Copyright

Copyright © 2013, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.
Contents

About This Document ........................................................................................................... xi
Document Conventions ........................................................................................................... xii

Chapter 1
Feature Nodes and Feature Sets ......................................................................................... 1
  Overview .............................................................................................................................. 1
  About Feature Sets ............................................................................................................ 1
  Profile Blocks and Fields ................................................................................................. 2
  Domains ........................................................................................................................... 6
  ACS Buffers ..................................................................................................................... 7
  Messaging Manager Profile Fields ................................................................................... 12

Chapter 2
Base Feature Nodes ........................................................................................................... 21
  Overview ............................................................................................................................ 21
  Available Feature Nodes ................................................................................................. 21
  Attempt Termination ......................................................................................................... 22
  Control Plan Notes .......................................................................................................... 24
  Disconnect Call .................................................................................................................. 25
  Dynamic Switch ............................................................................................................... 27
  End ................................................................................................................................ 28
  Junction ............................................................................................................................ 29
  Proportional Distribution ............................................................................................... 30
  Start ................................................................................................................................ 31
  Terminate Unchanged ...................................................................................................... 32
  Unconditional Termination .............................................................................................. 33

Chapter 3
CCS Charging Feature Nodes .......................................................................................... 35
  Overview ............................................................................................................................ 35
  Available Feature Nodes ................................................................................................. 35
  Balance Cascade Override ............................................................................................... 37
  Billable Event ................................................................................................................... 39
  Business Prefix Branch .................................................................................................... 44
  Call Information SMS ...................................................................................................... 46
  Cost Call Duration Branching .......................................................................................... 50
  Credit Wallet Transfer .................................................................................................... 53
  Declined Billing Cause .................................................................................................... 56
  Direct Unit Charge Request .............................................................................................. 58
  Get CUG Details ............................................................................................................... 60
  Named Event ...................................................................................................................... 61
  Play Tariff Plan Announcement ....................................................................................... 65
  Set Active Domain .......................................................................................................... 67
  Set BE EDR ...................................................................................................................... 70
  Set Discount ..................................................................................................................... 74
  Set Tariff Plan Rule ........................................................................................................... 76
  Tariff Plan Override ......................................................................................................... 79
  Universal ATB .................................................................................................................. 81
  Variable Amount Recharge ............................................................................................. 86
Chapter 4
CCS Credit Card Feature Nodes .................................................... 91
Overview.................................................................................. 91
Available Feature Nodes ............................................................. 91
Create and Register Credit Card ................................................ 92
Credit Card State Branching ....................................................... 97
Credit Cards Per Subscriber Branching ...................................... 98
Delete Credit Card Details ......................................................... 100
Deregister Credit Card .............................................................. 101
Modify Credit Card Details ....................................................... 103
Retrieve Credit Card for Subscriber ......................................... 106
Subscribers Per Credit Card Branching ..................................... 108

Chapter 5
CCS Subscriber Feature Nodes ..................................................... 111
Overview.................................................................................. 111
Available Feature Nodes ............................................................. 111
Change PIN ............................................................................. 113
Credit Card Details Change ....................................................... 115
Credit Card Recharge Menu ..................................................... 119
Credit Card Secret Code Change .............................................. 123
Credit Card Starter Menu ........................................................ 125
Do Credit Card Recharge .......................................................... 126
Friends and Destination Configuration .................................... 132
Friends and Family Configuration ............................................ 135
Friends and Destination Discount ............................................ 138
Friends and Destination Menu ................................................ 140
Get Destination Prefix ............................................................... 142
Help Information .................................................................... 145
Main Menu ............................................................................ 147
Personal Options Menu .............................................................. 149
Play Destination..................................................................... 152
Product Type Branching .......................................................... 153
Product Type Swap .................................................................. 157
Read Secret Code .................................................................... 159
Refresh Subscriber Information .............................................. 161
Remote Access Service ............................................................ 162
Select Language ..................................................................... 164
Set Product Type ..................................................................... 166
Subscriber Creation/ Deletion ................................................ 167
What’s New ........................................................................... 170

Chapter 6
CCS Voucher Feature Nodes .......................................................... 173
Overview.................................................................................. 173
Available Feature Nodes ............................................................. 173
Play Voucher Redeemed Info ................................................... 174
Recharge Menu ....................................................................... 175
Scratch Card Recharge ............................................................. 178
Scratch Card Recharge Alternate Subscriber ............................. 182
Chapter 7

CCS Wallet Management Feature Nodes............................................. 213

Overview.......................................................................................... 213
Available Feature Nodes................................................................. 213
Account Activate.............................................................................. 215
Account State Branch..................................................................... 216
Account Status................................................................................ 219
Account Status SMS........................................................................ 223
Apply Rewards.................................................................................. 225
Balance State Branch...................................................................... 226
Balance Status.................................................................................. 230
Balance Type Branching ................................................................. 234
Balance Type Cascade Branching.................................................... 236
Cumulative Balances....................................................................... 239
Periodic Charge State Branch......................................................... 242
Periodic Charge Subscription......................................................... 244
Periodic Charge Transfer................................................................. 247
Play Next Promotion.................................................................... 249
Select Credit Transfer.................................................................... 252
SMS Low Balance........................................................................... 254
Time Remaining.............................................................................. 256
Tracker Account State Branch.......................................................... 259
Wallet Life Cycle Period Branching................................................ 261
Wallet State Update.......................................................................... 263

Chapter 8

Data Access Pack Feature Nodes....................................................... 265

Overview.......................................................................................... 265
Available Feature Nodes................................................................. 265
DAP Request.................................................................................... 266
Send Request................................................................................... 271
DAP VXML....................................................................................... 277

Chapter 9

Data Operations Nodes..................................................................... 281

Overview.......................................................................................... 281
Available Feature Nodes................................................................. 281
Compare Profile Data....................................................................... 282
Copy................................................................................................. 285
Delete Profile Field......................................................................... 290
Modify............................................................................................... 292
Prefix Branching............................................................................. 294
Prefix Tree Branching...................................................................... 295
Profile Branching............................................................................ 298
Profile Counting............................................................................... 300
Set................................................................................................. 302
### Chapter 15
#### Network Feature Nodes ................................................................. 371
- Overview .................................................................................................. 371
- Available Feature Nodes ........................................................................ 371
- Branch on Bearer Type ........................................................................... 372
- Branch On Call Forwarding Pending ...................................................... 377
- Branch on Event Report Request BCSM Code ....................................... 378
- Branch on Indicator ............................................................................... 383
- Branch on Protocol ................................................................................ 385
- Branch on Service Key .......................................................................... 386
- Call Forwarded Branching ..................................................................... 389
- Call Progression .................................................................................... 391
- Set Cut and Paste ................................................................................ 393
- Set Indicator ......................................................................................... 394
- TCAP Handover ................................................................................... 397
- Transmission Type Branching ............................................................... 401

### Chapter 16
#### Number Feature Nodes ....................................................................... 403
- Overview .................................................................................................. 403
- Available Feature Nodes ........................................................................ 403
- Call Filtering .......................................................................................... 404
- Calling Party ........................................................................................... 407
- Calling Party Category .......................................................................... 408
- Dialed Number ...................................................................................... 411
- Geographical Routing .......................................................................... 413
- Number Lookup and Translation .......................................................... 418
- Number Matching ................................................................................ 421
- Number Normalisation ......................................................................... 425
- Table Lookup ........................................................................................ 426

### Chapter 17
#### OSD Feature Nodes ............................................................................. 429
- Overview .................................................................................................. 429
- Available Feature Nodes ........................................................................ 429
- Iterator .................................................................................................... 430

### Chapter 18
#### Others Feature Nodes ......................................................................... 433
- Overview .................................................................................................. 433
- Available Feature Nodes ........................................................................ 433
- Call Initiation ......................................................................................... 434
- Change CDR .......................................................................................... 438
- Copy Hunting List ................................................................................ 440
- Get Hunting List ................................................................................... 443
- Loop Limit .............................................................................................. 445
- NP Destination Selection ....................................................................... 446
- NP Home Routing ................................................................................. 450
- NP Least Cost Routing ......................................................................... 451
- NP Map Trigger .................................................................................... 454
- Service Handover .................................................................................. 456
Chapter 19

Pending TN Feature Nodes .......................................................... 469
  Overview ................................................................................. 469
  Available Feature Nodes ......................................................... 469
  Attempt Terminate to Pending TN ........................................... 470
  Attempt Terminate to Pending TN with Duration .................... 472
  Collect Digits to Pending TN .................................................... 474
  Get Hunting Number .............................................................. 477
  Set Pending TN from Profile .................................................... 479
  Terminate to Pending TN ......................................................... 481
  Test Pending TN Type ............................................................. 482

Chapter 20

Prefix Trees Feature Nodes ......................................................... 485
  Overview ................................................................................. 485
  Available Feature Nodes ......................................................... 485
  About Prefix Tree Feature Nodes ............................................. 486
  Change Ordered Prefix Tree Entry .......................................... 488
  Check Limitations ................................................................ 490
  Check Prefix Tree Capacity ..................................................... 493
  Create Prefix Tree ................................................................. 496
  Play Ordered Prefix Tree Entry .............................................. 499
  Prefix Tree Entry Extraction .................................................. 504

Chapter 21

Presence Feature Nodes ............................................................... 507
  Overview ................................................................................. 507
  Available Feature Nodes ......................................................... 507
  Presence Branching ............................................................... 507
  Set Presence .......................................................................... 510

Chapter 22

RIMS Feature Nodes ................................................................. 515
  Overview ................................................................................. 515
  Available Feature Nodes ......................................................... 515
  RIMS Nodes Use Cases ......................................................... 515
  IS41 RIMS Query .................................................................. 516
  MAP RIMS Query .................................................................. 518

Chapter 23

SES Feature Nodes ................................................................. 523
  Overview ................................................................................. 523
  Available Feature Nodes ......................................................... 523
  In-Roamer Contact Check ...................................................... 524
Chapter 24
SMCB Feature Node.................................................................................531
Overview.................................................................................................531
Short Message Charging........................................................................531

Chapter 25
Time Feature Nodes................................................................................533
Overview.................................................................................................533
Available Feature Nodes.........................................................................533
Time Zones...............................................................................................534
Day of Week..............................................................................................534
Day of Year...............................................................................................536
Profile Date Compare..............................................................................540
Profile Date Store....................................................................................541
Time of Day..............................................................................................545

Chapter 26
UIS Portal Feature Nodes........................................................................547
Overview.................................................................................................547
Available Feature Nodes.........................................................................547
Language Setting......................................................................................548
Send Buffer...............................................................................................551
User Input..................................................................................................553
User Selection...........................................................................................558
Version Branching....................................................................................562

Chapter 27
VPN Feature Nodes..................................................................................565
Overview.................................................................................................565
Available Feature Nodes.........................................................................565
Profile Blocks and Fields.........................................................................566
VPN Analyze.............................................................................................571
VPN Caller is On-Net.............................................................................574
VPN CLI Lookup.....................................................................................575
VPN Get Hunting Number......................................................................577
VPN Load Station...................................................................................578
VPN Lookup............................................................................................580
VPN Mobile Analyze..............................................................................582
VPN Originating CUG............................................................................585
VPN Redirection Counter Branching......................................................586
VPN Set Redirection Counter.................................................................588
VPN Set Tariff Code From Profile.........................................................589
VPN Subscriber Lookup.........................................................................591
VPN Terminating CUG..........................................................................593
VPN Voice Mail Number Configuration...................................................596
Chapter 28
XMS Content Feature Nodes................................................................. 599
Overview......................................................................................... 599
Available Feature Nodes................................................................. 599
Extract Content.............................................................................. 600
Extract Number............................................................................. 603
Format Text..................................................................................... 606
Keyword Search and Replace......................................................... 608
Message Data Branching............................................................... 611
Text Content Branching................................................................. 611

Chapter 29
XMS Control Feature Nodes.............................................................. 615
Overview......................................................................................... 615
Available Feature Nodes................................................................. 615
Accept............................................................................................ 616
Attempt Delivery Pending............................................................. 617
Branch on Domain........................................................................ 618
Discard......................................................................................... 620
MMX EDR....................................................................................... 621
Reject............................................................................................. 623
Send Short Message Notification................................................. 624
Send USSD Message..................................................................... 630
Send USSD Notification................................................................. 636
Set Message Routing.................................................................... 644
Set Originating Address............................................................... 646

Chapter 30
XMS Parameters Feature Nodes....................................................... 649
Overview......................................................................................... 649
Available Feature Nodes................................................................. 649
Alphabet Branching...................................................................... 650
Content Size Branching............................................................... 651
Message Attribute Branching....................................................... 652
Segment Number Branching......................................................... 657
Set Data Coding........................................................................... 658
Set Message Attribute................................................................. 659
Set Time Zone Message Attribute.............................................. 661
Test Data Coding......................................................................... 663

NCC Glossary of Terms.................................................................. 665
Index.............................................................................................. 679
About This Document

Scope
The scope of this document includes all the feature nodes used within control plans created using the Oracle Communications Network Charging and Control (NCC) ACS Control Plan Editor (CPE) application.

Audience
This guide is written primarily for control plan administrators.

Prerequisites
Although there are no prerequisites for using this guide, familiarity with control plans and the ACS Control Plan Editor application would be an advantage.

Related documents
The following documents are related to this document:
- ACS User's Guide
- CPE User's Guide
# Document Conventions

## Typographical Conventions

The following terms and typographical conventions are used in the Oracle Communications Network Charging and Control (NCC) documentation.

<table>
<thead>
<tr>
<th>Formatting convention</th>
<th>Type of information</th>
</tr>
</thead>
</table>
| **Special Bold**      | Items you must select, such as names of tabs.  
                        | Names of database tables and fields. |
| **Italics**           | Name of a document, chapter, topic or other publication.  
                        | Emphasis within text. |
| **Button**            | The name of a button to click or a key to press.  
                        | **Example:** To close the window, either click **Close**, or press **Esc**. |
| **Key+Key**           | Key combinations for which the user must press and hold down one key and then press another.  
                        | **Example:** Ctrl+P, or Alt+F4. |
| **Monospace**         | Examples of code or standard output. |
| **Monospace Bold**    | Text that you must enter.  
                        | **variable** Used to indicate variables or text that should be replaced. |
| **menu option > menu option >** | Used to indicate the cascading menu option to be selected, or the location path of a file.  
                        | **Example:** Operator Functions > Report Functions  
                        | **Example:** /IN/html/SMS/Helptext/ |
| **hypertext link**    | Used to indicate a hypertext link on an HTML page. |

Specialized terms and acronyms are defined in the **Glossary** at the end of this guide.
Chapter 1

Feature Nodes and Feature Sets

Overview

Introduction

This chapter describes how customers use feature sets in the Oracle Communications Network Charging and Control (NCC) ACS Control Plan Editor and explains how to use profile blocks and buffers in control plans.

Control plans define where to route calls, based on factors such as the type of service, geographic location, time of day, and so on. For more information about control plans, see CPE User's Guide.

In this chapter

This chapter contains the following topics.

About Feature Sets 1
Profile Blocks and Fields 2
Domains 6
ACS Buffers 7
Messaging Manager Profile Fields 12

About Feature Sets

About Customer Feature Sets

A feature set is a configurable list of feature nodes. Customers are allocated one or more feature sets by the ACS system administrator and the feature nodes from those feature sets can be used in any control plan that the customer creates. The feature node sets for a customer define which feature nodes will be available in the feature palette in the Control Plan Editor window.

For information on configuring feature sets, see ACS User's Guide.

About the Feature Palette

The feature nodes that are available from the feature palette are organized into feature groups. A feature group is a group of feature nodes that are related to a common function.

The way in which you display a feature group in the feature palette depends on the feature palette style. There are two possible feature palette styles:

- The floating panel style displays feature group names in a list, and the feature nodes within a selected group in a floating panel. This is the default. The floating panel style enables you to quickly locate a feature node in the palette by using the Search Palette feature to filter the available feature nodes.
- The static panel style displays an expandable list of feature node groups from which you select individual feature nodes. The Search Palette feature is not available.

You can configure the Control Plan Editor to use the static panel style by setting the paletteStyle applet parameter in the acs.html configuration file. For more information, see ACS Technical Guide.
Profile Blocks and Fields

What is a profile block

A profile block is a piece of binary data that is usually stored in the database in a "long raw" column type. For example, the profile block containing data relevant to an ACS customer is held in the PROFILE field of the ACS_CUSTOMER table.

Profile blocks store data used during session processing.

Profile block definition

Profile blocks and the mapping of profile tags to profile blocks are defined in SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs. For more information see the discussion on profile tag configuration in ACS User's Guide.

Primary tags

Profile blocks contain a series of different pieces of data called primary tags. Each tag is indexed by a hex tag. Some feature nodes enable you to specify which tag to use. For example, the Profile Branch feature node enables you to compare the value of a specific primary tag with a specified value, and branch on the result.

Profiles are generally maintained by editing the relevant screens in the UI for the application. They can also store data from the session, or be updated by a feature node, such as the Store Profile feature node.

Profile selection through tag#

Various feature nodes use profile blocks as part of their configuration. A profile block and tag can be selected either from the drop down lists of available profile blocks and tags, or in some cases by entering a tag value.

Enter tag value

Where allowed, perform one of the following actions:

- For the profile selection field set, the Data Type drop down list has a Fixed Value option, selection of which replaces the location and field drop down list with the fixed value box for the value to be typed into.
- For previous versions of the profile selection field sets, press Backspace to empty the Location drop down list, and replace the location and field drop down list with the Fixed Value box for the value to be typed into.

Profile block availability

The service loader you are using determines the profile blocks that are available to the control plan. All service loaders include the global profile.

The service loader also specifies the uses of Application Specific profiles 1-8.

<table>
<thead>
<tr>
<th>Block Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Specific 1</td>
<td>Subscriber account (CCS_ACCT_REFERENCE).</td>
</tr>
<tr>
<td>Application Specific 2</td>
<td>Product type</td>
</tr>
<tr>
<td>Application Specific 3</td>
<td>Control plan</td>
</tr>
<tr>
<td>Application Specific 5</td>
<td>CCS global configuration</td>
</tr>
<tr>
<td>Application Specific 6</td>
<td>Temporary storage containing:</td>
</tr>
</tbody>
</table>
Chapter 1

### Feature Nodes and Feature Sets

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallet type ID</td>
<td></td>
</tr>
<tr>
<td>Account (subscriber) type ID</td>
<td></td>
</tr>
<tr>
<td>Account (subscriber) reference</td>
<td></td>
</tr>
<tr>
<td>Wallet type</td>
<td></td>
</tr>
<tr>
<td>EDR ID</td>
<td></td>
</tr>
<tr>
<td>Application Specific 7</td>
<td>Temporary storage</td>
</tr>
<tr>
<td>Application Specific 8</td>
<td>Temporary storage</td>
</tr>
<tr>
<td>Customer</td>
<td>Service provider</td>
</tr>
</tbody>
</table>

Those specified as temporary storage are never written back to the database and are cleared at the end of the session. They can be used for such things as moving data from one application to another within the control plan (for example between a USSD feature node and a DAP feature node).

Whether the CCS profile blocks are updateable or read-only is specified in the `eserv.config` configuration file. If you wish to make a profile updateable back to the database, you must set the appropriate `enableProfile` parameter to `true` before using any feature nodes that can write back to a profile. For more information, see *CCS Technical Guide*.

## Standard profile block list

Here are the profile blocks available with a new installation of ACS.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Valid Profile</td>
<td>Allows you to search for relevant tags in all profiles that have been loaded.</td>
</tr>
<tr>
<td>App Specific Profile 1</td>
<td>Contains information specific to an application, for example, Messaging Manager.</td>
</tr>
<tr>
<td>App Specific Profile 2</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 3</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 4</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 5</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 6</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 7</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 8</td>
<td></td>
</tr>
<tr>
<td>CLI Subscriber Profile</td>
<td>Contains most of the information you can specify in the CLI tab of the ACS Numbers screen, for example:</td>
</tr>
<tr>
<td></td>
<td>- Account code</td>
</tr>
<tr>
<td></td>
<td>- Language</td>
</tr>
<tr>
<td></td>
<td>- Follow me number</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant to the 0800 service.</td>
</tr>
<tr>
<td>Control Plan Profile</td>
<td>This profile contains current switch node exits only.</td>
</tr>
<tr>
<td>Customer Profile</td>
<td>Contains customer information, for example:</td>
</tr>
<tr>
<td></td>
<td>- Incoming barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>- Incoming barred/allowed list</td>
</tr>
<tr>
<td></td>
<td>- PIN rights</td>
</tr>
<tr>
<td></td>
<td>- Default language</td>
</tr>
<tr>
<td></td>
<td>- Incoming barred/allowed ignore</td>
</tr>
<tr>
<td></td>
<td>- Termination number ranges</td>
</tr>
<tr>
<td>Profile</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Global Profile</td>
<td>Contains global information, for example:</td>
</tr>
<tr>
<td></td>
<td>- PIN rights</td>
</tr>
<tr>
<td></td>
<td>- Multi-lingual announcements</td>
</tr>
<tr>
<td></td>
<td>- Default language</td>
</tr>
<tr>
<td></td>
<td>- Control plan version hiding</td>
</tr>
<tr>
<td>Incoming Session Data</td>
<td>Data which comes in over the network, including the list of buffers as described in ACS Buffers (on page 7). Examples include:</td>
</tr>
<tr>
<td></td>
<td>- InitialDP received for voice</td>
</tr>
<tr>
<td></td>
<td>- MO Forward SM for SMS using Messaging Manager</td>
</tr>
<tr>
<td></td>
<td>- Diameter CCR (INITIAL_REQUEST)</td>
</tr>
<tr>
<td>Outgoing Session Data</td>
<td>Data which goes out over the network, including the list of buffers as described in ACS Buffers (on page 7).</td>
</tr>
<tr>
<td>Service Number Profile</td>
<td>Contains most of the information you can specify in the Service Number tab of the ACS Numbers screen, for example:</td>
</tr>
<tr>
<td></td>
<td>- Account code</td>
</tr>
<tr>
<td></td>
<td>- Language</td>
</tr>
<tr>
<td></td>
<td>- Follow me number</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant to the 0800 service.</td>
</tr>
<tr>
<td>Temporary Storage</td>
<td>Stores the data in memory and does not write it to the database.</td>
</tr>
<tr>
<td></td>
<td>It exists for the duration of the control plan execution only.</td>
</tr>
<tr>
<td>VPN Network Profile</td>
<td>Contains most of the information you can specify in the VPN edit network, for example:</td>
</tr>
<tr>
<td></td>
<td>- Account Code maximum length</td>
</tr>
<tr>
<td></td>
<td>- Outgoing barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>- Incoming barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>- VPN network SD no check</td>
</tr>
<tr>
<td></td>
<td>- VPN present private address</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant if you have the VPN service installed.</td>
</tr>
<tr>
<td>VPN Station Profile</td>
<td>Contains most of the information you can specify in the VPN edit station, for example:</td>
</tr>
<tr>
<td></td>
<td>- Outgoing barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>- Incoming barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>- VPN bar all incoming</td>
</tr>
<tr>
<td></td>
<td>- VPN bar off network incoming</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant if you have the VPN service installed.</td>
</tr>
</tbody>
</table>
**CCS Profile Block list**

When you install CCS, the application specific profiles (1-8) are updated to show CCS-specific names instead of the ACS defaults, as described in the following table:

<table>
<thead>
<tr>
<th>Name</th>
<th>App block</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Reference Profile</td>
<td>1</td>
<td>Details of a subscriber's account.</td>
</tr>
<tr>
<td>Product Type Profile</td>
<td>2</td>
<td>Details of a product type.</td>
</tr>
<tr>
<td>Control Plan Profile</td>
<td>3</td>
<td>Data associated with a specific control plan.</td>
</tr>
<tr>
<td>CCS Global Profile</td>
<td>5</td>
<td>Data available across the system.</td>
</tr>
<tr>
<td>CCS Temporary Profile</td>
<td>6</td>
<td>Temporary storage areas. Not written back to database.</td>
</tr>
<tr>
<td>CCS Temporary Profile</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>CCS Temporary Profile</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The CCS temporary profiles are available to provide compatibility with control plans created with earlier versions of ACS. Where possible, use the ACS Temporary Storage profile instead.

**Sub-tags**

It is possible to store a sub-profile block within a main profile block. For example, the speed dial block contains the list of speed dial numbers:

<table>
<thead>
<tr>
<th>Tag</th>
<th>Desc</th>
<th>Len</th>
<th>HexData...</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x000009</td>
<td>Outgoing BA List Type</td>
<td>1</td>
<td>01</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x00001a</td>
<td>Speed Dial Block</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>SubTags (2):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>10 01 30 34 39 33 39 33 34 30 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000002</td>
<td>5 02 31 32 33 34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

So, the speed dial block is a profile block containing:

- sub-tag 1, the off-net number 049393404
- sub-tag 2, the on-net number 1234

There is a sub-tag variable associated with the call which can be set using the Collect Digits To Sub-tag (see page 329) node and is used to indicate which tag in such a sub-profile block is to be accessed. This variable can be used in the following nodes:

- Copy (see page 285)
- Number Lookup and Translation (see page 418)
- Set Pending TN from Profile (see page 479)

**Array tags**

Array tags are primary tags that have an array of records, each of which contains a number of sub-tags.
Array tag example

For example, sending short messages to several numbers through a single primary tag can be configured (in ACS > Configuration > Profile Tag Details tab) as follows:

<table>
<thead>
<tr>
<th>Profile Tag Name</th>
<th>Profile Tag Type</th>
<th>Profile Tag Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Message To Send</td>
<td>Array</td>
<td>2000</td>
</tr>
<tr>
<td>Number To Send To</td>
<td>Numeric String</td>
<td>2001</td>
</tr>
<tr>
<td>Message To Send</td>
<td>String</td>
<td>2002</td>
</tr>
</tbody>
</table>

Primary Tag Name = Short Message To Send
Profile Tag Type = Array
Profile Tag location = 2000

Record Sub tag name = Number To Send To
Profile Tag Type = Numeric String
Profile Tag location = 2001
Parent Profile tag = 2000

Record Sub tag name = Message To Send
Profile Tag Type = String
Profile Tag location = 2002
Parent tag = 2000

So, in this example, there might be five records under tag 2000, each of which is a short message to send and the number to send to.

Updateable ACS profiles

The following profiles can be made updateable, using the Load Profile node:

- CUSTOMER
- CALL_PLAN
- SUBSCRIBER
- Service Number

Domains

Introduction

While ACS profiles are usually stored in the local database, it is possible to use third-party stored data in control plans. For example, if a third-party billing engine stores subscriber data which is needed in a control plan, the profile feature nodes can use the domain of the subscriber to direct profile interactions to the third-party billing engine.

Service domains

Part of the call context for ACS control plans includes service domains. While ACS does not populate, configure or use service domains itself, it provides call context slots for service domains which can be populated and used by plug-in services (for example, CCS).

The feature nodes in the plug-in service macro node library will use the service domains to select the correct destination billing engines.

Subscriber data

Where subscriber data is stored on a compatible billing engine, a domain can be configured to control where subscriber data interactions are directed.
ACS Buffers

What is an ACS buffer?

An ACS buffer is one of a number of ACS session data variables, most of which contain digits. A session data variable is a piece of data associated with a particular session, for example; a redirecting party ID. Session data variables are created at any point during session processing. Some variables are set at the beginning of the session from the values in the InitialDP. For more information about which variables are populated by which parts of the InitialDP, see ACS Technical Guide.

During session processing, session data variables can be used or updated by feature nodes. Feature nodes that use session data variables usually display the available session data in the lists on the feature node's configuration window.

Session data variables are retained only for the duration of the session processing. After a session is processed, ACS deletes any session data variables it may have defined. To store a session data variable permanently, you must write it to a profile field.

Nodes using buffers

You can access the list of buffers in a feature node containing the combination of profile Data Type, Location and Field lists. For example, you can use the Number Matching feature node to match a number in an incoming session data profile field:

Buffer list

The table describes the buffers that are automatically created when you install ACS, and describes how they are populated. For more information about the available buffers, see the discussion on profile tag configuration in NCC Advanced Control Services User’s Guide.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Code</td>
<td>Account code entered in Account Code Entry (see page 359) feature node.</td>
</tr>
<tr>
<td>Account Number</td>
<td>Account number of CCS subscriber account. Only use with CCS.</td>
</tr>
<tr>
<td>Additional Calling Party</td>
<td>Set from the Additional Calling Party Number parameter in the InitialDP. For more information, see acsChassis ServiceEntry</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Call Duration Seconds</td>
<td>From either: 1 Report BCSM the difference between the Disconnect and Answer (if armed). 2 Apply charging Report 3 Call Information Report</td>
</tr>
<tr>
<td>Call ID</td>
<td>The SLEE Call ID.</td>
</tr>
<tr>
<td>Call Reference Number</td>
<td>Set from the callReferenceNumber parameter from a CAP protocol InitialDP. See 3GPP TS 29.078.</td>
</tr>
<tr>
<td>Call Start Time Hour</td>
<td>The hour that the InitialDP was received, in local system time (tz variable of slee_acs).</td>
</tr>
<tr>
<td>Call Start Time Minute</td>
<td>The minute of the hour that the InitialDP was received, in local system time (tz variable of slee_acs).</td>
</tr>
<tr>
<td>Called IMSI</td>
<td>Set by the RIMS Query feature nodes. For more information about RIMS Query feature nodes, see MM Technical Guide.</td>
</tr>
<tr>
<td>Called Location Number</td>
<td>VMSC Address. Set by the RIMS Query feature nodes. For more information about RIMS Query feature nodes, see MM Technical Guide.</td>
</tr>
<tr>
<td>Called SGSN</td>
<td>Set by the RIMS Query feature nodes. For more information about RIMS Query feature nodes, see MM Technical Guide.</td>
</tr>
<tr>
<td>Calling IMSI</td>
<td>Set by the RIMS Query feature nodes. For more information about RIMS Query feature nodes, see MM Technical Guide.</td>
</tr>
<tr>
<td>Calling Logical Number</td>
<td>Set from the InitialDP for the call. For more information, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Calling Network Address</td>
<td>Set from the InitialDP for the call. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Calling Party Category        | Set from the InitialDP for the call. (callingPartysCategory parameter from the IDP in ETSI INAP, Called party'sCategory in CAP). These standards refer to ETSI ISUP which refers to ITU-T ISUP (Q763) which has the following codes used in the calling party's category parameter field:  

0  calling party's category unknown at this time (national use)  
1  operator, language French  
2  operator, language English  
3  operator, language German  
4  operator, language Russian  
5  operator, language Spanish  
6 to 8  available to Administrations for selection a particular language by mutual agreement  
9  reserved (see Recommendation Q.104) (Note) (national use)  
10  ordinary calling subscriber  
11  calling subscriber with priority  
12  data call (voice band data)  
13  test call  
14  spare  
15  payphone  
16 to 223  spare  
224 to 254  reserved for national use  
255  spare |
<p>| Calling Party ID              | Set from the Calling Party Number parameter in the InitialDP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide. |
| Calling Private Network Address| For VPN. Available if VPN is installed.                                                                                                                                                                     |
| Calling SGSN                  | Set by the RIMS Query feature nodes. For more information about RIMS Query feature nodes, see MM Technical Guide.                                                                                               |
| Carrier Code                  | Set in Set Carrier Code (see page 457) node.                                                                                                                                                                 |
| Cell ID                       | Set from the Cell Identity parameter in the CAMEL InitialDP. CAMEL IDP.LocationInformation.cellGlobalIdOrServiceAreaIdOrLAI.CellIdentity                                                                 |
| Current Time Hour             | Current hour, in local system time (tz variable of slee_acs).                                                                                                                                                 |
| Current Time Minute           | Current minute of the hour, in local system time (tz variable of slee_acs).                                                                                                                                   |
| Extension Digits 0            | Set from corresponding extension parameter in the InitialDP.                                                                                                                                                 |
| Extension Digits 1            | For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.                                                                                               |
| Extension Digits 2            |                                                                                                                                                                                                           |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension Digits 3</td>
<td></td>
</tr>
<tr>
<td>Extension Digits 4</td>
<td></td>
</tr>
<tr>
<td>Extension Digits 5</td>
<td></td>
</tr>
<tr>
<td>Extension Digits 6</td>
<td></td>
</tr>
<tr>
<td>Extension Digits 7</td>
<td></td>
</tr>
<tr>
<td>Extension Digits 8</td>
<td></td>
</tr>
<tr>
<td>Extension Digits 9</td>
<td></td>
</tr>
<tr>
<td>First Redirecting Party</td>
<td>Set from the original called party ID parameter in the InitialDP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Last Redirecting Party</td>
<td>Set from the redirecting party ID parameter in the InitialDP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Last Termination Number</td>
<td>Last number used in destination Routing address (DRA) in INAP connect operation.</td>
</tr>
<tr>
<td>Location Area Code</td>
<td>Set from Location Area Code parameter in CAMEL InitialDP. CAMEL IDP.LocationInformation.cellGlobalIdOrServiceAreaIdOrLAI.Location Area Code</td>
</tr>
<tr>
<td>Location Info Location Number</td>
<td>Set from locationNumber parameter in the locationInformation parameter in a CAP InitialDP. This parameter is optional in the InitialDP.</td>
</tr>
<tr>
<td>Location Number</td>
<td>Set from locationNumber parameter in the InitialDP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Mobile Country Code</td>
<td>Set from Country Code parameter in CAMEL InitialDP. CAMEL IDP.LocationInformation.cellGlobalIdOrServiceAreaIdOrLAI.Country Code</td>
</tr>
<tr>
<td>Mobile Network Code</td>
<td>Set from Network Code parameter in CAMEL InitialDP. CAMEL IDP.LocationInformation.cellGlobalIdOrServiceAreaIdOrLAI.Network Code</td>
</tr>
<tr>
<td>Mobile Originating Cell ID</td>
<td>Cell ID, from one of:</td>
</tr>
<tr>
<td></td>
<td>- InitialDP</td>
</tr>
<tr>
<td></td>
<td>- LCP (if originating)</td>
</tr>
<tr>
<td>Mobile Originating Country Code</td>
<td>Country Code, from one of:</td>
</tr>
<tr>
<td></td>
<td>- InitialDP</td>
</tr>
<tr>
<td></td>
<td>- LCP (if originating)</td>
</tr>
<tr>
<td>Mobile Originating Location Code</td>
<td>Location Code, from one of:</td>
</tr>
<tr>
<td></td>
<td>- InitialDP</td>
</tr>
<tr>
<td></td>
<td>- LCP (if originating)</td>
</tr>
<tr>
<td>Mobile Originating Network Code</td>
<td>Network Code, from one of:</td>
</tr>
<tr>
<td></td>
<td>- InitialDP</td>
</tr>
<tr>
<td></td>
<td>- LCP (if originating)</td>
</tr>
<tr>
<td>Mobile Terminating Cell ID</td>
<td>Cell ID, from one of:</td>
</tr>
<tr>
<td></td>
<td>- InitialDP</td>
</tr>
<tr>
<td></td>
<td>- LCP (if terminating)</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mobile Terminating Country Code</td>
<td>Country Code, from one of:</td>
</tr>
<tr>
<td></td>
<td>• InitialDP</td>
</tr>
<tr>
<td></td>
<td>• LCP (if terminating)</td>
</tr>
<tr>
<td>Mobile Terminating Location Code</td>
<td>Location Code, from one of:</td>
</tr>
<tr>
<td></td>
<td>• InitialDP</td>
</tr>
<tr>
<td></td>
<td>• LCP (if terminating)</td>
</tr>
<tr>
<td>Mobile Terminating Network Code</td>
<td>Network Code, from either:</td>
</tr>
<tr>
<td></td>
<td>• InitialDP</td>
</tr>
<tr>
<td></td>
<td>• LCP (if terminating)</td>
</tr>
<tr>
<td>MSC Address</td>
<td>Set from the mscAddress parameter from a CAP protocol InitialDP. See 3GPP TS 29.078.</td>
</tr>
<tr>
<td>MSG TYPE</td>
<td>Set from the eventtypeBCSM parameter in the InitialDP.</td>
</tr>
<tr>
<td>Original Called Number</td>
<td>Set from Original Called Party ID parameter in the InitialDP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Pending Termination Number</td>
<td>Set from Destination Routing Address parameter in InitialDP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>PIN Digits</td>
<td>Set from PIN entered in PIN Authorisation (see page 331) node</td>
</tr>
<tr>
<td>Pending TN Type</td>
<td>Type of number stored in Pending Termination Number buffer.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Not available in Call Context drop down list. For more information about this buffer, see Pending termination number variables (on page 11).</td>
</tr>
<tr>
<td>Private Network Address</td>
<td>Only relevant with VPN. For example, my private network address would be 3404, it is a number which only makes sense within a private network.</td>
</tr>
<tr>
<td>SCCP Calling Party Address GT</td>
<td>Global Title from SCCP Calling Party Address InitialDP.</td>
</tr>
<tr>
<td>Service Key</td>
<td>Set from ServiceKey parameter in InitialDP. This is the only compulsory parameter from an InitialDP. This is true for all flavours of INAP. For information about how this buffer is set, see acsChassis ServiceEntry configuration in ACS Technical Guide.</td>
</tr>
<tr>
<td>Service Number</td>
<td>Normalised called party number from InitialDP.</td>
</tr>
<tr>
<td>Subscriber State</td>
<td>Subscriber state from the CAMEL InitialDP.</td>
</tr>
<tr>
<td>VLR Number</td>
<td>Set from the VLR Number parameter in the CAMEL InitialDP. CAMEL IDP.locationInformation.VLR Number.</td>
</tr>
</tbody>
</table>

**Pending termination number variables**

There are two pending termination number variables:

1. PendingTN.
2. PendingTNType.

PendingTN contains a number which is used as the TN when a call is terminated. PendingTNType defines the type of number contained in PendingTN.
PendingTNType can classify the contents of PendingTN in one of six ways as listed in the following table.

<table>
<thead>
<tr>
<th>Identification number</th>
<th>Classification of the number held in PendingTN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>A number of an unknown type.</td>
</tr>
<tr>
<td>1</td>
<td>A number that accesses the PSTN directly (sometimes called an Off-Net number).</td>
</tr>
<tr>
<td>2</td>
<td>A number that passes through a private network on its way to the PSTN - the 'dial 1 to get out' scenario (sometimes called an On-Net number).</td>
</tr>
<tr>
<td>3</td>
<td>A speed-dial number. For example 754 assigned to the TN 64493934919.</td>
</tr>
<tr>
<td>4</td>
<td>A service number.</td>
</tr>
<tr>
<td>5</td>
<td>A calling line identification (CLI).</td>
</tr>
</tbody>
</table>

When a control plan starts:

- PendingTN is set from a value determined by the pendingTNSource parameter in a ServiceEntry configuration line in the `acs.conf` file. For information about ServiceEntry lines, see the `acsChassis ServiceEntry Configuration` (SLC) section of `ACS Technical Guide`.

- PendingTNType is set to 'unknown'.

PendingTN corresponds to CC Pending Termination Number in the drop down lists in the screens. PendingTNType is not available from the drop down lists (it is set by the Type of Digits to Collect drop down list).

ACS feature nodes that interact with pending termination number variables are listed below:

- The Collect Digits to Buffer feature node changes the value of PendingTN and PendingTNType.
- Test Pending TN Type can read PendingTNType.

Note: PendingTN is also known as Pending TN Buffer.

**Messaging Manager Profile Fields**

**About Messaging Manager Temporary Storage Profile**

When a message enters Messaging Manager Multigate, the data in the message is used to populate Messaging Manager profile fields in the temporary storage profile. You can manipulate or use the values stored in these profile fields by using the feature nodes that use profile tags in control plans. Feature nodes that use profile tags include:

- Copy
- Extract Content
- Message Attribute Branching

For more information about profiles, see `Profile Blocks and Fields` (on page 2).

For more information about Messaging Manager feature nodes see:

- *XMS Content Feature Nodes* (on page 599)
- *XMS Control Feature Nodes* (on page 615)
- *XMS Parameters Feature Nodes* (on page 649)
### Temporary Storage Profile Fields

This table lists the profile field names, tag numbers (in decimal), and tag types for the Messaging Manager profile fields held in the temporary storage profile.

<table>
<thead>
<tr>
<th>Profile Field Name</th>
<th>Tag Number</th>
<th>Tag Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMX Adaptations</td>
<td>3932475</td>
<td>Integer</td>
<td>MMS request. Whether the originator allows adaptation of the content.</td>
</tr>
<tr>
<td>MMX Adapter Name</td>
<td>3932426</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Allow Alternate Delivery</td>
<td>3932425</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Alt Dest Address</td>
<td>3932233</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Autoreply Active</td>
<td>3932184</td>
<td>Boolean</td>
<td></td>
</tr>
<tr>
<td>MMX Autoreply History</td>
<td>3932185</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Autoreply History Clear Time</td>
<td>3932219</td>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>MMX Autoreply Replied Address List</td>
<td>3932208</td>
<td>Limited Ordered Prefix Tree</td>
<td></td>
</tr>
<tr>
<td>MMX Autoreply Text</td>
<td>3932183</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Aux Application</td>
<td>3932472</td>
<td>String</td>
<td>MMS request. Auxiliary application addressing information.</td>
</tr>
<tr>
<td>MMX Barring Active</td>
<td>3932180</td>
<td>Boolean</td>
<td></td>
</tr>
<tr>
<td>MMX Barring Default Action</td>
<td>3932182</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Barring History</td>
<td>3932181</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 1</td>
<td>3932173</td>
<td>Limited Ordered Prefix Tree</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 1 Name</td>
<td>3932171</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 1 Type</td>
<td>3932172</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 2</td>
<td>3932176</td>
<td>Limited Ordered Prefix Tree</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 2 Name</td>
<td>3932174</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 2 Type</td>
<td>3932175</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 3</td>
<td>3932179</td>
<td>Limited Ordered Prefix Tree</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 3 Name</td>
<td>3932177</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Barring List 3 Type</td>
<td>3932178</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>Profile Field Name</td>
<td>Tag Number</td>
<td>Tag Type</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------</td>
<td>----------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MMX Billing Identifier</td>
<td>3932458</td>
<td>String</td>
<td>Message request. Additional billing information for the SMSC/MMSC from the ASP/VASP.</td>
</tr>
</tbody>
</table>
| MMX Charged Party       | 3932478    | Integer  | MMS request. Who is charged:  
  - Recipient  
  - Both, or  
  - Neither |
| MMX Content Class       | 3932473    | Integer  | MMS request. Classifies the content of the MM to the smallest content class to which the message belongs. |
| MMX Content Type        | 3932467    | String   | MIME request. The media types of content contained in the message.         |
| MMX Copied List         | 3932245    | String   |                                                                           |
| MMX Copy Notify Active  | 3932220    | Boolean  |                                                                           |
| MMX Current Alphabet    | 3932438    | String   | Message request. The user data character set that the User Data field is currently using. |
| MMX Current Recipient   | 3932441    | Integer  | Message request. Current delivery destination being processed.             |
| MMX Delivery Succeeded  | 3932449    | Integer  | Message request. Status of original message for delivery reports.         |
| MMX Desired Alphabet    | 3932439    | String   | Message request. The user data character set that should be used if possible when delivering the message. |
| MMX Destination Address | 3932235    | String   |                                                                           |
| MMX Destination Application | 3932470  | String   | MMS request. Identification of the destination application.               |
| MMX Destination Domain  | 3932428    | String   |                                                                           |
| MMX Destination IMSI    | 3932450    | String   | Message request. Identifies the destination MS.                           |
| MMX Destination LMSI    | 3932451    | String   | Message request. Additional identification of the destination MS when roaming. |
| MMX Destination MSC     | 3932452    | String   | Message request. Destination MSC or SGSN.                                |
| MMX Destination NPI Incoming | 3932488 | Byte     | Read only profile field, derived from the number plan indicator (NPI) part of the MMX Destination Address profile field. Enables operators to branch based on NPI by using the Profile Branching feature node in control plans. |
| MMX Destination TON Incoming | 3932486 | Byte     | Read only profile field, derived from the type of number (TON) part of the MMX Destination Address profile field. Enables operators to branch based on TON by using the Profile Branching feature node in control plans. |
| MMX DRM Content         | 3932474    | Integer  | MMS request. Whether the MM contains DRM-protected content.               |
| MMX Drop Original Message | 3932186   | Boolean  |                                                                           |
| MMX Earliest Delivery   | 3932455    | Integer  | Message request.                                                         |
### Profile Field Name | Tag Number | Tag Type | Remarks
--- | --- | --- | ---
Time | | | |
MMX Email Address 0 | 3932198 | String | |
MMX Email Address 1 | 3932199 | String | |
MMX Email Address 2 | 3932200 | String | |
MMX Email Address 3 | 3932201 | String | |
MMX Email Address 4 | 3932202 | String | |
MMX Email Address 5 | 3932203 | String | |
MMX Email Address 6 | 3932204 | String | |
MMX Email Address 7 | 3932205 | String | |
MMX Email Address 8 | 3932206 | String | |
MMX Email Address 9 | 3932207 | String | |
MMX Enhanced SMS to Email Shortcode | 3932243 | Numeric String | |
MMX Enhanced SMS to IM Shortcode | 3932241 | Numeric String | |
MMX Failed Copy List | 3932244 | String | |
MMX Failure Cause | 3932454 | Integer | Message request. The cause code from message source to allow errors or reasons to be translated through different protocols. |
MMX Forwarding Address 0 | 3932187 | String | |
MMX Forwarding Address 1 | 3932188 | String | |
MMX Forwarding Address 2 | 3932189 | String | |
MMX Forwarding Address 3 | 3932190 | String | |
MMX Forwarding Address 4 | 3932191 | String | |
MMX Forwarding Address 5 | 3932192 | String | |
MMX Forwarding Address 6 | 3932193 | String | |
MMX Forwarding Address 7 | 3932194 | String | |
MMX Forwarding Address 8 | 3932195 | String | |
MMX Forwarding Address 9 | 3932196 | String | |
MMX Forwarding Setting | 3932197 | Integer | |
MMX Global Barring Notify | 3932165 | Boolean | |
MMX Global Barring Response | 3932164 | Integer | |
<table>
<thead>
<tr>
<th>Profile Field Name</th>
<th>Tag Number</th>
<th>Tag Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMX Global Default Domain</td>
<td>3932168</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Global Temp Access Number Range End</td>
<td>3932170</td>
<td>Numeric</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3932169</td>
<td>Numeric</td>
<td></td>
</tr>
<tr>
<td>MMX Global Unique Autoreply Interval</td>
<td>3932167</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Global Wait For Hunting Result</td>
<td>3932166</td>
<td>Boolean</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 0</td>
<td>3932209</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 1</td>
<td>3932210</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 2</td>
<td>3932211</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 3</td>
<td>3932212</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 4</td>
<td>3932213</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 5</td>
<td>3932214</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 6</td>
<td>3932215</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 7</td>
<td>3932216</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 8</td>
<td>3932217</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX IM Address 9</td>
<td>3932218</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Integer Scratchpad</td>
<td>3932239</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Message Centre Name</td>
<td>3932430</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Message Contents</td>
<td>3932423</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Message ID</td>
<td>3932436</td>
<td>String</td>
<td>Message response. Identifies a message in some protocol-specific format. Message request. Delivery receipt?</td>
</tr>
<tr>
<td>MMX Message Protocol</td>
<td>3932420</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Message Reference</td>
<td>3932447</td>
<td>Integer</td>
<td>Message request. From MS, for correlation purposes.</td>
</tr>
<tr>
<td>MMX Message Size</td>
<td>3932456</td>
<td>Integer</td>
<td>Message request.</td>
</tr>
<tr>
<td>MMX Message Type</td>
<td>3932236</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Message Waiting Group</td>
<td>3932459</td>
<td>Integer</td>
<td>SMS request. GSM Message Waiting Indication Group (Discard, Store), SMPP, ms_validity.</td>
</tr>
<tr>
<td>MMX Message Waiting Indicator</td>
<td>3932460</td>
<td>Integer</td>
<td>SMS request. GSM Message Waiting Indication Sense, SMPP, ms_msg_wait_facilities.</td>
</tr>
<tr>
<td>MMX Message Waiting Type</td>
<td>3932461</td>
<td>Integer</td>
<td>SMS request. GSM Message Waiting Indication Type, SMPP, ms_msg_wait_facilities.</td>
</tr>
<tr>
<td>Profile Field Name</td>
<td>Tag Number</td>
<td>Tag Type</td>
<td>Remarks</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------</td>
<td>----------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MMX MMS Message Class</td>
<td>3932468</td>
<td>String</td>
<td>MMS request. The class of the MM (for example: personal, advertisement, information service). Present if specified by the originator MMS User Agent.</td>
</tr>
<tr>
<td>MMX More Messages</td>
<td>3932453</td>
<td>Integer</td>
<td>Message request.</td>
</tr>
<tr>
<td>MMX Next Temp Access Number</td>
<td>3932232</td>
<td>Numeric String</td>
<td></td>
</tr>
<tr>
<td>MMX Number of Recipients</td>
<td>3932440</td>
<td>Integer</td>
<td>Message request. Total number of delivery destinations.</td>
</tr>
<tr>
<td>MMX Numeric String Scratchpad</td>
<td>3932238</td>
<td>Numeric String</td>
<td></td>
</tr>
<tr>
<td>MMX Oldest Temp Access Number</td>
<td>3932231</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Originating Address</td>
<td>3932234</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Originating Domain</td>
<td>3932427</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Originating IMSI</td>
<td>3932433</td>
<td>String</td>
<td>Message request. Identifies the calling MS.</td>
</tr>
<tr>
<td>MMX Originating NPI Incoming</td>
<td>3932487</td>
<td>Byte</td>
<td>Read only profile field, derived from the number plan indicator (NPI) part of the MMX Originating Address profile field. Enables operators to branch based on NPI by using the Profile Branching feature node in control plans.</td>
</tr>
<tr>
<td>MMX Originating TON Incoming</td>
<td>3932485</td>
<td>Byte</td>
<td>Read only profile field, derived from the type of number (TON) part of the MMX Originating Address profile field. Enables operators to branch based on TON by using the Profile Branching feature node in control plans.</td>
</tr>
<tr>
<td>MMX Originator System Address</td>
<td>3932476</td>
<td>String</td>
<td>MMS request. The Address of the origination MMS Relay/Server.</td>
</tr>
<tr>
<td>MMX Priority</td>
<td>3932424</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Privacy Indicator</td>
<td>3932442</td>
<td>Integer</td>
<td>Message request. None, restricted, confidential, secret.</td>
</tr>
<tr>
<td>MMX Protocol Identifier</td>
<td>3932446</td>
<td>Integer</td>
<td>Message request. This is defined in GSM 03.40 (TP-PID). Also used by SMPP and EMI for sending to GSM.</td>
</tr>
<tr>
<td>MMX Protocol Version</td>
<td>3932421</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Provide Reply Path</td>
<td>3932448</td>
<td>Integer</td>
<td>Message request.</td>
</tr>
<tr>
<td>MMX Read Reply Request</td>
<td>3932457</td>
<td>Integer</td>
<td>Message request. Whether the originator wants a read reply.</td>
</tr>
<tr>
<td>MMX Reject Duplicates</td>
<td>3932445</td>
<td>Integer</td>
<td>Message request.</td>
</tr>
<tr>
<td>MMX Reply Application</td>
<td>3932471</td>
<td>String</td>
<td>MMS request. ‘Reply-path’ to this MM.</td>
</tr>
<tr>
<td>MMX Scratchpad</td>
<td>3932237</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Segment Count</td>
<td>3932463</td>
<td>Integer</td>
<td>SMS request. The number of segments in a concatenated message. Zero if not concatenated.</td>
</tr>
<tr>
<td>Profile Field Name</td>
<td>Tag Number</td>
<td>Tag Type</td>
<td>Remarks</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MMX Segment Number</td>
<td>3932464</td>
<td>Integer</td>
<td>SMS request. Segment of a concatenated message that is currently being processed. First segment is number 1.</td>
</tr>
<tr>
<td>MMX Segment Reference</td>
<td>3932465</td>
<td>Integer</td>
<td>SMS request. Reference number linking together the segments of a concatenated message</td>
</tr>
<tr>
<td>MMX Sender Visibility</td>
<td>3932469</td>
<td>Integer</td>
<td>MMS request. A request to show or hide the sender's identity when the message is delivered to the MM recipient</td>
</tr>
<tr>
<td>MMX Service Centre Timestamp</td>
<td>3932434</td>
<td>Integer</td>
<td>Message request. The time at which the message was received by the message centre. Will be set by MMX for early ack or FDA</td>
</tr>
<tr>
<td>MMX Single Shot</td>
<td>3932444</td>
<td>Integer</td>
<td>Message request.</td>
</tr>
<tr>
<td>MMX SMS Message Class</td>
<td>3932462</td>
<td>Integer</td>
<td>SMS request. Message class part of GSM DCS, SMPP, dest_addr_subunit.</td>
</tr>
<tr>
<td>MMX SMS to Email Shortcode</td>
<td>3932242</td>
<td>Numeric</td>
<td>String</td>
</tr>
<tr>
<td>MMX SMS to IM Shortcode</td>
<td>3932240</td>
<td>Numeric</td>
<td>String</td>
</tr>
<tr>
<td>MMX SMSC Address</td>
<td>3932422</td>
<td>String</td>
<td>Message request. Passed in IDP (Location Number), but not Connect.</td>
</tr>
<tr>
<td>MMX Source Location Information</td>
<td>3932479</td>
<td>String</td>
<td>Message request. Passed in IDP (Location Number), but not Connect.</td>
</tr>
<tr>
<td>MMX Status Report Request</td>
<td>3932437</td>
<td>Integer</td>
<td>Message request. Who requested a delivery receipt:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• None (noone)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• SME</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• XMS, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• both.</td>
</tr>
<tr>
<td>MMX Storage Requested</td>
<td>3932477</td>
<td>Integer</td>
<td>MMS request.</td>
</tr>
<tr>
<td>MMX Subject</td>
<td>3932466</td>
<td>String</td>
<td>MIME request. The title of the whole MM if specified by the originator MMS User Agent.</td>
</tr>
<tr>
<td>MMX Teleservice</td>
<td>3932429</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Address 0</td>
<td>3932226</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Address 1</td>
<td>3932227</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Address 2</td>
<td>3932228</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Address 3</td>
<td>3932229</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Address 4</td>
<td>3932230</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Number 0</td>
<td>3932221</td>
<td>Numeric</td>
<td>String</td>
</tr>
<tr>
<td>MMX Temp Access Number 1</td>
<td>3932222</td>
<td>Numeric</td>
<td>String</td>
</tr>
</tbody>
</table>
### NPI and TON Override Profile Fields

You can override the number plan indicator (NPI) values, or type of number (TON) values sent by Messaging Manager in outgoing messages. You set the override values by using the Set, or the Copy feature node, before sending the outgoing message by using the Send Short Message Notification feature node. Possible values are in the range of 0 (zero) to 255.

If you do not specify an override value, then Messaging Manager sends the original value from the incoming message in the outgoing message.

This table lists the names, tag numbers (in decimal), and tag types for the profile fields that override NPI and TON values in outgoing messages.

<table>
<thead>
<tr>
<th>Profile Field Name</th>
<th>Tag Number</th>
<th>Tag Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSMN Destination NPI Override</td>
<td>3932484</td>
<td>Byte</td>
<td>Overrides the destination NPI value in the outgoing message.</td>
</tr>
<tr>
<td>SSMN Destination TON Override</td>
<td>3932482</td>
<td>Byte</td>
<td>Overrides the destination TON value in the outgoing message.</td>
</tr>
<tr>
<td>SSMN Originating NPI Override</td>
<td>3932483</td>
<td>Byte</td>
<td>Overrides the originating NPI value in the outgoing message.</td>
</tr>
<tr>
<td>SSMN Originating TON Override</td>
<td>3932481</td>
<td>Byte</td>
<td>Overrides the originating TON value in the outgoing message.</td>
</tr>
</tbody>
</table>

---

### Table: Profile Field Names

<table>
<thead>
<tr>
<th>Profile Field Name</th>
<th>Tag Number</th>
<th>Tag Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMX Temp Access Number 2</td>
<td>3932223</td>
<td>Numeric String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Number 3</td>
<td>3932224</td>
<td>Numeric String</td>
<td></td>
</tr>
<tr>
<td>MMX Temp Access Number 4</td>
<td>3932225</td>
<td>Numeric String</td>
<td></td>
</tr>
<tr>
<td>MMX User Timezone</td>
<td>3932443</td>
<td>String</td>
<td>Message request.</td>
</tr>
<tr>
<td>MMX Validity Period Type</td>
<td>3932480</td>
<td>Integer</td>
<td></td>
</tr>
<tr>
<td>MMX VAS ID</td>
<td>3932432</td>
<td>String</td>
<td>Message request. Identifies an Value-Added Service (application).</td>
</tr>
<tr>
<td>MMX VASP ID</td>
<td>3932431</td>
<td>String</td>
<td>Message request. Identifies a Value-Added Service Provider (or Application Service Provider). Taken from inbound path name for SMS IP adapters.</td>
</tr>
</tbody>
</table>
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Base feature nodes. Base feature nodes form the fundamental outline of a control plan. They are the feature nodes that are essential to call routing, but do not provide any additional call processing.

In this chapter

This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Available Feature Nodes</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt Termination</td>
<td>21</td>
</tr>
<tr>
<td>Control Plan Notes</td>
<td>22</td>
</tr>
<tr>
<td>Disconnect Call</td>
<td>24</td>
</tr>
<tr>
<td>Dynamic Switch</td>
<td>25</td>
</tr>
<tr>
<td>End</td>
<td>27</td>
</tr>
<tr>
<td>Junction</td>
<td>28</td>
</tr>
<tr>
<td>Proportional Distribution</td>
<td>29</td>
</tr>
<tr>
<td>Start</td>
<td>30</td>
</tr>
<tr>
<td>Terminate Unchanged</td>
<td>31</td>
</tr>
<tr>
<td>Unconditional Termination</td>
<td>32</td>
</tr>
</tbody>
</table>

Available Feature Nodes

Base Feature Nodes List

This table lists the available Base feature nodes.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt Termination (see page 22)</td>
<td>The Attempt Termination node will attempt to terminate the call to a specified Termination Number but, if for some reason cannot terminate it to that number correctly, it takes a branch determined by the status of the call so that (for example) call diversion can be performed by the next node. <strong>Shortcut keys: Alt+A</strong></td>
</tr>
<tr>
<td>Control Plan Notes (see page 24)</td>
<td>Allows you to place notes on the CPE canvas. The note box can be expanded or contracted by clicking and dragging the resizing handle in the bottom right hand corner of the feature node. <strong>Note:</strong> There is no feature node icon for this, just a yellow box for entering notes.</td>
</tr>
<tr>
<td>Disconnect Call (see page 25)</td>
<td>Plays tone or message to the caller and disconnects the call. <strong>Shortcut keys: Alt+R</strong></td>
</tr>
<tr>
<td>Dynamic Switch (see page 27)</td>
<td>Takes a specific exit which can be specified in the node edit dialog and which may be overridden by dialing a management control plan.</td>
</tr>
</tbody>
</table>
### Chapter 2

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>End (see page 28)</strong></td>
<td>Signifies the end of the control plan branch. <strong>Shortcut keys:</strong> Alt+E</td>
</tr>
<tr>
<td><strong>Junction (on page 29)</strong></td>
<td>Use the Junction feature node to collect all incoming feature node connections into a single exit point. The usefulness is being able to position this feature node in a strategic position to move connecting lines clear of other feature nodes, thus making it easier to see what the control plan is doing.</td>
</tr>
<tr>
<td><strong>Proportional Distribution (see page 30)</strong></td>
<td>Routes set proportions of the calls down each exit. <strong>Shortcut keys:</strong> Alt+D</td>
</tr>
<tr>
<td><strong>Sleep (on page 461)</strong></td>
<td>The Sleep node allows time for background tasks to complete before proceeding to the next step in the control plan.</td>
</tr>
<tr>
<td><strong>Start (see page 31)</strong></td>
<td>The start node must be the first node in the control plan. <strong>Shortcut keys:</strong> Alt+S</td>
</tr>
<tr>
<td><strong>Terminate Unchanged (see page 32)</strong></td>
<td>Tells the switch to continue, which normally results in the call being terminated to the number originally dialed.</td>
</tr>
<tr>
<td><strong>Unconditional Termination (see page 33)</strong></td>
<td>Directs the call to be terminated to a specified termination number. <strong>Shortcut keys:</strong> Alt+U</td>
</tr>
</tbody>
</table>

### Attempt Termination

#### Node description

The Attempt Termination node will attempt to terminate the call to a specified termination number but, if for some reason cannot terminate it to that number correctly, it takes a branch determined by the status of the call so that (for example) call diversion can be performed by the next node.

Termination numbers are specified as ranges of numbers in the ACS Configuration screens. The numbers shown in the Configure Attempt Termination screen are the ranges of termination numbers that have been specified for the logged in customer. If the customer for whom the call plan is being created is a managed customer, the termination numbers that have not been specified for the customer may be used in the node.

**Note:** The Attempt Termination feature node can be set to automatically display the TN as the feature node name by setting the useTNForNodeName parameter in the acs.jnlp file. If this parameter is set, then you may not manually edit the feature node name. For more information, see *NCC Advanced Control Services Technical Guide*.

#### Shortcut keys

The shortcut keys to add an Attempt Termination node are Alt+A.

#### Node icon

![Attempt Termination Icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Attempt Term Icon]

**Restrictions**

A control plan may contain as many Attempt Termination nodes as required.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

Some nodes require telephony (that is, Play Announcement, Unconditional Termination, Disconnect, Attempt Termination, Selection Dependant Routing, Unconditional Terminate to Pending TN). Such nodes may follow Exits 2 and 3 of the Attempt Termination node. They may not follow exits 1, 4, 5 and 6.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The call was successfully connected to the specified termination number.</td>
</tr>
<tr>
<td>2</td>
<td>Busy</td>
<td>The Termination Number was busy (that is, in use) so the call was routed to Exit 2.</td>
</tr>
<tr>
<td>3</td>
<td>No Answer</td>
<td>The call was routed to the specified Termination Number, that phone rang for the specified Timeout time and then was routed down Exit 3.</td>
</tr>
<tr>
<td>4</td>
<td>Abandoned</td>
<td>The person placing the call hung up, so the call was routed to Exit 4.</td>
</tr>
<tr>
<td>5</td>
<td>Abort</td>
<td>The call will be sent to this exit in the case of network failure.</td>
</tr>
<tr>
<td>6</td>
<td>Routing Failure</td>
<td>Due to congestion, the call was forwarded to this exit.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Attempt Termination screen.

Configuring the node

Follow these steps to edit the Attempt Termination node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | To specify a termination number for the node, select the range in which the number lies from the ranges shown.  
**Result:** The prefix digits will be entered into the Termination Number entry field. |
| 2    | Use the **Termination Number** entry field to complete the number.  
The Xs in the range signify the minimum number of digits that are required and the Ys signify the maximum number of digits in the range. |
| 3    | Type the number of seconds that the call is to ring at the termination number before it is routed down the No Answer branch of the node. |
| 4    | Click **Save** to commit that termination number to the node.  
**Note:** The **Save** button will only become available when a number that is within the selected range is displayed in the Termination Number entry field. |

Control Plan Notes

Node description

Allows you to place notes on the CPE canvas. The note box can be expanded or contracted by clicking and dragging the resizing handle in the bottom right hand corner of the feature node.

**Note:** There is no feature node icon for this, just a yellow box for entering notes.

Control plan notes are simply notes you can place anywhere on the canvas to add understanding to the control plan, including behind feature node icons to add comments to a group of feature nodes. They add no functionality to the control plan.
Once a note has been placed on the canvas, it may be moved around, duplicated, or deleted as required. Control plan notes will 'stick' where they are placed when the control plan is saved and reloaded.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Control Plan Notes nodes as required.

**Node exits**

This node has no entries or exits, as it is not connected to other nodes within a control plan.

**Editing Control Plan Notes**

Follow these steps to add a note to a control plan.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drag the node on to the canvas and drop into place. The Control Plan Notes feature node icon appears in the canvas.</td>
</tr>
<tr>
<td>2</td>
<td>Double click the Control Plan Notes feature node icon. The Edit Comments window displays.</td>
</tr>
<tr>
<td>3</td>
<td>Click inside the editable area and type the text that is to appear in the control plan note. <strong>Note:</strong> All text appears in the note exactly as it is entered. To ensure that text does not appear in a long line, break it up with manual line breaks.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Ok</strong>. The text appears in the note box.</td>
</tr>
</tbody>
</table>

**Disconnect Call**

**Node description**

This node will disconnect a call. The disconnect call will use the cause value 31 by default. This may be changed using the node editing screen.

**Shortcut keys**

The shortcut keys to add a Disconnect Call node are **Alt+R**.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Disconnect Call nodes as required.

Any node that requires telephony (that is, Play Announcement, Unconditional Termination, Disconnect, Attempt Termination, Selection Dependant Routing), may not follow the Disconnect Call node.

Node exits

This node has one entry and one exit. The number of exits cannot be changed.

Configuration screen

Here is an example Configure Disconnect Call screen.

Configuring the node

To edit the Disconnect Call node, enter the value that is to be sent to the switch in the ReleaseCall operation. The value entered determines the tone or message played to the caller on disconnection of the call.

The cause value defaults to 31. Other values are listed in ITU-T recommendation Q850.

Some examples are:

<table>
<thead>
<tr>
<th>Value</th>
<th>Cause of Disconnection</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Normal call clearing</td>
</tr>
<tr>
<td>17</td>
<td>User busy</td>
</tr>
<tr>
<td>19</td>
<td>No answer from user</td>
</tr>
<tr>
<td>31</td>
<td>Normal unspecified</td>
</tr>
</tbody>
</table>
Dynamic Switch

Node description

The switching node allows calls to be routed to a specified exit. The switching node is simply a switch. It can point to one exit at any time and does not make any decision-based routing. All calls that reach that node are directed to the exit to which the switch points.

It is possible to enable the switch to be changed by the customer over the phone. This achieved in conjunction with profile nodes.

A control plan may contain as many Dynamic Switch nodes as required.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and 2 through 20 exits. Although this node accepts up to 20 exits, it is recommended that this number is restricted to a maximum of 10. You may configure the number of exits within this range as required, using the Edit Node Exits option on the shortcut menu. See Editing node exits.

Only one exit at a time may be used, and all calls will be routed to the active exit.

Configuration screen

Here is an example Configure Dynamic Switch screen.

Configuring the node

Follow these steps to change the exit to which the switch points.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edit the node exits to add up to another eighteen exits as required to accommodate the branches you are planning to configure. See Editing node exits for details.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| 2    | Use the arrows to change the exit number displayed.  
**Result:** As the exit number is changed, the diagram to the right will graphically demonstrate the exit to which the switch is set. |
| 3    | Click **Save**. |

**End**

**Node description**

This node signifies the end of the control plan branch.

A control plan may contain as many End nodes as required. The end node must be the last node in each branch of the control plan. There may not be any other node attached after the end node.

**Note:** If the control plan is going to be used by any sub control plan nodes, there is a maximum of 20 End nodes allowed in the control plan.

**Shortcut keys**

The shortcut keys to add an End node are **Alt+E**.

**Node icon**

![End icon]

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and no exit. It is possible to attach several branches of the control plan to the entry of a single End node.

**Configuration screen**

Here is an example Configure End screen.

![Configure End screen]

**Configuring the node**

This node requires no configuration data. You may change the **Node name**, if required.
**Junction**

**Node description**

Use the Junction feature node to collect all incoming feature node connections into a single exit point. The usefulness is being able to position this feature node in a strategic position to move connecting lines clear of other feature nodes, thus making it easier to see what the control plan is doing.

**Node icon**

![Node icon](image)

**Node exits**

This feature node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch 1</td>
<td>NA</td>
<td>Connects all the incoming feature nodes to the destination feature node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Junction screen.

![Configuration screen](image)

**Configuring the node**

This node requires no configuration data. You may change the **Node name**, if required.
Proportional Distribution

Node description

This node allows calls to be routed to different exits, based on the proportion of calls that are received. The user may configure the proportions of calls to be routed to each exit.

For example, you may wish 20% of calls to be routed to one exit, and 80% of calls to be routed to a second exit. This could be achieved by entering 20:80 in the node edit screen, or by entering 1:4.

Shortcut keys

The shortcut keys to add a Proportional Distribution node are Alt+D.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Proportional Distribution nodes as required.

Node exits

This node has one entry and may have 2 through 20 exits. You may configure the number of exits within this range as required, using the Edit Node Exits option on the shortcut menu. See Editing node exits.

Configuration screen

Here is an example Configure Proportional Distribution screen.
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ensure that you have enough exits specified to accommodate the proportions you are planning to configure.</td>
</tr>
</tbody>
</table>
| 2    | Using the spin box for each exit, change the number displayed to show the proportion of calls that are routed down that exit.  
**Note:** The proportion is calculated per total across all exits. To configure the node on a percentage basis, the total must equal 100. If there are two exits, configured with the digits 1 and 4, 1 out of 5 calls will route down exit 1 and the remaining 4 calls will route down exit 2. |
| 3    | When all proportions are as required, click **Save**. |

Start

**Node description**

The start node must be the first node in the control plan. All feature nodes in the control plan must be available on a branch starting from the Start node.

**Shortcut keys**

The shortcut keys to add a Start node are **Alt+S**.

**Note:** If there is already a Start node in the Control Plan, pressing this key combination will select the Start node.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

There may be only one Start node in a control plan.

**Node exits**

This node has no entry and one exit. The number of exits is fixed and cannot be changed.
Configuration screen

Here is an example Configure Start screen.

![Configure Start Screen](image)

Configuring the node

The Start node does not need to have any control plan data attached to it when operating in standard mode, although the user must accept the default settings by opening the node edit screen and clicking Save.

Follow these steps to configure the Start node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Standard Mode of operation, the control plan may not contain loops. For some advanced control plans, loops may be required. To allow loops in the control plan, select the **Loops Allowed** check box.  
**Note:** The control plan compiler will permit loops within the control plan, as long as those loops contain at least one feature node that performs a telephony action. For example, an attempt termination node or node that plays an announcement. |
| 2    | Click **Save**. |

Terminate Unchanged

Node description

The number that was dialed is used to connect the call.

Node icon

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Terminate Unchanged nodes as required.
Node exits

This node has one entry and one exit. The number of exits is fixed and cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unconditional</td>
<td>Terminate call, taking no other actions.</td>
</tr>
<tr>
<td></td>
<td>termination</td>
<td></td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Terminate Unchanged screen.

![Configure Terminate Unchanged](image)

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

Unconditional Termination

Node description

The Unconditional Termination node directs the call to be terminated to a specified termination number (TN).

Termination numbers are specified as ranges of numbers in the ACS Configuration screens. The numbers shown in the Configure Unconditional Termination screen are the ranges of termination numbers that have been specified for the logged in ACS Customer. If the customer for whom the control plan is being created is a managed customer, termination numbers that have not been specified for the customer may be used in the node. For more information about setting up ranges of numbers, see ACS User's Guide.

Note: The Unconditional Termination feature node can be set to automatically display the TN as the feature node name by setting the useTNForNodeName parameter in the `acs.jnlp` file. If this parameter is set, then you may not manually edit the feature node name. For more information, see NCC Advanced Control Services Technical Guide.

Shortcut keys

The shortcut keys to add an Unconditional Termination node are Alt+U.

Node icon

![Node icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Unconditional Termination Icon]

**Restrictions**

There may be as many Unconditional Termination nodes in a control plan as required. The Unconditional Termination node may not be followed by any node that requires telephony (for example: Play Announcement, Disconnect, Attempt Termination, Selection Dependant Routing).

**Node exits**

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unconditional termination</td>
<td>Terminates to the configured termination number.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Unconditional Termination screen.

![Configure Unconditional Termination Screen]

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To specify a termination number for the node, select the range in which the number lies from the ranges shown. Result: The prefix digits will be entered into the Termination Number field.</td>
</tr>
<tr>
<td>2</td>
<td>Use the Termination Number field to complete the number. The Xs in the range signify the minimum number of digits that are required and the Ys signify the maximum number of digits in the range.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save to commit that termination number to the node. The Save button will become available when a number that is within the selected range is displayed in the Termination Number field.</td>
</tr>
</tbody>
</table>
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS charging feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes 35
Balance Cascade Override 37
Billable Event 39
Business Prefix Branch 44
Call Information SMS 46
Cost Call Duration Branching 50
Credit Wallet Transfer 53
Declined Billing Cause 56
Direct Unit Charge Request 58
Get CUG Details 60
Named Event 61
Play Tariff Plan Announcement 65
Set Active Domain 67
Set BE EDR 70
Set Discount 74
Set Tariff Plan Rule 76
Tariff Plan Override 79
Universal ATB 81
Variable Amount Recharge 86
Voice Call Cost 88

Available Feature Nodes

CCS Charging feature nodes list

This table lists the feature nodes available from the CCS Charging palette group in the ACS Control Plan Editor.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Cascade Override</td>
<td>The Balance Cascade Override node is used to specify a balance cascade to override the balance cascade that otherwise would have been used for the next charging action.</td>
</tr>
<tr>
<td>Business Prefix Branch</td>
<td>The Business Prefix Branch node checks to see if the caller has dialed the business prefix as part of their number.</td>
</tr>
<tr>
<td>Node Name</td>
<td>Node description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Balance Cascade Override (on page 37)</td>
<td>The Balance Cascade Override node is used to specify a balance cascade to override the balance cascade that otherwise would have been used for the next charging action.</td>
</tr>
<tr>
<td>Call Information SMS (on page 46)</td>
<td>The Call Information SMS node is used after a uATB node to send an SMS notification to the user with regards to the duration and cost of the call, using templates defined for each language.</td>
</tr>
<tr>
<td>Cost Call Duration Branching (on page 50)</td>
<td>Allows for balance type and cost threshold branching, or call duration branching, on the values returned for the last charged call.</td>
</tr>
<tr>
<td>Credit Wallet Transfer (on page 53)</td>
<td>The Credit Wallet Transfer node allows cash credit to be converted into an alternative balance type for a subscriber’s own account or the account of an alternate subscriber.</td>
</tr>
<tr>
<td>Declined Billing Cause (on page 56)</td>
<td>The Declined Billing Cause node sends the cause of a billing failure to the subscriber.</td>
</tr>
<tr>
<td>Direct Unit Charge Request (on page 58)</td>
<td>The Direct Unit Charge Request node retrieves wallet information and sends it to the billing engine.</td>
</tr>
<tr>
<td>Named Event (on page 61)</td>
<td>The Named Event feature node is used to bill the caller for a defined number of named events with a defined discount.</td>
</tr>
<tr>
<td>Get CUG Details (on page 60)</td>
<td>The Get CUG Details node analyzes the calling and called party numbers to determine whether they are part of a closed user group (CUG).</td>
</tr>
<tr>
<td>Play Tariff Plan Announcement (on page 65)</td>
<td>The Play Tariff Plan Announcement node plays the announcement associated with the selected tariff plan.</td>
</tr>
<tr>
<td>Set Active Domain (on page 67)</td>
<td>The Set Active Domain node allows the selection of a billing domain for use by the current top-up/voucher redeem activity for the following management types:</td>
</tr>
<tr>
<td></td>
<td>• Wallet</td>
</tr>
<tr>
<td></td>
<td>• Voucher</td>
</tr>
<tr>
<td></td>
<td>• Rating</td>
</tr>
<tr>
<td></td>
<td>• Subscriber</td>
</tr>
<tr>
<td></td>
<td>• Service</td>
</tr>
<tr>
<td>Set BE EDR (on page 70)</td>
<td>The Set BE EDR node alters and adds EDR tags in EDRs generated by slee_acs during call flow. The EDR tag must be specified. The value can be static or populated from a profile field.</td>
</tr>
<tr>
<td>Set Discount (on page 74)</td>
<td>The Set Discount node retrieves discount information from the specified location and uses that information for any subsequent billing requests.</td>
</tr>
<tr>
<td>Set Tariff Plan Rule (on page 76)</td>
<td>Specifies the tariff plan to be used for combinations of network access type and bearer capability.</td>
</tr>
<tr>
<td>Tariff Plan Override (on page 79)</td>
<td>The Tariff Plan Override node overrides the configured tariff plan with the tariff plan specified in the node.</td>
</tr>
<tr>
<td>Universal ATB (on page 81)</td>
<td>The Universal Attempt Termination with Billing (UATB) node is used to bill subscribers for calls that they make or receive.</td>
</tr>
<tr>
<td>Variable Amount Recharge (on page 86)</td>
<td>The Variable Amount Recharge node will attempt a standard recharge for the specified wallet based on the voucher and wallet data derived from profile fields.</td>
</tr>
<tr>
<td>Voice Call Cost (on page 88)</td>
<td>The Voice Call Cost node plays the cost of the last call within the current control plan.</td>
</tr>
</tbody>
</table>
Balance Cascade Override

Node description

The Balance Cascade Override node is used to specify a balance cascade to override the balance cascade that otherwise would have been used for the next charging action. The balance cascade can be specified in the node or defined in a profile field.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

The balance cascades available to this node are limited to those available for the Service Provider of the screens user.

Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User's Guide for further details on charging domains.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The balance cascade has been overridden.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Balance Cascade Override screen.

![Configure Balance Cascade Override](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Profile</td>
<td>If selected then the Select Balance Cascade Override frame become enabled.</td>
</tr>
<tr>
<td>Manual Definition</td>
<td>If selected then the Balance Cascade Override Selection frame becomes enabled.</td>
</tr>
<tr>
<td>TagID Data Type</td>
<td>Specifies the data type to use when From Profile is selected. Note: This affects the profile location list.</td>
</tr>
<tr>
<td>TagID Location</td>
<td>Specifies the profile to use when From Profile is selected.</td>
</tr>
<tr>
<td>TagID Field</td>
<td>The profile field containing the balance cascade to use instead of the one currently configured for the next node in the control plan, that has a balance type cascade associated with it.</td>
</tr>
<tr>
<td>Balance Cascade</td>
<td>When Manual Definition is selected, this defines the override balance type cascade for the next node in the control plan that has a balance type cascade associated with it, such as an ATB or Named Event node.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Balance Cascade Override area select either:  
  ● From Profile, or  
  ● Manual Definition.  
  **Result:** The relevant Balance Cascade Override fields are made available. |
| 2    | Select the Balance Cascade to override the balance cascade defined for the next charging action. If you selected:  
  ● Manual Definition, Select the Balance Cascade from the drop down list. Only valid balance cascades will be available.  
  ● From Profile, Select the TagID Data Type, Location and Field containing the balance cascade you want to use from the drop down lists. |
| 3    | Click **Save**. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User’s Guide, Profile Tag Details* for more information).

Billable Event

**Node description**

**Warning:** This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the Named Event feature node.

The Billable Event feature node is used to bill the caller for a defined number of billable events with a defined discount.

The action is one of:
- Billing the caller wallet
- Reserving the event cost
- Confirming the cost can be billed
- Canceling the reserved event cost
- Retrieving the cost of the event

The number of events is either configured in the node, or stored at a selected location.

**Node icon**
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Bill Event](image)

**Restrictions**

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

**Note:** These exit descriptions are specific to the responses received from an Oracle Voucher and Wallet Server billing engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The caller has successfully exited the node with the billing event successfully completed.</td>
</tr>
<tr>
<td></td>
<td>Note:</td>
<td>This includes:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A negative wallet balance when the allow negative balance option has been selected (allow not selected would result in the No Credit branch being taken instead).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Any single Reserve or Confirm requests regardless of wallet balance.</td>
</tr>
<tr>
<td>2</td>
<td>No Credit</td>
<td>The caller has no credit and the allow negative balance option is off.</td>
</tr>
<tr>
<td>3</td>
<td>Billing Fault</td>
<td>An error has occurred within the billing function. Possible faults are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• multiple reservation attempts (just a single reservation at a time is permitted).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• confirm or revoke requests when there has not been a previous reserve request.</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Billable Event node screen.

![Configure Billable Event](image)

**Configuration fields**

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Class</td>
<td>List of event types that can be billed.</td>
</tr>
<tr>
<td>Billable Event</td>
<td>List of events for the Event Class selected.</td>
</tr>
<tr>
<td>Number of Events</td>
<td>The number of events to bill the subscriber. This value can be obtained from:</td>
</tr>
<tr>
<td></td>
<td>- <em>Number of Events</em> field, when the <strong>Node dialog</strong> option is selected, or</td>
</tr>
<tr>
<td></td>
<td>- <em>Number of Events</em> field, when the <strong>Profile</strong> option is</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td></td>
<td>selected.</td>
</tr>
<tr>
<td>Note:</td>
<td>The number of events value is hexadecimal, for example: 10 in the Number of Events field is actually 16 events.</td>
</tr>
<tr>
<td>Discount Percentage</td>
<td>The percentage discount to apply to the billable event cost.</td>
</tr>
<tr>
<td>Allow Negative Balance</td>
<td>Indicates if the caller wallet balance is allowed to become negative as a result of this event billing (includes an already negative wallet balance before this billable event).</td>
</tr>
<tr>
<td>Billable Event Feature Selection</td>
<td>This node has five modes of operation:</td>
</tr>
<tr>
<td></td>
<td>Direct Event - requests the billing engine to charge the caller wallet with the cost of the event(s).</td>
</tr>
<tr>
<td></td>
<td>Reserve Event - requests the billing engine to reserve the cost of the event(s) against the caller wallet.</td>
</tr>
<tr>
<td></td>
<td>Confirm Event - confirms the previously reserved event cost.</td>
</tr>
<tr>
<td></td>
<td>Revoke Event - cancels the previously reserved event cost.</td>
</tr>
<tr>
<td></td>
<td>Cost of Event - requests the billing engine to return the cost of the event(s).</td>
</tr>
<tr>
<td>Note:</td>
<td>The option selected here will affect the list of available items to select in the Event Class and Billable Event.</td>
</tr>
<tr>
<td>Store Cost</td>
<td>Indicates if the billed cost is to be saved in the Charge Cost location.</td>
</tr>
<tr>
<td>Charge Cost</td>
<td>Location to save the billed cost into for later use.</td>
</tr>
</tbody>
</table>

**Configuring the node**

Follow these steps to configure the node.

**Warning:** If using Diameter, refer to *NCC Diameter Control Agent Technical Guide* before configuring this node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the mode of operation for this instance of the node:</td>
</tr>
<tr>
<td></td>
<td>Direct Event - to bill the caller for the event cost.</td>
</tr>
<tr>
<td></td>
<td>Reserve Event - to reserve the event cost against the caller wallet balance.</td>
</tr>
<tr>
<td></td>
<td>Confirm Event - to confirm the reserved event cost.</td>
</tr>
<tr>
<td></td>
<td>Revoke Event - to cancel a previously made reserve request.</td>
</tr>
<tr>
<td></td>
<td>Cost of Event - to retrieve the cost of the event.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> This affects content for Event Class and Billable Event lists.</td>
</tr>
<tr>
<td>2</td>
<td>From the Event Class drop down list, select the class of this billable event.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> This list is configured in the SMS &gt; Services &gt; PrePaid Charging &gt; Rating Management &gt; Billable Event tab (refer to <em>CCS User's Guide</em> for more information).</td>
</tr>
<tr>
<td>3</td>
<td>From the Billable Event drop down list, select the event to bill.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> This list is configured in the SMS &gt; Services &gt; PrePaid Charging &gt; Rating Management &gt; Billable Event tab (refer to <em>CCS User's Guide</em> for more information).</td>
</tr>
<tr>
<td>4</td>
<td>In the Number of Events section, select the option to use to obtain the number of events to bill.</td>
</tr>
<tr>
<td></td>
<td>Either select:</td>
</tr>
</tbody>
</table>
### CCS Charging Feature Nodes

**Chapter 3**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td><strong>Node dialog</strong> to obtain the value from this node, or <strong>Profile</strong> to obtain the value from a location.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Result:</strong> The relevant Number of Events fields are made available.</td>
</tr>
<tr>
<td></td>
<td>- If <strong>Node dialog</strong>: In the <strong>Number of Events</strong> field, type the number of events to bill.</td>
</tr>
<tr>
<td></td>
<td>- If <strong>Profile</strong>: Select the <strong>Number of Events Data Type, Location</strong> and <strong>Field</strong> from the drop down lists.</td>
</tr>
<tr>
<td></td>
<td><strong>Warning:</strong> The number of events value in either field is a hexadecimal number, for example 10 entered is actually 16 events.</td>
</tr>
<tr>
<td>6</td>
<td><strong>In the</strong> <strong>Discount</strong> <strong>field</strong>, type the discount percentage to apply to the billed event cost.</td>
</tr>
<tr>
<td>7</td>
<td><strong>To permit a negative wallet balance when reserving or billing,</strong> select the <strong>Allow</strong> check box.</td>
</tr>
<tr>
<td>8</td>
<td><strong>If the mode of operation is:</strong></td>
</tr>
<tr>
<td></td>
<td>- <strong>Direct Event,</strong></td>
</tr>
<tr>
<td></td>
<td>- <strong>Confirm Event,</strong></td>
</tr>
<tr>
<td></td>
<td>- <strong>Cost of Event</strong></td>
</tr>
<tr>
<td></td>
<td><strong>and the cost is to be saved,</strong> select the <strong>Store Cost</strong> check box.</td>
</tr>
<tr>
<td>9</td>
<td><strong>If the Store Cost</strong> check box has been selected, select the <strong>ChargeCost Data Type, Location</strong> and <strong>Field</strong> from the drop down lists.</td>
</tr>
<tr>
<td>10</td>
<td><strong>Click</strong> <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Node logic

This diagram shows the internal logic processing of the node.

Business Prefix Branch

Node description

The Business Prefix Branch node checks to see if the caller has dialed the business prefix as part of their number. If so, the node strips the prefix from the dialed number and routes accordingly.

The Business Prefix is configured in the Resource Limits tab on the Resources screen within CCS.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

This node may be used any number of times within a control plan.

### Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Set Personal</td>
<td>The caller has not dialed the Business Prefix.</td>
</tr>
<tr>
<td>3</td>
<td>Set Business</td>
<td>The caller has dialed the Business Prefix.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure Business Prefix Branch node screen.

### Configuring the node

This node requires no configuration data. You may change the **Node name**, if required.
Node logic

This diagram shows the internal logic processing of the node.

Retrieve PT_BUSINESS_PREFIX_ID tag from PROFILE_APP4 block

Success? No Exit on branch 1 Unsupported
Yes

Convert * and # in business prefix (for example to B and C)

Retrieve pendingTN

bus prefix = pendingTN start? Yes Exit on branch 3 Set Business
No Exit on branch 2 Set Personal

Call Information SMS

Node description

The Call Information SMS node is used after a uATB node to send an SMS notification to the user with regards to the duration and cost of the call, using templates defined for each language. The user can also configure the following items in the node:

- The template to use to send the message (configured through the ACS > Configuration > Notification screens)
- The currency in which to display the cost of the call

The following parameters (some use strings configured in CCS, see CCS User's Guide, can be included in the messages:

- Duration - hours/minutes/seconds (available only after a call)
- Call cost (available only after a call)
- Wallet type
- Wallet expiry
- Balances
- Balance expiry
Notes:
The node will filter out all Expenditure Balance Types and not include them in the SMS notification message. See CCS User's Guide - Balance Types topic.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
This node may be used any number of times within a control plan.
This node requires an existing short message service.
This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before the uATB node in the control plan.
For more information, see Set Wallet Type.

Node exits
This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node, a text message has not been sent.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>A text message has been successfully sent to the short message service.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Call Information SMS node screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the SMS Termination Number Selection panel, select the location of the number to which the SMS will be sent. Select either:  
  - **Number Buffer**, or  
  - **Profile String**  
  **Result:** The relevant fields are made available.  
  - If **Number Buffer**: Select from the **Number Buffer** drop down list.  
  - If **Profile String**: Select from the **Profile String Data Type**, **Location** and **Field** drop down lists. |
| 2    | Select the **Application** where the notification template is defined from the drop down list.  
  **Note:** ACS will be used by default. |
| 3    | Select the notification **Type** from the drop down list.  
  Defaults to CallInfoDurationCost for application ACS. |
| 4    |  
  - To use the subscriber’s wallet currency when constructing the cost string for the SMS, select **Use Wallet Cost Currency**.  
  - To use a different currency, select **Override Cost Currency** and select the currency you want from the drop down list. |
Chapter 3

### CCS Charging Feature Nodes

#### Step 6
Click **Save**.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

#### Further reference:
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

#### Message parameters

Message parameters included in the notification template message text are searched for and replaced with an appropriate value.

Here is a list of available parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1</td>
<td>Call length hours (not zero padded).</td>
</tr>
<tr>
<td>$2</td>
<td>Call length minutes (not zero padded).</td>
</tr>
<tr>
<td>$3</td>
<td>Call length seconds (not zero padded).</td>
</tr>
<tr>
<td></td>
<td>Examples.</td>
</tr>
<tr>
<td></td>
<td><strong>Actual call length</strong></td>
</tr>
<tr>
<td>1 hour, 15 minutes and 23 seconds</td>
<td>1</td>
</tr>
<tr>
<td>28 minutes and 5 seconds</td>
<td>0</td>
</tr>
<tr>
<td>$4</td>
<td>The balance details of the affected balance types. Details include:</td>
</tr>
<tr>
<td></td>
<td>• Balance description</td>
</tr>
<tr>
<td></td>
<td>• Balance currency</td>
</tr>
<tr>
<td></td>
<td>• Balance amount</td>
</tr>
<tr>
<td></td>
<td>• Balance expiry (either the number of days to expiry or the no balance expiry text).</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>The balance details string is configured on the <strong>Balance Type Translations</strong> tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See <em>CCS User's Guide</em> for details.</td>
</tr>
<tr>
<td>$5</td>
<td>The wallet expiry details. One of the following:</td>
</tr>
<tr>
<td></td>
<td>• The number of days remaining before the wallet expires</td>
</tr>
<tr>
<td></td>
<td>• The no expiry date text defined for wallets that have no expiry date set</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>The wallet expiry date text is configured on the <strong>Wallet Name Translations</strong> tab in the Wallet Management screen in CCS. See <em>CCS User's Guide</em> for details.</td>
</tr>
<tr>
<td>$6</td>
<td>The cost details including the currency and amount.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>The cost string is configured on the <strong>Balance Type Translations</strong> tab in the Wallet Management screen in CCS. See <em>CCS User's Guide</em> for details.</td>
</tr>
<tr>
<td>$7</td>
<td>The wallet description.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>The wallet description is configured on the <strong>Wallet Name Translations</strong> tab in the</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See <em>CCS User's Guide</em> for details.</td>
</tr>
</tbody>
</table>
| $8        | The total call length in hours, minutes and seconds.  
Example: 1:16:51. |
| $9        | The total call length in minutes and seconds.  
Example: 76:51 |
|           | **Note:** Use parameters $8 or $9 instead of using parameters $1, $2 and $3. |

**Message example**

Here are some example templates and the corresponding messages generated by the Call Information SMS node.

**Example 1**

A template of:

Call Dur: $1 hr $2 min $3 secs - call cost $6 - a/c type $7 - exp details $5- bal $4  
will send the message:

"Call Dur: 0 hr 7 min 42 secs - call cost Gen Bal AED7.68 - a/c type Eng Private - exp details no expiry - bal Eng Gen Bal AED7287.21-no expiry"

**Example 2**

A template of:

Call Dur: $9 minutes - call cost $6 - a/c type $7 - exp details $5- bal $4  
will send the message:

"Call Dur: 7:42 minutes - call cost Gen Bal AED7.68 - a/c type Eng Private - exp details no expiry - bal Eng Gen Bal AED7287.21-no expiry"

**Cost Call Duration Branching**

**Node description**

Allows for balance type and cost threshold branching, or call duration branching, on the values returned for the last charged call.

This feature node when combined with the *Store Profile Field* and *Retrieve Profile Field* feature nodes will allow a service to be defined in a control plan where a configured number of the free daily connections of less than a configured number of seconds can be allocated to a group of specified numbers.

This feature node is used for one of:

- Call cost branching
- Call duration branching

Depending on the mode, either the balance type and cost threshold (call cost branching) or just the duration threshold (call duration branching) will be configured on the feature node, making these parameters instance specific within the control plan. Optionally, the cost per duration may be stored in a selected profile field.

This feature node when used for call cost branching will limit the balance types that can be selected by the operator to only those that are used as chargeable balance types; hence this does not include ‘Expenditure’ and ‘Cross Balance Type Discount’ balance types.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Cost Call Duration Branching nodes as required.

Node exits

This node has one entry and five exits. The number of exits cannot be changed.

**Note:** The reason an exit is taken depends on the mode in use (cost or call duration).

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | >     | The wallet balance or call duration is greater than the configured threshold.  
Telephony actions are allowed after this branch. |
| 2    | <     | The wallet balance or call duration is less than the configured threshold.  
Telephony actions are allowed after this branch. |
| 3    | =     | The wallet balance or call duration is the same as the configured threshold.  
Telephony actions are allowed after this branch. |
| 4    | No Balance Found | The specified balance type was not found in the subscriber’s wallet, or the current domain does not support the required actions.  
Telephony actions are allowed after this branch. |
| 5    | Unsupported | Any error/failure encountered. |

**Note:** A zero wallet balance could potentially use either exit 2 or exit 3 depending on the threshold value.
Configuration screen

Here is an example Configure Cost Call Duration Branching screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the Branch Type to use. Either:  
  - Cost, or  
  - Call Duration  
  Result: The relevant fields are made unavailable. |
| 2    | Select which balance type(s) to use. Either:  
  - Tick the Sum All check box to use all cash balance types, or  
  - Select from the Balance Type drop down list to use a single cash balance type.  
  Note: The Balance Type drop down list shows all Cash balance types for the current ACS customer that can be used for charging. This excludes all Expenditure and Cross Balance Type Discount balances. |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Type the comparison balance or duration threshold to use in the <strong>Threshold</strong> field.</td>
</tr>
<tr>
<td>4</td>
<td>To store the call cost or duration tick the <strong>Enabled</strong> check box in the Store Cost/Duration area. Then, select the <strong>Destination</strong> profile from the <strong>Data Type, Location</strong> and <strong>Field</strong> drop down lists.</td>
</tr>
<tr>
<td>5</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

**Credit Wallet Transfer**

**Node description**

The Credit Wallet Transfer node allows cash credit to be converted into an alternative balance type for a subscriber’s own account or the account of an alternate subscriber.

Credit transfers only apply to peer-to-peer and service bundle transfer definitions. See *CCS User's Guide* for further information.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Credit Wallet Transfer nodes as required.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>The current charging domain does not support all the required services needed by the feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>Credit transfer completed successfully.</td>
</tr>
<tr>
<td>3</td>
<td>Unauthorised</td>
<td>The product type of the purchaser was not found in the limited product type list associated with this credit transfer.</td>
</tr>
</tbody>
</table>
Exit | Cause          | Description                                                                                                                                                                                                                                                                                                                                 |
--- | -------------- |---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
 4   | Bad PIN       | The PIN of the purchaser failed to validate. This may be due to the:  
          |                                                                 | • Supplied PIN was invalid  
          |                                                                 | • PIN was required but was not supplied  
          |                                                                 | • Subscriber does not have a PIN associated with this wallet |
 5   | Invalid Transfer | The credit transfer short name specified (and the credit transfer type required, either service bundle or peer-to-peer) was invalid.                                                                                                                                                                                                                   |
 6   | Error          | Various general errors which may, amongst others, be:  
          |                                                                 | • Configuration related  
          |                                                                 | • Insufficient funds related  
          |                                                                 | • Purchaser or recipient wallet related |

**Configuration screen**

Here is an example Configure Credit Wallet Transfer screen.
Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient CLI</td>
<td>The phone number of the credit transfer recipient, found in one of the ACS phone-number buffers.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.</td>
</tr>
<tr>
<td>Purchasing subscriber PIN</td>
<td>The PIN number for the purchasing subscribers wallet the credit is coming from, found in one of the ACS phone-number buffers.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.</td>
</tr>
<tr>
<td>Recipient Wallet Type Category Selection</td>
<td>The destination wallet for the credit transfer. Can be one of:</td>
</tr>
<tr>
<td></td>
<td>• Primary wallet</td>
</tr>
<tr>
<td></td>
<td>• Secondary wallet</td>
</tr>
<tr>
<td></td>
<td>• Retrieve from buffer</td>
</tr>
<tr>
<td></td>
<td><strong>Notes:</strong></td>
</tr>
<tr>
<td></td>
<td>• The buffer content must be PRIMARY or SECONDARY.</td>
</tr>
<tr>
<td></td>
<td>• Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.</td>
</tr>
<tr>
<td>Credit Wallet Transfer Selection</td>
<td>Select the Credit Transfer short name (this list is configured in the CCS Transfer Management screen).</td>
</tr>
<tr>
<td></td>
<td>Can be one of:</td>
</tr>
<tr>
<td></td>
<td>• Retrieve from feature node (Credit Wallet Transfer list)</td>
</tr>
<tr>
<td></td>
<td>• Retrieve from buffer (Credit Wallet Transfer Name section, Credit Wallet Transfer list)</td>
</tr>
<tr>
<td></td>
<td>• Retrieve from profile (Credit Wallet Transfer Name section, Data Type, Location and Field lists)</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the <strong>Recipient CLI</strong> drop down list, select the buffer containing the phone number of the credit transfer recipient.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Purchaser PIN</strong> drop down list, select the buffer containing the purchaser wallet PIN.</td>
</tr>
<tr>
<td>3</td>
<td>From the <strong>Recipient Wallet Type Category Selection</strong> options, select the wallet to use or the location of the wallet to use.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If the buffer option is selected, from the <strong>Wallet Type Category</strong> drop down list also select the buffer containing the wallet type.</td>
</tr>
<tr>
<td>4</td>
<td>From the <strong>Credit Wallet Transfer Selection</strong> options, select the location of the credit transfer</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
5 | **Note:** The following fields require completion depending on the option selected. <br>**If Feature Node option selected:**<br> - from the Credit Wallet Transfer drop down list, select the Credit Transfer short name to use. <br>**or**<br>**If Buffer option selected:**<br> - from the CreditWalletTransfer drop down list, select the buffer containing the Credit Transfer short name to use. <br>**or**<br>**If Profile option selected:**<br> - from the Data Type, Location and Field drop down lists the profile the Credit Transfer short name is located in. <br>**Note:** The short name in a buffer or profile field must match a name configured in the PrePaid Charging > Transfer Management screen. <br>6 | Click **Save**. **Result:** The purchaser and recipient may receive SMS notifications, depending on the setting of the notification opt out flag and the result of the transfer. See *CCS User's Guide*, Adding Subscribers for configuration instructions and SMS notifications for messages and their content. **Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**<br>- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).<br>- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User's Guide*, Profile Tag Details for more information).

**SMS notification**<br>This table describes the SMS notifications and the conditions enabling them to be sent.

<table>
<thead>
<tr>
<th>Message to</th>
<th>MSISDN</th>
<th>Transfer status</th>
<th>Message content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchaser</td>
<td>Differs from recipient</td>
<td>Success</td>
<td>Cost of the transfer plus the recipient MSISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failure</td>
<td>Alternative failure message.</td>
</tr>
<tr>
<td></td>
<td>Same as recipient</td>
<td>Success</td>
<td>Cost of the transfer plus credits received.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Failure</td>
<td>Alternative failure message.</td>
</tr>
<tr>
<td>Recipient</td>
<td>Differs from purchaser</td>
<td>Success</td>
<td>Credits received plus the purchaser MSISDN</td>
</tr>
</tbody>
</table>

**Declined Billing Cause**

**Node description**<br>The Declined Billing Cause node sends the cause of a billing failure to the subscriber.
This feature node provides additional functionality for the UATB feature node when placed after the "declined (no funds)" branch of the UATB feature node.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan. For best usage, should be placed after a UATB node - declined (no funds) branch.

**Node exits**

This node has one entry and seven exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not Declined</td>
<td>The billing was not declined.</td>
</tr>
<tr>
<td>2</td>
<td>No Funds</td>
<td>The billing was declined due to lack of funds.</td>
</tr>
<tr>
<td>3</td>
<td>Max Concurrent</td>
<td>Number of concurrent users for this wallet has been exceeded.</td>
</tr>
<tr>
<td>4</td>
<td>Restricted Rating</td>
<td>Rating/ tariff for this call destination has not been established.</td>
</tr>
<tr>
<td>5</td>
<td>Invalid Wallet State</td>
<td>Wallet is frozen.</td>
</tr>
<tr>
<td>6</td>
<td>Blocked Destination</td>
<td>The billing was declined due to the destination being barred.</td>
</tr>
<tr>
<td>7</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Declined Billing Cause Branch node screen.
Configuring the node
This node requires no configuration data. You may change the **Node name**, if required.

Direct Unit Charge Request

**Node description**
The Direct Unit Charge Request node retrieves wallet information and sends it to the billing engine.

**Node icon**
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**
This node may be used any number of times within a control plan.

**Node exits**
This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The request has been successfully applied to the BE.</td>
</tr>
<tr>
<td>2</td>
<td>Not Enough Info</td>
<td>The Override Duration seconds are missing when this option has been selected.</td>
</tr>
<tr>
<td>3</td>
<td>Billing Fault</td>
<td>Any BE error (such as insufficient credit or timeout).</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Direct Unit Charge node screen.

![Configuration screen](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Actual Duration</td>
<td>Uses the actual call duration for billing.</td>
</tr>
<tr>
<td>Override Duration</td>
<td>Enables the use of the override duration time instead of the actual duration.</td>
</tr>
<tr>
<td>Duration Time</td>
<td>Time in seconds to use when Override Duration option selected.</td>
</tr>
<tr>
<td>Debit</td>
<td>Allow the request to perform a debit instead of a credit.</td>
</tr>
<tr>
<td>Credit</td>
<td>Allow the request to perform a credit instead of a debit.</td>
</tr>
<tr>
<td>Ignore Wallet Balance</td>
<td>Allows the wallet balance to go negative instead of being rejected (will only be used if the account reference is configured for this)</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Actual Duration</strong> option to bill against the call duration, or Select the <strong>Override Duration</strong> option to use the entered duration for billing, and then type the Override Duration seconds.</td>
</tr>
<tr>
<td>2</td>
<td>Select either the <strong>Debit</strong> or <strong>Credit</strong> options.</td>
</tr>
<tr>
<td>3</td>
<td>Select the <strong>Ignore Wallet Balance</strong> check box to allow the wallet balance to go negative.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
Get CUG Details

Node description

The Get CUG Details node analyzes the calling and called party numbers to determine whether they are part of a closed user group (CUG). If they belong to the same CUG, then the tariff plan used by the next UATB node is overridden by the tariff plan specified for the CUG in the Resources screens.

Note: If both parties belong to more than one CUG, then the tariff plan from the first CUG to be returned, is normally used.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User's Guide for further details on charging domains.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Not In CUG</td>
<td>Either the Calling Party or the Called Party are not in a Closed User Group (CUG), or they are not in the same one.</td>
</tr>
<tr>
<td>3</td>
<td>In CUG</td>
<td>Both the Calling Party and the Called Party are in the same CUG, and the current tariff plan has been successfully overridden.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Get CUG Details node screen.

![Configuration screen example](image)

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

**Named Event**

**Node description**

The Named Event feature node is used to bill the caller for a defined number of named events with a defined discount.

The action is one of:

- Billing the caller wallet
- Reserving the event cost
- Confirming the cost can be billed
- Canceling the reserved event cost
- Retrieving the cost of the event

The number of events is either configured in the feature node or stored at a selected location.

**Node icon**

![Node icon](image)

**Restrictions**

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.
Note: These exit descriptions are specific to the responses received from an Oracle Voucher and Wallet Server billing engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Success     | The caller has successfully exited the node with the billing event successfully completed.  
Note: This includes:  
- A negative wallet balance when the allow negative balance option has been selected (allow not selected would result in the No Credit branch being taken instead).  
- Any single Reserve or Confirm requests regardless of wallet balance. |
| 2    | No Credit   | The caller has no credit and the allow negative balance option is off.       |
| 3    | Billing Fault | An error has occurred within the billing function. Possible faults are:  
- multiple reservation attempts (just a single reservation at a time is permitted).  
- confirm or revoke requests when there has not been a previous reserve request. |
| 4    | Unsupported | Either error / failure or that the Domain being used does not support this feature node. |
Configuration screen

Here is an example Configure Named Event screen.

### Configuring the node

Follow these steps to configure the node.

**Warning:** If using Diameter, refer to *NCC Diameter Control Agent Technical Guide* before configuring this node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the mode of operation for this instance of the node:  
      * Direct Event* - to bill the caller for the event cost.  
      * Reserve Event* - to reserve the event cost against the caller wallet balance.  
      * Confirm Event* - to confirm the reserved event cost. |
### Chapter 3

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>From the Event Class drop down list, select the class of this named event.</td>
</tr>
<tr>
<td>3</td>
<td>From the Named Event drop down list, select the event to bill.</td>
</tr>
<tr>
<td>4</td>
<td>In the Number of Events section, select the option to use to obtain the number of events to bill. Select one of:</td>
</tr>
<tr>
<td>5</td>
<td>If Node dialog: In the Number of Events field, type the number of events to bill.</td>
</tr>
<tr>
<td>6</td>
<td>In the Discount field, type the discount percentage to apply to the billed event cost.</td>
</tr>
<tr>
<td>7</td>
<td>To permit a negative wallet balance when reserving or billing, select the Allow check box.</td>
</tr>
<tr>
<td>8</td>
<td>If the mode of operation is:</td>
</tr>
<tr>
<td>9</td>
<td>If the Store Cost check box has been selected, select the ChargeCost Data Type, Location and Field from the drop down lists.</td>
</tr>
<tr>
<td>10</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** This affects content for event class and named event lists.

- **Revoke Event** - to cancel a previously made reserve request.
- **Cost of Event** - to retrieve the cost of the event.

**Note:** This list is configured in the SMS > Services > PrePaid Charging > Rating Management > Named Event tab (refer to CCS User's Guide for more information).

**Note:** This list is configured in the SMS > Services > PrePaid Charging > Rating Management > Named Event tab (refer to CCS User's Guide for more information).

**Warning:** The number of events value in either field is a hexadecimal number, for example 10 entered is actually 16 events.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).
**Node logic**

This diagram shows the internal logic processing of the node.

- **Retrieve node parameters**
- **Send billing event to BE**
- **Sent successfully?**
  - Yes
  - No → Exit on branch 4
    - Unsupported

- **BE processed event?**
  - Yes
    - Exit on branch 3
      - Billing Fault
  - No
    - Exit on branch 2
      - No Credit
    - Exit on branch 1
      - Success

**Includes:**
- Multiple reservation requests
- Confirm requests and no request exists
- Revoke requests and no request exists
- Allowing negative wallet balances

---

**Play Tariff Plan Announcement**

**Node description**

The Play Tariff Plan Announcement node plays the announcement associated with the selected tariff plan.

The tariff plan can be selected in the node or specified in a profile tag field.

**Node icon**
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![TP Announce Icon](image)

### Restrictions

A control plan may contain as many Play Tariff Plan Announcement nodes as required.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type **BCD**. See *Charging Control Services User's Guide* for further details on charging domains.

### Node exits

This node has one entry and 2 exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The node successfully found the selected tariff plan and played the associated announcement.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>An error/failure occurred finding the selected tariff plan or when loading and playing the announcement.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure Play Tariff Plan Announcement screen.
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Tariff Plan Source area select:  
  - From Profile  
  - Manual Definition, or  
  - Active Tariff Plan. |
| 2    | If From Profile: Select the Data Type, Location and Field drop down lists containing the required tariff plan.  
  If Manual Definition: Select the Tariff Plan from the drop down list.  
  If Active Tariff Plan: Then the currently active tariff plan will be used. |
| 3    | Click Save. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User's Guide, Profile Tag Details* for more information).

**Set Active Domain**

**Node description**

The Set Active Domain node allows the selection of a billing domain for use by the current top-up/voucher redeem activity for the following management types:
- Wallet
- Voucher
- Rating
- Subscriber
- Service

This node also allows changing the domain type at any point within a control plan.

For example, if TUS is installed (using the default VoucherDomainType from eserv.config for TUS) then the domain can be changed mid call to UBE and vice versa with the Set Active Domain node.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions

A control plan may contain as many Set Active Domain nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The billing domain to use was set successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>A system error of some kind occurred. The billing domain to use has not set.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Set Active Domain screen.

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain options</td>
<td>The domain to set can be either the name of a domain or a type of domain. The drop down list available will depend on the option selected here.</td>
</tr>
<tr>
<td>Name</td>
<td>A drop down list of all the valid domain names. The domain names are maintained in the <strong>SMS &gt; Services &gt; PrePaid Charging &gt; Service Management &gt; Domain</strong> tab screens.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Type</td>
<td>A drop down list of all the valid domain types. The domain types are maintained in the SMS &gt; Services &gt; PrePaid Charging &gt; Service Management &gt; Domain tab screens.</td>
</tr>
<tr>
<td>Management check boxes</td>
<td>These are the chassis actions to apply to the selected domain. The availability of check boxes for selection is maintained with the domain in the SMS &gt; Services &gt; PrePaid Charging &gt; Service Management &gt; Domain tab screens.</td>
</tr>
<tr>
<td>Rating</td>
<td>Sets the rating domain.</td>
</tr>
<tr>
<td>Service</td>
<td>Sets service chassis action.</td>
</tr>
<tr>
<td>Subscriber</td>
<td>Sets the subscriber chassis action.</td>
</tr>
<tr>
<td>Tracker</td>
<td>Sets the tracker chassis action.</td>
</tr>
<tr>
<td>Voucher</td>
<td>Sets the voucher chassis action.</td>
</tr>
<tr>
<td>Wallet</td>
<td>Sets the wallet chassis action.</td>
</tr>
</tbody>
</table>

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the option to use to identify the domain:</td>
</tr>
<tr>
<td></td>
<td>• Domain Name</td>
</tr>
<tr>
<td></td>
<td>• Domain Type</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Name</strong> or <strong>Type</strong> drop down lists, select the domain name or type.</td>
</tr>
</tbody>
</table>

**Notes:**
- When **Domain Name** is selected, the **Type** is automatically filled.
- When **Domain Type** is selected, the **Name** field is blank and disabled.
- The domain names and types are maintained in the SMS > Services > PrePaid Charging > Service Management > Domain tab screens.

| 3    | Optionally select the **Management** check boxes allowed to set the required chassis action for the domain: |
|      | • Service                                                                                           |
|      | • Subscriber                                                                                         |
|      | • Tracker                                                                                           |
|      | • Wallet                                                                                             |
|      | • Voucher                                                                                           |

**Notes:**
- The defaults are: Service - unselected, the others except the Tracker option - selected. The Tracker option will only be available if the domain type is set to UBE.
- The **Service** check box should only be selected with due caution and a thorough understanding of the potential consequences. See *CCS User's Guide*.
Step | Action
---|---
4 | Optionally select the Management Rating check box (if allowed) to set the required domain billing engine.
   |  
   | Note: The default is selected.
5 | Click Save.
   |  
   | Note: The optional check boxes are available for use once they have been selected in the SMS > Services > PrePaid Charging > Service Management > Domain tab screens.

**Example use of node**

The following is an example of how this node can be used under the existing available features.

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario</td>
<td>A system is setup to redeem UBE vouchers, but this control plan requires the redemption of a voucher.</td>
</tr>
<tr>
<td>Solution</td>
<td>Select a domain type of TUS, then select the voucher check box.</td>
</tr>
<tr>
<td>Result</td>
<td>All subsequent voucher requests will be made to the TUS servers instead of the UBE.</td>
</tr>
</tbody>
</table>

**Set BE EDR**

**Node description**

The Set BE EDR node alters and adds EDR tags in EDRs generated by slee_acs during call flow. The EDR tag must be specified. The value can be static or populated from a profile field. If the tag already exists on the EDR, the value of the tag is overridden.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Existing BE EDR tag details successfully over-ridden, new tag appended.</td>
</tr>
</tbody>
</table>
Chapter 3

CCS Charging Feature Nodes

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either error / failure or the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Set BE EDR node screen when using profile blocks.

![Configure Set BE EDR screen](image)
Configuration screen

Here is an example Configure Set BE EDR node screen when using a CCS context value.

![Configure Set BE EDR](image)

Configuration fields

This table describes the function of each field.

**Note:** Location/Field are mutually exclusive from Fixed Value.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| EDR Tag                | The tag to set the value to. One of:
  - A new tag to add to the EDR
  - The EDR tag to replace the value of
  This field must be between 1 and 50 characters long. This field is required.
  **Warning:** The only characters which can be used in this field are 0-9, a-z, A-Z, -, _ and spaces. |
| Data Type, Location, Field | The type, location and field of the profile block that contains the required field. |
| Field                  | The profile field that contains the value to use for the EDR Tag. This field must be 1 and 50 characters long. |
| Context Field          | The call context field to use for the EDR Tag. For more information about call context fields, see *ACS User's Guide*. |
|                        | **Note:** The entries in this field are a sub-set of the fully available set of call context fields. |
| Fixed Value            | Select the **Data Type** of **Fixed Value** to see this field. |
|                        | Value to use for the EDR Tag |
|                        | This field must be between 1 and 50 characters long. |
|                        | **Warning:** The only characters which can be used in this field are 0-9, a-z, A-Z, -, _ and spaces. |
### Chapter 3

#### CCS Charging Feature Nodes

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Z, _, and spaces.</td>
<td></td>
</tr>
<tr>
<td>Context Number</td>
<td>When selected, normalization occurs on fields selected from the Context Field based upon capability and rules.</td>
</tr>
</tbody>
</table>

## Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>EDR Tag</strong> field, enter the string you want to use as the EDR field label.</td>
</tr>
</tbody>
</table>
| 2    | To set the EDR Tag value or source:  
|      |  - From a profile field, select **Get value from profile variable** radio button.  
|      |  - Enter a fixed value, select **Get value from profile variable** radio button.  
|      |  - From a CCS context field, select **Get value from CCS context field** radio button. |
| 3    | From a profile field  
|      |    Select the field from the **Data Type**, **Location** and **Field** drop down lists.  
|      |    Click **Save**. |
| 4    | From a fixed value  
|      |    Select the **Data Type** field.  
|      |    **Result**: The screen changes, the Fixed Value field replaces the Location and Field list boxes.  
| 4    | Type the value in the **Fixed Value** field. |

[Image of Configure Set BE EDR dialog box]
Step | Action
--- | ---
5 | Click **Save**.

**From a CCS context field**

3 | Select the field from the drop down list.
4 | Select the **Context Number** check box to have the CCS context field value normalised. Un-select to use the CCS context field value as stored.
5 | Click **Save**.

For more information about the fields this node uses, see Configuration fields.

### Set Discount

**Node description**

The Set Discount node retrieves discount information from the specified location and uses that information for any subsequent billing requests. The discount information collected by this node overrides the last set discount node encountered while traversing a Control Plan.

**Note:** The discounts provided by the node are applied in addition to any existing discounts.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Set Disc icon](image)

**Restrictions**

The Set Discount node may be used any number of times within a control plan.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type **BCD**. See *Charging Control Services User's Guide* for further details on charging domains.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Discount information retrieved successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- General error or failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The Domain being used does not support this feature</td>
</tr>
</tbody>
</table>
### Configuration screen

Here is an example Configure Set Discount node screen.

**Note:** Discount Period fields will only be visible in the screen if a manual discount override entry has been configured and **Add Next** has been used to add percentage discount override values.

#### Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Discount Override Source  | Takes the discount from either:  
  - The configured profile (From Profile option)  
  - This node (Manual Definition option)                                                 |
| Select Discount Override From | The profile **Data Type**, **Location** and **Field** (in decimal) for the discount information.  
  Available when From Profile option is selected. |
| Maximum Charge            | The maximum charge allowed for the call.                                                                                                                                                                    |
| Discount Period $n$       | Allows up to ten discounts. Each discount is configured as a percentage. This will be applied to the corresponding period for the rate in the tariff plan used for the charge. Negative percentages may be specified, allowing the |
### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the source for the discount from the Discount Override Source options. Either:  
  - From Profile (retrieves the discount from the specified profile block and tag)  
  - Manual Definition (retrieves the discount from this node configuration). |
| 2    | From the drop down lists in the Select Discount Override From area, select the profile data type, location and field where the discount is stored. |
| 3    | Click **Save** to complete this procedure. |

**If From Profile option used.**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Type the maximum charge allowed for the call in the Maximum Charge field.</td>
</tr>
</tbody>
</table>
| 5    | Click **Add Next** to display the Discount Period 1 field, and type in the discount percentage for this period.  
  *Note:* When editing, all the discount percentages currently configured in the node will be shown. |
| 6    | To add a discount percentage for the next period, repeat step 5 (you may specify discount percentages for up to ten periods). |
| 7    | To remove the discount percentage for the most recent discount period, click **Remove Last**. |
| 8    | Click **Save** to complete this procedure. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

---

## Set Tariff Plan Rule

### Node description

Specifies the tariff plan to be used for combinations of network access type and bearer capability.

When the Set Tariff Plan Rule node is activated during a call, the settings configured in the node are retrieved from the call plan data. When the call passes through the next UATB node, these settings are used to determine which tariff plan should be used for the caller's current network access type and bearer capability. If the tariff plan changes, then the notification configured in the node for network access type and bearer capability combination will be sent.
Node icon

If the CPE has been configured to use the static panel CPE palette style, the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

To function correctly this node should be placed in front of the UATB node. The rules defined in the last Set Tariff Plan Rule node before the UATB node will be used.

If a Tariff Plan Override node is placed after the Set Tariff Plan Rule node in a call plan, then the charging defined in the TPO node will be used instead. Otherwise the charging defined in the Set Tariff Plan Rule node will be used.

Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User's Guide for further details on charging domains.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure, or the domain being used does not support this feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The product type tariff plan has been successfully overridden by the one specified in the node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Tariff Plan Rule node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Access Network     | List of available access network types. These are defined in Access Network geography set in ACS.  
|                    | **Note:** The "None" value is used for rules where the access network type is not relevant.                                                  |
| Bearer Type        | List of available bearer types. Valid values are 1 to 255 and "None".  
|                    | **Note:** The "None" value is used for rules where the bearer type is not relevant.                                                            |
| Tariff Plan        | Sets the tariff plan for the selected access network type and bearer type combination.                                                        |
| Notification Application | List of applications defined in ACS under which the available notification messages are grouped.                              |
| Notification Message | Lists the available notification messages for the selected notification application.                                                        |
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the <strong>Access Network</strong> drop down list, select the access network for the rule you are adding.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Bearer Type</strong> drop down list, select the bearer type for the rule.</td>
</tr>
<tr>
<td>3</td>
<td>From the <strong>Tariff Plan</strong> drop down list, select the tariff plan to use for this combination of access network type and bearer type.</td>
</tr>
<tr>
<td>4</td>
<td>From the <strong>Notification App</strong> drop down list, select the application for which the notification message you want to use has been configured in ACS.</td>
</tr>
<tr>
<td>5</td>
<td>From the <strong>Notification Message</strong> drop down list, select the message to output for this rule.</td>
</tr>
</tbody>
</table>
| 6    | Click **Add**.  
**Result:** The rule is added to the grid. |
| 7    | Repeat step 1 to 6 for all the combinations of access network type and bearer type you require. |
|      | Modify any existing rules as required. To |
|      |   - update a rule, highlight it in the grid. Use the selection boxes to change its values, and click **Update**. |
|      |   - delete a rule, highlight it in the grid and click **Delete**. |
| 8    | Click **Save**. |

Tariff Plan Override

Node description

The Tariff Plan Override node overrides the configured tariff plan with the tariff plan specified in the node. Optionally the tariff plan can be selected from a profile field.

The override only applies to the next UATB node in the control plan.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.
Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure or that the domain being used does not support this feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The product type tariff plan has been successfully overridden by the one specified in the node.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Tariff Plan Override screen.

![Configure Tariff Plan Override](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Tariff Plan Override Source area select one of the following:  
|      | • From Profile  
|      | • Manual Definition |
| 2    | Select the tariff plan to use instead of the one configured for the product type, for the next IRR or CRR action. If you selected:  
|      | • From Profile: Select from the Data Type, Location and Field drop down lists the profile field containing the tariff plan you want to use.  
|      | • Manual Definition: Select from the Tariff Plan drop down list. |
| 3    | Click Save. |
Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

Universal ATB

Node description

The Universal Attempt Termination with Billing (UATB) node is used to bill subscribers for calls that they make or receive. Billing is done following the tariff plan assigned to the subscriber’s product type.

The UATB node can be used in either an originating or a terminating control plan with one of the following switch types:

- CS1 switch (the VSSP is required to translate from CS1 to CAMEL for UATB to operate)
- Nokia switch
- CAMEL Phase 2 switch
- CAMEL Phase 3 switch

The switch type is determined by extracting the ‘Application Context’ parameter from the TCAP primitive and will follow the correct charging flow accordingly.

A pre-call announcement may be played by setting the PreCallAnnouncementId parameter (in eserv.config file) to a valid announcement ID. For more information about this parameter, see CCS Technical Guide topic ccsSvcLibrary.

The UATB node checks if a control plan trigger has been armed after each billing engine action is performed. If a control plan trigger has been armed the UATB node will fetch the required trigger details for the call capability/product type and invoke the new control plan trigger chassis action, passing in the trigger detail.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and 14 exits. The number of exits cannot be changed.
Note: These exit descriptions are specific to the responses received from an Oracle VWS Voucher and Wallet Server. For specific information about how responses from other Voucher and Wallet Servers map to these exits, see the technical guide for the interface for Voucher and Wallet Server being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Declined (No Funds)  | Exit taken for one of the following:  
- Insufficient balance found to satisfy even the initial reservation request  
- Max-concurrent reached for the subscriber's wallet  
- Restricted rating  
- Blocked destination  
- Invalid wallet state (that is: frozen, suspended or terminated). |
| 2    | BFT                  | Exit taken for one of the following:  
- Could not talk to the Voucher and Wallet Server due to one of the following:  
  - Could not contact billing engine client  
  - Voucher and Wallet Server is busy  
  - Various internal "no dialog" type errors  
- Could not charge for call,  
- Unknown account/wallet |
| 3    | BFT (Released)       | Exit taken for one of the following:  
- Calling number has run out of funds during the call (subsequent reservation has failed due to a system error or through failing to contact the Voucher and Wallet Server)  
- ‘BFT grace period length’ is set (that is, BFT grace period length is greater than ‘0’)  
  Call will be released and call processing will no longer be permitted. |
| 4    | BFT (Disconnected)   | Exit taken for one of the following:  
- Calling number has run out of funds during the call (subsequent reservation has failed due to a system error or through failing to contact the Voucher and Wallet Server)  
- ‘BFT grace period length’ is set (that is, BFT grace period length is greater than ‘0’)  
  Called number (leg 2) will be disconnected and call processing will still be possible.  
  Warning: Not supported for the Nokia switch. |
| 5    | NSF (Released)       | Exit taken when calling number has run out of funds during the call.  
  Call will be released and call processing will no longer be permitted. |
| 6    | NSF (Disconnected)   | Exit taken when calling number has run out of funds during the call.  
  Called number (leg 2) will be disconnected and call processing will still be possible.  
  Warning: Not supported for the Nokia switch. |
| 7    | Free Call (Released) | Exit taken when:  
- ‘free call’ indicator flag is set in the Apply Charging... |
Chapter 3

CCS Charging Feature Nodes

Chapter 3

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 8    | Abort               | Exit taken when:                                                                                   - TCAP Abort as indicated in the event type Event Report BCSM returned from the switch  
- TCAP Abandon as indicated in the event type Event Report BCSM returned from the switch  
- ‘abort’ flag is set by ACS in the response to the Apply Charging returned to the Universal ATB  
- Processing error during the call which cannot be classified elsewhere |
| 9    | Route Select Failure| TCAP Route Select Failure as indicated in the event type in the Event Report BCSM returned from the switch.                                                                                                 |
| 10   | Busy                | Called number is busy as indicated in the event type in the Event Report BCSM returned from the switch.                                                                                                     |
| 11   | No Answer           | Called party failed to answer as indicated in the event type in the Event Report BCSM returned from the switch.                                                                                              |
| 12   | Disconnect (Calling)| Calling party has disconnected as indicated in the event type in the Event Report BCSM returned from the switch.                                                                                          |
| 13   | Disconnect (Called) | Called party has disconnected as indicated in the event type in the Event Report BCSM returned from the switch.                                                                                             |
| 14   | Unsupported         | Either:                                                                                           - an unexpected error or failure, or  
- the Domain being used does not support this feature node.                                                                                                                                            |

Warning: Not supported for the Nokia switch.

Note: These exit descriptions pertain to the Oracle VWS. When used with other Voucher and Wallet Servers the exit causes may differ. See the relevant technical guide for the Voucher and Wallet Server being used.

Call end reasons

This feature node provides ACS callEndReasons on issuing a FinaliseCall action, prior to taking one of the exits. This table lists the callEndReasons.

<table>
<thead>
<tr>
<th>callEndReasons</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reasonNotSet</td>
<td>0</td>
<td>Not set (default)</td>
</tr>
<tr>
<td>precallAnnouncementFailure</td>
<td>1</td>
<td>Issued when a precall announcement cannot be played, whether due to abandonment, or other error conditions.</td>
</tr>
<tr>
<td>callEndReasons</td>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>firstEventACRAbort</td>
<td>2</td>
<td>Issued when an abort occurs when ACR is received before event report.</td>
</tr>
<tr>
<td>firstEventATAbort</td>
<td>3</td>
<td>Issued when an abort occurs due to an AT (Attempt Terminate) which is caused by sending either a connect or a continue to the switch. Note: This value is currently not set, and is reserved for future use.</td>
</tr>
<tr>
<td>secondEventACRAbort</td>
<td>4</td>
<td>Issued when an abort occurs following receipt of an event report (waiting for the apply charging report).</td>
</tr>
<tr>
<td>secondEventATAbort</td>
<td>5</td>
<td>Iss set (for CS1 / Nokia switches) when ACS is attempting termination and waiting for a BCSM Event Report. For CAMEL, it is set where an abort is received in the ERBCSM.</td>
</tr>
<tr>
<td>abortWaitingForBEResponse</td>
<td>6</td>
<td>Issued when an abort occurs on the main dialog while waiting for a response to the extend time reservation action.</td>
</tr>
<tr>
<td>releasedOnTCPExpiry</td>
<td>7</td>
<td>Issued when the switch releases the call on timer expiry (noted in the apply charging report).</td>
</tr>
<tr>
<td>releasedNoFunds</td>
<td>8</td>
<td>Issued where the UATB issues a release on failure to secure further funds for the call.</td>
</tr>
<tr>
<td>disconnectedLegBNoFunds</td>
<td>9</td>
<td>Issued where the UATB issues a B leg disconnect on failure to secure further funds for the call.</td>
</tr>
<tr>
<td>calledPartyBusy</td>
<td>10</td>
<td>Issued on busy.</td>
</tr>
<tr>
<td>routeSelectFailure</td>
<td>11</td>
<td>Issued on route select failure.</td>
</tr>
<tr>
<td>callingPartyAbandon</td>
<td>12</td>
<td>Issued on abandon.</td>
</tr>
<tr>
<td>noAnswer</td>
<td>13</td>
<td>Issued on no answer.</td>
</tr>
<tr>
<td>callingPartyDisconnected</td>
<td>14</td>
<td>Issued on calling party disconnected.</td>
</tr>
<tr>
<td>calledPartyDisconnected</td>
<td>15</td>
<td>Issued on called party disconnected.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Universal Attempt Termination With Billing node screen.

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UseNoAnswer</td>
<td>Select this check box to use the No Answer Timer value.</td>
</tr>
<tr>
<td>NoAnswerTimer</td>
<td>This option provides a value for the No Answer Timer that is sent with a</td>
</tr>
<tr>
<td></td>
<td>Connect message. This option is supported for all switch types.</td>
</tr>
<tr>
<td>PlayToneTimer</td>
<td>This option is only available for the CAMEL charging flow. When selected,</td>
</tr>
<tr>
<td></td>
<td>a tone will be played before the caller runs out of funds.</td>
</tr>
<tr>
<td>UseRatingBuffer</td>
<td>Select this check box to specify the Rating Prefix Buffer.</td>
</tr>
<tr>
<td>RatingPrefixBuffer</td>
<td>Sets the destination prefix buffer to use for rating. When UseRatingBuffer</td>
</tr>
<tr>
<td></td>
<td>is not selected, the default Pending Termination Number buffer is used.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If required select the <strong>UseNoAnswer</strong> check box and then enter a value, in seconds, in the <strong>NoAnswerTimer(sec)</strong> field.</td>
</tr>
<tr>
<td>2</td>
<td>If required select the <strong>PlayToneTimer</strong> check box.</td>
</tr>
<tr>
<td>3</td>
<td>If required select the <strong>UseRatingBuffer</strong> check box and then select destination prefix buffer to use for rating from the <strong>RatingPrefixBuffer</strong> drop down list.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** Additional configuration is available in `eserv.config`. For more information, see *CCS Technical Guide, ccsSvcLibrary and ccsMacroNodes.*

Variable Amount Recharge

Node description

The Variable Amount Recharge node will attempt a standard recharge for the specified wallet based on the voucher and wallet data derived from profile fields.

The feature node will combine the following recharge details and invoke the WalletDelegation chassis action:

- Recharge entries (containing balance, recharge amount information)
- Wallet expiry extension policy
- Wallet expiry extension period
- Voucher specified by the voucher type name (if supplied and configured)

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Variable Amount Recharge nodes as required.

Node exits

This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The variable recharge data was found and applied successfully.</td>
</tr>
</tbody>
</table>
## Configuration screen

Here is an example Configure Variable Amount Recharge screen.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>No Balances</td>
<td>No balance information is specified in Recharge List. Recharge action is skipped.</td>
</tr>
<tr>
<td>3</td>
<td>Invalid Wallet Type</td>
<td>Specified wallet type is invalid/ not recognized by the billing engine.</td>
</tr>
<tr>
<td>4</td>
<td>Wallet Not Found</td>
<td>The wallet does not exist upon the charging domain.</td>
</tr>
<tr>
<td>5</td>
<td>Wallet Non-rchrgble</td>
<td>The wallet cannot be recharged as it is in an inappropriate state (for example: pre-use, frozen, suspended or terminated), or a balance is not rechargeable (for example: single use balance type).</td>
</tr>
<tr>
<td>6</td>
<td>Invalid Recharge Val</td>
<td>Recharge attempt was unsuccessful due to Bad PIN.</td>
</tr>
<tr>
<td>7</td>
<td>System Error</td>
<td>A general system error occurred.</td>
</tr>
<tr>
<td>8</td>
<td>Communicate Error</td>
<td>A communication error occurred (usually meaning unable to communicate with the billing engine).</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Recharge List area, select a profile location from the Recharge Data Type, Recharge Location and Recharge Field drop down lists. The Recharge List profile field stores a list of recharge entries, each containing the following sub profile fields and tags:  
  - Balance Type Name  
  - Recharge Amount  
  - Balance Expiry Extension Period (optional)  
  - Balance Expiry Extension Policy (optional)  
  - Bucket Creation Policy (optional) |
| 2    | Optionally, select the balance type override from the Override Type drop down list to overwrite the balance specified in the Recharge List. |
| 3    | Select the Wallet Expiry Extension Policy profile from the Expiry Policy Data Type, Expiry Policy Location and Expiry Policy Field drop down lists. This profile indicates the policy used in determining the expiry date for the wallet. |
| 4    | Select the Wallet Expiry Period profile from the Expiry Period Data Type, Expiry Period Location and Expiry Period Field drop down lists. This profile indicates the period used to determine the new expiry date for the wallet. |
| 5    | In the Select Voucher Type area, choose the source of voucher information as either:  
  - From Node  
  - From Profile |
| 6    | Depending on the above selection, appropriate fields are enabled in the Voucher Type area.  
  - Select a voucher profile location from Data Type, Location and Field drop down lists, or  
  - Select a voucher node from Data Type, Type from node drop down lists. |
| 7    | Select the Wallet Type profile from the Wallet Type Name Data Type, Wallet Type Name Location and Wallet Type Name Field drop down lists. This profile contains the wallet that will be recharged at the end of the transaction. |

Note: The items in the drop down lists are all managed via the SMS > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs.

Voice Call Cost

Node description

The Voice Call Cost node plays the cost of the last call within the current control plan.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
This node may be used any number of times within a control plan.

Node exits
This node has one entry point and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>All information has been played successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Voice Call Cost node screen.

Configuration fields
This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available Announcement Sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected Announcement Set.</td>
</tr>
</tbody>
</table>
**Configuring the node**

Follow these steps to configure the node

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
</tbody>
</table>
| 2    | Click **Save**.  
*Note*: This will be grayed out until all the announcement sets have been selected. |
Chapter 4

CCS Credit Card Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS credit card feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

CCS Credit Card Feature Nodes List

This table lists the feature nodes available from the CCS Credit Card palette group in the ACS Control Plan Editor, and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create and Register Credit Card (on page 92)</td>
<td>The Create &amp; Register Credit Card feature node links a specified subscriber (or if the token identifier is already in the database, then the current logical subscriber) to a credit card. Fast key: CRCC</td>
</tr>
<tr>
<td>Credit Card State Branching (on page 97)</td>
<td>The Credit Card State Branching feature node enables control plan flow logic depending on the status of a specified credit card. Fast key: CCSB</td>
</tr>
<tr>
<td>Credit Cards Per Subscriber Branching (on page 98)</td>
<td>The Credit Cards Per Subscriber Branching feature node enables control plan flow logic based on the number of credit cards associated with a specified subscriber. Fast key: CCSL</td>
</tr>
<tr>
<td>Delete Credit Card Details (on page 100)</td>
<td>The Delete Credit Card Details feature node enables the credit card record and the associated subscriber registration to be removed from the database. Fast key: RMCC</td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Description</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Deregister Credit Card (on page 101)</strong></td>
<td>The Deregister Credit Card feature node removes the link between the credit card and the specified subscriber. Fast key: DRCC</td>
</tr>
<tr>
<td><strong>Modify Credit Card Details (on page 103)</strong></td>
<td>The Modify Credit Card Details feature node enables a credit card to be modified. Fast key: MDCC</td>
</tr>
<tr>
<td><strong>Retrieve Credit Cards for Subscriber (on page 106)</strong></td>
<td>The Retrieve Credit Cards for Subscriber feature node retrieves details for all the credit cards for the current logical subscriber. Fast key: RTCC</td>
</tr>
<tr>
<td><strong>Subscribers Per Credit Card Branching (on page 108)</strong></td>
<td>The Subscribers Per Credit Card Branching feature node enables control plan flow logic depending on the number of subscribers associated with a specified credit card. Fast key: SCCL</td>
</tr>
</tbody>
</table>

### Create and Register Credit Card

**Node description**

The Create & Register Credit Card feature node links a specified subscriber (or if the token identifier is already in the database, then the current logical subscriber) to a credit card.

When the option in the **Action** frame is set to:

- **New In Frozen State**, the feature node will not search for a subscriber record; it will only search for a credit card record.
- **Register**, the feature node searches the SCP database (through a cache) for an existing registration between the specified subscriber and the specified credit card record using the tokenized number as a search key.

If no credit card record is found for the tokenized number, the feature node applies the masking rule specified to the full credit card number, resulting with a display number split into prefix and suffix that is sent to the SMS with the remaining parameters.

The display prefix and display suffix fields are encrypted by a local database function before being sent to the SMS in the replication request.

**Node icon**

![Node Icon](image)

**Restrictions**

This node may be used any number of times within a control plan.
### Node exits

This node has one entry and ten exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Name</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1st Reg to New CC</td>
<td>No credit card record for the given tokenized number was found, and the action field is set to Register (Create if required).</td>
</tr>
<tr>
<td>2</td>
<td>1st Reg Activated CC</td>
<td>No subscriber registration records were found (but the credit card record is present and the state is Frozen) and the action field is set to Register (Create if required).</td>
</tr>
<tr>
<td>3</td>
<td>Secondary Reg Added</td>
<td>A matching subscriber registration record is not found (but the credit card record is present and the state is Active) and the action field is set to Register (Create if required) and the Confirm Secondary Registration flag has been set.</td>
</tr>
<tr>
<td>4</td>
<td>Pending Reg Added</td>
<td>A matching subscriber registration record was not found (but the credit card record is present and the state is Active) and the action field is set to Register (Create if required) and the Confirm Secondary Registration flag has not been set.</td>
</tr>
<tr>
<td>5</td>
<td>Frozen CC Created</td>
<td>No credit card record for the given tokenized number was found, and the action field is set to Create in Frozen state.</td>
</tr>
<tr>
<td>6</td>
<td>Already Registered</td>
<td>A matching subscriber registration record for the credit card exists.</td>
</tr>
<tr>
<td>7</td>
<td>CC in Frozen State</td>
<td>The action field has been set to Create in Frozen state and an existing credit card record is found which is either in the Active state or has the Frozen flag set.</td>
</tr>
<tr>
<td>8</td>
<td>CC in Deleted State</td>
<td>The credit card record is in the Deleted state.</td>
</tr>
<tr>
<td>9</td>
<td>CC in Active State</td>
<td>A matching subscriber registration record is found.</td>
</tr>
<tr>
<td>10</td>
<td>Error</td>
<td>Any of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• One of the required parameters is not present (such as Expiry Date).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No subscriber registration records were found (but the Credit Card record is present) and either of the subscribers per credit card or the credits cards per subscriber limits has already been reached.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The tokenized number is longer than 256 characters.</td>
</tr>
</tbody>
</table>
## Node fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
<td>The initial state for the credit card.</td>
</tr>
<tr>
<td><strong>Register</strong></td>
<td>- No credit card record found - new record created as Active state and registered to the subscriber as Primary card.</td>
</tr>
<tr>
<td></td>
<td>- Credit card record found, but no subscriber registration record found.</td>
</tr>
<tr>
<td></td>
<td>- For Frozen states, register as Primary.</td>
</tr>
<tr>
<td></td>
<td>- For Active states and Confirm Secondary Registration set, register as Secondary.</td>
</tr>
<tr>
<td></td>
<td>- For Active states and Confirm Secondary Registration not set, register as Pending.</td>
</tr>
<tr>
<td><strong>New Frozen State</strong></td>
<td>No credit card found - new record is created as Frozen state. (Default is Register).</td>
</tr>
<tr>
<td><strong>Credit Card Number Source</strong></td>
<td>The profile field containing the full credit card number (optional, but mandatory for new credit cards).</td>
</tr>
<tr>
<td><strong>Tokenised Credit Card Number Source</strong></td>
<td>The profile field containing the tokenized credit card number (mandatory).</td>
</tr>
<tr>
<td><strong>Subscriber ID Source</strong></td>
<td>The profile field containing the subscriber number (optional).</td>
</tr>
<tr>
<td><strong>Expiry Data Source</strong></td>
<td>The profile field containing the credit card expiry date (optional, but mandatory for new credit cards).</td>
</tr>
<tr>
<td><strong>Card Holder Source</strong></td>
<td>The profile field containing the name on the credit card (optional, but mandatory for new credit cards).</td>
</tr>
<tr>
<td><strong>Masking Rule</strong></td>
<td>The profile field or list containing the credit card masking rule (optional, but mandatory for new credit cards).</td>
</tr>
<tr>
<td><strong>Secondary Registration</strong></td>
<td>A flag to indicate the credit card is a pending or secondary registration (default is unset - pending). Select for a secondary registration and leave clear for a Pending registration</td>
</tr>
<tr>
<td><strong>Service Provider ID Source</strong></td>
<td>The profile field containing the ACS Customer identity.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Create-Register CC screen.
Configuring the node

Follow these steps to configure the Create & Register Credit Card feature node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the required **Action** option. The options are:  
  - Register  
  - New Frozen State |
| 2    | Select from the **Data Type**, **Location** and **Field** drop down lists to set the following data locations:  
  - Credit Card Number Source  
  - Tokenised Credit Card Number Source  
  - Subscriber ID Source  
  - Expiry Data Source  
  - Card Holder Name Source  
  - Service Provider ID Source |
| 3    | Select the **Masking Rule** option:  
  - From profile - then select from the **Data Type**, **Location** and **Field** drop down lists  
  - From node - then select from the **Name** drop down list. |
| 4    | Confirm the registration as one of the following:  
  - Secondary (select the **Confirm on Create** check box)  
  - Pending (ensure **Confirm on Create** check box is not selected). |
| 5    | Click **Save**. |

*Note:* The items in the profile field drop down lists are all managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.
Credit Card State Branching

Node description

The Credit Card State Branching feature node enables control plan flow logic depending on the status of a specified credit card.

The feature node will read the SCP database (through a cache) and check the specified credit card record using the tokenized number as a search key.

Node icon

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Active</td>
<td>The credit card record is in the Active state.</td>
</tr>
<tr>
<td>2</td>
<td>Frozen</td>
<td>The credit card record is in the Frozen state.</td>
</tr>
<tr>
<td>3</td>
<td>Unknown CC</td>
<td>No credit card record was found for the specified tokenized number.</td>
</tr>
<tr>
<td>4</td>
<td>Deleted</td>
<td>The credit card record is in the Deleted state.</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>A general error has occurred.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure CC State Branching screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select from the <strong>Data Type</strong>, <strong>Location</strong> and <strong>Field</strong> profile field drop down lists to set the Tokenised Credit Card Number Source data location.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The items in the profile field drop down lists are all managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.

Credit Cards Per Subscriber Branching

Node description

The Credit Cards Per Subscriber Branching feature node enables control plan flow logic based on the number of credit cards associated with a specified subscriber.

The feature node will search the SCP database (through a cache) to look for credit card registrations for the selected subscriber.

The search results will include credit card records in either the active or frozen state, but exclude those in the deleted state.

The subscriber registration state field will be ignored, therefore pending registrations will be included in the number of records found.

The feature node compares the number of returned records with the credit cards per subscriber limit, which is read from either the customer profile or the CCS global profile (in that order).


**Node icon**

![Node icon](image)

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Name</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None Registered</td>
<td>No credit card records were found.</td>
</tr>
<tr>
<td>2</td>
<td>One Registered</td>
<td>One credit card record is found and the credit cards per subscriber limit is greater than one.</td>
</tr>
<tr>
<td>3</td>
<td>Limit Not Reached</td>
<td>The number of credit card records found (including pending registrations) is less than the configured credit cards per subscriber limit.</td>
</tr>
<tr>
<td>4</td>
<td>Limit Reached</td>
<td>The number of credit card records found (including pending registrations) is greater than or equal to the credit cards per subscriber limit.</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>A credit cards per subscriber limit could not be found.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure CCs Per Subscriber Limit Branching screen.
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select from the <strong>Data Type</strong>, <strong>Location</strong> and <strong>Field</strong> profile field drop down lists to set the Subscriber ID Source data location.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The items in the profile field drop down lists are all managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.

Delete Credit Card Details

**Node description**

The Delete Credit Card Details feature node enables the credit card record and the associated subscriber registration to be removed from the database.

**Note:** If the state of the credit card is frozen, the state is changed to deleted and no records are removed.

The feature node searches the SCP database (through a cache) for the specified credit card record using the tokenized number as a search key.

**Node icon**

![Node Icon]

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Name</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deleted</td>
<td>The Credit Card record is in either the <strong>Active</strong> or <strong>Frozen</strong> state.</td>
</tr>
<tr>
<td>2</td>
<td>CC Already Deleted</td>
<td>The Credit Card record is already in the <strong>Deleted</strong> state.</td>
</tr>
<tr>
<td>3</td>
<td>Unknown CC</td>
<td>No Credit Card records have been found.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>A general error occurred.</td>
</tr>
</tbody>
</table>
Chapter 4

Configuration screen

Here is an example Configure Delete CC screen.

![Configure Delete CC Screen](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select from the Data Type, Location and Field profile field drop down lists to set the Tokenised Credit Card Number Source data location.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: The items in the profile field drop down lists are all managed using the SMS > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs.

Deregister Credit Card

Node description

The Deregister Credit Card feature node removes the link between the credit card and the specified subscriber.

The feature node searches the SCP database (through a cache) for a matching credit card record (using the tokenized number as a search key) and a registration to the specified subscriber.

Primary registration states cannot be removed by this feature node. The credit card can be removed by using the Delete Credit Card Details feature node. The primary registration may be changed using the CCS screens (SMS > Services > Prepaid Charging > Subscriber Management > Credit Cards) or a PI command (see PI Commands (CCS) Operations Guide).
**Node icon**

![](image)

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deregistered</td>
<td>A registration record is found and the registration state is Secondary or Pending.</td>
</tr>
<tr>
<td>2</td>
<td>No Pri Dereg Allowed</td>
<td>A registration record is found and the registration state is Primary.</td>
</tr>
<tr>
<td>3</td>
<td>CC in Deleted State</td>
<td>A credit card record is found with the Deleted state.</td>
</tr>
<tr>
<td>4</td>
<td>Not Registered</td>
<td>A credit card record is found but no registration can be found.</td>
</tr>
<tr>
<td>5</td>
<td>Unknown CC</td>
<td>No credit card record can be found.</td>
</tr>
<tr>
<td>6</td>
<td>Error</td>
<td>A general error has occurred.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Deregister CC screen.
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select from the Data Type, Location and Field profile field drop down lists to set the following data locations:  
- Subscriber Source  
- Tokenised Credit Card Number Source |
| 2    | Click **Save**. |

**Note:** The items in the profile field drop down lists are all managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.

Modify Credit Card Details

**Node description**

The Modify Credit Card Details feature node enables a credit card to be modified.

The feature node searches the SCP database (through a cache) for an existing credit card record with the specified current tokenized number.

The modification type selection drives what is changed:

- **Activate** - Changes the credit card state from frozen to active.
- **Confirm** - Changes the selected subscriber registration state from pending to secondary.
- **Expiry Date** - Changes the credit card expiry date (the expiry date and new tokenized number fields are only available with this option).
- **Freeze** - Changes the credit card state from active to frozen.

**Node icon**

![Node icon](image)

**Restrictions**

This node may be used any number of times within a control plan.
## Node exits

This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>This branch taken for any of these conditions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Confirm and the subscriber registration record is found with a registration state of Pending.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Activate and the credit card record is found with the state of Frozen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Freeze and the credit card record is found with the state of Active.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Expiry Date and both the required information and credit card record are found.</td>
</tr>
<tr>
<td>2</td>
<td>CC Already Active</td>
<td>This branch taken when the modification type is Activate and the retrieved credit card state is Active.</td>
</tr>
<tr>
<td>3</td>
<td>CC Already Frozen</td>
<td>This branch taken when the modification type is Freeze and the retrieved credit card state is Frozen.</td>
</tr>
<tr>
<td>4</td>
<td>Unknown CC</td>
<td>This branch taken when an existing credit card record with the specified current tokenized number could not be found.</td>
</tr>
<tr>
<td>5</td>
<td>Reg Not Pending</td>
<td>This branch taken when the modification type is Confirm and a subscriber registration record is found with a registration state of Primary or Secondary.</td>
</tr>
<tr>
<td>6</td>
<td>Subscriber Not Regd</td>
<td>This branch taken when the modification type is Confirm and no subscriber registration record is found.</td>
</tr>
<tr>
<td>7</td>
<td>CC in Deleted State</td>
<td>This branch taken when the found credit card record is in the Deleted state.</td>
</tr>
<tr>
<td>8</td>
<td>Error</td>
<td>This branch taken for any of these conditions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The new tokenized number is longer than 256 characters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Expiry Date and the expiry date or new tokenized number have not been provided.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Expiry Date and no records are found.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Activate and no records are found.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The modification type is Confirm and the credit card record has a state of Frozen.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Modify CC screen.

![Configuration screen image]

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the required **Modification Type** option, one of:  
|      |   - Activate  
|      |   - Confirm  
|      |   - Expiry Date  
|      |   - Freeze  

**Note:** The available profile field selections are made available according to this selection.
2. Select from the available profile field **Data Type**, **Location** and **Field** drop down lists to set the following data locations:
   - Current Tokenised Credit Card Number Source
   - New Tokenised Credit Card Number Source
   - Subscriber ID Source
   - Expiry Date Source

3. Click **Save**.

**Note:** The items in the profile field drop down lists are all managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.

### Retrieve Credit Cards for Subscriber

#### Node description

The Retrieve Credit Cards for Subscriber feature node retrieves details for all the credit cards for the current logical subscriber.

The feature node searches the SCP database (not through a cache) to return the credit card records that are registered to the specified subscriber.

The results are ordered in ascending date that the credit card was registered to the subscriber.

You can search for credit card records in the following states:

- **Active**
- **Frozen** when this option is configured (default is no selection)
- **Primary** or **Secondary** registration
- **Pending** registration when this option is configured (default is no selection)

The results (consisting of display number suffix and tokenized number) are saved in the configured ordered prefix trees.

Following this feature node, a Play Ordered Prefix Tree Entry feature node can be used to play the set of found display number suffixes to a subscriber about the credit cards they have registered.

The Play Ordered Prefix Tree Entry feature node can also be used to allow the subscriber to select one credit card to be used to make a payment.

When a credit card has been selected, the matching tokenized number can be saved to a single profile buffer using the Prefix Tree Entry Extraction feature node.

#### Node icon

![Node Icon]

#### Restrictions

This node may be used any number of times within a control plan.
Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>One Registration</td>
<td>A single registration has been found (including if selected, those in Pending or Frozen state).</td>
</tr>
<tr>
<td>2</td>
<td>Many Registrations</td>
<td>Multiple credit card records found (including if selected, those in Pending or Frozen state).</td>
</tr>
<tr>
<td>2</td>
<td>No Registrations</td>
<td>No registration records found (including if selected, those in Pending or Frozen state).</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td></td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Retrieve CCs For Sub screen.
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the required **include** options.  
  - To include credit cards that are still pending registration, select the **Pending Registration** check box.  
  - To exclude credit cards that are still pending registration, ensure the **Pending Registration** check box is not selected.  
  - To include credit cards that are frozen, select the **Frozen Credit Card** check box.  
  - To exclude credit cards that are frozen, ensure the **Frozen Credit Card** check box is not selected. |
| 2    | Select from the profile field **Data Type**, **Location** and **Field** drop down lists to set the following data locations:  
  - Subscriber ID Source  
  - Credit Card Number Suffix - Prefix Tree Target  
  - Tokenised Credit Card Number - Prefix Tree Target |
| 3    | Click **Save**. |

**Note:** The items in the profile field drop down lists are all managed using the [SMS > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs](#).

Subscribers Per Credit Card Branching

**Node description**

The Subscribers Per Credit Card Branching feature node enables control plan flow logic depending on the number of subscribers associated with a specified credit card.

The feature node searches the SCP database (through a cache) to look for subscriber registrations for the specified credit card record using the tokenized number as a search key.

The search results include all records in the pending, frozen or active states.

The subscribers per credit card limit is read from either the customer profile or the CCS global profile (in that order).

**Node icon**

![Node Icon](image)

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Name</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Registrations</td>
<td>No subscribers registered to the credit card.</td>
</tr>
</tbody>
</table>
## Exit Name Cause

<table>
<thead>
<tr>
<th>Exit</th>
<th>Name</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Limit Not Reached</td>
<td>The configured limit of subscribers registered (including pending registration) to this credit card not yet reached.</td>
</tr>
<tr>
<td>3</td>
<td>Limit Reached</td>
<td>The number of subscribers registered (including pending registration) to this credit card is equal to or more than the configured limit.</td>
</tr>
<tr>
<td>4</td>
<td>Unknown CC</td>
<td>No records found for the credit card.</td>
</tr>
<tr>
<td>5</td>
<td>CC in Deleted State</td>
<td>The credit card is in the Delete state.</td>
</tr>
<tr>
<td>6</td>
<td>Error</td>
<td>No limit value found for the subscribers per credit card limit.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure Subscribers per CC Limit Branch screen.

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select from the profile field <strong>Data Type</strong>, <strong>Location</strong> and <strong>Field</strong> drop down lists to set the Tokenised Credit Card Number Source data location.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The items in the profile field drop down lists are all managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.
Chapter 5

CCS Subscriber Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS Subscriber feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change PIN (on page 113)</td>
<td>Prompts the user to enter digits to change their PIN.</td>
</tr>
<tr>
<td>Credit Card Details Change</td>
<td>The Credit Card Details Change node allows the user to enter a new</td>
</tr>
<tr>
<td>Credit Card Recharge Menu</td>
<td></td>
</tr>
<tr>
<td>Credit Card Secret Code Change</td>
<td></td>
</tr>
<tr>
<td>Credit Card Starter Menu</td>
<td></td>
</tr>
<tr>
<td>Do Credit Card Recharge</td>
<td></td>
</tr>
<tr>
<td>Friends and Destination Configuration</td>
<td></td>
</tr>
<tr>
<td>Friends and Family Configuration</td>
<td></td>
</tr>
<tr>
<td>Friends and Destination Discount</td>
<td></td>
</tr>
<tr>
<td>Friends and Destination Menu</td>
<td></td>
</tr>
<tr>
<td>Get Destination Prefix</td>
<td></td>
</tr>
<tr>
<td>Help Information</td>
<td></td>
</tr>
<tr>
<td>Main Menu</td>
<td></td>
</tr>
<tr>
<td>Personal Options Menu</td>
<td></td>
</tr>
<tr>
<td>Play Destination</td>
<td></td>
</tr>
<tr>
<td>Product Type Branching</td>
<td></td>
</tr>
<tr>
<td>Product Type Swap</td>
<td></td>
</tr>
<tr>
<td>Read Secret Code</td>
<td></td>
</tr>
<tr>
<td>Refresh Subscriber Information</td>
<td></td>
</tr>
<tr>
<td>Remote Access Service</td>
<td></td>
</tr>
<tr>
<td>Select Language</td>
<td></td>
</tr>
<tr>
<td>Set Product Type</td>
<td></td>
</tr>
<tr>
<td>Subscriber Creation/ Deletion</td>
<td></td>
</tr>
<tr>
<td>What's New</td>
<td></td>
</tr>
</tbody>
</table>

Available Feature Nodes

CCS Subscriber Feature Nodes List

This table lists the available CCS Subscriber feature nodes.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change PIN (on page 113)</td>
<td>Prompts the user to enter digits to change their PIN.</td>
</tr>
<tr>
<td>Credit Card Details Change</td>
<td>The Credit Card Details Change node allows the user to enter a new</td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Description</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
</tr>
<tr>
<td>(on page 115)</td>
<td>expiry date for their credit card.</td>
</tr>
<tr>
<td>Credit Card Recharge Menu (on page 119)</td>
<td>The Credit Card Recharge Menu allows the user access to the credit card recharge facility, and to change their credit card recharge details.</td>
</tr>
<tr>
<td>Credit Card Secret Code Change (on page 123)</td>
<td>The Credit Card Secret Code Change node allows the user to enter a new Credit Card PIN.</td>
</tr>
<tr>
<td>Credit Card Starter Menu (on page 125)</td>
<td>The Credit Card Starter Menu node collects a security PIN from the user for identity verification when the user attempts credit card recharges on their account.</td>
</tr>
<tr>
<td>Do Credit Card Recharge (on page 126)</td>
<td>The Do Credit Card Recharge node allows the user to recharge an account using a credit card.</td>
</tr>
<tr>
<td>Friends and Destination Configuration (on page 132)</td>
<td>The Friends and Destination Configuration node enables the caller to maintain their friends and destination discount prefix.</td>
</tr>
<tr>
<td>Friends and Family Configuration (on page 135)</td>
<td>The Friends and Family Configuration node enables the caller to maintain their friends and family service number list.</td>
</tr>
<tr>
<td>Friends and Destination Discount (on page 138)</td>
<td>The Friends and Destination Discount node enables the Friends and Family / Friends and Destination service to apply the discount for that service as configured for the product type in use.</td>
</tr>
<tr>
<td>Friends and Destination Menu (on page 140)</td>
<td>The Friends and Destination Menu node informs the caller which service - if any - is currently active.</td>
</tr>
<tr>
<td>Get Destination Prefix (on page 142)</td>
<td>The Get Destination Prefix node retrieves the longest matching favourite destination prefix for a provided number.</td>
</tr>
<tr>
<td>Help Information (on page 145)</td>
<td>The Help Information node provides an information service over the phone.</td>
</tr>
<tr>
<td>Main Menu (on page 147)</td>
<td>The Main Menu node offers the caller a range of call options and routes the call according to the selection made.</td>
</tr>
<tr>
<td>Personal Options Menu (on page 149)</td>
<td>The Personal Options Menu node offers the caller a range of options about their profile and routes the call according to the selection made.</td>
</tr>
<tr>
<td>Play Destination (on page 152)</td>
<td>The Play Destination node plays to the caller the destination announcement associated with the provided destination prefix.</td>
</tr>
<tr>
<td>Product Type Branching (on page 153)</td>
<td>The Product Type Branching node branches depending on the comparison of the destination (called) subscriber's product type, and one of:</td>
</tr>
<tr>
<td></td>
<td>• A specified product type</td>
</tr>
<tr>
<td></td>
<td>• The product type of the subscriber loaded by the CCS service library (usually the calling party)</td>
</tr>
<tr>
<td>Product Type Swap (on page 157)</td>
<td>The Product Type Swap node enables a subscriber to change their own product type.</td>
</tr>
<tr>
<td>Read Secret Code (on page 159)</td>
<td>The Read Secret Code node prompts the caller to enter their PIN.</td>
</tr>
<tr>
<td>Refresh Subscriber Information (on page 161)</td>
<td>The Refresh Subscriber Information node allows the stored subscriber information to be retrieved during a call to avoid out of date information being used.</td>
</tr>
<tr>
<td>Remote Access Service (on page 162)</td>
<td>The Remote Access Service node enables a user to turn their Remote Access feature on or off.</td>
</tr>
<tr>
<td>Select Language (on page 164)</td>
<td>The Select Language node allows the user to change the language in which their announcements are played.</td>
</tr>
</tbody>
</table>
### Node Name | Node Description
--- | ---
Set Product Type (on page 166) | The Set Product Type node enables a subscriber to set the product type.
What's New (on page 170) | The What's New node plays the “What's New” announcement to the caller. The caller can divert to a specified service number in order to obtain further information about the content of the announcement.

## Change PIN

**Node description**

Prompts the user to enter digits to change their PIN.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Change PIN nodes as required.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The subscriber’s PIN was successfully changed.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Any condition, error, failure that occurred, not covered by the other three exits.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The subscriber hung up before the PIN was changed.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The subscriber pressed the Escape key.</td>
</tr>
</tbody>
</table>
### Configuration screen

Here is an example Configure Change PIN screen.

![Configure Change PIN Screen](image)

### Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>First PIN Prompt</td>
<td>This is the announcement to play that requests the subscribers to enter their new PIN.</td>
</tr>
<tr>
<td>Timeout</td>
<td>This is the announcement to play when the subscriber has not responded in the configured amount of time.</td>
</tr>
<tr>
<td>Note: The timeout time is different between the first digit and the rest of the digits, defined by the <code>acs.conf</code> parameters <code>FirstDigitTimeout</code> and <code>InterDigitTimeout</code>. See <code>ACS Technical Guide</code>.</td>
<td></td>
</tr>
<tr>
<td>PIN Too Long</td>
<td>This is the announcement to play when the entered PIN contained too many digits.</td>
</tr>
<tr>
<td>Note: This is un-configurable and set at ten digits.</td>
<td></td>
</tr>
<tr>
<td>PIN Too Short</td>
<td>This is the announcement to play when the entered PIN contained too few digits.</td>
</tr>
<tr>
<td>Note: This is un-configurable and set at four digits.</td>
<td></td>
</tr>
<tr>
<td>Max Retries Exceeded</td>
<td>This is the announcement to play when the subscriber has had more than the configured number of attempts to change their PIN.</td>
</tr>
</tbody>
</table>
Chapter 5

### CCS Subscriber Feature Nodes

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note:</td>
<td>The number of retries is defined by the <code>eserv.config</code> parameter <code>MaximumMenuRetries</code>. See <code>CCS Technical Guide</code>.</td>
</tr>
<tr>
<td>Second PIN Prompt</td>
<td>This is the announcement to play that requests the subscribers to enter their new PIN again for confirmation.</td>
</tr>
<tr>
<td>PIN Mismatch</td>
<td>This is the announcement to play when the second PIN entry is not the same as the first PIN entry.</td>
</tr>
</tbody>
</table>

---

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the <strong>First PIN Prompt</strong> drop down lists, select the announcement requesting the new PIN.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Timeout</strong> drop down lists, select the announcement to use when the subscriber has failed to respond.</td>
</tr>
<tr>
<td>3</td>
<td>From the <strong>PIN Too Long</strong> drop down lists, select the announcement to use when the entered PIN has too many digits.</td>
</tr>
<tr>
<td>4</td>
<td>From the <strong>PIN Too Short</strong> drop down lists, select the announcement to use when the entered PIN has too few digits.</td>
</tr>
<tr>
<td>5</td>
<td>From the <strong>Max Retries Exceeded</strong> drop down lists, select the announcement to use when the subscriber has run out of attempts to change their PIN.</td>
</tr>
<tr>
<td>6</td>
<td>From the <strong>Second PIN Prompt</strong> drop down lists, select the announcement requesting the new PIN again for confirmation.</td>
</tr>
<tr>
<td>7</td>
<td>From the <strong>PIN Mismatch</strong> drop down lists, select the announcement to use when the entered PIN values are not the same.</td>
</tr>
<tr>
<td>8</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

---

**Credit Card Details Change**

**Node description**

*Warning:* This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Details Change feature node allows the user to enter a new expiry date for their Credit Card.

1. The user is prompted to enter the Credit Card Number.
2. If the number is valid, the user is prompted for a new Expiry date.
3. If the date is valid, the user is prompted to confirm the expiry date and the account record is updated.

If the customer exceeds the number of allowed invalid entries (as defined in the `asc.conf` Refer to `ACS Technical Guide` for further information) the account will be frozen.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Node Icon](image)

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure, the Domain being used does not support this feature node, or no selection has been made.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The credit card details have been changed successfully.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>5</td>
<td>Frozen</td>
<td>The account has been frozen.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Credit Card Details Change node screen.

![Configuration screen](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For <strong>each relevant</strong> announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific <strong>Announcement Set</strong> to which the <strong>Announcement Entry</strong> belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** This will be grayed out until all the announcement sets have been selected.
Node logic

This diagram shows the internal logic processing of the node.

- Get account ID and ACS customer ID
- Play "Please enter card number" announcement
- Collect card number
- Card Number 15 to 20 digits?
  - Yes
    - Play "Too many errors" announcement
    - Play "Enter expiry date" announcement
    - Play "Confirm expiry date of MMYY" announcement
    - Collect single digit
    - Collected input?
      - Yes
        - Collected date is exactly 4 digits?
          - Yes
            - Collect expiry date
            - Play "Enter expiry date" announcement
            - Play "Confirm expiry date of MMYY" announcement
          - No
            - Collected date is sensible month/year
              - Yes
                - Play "Enter expiry date" announcement
                - Play "Confirm expiry date of MMYY" announcement
              - No
                - Play "Incorrect card number. Please re-enter" announcement
      - No
        - Play "Please re-enter expiry date" announcement
        - Play "Incorrect card number. Please re-enter" announcement
        - Play "Enter expiry date" announcement
        - Play "Confirm expiry date of MMYY" announcement
    - Exit on branch 1 Unsupported
  - No
    - Play "Incorrect card number. Please re-enter" announcement
    - Play "Enter expiry date" announcement
    - Play "Confirm expiry date of MMYY" announcement
    - Collect single digit
    - Collected input?
      - Yes
        - Collected date is exactly 4 digits?
          - Yes
            - Collect expiry date
            - Play "Enter expiry date" announcement
            - Play "Confirm expiry date of MMYY" announcement
          - No
            - Collected date is sensible month/year
              - Yes
                - Play "Enter expiry date" announcement
                - Play "Confirm expiry date of MMYY" announcement
              - No
                - Play "Incorrect card number. Please re-enter" announcement
      - No
        - Play "Please re-enter expiry date" announcement
        - Play "Incorrect card number. Please re-enter" announcement
        - Play "Enter expiry date" announcement
        - Play "Confirm expiry date of MMYY" announcement
    - Exit on branch 1 Unsupported
- Lock account
  - Play "Your account is locked" announcement
  - Yes
    - Exit on branch 5 Frozen
  - No
    - 10 Consecutive errors?
      - Yes
        - Exit on branch 5 Frozen
      - No
        - Play "Incorrect card number. Please re-enter" announcement
        - Play "Enter expiry date" announcement
        - Play "Confirm expiry date of MMYY" announcement
        - Collect single digit
        - Collected input?
          - Yes
            - Collected date is exactly 4 digits?
              - Yes
                - Collect expiry date
                - Play "Enter expiry date" announcement
                - Play "Confirm expiry date of MMYY" announcement
              - No
                - Collected date is sensible month/year
                  - Yes
                    - Play "Enter expiry date" announcement
                    - Play "Confirm expiry date of MMYY" announcement
                  - No
                    - Play "Incorrect card number. Please re-enter" announcement
          - No
            - Play "Please re-enter card number" announcement
            - Play "Incorrect card number. Please re-enter" announcement
            - Play "Enter expiry date" announcement
            - Play "Confirm expiry date of MMYY" announcement
    - Exit on branch 1 Unsupported
- Exit in branch 2 Success
- Update CC details for account
  - 1
    - * (asterix)
  - 2
    - Exit on branch 4 Escape
Credit Card Recharge Menu

Node description

**Warning:** This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Recharge Menu feature node allows the user access to the Credit Card Recharge facility, and to change their Credit Card Recharge details. The feature node allows the user:

- Access to the Credit Card Recharge facility
- To change their Credit Card Recharge details

For security, all Credit Card details are stored in the system and a PIN is used to access the recharge node.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has not made a menu selection.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>4</td>
<td>Recharge</td>
<td>The caller has selected the Recharge option.</td>
</tr>
<tr>
<td>5</td>
<td>Change Code</td>
<td>The caller has selected the Change PIN option.</td>
</tr>
<tr>
<td>6</td>
<td>Change Details</td>
<td>The caller has selected the Change Credit Card Details option.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Credit Card Recharge Menu node screen.

![Configure Credit Card Recharge Menu](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available Announcement Sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected Announcement Set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific <strong>Announcement Set</strong> to which the <strong>Announcement Entry</strong> belongs. Only...</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
2 | Click **Save**.

**Note:** This will be greyed out until all the announcements have been selected.
Node logic

This diagram shows the internal logic processing of the node.
Credit Card Secret Code Change

Node description

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Secret Code Change feature node allows the user to enter a new Credit Card PIN. User security access should be verified before this node is reached. On successfully entering the PIN, the account record is updated.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The credit card PIN details have been changed successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has not selected an entry.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Credit Card Secret Code Change node screen.

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>Enable Announcement</td>
<td>Allows the selected announcements to be played.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Enable Announcement check box as required to enable the Play Re-enter Code Announcement.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
| | **Note:** This will be greyed out until all the announcement sets have been selected.

**Credit Card Starter Menu**

**Node description**

*Warning:* This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Starter Menu feature node collects a security PIN from the user for identity verification when the user attempts credit card recharges on their account. The node first verifies the user by asking them to enter their credit card number and expiry, then checks to see if the values entered match the values stored in the system.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The credit card PIN details have been stored.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>5</td>
<td>Frozen</td>
<td>The caller's account status is Frozen, and they are therefore forbidden to use this node.</td>
</tr>
<tr>
<td>6</td>
<td>No CC Details</td>
<td>No credit card details exist for this caller, and they are therefore forbidden to use this node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Credit Card Starter node screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save. <strong>Note:</strong> This will be greyed out until all the announcement sets have been selected.</td>
</tr>
</tbody>
</table>

Do Credit Card Recharge

Node description

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.
The Do Credit Card Recharge feature node allows the user to recharge an account using a credit card. There are nine possible recharge options, which may be configured in any combination and played as a single menu. The caller may then recharge the account using the selected option.

The feature node will filter out all expenditure balance types and not include them in the played message. See *CCS User's Guide* - *Balance Types* topic.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The account has been successfully recharged.</td>
</tr>
<tr>
<td>2</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has not chosen an option from the menu.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Do Credit Card Recharge node screen.

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>Enable Announcement</td>
<td>Allows the selected announcements to be played.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Enable Announcement check boxes as required to enable the Play Title Announcement and Play Confirm Change Announcement.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
</tbody>
</table>

Note: This will be grayed out until all the announcement sets have been selected.

Note: The caller has three chances to press an invalid key, or to let the menu timeout, before the Abandon exit branch is taken. If the caller presses the * key, the call is routed down the Escape branch.

Further reference:

The credit card recharge rules applying to this node, are defined in the Prepaid Charging, Subscriber Management, Product Type window. For more information, see CCS User’s Guide.
**Node logic**

This diagram shows the internal logic processing of the node.

![Flowchart Diagram](image-url)
Friends and Destination Configuration

Friends, Family and Destination Discount module

The Friends, Family and Destination Discount module seeks to apply a configured discount to calls made to numbers defined in a list, of up to 10 entries, for a particular account when made from an MSISDN associated with that account.

The discount percentage is the cumulative amount which is to be discounted in total for Friends and Family numbers.
The only time in which an individual call is discounted by the amount configured for the Friends and Family product associated with an account is when that account has only one Friends and Family number configured.

Friends and Destination discounting occurs either for a single number prefix or for a group of prefixes, depending on how the Friends/Destination Discount feature node is configured:

- If Multi-Destinations is selected, then the percentage discount is applied to calls where the call prefix belongs to the same group as the discount prefix defined in this node (prefixes belong to the same group if they share the same announcement).
- If Multi-Destinations is not selected, then the discount applies only to calls with the specified discount prefix.

**Note:** Only dialed numbers which exactly match the configured Friends and Family numbers will be discounted.

### Node description

The Friends and Destination Configuration node enables the caller to maintain their friends and destination discount prefix. The node prompts the caller to select one of the following options:

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Add/Change Prefix</td>
<td>If no prefix has been previously defined for this subscriber, or enter a new prefix for discount calls.</td>
</tr>
<tr>
<td>2</td>
<td>Delete Prefix</td>
<td>Remove any existing prefix.</td>
</tr>
<tr>
<td>9</td>
<td>Activate Service</td>
<td>Enables the Friends and Destination discount service.</td>
</tr>
</tbody>
</table>

**Note:** The subscriber can have either the Friends and Family or the Friends and Destination service active. Activating the Friends and Destination service will mean that the Friends and Family service will no longer be in use.

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

This node may be used any number of times within a control plan.

### Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main Menu</td>
<td>The caller has selected the Main Menu option.</td>
</tr>
<tr>
<td>2</td>
<td>User Hang-up</td>
<td>The caller has abandoned the call.</td>
</tr>
</tbody>
</table>
### Exit Cause Description

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Disconnect</td>
<td>The caller has entered too many invalid entries or has not made a selection from the menu.</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has selected the Escape option.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure Friends and Destination Configuration node screen.

![Configuration screen image]

### Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>MaxInvalidDigits</td>
<td>The maximum number of invalid entries allowed.</td>
</tr>
<tr>
<td>AnnouncementTimeout</td>
<td>The timeout used for standard prompt announcements.</td>
</tr>
<tr>
<td>ListCyclingTimeout</td>
<td>The timeouts used during list cycling.</td>
</tr>
<tr>
<td>ListStartTimeout</td>
<td>The timeouts used during list start.</td>
</tr>
<tr>
<td>SendChargeSMS</td>
<td>Send SMS text message with change detail and cost.</td>
</tr>
<tr>
<td>Event Class</td>
<td>List of event types that can be billed.</td>
</tr>
<tr>
<td>Named Event</td>
<td>List of events for the event class selected.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Enter the maximum number of retries allowed for entering digits in the MaxInvalidDigit field.</td>
</tr>
<tr>
<td>3</td>
<td>Type the timeout period in seconds for all prompt and collect messages in the AnnouncementTimeout field.</td>
</tr>
<tr>
<td>4</td>
<td>Select the SendChargeSMS check box if the amount charged is to be sent to the caller.</td>
</tr>
<tr>
<td>5</td>
<td>Select the Event Class to use from the drop down list.</td>
</tr>
<tr>
<td>6</td>
<td>Select the Named Event to use from the drop down list.</td>
</tr>
<tr>
<td>7</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: This will be grayed out until all the announcement sets have been selected.

Friends and Family Configuration

Node description

The Friends and Family Configuration node enables the caller to maintain their friends and family service number list. The node plays announcements that:

- Inform the caller of how many friends and family numbers they currently have stored in their list
- Enable them to perform predefined functions using phone key pad buttons

Caller available functions

Callers can use the following keys to perform the listed function.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Review Numbers</td>
<td>Enables caller to scroll stored numbers.</td>
</tr>
<tr>
<td>2</td>
<td>Change Numbers</td>
<td>Enables caller to select and edit a number. The new number must appear in the white list, and must not appear in the global black list.</td>
</tr>
<tr>
<td>3</td>
<td>Add Numbers</td>
<td>Available if the caller has not exceeded the maximum number of stored entries for their product type. New numbers must appear in the white list, and must not appear in the global black list.</td>
</tr>
<tr>
<td>4</td>
<td>Delete Numbers</td>
<td>Available if any stored number exists.</td>
</tr>
<tr>
<td>5</td>
<td>Activate F&amp;F Service</td>
<td>If not already activated.</td>
</tr>
</tbody>
</table>
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

None, but the Friends and Family Configuration node is expected to be used together with the others (that is, the node will be used with the Friends and Destination Configuration node and the Main Menu node).

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main Menu</td>
<td>The caller has selected the Main Menu option.</td>
</tr>
<tr>
<td>2</td>
<td>User Hang-up</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Disconnect</td>
<td>The caller has entered too many invalid entries or has not made a selection from the menu.</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has selected the Escape option.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Friends and Family Configuration node configuration screen.

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>MaxInvalidDigits</td>
<td>The maximum number of invalid entries allowed.</td>
</tr>
<tr>
<td>AnnTimeout</td>
<td>The timeout used for standard prompt announcements.</td>
</tr>
<tr>
<td>ListCyclingTimeout</td>
<td>The timeouts used during list cycling.</td>
</tr>
<tr>
<td>ListStartTimeout</td>
<td>The timeouts used during list start.</td>
</tr>
<tr>
<td>SendChargeSMS</td>
<td>Send SMS text message with change detail and cost.</td>
</tr>
<tr>
<td>Event Class</td>
<td>List of event types that can be billed.</td>
</tr>
<tr>
<td>Named Event</td>
<td>List of events for the event class selected.</td>
</tr>
</tbody>
</table>

If the caller initiates a change or addition to the stored Friends and Family numbers list this node will bill the subscriber's account for the amount set in the Named Event panel of the Tariff screen for Friends and Family configuration changes.
Note: The subscriber can have either the Friends and Family OR the Friends and Destination service active. Activating the Friends and Family service will mean that the Friends and Destination service will no longer be in use.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Type the maximum number of times a caller can enter a disallowed number in the MaxInvalidDigits field.</td>
</tr>
<tr>
<td>3</td>
<td>Type the length of time in seconds after the main announcement is played before the call is disconnected in the AnnTimeout field.</td>
</tr>
<tr>
<td>4</td>
<td>Type the length of time in seconds a list announcement is played before the call is disconnected in the ListCyclingTimeout field.</td>
</tr>
<tr>
<td>5</td>
<td>Type the length of time a list announcement is played before the call is disconnected in the ListStartTimeout field.</td>
</tr>
<tr>
<td>6</td>
<td>Select the SendChargeSMS check box if the amount charged is to be sent to the caller.</td>
</tr>
<tr>
<td>7</td>
<td>Select the Event Class to use from the drop down list.</td>
</tr>
<tr>
<td>8</td>
<td>Select the Named Event to use from the drop down list.</td>
</tr>
<tr>
<td>9</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: This will be grayed out until all the announcement sets have been selected.

Friends and Destination Discount

Node description

The Friends and Destination Discount node enables the Friends and Family / Friends and Destination service to apply the discount for that service as configured for the product type in use. The node is placed before any UATB node to set the required discount percentage for the call.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

None, but the Friends/Destination Discount node is expected to be used together with the others (that is, the node will be used with the Friends and Family node and the Main Menu node).
Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User's Guide for further details on charging domains.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The caller has successfully exited the node and the correct discount override will be used.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>3</td>
<td>No Discount</td>
<td>The caller has not qualified for a Friends and Family / Friends and Destination discount. No discount will be applied to the call.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Friend/Destination Discount node screen.

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-Destinations</td>
<td>Determines whether the discount is applied to a single number prefix or to a group of prefixes. When selected, the discount is applied to all calls where the call prefix belongs to the same group as the discount prefix defined for the caller.</td>
</tr>
</tbody>
</table>

Note: Prefixes are grouped by announcement (prefixes that share the same announcement belong to the same group). You can use this facility to map prefixes by region.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If required, tick the Multi_Destinations check box.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
Friends and Destination Menu

Node description

The Friends and Destination Menu node informs the caller which service - if any - is currently active. The caller is then prompted to select which service they would like to maintain.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Friends and Family</td>
<td>The caller has selected the Friends and Family option from the menu.</td>
</tr>
<tr>
<td>2</td>
<td>Friends and Destination</td>
<td>The caller has selected the Friends and Destination option from the menu.</td>
</tr>
<tr>
<td>3</td>
<td>User Hang up</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>4</td>
<td>Disconnect</td>
<td>The caller has entered too many invalid entries or has not made a selection from the menu.</td>
</tr>
<tr>
<td>5</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>6</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Friend/Destination Menu node screen.

![Configuration screen](image)

**Configuration fields**

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>MaxInvalidDigits</td>
<td>The maximum number of invalid entries allowed.</td>
</tr>
<tr>
<td>AnnTimeout</td>
<td>The timeout used for standard prompt announcements.</td>
</tr>
</tbody>
</table>

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Type the maximum number of times a caller can enter a disallowed number in the</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>3</td>
<td>Type the length of time in seconds after the main announcement is played before the call is disconnected in the <strong>AnnTimeout</strong> field.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** This will be greyed out until all the announcement sets have been selected.

### Get Destination Prefix

#### Node description

The Get Destination Prefix node retrieves the longest matching favourite destination prefix for a provided number.

The feature node:

- Uses the source digits to look up the friends and destination prefix map
- The longest matching friends and destination prefix is found
- The result is stored in the destination prefix profile field.

The source number will be provided in one of the following profile field types:

- Limited Number String
- Number String

The feature node will place the prefix in a profile field of type:

- Number String

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

The Get Destination Prefix node may be used any number of times within a control plan.

#### Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The destination prefix was found, and the announcement was played.</td>
</tr>
<tr>
<td>2</td>
<td>Not Found</td>
<td>No mappings were found for the provided number.</td>
</tr>
</tbody>
</table>
Exit | Cause | Description
---|---|---
3 | Error | One of:
  - Source number profile field missing
  - General error

### Configuration screen

Here is an example Configure Get Destination Prefix node screen.

![Configuration screen for Get Destination Prefix node](image)

### Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Digits section</td>
<td>The profile Data Type, Location and Field for the source digits information.</td>
</tr>
<tr>
<td>Destination Prefix section</td>
<td>The profile Data Type, Location and Field for the destination prefix information.</td>
</tr>
</tbody>
</table>

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Source Digits Data Type, Location and Field from the drop down lists.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Destination Prefix Data Type, Location and Field from the drop down lists.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User’s Guide, Profile Tag Details for more information).
Help Information

Node description

The Help Information node provides an information service over the phone. The caller navigates through a menu of help topics and listens to the recorded messages on the topics of their choice.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has not made a menu selection.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Success</td>
<td>The caller has exited the node successfully.</td>
</tr>
</tbody>
</table>
## Configuration screen

Here is an example Configure Help Info node screen.

### Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>. <strong>Note:</strong> This will be greyed out until all the announcement sets have been selected.</td>
</tr>
</tbody>
</table>
Main Menu

Node description
The Main Menu node offers the caller a range of call options and routes the call according to the selection made.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
This node may be used any number of times within a control plan.

Node exits
This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Any of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Error / failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Domain being used does not support this feature node</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Number of menu retries has exceeded the limit.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>What's New</td>
<td>The caller has selected the What's New option by entering key 1.</td>
</tr>
<tr>
<td>4</td>
<td>Account</td>
<td>The caller has selected the Account Status option by entering key 2.</td>
</tr>
<tr>
<td>5</td>
<td>Personal</td>
<td>The caller has selected the Personal Options option by entering key 3.</td>
</tr>
<tr>
<td>6</td>
<td>Recharge</td>
<td>The caller has selected the Recharge option by entering key 4.</td>
</tr>
<tr>
<td>7</td>
<td>Information</td>
<td>The caller has selected the Information option by entering key 5.</td>
</tr>
<tr>
<td>8</td>
<td>Out-call</td>
<td>The caller has selected the Make Call option by entering key 6.</td>
</tr>
</tbody>
</table>
Chapter 5

Configuration screen

Here is an example Configure Main Menu node screen.

![Configure Main Menu screen](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific <strong>Announcement Set</strong> to which the <strong>Announcement Entry</strong> belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>. <strong>Note:</strong> This will be greyed out until all the announcement sets have been selected.</td>
</tr>
</tbody>
</table>
**Node logic**

This diagram shows the internal logic processing of the node.

---

**Personal Options Menu**

**Node description**

The Personal Options Menu node offers the caller a range of options about their profile and routes the call according to the selection made.
Chapter 5

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or number of menu retries has exceeded the limit.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>3</td>
<td>Escape</td>
<td>The caller has selected the Escape option by entering *.</td>
</tr>
<tr>
<td>4</td>
<td>Change Language</td>
<td>The caller has selected the Change Language option by entering 1.</td>
</tr>
<tr>
<td>5</td>
<td>Maintain Fixed</td>
<td>The caller has selected the Maintain Fixed option by entering 2.</td>
</tr>
<tr>
<td>6</td>
<td>Swap Products</td>
<td>The caller has selected the Product Swap option by entering 3.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Personal Options Menu node screen.

![Configure Personal Options Menu](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** This will be grayed out until all the announcement sets have been selected.
Play Destination

Node description

The Play Destination node plays to the caller the destination announcement associated with the provided destination prefix.

The feature node:

- Uses the destination prefix to look up the destination announcement configured in friends and destination
- If the announcement is found it is then played

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

The Play Destination node may be used any number of times within a control plan.
To function correctly, this node should be placed after the Get Destination Prefix (on page 142) node.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The destination prefix was found, and the announcement was played.</td>
</tr>
<tr>
<td>2</td>
<td>Not Found</td>
<td>The destination prefix has no matching entry in the friends and destination prefix map list.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>General errors.</td>
</tr>
<tr>
<td>4</td>
<td>Abandon</td>
<td>The user hung up during the announcement.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Play Destination node screen.

![Configuration screen example](image)

Configuration fields

This table describes the function of the field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination Prefix section</td>
<td>The profile Data Type, Location and Field for the destination prefix information.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Destination Prefix Data Type, Location and Field from the drop down lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User’s Guide, Profile Tag Details for more information).

Product Type Branching

Node description

The Product Type Branching node branches depending on the comparison of the destination (called) subscriber’s product type, and one of:
A specified product type

The product type of the subscriber loaded by the CCS service library (usually the calling party)

The basic configuration has three default branches. The node can be configured to have up to an additional twenty branches to define product type branching rules.

This functionality allows for:

- Improved/promotional rating between certain product type groups to occur (such as community calling discounts)
- Additional functionality within the control plan

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

The Product Type Branching node has one entry point and 3 to 23 exit points. You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not found</td>
<td>The destination subscriber's product type was not found.</td>
</tr>
</tbody>
</table>
| 2    | Same              | The **Use Same** check box is selected and the calling subscriber and destination subscriber's product types match. The matched branch rules are ignored.  
**Note:** The standard configuration for this node sets this exit as the default exit. The default branch is taken when the destination subscriber's product type does not match any branch rules. This includes situations where no matched branch rules have been configured. |
| 3    | Unsupported or Error | Wrong configuration information or general system errors such as timeout.                                                                           |
| 4 to 23 | Matched | The destination subscriber's product type matched one of the branches.                                                                                     |
Configuration screen

Here is an example Configure Product Type Branching screen.

![Configure Product Type Branching screen](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Product Types</td>
<td>This is the list of all the product types defined in the Service Management System &gt; PrePaid Charging &gt; Subscriber Management &gt; Product Type screens for the current service provider.</td>
</tr>
<tr>
<td>Branch Product Types</td>
<td>The branch number being configured and the product types associated with the branch.</td>
</tr>
<tr>
<td>Use Same</td>
<td>If selected, branch two will be taken if the calling subscriber and destination subscriber have the same product types regardless of any matching branch configuration.</td>
</tr>
<tr>
<td>Destination CLI</td>
<td>Use this buffer as the source for the CLI of the destination subscriber. The product type for this subscriber will be the one matched against. Note: If found, these details are written to Application Specific Profile 4 (App 4).</td>
</tr>
<tr>
<td>Destination Wallet Type Category Selection</td>
<td>Which wallet type to use to determine the destination subscriber's product type to be used. Primary wallet is the default and most common wallet.</td>
</tr>
<tr>
<td>Default Branch</td>
<td>Provides the branch to take if the destination subscriber's product type was not found in any of the branch product type rules.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Determine and establish the number of Product Type exits to configure (maximum of seven). See Editing node exits.</td>
</tr>
</tbody>
</table>
| 2    | In the Branch Product Types area, use the Number scroll bar to select the match branch to configure.  
      **Result:** The selected branch with any current rules appears in the panel below. |
| 3    | To remove a Product Type from the selected branch, click the Product Type and then click **<< Replace in set.**  
      **Result:** The Product Type is removed from the branch and becomes available for adding to another branch. |
| 4    | In the All Product Types area, select a Product Type to associate with the selected branch.  
      **Result:** If the Product Type has not been assigned to a branch, the Move to branch >> button becomes available. |
| 5    | Click Move to branch >>  
      **Result:** The Product Type is added to the selected branch. |
| 6    | Repeat steps 3 and 4 for all the Product Types to associate with the selected branch. |
| 7    | Repeat steps 2 to 6 for all match branches.  
      **Note:** The node can work without matching branches. The default exit will be used for all destination subscribers which have a Product Type. |
| 8    | Select which wallet type to use to determine the destination subscriber's Product Type. |
| 9    | Use the Default Branch scroll bar to select what branch to take if the destination subscriber's Product Type is not in the match branches. |
| 10   | Click Save. |
Node logic

This diagram shows the internal logic processing of the node.

Product Type Swap

Node description

The Product Type Swap node enables a subscriber to change their own product type. The Service Provider can bill or not bill for this service.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions
This node may be used any number of times within a control plan.

Node exits
This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, the domain being used does not support this feature node, or the product type change was unsuccessful.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The product type change was successful.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>4</td>
<td>Insufficient Credit</td>
<td>The caller has insufficient credit to complete the product type change.</td>
</tr>
<tr>
<td>5</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Product Type Change node screen.
Chapter 5

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>Event Class</td>
<td>List of event types that can be billed.</td>
</tr>
<tr>
<td>Named Event</td>
<td>List of events for the event class selected.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Event Class from the drop down list.</td>
</tr>
<tr>
<td>3</td>
<td>Select the Named Event from the drop down list.</td>
</tr>
<tr>
<td>4</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: This will be grayed out until all the announcements have been selected.

Read Secret Code

Node description

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Read Secret Code feature node prompts the caller to enter their PIN. If the user exceeds the number of attempts allowed, the entry process will be abandoned.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>A valid code has been entered successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Invalid Code</td>
<td>The maximum number of incorrect code attempts has been entered.</td>
</tr>
<tr>
<td>3</td>
<td>Frozen</td>
<td>The caller's account is Frozen and therefore cannot use this node.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>5</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>6</td>
<td>Failure</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or no selection has been made.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Read Secret Code node screen.
Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: This will be greyed out until all the announcement sets have been selected.

Refresh Subscriber Information

Node description

Some parts of the call context can become out of date while a call is being processed. The Refresh Subscriber Information node allows the stored subscriber information to be retrieved during a call to avoid out of date information being used. This node sends out one RetrieveSubscriberInformation MOX message request for new subscriber information to the billing system.

Note: This node should not be used in Billing Failure Treatment (BFT) control plans.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.
Note: These exit descriptions are specific to the responses received from an Oracle VWS. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Subscriber information is successfully retrieved.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Subscriber Information screen.

**Configuring the node**

This node requires no configuration data. You may change the **Node name**, if required.

**Remote Access Service**

**Node description**

The Remote Access Service node enables a user to turn their Remote Access feature on or off. The announcement played to the caller depends on the state of the user’s Remote Access Service feature.

**Example:** If Remote Access has been disabled (turned off) the announcement played will give the option of enabling (turning on).

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.
Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The caller has successfully exited the node.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Remote Access Service node screen.

![Configure Remote Access Service node screen](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save. <strong>Note:</strong> This will be greyed out until all the announcement sets have been selected.</td>
</tr>
</tbody>
</table>

Select Language

Node description

The Select Language node allows the user to change the language in which their announcements are played. This change is made to the user’s profile, and is therefore an immediate, global change.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>A language has been chosen and set.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.</td>
</tr>
<tr>
<td>4</td>
<td>Escape</td>
<td>The caller has selected the Escape option by entering *.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Select Language node screen.

![Configuration Select Language](image)

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available Announcement Sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected Announcement Set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For <strong>each relevant</strong> announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific <strong>Announcement Set</strong> to which the <strong>Announcement Entry</strong> belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** This will be greyed out until all the announcement sets have been selected.
Set Product Type

Node description

The Set Product Type node enables a subscriber to set the product type. The Service Provider can bill or not bill for this service.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The product type was successfully set.</td>
</tr>
<tr>
<td>2</td>
<td>Type Not Found</td>
<td>The selected product type was not found.</td>
</tr>
<tr>
<td>3</td>
<td>Failure</td>
<td>Either, error / failure, the domain being used does not support this feature node, or the product type selection was unsuccessful.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Product Type node screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Product Type</strong> from the drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

Subscriber Creation/ Deletion

Node description

This node can be used to dynamically create and delete subscribers (and wallets) from the SLC. It consists of the configuration parameters needed for subscriber creation and deletion, which it passes to the chassis action, which in turn invokes the appropriate PI command (ADD or DEL).

To create a subscriber, the following information is used:

- ACS customer
- ACS language
- Product type
Subscribers CLI digits, saved to buffer

To delete a subscriber, the subscriber CLI digits are passed to the chassis action.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

Only one Subscriber Creation/Deletion node per control plan is required.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The subscriber is successfully created or deleted depending on the selected action.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>Either, error/failure, the Domain being used does not support this feature node, or no selection has been made. The subscriber creation or deletion operation failed.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>An error occurred when attempting to read the feature node configuration.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Subscriber Creation Deletion screen.

<table>
<thead>
<tr>
<th>Configuration screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node name: SubCreateDelete</td>
</tr>
</tbody>
</table>

**SubDigitBuffer**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>Subscriber Creation/Deletion</strong> frame, select the operation to be performed. One of:</td>
</tr>
<tr>
<td></td>
<td>- <strong>SubscriberCreation</strong> - creates subscribers and wallets from the SLC.</td>
</tr>
<tr>
<td></td>
<td>- <strong>SubscriberDeletion</strong> - deletes subscribers and wallets from the SLC.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>ACS Customer</strong> drop down list, select the ACS customer to whom the control plan belongs. The subscriber will be associated with this ACS customer or telco.</td>
</tr>
<tr>
<td>3</td>
<td>From the <strong>ACS Language</strong> drop down list, select the applicable language for the new subscriber.</td>
</tr>
<tr>
<td>4</td>
<td>From the <strong>Product Type</strong> drop down list, select the name of the product type applicable to the subscriber.</td>
</tr>
<tr>
<td>5</td>
<td>From the <strong>SubDigitBuffer</strong> drop down list, select the buffer type where the collected subscriber’s digits should be stored in, before being passed to the chassis action. For subscriber creation, this field will be used to store the subscriber CLI, the account number and the account PIN. For subscriber deletion, this field will be used to store the subscriber CLI.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to edit the node configuration.
Chapter 5

Step | Action
--- | ---
6 | Click **Save**.

### What's New

#### Node description

The What's New node plays the “What's New” announcement to the caller. The caller can divert to a specified service number in order to obtain further information about the content of the announcement.

**Note:** This node stores only the Connect To number in the Pending TN buffer and does not connect the call. Therefore a further node is required to make the connection to the specified service number.

The control plan processing can continue if telephony is allowed through the chosen exit point: Failure, Success and Outcall. No further telephony is allowed if the caller abandons the call.

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

This node may be used any number of times within a control plan.

#### Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Success</td>
<td>The announcement played successfully, but the caller chose not to divert/connect to the service number by entering 2 or *.</td>
</tr>
<tr>
<td>4</td>
<td>Outcall</td>
<td>The caller chose to divert/connect to the service number by entering 1.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Whats New node screen.

![Configure Whats New node screen]

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available Announcement Sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected Announcement Set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** This will be grayed out until all the announcement sets have been selected.
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS Voucher feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

<table>
<thead>
<tr>
<th>Feature Node</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play Voucher Redeemed Info</td>
<td>174</td>
</tr>
<tr>
<td>Recharge Menu</td>
<td>175</td>
</tr>
<tr>
<td>Scratch Card Recharge</td>
<td>178</td>
</tr>
<tr>
<td>Scratch Card Recharge Alternate Subscriber</td>
<td>182</td>
</tr>
<tr>
<td>Select Voucher Scenario</td>
<td>190</td>
</tr>
<tr>
<td>Voucher Recharge</td>
<td>196</td>
</tr>
<tr>
<td>Voucher Redeemed</td>
<td>204</td>
</tr>
<tr>
<td>Voucher Type Balance Information</td>
<td>206</td>
</tr>
<tr>
<td>Voucher Type Recharge</td>
<td>208</td>
</tr>
</tbody>
</table>

Available Feature Nodes

CCS Voucher Feature Nodes List

This table lists the feature nodes available from the CCS Voucher palette group in the ACS Control Plan Editor.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play Voucher Redeemed Info (on page 174)</td>
<td>The Play Voucher Redeemed Info node plays the voucher balance to the subscriber.</td>
</tr>
<tr>
<td>Recharge Menu (on page 175)</td>
<td>The Recharge Menu node allows the caller to select a method of recharging an account.</td>
</tr>
<tr>
<td>Scratch Card Recharge (on page 178)</td>
<td>The Scratch Card Recharge node enables a caller to use a scratch card to recharge their account, and to change the product type if required.</td>
</tr>
<tr>
<td>Scratch Card Recharge Alternate Subscriber (on page 182)</td>
<td>The Scratch Card Recharge Alternative Subscriber node enables a caller to use a scratch card to recharge another user's account, and to change the product type if required.</td>
</tr>
<tr>
<td>Select Voucher Scenario (on page 190)</td>
<td>The Select Voucher Scenario node enables a subscriber to select from amongst the different ways the voucher can be redeemed, by choosing a particular scenario.</td>
</tr>
<tr>
<td>Voucher Recharge (on page 196)</td>
<td>The Voucher Recharge node allows the caller to recharge their account using a voucher number, and to change their product type if required.</td>
</tr>
</tbody>
</table>
### Node Name  |  Node description
--- | ---
**Play Voucher Redeemed Info** (on page 174) | The Play Voucher Redeemed Info node plays the voucher balance to the subscriber.
**Voucher Redeemed** (on page 204) | The Voucher Redeemed node retrieves a voucher number from the specified location.
**Voucher Type Balance Information** (on page 206) | The Voucher Type Balance Information node retrieves the balances associated with a Voucher Type and stores them in a selected profile.
**Voucher Type Recharge** (on page 208) | The Voucher Type Recharge node invokes the voucher type recharge billing engine action using the configured name of the voucher type.

## Play Voucher Redeemed Info

### Node description

The Play Voucher Redeemed Info node plays the voucher balance to the subscriber. The node will generate and play a multi-part announcement that is built up from the response information from a successful voucher redeem. It is to be placed after a voucher redemption node (For example, Scratchcard or Voucher Redeem and plays out what the billing engine actually redeemed.

### Node icon

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

This node may be used any number of times within a control plan.

### Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The caller received the voucher information.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Play Voucher Redeemed Info node screen.

![Configuration screen](image)

Configuration fields

This table describes the function of each field in the Configure Play Voucher Redeemed Info screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Note: You can set the node to use the system currency using the PAVRBalancesUseSystemCurrency parameter. For more information, see CCS Technical Guide.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
</tbody>
</table>
| 2    | Click Save.  

Note: This will be greyed out until all the announcement sets have been selected.

Recharge Menu

Node description

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use a combination of the Profile Branching and Selection Dependent Routing feature nodes.

The Recharge Menu feature node allows the caller to select a method of recharging an account.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>3</td>
<td>Escape</td>
<td>The caller has selected the Escape option by entering *.</td>
</tr>
<tr>
<td>4</td>
<td>Voucher</td>
<td>The caller has selected the Voucher Menu option by entering key 1.</td>
</tr>
<tr>
<td>5</td>
<td>Credit Card</td>
<td>The caller has selected the Credit Card Menu option by entering key 2 when they have a PIN set. This exit is only available when the caller has previously made a credit card recharge.</td>
</tr>
<tr>
<td>6</td>
<td>First Credit Card</td>
<td>The caller has selected the Credit Card Menu option by entering key 2, and has no PIN set. This exit is only available when the caller has never before made a credit card recharge.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Recharge Menu node screen.

Configuration fields

This table describes the function of each field in the Configure Recharge Menu node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: This will be greyed out until all the announcement sets have been selected.
Scratch Card Recharge

Node description

The Scratch Card Recharge node enables a caller to use a scratch card to recharge their account, and to change the product type if required. The caller is prompted to enter their scratch card number.

The maximum number of consecutive times a caller can enter an invalid number is configured by the MaximumBadCodeRetries parameter in the ccsMacroNodes section of eserv.config. See CCS Technical Guide for details.

Note: If the Set Wallet Type feature node is used prior to the Scratch Card Recharge node, then the product type of the alternative wallet is changed when the voucher is redeemed.

Notes:

If the subscriber:

- Enters an invalid number the configurable amount of times (and is not already Blacklisted), then they are set to Blacklisted and exited down the Blacklist branch.
- Has been blacklisted, they will also be required to enter the serial number of the scratch card. The subscriber has three attempts to enter a valid serial number.
- Is blacklisted and does not enter a valid scratch card number and serial number during any attempt, they are then set to Frozen and exited down the Frozen branch.
- Enters a valid scratch card number and serial number, then the voucher is redeemed.

When the voucher is redeemed, the product type may also be changed if the rules defined for product type changes are met. The product type is only changed if:

- the 'from' and 'to' product types are current product types for the account's service provider,
- the default wallet for the account is using one of the 'from' product types,
- and the 'to' product type is listed in the swap configuration for the 'from' product type.

A successful product type change is replicated back through the SMS.

Note: Whenever a voucher recharge attempt is made, the voucher's redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows checking of whether a voucher has been redeemed and, if not, whether a failed redeem attempt has been made.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.
This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See *Charging Control Services User’s Guide* for further details on charging domains.

### Node exits

This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The caller has successfully exited the node or the wallet may not be recharged, or the voucher was successfully recharged but a product type swap request was unsuccessful.</td>
</tr>
<tr>
<td>2</td>
<td>Success Product Swap</td>
<td>The caller has successfully exited the node and requested a product type swap.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has not made an entry.</td>
</tr>
<tr>
<td>4</td>
<td>Restricted Product</td>
<td>The caller was unable to recharge the voucher because the caller’s product type does not belong to the list of available product types for the voucher.</td>
</tr>
<tr>
<td>5</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>6</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>7</td>
<td>Frozen</td>
<td>The caller’s account has been set to Frozen and therefore cannot use this node.</td>
</tr>
<tr>
<td>8</td>
<td>Blacklist</td>
<td>The call has entered too many invalid scratch card numbers and has been Blacklisted.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Scratch Card Recharge node screen.

![Configuration screen](image)

Configuration fields

This table describes the function of each field in the Configure Scratch Card Recharge node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save. Note: This will be greyed out until all the announcement sets have been selected.</td>
</tr>
</tbody>
</table>
Node logic

This diagram shows the internal logic processing of the node.

Retrieve customer profile

Dishonest flag set for customer?

Yes

Set DISHONEST = TRUE

No

Call abandoned?

Yes

Exit on branch 5 Abandon

No

IF first digit = '

Yes

Exit on branch 6 Escape

No

Timeout or bad digits collected

Yes

Retry

No

Number of retries exceeded

Yes

Add separation character to number

No

If DISHONEST

Yes

Exit on branch 7 Frozen

No

Exit on branch 8 Blacklist

Process scratch card number

Play

IF DISHONEST

Yes

Honest

No

Serial

Exit on branch 1 Success

Prompt for scratch card number & retrieve digits

Dishonest flag set for customer?

Yes

Exit on branch 3 Unsupported

No

Default balance type?

Yes

Unsupported

No

Check account information received

Unable to locate info or BE failure

Yes

Default balance type?

Yes

Unsupported

No

Difference expired or customer is pre-use

Yes

Exit on branch 3 Unsupported

No

Exit on branch 1 Success
Scratch Card Recharge Alternate Subscriber

Node description

The Scratch Card Recharge Alternative Subscriber node enables a caller to use a scratch card to recharge another user's account, and to change the product type if required.

The caller is prompted to enter the MSISDN of the account, and re-enter for confirmation, that they wish to recharge. They are then prompted to enter the scratch card number. The caller has three attempts to enter a valid scratch card number.
Note: If the Set Wallet Type feature node is used prior to the Scratch Card Recharge - Alternate Subscriber node, then the product type of the alternative wallet is changed when the voucher is redeemed.

Node description
If the caller:

- Does not enter a valid scratch card number at any attempt (and is not already Blacklisted), then they are set to Blacklisted and exited down the Blacklist branch.
- Has been blacklisted, they will also be required to enter the serial number of the scratch card (voucher). The caller has three attempts to enter a valid serial number.
- Is blacklisted and does not enter a valid scratch card number and serial number during any attempt they are then exited down the Failure branch.
- Enters a valid scratch card number and serial number, then the voucher is redeemed.

When the voucher is redeemed, the product type may also be changed if the rules defined for product type changes are met. The product type is only changed if:

- the 'from' and 'to' product types are current product types for the account's service provider,
- the default wallet for the account is using one of the 'from' product types, and
- the 'to' product type is listed in the swap configuration for the 'from' product type.

A successful product type change is replicated back through the SMP.

Note: Whenever a voucher recharge attempt is made, the voucher's redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows checking of whether a voucher has been redeemed and, if not, whether a failed redeem attempt has been made.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User's Guide for further details on charging domains.
**Node exits**

This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The caller has successfully recharged the voucher and exited the node, but a product type swap, if requested, was unsuccessful.</td>
</tr>
<tr>
<td>2</td>
<td>Success Product Swap</td>
<td>The caller has successfully exited the node and requested a product type swap.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either, error / failure, the Domain being used does not support this feature node, or the caller has not made an entry.</td>
</tr>
<tr>
<td>4</td>
<td>Restricted Product</td>
<td>The caller was unable to recharge the voucher because the caller's product type does not belong to the list of available product types for the voucher.</td>
</tr>
<tr>
<td>5</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>6</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>7</td>
<td>Frozen</td>
<td>The caller's account is Frozen and therefore cannot use this node.</td>
</tr>
<tr>
<td>8</td>
<td>Blacklist</td>
<td>The call has entered too many invalid scratch card numbers and has been Blacklisted.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Scratch Card Recharge - Alternative Subscriber node screen.
Configuration fields

This table describes the function of each field in the Configure Scratch Card Recharge - Alternate Subscriber node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: This will be greyed out until all the announcement sets have been selected.
**Node logic**

This diagram shows the internal logic processing of the node.

- **Get customer profile**
- **Prompt for alternative MSISDN**
  - **Get MSISDN digits**
    - **First MSISDN?**
      - Yes: **Set MSISDN attempt = 2**
      - No: **Set MSISDN attempt = 1**
        - **Response = abandon?**
          - Yes: **Exit on branch 5 Abandon**
          - No: **Escape?**
            - Yes: **Exit on branch 6 Escape**
            - No: **Timeout or bad digits?**
              - Yes: **Retries exceeded?**
                - Yes: **Exit on branch 3 Unsupported**
                - No: **Success?**
                  - Yes: **Eval**
                  - No: **Exit on branch 3 Unsupported**
              - No: **First character = \*?**
                - Yes: **Exit on branch 6 Escape**
                - No: **Success?**
                  - Yes: **Eval**
                  - No: **Exit on branch 3 Unsupported****
Chapter 6

CCS Voucher Feature Nodes

187

First characters = '00' Remove ALL leading zeroes

First character = '0' Remove '0'

Append config: home country national prefix

MSISDN attempt = 1?

MSISDN has acct ref?

Number of wallets = 0?

Number of wallets = 1 or 2?

1 wallet?

Both MSISDN's are the same?

Set MSISDN attempt = 2

Prompt for second MSISDN

Get MSISDN digits

Load account info

Load failure?

Exit on branch 3 Unsupported

Exit on branch 3 Unsupported

Business or personal?

Wallet

Wallet

Check wallet ID for wallet

Load account info

Get Acc

MSIS
Select Voucher Scenario

Node description

The Select Voucher Scenario node enables a subscriber to select from amongst the different ways the voucher can be redeemed, by choosing a particular scenario.

Note: It is possible for a scenario to increment a balance or extend the expiry date for the balance, or both. In addition, a scenario may also possibly change the overall account expiry date.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Select Voucher Scenario nodes as required.
To work correctly, this node must be placed between two Voucher Recharge nodes in a working control plan.

Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>A scenario has been selected by the subscriber.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>Any of a number of failures, for example:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Profile that should have contained the scenario list is missing or empty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Subscriber pressed escape</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>An unknown response was received from Voucher Management.</td>
</tr>
<tr>
<td>4</td>
<td>Abandon</td>
<td>The caller has hung up before completing the scenario selection.</td>
</tr>
<tr>
<td>5</td>
<td>Timeout</td>
<td>The subscriber failed to respond within the configured timeout period</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Select Voucher Scenario screen showing the fields for an SMS interaction.
Configuration screen

Here is an example Configure Select Voucher Scenario screen, showing the fields for a Voice or USSD interaction.

Configuring the node

The configuration fields are used to establish the variable part message/announcement that the subscriber receives.

Review the examples before proceeding with the node configuration.

Follow these steps to configure the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Scenario Data** from the Data Type, Location and Field drop down lists.  
**Note:** This where the valid scenarios are located. |
| 2    | Select the **Interaction Method** to use with the subscriber.  
Either of:  
- Voice  
- USSD, or  

---

Chapter 6, CCS Voucher Feature Nodes
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Follow the relevant instructions for the method selected.</td>
</tr>
</tbody>
</table>

**Voice or USSD**

**Voice or USSD method**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 4    | Select the announcement from each of the announcement **Set** and **Entry** drop down lists:  
- **Initial Prompt**: Select the first message.  
- **Selection Choice**: Select the scenario selection choices message.  
- **Balance Expiry Ext**: Select the balance expiry will be extended message.  
- **No Bal Expiry Ext**: Select the balance expiry will not be extended message.  
- **Account Expiry Ext**: Select the account expiry will be extended message.  
- **No Account Exp Ext**: Select the account expiry will not be extended message.  
- **Account Type Change**: Select the account type will be changed message.  
- **Final Prompt**: Select the last message to the subscriber. |
| 5    | Select the **Selected Scenario** profile from the **Data Type**, **Location** and **Field** drop down lists.  
**Note**: This is where the scenario number to use for the voucher redemption will be saved. |
| 6    | Click **Save**. |

**SMS**

**SMS method**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 4    | In the **Text Notifications** panel, enter the text fields which will be used to construct a short message to the subscriber.  
Type the text for the initial prompt to the subscriber in the **Initial Prompt** field. |
| 5    | Type the text for the response choices available to the subscriber in the **Selection Choice** field. |
| 6    | Type the text for any extension on account expiry available to the subscriber in the **Acc Expiry Ext** field. |
| 7    | Type the text for no extension on account expiry available to the subscriber in the **No Acc Expiry Ext** field. |
| 8    | Type the text for any account type change available to the subscriber in the **Acc Type Change** field. |
| 9    | Select the **Resultant Message** profile from the **Data Type**, **Location** and **Field** drop down lists.  
**Note**: This is where the subscriber returned SMS containing the scenario number to use will be saved. |
| 10   | Click **Save**. |

**Note**: The list of data types is fixed at installation time for each feature node or screen.

**Further reference**:  
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
Chapter 6

- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User’s Guide, Profile Tag Details for more information).

### Example configuration values

This table shows a textual example of the variable parts to be used when configuring the Voice and USSD announcement fields.

<table>
<thead>
<tr>
<th>Announcement</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Prompt</td>
<td>“Your voucher has several options, please select from the following”</td>
</tr>
<tr>
<td>Selection Choice</td>
<td>“Press &lt;choice&gt; for”</td>
</tr>
<tr>
<td>Balance Expiry Ext</td>
<td>“with an expiry extension of &lt;days&gt; days”</td>
</tr>
<tr>
<td>No Bal Expiry Ext</td>
<td>“with no expiry”</td>
</tr>
<tr>
<td>Account Expiry Ext</td>
<td>“with an extension to the account expiry of &lt;days&gt; days”</td>
</tr>
<tr>
<td>No Account Exp Ext</td>
<td>&quot;with no extension to the account expiry&quot;</td>
</tr>
<tr>
<td>Account Type Change</td>
<td>&quot;with a change of Product Type to &quot;</td>
</tr>
</tbody>
</table>

**Note:** The available balance types are configured on the Balance Type tab in CCS. The cost strings used to report balance values are configured on the Balance Type Translations tab in CCS. Refer to the Wallet Management chapter in the CCS User’s Guide for details.

The above example allows the following announcement to be created:

- Press 1 for 10 sms with an expiry extension of 10 days.
- Press 2 for 5 dollars and 5 sms with a change of Product Type to Platinum.
- Press 3 for 20 sms with an expiry extension of 5 days.

### Example SMS values

This table shows a textual example of the variable parts to be used when configuring the SMS Text Notifications fields.

<table>
<thead>
<tr>
<th>SMS/Announcement</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Prompt</td>
<td>“Your voucher has several options, please select from the following”</td>
</tr>
<tr>
<td>Selection Choice</td>
<td>“Text &lt;choice&gt; for”</td>
</tr>
<tr>
<td>Acc Expiry Ext</td>
<td>“with an extension to the account expiry of &lt;days&gt; days”</td>
</tr>
<tr>
<td>No Acc Expiry Ext</td>
<td>&quot;with no extension to the account expiry&quot;</td>
</tr>
<tr>
<td>Acc Type Change</td>
<td>&quot;with a change of Product Type to &quot;</td>
</tr>
</tbody>
</table>

**Note:** The available balance types are configured on the Balance Type tab in CCS. The cost strings used to report balance values are configured on the Balance Type Translations tab in CCS. Refer to the Wallet Management chapter in the CCS User’s Guide for details.

The above example allows the following SMS to be created as a single message:

- Text 1 for 10 sms with an extension to the account expiry of 10 days.
- Text 2 for 5 dollars and 5 sms with a change of Product Type to Platinum.
- Text 3 for 20 sms with an expiry extension of 5 days.

**Warning:** This may require careful use of the node in a Control Plan to split the options over several SMS messages to avoid the SMS length limitation.
**Example use of node**

Voucher redeem options can be varied, for example:

- Voucher redeems for 120 minutes of international calling (180 minutes during our “Talk-Fest July” promo special)
- Voucher redeems for 200 short messages made within a 30 day period (300 SMS during our “Text-Fest August” promo special), or
- Gold customers receive an additional 10% on top of their chosen option.

The potential scenarios are complex enough that CCS cannot be expected to know beforehand what scenarios apply, nor what the final values to the subscriber might be. There may be only one scenario that applies, or two, or three.

CCS requires some guidance from Voucher Management, as shown in the following example interaction for redeeming a voucher:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Subscriber requests CCS to redeem a voucher for them.</td>
</tr>
<tr>
<td>2</td>
<td>CCS passes request to Voucher Management, indicates no particular scenario.</td>
</tr>
<tr>
<td>3</td>
<td>Voucher Management determines that this voucher has multiple scenarios, informing CCS that this is the case, along with some information to help prompt the subscriber.</td>
</tr>
</tbody>
</table>
| 4    | For Voice/USSD interactions:  
|      |  
|      |  
|      | For SMS interactions:  
|      |  
| 5    | The subscriber re-requests CCS to redeem the same voucher and includes their preferred scenario option. |
| 6    | CCS passes request to Voucher Management, this time with scenario selection information. |
| 7    | Voucher Management performs redeem and updates balance values. |
| 8    | CCS notifies subscriber of success, and announces updated balance values by using the Send Short Message Notification node. |

**Note:** If you recharge successfully on a UBE domain which has real-time wallet notifications configured for balance changes, CCS will send a notification for the balance change as well as the notification sent from the Send Short Message Notification node. For more information about the real-time wallet notifications, see **CCS User's Guide**.

**Note:** If there is only one scenario, then steps three to five can be skipped.

**Voucher Recharge**

**Node description**

The Voucher Recharge node allows the caller to recharge their account using a voucher number, and to change their product type if required.

**Note:** Whenever a voucher recharge attempt is made, the voucher’s redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts
This allows checking of whether a voucher has been redeemed and, if not, whether a failed redeem attempt has been made.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and ten exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The voucher recharge has been successful and the caller's account has been credited.</td>
</tr>
<tr>
<td>2</td>
<td>Success Product Swap</td>
<td>The caller has successfully exited the node and requested a product type swap.</td>
</tr>
</tbody>
</table>
| 3    | Unsupported | The recharge has not been successful for any of the following reasons:  
- The Domain being used does not support this feature node  
- The number of menu retries has exceeded the limit  
- Information routing error  
- Timeout  
- Recharge Interface Not Found  
- Interface can not be used to recharge this voucher  
- Any other failure or error condition not listed for the other exits. |
| 4    | Restricted Product | The caller was unable to recharge the voucher because the caller's product type does not belong to the list of available product types for the voucher. |
| 5    | Abandon | This exit is used for many error conditions, including the following:  
- Customer/Retailer (to be recharged/credited) was not found  
- Customer/Retailer (to be recharged/credited) is not initialized  
- Customer/Retailer (to be recharged/credited) is deactivated  
- Customer/Retailer (to be recharged/credited) is suspended on IN  
- Customer/Retailer (to be recharged/credited) is suspended on Voucher Management  
- Limit of number of recharge is reached  
- Bad customer state  
- Product is not rechargeable |
<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Invalid error code for a recharge subscriber update</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No recharge part for this subscriber</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• One of balances involved in recharge is deactivated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• One of balances involved in recharge is missing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Subscriber is locked from Voucher Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Customer/Retailer credit is too large</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The value minimum of the transaction is not reached</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The value maximum of the transaction value reached</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Recharge value is out of range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Credit out of range</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher not found</td>
</tr>
<tr>
<td>6</td>
<td>Escape</td>
<td>The caller has selected the Escape option.</td>
</tr>
<tr>
<td>7</td>
<td>Frozen</td>
<td>The caller's account status is Frozen, and they are therefore forbidden to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>use a voucher recharge.</td>
</tr>
<tr>
<td>8</td>
<td>Need Scenario Info</td>
<td>This voucher has several potential ways to be recharged. This exit is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>used to find out which one to use. Must always exit to a Select Voucher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scenario (on page 190) node.</td>
</tr>
<tr>
<td>9</td>
<td>Voucher Invalid</td>
<td>The voucher number is invalid, for any of the following reasons:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Not enough digits in the source buffer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Unexisting recharge properties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher Bad Found</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tariff Plan Not Exist For This Pack</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bad Voucher Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher is in pending state</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher is in frozen state</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher is blocked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher has expired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher is disabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher type is not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Voucher has a bad brand Id</td>
</tr>
<tr>
<td>10</td>
<td>Already Redeemed</td>
<td>The voucher number has already been redeemed.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Voucher Recharge node screen (top part).
Configuration screen

Here is an example Configure Voucher Recharge node screen (bottom part).

![Configure Voucher Recharge node screen](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Source for the voucher recharge. Either of:</td>
</tr>
<tr>
<td></td>
<td>- Interactive, or</td>
</tr>
<tr>
<td></td>
<td>- Stored.</td>
</tr>
<tr>
<td></td>
<td><strong>Result:</strong> The related source fields for the selected option become available.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Get voucher number options:</td>
</tr>
<tr>
<td></td>
<td>- If Interactive: Select from the announcement drop down lists the announcement to play to prompt the subscriber for the voucher number.</td>
</tr>
<tr>
<td></td>
<td>- If Stored: Select from the profile Data Type, Location and Field drop down lists containing the voucher number.</td>
</tr>
<tr>
<td>3</td>
<td>If Interactive: Select the from the Announcement drop down lists the various announcements to play to the subscriber:</td>
</tr>
<tr>
<td></td>
<td>- Thankyou announcement to play when the redeem process is concluded.</td>
</tr>
<tr>
<td></td>
<td>- Account Locked announcement to play when the subscriber either is currently frozen, or has become frozen as a result of the voucher redeem.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
|  | - **Invalid Attempt - Created** announcement to play when the voucher being redeemed has been created, but is not yet available for redemption.
|  | - **Invalid Attempt - Used** announcement to play when the voucher being redeemed has already been redeemed.
|  | - **Invalid Attempt - Unavailable** announcement to play when the voucher being redeemed is no longer available (i.e. has been stopped by the telco, or expired).
|  | - **Invalid Attempt - Invalid Number** announcement to play when the subscriber has provided an incorrect voucher number.
|  | - **Maximum Iterations Reached** announcement to play when the number of retries a subscriber is allowed has been reached.
|  | - **Redeem System Error : Please try later** announcement to play when the voucher redeem system is unavailable.
|  | - **Limited Product Type Failure** announcement to play when the subscriber product type is invalid for, or would become invalid due to, the voucher recharge.

**Note:** If **Stored** selected, these options are all grayed out.

4. If the voucher redeem scenario is known, tick the **Have scenario selection** check box.

**Result:** The Selected Scenario profile fields become available.

5. If available, from the **Selected Scenario Data Type, Location and Field** drop down lists, select the profile containing the scenario number to use for the voucher redemption.

6. From the **Scenario Data Data Type, Location and Field** drop down lists, select the profile containing the currently available scenarios for voucher redemption.

7. Click **Save**.

**Note:** This will be greyed out until all the required fields have been completed.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User’s Guide, Profile Tag Details* for more information).

**Example for voice/USSD**

Here is an example control plan showing a basic method of voucher recharge when there are more than one way to redeem the voucher.
This control plan relates to voice or USSD invoked usage.

**Example for SMS**

Here are example control plans showing a basic method of voucher recharge when there are more than one way to redeem the voucher.

These control plans relate to SMS invoked recharge usage.
The first control plan sets up the request to the subscriber to supply the redeem scenario by a further SMS.

The second control plan uses the supplied information to extract the scenario number and then to redeem the voucher.
Voucher Redeemed

Node description

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the Voucher Recharge feature node.

The Voucher Redeemed feature node retrieves a voucher number from the specified location. The number of redeem attempts is only used to determine how the feature node should branch. The number of attempts will be recorded each time the control plan passes through the feature node. Each time the control plan executes the feature node, the feature node will attempt only one redemption.

Note: Whenever a voucher recharge attempt is made, the voucher's redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows checking of whether a voucher has been redeemed and, if not, whether a failed redeem attempt has been made.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan. This node may have a tracking string added.

This node relies on an ACS number buffer containing the voucher digits, therefore it must be placed after a collect digits to buffer type of node.

Node exits

The node has one entry and ten exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle VWS. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Voucher redeemed and subscriber account updated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Success Product Swap</td>
<td>Voucher redeemed and subscriber product type swapped.</td>
</tr>
</tbody>
</table>
Chapter 6

CCS Voucher Feature Nodes

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Restricted Product</td>
<td>Voucher has a restricted product redemption list.</td>
</tr>
<tr>
<td>4</td>
<td>Unknown Wallet</td>
<td>Wallet has been deleted, not replicated correctly or some other wallet error.</td>
</tr>
<tr>
<td>5</td>
<td>Invalid Wallet State</td>
<td>Subscriber account has been frozen.</td>
</tr>
<tr>
<td>6</td>
<td>Invalid Serial</td>
<td>Voucher number is invalid.</td>
</tr>
<tr>
<td>7</td>
<td>Already Redeemed</td>
<td>The voucher number has already been redeemed.</td>
</tr>
<tr>
<td>8</td>
<td>Voucher Invalid</td>
<td>The voucher number is invalid (includes not enough digits in the source buffer).</td>
</tr>
<tr>
<td>9</td>
<td>Retry Exceeded</td>
<td>The number of redeem attempts has been exceeded (as defined by the Redeem Attempts node parameter).</td>
</tr>
<tr>
<td>10</td>
<td>Unsupported</td>
<td>Either error / failure or that the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Voucher Redeemed node screen.

**Configuration fields**

This table describes the function of each field in the Configure Voucher Redeemed node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Source</td>
<td>The ACS number buffer containing the voucher number.</td>
</tr>
<tr>
<td>Redeem Attempts</td>
<td>Maximum number of voucher number attempts before taking the retry exceed branch.</td>
</tr>
<tr>
<td>Number of Digits</td>
<td>The number of digits to remove from the front of the voucher number prior to redemption.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the ACS buffer that contains the voucher number digits from the <strong>Number Source</strong> drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>Type the maximum number of voucher number entry retries in the <strong>Redeem Attempts</strong> field.</td>
</tr>
<tr>
<td>3</td>
<td>Type the number of digits to remove from the front of the voucher digits before attempting to redeem in the <strong>Number of Digits</strong> field.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Voucher Type Balance Information**

**Node description**

The Voucher Type Balance Information node retrieves the balances associated with a Voucher Type and stores them in a selected profile.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Voucher Type Balance Information nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The voucher type balance information has been successfully stored in a profile.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>The voucher type could not be found or the balance information could not be extracted.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Voucher Type Balance Information screen.

Configuration fields

This table describes the function of each field in the Configure Voucher Type Balance Information node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voucher Type Source options</td>
<td>Controls what the voucher source will be:</td>
</tr>
<tr>
<td>Select Voucher Type From area</td>
<td>Either:</td>
</tr>
<tr>
<td></td>
<td>- Specifies the profile to use when From Profile is selected, or</td>
</tr>
<tr>
<td></td>
<td>- The voucher type that balance information will be retrieved for when Manual Definition is selected.</td>
</tr>
<tr>
<td>Voucher Scenario Source options</td>
<td>Controls what the voucher scenario source will be:</td>
</tr>
<tr>
<td>Select Voucher Scenario From area</td>
<td>Either:</td>
</tr>
<tr>
<td></td>
<td>- The default voucher scenario will be used when None is selected, or</td>
</tr>
</tbody>
</table>
### Configuring the node

Follow these steps to configure the node.

**Note:** For more information on the Voucher Type Balance Information node configuration fields see *Configuration fields* (on page 207).

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Voucher Type Source area select either:  
      * From Profile, or  
      * Manual Definition. |
| 2    | Select the Voucher Type for which balance information will be retrieved. If you selected:  
      * From Profile, select from the profile Data Type, Location and Field drop down lists that contains the Voucher Type you want, or  
      * Manual Definition, select the voucher type from the Voucher Type drop down list. |
| 3    | In the Voucher Scenario Source area select either:  
      * None, or  
      * From Profile. |
| 4    | If you selected From Profile, in the Select Voucher Scenario From area, select the profile Data Type, Location and Field drop down lists that contains the Voucher Scenario you want. |
| 5    | In the Store Balances In area select the profile Data Type, Location and Field drop down lists where the balance information will be stored. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

### Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

### Voucher Type Recharge

#### Node description

The Voucher Type Recharge node invokes the voucher type recharge billing engine action using the configured name of the voucher type. See *CCS User's Guide* for details on configuring voucher type recharges.

**Note:** Whenever a voucher recharge attempt is made, the voucher’s redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows checking of whether a voucher has been redeemed and, if not, whether a failed redeem attempt has been made.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Voucher Type Recharge nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The billing engine has returned a successful voucher type recharge indication.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>The billing engine has returned a failed voucher type recharge indication.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>This exit is taken if the voucher type recharge capability is not supported.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Voucher Type Recharge screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Voucher Type Source area select either:  
|      | • From Profile, or  
|      | • Manual Definition. |
| 2    | Select the Voucher Type to be recharged. If you selected:  
|      | • From Profile, select Select Voucher Type From from the Data Type, Location and Field drop down lists.  
|      | • Manual Definition, in the Voucher Type area, select the name of the voucher type to recharge from the drop down list.  
|      | **Note:** This node will always recharge vouchers against the default scenario for this voucher type. |
| 3    | Click Save. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Chapter 7

CCS Wallet Management Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS Wallet Management feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

CCS Wallet Management Feature Nodes List

This table lists the feature nodes available from the CCS Wallet palette group in the ACS Control Plan Editor.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Activate (on page 215)</td>
<td>The Account Activate node updates any account in Pre-Use state to Active.</td>
</tr>
<tr>
<td>Account State Branch (on page 216)</td>
<td>The Account State Branch node routes the call based on the state of the caller's account.</td>
</tr>
<tr>
<td>Account Status (see &quot;Account)</td>
<td>The Account Status node plays information regarding the caller's</td>
</tr>
<tr>
<td>Node name</td>
<td>Node description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Account Activate (on page 215)</td>
<td>The Account Activate node updates any account in Pre-Use state to Active.</td>
</tr>
<tr>
<td>Status SMS* (on page 223)</td>
<td>account and balances.</td>
</tr>
<tr>
<td>Account Status SMS (on page 223)</td>
<td>The Account Status SMS node sends a short message to the caller using templates defined for each language.</td>
</tr>
<tr>
<td>Apply Rewards (on page 225)</td>
<td>The Apply Rewards node applies the real time rewards that the current subscriber has qualified for.</td>
</tr>
<tr>
<td>Balance State Branch (on page 226)</td>
<td>The Balance State Branch node routes the call based on the state of the caller's account balance.</td>
</tr>
<tr>
<td>Balance Status (on page 230)</td>
<td>The Balance Status node plays announcements to provide the user with information about their account.</td>
</tr>
<tr>
<td>Balance Type Branching (see &quot;Balance Type Cascade Branching&quot; on page 236)</td>
<td>Allows for threshold branching on the values of the balances held in the selected balance type cascade.</td>
</tr>
<tr>
<td>Balance Type Cascade Branching (on page 236)</td>
<td>Allows for threshold branching on the values in the subscriber's wallet of chargeable balance types (for example, 'General Cash'), expenditure balance types or cross-balance types.</td>
</tr>
<tr>
<td>Cumulative Balances (see &quot;Periodic Charge State Branch&quot; on page 242)</td>
<td>The Cumulative Balances node provides the caller with details of their cumulative balances.</td>
</tr>
<tr>
<td>Periodic Charge State Branch (on page 242)</td>
<td>The Periodic Charge State Branching node branches on the state of a subscriber's subscription to a periodic charge.</td>
</tr>
<tr>
<td>Periodic Charge Subscription (on page 244)</td>
<td>The Periodic Charge Subscription node changes the state of a subscriber's periodic charge in one or more ways:</td>
</tr>
<tr>
<td></td>
<td>• To a new specified state</td>
</tr>
<tr>
<td></td>
<td>• Indicate the subscription request should trigger charging on the VWS for the subscription request</td>
</tr>
<tr>
<td></td>
<td>• That the pro-rating feature enhancements on the VWS are to be incorporated into the current service</td>
</tr>
<tr>
<td></td>
<td>• To specify for certain PC charge definitions the subscription month and day of week to be specified in the subscription request</td>
</tr>
<tr>
<td></td>
<td>• For certain PC charge definitions, to allow the required charge month and day of week to be specified in the PC charge alignment request</td>
</tr>
<tr>
<td>Periodic Charge Transfer (on page 247)</td>
<td>The Periodic Charge Transfer node allows a subscriber to be moved between related Periodic Charges.</td>
</tr>
<tr>
<td>Play Next Promotion (on page 249)</td>
<td>The Play Next Promotion node calculates the subscriber's next promotion based on their current balances and if required, plays the announcement associated with the promotion.</td>
</tr>
<tr>
<td>Select Credit Transfer (on page 252)</td>
<td>Plays an announcement for each credit transfer associated with the subscriber's product type. The user can interrupt the announcements to select a service.</td>
</tr>
<tr>
<td>SMS Low Balance (on page 254)</td>
<td>The SMS Low Balance node sends an SMS to a subscriber when their balance falls below a specified threshold.</td>
</tr>
<tr>
<td>Time Remaining (on page 256)</td>
<td>The Time Remaining node determines the remaining time available, at call start, based on a subscriber's current cash balance.</td>
</tr>
<tr>
<td>Node name</td>
<td>Node description</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Account Activate (on page 215)</td>
<td>The Account Activate node updates any account in Pre-Use state to Active.</td>
</tr>
<tr>
<td>Tracker Account State Branch (on page 259)</td>
<td>The Tracker Account State Branch node routes the call based on the state of the caller's account. The wallet information will be retrieved from the subscriber's tracking domain if the wallet is distributed across separate tracking and charging domains.</td>
</tr>
<tr>
<td>Wallet Life Cycle Period Branching (on page 261)</td>
<td>The Wallet Life Cycle Period Branching node allows you to check if the subscriber is assigned to the WLC period of a WLC plan.</td>
</tr>
<tr>
<td>Wallet State Update (on page 263)</td>
<td>The Wallet State Update node sets the current wallet to the configured state.</td>
</tr>
</tbody>
</table>

## Account Activate

**Node description**

The Account Activate node updates any account in Pre-Use state to Active.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Account Activate Icon](image)

**Restrictions**

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See *Charging Control Services User's Guide* for further details on charging domains.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The caller has successfully exited the node.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either, error / failure, or the domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Account Activation node screen.

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

Account State Branch

Node description

The Account State Branch node routes the call based on the state of the caller's account.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Active</td>
<td>The account is active.</td>
</tr>
<tr>
<td>2</td>
<td>Frozen</td>
<td>The account has been Frozen due to dishonesty.</td>
</tr>
<tr>
<td>3</td>
<td>Preuse</td>
<td>The account has not yet been used.</td>
</tr>
<tr>
<td>4</td>
<td>Suspended</td>
<td>The account is Suspended.</td>
</tr>
<tr>
<td>5</td>
<td>Dormant</td>
<td>The account is Dormant.</td>
</tr>
<tr>
<td>6</td>
<td>Terminated</td>
<td>The account has been Expired.</td>
</tr>
</tbody>
</table>
### Exit Cause Description

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Unsupported</td>
<td>Either, error / failure, or the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>8</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
</tbody>
</table>

### Restrictions

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

### Configuration screen

Here is an example Configure Account State Branch node screen.

![Configure Account State Branch](image)

### Configuring the node

This node requires no configuration data. You may change the **Node name**, if required.
Node logic

This diagram shows the internal logic processing of the node.
Account Status

Node description
The Account Status node plays information regarding the caller’s account and balances. Specifically, it will play a no-credit announcement, if appropriate, and inform the caller of their:

- Account expiry date
- Default balance expiry
- Balance amounts

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
This node may be used any number of times within a control plan.
This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.
For more information, see Set Wallet Type.

Node exits
This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>All information has been played successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either, error / failure, or the domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Account Status node screen.

Configuration fields

This table describes the function of each field in the Configure Account Status node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>EnableAnnouncements</td>
<td>Allows the selected announcement to be played.</td>
</tr>
<tr>
<td>SkipAnnouncement</td>
<td>Prohibit playing of the balance announcement.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>For each relevant announcement, select the Enable Announcement check box as required.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>3</td>
<td>Select the <strong>Skip Announcement</strong> check box as required. When checked, this Skip Balance Announcement option will play account status and <strong>not</strong> include the balance information within the announcement set.</td>
</tr>
</tbody>
</table>
| 4    | Click **Save**.  

**Note:** This will be greyed out until all the announcement sets have been selected.
**Node logic**

This diagram shows the internal logic processing of the node.

1. Read list of balance types for each customer (from config file)
2. Read config file items
3. Retrieve wallet ID and product type (from BE)
4. Retrieve threshold values from database
5. Read PT SECOND_ANNOUNCEMENT DatA tag
6. Retrieve account information
7. Get balance type for balance
8. Check if we play zero balances of that balance type
   - Yes: Play zero balances?
     - Yes: More balances in wallet?
       - Yes: Play all “balance expiry dates” announcement
       - No: Exit on branch 1 Success
     - No: Balance is 0?
       - Yes: Play “account expiry date” announcement
       - No: Play “amount balance” announcement
   - No: Exit on branch 1 Success
9. Balance type?
   - No: Amount balance?
     - Yes: Bal currency = sys currency?
       - Yes: Get announcement ID for balance type
       - No: Get announcement ID for currency
     - No: BSPlayNoCreditAnn?
       - Yes: Balance is positive?
         - Yes: Play “amount balance” announcement
         - No: Play “no credit” announcement
       - No: Play “no credit” announcement
     - No: Play “time balance” announcement
   - Yes: Time balance?
     - Yes: Play “time balance” announcement
     - No: More balances in wallet?
       - Yes: Play all “balance expiry dates” announcement
       - No: Exit on branch 1 Success

Including:
- account balance
- account expiry date
- balance expiry date

From PROFILE_APP2 block (second currency enabled and ID)

BSPlayNoCreditAnn
BSPlaySingleDayAnn
BSPlayTitleAnn
BSPlayPositiveOnlyBalanceExpiryAnn

Amount balance

No

Yes

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

No

Yes

Play “no credit” announcement
Account Status SMS

Node description

The Account Status SMS node sends a short message to the caller using templates defined for each language. The balance types played in the messages are stored in eserv.config.

The templates available for selection are configured through the ACS > Configuration > Notification screens.

The available parameters are:

- Wallet type
- Balances and balance expiries

For more information on the available parameters see Message parameters (on page 224).

Note: This node requires an existing short message service.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, or the domain being used does not support this feature node. A text message has not been sent.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>A text message has been successfully sent to the short message service.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Account Status Text Message screen.

![Configuration screen](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Using the drop down lists in the Notification panel, select the Application where the notification type for the SMS is defined.  

**Note:** ACS will be used by default. |
| 2    | Select the Notification Type from the drop down list. |
| 3    | Click Save. |

Message parameters

Message parameters included in the notification template message text are searched for and replaced with an appropriate value.
Here is the list of available parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| $1 | The wallet description.  
  **Note:** This is configured on the Wallet Name Translations tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See CCS User’s Guide for details. |
| $2 | The balance details for each balance type reported. Details include:  
  - Balance description  
  - Balance amount  
  - Balance expiry (either the number of days to expiry or the no balance expiry text)  
  **Note:** The balance details string is configured on the Balance Type Translations tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See CCS User’s Guide for details. |

**Message example**

Here is an example template and the corresponding message generated by the Account Status SMS node.

**Example**

A template of:

A/c type $2 - balance: $1

will send the message:

"A/c type: Primary wallet - balance: Eng Gen Bal GBP 1873.56-no expiry"

**Apply Rewards**

**Node description**

The Apply Rewards node applies the real time rewards that the current subscriber has qualified for.

The node will determine whether or not the subscriber qualifies for a configured reward based on their product type and the current value of their balance. As a result of applying a reward, the subscriber's product type may change.

**Note:** A reward will not be applied if the current date falls outside the reward period.

**Node icon**

![Node icon]
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Apply Rewards nodes as required.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The rewards have been successfully applied.</td>
</tr>
<tr>
<td>2</td>
<td>No Rewards Applied</td>
<td>The subscriber does not qualify for any rewards.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>An error/failure occurred when attempting to apply rewards.</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>The Domain being used does not support this type of reward.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Apply Rewards screen.

**Configuring the node**

This node requires no configuration data. You may change the **Node name**, if required.

**Balance State Branch**

**Node description**

The Balance State Branch node routes the call based on the state of the caller's account balance. To calculate the caller's account balance a configurable set of balance types will be checked. The set of balance types to be checked is configured in the SLC `eserv.config` file, see **CCS Technical Guide** for details.

This node reads the caller's Product Type node options configured for the Balance State Branch and determines that if the Use Threshold field is:

- **Selected**, then the Product Type Threshold is ignored and the Node Balance Threshold is used instead
- **Not selected**, then the Product Type Value is used
Note: The node will filter out all Expenditure Balance Types and not include them in the balance calculation. See CCS User’s Guide - Balance Types topic.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

Node exits

This node has one entry point and seven exits that are set by the system. The number of exit points is fixed and may not be edited by the user.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Credit OK</td>
<td>The available funds (which may or may not include credit limit and/or committed reservations) is &gt;= the threshold.</td>
</tr>
<tr>
<td>2</td>
<td>Unsupported</td>
<td>Either, error / failure, or the domain being used does not support this feature node.</td>
</tr>
<tr>
<td>3</td>
<td>No Credit</td>
<td>The value being compared (which may or may not include credit limit and/or committed reservations) is &lt;= zero.</td>
</tr>
<tr>
<td>4</td>
<td>Credit &lt; Threshold</td>
<td>The available credit (which may or may not include credit limit and/or committed reservations) is less than the threshold used. (which is either the product type Balance status warning threshold value or the node value). See Threshold example.</td>
</tr>
<tr>
<td>5</td>
<td>Balance Expired</td>
<td>The account balance has expired.</td>
</tr>
<tr>
<td>6</td>
<td>Account Expired</td>
<td>The account has expired.</td>
</tr>
<tr>
<td>7</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Balance State Branch node screen.

![Configure Balance State Branch](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the threshold source value to use:  
* Select the **UseThreshold** check box to use the **node** threshold value.  
* Deselect the **UseThreshold** check box to use the **Product Type** threshold value  
  (this is the **Balance status warning threshold** value configured at - SMS > Services >  
  Prepaid Charging > Subscriber management > Product Type > Node Options). |
| 2    | Type the comparison balance threshold to use in the **Threshold** field.  
**Note:** A value must be entered - even if zero - before the **Save** button becomes available. |
| 3    | Select the additional threshold considerations:  
* Select the **Above Credit Limit** check box to include the subscriber’s credit limit.  
* Select the **Excl. Reserved Funds** check box to ignore any committed reservations.  
**Tip:** See Threshold example for how these check boxes work together. |
| 4    | Click **Save**. |
Node logic

This diagram shows the internal logic processing of the node.

Get wallet ID and account type ID

Retrieve second currency (if any) and balance threshold

Get balance info (incl. Expiry)

Has Wallet expired?

(Y-PERIOD)

No

Has Balance expired?

(X-PERIOD)

No

Debit account?

Yes

Credit left?

No

Yes

Bal under threshold?

Yes

No

Exit on branch 6
Account Expired

Exit on branch 5
Balance Expired

Exit on branch 3
No Credit

Exit on branch 4
Credit < Threshold

Exit on branch 1
Credit OK

Threshold example

This example uses the following values:

- Threshold is $115
- Actual balance is $20
- Credit limit is $100
- Outstanding reservation is $5
This table shows how the comparison value is computed for these values:

<table>
<thead>
<tr>
<th>Exclude Reservations</th>
<th>Include Credit Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>Actual balance = $20</td>
</tr>
<tr>
<td></td>
<td>Exit 4 taken (comparison &lt; threshold)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td>Actual balance - Reservations = $20 - $5 = $15</td>
</tr>
<tr>
<td></td>
<td>Exit 4 taken (comparison &lt; threshold)</td>
</tr>
</tbody>
</table>

**Balance Status**

**Node description**

The Balance Status node plays announcements to provide the user with information about their account. The node plays:

- Individual balances
- A no-credit announcement, if necessary
- Expiry dates for both the user’s account and balance(s)

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.
This node deals only with the wallet type currently set in the call context.
For more information, see Set Wallet Type.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>All announcements have completed successfully.</td>
</tr>
<tr>
<td>Exit</td>
<td>Cause</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either, error / failure or the Domain being used does not support this feature node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Balance Status node screen.

**Configuration fields**

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected</td>
</tr>
</tbody>
</table>
Field | Description
---|---
| announcement set.
EnableAnnouncements | If check box selected, allows the selected announcement to be played.
Committed Funds | When selected, exclude committed reservations in the available funds played in the announcement.
Unreserved Funds | When selected, exclude uncommitted reservations in the available funds played in announcements (the uncommitted reservation amount is subtracted from the available funds).

This node only deals with information for the balance types specified in the `BSAnnBalanceTypes array` of the `ccsMacroNodes section` of the `eserv.config` file on the SLC.

This node will only play expiry information if the expiry is within the ranges specified in the caller's:
- Product type account expiry warning threshold
- Product type balance expiry warning threshold

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For each relevant announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller. Select the specific Announcement Set to which the Announcement Entry belongs. Only valid announcements are available from the lists.</td>
</tr>
<tr>
<td>2</td>
<td>For each relevant announcement, tick the Enable Announcement check box as required.</td>
</tr>
</tbody>
</table>
| 3 | Select the Funds to Report option:  
  - Select Unreserved Funds to exclude uncommitted reservations in the available funds played in announcements, or  
  - Select Committed Funds to exclude committed reservations in the available funds played in the announcement. |
| 4 | Click Save.  
**Note:** This will be greyed out until all the announcement sets have been selected. |
Node logic

This diagram shows the internal logic processing of the node.

Read list of balance types for each customer

Read config file items

Retrieve wallet ID and product type

Retrieve threshold values from database

Read PT_*SECOND_ANNOUNCEMENT_*DAT A tag

Retrieve account information

Play Balances?

Get balance type for balance

Check if we play zero balances of that balance type

More balances in wallet?

Play zero balances?

Balance is 0?

Balance type?

Time balance

Play time balance

Play account expiry date if under threshold

Exit on branch 1 Success

Play all balance expiry dates for balances < threshold

Balance is positive?

Balance currency = sys currency?

Get announcement ID for balance type

Get announcement ID for currency

Amount balance

Balance type?

Yes

No

Balance is 0?

Yes

No

BSPlayNoCreditAnn

BSPlaySingleDayAnn

BSPlayTitleAnn

BSPlayPositiveOnlyBalanceExpireAnn

WSPlayTitleAnn

(from config file)

BSPlayNoCreditAnn

BSPlaySingleDayAnn

BSPlayTitleAnn

BSPlayPositiveOnlyBalanceExpireAnn

BSPlayTitleAnn

(from BE)

from PROFILE_APP block (second currency enabled and ID)

Including: account balance, account expiry date, balance expiry date

No

Yes

Yes

Yes

No

No

No

No

No

Yes

Yes
Balance Type Branching

Node description

Allows for threshold branching on the values in the subscriber's wallet of chargeable balance types (for example, ‘General Cash’), expenditure balance types or cross-balance types.

For example, this node could be used to apply a discount to the current call, based on the existing value of a particular balance. The call in progress in the current control plan will not have been billed yet, so will not be considered for such a discount.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

There are no restriction on this node's usage. A control plan may contain as many of these nodes as required.

Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt;</td>
<td>The available funds are greater than the configured threshold.</td>
</tr>
<tr>
<td>2</td>
<td>&lt;</td>
<td>The available funds are less than the configured threshold.</td>
</tr>
<tr>
<td>3</td>
<td>=</td>
<td>The available funds are the same as the configured threshold.</td>
</tr>
<tr>
<td>4</td>
<td>No Balance Found</td>
<td>The specified balance type was not found in the subscriber’s wallet.</td>
</tr>
<tr>
<td>5</td>
<td>Unsupported</td>
<td>Any error/failure encountered.</td>
</tr>
</tbody>
</table>

Notes:

- A zero wallet balance could potentially use exits 1, 2 or 3 depending on the threshold, credit limit, reservation combination value.
- Telephony actions are allowed after exits 1 to 4.
- See Threshold example for understanding how the available balance is calculated.
Configuration screen

Here is an example Configure Balance Type Branching screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Balance Category** to limit the balance type list to select from for the branch comparison.  
One of:  
- **All** - all balance types for the current ACS customer will be listed.  
- **Chargeable** - only those balance types for the current ACS customer that can be used for charging will be listed. For example this will exclude all 'Expenditure' and 'Cross Balance Type Discount' balance types.  
- **Expenditure** - only those balance types for the current ACS customer defined as 'Expenditure' balance types (daily, weekly, monthly, yearly, wallet) will be listed.  
- **CrossDiscount** - only those balance types for the current ACS customer defined as 'Cross Balance Type Discount' balance types will be listed.  
- **Internal** - only those balance types for the current ACS customer defined as 'Internal' balance types will be listed.  
| 2    | From the **Balance Type** drop down list, select the balance type to use in the branch comparison.  
| 3    | Type the comparison threshold to use in the **Threshold** field.  

### Step 4
Select the additional threshold considerations:
- Select the **Above Credit Limit** check box to include the subscriber’s credit limit.
- Select the **Excl. Reserved Funds** check box to exclude any committed reservations.

**Tip:** See Threshold example for how these check boxes work together.

### Step 5
Click **Save**.

#### Threshold example

If the:
- threshold is $115
- actual balance is $20
- credit limit is $100, and
- an outstanding reservation for $5

This table shows how the comparison value is computed for these values:

<table>
<thead>
<tr>
<th>Exclude Reservations</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual balance</td>
<td>$20</td>
<td>Actual balance + Credit Limit</td>
</tr>
<tr>
<td>Exit 2 taken</td>
<td></td>
<td>Exit 1 taken</td>
</tr>
<tr>
<td>(comparison &lt; threshold)</td>
<td></td>
<td>(comparison &gt; threshold)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual balance - Reservations</td>
<td>$20 - $5 = $15</td>
<td>Actual balance - Reservations + Credit Limit</td>
</tr>
<tr>
<td>Exit 2 taken</td>
<td></td>
<td>Exit 3 taken</td>
</tr>
<tr>
<td>(comparison &lt; threshold)</td>
<td></td>
<td>(comparison = threshold)</td>
</tr>
</tbody>
</table>

#### Balance Type Cascade Branching

**Node description**

Allows for threshold branching on the values of the balances held in the selected balance type cascade.

The summed value of the balances for the unit type configured in the node will be used when determining the appropriate branch to follow.

**Node icon**

![Node Icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Balance Type Cascade Branching nodes as required.

Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User’s Guide for further details on charging domains.

Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt;</td>
<td>The sum of the balances in the balance type cascade of the specified unit is greater than the configured threshold. Telephony actions are allowed after this branch.</td>
</tr>
<tr>
<td>2</td>
<td>&lt;</td>
<td>The sum of the balances in the balance type cascade of the specified unit is less than the configured threshold. Telephony actions are allowed after this branch.</td>
</tr>
<tr>
<td>3</td>
<td>=</td>
<td>The sum of the balances in the balance type cascade of the specified unit is the same as the configured threshold. Telephony actions are allowed after this branch.</td>
</tr>
<tr>
<td>4</td>
<td>No Bal Casc Found</td>
<td>The specified balance type cascade was not found. Telephony actions are allowed after this branch.</td>
</tr>
<tr>
<td>5</td>
<td>No Balance Found</td>
<td>There were no balances for the specified unit type in the selected balance cascade. Telephony actions are allowed after this branch.</td>
</tr>
<tr>
<td>6</td>
<td>Unsupported</td>
<td>An error/failure was encountered.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Balance Type Branching screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Balance Type Cascade drop down list, select the cascade to use in the branch comparison.</td>
</tr>
</tbody>
</table>
| 2    | Select the Balance Units to use. Only balances types with the selected unit type will be summed and compared against the threshold value.  
   | **Note:** If you selected Units then all balances, except cash or time, will be summed. |
| 3    | In the Threshold area type the comparison balance threshold value for the selected balance units.  
   | **Note:** Only the fields relevant to the selected balance units will be enabled. |
| 4    | Click **Save**. |
Cumulative Balances

Node description

The Cumulative Balances node provides the caller with details of their cumulative balances. For each cumulative balance category configured for one of:

- Product type
- The selected cumulative balance plan (only available if the cumulative balance plan feature has been activated on your system), the node:
  - Sums the balances of the balance types assigned to the balance category
  - Plays the configured announcements

If there are no balance types assigned to a particular category, then the category is ignored. If the cumulative balance for a category is zero, then the announcement is only played if the Play Zero flag is set for the category.

Notes:

- For details on configuring balance category announcements, see the CCS User’s Guide.
- To have unreserved balances reported for subscriber’s cumulative balances, the option must be configure in the SMS > Services > Prepaid Charging > Wallet Management > Cumulative Balance Plans tab > New/Edit > Add Balance Category button > Use Unreserved Balances check box.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

There are no restriction on this node's usage. A control plan may contain as many of these nodes as required.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>All announcements have completed successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller has terminated the call.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Either, error / failure, or the domain being used does not support this feature node.</td>
</tr>
<tr>
<td>4</td>
<td>Not Found</td>
<td>No announcements can be played because balance categories have not been set up for the product type.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Cumulative Balances screen.

Configuration fields

This table describes the function of each field in the Configure Cumulative Balances node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Plan</td>
<td>List of all the available cumulative balance plans for the current service provider.</td>
</tr>
<tr>
<td></td>
<td><strong>Notes:</strong></td>
</tr>
<tr>
<td></td>
<td>• Cumulative balance plans are configured in the Wallet Management screen in CCS.</td>
</tr>
<tr>
<td></td>
<td>• The special value &quot;Use Product Type&quot; may be used to select the default cumulative balance plan configured for the product type.</td>
</tr>
<tr>
<td></td>
<td>• This field will not be visible in the screen if the cumulative balance plans feature has not been activated on your system.</td>
</tr>
<tr>
<td>EnableAnnouncement</td>
<td>Select to enable the selected title announcement to be played.</td>
</tr>
</tbody>
</table>
### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the **Balance Plan** drop down list select the cumulative balance plan to use. If you select the special value "Use Product Type" then the default balance plan configured for the Product Type will be used.  

**Note:** This field will only be visible in the screen if the cumulative balance plan feature has been activated on your system. For more information on activating features in CCS, see the *CCS Installation Guide*.  

| 2    | If you want a title announcement to be played to the caller, in the Title Announcement area tick the **Enable Announcement** check box. Then use the drop down lists to select the **Announcement Set** and **Announcement Entry** to play. Only valid announcements are available from the lists.  

**Note:** You must select an announcement set and entry even if you do not enable the announcement.  

| 3    | For each announcement you want to play, in the relevant announcement area tick the **Enable Announcement(s)** check box.  

**Note:** The cumulative balance category announcements played are configured in CCS either:
- using the cumulative balances option on the Product Type screen, or  
- if the Cumulative Balance Plan feature has been activated, then they are configured on the Cumulative Balance Plan tab in the Wallet Management screen.  

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Set</td>
<td>List of all the available announcement sets.</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>Category Title Announcement</td>
<td>Select <strong>EnableAnnouncement</strong> to enable playing the category title announcement. Defaults to disabled.</td>
</tr>
</tbody>
</table>
| Play No Credit for Balances     | Select **EnableAnnouncements** to enable playing no credit balance announcements for balances that are either zero (0) or negative. One of the following messages is played:  
  - You have 0 units - for zero balances  
  - You have no credit - for negative balances  
  Defaults to disabled. |
| Play Positive Only Expiries for Balances | Select **EnableAnnouncements** to enable playing announcements for balances with positive expiries only.  
 Defaults to disabled. |
| Play Single Day Expiries for Balances and Account | Select **EnableAnnouncements** to enable playing announcements for account and balances with single day expiries.  
 Defaults to disabled. |
Chapter 7

Step 4 Action

For more information see the CCS User’s Guide.

Click Save.

Note: This will be greyed out until the title announcement and entry has been selected.

Periodic Charge State Branch

Node description

The Periodic Charge State Branching node branches on the state of a subscriber’s subscription to a periodic charge. The subscriber which is checked is the one associated with the MSISDN which is currently populated in the CLI call context field. The periodic charge to check is specified in the node’s configuration.

Amongst other uses, the Periodic Charge State Branch node can be used for:

- Checking a subscriber’s subscription status before providing a service
- Error checking in BPL tasks used for handling periodic charge subscriptions
- Routing in a periodic charge IVR control plan

For more information about subscribers and periodic charges, see CCS User’s Guide.

For more information about call context fields, see CPE User’s Guide.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Periodic Charge Status Branching nodes as required.

Warning: This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User’s Guide for further details on charging domains.

Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsubscribed</td>
<td>Corresponds to the periodic charge &quot;unsubscribed&quot; state and all states not covered by other exit branches.</td>
</tr>
<tr>
<td>2</td>
<td>Active</td>
<td>Corresponds to the periodic charge &quot;active&quot; state and active sub-states.</td>
</tr>
</tbody>
</table>
Exit | Cause   | Description
--- | ------- | ----------------------------------
3   | Grace   | Corresponds to the periodic charge “grace” state and grace substates.
4   | Terminated | Corresponds to the periodic charge “terminated” state.
5   | Unavailable | The wallet does not have a bucket of the required type.
6   | Unsupported | Exit branch for error conditions.

### Configuration screen

Here is an example Configure Periodic Charge Status Branching screen.

![Configuration screen](image)

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Periodic Charge Name** section select either the location of the charge name or charge name you want to branch on the state of. Select either:  
  - **From Profile** (for the location), or  
  - **From Node** (for the name)  
  **Result:** The relevant fields become available. |
Step | Action
--- | ---
2 | • If From Profile: select the location from the Data Type, Location and Field drop down lists.  
   • If From Node: select the name from the Name drop down list

Notes:
• The profile Field is populated by the records configured on the Periodic Charge tab on the Wallet Management screen.
• The name list are all the Periodic Charge names for this subscriber.

3 | From the Change State drop down list, select the state the subscriber's periodic charge should be changed to.

Examples:
• To subscribe a subscriber to a periodic charge, select Subscribe.
• To unsubscribe a subscriber from a periodic charge, select Unsubscribe.
• To trigger a loss of service, select Terminate.
• To enable the first grace state on the VWS, select Grace.

4 | Click Save.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:
• For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
• The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

### Periodic Charge Subscription

**Node description**

The Periodic Charge Subscription node changes the state of a subscriber's periodic charge to a new specified state. The affected subscriber is the subscriber who is associated with the MSISDN which is currently populated in the CLI call context field.

Note: If you are using periodic charge groups, you should ensure a subscriber cannot have two concurrent subscriptions to periodic charges within the same periodic charge group. You can use the Periodic Charge State Branching (see "Periodic Charge State Branch" on page 242) to check the state of a specified periodic charge.

For more information about:
• subscribers and periodic charges, see CCS User's Guide.
• call context fields, see CPE User's Guide.

### Node icon

![Image of a periodic charge icon]
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Periodic Charge Subscription nodes as required.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See *Charging Control Services User's Guide* for further details on charging domains.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Any error except billing engine errors.</td>
</tr>
<tr>
<td>2</td>
<td>Not Subscribed</td>
<td>Subscriber has no bucket of the correct type for this charge, and the request was for an unsubscribe or a terminate.</td>
</tr>
<tr>
<td>3</td>
<td>Success</td>
<td>State changed successfully.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> This includes successful unsubscribe actions.</td>
</tr>
<tr>
<td>4</td>
<td>Failure</td>
<td>Subscription not allowed (for example, the periodic charge is not associated with the subscriber’s product type).</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>Billing engine error.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Periodic Charge Subscription screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Periodic Charge Name** section select either the location of the charge name or charge name, select either:  
- From Profile (for the location), or  
- From Node (for the name)  
Result: The relevant fields become available. |
| 2    | If From Profile: select the location from the **Data Type**, **Location** and **Field** drop down lists.  
- If From Node: select the name from the **Name** drop down list  
**Notes:**  
- The profile **Field** is populated by the records configured on the Periodic Charge tab on the Wallet Management screen.  
- The name list are all the Periodic Charge names for this subscriber. |
| 3    | From the **Change State** drop down list, select the state the subscriber's periodic charge should be changed to. |
Step | Action
--- | ---
Examples:  
- To subscribe a subscriber to a periodic charge, select **Subscribe**.
- To unsubscribe a subscriber from a periodic charge, select **Unsubscribe**.
- To trigger a loss of service, select **Terminate**.
- To enable the first grace state on the VWS, select **Grace**.
4 | Click **Save**.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

## Periodic Charge Transfer

**Node description**

The Periodic Charge Transfer node transfers one periodic charge subscription to another periodic charge from the same group. The state and charge date remain the same, only the periodic charge subscription is changed.

The change is made for the subscriber with the CLI which matches the current calling logical number buffer in the Call Context profile. The subscription which is terminated, is the subscription which is in the periodic charge group specified in the Periodic Charge Group field.

**Warning:** If a subscriber is concurrently subscribed to more than one subscription in a group, the transfer will fail. Subscription services should be designed to ensure a subscriber does not have concurrently subscriptions to more than one periodic charge in a periodic charge group.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and seven exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>The target periodic charge is not supported by the VWS.</td>
</tr>
<tr>
<td>2</td>
<td>Not Subscribed</td>
<td>The subscriber was not subscribed to a periodic charge in the</td>
</tr>
<tr>
<td>Exit</td>
<td>Cause</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
|      | configured group. One of: | ● The subscriber's account did not have a subscription balance for any periodic charge in the group specified in the Periodic Charge Group field  
● The current subscription had a state of Unsubscribed or Terminated |
| 3    | Not In Product | The target periodic charge is not associated with the same product type as the subscriber's current periodic charge.                                                                                          |
| 4    | Success        | The wallet and subscription have been successfully changed, or the subscriber was already subscribed to the target periodic charge.                                                                         |
| 5    | Failure        | The wallet or subscription balance update has failed on the VWS.                                                                                                                                           |
| 6    | Config Error   | The configured group or target periodic charge is not found in the service provider's configuration. The group or periodic charge may have been changed since the control plan was last saved.  
This exit is also taken if the subscriber has more than one subscription within the periodic charge group. The service may need checking to see if it allows subscribers to subscribe to more than one periodic charge in a periodic charge group. |
| 7    | Error          | An error not covered by the other exits has occurred.                                                                                                                                                    |

**Restrictions**

A control plan may contain as many Periodic Charge Transfer nodes as required.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type **BCD**. See *Charging Control Services User's Guide* for further details on charging domains.
Configuration screen

Here is an example Configure Periodic Charge Transfer screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the <strong>Periodic Charge Group</strong> drop down list, select a group the target periodic charge belongs to.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Transfer Charge</strong> drop down list, select the periodic charge the subscriber’s subscription will be changed to.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

Play Next Promotion

Node description

The Play Next Promotion node calculates the subscriber’s next promotion based on their current balances and if required, plays the announcement associated with the promotion.

Only one promotion will be selected, based on the:

- Available promotions defined for the service provider and associated with the subscriber’s product type
- Balance cascade used to identify the qualifying balances
- Promotion period

If more than one promotion qualifies, then the promotion with the smallest difference between the promotion threshold and the current balance value will be selected. Optionally, the name of the selected promotion can be stored in a profile tag field.
Promotion rules
Here are the rules that apply to promotions played by the node.

1. The promotion must have one of these event categories:
   - balance recharge
   - balance credit
   - balance expiry
   - tracker threshold
   - tracker expiry

2. The subscriber must be eligible for the promotion based on the promotion white or black list.

3. The current value for the event balance type must meet the defined conditions.

Note: The promotion details are configured in the Promotion Manager screens.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
A control plan may contain as many Play Next Promotion nodes as required.

Node exits
This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>A promotion was successfully selected and either played or stored to a profile tag field.</td>
</tr>
<tr>
<td>2</td>
<td>Not Supported</td>
<td>The Domain being used does not support promotions.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>A promotion could not be selected or an error/failure occurred while attempting to play/store the promotion.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Play Next Promotion screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>If you want to play the title announcement configured in the node, in the Title Announcement area select the <strong>Play Announcement</strong> check box, then select the announcement set and entry to play from the drop down lists.</td>
</tr>
<tr>
<td>2</td>
<td>If you want to play the announcement configured for the promotion in the Promotion Manager screens, select the <strong>Play Announcement</strong> check box in the Promotion Announcement area.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The announcements configured for rewards in the Wallet Management screens will be used for licensed versions of Prepaid Charging which are earlier than version 4.3.0.0.</td>
</tr>
<tr>
<td>3</td>
<td>If you want to store the promotion name in a profile tag field then in the Destination Profile area, select the <strong>Store Promotion</strong> check box. Then using the <strong>Data Type</strong>, <strong>Location</strong> and <strong>Field</strong> drop down lists select the profile where the information will be stored.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.
Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

Select Credit Transfer

Node description

Plays an announcement for each credit transfer associated with the subscriber’s product type. The user can interrupt the announcements to select a service.

The announcements will be played in credit transfer name order. If a credit transfer does not have an announcement associated with it, then it will be skipped.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Select Credit Transfer nodes as required.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See Charging Control Services User's Guide for further details on charging domains.

Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Either all possible announcements were played or there were no credit transfers available for the subscriber's product type.</td>
</tr>
<tr>
<td>2</td>
<td>Selected</td>
<td>The user successfully selected a credit transfer service.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The user disconnected the call.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>An error/failure occurred playing the announcements or when selecting a credit transfer service.</td>
</tr>
<tr>
<td>5</td>
<td>Unsupported</td>
<td>The Domain does not support credit transfer services.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Select Credit Transfer screen.

![Configuration screen diagram]

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Transfer Type** area select the type of credit transfer for which announcements will be played. Select:  
  - **Any** to play both Peer to Peer and Service Bundle announcements  
  - **Peer to Peer** to only play Peer to Peer announcements, or  
  - **Service Bundle** to only play service bundle announcements. |
| 2    | Select the **Save User Selection** from the **Data Type**, **Location** and **Field** drop down lists. |
| 3    | In the **Title Announcement** area select the announcement set and entry that will be played first. |
| 4    | In the **Press 1** to **Press 10** areas select the announcement sets and entries to associate with the available credit transfers. Announcements for a maximum of ten credit transfer options may be played to the user. |
| 5    | Click **Save**. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.
Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

**SMS Low Balance**

**Node description**

The SMS Low Balance node sends an SMS to a subscriber when their balance falls below a specified threshold.

The message delivered by the SMS uses the ACS LowBalanceWarning Notification Type template. This node does not support the inclusion of any parameters in the notification template and therefore will send a low balance text message only.

For more information about configuring Notification Types see the Configuration chapter in the ACS User's Guide.

**Note:** You must configure a Notification Template for all languages that may be used to deliver the low balance warning message.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

This node may be used any number of times within a control plan.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Either, error / failure, or the Domain being used does not support this feature node. The balance has not been checked.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The Balance was equal to or higher than the threshold.</td>
</tr>
<tr>
<td>3</td>
<td>Low Balance</td>
<td>The Balance was lower than the threshold. An SMS will be sent from the Notification Interface using the ACS LowBalanceWarning notification type template. For more information on notification type templates, see ACS User’s Guide.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure SMS Low Balance node screen.

![Configuration screen](image)

Configuration fields

This table describes the function of the field in the Configure SMS Low Balance node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
<td>The credit value used to determine when the subscriber gets sent a low credit message.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type the credit <strong>Threshold</strong> value for triggering the low credit TXT message.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
Node logic

This diagram shows the internal logic processing of the node.

Get wallet ID

Read PT_SECOND_ANNOUNCEMENT_DAT A tag

Second currency enabled?

Yes

Get second currency data

Separator
Symbol
Exchange rate

No

Retrieve language for SMS

Retrieve account information

Including:
account balance
account expiry date
balance expiry date

Create balance string for SMS

Send SMS using chasiss action

Balance < Threshold amount

Yes

No

Exit on branch 2
Success

Exit on branch 3
Low Balance

Time Remaining

Node description

The Time Remaining node determines the remaining time available, at call start, based on a subscriber’s current cash balance.
This information is stored in configurable profile fields to be used by subsequent nodes in the control plan.

**For Example:** The Play Variable Part Announcement node will play the total available reservation duration subsequently in the control plan.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

The Play Variable Part Announcement node will play the total available reservation duration subsequently in the control plan.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Rate details retrieved successfully and profile tags are populated.</td>
</tr>
<tr>
<td>2</td>
<td>Rating Failure</td>
<td>Rate details could not be retrieved from the VWS due to invalid wallet state or incorrect rating configuration.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>An error occurred when attempting to read the feature node configuration or update a profile tag.</td>
</tr>
<tr>
<td>4</td>
<td>Unsupported</td>
<td>Either, error / failure, since the required chassis action is not supported by the VWS.</td>
</tr>
</tbody>
</table>
| 5    | Insufficient Funds| A reservation failed on the VWS either because the subscriber’s wallet didn’t contain a sufficient balance to meet one of:  
- The minimum call duration  
- The billing resolution of the associated rating rule |

**Restrictions**

A control plan can have as many Time Remaining nodes as required.

**Configuration fields**

This table describes the function of each field in the Configure Time Remaining node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Total Seconds) Data Type</td>
<td>Indicates the type of profile where the total duration value is stored.</td>
</tr>
<tr>
<td>(Total Seconds) Location</td>
<td>Indicates the buffer location of the total duration value, in seconds.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>(Total Seconds) Field</td>
<td>Indicates the profile tag where the total duration value is stored.</td>
</tr>
<tr>
<td></td>
<td>The value is stored in seconds.</td>
</tr>
<tr>
<td>(Hours) Data Type</td>
<td>Indicates the type of profile where the total hour duration value is stored.</td>
</tr>
<tr>
<td>(Hours) Location</td>
<td>Indicates the buffer location of the total hour duration value.</td>
</tr>
<tr>
<td>(Hours) Field</td>
<td>Indicates the duration in total hours for the hour portion of the time</td>
</tr>
<tr>
<td></td>
<td>remaining.</td>
</tr>
<tr>
<td>(Minutes) Data Type</td>
<td>Indicates the type of profile where the total minute duration value is stored.</td>
</tr>
<tr>
<td>(Minutes) Location</td>
<td>Indicates the buffer location of the total minute duration value.</td>
</tr>
<tr>
<td>(Minutes) Field</td>
<td>Indicates the duration in total minutes for the minute portion of the time</td>
</tr>
<tr>
<td></td>
<td>remaining.</td>
</tr>
<tr>
<td>(Seconds) Data Type</td>
<td>Indicates the type of profile where the total second duration value is stored.</td>
</tr>
<tr>
<td>(Seconds) Location</td>
<td>Indicates the buffer location of the total second duration value.</td>
</tr>
<tr>
<td>(Seconds) Field</td>
<td>Indicates the duration in total seconds for the second portion of the time</td>
</tr>
<tr>
<td></td>
<td>remaining.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Time Remaining screen.
Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | For each relevant duration, use the drop down lists to select the profile tags and fields that store the duration value. Select the following for each duration type:  
- (Total Seconds) Data Type  
- (Total Seconds) Location  
- (Total Seconds) Field  
- (Hours) Data Type  
- (Hours) Location  
- (Hours) Field  
- (Minutes) Data Type  
- (Minutes) Location  
- (Minutes) Field  
- (Seconds) Data Type  
- (Seconds) Location  
- (Seconds) Field  

For more information about the fields on this screen, see Configuration fields (on page 257).

2 | Click Save.

Tracker Account State Branch

Node description

The Tracker Account State Branch node routes the call based on the state of the caller’s account. The wallet information will be retrieved from the subscriber’s tracking domain if the wallet is distributed across separate tracking and charging domains.

Note: If the VWS is used for both the tracking and charging domain and an Account State Branch (on page 216) node is placed in front of the TASB node in the control plan, then the TASB node is ignored. The call will be routed based on the wallet state returned by the ASB node.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and eight exits. The number of exits cannot be changed.

**Note:** These exit descriptions are specific to the responses received from a VWS. You must specify a VWS domain type when configuring the tracking domain.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Active</td>
<td>The subscriber account is active.</td>
</tr>
<tr>
<td>2</td>
<td>Frozen</td>
<td>The subscriber account has been Frozen due to dishonesty.</td>
</tr>
<tr>
<td>3</td>
<td>Preuse</td>
<td>The subscriber account has not yet been used.</td>
</tr>
<tr>
<td>4</td>
<td>Suspended</td>
<td>The subscriber account is Suspended.</td>
</tr>
<tr>
<td>5</td>
<td>Dormant</td>
<td>The subscriber account is Dormant.</td>
</tr>
<tr>
<td>6</td>
<td>Terminated</td>
<td>The subscriber account has been Expired.</td>
</tr>
<tr>
<td>7</td>
<td>Unsupported</td>
<td>Either, error / failure, or the Domain being used does not support this feature node.</td>
</tr>
<tr>
<td>8</td>
<td>Abandon</td>
<td>The caller has abandoned the call.</td>
</tr>
</tbody>
</table>

**Restrictions**

This node may be used any number of times within a control plan.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node. The wallet must be on a tracking domain.

**Configuration screen**

Here is an example Configure Tracker Account State Branch node screen.

**Configuring the node**

This node requires no configuration data. You may change the **Node name**, if required.
Wallet Life Cycle Period Branching

Node description
The Wallet Life Cycle Period Branching node allows you to check if the subscriber is assigned to the WLC period of a WLC plan.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits
This node has one entry and four exits. You may add exits, to match the periods of the specified Wallet Life Cycle Plan. The maximum number of exits is limited to 20.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wrong Plan</td>
<td>Subscriber product type is not associated with the configured</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wallet Life Cycle Plan.</td>
</tr>
<tr>
<td>2</td>
<td>Not in Period</td>
<td>Subscriber account is not currently residing in any of the Wallet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life Cycle periods configured to exit branches.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>Not all capabilities are met.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>General error.</td>
</tr>
</tbody>
</table>

Restrictions
A control plan may contain as many Wallet Life Cycle Period Branching nodes as required.
**Configuration screen**

Here is an example Configure Wallet Life Cycle Period Branching screen.

![Configuration screen](image)

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the node you wish to configure.</td>
</tr>
<tr>
<td>2</td>
<td>Right-mouse click and <strong>Edit Node Exits</strong> to create the number of branches you require.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Save</strong> and return to the node.</td>
</tr>
<tr>
<td>4</td>
<td>Open the node. <strong>Result:</strong> You see the Configure Life Cycle Period Branching screen.</td>
</tr>
<tr>
<td>5</td>
<td>Select a <strong>Wallet Life Cycle</strong> plan from the drop down list of available WLC plans.</td>
</tr>
<tr>
<td>6</td>
<td>Select the Branch <strong>Number</strong>.</td>
</tr>
</tbody>
</table>
6. Select the WLC period and click **Move to branch>>**.

Note: You may associate multiple periods with the same branch, but cannot assign a period to more than one branch. It is not necessary to assign all periods.

7. When you have assigned all the required periods to the branches, click **Save**.

**Wallet State Update**

**Node description**

The Wallet State Update node sets the current wallet to the configured state.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions

A control plan may contain as many Wallet State Update nodes as required.

This node deals only with the wallet type currently set in the call context. If a different wallet is required, a Set Wallet Type node must be invoked before this node.

For more information, see Set Wallet Type.

If no wallet type has been set in the call context, the configured default wallet is used.

**Warning:** This feature node is unusable when the account details are held on a BRM. That is, when the charging domain of the subscriber is of type BCD. See *Charging Control Services User's Guide* for further details on charging domains.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The wallet state was updated.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>The wallet state update failed.</td>
</tr>
<tr>
<td>3</td>
<td>Unsupported</td>
<td>This exit is taken if the wallet state update capability is not supported.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Wallet State Update screen.

![Configure Wallet State Update](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Wallet State drop down list, select the state to change the wallet to.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save. <strong>Result:</strong> The subscriber associated with the wallet may receive a SMS notification, depending on the setting of the notification opt out flag. See <em>CCS User's Guide, Adding Subscribers</em> for configuration instructions.</td>
</tr>
</tbody>
</table>
# Chapter 8

## Data Access Pack Feature Nodes

### Overview

### Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Data Access Pack (DAP) feature nodes.

### In this chapter

This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Feature Nodes</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Feature Nodes</td>
<td>265</td>
</tr>
<tr>
<td>DAP Request</td>
<td>266</td>
</tr>
<tr>
<td>Send Request</td>
<td>271</td>
</tr>
<tr>
<td>DAP VXML</td>
<td>277</td>
</tr>
</tbody>
</table>

### Available Feature Nodes

#### DAP Feature Nodes List

This table lists the feature nodes available from the DAP palette group in the ACS Control Plan Editor and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send Request</td>
<td>The DAP Send Request node allows ACS to send DAP requests to a DAP interface for forwarding to an external ASP. Fast key: DAP1</td>
</tr>
<tr>
<td>DAP Request</td>
<td>The DAP Request feature node allows ACS to select, configure and then send DAP requests to a DAP interface for forwarding to an external ASP. Fast key: DAP2</td>
</tr>
<tr>
<td>DAP VXML</td>
<td><strong>Warning:</strong> This feature node has now been deprecated and should no longer be used. This functionality has been replaced by the Diameter Charging Driver features. This feature node plays an announcement based on a text string stored in a profile. Fast key: DAPV</td>
</tr>
</tbody>
</table>

**Note:** The Send Request node is deprecated and is included for backward compatibility to enable older control plans to compile and run correctly.
Profile Blocks and DAP

In order to read from or write to the profile blocks, the control plan needs to have access to the profile. Profiles are generally handled by ACS, however, some components use the profile loaded by the service library which is handling the call. You can load a new profile using the Load Profile feature node.

**Note:** The DAP Send Request node has no service loader of its own, and therefore the profiles that can be written are dependent on the type of control plan used. For example, you can write to Application Specific 7 to move data between USSD and Send Request nodes as this is the temporary profile available within USSD GW control plans.

For more information about which profile is loaded by a service library, see the technical documentation for the component that the service library comes from.

For more information about profile blocks, see *ACS User's Guide*.

DAP Request

Node description

The DAP Request feature node allows ACS to select, configure and then send DAP requests to a DAP interface for forwarding to an external ASP.

Request parameters can be configured in three places:

1. When importing WSDL files (SMS > DAP > Import WSDL), before saving the operation, all errors including parameter configuration values must be resolved.
2. After WSDL files have been imported and saved, they appear in the SMS > DAP > Resources > Operations dialog, where they may be edited.
3. At control plan creation time, within this node.

**Note:**

- If a parameter has been flagged as hidden either when importing or later editing the operation, this parameter will not be seen in the node parameters list. All required configuration is done outside of the node.
- The opposite is that any parameter not set to hidden, must be configured in the node.

Node icon

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many DAP Request nodes as required.
### Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>This branch taken for any of the following conditions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If the DAP macro node instance receives an indication from the DAP interface indicating that the message has been successfully sent and the outstanding request does not expect parameters to be returned.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> Any unexpected returned parameters are ignored.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• When all of the expected ASP response parameters have been copied into the stated designated fields or/profile tag blocks.</td>
</tr>
<tr>
<td>2</td>
<td>Parameter Problem</td>
<td>This branch taken for any of the following reasons:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If there is a problem retrieving the value of a stated profile tag (for example, CCS productTypeID field) and no default value has been specified.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If the node could not convert the returned value to a profile tag.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If the value cannot be stored in the profile tag.</td>
</tr>
<tr>
<td>3</td>
<td>Mismatch</td>
<td>If the outstanding request expects response parameters to be returned from the ASP but the parameters returned from the ASP do not match what is expected.</td>
</tr>
<tr>
<td>4</td>
<td>ASP Failure</td>
<td>If the ASP returns a response that is configured as &quot;Indicating Error&quot;.</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>This branch taken for any of the following conditions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If there is a format problem with the retrieved parameter string.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If a DAP interface cannot be determined to send the request to.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If an unknown short code is specified for an ACS run time parameter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If the DAP macro node instance receives an indication from the action handler or DAP interface indicating that the message has not been successfully sent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If there is a format problem with the ASP response related parameters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If an unknown short code is specified for an ACS run time parameter within the ASP response parameter information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If an unknown profile application block code is stated within the ASP response parameter information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If the macro node fails to retrieve profile block references.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Dap Request screen showing the errors that must be corrected before the Save is enabled.

![Configure Dap Request Screen]

Configuring the node

Follow these steps to configure the node request parameters.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click the Request tab if not already displayed.</td>
</tr>
<tr>
<td>2</td>
<td>Select a parameter to configure from the Request Parameters list (click on the parameter name).</td>
</tr>
<tr>
<td></td>
<td><strong>Result:</strong> Any errors for this parameter are shown in the text box above the Exit Branches.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The various configuration fields become available for completion according to how the parameter was defined in the SMS &gt; DAP &gt; Import WSDL or SMS &gt; DAP &gt; Resources &gt; Operations configuration screens:</td>
</tr>
<tr>
<td></td>
<td>• Text - Only the Description and Default Value fields available.</td>
</tr>
<tr>
<td></td>
<td>• Profileblock - Only the Description, Profile Field Type, Profile Block and Profile Field fields available.</td>
</tr>
<tr>
<td></td>
<td>• Either - all fields are available.</td>
</tr>
<tr>
<td>3</td>
<td>Enter a description for the parameter in the Description field.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>4</td>
<td>If available, optionally enter a default value in the Default Value field.</td>
</tr>
<tr>
<td>5</td>
<td>If available, select the type and location of the value from the Profile drop down lists.</td>
</tr>
</tbody>
</table>

**Note:**
- For information on profiles and how to use them, see Selecting profile locations and fields.
- If an expected profile field is missing, it can be added via the ACS Configuration screens. See Profile Tag Details.

| 6    | Repeat steps 2 to 5 for all the parameters in the list. |

**Note:** All errors for all parameters in both tabs must be resolved before the Save button is available.

| 7    | Click Save. |

### Configuration screen

Here is an example Configure Dap Request, Response tab screen.
### Configuring response tab - default

Follow these steps to configure the parameters

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click the Response tab if not already displayed.</td>
</tr>
</tbody>
</table>
| 2    | Select the parameter to configure a response for from the Parameter drop down list.  
**Result:** Any configuration requirements for this parameter are shown in the text box above the Exit Branches.  
**Note:** The various configuration fields become available for completion according to how the parameter was defined in the SMS > DAP > Import WSDL or SMS > DAP > Resources > Operations configuration screens:  
- Text - Just the Description and Default Value fields available.  
- Profileblock - Just the Description Profile Field Type, Profile Block and Profile Field fields available.  
- Either - all fields are available. |
| 3    | Type a description for the parameter in the Description field. |
| 4    | If available, optionally type a default value in the Default Value field. |
| 5    | If available, select the type and location of the value from the Profile drop down lists.  
**Note:**  
- For information on profiles and how to use them, see Selecting profile locations and fields.  
- If an expected profile field is missing, it can be added via the ACS Configuration screens. See Profile Tag Details. |
| 6    | Repeat steps 2 to 5 for all the parameters in the list.  
**Note:** All errors for all parameters in both tabs must be resolved before the Save button is available. |
| 7    | Click Save. |

### View Operation Script

Follow these steps to see the script details behind the parameters this node will use.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Click View.  
**Result:** You see the Operation Overview screen. |
Step | Action
---|---
2 | Click **Close**.

### Send Request

**Node description**

**Warning:** This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the **DAP Request** feature node.

The DAP Send Request feature node allows ACS to send DAP requests to a DAP interface for forwarding to an external ASP.

Optionally following a send, the Send Request node can also read DAP responses received on the DAP interface sent by the ASP.

**Node icon**

![Node Icon](image-url)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![SendRequest Icon]

**Restrictions**

A control plan may contain as many Send Request nodes as required.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Error</td>
<td>This exit is taken when the receiving system cannot be contacted, or there is a problem with sending the request (for example, when a NACK reply is received from an ASP). &lt;br&gt;<strong>Note:</strong> This branch will be taken at startup if slee_acs has started to process calls before the DAP interface is available.</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>This exit is taken when either an ACK is received for the message sent, or if the message is successfully sent and the wait flag is not checked.</td>
</tr>
<tr>
<td>3</td>
<td>Mismatch</td>
<td>A mismatch has occurred between the configured and actual tags received in the ASP response.</td>
</tr>
<tr>
<td>4</td>
<td>Problem</td>
<td>If the associated value received within an ASP response cannot be stored within ACS or profile. For example, incorrect size or invalid storage location.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Send Request screen. It appears like this when you first open a new node, before you select a template.

![Configure Send Request screen](image)

Configuring the node

Follow these steps to configure the Send Request node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Template</strong> to be assigned to the feature node.</td>
</tr>
</tbody>
</table>

**Note:** The templates available in the list are those that have been created using the DAP application screens. Template names suffixed with (c) indicates the template has been created with correlation.

**Result:** The fields in the box below the template selection list will be populated with the data assigned for the selected template using the **Operations** tab on the DAP Resources screen. The area displays all the variables, but only allows you to select options that were made available by selecting a **Node Disposition** that is not **Hidden**, for each parameter.
The **Variable** field displays the parameter variable defined in the script for the template.

The **Treatment** field displays the permissible treatment options for each variable. Must be one of:

- Either Required. You must either select the **Runtime** or enter **Alternative Text**.
- Text ReadOnly. Displays the alternative text supplied in the template.
- Runtime ReadOnly. Displays the runtime supplied in the template.
- Runtime Required. You must select the **Runtime**.
- Text Required. You must enter **Alternative Text** for the parameter.

**Note:** **Save** will become available once you have filled in all the required fields in this section.

2. Click **Script** to view the script used by the selected template in the Template Description screen. For more information, refer to Script format.
### Step 3
If a Runtime field is active, you can change the selected runtime value that is to be associated with the variable. The parameter will be replaced by the dynamic value at runtime.

### Step 4
If you select the runtime of Profile tag, the screen will display the Profile Block group. Select the Tag Data Type, Tag Location and Tag Field from the lists.

#### Notes:
- The Tag Field is populated with the tags that have a Profile Tag Type of String, Numeric String, or Limited Numeric String, as specified on the Profile Tag Details tab of the ACS Configuration screen.
- The Profile Blocks that can be used are dependent upon the other applications installed and the control plan you are using. For more information about how profile blocks are used, see Profile blocks.
- If the selected template specifies a Profile Tag that cannot be defined in this screen, edit the selected template on the Operations tab on the DAP Resources screen, so that it is available.

### Step 5
You create up to 20 return parameters to associate with either an ACS Runtime Variable Part or in a user-defined profile block and ID. Click New to create a return parameter.

**Result:** The Return Parameter screen appears.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 5 | In the **Tag** text box, enter the name of the XML tag containing the return details.  
**Note:** This must match an existing XML tag that is returned by the ASP.  
**Example:** For an XML script returned from an ASP containing <return_callingPartyNumber>441473289900</return_callingPartyNumber>, the **tag name to enter** is return_callingPartyNumber. |
| 6 | Select from either the **ACS Runtime** or the three fields in the **Profile Block** frame. |
| 7 | To make the return parameter optional, select the **Optional** check box.  
- If mandatory, this parameter must be returned from the ASP. If it is not, then it will go to exit branch 3 (Mismatch) and will log a syslog error naming the missing parameter.  
- If optional, the node will process the return parameter if it is returned from the ASP. If it is not, then it will still process successfully. |
| 8 | Click **Update** to save the return parameter.  
**Result:** The Configure Send Request screen shows the added return parameter. |
Step | Action
--- | ---
1 | Configure Send Request

**Note:** To edit the return parameter, select the record in the table and click **Edit**.

9

The **Wait Flag** check box displays whether the system waits for a response from the ASP before returning a DAP response to the client. If correlation has:
- Been defined for the template, the **Wait Flag** check box is selected and cannot be modified.
- Not been defined, you can select the **Wait Flag** check box, if required

10 Click **Save**.

**DAP VXML**

**Node description**

This feature node plays an announcement based on a text string stored in a profile.

**Node icon**
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many UIP VXML nodes as required.

**Restrictions**

A control plan may contain as many DAP VXML feature nodes as required.

**Node exits**

This feature node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The announcement was played successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Abandon</td>
<td>The caller hung up during the announcement.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>General Error Handling.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure DAP Play VXML Announcement screen.

**Configuring the node**

Follow these steps to configure the node.

**Note:**
- For information on profiles and how to use them, see Selecting profile locations and fields.
If an expected profile field is missing, it can be added via the ACS Configuration screens. See Profile Tag Details.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Text to Play Location field, select the profile block in which relevant information is stored.</td>
</tr>
<tr>
<td>2</td>
<td>In the Text to Play Field field, select the profile tag that identifies the information required by the node.</td>
</tr>
<tr>
<td>3</td>
<td>In the Resource Name field, enter the name of the media server which will provide the announcement.</td>
</tr>
</tbody>
</table>

**Warning:** This string must be set to `uugw`. 
Chapter 9

Data Operations Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Data Operations feature nodes. Data Operations feature nodes are used to manage and use profile data.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Data Operations Feature Nodes List

This table lists the feature nodes available from the Data Operations palette group in the ACS Control Plan Editor and the fast key for each feature node in the list. You can use the fast key to search for a feature node in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compare Profile Data</strong></td>
<td>Allows you to compare the value of two profile fields and then branch on the outcome. Fast key: CPF</td>
</tr>
<tr>
<td><strong>Copy</strong></td>
<td>Copies data (for example - digits) from one data field to another. Fast key: STTP</td>
</tr>
<tr>
<td><strong>Delete Profile Field</strong></td>
<td>Removes the selected profile field if it exists (not just the contents). Fast key: DPF</td>
</tr>
<tr>
<td><strong>Modify</strong></td>
<td>Adds, changes or removes digits from the start or end (or both) of a number. Fast key: CUTC</td>
</tr>
<tr>
<td><strong>Prefix Branching</strong></td>
<td>Compares the contents of an ACS number buffer against the specified profile field. Fast key: APBN</td>
</tr>
<tr>
<td>Node name</td>
<td>Node description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Prefix Tree Branching (on page 295)</td>
<td>Compares the contents of an ACS number buffer against the specified prefix tree. Fast key: APTB</td>
</tr>
<tr>
<td>Profile Branching (see page 298)</td>
<td>Checks the value of a specified profile field against a set value. Fast key: PB</td>
</tr>
<tr>
<td>Profile Counting (on page 300)</td>
<td>Sets or increments a profile counter. Fast key: PCNT</td>
</tr>
<tr>
<td>Set (see page 302)</td>
<td>Stores a fixed value in a data field. Fast key: SDTN</td>
</tr>
</tbody>
</table>

**Compare Profile Data**

**Node description**

The Compare Profile Data node allows you to compare the value of two profile fields and then branch on the outcome.

The compare is initially done at the field length level and then at the content level if the two fields are the same length.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Compare Profile Data nodes as required.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A &lt; B</td>
<td>Profile field value A is less than profile field B.</td>
</tr>
<tr>
<td>2</td>
<td>A = B</td>
<td>Profile field value A is equal to profile field B.</td>
</tr>
<tr>
<td>3</td>
<td>A &gt; B</td>
<td>Profile field value A is greater than profile field B.</td>
</tr>
<tr>
<td>4</td>
<td>Missing Field</td>
<td>Either profile field A or profile field B is missing from their respective profiles.</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>Any of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Invalid field type length</td>
</tr>
</tbody>
</table>
Chapter 9

Table of Causes

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Failed to retrieve profile fields</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• General Error</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Unrecognized field type</td>
</tr>
</tbody>
</table>

Content comparison rules

This table describes how the field contents are compared when the two field lengths are equal.

<table>
<thead>
<tr>
<th>Profile Field Type</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOLEAN</td>
<td>Integer comparison where false = 0, and true = 1.</td>
</tr>
<tr>
<td>BYTE</td>
<td>Integer comparison.</td>
</tr>
<tr>
<td>INTEGER</td>
<td>Integer comparison.</td>
</tr>
<tr>
<td>DATE</td>
<td>Integer comparison, where the dates are represented as a positive integer (seconds since the Epoch).</td>
</tr>
<tr>
<td>STRING, NSTRING, LNSTRING</td>
<td>Lexicographical comparison between the two equal length strings (finding the order of two words as they would appear in a dictionary).</td>
</tr>
<tr>
<td>PREFIX, OPREFIX, LOPREFIX</td>
<td>Perform byte by byte comparison of the two compiled prefix trees. Branches based on the difference between the two bytes in the two prefix trees that differ.</td>
</tr>
<tr>
<td>PATTERNS, UINTGER, UINTGER64</td>
<td>Perform a memory compare between the two fields.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Compare Profile Data screen.

![Configure Compare Profile Data screen]

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the profile field type for the comparison from the Type drop down list.  
**Note:** Not all the list items are valid for comparison. See the Content comparison rules table.  |
| 2    | Using the drop down lists in the Profile Field A area, select the first profile field to compare.  |
| 3    | Using the drop down lists in the Profile Field B area, select the other profile field to compare.  |
| 4    | Click Save.  
**Note:** The list of data types is fixed at installation time for each feature node or screen.  |

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).  
The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see **ACS User's Guide, Profile Tag Details** for more information).
Node logic

This diagram shows the internal logic processing of the node.

Copy

Node description

The Copy feature node allows you to copy data (for example - digits) from one profile field to another. You can always copy a profile field to another profile field of the same type. In addition, you can use the Copy feature node to convert between the following profile field types:

- Boolean
- Byte
- Short
- Integer
- Unsigned Integer
- Unsigned 64-bit Integer
- String
- Numeric String
- Limited Numeric String
- Bounded Integer
The Copy feature node first converts the source field to a character string (except when it is already a string or a numeric string field) and then converts the character string to the target type, according to a set of predefined Profile Field Conversion Rules (on page 286).

If the source profile field type is OPREFIX or LOPREFIX, then the Copy feature node copies the source field content directly into a corresponding prefix tree without any conversion.

Profile Field Conversion Rules
This table lists the types of conversions and the corresponding conversion rules used by the Copy feature node to convert profile field data to and from character strings.

<table>
<thead>
<tr>
<th>Type of Conversion</th>
<th>Conversion Rule</th>
</tr>
</thead>
</table>
| Boolean to character string | Interprets the stored bytes as a signed four byte integer that is represented in base 10, and:  
  - Converts false to zero (0).  
  - Converts true to a non zero integer (usually either one (1), or 16777216). |
| Character string to boolean | Converts the following values to true:  
  - Non-zero integers.  
  - "true", "t", "yes", "y", and "on".  
  Converts all other values, including an empty string, and zero (0) to false. |
| Byte to character string | Converts bytes (assumed to be unsigned) to a value in the range of "0" to "255". |
| Short to character string | Converts shorts (assumed to be unsigned) to a value in the range of "0" to "65535". |
| Integer to character string | Converts integers (represented in base 10) to a value in the range of 
  
  
  
  
  "-9223372036854775808" to "9223372036854775807".  
  
  **Note:** Integers are either four bytes or eight bytes long. |
| Unsigned 64-bit integer to character string | Converts unsigned integers (represented in base 10) to a value in the range of 
  
  
  
  
  "0" to "18446744073709551615". |
| Character string to one of:  
  - Unsigned Integer  
  - Unsigned 64-bit integer  
  - Integer  
  - Short  
  - Byte | Converts the string to the required number type.  
  If the character string starts with "0x", then the Copy feature node discards the "0x" and interprets the string as a base 16 number.  
  Otherwise the Copy feature node interprets the string as a base 10 number. |
| Unsigned integer to character string | Converts unsigned integers (represented in base 10) to a value in the range of 
  
  
  
  
  "0" to "4294967295". |
| String, limited numeric string, or numeric string to character string.  
  Character string to string, limited numeric string, or numeric string.  
  Bounded integer to character string | No conversion needed. The Copy feature node copies these types of profile fields to another profile field of the same type.  
  The Copy feature node cannot copy a bounded integer to a character string. |
## Type of Conversion

<table>
<thead>
<tr>
<th>Type of Conversion</th>
<th>Conversion Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character string to bounded integer</td>
<td>Converts the character string to a four byte integer and puts it in bytes 9, 10, 11 and 12 of the bounded integer.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Bytes one to four hold the lower bound, and bytes five to eight hold the upper bound. To successfully copy an integer to a bounded integer, the source integer must be between the two bounds.</td>
</tr>
</tbody>
</table>

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success Branch</td>
<td>Data successfully saved to the profile.</td>
</tr>
<tr>
<td>2</td>
<td>Not Updated Branch</td>
<td>Data could not be saved.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Copy screen.

Include Pending TN Type

The Include Pending TN Type check box appears when the Source Field selection is CC Pending Termination Number, as shown in this example of part of the screen.
Treat Target as Prefix
The Treat Target as Prefix check box appears when the Source Field and Target Field selections are of type string or number string, as shown in this example of part of the screen.

Use Stored Sub-Tag
The Use Stored Sub-Tag check box appears when the Target Field selection contains sub-tags (for example, the Speed Dial Block contains the sub-tag list of speed dial numbers. For more information, see Sub-tags (on page 5)), as shown in this example of part of the screen.

In this example, earlier in the Control Plan, the sub-tag (e.g. the speed dial number, let’s say 50) has been specified using the Collect Digits To Sub-tag (see page 329) node. The telephone number, e.g. 08001234567, to associate with it has then been stored in the CC Pending TN buffer using the Collect Digits to Pending TN (see page 474) node. Using the Copy node, that number is copied into the Speed Dial block, so that the speed dial number 50 is set to call 08001234567.

Configuring the node
Follow these steps to configure the Copy node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the drop down lists in the Source Profile area, select the source stored data location.</td>
</tr>
</tbody>
</table>

Notes: If you set a customer-specific profile, the profile set in this field must belong to the customer who will be running the Control Plan.
# Delete Profile Field

## Node description

The Delete Profile Field node allows you to delete the specified profile field from the profile (that is, the field as well as the contents are removed from the profile).

## Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | If the Control Plan is owned by the Boss user:  
|      | - the profile must be set to Control Plan, or  
|      | - a customer id must be specified at an earlier point in the Control Plan. |
| 2    | From the drop down lists in the **Target Profile** area, select the target that the data is to be copied to. |
| 3    | If the **Include Pending TN Type** check box is displayed, then either:  
|      | - tick the node will save the Pending TN to the profile with the Pending TN Type prefixed.  
|      | - clear the node will save just the Pending TN to the profile. |
| 4    | If the **Treat Target as Prefix** check box is displayed, then either:  
|      | - tick the node will prefix the target value with the source value.  
|      | - clear the node will copy the source value to the target value. |
| 5    | If the **Use Stored Sub-Tag** check box is displayed, select the required target field format from the **Target sub-tag Storage Format** drop down list. The node will save the sub-tag value with the required format in the target field. |
| 6    | Click **Save**.  
|      | **Note:** **Save** is not available until all the required information has been selected or entered.  
|      | **Note:** The list of data types is fixed at installation time for each feature node or screen. |

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
- For information about using the Call Context Profile, refer to *ACS Buffers* (on page 7).
Restrictions
A control plan may contain as many Delete Profile Field nodes as required.

Node exits
This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The delete was successful.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>The delete failed.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Delete Profile Field screen.

Configuring the node
Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Profile Field area, using the drop down lists, select the profile field to delete.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:
- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).

The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).
Modify

Node description

The Modify feature node allows you to add, change or remove digits from the start or end (or both) of a number.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Modify nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Modified</td>
<td>The number was modified.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>Error</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Modify screen.

![Configuration screen](image)

Configuring the node

Follow these steps to edit the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Modify area, using the drop down lists, select the field to modify.  
**Note:** ACS normalisation will have already been applied to this number. |
| 2    | Type the number of digits that are to be stripped from the front of the number.  
**Example:** If a value of 2 is entered, 2 digits are removed from the start of the number. |
| 3    | Type the number of digits that are to be stripped from the end of the number. |
| 4    | Type the characters to prepend to the start of the number. |
| 5    | Type the characters to append to the end of the number. |
| 6    | Click **Save**.  
**Note:** The list of data types is fixed at installation time for each feature node or screen. |

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Prefix Branching

Node description

The Prefix Branching node allows you to compare the contents of an ACS number buffer against the specified profile field, and will branch according to whether the profile field content is a prefix of the ACS number buffer value.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Prefix Branching nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matched</td>
<td>The specified profile field’s value was a prefix of the number buffer’s value.</td>
</tr>
<tr>
<td>2</td>
<td>Not Matched</td>
<td>The specified profile field’s value was not a prefix of the number buffer’s value.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Prefix Branching screen.

![Configuration screen](image)

Editing the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using the drop down lists in the Number String area, select the source prefix tree.</td>
</tr>
<tr>
<td>2</td>
<td>Using the drop down lists in the Number Source area, select the ACS number buffer containing the number to compare with the prefix tree.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Prefix Tree Branching

Node description

The Prefix Tree Branching node allows you to compare the contents of an ACS number buffer against the specified prefix tree, and will branch according to whether the tree contains a prefix of the number.

If a match is found, the value associated with the matched entry (often the order of a limited prefix tree) will be stored in the specified profile field.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Prefix Tree Branching nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matched</td>
<td>A prefix of the number was found in the tree.</td>
</tr>
<tr>
<td>2</td>
<td>Not Matched</td>
<td>A prefix of the number was not found in the tree.</td>
</tr>
<tr>
<td>3</td>
<td>Fully Matched</td>
<td>The number was found in the tree (full match, not a prefix)</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Prefix Tree Branching screen.

![Configuration screen](image)

**Configuring the node**

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Prefix Tree area, using the drop down boxes, select from the list of prefix trees.</td>
</tr>
<tr>
<td>2</td>
<td>In the Number Source area, using the drop down boxes, select the source for the number to match.</td>
</tr>
</tbody>
</table>
| 3    | If you want to temporarily store a matched number in a specified field so that the node doesn't change the prefix tree:  
  1. Tick the **Enabled** check box in the Use Selected Entry area.  
  2. Then use the drop-down lists in the Selected Entry area to specify where to store the number. |
| 4    | Click **Save**. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

Node logic

This diagram shows the internal logic processing of the node.

Profile Branching

Node description

The Profile Branching feature node checks the value of a specified profile field against a set value.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Profile Branching nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle VWS billing engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>True</td>
<td>The result of the comparison is true for the factors set in the node screen.</td>
</tr>
<tr>
<td>2</td>
<td>False</td>
<td>The result of the comparison is false for the factors set in the node screen.</td>
</tr>
<tr>
<td>3</td>
<td>Data Not Found</td>
<td>Data required by the node has not been found. No comparison has been made.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Profile Branching screen.
Configuring the node

Follow these steps to configure the Profile Branching node.

Note: For information on profiles and how to use them, see Selecting profile locations and fields.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>Source Data Type</strong> field, select the data type of the source profile block.</td>
</tr>
<tr>
<td>2</td>
<td>In the <strong>Source Location</strong> field, select the profile block in which relevant information is stored.</td>
</tr>
<tr>
<td>3</td>
<td>In the <strong>Source Field</strong> field, select the profile tag that identifies the information required by the node.</td>
</tr>
<tr>
<td>4</td>
<td>Select either to compare the <strong>Value</strong>, or the <strong>Length</strong> of the source.</td>
</tr>
</tbody>
</table>
| 5    | From the **Comparison Operator** list, select the type of comparison that is to be made.  
Example: In the screen shown above, the value in the specified profile field is required to be greater than 0. Therefore, the Comparison Operator is set to “Greater than” and the Comparison Constant is set to “0”. |
| 6    | Type the **Comparison Constant** that is required.  
Result: The specified Profile field will be compared with the set constant value. |
| 7    | Click **Save**.  
Note: The **Save** button becomes available when the Primary Tag field is populated with a value other than 0. |

Profile Counting

Node description

The Profile Counting node resets the configured integer profile field by one of:

- Setting the profile field content with this node's configured value
- Incrementing the profile field content by this node's configured value

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Profile Counting nodes as required.
Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The profile counting field was updated successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>General Error.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Profile Counting screen.

![Configure Profile Counting screen](image)

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Profile Counter Field area, using the drop down boxes, select the target profile counter field.</td>
</tr>
<tr>
<td>2</td>
<td>Type the number to set to or increment the profile counter by in the Value field.</td>
</tr>
<tr>
<td>3</td>
<td>To set the profile counter to the value, tick the Set Absolute check box. To increment the profile counter by the value, clear the Set Absolute check box.</td>
</tr>
<tr>
<td>4</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:
For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and *Profile Tag Mapping* tabs (see *ACS User's Guide*, *Profile Tag Details* for more information).

**Node logic**

This diagram shows the internal logic processing of the node.

```
Retrieve profile field

Field missing?

Yes → Exit on branch 2
              Error

No

No

Set Absolute?

Yes

Add value to profile field

Set profile field to value

Exit on branch 1
              Success
```

**Set**

**Node description**

This node stores the entered digits in a data field. They may be later collected from this profile and used in the control plan.

A percentage character will have a special meaning during the node processing. If a '%' is entered in the digits field on the node edit screen it will be replaced by the current value of the buffer and the buffer will be updated with that final result. Only the first occurrence of the '%' char will be treated this way. Any other occurrences of the percentage character will be ignored.

**Node icon**

![Node icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Set icon](image)

**Restrictions**

A control plan may contain as many Set nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Value has been set in target profile.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>Error occurred.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Set screen.

![Configure Set screenshot](image)

**Configuring the node**

Follow these steps to configure the Set node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Value field type the number (in digits) to save in the selected target profile field.</td>
</tr>
<tr>
<td>2</td>
<td>In the Target Profile area, using the drop down boxes, select the target profile.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.
Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
The primary tag lists are configured in the *SMS > Services > ACS Service > Configuration > Profile Tag Details* and *Profile Tag Mapping* tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) ENUM Control Agent feature nodes.

In this chapter

This chapter contains the following topics:

Available Feature Nodes

ENUM Feature Nodes List

This table lists the feature nodes available from the ENUM palette group in the ACS Control Plan Editor and the fast key for each feature node in the list. You can use the fast key to search for a feature node in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENUM Call Out</td>
<td>The ENUM Call Out node performs an ENUM lookup using the ENCA interface.</td>
</tr>
<tr>
<td>ENUM NAPTR</td>
<td>The ENUM NAPTR Response node processes a previously retrieved NAPTR response.</td>
</tr>
<tr>
<td>ENUM Query</td>
<td>The ENUM Query node is used to query the ENUM database.</td>
</tr>
</tbody>
</table>

ENUM Call Out

Node description

The ENUM Call Out node performs an ENUM lookup using the ENCA interface.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many ENUM Call Out nodes as required.

Node exits

This node has one entry and ten exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>ENCA return code = 0</td>
</tr>
<tr>
<td>2</td>
<td>Too Few Parameters</td>
<td>No number was given in the call-out ENCA request (number is blank).</td>
</tr>
<tr>
<td>3</td>
<td>Failed Translation</td>
<td>ENCA DNS response translation failed.</td>
</tr>
<tr>
<td>4</td>
<td>DNS Timeout</td>
<td>DNS server(s) failed to respond within the configured time-limit.</td>
</tr>
<tr>
<td>5</td>
<td>DNS Format Error</td>
<td>DNS served responded with message: &quot;Format Error&quot;.</td>
</tr>
<tr>
<td>6</td>
<td>DNS Server Failure</td>
<td>DNS served responded with message: &quot;Server Failure&quot;.</td>
</tr>
<tr>
<td>7</td>
<td>DNS Name Error</td>
<td>DNS served responded with message: &quot;Name Error&quot;.</td>
</tr>
<tr>
<td>8</td>
<td>DNS Not Implemented</td>
<td>DNS served responded with message: &quot;Not Implemented&quot;.</td>
</tr>
<tr>
<td>9</td>
<td>DNS Refused</td>
<td>DNS served responded with message: &quot;Refused&quot;.</td>
</tr>
<tr>
<td>10</td>
<td>ENCA Fail</td>
<td>ENCA failure (out of resources / bad domain name / any other error).</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure ENUM Call Out screen.

![Configure ENUM Call Out Screen]

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select where the number to convert will be sourced from, one of:  
|      |  - **Profile** (from a profile block and tag)  
|      |  - **Freeform** (from this configuration screen)  
|      | **Result:** The relevant Number Location fields are made available.  
| 2    | Depending on what was selected at step 1, one of:  
|      |  - Select the Number Location from the **Number Location** and **Number Field** drop down lists  
|      |  - Enter the number in the **Number** field
**Step** | **Action**
--- | ---
3 | If the number is to be converted to FQDN format, select the Convert to FQDN check box.
4 | Select where the domain name will be sourced from, one of:
   - **Profile** (from a profile block and tag)
   - **Freeform** (from this configuration screen)
**Result:** The relevant Domain Name fields are made available.
5 | Depending on what was selected at step 4, one of:
   - Select the Domain Name from the Domain Name Location and Domain Name Field drop down lists, or
   - Enter the domain name in the Domain Name field.
6 | Click **Save**.

**ENUM Naptr Response**

**Node description**

The ENUM NAPTR Response node processes a previously retrieved NAPTR response to extract specific records.

When extracting AUS (Application Unique String) type, the presence of the AUS is detected by a ‘+’ character found, followed by one or more numerical characters terminated with ‘@’ (for example "!^.*$!+441473289900@oracle.com!")

**Node icon**

![Node icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many ENUM NAPTR Response nodes as required.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The record was extracted and saved.</td>
</tr>
<tr>
<td>2</td>
<td>No Match NAPTR</td>
<td>The required record could not be found.</td>
</tr>
<tr>
<td>3</td>
<td>No Match AUS</td>
<td>An AUS format number could not be found.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>Any other error situation.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure ENUM NAPTR Response screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Search String** section, set the search criteria to match records against.  
|      | • Enter the record type to extract in the **Search String** field  
|      | • Enter the record number to extract in the **Index** field |
| 2    | In the **Active Record Save Location**, identify where the found record is to be saved, one of:  
<p>|      | • A new location, select from the <strong>Profile Location</strong> and <strong>Profile Field</strong> drop down lists |</p>
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><strong>Note:</strong> selecting this check box over-rides any profile selection.</td>
</tr>
<tr>
<td>3</td>
<td>In the <strong>Regular Expression Substitution</strong> section, to invoke the regular expression substitution, check the <strong>Perform Substitution</strong> check box, then:</td>
</tr>
<tr>
<td></td>
<td>• Identify incoming profile location, one of:</td>
</tr>
<tr>
<td></td>
<td>▪ Select an incoming AUS value from the <strong>Incoming Profile Location</strong> and <strong>Incoming Profile Field</strong> drop down lists</td>
</tr>
<tr>
<td></td>
<td>▪ Select the <strong>Use Default Profile</strong> check box</td>
</tr>
<tr>
<td></td>
<td>• Select a save location from the <strong>Outgoing Profile Location</strong> and <strong>Outgoing Profile Field</strong> drop down lists</td>
</tr>
<tr>
<td>4</td>
<td>In the <strong>AUS Processing</strong> section, for AUS format numbers extracted:</td>
</tr>
<tr>
<td></td>
<td>• Select the <strong>Extract AUS</strong> check box</td>
</tr>
<tr>
<td></td>
<td>• If required, select the <strong>Remove +</strong> check box to remove the preceding +</td>
</tr>
<tr>
<td></td>
<td>• If required, select the <strong>Remove -</strong> check box to remove the preceding -</td>
</tr>
<tr>
<td>5</td>
<td>In the <strong>AUS Save Location</strong> section, for AUS format numbers, select the save location from the <strong>Profile Location</strong> and <strong>Profile Field</strong> drop down lists.</td>
</tr>
<tr>
<td>6</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**ENUM Query**

**Node description**

The ENUM Query node is used to query the ENUM database.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many ENUM Query nodes as required.
## Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Subscriber records   | Search key found subscriber records that matched the search key (dialed number within a record number range) and may have matched the optional Service criteria.  
  **Note:** The search key is used to find subscribers/operators. This is a dialed number (for example, 1234567) that is searched for between a range of numbers. |
| 2    | Operator records     | Search key did not find any subscriber records, but did find operator records that matched the search key (dialed number within a record number range) and may have matched the optional Service criteria. |
| 3    | No NAPTR Records     | Search key did find subscriber or operator records that matched the search key but did not find any NAPTR records.                             |
| 4    | No SUB/OP info       | Search key did not find any subscriber or operator records that matched the search key.                                                     |
| 5    | Error                | Database or I/O error.                                                                                                                      |

**Note:** The Service criteria is an optional delimiter for the NAPTR record returned. By specifying the service you can delimit on the service of a NATPR records (that is, only return records of E2U+sip type). The search key is still the primary search criteria.
Configuration screen

Here is an example Configure ENUM Query screen.

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Search Key Location**, one of:  
|      |   - Select from the drop down lists  
|      |   - Select the **Use Default Profile** check box |
| 2    | To optionally specify a **Service Type**:  
|      |   - Select the **Specify Type** check box  
|      |   - Select the **Service Type** from the drop down list  
|      | **Note:** The Service Type list is configured in SMS > Services > ENUM service > NAPTR Record Management > Service tab/screens. |
| 3    | Select the **Outgoing Destination** location using the drop down lists. |
| 4    | Click **Save**. |
Overview

Introduction
This chapter describes the Oracle Communications Network Charging and Control (NCC) Events feature nodes. Event logging feature nodes collect and store data from the call, so that it can be retrieved in report form.

In this chapter
This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Branching (see page 313)</td>
<td>Enables alternative control plan branches to be taken, based on the value of a particular event count.</td>
</tr>
<tr>
<td>Event Counting (see page 315)</td>
<td>Increments a specified counter by a specified amount each time a call is routed through this node.</td>
</tr>
<tr>
<td>Event Setting (see page 316)</td>
<td>Resets an event counter to a specified number each time a call is routed through this node.</td>
</tr>
</tbody>
</table>

Available Feature Nodes

Events Feature Nodes List
This table lists the feature nodes available from the Events palette group in the ACS Control Plan Editor.

Event Branching

Node description
This node will enable alternative control plan branches to be taken, based on the value of a particular event count. A comparison of the current value of a particular counter may be made against a constant value or another event count.

To configure this node, two statistics counters are specified, or a statistics counter and a constant value. The two counters (or the counter and the constant) are compared according to a specified comparison operation. For example, a constant value of 6 may be specified, with a comparison operation of “greater than”. In this case, calls will be routed down the “Comparison is True” branch whenever the first statistics counter registers a value greater than 6. All other calls are routed down the “Comparison is False”.
A control plan may contain as many Event Branching nodes as required.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>True</td>
<td>The result of the comparison is true for the factors set in the node screen.</td>
</tr>
<tr>
<td>2</td>
<td>False</td>
<td>The result of the comparison is false for the factors set in the node screen.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Event Branching screen.

**Configuring the node**

Follow these steps to configure the Event Branching node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the <strong>Counter</strong> list, select the counter that is to be monitored by the node. Counters are configured through the <strong>Event Counters</strong> tab on the ACS Resources screen. For more information, see <strong>ACS User's Guide</strong></td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>2</td>
<td>From the Operation list, select the type of comparison that is to be made.</td>
</tr>
<tr>
<td>3</td>
<td>From the Counter or Constant list, select a statistics counter or (Compare with Constant Value). If comparing with a constant value, enter the value in the field above the list field.</td>
</tr>
<tr>
<td>4</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Event Counting**

**Node description**

This node increments a specified counter by a specified amount, each time a call is routed through the node.

The Event Counting Node must be given a statistics counter in which to save the statistics, and an amount by which to increment each time the node has a call routed through it. This is set in the Configure Event Counting screen shown below. The Configure Event Counting screen is available from the Edit Node Data option on the shortcut menu.

A control plan may contain as many Event Counting nodes as required.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and one exit. The number of exits cannot be changed.

**Configuration screen**

Here is an example Configure Event Counting screen.
Configuring the node

Follow these steps to configure the Event Counting node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the event counter from the drop-down list to which this Event Counting node is counting. Event counters are set up in the Event Counters tab on the ACS Resources screen.</td>
</tr>
<tr>
<td>2</td>
<td>In the Increment field, enter the number that the counter will increment each time a call is routed through the node. The increment value must be between -999999 and 999999.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Event Setting

Node description

This node will reset a event counter to a specified number each time a call is routed through this node. The Event Setting node must have a statistics counter that is to be reset specified and the amount that the statistics counter is to be reset to. These things are set in the Configure Event Setting screen. A control plan may contain as many Event Setting nodes as required.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and one exit. The number of exits cannot be changed.

Configuration screen

Here is an example Configure Event Setting screen.
Configuring the node

Follow these steps to configure the Event Setting Node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the event counter that is to be reset from the drop-down list. Event counters are set up in the Event Counters tab on the ACS Resources screen.</td>
</tr>
<tr>
<td>2</td>
<td>Enter the number to which the statistics counter is to be reset. A Statistics Counter may be reset to any value between -99999 and 999999.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
Chapter 12

Interaction Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Interaction feature nodes. Use Interaction feature nodes to play an announcement to the caller, or to prompt for caller interaction, or to relay call information.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Interaction Feature Nodes List

This table lists the feature nodes available from the Interaction palette group in the ACS Control Plan Editor and the fast keys for the feature nodes in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect Date to Tag</td>
<td>Collects and saves a date and/or time to a profile field. Input is either another profile or subscriber. Fast key: CDTT</td>
</tr>
<tr>
<td>Collect Digits to Buffer</td>
<td>Prompts the user to enter digits and will then store the entered digits in a nominated buffer from where they may be later used in the control plan. Fast key: CDB</td>
</tr>
<tr>
<td>Collect Digits to Sub-tag</td>
<td>Prompts the user to enter digits and will save digits to the sub tag variable for use in other nodes. Fast key: CDST</td>
</tr>
<tr>
<td>PIN Authorisation</td>
<td>Verifies the PIN number, prompting the caller for the PIN if necessary. Fast key: PINA</td>
</tr>
<tr>
<td>Play Announcement</td>
<td>Plays a specified announcement to the caller.</td>
</tr>
<tr>
<td>Node name</td>
<td>Node description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Play Variable Part Announcement</td>
<td>Plays an announcement to the caller containing up to five variable &quot;parts&quot; containing, for example, numbers and prices. Fast key: PAPV</td>
</tr>
<tr>
<td>Selection Dependent Routing</td>
<td>Menu node which prompts the caller to enter a digit and takes an exit based on that digit. Fast key: SD Shortcut keys: Alt+M</td>
</tr>
<tr>
<td>Send Notification</td>
<td>This node constructs message text from the given notification template and then sends the message using one of the available transport mechanisms. Fast key: NOTF</td>
</tr>
</tbody>
</table>

**Collect Date to Tag**

**Node description**

Collects and saves a date and/or time to a profile field. Input is either another profile or subscriber.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Collect Date to Tag nodes as required.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The date and/or time was successfully saved in the target location.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>Any of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Maximum number of retries has been reached without getting any valid date and/or time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Equipment failure during interaction with Subscriber</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>Any of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The subscriber hung up before completing the date/time</td>
</tr>
</tbody>
</table>
Exit | Cause | Description
--- | --- | ---
 |  | request.
 |  | - The subscriber pressed the star key to cancel the selection of the date or time.

**Configuration screen**

Here is an example Configure Collect Date To Tag screen. The active areas on the screen change depending upon the options selected on it, so the example is split into each section.

**Source Profile Tag**

Here is an example of part of the Configure Collect Date to Tag screen, showing active fields if the Profile Tag option is selected.

**User Interaction Configuration**

Here is an example of part of the Configure Collect Date to Tag screen, showing the User Interaction Configuration frame.
**Date configuration**

Here is an example of part of the Configure Collect Date to Tag screen, showing active fields if the **User Interaction** and **Collect Date Only** options are selected.

**Time configuration**

Here is an example of part of the Configure Collect Date to Tag screen, showing active fields if the **User Interaction** and **Collect Time Only** options are selected.

**Date +Time configuration**

If the **User Interaction** and **Collect Date + Time** options are selected, the fields displayed in the example **Date configuration** (on page 322) and **Time configuration** (on page 322) are active.
Target Selection
Here is an example of part of the Configure Collect Date to Tag screen showing the target selection fields.

Response defaults
When collecting date and/or time from a subscriber, there are defaults used if the complete date or time are not entered.

The defaults for dates are:
- The month value must be entered by the subscriber.
- Missing year is substituted by the current sysdate year value.
- Missing day is substituted by "01".
- When time only collected, date is defaulted to "01/01/1970"

The defaults for times are:
- The hour value must be entered by the subscriber.
- Missing minutes are substituted by "00".
- Missing seconds are substituted by "00".
- When date only collected, time is defaulted to "00240000".

Configuring the node
Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the source profile tag (See example on page 321). The options are: User Interaction  
|      |        |
|      | "Profile Tag"  
|      | Result: The relevant fields are made available, others are grayed out. |

User Interaction

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2    | Select what data is to be requested from the subscriber. The options are: Collect Date Only  
|      | Collect Time Only  
|      | Collect Date + Time  
|      | Result: The relevant date/time fields are available or grayed out. |

3 Select Maximum number of retries from the scroll box.

Notes:
- Each announcement also has a number of allowed retries, collectively these may...
Step | Action
--- | ---
1 | The number of retries for the date selections should be greater than the Maximum number of retries.
   - If there is a timeout, or an invalid date or time selected by the user, the Retry prompt is played to invite the user to provide another date or time.
   - After the announcement Repetition or Maximum number of retries failures, the feature node branches to Error.
   - When the Collect Date + Time option has been selected and the date is valid before running out of allowed retries, then the number of retries for the time selections are set to the Maximum number of retries value.

4 | For the option:
   - **Collect Date Only**: Follow the procedure for Collect Date Only (see "Configuring the node" on page 324).
   - **Collect Time Only**: Follow the procedure for Collect Time Only (see "Configuring the node" on page 325).
   - **Collect Date + Time**:
     1. Follow the procedure for Collect Date Only (see "Configuring the node" on page 324).
     2. Follow the procedure for Collect Time Only (see "Configuring the node" on page 325).

5 | Follow the steps for Target Selection.
6 | Click Save.

### Profile Tag

2 | Select the **Source Profile Tag** from the Data Type, Location and Field drop down lists.
3 | Select the date and time format from the **Source Tag Mask** drop down list.
4 | Follow the steps for Target Selection.
5 | Click Save.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User's Guide, Profile Tag Details* for more information).

### Configuring the node

Follow these steps to **configure the date** (See example on page 322) only interaction.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the date entry announcement to play from the Collect Date Main Configuration drop down lists.</td>
</tr>
<tr>
<td>2</td>
<td>Select the maximum number of times to repeat the announcement from the Collect Date Main Configuration Repetition scroll box.</td>
</tr>
<tr>
<td>3</td>
<td>Select the maximum duration (in seconds) to wait for user interaction from the Collect Date Main Configuration Duration scroll box.</td>
</tr>
<tr>
<td>4</td>
<td>Select the retry announcement to play from the Collect Date Retry Configuration drop down lists.</td>
</tr>
<tr>
<td>5</td>
<td>Select the maximum number of times to repeat the announcement from the Collect Date Retry Configuration Repetition scroll box.</td>
</tr>
</tbody>
</table>
### Chapter 12

#### Interaction Feature Nodes

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Select the maximum duration (in seconds) to wait for user interaction from the Collect Date Retry Configuration <strong>Duration</strong> scroll box.</td>
</tr>
<tr>
<td>7</td>
<td>Select the confirmation announcement to play from the <strong>Collect Date Confirmation Configuration</strong> drop down lists.</td>
</tr>
<tr>
<td>8</td>
<td>Select the maximum number of times to repeat the announcement from the Collect Date Confirmation Configuration <strong>Repetition</strong> scroll box.</td>
</tr>
<tr>
<td>9</td>
<td>Select the maximum duration (in seconds) to wait for user interaction from the Collect Date Confirmation Configuration <strong>Duration</strong> scroll box.</td>
</tr>
<tr>
<td>10</td>
<td>Select the <strong>Date Format</strong> from the drop down list.</td>
</tr>
</tbody>
</table>

**Configuring the node**

Follow these steps to *configure the time* (See example on page 322) only interaction.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the time entry announcement to play from the <strong>Collect Time Main Configuration</strong> drop down lists.</td>
</tr>
<tr>
<td>2</td>
<td>Select the maximum number of times to repeat the announcement from the Collect Time Main Configuration <strong>Repetition</strong> scroll box.</td>
</tr>
<tr>
<td>3</td>
<td>Select the maximum duration (in seconds) to wait for user interaction from the Collect Time Main Configuration <strong>Duration</strong> scroll box.</td>
</tr>
<tr>
<td>4</td>
<td>Select the retry announcement to play from the <strong>Collect Time Retry Configuration</strong> drop down lists.</td>
</tr>
<tr>
<td>5</td>
<td>Select the maximum number of times to repeat the announcement from the Collect Time Retry Configuration <strong>Repetition</strong> scroll box.</td>
</tr>
<tr>
<td>6</td>
<td>Select the maximum duration (in seconds) to wait for user interaction from the Collect Time Retry Configuration <strong>Duration</strong> scroll box.</td>
</tr>
<tr>
<td>7</td>
<td>Select the confirmation announcement to play from the <strong>Collect Time Confirmation Configuration</strong> drop down lists.</td>
</tr>
<tr>
<td>8</td>
<td>Select the maximum number of times to repeat the announcement from the Collect Time Confirmation Configuration <strong>Repetition</strong> scroll box.</td>
</tr>
<tr>
<td>9</td>
<td>Select the maximum duration (in seconds) to wait for user interaction from the Collect Time Confirmation Configuration <strong>Duration</strong> scroll box.</td>
</tr>
<tr>
<td>10</td>
<td>Select the <strong>Time Format</strong> from the drop down list.</td>
</tr>
<tr>
<td>11</td>
<td>Select the <strong>Timezone type</strong> from the drop down list. Options are:</td>
</tr>
<tr>
<td></td>
<td>- SCP Local Time</td>
</tr>
<tr>
<td></td>
<td>- GMT</td>
</tr>
<tr>
<td></td>
<td>- Explicit Unix TZ</td>
</tr>
<tr>
<td></td>
<td>- TZ of Service Number</td>
</tr>
<tr>
<td></td>
<td>- TZ of Logical CLI</td>
</tr>
<tr>
<td></td>
<td>- TZ of Network CLI</td>
</tr>
<tr>
<td>12</td>
<td>If you selected the type <strong>Explicit Unix TZ</strong>, select the <strong>Unix Timezone</strong> from the drop down list.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to select the target (See example on page 323) where to store the date and time data.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select in the **Target Selection** frame, the target **Data Type**, **Location** and **Field** drop down lists.  

**Note:** This may require scrolling to the bottom of the screen. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

## Collect Digits to Buffer

### Node description

This node prompts the user to enter digits which it then stores in the nominated buffer or profile location. The digits may be retrieved later and used in the Control Plan. Any buffer may be selected; however some buffers may be used by subsequent nodes that are expecting a different value.

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

A control plan may contain as many Collect Digits to Buffer nodes as required.

### Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The correct number of digits was collected successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Not Updated</td>
<td>The correct number of digits was not collected after the specified number of retries.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>The caller abandoned the call.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Collect Digits to Buffer screen.

![Configure Collect Digits to Buffer screen](image)

Configuring the node

Follow these steps to edit the feature node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | The **Type of Digits to Collect** field is only relevant if you are going to select **CC Pending Termination Number** from the **Buffer Field** list. See Step 2.  
If relevant, select a value for this field; otherwise ignore it. |
| 2    | From the lists in the **Buffer** frame, select the location to use to store the collected digits.  
**Notes:**  
- If you want to copy the type of digits data to Pending TN Type, select the Pending Termination Number buffer.  
- For information on profiles and how to use them, see Selecting profile locations and fields. See **ACS Buffers** (on page 7) for more information about buffers. |
| 3    | From the **Main Announcement** frame, select: |
Step | Action
--- | ---
1 | The announcement set that contains the main announcement you want to play to the caller from the Announcement Set list.
2 | The announcement to play from the Announcement Entry list.
3 | Set the Repetition field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set.
4 | Set the Duration field to the length of time in seconds that the announcement is to be played. If set to zero, the announcement will be played for its full length.
5 | The retry announcement contains the announcement you want to play to the caller if the number of digits collected is not within the range specified.
6 | In the Retry Announcement frame, select the:
   - Announcement Set that contains the retry announcement.
   - Announcement Entry for the retry announcement you want to play.
   Then set:
   - Repetition to the number of times to repeat the retry announcement.
   - Duration to the length of time, in seconds, that the retry announcement is to be played.
7 | In the Number of Retries field, set the number of times that the feature node will attempt to collect data from the caller, before routing the call to the Not Updated branch. This value may be between 0 and 10.
8 | In the Minimum Number of digits field, set the minimum number of digits that must be collected. The value set must be between 1 and 32. The minimum number of digits must be less than, or equal to, the maximum number of digits.
9 | In the Maximum Number of digits field, set the maximum number of digits that must be collected. The value set must be between 1 and 32. The maximum number of digits must be greater than, or equal to, the minimum number of digits.
10 | (Optional) To include a prefix before the digits collected value, enter the prefix in the Digit Prefix field. The prefix may be up to 32 valid characters. Valid characters include 0-9, A-F.
11 | From the Cancel Character options, select the character that the caller can use to cancel the digit collection. The switch on the answering device is used by default.
12 | From the End Character options, select the character that the caller can use to indicate the end of the digit collection. The switch on the answering device is used by default.
13 | (Optional) To check that the collected digits are within the TN ranges for this client, select the Verify Against TN Ranges? check box. This will check the termination number range rules set up for this customer (through the New or the Edit Customer screen in ACS) and verify according to the rules set. For more information, see the discussion on Adding customers in ACS User's Guide.
14 | Click Save.

**Note:** The Save button becomes available when you have entered all the required information.

**Result:** The feature node data will be saved.

**Note:** The announcement set and announcement entry lists are populated with data that is specified using the Announcements tab of the ACS Configuration screen.
Collect Digits to Sub-tag

Node description

This node will prompt the user to enter digits, and will save the digits to a sub-tag. This sub-tag will be a part of a profile block (for example, the speed dial block contains the sub-tag list of speed dial numbers). See Sub-tags (on page 5) for a definition.

The node can be used to add digits to a sub-tag in a profile, or to access a previously configured sub-tag in a profile. Consequently, this node is usually used immediately before a profile node.

For information on profiles and how to use them, see Selecting profile locations and fields.

Refer to the Copy node, Use Stored Sub-Tag description for an example of using this node, in conjunction with the Copy node, to change a speed dial number.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Collect Digits to Sub-tag nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The digits were entered and collected successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Not Updated</td>
<td>The digits could not be collected.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>The caller abandoned the call.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Collect Digits to Sub-Tag screen.

![Configure Collect Digits To Sub-Tag](image)

Configuring the node

Follow these steps to edit the Collect Digits to Sub-Tag node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the Main Announcement area, select the Announcement Set that contains the main announcement you want to play to the caller. The main announcement will be played to prompt for digits to enter into a sub-tag.  
**Result:** The Announcement Entry drop-down box will become available. |
| 2    | From the Announcement Entry drop-down list, select the main announcement you want to play to the caller. |
| 3    | Set the Repetition field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set. |
| 4    | Set the Duration field to the length of time in seconds that the announcement is to be played. If set to zero, the announcement will be played for its full length. |
| 5    | The retry announcement contains the announcement you want to play to the caller if the sub-tag value is not within the range specified in step 7. In the Retry Announcement area, select the:  
- Announcement Set which contains the retry announcement  
- Announcement Entry for the retry announcement you want to play, and set the Repetition to the number of times to repeat the retry announcement  
- Duration to the length of time, in seconds, that the retry announcement is to be played.  
as described in steps 1 - 4. |
Step | Action
--- | ---
6 | In the **Number of Retries** field, set the number of times that the node will attempt to collect data from the caller, before routing the call to the Not Updated branch. This value may be between 0 and 10.
7 | In the **Minimum Sub Tag Value** and **Maximum Sub Tag Value** fields, set the minimum and maximum sub-tag value to be collected. This is the range of values that the user can set, for example, speed dial numbers between 10 and 20.
8 | Click **Save**.

**Note:** **Save** is not available until all the required information has been selected or entered.

**Note:** The announcement set and announcement entry lists are populated with data that is specified using the **Announcements** tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the **Announcements** topic in **ACS User's Guide**.

### PIN Authorisation

**Node description**

This node checks that there is a PIN in the PIN buffer. If there is none there, it prompts the user to enter their PIN and places the received digits in the PIN buffer. It then checks that the PIN is correct. If it is not, then it prompts for PIN entry (maximum of ten times). It then collects the PIN accesses in the station profile (if there is none, it uses the network profile default). A check is made that the attempted action is permitted.

**Note:** A PIN can be set for a service number or CLI number in ACS. See the **ACS Numbers** topic in **ACS User's Guide** for details.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The valid PIN is entered.</td>
</tr>
<tr>
<td>2</td>
<td>Not Allowed</td>
<td>The entered PIN is not recognized.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>An error has occurred and the PIN has not been collected.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure PIN Authorisation screen.

![Configuration screen](image)

Configuring the node

Follow these steps to edit the PIN Authorisation node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Main Announcement area, select the Announcement Set that contains the main announcement you want to play. <strong>Result:</strong> The Announcement Entry drop-down box will become available.</td>
</tr>
<tr>
<td>2</td>
<td>From the Announcement Entry drop-down list, select the main announcement you want to play to the caller to request a PIN.</td>
</tr>
<tr>
<td>3</td>
<td>Set the Repetition field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set.</td>
</tr>
<tr>
<td>4</td>
<td>Set the Duration field to the length of time in seconds that the announcement is to be played. If set to zero, the announcement will be played for its full length.</td>
</tr>
<tr>
<td>5</td>
<td>The retry announcement contains the announcement you want to play to the caller if an incorrect PIN is entered. In the Retry Announcement area, select the:</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>5</td>
<td>As described in steps 1 - 4.</td>
</tr>
<tr>
<td>6</td>
<td>In the <strong>Number of Retries</strong> field, set the number of times that the node will attempt to collect the correct PIN from the caller, before routing the call to the Not Allowed branch. This value may be between 0 and 10.</td>
</tr>
<tr>
<td>7</td>
<td>Tick the <strong>Access Rights Required</strong> check boxes that you wish to give right of access to the information that the node requires. These relate directly to the application in which the PIN was stored.</td>
</tr>
<tr>
<td>8</td>
<td>Select the profile blocks in which the information that the node requires is located. A profile block must be selected for each of the PIN, the Access Rights, and the default Access. <strong>Note:</strong> For information about profile blocks, see <em>Profile Blocks and Tags</em> (on page 2).</td>
</tr>
<tr>
<td>9</td>
<td>Click <strong>Save</strong>. <strong>Note:</strong> <strong>Save</strong> is not available until all the required information has been selected or entered.</td>
</tr>
</tbody>
</table>

**Note:** The announcement set and announcement entry lists are populated with data that is specified using the **Announcements** tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the **Announcements** topic in *ACS User's Guide*.

## Play Announcement

**Node description**

This node will play a specified recorded announcement to the caller.

**Node icon**

![Announcement icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Play Announcement nodes as required.
Shortcut keys
The shortcut keys to add a Play Announcement node are Alt+P.

Node exits
This feature node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Completed</td>
<td>The announcement completed playing to the caller without any problems, the caller interrupting (by pressing keys on their telephone or speaking in a voice recognition system), or hanging up.</td>
</tr>
<tr>
<td>2</td>
<td>Abandoned</td>
<td>The playing of the announcement was abandoned for some reason. This could be that the caller hung up before the announcement had completed playing, or the announcement could not be played correctly as there was some sort of error.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>Continue session control after announcement failures and aborts.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Play Announcement screen.

![Configure Play Announcement screen]

Configuring the node
Follow these steps to edit the Play Announcement node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Main Announcement frame, select the Announcement Set which contains the main announcement to play to the caller. Result: The Announcement Entry field becomes available.</td>
</tr>
<tr>
<td>2</td>
<td>From the Announcement Entry drop-down list, select the main announcement to play to the caller.</td>
</tr>
<tr>
<td>3</td>
<td>Set the Repetition field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement is played for the duration set.</td>
</tr>
<tr>
<td>4</td>
<td>Set the Duration field to the length of time, in seconds, that the announcement is to be played. When set to zero, the announcement will be played for its full length.</td>
</tr>
<tr>
<td>5</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
Note: The announcement set and announcement entry lists are populated with data that is specified using the Announcements tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the Announcements topic in ACS User's Guide.

**Play Variable Part Announcement**

**Node description**

The Play Variable Part Announcement node announces to the user up to five variables that were loaded from the profile block.

The node must have an announcement selected with variable parts. This announcement will be played and the variable part(s) specified will be played in the announcement.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Play Variable Part Announcement nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

**Note:** These exit descriptions are specific to the responses received from an Oracle VWSbilling engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Completed</td>
<td>The announcement completed playing to the caller without any problems, the caller interrupting (by pressing keys on their telephone or speaking in a voice recognition system), or hanging up.</td>
</tr>
<tr>
<td>2</td>
<td>Abandoned</td>
<td>The playing of the announcement was abandoned for some reason. This could be that the caller hung up before the announcement had completed playing, or the announcement could not be played correctly as there was some sort of error.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>Continue session control after announcement failures and aborts.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Play Variable Part Announcement screen.

Configuring the node

Follow these steps to edit the Play Variable Part Announcement node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the Main Announcement frame, select the Announcement Set which contains the main announcement you want to play to the caller.  
     | **Result:** The Announcement Entry list becomes available.  
     | Select the main announcement you want to play to the caller from the Announcement Entry drop down list. |
| 2    | For each of the variable parts:  
     | - In the Data Type field, select the profile data type.  
     | - In the Location field, select the location where the field is stored.  
     | - In the Field field, select the field to be played.  
     | - Select the Denormalisation check box, if you wish the number in this field to be denormalized. See ACS Technical Guide, Play Variable Part Announcement Configuration topic, for this node’s denormalization rules. |
| 3    | Click **Save**.  
     | **Note:** **Save** is not available until all the required information has been selected or entered. |
Note: The announcement set and announcement entry lists are populated with data that is specified using the Announcements tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the Announcements topic in ACS User's Guide.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:
- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

## Selection Dependent Routing

### Node description

Use the Selection Dependent Routing feature node to play an announcement to the caller and to route the call according to their response. In addition, you can configure a fast timeout period that enables callers to exit directly from the feature node after timing out. For example, you can use this feature to connect calls directly to the operator after timing out.

This feature node routes calls based on a single digit, letter, or character entered on the caller’s telephone keypad. You map valid digits, letters, or characters to the feature node exits in the feature node configuration window. Valid digits, letter and characters are:

- Numbers ranging from 0 (zero) to 9
- Letters ranging from A to F
- Special characters * and #

You configure the fast timeout period (in seconds) by mapping the letter "T" to the required feature node exit and entering a value for the fast timeout period in the Configure Selection Dependent Routing configuration window. When you configure this option, the caller is not prompted for a number after timing out. For details, see Setting the Fast Timeout Period (on page 340).

### Shortcut keys

The shortcut keys to add a Selection Dependent Routing node are Alt+M.

### Node icon

![Node Icon](attachment:image.png)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

A control plan may contain as many Selection Dependent Routing feature nodes as required.
Node exits

This node has one entry and may have 2 through 20 exits. You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.

There are two cases in which a caller will be sent to a branch other than the branch corresponding to a digit selected by the caller. These are:

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not Collected</td>
<td>The branch that the call will be sent to after the Timeout Announcement is played to them the number of times set in the Max Iterations field.</td>
</tr>
<tr>
<td>2</td>
<td>Hang Up</td>
<td>The branch that the call is to be routed down, when the caller hangs up or there is a network error.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Selection Dependant Routing screen.

![Configure Selection Dependant Routing](image)

Configuring the node

Follow these steps to configure the Selection Dependant Routing node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Main Announcement area, select the <strong>Main Announcement Set</strong> that contains the main announcement to play to the caller.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
| **Note:** It is not necessary to have all the announcements that are to be played by this node in the same announcement set. |
| **Result:** The **Main Announcement Entry** drop-down box will become available. |
| 2 | From the **Main Announcement Entry** drop-down list, select the main announcement to play to the caller. |
| 3 | Set the **Repetition** field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set. |
| 4 | The timeout announcement contains the announcement you want to play to the caller when the caller has waited too long before entering a digit. In the **Timeout Announcement** frame, select the following, as described in steps 2 - 5: |
| | • **Timeout Announcement Set** which contains the timeout announcement |
| | • **Timeout Announcement Entry** for the announcement to play |
| | • **Repetition** to the number of times to repeat the announcement |
| | • **Duration** to the length of time, in seconds, that the announcement is to be played. |
| 5 | The invalid digit announcement contains the announcement you want to play to the caller when the caller has entered a disallowed digit. In the **Invalid Digit Announcement** frame, select the following, as described in steps 2 - 5: |
| | • **Invalid Digit Announcement Set** which contains the announcement |
| | • **Invalid Digit Announcement Entry** for the announcement to play |
| | • **Repetition** to the number of times to repeat the retry announcement |
| | • **Duration** to the length of time, in seconds, that the retry announcement is to be played. |
| 6 | In the **Number of Retries** field, set the number of times that the node will attempt to collect a number from the caller, before routing the call to the Not Collected branch. This value may be between 0 and 10. |
| 7 | In the standard range entry field in the lower half of the screen, map the digits that a caller may enter to an exit branch. To add a digit: |
| | • Click **Add Digit** |
| | **Result:** A new default entry appears. |
| | • In the **Digit** drop-down box, select the required digit. |
| | • In the **Branch** drop-down box, select the exit to which calls receiving the entry of that digit are to be routed. |
| | • Click **Change**. |
| | Repeat for the required number of mappings. |
| 8 | Click **Save**. |
| | **Note:** **Save** is not available until all the required information has been selected or entered. |

**Note:** The announcement set and announcement entry lists are populated with data that is specified using the **Announcements** tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the **Announcements** topic in **ACS User's Guide**.
Setting the Fast Timeout Period

To configure the Selection Dependent Routing feature node to exit directly after timing out:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open the configuration window for the Selection Dependent Routing feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Specify the branch that you want to use for the fast timeout exit using one of the following methods:</td>
</tr>
<tr>
<td></td>
<td>- To change the current configuration for a branch to T.</td>
</tr>
<tr>
<td></td>
<td>a) Select the digit and branch combination you want to change from the list in the digit table.</td>
</tr>
<tr>
<td></td>
<td>b) Select T from the Digit list and click Change.</td>
</tr>
<tr>
<td></td>
<td>- To add T to a branch.</td>
</tr>
<tr>
<td></td>
<td>a) Use the Branch arrow keys to select the branch you want.</td>
</tr>
<tr>
<td></td>
<td>b) Select T from the Digit list and click Add.</td>
</tr>
</tbody>
</table>

The Fast Timeout Period field is enabled and set to the preconfigured default value of 10.

Note: If set, the value for the SDRfastTimeoutDefault parameter in the sms.jnlp file overrides the fast timeout period default value. For more information on configuring ACS sms.jnlp parameters, see NCC Advanced Control Services Technical Guide.

3 (Optional) Change the timeout period by performing the following steps:

a. In the digit table, select T.

b. In the Fast Timeout Period field, enter the timeout value in seconds and click Change.

4 Click Save.

The feature node configuration is saved.

Send Notification

Node description

This node constructs message text from the given notification template and then sends the message using one of the available transport mechanisms.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Send Notification nodes as required.
Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The notification was constructed and sent.</td>
</tr>
<tr>
<td>2</td>
<td>Delivery Failure</td>
<td>The notification was constructed, but encountered a problem when attempting to send.</td>
</tr>
<tr>
<td>3</td>
<td>No Language</td>
<td>No language was selected in the node configuration.</td>
</tr>
<tr>
<td>4</td>
<td>No Template</td>
<td>No template could be found to construct the message.</td>
</tr>
<tr>
<td>5</td>
<td>Missing Information</td>
<td>The template expected more information than could be found.</td>
</tr>
<tr>
<td>6</td>
<td>Subscriber Opt-out</td>
<td>The subscriber has opted out of receiving any notifications. This option is set in ACS Configuration &gt; Notifications tab &gt; Add/Edit Notification Type panel.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Send Notification screen.
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Template section, either:  
      - provide the location of the template  
      - select a profile location from the Data Type, Location and Field drop down lists  
      - select the template to use  
      - select the template from the two Fixed drop down lists. |
| 2    | In the Language section, either:  
      - let the system determine the language  
      - select the Automatically determined radio button  
      - provide the location where the language can be found  
      - select a profile location from the Data Type, Location and Field drop down lists  
      - select the language to use  
      - select the language from the Fixed drop down list. |
| 3    | Click Save. |

Send Short Message

Node description

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the Send Notification feature node.

This feature node sends a short message to the caller when triggered by a nominated application.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Send Short Message nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The short message was successfully sent.</td>
</tr>
</tbody>
</table>
Chapter 12

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Failure</td>
<td>The message could not be sent.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure Send Short Message screen.

#### Configuring the node

Follow these steps to configure the Send Short Message node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Application drop down list, select application that will trigger the short message to be sent.</td>
</tr>
<tr>
<td>2</td>
<td>From the Message drop down list, select the message that will be sent. <strong>Note:</strong> Messages are created and maintained through the ACS &gt; Configuration &gt; Notification tab.</td>
</tr>
<tr>
<td>3</td>
<td>From the Language drop down list, select the language the message will be sent in. <strong>Note:</strong> Available languages are maintained through the ACS &gt; Tools &gt; Language tab.</td>
</tr>
<tr>
<td>4</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Notes:**
- The calling number is normalized before it is sent to the notificationIF.
- This node sends a SLEE notification event to the notificationIF.
- The notificationIF will then forward the message to either Messaging Manager or the SMSC interface depending on configuration.
- See SMSC Technical Guide for details on how to install and configure the notificationIF.
Chapter 13

LCP Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Location Capabilities Pack (LCP) feature nodes. These feature nodes enable you to use Advanced Control Services applications to look up location information for subscribers' mobile devices.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

LCP Feature Nodes List

This table lists the feature nodes available from the LCP palette group in the ACS Control Plan Editor and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>In The Zone (on page 347)</td>
<td>The In The Zone node allows a location-based service to be provided to the end-users to allow differential service depending on the location or MSISDN. Fast key: ITZ</td>
</tr>
<tr>
<td>Set My Zone (on page 350)</td>
<td>The Set My Zone node allows a &quot;self-care&quot; service to be provided to the end-users to set a zone of a selected type. Fast key: SMZ</td>
</tr>
<tr>
<td>Store My Location (on page 352)</td>
<td>The Store My Location node provides an alternative location-based service, by allowing the end-user’s current location or MSISDN to be stored in a context field for later comparison. Fast key: STML</td>
</tr>
<tr>
<td>Store My Network ID (on page 354)</td>
<td>The Store My Network Identity node stores the retrieved IMSI or MSRN in a profile tag. Fast key: STMN</td>
</tr>
</tbody>
</table>
Exits

Introduction

All of the LCP feature nodes contain the following two exits:

- No Location Info
- Error

The exit taken by a LCP feature node depends on the communication plug-in used by LCP to communicate with the location servers on the customer’s network.

Using MAP ATI Plug-in

If the plug-in selected is MAP ATI Plugin and the location application returns one of the results listed below, then the No Location Info exit will be followed:

- Unknown subscriber
- Absent subscriber
- System failure
- Unauthorized network
- Unauthorized application
- Position method failure

These conditions are outside the scope of the Location Application (the errors are generated by external entities rather than the Location Application itself).

Using POSREQ Plug-in

If the plug-in selected is IS41 POSREQ Plugin and the location application returns one of the results listed below, then:

- Error exit is taken:
  - Operation Sequence Problem = 132
  - Parameter Error = 136
  - Invalid Parameter Value = 138
  - Feature Inactive = 139
  - Missing Parameter = 140
- No Location Info exit is taken:
  - OSA Unknown Subscriber
  - Unrecognized MIN = 129
  - Unrecognized ESN = 130
  - Unrecognized MDN = 143
  - OSA Absent Subscriber
  - MIN/HLR Mismatch = 131
  - OSA Unauthorized Network
  - Operation Not Supported = 134
  - OSA System Failure
  - System Failure = 137
  - Resource Shortage = 133
  - Trunk Unavailable = 135
Using SRI-MSRN Plug-in

If the plug-in selected is the SRI-MSRN Plugin, or SRI-IMSI Plugin and the location application returns one of the results listed below, then the No Location Info exit will be followed:

- System failure
- Unauthorized network, caused by:
  - Facility not supported
  - OR not allowed
  - Bearer service not provided
  - Tele service not provided
  - CUG reject
  - Call barred
  - Forwarding Violation
- Unknown subscriber, caused by:
  - Unknown subscriber
  - Number changed
  - Absent subscriber
  - Busy subscriber
  - No subscriber reply

These conditions are outside the scope of the Location Application (the errors are generated by external entities rather than the Location Application itself).

In The Zone

Node description

The In The Zone node allows a location-based service to be provided to the end-users to allow differential service depending on the location or MSISDN.

This node denormalizes the number currently held in the MSISDN buffer, using the standard rules defined in acs.conf or the default rule configured.

Node icon

![Node Icon]

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many In the Zone nodes as required.

Warning: This node will only work with the MAP ATI Plugin node. For more information about this plug-in, see Using MAP ATI plug-in.
**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In Zone</td>
<td>The current location is in the zone specified.</td>
</tr>
<tr>
<td>2</td>
<td>Not In Zone</td>
<td>The current location is outside the zone specified.</td>
</tr>
<tr>
<td>3</td>
<td>No Location Info</td>
<td>Unable to obtain the location information.</td>
</tr>
<tr>
<td>4</td>
<td>No Zones</td>
<td>There are no zones configured for the current service provider</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>

**Note:** Refer to *Exits* (on page 346) for a description of errors that will cause the *No Location Info* and *Error* exits to be taken.

**Configuration screen**

Here is an example Configure In The Zone screen.
Configuring the node

Follow these steps to edit the In The Zone node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the MSISDN source to query section, select the MSISDN that will be used to query the HLR:  
  - **MSISDN Source Data Type**: Select the source data type.  
  - **MSISDN Source Location**: Select the profile block containing the MSISDN.  
  - **MSISDN Source Field**: Select the profile field containing the MSISDN. |
| 2    | In **Profile Block**, select where the zone will be read from. |
| 3    | Specify the Call Leg to be used for the location query. Select one of the following:  
  - **Originating** (Calling Party)  
  - **Terminating** (Called Party) |
| 4    | In **Plugin Name**, select which location plug-in to use. The default setting is the locApp configured plug-in. |
| 5    | Specify the **Location Info Age**. This is how old location information is allowed to be (if in cache). Select one of the following:  
  - **Default**: Use the locApp specified time.  
  - **None**: Never use the cache.  
  - Manual entry text field: Here you need to type a value (in seconds) in the text box beside the option. Minimum value 1, maximum 864000 (10 days). |
| 6    | Specify a **Response Deadline**. This is how long the locApp is allowed (in number of seconds) before a reply is returned (note that if a timeout occurs a timeout result will be returned). Select one of the following:  
  - **Default**: Use the locApp specified default.  
  - Manual entry: Here you need to type a value (in seconds) in the text box beside the option, how long the timeout should be. Minimum value 1, maximum 600 (10 minutes). |
| 7    | In **Zone Name**, select which zone type this node is comparing against, or *<All>* for all zones.  
  This field is populated by the Zone type entries in the ACS Configuration, **Profile Tag Details** tab. For more information about this tab, see *ACS User's Guide*.  
  **Note**: The location information returned by the HLR is always compared against the zones configured for the A-Party.  
  **Note**: The list of data types is fixed at installation time for each feature node or screen.  
  **Further reference**:  
  - For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).  
  - The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Set My Zone

Node description

The Set My Zone node allows a “self-care” service to be provided to the end-users to set a zone of a selected type.

This node denormalizes the number currently held in the MSISDN buffer, using the standard rules defined in `acs.conf` or the default rule configured.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Set My Zone nodes as required.

Warning: This node will only work with the MAP ATI Plugin node. For more information about this plug-in, see Using MAP ATI plug-in.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The action to set a zone completed successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Too Many Zone Shapes</td>
<td>The number of zone shapes for the zone type has exceeded the maximum number (the maximum zone types is set to 5).</td>
</tr>
<tr>
<td>3</td>
<td>No Location Info</td>
<td>Unable to obtain the location information.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>

Note: Refer to Exits (on page 346) for a description of errors that will cause the No Location Info and Error exit branches to be taken.
Configuration screen

Here is an example Configure Set My Zone screen.

![Configuration screen](image)

Configuring the node

Follow these steps to edit the Set My Zone node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the MSISDN source to query section, select the MSISDN that will be used to query the HLR:  
  - **MSISDN Source Data Type**: Select the source data type.  
  - **MSISDN Source Location**: Select the profile block containing the MSISDN.  
  - **MSISDN Source Field**: Select the profile field containing the MSISDN. |
| 2    | In **Profile Block**, select where the zone will be written to. |
| 3    | In **Zone Name**, select which zone to set for this node.  
  This field is populated by the Zone type entries on the ACS Configuration, **Profile Tag Details** tab. For more information about this tab, see *ACS User’s Guide*. |
| 4    | In **Plugin Name**, select which location plug-in to use. Default setting is to use the locApp configured plug-in. |
Step | Action
--- | ---
5 | Specify the Location Info Age. This is how old location information is allowed to be (if in cache). Select one of the following:
   - **Default**: Use the locApp specified time.
   - **None**: Never use the cache.
   - Manual entry text field: Here you need to type a value (in seconds) in the text box beside the option. Minimum value 1, maximum 864000 (10 days).

6 | Specify a Response Deadline. This is how long the locApp is allowed (in number of seconds) before a reply is returned (note that if a timeout occurs a timeout result will be returned). Select one of the following:
   - **Default**: Use the locApp specified default.
   - Manual entry: Here you need to type a value (in seconds) in the text box beside the option, how long the timeout should be. Minimum value 1, maximum 600 (10 minutes).

7 | Specify a Modification Type. Select one of the following:
   - **Add**: This will add a new zone (the current location) into the selected zone type.
   - **Reset**: This will cause the node to delete all the existing zones in the selected zone type and add the current location as the only zone.

8 | In Min Radius, specify the minimum radius of a zone. If the locApp returns an uncertainty radius smaller than the minimum radius specified, the min radius (in km) is used.

**Note**: The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

**Store My Location**

**Node description**

The Store My Location node provides an alternative location-based service, by allowing the end-user’s current location or MSISDN to be stored in a context field for later comparison.

This node can also be used to find a subscriber's location details or MSISDN for other purposes, including billing for callback when the subscriber is roaming.

The MSISDN used to query the HLR will be denormalized as per the standard denormalization rules specified in the *acs.conf* or the default rule configured.

**Node icon**

![Node icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Store My Loc](image)

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The current location has been stored in the context specified.</td>
</tr>
<tr>
<td>2</td>
<td>No Location Info</td>
<td>Unable to obtain the location information.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>

**Note:** Refer to *Exits* (on page 346) for a description of errors that will cause the No Location Info and Error exit branches to be taken.

**Configuration screen**

Here is an example Configure Store My Location screen.
## Configuring the node

Follow these steps to configure the Store My Location node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using the drop down lists in the MSISDN source to query area, select the field containing the MSISDN that will be used to query the HLR.</td>
</tr>
</tbody>
</table>
| 2    | In Store to Buffer, select where the location information will be stored. The following buffers are available in the drop down list:  
  - Pending Termination Number  
  - Calling Logical Number  
  - Calling Private Network Address  
  - Calling Network Address  
  - Calling Party ID  
  - Dialed Service Number  
  - Additional Calling Party Number  
  - Leg Cell Id or LAI |
| 3    | Choose which Call Leg to use for the location query. Select one of the following:  
  - Originating (Calling Party)  
  - Terminating (Called Party) |
| 4    | From the Plugin Name drop down list, select which location plug-in to use. Select <Default> to use the locApp configured plug-in. |
| 5    | Specify the Location Info Age. This is how old location information is allowed to be (if in cache). Select one of the following:  
  - Default: Use the locApp specified time  
  - None: Never use the cache  
  - Manual entry text field: Here you need to type a value (in seconds) in the text box beside the option. |
| 6    | Specify a Response Deadline. This is how long the locApp is allowed (in number of seconds) before a reply is returned (note that if a timeout occurs a timeout result will be returned). Select one of the following:  
  - Default: Use the locApp specified default  
  - Manual entry: Here you need to type a value (in seconds) in the text box beside the option, how long the timeout should be. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

## Store My Network ID

**Node description**

The Store My Network Identity node stores the retrieved IMSI or MSRN in a profile tag.
## Node icon

![Node icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

## Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The IMSI location information has been successfully retrieved.</td>
</tr>
<tr>
<td>2</td>
<td>NoLocationInfo</td>
<td>Unable to retrieve location information.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>

## Configuration fields

This table describes the function of each field in the Configure Store My Network Id node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node name</td>
<td>The name of the node.</td>
</tr>
<tr>
<td>MSISDN Data Type</td>
<td>The MSISDN profile block data type.</td>
</tr>
<tr>
<td>MSISDN Location</td>
<td>The profile block containing the MSISDN location.</td>
</tr>
<tr>
<td>MSISDN Field</td>
<td>The profile field containing the MSISDN.</td>
</tr>
<tr>
<td>IMSI Data Type</td>
<td>The IMSI profile block data type.</td>
</tr>
<tr>
<td>IMSI Location</td>
<td>The profile block location for the retrieved IMSI.</td>
</tr>
<tr>
<td>IMSI Field</td>
<td>The profile field where the retrieved IMSI will be stored.</td>
</tr>
<tr>
<td>Call Leg</td>
<td>Whether to retrieve the IMSI from the originating (caller) or terminating (called) party.</td>
</tr>
<tr>
<td>Plugin Name</td>
<td>The name of the plug-in to use to retrieve the IMSI. By default the MAP SRI-MSRN plug-in will be used.</td>
</tr>
<tr>
<td>Location Info Age (s)</td>
<td>Maximum age allowed for location information (if in cache). One of the following:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Default</strong>: Use the plug-in application specified time</td>
</tr>
<tr>
<td></td>
<td>- <strong>None</strong>: Never use the cache</td>
</tr>
<tr>
<td></td>
<td>- A specified number of seconds</td>
</tr>
<tr>
<td>Response Deadline (s)</td>
<td>Maximum length of time allowed (in seconds) before receiving a response (if a timeout occurs a timeout result will be returned). One of the following:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Default</strong>: Use the plug-in application specified default</td>
</tr>
<tr>
<td></td>
<td>- A specified number of seconds</td>
</tr>
</tbody>
</table>
## Configuration screen

Here is an example Configure Store My Network ID screen.

![Configuration screen](image)

## Configuring the node

Follow these steps to configure the node.

**Note:** For more information on the configuration fields, see *Configuration fields* (on page 355).

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the MSISDN Location area, using the drop down boxes, select the profile containing the MSISDN.</td>
</tr>
<tr>
<td>2</td>
<td>From the IMSI Location area, using the drop down boxes, select the profile where the IMSI will be stored.</td>
</tr>
</tbody>
</table>
| 3    | Choose which **Call Leg** to use for the location query. Select one of the following:  
  - **Originating** (Calling Party)  
  - **Terminating** (Called Party)  
| 4    | In **Plugin Name**, select which location plug-in to use. |
| 5    | Specify the **Location Info Age**. |
| 6    | Specify a **Response Deadline**. |
| 7    | Click **Save**. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User’s Guide, Profile Tag Details* for more information).
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Number Translation Service (NTS) feature nodes. NTS feature nodes provide teleservice actions.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

NTS Feature Nodes List

This table lists the feature nodes available from the NTS palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Code Entry</td>
<td>Prompts for an account number to be entered and saves the digits in a buffer.</td>
</tr>
<tr>
<td>(see page 359)</td>
<td>Fast key: ACE</td>
</tr>
<tr>
<td>Activate Control Plan</td>
<td>Activates a specified control plan.</td>
</tr>
<tr>
<td>(see page 362)</td>
<td>Fast key: ACP</td>
</tr>
<tr>
<td>Load Profile</td>
<td>Loads the specified customer, control plan, service number or CLI profile.</td>
</tr>
<tr>
<td>(see page 367)</td>
<td>Fast key: ALP</td>
</tr>
</tbody>
</table>

Account Code Entry

Node description

The Account Code entry node prompts for an account number to be entered and collects the digits. Collected digits are placed in the Account Code buffer.

The access code entered by the caller is added to the Call Data Record.

Account Codes are also known as access codes. You can set the access code policy for service numbers and CLIs in ACS.

Note: Depending on the Access Code Policy that is selected for the Service Number or CLI, the account code entered using this node may be one of:
Not required
Required and verified
Required and not verified


**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Account Code Entry nodes as required.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The Account Code was entered and collected successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Not Allowed</td>
<td>The Account Code entered is invalid.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>The Account Number or Code entered was not found by the system.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Account Code Entry screen.

**Configuring the node**

Follow these steps to configure the Account Code Entry node, to set or amend the Main Account Number Announcement.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | The main announcement is the announcement that will be played to prompt for an Account number.  
In the Main Announcement area, select the Announcement Set which contains the main announcement you want to play to the caller.  
**Result:** The Announcement Entry field becomes available. |
| 2    | From the Announcement Entry drop-down list, select the main announcement you want to play to the caller. |
| 3    | Set the Repetition field to the number of times you wish to repeat the announcement, by increasing or decreasing the value in the spin box. The allowable values are from 1 (default) to 127. If set to zero, the announcement will be repeated for the length of the duration set. |
| 4    | Set the Duration field to the length of time in seconds that the announcement is to be played. The allowable values are from 0 (default) to 32767. If set to zero, the announcement will be played for its full length. |
| 5    | Amending the Retry announcement on Invalid Entry.  
The retry announcement will be played if the Account Number entered after the main announcement is not valid.  
In the Retry Announcement area, select the:  
- Announcement Set which contains the retry announcement  
- Announcement Entry for the retry announcement you want to play, and set  
- Repetition to the number of times to repeat the retry announcement |
### Activate Control Plan

#### Node description

This node enables a caller to schedule a control plan using a touch tone phone. It should be used as part of an IVR control plan (for example, the ACS Management Control Plan).

The caller specifies which control plan to schedule by entering the control plan's control plan ID (that is, MF Identifier). The node can also be set up to enable the caller to specify the time and date the control plan will become active. If a time is not specified, the control plan becomes active immediately.

The control plan can be scheduled against either an SN or CLI according to the following rules:

- If the Load Profile (see page 367) node most recently triggered in the control plan loaded an SN or CLI profile, the control plan will be scheduled against a number of the same type.
- If neither the SN nor CLI profile has been loaded, the node will schedule against the type of number specified in the pending TN type buffer.

For more information about:

- MF Identifier, see MF Identifier.
- Pending TN type buffer, see Pending termination number variables (on page 11).

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

A control plan may contain as many Activate Control Plan nodes as required. It must follow either a Load Profile node which loads an SN or CLI profile, or a node which sets the Pending TN Type variable.
### Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The control plan was activated successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Not Updated</td>
<td>There was a problem with activating the control plan. In addition to other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>possible faults, this exit is taken if the node cannot establish whether</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to schedule the control plan against an SN or a CLI.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>The caller abandoned the call.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Activate Control Plan screen.
Configuring the node

Follow these steps to configure the Activate Control Plan node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Main Announcement area, select the Announcement Set which contains the main announcement you want to play to the caller. The main announcement will be played to prompt for a Control Plan ID (MF identifier).  &lt;br&gt; <strong>Result:</strong> The Announcement Entry field becomes available.</td>
</tr>
<tr>
<td>2</td>
<td>From the Announcement Entry drop-down list, select the main announcement you want to play to the caller.</td>
</tr>
<tr>
<td>3</td>
<td>Set the Repetition field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set.</td>
</tr>
<tr>
<td>4</td>
<td>Set the Duration field to the length of time, in seconds, that the announcement is to be played. If set to zero, the announcement will be played for its full length.</td>
</tr>
<tr>
<td>5</td>
<td>The retry announcement contains the announcement you want to play to the caller if an invalid ID is entered after the main announcement.  &lt;br&gt; In the Retry Announcement area, select the:  &lt;br&gt; - Announcement Set which contains the retry announcement  &lt;br&gt; - Announcement Entry for the retry announcement you want to play, and set the  &lt;br&gt; - Repetition to the number of times to repeat the retry announcement  &lt;br&gt; - Duration to the length of time, in seconds, that the retry announcement is to be played  &lt;br&gt; as described in steps 1 - 4.</td>
</tr>
<tr>
<td>6</td>
<td>Set the Number of Retries field to the number of times that the node will attempt to collect the correct ID from the caller, before routing the call to the Not Updated branch. This value may be between 0 and 10.</td>
</tr>
<tr>
<td>7</td>
<td>If you:  &lt;br&gt; - want to prompt the caller to set an activation date, tick the Prompt for Activation Time? check box.  &lt;br&gt; - do not want to prompt the caller to set an activation date, go to step 11.</td>
</tr>
<tr>
<td>8</td>
<td>From the Timezone Type drop-down list, select the timezone you want to use.  &lt;br&gt; If you select the Explicit Unix TZ option, you need to select a specific region from the Unix Timezone field.  &lt;br&gt; For more Time zone information, see Time Zones (on page 534).</td>
</tr>
<tr>
<td>9</td>
<td>The Date Announcement area contains the announcement you want to play to the caller. Select the:  &lt;br&gt; - Date Announcement Set which contains the main announcement  &lt;br&gt; - Date Announcement Entry for the main announcement you want to play, and set the  &lt;br&gt; - Repetition to the number of times to repeat the announcement  &lt;br&gt; - Duration to the length of time, in seconds, that the announcement is to be played.  &lt;br&gt; as described in steps 1 - 4.</td>
</tr>
<tr>
<td>10</td>
<td>The Retry Date Announcement area contains the announcement you want to be repeated while the system waits for the caller to take an action. Select the:  &lt;br&gt; - Date Announcement Set which contains the retry announcement  &lt;br&gt; - Date Announcement Entry for the retry announcement you want to play, and set</td>
</tr>
</tbody>
</table>
### Step 14.36

#### NCC Feature Nodes Reference Guide

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>the</td>
<td>Repetition to the number of times to repeat the announcement</td>
</tr>
<tr>
<td>the</td>
<td>Duration to the length of time, in seconds, that the announcement is to be played.</td>
</tr>
<tr>
<td>as described in steps 1 - 4.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Click Save.</td>
</tr>
<tr>
<td>Note: Save is not available until all the required information has been selected or entered.</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The announcement set and announcement entry lists are populated with data that is specified using the Announcements tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the Announcements topic in ACS User's Guide.

### Example use of node

Here is an example of using the Activate Control Plan node to activate a control plan for a service number or CLI.

For detailed information on the ACS Management control plan, see the chapter - Dial-up Control Plan Management in ACS, in ACS User's Guide.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A customer is set up with an 0800 number and the self management screens.</td>
</tr>
<tr>
<td>2</td>
<td>The customer creates 2 control plans.</td>
</tr>
<tr>
<td>3</td>
<td>The customer phones a number attached to the ACS management control plan to change which control plan is active for the number.</td>
</tr>
<tr>
<td></td>
<td>Here is an example of a Configure Activate Control Plan screen in ACS management control plan that does this. See the ACS Management Control Plan example in &lt;ACS_User_sn&gt; to see the other feature nodes required when using this with option 1 (Activate Control Plan - Service Number) and option 2 (Activate Control Plan - CLI).</td>
</tr>
</tbody>
</table>
In this example, the caller is prompted to enter the:
- Control plan ID (MF Identifier)
- Date to activate the control plan

**Load Profile**

**Node description**

This node will load the specified profile.

This allows you to read the profile in the database and makes it available to be updated by other nodes that can write back to the profile.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many ACS Load Profile nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success Branch</td>
<td>The profile was loaded successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Not Loaded Branch</td>
<td>The profile was not loaded.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned Branch</td>
<td>The caller abandoned the call.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Load Profile screen.
## Configuring the node

Follow these steps to configure the Load Profile node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the Main Announcement area, select the Announcement Set that contains the main announcement you want to play to the caller.  
**Result:** The Announcement Entry drop-down box will become available. |
| 2    | From the Announcement Entry drop-down list, select the main announcement you want to play to the caller.  
**Note:** The announcement set and announcement entry lists are populated with data that is specified using the Announcements tab of the ACS Configuration screen.  
For more information about configuring announcement sets and announcement entries, see the "Announcements" topic in the ACS User Guide. |
| 3    | Set the Repetition field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set. |
| 4    | Set the Duration field to the length of time in seconds that the announcement is to be played. If set to zero, the announcement will be played for its full length. |
| 5    | The retry announcement contains the announcement you want to play to the caller if the number of digits collected is not within the range specified.  
In the Retry Announcement area, select the:  
- Announcement Set which contains the retry announcement  
- Announcement Entry for the retry announcement you want to play, and set the  
- Repetition to the number of times to repeat the retry announcement  
- Duration to the length of time, in seconds, that the retry announcement is to be played.  
as described in steps 1 - 4. |
| 6    | In the Number of Retries field, set the number of times that the node will attempt to collect data from the caller, before routing the call to the Not Updated branch. This value may be between 0 and 10. |
| 7    | Using the drop down lists in the Load From Data Type and Load From Location fields, select the profile block from which information is to be loaded onto the node.  
**Note:** Only profiles that can be updated are listed. |
| 8    | Click Save.  
**Note:** Save is not available until all the required information has been selected or entered. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**  
- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).  
The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).  

### Example use of node

Here is an example of using the Load Profile node to load the customer profile, in order to access the Dial-up self management options.
For detailed information on the ACS Management control plan, see the chapter - Dial-up Control Plan Management in ACS, in *ACS User's Guide*.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A customer is set up with an 0800 number and the self management screens.</td>
</tr>
<tr>
<td>2</td>
<td>The customer phones a number attached to the ACS Management control plan. Here is an example of a Configure Load Profile screen in an ACS Management control plan that prompts the caller for a Customer Profile. See the ACS Management Control Plan example in <em>ACS User's Guide</em> to see the entire control plan.</td>
</tr>
</tbody>
</table>

In this example, the caller is prompted to enter their management ID.
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Network feature nodes. Use Network feature nodes for decisions and actions relating to INAP protocol.

Note: To use network feature nodes, you should have a good working knowledge of networks, switches and the INAP protocol.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch on Bearer Type (see page 372)</td>
<td>Will route calls to different branches depending on the incoming calling party bearer type and the node configuration. Fast key: BoBT</td>
</tr>
<tr>
<td>Branch On Call Forwarding Pending (see page 377)</td>
<td>Branches, depending on the presence or not of a pending call forward, retrieved from the call context. Fast key: BCFW</td>
</tr>
<tr>
<td>Branch on Event Report Request BCSM Code (see page 378)</td>
<td>Branches depending on the result of the previous Request Report BCSM Event operation. Fast key: BoEC</td>
</tr>
</tbody>
</table>

Available Feature Nodes

Network Feature Nodes List

This table lists the feature nodes available from the Network palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.
### Node name | Node description
--- | ---
**Branch on Indicator** (see page 383) | Takes an exit based on the: number incomplete, screening, or presentation restricted indicator of a specified number. Fast key: BoCP

**Branch on Protocol** (see page 385) | Branches on the protocol used by the current call. Fast key: BOP

**Branch on Service Key** (on page 386) | Compares an ACS IDP service key with a fixed value configured in the node. The node routes calls to different branches depending on the node configuration and whether or not a match is found. Fast key: BoSK

**Call Forwarded Branching** (see page 389) | Determines which Control Plan branch is taken based on the whether or not the callForwarded flag, is set. Fast key: CFB

**Call Progression** (see page 391) | Allows the user to change parameters controlling call progression. Fast key: CCPN

**Set Cut and Paste** (see page 393) | Instructs the switch to remove digits from the called party number, prepend the termination number and terminate to the resulting number. Fast key: CNPA

**Set Indicator** (see page 394) | Set the number incomplete, screening, or presentation restricted indicator of a specified number. Fast key: SCPT

**TCAP Handover** (see page 397) | Hand over control of the call to another network element. Fast key: THFN

**Transmission Type Branching** (see page 401) | Will route the call to different branches depending on the incoming calling party transmission type. Fast key: TTB

### Branch on Bearer Type

**Node description**

The Branch on Bearer Type (Bearer Capability) node will route calls to different branches depending on the incoming calling party bearer capability or the high layer characteristic and the node configuration.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions

A control plan may contain as many Branch on Bearer Type nodes as required.

Node exits

This node has one entry and may have 4 through 10 exits. You may configure the number of exits within this range as required, using the Edit Node Exits option on the shortcut menu. See Editing node exits.

Node exits 1 through 3 are set by the system and may not be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Match Found</td>
<td>No match was found for any rule in the Bearer Capacity structure extracted from the Initial Detection Point.</td>
</tr>
<tr>
<td>2</td>
<td>Bearer Not Available</td>
<td>The bearer specified in the node was not available in the Bearer Capacity structure extracted from the Initial Detection Point.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>A error occurred.</td>
</tr>
<tr>
<td>4 to 10</td>
<td>Exit 4</td>
<td>These exits are followed depending on the rules attached to them.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example of the Configure Branch on Bearer screen.

![Configure Branch On Bearer](image)

Configuring the node

Follow these steps to edit the Branch on Bearer node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Edit the node exits to add exits as required. See Editing node exits for details.  
**Note:** The new number of exits is represented on the node icon, but *not* on the configuration screen exit list. |
| 2    | Open the Configure Branch on Bearer screen.  
**Result:** The Bearer Type Branching tree lists all the exits that have been added, as in the example below, showing 7 exits.  
By default, Branch 1 and Branch 2 are pre-configured. |
Step | Action
--- | ---
| **Note:** The number of branches to configure will always be the total number of exits configured, minus the three pre-configured branches. In this example node, there are 7 exits, therefore there are 4 configurable branches. | 

3 | In the **Bearer Component** frame, select the option on which to branch.  
- **Layer 1 Protocol** -  
- **Info Transfer Rate** -  
- **Info Tran capability** -  
- **Transfer Mode** -  
- **Coding Standard** -  
- **High Layer Character** - matches on Octet 4 of the High Layer Characteristics bearer field.  

4 | Branches are made up of rules. A rule is either a range of bearer types or a single value.  
The maximum number you can enter in the rules is 256. Before you can add rules to any other branches, you must edit the rules for Branch 2 (that is, 1-256) and change 256 to the number appropriate to the branch. This will allow you to add rules to the branches.  
To edit a rule, right-click on a rule and click **Edit**.  
**Result:** The Edit Rules dialog will appear.  

To create a rule:  
- Of a single value, you can enter the value in the left hand field only, or the same number in both fields.  
- For a range of numbers, enter values in both fields. The ‘from’ value must be lower than the ‘to’ value.  

**Note:** The numbers must not overlap any other rule ranges. Make the change and click **OK**.  

5 | To add rules to a branch, right-click on the branch. From the pop-up menu displayed, select **Add**. You see the Add Rules screen.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Create the rule as required.</td>
</tr>
</tbody>
</table>
| 7    | Click **OK**.  
**Result:** One of the following will occur:  
- The new rule will be added to the rule list.  
- If a rule conflicts with an existing rule, a warning dialog box will appear providing more detail about the conflict. |
| 8    | Edit or delete rules under each branch.  
To delete a rule, right-click on a rule and click **Delete**.  
**Result:** The rule is deleted from the branch. |
| 9    | When rules have been added to all branches as shown in the example below, the **Save** button will become available.  
Click **Save**.  
**Result:** The node data is saved.  
**Notes:**  
- After configuration, you may add or remove exits for the node using Edit Node Exits, then edit the node branches again. |
Chapter 15

If you remove exits, when you open the Configure Branch on Bearer screen again you will see a warning, such as this example.

Click OK to continue, then edit the node.

Branch On Call Forwarding Pending

Node description

The Branch On Call Forwarding Pending node branches depending on whether there is a call forward pending or not.

This node uses the callForwardingSS-Pending parameter flag to determine which branch to take. See standard 3GPP TS 29.078, version 5.0.0 for full details.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Branch On Call Forwarding Pending nodes as required.

This node is applicable to the CAP protocol and all other protocol usage will result in the Not Pending branch 2 exit being taken.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pending</td>
<td>There is a call forward pending.</td>
</tr>
<tr>
<td>2</td>
<td>Not Pending</td>
<td>There is not a call forward pending.</td>
</tr>
</tbody>
</table>
Configuration screen
Here is an example Configure Branch On Call Forwarding Pending screen.

Configuring the node
This node requires no configuration data. You may change the Node name, if required.

Branch on Event Report Request BCSM Code

Node description
The BoEC node branches depending on the result of the previous Request Report BCSM Event operation. The TDP codes that the node recognizes are from these events:

- oDisconnect
- tDisconnect
- oCalledPartyBusy
- tCalledPartyBusy
- RouteSelectFailure

Note: The "o" and "t" indicate Originating and Terminating respectively.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
A control plan may contain as many Branch on Event Report Request BCSM Code (BoEC) nodes as required.
Node exits

This node has one entry and initially five exits. You can manually add up to another five exits, making a total of 10 exits.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Label</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No match found</td>
<td>The cause code being passed to the node is not defined in any of the node's branch rules.</td>
</tr>
<tr>
<td>2</td>
<td>Code not available</td>
<td>ACS did not pass a cause code to the node.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>A software error occurred.</td>
</tr>
<tr>
<td>4</td>
<td>Call Forwarded</td>
<td>ACS has been advised that a terminating call has been forwarded.</td>
</tr>
<tr>
<td>5 through 10</td>
<td>Exit 5 through Exit 10</td>
<td>Determined by branch rules specified for the exit.</td>
</tr>
</tbody>
</table>

**Note:** The call-forwarded exit scenario for this node is identical to that of the Call Forwarded Branching node. Refer to the section on the Call Forwarded Branching node; in particular Node exits (on page 390).

Configuration screen

Here is an example of the Configure Branch On ERRB Cause Code screen.
Configuring the node

Branches are made up of Cause code rules. A rule is either a range of Event Report Request BCSM Codes or a single value. Each branch can have as many rules as required, provided that the cause code has not been configured in another rule within this node.

Cause codes are defined in the following two documents.

- **ETS 300 374-1**  
  *Intelligent Network (IN): Intelligent Network Capability Set 1 (CS1); Core Intelligent Network Application Protocol (INAP); Part 1: Protocol specification*  
  European Telecommunications Standards Institute  
  In particular, see *EventSpecificInformationBCSM* on page 47.

- **ITU-T Recommendation Q.850**  
  *Usage of Cause and Location in the Digital Subscriber Signalling System No. 1 and the Signalling System No. 7 ISDN User Part*  
  International Telecommunications Union

Follow these steps to edit the Branch on ERRB Cause Code node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Edit the node exits to add up to another five exits as required. See Editing node exits for details.  
  **Note:** The new number of exits is represented on the node icon, but NOT on the configuration screen exit list. |
| 2    | Open the Configure Branch on ERRB Cause Code screen.  
  **Result:** The ERRB Cause Code Branching tree lists all the exits that have been added, as in the example below, showing 7 exits.  
  ![Branching tree example](image)  
  **Note:** The number of branches to configure will always be the total number of exits configured, minus the 4 pre-configured branches. In this example node, there are 7 exits, therefore there are 3 configurable branches. |
| 3    | To add rules to a branch, right-click on the Branch. From the pop-up menu displayed, select *Add*. You see the Add Rules screen.  
  ![Add Rules screen](image)  
  ![Add Rules screen](image) |
| 4    | Create the rule as required.  
  To create a rule:  
  - of a single value, you can enter the value in the left hand field only, or the same number in both fields.  
  - for a range of numbers, enter values in both fields. The 'from' value must be lower than the 'to' value. |
Chapter 15

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: The numbers must not overlap any other rule ranges. The maximum value of a rule is 256.</td>
<td></td>
</tr>
</tbody>
</table>

5 Click OK.

Result: Either:
- the new rule will be added to the rule list, or
- if a rule conflicts with an existing rule, a warning dialog box will appear providing more detail about the conflict.

6 Edit or delete rules under each branch. To:
- edit a rule, right-click on a rule and click Edit.
  Result: The Edit Rules dialog will appear.

  ![Edit Rules](image)

  Make the change and click OK
  - delete a rule, right-click on a rule and click Delete.
  Result: The rule is deleted from the branch.

7 When rules have been added to all branches as shown in the example below, the Save button will become available.

![Branch Example](image)

Click Save.

Result: The node data is saved.

Note: After configuration, you may add or remove exits for the node using Edit Node Exits, then edit the node branches again.
If you remove exits, when you open the Configure Branch on Bearer screen again you will see a warning, such as this example.

Click **OK** to continue, then edit the node.

**Example of the use of the node**

For a terminating call, suppose you want to select the following outcomes, depending on the values of cause numbers.

- If ACS was notified of call-forwarding, you want to play an announcement about call-forwarding.
- For cause number 1, you want to play an announcement about the telephone number being unallocated.
- For cause numbers 17 through 20, you want to play an announcement about the telephone number being either busy, unresponsive, unanswered or unanswerable because the telephone is switched off.
- For all other cause numbers, you want to simply disconnect the call.

To implement this scenario, you could set up the control plan shown below.
You would set up the configurable exits of the branch on ERRB Cause Code node as shown below.

The non-configurable exit branches would remain as shown below.

**Branch on Indicator**

**Node description**

The Branch on Indicator node allows you to take an exit based on one of the indicators of a specified number:

- Number incomplete
- Screening
- Presentation restricted

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Branch on Indicator nodes as required.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Value 0</td>
<td>Bit value of 0</td>
</tr>
<tr>
<td>2</td>
<td>Value 1</td>
<td>Bit value of 1</td>
</tr>
<tr>
<td>3</td>
<td>Value 2</td>
<td>Bit value of 2</td>
</tr>
<tr>
<td>4</td>
<td>Value 3</td>
<td>Bit value of 3</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>Error</td>
</tr>
</tbody>
</table>

The interpretation of the value depends on the indicator selected.
**Interpretation of values**

This table describes the meaning of each value, depending on the indicator selected.

<table>
<thead>
<tr>
<th>Value</th>
<th>Presentation Restricted</th>
<th>Screening</th>
<th>Number Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The presentation is allowed</td>
<td>User provided, but not verified</td>
<td>Complete</td>
</tr>
<tr>
<td>1</td>
<td>The presentation is restricted</td>
<td>User provided, verified and passed</td>
<td>Incomplete</td>
</tr>
<tr>
<td>2</td>
<td>The address is not available</td>
<td>User provided, verify failed</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Spare</td>
<td>Network provided</td>
<td></td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Branch On Indicator screen.

![Configure Branch On Indicator](image)

**Configuring the node**

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the indicator option:  
  - Presentation Restricted  
  - Screening  
  - Number Incomplete |
| 2    | Select the number from the drop down list.  
  - CallingPartyNumber  
  - AdditionalCallingPartyNumber  
  - OriginalCalledPartyID  
  - RedirectingPartyID  
  - LocationNumber  
  - LocationInformationLocationNumber |
| 3    | Click **Save**. |
Branch on Protocol

Node description
The Branch on Protocol node allows you to determine the protocol used by the current call and branch accordingly.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits
This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CS1</td>
<td>CS1 Protocol</td>
</tr>
<tr>
<td>2</td>
<td>Nokia</td>
<td>(for future use)</td>
</tr>
<tr>
<td>3</td>
<td>CAP 2</td>
<td>CAP 2 protocol</td>
</tr>
<tr>
<td>4</td>
<td>CAP 3 or higher</td>
<td>CAP 3, or higher, protocol</td>
</tr>
<tr>
<td>5</td>
<td>CAP 3 or higher SMS</td>
<td>(for future use)</td>
</tr>
<tr>
<td>6</td>
<td>Failed to determine</td>
<td>Unspecified error</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Branch on Protocol screen.

Configuring the node
This node requires no configuration data. You may change the Node name, if required.
Branch on Service Key

Node description

This node compares an ACS IDP service key with a fixed value configured in the node. The node will route calls to different branches depending on the node configuration and whether or not a match is found.

You can edit the node structure to increase the number of node exits. You can then allocate a Service Key number or range of numbers to each additional exit.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Branch on Service Key nodes as required.

Node exits

This node has one entry and may have 3 through 10 exits. You may configure the number of exits within this range as required, using the Edit Node Exits option on the shortcut menu. See Editing node exits.

Node exits 1 and 2 are set by the system and may not be changed by the user.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No match found</td>
<td>No match was found for the service key extracted from the Initial Detection Point.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>The service key rules are incorrectly configured or an internal error has occurred.</td>
</tr>
<tr>
<td>3 to 10</td>
<td>Exit 3</td>
<td>These exits are followed depending on the rules attached to them.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Branch on Service Key screen.

![Configuration screen](image)

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Edit the node exits to add exits as required. See Editing node exits for details.  
**Note:** The new number of exits is represented on the node icon, but NOT on the configuration screen exit list. |
| 2    | Open the Configure Branch on Service Key screen.  
**Result:** The Service Key Branching tree lists all the exits that have been added, as in the example below, showing 6 exits. |
| 3    | Select the option on which to branch. |
| 4    | Branches are made up of rules. A rule is either a range of Service Keys or a single value.  
To edit a rule, right-click on it and click **Edit**.  
**Result:** The Edit Rules dialog will appear. |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 3 | To create a rule:  
  - of a single value, you can enter the value in the left hand field only, or the same number in both fields.  
  - for a range of numbers, enter values in both fields. The 'from' value must be lower than the 'to' value.  
  **Note:** The numbers must not overlap any other rule ranges. Make the change and click **Okay**. |
| 5 | To add rules to a branch, right-click on the Branch. From the pop-up menu displayed, select **Add**. You see the Add Rules screen. |
| 6 | Create the rule as required. |
| 7 | Click **Okay**.  
  **Result:** Either:  
  - the new rule will be added to the rule list, or  
  - if a rule conflicts with an existing rule, a warning dialog box will appear providing more detail about the conflict. |
| 8 | Edit or delete rules under each branch.  
  To delete a rule, right-click on a rule and click **Delete**.  
  **Result:** The rule is deleted from the branch. |
| 9 | When rules have been added to all branches as shown in the example below, the **Save** button will become available.  
  Click **Save**.  
  **Result:** The node data is saved. |
Note: After configuration, you may add or remove exits for the node using Edit Node Exits, then edit the node branches again.

If you remove exits, when you open the Configure Branch on Service Key screen again you will see a warning, such as in this example.

Click OK to continue, then edit the node.

**Call Forwarded Branching**

**Node description**

This node branches in either of two directions, depending on whether or not ACS has been advised that a terminating call has been forwarded.

ACS may receive advice about call-forwarding from a Service Switching Point (SSP) that complies with the CAMEL Application Part (CAP) specification. To use the Call Forwarded Branching node, you need to be familiar with the CAP specification. The specification is contained in the following document.
Note: This node can only be used with terminating calls passed to ACS by an SSP that complies with the CAP specification.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Call Forwarded Branching nodes as required.

Note: This node is only available in ACS 2.4.1 and later versions, for users of the CAMEL protocol.

Node exits

The Call Forwarded Branching node has one entry and two exits. The number of exits is fixed and cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Label</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Call Forwarded</td>
<td>ACS has been advised that a terminating call has been forwarded.</td>
</tr>
<tr>
<td>2</td>
<td>Call Not Forwarded</td>
<td>ACS has not been advised that a terminating call has been forwarded.</td>
</tr>
</tbody>
</table>

Note: ACS is advised that a terminating call has been forwarded when an EventReportBCSM is received from the SSP. EventReportBCSM indicates to ACS's tBusy and tNoAnswer detection points that a "call forwarded" has been received.

Configuration screen

Here is an example Configure Call Forwarded Branching screen.
**Configuring the node**

This node requires no configuration data. You may change the Node name, if required.

**Example of the use of the node**

For a terminating call, you may want to play an announcement if the call has been call-forwarded and simply terminate the call if it has not been call-forwarded.

To implement this scenario, you could set up the control plan shown below.

---

**Call Progression**

**Node description**

The Call Progression node allows you to configure the following parameters in the outgoing connect message:

- Suppress Switch Announcements
- Set OCSI Applicable
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may have as many Call Progression nodes as required. A later instance of the node parameters will override the previous ones.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The node parameters have been set.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>The node parameters have not been set.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Call Progression screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Suppress Ann</strong> check box to suppress switch announcements in the outgoing Connect message.</td>
</tr>
<tr>
<td>2</td>
<td>Select the <strong>OCSIApplicable</strong> check box to set the OCSIApplicable parameter in the outgoing Connect message.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

## Set Cut and Paste

### Node description

The number entered in the node configuration dialog is sent in all following INAP Connect operations as the value of the `cutAndPaste` parameter.

For details about the effect of `cutAndPaste`, see *ETS 300 374-1*.

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

A control plan may contain as many Set Cut and Paste nodes as required.

### Node exits

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cut and Paste Set</td>
<td>The cut and paste has been set.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Cut and Paste screen.

Configuring the node

Follow these steps to configure the Set Cut and Paste node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Cut Value** field, enter the value to set the cutAndPaste parameter to in INAP Connect operations sent to the switch from here on.  
**Note:** If you set Cut Value to 23 or more, ACS will stop setting the cutAndPaste parameter in INAP Connect operations. |
| 2    | Click **Save**. |

Set Indicator

Node description

The Set Indicator node allows you to set the value one of the indicators of a specified number sent in the CONNECT message:

- Number incomplete
- Screening
- Presentation restricted

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Value successfully set.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>Value not set due to error</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Set Indicator screen for the Presentation Restricted indicator.
**Configuration screen**

Here is an example Configure Set Indicator screen for the screening indicator.

![Configure Set Indicator screen for screening indicator](image1)

**Configuration screen**

Here is an example Configure Set Indicator screen for the Number Incomplete indicator.

![Configure Set Indicator screen for Number Incomplete](image2)
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the **Select Indicator** options, select the indicator to set:  
  - Presentation Restricted  
  - Screening  
  - Number Incomplete. |
| 2    | From **Select Number** drop down list, select the phone number to apply the indicator to:  
  - CallingPartyNumber  
  - AdditionalCallingPartyNumber  
  - OriginalCalledPartyID  
  - RedirectingPartyID  
  - LocationNumber  
  - LocationInformationLocationNumber  
  **Note:** This list contains all the valid phone number options. |
| 3    | From the **Set Indicator** options, select the value to apply to the selected phone number indicator.  
  Refer to the interpretation of values table below. |
| 4    | Click **Save**. |

**Interpretation of values**

This table describes the meaning of each value, depending on the indicator selected.

<table>
<thead>
<tr>
<th>Value</th>
<th>Presentation Restricted</th>
<th>Screening</th>
<th>Number Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The presentation is allowed</td>
<td>User provided, but not verified</td>
<td>Complete</td>
</tr>
<tr>
<td>1</td>
<td>The presentation is restricted</td>
<td>User provided, verified and passed</td>
<td>Incomplete</td>
</tr>
<tr>
<td>2</td>
<td>The address is not available</td>
<td>User provided, verify failed</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Spare</td>
<td>Network provided</td>
<td></td>
</tr>
</tbody>
</table>

**TCAP Handover**

**Node description**

The TCAP Handover node calls a chassisAction to construct an IDP on the existing SLEE dialog. It then calls the TCAP interface to hand over the SLEE dialog to an external network entity.

The available network entities are defined in `acs.conf` and made available to this node (SCP Name list) through the `acs.jnlp` or `sms.jnlp` files (scfs parameter). These will typically be SLCs, see *ACS Technical Guide*, topic *Customizing the screens for details*.

The following IDP parameters can be configured in the node to use a specific ACS termination number or buffer:
- Calling Party Number
- Called Party Number
- Redirecting Party ID
- Location Number
- Additional Calling Party Number

The available buffers are listed in the Buffer list.

**Note:** All other fields in the constructed IDP are taken from the calling information for the original call.

**Node icon**

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The node successfully passed the TCAP dialog to another entity.</td>
</tr>
<tr>
<td>2</td>
<td>Bad Destination</td>
<td>The hand over destination defined for the specified network entity could not be found.</td>
</tr>
<tr>
<td>3</td>
<td>Failure</td>
<td>The hand over was unsuccessful.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Tcap Handover screen.

Specifying values in profile selection fields

For each combo box combination on this screen, there are two methods of entering a value:
1 Use the drop down lists in the **Data Type**, **Location** and **Field** boxes, as in this example, to select the relevant values:

<table>
<thead>
<tr>
<th>callingPartyNumber</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Type</strong></td>
</tr>
<tr>
<td><strong>Location</strong></td>
</tr>
<tr>
<td><strong>Field</strong></td>
</tr>
</tbody>
</table>

2 Select **Fixed Value** in the **Data Type** box.

**Result:** The fields will change, as in this example, and you can type the required value in the **Fixed Value** field.

<table>
<thead>
<tr>
<th>callingPartyNumber</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Type</strong></td>
</tr>
<tr>
<td><strong>Fixed Value</strong></td>
</tr>
</tbody>
</table>

**Configuring the node**

Follow these steps to edit the TCAP Handover feature node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>SCP Name</strong> of the network entity for the handover destination.</td>
</tr>
<tr>
<td>2</td>
<td>In the IDP Parameters area, for each IDP parameter, specify the value. You can specify the following optional IDP parameters:</td>
</tr>
<tr>
<td></td>
<td>- callingPartyNumber</td>
</tr>
<tr>
<td></td>
<td>- calledPartyNumber</td>
</tr>
<tr>
<td></td>
<td>- redirectingPartyID</td>
</tr>
<tr>
<td></td>
<td>- locationNumber</td>
</tr>
<tr>
<td></td>
<td>- additionalCallingPartyNumber</td>
</tr>
<tr>
<td>3</td>
<td>When a TCAP handover is performed it is often desirable to preserve fields from original incoming IDP into fields in outgoing IDP. By default, the original IDP parameter values are preserved - the <strong>Preserve Attributes</strong> check box is selected. To disable the original IDP parameter values preservation, deselect the check box.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

For more information on profile blocks and tags, see *ACS User's Guide*. 
Transmission Type Branching

Node description

The Transmission Type Branching node allows you to route the call to different branches depending on the incoming calling party transmission type.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and seven exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speech</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Unrest. Digital</td>
<td>Unrestricted Digital</td>
</tr>
<tr>
<td>3</td>
<td>Restricted Digital</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3.1kHz audio</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Unret. Dg. Tones</td>
<td>Unrestricted Digital Tones</td>
</tr>
<tr>
<td>6</td>
<td>Video</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>No Bearer Cap</td>
<td></td>
</tr>
</tbody>
</table>

Restrictions

A control plan may contain as many Transmission Type Branching nodes as required.

Configuration screen

Here is an example Configure Transmission Type Branching screen.
Configuring the node

This node requires no configuration data. You may change the Node name, if required.
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Number feature nodes. Use Number feature nodes to route calls using information about the origin of the call.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Available Feature Nodes List

This table lists the feature nodes available from the Number palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Filtering (see page 404)</td>
<td>Checks the number in the selected call-digit buffer to determine whether it matches a number in the allowed or barred list stored in the configured profile location. Fast key: CF</td>
</tr>
<tr>
<td>Calling Party (see page 407)</td>
<td>Routes a call based on the number that the call is coming from. Fast key: CP Shortcut keys: Alt+C</td>
</tr>
<tr>
<td>Calling Party Category (see page 408)</td>
<td>Routes a call based on the category of phone from which the call originates. Fast key: CPC Shortcut keys: Alt+Shift+C</td>
</tr>
<tr>
<td>Dialled Number (see page 411)</td>
<td>Allows branching based on the service number that was dialed by the calling party. Fast key: DN</td>
</tr>
<tr>
<td>Geographical Routing</td>
<td>Allows a control plan to be branched, based on the geographic location of the call.</td>
</tr>
</tbody>
</table>

Geographical Routing allows a control plan to be branched, based on the geographic location of the call.
### Node name | Node description
--- | ---
(see page 413) | calling party.  
Fast key: GR  
Shortcut keys: Alt+Shift+G

**Number Lookup and Translation (see page 418)**  
Takes a number that is entered by the user and translates it to another number that is stored in the database.  
Fast key: NLT

**Number Matching (see page 421)**  
Allows the user to enter one or more search patterns, against which the selected number is matched.  
Fast key: MTCH

**Number Normalisation (see page 425)**  
Normalizes the specified number variable, following the rules defined in *acs.conf*.  
Fast key: NumN

**Table Lookup (see page 426)**  
Maps a specified prefix or CLI to a geographical routing code, such as a postal code or an exchange code, by looking up the code in a selected table lookup dataset. The feature node stores the resulting code in a profile field. The exit taken from the feature node depends on whether or not a match is found for the prefix or CLI.  
Fast key: TBLU

---

### Call Filtering

#### Node description

Use the Call Filtering feature node to check the number in the selected call-digits buffer to determine whether it matches a number in the allowed or barred list stored in the configured profile location.

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

A control plan may contain as many Call Filtering feature nodes as required.
## Node exits

This feature node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Barred</td>
<td>The call is barred, so it is routed down branch 1. This may then be followed by the required functionality, such as a Play Announcement or Disconnect feature node.</td>
</tr>
<tr>
<td>2</td>
<td>Allowed</td>
<td>The call is allowed, so it is routed down branch 2. This may then be followed by the required functionality, such as a Termination Unchanged feature node.</td>
</tr>
<tr>
<td>3</td>
<td>Data Not Found</td>
<td>No data is found to identify the number as allowed or barred. The call is routed down branch 3. It may then be followed by the required functionality, such as a Play Announcement or Disconnect feature node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Call Filtering screen.

### Configuring the node

To edit the Call Filtering feature node:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the lists in the Compare With Which Buffer area, select the buffer that contains the number to check in the allowed or barred numbers list. You specify the number list to use in the location fields.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Location Of List Type</strong> lists, select the profile field that sets whether the list type is allowed or barred.</td>
</tr>
<tr>
<td>3</td>
<td>From the <strong>Location Of List Data</strong> lists, select the prefix tree profile field that contains the list of allowed or barred numbers.</td>
</tr>
</tbody>
</table>
### Calling Party

#### Node description

This node routes calls based on the telephone number from which the call is made. This allows callers whose phone numbers have specified prefixes to be routed to different exits. Calls are routed to the exit that is mapped to the best match between the calling party number and the prefixes that are in the node data.

**Example:** If the prefixes entered into the node data are 04, 09, 04477 and 044, a caller from 044773384 will be routed down the branch associated with 04477, as this is the best match found for the calling party number.

For calls where there is no match found in the prefix list, the call is routed down the default exit.

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Shortcut keys

The shortcut keys to add a Calling Party node are **Alt+C**.

#### Restrictions

A control plan may contain as many Calling Party nodes as required.

#### Node exits

This node has one entry and may have two through 20 exits. You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.
Configuration screen

Here is an example Configure Calling Party screen.

![Configure Calling Party screenshot]

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edit the node exits to add up to another eighteen exits as required. See Editing node exits for details.</td>
</tr>
</tbody>
</table>
| 2    | Click **Add Prefix**.  
  **Result:** A highlighted entry appears in the display grid. This creates the new Prefix entry, and is edited in the following steps. |
| 3    | Type the prefix in the entry field to the left of the **Branch** box.  
  Calls made from numbers with this prefix are routed to the exit specified in this step. |
| 4    | Use the **Branch** box to select the exit these calls should be routed to. |
| 5    | Click **Change**.  
  **Result:** The Prefix appears in the display grid, with the exit displayed in brackets. |
| 6    | Repeat Steps 1 – 4 for as many prefix additions as required. |
| 7    | Set the default branch for all calls which do not match a specified prefix. |
| 8    | Click **Save**.  
  **Note:** **Save** is not available until all the required information has been selected or entered. |

Calling Party Category

Node description

This node routes a call based on the category of phone from which the call originates. A category number identifies calls within the system, indicating the type of telephone from which the call is made (for example, pay phones, hotels or prisons).
This node is used by System Administrators only, for advanced editing. It will only work if the Telco's system is set up to provide the IDP calling party category information. This configuration must be configured on the switch at system level.

**Node icon**

![Node icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Shortcut keys**

The shortcut keys to add a Calling Party Category node are **Alt+Shift+C**.

**Restrictions**

A control plan may contain as many Calling Party Category nodes as required.

**Node exits**

This node has one entry and may have two through seven exits. You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.

**Configuration screen**

Here is an example Configure Calling Party Category screen.
Configuring the node

Follow these steps to edit the Calling Party Category node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edit the node exits to add up to another five exits as required. See Editing node exits for details.</td>
</tr>
<tr>
<td>2</td>
<td>Select the default branch. Where the system is not configured to process calling party category data, the system will use the default branch for any calls using a Control Plan containing this node.</td>
</tr>
<tr>
<td>3</td>
<td>Click Add Entry. Result: A highlighted entry appears in the display grid. This creates the new entry, and is edited in the following steps.</td>
</tr>
<tr>
<td>4</td>
<td>Use the Calling Party Type spin box to select the category number of the required type of phone. Any value from 0 – 255 may be used to indicate any given category of phone. These values are network-specific, so they may be set to reflect the needs of the market. The table below details the standard values used for ISUP. Result: Calls from phones of the selected calling party type will route down the selected branch. Example: If values are selected from the ITU/ETSI CS1 standards, category 4 represents calls from the Russian language operator, and category 15 represents calls from payphones. If the incoming call is from an undefined category, or if the system is not configured to process calling party category data, the call will be routed down the default branch.</td>
</tr>
<tr>
<td>5</td>
<td>Use the Branch spin box to select the exit. This is the exit to which calls made from phones of this category are routed.</td>
</tr>
<tr>
<td>6</td>
<td>Click Change. Result: The Category appears in the display grid, with the exit displayed in brackets.</td>
</tr>
<tr>
<td>7</td>
<td>Repeat Steps 1 – 4 for as many category additions as required.</td>
</tr>
<tr>
<td>8</td>
<td>Click Save. Note: Save is not available until all the required information has been selected or entered.</td>
</tr>
</tbody>
</table>

ISUP: Enumerated Values for Calling Party Category

The table below detail the standard values:

<table>
<thead>
<tr>
<th>Integer value</th>
<th>Station type</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>Unknown (not provided)</td>
</tr>
<tr>
<td>0</td>
<td>Unknown</td>
</tr>
<tr>
<td>1</td>
<td>Operator, language French</td>
</tr>
<tr>
<td>2</td>
<td>Operator, language English</td>
</tr>
<tr>
<td>3</td>
<td>Operator, language German</td>
</tr>
<tr>
<td>4</td>
<td>Operator, language Russian</td>
</tr>
<tr>
<td>5</td>
<td>Operator, language Spanish</td>
</tr>
<tr>
<td>6 - 8</td>
<td>Available to administration for selecting a particular language by mutual agreement</td>
</tr>
</tbody>
</table>
## Integer value | Station type
--- | ---
9 | Reserved
10 | Ordinary Calling subscriber
11 | Calling subscriber with priority
12 | Data call (voice band data)
13 | Test call
14 | Spare
15 | Payphone
16 - 223 | Spare
224 - 254 | Reserved for national use
255 | Spare

### In IS-41 NP(MSID) type
- **0**: Mobile Identification Number
- **1**: International Mobile Station Identity

For more information about the Calling Party Category, see *ITU-T standard Q763*.

## Dialled Number

### Node description

The Dialled Number node allows branching, based on the service number (SN) that was dialed by the person making the call. This allows several service numbers to use the same control plan and be routed down different branches, based on the service number that the caller used.

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Dialled Number Icon](image)

### Restrictions

A control plan may contain as many Dialled Number nodes as required.

### Node exits

This node has one entry and may have 2 through 20 exits. You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.
**Configuration screen**

Here is an example Configure Dialled Number screen.

![Configure Dialled Number screen](image)

**Configuring the node**

Follow these steps to add a prefix to the node data, using the Configure Dialled Number screen.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edit the node exits to add up to another eighteen exits as required to accommodate the numbers you are planning to configure. See Editing node exits for details.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Add Prefix</strong>. <strong>Result</strong>: You see an undefined prefix displayed in the list box to the left of the button.</td>
</tr>
<tr>
<td>3</td>
<td>Enter the prefix into the field to the left of the <strong>Branch</strong> field, as shown below.</td>
</tr>
</tbody>
</table>

To determine the routing, prefixes (or the entire number) must be entered into the node data. The routing will be based on the best match between the dialed number and the prefixes that are in the node data. The dialed number list takes up to 1500 characters in total, which limits the number of entries in the list. It is recommended that a maximum of 50 entries be made in the list.

**Example**: If 0800447732 is dialed and the prefixes entered into the node data are 0800, 0900, 0800447 and 080044, the call will be routed down the branch associated with 0800447 because this is the best match found for the number dialed.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>In the <strong>Branch</strong> field, select the branch down which calls whose dialed number best matches this prefix are to route. When the entry is correct, click <strong>Change</strong>. <strong>Example</strong>:</td>
</tr>
</tbody>
</table>
Repeat steps 1-4 until you have specified the dialed number ranges required.

From the Default box, select the branch that dialed numbers that do not match any prefix entered into the node will route down.

Click Save.

Geographical Routing

Node description

This node allows a control plan to branch based on the geographic location of the calling party. This node may be used to offer different service to calls from certain locations. For example, routing to a local office.

A control plan may contain as many Geographic Routing nodes as required.

Shortcut keys

The shortcut keys to add a Geographical Routing node are Alt+Shift+G.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and may have two through 20 exits. Although this node accepts up to 20 exits, it is recommended that this number is restricted to a maximum of 10. You may configure the number of exits within this range as required, using the Edit Node Exits option on the shortcut menu. See Editing node exits.
**Geographic routing**

A geography set is made up of multiple nested geography entries. Each entry is mapped to a unique prefix, and may also be connected to a (or several) region. A region is a group of geography entries. The entries contained in a single region may come from different branches and different nested levels, or may contain whole branches.

Routing may be based on either region or geography entry prefix. A geography entry may only appear once on a branch. That is, it may not appear on two branches.

The routing will be based on the best match between the calling party number (or other selected buffer) and the number prefix that has been set for the region in the Geography tab of the configuration screens.

**Nested subtrees**

If an entire nested subtree within a geography set is allocated to a branch then the root of the subtree should be allocated to the branch.

**Example:** If the number prefix entered for a region used in this node was 0447 and the number prefix for another region used in this node was 04477, a caller from 044773384 will be routed down the branch associated with 04477 because this is the best match found for the calling party number.

**Allocating individual prefixes vs allocating folders**

It can be visually clearer to allocate every individual prefix to a branch in the All Geo Areas frame but this is not necessary. When allocating a folder to a branch all prefixes (and sub-folder prefixes) will route down that branch even though the Branch Geo Area (right side) does not list each prefix. However if any prefixes or sub-folders in the root folder are allocated to another branch then calls to those prefixes will route down the new branch instead. You will notice that the prefixes or sub-folders will not be highlighted in the All Geo Areas (left side) of the root folder when allocated to other branches.

**Example:**

The geography set has a folder called Eastern Province which contains 3 prefixes, 2 of which are in a sub-folder called Northern District.

If the Eastern Province folder is allocated to a branch then all matched prefixes will go down that branch (even though the Branch Geo Area frame will only display the Eastern Province folder name).

If the sub-folder, Northern District, is now allocated to another branch then all calls that best match the prefixes in this sub-folder will go down the new branch.

While the third prefix, Southern District (Prefix 12), will still go down the branch allocated to the root folder Eastern Province.

The Northern District folder will not be highlighted in the All Geo Areas frame indicating it is allocated on another branch instead.

**Default branch**

For calls where there is no match found for the allocated prefixes in the Branch Geo Areas frame, the call will be routed down the default exit branch, as specified by the Default Branch field.
Configuration screen

Here is an example Configure Geographical Routing screen.

Add a geographic entry or Region to an exit branch

Follow these steps to add a geographic entry or region to an exit branch.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the location of the number data from the Source Data Type, Location and Field drop down lists.  
**Note**: For information on profiles and how to use them, see Selecting profile locations and fields. |
| 2    | Select the required geography set from the list. The list will display all the Geography sets that the customer has access to. To the left of the screen is the full tree structure of the geography set. Branches of the tree may be condensed and expanded by:  
- Using the left and right arrow keys  
- Clicking on the and  |
| 3    | Enter the branch number to which the geographic entry or region is to be routed in the Number field. |
### Example:

<table>
<thead>
<tr>
<th>Branch Geo Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number 1</td>
</tr>
</tbody>
</table>

4. **Select the entry that is to be routed to that branch from the geography tree at the left.**

#### Notes:
- You can select the root branch by pressing \textit{Alt+S}, and navigate around the tree using the arrow keys. You can also select any of the first nine entries by pressing \textit{Ctrl} and the corresponding number key.
- To route based on geography regions select the \textbf{74 Regions} tab.
- When routing to exit branches using regions the entries that belong to the region will be assigned to the exit branch.
- It is important to ensure that an entry is only routed to one exit branch.

5. **Either press \textit{Ctrl+B} or click \textit{Move to Branch \textgreater\textless}.** The entry will be added to the tree structure for the specified branch. If a condensed branch of the geography tree is added to the branch sub-tree, the entry selected and all levels below that will be added to the branch sub-tree. To add geography entries to another branch, select a new branch and use \textit{Move to Branch \textgreater\textless} or \textit{Replace in Set} to add and remove geography tree entries.

6. **Add entries and regions to all branch exits as required.**

7. **Select the \textbf{Default Branch}.**

8. **When you have finished all editing, click \textbf{Save}.

**Note:** \textit{Save} is not available until changes have been made.

### Remove geography entries from a branch subtree

Follow these steps to remove Geography Entries from a Branch sub-tree.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the geography set that is required from the list. The list will display all the geography sets that the customer has access to. To the left of the screen is the full tree structure of the geography set. Branches of the tree may be condensed by:</td>
</tr>
<tr>
<td></td>
<td>- Using the left and right arrow keys</td>
</tr>
<tr>
<td></td>
<td>- Clicking on the ( \cdot ) and expanded by clicking on the ( \cdot )</td>
</tr>
<tr>
<td>2</td>
<td>Select the branch to which a geography tree branch is currently routed by entering a number into the \textbf{Branch} field.</td>
</tr>
<tr>
<td>3</td>
<td>From the \textbf{Branch Geo Areas} frame, select the entry that is to be removed.</td>
</tr>
<tr>
<td></td>
<td>\textbf{Note}: You can select the root branch by pressing \textit{Alt+B}, and navigate around the tree using the arrow keys. You can also select any of the first nine entries by pressing \textit{Ctrl} and the corresponding number key.</td>
</tr>
<tr>
<td>4</td>
<td>Either press \textit{Ctrl+S} or click \textit{Replace in Set}.</td>
</tr>
<tr>
<td></td>
<td>\textbf{Result}: The geography entry is replaced in the full geography set tree. This entry may now be added to another branch sub-tree if required.</td>
</tr>
<tr>
<td>5</td>
<td>When finished all editing, click \textbf{Save}.</td>
</tr>
</tbody>
</table>

416  NCC Feature Nodes Reference Guide
Finding a number in the geographic tree

Follow these steps to find where a specific telephone number or prefix is in the geography tree.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Configure Geographical Routing screen, press Ctrl+R to place your cursor into the field next to the Find button.</td>
</tr>
<tr>
<td>2</td>
<td>Type the number or prefix you want to search for and press Ctrl+F to activate the Find button.</td>
</tr>
</tbody>
</table>

Result: The All Geo Areas tree will expand and highlight the best match for your query.

Example control plan

Here is an example control plan containing a Geographical Routing feature node.

This control plan will route calls to different service centers based on where the call originates from (for example, routes to the nearest Pizza shop).

This control plan is triggered when the caller dials a certain termination number (for example 0800 PIZZA).
Number Lookup and Translation

Node description

This node takes a number that is either entered by the user or is held as a data item, and translates it to another number.
The new number is stored in a field in a specified location for later use, for example, as a pending termination number.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Number Lookup and Translation nodes as required.
The number translation data and announcements must be set up before this node can be configured correctly.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The number has been successfully translated.</td>
</tr>
<tr>
<td>2</td>
<td>Not Translated</td>
<td>The number has not been translated.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>The caller has abandoned the call.</td>
</tr>
<tr>
<td>4</td>
<td>Not Updated</td>
<td>The number could not be updated.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Number Lookup and Translation screen.

![Configure Number Lookup and Translation screen](image)

**Configuring the node**

Follow these steps to configure the node.

**Note:** For information about profiles and how to use them, see Selecting profile locations and fields.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Read number translation list from field, select the location in which the number translations are stored. The Control Plan designer must verify that this field contains the correct selection.  
**Note:** If this number translation has been established by using the ACS > Resource > Number Translation screen, the information will always be in Customer Profile, Sub-field 1. |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2    | In the **Sub-field** field, enter the sub-tag that selects a group of number translations. This field entry does not have a default value. See *Sub-tags* (on page 5) for a definition of sub-tags. The list that is stored under the sub-field is a prefix tree data structure, which allows the input number to be quickly looked up and verified. **Example:**  
  - Sub-field 1 could be Marketing translations between account codes and phone numbers.  
  - Sub-field 2 could be Sales Department quick dial numbers. |
| 3    | Select the method of obtaining the number:  
  - Retrieve stored number  
    **Result:** The **Retrieve number from location** and **Retrieve number from field** drop down lists are activated. Go to Step 4.  
  - Prompt and collect number  
    **Result:** The **Announcement Entry** drop-down box will become available.  
  | 4    | If you selected the Retrieve stored number option, in the **Retrieve number from location** and **Retrieve number from field** drop down lists, select the location of the data to retrieve. Go to Step 12.  
  | 5    | If you selected the Prompt and collect number option, from the Main Announcement area, select the **Announcement Set** that contains the main announcement you want to play to the caller.  
  **Result:** The **Announcement Entry** drop-down box will become available.  
  | 6    | From the **Announcement Entry** drop-down list, select the main announcement you want to play to the caller.  
  **Note:** All announcements are established in the **ACS > Configuration > Announcements** screens.  
  | 7    | Set the **Repetition** field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set.  
  | 8    | Set the **Duration** field to the length of time in seconds that the announcement is to be played. If set to zero, the announcement will be played for its full length.  
  | 9    | The retry announcement contains the announcement you want to play to the caller if the digits they enter are not recognised. In the Retry Announcement area, select the:  
  - **Announcement Set** which contains the retry announcement  
  - **Announcement Entry** for the retry announcement you want to play, and set the  
    - **Repetition** to the number of times to repeat the retry announcement  
    - **Duration** to the length of time, in seconds, that the retry announcement is to be played.  
    as described in steps 5 - 9.  
  | 10   | In the **Number of Retries** field, set the number of times that the node will attempt to collect data from the caller, before routing the call to the Not Translated branch. This value may be between 0 and 10.  
  | 11   | From the **Store translated number to Location** and **Store translated number to Field** drop down lists, select where to store the translated number.  
  | 12   | Click **Save**.  
  **Note:** **Save** is not available until all the required information has been selected or entered.  
  |
**Note:** The announcement set and announcement entry lists are populated with data that is specified using the Announcements tab of the ACS Configuration screen.

For more information about configuring announcement sets and announcement entries, see the Announcements topic in ACS User's Guide.

**Example**

The following have been set up in the ACS > Resource > Number Translation screens (list of Sub-field 1 numbers):

<table>
<thead>
<tr>
<th>Input Number</th>
<th>Termination Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>08004567</td>
<td>041234567</td>
</tr>
<tr>
<td>08009876</td>
<td>063456789</td>
</tr>
</tbody>
</table>

The number to translate is compared to the Input Number list.

When a match is found, the matching termination number is stored in the configured location.

**Number Matching**

**Node description**

The Number Matching node allows you to enter, against which the selected number is matched, one of:

- One or more search patterns
- A profile block and field

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Number Matching nodes as required.

When entering a search pattern list, the maximum length of the list is 2000 characters per node instance (as of ACS 2.4.2.14. Prior versions have a 160 character limit).

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number Found</td>
<td>The selected number matches a search pattern.</td>
</tr>
<tr>
<td>Number</td>
<td>Description</td>
<td>Details</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>2</td>
<td>Number Not Found</td>
<td>The selected number does not match a search pattern.</td>
</tr>
</tbody>
</table>
| 3      | Number is Undefined | One of:  
- The buffer to compare is empty  
- There is no number list found at the profile and field combination provided |

**Configuration screen**

Here is an example Configure Number Matching screen.

![Configure Number Matching screen](image)

**Search patterns**

The Number Matching feature node allows you to enter one or more search patterns in the **Static Pattern List** field, against which the selected number is matched.

The control plan compiler notifies you if the pattern entered is invalid. The search patterns are entered using regular expressions. Some characters have special meaning when used in a regular expression; other characters stand for themselves. Under ACS, telephone number matching is customized for patterns of telephone numbers. The "number" character set is represented by digits zero through nine, asterisk, pound sign (hash mark), and the letters A through F.

**Special characters**

Here are the definitions of special characters used in search patterns.

<table>
<thead>
<tr>
<th>Special Character</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>For the purposes of this feature node, the character c refers to the</td>
</tr>
</tbody>
</table>
### Special Character Definition

<table>
<thead>
<tr>
<th>Special Character</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>“number”</td>
<td>&quot;number&quot; character set as defined above.</td>
</tr>
<tr>
<td>?</td>
<td>Any single character in the pattern.</td>
</tr>
<tr>
<td>(r)</td>
<td>The regular expression r. For example, (r)x(y)z is the combination of regular expressions rxzy. This is typically used to group number sequences as distinct units.</td>
</tr>
<tr>
<td>r%</td>
<td>Zero or more successive occurrences of the regular expression r. The longest left-most match is chosen.</td>
</tr>
<tr>
<td>rx</td>
<td>The occurrence of regular expression r, followed by the occurrence of regular expression x.</td>
</tr>
<tr>
<td>r&lt;m:n&gt;</td>
<td>Any number of m through n successive occurrences of the regular expression r. The regular expression r&lt;m&gt; matches exactly m occurrences; r&lt;m:&gt; matches at least m occurrences. The occurrence counting angle brackets allows only numbers and a colon within the brackets. The angle brackets and colon have no meaning outside of this context.</td>
</tr>
<tr>
<td>[s]</td>
<td>Any character in the set s, where s is a sequence of characters and/or a range of characters, for example [0-9]. When used in square brackets, the dash denotes a range for example, [cc]. <strong>Note:</strong> The dash has no special meaning if it occurs immediately after the open bracket, or before the closing bracket: for example, ([()-] or [c-]).</td>
</tr>
<tr>
<td>^s</td>
<td>Any character not in the set s, where s is defined as in the previous entry. The circumflex has the meaning &quot;complement of&quot;, where it immediately follows the open bracket for example, [^s]. A circumflex is not part of a telephone number, so a match will never be found for a pattern where the circumflex does not immediately follow the open bracket.</td>
</tr>
</tbody>
</table>

### Examples:

Here are some examples of search patterns.

<table>
<thead>
<tr>
<th>Search Pattern</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td>Match digit sequence ‘123’ exactly.</td>
</tr>
<tr>
<td>123%</td>
<td>Match digit sequence ‘12’ followed by none or more ‘3’ digits {matches 12, 123, 1233, 12333}</td>
</tr>
<tr>
<td>123&lt;1:&gt;</td>
<td>Match digit sequence ‘12’ followed by one or more ‘3’ digits {matches 123, 1233, 12333, ..}</td>
</tr>
<tr>
<td>(123)%</td>
<td>Match none or more entire sequences of ‘123’ {matches nothing, 123, 123123, 123123123, ...}</td>
</tr>
<tr>
<td>(123)&lt;1:2:</td>
<td>Match on at least one and no more than two sequences ‘123’ {matches ONLY 123 and 123123}</td>
</tr>
<tr>
<td>021?&lt;6:7&gt;</td>
<td>Match on prepaid (at least 6 of any digits) &amp; subscriber (most 7 digits)</td>
</tr>
<tr>
<td>025?&lt;6:&gt;</td>
<td>Match on at least 6 of any digit, no upper limit of digits</td>
</tr>
<tr>
<td>02[15]&lt;6:&gt;</td>
<td>Match on a number that starts with 02, is directly followed by a single digit 1 or 5, and followed by at least 6 occurrences of any digit.</td>
</tr>
<tr>
<td>123?%</td>
<td>Match on a number where 123 is followed by anything or nothing.</td>
</tr>
<tr>
<td>??123???</td>
<td>Match on any 8-digit number where the 3rd to 5th digits are 123.</td>
</tr>
<tr>
<td>?%123</td>
<td>Match on any number ending in 123, including 123.</td>
</tr>
</tbody>
</table>
Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>Number to Match</strong> frame, using the drop down lists, specify the number to match.</td>
</tr>
</tbody>
</table>
| 2    | Select the pattern list location. If you select:  
|      |   • **Node dialog**, the **Static Pattern List** field will be active.  
|      |   • **Profile**, you need to specify the data type, location and field. |
| 3    | If you selected:  
|      |   • **Node dialog**:  
|      |     ▪ Fill in the **Number Match Pattern List** field. See *Search patterns* (on page 422) for a list of example patterns.  
|      |     ▪ **Warning**: If you leave this field empty, exit 3 will be taken, as there is nothing to match against.  
|      |   • **Profile**, select from the drop-down lists, the:  
|      |     ▪ **Pattern List Data Type**  
|      |     ▪ **Pattern List Location**  
|      |     ▪ **Pattern List Field** containing the pattern to match against |
| 4    | Click **Save**. |

**Note**: If any control plan containing Number Matching nodes were exported prior to the profile block functionality being introduced and you import them again, then you will need to re-save in order to allow the control plan to recompile.

**Note**: The list of data types is fixed at installation time for each feature node or screen.

**Further reference**:  
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).  
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User’s Guide, Profile Tag Details* for more information).

**Example**

This example is based on the configuration screen shown for this node:  
- The number to match against is held in the Calling Logical Number field in the call context.  
- The search pattern looks for the digits 123, starting in position 3, in an eight digit number.  
The exit taken is shown in this table for the various Calling Logical Number examples:

<table>
<thead>
<tr>
<th>CLN</th>
<th>Exit taken</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td>04123678</td>
<td>3 - Number is Undefined</td>
<td>No number found at configured location - Logical Calling Number buffer is empty.</td>
</tr>
<tr>
<td>0412367</td>
<td>1 - Number Found</td>
<td>123 found, starting at position 3, in an eight digit number.</td>
</tr>
<tr>
<td>0412367</td>
<td>2 - Number Not Found</td>
<td>Not an eight digit number - only 7 digits.</td>
</tr>
<tr>
<td>12345678</td>
<td>2 - Number Not Found</td>
<td>123 not at position 3 - occurs at position 2.</td>
</tr>
<tr>
<td>0212345678</td>
<td>2 - Number Not Found</td>
<td>Not an eight digit number - 9 digits.</td>
</tr>
</tbody>
</table>
**Number Normalisation**

**Node description**

The Number Normalisation node normalizes the number currently held in the selected buffer, following the rules defined in `acs.conf`.

*Note:* Any changes made to `acs.conf` will necessitate a SLEE restart for the changes to be registered with this node.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Number Normalisation Icon](image)

**Restrictions**

A control plan may contain as many Number Normalisation nodes as required.

**Node exits**

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>T</td>
<td>The caller has successfully exited the node.</td>
</tr>
</tbody>
</table>
Chapter 16

Configuration screen

Here is an example Configure Number Normalisation screen.

![Configure Number Normalisation Screen](image)

Configuring the node

Follow these steps to edit the node configuration.

See the ACS technical Guide, topic `acsChassis Normalisation Parameters (SCP)` for information on number normalisation.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using the drop down lists in the Number Buffer area, specify the buffer containing the number to normalise.</td>
</tr>
<tr>
<td>2</td>
<td>Type the Source NOA value.</td>
</tr>
<tr>
<td>3</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

Table Lookup

Node description

The Table Lookup feature node maps a specified prefix or CLI to a geographical routing code, such as a postal code or an exchange code, by looking up the code in a selected table lookup dataset. The feature node stores the resulting code in a profile field. The exit taken from the feature node depends on whether or not a match is found for the prefix or CLI.
About table lookup datasets

A table lookup dataset contains a group of related codes, for example, for a specific geographic area or suburb.

A table lookup dataset can be public or private. A private table lookup dataset belongs to a specific customer. It is only available to that customer and the parent customers linked to that customer in the customer hierarchy. A public table lookup dataset is available to all customers.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Table Lookup feature nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Name</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matched</td>
<td>A prefix has been mapped to a code.</td>
</tr>
<tr>
<td>2</td>
<td>No Match</td>
<td>No matching prefix was found in the dataset</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>

Configuring the node

To configure the Table Lookup feature node:

1. Open the configuration window for the Table Lookup feature node.
2. In the Lookup Input source area select the location of the prefix or CLI that you want the feature node to look up from the Source Data Type, Source Location and Source Field lists.
3. In the Lookup Result target area select the location to store the resulting code from the Target Data Type, Target Location and Target Field lists.
4. From the Dataset list, select the dataset that corresponds to the type of code you want. You can select a publicly owned dataset or a dataset that belongs to the customer. For more information about table lookup datasets, see About table lookup datasets (on page 427).
5. Click Save.
Chapter 17
OSD Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Open Services Development (OSD) feature node. If any additional custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

OSD Feature Node List

This table lists the feature node available from the OSD palette group and the feature node fast key. You can use the fast key to search for the feature node in the feature palette or the canvas.

<table>
<thead>
<tr>
<th>Node name (on page 430)</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iterator</td>
<td>The Iterator node allows iterating through prefix tree, ordered prefix trees, or array elements, extracting the content of each entry or element and copying it to temporary storage variables. Fast key: ITRT</td>
</tr>
</tbody>
</table>

Disconnect Nodes Release Causes

This table lists the release causes you should use in Disconnect feature nodes that you include in your OSD control plans.

<table>
<thead>
<tr>
<th>Cause</th>
<th>OSD Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No such subscriber</td>
</tr>
<tr>
<td>3</td>
<td>Missing parameter</td>
</tr>
<tr>
<td>4</td>
<td>Mis-typed parameter</td>
</tr>
<tr>
<td>5</td>
<td>System error</td>
</tr>
</tbody>
</table>

Each cause is translated into a SOAP cause that is returned to the WSDL origin. This means that anyone trying to identify a fault with the control plan will be using accurate information.
Iterator

Node description

The Iterator node allows iterating through prefix tree, ordered prefix trees, or array elements, extracting the content of each entry or element and copying it to temporary storage variables.

Prefix trees and ordered prefix trees are defined in profile blocks. For more information on how to define these types of structures, see ACS User's Guide.

A telco or a third party (for example, an ASP) may require access to the NCC platform from a WEB application (for example to transfer money from user A's account to user B's account, send a short message to user B and then tell user A what the balance and expiry date of all his balances are).

A control plan using the iterator node can perform part of this logic that deals with which parameters come in / go out through XML.

When the control plan is saved, a WSDL file is produced which can then be given to the third party or client ASP.

A SOAP request conforming to this WSDL and sent to the appropriate address and port will result in the control plan being run and a SOAP response containing the balances and expiry dates being sent back to the application.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Iterator nodes as required.

Warning: An Iterator node must never be placed within the loop of another Iterator node. See Iterator examples (on page 431) below

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Next</td>
<td>A sub tag has been successfully processed, but there is at least another sub tag to process.</td>
</tr>
<tr>
<td>2</td>
<td>No more</td>
<td>A sub tag has been successfully processed and there are no more sub tags.</td>
</tr>
<tr>
<td>3</td>
<td>Data not found</td>
<td>Data could not be found at the profile filed (prefix tree) location.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>The node detected that two or more feature nodes are used simultaneously, which could result in each node attempting to copy into the same fields in Temporary Storage.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Iterator screen.

![Configure Iterator Screen]

Configuring the node

Follow these steps to configure the Iterator node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Source Profile Field section of the Configure Iterator node screen, select the **Data Type**, **Location**, and **Field** from the drop down lists for the node to iterate over.  
**Result:** The Elements section is populated with the sub tags and their storage location after the Iterator node has finished processing the selected profile field. |
| 2    | Click **Save**. |

Iterator examples

This example shows a basic iteration over an array, with each iteration sending a SMS message. The actual content of the array elements can be any data type.
Here is an example control plan using the Iterator node.
Chapter 18

Others Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Others feature nodes. These feature nodes provide specialized functions, not easily matched to an existing category.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Initiation (see page 434)</td>
<td>Enables a call attempt to be initiated from within the control plan. The node simulates an Initiate Call Attempt (ICA) to an IN switch to create a call that can be processed by ACS as if it had been a standard dialed call. Fast key: CI</td>
</tr>
<tr>
<td>Change CDR (see page 438)</td>
<td>Allows control plan designers to alter and add CDR tags to ACS CDRs during call flow. Fast key: CCDR</td>
</tr>
<tr>
<td>Copy Hunting List (on page</td>
<td>Prompts the user for a hunting list and copies the hunting list contents to</td>
</tr>
</tbody>
</table>

Available Feature Nodes

Others Feature Nodes List

This table lists the feature nodes available from the Others palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.
### Node description

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Hunting List (on page 443)</td>
<td>Reads hunting list from subscriber's profile, and copies hunting list contents to the additional pending TN buffers. Fast key: AGHL</td>
</tr>
<tr>
<td>Loop Limit (on page 445)</td>
<td>The Loop Limit feature node allows ACS to traverse an instance of the node up to a specified number of times during the control plan processing. Fast key: LLIM</td>
</tr>
<tr>
<td>Service Handover (see page 456)</td>
<td>Allows the call to be passed to another service that runs a control plan as if it were a new call. Fast key: SHO</td>
</tr>
<tr>
<td>Set Carrier Code (see page 457)</td>
<td>Allows the user to set a carrier code for a control plan that can execute an Attempt Terminate node. The carrier code is a string of digits, which is used to determine the carrier for the call. Fast key: SCC</td>
</tr>
<tr>
<td>Set Tariff Code (see page 459)</td>
<td>Sets the tariff code for the current call, to set the billing information that is sent to the switch. Fast key: STC</td>
</tr>
<tr>
<td>Statistic Increment (see page 462)</td>
<td>Increments the value of a specified statistic. Fast key: STIN</td>
</tr>
<tr>
<td>Sub Control Plan (see page 464)</td>
<td>Merges another compiled control plan into this control plan. The number of exits from this node match the End nodes from the merging control plan. Fast key: SCPN</td>
</tr>
</tbody>
</table>

### Call Initiation

#### Node description

The Call Initiation node enables a call attempt to be initiated from within the control plan. The node initiates a call attempt (ICA) to an IN switch to create a call that can be processed by ACS as if it had been a standard dialed call.

When the response (answered, noAnswer, busy, or Route Selection Failure) to the call is received, the node performs both the following actions:

- Process the current control plan as normal by taking the appropriate exit
- Transfer the new dialog (on which the ICA was sent) back into ACS as an IDP. The new call is processed in the normal way, executing a new control plan based on the standard service loading rules.

If the customer has a restricted termination range policy, the available termination ranges will be displayed in the top left hand corner of the configuration screen.

#### Node description

- The IDP is constructed from information supplied in the Configure Call Initiation screen, the standard control plan number buffers and the call information from the initiating call.
The available network switches are defined in `acs.conf` and made available to this node (Switch Name list) through the `acs.jnlp` or `sms.jnlp` files (ssfs parameter). See *ACS Technical Guide*, topic *Customizing the screens* for details.

- The destination for the ICA is configurable within the node. The SLEE interface for the ICA network is configurable in `acs.conf`. See *ACS Technical Guide* for details.
- This feature node may not be available, depending on the license agreement with Oracle.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Call Initiation nodes as required.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The response the ICA received was 'Answer'.</td>
</tr>
<tr>
<td>2</td>
<td>Busy</td>
<td>The response the ICA received was 'Busy'.</td>
</tr>
<tr>
<td>3</td>
<td>No Answer</td>
<td>The response the ICA received was 'No Answer'.</td>
</tr>
<tr>
<td>4</td>
<td>Route Select Failure</td>
<td>The response the ICA received was 'Route Select Failure'.</td>
</tr>
<tr>
<td>5</td>
<td>Transient Failure</td>
<td>Either the node cannot find the network entity for the specified name, or it cannot find the service interface.</td>
</tr>
<tr>
<td>6</td>
<td>Permanent Failure</td>
<td>No response was received for the ICA.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Call Initiation screen.

![Configure Call Initiation](image)

Note: There is a brief explanation of how to use the node at the bottom of the fields. You may need to scroll to view it.

**Specifying values in profile selection fields**

For each combo box combination on this screen, there are two methods of entering a value:

1. Use the drop down lists in the **Data Type**, **Location** and **Field** boxes, as in this example, to select the relevant values:

   ![CallingParty/Number](image)

2. Select Fixed Value in the **Data Type** box.
Result: The fields will change, as in this example, and you can type the required value in the Fixed Value field.

<table>
<thead>
<tr>
<th>CallingPartyNumber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Type: Fixed Value</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>Switch</strong> area, select the <strong>Name</strong> of the network entity for the ICA destination from the drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>(Optional) In the <strong>Calling Party</strong> frame, specify the value for the Calling Party ICA. Specify either an ACS termination number or an ACS buffer.</td>
</tr>
<tr>
<td>3</td>
<td>(Optional) In the <strong>Prefix Calling Party</strong> field, type a prefix for the calling party. This could be used, for example, so that the switch will not be re-triggered on the terminating leg.</td>
</tr>
<tr>
<td>4</td>
<td>(Required) In the <strong>Party to call</strong> frame, specify the value for the Called Party ICA. Specify either an ACS termination number or an ACS buffer.</td>
</tr>
<tr>
<td>5</td>
<td>In the <strong>No Answer Timeout</strong> field, type the number of seconds the switch should wait for the called party to accept the connection before assuming there was no answer. The No Answer Timeout value must be greater than zero.</td>
</tr>
</tbody>
</table>

**Note:** The wait time is automatically increased by a configurable amount defined in `acs.conf`. See ACS Technical Guide for details.

| 6    | (Optional) In the **Controller** area, enter the **Service Key** for the IDP. |
| 7    | For each IDP, specify the values for the following optional fields: |
|      | • callingPartyNumber |
|      | • calledPartyNumber |
|      | • redirectingPartyID |
|      | • locationNumber |
|      | • additionalCallingPartyNumber |
| 8    | Click **Save**. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

* For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
* The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Example

Here is an example control plan showing how a Call Initiation node may be used.

![Control Plan Diagram]

**Change CDR**

**Node description**

The **Change CDR** node allows control plan designers to alter and add EDR tags to ACS EDRs during call flow. The EDR tag and value can be defined as whatever the designer requires within the rules listed in the Configuring the node procedure.

**Note:** The Change CDR node alters the EDR at the point in the control plan where it is placed, future events may further alter the EDR, either through external events (such as, the end of a call) or through other Change CDR nodes.

**System generated EDR tags**

This is a list of the system generated tags. These may be used in the Change CDR node, but their values will not be changed, a new tag of the same name will be added to the end of the EDR instead.

CID, OA, OTI, CUST, SN, TN, CGN, CLI, SK, TCS, TCE, LPN, LAC, CS, CPC, CC, CPNI, PCNA, TPNI, PTNA, CGNA, TGNA, TFN, LGID, CPN, CAET, CCET, CA, RELC, OCPI, CPNN, CGNN, CPPI, NOAT, CBAT, FATS, CCTS, HTS, AIDL, EXTn

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions
A control plan may contain as many Change CDR nodes as required.

Node exits
This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The EDR has been successfully updated with the details specified for the CDR tag and new CDR value.</td>
</tr>
</tbody>
</table>
| 2    | Error | This branch is taken only in the event that node configuration is incorrect. Technical limitations limit the validation done on the node configuration at compile time, and therefore must be done at run time. The following situations will cause the Error branch to be taken:  
  - The CDRTag field is left empty  
  - The CDRValue field is left empty |

Configuration screen
Here is an example Configure Change CDR screen.
Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **ForceAppend** check box to force the specified EDR tag to be appended to the EDR. If the tag already exists in the EDR, it will not be altered and the EDR will end up with the same tag in multiple places. The tag values in this case will not necessarily be the same.  
If this box is not selected and the EDR already includes the tag configured in the node, then the tag in the EDR is modified to have the value defined in the node. If the tag does not exist in the EDR, then the tag/value pair is added to the EDR. This means the tag defined in the node is always included in the EDR. |
| 2    | The value in the **CDRTag** field must be between 1 - 50 characters long.  
It defines the EDR tag to modify or add to the EDR. Any character may be used in this field, however the following rules apply:  
- Use only uppercase A-Z characters.  
- Do not use the characters | and =  
**Warning:** The use of any of the *system generated tags* causes the original to remain unchanged and a second tag added to the end of the EDR, as if **ForceAppend** had been selected. |
| 3    | Select the **Tag Value** source. Options are:  
- **Fixed Value** - from **CDRValue** field when this option selected.  
- **Profile Value** - from profile location when this option selected. |
| 4    | If **Fixed Value** selected, enter the **CDRValue** field, this must be between 1 - 50 characters long.  
It specifies the EDR value for the defined EDR tag. You may use any character in this field, except the characters | and =.  
**Note:** If the profile value is selected, this field is grayed out. |
| 5    | If **Profile Value** selected, select the location from the **Data Type**, **Location** and **Field** drop down lists.  
**Note:** If the fixed value is selected, these fields are grayed out. |
| 6    | Click **Save**. |

Copy Hunting List

Node description

This node prompts the user for a hunting list and copies the hunting list contents to the pending TN buffers. The hunting list can be one of:

- Identified by name  
- The hunting list selected by the hunting planner  

Only the first ten numbers in the list are used. The first number in the list is copied to the pending TN and the next nine numbers are copied to the additional pending TNs. Any further numbers are discarded.
**Note:** To use this node either VPN or FMC must be activated on your system. If you are using this node with VPN then the hunting lists and hunting planner must be formatted according to the format used by the VPN product and must be located within the VPN_PT_HUNTING_CONFIG profile tag. See *VPN Technical Guide* for more details.

The node also gives the user the option to override the no answer timer with one of:

- A fixed value held in a user defined profile field
- The highest timer found within the hunting list

**Node icon**

![Node Icon]

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Copy Hunting List to Pending TNs as required.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The hunting list numbers have been successfully copied.</td>
</tr>
<tr>
<td>2</td>
<td>Success Trunct</td>
<td>The hunting list contains more than ten numbers. Only the first ten numbers have been copied.</td>
</tr>
<tr>
<td>3</td>
<td>Failure No Planner</td>
<td>The node has been configured to copy the list selected by the hunting planner but no hunting planner was defined.</td>
</tr>
<tr>
<td>4</td>
<td>Failure No List</td>
<td>The specified list name does not match an existing hunting list.</td>
</tr>
</tbody>
</table>
Chapter 18

Configuration screen

Here is an example Configure Copy Hunting List screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Hunting list panel set the hunting list to be copied, to copy:  
      | - the hunting list chosen by the hunting planner, select the **Use planner list** option  
      | - a specified list, select the **Use list below** option and type the hunting list name in the **List name** box. |
| 2    | If required, set the override for the No answer timeout. To use:  
      | - the current No Answer Timeout value, ensure **Leave unchanged** is selected  
      | - the highest timer within the hunting list, select the **Use max from list** option, or  
      | - a value from a profile tag, select the **Read from profile** option and set the Data Type, Location and Field holding the timer using the drop down lists.  
      | **Note:** If you selected Read from profile and the node cannot find the specified profile field, then the No Answer Timeout will not be overridden. |
| 3    | Click **Save**.  

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:
For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User’s Guide, Profile Tag Details* for more information).

### Get Hunting List

#### Node description

Reads hunting list from subscriber’s profile, and copies hunting list contents to the additional pending TN buffers.

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

A control plan may contain as many Get Hunting List nodes as required.

#### Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unsupported</td>
<td>Any outcome other than success, for instance:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- List could not be found</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Software error</td>
</tr>
<tr>
<td>2</td>
<td>Success</td>
<td>The hunting list numbers were retrieved and passed to the ACS Context.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Get Hunting List screen.

![Configure Get Hunting List screen](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Hunting list area set the hunting list to use from the Hunting List Data Type, Location and Field drop down lists.</td>
</tr>
<tr>
<td>2</td>
<td>Set the Timeout. To use:&lt;br&gt;&lt;ul&gt;&lt;li&gt;a value from a profile tag, select the <strong>Read from profile</strong> option and set the Data Type, Location and Field holding the timer using the drop down lists, or&lt;/li&gt;&lt;li&gt;a node configured value, select the <strong>Use default value</strong> option and enter the value in the Default Timeout field.&lt;/li&gt;&lt;/ul&gt;&lt;br&gt;Note: If you selected Read from profile and the node cannot find the specified profile field, then the No Answer Timeout will not be overridden.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

Note: The drop down lists display Limited Order Prefix Tree profiles.

For more information on profile blocks and tags, see *ACS User's Guide*. 
Loop Limit

Node Description

The Loop Limit feature node allows ACS to traverse an instance of the node up to a specified number of times during the control plan processing.

This node can be used in the control plan to create loops composed of other nodes not using telephony.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain a maximum of 12 instances of the Loop Limit node.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Below Limit</td>
<td>The traverse limit has not been reached.</td>
</tr>
<tr>
<td>2</td>
<td>Limit Reached</td>
<td>This node cannot be traversed any more for this instance of the control plan.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Loop Limit screen.

![Configure Loop Limit Screen](image)

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Value field type the number of iterations for the loop. The value must be between 1 and 1000.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**NP Destination Selection**

**Node description**

The NP Destination Selection node determines the owner of the called number (that is, is the number ported or non ported?). Based on the porting status and whether the number is owned by the operator (internal) or owned by another operator (external), it can be configured how the call number is modified.

Optionally, the NP Least Cost Routing node can be used after the NP Destination Selection node to select the most appropriate route towards the operator that owns the number based on rules configured in nodes within the control plan. If the control plan has been triggered by receiving a MAP message, then the NP MTA node must follow the NP DS node (or NP LCR node if used). However it is possible to have non telephony in between.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and 11 exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DN Number Violation</td>
<td>The Destination Number is not valid.</td>
</tr>
<tr>
<td>2</td>
<td>No Destination Found</td>
<td>There is no matching Routing Destination for the called party number.</td>
</tr>
<tr>
<td>3</td>
<td>Internal Not Ported F</td>
<td>The node has successfully selected an internal destination on your network where the Routing Number (for a fixed destination call) matches an operator entry in NP_DN_RANGES or a PQYZ entry (depending on the runtime configuration).</td>
</tr>
<tr>
<td>4</td>
<td>External Not Ported F</td>
<td>The node has successfully selected an external destination (one that belongs to another operator) where the Routing Number (for a fixed destination call) matches an operator entry in NP_DN_RANGES or a PQYZ entry (depending on the runtime configuration).</td>
</tr>
<tr>
<td>5</td>
<td>Internal Ported In F</td>
<td>The Routing Number (for a fixed destination call) has been ported in to your network from another operator and has an associated subscriber match within the NP_DN_RANGES table.</td>
</tr>
<tr>
<td>6</td>
<td>External Ported Out F</td>
<td>The Routing Number (for a fixed destination call) has an associated subscriber match within the NP_DN_RANGES table and has been ported out from your network to another operator.</td>
</tr>
<tr>
<td>7</td>
<td>Internal Not Ported M</td>
<td>The node has successfully selected an internal destination on your network where the Routing Number (for a mobile destination call) matches an operator entry in NP_DN_RANGES or a PQYZ entry (depending on the runtime configuration).</td>
</tr>
<tr>
<td>8</td>
<td>External Not Ported M</td>
<td>The node has successfully selected an external destination (one that belongs to another operator) where the Routing Number (for a mobile destination call) matches an operator</td>
</tr>
<tr>
<td>Exit</td>
<td>Cause</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Internal Ported In M</td>
<td>The Routing Number (for a mobile destination call) has been ported in to your network from another operator and has an associated subscriber match within the NP_DN_RANGES table.</td>
</tr>
<tr>
<td>10</td>
<td>External Ported Out M</td>
<td>The Routing Number (for a mobile destination call) has an associated subscriber match within the NP_DN_RANGES table and has been ported out from your network to another operator.</td>
</tr>
<tr>
<td>11</td>
<td>Processing Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>
Configuration screen
Here is an example NP Destination Selection screen.

Configuration fields
This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN unmodified</td>
<td>Do not change the pending Termination Number.</td>
</tr>
<tr>
<td>(Internal or External)</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Prepend TN with RN (Internal or External)</td>
<td>Prefix the pending Termination Number with the Additional Routing Number. If this is not available use the Routing Number.</td>
</tr>
<tr>
<td>Replace TN with RN (Internal or External)</td>
<td>Replace the pending Termination Number with the Additional Routing Number. If this is not available use the Routing Number.</td>
</tr>
<tr>
<td>Append URI</td>
<td>Include the URI associated with the Called Party Number in an Extension field that will be sent in the INAP CONNECT operation to the client interface.</td>
</tr>
</tbody>
</table>

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the required <strong>Internal</strong> option.</td>
</tr>
<tr>
<td>2</td>
<td>Select the required <strong>External</strong> option.</td>
</tr>
<tr>
<td>3</td>
<td>Select the <strong>Append URI</strong> check box if required.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

### NP Home Routing

#### Node description

The NP Home Routing node is used to determine the routing destination for a call within the network. The node looks up the called number in the subscriber list. If the called number is:

- A regular subscriber, then the node retrieves the destination from the DN range that matches the called number. Least cost routing can then be used to select an appropriate carrier for the call.
- A special number, then no routing destination is set and the Special Number node exit is used. Otherwise the No Destination exit is used.

#### Node icon

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

This node may be used any number of times within a control plan.
Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Home Dest Selected</td>
<td>The node has successfully matched the called number to a home routing number.</td>
</tr>
<tr>
<td>2</td>
<td>Special Number</td>
<td>The node has successfully matched the called number to a special number.</td>
</tr>
<tr>
<td>3</td>
<td>No Destination</td>
<td>The called number is not your subscriber. The destination could not be found.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>An internal error has occurred.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure NP Home Routing screen.

![Configure NP Home Routing](image)

Configuring the node

This node requires no configuration data. You may change the node name, if required.

NP Least Cost Routing

Node description

The NP Least Cost Routing node is used to determine which carrier to use during call processing based on least cost rules.

The routing destination set by the Destination Selection node or the Home Routing node determines which list of carriers to try from the rule set. An attempt is made to connect the call to the carriers in sequence until one of:

- The call is successfully connected
- No more carriers are available

Prior to each connection attempt, the pending calling and called numbers of the call will be modified in accordance with the preferred number format of the carrier, their country code, optional override NOA and called party prefix.

**Note**: Standard ACS feature nodes, such as the Time of Day, or Day of Week routing nodes may be used to select different rule sets for different scenarios.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node is expected to be used in conjunction with an Attempt Termination node and after the Destination Selection or the Home Routing node. However, if the control plan was triggered using MAP through the MTA, then this node should be followed by the MTA node and then an unconditional termination type node.

This node may be used any number of times within a call plan to facilitate the use of different rule sets depending on circumstances.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Route not found</td>
<td>The node could not find the route specified for the carrier.</td>
</tr>
<tr>
<td>2</td>
<td>Carrier Available</td>
<td>The call has been successfully connected to the selected carrier.</td>
</tr>
<tr>
<td>3</td>
<td>No More Carriers</td>
<td>Attempts to connect to each carrier in the Rule Set were unsuccessful.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>An internal error has occurred</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure NP Least Cost Routing screen.

Configuration fields

This table describes the function of the field on this screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule Set</td>
<td>Defines the list of rules available for least cost routing that determine which carrier and routing destination will be used.</td>
</tr>
</tbody>
</table>

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Rule Set</strong> from the drop down list of carriers to use for least cost routing.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
NP Map Trigger

Node description

The NP Map Trigger node is used to determine the appropriate response to the Map message that triggered the IN service.

For example, in an MNP environment the MAP message can be one of:

- Acknowledged with the MAP response message
- Acknowledged with the MAP error message (TCAP_ERROR message being returned)
- Aborted at the TCAP level (TCAP_U_ABORT message being returned)
- Relayed at the SCCP level to the appropriate HLR for processing

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

This node must be placed after the NP Destination Selection node (or LCR node if used) in the control plan. The control plan must end with an Unconditional Termination node.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Config Applied</td>
<td>SCI successfully configured.</td>
</tr>
<tr>
<td>2</td>
<td>Processing Error</td>
<td>Unable to apply configuration.</td>
</tr>
</tbody>
</table>
Chapter 18

Configuration screen

Here is an example Configure NP Map Trigger screen.

Configuration fields

This table describes the function of each field.

**Note:** The DRA is the `destinationRoutingAddress` field in the INAP CONNECT and is derived from the pendingTN buffer.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map with DRA</td>
<td>Sends MAP response and puts the Destination Routing Address (DRA) in the configured MAP field (NOA value for configured MAP field).</td>
</tr>
<tr>
<td>Map Error</td>
<td>Sends MAP Error where the error cause is set to the MAP Error field value.</td>
</tr>
<tr>
<td>TCAP Abort</td>
<td>Sends TCAP_ABORT - U_ABORT with the cause value set to the TCAP Error field value. (Cause value mapped to appropriate alarm by MAP trigger application).</td>
</tr>
<tr>
<td>SCCP Relay 1</td>
<td>Updates the SCCP called Global Title (GT) with the DRA, performs GT Translation on the DRA, and sets Routing Information = route on PC (NOA value for the SCCP called GT NOA).</td>
</tr>
<tr>
<td>SCCP Relay 2</td>
<td>Updates the SCCP called GT with the DRA, does not perform GT Translation on the DRA, and Routing Information = route on GT (NOA value for the SCCP called GT NOA).</td>
</tr>
<tr>
<td>SCCP Relay 3</td>
<td>No change to SCCP called GT digits, performs GT Translation on the DRA, and Routing Information = route on Point Code (NOA value for the</td>
</tr>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOA</td>
<td>Sets the Nature of Address value for one of these options:</td>
</tr>
<tr>
<td></td>
<td>• Map with DRA</td>
</tr>
<tr>
<td></td>
<td>• SCCP Relay 1</td>
</tr>
<tr>
<td></td>
<td>• SCCP Relay 2</td>
</tr>
<tr>
<td></td>
<td>• SCCP Relay 3</td>
</tr>
<tr>
<td></td>
<td>Valid values are in the range 0-127, and 255.</td>
</tr>
<tr>
<td>TCAP Error</td>
<td>Sets the TCAP Error cause value for the TCAP Abort option.</td>
</tr>
<tr>
<td>Map Error</td>
<td>Sets the Map Error value for the Map Error option.</td>
</tr>
</tbody>
</table>

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the required option.</td>
</tr>
<tr>
<td>2</td>
<td>If you selected one of these options:</td>
</tr>
<tr>
<td></td>
<td>• Map with DRA</td>
</tr>
<tr>
<td></td>
<td>• SCCP with GTT</td>
</tr>
<tr>
<td></td>
<td>• SCCP no GTT, or</td>
</tr>
<tr>
<td></td>
<td>• SCCP with GT digits</td>
</tr>
<tr>
<td></td>
<td>then in the NOA field, set the NOA.</td>
</tr>
<tr>
<td>3</td>
<td>If you selected the MAP Error option then select the map error message to use from the Map Error drop down list.</td>
</tr>
<tr>
<td>4</td>
<td>If you selected the TCAP Abort option then in the TCAP Error field, type the cause value.</td>
</tr>
<tr>
<td>5</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

### Service Handover

#### Node description

The Service Handover feature node allows the call to be passed to another service that runs a control plan as if it were a new call.

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions
A control plan may contain as many Service Handover nodes as required.

Node exits
This node has one entry and two exits. The number of exits cannot be changed. Since this node passes the call to another control plan, a Success exit is not required.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data Not Found</td>
<td>The control plan selected for handover is not found.</td>
</tr>
<tr>
<td>2</td>
<td>Chain Count Exceeded</td>
<td>The chain count limit has been exceeded, and the call may not be passed to another control plan. Note: The chain count limit is set in the acsChassis section of the acs.conf - refer to ACS Technical Guide.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Service Handover screen.

Configuring the node
Follow these steps to configure the Service Handover node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Handover to list, select a service. Calls passing through this node will be transferred to this service.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Set Carrier Code

Node description
This node sets the identity of the carrier for the call. The carrier code is a string of digits that are prefixed onto the Destination Routing Address (DRA) of the connect sent by following Termination feature nodes.

The carrier code can be set in any of the available profile blocks (for example, the Service Number Profile).

Note: This node has no effect if the CarrierCodeDisposal parameter in acs.conf is set to 1. For more information, see ACS Technical Guide.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Set Carrier Code nodes as required.

This node is only meaningful when used in a control plan containing a termination node, for example, the Attempt Terminate node.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CC Set Branch</td>
<td>Used when the data is found and the carrier code is set.</td>
</tr>
<tr>
<td>2</td>
<td>CC Not Set Branch</td>
<td>Used when profile-based data is not found. Is also used if the length of the number string in the profile field specified for the carrier code is greater than the allowable length of the carrier code.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Set Carrier Code screen.
Configuring the node

Follow these steps to configure the Set Carrier Code node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the option of:  
  - using the carrier number entered into this screen, or  
  - reading the carrier number from a profile block.  
  The fields relating to the non-selected option are disabled and cannot be edited. |
| 2    | Where the following option is selected:  
  - **Use This Carrier Number**  
    Type the carrier code in the **Use This Carrier Number** field.  
    Carrier codes may include any hexadecimal character (0-9, a-f, A-F, and # and *).  
    You can enter up to 20 characters.  
  - **Read from Profile Block**  
    Select the profile field to read the carrier code from using the **Read From Data Type**, **Read from Location** and **Read From Field** drop down lists.  
  **Note:** If the length of the number string in the profile field specified for the carrier code is greater than the allowable length of the carrier code, an alarm is raised and the “CC Not Set Branch” is taken. |
| 3    | Click **Save**.  
  **Note:** **Save** is not available until all the required information has been selected or entered. |

**Note:** If you import a previously exported control plan which contains Set Carrier Code nodes prior to the profile block functionality being introduced, then you will need to re-save in order to allow the control plan to recompile.  
**Note:** The list of data types is fixed at installation time for each feature node or screen.  

Further reference:  
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).  
The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Set Tariff Code

Node description

This feature node sets the billing information that is sent to the switch. This may be a Furnish Charging Information (FCI) request or a Send Charging Information (SCI) request.  
**Note:** The SCI operation may contain a tariff code.  
It is used in conjunction with the optional **Tariff Codes** tab of the ACS Resources screen. Where the **Tariff Code** tab has not been purchased as part of ACS, this node is not available for use within a control plan.  
For more information about configuring tariffs, see *ACS User's Guide*.  

Chapter 18, Others Feature Nodes 459
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Set Tariff $/min icon](image)

**Restrictions**

The node must be placed before a terminating node for an FCI to be sent. A control plan may contain as many Set Tariff Code nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tariff Set</td>
<td>A failure has occurred and a text message has not been sent.</td>
</tr>
<tr>
<td>2</td>
<td>Tariff Not Set</td>
<td>A text message has been successfully sent.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Set Tariff Code screen.

![Configure Set Tariff Code screen](image)

**Configuring the node**

Follow these steps to set the tariff code.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use the drop-down list to select the type tariff applied to the current call. The tariff code names available in the list are set on the Tariff Codes tab of the ACS Resources screen.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** Save is not available until all the required information has been selected or entered.
Sleep

Node description

The Sleep node allows time for background tasks to complete before proceeding to the next step in the control plan.

The value used should be large enough for the background task to finish, but short enough to avoid holding up the Control Plan unnecessarily.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

There are no restriction on this node's usage. A control plan may contain as many of these nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The control plan slept for the configured amount of time.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>In theory, should never be able to take this branch.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Sleep screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Enter the Sleep Time Value in milliseconds the node is to wait before branching down the Success branch.  

**Note:** There is a maximum sleep time allowed of 600000ms (ten minutes) |
| 2    | Click Save. |

Statistic Increment

Node description

This node allows you to use statistics that you wish to track for a specific application or statistic within an application.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Feature Node Icon](image)

**Restrictions**

A control plan may contain as many Statistic Increment nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Statistic was successfully incremented.</td>
</tr>
<tr>
<td>2</td>
<td>Node Error</td>
<td>General case for an un-handled state in this node.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Statistic Increment screen.

![Configure Statistic Increment Screen](image)

**Configuring the node**

Follow these steps to configure the Statistic Increment node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Required) Select the Application ID using the <strong>Application ID</strong> field drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>(Required) Select the Statistic ID using the <strong>Statistic ID</strong> field drop down list.</td>
</tr>
</tbody>
</table>

**Note:** This list is populated from entries made in the Statistic Management screens. See **SMS User's Guide** for more information.
You can produce reports on the statistic from the Service Management System Operator Functions, Report Functions menu option. See *SMS User's Guide* for more information.

**Sub Control Plan**

**Node description**

The Load Sub Control Plan node executes a successfully compiled control plan.

When this control plan is compiled, this node is effectively replaced by the other plan to create a single run time control plan. In the CPE this plan shows the Load Sub Control Plan node with the relevant exits that apply for the other plan.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain a maximum of 127 sub control plan nodes.

These are the other restrictions:

- The Sub Control Plan node can only access successfully-compiled control plans.
- The Sub Control Plan node cannot access a control plan that has more than 20 End nodes. If you try to access such a control plan, the control plan editor displays a Control Plan Validation Failure dialog box.
- A Sub Control Plan node cannot access itself; that is, sub control plans cannot be used recursively.

**Warning:** The maximum number of nodes allocated to any customer's control plan is calculated across all control plans. You cannot exceed the allocation by the use of sub control plans. The maximum number of nodes is set in the ACS Customer screen, the absolute maximum is 2000 nodes. Refer to the Customer Resource Limits section of *ACS User's Guide*.

**Node exits**

This node has one entry and a varying number of exits that are set as a result of the sub control plan. A user cannot change the number of exits.
Configuration screen

Here is an example Configure Load Sub Control Plan screen.

![Configure Load Sub Control Plan screen](image)

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | (Optional) In the **Search By** field enter the control plan name prefix to use to filter the list of available control plans. You can enter the following wildcards in the search string:  
  - % (percent) to match any string of any length  
  - _ (underscore) to match a single character  
  
  **Tip:** You can limit the number of control plans found by entering a value in **Max Rows**.  |
| 2    | From the **Control Plans** list, select the control plan to load into the main control plan as a sub-control plan.  |
| 3    | (Optional) To view the selected control plan, click **View**.  
  The selected control plan opens in a new Control Plan Editor window. The control plan structure will be read-only, but you will be able to edit the control plan data, and save it to a new version of the control plan, if required.  
  - To save any changes to the control plan data, select **Save** from the **File** menu.  
    In the Save Data/Structure dialog box, enter a new name in the **Control Plan Data** field, and click **Save**.  
  - To close the control plan, click the close window button in the top right corner of the Control Plan Editor window.  |
| 4    | Click **Save**.  |
Node logic

This diagram shows the internal logic processing of the node as configured in the CPE, where the sub control plan node has been configured to run "Control Plan B".
Node logic as compiled

This diagram shows the internal logic processing of the node at run time, where the sub control plan node has been replaced by the contents of Control Plan B (less the Start and End nodes from Control Plan B).

```
Control Plan A

Start A

Selection
Dependant Routing

(Play announcement)

(Play announcement)

End A
```
Chapter 19

Pending TN Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Pending TN feature nodes. Use Pending TN feature nodes to record and manipulate digits for use later in the control plan.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Pending TN Feature Nodes List

This table lists the feature nodes available from the Pending TN feature group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempt Terminate to Pending TN (see page 470)</td>
<td>Attempts to terminate to the number currently held in the Pending TN buffer.</td>
</tr>
<tr>
<td>Fast key: ATTP</td>
<td></td>
</tr>
<tr>
<td>Fast key: Alt+Shift+A</td>
<td></td>
</tr>
<tr>
<td>Attempt Terminate to Pending TN with Duration (see page 472)</td>
<td>Connects the call up to a maximum duration without charging the caller, for example connecting to a customer services representative.</td>
</tr>
<tr>
<td>Fast key: ATPD</td>
<td></td>
</tr>
<tr>
<td>Collect Digits to Pending TN (see page 474)</td>
<td>Prompts the user to enter digits and will then store the entered digits in the Pending TN buffer from where they may be later used in the Control Plan.</td>
</tr>
<tr>
<td>Fast key: CDPT</td>
<td></td>
</tr>
<tr>
<td>Get Hunting Number (see page 477)</td>
<td>Used to search a list of termination numbers and timeout pairs within any available profiles.</td>
</tr>
<tr>
<td>Fast key: AGHN</td>
<td></td>
</tr>
<tr>
<td>Set Pending TN from Profile</td>
<td>Takes a number from the profile and places it in the Pending TN Buffer.</td>
</tr>
</tbody>
</table>
### Node name | Node description
--- | ---
(see page 479) | This node can also be used to set the NoAnswer timeout. Fast key: SEPP
**Terminate to Pending TN** (see page 481) | Terminates unconditionally to the number currently held in the Pending TN Buffer. May also be known as Unconditional Terminate to pending TN. Fast key: UTTP Shortcut keys: Alt+Shift+U
**Test Pending TN Type** (see page 482) | Looks at the pending TN Type variable and routes the call depending on the type of number that is in the buffer. Fast key: TPTT

---

## Attempt Terminate to Pending TN

### Node description

The Attempt Terminate to Pending TN node attempts to terminate to the number currently held in the PendingTN variable.

For information about the PendingTN variable, see *Pending termination number variables* (on page 11).

### Node icon

![Node icon]

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

A control plan may contain as many Attempt Terminate to Pending TN nodes as required.

### Shortcut keys

The shortcut keys to add an Attempt Termination to Pending TN node are Alt+Shift+A

### Node exits

This node has one entry and six exits. The number of exits cannot be changed.
Some nodes require telephony (that is, Play Announcement, Unconditional Termination, Disconnect, Attempt Termination, Selection Dependant Routing, Unconditional Terminate to Pending TN). Such nodes may follow Exits 2 and 3 of the Attempt Terminate to Pending TN node. They may not follow exits 1, 4, 5 and 6.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The call was successfully connected to the specified termination number.</td>
</tr>
<tr>
<td>2</td>
<td>Busy</td>
<td>The Termination Number held in the Pending TN Buffer was busy (that is, in use), so the call was routed to Exit 2.</td>
</tr>
<tr>
<td>3</td>
<td>No Answer</td>
<td>The call was routed to the Termination Number specified in the Pending TN Buffer and that phone rang for the specified Timeout time and then was routed down Exit 3.</td>
</tr>
<tr>
<td>4</td>
<td>Abandoned</td>
<td>The person placing the call hung up, so the call was routed to Exit 4.</td>
</tr>
<tr>
<td>5</td>
<td>Abort</td>
<td>The call will be sent to this exit in the case of network failure.</td>
</tr>
<tr>
<td>6</td>
<td>Routing Failure</td>
<td>Due to congestion, the call was forwarded to this exit.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Attempt Terminate to Pending TN screen.

**Configuring the node**

Follow these steps to configure the Attempt Terminate to Pending TN node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the <strong>National/International Prefix Location</strong> drop down lists, select the profile <strong>Data Type</strong> and <strong>Location</strong> to read Least Cost Routing configuration from. The location list displays all available fields for the data type selected. For more information about profile blocks, see <em>Profile Blocks and Tags</em> (on page 2). If you do not want to use Least Cost Routing on this destination number, select <strong>None Selected</strong>. For more information about Least Cost Routing, see the <em>ACS User Guide</em>.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
2 | You must set the **Timeout** value for the node. This is the number of seconds that is allowed to pass before the call is routed down the **No Answer** branch. The **Timeout** value may be between 0 and 180 seconds.
3 | Click **Save**.

**Attempt Terminate to Pending TN with Duration**

**Node description**

This node is used to connect the call up to a maximum duration and without charging the caller, for example connecting to a subscription weather service announcement.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Attempt Terminate to Pending TN with Duration nodes as required.

**Node exits**

This node has one entry and eight exits. The number of exits cannot be changed.

**Note:** These exit descriptions are specific to the responses received from an Oracle VWS billing engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Busy</td>
<td>The Destination Party was busy and the call could not be connected.</td>
</tr>
<tr>
<td>2</td>
<td>No Answer</td>
<td>Destination Party did not answer.</td>
</tr>
<tr>
<td>3</td>
<td>RS Failure</td>
<td>Route Select Failure. The network could not connect the Caller to the Destination Party.</td>
</tr>
<tr>
<td>4</td>
<td>Disconnect A-Party</td>
<td>The Caller hangs up to end the call.</td>
</tr>
<tr>
<td>5</td>
<td>Disconnect B-Party</td>
<td>The Destination Party hangs up to end the call.</td>
</tr>
<tr>
<td>6</td>
<td>Abort</td>
<td>The call was aborted at some time during the processing of this node.</td>
</tr>
<tr>
<td>7</td>
<td>Abandon</td>
<td>The call was abandoned.</td>
</tr>
<tr>
<td>8</td>
<td>Node Error</td>
<td>General case for an un-handled state in this node.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Attempt Terminate to Pending TN with Duration screen.

Configuration screen

Here is an example Configure Attempt Terminate to Pending TN with Duration screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>No Answer Timeout</strong> field, specify the number of seconds the switch should wait for the called party to accept the connection before assuming there was no answer. Value range: 0-2047</td>
</tr>
<tr>
<td>2</td>
<td>In the <strong>Maximum Call Duration</strong> field, specify the maximum number of 'deci-seconds' before the call is disconnected.</td>
</tr>
<tr>
<td>3</td>
<td>Tick <strong>Record Call in CDR</strong> if you wish to generate a 'Call Information' report at the end of the call. This call information can then be used in the EDR. <strong>Note:</strong> Selecting this option may impact other nodes within this control plan. If the <strong>Record Call in CDR</strong> check box is ticked, all subsequent attempt termination nodes will request a CIR.</td>
</tr>
<tr>
<td>4</td>
<td>From the <strong>Profile Identifier Data Type</strong> and <strong>Location</strong> drop down lists, select the profile to read Least Cost Routing configuration from. The location list displays all available fields for the data type selected.</td>
</tr>
</tbody>
</table>
Collect Digits to Pending TN

Node description

This node prompts the caller to enter digits which it then stores in a buffer (the Pending TN Buffer). The digits may be retrieved later and used in the control plan. The nodes that read from this buffer are:

- Terminate to Pending TN (see page 481)
- Attempt Terminate to Pending TN (see page 470)

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Collect Digits to Pending TN nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The correct number of digits was collected successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Not Updated</td>
<td>The correct number of digits was not collected after the specified number of retries.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>The caller abandoned the call.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Collect Digits to Pending TN screen.

![Configuration screen](image)

Configuring the node

Follow these steps to edit the feature node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Type of Digits to Collect** from the drop-down list. The type may be:  
  - Off Net  
  - On Net  
  - Speed Dial  
  - Service Number  
  - CLI |
| 2    | From the **Main Announcement** frame, select the **Announcement Set** that contains the main announcement you want to play to the caller.  
  **Result:** The **Announcement Entry** drop-down box will become available. |
| 3    | From the **Announcement Entry** drop-down list, select the main announcement you want to play to the caller. |
### Step 4
Set the **Repetition** field to the number of times to repeat the main announcement while the system waits for the caller to take an action. If set to zero, the announcement will be repeated for the length of the duration set.

### Step 5
Set the **Duration** field to the length of time in seconds that the announcement is to be played. If set to zero, the announcement will be played for its full length.

### Step 6
The retry announcement contains the announcement you want to play to the caller if the number of digits collected is not within the range specified.

In the **Retry Announcement** frame, select the:
- **Announcement Set** which contains the retry announcement
- **Announcement Entry** for the retry announcement you want to play
- Set the **Repetition** to the number of times to repeat the retry announcement
- Set the **Duration** to the length of time, in seconds, that the retry announcement is to be played.

as described in steps 2 - 5.

### Step 7
In the **Number of Retries** field, set the number of times that the node will retry collecting data from the caller (after an initial failure), before routing the call to the Not Updated branch. This value may be between 0 and 10.

### Step 8
In the **Minimum Number of digits** field, set the minimum number of digits that must be collected. This box accepts values between 1 and 32.

The minimum number of digits must be less than, or equal to, the maximum number of digits.

### Step 9
In the **Maximum Number of digits** field, set the maximum number of digits that must be collected. This box accepts values between 1 and 32. The maximum number of digits must be greater than, or equal to, the minimum number of digits.

### Step 10
If a prefix is to be included before the digits collected, enter this in the **Digit Prefix** field.

The prefix may be up to 32 valid characters. Valid characters include 0-9, A-F.

### Step 11
From the **Cancel Character** options, select the character which the caller can use to cancel the digit collection.

The default option will use the switch on the answering device.

**Notes:**
- If the caller uses this digit and the maximum number of retries has not been met, it will return the caller to the retry prompt and add one to the retry count.
- If the caller uses this digit and the maximum number of retries has been met, it will take the Not Updated branch.

### Step 12
From the **End Character** options, select the character which the caller can use to indicate the end of the digit collection.

The default option will use the switch on the answering device.

### Step 13
If you want to check that the collected digits are within the TN ranges for this client, tick the **Verify Against TN Ranges?** check box.

This will check the Termination Number Range Rules set up for this customer (via the New/Edit Customer screen in ACS) and verify according to the setting. For more information, refer to Adding customers in the *ACS User Guide*.

### Step 14
Click **Save**.

**Note:** **Save** is not available until all the required information has been selected or entered.

**Result:** The node data will be saved.

**Note:** The announcement set and announcement entry lists are populated with data that is specified using the **Announcements** tab of the ACS Configuration screen.
For more information about configuring announcement sets and announcement entries, see the Announcements topic in ACS User's Guide.

Get Hunting Number

Node description

The Get Hunting Number node is used to search a list of termination numbers and timeout pairs within any available profiles.

On each iteration the node sets the PendingTN and timeout using the next number on the list until no numbers remain.

Notes:

- There are no data provisioning screens in ACS for this node. Provisioning the data required by this node requires a custom product like VPN.
- The information for the node is stored in a profile, with the node searching all the profiles it has, in turn, until it finds the hunting information.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Get Hunting Number nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Next Number</td>
<td>A number is found</td>
</tr>
<tr>
<td>2</td>
<td>No More Numbers</td>
<td>No numbers remain</td>
</tr>
<tr>
<td>3</td>
<td>Failure</td>
<td>General failure</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Get Hunting Number screen.

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

Example

As an example, assuming that the following hunting configuration data has been placed in a profile block:

```
0x030020 Hunting Config
  SubTags (2):
    0x000001 356  Hunting Lists (tag 1):
      Hunting List ID 1 (name = 'Hunting List 1'):
        Rank 1 termination number:
          Digits: 04111222
          On network ID: 5
          Timeout: 10
        Rank 2 termination number:
          Digits: 1234
          Off network number
          Timeout: 20
      Hunting List ID 2 (name = 'Hunting list 2'):
        Rank 1 termination number:
          Digits: 04333444
          On network ID: 5
          Timeout: 30
        Rank 2 termination number:
          Digits: 4321
          Off network number
          Timeout: 40
    0x000002 380  Hunting Planner (tag 2):
      Time Data 0:
        Location pattern: ^7777
        CLI pattern: ^77777
        Time of Day
        Start Time: 04:15
        End Time: 08:17
        Hunting List ID: 1
      Time Data 1:
        Location pattern: ^6666
        CLI pattern: ^76666
        Day of Week and Time of Day
        Start Time: Sunday 05:00
        End Time: Monday 06:00
        Hunting List ID: 2
      Time Data 2:
        Location pattern: ^5555
```
When the node is used for the first time in a call, it works out which hunting list to use from the hunting planner information, based on time of day, and other factors. The hunting list is an ordered list of termination numbers to try, and a no answer timeout. So, the first list in the example above says try private number 04111222 on network 5 for 10 seconds. The second list says try public number 1234 for 20 seconds.

Each time the get hunting number node is executed, it puts a new number from the list in the pending termination number buffer and the corresponding timeout value in the no answer timer variable in call context. If the end of the list is reached, the get hunting number node exits down branch 2.

The idea is that there is a loop back from the no answer branch of an attempt terminate to pending TN node to a Get Hunting Number node.

**Example control plan**

Here is an example illustrating how the Get Hunting Number node can be used in a control plan.

**Set Pending TN from Profile**

**Node description**

The Set Pending TN from Profile feature node takes a number from the profile and places it in the pending termination number buffer.
This node can also be used to set the NoAnswer timeout.

**Node icon**

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Set Pending TN from Profile nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The number has been placed in the Pending TN buffer.</td>
</tr>
<tr>
<td>2</td>
<td>Data Not Found</td>
<td>The number has not been placed in the Pending TN buffer.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Set Pending TN From Profile screen.
Configuring the node

Follow these steps to configure the Set Pending TN from Profile node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Using the drop down lists in the Location of TN Data Type, Location and Field boxes, select where the number is to be read from.  
**Notes:**  
• If you set a customer-specific profile, the profile set in this field must belong to the customer who will be running the control plan.  
• If the control plan is owned by the Boss user then the profile must be set to control plan, or a customer ID must be specified at an earlier point in the control plan. |
| 2    | Using the drop down lists in the Location of Timeout Data Type, Location and Field fields, select where the timeout period is to be read from. |
| 3    | Click **Save**.  
**Note:** **Save** is not available until all the required information has been selected or entered. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**
- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User's Guide, Profile Tag Details* for more information).

**Terminate to Pending TN**

**Node description**

The Terminate to Pending TN node terminates unconditionally to the number assigned to the PendingTN variable. For information about the PendingTN variable, see *Pending termination number variables* (on page 11).  

This node is sometimes called Unconditional Terminate to Pending TN.

**Shortcut key**

The shortcut key to add a Terminate to Pending TN node is **Alt+Shift+U**.

**Node icon**
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Terminate to Pending TN nodes as required.

The Terminate to Pending TN node may not be followed by any node that requires telephony (that is, Play Announcement, Unconditional Termination, Disconnect, Attempt Termination, Selection Dependant Routing, Attempt Terminate to Pending TN).

Node exits

This node has one entry and one exit. The number of exits cannot be changed.

Configuration screen

Here is an example Configure Terminate to Pending TN screen.

![Configure Terminate to Pending TN](image)

Configuring the node

Follow these steps to configure the Terminate to Pending TN node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the National/International Prefix Location Fixed Value drop down list, select the profile to read least cost routing configuration from. The list displays a list of all profiles which can be read from.  
For more information about profile blocks, see Profile Blocks and Tags (on page 2).  
If you do not want to use least cost routing on this destination number, select None Selected.  
For more information about Least Cost Routing, see ACS User's Guide. |
| 2    | Click Save. |

Test Pending TN Type

Node description

The Test Pending TN Type node branches in one of six ways depending on the value assigned to the PendingTNType variable.

The PendingTNType variable classifies an associated termination number as any one of:

- A number of an unknown type
- A number that accesses the PSTN directly (sometimes called an Off-Net number)
A number that passes through a private network on its way to the PSTN (sometimes called an On-Net number)

- A speed-dial number
- A service number
- A calling line identification (CLI)

For more information about the PendingTNType variable, see *Pending termination number variables* (on page 11).

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unknown</td>
<td>Number type is unknown.</td>
</tr>
<tr>
<td>2</td>
<td>Public Network</td>
<td>Number type is public network.</td>
</tr>
<tr>
<td>3</td>
<td>Private Network</td>
<td>Number type is private network.</td>
</tr>
<tr>
<td>4</td>
<td>Speed Dial</td>
<td>Number type is speed dial.</td>
</tr>
<tr>
<td>5</td>
<td>Service Number</td>
<td>Number type is service number.</td>
</tr>
<tr>
<td>6</td>
<td>CLI</td>
<td>Number type is CLI.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Test Pending TN Type screen.

**Configuring the node**

This node requires no configuration data. You may change the *Node name*, if required.
Chapter 20

Prefix Trees Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Prefix Trees feature nodes. Use Prefix Trees feature nodes to manipulate prefix digits for use later in the control plan.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Prefix Trees Feature Nodes List

This table lists the feature nodes available from the Prefix Trees palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Ordered Prefix Tree Entry (see page 488)</td>
<td>Changes a single entry within an ordered prefix tree. Fast key: OP1</td>
</tr>
<tr>
<td>Check Limitations (see page 490)</td>
<td>Compares the contents of a number profile block against the limitations for a specified limited type. Fast key: LOP3</td>
</tr>
</tbody>
</table>
| Check Prefix Tree Capacity (see page 493) | Checks the capacity of a prefix tree for a selected capacity type:  
  - The number of entries available  
  - The number of entries used  
  - The maximum number of entries for the tree  
  Fast key: LOP1 |
| Create Prefix Tree (on page 496) | The Create Prefix Tree node creates a prefix tree from a delimited input string. Fast key: CPTS |
| Play Ordered Prefix Tree Entry (see page 499) | Plays a single selected entry in an ordered prefix tree to the caller. Fast key: LOP2 |
### About Prefix Tree Feature Nodes

#### Introduction

Prefix tree feature nodes enable you to maintain prefix trees and numeric strings stored in subscriber profiles, such as the prefix tree used to store a subscriber’s list of friends and family numbers.

#### Processing limited types

When processing of limitations is mentioned, the following behavior occurs.

The limitations are sourced from the same tag as the actual limited profile field, the limitation tag will be either from the product type or the service provider profile.

#### Limitation source

Limitation values are configured through the CCS product type configuration screens. See *CCS User’s Guide*, Subscriber Management - Product Type topic.

The limitations will be sourced as follows:

<table>
<thead>
<tr>
<th>Profile</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Type</td>
<td>The CCS service library makes this available in Application Specific Profile 2 (Product Type).</td>
</tr>
<tr>
<td>Service Provider</td>
<td>The CCS service library makes this available as the ACS Customer Profile.</td>
</tr>
</tbody>
</table>

The product type limitations generally take precedence over the service provider limitations.

#### Limitations

The limitations are stored in a profile block at the same tag as the associated limited profile field.

This table describes the limitations.

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Description</th>
<th>Tag</th>
<th>Profile Field Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignore Limitations</td>
<td>If set, all limitations for this profile field in the applicable profile (either product type or service provider) will be ignored. Possible values are: 0 – Do not ignore 1 – Ignore</td>
<td>0x1</td>
<td>LOPREFIX, LNSTRING</td>
</tr>
<tr>
<td>Maximum Number of Entries</td>
<td>The maximum number of entries that may be placed in a limited prefix tree.</td>
<td>0x2</td>
<td>LOPREFIX</td>
</tr>
<tr>
<td>Limitation</td>
<td>Description</td>
<td>Tag</td>
<td>Profile Field Types</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Minimum Number Length</td>
<td>The minimum length a string must be to be stored in a limited profile field.</td>
<td>0x3</td>
<td>LOPREFIX, LNSTRING</td>
</tr>
<tr>
<td>Maximum Number Length</td>
<td>The maximum length a string may be to be stored in a limited profile field.</td>
<td>0x4</td>
<td>LOPREFIX, LNSTRING</td>
</tr>
<tr>
<td>Limitation Prefix Tree Type</td>
<td>The type of the limitation prefix tree used to filter values that may be stored in a limited profile field. Possible values are: 0 – Allowed List 1 – Barred List</td>
<td>0x5</td>
<td>LOPREFIX, LNSTRING</td>
</tr>
<tr>
<td>Limitation Prefix Tree</td>
<td>A prefix tree used to filter values that may be stored in a limited profile field.</td>
<td>0x6</td>
<td>LOPREFIX, LNSTRING</td>
</tr>
</tbody>
</table>

**Limitation default values**

This table describes the limitation function defaults.

<table>
<thead>
<tr>
<th>Limitation</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignore Limitations</td>
<td>Ignore. This will force all other limitations to be ignored for this profile. Note: If the product type is missing the ignore flag, the service provider limitations will be used (if they exist).</td>
</tr>
<tr>
<td>Maximum Number of Entries</td>
<td>100</td>
</tr>
<tr>
<td>Minimum Number Length</td>
<td>0</td>
</tr>
<tr>
<td>Maximum Number Length</td>
<td>255</td>
</tr>
<tr>
<td>Limitation Prefix Tree Type</td>
<td>Barred List</td>
</tr>
<tr>
<td>Limitation Prefix Tree</td>
<td>Empty Tree</td>
</tr>
</tbody>
</table>

**Ordered prefix trees**

Prefix trees have an order value associated with each entry that is used for maintaining the prefix tree sequence. This value starts at zero for the first entry.

New entries are added to the end of a prefix tree, being assigned an order value equal to the size of the tree before the addition. Similarly, a deleted entry will cause all entries with a higher order value to have their order values reduced by one.

When maintaining ordered tree entries (select/ change/ delete) the order value should be used to locate the right entry.
Change Ordered Prefix Tree Entry

Node description

The Change Ordered Prefix Tree Entry node changes the contents of an ordered prefix tree. This table describes the valid actions.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add a new entry</td>
<td>This will add the contents of an ACS number buffer to the end of an ordered prefix tree. <strong>Note:</strong> If the prefix tree is missing a profile field will be created as a prefix tree with the new entry in it.</td>
</tr>
<tr>
<td>Change an existing entry</td>
<td>The feature node will replace the specified entry in the tree with the contents of an ACS number buffer.</td>
</tr>
<tr>
<td>Delete an existing entry</td>
<td>The specified entry will be removed from the tree. <strong>Note:</strong> All of these operations will maintain the ordering of the tree entries (see Ordered prefix trees (on page 487)).</td>
</tr>
</tbody>
</table>

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Change Ordered Prefix Tree Entry nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The change was successful.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>The change failed, due to one of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Specified entry not present in the prefix tree (change or delete action)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Entry profile field not set (change or delete action)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• General node processing error (including add action failure)</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Change Ordered Prefix Tree Entry screen.

![Configure Change Ordered Prefix Tree Entry screen]

**Configuring the node**

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Operation Type** option:  
|      | - Add Entry  
|      | - Update Entry  
|      | - Remove Entry  
|      | **Result:** The field availability changes as listed:  
|      | **Add** | **Update** | **Remove** |
|      | Ordered Prefix Tree fields | Ordered Prefix Tree fields | Ordered Prefix Tree fields |
|      | Number Source fields | Entry to be Updated/Removed fields | Entry to be Updated/Removed fields |
| 2    | In the Ordered Prefix Tree area, using the drop down lists, select the Prefix Tree. |
| 3    | For Update or Remove options, in the Entry to be Updated/Removed area, using the |
Step | Action
--- | ---
4 | For Add or Update options, in the Number Source area, using the drop down lists, select the entry value to use.
5 | Click **Save**.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:
- For information on profile blocks (data type, location and field) and how to use them, see **Profile Blocks and Tags** (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see **ACS User’s Guide, Profile Tag Details** for more information).

**Node logic**

This diagram shows the internal logic processing of the node.

**Check Limitations**

**Node description**

The Check Limitations node compares the contents of a number profile block against the limitations for a specified limited type. See **About Prefix Tree Feature Nodes** (on page 486) for information on limitations.

**Node icon**
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![CheckLimits]

**Restrictions**

A control plan may contain as many Check Limitations nodes as required.

**Node exits**

This node has one entry and five exits. The number of exits cannot be changed. Exits 2 through 4 are all types of "Error".

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number Allowed</td>
<td>The number meets all criteria for acceptance.</td>
</tr>
<tr>
<td>2</td>
<td>Number Barred</td>
<td>The entered number was either included in the barred list, or excluded from the allowed list, depending on the limitation prefix tree type.</td>
</tr>
<tr>
<td>3</td>
<td>Number Too Short</td>
<td>The entered number was not long enough for the given profile field.</td>
</tr>
<tr>
<td>4</td>
<td>Number Too Long</td>
<td>The entered number was too long for the given profile field.</td>
</tr>
<tr>
<td>5</td>
<td>Error</td>
<td>General Error.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Check Limitations screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the **Source Primary Tag** drop down list, select the limitation to use.  
**Note:** The available limitation types for this feature node are:  
- Limited Ordered Prefix Tree  
- Limited Number String |
| 2    | From the drop down lists in the **Number Source** area, select the **Source Data Type**, **Location** and **Field** containing the number to compare against the selected limitation type. |
| 3    | Click **Save**.  
**Note:** The list of data types is fixed at installation time for each feature node or screen. |

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Check Prefix Tree Capacity

Node description

The Check Prefix Tree Capacity node enables you to:

- Check how many entries there are in a prefix tree
- Optionally, for a limited ordered prefix tree, play the configured capacity type value (if played, the value is stored in the profile field configured in the node)

The capacity type value which can be played is one of the following:

- The number of entries available (only for limited ordered)
- The number of entries used (all types)
- The maximum number of entries for the tree (only for limited ordered)

If the prefix tree profile field is missing from the profile, the node assumes it is a tree with zero entries.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Check Prefix Tree Capacity nodes as required.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Free Entries</td>
<td>The prefix tree is not full.</td>
</tr>
<tr>
<td>2</td>
<td>Full</td>
<td>The prefix tree is full.</td>
</tr>
<tr>
<td>3</td>
<td>Abandon</td>
<td>The user hung up during the announcement.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>General error handling</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Check Prefix Tree Capacity screen.

![Configuration screen](image)

**Configuring the node**

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Play Announcement** check box to play the capacity result.  
*Result:* The Play Capacity **Announcement Set** and **Announcement Entry** fields become available and the **Save** button becomes unavailable. |
| 2    | Select the Prefix Tree Type.  
*Result:* If you selected:  
- **Normal**, the Source fields in the Source Prefix Tree area and the Target fields in the Capacity Storage area become available. Go to step 4.  
- **Limited Order**, in addition, the Capacity Type options and the rest of the fields in the Source Prefix Tree area become available. Go to step 3. |
Chapter 20

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 3    | Select the Capacity Type option to use for capacity calculations:  
  - Entries count - the number of entries available,  
  - Entries left - the number of entries used, or  
  - Capacity - the maximum number of entries for the tree. |
| 4    | In the Source Prefix Tree area select the source limited ordered prefix tree to query using the Source drop down lists. |
| 5    | If you selected Limited Order:  
  - From the Limit drop down lists, select where the limit (value of the maximum capacity of prefix trees) is stored.  
  - From the Alternate Limit drop down lists, select an alternate location if the limit is empty (optional fields). |
| 6    | In the Capacity Storage area, using the drop down lists, select the capacity store target. |
| 7    | In the Play Capacity area, select the announcement to play for the selected capacity type.  
  **Result:** The Save button becomes available.  
  **Click Save.** |
| 8    | Note: The list of data types is fixed at installation time for each feature node or screen. |

Further reference:
- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).
- The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).
Node logic
This diagram shows the internal logic processing of the node.

Create Prefix Tree

Node description
The Create Prefix Tree node creates a prefix tree from a delimited input string. Each entry in the input string is checked against the limitation profile tag field specified in the node. This checks whether the entry is one of:

- Allowed
- Barred
• Too long
• Too short

### Delimiters

This table lists the delimiters allowed between entries in the input string.

<table>
<thead>
<tr>
<th>Delimiter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; &quot;</td>
<td>Space</td>
</tr>
<tr>
<td>&quot; , &quot;</td>
<td>Comma</td>
</tr>
<tr>
<td>&quot;:&quot;</td>
<td>Colon</td>
</tr>
<tr>
<td>&quot;</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

**Note:** Delimiter characters may be combined, for example, so that spaces and commas can be used between entries.

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

A control plan may contain as many Create Prefix Tree nodes as required.

### Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The node has successfully inserted all the entries from the source string into the selected prefix tree.</td>
</tr>
<tr>
<td>2</td>
<td>Entries Limited</td>
<td>The limitations set in the node prevented one or more source entries from being inserted into the selected prefix tree.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>Indicates none of the source entries were inserted into the selected prefix tree or an error/failure occurred.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Create Prefix Tree from String screen.

### Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the drop down lists in the Source String area, select the profile tag field containing the string you want to use to create the prefix tree.</td>
</tr>
<tr>
<td>2</td>
<td>From the drop down lists in the Destination Profile area, select the profile tag field where the prefix tree will be stored.</td>
</tr>
</tbody>
</table>
| 3    | To limit the allowable entries in the source string, tick the **Use Limitations** check box. Then, from the **Limitation Primary Tag** drop down list, select the profile tag field to use.  

**Note:** The Product Type profile will be used if available, otherwise the Service Provider profile will be used. |
| 4    | Click **Save**. |

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).
Play Ordered Prefix Tree Entry

Node description

The Play Ordered Prefix Tree Entry node plays a single selected entry from an ordered prefix tree to the caller.

If the entry number profile field is not present, the first prefix tree entry (entry number zero) is used in the announcement.

Node icon

![Node Icon]

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Selection keys

Selection keys (digits 0 to 9) to cater for “Forward”, “Backward”, “Select”, and “Exit” operations can be optionally configured to enable scrolling through a prefix tree.

When configured, the announcement is played as a prompt and collect operation. If an incorrect digit is collected, the Invalid Key error branch is taken.

When not configured, the announcement is played as a variable announcement with two parts in the following order:

1  Entry Number
2  Prefix Tree Entry

Restrictions

A control plan may contain as many Play Ordered Prefix Tree Entry nodes as required.

For the Next and Previous operations to work correctly, these exits should go to a node that can increment/ decrement the field entry value, i.e. a Profile Counter node.

Node exits

This node has one entry and nine exits. The number of exits cannot be changed.

Exits 1 through 5 are optional and therefore available only when configured.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Next</td>
<td>The caller entered the “Next” key (digit 0 to 9).</td>
</tr>
</tbody>
</table>

**Note:** Checks (listed under exit 6 below) are made before branching which could result in exit 6 being taken instead, see exit 6 below.
## Exit Cause Description

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Previous</td>
<td>The caller entered the “Previous” key (digit 0 to 9).</td>
</tr>
<tr>
<td>3</td>
<td>Exit</td>
<td>The caller entered the “Exit” key (digit 0 to 9).</td>
</tr>
<tr>
<td>4</td>
<td>Selected</td>
<td>The caller entered the “Select” key (digit 0 to 9).</td>
</tr>
<tr>
<td>5</td>
<td>Timed Out</td>
<td>The user did not enter a digit within the configured menu timeout period.</td>
</tr>
<tr>
<td>6</td>
<td>Last Played</td>
<td>One of the following occurred.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The last entry was played in the tree.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The next entry in the tree is outside the maximum number of entries (and Check Limitations was set).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The entry number was not valid for this tree (in which case the last entry (or last applicable entry in the case of limitations being applied) will have been played).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The prefix tree is not present in the profile.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The prefix tree has no entries.</td>
</tr>
<tr>
<td>7</td>
<td>Invalid Key</td>
<td>The caller entered an invalid key.</td>
</tr>
<tr>
<td>8</td>
<td>Abandoned</td>
<td>The caller hung up during the announcement.</td>
</tr>
<tr>
<td>9</td>
<td>Error</td>
<td>General Error Handling.</td>
</tr>
</tbody>
</table>

## Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check Limitations</td>
<td>When selected, restricts the maximum number of entries that may be played to the maximum number of entries for the source prefix tree.</td>
</tr>
<tr>
<td>Announcement Set</td>
<td>List of all the announcement sets (configured in the ACS Configuration screen in ACS).</td>
</tr>
<tr>
<td>Announcement Entry</td>
<td>List of all the announcements belonging to the selected announcement set.</td>
</tr>
<tr>
<td>Source Data Type</td>
<td>The source data type for the prefix tree.</td>
</tr>
<tr>
<td>Source Location</td>
<td>The profile block containing the prefix tree location.</td>
</tr>
<tr>
<td>Source Field</td>
<td>The prefix tree location field within the profile block. The available field types listed are:</td>
</tr>
<tr>
<td></td>
<td>- Limited Ordered Prefix Tree</td>
</tr>
<tr>
<td></td>
<td>- Ordered Prefix Tree</td>
</tr>
<tr>
<td>Entry Data Type</td>
<td>The data type of the prefix tree entry number to play.</td>
</tr>
<tr>
<td>Entry Location</td>
<td>Profile block that contains the prefix tree entry number to play.</td>
</tr>
<tr>
<td>Entry Field</td>
<td>Profile field containing the entry number to play.</td>
</tr>
<tr>
<td>Forward</td>
<td>Sets the key for &quot;Next&quot; operation. This is optional, and if not set, no next option will be available to the caller. Single 0 to 9 digit not configured elsewhere.</td>
</tr>
<tr>
<td>Backward</td>
<td>Sets the key for &quot;Previous&quot; operation. This is optional, and if not set, no previous option will be available to the caller. Single 0 to 9 digit not configured elsewhere.</td>
</tr>
<tr>
<td>Exit</td>
<td>Sets the key for &quot;Exit&quot; operation. This is optional, and if not set, no exit option will be available to the caller. Single 0 to 9 digit not configured elsewhere.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Select</td>
<td>Sets the key for &quot;Selected&quot; operation. This is optional, and if not set, no selected option will be available to the caller. Single 0 to 9 digit not configured elsewhere.</td>
</tr>
<tr>
<td>Menu Timeout</td>
<td>Seconds to wait for a key entry (when selection keys are configured) before branching &quot;Timed out&quot;. Range is 0 to 99 seconds. Note: The lower this value is the more likely a timeout is going to occur (that is, 0 would result in 100% certain timeout).</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Play Ordered Prefix Tree Entry screen.
Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tick the Check limitations check box to restrict the maximum number of entries to play to the source prefix tree maximum number of entries. Non-selection will allow all the available entries to be played.</td>
</tr>
<tr>
<td>2</td>
<td>In the Play Entry area, using the drop down boxes, select the Announcement Set and Announcement Entry for the prefix tree entry announcement to play.</td>
</tr>
<tr>
<td>3</td>
<td>In the source Prefix Tree area, using the drop down boxes, select the prefix tree.</td>
</tr>
<tr>
<td>4</td>
<td>In the Entry Number to be Played area, using the drop down boxes, select the prefix tree number to play.</td>
</tr>
<tr>
<td>5</td>
<td>In the Forward field, enter the unique digit (0 to 9) the caller must enter to use the forward function. This is optional.</td>
</tr>
<tr>
<td>6</td>
<td>In the Backward field, enter the unique digit (0 to 9) the caller must enter to use the backward function. This is optional.</td>
</tr>
<tr>
<td>7</td>
<td>In the Exit field, enter the unique digit (0 to 9) the caller must enter to use the exit function. This is optional.</td>
</tr>
<tr>
<td>8</td>
<td>In the Select field, enter the unique digit (0 to 9) the caller must enter to use the select function. This is optional.</td>
</tr>
<tr>
<td>9</td>
<td>In the Menu Timeout field, optionally enter a number of seconds (0 to 99). This is the amount of time to wait for a response from the caller before taking the Timed out exit. <strong>Note:</strong> The lower this value is, the more likely a timeout is going to occur. 0 results in 100% certain timeout.</td>
</tr>
<tr>
<td>10</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** In steps 5 to 8, the digit must be unique for this configuration. Any conflicts will be reported and must be resolved before saving.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see *ACS User's Guide*, Profile Tag Details for more information).
**Node logic**

This diagram shows the internal logic processing of the node.

1. Get source Prefix Tree Entry to play
2. Check Prefix Tree missing or no Entry? If yes, exit on branch 6 Last Played, otherwise proceed.
3. Check Missing Entry number profile? If yes, set required announcement, otherwise proceed.
4. Play announcement
5. Check Caller hangs up? If yes, exit on branch 8 Abandon, otherwise proceed.
6. Check Last Entry played? If yes, proceed, otherwise check if any keys configured? If no, exit on branch 6 Last Played, otherwise check if timed out? If no, continue, otherwise exit on branch 6 Timed out.
7. If any keys configured? Check if timed out? If yes, exit on branch 6 Timed out, otherwise exit on branch 7 Invalid key.
8. Check Max number of entries? If yes, exit on branch 6 Last Played, otherwise check if exit key? If yes, exit on branch 1 Next, otherwise exit on branch 3 Exit.
Prefix Tree Entry Extraction

Node description
The Prefix Tree Entry Extraction feature node enables one or more entries in a profile prefix tree to be extracted and stored in other profile fields.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Looping
If there is more than one entry in the prefix tree that requires processing then the Prefix Tree Entry Extraction node should be set up in a loop in the control plan. If no external data will be supplied to the Prefix Tree Entry Extraction node, then the following additional nodes will be required in the control plan:

- Set feature node
- Loop Limit feature node
- Profile Counting feature node

Loop process
This process describes how a loop can be used to process multiple entries from the prefix tree specified in the Prefix Tree Entry Extraction (PTEE) node in the control plan.

1. The Set node is used to initialize the first entry position for the PTEE node. This means it must be placed in the control plan before the PTEE node.
2. The PTEE node will extract the initial entry and follow the More Entries path (if more entries exist).
3. Following any required processing, the Loop Limit node will be checked to ensure the maximum number of iterations has not been reached and its counter will be incremented.
4. The Profile Counting node must be placed after the Loop Limit node in the control plan. It will increment the entry position to be used by the PTEE node.
5. The PTEE node will extract the entry indicated by the Profile Counting node and if more entries exist it will exit through the More Entries path.
6. This processing will continue until there are no more entries in the prefix tree or the loop limit is reached. The loop will then be exited following any required processing.
Example

Here is an example diagram showing how to implement a loop in the control plan.

![Example Diagram](image)

Restrictions

A control plan may contain as many Prefix Tree Entry Extraction nodes as required.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>More Entries</td>
<td>There are some more entries to extract.</td>
</tr>
<tr>
<td>2</td>
<td>No More Entries</td>
<td>The entry position is pointing to the last entry indicating that there are no more entries to extract.</td>
</tr>
<tr>
<td>3</td>
<td>Invalid Position</td>
<td>The entry position is either 0 or greater than the limit.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>The specified profile does not exist.</td>
</tr>
</tbody>
</table>

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Data Type</td>
<td>The data type of the source profile block.</td>
</tr>
<tr>
<td>Source Location</td>
<td>The profile block containing the prefix tree.</td>
</tr>
<tr>
<td>Source Field</td>
<td>The prefix tree field within the profile block.</td>
</tr>
<tr>
<td></td>
<td>The available field types listed are:</td>
</tr>
<tr>
<td></td>
<td>• Limited Ordered Prefix Tree</td>
</tr>
<tr>
<td></td>
<td>• Ordered Prefix Tree</td>
</tr>
<tr>
<td>Entry Data Type</td>
<td>The data type of the entry profile block.</td>
</tr>
<tr>
<td>Entry Location</td>
<td>The profile block that contains the prefix tree entry number to extract.</td>
</tr>
<tr>
<td>Entry Field</td>
<td>The profile field containing the entry number to extract. This will be an integer field.</td>
</tr>
<tr>
<td>Destination Data Type</td>
<td>The data type of the profile to use to store the extracted data.</td>
</tr>
<tr>
<td>Destination Location</td>
<td>The profile block location for the extracted data.</td>
</tr>
<tr>
<td>Destination Field</td>
<td>The profile field where the extracted data will be stored. This will be an integer field.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Prefix Tree Entry Extraction screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the Source Prefix Tree area, using the drop down boxes, select the prefix tree.</td>
</tr>
<tr>
<td>2</td>
<td>From the Entry Position to be Extracted area, using the drop down boxes, select the prefix tree number to extract.</td>
</tr>
<tr>
<td>3</td>
<td>From the Destination Profile Field area, using the drop down boxes, select the destination profile field for the extracted data.</td>
</tr>
<tr>
<td>4</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).

The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Presence feature nodes. Use Presence feature nodes to check for and set a subscriber's availability at a number of predefined locations.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Presence Feature Nodes List

This table lists the feature nodes available from the Presence palette group in the ACS Control Plan Editor.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence Branching</td>
<td>Prompts the user to select the location to check for the presence and availability of the entity referenced in either a specified ACS buffer or profile tag, and then branches accordingly.</td>
</tr>
<tr>
<td>(on page 507)</td>
<td></td>
</tr>
<tr>
<td>Set Presence</td>
<td>Sends a request to the presence server to set the availability at a selected location of a specified subscriber or presence entity.</td>
</tr>
<tr>
<td>(on page 510)</td>
<td></td>
</tr>
</tbody>
</table>

Presence Branching

Node description

This node sends a request via ACS to a third party presence server to query a selected location for the presence and availability of a specified subscriber or presence entity. It then branches accordingly.

Note: The node relies on a protocol specific presence querying chassis action to process the request. The library used is delivered separately by another package, such as scaScp.
This table lists the standard set of locations and availabilities, delivered at installation, that may be queried.

<table>
<thead>
<tr>
<th>Standard Locations</th>
<th>Standard Availabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Home,</td>
<td>• Available,</td>
</tr>
<tr>
<td>• Office,</td>
<td>• Away,</td>
</tr>
<tr>
<td>• PlaceOther</td>
<td>• Busy,</td>
</tr>
<tr>
<td></td>
<td>• N/A</td>
</tr>
</tbody>
</table>

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Presence Branching nodes as required.

This node can only be used if a library for the presence querying chassis action has been installed.

**Node exits**

This node has one entry and up to eight exits depending on which availabilities the user configures for the selected query location.

Exits 1 through 4 are determined by the system and cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No presence entity</td>
<td>The specified presence entity could not be found.</td>
</tr>
<tr>
<td>2</td>
<td>No presence domain</td>
<td>The presence domain profile tag does not exist and no default presence domain has been configured.</td>
</tr>
<tr>
<td>3</td>
<td>No match</td>
<td>The availability retrieved by the presence server does not match any of the configured availabilities.</td>
</tr>
<tr>
<td>4</td>
<td>Error</td>
<td>The presence server has reported an error.</td>
</tr>
<tr>
<td>5</td>
<td>Available</td>
<td>At the configured location the presence entity is:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Available</td>
</tr>
<tr>
<td>6</td>
<td>Away</td>
<td>• Away</td>
</tr>
<tr>
<td>7</td>
<td>Busy</td>
<td>• Busy</td>
</tr>
<tr>
<td>8</td>
<td>N/A</td>
<td>• Not available</td>
</tr>
</tbody>
</table>

**Note:** Exits 5 through 8 will be in the order configured, and therefore not necessarily in the order shown here.
**Configuration screen**

Here is an example Configure Presence Branching screen.

![Configure Presence Branching screen](image)

**Configuring the node**

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the drop down lists in the Presence Entity panel, select the Data Type, Location and Field where the presence entity name or number is held.  &lt;br&gt; <strong>Note:</strong> The selected Field must be of type STRING.</td>
</tr>
<tr>
<td>2</td>
<td>If required, set the Domain Name field to the name of the domain to append to the presence entity name or number.  &lt;br&gt; <strong>Note:</strong> The domain will not be appended to the presence entity if it is already present in the Field selected in the Presence Entity panel.</td>
</tr>
<tr>
<td>3</td>
<td>From the drop down lists in the Presence Domain panel, select the Data Type, Location and Field that identifies the presence query chassis action protocol. The selected Field must be of type INTEGER.  &lt;br&gt; <strong>Note:</strong> Currently only the SIP protocol is supported.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
4 | Set the action to be taken if the presence domain cannot be found. Select:  
• Error - to report an error, or  
• Use default below - to use the default presence domain. Select the default presence domain from the drop down list.
5 | Set the Location to query for the presence entity.
6 | Set the Availabilities to query for the selected location.  
• To add an availability to the location query, select it in the drop down list and click **Add branch**.  
• To remove an availability from the location query, select it in the drop down list and click **Remove branch**.  
**Note:** Each time you add or remove an availability, an exit is either added or removed from the node.
7 | Click **Save**.

**Set Presence**

**Node description**

This node sends a request through ACS to a third party presence server to set the availability at a selected location of a specified subscriber or presence entity.

Before sending the request, the node prompts the user to select the following:

• The number and domain name for the presence entity to set  
• An availability and location  
• The implementation of the presence setting chassis action to invoke. Currently only SIP is supported.

The presence entity number can be specified using fields which may contain (for example) the:

• Called number  
• Calling party number  
• Subscriber phone number  
• Subscriber name

**Notes:**  
The node relies on a protocol specific presence setting chassis action to process the request. The library for the presence setting chassis action is delivered separately by another package, such as scaScp.

Only one availability per location may be set for a presence entity. Each time you specify a new availability for a particular location, the previous one is overwritten.

This table lists the standard set of locations and availabilities that are delivered at installation and that may be set for a presence entity.

<table>
<thead>
<tr>
<th>Standard Locations</th>
<th>Standard Availabilities</th>
</tr>
</thead>
</table>
| • Home  
• Office  
• PlaceOther | • Available  
• Away  
• Busy  
• N/A |
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Set Presence nodes as required.
This node may only be used if a library for the presence setting chassis action has been installed.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No presence entity</td>
<td>The specified presence entity could not be found.</td>
</tr>
<tr>
<td>2</td>
<td>No presence domain</td>
<td>The presence domain does not exist and no default presence domain has been configured.</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>The presence server has reported an error.</td>
</tr>
<tr>
<td>4</td>
<td>Success</td>
<td>The presence entity was successfully set to the configured location and availability.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Presence screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the drop down lists in the Presence Entity panel, select the <strong>Data Type</strong>, <strong>Location</strong> and <strong>Field</strong> where the presence entity name or number is held.</td>
</tr>
</tbody>
</table>
| 2    | If required, set the Domain Name field to the name of the domain to append to the presence entity name or number.  

**Note:** The domain will not be appended to the presence entity if it is already present in the **Field** selected in the Presence Entity panel. |
| 3    | From the drop down lists in the Presence domain panel, select the **Data Type**, **Location** and **Field** where the presence setting chassis action information is held.  

**Note:** Currently only SIP presence setting is supported. |
| 4    | Set the action to be taken if the presence domain cannot be found. Select:  

- **Error** - to report an error, or |
### Step 5
Set the **Location** for the presence entity.

### Step 6
Select the **Availability** that will be set by the node for the selected location.

### Step 7
Click **Save**.
Chapter 22

RIMS Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) RIMS feature nodes. You use RIMS feature nodes in Messaging Manager Navigator control plans. If any additional custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

RIMS Feature Nodes List

This table lists the feature nodes available from the RIMS palette group in the Control Plan Editor.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS41 RIMS Query</td>
<td>Supports IS-41 messages and queries the IMSI/MIN or IMSI/MIN &amp; VMSC/SGSN address of any ACS number field.</td>
</tr>
<tr>
<td>(on page 516)</td>
<td></td>
</tr>
<tr>
<td>MAP RIMS Query</td>
<td>Supports MAP messages and queries the IMSI/MIN or IMSI/MIN &amp; VMSC/SGSN address of any ACS number field.</td>
</tr>
<tr>
<td>(on page 518)</td>
<td></td>
</tr>
</tbody>
</table>

RIMS Nodes Use Cases

Introduction

In order to retrieve the requested values from Messaging Manager Navigator and store them in the chassis and engine fields, each node has two states.

- The first state sets up an xmsRimsChassisAction and passes the data needed to generate the RIMS query message.
- The second state receives information determining which exit branch to take from the chassis action.

The only difference between the MAP and IS41 nodes are the data fields in the UI that will be used to populate the query message, thus the following section will apply to both MAP and IS41 nodes unless specified.
Query

The first state in each node will construct an xmsRimsChassisAction and send it the node data needed to construct the RIMS query message.

The node will then set the next state to be State 2, and will return ACS_ENGINE_MACRO_STAY_HERE, passing control to ACS until a response is received.

Response

The second state of the node will be entered once the xmsRimsChassisAction has determined the validity of the response message from RIMS, and stored the values in the chassis and engine contexts if they are successful. The chassis action will return an enum denoting which exit branch the node should take based on this.

Therefore, all the second state will need to do is follow the specified exit.

IS41 RIMS Query

Node description

The IS41 RIMS Query node supports IS-41 messages and queries the IMSI/MIN or IMSI/MIN & VMSC address of any MDN stored in an ACS number field.

The results can then be placed into ACS chassis and engine parameters.

This node allows you to override the SCCP Destination address digits used by the RIMS interface when sending IS41 SMSRequest messages to the HLR. The SCCP Calling Party address can also be overridden, allowing different addresses to be selected inside the control plan.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Query was successful.</td>
</tr>
<tr>
<td>2</td>
<td>Transient Failure</td>
<td>A transient failure status was returned.</td>
</tr>
<tr>
<td>3</td>
<td>Permanent Failure</td>
<td>A permanent failure status was returned.</td>
</tr>
<tr>
<td>4</td>
<td>Node Failure</td>
<td>General case for an unhandled state in this node.</td>
</tr>
<tr>
<td>5</td>
<td>RIMS Timeout</td>
<td>Response time exceeded timeout.</td>
</tr>
</tbody>
</table>
Restrictions
The HLR SCCP Address area in this node specifies a full SCCP destination address, not just the prefix. Therefore, this node is expected to be used in conjunction with, and after a Copy and/or a Modify node when a composite address is required by the control plan, for example, prefix + MDN.
This node may be used any number of times within a control plan.

Configuration screen
Here is an example Configure IS41 RIMS Query screen.

Configuring the node
Follow these steps to configure the IS41 RIMS Query node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the value in <strong>MDN source to query</strong> to send as the MDN key in the query message to RIMS.</td>
</tr>
<tr>
<td>2</td>
<td>In the <strong>Party for Results</strong> area, select the option to store the values in the response from RIMS in either calling or called engine and chassis fields.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>3</td>
<td>In the <strong>Type of Query</strong> area, select the return option to control the contents of the requested results field in the query message.</td>
</tr>
</tbody>
</table>
| 4    | In the HLR SSCP Address area, select the **Override** check box to optionally edit the following fields:  
- **Digits Location**: the profile block where the global title SCCP Destination address digits are stored.  
- **Digits Field**: the profile tag where the global title SCCP Destination address digits are stored.  
- **Translation Type**: the translation type applicable to this global title.  

**Note**: This area is used to specify the SCCP Destination address digits for the RIMS interface to use while sending IS41 SMSRequest messages to the HLR. This will be based on the data stored in the profile. |
| 5    | In the SCCP Calling Party area, select from the drop down list the **Return Address** of the SCCP originating address.  
This field is populated from the `scf` parameter in the `sms.html` file and the `acs.conf` file. For more information about this parameter, see *ACS Technical Guide*.  

**Note**: It is recommended to select the **Return Address** value as **Default**. The default value is configured in the `RIMS.IS41` section of the `eserv.config` file. |
| 6    | Click **Save**. |

**MAP RIMS Query**

**Node description**

The MAP RIMS Query node supports MAP messages and queries the IMSI/MIN or IMSI/MIN & VMSC/SGSN address of any MDN stored in an ACS number.  
The results can then be placed into ACS chassis and engine parameters.  
This node allows you to override the SCCP Destination address digits used by the RIMS interface when sending MAP SendRoutingInfoForSM messages to the HLR. The SCCP Calling Party address can also be overridden, allowing different addresses to be selected inside the control plan.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success - VMSC</td>
<td>VMSC or only the IMSI, are successfully returned.</td>
</tr>
<tr>
<td>2</td>
<td>Success - SGSN</td>
<td>SGSN successfully returned.</td>
</tr>
<tr>
<td>3</td>
<td>Transient Failure</td>
<td>A transient failure status was returned.</td>
</tr>
<tr>
<td>4</td>
<td>Permanent Failure</td>
<td>A permanent failure status was returned.</td>
</tr>
<tr>
<td>5</td>
<td>Node Failure</td>
<td>General case for an unhandled state in this node.</td>
</tr>
<tr>
<td>6</td>
<td>RIMS Timeout</td>
<td>Response time exceeded timeout.</td>
</tr>
</tbody>
</table>

Restrictions

The HLR SSCP Address area in this node specifies a full SCCP Destination address, not just the prefix. Therefore, this node is expected to be used in conjunction with, and after a Copy and/or a Modify node when a composite address is required by the control plan, for example, prefix + MSISDN.

This node may be used any number of times within a control plan.
**Configuration screen**

Here is an example Configure Map RIMS Query screen.

![Configure Map RIMS Query screen](image)

**Configuring the node**

Follow these steps to configure the Map RIMS Query node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the value in **MSISDN source to query** to send as the MSISDN key in the query message to RIMS.  
<pre><code>  | **Note:** If you select an IMSI, RIMS will treat this value as an MSISDN and may return a non-intuitive number. |
</code></pre>
<p>| 2    | In the <strong>Party for Results</strong> area, select the option to store the values in the response from RIMS in either calling or called engine and chassis fields. |</p>
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 3    | In the **Type of Query** area, select the return option to control the contents of the requested results field in the query message.  
**Note:** If you select the **Return IMSI and SGSN/MSC address** option, but only the VMSC address is returned, the exit used will be "Success - VMSC".  
| 4    | Select the **Priority Request** check box if you wish to set RIMS query message to priority, rather than normal.  
| 5    | In the HLR SSCP Address area, select the **Override** check box to optionally edit the following fields:  
  - **Digits Location:** the profile block where the global title SCCP DEST address digits are stored.  
  - **Digits Field:** the profile tag where the global title SCCP DEST address digits are stored.  
  - **Translation Type:** the translation type applicable to this global title.  
**Note:** This area is used to specify the SCCP Destination address digits which the RIMS interface will use while sending MAP SendRoutingInfoForSM messages to the HLR. This will be based on the data stored in the profile.  
| 6    | From the SCCP Calling Party area, select from the drop down list the **Return Address** of the SCCP originating address.  
This field is populated from the *scf* parameter in the *sms.html* file and the *acs.conf* file. For more information about this parameter, see *ACS Technical Guide*.  
**Note:** It is recommended to select the **Return Address** value as **Default**. The default value is configured in the **RIMS.MAP** section of the *eserv.config* file.  
| 7    | Click **Save**.  

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Subscriber Event Service (SES) feature nodes.

You use SES feature nodes to check which subscribers are entering or leaving a network using SES, and to configure which messages should be sent to these subscribers.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

SES Feature Nodes List

Use SES feature nodes in your control plans to determine if a subscriber qualifies for messages, and to configure the selection of the messages to send.

This table lists the feature nodes available from the SES palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Roamer Contact Check (on page 524)</td>
<td>This feature node checks for the last time the subscriber was contacted on entering the network. Fast key: IRCC</td>
</tr>
<tr>
<td>In-Roamer Messages Selection (on page 525)</td>
<td>This feature node configures which messages to send to an inbound subscriber. Fast key: IRMS</td>
</tr>
<tr>
<td>Out-Roamer Contact Check (on page 527)</td>
<td>This feature node checks for the last time the subscriber was contacted on leaving the network. Fast key: ORCC</td>
</tr>
<tr>
<td>Out-Roamer Messages Selection (on page 528)</td>
<td>This feature node configures which messages to send to an outbound subscriber. Fast key: ORMS</td>
</tr>
</tbody>
</table>
In-Roamer Contact Check

Node description

When a roaming subscriber enters your network, this node checks the duration since any previous inbound roaming contact with the subscriber, by looking up the contact history, and compares the duration with the period of days configured in the node.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many In-Roamer Contact Check nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contacted</td>
<td>The subscriber has been contacted within the configured number of days.</td>
</tr>
<tr>
<td>2</td>
<td>Not Contacted</td>
<td>The subscriber has not been contacted within the configured number of days (includes never been contacted and any system failures).</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure In-Roamer Contact Check screen.
Using the node

For descriptions of how this node is used, refer to the following topics in *SES User's and Technical Guide*:

- Example Control Plan - In-Roamer
- Example scenarios

Configuring the node

Follow these steps to edit the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Type a value in days in the **Period** field.  
      | **Note**: Blank or zero means the subscriber will be contacted every time they enter the network. |
| 2    | Click **Save**. |

In-Roamer Messages Selection

Node description

This node selects the messages for sending to the subscriber, based on the message priority, the number of messages to be sent, and the message selection option used. For more information, see *SES User's and Technical Guide, System Overview* chapter.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many In-Roamer Messages Selection nodes as required, however they **should** be placed after an In-Roamer Contact Check node to ensure they do not get messages every time.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Messages</td>
<td>No messages were selected (includes system failures).</td>
</tr>
<tr>
<td></td>
<td>Selected</td>
<td></td>
</tr>
</tbody>
</table>
## Exit Cause Description

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Messages Selected</td>
<td>At least one message was selected.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure In-Roamer Messages Selection screen.

![Configuration screen](image)

### Using the node

For descriptions of how this node is used, refer to the following topics in *SES User's and Technical Guide*:

- Example Control Plan - In-Roamer
- Example scenarios

### Editing the node

Follow these steps to edit the In-Roamer Messages Selection node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Type the maximum number of messages to send to the subscriber in the **Number** field.  
**Note:** Currently the maximum is about 2 billion.  |
| 2    | Select either the **Random** or **Latest** message Selection Method.  
**Note:** Messages are configured to be priority, or non priority (see *SES User's and Technical Guide*, SES Configuration - Messages Tab). For either option, the priority messages are used to fulfill the Number parameter before the non priority messages. See *SES User's and Technical Guide*, SES Example scenarios.  
**Note:** Latest is the message with the most recent availability date.  |
| 3    | Click **Save**.                                                        |
Out-Roamer Contact Check

Node description

When a roaming subscriber leaves your network, this node checks the duration since any previous out-roaming contact with the subscriber, by looking up the contact history, and compares the duration with the period of days configured in the node.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Out-Roamer Contact Check nodes as required.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Opted Out  | The subscriber has opted out of being contacted on leaving the network.  
Note: This flag is configurable. Refer to SES User's and Technical Guide, macroNodes configuration, for the value of the tag used. |
| 2    | Contacted  | The subscriber has been contacted within the configured number of days.                                                                      |
| 3    | Not Contacted | The subscriber has not been contacted within the configured number of days (includes never been contacted and any system failures).          |

Using the node

For descriptions of how this node is used, refer to the following topics in SES User's and Technical Guide:

- Example Control Plan - Out-Roamer
- Example scenarios
**Configuration screen**

Here is an example Configure Out-Roamer Contact Check screen.

![Configuration screen image]

**Configuring the node**

Follow these steps to edit the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Type a value in days in the **Period** field.  
      | **Note:** Blank or zero means the subscriber will be contacted every time they exit the network. |
| 2    | Click **Save**. |

**Out-Roamer Messages Selection**

**Node description**

This node selects the messages for sending to the subscriber, based on the message priority, the number of messages to be sent, and the message selection option used. For more information, see <SES_Ug_sn>, System Overview chapter.

**Node icon**

![Node icon]

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions
A control plan may contain as many Out-Roamer Messages Selection nodes as required, however they should be placed after an Out-Roamer Contact Check node to ensure they do not get messages every time.

Node exits
This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Messages</td>
<td>No messages were selected (includes system failures).</td>
</tr>
<tr>
<td></td>
<td>Selected</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Messages Selected</td>
<td>At least one message was selected.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Out-Roamer Messages Selection screen.

Using the node
For descriptions of how this node is used, refer to the following topics in SES User’s and Technical Guide:

- Example Control Plan - Out-Roamer
- Example scenarios

Configuring the node
Follow these steps to edit the Out-Roamer Messages Selection node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Note: Currently this is about 2 billion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type the maximum number of messages to send to the subscriber in the Number field.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Select either the Random or Latest message Selection Method.</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Messages are configured to be priority or no priority (see SES Configuration - Messages Tab). For either option, the priority messages are used to fulfill the Number parameter before the no priority messages. See SES Example scenarios.

**Note:** Latest is the message with the most recent availability date.
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) SMCB Macro feature node available from the SMCB palette group in the ACS Control Plan Editor.

In this chapter

This chapter contains the following topics.

Short Message Charging 531

Short Message Charging

Node description

This node provides the charging mechanism in an ACS service plan where ever it is required.
This allows a flexible approach to call logic and functionality.
For example, a CCS Friends and Family feature node could be used before the Short Message Charging feature node to provide a discount for sending short messages to friends and family numbers.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Confirm Res Success</td>
<td>Confirm reservation success (debitUnitRes)</td>
</tr>
<tr>
<td>2</td>
<td>Revoke Res Success</td>
<td>Reservation revoked success (releaseRes)</td>
</tr>
<tr>
<td>3</td>
<td>No Rating Rule</td>
<td>No rating rule found (no billing at all)</td>
</tr>
<tr>
<td>4</td>
<td>Initial Res Failure</td>
<td>SMS forward denied (reserveUnitErr)</td>
</tr>
</tbody>
</table>
### Exit | Cause | Description
--- | --- | ---
5 | Confirm Res Failure | Confirm reservation failure (debitUnitErr)
6 | Revoke Res Failure | Reservation revoked failure (not sure this is possible in MOX)
7 | General Failure | An error occurred. Can be anything, for example:
- Failure to communicate with the billing engine
- Actions not supported for this service domain
  (failure to talk to the billing engine or actions not supported for this service domain)
8 | Free SMS | Free Short Message (no billing at all)

### Configuration screen

Here is an example Configure SM Charging screen.

![Configure SM Charging](image)

### Configuring the node

This node requires no configuration data. You may change the **Node name**, if required.
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Time feature nodes. Use Time feature nodes to route calls according to when the call is made.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Time Feature Nodes List

This table lists the feature nodes available from the Time feature group in the Control Plan Editor.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day of Week (see page 534)</td>
<td>Allows branching based on the day of the week on which the call is placed.</td>
</tr>
<tr>
<td></td>
<td><strong>Shortcut keys:</strong> Alt+W</td>
</tr>
<tr>
<td>Day of Year (see page 536)</td>
<td>Allows control plan branches to be taken, based on the current day of the year.</td>
</tr>
<tr>
<td></td>
<td><strong>Shortcut keys:</strong> Alt+Y</td>
</tr>
<tr>
<td>Profile Date Compare (see</td>
<td>Compares the selected profile date with the current system date.</td>
</tr>
<tr>
<td>page 540)</td>
<td></td>
</tr>
<tr>
<td>Profile Date Store (see</td>
<td>Takes the current system date and extends it by the date extension number</td>
</tr>
<tr>
<td>page 541)</td>
<td>configured in the node. The extended date is stored within the requested profile,</td>
</tr>
<tr>
<td></td>
<td>for future use. If a date extension is not specified, then the current system</td>
</tr>
<tr>
<td></td>
<td>date is stored.</td>
</tr>
<tr>
<td></td>
<td><strong>Shortcut keys:</strong> Alt+T</td>
</tr>
<tr>
<td>Time of Day (see page 545)</td>
<td>Allows branching based on the time of day that the call is placed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chapter 25, Time Feature Nodes  533
**Time Zones**

**Time zone list**

The Time feature nodes use the timezone set in the feature node to determine when a call should be processed. You can also set the timezone in the *Activate Control Plan* (see page 362) feature node.

This table lists the available time zones:

<table>
<thead>
<tr>
<th>Time Zone</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCP local time</td>
<td>The time according to the TZ variable on the SLC which handles the call.</td>
</tr>
<tr>
<td>Explicit Unix TZ</td>
<td>The explicit time zone configured on the <em>Geography</em> tab for the ACS TIME_ZONE_GEOGRAPHY_SET public geography set in the ACS Configuration window. This value is one of the configured top level entries. Tip: This time zone list is available in a separate drop down list when this option is selected.</td>
</tr>
<tr>
<td>GMT</td>
<td>Greenwich Mean Time time zone.</td>
</tr>
<tr>
<td>TZ of Service Number</td>
<td>Similar to Explicit Unix TZ, however the time zone is automatically selected based on the buffer containing the service number.</td>
</tr>
<tr>
<td>TZ of Logical CLI</td>
<td>Similar to Explicit Unix TZ, however the time zone is automatically selected based on the buffer containing the logical CLI number.</td>
</tr>
<tr>
<td>TZ of Network CLI</td>
<td>Similar to Explicit Unix TZ, however the time zone is automatically selected based on the buffer containing the network CLI number.</td>
</tr>
</tbody>
</table>

To enable the correct working of the feature nodes requiring time zone information, you should ensure that the TIME_ZONE_GEOGRAPHY_SET geography set has been configured.

**MoLI codes**

The MoLI digits (*Mobile Location Identification*) can also be used in the same way as for geographic routing.

For example, if the MOLI prefix is “*” and “034” in the TIME_ZONE_GEOGRAPHY_SET is associated with the time zone "Australia/Victoria" then mobile calls from Melbourne will use the appropriate time zone as long as "TZ of Network CLI" is selected.

**Day of Week**

**Node description**

The Day of Week node allows branching based on the day of the week on which the call is placed. This branching decision is made according to the data that is entered into the node through the *Configure Day of Week Node* edit screen.

To configure this node, the user adds a day of week range and maps that range to a specified exit. Calls made on any day of the week within the range are routed down that exit, to be processed according to the nodes that follow.

**Shortcut keys**

The shortcut keys to add a Day of Week node are *Alt+W*. 
**Node icon**

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Day of Week nodes as required. There are no restrictions on where they are placed, as long as all entry and exit points are connected to other nodes.

**Node exits**

The Day of Week node has one entry and may have 2 through 7 exits. Each exit is mapped to a day of week range, and must be connected to an appropriate node. You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See **Editing node exits**.

**Configuration screen**

Here is an example Configure Day of Week screen.

![Configure Day of Week Screen](image)

**Configuring the node**

Follow these steps to configure the day of week node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edit the node exits to add up to another five exits as required to accommodate the dates you are planning to configure. See <strong>Editing node exits</strong> for details.</td>
</tr>
<tr>
<td>2</td>
<td>From the <strong>Timezone Type</strong> field, select the timezone to use. If you select <strong>Explicit Unix TZ</strong>, you must select a specific region from the <strong>Unix Timezone</strong> field.</td>
</tr>
</tbody>
</table>
Chapter 25

Adding a branch/range mapping

Follow these steps to map a day of week range to an exit, using the Configure Day of Week screen.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click <strong>Add Range</strong>. To the left of the <strong>Branch</strong> field, the drop-down lists will be populated.</td>
</tr>
<tr>
<td>2</td>
<td>Select the day required in each list, to show the first and last day in the range. A range of:</td>
</tr>
<tr>
<td></td>
<td>● Wed – Wed affects only calls made on Wednesday of each week.</td>
</tr>
<tr>
<td></td>
<td>● Mon – Thur affects calls made on any day from Monday to Thursday.</td>
</tr>
<tr>
<td></td>
<td>Note that the range may not overlap any existing range. The ranges specified do not need to include all possibilities. Any calls made on a day not specified in an allocated range routes down the default branch.</td>
</tr>
<tr>
<td>3</td>
<td>Select the branch that is to be mapped to the specified range. Calls made within that range are routed down the exit selected in the branch list. It is possible to have several ranges routing down the same branch or to have branches that no calls will ever take.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Change</strong>. <strong>Result</strong>: The branch/range mapping will appear in the display field. To delete a mapping, select the entry and click <strong>Delete Range</strong>.</td>
</tr>
</tbody>
</table>

Day of Year

Node description

This node allows control plan branches to be taken based on the current day of the year.

Dates may be specified as individual days or as named holidays, as set in the **Holidays** tab on the ACS Configuration screen. Multiple dates and ranges of dates can be specified for each branch from the node.

To configure this node, the user adds a day of year range and maps that range to a specified exit. Calls made on any day of the year within the range are routed down that exit, to be processed according to the nodes that follow.

For more information about configuring holiday sets, see *ACS User's Guide*.

Shortcut keys

The shortcut keys to add a Day of Year node are **Alt+Y**.
Restrictions

A control plan may contain as many Day of Year nodes as required.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

The Day of Year node has one entry and may have 2 through 20 exits. Although this node accepts up to 20 exits, it is recommended that this number is restricted to a maximum of 10, due to the width restraints of the node. The default number of exits is 2.

There are three types of exit:

- A specific date or date range (which can be mapped to any free branch)
- A default branch (if the current date is not specified in any of the dates or date ranges, this branch will be followed)
- Any holiday in set (if it matches any of the dates in the chosen set that have not been specifically assigned a branch, this branch will be followed)

You cannot map two dates or date ranges to the same branch. Ensure you do not specify the same day twice (either in a holiday set or on a specified branch), as your control plan data will not compile successfully.

If you do not want to use the Any Holidays branch, set it to the same exit as the default.

You may configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.
Configuration screen

Here is an example Configure Day of Year screen.

Adding a branch/range mapping

Dates may be entered in this node in two forms, as one of the following:

- Holiday entries as entered in a specified holiday set
- Explicit date ranges

If a date is included as a holiday set, but is not specifically assigned a branch, the call is routed down the Any Holiday exit.

For calls where there is no match found to any specified date, the call is routed down the default exit.

Configuring the node

Follow these steps to configure the day of year node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edit the node exits to add up to another eighteen exits as required to accommodate the dates you are planning to configure. See Editing node exits for details.</td>
</tr>
<tr>
<td>2</td>
<td>From the Timezone Type box, select the timezone you want to use. If you select the Explicit Unix TZ option, you must choose a specific region from the Unix Timezone box. For more Time zone information, see Time Zones (on page 534).</td>
</tr>
<tr>
<td>3</td>
<td>Specify the exit for dates which match a date within the specified Holiday Set, but do not match a date entry with a specific branch assigned to it.</td>
</tr>
</tbody>
</table>
| 4    | Enter the holiday details by either:  
|      | • specifying each date or date range explicitly, or |
Adding holiday set entries

Follow these steps to add holiday set entries, using the Configure Day of Year Node screen.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the holiday set required from the drop-down box.</td>
</tr>
</tbody>
</table>
| 2    | If the selected holiday set has:  
|      | - More than one entry in it, you can add them all by clicking Add Whole Set.  
|      | - Only one entry or if you only want to add the first entry from the set, click Add Entry.  
|      | **Result:** The chosen entries will be added to the display list.  
| 3    | In the list box below the display area, select the holiday entry that is required.  
| 4    | In the **Branch** field, select the branch the specified days should route to.  
| 5    | Click **Change**.  
|      | **Result:** The selected default entry in the display area will be changed to the holiday entry and branch selected.  
| 6    | Repeat steps 3 and 4 until all the holiday entries have been mapped to different branches. (They must be mapped to different branches or the control plan will not compile.)  
| 7    | Click **Save**.  

Adding explicit date ranges

Follow these steps to add explicit date ranges, using the Configure Day of Year Node screen.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Click **Add Entry**.  
|      | **Result:** A default entry will be added to the display list, as a selected entry.  
| 2    | Select the (Explicit Date Range) option in the Holiday Entry selection box.  
|      | **Result:** The Start and End Date fields will become available.  
| 3    | Select the date range required.  
|      | **Note:** The date ranges are inclusive. For example, a date range of January 1 to January 12 will route calls made on 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 January down the selected branch.  
|      | To specify a single date, set both the Start and End Date fields to the same day.  
| 4    | Select the branch to be taken by calls within that range.  
| 5    | Click **Change Entry**.  

**Note:** The Save button will not be available if a range has not been accepted, or if the ranges overlap.
### Step 25: Action 540

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result:</td>
<td>The selected default entry in the display area will be changed to the explicit date range and branch selected.</td>
</tr>
<tr>
<td>6</td>
<td>Select a holiday data set. This information will not be used, but is required for the Control Plan data to compile correctly.</td>
</tr>
<tr>
<td>7</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

## Profile Date Compare

### Node description

The Profile Date Compare node compares the selected Profile Date with the current system date, and branches according to the following rules:

- the stored date is in the past (stored date is less than current date),
- the stored date is in the future (stored date is greater than current date),
- the stored date is today's date (stored date equals current date).

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

A control plan may contain as many Profile Date Compare nodes as required.

### Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Failure</td>
<td>There was an internal error.</td>
</tr>
<tr>
<td>2</td>
<td>Not Found</td>
<td>The selected Profile Date could not be found.</td>
</tr>
<tr>
<td>3</td>
<td>Past</td>
<td>The selected Profile Date is earlier than the current system date.</td>
</tr>
<tr>
<td>4</td>
<td>Today</td>
<td>The selected Profile Date is the same as the current system date.</td>
</tr>
<tr>
<td>5</td>
<td>Future</td>
<td>The selected Profile Date is later than the current system date.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Profile Date Compare screen.

Configuring the node

Follow these steps to edit the Profile Date Compare node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the drop down lists in the Location of Date area, select the profile Data Type, Location and Field that holds the stored Profile Date you want to be compared against the current system date.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Note:** The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information on profile blocks (data type, location and field) and how to use them, see Profile Blocks and Tags (on page 2).

The primary tag lists are configured in the SMS > Services > ACS Service > Configuration > Profile Tag Details and Profile Tag Mapping tabs (see ACS User's Guide, Profile Tag Details for more information).

Profile Date Store

Node description

The Profile Date Store node stores a date extension number depending on the type of extension selected. The extended date is stored within the requested profile, for future use.

The stored date is either:

- The current system date plus the date extension (not specified = current system date).
- The date retrieved from the store location plus the date extension.
- The best date of either the first two options.

**Note:** Only whole days may be stored.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Profile Date Store nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Failure | The date could not be stored either because of any of:  
  • The date was invalid  
  • The profile date was missing from the selected Profile when a date was expected  
  • There was an general error |
| 2    | Success | The date has been stored to the selected profile date for the selected profile. |
Configuration screen

Here is an example Configure Profile Date Store screen.

Configuring the node

Follow these steps to edit the Profile Date Store node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the drop down lists in the Store Date To area, select the **Data Type**, **Location** and **Field** where you want to retrieve and/or store the Profile Date.  
Note: The available profile data is the same for all service providers on the system. |
| 2    | In the Units area select whether to add **Days**, **Months** or **Years** to the stored date. |
| 3    | In the Number to add area, configure the number of the selected unit type to add to the stored date. Either:  
  - in the **Time to add** field type in the required value, or |
Step | Action
--- | ---
| 1 | tick the **Use Profile** check box and select the profile **Data Type**, **Location** and **Field** where the value you want to use is stored.

The extended date is checked to ensure that it is not greater than the max Unix time defined for the system.

**Note:** If you do not specify a value here, then a value of zero is assumed.

4 | If the units you chose were months, then in the **End month algorithm area** select the required option for adjusting end of month dates.

- **Adjust up** - Adding a month to the end of the current month will set the date to the last day in the following month. Also sets the date to the last day in the following month if the current date is the day before the last day in the month and the following month has fewer days.

- **Adjust down** - Adding a month to the end of the current month sets the date to the last day in the following month for months which have the same or fewer days than the current month. Where the following month has more days than the current month, it sets the date to the same day number in the month.

- **Add # days in month** - Adds the number of days in the current month to the following month. Where the following month has fewer days than the current month, this means the date will be set to the beginning of the next month.

For further clarification, see *Adding months example* (on page 544).

5 | Select the type of extension required from the **Extend From options**.

- **Today** - To add to the current system time, select option.
- **Profile** - To add to the date currently stored, select option.
- **Later of the two** - To store the later date out of the Today and Profile options.

6 | In the **Timezone area** select the required timezone options from the drop down lists.

7 | Click **Save**.

**Note:** The list of data types is fixed at installation time for each feature node or screen.

**Further reference:**

- For information on profile blocks (data type, location and field) and how to use them, see *Profile Blocks and Tags* (on page 2).

The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

### Adding months example

This table shows some example month end adjustment results when adding one month.

<table>
<thead>
<tr>
<th>Current Date</th>
<th>Adjust up</th>
<th>Adjust down</th>
<th>Add # days in month</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 January</td>
<td>28 February</td>
<td>28 February</td>
<td>2 March</td>
</tr>
<tr>
<td>30 April</td>
<td>31 May</td>
<td>30 May</td>
<td>30 May</td>
</tr>
</tbody>
</table>
Time of Day

Node description

The Time of Day node allows branching based on the time of day that the call is placed. The branching decision is made according to the data that is entered into the node.

Shortcut keys

The shortcuts key to add a Time of Day node are Alt+T.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and may have 2 through 20 exits. You may configure the number of exits within this range as required, using the Edit Node Exits option on the shortcut menu. See Editing node exits.

Restrictions

A control plan may contain as many Time of Day nodes as required.
Configuration screen

Here is an example Configure Time of Day screen.

![Configuration screen](image)

Configuring the node

Follow these steps to add a time range to the node data.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | From the **Timezone Type** drop down list, select the timezone to use.  
If you select **Explicit Unix TZ**, you need to select a specific region from the **Unix Timezone** drop down list.  
For more time zone information, see **Time Zones** (on page 534). |
| 2    | From the **Default** field, select the branch calls that do not match a time of day range should be routed to. |
| 3    | Click **Add Range** and make the changes necessary to the time range given, then choose the branch down which calls made in this time range are to route. |
| 4    | Enter the time range in the boxes to the left of the **Branch** field and click **Change**. |
| 5    | To add another range, repeat steps 3 and 4. |
| 6    | Click **Save**. |
Chapter 26

UIS Portal Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) UIS Portal feature nodes.

In this chapter

This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Available Feature Nodes</th>
<th>547</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Setting</td>
<td>548</td>
</tr>
<tr>
<td>Send Buffer</td>
<td>551</td>
</tr>
<tr>
<td>User Input</td>
<td>553</td>
</tr>
<tr>
<td>User Selection</td>
<td>558</td>
</tr>
<tr>
<td>Version Branching</td>
<td>562</td>
</tr>
</tbody>
</table>

Available Feature Nodes

UIS Portal feature nodes list

This table lists the USSD Gateway feature nodes available from the UIS Portal palette group and the fast key for each feature node in the list. You can use fast keys to search for feature nodes in the palette or the canvas.

Note: If any custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Setting</td>
<td>Enables the caller to select the language they want to use for this service.</td>
</tr>
<tr>
<td></td>
<td>Fast key: UPC3</td>
</tr>
<tr>
<td>Send Buffer</td>
<td>Sends data to the SMSC.</td>
</tr>
<tr>
<td></td>
<td>Fast key: UPC5</td>
</tr>
<tr>
<td>User Input</td>
<td>Collects input from the calling party.</td>
</tr>
<tr>
<td></td>
<td>Fast key: UPC4</td>
</tr>
<tr>
<td>User Selection</td>
<td>Enables user selection from a menu.</td>
</tr>
<tr>
<td></td>
<td>Fast key: UPC2</td>
</tr>
<tr>
<td>Version Branching</td>
<td>Branches on the Version of MAP used.</td>
</tr>
<tr>
<td></td>
<td>Fast key: UPC1</td>
</tr>
</tbody>
</table>
Language Setting

Node description

The Language Setting node enables the subscriber to select one of a set of configured languages. This node plays an announcement to the user, prompting them to select a language to use for the USSD call. This user's temporary profile is updated with the selected language.

Note: The selection only lasts for the duration of the call.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Error</td>
<td>Node encountered an error during execution. The Error or Timeout announcement will be played.</td>
</tr>
<tr>
<td>2</td>
<td>Improper User Input</td>
<td>User entered a digit which does not map to a language.</td>
</tr>
<tr>
<td>3</td>
<td>Success</td>
<td>Temporary profile updated with selected language.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Language Setting screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Language Menu Announcement area, select the Announcement Set which contains the language menu announcement you want to play to the caller.  
**Result:** The Announcement Entry field is populated with the entries for the selected set. |
| 2    | From the Announcement Entry drop-down list, select the announcement you want to play to the caller. |
| 3    | In the Error Announcement area, select the Announcement Set and Announcement Entry you wish to play for an error. |
| 4    | In the Improper User Input Announcement area, select the Announcement Set and Announcement Entry you wish to play if the user has input incorrectly. |
| 5    | In the PACUI Duration field type the number of seconds' duration to play announcement and collect user information. |
6 Click **Edit Mapping**.

**Result:** You see the Language Position Mapping Dialog.

7 Use the Language Position Mapping Dialog screen to construct a list of ordered languages. This screen displays a grid populated with all of the available languages. The grid has three columns:

- **Value** - This column contains the language id / value that is sent to the gateway interface. This value will a number between 0 and 19. Any changes you make to this column will be ignored.
- **Name** - The language name, for example English, French, or German. Any changes you make to this column will be ignored.
- **Position** - The position column is used to determine which languages will be included in the list and in what order.

A valid list will contain:

- At least one language (starting at position 1)
- The positions numbered consecutively, for example, 1, 2 and 3
- No more than one language for any given position. If more than one language is mapped to the same position then an error will be generated when **OK** is clicked

You can map the positions of the languages in one of the following ways:

- Manually
- Automatically
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 8    | To manually map the languages:  
|      | 1 Click on the Position cell in the row for the language.  
|      | 2 Type the number in the cell  
|      | 3 Repeat for each language.  
|      | To automatically map the language positions:  
|      | 1 Click **Auto Map Language Position**.  
|      | **Result:** A list will be generated which contains all of the available languages, positioned in the order that they are stored in the system database. You can subsequently manually edit this configuration if required.  
| 9    | Click **OK**.  
|      | **Result:** Validation checks are carried out to determine whether or not the criteria detailed above has been met. If not, you will be informed via an error dialog. If the validation checks are successful, then the dialog box will close, and the language list on the Configure Language Setting screen will be updated.  

## Send Buffer

### Node description

The Send Buffer node sends the final selection buffer that has been built through the various Menu Selection and User Entry macro nodes to an SMSC through the UCP Interface.

Once the final selection buffer has been sent, the Send Buffer node writes an EDR to record the transaction.

### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

### Restrictions

This node may be used any number of times within a control plan.

### Node exits

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Both the final selection buffer, and the CDR have been successfully sent.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>Node encountered an error receiving or sending data.</td>
</tr>
<tr>
<td>Exit</td>
<td>Cause</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Empty Buffer</td>
<td>Final selection buffer retrieved from the configured ProfileTag has been</td>
</tr>
<tr>
<td></td>
<td></td>
<td>allocated but is empty. This situation will occur if the previous node</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in the call plan was a menu selection node that was set to clear the buffer.</td>
</tr>
<tr>
<td>4</td>
<td>No Buffer</td>
<td>Final selection buffer does not exist. Suggests a configuration error in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the CPE.</td>
</tr>
<tr>
<td>5</td>
<td>Length Exceeded</td>
<td>Received buffer length exceeded 255 characters.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Send Buffer screen.
### Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the <strong>Originating Address</strong> field, select an address from the list:</td>
</tr>
<tr>
<td></td>
<td>1 Called Party Number</td>
</tr>
<tr>
<td></td>
<td>2 Calling Party Number</td>
</tr>
<tr>
<td></td>
<td>3 Normalised Called Party Number</td>
</tr>
<tr>
<td></td>
<td>4 Normalised Calling Party Number</td>
</tr>
<tr>
<td></td>
<td>5 Pending TN Buffer</td>
</tr>
<tr>
<td></td>
<td>6 Application Buffer</td>
</tr>
<tr>
<td></td>
<td>7 Manually Inserted</td>
</tr>
<tr>
<td></td>
<td>For details on normalization, refer to either the <em>USSD Gateway</em>, or the <em>ACS Technical Guide</em>.</td>
</tr>
<tr>
<td>2</td>
<td>If you selected:</td>
</tr>
<tr>
<td></td>
<td>• Application Buffer, select the buffer value from the drop down list to the far right of the field.</td>
</tr>
<tr>
<td></td>
<td>• Manually Inserted, type the originating address in the text field to the right of the field. Maximum of 31 characters.</td>
</tr>
<tr>
<td>3</td>
<td>In the <strong>Destination Address</strong> field, select an address from the list. This will normally contain the MSISDN of the subscriber using the service.</td>
</tr>
<tr>
<td></td>
<td>The available options are the same as for the originating address.</td>
</tr>
<tr>
<td>4</td>
<td>Select the <strong>Generate CDRs</strong> check box if you wish to generate CDRs.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> You can view these CDRs on the UPC CDR Viewer Screen.</td>
</tr>
<tr>
<td>5</td>
<td>Select the <strong>Charge CDR</strong> check box if you wish to charge CDRs.</td>
</tr>
<tr>
<td>6</td>
<td>Select the <strong>Strip Last Space</strong> check box if you wish to strip the last space from the buffer.</td>
</tr>
<tr>
<td>7</td>
<td>Type the name of the UCP interface to be used.</td>
</tr>
<tr>
<td></td>
<td>This alphanumeric field can be populated with up to 19 characters.</td>
</tr>
<tr>
<td>8</td>
<td>The <strong>Send Text</strong> option allows you to enter hard coded text, in the text field, which is sent to the UCP interface at run time.</td>
</tr>
<tr>
<td>9</td>
<td>The <strong>Send Buffer ID</strong> option allows you to select the buffer, in the drop down box, in which data is collected.</td>
</tr>
<tr>
<td>10</td>
<td>The <strong>Message Class</strong> drop-down menu selects &quot;Not Set&quot;.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> This feature is for future enhancements.</td>
</tr>
<tr>
<td>11</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

### User Input

**Node description**

This node plays an announcement to the subscriber which prompts them for input. It then collects the input and appends it to the configured selection buffer.
Chapter 26

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Error</td>
<td>Node encountered an error during execution.</td>
</tr>
<tr>
<td>2</td>
<td>Improper User Input</td>
<td>There was a problem with the user's input.</td>
</tr>
<tr>
<td>3</td>
<td>Success</td>
<td>Node executed correctly.</td>
</tr>
<tr>
<td>4</td>
<td>VA type non-digit</td>
<td>Problem using the Variable Part Announcements configuration.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure User Input screen.

![Configuration screen](image)

**Configuring the node**

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Service IF** field, select the service from the drop down list.  
**Note:** The list is populated with all the Service Interface names created by the USSD Gateway Base Configuration screen, Service IF tab. |
| 2    | In the **Menu** field, select the menu from the drop down list.  
The list is populated with all the Menu names created by the USSD Gateway Menu Configuration screen, Menu Info tab which was created for a particular Service Interface.  
**Note:** If the menu has been set up containing variable parts, but a different number of |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>variables have been set up in the text for MAP 1 and MAP 2, you will see an error, for example:</td>
</tr>
<tr>
<td>2</td>
<td><img src="Image" alt="Invalid special markers" /> The menu has an inconsistent number of special markers defined</td>
</tr>
<tr>
<td>3</td>
<td>In this example, the MAP 1 menu has 3 variables, but the MAP 2 has only 2. You must correct this using the Menu Language tab before you can select the menu.</td>
</tr>
<tr>
<td>4</td>
<td>The field to the right of the Variable Parts button displays the number of variable parts contained within the selected menu. If the value displayed in the field is not 0, then the menu item contains variable parts. These are displayed in the MAP 1 and MAP 2 text display boxes, as pairs of percentage symbols (%%). See Menu Language for details. You must click Variable Parts to open the Variable Part Announcement screen and insert substitutions for each variable part in the message. See Setting Variable Part Announcements (on page 557).</td>
</tr>
</tbody>
</table>
| 5    | Select the option of where to store the user input:  
- Profile - This allows you to select Profile Blocks and Primary Tags  
- Buffer - This allows you to enter information into a buffer. | 
| 6    | If you selected:  
- Profile option, select the:  
  - Pattern List Profile Block and  
  - Pattern List Primary Tag.  
For the USSD Gateway service, the following profiles are writable to the database:  
- Customer  
- Call Plan  
- CLI Subscriber  
- Service Number  
In addition the following is specified as a temporary profile, stored in memory:  
- Application Specific 7  
For more information on Profile Blocks and tags, refer to the CPE User's Guide.  
- Buffer option - fill in the following field:  
  - Buffer ID - This drop-down menu allows you to select which buffer to use to store the user input.  
  **Note:** The USSD Gateway Portal runtime system uses ten data buffers to store data. | 
| 7    | In the Duration field, set the length of time, in seconds that the user has to enter their selection.  
**Note:** Optional | 
| 8    | Ticking the Add Space check box will add a space at the end of the string entered into the buffer. |
### Chapter 26

#### UIS Portal Feature Nodes

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Ticking the <strong>Clear Buffer</strong> check box will clear any value entered into the buffer before any selection has been entered.</td>
</tr>
</tbody>
</table>
| 10   | In the **Language** field, select the language to use.  
This is populated with the language names created by the USSD Gateway Base Configuration screen, Language tab.  
The **MAP 1** and **MAP 2** fields will display the text information presented to the user using a MAP1 or MAP2 version device, in the selected language. |
| 11   | Click **Save**. |

### Setting Variable Part Announcements

If the menu contains one or more variable announcement parts, use the Variable Part Announcement screen to define each variable part.

Here is an example Variable Part Announcement Dialog.

![Variable Part Announcement Dialog](image)

This example contains four variable parts, each illustrating a different option from the list of buffers.

**Buffers**

Here are the buffers available in the Variable Part Announcements Dialog and the action to perform when the buffer is selected.

<table>
<thead>
<tr>
<th>Buffer</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Called Party Number</td>
<td>No further action required</td>
</tr>
<tr>
<td>Calling Party Number</td>
<td></td>
</tr>
<tr>
<td>Normalised Called Party Number</td>
<td></td>
</tr>
<tr>
<td>Normalised Calling Party Number</td>
<td></td>
</tr>
<tr>
<td>Pending TN Buffer</td>
<td></td>
</tr>
<tr>
<td>Application Buffer</td>
<td>Select the buffer used to store the user input in the drop down list</td>
</tr>
<tr>
<td>Manually inserted</td>
<td>Type a value in the text field.</td>
</tr>
</tbody>
</table>
Select the:
- Pattern List Profile Block and
- Pattern List Primary Tag.

For more information on Profile Blocks and tags, refer to 
CPE User's Guide.

For a description of the buffers, refer to CPE User's Guide.

User Selection

Node description

The User Selection node displays a menu and collects the user's choice. The node matches the choice to a keyword in the UPC menu string. If a keyword matches, it is appended to the final selection buffer.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

This node may be used any number of times within a control plan.

Node exits

The User Selection node has one entry and may have 5 through 25 exits. Each exit is mapped to a day of week range, and must be connected to an appropriate node. You can configure the number of exits using the Edit Node Exits screen (see "Editing the number of exit branches" on page 561).

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Error</td>
<td>Node encountered an error during execution.</td>
</tr>
<tr>
<td>2</td>
<td>Improper User Input</td>
<td>User Selection doesn't match keyword choice.</td>
</tr>
<tr>
<td>3</td>
<td>VA type non-digit</td>
<td>Problem using the Variable Part Announcements configuration.</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>User selected 0.</td>
</tr>
</tbody>
</table>
| 5    | *             | User selected *.


Configuration screen

Here is an example Configure User Selection screen.

![Configure User Selection screenshot](image)

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the **Service IF** field, select the service from the drop down list.  
**Note:** The list is populated with all the Service Interface names created by the USSD Gateway Base Configuration screen, Service IF tab. |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2    | In the **Menu** field, select the menu from the drop down list.  
The list is populated with all the Menu names created by the USSD Gateway Menu Display screen, Menu Language tab which was created for a particular Service Interface.  
**Note:** If the menu has been set up containing variable parts, but a different number of variables have been set up in the text for MAP 1 and MAP 2, you will see an error, for example: |
| 3    | Fill in the **Buffer ID** field. This drop-down menu allows you to select which buffer that the user input has been stored in.  
**Note:** The USSD Gateway Portal run-time system uses ten data buffers to store data. |
| 4    | In the **Duration** field, set the length of time, in seconds that the user has to enter their selection.  
**Note:** Optional |
| 5    | Ticking the **Add Space** check box will add a space at the end of the string entered into the buffer. |
| 6    | Ticking the **Clear Buffer** check box will clear any value entered into the buffer before any selection has been entered. |
| 7    | The field to the left of the Parts button displays the number of exits listed in the field below the **Language** field, which displays the Exit-Keyword mapping set up in the User Selection tab.  
**Note:** To make these exits available, you must add the required number of exits to the node. See *Editing the number of exit branches* (on page 561). |
| 8    | The field to the right of the Parts button (**Num Selections**) displays the number of variable parts contained within the selected menu.  
If the value displayed in the field is not 0, then the menu item contains variable parts. These are displayed in the MAP 1 and MAP 2 text display boxes, as pairs of percentage symbols (%%). See Menu Language for details.  
You must click **Parts** to open the Variable Part Announcement screen and insert substitutions for each variable part in the message. See *Setting Variable Part Announcements* (on page 561). |
| 9    | In the **Language** field, select the language to use.  
This is populated with the language names created by the USSD Gateway Base Configuration screen, Language tab. |
| 10   | Selecting the **MAP 1** and **MAP 2** options will display, in the field below, the text information presented to the user using a MAP1 or MAP2 version device, in the selected language. |
| 11   | Click **Save**. |
Editing the number of exit branches

Follow these steps to edit the number of exit branches of a node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ensure Call Plan Editor is in Graphical mode.</td>
</tr>
</tbody>
</table>
| 2    | Right-click on node you want to change the number exits for.  
**Result:** You see a shortcut menu. |
| 3    | Click **Edit Node Exits**.  
**Result:** You see the Edit Node Structure screen. |
| 4    | Use the arrows to change the number displayed. The up arrow will increase the displayed number and the down arrow will decrease the displayed number.  
The number of exits on the node will now reflect the number that was entered into the Edit Node Structure screen. |
| 5    | Click **Save**.  
**Result:** The Edit Node Structure screen will close. |

Setting Variable Part Announcements

If the menu contains one or more variable announcement parts, use the Variable Part Announcement screen to define each variable part.
Here is an example Variable Part Announcement Dialog.

![Variable Part Announcement Dialog](image)

This example contains four variable parts, each illustrating a different option from the list of buffers.

**Buffers**

Here are the buffers available in the Variable Part Announcements Dialog and the action to perform when the buffer is selected.

<table>
<thead>
<tr>
<th>Buffer</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Called Party Number</td>
<td>No further action required</td>
</tr>
<tr>
<td>Calling Party Number</td>
<td></td>
</tr>
<tr>
<td>Normalised Called Party Number</td>
<td></td>
</tr>
<tr>
<td>Normalised Calling Party Number</td>
<td></td>
</tr>
<tr>
<td>Pending TN Buffer</td>
<td></td>
</tr>
<tr>
<td>Application Buffer</td>
<td>Select the buffer used to store the user input in the drop down list</td>
</tr>
<tr>
<td>Manually inserted</td>
<td>Type a value in the text field.</td>
</tr>
</tbody>
</table>

For a description of the buffers, refer to *CPE User's Guide*.

**Version Branching**

**Node description**

The Version Branching node attempts to determine which version of MAP is being used for the call. It branches on MAP version or takes a default exit if a version cannot be determined.

The node determines the subscriber’s MAP version by querying the Additional Calling Party Number using the IDP Query action.

**Node icon**

![Node Icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
This node may be used any number of times within a control plan.

Node exits
This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAP 1 version</td>
<td>Call is using MAP1.</td>
</tr>
<tr>
<td>2</td>
<td>MAP 2 version</td>
<td>Call is using MAP2.</td>
</tr>
<tr>
<td>3</td>
<td>Undetermined</td>
<td>MAP version could not be determined.</td>
</tr>
<tr>
<td></td>
<td>version</td>
<td></td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Version Branching screen.

Configuring the node
This node may have a Tracking String added. It does not require any other configuration.
Click **Save** to save the node.
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) VPN feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

VPN Feature Nodes List

This table lists the NCC feature nodes available from the VPN palette group in the Control Plan Editor. If any custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPN Analyze (on page 571)</td>
<td>Used to break down the digits contained in the Pending TN Buffer.</td>
</tr>
<tr>
<td>VPN Load Station (on page 578)</td>
<td>Used to load an alternate calling station profile.</td>
</tr>
<tr>
<td>VPN Lookup (on page 580)</td>
<td>Used to translate an OnNet number to the corresponding Network address from VPN_STATION in the database.</td>
</tr>
<tr>
<td>VPN CLI Lookup (on page 575)</td>
<td>Used to set the Originating Network ID for the current service interaction.</td>
</tr>
<tr>
<td>VPN Mobile Analyze (on page 582)</td>
<td>Used to break down the digits contained in the Pending Termination</td>
</tr>
<tr>
<td>Node Name</td>
<td>Node Description</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>page 582)</td>
<td>Number Buffer.</td>
</tr>
<tr>
<td><strong>VPN Caller is On-Net</strong> (on page 574)</td>
<td>Used to check if the incoming caller is on-net.</td>
</tr>
<tr>
<td><strong>VPN Get Hunting Number</strong> (on page 577)</td>
<td>Used to search a list of termination numbers and timeout pairs.</td>
</tr>
<tr>
<td><strong>VPN Redirection Counter Branching</strong> (on page 586)</td>
<td>Allows comparison of the Redirection Information Counter received in the invoking message.</td>
</tr>
<tr>
<td><strong>VPN Set Redirection Counter</strong> (on page 588)</td>
<td>Allows an integer constant to be set as the redirection information counter.</td>
</tr>
<tr>
<td><strong>VPN Set Tariff Code From Profile</strong> (on page 589)</td>
<td>Used to add network charging data to the next outgoing TCAP primitive.</td>
</tr>
<tr>
<td><strong>VPN Subscriber Lookup</strong> (on page 591)</td>
<td>Allows you to look up a number buffer and load the VPN network and station profiles associated with that number.</td>
</tr>
<tr>
<td><strong>VPN Voice Mail Number Configuration</strong> (on page 596)</td>
<td>Allows modification of the Pending Termination Number to provide compatibility with voicemail systems.</td>
</tr>
<tr>
<td><strong>VPN Originating CUG</strong> (on page 585)</td>
<td>Analyzes the calling and called numbers contained in the Calling Private Network or Logical Calling Buffer, and the PendingTN Buffer, respectively.</td>
</tr>
<tr>
<td><strong>VPN Terminating CUG</strong> (on page 593)</td>
<td>Analyzes the calling and called numbers contained in the Calling Private Network or Logical Calling Buffer, and the PendingTN Buffer respectively.</td>
</tr>
</tbody>
</table>

**Profile Blocks and Fields**

**Nodes using profile blocks**

The following VPN nodes use the profile blocks listed below:

- **VPN Analyze** (on page 571)
- **VPN Mobile Analyze** (on page 582)
- **VPN Set Tariff Code From Profile** (on page 589)

**Profile block availability**

The service loader you are using determines the profile blocks that are available to the control plan and whether they are read-only or can be updated. All service loaders include the Global Profile.

For example, you can read the VPN Network Profile, VPN Station Profile and Customer Profile if the VPN service loader is used.

The VPN service loader specifies the Station Profile as updateable and the Network Profile as read-only. This means that any nodes that can write back to a profile can update the VPN Station Profile in the database.

The service loader also specifies the uses of Application Specific profiles 1-8. Some of these will be specified as temporary profiles, which are never written back to the database and are cleared at the end of the call. They can be used for such things as moving data from one application to another within the control plan (for example between a USSD node and a DAP node).
Profile block list

Here are the profile blocks.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPN Network Profile</td>
<td>Contains most of the information you can specify in the VPN edit network, for example:</td>
</tr>
<tr>
<td></td>
<td>• Account code maximum length</td>
</tr>
<tr>
<td></td>
<td>• Outgoing barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>• Incoming barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>• VPN network SD no check</td>
</tr>
<tr>
<td></td>
<td>• VPN present private address</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant if you have the VPN service installed.</td>
</tr>
<tr>
<td>VPN Station Profile</td>
<td>Contains most of the information you can specify in the VPN edit station, for example:</td>
</tr>
<tr>
<td></td>
<td>• Outgoing barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>• Incoming barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>• VPN bar all incoming</td>
</tr>
<tr>
<td></td>
<td>• VPN bar off network incoming</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant if you have the VPN service installed.</td>
</tr>
<tr>
<td>Customer Profile</td>
<td>Contains customer information, for example:</td>
</tr>
<tr>
<td></td>
<td>• Incoming barred/allowed list type</td>
</tr>
<tr>
<td></td>
<td>• Incoming barred/allowed list</td>
</tr>
<tr>
<td></td>
<td>• PIN rights</td>
</tr>
<tr>
<td></td>
<td>• Default language</td>
</tr>
<tr>
<td></td>
<td>• Incoming barred/allowed ignore</td>
</tr>
<tr>
<td></td>
<td>• Termination number ranges</td>
</tr>
<tr>
<td></td>
<td>• Termination number range policy</td>
</tr>
<tr>
<td>Control Plan Profile</td>
<td>This profile contains current switch node exits only.</td>
</tr>
<tr>
<td>Global Profile</td>
<td>Contains global information, for example:</td>
</tr>
<tr>
<td></td>
<td>• PIN rights</td>
</tr>
<tr>
<td></td>
<td>• Multi-lingual announcements</td>
</tr>
<tr>
<td></td>
<td>• Default language</td>
</tr>
<tr>
<td></td>
<td>• Control plan version hiding</td>
</tr>
<tr>
<td>CLI Subscriber Profile</td>
<td>Contains most of the information you can specify in the CLI tab of the Numbers screen, for example:</td>
</tr>
<tr>
<td></td>
<td>• Account Code</td>
</tr>
<tr>
<td></td>
<td>• Language</td>
</tr>
<tr>
<td></td>
<td>• Follow me number</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant to the 0800 service.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Service Number Profile</td>
<td>Contains most of the information you can specify in the Service Number tab of the Numbers screen, for example:</td>
</tr>
<tr>
<td></td>
<td>• Account code</td>
</tr>
<tr>
<td></td>
<td>• Language</td>
</tr>
<tr>
<td></td>
<td>• Follow me number</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Only relevant to the 0800 service.</td>
</tr>
<tr>
<td>App Specific Profile 1</td>
<td>Contains information specific to an application (for example, Messaging Manager or CCS).</td>
</tr>
<tr>
<td>App Specific Profile 2</td>
<td><strong>Note:</strong> Unless it is in use by a specific application, these profiles, for example, App Specific Profile 7 can be specified as a temporary profile (where nothing is written back to the database) in order to pass information from one application to another, for example between USSD and DAP).</td>
</tr>
<tr>
<td>App Specific Profile 3</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 4</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 5</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 6</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 7</td>
<td></td>
</tr>
<tr>
<td>App Specific Profile 8</td>
<td></td>
</tr>
<tr>
<td>Any Valid Profile</td>
<td>Allows you to search for tags in all profiles that have been loaded.</td>
</tr>
</tbody>
</table>

**ACS primary tags**

Here is a list of ACS primary tags.

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO NOT USE</td>
<td>0x0000</td>
<td>0</td>
</tr>
<tr>
<td>PIN Prefix</td>
<td>0x0001</td>
<td>1</td>
</tr>
<tr>
<td>PIN Length</td>
<td>0x0002</td>
<td>2</td>
</tr>
<tr>
<td>Account Code Prefix</td>
<td>0x0003</td>
<td>3</td>
</tr>
<tr>
<td>Account Code Max Length</td>
<td>0x0004</td>
<td>4</td>
</tr>
<tr>
<td>A/S Prefix</td>
<td>0x0005</td>
<td>5</td>
</tr>
<tr>
<td>A/S Length</td>
<td>0x0006</td>
<td>6</td>
</tr>
<tr>
<td>Off Net Prefix</td>
<td>0x0007</td>
<td>7</td>
</tr>
<tr>
<td>S/D Prefix</td>
<td>0x0008</td>
<td>8</td>
</tr>
<tr>
<td>Outgoing Barred/Allowed List Type</td>
<td>0x0009</td>
<td>9</td>
</tr>
<tr>
<td>Outgoing Barred/Allowed List</td>
<td>0x000a</td>
<td>10</td>
</tr>
<tr>
<td>Incoming Barred/Allowed List Type</td>
<td>0x000b</td>
<td>11</td>
</tr>
<tr>
<td>Incoming Barred/Allowed List</td>
<td>0x000c</td>
<td>12</td>
</tr>
<tr>
<td>Account Code Values</td>
<td>0x000d</td>
<td>13</td>
</tr>
<tr>
<td>Account Code Policy</td>
<td>0x000e</td>
<td>14</td>
</tr>
<tr>
<td>-RESERVED-</td>
<td>0x000f</td>
<td>15</td>
</tr>
<tr>
<td>Divert RSF</td>
<td>0x0010</td>
<td>16</td>
</tr>
<tr>
<td>Divert Busy</td>
<td>0x0011</td>
<td>17</td>
</tr>
<tr>
<td>Divert No Answer</td>
<td>0x0012</td>
<td>18</td>
</tr>
<tr>
<td>Divert Follow Me</td>
<td>0x0013</td>
<td>19</td>
</tr>
<tr>
<td>Divert TOW Schedule</td>
<td>0x0014</td>
<td>20</td>
</tr>
<tr>
<td>PIN Digits</td>
<td>0x0015</td>
<td>21</td>
</tr>
<tr>
<td>Description</td>
<td>Hex</td>
<td>Decimal</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>PIN Rights</td>
<td>0x0016</td>
<td>22</td>
</tr>
<tr>
<td>Off Net Bar</td>
<td>0x0017</td>
<td>23</td>
</tr>
<tr>
<td>Follow on Break Out Sequence</td>
<td>0x0018</td>
<td>24</td>
</tr>
<tr>
<td>Station is Manager</td>
<td>0x0019</td>
<td>25</td>
</tr>
<tr>
<td>Speed List</td>
<td>0x001a</td>
<td>26</td>
</tr>
<tr>
<td>Divert Barred/Allowed List Type</td>
<td>0x001b</td>
<td>27</td>
</tr>
<tr>
<td>Divert Barred/Allowed List</td>
<td>0x001c</td>
<td>28</td>
</tr>
<tr>
<td>Divert Locations</td>
<td>0x001d</td>
<td>29</td>
</tr>
<tr>
<td>Break Limit</td>
<td>0x001e</td>
<td>30</td>
</tr>
<tr>
<td>LCR Old National</td>
<td>0x001f</td>
<td>31</td>
</tr>
<tr>
<td>LCR New National</td>
<td>0x0020</td>
<td>32</td>
</tr>
<tr>
<td>LCR Old International</td>
<td>0x0021</td>
<td>33</td>
</tr>
<tr>
<td>LCR New International</td>
<td>0x0022</td>
<td>34</td>
</tr>
<tr>
<td>Multi Lingual Announcements</td>
<td>0x0023</td>
<td>35</td>
</tr>
<tr>
<td>Number Lists</td>
<td>0x0024</td>
<td>36</td>
</tr>
<tr>
<td>Language</td>
<td>0x0025</td>
<td>37</td>
</tr>
<tr>
<td>Switch Configuration</td>
<td>0x0026</td>
<td>38</td>
</tr>
<tr>
<td>Virtual Message List</td>
<td>0x0027</td>
<td>39</td>
</tr>
<tr>
<td>Number Of Messages</td>
<td>0x0028</td>
<td>40</td>
</tr>
<tr>
<td>GUI Language</td>
<td>0x0029</td>
<td>41</td>
</tr>
<tr>
<td>Carrier Code</td>
<td>0x002a</td>
<td>42</td>
</tr>
<tr>
<td>Barred Categories</td>
<td>0x002b</td>
<td>43</td>
</tr>
<tr>
<td>Outgoing Barred/Allowed Ignore</td>
<td>0x002c</td>
<td>44</td>
</tr>
<tr>
<td>Incoming Barred/Allowed Ignore</td>
<td>0x002d</td>
<td>45</td>
</tr>
<tr>
<td>Divert Barred/Allowed Ignore</td>
<td>0x002e</td>
<td>46</td>
</tr>
<tr>
<td>Account Code Minimum Length</td>
<td>0x002f</td>
<td>47</td>
</tr>
<tr>
<td>Timezone Geographical Map</td>
<td>0x0030</td>
<td>48</td>
</tr>
<tr>
<td>PIN Encryption Method</td>
<td>0x0031</td>
<td>49</td>
</tr>
<tr>
<td>Silent Disconnect</td>
<td>0x0032</td>
<td>50</td>
</tr>
<tr>
<td>Postpaid Flag</td>
<td>0x0033</td>
<td>51</td>
</tr>
<tr>
<td>Hunt On Busy</td>
<td>0x0034</td>
<td>52</td>
</tr>
<tr>
<td>Hunt On No Answer</td>
<td>0x0035</td>
<td>53</td>
</tr>
<tr>
<td>Hunt Always</td>
<td>0x0036</td>
<td>54</td>
</tr>
<tr>
<td>Hunt RESERVED</td>
<td>0x0037</td>
<td>55</td>
</tr>
<tr>
<td>Help Line Address</td>
<td>0x0038</td>
<td>56</td>
</tr>
<tr>
<td>Legacy</td>
<td>0x0039</td>
<td>57</td>
</tr>
<tr>
<td>Disable</td>
<td>0x003a</td>
<td>58</td>
</tr>
<tr>
<td>VARS</td>
<td>0x003b</td>
<td>59</td>
</tr>
<tr>
<td>VARS Mapping</td>
<td>0x003c</td>
<td>60</td>
</tr>
<tr>
<td>Toll Free Beep ID</td>
<td>0x003d</td>
<td>61</td>
</tr>
<tr>
<td>Toll Free Beep Type</td>
<td>0x003e</td>
<td>62</td>
</tr>
<tr>
<td>Description</td>
<td>Hex</td>
<td>Decimal</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Termination Number Ranges</td>
<td>0x003f</td>
<td>63</td>
</tr>
<tr>
<td>Termination Number Range Policy</td>
<td>0x0040</td>
<td>64</td>
</tr>
<tr>
<td>Control Plan Version Hiding</td>
<td>0x0041</td>
<td>65</td>
</tr>
<tr>
<td>Toll Free Beeps Required</td>
<td>0x0042</td>
<td>66</td>
</tr>
<tr>
<td>Bar Pay Phone Callers</td>
<td>0x0043</td>
<td>67</td>
</tr>
<tr>
<td>Bar Cell Phone Callers</td>
<td>0x0044</td>
<td>68</td>
</tr>
</tbody>
</table>

**Note:** Each service may have its own specific tags in a separate tag range.

### VPN primary tags

Here is a list of the VPN primary tags, used in the VPN service.

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network SD No Check</td>
<td>0x30001</td>
<td>196609</td>
</tr>
<tr>
<td>Present Private Address</td>
<td>0x30002</td>
<td>196610</td>
</tr>
<tr>
<td>Bar All Incoming</td>
<td>0x30003</td>
<td>196611</td>
</tr>
<tr>
<td>Bar Off Network Incoming</td>
<td>0x30004</td>
<td>196612</td>
</tr>
<tr>
<td>PIN Prefix</td>
<td>0x30005</td>
<td>196613</td>
</tr>
<tr>
<td>Account Code Prefix</td>
<td>0x30006</td>
<td>196614</td>
</tr>
<tr>
<td>Alternate Station Prefix</td>
<td>0x30007</td>
<td>196615</td>
</tr>
<tr>
<td>Off Network Prefix</td>
<td>0x30008</td>
<td>196616</td>
</tr>
<tr>
<td>Speed Dial Prefix</td>
<td>0x30009</td>
<td>196617</td>
</tr>
<tr>
<td>PIN Length</td>
<td>0x3000a</td>
<td>196618</td>
</tr>
<tr>
<td>Account Code Length</td>
<td>0x3000b</td>
<td>196619</td>
</tr>
<tr>
<td>Station Length</td>
<td>0x3000c</td>
<td>196620</td>
</tr>
<tr>
<td>Off Network Call Barred</td>
<td>0x3000d</td>
<td>196621</td>
</tr>
<tr>
<td>Station Is Manager</td>
<td>0x3000e</td>
<td>196622</td>
</tr>
<tr>
<td>Restrict Calling Address</td>
<td>0x3000f</td>
<td>196623</td>
</tr>
<tr>
<td>Allow Short Extensions</td>
<td>0x30010</td>
<td>196624</td>
</tr>
<tr>
<td>Hunting List 1</td>
<td>0x30011</td>
<td>196625</td>
</tr>
<tr>
<td>Hunting List 2</td>
<td>0x30012</td>
<td>196626</td>
</tr>
<tr>
<td>Hunting List 3</td>
<td>0x30013</td>
<td>196627</td>
</tr>
<tr>
<td>Hunting List 4</td>
<td>0x30014</td>
<td>196628</td>
</tr>
<tr>
<td>Hunting List 5</td>
<td>0x30015</td>
<td>196629</td>
</tr>
<tr>
<td>Hunting List Default</td>
<td>0x30016</td>
<td>196630</td>
</tr>
<tr>
<td>Hunting To List 1</td>
<td>0x30017</td>
<td>196631</td>
</tr>
<tr>
<td>Hunting To List 2</td>
<td>0x30018</td>
<td>196632</td>
</tr>
<tr>
<td>Hunting To List 3</td>
<td>0x30019</td>
<td>196633</td>
</tr>
<tr>
<td>Hunting To List 4</td>
<td>0x3001a</td>
<td>196634</td>
</tr>
<tr>
<td>Hunting To List 5</td>
<td>0x3001b</td>
<td>196635</td>
</tr>
<tr>
<td>Hunting To List Default</td>
<td>0x3001c</td>
<td>196636</td>
</tr>
<tr>
<td>Send Identical CPN</td>
<td>0x3001d</td>
<td>196637</td>
</tr>
<tr>
<td>Match Undefined Extensions</td>
<td>0x3001e</td>
<td>196638</td>
</tr>
<tr>
<td>Description</td>
<td>Hex</td>
<td>Decimal</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Hunting Configuration</td>
<td>0x30020</td>
<td>196640</td>
</tr>
<tr>
<td>Hunting Scheduling</td>
<td>0x30060</td>
<td>196704</td>
</tr>
<tr>
<td>SCI ID</td>
<td>0x30100</td>
<td>196864</td>
</tr>
<tr>
<td>SCI Data</td>
<td>0x30101</td>
<td>196865</td>
</tr>
<tr>
<td>Dialing Prefix Length</td>
<td>0x30200</td>
<td>197120</td>
</tr>
<tr>
<td>Calling On Network List</td>
<td>0x30310</td>
<td>197392</td>
</tr>
<tr>
<td>Calling On Network List Type</td>
<td>0x30311</td>
<td>197393</td>
</tr>
<tr>
<td>Calling Off Network List</td>
<td>0x30320</td>
<td>197408</td>
</tr>
<tr>
<td>Calling Off Network List Type</td>
<td>0x30321</td>
<td>197409</td>
</tr>
<tr>
<td>Calling PIN Always List</td>
<td>0x30330</td>
<td>197424</td>
</tr>
<tr>
<td>Calling PIN Always List Type</td>
<td>0x30331</td>
<td>197425</td>
</tr>
<tr>
<td>Calling PIN Never List</td>
<td>0x30340</td>
<td>197440</td>
</tr>
<tr>
<td>Calling PIN Never List Type</td>
<td>0x30341</td>
<td>197441</td>
</tr>
<tr>
<td>Called On Network LIST</td>
<td>0x30350</td>
<td>197456</td>
</tr>
<tr>
<td>Called On Network List Type</td>
<td>0x30351</td>
<td>197457</td>
</tr>
<tr>
<td>Called Off Network List</td>
<td>0x30360</td>
<td>197472</td>
</tr>
<tr>
<td>Called Off Network List Type</td>
<td>0x30361</td>
<td>197473</td>
</tr>
<tr>
<td>Called PIN Always List</td>
<td>0x30370</td>
<td>197488</td>
</tr>
<tr>
<td>Called PIN Always _List Type</td>
<td>0x30371</td>
<td>197489</td>
</tr>
<tr>
<td>Called PIN Never List</td>
<td>0x30380</td>
<td>197504</td>
</tr>
<tr>
<td>Called PIN Never List Type</td>
<td>0x30381</td>
<td>197505</td>
</tr>
</tbody>
</table>

**Zones**

VPN work zone functionality relies on profile fields of the zone type being set up in ACS. For more information about zone profile fields, see *ACS User's Guide* and *LCP User's Guide*.

**VPN Analyze**

**Node description**

The VPN Analyze node allows you to break down the digits contained in the Pending TN Buffer. It parses the optional VPN prefix fields, placed into dedicated buffers, and the content and type of the actual termination number, placed in Pending TN Buffer. Depending on the outcome, it may replace the original content of the Pending TN Buffer.

VPN Analyze checks the following:

- VPN Network Site Code
- Mapped Network Prefix
- Optional Prefixes
- Termination Number
Node description

VPN Network Site Code
The first digits in the Pending TN Buffer are compared with the site codes for all defined VPNs. If a match is found, then the network id for the VPN of the matched site code is compared with the network id for the current VPN. If the ids are the same, then the Pending TN Type is set to ‘Private’ (called number is on-net). If they are different, then the Pending TN Type is set to ‘Public’ (called number is off-net).

Mapped Network Prefix
If no match is found for the VPN site code, then VPN Analyze tries to match the first digits of the Pending TN Buffer against all the mapped network prefixes of the owning VPN. If a match is found then the site code of the VPN of the matched network prefix is replaced in the Pending TN Buffer by the mapped network prefix. The network id of the VPN for the matched network prefix is compared with the network id for the current VPN. If the ids are the same, then the Pending TN Type is set to ‘Private’ (called number is on-net). If they are different, then the Pending TN Type is set to ‘Public’ (called number is off-net).

Optional Prefixes
The dialed digits can be prefixed with one or more of the following components. They can appear in any order.

| PIN Number: | Indicated by the PIN Prefix. If present, this is placed in the PIN Buffer. |
| Account Code: | Indicated by the Account Code prefix. If present, this is placed in the Account Code Buffer. |
| Alternate Station ID: | Indicated by the Alternate Station prefix. If present, this is placed in the Calling OnNet Address Buffer. |

Termination Number
Only one of the following must be present. This must be the last item in the digits string.

| Speed Dial: | Indicated by the Speed Dial prefix. There must be at least one and at most three digits remaining. The remaining digits are taken as the speed dial number and are copied into the Sub-Tag Buffer as a numeric value. |
| Off-Net: | Indicated by the Off Net prefix. The remaining digits are taken off net number and are copied into the Pending TN Buffer. |
| On-net: | In the absence of either of the above prefixes, the remaining digits are considered to be an On-Net address and are copied into the Pending TN Buffer. |

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Availability
Available in VPN.

Restrictions
Telephony is not permitted after the CollectFail branch.

Node exits
This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The decode did not fail and no alternate station was found.</td>
</tr>
<tr>
<td>2</td>
<td>AltStation</td>
<td>An alternate station has been found</td>
</tr>
<tr>
<td>3</td>
<td>DecodeFail</td>
<td>A decode failure has occurred.</td>
</tr>
<tr>
<td>4</td>
<td>CollectFail</td>
<td>A collect info failure has occurred.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure VPN Analyze screen.
Configuring the node

Follow these steps to set prefix numbers.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Options can be excluded using the following values in the **Exclude Flags** box. Exclude:  
  - Alternate Station = 0x1  
  - PIN number = 0x2  
  - Account Code = 0x4  
  - Off-Net number = 0x8  
  - Speed-Dial number = 0x10 |
| 2    | The **Get More Digits** box lets you specify that CollectInformation should be used if there are insufficient digits for parsing. |
| 3    | The **Buffer ID** value for the Speed Dial Buffer must be 5, to match the Collect To SubTag buffers (which are currently fixed at 5 and cannot be modified). |
| 4    | Click **Save**. |

**Note:** Decode failure occurs when:

- Insufficient digits are present to decode an optional prefix.
- Field already parsed.
- Excluded fields are present.

VPN Caller is On-Net

**Node description**

The VPN Caller is On-Net node allows you to check if the incoming caller is on-net.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Availability**

Available in VPN.

**Restrictions**

A control plan may contain as many VPN Caller is On-Net nodes as required.
Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>A private calling and called address is defined and the calling network ID matches the called network ID.</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>no match</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure VPN Caller is On-Net screen.

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

VPN CLI Lookup

Node description

The VPN CLI Lookup node allows you to set the Originating Network ID for the current service interaction. The node matches a calling number buffer with the physical address of a VPN station.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Restrictions

A control plan may contain as many Get Hunting Number nodes as required.
Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On This Net</td>
<td>The value matched the physical address of a VPN station in this network.</td>
</tr>
<tr>
<td>2</td>
<td>On Another Net</td>
<td>The value matched the physical address of a VPN station in another network.</td>
</tr>
<tr>
<td>3</td>
<td>Off Net</td>
<td>The value did not match any known VPN station physical address.</td>
</tr>
<tr>
<td>4</td>
<td>Macro Fail</td>
<td>There was a failure.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure VPN CLI Lookup screen.

Configuring the node

Follow these steps to configure the VPN CLI Lookup.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>You can set the node to check the:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Calling Logical</strong> number buffer,</td>
</tr>
<tr>
<td></td>
<td>• <strong>Calling Network</strong> value, or</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>Calling Party ID from the invoking message.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If multiple buffers have been selected, the first will be used.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Result:</strong> The node will then branch based on the result.</td>
</tr>
</tbody>
</table>

**VPN Get Hunting Number**

**Node description**

*Warning:* This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the **Get Hunting Number** feature node.

The VPN Get Hunting Number feature node allows you to search a list of termination numbers and timeout pairs. On each iteration, the node sets the PendingTN and timeout using the next number on the list until no numbers remain.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Availability**

Available in VPN.

**Restrictions**

None.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Next Number</td>
<td>A number is found</td>
</tr>
<tr>
<td>2</td>
<td>No More Numbers</td>
<td>No numbers remain</td>
</tr>
<tr>
<td>3</td>
<td>Failure</td>
<td>General failure</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure VPN Get Hunting Number screen.

![Configure VPN Get Hunting Number](image)

Configuring the node

The hunting numbers and timeouts are set for every station through the VPN Station Hunting Planner screen.

This node requires no configuration data. You may change the **Node name**, if required.

VPN Load Station

Node description

The VPN alternate station allows you to load an alternate calling station profile.

If defined, the network address of the station to call is in Calling On-Net Address. If it is not defined, then the VPN alternate station node prompts you to enter a station ID, using the specified announcements. You are prompted up to a defined maximum number of times before following the Not Loaded exit.

Node description

The Load Station process is described below.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calling on-net address is defined?</td>
</tr>
<tr>
<td></td>
<td>If there is a value currently defined in the calling on-net address, then skip directly to stage 3.</td>
</tr>
<tr>
<td>2</td>
<td>Prompt for Input.</td>
</tr>
<tr>
<td></td>
<td>- Check if max iterations reached (follow Not Loaded).</td>
</tr>
<tr>
<td></td>
<td>- Collect a digit string, between 2 and 16 digits in length.</td>
</tr>
<tr>
<td></td>
<td>- On input failure, increment the iteration counter and restart this stage (stage 2).</td>
</tr>
<tr>
<td></td>
<td>- Also check here for Canceled (follow Not Loaded) or Abandoned (follow Abandoned).</td>
</tr>
<tr>
<td>3</td>
<td>Load the profile?</td>
</tr>
<tr>
<td></td>
<td>- Load the specified station profile from the database.</td>
</tr>
<tr>
<td></td>
<td>- Go to stage 4 on success.</td>
</tr>
<tr>
<td></td>
<td>- If the data is not found and max iterations are reached then follow the Not Loaded branch.</td>
</tr>
<tr>
<td></td>
<td>- Otherwise return to stage 2 for re-prompt.</td>
</tr>
<tr>
<td>4</td>
<td>Success.</td>
</tr>
<tr>
<td></td>
<td>Update the callingOnNetAddress in the engine context to correspond to the new station</td>
</tr>
</tbody>
</table>
profile

Notes:

- If you were prompted, then the collected digits are not placed in the engine context callingOnNetAddress buffer until the profile has been successfully loaded.
- If max iterations is set to 0, then you should never be prompted. In this case the announcement ids may not actually be defined. This is permitted by the editor and compiler.
- This feature does not check the PIN for the remote profile, or any specific access rights. A subsequent PIN authorization feature node is typically required.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>See node description.</td>
</tr>
<tr>
<td>2</td>
<td>Not Loaded</td>
<td>See node description.</td>
</tr>
<tr>
<td>3</td>
<td>Abandoned</td>
<td>See node description.</td>
</tr>
<tr>
<td>4</td>
<td>Collected</td>
<td>See node description.</td>
</tr>
</tbody>
</table>

Restrictions

Telephony is not permitted after the Abandoned branch.
Configuration screen

Here is an example Configure VPN Load Station screen.

![Configure VPN Load Station](image)

Configuring the node

Follow these steps to edit the node

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Initial and Reprompt Announcements to set the initial prompt and re-prompt announcement.</td>
</tr>
<tr>
<td>2</td>
<td>Set the <strong>Max Iterations</strong> value to the number of retries.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

VPN Lookup

Node description

The VPN Lookup allows you to translate an On-Net number to the corresponding Network address from VPN_STATION in the database. The node uses the PendingTN type to determine if a lookup should be performed.

The VPN Lookup process is described below.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1     | If the PendingTN type is:
VPN Feature Nodes

Chapter 27

OffNet, or Unknown, return Success
SpeedDial, return Failure
OnNet, then go to stage 2

2
Look up the corresponding NETWORK address from VPN_STATION in the database using the current network ID. If:
- Found, replace the pending TN with that OffNet address, and return Success
- Otherwise, return Failure

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>See node description.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>See node description.</td>
</tr>
</tbody>
</table>

Configuration screen

Configuring the node

This node requires no configuration data. You may change the Node name, if required.
VPN Mobile Analyze

Node description

The VPN Mobile Analyze node allows you to break down the digits contained in the Pending Termination Number Buffer. This node differs from the VPN Analyze node in that it does not use the network defined prefixes to analyze the type of call being made, unless the option to strip prefixes is enabled in the configuration file.

The logic of the node is to check, in order:

- Network Site Code
- Mapped Network Prefix
- Global Special Numbers
- Network Speed Dial
- Station Speed Dial
- Network Station Extensions.

If a match is:

- Found, the number type is set accordingly and the node exits through the appropriate exit.
- Not found, the number of digits needed to make the shortest possible match is used to collect more digits and the whole process is started again.

This matching process is repeated until a valid match is found. If no match is found, then the number is assumed to be off-net and the off-net branch is taken.

Node description

Network Site Code

VPN Mobile Analyze compares the first digits in the pending TN buffer with the site codes for all defined VPNs. If a match is found, then the network ID of the VPN for the matched site code is compared with the network ID of the current VPN. If the IDs are the same, then the pending TN type is set to 'Private' (on-net), if they are different, it is set to 'Public' (off-net).

Mapped Network prefix

If there is no match for the network site code, then the first digits of the pending TN buffer are compared with all the mapped network prefixes of the owning VPN. If a match is found, then the site code of the VPN for the matched network prefix is replaced in the pending TN buffer by the mapped network prefix. In addition, the network ID of the VPN for the matched network prefix is compared with the network ID for the current VPN. If the IDs are the same, then the pending TN type is set to 'Private' (on-net), otherwise it is set to 'Public' (off-net).

Stripping off number prefixes

When the corresponding configuration option in the eserv.config file is enabled, the node strips off the VPN network speed dial or off-net prefix prior to number matching. If a match is found, the node exits via the appropriate branch, depending on the applicable number match.

Global Special Numbers

The global special number check, network speed dial check, and station speed dial checks can be enabled and disabled using the check boxes in the node.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Restrictions

Telephony is not permitted after the Error branch.

Node exits

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Global Special</td>
<td>Match has been made with Global Special number.</td>
</tr>
<tr>
<td>2</td>
<td>Network Speed Dial</td>
<td>Match has been made with Network Speed Dial number.</td>
</tr>
<tr>
<td>3</td>
<td>Station Speed Dial</td>
<td>Match has been made with Station Speed Dial number.</td>
</tr>
<tr>
<td>4</td>
<td>On Net</td>
<td>Match was made with extension number of a VPN station on the same VPN Network as the caller.</td>
</tr>
<tr>
<td>5</td>
<td>Off Net</td>
<td>No match was made.</td>
</tr>
<tr>
<td>6</td>
<td>Error</td>
<td>General failure</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure VPN Mobile Analyze screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the following check boxes to enable or disable the check comparisons against specific number lists:  &lt;br&gt;• Global Special  &lt;br&gt;• Network Speed Dial  &lt;br&gt;• Station Speed Dial</td>
</tr>
<tr>
<td>2</td>
<td>Enter the decimal value of the tag for the profile block in the text box below any selected box.  &lt;br&gt;Note: The tag for Speed Dial is 26. Refer to Profile Blocks and Tags (on page 2).</td>
</tr>
<tr>
<td>3</td>
<td>Click Save</td>
</tr>
</tbody>
</table>
VPN Originating CUG

Node description

The Originating CUG node analyzes the calling and called numbers contained in the calling private network or logical calling buffer, and the pending TN buffer, respectively.

It determines whether the calling and called numbers are in the same logical CUG, and it determines the CUG type. The following rules apply:

- If the calling number is in a restricted CUG, then the called number must be in the same CUG. If it is not in the same CUG, then the CUG failure branch of the node is followed.
- If a VPN station is in more than one CUG, one of which is non-restricted, then the VPN station is also deemed to be non-restricted.
- If the calling number is not in a CUG or it is in a non-restricted CUG, then the success branch of the node is followed.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Restrictions

None.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Decode succeeded as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Calling number is not in CUG or it is in a non-restricted CUG.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Calling number is in a restricted CUG, called number is on-net and both numbers are in the same CUG.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>General errors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  ACS engine pending context PendingTN or Logical Address buffer may not contain enough digits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Error returned from Oracle.</td>
</tr>
<tr>
<td>3</td>
<td>CUG Error</td>
<td>Decode failed as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Calling number is in a restricted CUG, called number is on-net.</td>
</tr>
<tr>
<td>Exit</td>
<td>Cause</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Calling number is in a restricted CUG and called number is not in the same CUG (the called number may be on-net, off_net, on a different VPN, or a non VPN number).</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure VPN CUG Originating screen.

![Configuration screen](image)

**Configuring the node**

This node requires no configuration data. You may change the **Node name**, if required.

**VPN Redirection Counter Branching**

**Node description**

The Redirection Counter branching node allows you to compare the Redirection Information Counter received in the invoking message. The node lets you define an integer constant for the comparison. One of the following branches is taken, as appropriate:

- Less than
- Equal to
- More than

**Note:** If no value is supplied for the redirection counter, then the error branch is taken.

**Node icon**

![Node icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Availability

Available in VPN.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Less Than</td>
<td>The redirection counter was less than the value.</td>
</tr>
<tr>
<td>2</td>
<td>Equal To</td>
<td>The redirection counter was equal to the value.</td>
</tr>
<tr>
<td>3</td>
<td>More Than</td>
<td>The redirection counter was more than the value.</td>
</tr>
<tr>
<td>4</td>
<td>Fail</td>
<td>The redirection counter was not supplied.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Redirection Counter Branching screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**VPN Set Redirection Counter**

**Node description**

The Set Redirection Counter node allows you to set an integer constant as the redirection information counter. This value is then used as the redirection information counter in the next Connect message sent by the system.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Availability**

Available in VPN.

**Restrictions**

A control plan may contain as many Get Hunting Number nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Redirection succeeded</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>Redirection failed</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set VPN Set Redirection Counter screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter the value of the new Redirection Information Counter in the Set to value field.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

VPN Set Tariff Code From Profile

Node description

The Set Tariff Code node allows you to add network charging data to the next outgoing TCAP primitive. The node first looks at the station profile, then the network profile and finally the customer profile, and selects the network charging data, based on the first successful match.

The SCI/FCI data for the Customer/Network/Station can be accessed and set through the VPN Customer/Network/Station provisioning screens.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Availability**

Available in VPN.

**Restrictions**

A control plan may contain as many VPN Set Tariff Code from Profile nodes as required.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tariff Set</td>
<td>Tariff successfully set</td>
</tr>
<tr>
<td>2</td>
<td>No Tariff Found</td>
<td>Tariff not found</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>General failure message</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Tariff Code From Profile screen.

![Configuration screen](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Tariff From Profile from the list.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

VPN Subscriber Lookup

Node description

The VPN Subscriber Lookup node allows you to look up a number buffer and load the VPN network and station profiles associated with that number. This will store them in chassis context so that other nodes (for example, Set Pending TN from Profile, Profile Branching) can use the information.

**Note:** This can be used with any service library, not just VPN.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many VPN Subscriber Lookup nodes as required. This node may be made available in Non-Graphical Editing mode (see *CPE User’s Guide* for further explanation).

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Profile was successfully retrieved from the database.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>Profile was not retrieved from the database.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure VPN Subscriber Lookup screen.

![Configure VPN Subscriber Lookup screen](image)

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the number buffer from the Which Number? drop down list. Available buffers are:  
- Dialed Service Number  
- Calling Logical Number  
- Calling Network Address  
- Calling Party ID  
- Pending Termination Number  
- Original Called Number |
| 2    | Click Save. |

Note: For more information on number buffers, refer to the CPE User's Guide.

VPN Terminating CUG

Node description

The VPN Terminating CUG node analyzes the calling and called numbers contained in the Calling Private Network or Logical Calling Buffer, and the PendingTN Buffer respectively.
The node determines whether the calling and called numbers are in the same logical CUG, and also determines the CUG type. If required, it also collects the PIN for the called number's CUG. The following rules apply:

- If the CUG PIN is required, and the called number is in a CUG, and the calling number is not in a CUG, and the maximum number of retry attempts is reached, then the CUG PIN failure branch of the node is followed.
- If the called number is in a CUG, and the calling number is not in a CUG, and the correct PIN has been entered, then the success branch of the node is also followed.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Restrictions

None.

Node exits

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Decode succeeded as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Called number is not in a CUG.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Calling and called numbers are in the same CUG.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3  Called number is in a CUG, calling number is not in a CUG and correct PIN has been collected.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>General errors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  ACS Engine context PendingTN or Logical Address buffer may not contain enough digits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Error returned from Oracle.</td>
</tr>
<tr>
<td>3</td>
<td>CUG Error</td>
<td>Decode failed as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Available for future enhancements.</td>
</tr>
<tr>
<td>4</td>
<td>CUG PIN Error</td>
<td>Decode failed as follows:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Called number is in a CUG, calling number is not in a CUG and number of retry attempts for collecting the PIN has been exceeded.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure VPN CUG Terminating screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter the number of retry attempts for collecting the PIN in the Number of PIN Attempts field.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Collect PIN Introduction announcement from the lists.</td>
</tr>
<tr>
<td>3</td>
<td>Select the Invalid PIN Entered announcement from the lists.</td>
</tr>
<tr>
<td>4</td>
<td>Select the Maximum PIN Attempts Reached announcement from the lists.</td>
</tr>
<tr>
<td>5</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
VPN Voice Mail Number Configuration

Node description

The Voice Mail Number Configuration node allows you to modify the Pending Termination Number to provide compatibility with voicemail systems. The node allows you to modify a selected number buffer by inserting some defined digits at an offset, also defined in the feature node.

Example:

Insert At Position: 5
Insert What (Pattern): 888
Buffer (Call Context Number): pendingTN (01473200)

In this case the final number would be 01473888200.

The final number is copied to the pendingTN buffer and the node is exited through the SUCCESS branch.

If the length of the final number is too long (typically 32 digits or more), or if there is no number available for the selected buffer under the processing call, then no number is copied to the pendingTN buffer and the node is exited through the ERROR branch.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Availability

Available in VPN.

Restrictions

A control plan may contain as many VPN Voice Mail Number Configuration nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>See node description.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>See node description.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Voice Mail Number Configuration screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter the offset where the pattern list should be inserted in the <strong>Insert At Position</strong> field.</td>
</tr>
<tr>
<td>2</td>
<td>Enter the string to be inserted in the <strong>Pattern List</strong> field.</td>
</tr>
</tbody>
</table>
| 3    | Select the buffer to use to form the final voice mail number from the **Call Context Number** drop down list.  
      **Note:** For a definition of each buffer, refer to the *CPE User’s Guide.* |
| 4    | Click **Save**. |
Chapter 28

XMS Content Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Messaging Manager XMS Content feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

XMS Content Feature Nodes List

This table lists all the available Messaging Manager feature nodes in the XMS Content feature group. If any custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

Note: For information about the available Messaging Manager profile fields, see Messaging Manager Profile Fields (on page 12).

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Node Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extract Content (see page 600)</td>
<td>The Extract Content feature node extracts a part of a profile field, or incoming SMS message, and stores it in a specified profile field.</td>
</tr>
<tr>
<td>Extract Number (on page 603)</td>
<td>The Extract Number feature node extracts the MSISDN from business card data held in either the SMS TEXT context or configured profile field, and then stores the MSISDN in a profile field.</td>
</tr>
<tr>
<td>Format Text (see page 606)</td>
<td>The Format Text feature node enables a buffer to be populated with a formatted string based on a static string that may include place holders for the contents of other selectable buffers.</td>
</tr>
<tr>
<td>Keyword Search and Replace (see page 608)</td>
<td>The Keyword Search and Replace node branches, depending on whether or not a particular word was matched in the message.</td>
</tr>
<tr>
<td>Message Data Branching (on page 611)</td>
<td>The Message Data Branching node branches depending on whether the current message contains text or data, according to the data coding scheme.</td>
</tr>
<tr>
<td>Text Content Branching (see page 611)</td>
<td>The Text Content Branching node branches depending on the content of the short message.</td>
</tr>
</tbody>
</table>
Extract Content

Node description

The Extract Content feature node extracts a part of a profile field, or incoming SMS message, and stores it in a specified profile field.

Note: The part extracted is a string (that can represent a number or text) delimited by a white space character. For the various white space characters used by the supported alphabets see www.unicode.org.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Extract Content nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The required section of the SMS was extracted and stored.</td>
</tr>
</tbody>
</table>
| 2    | Error  | The section of SMS could not be extracted, for the following reasons:  
|      |       | ● The input type expected was numeric but the extracted section contained non numeric digits for the alphabet in use.  
|      |       | ● The input type expected was numeric but "+" found after the start of the extracted section.  
|      |       | ● The content did not match the expected content type.  
|      |       | ● There are not enough words in the source to match the word number extraction criteria. |
Configuration screen

Here is an example Configure Extract Content screen.

Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | For the source, you can select either a profile, or the SMS buffer. To select:  
     |       |   ● A profile, select the **Source Location** and **Source Field**  
     |       |   ● SMS buffer content, select the **Use SMS Payload** check box |
## Step Action

### 2
In the **Word number** field, enter the number of the word, or range of words, to extract from the source.

**Note:** The Word number can be positive, zero or negative.

Suppose the message reads "It was the best of times".
- A positive number means that you count from the left-hand side, or start, of the message.
  
  **Example:** 3 would extract "the".
- 0 or 1 means select the first word on the left-hand side, or start, of the message.
  
  **Example:** 1 would extract "It".
- A negative number means count back from the right-hand side, or end, of the message.
  
  **Example:** -2 would extract "of".
- A number followed by a colon means from that numbered word to the end.
  
  **Example:** 3: would extract "the best of times".
- A colon followed by a number means from the beginning (word 1) to the number word specified.
  
  **Example:** :4 would extract "It was the best".
- A negative followed by a colon means count back from the right then all to the end.
  
  **Example:** -3: would extract "best of times".
- Two numbers separated by a colon means a range of first specified word to the last specified.
  
  **Example:** 3:5 would extract "the best of".
- Two negative numbers separated by a colon mean first number from the right to the second number from the right.
  
  **Example:** -4:-2 would extract "the best of"
- Just a colon (that is, ":") means the entire string.

**Note:** Some ranges, such as 3:-7 for this example will just produce a blank string in the target field and will exit from the Error branch because there are not enough words.

### 3
If the extracted word needs to be validated as a number, select the **Numeric** check box. The node will exit from the Error branch if the selection is not numeric.

### 4
Select the extracted content store location from the **Location** drop down list.

### 5
Select the store location field from the **Field** drop down list.

### 6
Click **Save**.

## Example

Here is an example of the process, using the Extract Content node to extract the email forwarding address.

### Stage Description

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1     | Users can enable forwarding by sending an SMS, for example:  
  Fwd on joe.bloggs@telco.com |
| 2     | The control plan would use the Format Text node to check if it was a valid message. |
| 3     | The Extract Content node is configured as shown below. |
Result: This node would store the third word (that is, 'joe.bloggs@telco.com') in the user's profile under the 'Email Address' tag.

Extract Number

Node description

The Extract Number feature node extracts the MSISDN from business card data held in either the SMS TEXT context or configured profile field, and then stores the MSISDN in a profile field.

The node will process the provided text to extract a valid MSISDN. Non-numeric numbers will be ignored unless they constitute part of the number.

The following examples demonstrate valid formats:

- "(012) 345 6789"
- "0123,456,789"
- "+44-123-456"
- "+44 123 456789"
- "(+44)123-456789"

Note: The business card data must contain only one MSISDN. The MSISDN will be extracted without normalization.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Extract Number nodes as required.

**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>MSISDN successfully extracted and stored in the specified profile field</td>
</tr>
<tr>
<td>2</td>
<td>Too Many Numbers</td>
<td>Unable to extract the MSISDN as there was more:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Than one number in the SMS context/profile field</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Digits than the maximum allowed</td>
</tr>
<tr>
<td>3</td>
<td>Error</td>
<td>Either of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• An error occurred reading the business card data, for example. The business card did not contain an MSISDN or it was an invalid number.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Less than the minimum expected digits</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Extract number from business card screen.

![Configuring Extract number from business card screen](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the **Business Card Source**:  
|      |   - **From Profile** to locate the card in a profile  
|      |   - **From SMS** to locate the card in a message (the Source Profile section will be grayed out)  |
| 2    | For a profile location, select the **Source Profile** from the **Source Data Type, Location and Field** drop down lists.  |
| 3    | select the **Destination Profile** where the extracted MSISDN will be stored from the **Destination Data Type, Location and Field** drop down lists.  
|      | **Warning:** Unexpected behavior encountered if the source and destination profiles are the same.  |
| 4    | In the **Minimum** field, type the minimum length allowed for the MSISDN.  
<p>|      | <strong>Note:</strong> The error branch will be followed if the length of the extracted MSISDN is less than the defined minimum length.  |</p>
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 5    | In the **Maximum** field, type the maximum length allowed for the MSISDN.  
*Note:* The too many numbers branch will be followed if the length of the extracted MSISDN is greater than the defined maximum length. |
| 6    | Click **Save**. |

**Format Text**

**Node description**

The Format Text feature node enables a buffer to be populated with a formatted string based on a static string that may include place holders for the contents of other selectable buffers.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Format Text nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The formatting was successful.</td>
</tr>
<tr>
<td>2</td>
<td>Error</td>
<td>There is something wrong with the format string and it cannot be formatted. The output buffer will be unchanged.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example Configure Format Text screen.

![Example Configure Format Text screen](image)

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | In the Target Buffer area, select the buffer to store the formatted string. You can:  
|      | 1. Select a **Target Location** and **Target Field**  
|      | 2. Select the **Use SMS Payload** check box to populate the SMS buffer |
| 2    | If you wish to add the text created in this node to the end of the existing contents of the target buffer, select the **Append to target** check box. |
| 3    | The **Format** field is where you supply the format of the string. This is free-form and allows any text. The variables starting with $ will be substituted at run time by the text in the source buffer specified by the number, for example $1 is the 1st Source, $2 the 2nd Source.  
|      | **Note:** The only valid characters to follow the $ are 1, 2, 3, 4, 5, and $. Anything other than these values will result in the node exiting the Error exit.  
|      | If you wish to use the dollar sign in the string, you must prefix it with $, that is, $$ |
| 4    | There are 5 source areas available. In each of the required source areas, select the **Source Location** and **Source Field**. These buffers can be strings, integers, prefix trees, or dates.  
|      | **Note:** If the source buffer is a date, then a date format can be supplied. This is in the format field followed by {} containing the formatting values, for example, $4{%d/%m/%y}. If no format is specified then the system locale date format will be used. |
Example

Here is an example of the process, using the Format Text node to store the blacklist contents of a user’s profile to send to them.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The user's blacklist contains the following numbers: 1230001 1230015 1230004</td>
</tr>
<tr>
<td>2</td>
<td>You can use the Format Text node to create a string containing the blacklist by configuring the node as shown below.</td>
</tr>
</tbody>
</table>

Result: The formatted string is:
"Your blacklist contains 1230001 1230015 1230004"
This is stored in the SMS payload target buffer. It can then be sent using another node in the control plan.

Keyword Search and Replace

Node description

The Keyword Search and Replace node branches, depending on whether or not a particular word was matched in the message.

The node allows up to five different keywords to be searched for in the short message and will branch according to the word that was matched. It is also possible to replace the word that was matched in the message with something else.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Node exits**

This node has one entry and seven exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matched 1</td>
<td>The keyword specified as Pattern 1 was matched in the message.</td>
</tr>
<tr>
<td>2</td>
<td>Matched 2</td>
<td>The keyword specified as Pattern 2 was matched in the message.</td>
</tr>
<tr>
<td>3</td>
<td>Matched 3</td>
<td>The keyword specified as Pattern 3 was matched in the message.</td>
</tr>
<tr>
<td>4</td>
<td>Matched 4</td>
<td>The keyword specified as Pattern 4 was matched in the message.</td>
</tr>
<tr>
<td>5</td>
<td>Matched 5</td>
<td>The keyword specified as Pattern 5 was matched in the message.</td>
</tr>
<tr>
<td>6</td>
<td>Not Matched</td>
<td>None of the patterns specified in the node were matched</td>
</tr>
<tr>
<td>7</td>
<td>Bypass</td>
<td></td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Keyword Search and Replace screen.

Configuring the node

Follow these steps to edit the Keyword Search and Replace node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter the patterns that are to be searched for in the message.</td>
</tr>
<tr>
<td>2</td>
<td>Enter the replacement values for each searchable pattern.</td>
</tr>
<tr>
<td>3</td>
<td>Select the <strong>Case Sensitive</strong> check box to make search patterns case sensitive.</td>
</tr>
<tr>
<td>4</td>
<td>Select the <strong>Bypass Concatenated</strong> check box to not check for the patterns in concatenated messages.</td>
</tr>
<tr>
<td>5</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The node will search the message for the patterns to be matched in order, and once a match is made will not search any further.
Message Data Branching

Node description

The Message Data Branching node branches depending on whether the current message contains text or data, according to the data coding scheme.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Text Message</td>
<td>The message is text encoded.</td>
</tr>
<tr>
<td>2</td>
<td>Data Message</td>
<td>The message is data encoded.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Message Data Branching screen.

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

Text Content Branching

Node description

The Text Content Branching node branches depending on the content of the short message.
It takes the regular expressions entered into the node and tries to match these expressions to the content of the short message. Matches are done in the order that they appear in the node, as soon as a match is made the branch corresponding to that expression will be taken. The node does not do a "best match", but looks for and takes the first match found.

When a match is found, it branches accordingly; if no match is found the node exits the "Not Matched" exit.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A service control plan may contain as many Text Content Branching nodes as required.

The Text Content Branching node makes use of the Solaris internal regular expression functions, for best results it is recommended that you avoid the use of recursive regular expressions. The use of * and + operators placed inside of parentheses "()" and other * and + operators is likely to result in erroneous branching.

This is an example of a bad regular expression: ^( *[0-9]+)*$

While this is a good version of the same expression: ^ *[0-9][0-9 ]*$

**Node exits**

This node has one entry and six exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Match 1</td>
<td>Short message received matches regular expression 1.</td>
</tr>
<tr>
<td>2</td>
<td>Match 2</td>
<td>Short message received matches regular expression 2.</td>
</tr>
<tr>
<td>3</td>
<td>Match 3</td>
<td>Short message received matches regular expression 3.</td>
</tr>
<tr>
<td>4</td>
<td>Match 4</td>
<td>Short message received matches regular expression 4.</td>
</tr>
<tr>
<td>5</td>
<td>Match 5</td>
<td>Short message received matches regular expression 5.</td>
</tr>
<tr>
<td>6</td>
<td>Not Matched</td>
<td>None of the regular expressions matched the short message.</td>
</tr>
</tbody>
</table>
**Configuration screen**

Here is an example of the Configure Text Content Branching screen.

![Configuration screen](image)

**Configuring the node**

Follow these steps to edit the Text Content Branching node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Determine whether the regular expressions that are to be matched against the short messages are to be case sensitive; if so, select the check box.</td>
</tr>
<tr>
<td>2</td>
<td>Enter up to five regular expressions that the short message is to be matched against.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
Chapter 29

XMS Control Feature Nodes

Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Messaging Manager XMS Control feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

Available Feature Nodes

XMS Control Feature Node List

This table lists all the available Messaging Manager feature nodes in the XMS Control feature group. If any custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

Note: For information about the available Messaging Manager profile fields, see Messaging Manager Profile Fields (on page 12).

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept (see page 616)</td>
<td>The Accept node is used to instruct Messaging Manager to perform an Accept action. This node should be used in preference to the Disconnect Call node specifying 127.</td>
</tr>
<tr>
<td>Attempt Delivery Pending</td>
<td>The Attempt Delivery Pending (ADP) node attempts to deliver the message. This node has no billing engine interaction, and will attempt the delivery of the short message with no account balance check.</td>
</tr>
<tr>
<td>Branch on Domain (see page 618)</td>
<td>The Branch on Domain node allows a service plan to act differently depending on the domains assigned to the message origination or destination domains.</td>
</tr>
<tr>
<td>Node name</td>
<td>Node description</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Discard (see page 620)</strong></td>
<td>The Discard node is used to tell Messaging Manager to perform a discard action.</td>
</tr>
<tr>
<td><strong>MMX EDR (on page 621)</strong></td>
<td>The MMX EDR node takes a literal string for the EDR tag, and a profile buffer for the EDR value.</td>
</tr>
<tr>
<td><strong>Reject (see page 623)</strong></td>
<td>The Reject node is used to send a specified (in this node) ACS release cause to Messaging Manager. This node should be used in preference to the Disconnect Call node specifying the release cause.</td>
</tr>
<tr>
<td><strong>Send Short Message Notification (see page 624)</strong></td>
<td>Use the Send Short Message Notification (SSMN) feature node to construct and send an INTERNAL short message from Messaging Manager that you specify either in the feature node, or by using a notification template defined in ACS.</td>
</tr>
<tr>
<td><strong>Send USSD Message (see page 630)</strong></td>
<td>The Send USSD Message node is used to send a message to the USSD application.</td>
</tr>
<tr>
<td><strong>Send USSD Notification (on page 636)</strong></td>
<td>The Send USSD Notification node is used to send a USSD Notification message to the MSC/handset.</td>
</tr>
<tr>
<td><strong>Set Message Routing (see page 644)</strong></td>
<td>The Set Message Routing node allows a control plan to set routing parameters which determine the routing rule to use, and hence guides outbound path selection.</td>
</tr>
<tr>
<td><strong>Set Originating Address (see page 646)</strong></td>
<td>The Set Originating Address node allows you to set the originating address for all messages that pass through the node to the address specified in the node.</td>
</tr>
</tbody>
</table>

**Accept**

**Node description**

The Accept node is used to instruct Messaging Manager to perform an Accept action. This node should be used in preference to the Disconnect Call node specifying 127.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Accept nodes as required.
Node exits

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The Release Code has been sent.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Accept screen.

```
Configure Accept
   Node name: Accept
       Exit Branches
   Success

Comments Save Cancel
```

Configuring the node

This node requires no configuration data. You may change the Node name, if required.

Attempt Delivery Pending

Node description

The Attempt Delivery Pending (ADP) node attempts to deliver the message. This node has no billing engine interaction, and will attempt the delivery of the short message with no account balance check. This node will also monitor for delivery and returns a message delivery status.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A service control plan may contain as many Attempt Delivery Pending nodes as required.
**Node exits**

This node has one entry and five exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Delivery Failure</td>
<td>SMS delivery failed.</td>
</tr>
<tr>
<td>2</td>
<td>Queued</td>
<td>SMS sent to SMSC, no further monitoring.</td>
</tr>
<tr>
<td>3</td>
<td>Notified</td>
<td>Successful delivery of the message to an SME.</td>
</tr>
<tr>
<td>4</td>
<td>Abort/Abandon</td>
<td>An abort was received from the network, or message abandoned.</td>
</tr>
<tr>
<td>5</td>
<td>Node Failure</td>
<td>Failure due to an internal error, or result message being either unknown, or not of the right type.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Attempt Delivery Pending screen.

![Configure Screen](image)

**Editing the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Select the action for Messaging Manager to take. To cause a:  
  ● Relay action, select the Relay check box  
  ● Route action, deselect the Relay check box |
| 2    | Click Save. |

**Branch on Domain**

**Node description**

The Branch on Domain node allows a service plan to act differently depending on the domains assigned to the message origination or destination domains.
**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![BranchOnDom Icon](image)

**Restrictions**

There is a maximum of one Branch on Domain node in a control plan.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Match</td>
<td>The configured regular expression matches the indicated domain.</td>
</tr>
<tr>
<td>2</td>
<td>No Match</td>
<td>The regular expression does not match the domain.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Branch on Domain screen.
Configuring the node

Follow these steps to edit the Branch on Domain node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select which <strong>Domain</strong> to match on.</td>
</tr>
<tr>
<td>2</td>
<td>Enter the <strong>Pattern</strong> to match against.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Discard**

**Node description**

The Discard node is used to tell Messaging Manager to perform a discard action.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Discard nodes as required.

**Node exits**

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The Release Code has been sent.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Discard screen.
Configuring the node

This node requires no configuration data. You may change the Node name, if required.

**MMX EDR**

**Node description**

The MMX EDR node takes a literal string for the EDR tag, and a profile buffer for the EDR value. Thus, any profile buffer can be written to an MMX EDR. The node stores the string as a profile buffer. This buffer will then be examined by the service loader, and passed back to Messaging Manager as an extension with the tag SM_TAG_CDR_INFO.

EDRs specified by the MMX EDR nodes will appear in the final EDR in alphabetical order instead of following the processing order in the control plan.

The MMX EDR node does not interact with EDR tags from other sources and will not affect or overwrite any of these EDR tags. Therefore, the final EDR record may have duplicated EDR tags if the same EDR tag is defined and used by the MMX EDR node and other different sources.

**Supported profile data types**

The profile data types supported by the MMX EDR node are limited to the following types:

- STRING
- NSTRING
- LNSTRING
- SHORT
- UINTGER
- INTEGER
- BYTE

For other types, you need to use the Format Text (see page 606) node to format the data and save the formatted string into a profile buffer, then configure the profile buffer as the source buffer in the MMX EDR node.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many MMX EDR nodes as required.
**Node exits**

This node has one entry and three exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Value successfully retrieved from profile.</td>
</tr>
<tr>
<td>2</td>
<td>Value not Found</td>
<td>Value not found in profile.</td>
</tr>
<tr>
<td>3</td>
<td>Failure</td>
<td>General failure condition.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure MMX EDR screen.

![Configure MMX EDR screen](image)

**Configuring the node**

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter an EDR Tag in the field.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> When using the MMX EDR node to build a control plan, you need to make sure all given EDR tags are unique across the control plan. If there are any duplicated EDR tags, the last occurrence will overwrite previous ones.</td>
</tr>
<tr>
<td>2</td>
<td>Select a profile location and field to retrieve.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
Reject

Node description

The Reject node is used to send a specified (in this node) ACS release cause to Messaging Manager. This node should be used in preference to the Disconnect Call node specifying the release cause.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Reject nodes as required.

Node exits

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The ACS release cause has been sent to MM.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Reject screen.
Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Reject cause to use from the Release cause drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Send Short Message Notification

Node description

Use the Send Short Message Notification (SSMN) feature node to construct and send an INTERNAL short message from Messaging Manager that you specify either in the feature node, or by using a notification template defined in ACS.

You select the message originator and destination from the following options:

- A fixed number or alphanumeric address. If the address is alphanumeric, the message must be routed through the protocol that supports it, such as EMI, SMPP, or SIP.
- Any existing ACS context digit field, including:
  - The caller or message originator of the current call or SMS.
  - The called party or message destination of the current call or SMS.
- A profile tag containing a comma separated list of destinations.

If required, you can override NPI and TON values in the outgoing message by using a Set, or a Copy feature node before the SSMN feature node in the control plan. You use the Set, or the Copy feature node to set the override values in one or more of the following profile fields:

- SSMN Originating TON Override
- SSMN Destination TON Override
- SSMN Originating NPI Override
- SSMN Destination NPI Override

See NPI and TON Override Profile Fields (on page 19) for more information.

Note: You can use the SSMN feature node in any service control plan. Although the SSMN feature node is installed with Messaging Manager, you can use it in non-Messaging Manager service control plans. The SSMN feature node does not require the use of the Messaging Manager service library.

Important: To use this feature node in a service control plan, an INTERNAL adapter must be configured in the system.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions

A control plan may contain as many Send Short Message Notification feature nodes as required.

Node exits

This feature node has one entry and eight exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Message sent successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Send Failure</td>
<td>Cannot send SLEE event to wrapper.</td>
</tr>
<tr>
<td>3</td>
<td>Params Unavailable</td>
<td>The token specified cannot be found. For example &lt;SMS_TEXT&gt; token, if message text is not available or cannot be converted to Latin-1.</td>
</tr>
<tr>
<td>4</td>
<td>Node Failure</td>
<td>Internal node error. Message not sent.</td>
</tr>
<tr>
<td>5</td>
<td>Timeout</td>
<td>Did not get the expected response within the Timeout number of seconds.</td>
</tr>
<tr>
<td>6</td>
<td>Temporary Error</td>
<td>The returned cause code maps to a temporary error.</td>
</tr>
<tr>
<td>7</td>
<td>Permanent Error</td>
<td>The returned cause code maps to a permanent error.</td>
</tr>
<tr>
<td>8</td>
<td>Abort</td>
<td>The returned cause code maps to an abort error.</td>
</tr>
</tbody>
</table>

Note: The temporary, permanent and abort errors are all configured in the Messaging Manager Action and Error Codes screens. From the main SMS screen, see Services > Messaging Manager> Action and Error Codes and the Error Type column.
Configuration screen

Here is an example Configure Send Short Message Notification screen.

![Configure Send Short Message Notification screen]

Configuring the node

Follow these steps to edit the Send Short Message Notification feature node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Type</strong> of source address from the list. <strong>Result:</strong> The fields requiring data for the type selected are made available.</td>
</tr>
<tr>
<td>2</td>
<td>If available, enter the characters or digits for the source address in the <strong>Chars/Digits</strong> field. <strong>Tip:</strong> This is a text string representing the sender of the notification. It can be either a telephone number or an alphanumeric address.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>3</td>
<td>If available, from the <strong>Profile Block</strong> drop down list, select the profile block for the source address.</td>
</tr>
<tr>
<td>4</td>
<td>If available, enter in the <strong>Tag</strong> field, the location of the source address within the selected profile block. <strong>Tip:</strong> Valid tags for the profile block can be found in the ACS configuration screens. From main SMS screen, select menu options <strong>Services &gt; ACS Services</strong>, then <strong>Configuration</strong>. The profile block and tag names are available under the <strong>Profile Tag Mapping</strong> tab, and the tag value for the tag name under the <strong>Profile Tag Details</strong> tab (Profile Tag column).</td>
</tr>
</tbody>
</table>

**Message Addresses - Destination**

| 5    | Select the **Type** of destination address from the list. **Result:** The fields requiring data for the type selected are made available. |
| 6    | If available, enter the characters or digits for the destination address in the **Chars/Digits** field. **Tip:** This is a text string representing the sender of the notification. It can be either a telephone number or an alphanumeric address. If it contains any characters other than 0-9, it will be regarded as an alphanumeric address and will have TON set to alphanumeric, otherwise TON will be set to unknown. NPI will always be set to unknown. |

| 7    | If available, from the **Profile Block** drop down list, select the profile block for the destination address(es). |
| 8    | If available, enter in the **Tag** field, the location of the destination address(es) as a comma separated list of destinations within the selected profile block. **Tip:** Valid tags for the profile block can be found in the ACS configuration screens. From main SMS screen, select menu options **Services > ACS Services**, then click **Configuration**. The profile block and tag names are available under the **Profile Tag Mapping** tab, and the tag value for the tag name under the **Profile Tag Details** tab (Profile Tag column). |

**Options**

| 9    | To send the message as a flash message, select the **Flash Message** check box. **Tip:** Flash messages are displayed immediately on the subscriber’s handset, rather than going to their in box. |
| 10   | If a response is expected, to avoid missing the response, select the **Wait for Response** check box and then enter the number of seconds to wait for the response in the **Timeout** field. **Tip:** If the check box is deselected, then the node will exit the Success exit immediately. |
| 11   | To preserve the parameters set for the original message that triggered the control plan, select the **Copy Current Message** check box. **Result:** The current message is copied and the parameters supplied in this node are applied to the internal message being constructed by this node. **Example:** If the destination domain has been specified in the Set Message Routing node... |
**Step** | **Action**
--- | ---
| 12 | earlier in the control plan, this will be copied to the new message.

**Alphabet**

12 | Select a character encoding for the SMS message, click on the arrow against the Alphabet text box and pick an encoding from the drop-down list.

**Example:** To send SMS text using Arabic characters, you would pick ISO88596, Arabic.

**Message**

13 | Select one of the following

- Use Notification Template to send the message using a notification template. Then select the Application, Type and Language for the template from the drop down lists, or

- Use Message to specify the message in the feature node. Then type the text of the notification message in the Message field.

**See Message content** (on page 628) for a description of how to construct messages.

14 | Click Save.

**Message content**

The Message field is a (UTF-8) text field. This field is tokenized when the node is initialized, so that fast construction of the message can be done during message processing. For a list of tokens, see Message tokens (on page 629).

Tokens are searched for in the message text, and replaced with an appropriate value. If the value (at call-time) is null, the token is removed from the message text.

The SMS is sent to MM with the specified UTF-8 encoded text, and the desired alphabet set from the Alphabet drop down list.

**Warning:** Tokens are case sensitive.

**Machine environment information**

In addition, there is access to some of the machine’s environment information, using the following tokens.

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;DATE&gt;</td>
<td>The current system time on the SLC (after conversion to GMT). Output format is described in the Configuration section. This variable may have a modifier, in number of hours to add to the time. For example: &quot;<a href="">DATE+2:30</a>&quot;.</td>
</tr>
<tr>
<td>&lt;TIME&gt;</td>
<td>As above, but with a different output format. The am/pm requirement is possible through the strftime format string.</td>
</tr>
<tr>
<td>&lt;TIME24&gt;</td>
<td>As above, but with a different output format.</td>
</tr>
</tbody>
</table>

**Example message**

An SMS text is:

"Your call to <SERVICE_NUMBER> was sent on <DATE>"

This will appear (at the receiving handset) as:

"Your call to 043345335 was sent on Monday 10th December 2012".
**Message tokens**

Tokens are searched for in the message text, and replaced with an appropriate value. If the value (at call-time) is null, the token is removed from the message text. The token values are extracted from the ACS engine context, so a value is always expected to be available.

Here is the list of tokens:

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ACCOUNT_ID&gt;</code></td>
<td>Currently only set if the service control plan was triggered with the CC service library. The format is an integer that is the CCS Account Reference ID (stored in the SMF database).</td>
</tr>
<tr>
<td><code>&lt;ACCOUNT_NUMBER&gt;</code></td>
<td>The normalized calling or called number. For Messaging Manager triggered service control plans, this is the calling number for XMS_Originating, and the called number for the XMS_Terminating service. For ACS_CB triggered service control plans this is the normalized calling or called number, whichever party is to be billed for the message.</td>
</tr>
<tr>
<td><code>&lt;CALLED_NUMBER&gt;</code></td>
<td>The unnormalized called number.</td>
</tr>
<tr>
<td><code>&lt;CALLED_PARTY_ID&gt;</code></td>
<td>Exactly the same as <code>&lt;CALLED_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;CALLING_NUMBER&gt;</code></td>
<td>The calling party's MSISDN.</td>
</tr>
<tr>
<td><code>&lt;CALLING_PARTY_ID&gt;</code></td>
<td>Exactly the same as <code>&lt;CALLING_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;CALLING_PRIVATE_NETWORK&gt;</code></td>
<td>Only set for service control plans that are triggered via the VPN service. In this case it will be the calling number in the private network.</td>
</tr>
<tr>
<td><code>&lt;CALL_DURATION&gt;</code></td>
<td>The current call length (set for example by the ccsATB and ccsUATB nodes).</td>
</tr>
<tr>
<td><code>&lt;CALL_TIME&gt;</code></td>
<td>Ultimately comes from the SLC time at the start of triggering to ACS. The format is determined by the node configuration for the time format.</td>
</tr>
<tr>
<td><code>&lt;CALL_START_DATE&gt;</code></td>
<td>Exactly the same as the <code>&lt;CALL_TIME&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;LOCATION_NUMBER&gt;</code></td>
<td>The location number from the IDP used to trigger ACS. For Messaging Manager triggered calls this will be the SourceLocationInformation (that is, the originating address).</td>
</tr>
<tr>
<td><code>&lt;LOGICAL_CALLING_NUMBER&gt;</code></td>
<td>A normalized version of the logical calling number. For Messaging Manager triggered service control plans this will be the MIN or MDN, depending on the switch involved.</td>
</tr>
<tr>
<td><code>&lt;NETWORK_CALLING_NUMBER&gt;</code></td>
<td>This is the MIN or MDN, depending on the switch.</td>
</tr>
<tr>
<td><code>&lt;NORM_CALLED_NUMBER&gt;</code></td>
<td>Normalized version of <code>&lt;CALLED_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;NORM_CALLING_NUMBER&gt;</code></td>
<td>Normalized version of <code>&lt;CALLING_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;ORIGINAL_CALLED_NUMBER&gt;</code></td>
<td>This is the getOriginalCalledPartyID from the IDP, which is the called party number (before any changes made by ACS).</td>
</tr>
<tr>
<td><code>&lt;PIN&gt;</code></td>
<td>Only available if a prior node in the service control plan has set the PIN (for example, the PIN Authorisation Node).</td>
</tr>
<tr>
<td><code>&lt;PENDING_TERMINATION_NUMBER&gt;</code></td>
<td>Only available if a termination attempt has previously been made in the current service control plan.</td>
</tr>
</tbody>
</table>
### Extra configuration

The Send Short Message Notification feature node requires extra configuration in both of these sections of the `eserv.config` file:

- macroNodes
- Internal adapter

For more information about these sections, see *MM Technical Guide*.

### Send USSD Message

#### Node description

The Send USSD Message node is used to send a message to the USSD application.

#### Node icon

![Send USSD Message Icon](image)
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Send USSD Icon](image)

**Restrictions**

A service control plan may contain as many Send USSD Message nodes as required.

**Node exits**

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Message sent successfully</td>
</tr>
<tr>
<td>2</td>
<td>USSD Failure</td>
<td>USSD operation sent, but an error was received from the target system.</td>
</tr>
<tr>
<td>3</td>
<td>Timeout</td>
<td>USSD operation sent, but no response received from the target system before the timeout period was reached.</td>
</tr>
<tr>
<td>4</td>
<td>Node Failure</td>
<td>Node error, the message was not sent.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Send USSD Message screen.

Configuration fields

This table describes the function of each field in the Configure Send USSD message screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source MSISDN</td>
<td>This section is used to set the number that Messaging Manager pretends to be, for the purposes of sending the USSD operation.</td>
</tr>
<tr>
<td>Type</td>
<td>List of numbers contained in the call context.</td>
</tr>
<tr>
<td>Nature of Address</td>
<td>Sets the nature of address to be used. This is only available for number types that do not contain a nature of address.</td>
</tr>
<tr>
<td>SSN</td>
<td>Subsystem Number to use.</td>
</tr>
<tr>
<td>Digits</td>
<td>Used to set the digits. This is only available for the Fixed Address number type.</td>
</tr>
<tr>
<td>Target System</td>
<td>This section is used to set the Global Title of the system that the USSD operation is to be sent to.</td>
</tr>
<tr>
<td>GT Type</td>
<td>Select the Global Title Type from the list, as specified in the SCCP Q713 standard, section 3.4.2.3.</td>
</tr>
</tbody>
</table>
### Configuring the node

Follow these steps to edit the Send USSD Message node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Type</strong> of source address from the list.</td>
</tr>
</tbody>
</table>
| 2    | If you select the **type - Fixed Address**, you need to fill in the **Digits** field. This is a text string representing the sender of the USSD operation. It can be either a telephone number or an alphanumeric address.  
If it contains any characters other than 0-9, it will be regarded as an alphanumeric address and will have TON (Type Of Number) set to alphanumeric, otherwise TON will be set to unknown. NPI (Number Plan Indicator) will always be set to unknown.  
Set the Global Title of the destination address.  
Depending on the **Type** and **GT Type** selected, other fields in this section will be available, if required. |
| 3    | Set the **Subsystem Number** to the required value in the **SSN** field.  
Type the text of the message in the **Message** field.  
See Message content for a description of how to construct messages.  
Add the separators required. |
| 4    | Set the timeout period for the node. |
| 5    | Click **Save**. |
**Message content**

The **Message** field is a (UTF-8) text field. This field is tokenized when the node is initialized, so that fast construction of the message can be done during message processing. For a list of tokens, see *Message tokens* (on page 629).

Tokens are searched for in the message text, and replaced with an appropriate value. If the value (at call-time) is null, the token is removed from the message text.

The SMS is sent to MM with the specified UTF-8 encoded text, and the desired alphabet set from the Alphabet drop down list.

**Warning:** Tokens are case sensitive.

**Message tokens**

Tokens are searched for in the message text, and replaced with an appropriate value. If the value (at call-time) is null, the token is removed from the message text. The token values are extracted from the ACS engine context, so a value is always expected to be available.

Here is the list of tokens:

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ACCOUNT_ID&gt;</code></td>
<td>Currently only set if the service control plan was triggered with the CC service library. The format is an integer that is the CCS Account Reference ID (stored in the SMF database).</td>
</tr>
<tr>
<td><code>&lt;ACCOUNT_NUMBER&gt;</code></td>
<td>The normalized calling or called number. For Messaging Manager triggered service control plans, this is the calling number for XMS_Originating, and the called number for the XMS_Terminating service. For ACS_CB triggered service control plans this is the normalized calling or called number, whichever party is to be billed for the message.</td>
</tr>
<tr>
<td><code>&lt;CALLED_NUMBER&gt;</code></td>
<td>The unnormalized called number.</td>
</tr>
<tr>
<td><code>&lt;CALLED_PARTY_ID&gt;</code></td>
<td>Exactly the same as <code>&lt;CALLED_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;CALLING_NUMBER&gt;</code></td>
<td>The calling party's MSISDN.</td>
</tr>
<tr>
<td><code>&lt;CALLING_PARTY_ID&gt;</code></td>
<td>Exactly the same as <code>&lt;CALLING_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;CALLING_PRIVATE_NETWORK&gt;</code></td>
<td>Only set for service control plans that are triggered via the VPN service. In this case it will be the calling number in the private network.</td>
</tr>
<tr>
<td><code>&lt;CALL_DURATION&gt;</code></td>
<td>The current call length (set for example by the ccsATB and ccsUATB nodes).</td>
</tr>
<tr>
<td><code>&lt;CALL_TIME&gt;</code></td>
<td>Ultimately comes from the SLC time at the start of triggering to ACS. The format is determined by the node configuration for the time format.</td>
</tr>
<tr>
<td><code>&lt;CALL_START_DATE&gt;</code></td>
<td>Exactly the same as the <code>&lt;CALL_TIME&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;LOCATION_NUMBER&gt;</code></td>
<td>The location number from the IDP used to trigger ACS. For Messaging Manager triggered calls this will be the SourceLocationInformation (that is, the originating address).</td>
</tr>
<tr>
<td><code>&lt;LOGICAL_CALLING_NUMBER&gt;</code></td>
<td>A normalized version of the logical calling number. For Messaging Manager triggered service control plans this will be the MIN or MDN, depending on the switch involved.</td>
</tr>
<tr>
<td><code>&lt;NETWORK_CALLING_NUMBER&gt;</code></td>
<td>This is the MIN or MDN, depending on the switch.</td>
</tr>
<tr>
<td>Token</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>&lt;NORM_CALLED_NUMBER&gt;</td>
<td>Normalized version of &lt;CALLED_NUMBER&gt;.</td>
</tr>
<tr>
<td>&lt;NORM_CALLING_NUMBER&gt;</td>
<td>Normalized version of &lt;CALLING_NUMBER&gt;.</td>
</tr>
<tr>
<td>&lt;ORIGINAL_CALLED_NUMBER&gt;</td>
<td>This is the getOriginalCalledPartyID from the IDP, which is the called party number (before any changes made by ACS).</td>
</tr>
<tr>
<td>&lt;PIN&gt;</td>
<td>Only available if a prior node in the service control plan has set the PIN for example, the PIN Authorisation Node.</td>
</tr>
<tr>
<td>&lt;PENDING_TERMINATION_NUMBER&gt;</td>
<td>Only available if a termination attempt has previously been made in the current service control plan.</td>
</tr>
<tr>
<td>&lt;PROFILE_CHAR_BLOCK number_TAG&lt;tag number&gt;&gt;</td>
<td>Data stored in Profile blocks is retrieved during call processing using one of the profile tag tokens: PROFILE_CHAR_BLOCK - if value is string format PROFILE_INT_BLOCK - if value is an integer The required values are defined as:  • number is an integer for the block number;  • tag number is the decimal value of the profile tag. Example: &lt;PROFILE_CHAR_BLOCK19_TAG7671818&gt; is replaced by a string value taken from the field with tag 7671818 from profile block 19. For more information about profile blocks, see Profile Block list (on page 641).</td>
</tr>
<tr>
<td>&lt;REDIRECTION_NUMBER&gt;</td>
<td>The redirecting party ID from the IDP used to trigger ACS. For Messaging Manager triggered service control plans, this is the SMSCAddress (DA serviceCentre).</td>
</tr>
<tr>
<td>&lt;SERVICE_NUMBER&gt;</td>
<td>The normalized called number (that is, the same as &lt;NORM_CALLED_NUMBER&gt;).</td>
</tr>
<tr>
<td>&lt;SMS_TEXT&gt;</td>
<td>The original incoming SMS text message.</td>
</tr>
<tr>
<td>&lt;TERMINATION_NUMBER&gt;</td>
<td>Will be set after a node which has attempted termination, for example, the ccsATBNode.</td>
</tr>
<tr>
<td>&lt;TERMINATION_PRIVATE_NETWORK&gt;</td>
<td>Will only be set if using the VPN. It is the termination number for the private network.</td>
</tr>
<tr>
<td>&lt;USSD_RESPONSE&gt;</td>
<td>Text returned from the Send USSD Message node.</td>
</tr>
</tbody>
</table>

### Machine environment information

In addition, there is access to some of the machine's environment information, using the following tokens.

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;DATE&gt;</td>
<td>The current system time on the SLC (after conversion to GMT). Output format is described in the Configuration section. This variable may have a modifier, in number of hours to add to the time. For example: &quot;<a href="">DATE+2:30</a>&quot;.</td>
</tr>
<tr>
<td>&lt;TIME&gt;</td>
<td>As above, but with a different output format. The am/pm requirement is possible through the strftime format string.</td>
</tr>
<tr>
<td>&lt;TIME24&gt;</td>
<td>As above, but with a different output format.</td>
</tr>
</tbody>
</table>
Example message
An SMS text is:
"Your call to <SERVICE_NUMBER> was sent on <DATE>"
This will appear (at the receiving handset) as:
"Your call to 043345335 was sent on Monday 10th December 2012”.

Send USSD Notification

Node description
The Send USSD Notification node is used to send a USSD Notification message to the MSC/handset.

Tip: This node is closely related to the Send USSD Message (on page 630) node.

The originator and destination for a message are selectable from one of:

- A fixed number or alpha-numeric address
- Any existing ACS context digit field, including one of:
  - The caller/message originator of the current call or SMS
  - The called party/message destination of the current call or SMS

Note: The node can be used on any service control plan. It needs to be installed with Messaging Manager, but can be used on non-Messaging Manager service plans, and does not require the use of the Messaging Manager service library.

Node icon
If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
A service control plan may contain as many Send USSD Notification nodes as required.

Node exits
This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>Message sent successfully.</td>
</tr>
<tr>
<td>2</td>
<td>USSD Failure</td>
<td>USSD notification sent, but an error was received from the target system.</td>
</tr>
<tr>
<td>3</td>
<td>Timeout</td>
<td>USSD notification sent, but no response received from the target system before the timeout period was reached.</td>
</tr>
<tr>
<td>4</td>
<td>Node Failure</td>
<td>Node error, the USSD notification was not sent.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Send USSD Notification screen.

![Configure Send USSD Notification screen](image)

Configuration fields

This table describes the function of each field in the Configure Send USSD Notification node screen.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target MSISDN</td>
<td>This section is used to set the destination the USSD Notification is to be sent to.</td>
</tr>
<tr>
<td>Type</td>
<td>The list of numbers contained in the call context.</td>
</tr>
<tr>
<td>Nature of Address</td>
<td>Sets the nature of address to be used. This is only available for number types that do not contain a nature of address.</td>
</tr>
<tr>
<td>Digits</td>
<td>Sets the digits for the destination address. This is only available if Type is set to Fixed Address.</td>
</tr>
<tr>
<td>Type</td>
<td>The list of numbers used in the call context.</td>
</tr>
</tbody>
</table>
### Configuring the node

Follow these steps to edit the Send USSD Notification node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the Target MSISDN area, select the type of number the destination address will be from the <strong>Type</strong> drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>If you have selected a type which does not set an NOA, select a nature of address from the <strong>Nature of Address</strong> drop down list.</td>
</tr>
<tr>
<td>3</td>
<td>If you have selected <strong>Fixed Address</strong> from the <strong>Type</strong> drop down list, enter the address to send the notification to in the <strong>Digits</strong> field. It can be either a telephone number or an alphanumeric address.</td>
</tr>
<tr>
<td>4</td>
<td>In the Source System area, select the type of number the source address will be from the <strong>Type</strong> drop down list. Depending on the <strong>Type</strong> and <strong>GT Type</strong> selected, other fields in this section will be available, if required.</td>
</tr>
<tr>
<td>5</td>
<td>From the <strong>GT Type</strong> drop down list, select the Global Title of the source address. For more information about how these GTs are specified, see section 3.4.2.3 in the SCCP Q713 standard.</td>
</tr>
<tr>
<td>6</td>
<td>In the <strong>Translation Type</strong> field, enter the translation type for the system which is sending the notification. For more information about valid types, see Q7.13.</td>
</tr>
<tr>
<td>7</td>
<td>If you have selected <strong>Fixed Address</strong> or one of the Extension Digits options from the <strong>Type</strong> drop down list, select a number plan from the <strong>Number Plan</strong> drop down list.</td>
</tr>
<tr>
<td>8</td>
<td>If you have selected a type which does not set an NOA, select a nature of address from the <strong>Nature of Address</strong> drop down list.</td>
</tr>
<tr>
<td>9</td>
<td>In the <strong>SSN</strong> field, enter the sub system number which will be used to identify MM in sent messages.</td>
</tr>
<tr>
<td>10</td>
<td>If you have selected <strong>Fixed Address</strong> from the <strong>Type</strong> drop down list, enter the source address.</td>
</tr>
</tbody>
</table>
address in the **Digits** field. This is a text string representing the sender of the USSD notification. It can be either a telephone number or an alphanumeric address. If it contains any characters other than 0-9, it will be regarded as an alphanumeric address and will have TON (Type Of Number) set to alphanumeric, otherwise TON will be set to unknown. NPI (Number Plan Indicator) will always be set to unknown.

Step 11
In the **Message Template** field, enter the text of the message.

**Tip:** If the text (taking into account the length specifier in any PT tokens) exceeds 160 characters, the Save button will be disabled.

Step 12
In the **Timeout** field, set the number of seconds MM will wait for a response from the MSC/handset before taking the Timeout exit.

Step 13
Click **Save**.

### Message content

The **Message** field is a (UTF-8) text field. This field is tokenized when the node is initialized, so that fast construction of the message can be done during message processing. For a list of tokens, see **Message tokens** (on page 629).

Tokens are searched for in the message text, and replaced with an appropriate value. If the value (at call-time) is null, the token is removed from the message text.

The USSD notification is sent to MM with the specified UTF-8 encoded text.

**Warning:** Tokens are case sensitive.

### Message tokens

Tokens are searched for in the message text, and replaced with an appropriate value. If the value (at call-time) is null, the token is removed from the message text. The token values are extracted from the ACS engine context, so a value is always expected to be available.

Here is the list of tokens:

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ACCOUNT_ID&gt;</code></td>
<td>Currently only set if the service control plan was triggered with the CC service library. The format is an integer that is the CCS Account Reference ID (stored in the SMF database).</td>
</tr>
<tr>
<td><code>&lt;ACCOUNT_NUMBER&gt;</code></td>
<td>The normalized calling or called number. For Messaging Manager triggered service control plans, this is the calling number for XMS_Originating, and the called number for the XMS_Terminating service. For ACS_CB triggered service control plans this is the normalized calling or called number, whichever party is to be billed for the message.</td>
</tr>
<tr>
<td><code>&lt;CALLED_NUMBER&gt;</code></td>
<td>The unnormalized called number.</td>
</tr>
<tr>
<td><code>&lt;CALLED_PARTY_ID&gt;</code></td>
<td>Exactly the same as <code>&lt;CALLED_NUMBER&gt;</code>.</td>
</tr>
<tr>
<td><code>&lt;CALLING_NUMBER&gt;</code></td>
<td>The calling party's MSISDN.</td>
</tr>
<tr>
<td><code>&lt;CALLING_PARTY_ID&gt;</code></td>
<td>Exactly the same as <code>&lt;CALLING_NUMBER&gt;</code></td>
</tr>
<tr>
<td><code>&lt;CALLING_PRIVATE_NETWORK&gt;</code></td>
<td>Only set for service control plans that are triggered via the VPN service. In this case it will be the calling number in the private network.</td>
</tr>
<tr>
<td>Token</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>&lt;CALL_DURATION&gt;</td>
<td>The current call length (set for example by the ccsATB and ccsUATB nodes).</td>
</tr>
<tr>
<td>&lt;CALL_TIME&gt;</td>
<td>Ultimately comes from the SLC time at the start of triggering to ACS. The format is determined by the node configuration for the time format.</td>
</tr>
<tr>
<td>&lt;CALL_START_DATE&gt;</td>
<td>Exactly the same as the &lt;CALL_TIME&gt;</td>
</tr>
<tr>
<td>&lt;LOCATION_NUMBER&gt;</td>
<td>The location number from the IDP used to trigger ACS. For Messaging Manager triggered calls this will be the SourceLocationInformation (for example, the originating address).</td>
</tr>
<tr>
<td>&lt;LOGICAL_CALLING_NUMBER&gt;</td>
<td>A normalized version of the logical calling number. For Messaging Manager triggered service control plans this will be the MIN or MDN, depending on the switch involved.</td>
</tr>
<tr>
<td>&lt;NETWORK_CALLING_NUMBER&gt;</td>
<td>This is the MIN or MDN, depending on the switch.</td>
</tr>
<tr>
<td>&lt;NORM_CALLED_NUMBER&gt;</td>
<td>Normalized version of &lt;CALLED_NUMBER&gt;</td>
</tr>
<tr>
<td>&lt;NORM_CALLING_NUMBER&gt;</td>
<td>Normalized version of &lt;CALLING_NUMBER&gt;</td>
</tr>
<tr>
<td>&lt;ORIGINAL_CALLED_NUMBER&gt;</td>
<td>This is the getOriginalCalledPartyID from the IDP, which is the called party number (before any changes made by ACS).</td>
</tr>
<tr>
<td>&lt;PIN&gt;</td>
<td>Only available if a prior node in the service control plan has set the PIN (for example, the PIN Authorisation Node).</td>
</tr>
<tr>
<td>&lt;PENDING_TERMINATION_NUMBER&gt;</td>
<td>Only available if a termination attempt has previously been made in the current service control plan.</td>
</tr>
</tbody>
</table>
| <PT BLOCK TAG FORMAT> | Data stored in Profile blocks is retrieved during call processing using the profile tag token.  
Format: <PT block tag format[length_limit]>  
Where:  
- block is an integer which specifies the profile block to use  
- tag is the profile tag to use (specified in decimal)  
- format specifies the format to display the value (for example "I" for integer, "L" for length (time duration), "S" for string), and  
- length_limit is an optional length specifier which limits the number of characters used to display the value. If the profile tag value is greater than this limit, the value will be truncated by removing trailing characters.  
Example: <PT 8 28200002 I5> will be replace by an integer value taken from the field with tag 2820002 in profile block 8 and the displayed value will be 5 characters long. If the profile tag value is greater than 5 characters, the first five characters will be displayed and the rest will be truncated.  
For more information, see Profile Block list (on page 641). |
<p>| &lt;REDIRECTION_NUMBER&gt; | The redirecting party ID from the IDP used to trigger ACS. For Messaging Manager triggered service control plans, this is the SMSCAddress (DA serviceCentre). |
| &lt;SERVICE_NUMBER&gt;    | The normalized called number (for example the same as &lt;NORM_CALLED_NUMBER&gt;).                                                                |
| &lt;TERMINATION_NUMBER&gt; | Will be set after a node which has attempted termination, for                                                                                  |</p>
<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>example, the ccsATBNode.</td>
<td></td>
</tr>
<tr>
<td><code>&lt;TERMINATION_PRIVATE_NETWORK&gt;</code></td>
<td>Will only be set if using the VPN. It is the termination number for the private network.</td>
</tr>
</tbody>
</table>

**Profile Block list**

Here are the profile blocks accessible using the `<PT>` message token.

<table>
<thead>
<tr>
<th>Name</th>
<th>Integer</th>
<th>Description</th>
</tr>
</thead>
</table>
| VPN Network Profile   | 1       | Contains most of the information you can specify in the VPN edit network, for example:  
- Account Code maximum length  
- Outgoing barred/allowed list type  
- Incoming barred/allowed list type  
- VPN network SD no check  
- VPN present private address  
**Note:** Only relevant if you have the VPN service installed. |
| VPN Station Profile   | 2       | Contains most of the information you can specify in the VPN edit station, for example:  
- Outgoing barred/allowed list type  
- Incoming barred/allowed list type  
- VPN bar all incoming  
- VPN bar off network incoming  
**Note:** Only relevant if you have the VPN service installed. |
| Customer Profile      | 3       | Contains customer information, for example:  
- Incoming barred/allowed list type  
- Incoming barred/allowed list  
- PIN rights  
- Default language  
- Incoming barred/allowed ignore  
- Termination number ranges  
- Termination number range policy |
| Control Plan Profile  | 4       | This profile contains current switch node exits only. |
| Global Profile        | 5       | Contains global information, for example:  
- PIN rights  
- Multi-lingual announcements  
- Default language  
- Control plan version hiding |
| CLI Subscriber Profile| 6       | Contains most of the information you can specify in the CLI tab of the Numbers screen, for example:  
- Account code  
- Language  
- Follow me number  
**Note:** Only relevant to the 0800 service. |
### Service Number Profile
Contains most of the information you can specify in the Service Number tab of the Numbers screen, for example:
- Account code
- Language
- Follow me number

**Note:** Only relevant to the 0800 service.

<table>
<thead>
<tr>
<th>Profile Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>App Specific Profile 1</td>
<td>8</td>
</tr>
<tr>
<td>App Specific Profile 2</td>
<td>9</td>
</tr>
<tr>
<td>App Specific Profile 3</td>
<td>10</td>
</tr>
<tr>
<td>App Specific Profile 4</td>
<td>11</td>
</tr>
<tr>
<td>App Specific Profile 5</td>
<td>12</td>
</tr>
<tr>
<td>App Specific Profile 6</td>
<td>13</td>
</tr>
<tr>
<td>App Specific Profile 7</td>
<td>14</td>
</tr>
<tr>
<td>App Specific Profile 8</td>
<td>15</td>
</tr>
<tr>
<td>Any Valid Profile</td>
<td>16</td>
</tr>
</tbody>
</table>

**App Specific Profile 1:** Contains information specific to an application, for example, Messaging Manager.

**Note:** Unless it is in use by a specific application, these profiles (for example, App Specific Profile 7 can be specified as a temporary profile (where nothing is written back to the database) in order to pass information from one application to another, for example between USSD and DAP).

**Any Valid Profile:** Allows you to search for tags in all profiles that have been loaded.

---

### MOX tokens
MOX tokens are only available in some circumstances. A MOX request of the appropriate type must have been sent as the last MOX message. Also, the beServer that replied to this MOX message must be of a type that fills out the requested information (for example, balances are not available in some VWS protocols).

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;MOX_BALANCE&gt;</code></td>
<td>Only available if the last message received from the BeClient was a RetrieveSubscriberProfileRes. Some service libraries (for example, ACS_CB) perform this on triggering to ACS; Messaging Manager does not. For MM the RSINode should be placed immediately before the SSMNode to ensure an RSP is available.</td>
</tr>
<tr>
<td><code>&lt;MOX_CURRENCY&gt;</code></td>
<td>Only available if the last message received from the BeClient was a RetrieveSubscriberProfileRes. Some service libraries (for example, ACS_CB) perform this on triggering to ACS; Messaging Manager does not. For MM the RSINode should be placed immediately before the SSMNode to ensure an RSP is available.</td>
</tr>
<tr>
<td><code>&lt;MOX_CALL_COST&gt;</code></td>
<td>Only available if there is a DebitUnitReq ready to send to the BeClient. This is only true if the last node using MOX was an attempt terminate with Billing (for example, cbATBNode or xmsADPBNode). The number format has two decimal places (for example, 19.19, 19.00), followed by the unit (which comes from the configured unit mappings).</td>
</tr>
<tr>
<td><code>&lt;MOX_VOUCHER_NUMBER&gt;</code></td>
<td>Only available if the last message received from the BeClient was a VoucherReserveRes. Currently, there are no call plan nodes that perform this so this token is unavailable.</td>
</tr>
<tr>
<td><code>&lt;MOX_VOUCHER_REDEEMED_DATE&gt;</code></td>
<td>Only available if the last message received from the BeClient was a VoucherReserveRes. Currently, there are no call plan nodes that perform this so this token is unavailable.</td>
</tr>
<tr>
<td><code>&lt;MOX_VOUCHER_AMOUNT&gt;</code></td>
<td>Only available if the last message received from the BeClient was a VoucherReserveRes. Currently, there are no call plan nodes that perform this so this token is unavailable.</td>
</tr>
<tr>
<td><code>&lt;MOX_VOUCHER_RECHARGE&gt;</code></td>
<td>Only available if the last message received from the BeClient was a VoucherReserveRes. Currently, there are no call plan nodes that perform this so this token is unavailable.</td>
</tr>
</tbody>
</table>
Token | Description
--- | ---
E_ACCOUNT_TO_CREDIT> | VoucherReserveRes. Currently, there are no call plan nodes that perform this so this token is unavailable.

<MOX_VOUCHER_RECHARG_E_REDEEMING_ACCOUNT> | Only available if the last message received from the BeClient was a VoucherReserveRes. Currently, there are no call plan nodes that perform this so this token is unavailable.

<MOX_CALL_START_DATE> | Only available if there is a DebitUnitReq ready to send to the BeClient. This is only true if the last node using MOX was an Attempt Terminate with Billing (for example, cbATBNode or xmsADPBNod). This time value is the same as <CALL_TIME>. The format (expressed using the time configuration format for this node) is "%G-%m-%d %T0".

<MOX_CALL_ANSWER_DATE> | Only available if there is a DebitUnitReq ready to send to the BeClient. This is only true if the last node using MOX was the cbATBNode. This is the attemptTerminateResultTime. The format is the same as for <MOX_CALL_START_DATE>, that is, "%G-%m-%d %T0".

<MOX_REDIRECTION_NUMBER> | The cbContext.normRedirectionNumber. This is the ctd_redirection_num and only available if the call plan was triggered with the ACS_CB service library.

**Note:** Replace the n in the token with the index of a balance. For example, to retrieve the first balance in a set use <MOX_BALANCE0>.

### Machine environment information

In addition, there is access to some of the machine's environment information, using the following tokens.

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;DATE&gt;</td>
<td>The current system time on the SLC (after conversion to GMT). Output format is described in the Configuration section. This variable may have a modifier, in number of hours to add to the time. For example: &quot;<a href="">DATE+2:30</a>&quot;.</td>
</tr>
<tr>
<td>&lt;TIME&gt;</td>
<td>As above, but with a different output format. The am/pm requirement is possible through the strftime format string.</td>
</tr>
<tr>
<td>&lt;TIME24&gt;</td>
<td>As above, but with a different output format.</td>
</tr>
</tbody>
</table>

**Example notification**

A USSD notification text is:

"Your call to <SERVICE_NUMBER> was sent on <DATE>"

This will appear (at the receiving handset) as:

"Your call to 043345335 was sent on Monday 10th December 2012".

### Extra configuration

The Send USSD Notification node requires extra configuration in the macroNodes section in the eserv.config file. For more information, see Send Short Message configuration.
Set Message Routing

Node description
The Set Message Routing node allows a control plan to set routing parameters which determine the routing rule to use, and hence guides outbound path selection.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
There may be any number of Set Message Routing nodes as required in a service control plan.

Node exits
This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Message Routing Set</td>
<td>Message has had the new routing attributes applied.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Message Routing screen.

![Configuration screen](Configuration_screen.png)

Configuring the node

Follow these steps to edit the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | To set the routing class for the message:  
|      | - Select the **Leave Unchanged** check box  
|      | - Select the **New Routing Class** to use from the drop-down list |
| 2    | To set the destination domain for the message:  
|      | - Deselect the **Leave Unchanged** check box  
|      | - Enter the name of the Domain that the Destination is to be set to in the **New Domain** field.  
|      | **Note:** This must be an exact match with a Messaging Manager domain name. |
| 3    | To set the originating domain for the message:  
|      | - Deselect the **Leave Unchanged** check box  
|      | - Enter the name of the Domain that the Origination is to be set to in the **New Domain** field.  
|      | **Note:** This must be an exact match with a Messaging Manager domain name. |
| 4    | To set the message centre for the message:  
|      | - Deselect the **Leave Unchanged** check box |
Step | Action
--- | ---
| | Enter the name of the Message Center that is to be set for the message in the New Message Centre field.

**Note:** This must be an exact match with a Messaging Manager Message Center name.

5  | Click **Save**.

### Set Originating Address

**Node description**

The Set Originating Address node allows you to set the originating address for all messages that pass through the node to the address specified in the node.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

There may be any number of Set Originating Address nodes as required in a service control plan.

**Node exits**

This node has one entry and one exit. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Address Set</td>
<td>The originating address for the message has been set to the specified value.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Set Originating Address screen.

![Configure Set Originating Address screen]

Configuring the node

Follow these steps to edit the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enter the address that all messages passing through the node will have set as their originating address. This field will accept numeric values, as well as the * and # symbols.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
Overview

Introduction

This chapter describes the Oracle Communications Network Charging and Control (NCC) Messaging Manager XMS Parameters feature nodes.

In this chapter

This chapter contains the following topics.

Available Feature Nodes

XMS Parameters Feature Nodes List

This table lists all the available Messaging Manager feature nodes in the XMS Parameters feature group. If any custom feature nodes have been created and installed to fit your specific customer requirements, they will not appear in this list.

Note: For information about the available Messaging Manager profile fields, see Messaging Manager Profile Fields (on page 12).

<table>
<thead>
<tr>
<th>Node name</th>
<th>Node description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabet Branching (see page 650)</td>
<td>The Alphabet Branching node determines if the message text is using the alphabet specified in this node and branches accordingly.</td>
</tr>
<tr>
<td>Content Size Branching (see page 651)</td>
<td>The Content Size Branching node branches depending on the size of the short message (in bytes). It takes the threshold entered into the node and chooses either the small or large branch.</td>
</tr>
<tr>
<td>Message Attribute Branching (on page 652)</td>
<td>Branches on the value of a message attribute.</td>
</tr>
<tr>
<td>Segment Number Branching (see page 657)</td>
<td>The Segment Number Branching node branches, depending on if the current message is the last (or only) component in a concatenated, multi-part, message. It compares the current segment number with the total number of segments and takes the appropriate exit.</td>
</tr>
<tr>
<td>Set Data Coding (see page 658)</td>
<td>The Set Data Coding node sets the character set of the message.</td>
</tr>
</tbody>
</table>
Node name | Node description
--- | ---
Set Message Attribute (on page 659) | Allows the modification of various attributes of the message data by overriding the options requested by a caller.
Set Time Zone Message Attribute (on page 661) | Sets the message time zone attribute to the user's time zone.
Test Data Coding (see page 663) | The Test Data Coding node checks the message for compatibility with the specified (in this node) destination alphabet.

### Alphabet Branching

#### Node description

The Alphabet Branching node determines if the message text is using the alphabet specified in this node and branches accordingly.

#### Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

#### Restrictions

A control plan may contain as many Alphabet Branching nodes as required.

#### Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Match</td>
<td>The message uses the current alphabet specified.</td>
</tr>
<tr>
<td>2</td>
<td>No Match</td>
<td>The message does not use the current alphabet specified.</td>
</tr>
</tbody>
</table>
Configuration screen

Here is an example Configure Alphabet Branching screen.

![Configure Alphabet Branching](image1)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the alphabet to compare the message against from the Alphabet drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Content Size Branching

Node description

The Content Size Branching node branches depending on the size of the short message (in bytes). It takes the threshold entered into the node and chooses either the small or large branch.

Node icon

![Node Icon](image2)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![Size Branch Icon](image3)
Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Small Message</td>
<td>The message is smaller than the specified number of bytes.</td>
</tr>
<tr>
<td>2</td>
<td>Large Message</td>
<td>The message is equal to, or larger than the specified number of bytes.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Content Size Branching screen.

![Configure Content Size Branching](image)

Configuring the node

Follow these steps to edit the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Specify the message size threshold, in number of bytes.</td>
</tr>
<tr>
<td>2</td>
<td>If you select the Include Header check box, then the length of the user data header is included in the message length.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong></td>
</tr>
</tbody>
</table>

Message Attribute Branching

Node description

Branches on the value of a message attribute. Branching is based on the result of a logical comparison between a value and the value in the corresponding message attribute.
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions
A control plan may contain as many Message Attribute Branching nodes as required.

Node exits
This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Less Than</td>
<td>The value in the message is lower than the value configured in the node.</td>
</tr>
<tr>
<td>2</td>
<td>Equals</td>
<td>The value in the message is the same as the value configured in the node.</td>
</tr>
<tr>
<td>3</td>
<td>Greater Than</td>
<td>The value in the message is greater than the value configured in the node.</td>
</tr>
<tr>
<td>4</td>
<td>Not Found</td>
<td>An error occurred during the comparison.</td>
</tr>
</tbody>
</table>

Note: Strings are evaluated against ASCII order, on a character-by-character basis starting with the left-hand character.
Configuration screen

Here is an example Configure Message Attribute Branching screen.

![Configure Message Attribute Branching](image)

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Configure this record by entering data in the fields on the Configure Set Message Attribute screen. For more information about the fields on this screen, see Configuration fields (on page 654).</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

Configuration fields

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute</td>
<td>The message attribute to compare.</td>
</tr>
<tr>
<td>Value Type</td>
<td>The type of value the attribute will be compared with.</td>
</tr>
<tr>
<td>Fixed</td>
<td>The value the message attribute will be compared with. Note: This field is only available if the Value Type field is set to Fixed.</td>
</tr>
<tr>
<td>Enumerated</td>
<td>The value the message attribute will be compared with. Notes:</td>
</tr>
<tr>
<td></td>
<td>• This field is only available if the Value Type field is set to Enum.</td>
</tr>
<tr>
<td></td>
<td>• The drop list is populated by the application. The available options</td>
</tr>
</tbody>
</table>
cannot be changed. For more information about the available values, see Enumerated fields (on page 655).

Source Location

The profile block which stores the value the message attribute will be compared with.

Notes:
- This field is only available if the Value Type field is set to Profile.
- The drop down list is populated by the records on the Profile Tag Details tab of the ACS Configuration screen.

Source Field

The profile field which stores the value the message attribute will be compared with.

Notes:
- This field is only available if the Value Type field is set to Profile.
- The drop down list is populated by the records on the Profile Tag Details tab of the ACS Configuration screen. The available profile fields are dependant on the profile selected in the Source Location drop down list.

For more information about profiles, see Selecting profile locations and fields.

**Enumerated fields**

This table describes the list of enumerated values which are available to the Message Attribute nodes.

<table>
<thead>
<tr>
<th>Group Name</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTRIBUTE</td>
<td>SRR</td>
<td>Status report (delivery receipt) request</td>
</tr>
<tr>
<td></td>
<td>RRR</td>
<td>Read-reply report request</td>
</tr>
<tr>
<td></td>
<td>SMS_CLASS</td>
<td>SMS Message class</td>
</tr>
<tr>
<td></td>
<td>MW_TYPE</td>
<td>Message waiting type</td>
</tr>
<tr>
<td></td>
<td>MW_SENSE</td>
<td>Message waiting sense</td>
</tr>
<tr>
<td></td>
<td>MW_GROUP</td>
<td>Message waiting group</td>
</tr>
<tr>
<td></td>
<td>PRIORITY</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SINGLE_SHOT</td>
<td>Single-shot</td>
</tr>
<tr>
<td></td>
<td>RECEIPT</td>
<td>Number of recipients</td>
</tr>
<tr>
<td></td>
<td>RECIPIENT</td>
<td>Current recipient</td>
</tr>
<tr>
<td></td>
<td>SIZE</td>
<td>Message size</td>
</tr>
<tr>
<td></td>
<td>MMS_CLASS</td>
<td>MMS message class</td>
</tr>
<tr>
<td></td>
<td>ADAPTER</td>
<td>Content adaptation</td>
</tr>
<tr>
<td></td>
<td>TIME_ZONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SERVICE_CODE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BILLING_INFO</td>
<td>Billing Identifier</td>
</tr>
<tr>
<td>Group Name</td>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>VP_TYPE</td>
<td></td>
<td>Validity Period Type</td>
</tr>
<tr>
<td>VALIDITY</td>
<td></td>
<td>Validity Period</td>
</tr>
<tr>
<td>MESSAGE_TYPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARGED_PARTY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAS_ID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VASP_ID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRR</td>
<td>0</td>
<td>None requested</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>SME requested</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>MMX requested</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Both requested</td>
</tr>
<tr>
<td>RRR</td>
<td>0</td>
<td>Not requested</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Requested</td>
</tr>
<tr>
<td>SMS_CLASS</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Display (GSM 0)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Mobile Equipment (GSM 1)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>SIM (GSM 2)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>External (GSM 3)</td>
</tr>
<tr>
<td>MW_TYPE</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Voicemail</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Fax</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Email</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Other</td>
</tr>
<tr>
<td>MW_SENSE</td>
<td>0</td>
<td>Inactive</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Active</td>
</tr>
<tr>
<td>MW_GROUP</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Discard</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Store</td>
</tr>
<tr>
<td>PRIORITY</td>
<td>0</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Interactive</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Urgent</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Emergency</td>
</tr>
<tr>
<td>SINGLE_SHOT</td>
<td>0</td>
<td>False</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>True</td>
</tr>
<tr>
<td>MMS_CLASS</td>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Personal</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Advert</td>
</tr>
</tbody>
</table>
Segment Number Branching

Node description

The Segment Number Branching node branches, depending on if the current message is the last (or only) component in a concatenated, multi-part, message. It compares the current segment number with the total number of segments and takes the appropriate exit.

Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Node exits

This node has one entry and four exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Only Segment</td>
<td>The message contains only one segment.</td>
</tr>
<tr>
<td>2</td>
<td>First Segment</td>
<td>There is more than one segment in the message and the segment number is one.</td>
</tr>
</tbody>
</table>
### Configuration screen

Here is an example Configure Segment Number Branching screen.

![Configure Segment Number Branching](image)

### Configuring the node

This node requires no configuration data. You may change the **Node name**, if required.

### Set Data Coding

#### Node description

The Set Data Coding node sets the character set of the message.

#### Node icon

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

![SetDCS](image)

#### Restrictions

A control plan may contain as many Set Data Coding nodes as required.

#### Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The configured alphabet has been successfully selected.</td>
</tr>
</tbody>
</table>
### Chapter 30

#### XMS Parameters Feature Nodes

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Failure</td>
<td>General error occurred.</td>
</tr>
</tbody>
</table>

**Configuration screen**

Here is an example Configure Set Data Coding screen.

![Configure Set Data Coding](image)

#### Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the message alphabet from the Alphabet drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>

**Set Message Attribute**

**Node description**

Allows the modification various attributes of the message data by overriding the options requested by a caller.

To set a message's time zone to the time zone of the user, see *Set Time Zone Message Attribute* (on page 661).

**Node icon**

![Node Icon](image)

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.
Restrictions
A control plan may contain as many Set Message Attribute nodes as required.

Node exits
This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The specified attribute was set successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>The node failed to change the specified attribute.</td>
</tr>
</tbody>
</table>

Configuration screen
Here is an example Configure Set A Message Attribute screen.

Configuring the node
Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Configure this record by entering data in the fields on the Configure Set Message Attribute screen. For more information about the fields on this screen, see Configuration fields (on page 661).</td>
</tr>
<tr>
<td>2</td>
<td>Click Save.</td>
</tr>
</tbody>
</table>
**Configuration fields**

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribute</td>
<td>The message attribute to change.</td>
</tr>
<tr>
<td>Value Type</td>
<td>The type of value the attribute will be set to.</td>
</tr>
<tr>
<td>Fixed</td>
<td>The value the message attribute will be set to.</td>
</tr>
<tr>
<td>Enumerated</td>
<td>The value the message attribute will be set to.</td>
</tr>
<tr>
<td>Source Location</td>
<td>The profile block which stores the value the message attribute will be set to.</td>
</tr>
<tr>
<td>Source Field</td>
<td>The profile field which stores the value the message attribute will be set to.</td>
</tr>
</tbody>
</table>

**Notes:**
- This field is only available if the **Value Type** field is set to `Enum`.
- The drop down list is populated by the application. The available options cannot be changed. For more information about the available values, see *Enumerated fields* (on page 655).

**Set Time Zone Message Attribute**

**Node description**

Sets the message time zone attribute to the user's time zone.

To set other message attributes, see *Set Message Attribute* (on page 659).

To branch on message attributes (including time zone), see *Message Attribute Branching* (on page 652).
Node icon

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

Restrictions

A control plan may contain as many Set time Zone Attribute nodes as required.

Node exits

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Success</td>
<td>The time zone was set successfully.</td>
</tr>
<tr>
<td>2</td>
<td>Failure</td>
<td>An error occurred and the time zone was not set.</td>
</tr>
</tbody>
</table>

Configuration screen

Here is an example Configure Set Time Zone Message Attribute screen.

Configuring the node

Follow these steps to configure the node.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Configure this record by entering data in the fields on the Configure Set Time Zone Message Attribute screen. For more information about the fields on this screen, see Configuration fields (on page 663).</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Configuration fields**

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timezone Type</td>
<td>The source of the timezone value.</td>
</tr>
<tr>
<td>Unix Timezone</td>
<td>The timezone to use from the standard unix timezone set.</td>
</tr>
</tbody>
</table>

*Note: This field is only available if **Timezone Type** is set to **Explicit Unix TZ**.*

For more information about profiles, see Selecting profile locations and fields.

**Test Data Coding**

**Node description**

The Test Data Coding node checks the message for compatibility with the specified (in this node) destination alphabet.

This node is used to determine if the message can be converted to the specified alphabet. If not then the control plan can be set to compare against another alphabet in another instance of this mode.

**Node icon**

If the CPE has been configured to use the static panel CPE palette style, then the CPE displays the icon shown below to represent the feature node.

**Restrictions**

A control plan may contain as many Test Data Coding nodes as required.

**Node exits**

This node has one entry and two exits. The number of exits cannot be changed.

<table>
<thead>
<tr>
<th>Exit</th>
<th>Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pass</td>
<td>The message will be convertible to the destination alphabet with less than or equal to the allowed character conversion failures.</td>
</tr>
<tr>
<td>2</td>
<td>Fail</td>
<td>The message will not be converted to the destination alphabet without incurring more than the allowed character conversion</td>
</tr>
<tr>
<td>Exit</td>
<td>Cause</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>failures.</td>
</tr>
</tbody>
</table>

### Configuration screen

Here is an example Configure Test Data Coding screen.

![Configure Test Data Coding](image)

### Configuring the node

Follow these steps to edit the node configuration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the destination alphabet for the message to be converted to from the Alphabet drop down list.</td>
</tr>
<tr>
<td>2</td>
<td>Enter the maximum number of characters that cannot be converted to the destination alphabet before failing the conversion test in the Misses Allowed field.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>
NCC Glossary of Terms

AAA

ACS
Advanced Control Services configuration platform.

ACS_CB
ACS Convergent Billing

ANI
Automatic Number Identification - Term used in the USA by long-distance carriers for CLI.

API
Application Programming Interface

ASP
- Application Service Provider, or

ATI
Any Time Interrogation - this process is used on a GSM network to interrogate the HLR for location and or subscriber information.

AUS
Application Unique String.

BCSM
Basic Call State Model - describes the basic processing steps that must be performed by a switch in order to establish and tear down a call.

BE
Billing Engine

BFT
Billing Failure Treatment - the process that is applied if the system has lost all connections to a billing engine. It allows for limited continuation of call processing functions, if configured.

C7
See SS7.
CAMEL

Customized Applications for Mobile network Enhanced Logic

This is a 3GPP (Third Generation Partnership Project) initiative to extend traditional IN services found in fixed networks into mobile networks. The architecture is similar to that of traditional IN, in that the control functions and switching functions are remote. Unlike the fixed IN environment, in mobile networks the subscriber may roam into another PLMN (Public Land Mobile Network), consequently the controlling function must interact with a switching function in a foreign network. CAMEL specifies the agreed information flows that may be passed between these networks.

CAP

CAMEL Application Part

CC

Country Code. Prefix identifying the country for a numeric international address.

CCR

Credit-Control-Request, used in Diameter by the credit-control client to request credit authorization from the credit-control server.

CCS

1) Charging Control Services (or Prepaid Charging) component.
2) Common Channel Signalling. A signalling system used in telephone networks that separates signalling information from user data.

CDR

Call Data Record

Note: The industry standard for CDR is EDR (Event Detail Record). Over time EDR will replace CDR in the Oracle documentation.

CID

Call Instance Data

CLI

Calling Line Identification - the telephone number of the caller. Also referred to as ANI.

Connection

Transport level link between two peers, providing for multiple sessions.

Convergent

Also “convergent billing”. Describes the scenario where post-paid and pre-paid calls are handed by the same service platform and the same billing system. Under strict converged billing, post-paid subscribers are essentially treated as “limited credit pre-paid”.

666  NCC Feature Nodes Reference Guide
CORBA

Common Object Request Broker Architecture. It is a framework that provides interoperability between objects built in different programming languages, running on different physical machines perhaps on different networks. It specifies an Interface Definition Language, and API that allows client / server interaction with the ORB.

CPE

Control Plan Editor (previously Call Plan Editor) - software used to define the logic and data associated with a call - for example, "if the subscriber calls 0800 nnnnnnn from a phone at location xxx then put the call through to bb bbb bbbb".

CS1

ETSI INAP Capability Set 1. An ITU standard.

DAP

Data Access Pack. An extension module for ACS which allows control plans to make asynchronous requests to external systems over various protocols including XML and LDAP.

Diameter

A feature rich AAA protocol. Utilises SCTP and TCP transports.

DP

Detection Point

DRA

Destination Routing Address. The parameter in the INAP Connect operation, sent from ACS to the SSP. This is the number the SSP is instructed to connect to.

DTMF

Dual Tone Multi-Frequency - system used by touch tone telephones where one high and one low frequency, or tone, is assigned to each touch tone button on the phone.

EDR

Event Detail Record

Note: Previously CDR. The industry standard for CDR is EDR (Event Detail Record). Over time EDR will replace CDR in the NCC documentation.

EMI

Exchange Message Interface protocol

ENUM

E.164 Number Mapping.

ESN

Electronic Serial Number - a 32bit number uniquely identifying the mobile station equipment.
ETSI
European Telecommunications Standards Institute

FCI
Furnish Charging Information. An INAP operation sent from ACS to the SSP to control the contents of EDRs produced by the SSP.

FDA
First Delivery Attempt - the delivery of a short message directly to the SME rather than relaying it through the MC.

GPRS
General Packet Radio Service - employed to connect mobile cellular users to PDN (Public Data Network - for example the Internet).

GSM
Global System for Mobile communication.
It is a second generation cellular telecommunication system. Unlike first generation systems, GSM is digital and thus introduced greater enhancements such as security, capacity, quality and the ability to support integrated services.

GT
Global Title.
The GT may be defined in any of the following formats:
- Type 1: String in the form "1,<noa>,<BCD address digits>"
- Type 2: String in the form "2,<trans type><BCD address digits>"
- Type 3: String in the form "3,<trans type>,<num plan>,<BCD address digits>"
- Type 4: String in the form "4,<trans type>,<num plan>,<noa>,<BCD address digits>"
The contents of the Global Title are defined in the Q713 specification, please refer to section 3.4.2.3 for further details on defining Global Title.

GUI
Graphical User Interface

HLR
The Home Location Register is a database within the HPLMN (Home Public Land Mobile Network). It provides routing information for MT calls and SMS. It is also responsible for the maintenance of user subscription information. This is distributed to the relevant VLR, or SGSN (Serving GPRS Support Node) through the attach process and mobility management procedures such as Location Area and Routing Area updates.

HPLMN
Home PLMN
**HTML**

HyperText Markup Language, a small application of SGML used on the World Wide Web. It defines a very simple class of report-style documents, with section headings, paragraphs, lists, tables, and illustrations, with a few informational and presentational items, and some hypertext and multimedia.

**Hunting**

A terminating call feature where a subscriber may request a list of alternate destination addresses. If their mobile station is not attached, or does not answer a call, then the service logic should attempt to reach the supplied alternate destinations in sequence.

**ICA**

InitiateCallAttempt. A CAMEL/INAP operation sent by the SLC to an SSP request that a voice call is started.

**IDP**

INAP message: Initial DP (Initial Detection Point)

**IMSI**

International Mobile Subscriber Identifier. A unique identifier allocated to each mobile subscriber in a GSM and UMTS network. It consists of a MCC (Mobile Country Code), a MNC (Mobile Network Code) and a MSIN (Mobile Station Identification Number).

The IMSI is returned by the HLR query (SRI-SM) when doing FDA. This tells the MSC exactly who the subscriber is that the message is to be sent to.

**IN**

Intelligent Network

**INAP**

Intelligent Network Application Part - a protocol offering real time communication between IN elements.

**Initial DP**

Initial Detection Point - INAP Operation. This is the operation that is sent when the switch reaches a trigger detection point.

**In-Roamer**

A roaming subscriber entering a mobile phone network.

**IP**

1) Internet Protocol

2) Intelligent Peripheral - This is a node in an Intelligent Network containing a Specialized Resource Function (SRF).
IS-41
Interim Standard 41 is a signaling protocol used in cellular telecommunications systems. It deals with the signalling between the MSC and other network elements for the purpose of handovers and roaming etc.

ISDN
Integrated Services Digital Network - set of protocols for connecting ISDN stations.

ISUP
ISDN User Part - part of the SS7 protocol layer and used in the setting up, management, and release of trunks that carry voice and data between calling and called parties.

ITU
International Telecommunication Union

IVR
Interactive Voice Response - systems that provide information in the form of recorded messages over telephone lines in response to user input in the form of spoken words or, more commonly, DTMF signalling.

LAC
Location Area Code. This is an integer value specified as the third level of detail in the location area information. One LAC contains multiple Cell IDs or SAIs.

LCP
Location Capabilities Pack - set of software components used by other applications to look up the location of mobile devices.

LMSI
The subscriber's Local Mobile Subscriber Identity. When the subscriber is roaming, FDA uses both a LMSI and an IMSI.

MAP
Mobile Application Part - a protocol which enables real time communication between nodes in a mobile cellular network. A typical usage of the protocol would be for the transfer of location information from the VLR to the HLR.

MC
Message Centre. Also known as SMSC.

MCC
Mobile Country Code. In the location information context, this is padded to three digits with leading zeros. Refer to ITU E.212 ("Land Mobile Numbering Plan") documentation for a list of codes.
**MDN**

Mobile Directory Number

**Messaging Manager**

The Messaging Manager service and the Short Message Service components of Oracle Communications Network Charging and Control product. Component acronym is MM (formerly MMX).

**MIN**

Mobile Identification Number, also known as an MSID.

**MM**

Messaging Manager. Formerly MMX, see also XMS (on page 678) and Messaging Manager (on page 671).

**MNC**

Mobile Network Code. The part of an international address following the mobile country code (MCC), or at the start of a national format address. This specifies the mobile network code, that is, the operator owning the address. In the location information context, this is padded to two digits with a leading zero. Refer to ITU E.212 ("Land Mobile Numbering Plan") documentation for a list of codes.

**MNP**

Mobile Number Portability

**MO**

Mobile Originated

**MOX**

Minimal OSA using XDR.

This protocol, based on a modified subset of Parlay/OSA, can be used between the SLC and the Commerce Engine (CE).

**MS**

Mobile Station

**MSC**

Mobile Switching Centre. Also known as a switch.

**MSID**

Mobile Subscriber Identification, also known as an MIN.

**MSIN**

Mobile Station Identification Number.
**MSISDN**

Mobile Station ISDN number. Uniquely defines the mobile station as an ISDN terminal. It consists of three parts; the country code (CC), the national destination code (NDC) and the subscriber number (SN).

**MSRN**

Mobile Station Roaming Number

**MT**

Mobile Terminated

**NOA**

Nature Of Address - a classification to determine in what realm (Local, National or International) a given phone number resides, for the purposes of routing and billing.

**NP**

Number Portability

**NPI**

Number Plan Indicator

**Octet**

Byte - 8 bits.

**Oracle**

Oracle Corporation

**ORB**

Object Request Broker. Within an Object based communication system, an ORB keeps track of the actual addresses of all defined objects and thus is used to route traffic to the correct destination. The CORBA defines the ORB in a series of standards enabling different platforms to share common information.

**OSA**

Open Service Access provides a standard interface through which developers can design services that may interact with functions within the network.

**Out-Roamer**

A roaming subscriber leaving their mobile phone network.

**PACUI**

Play Announcement and Collect User Information
**Parlay/OSA**
Defines a set of open, standardised APIs that allow applications to access core network functionality. The APIs are defined using CORBA IDL which models method calls on remote objects.

**PC**
Point Code. The Point Code is the address of a switching point.

**Peer**
Remote machine, which for our purposes is capable of acting as a Diameter agent.

**PI**
Provisioning Interface - used for bulk database updates/configuration instead of GUI based configuration.

**PIN**
Personal Identification Number

**PLMN**
Public Land Mobile Network

**PSTN**
Public Switched Telephone Network - a general term referring to the variety of telephone networks and services.

**RIMS**
Routing Information for Mobile Services. Used to cache HLR lookup information.

*Note: Now known as "Messaging Manager Navigator".*

**RTCC**
Real Time Call Control. The real-time SLC function which controls pre-paid (or convergent post-paid) voice calls under guidance from a billing platform.

**SCCP**
Signalling Connection Control Part (part of the SS7 protocol stack).

**SCCP Address**
Is made up of PC + SSN + GT; or PC + SSN; or GT; or GT + PC.

**SCI**
Send Charging Information. An INAP operation sent from ACS to the SSP to control real time charging by the SSP.
SCP
Service Control Point. Also known as SLC.

SCTP
Stream Control Transmission Protocol. A transport-layer protocol analogous to the TCP or User Datagram Protocol (UDP). SCTP provides some similar services as TCP (reliable, in-sequence transport of messages with congestion control) but adds high availability.

Service Provider
See Telco.

SES
Subscriber Event Service is an application that enables a service provider to send text messages to roaming subscribers (both their own and foreign subscribers) when they roam in and out of their network.

Session
Diameter exchange relating to a particular user or subscriber access to a provided service (for example, a telephone call).

SGML

SGSN
Serving GPRS Support Node

SIM
Usually referred to as a SIM card, the Subscriber Identity Module is the user subscription to the mobile network. The SIM contains relevant information that enables access onto the subscripted operator’s network.

SIP
Session Initiation Protocol - a signaling protocol for Internet conferencing, telephony, event notification and instant messaging. (IETF)

SK
Service Key

SLC
Service Logic Controller (formerly UAS).

SLEE
Service Logic Execution Environment
**SME**
Short Message Entity - an entity which may send or receive Short Messages. It may be located in a fixed network, a mobile, or an SMSC.

**SMP**
Service Management Platform (also referred to as SMS).

**SMPP**
Short Message Peer-to-Peer protocol

**SMS**
Depending on context, can be:
- Short Message Service
- Service Management System platform
- NCC Service Management System application

**SMSC**
Short Message Service Centre - stores and forwards a short message to the indicated destination subscriber number.

**SN**
Service Number

**SOAP**

**SRF**
Specialized Resource Function - This is a node on an IN which can connect to both the SSP and the SLC and delivers additional special resources into the call, mostly related to voice data, for example play voice announcements or collect DTMF tones from the user. Can be present on an SSP or an Intelligent Peripheral (IP).

**SRI**
Send Routing Information - This process is used on a GSM network to interrogate the HLR for subscriber routing information.

**SS7**
A Common Channel Signalling system used in many modern telecoms networks that provides a suite of protocols which enables circuit and non circuit related information to be routed about and between networks. The main protocols include MTP, SCCP and ISUP.

**SSN**
Subsystem Number. An integer identifying applications on the SCCP layer.
For values, refer to 3GPP TS 23.003.
SSP
Service Switching Point

Switching Point
Anything that can send and receive C7 messages.

System Administrator
The person(s) responsible for the overall set-up and maintenance of the IN.

TCAP
Transaction Capabilities Application Part – layer in protocol stack, message protocol.

TCP
Transmission Control Protocol. This is a reliable octet streaming protocol used by the majority of applications on the Internet. It provides a connection-oriented, full-duplex, point to point service between hosts.

TDP
Trigger Detection Point.

Telco
Telecommunications Provider. This is the company that provides the telephone service to customers.

Telecommunications Provider
See Telco.

Termination node
Any node which sends, or can send, an INAP Connect operation to the SSP. In ACS, termination nodes are:

- Unconditional Termination (see page 33)
- Attempt Termination (see page 22)
- Attempt Terminate to Pending TN (see page 470)
- Terminate to Pending TN (see page 481)
- Attempt Terminate to Pending TN With Duration (see page 472)

Termination Number
The final number that a call terminates to. Can be set in control plan nodes such as Attempt Termination (see page 22) and Unconditional Termination (see page 33) for re-routing numbers such as Toll Free or Follow Me numbers.

UCAI
Universal Call Agent ISUP (formerly VSSP)
UIS
USSD Interactive Services

UPC
USSD Portal Components

URI
Uniform Resource Identifier.

USSD
Unstructured Supplementary Service Data - a feature in the GSM MAP protocol that can be used to provide subscriber functions such as Balance Query and Friends and Family Access.

VLR
Visitor Location Register - contains all subscriber data required for call handling and mobility management for mobile subscribers currently located in the area controlled by the VLR.

VMSC
Visited Mobile Switching Centre

Voice Call
The term “voice call” in this document is intended to denote any call controlled by CAMEL or INAP InitialDP. In practice this also includes fax calls, data-over-voice calls, and also includes 3G voice and video conference calls.

VPN
The Virtual Private Network product is an enhanced services capability enabling private network facilities across a public telephony network.

VSSP
Virtual SSP - old name for UCAI

VWS
Oracle Voucher and Wallet Server (formerly UBE).

WSDL
Web Services Description Language.

XDR
External Data Representation.
A standard for the description and encoding of data. It is useful for transferring data between different computer architectures.

XDR uses a language to describe data formats. The language can only be used to describe data; it is not a programming language.
XML

eXtensible Markup Language. It is designed to improve the functionality of the Web by providing more flexible and adaptable information identification.

It is called extensible because it is not a fixed format like HTML. XML is a `metallanguage' — a language for describing other languages—which lets you design your own customized markup languages for limitless different types of documents. XML can do this because it's written in SGML.

XMS

Three letter code used to designate some components and path locations used by the Oracle Communications Network Charging and Control Messaging Manager (on page 671) service and the Short Message Service. The published code is MM (on page 671) (formerly MMX).
## Index

### A

<table>
<thead>
<tr>
<th>Term</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>681</td>
</tr>
<tr>
<td>About Customer Feature Sets</td>
<td>1</td>
</tr>
<tr>
<td>About Feature Sets</td>
<td>1</td>
</tr>
<tr>
<td>About Messaging Manager Temporary Storage Profile</td>
<td>13</td>
</tr>
<tr>
<td>About Prefix Tree Feature Nodes</td>
<td>498, 503</td>
</tr>
<tr>
<td>About table lookup datasets</td>
<td>440</td>
</tr>
<tr>
<td>About the Feature Palette</td>
<td>1</td>
</tr>
<tr>
<td>About This Document</td>
<td>xi</td>
</tr>
<tr>
<td>Accept</td>
<td>629, 630</td>
</tr>
<tr>
<td>Account Activate</td>
<td>221, 223</td>
</tr>
<tr>
<td>Account Code Entry</td>
<td>7, 371</td>
</tr>
<tr>
<td>Account State Branch</td>
<td>221, 224, 268</td>
</tr>
<tr>
<td>Account Status</td>
<td>227</td>
</tr>
<tr>
<td>Account Status SMS</td>
<td>221, 222, 231</td>
</tr>
<tr>
<td>ACS</td>
<td>681</td>
</tr>
<tr>
<td>ACS Buffers</td>
<td>4, 7, 300, 337</td>
</tr>
<tr>
<td>ACS primary tags</td>
<td>582</td>
</tr>
<tr>
<td>ACS_CB</td>
<td>681</td>
</tr>
<tr>
<td>Activate Control Plan</td>
<td>371, 374, 548</td>
</tr>
<tr>
<td>Add a geographic entry or Region to an exit branch</td>
<td>427</td>
</tr>
<tr>
<td>Adding a branch/range mapping</td>
<td>550, 552</td>
</tr>
<tr>
<td>Adding explicit date ranges</td>
<td>553</td>
</tr>
<tr>
<td>Adding holiday set entries</td>
<td>553</td>
</tr>
<tr>
<td>Adding months example</td>
<td>558</td>
</tr>
<tr>
<td>Allocating individual prefixes vs allocating folders</td>
<td>426</td>
</tr>
<tr>
<td>Alphabet Branching</td>
<td>663, 664</td>
</tr>
<tr>
<td>ANI</td>
<td>681</td>
</tr>
<tr>
<td>API</td>
<td>681</td>
</tr>
<tr>
<td>Apply Rewards</td>
<td>222, 233</td>
</tr>
<tr>
<td>Array tag example</td>
<td>6</td>
</tr>
<tr>
<td>Array tags</td>
<td>5</td>
</tr>
<tr>
<td>ASP</td>
<td>681</td>
</tr>
<tr>
<td>ATI</td>
<td>681</td>
</tr>
<tr>
<td>Attempt Delivery Pending</td>
<td>629, 631</td>
</tr>
<tr>
<td>Attempt Terminate to Pending TN</td>
<td>481, 482, 486, 692</td>
</tr>
<tr>
<td>Attempt Terminate to Pending TN with Duration</td>
<td>481, 484, 692</td>
</tr>
<tr>
<td>Attempt Termination</td>
<td>23, 24, 692</td>
</tr>
<tr>
<td>Audience</td>
<td>xi</td>
</tr>
<tr>
<td>AUS</td>
<td>681</td>
</tr>
<tr>
<td>Availability</td>
<td>587, 589, 590, 592, 594, 596, 598, 600, 602, 603, 605, 609, 611</td>
</tr>
<tr>
<td>Available Feature Nodes</td>
<td>23, 37, 97, 117, 181, 221, 275, 291, 315, 323, 329, 357, 371, 383, 415, 441, 445, 481, 497, 521, 529, 537, 547, 561, 579, 613, 629, 663</td>
</tr>
</tbody>
</table>

### B

<table>
<thead>
<tr>
<th>Term</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Cascade Override</td>
<td>37, 39</td>
</tr>
<tr>
<td>Balance State Branch</td>
<td>222, 234</td>
</tr>
<tr>
<td>Balance Status</td>
<td>222, 238</td>
</tr>
<tr>
<td>Balance Type Branching</td>
<td>242</td>
</tr>
<tr>
<td>Balance Type Cascade Branching</td>
<td>222, 244</td>
</tr>
<tr>
<td>Base Feature Nodes</td>
<td>23</td>
</tr>
<tr>
<td>Base Feature Nodes List</td>
<td>23</td>
</tr>
<tr>
<td>BCSM</td>
<td>681</td>
</tr>
<tr>
<td>BE</td>
<td>681</td>
</tr>
<tr>
<td>BFT</td>
<td>681</td>
</tr>
<tr>
<td>Billable Event</td>
<td>41</td>
</tr>
<tr>
<td>Branch on Bearer Type</td>
<td>383, 384</td>
</tr>
<tr>
<td>Branch On Call Forwarding Pending</td>
<td>383, 389</td>
</tr>
<tr>
<td>Branch on Domain</td>
<td>629, 632</td>
</tr>
<tr>
<td>Branch on Event Report Request BCSM Code</td>
<td>383, 390</td>
</tr>
<tr>
<td>Branch on Indicator</td>
<td>384, 395</td>
</tr>
<tr>
<td>Branch on Protocol</td>
<td>384, 397</td>
</tr>
<tr>
<td>Branch on Service Key</td>
<td>384, 398</td>
</tr>
<tr>
<td>Buffer list</td>
<td>7</td>
</tr>
<tr>
<td>Buffers</td>
<td>572, 577</td>
</tr>
<tr>
<td>Business Prefix Branch</td>
<td>37, 46</td>
</tr>
</tbody>
</table>

### C

<table>
<thead>
<tr>
<th>Term</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C7</td>
<td>681</td>
</tr>
<tr>
<td>Call end reasons</td>
<td>88</td>
</tr>
<tr>
<td>Call Filtering</td>
<td>415, 416</td>
</tr>
<tr>
<td>Call Forwarded Branching</td>
<td>384, 401</td>
</tr>
<tr>
<td>Call Information SMS</td>
<td>38, 48</td>
</tr>
<tr>
<td>Call Initiation</td>
<td>445, 446</td>
</tr>
<tr>
<td>Call Progression</td>
<td>384, 403</td>
</tr>
<tr>
<td>Caller available functions</td>
<td>142</td>
</tr>
<tr>
<td>Calling Party</td>
<td>415, 419</td>
</tr>
<tr>
<td>Calling Party Category</td>
<td>415, 420</td>
</tr>
<tr>
<td>CAMEL</td>
<td>682</td>
</tr>
<tr>
<td>CAP</td>
<td>682</td>
</tr>
<tr>
<td>CC</td>
<td>682</td>
</tr>
<tr>
<td>CCR</td>
<td>682</td>
</tr>
<tr>
<td>CCS</td>
<td>682</td>
</tr>
<tr>
<td>CCS Charging Feature Nodes</td>
<td>37</td>
</tr>
<tr>
<td>CCS Charging feature nodes list</td>
<td>37</td>
</tr>
<tr>
<td>CCS Credit Card Feature Nodes</td>
<td>97</td>
</tr>
<tr>
<td>CCS Credit Card Feature Nodes List</td>
<td>97</td>
</tr>
<tr>
<td>CCS Profile Block list</td>
<td>5</td>
</tr>
<tr>
<td>CCS Subscriber Feature Nodes</td>
<td>117</td>
</tr>
<tr>
<td>CCS Subscriber Feature Nodes List</td>
<td>117</td>
</tr>
<tr>
<td>CCS Voucher Feature Nodes</td>
<td>181</td>
</tr>
<tr>
<td>CCS Voucher Feature Nodes List</td>
<td>181</td>
</tr>
<tr>
<td>CCS Wallet Management Feature Nodes</td>
<td>221</td>
</tr>
<tr>
<td>CCS Wallet Management Feature Nodes List</td>
<td>221</td>
</tr>
<tr>
<td>CDR</td>
<td>682</td>
</tr>
<tr>
<td>Change CDR</td>
<td>445, 450</td>
</tr>
<tr>
<td>Change Ordered Prefix Tree Entry</td>
<td>497, 500</td>
</tr>
<tr>
<td>Change PIN</td>
<td>117, 119</td>
</tr>
<tr>
<td>Check Limitations</td>
<td>497, 503</td>
</tr>
<tr>
<td>Check Prefix Tree Capacity</td>
<td>497, 505</td>
</tr>
<tr>
<td>CID</td>
<td>682</td>
</tr>
<tr>
<td>Page References</td>
<td>Topics</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------</td>
</tr>
<tr>
<td>118, 134</td>
<td>Do Credit Card Recharge</td>
</tr>
<tr>
<td>xii</td>
<td>Document Conventions</td>
</tr>
<tr>
<td>6</td>
<td>Domains</td>
</tr>
<tr>
<td>683</td>
<td>DP</td>
</tr>
<tr>
<td>683</td>
<td>DRA</td>
</tr>
<tr>
<td>683</td>
<td>DTMF</td>
</tr>
<tr>
<td>24, 29</td>
<td>Dynamic Switch</td>
</tr>
<tr>
<td>27</td>
<td>Editing Control Plan Notes</td>
</tr>
<tr>
<td>305, 540, 632</td>
<td>Editing the node</td>
</tr>
<tr>
<td>573, 575, 576</td>
<td>Editing the number of exit branches</td>
</tr>
<tr>
<td>683</td>
<td>EDR</td>
</tr>
<tr>
<td>683</td>
<td>EMI</td>
</tr>
<tr>
<td>24, 30</td>
<td>End</td>
</tr>
<tr>
<td>2</td>
<td>Enter tag value</td>
</tr>
<tr>
<td>315</td>
<td>ENUM Call Out</td>
</tr>
<tr>
<td>315</td>
<td>ENUM Feature Nodes</td>
</tr>
<tr>
<td>315, 318</td>
<td>ENUM Naptr Response</td>
</tr>
<tr>
<td>315</td>
<td>ENUM Query</td>
</tr>
<tr>
<td>683</td>
<td>Enumerated fields</td>
</tr>
<tr>
<td>683</td>
<td>ESN</td>
</tr>
<tr>
<td>684</td>
<td>ETSI</td>
</tr>
<tr>
<td>323</td>
<td>Event Branching</td>
</tr>
<tr>
<td>323, 325</td>
<td>Event Counting</td>
</tr>
<tr>
<td>323, 326</td>
<td>Event Setting</td>
</tr>
<tr>
<td>323</td>
<td>Events Feature Nodes</td>
</tr>
<tr>
<td>323</td>
<td>Events Feature Nodes List</td>
</tr>
<tr>
<td>433, 437, 450, 490, 518, 616, 622</td>
<td>Example</td>
</tr>
<tr>
<td>204</td>
<td>Example configuration values</td>
</tr>
<tr>
<td>429, 492</td>
<td>Example control plan</td>
</tr>
<tr>
<td>211</td>
<td>Example for SMS</td>
</tr>
<tr>
<td>210</td>
<td>Example for voice/USSD</td>
</tr>
<tr>
<td>643, 650</td>
<td>Example message</td>
</tr>
<tr>
<td>658</td>
<td>Example notification</td>
</tr>
<tr>
<td>394, 403</td>
<td>Example of the use of the node</td>
</tr>
<tr>
<td>204</td>
<td>Example SMS values</td>
</tr>
<tr>
<td>73, 205, 378, 382</td>
<td>Example use of node</td>
</tr>
<tr>
<td>358, 360, 362, 365</td>
<td>Exits</td>
</tr>
<tr>
<td>644, 658</td>
<td>Extra configuration</td>
</tr>
<tr>
<td>613, 614</td>
<td>Extract Content</td>
</tr>
<tr>
<td>613, 617</td>
<td>Extract Number</td>
</tr>
<tr>
<td>684</td>
<td>FCI</td>
</tr>
<tr>
<td>684</td>
<td>FDA</td>
</tr>
<tr>
<td>1</td>
<td>Feature Nodes and Feature Sets</td>
</tr>
<tr>
<td>429</td>
<td>Finding a number in the geographic tree</td>
</tr>
<tr>
<td>613, 620, 635</td>
<td>Format Text</td>
</tr>
<tr>
<td>118, 139</td>
<td>Friends and Destination Configuration</td>
</tr>
<tr>
<td>118, 145</td>
<td>Friends and Destination Discount</td>
</tr>
<tr>
<td>118, 147</td>
<td>Friends and Destination Menu</td>
</tr>
<tr>
<td>118, 142</td>
<td>Friends and Family Configuration</td>
</tr>
<tr>
<td>139</td>
<td>Friends, Family and Destination Discount module</td>
</tr>
<tr>
<td>426</td>
<td>Geographic routing</td>
</tr>
<tr>
<td>416, 425</td>
<td>Geographical Routing</td>
</tr>
<tr>
<td>38, 63</td>
<td>Get CUG Details</td>
</tr>
<tr>
<td>118, 149, 159</td>
<td>Get Destination Prefix</td>
</tr>
<tr>
<td>446, 455</td>
<td>Get Hunting List</td>
</tr>
<tr>
<td>481, 489</td>
<td>Get Hunting Number</td>
</tr>
<tr>
<td>684</td>
<td>GPRS</td>
</tr>
<tr>
<td>684</td>
<td>GSM</td>
</tr>
<tr>
<td>684</td>
<td>GT</td>
</tr>
<tr>
<td>684</td>
<td>GUI</td>
</tr>
<tr>
<td>118, 152</td>
<td>Help Information</td>
</tr>
<tr>
<td>684</td>
<td>HLR</td>
</tr>
<tr>
<td>684</td>
<td>HPLMN</td>
</tr>
<tr>
<td>685</td>
<td>HTML</td>
</tr>
<tr>
<td>685</td>
<td>Hunting</td>
</tr>
<tr>
<td>685</td>
<td>ICA</td>
</tr>
<tr>
<td>685</td>
<td>IDP</td>
</tr>
<tr>
<td>685</td>
<td>IMSI</td>
</tr>
<tr>
<td>685</td>
<td>IN</td>
</tr>
<tr>
<td>357, 359</td>
<td>In The Zone</td>
</tr>
<tr>
<td>685</td>
<td>INAP</td>
</tr>
<tr>
<td>298</td>
<td>Include Pending TN Type</td>
</tr>
<tr>
<td>685</td>
<td>Initial DP</td>
</tr>
<tr>
<td>685</td>
<td>In-Roamer</td>
</tr>
<tr>
<td>537, 538</td>
<td>In-Roamer Contact Check</td>
</tr>
<tr>
<td>537, 539</td>
<td>In-Roamer Messages Selection</td>
</tr>
<tr>
<td>329</td>
<td>Interaction Feature Nodes</td>
</tr>
<tr>
<td>329</td>
<td>Interaction Feature Nodes List</td>
</tr>
<tr>
<td>396, 409</td>
<td>Interpretation of values</td>
</tr>
<tr>
<td>358, 498, 529</td>
<td>Introduction</td>
</tr>
<tr>
<td>685</td>
<td>IP</td>
</tr>
<tr>
<td>686</td>
<td>IS-41</td>
</tr>
<tr>
<td>529, 530</td>
<td>IS41 RIMS Query</td>
</tr>
<tr>
<td>686</td>
<td>ISDN</td>
</tr>
<tr>
<td>686</td>
<td>ISUP</td>
</tr>
<tr>
<td>422</td>
<td>Enumerated Values for Calling Party Category</td>
</tr>
<tr>
<td>441, 442</td>
<td>Iterator</td>
</tr>
<tr>
<td>442</td>
<td>Iterator examples</td>
</tr>
<tr>
<td>444</td>
<td>ITU</td>
</tr>
<tr>
<td>686</td>
<td>IVR</td>
</tr>
<tr>
<td>24, 31</td>
<td>Junction</td>
</tr>
<tr>
<td>613, 622</td>
<td>Keyword Search and Replace</td>
</tr>
<tr>
<td>L</td>
<td>Language Setting • 561, 562</td>
</tr>
<tr>
<td>LAC • 686</td>
<td></td>
</tr>
<tr>
<td>LCP • 686</td>
<td></td>
</tr>
<tr>
<td>LCP Feature Nodes • 357</td>
<td></td>
</tr>
<tr>
<td>LCP Feature Nodes List • 357</td>
<td></td>
</tr>
<tr>
<td>Limitation default values • 499</td>
<td></td>
</tr>
<tr>
<td>Limitation source • 498</td>
<td></td>
</tr>
<tr>
<td>Limitations • 498</td>
<td></td>
</tr>
<tr>
<td>LMSI • 686</td>
<td></td>
</tr>
<tr>
<td>Load Profile • 371, 374, 379</td>
<td></td>
</tr>
<tr>
<td>Loop Limit • 446, 457</td>
<td></td>
</tr>
<tr>
<td>Looping • 517</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Machine environment information • 642, 649, 658</td>
</tr>
<tr>
<td>Main Menu • 118, 154</td>
<td></td>
</tr>
<tr>
<td>MAP • 686</td>
<td></td>
</tr>
<tr>
<td>MAP RIMS Query • 529, 532</td>
<td></td>
</tr>
<tr>
<td>MC • 686</td>
<td></td>
</tr>
<tr>
<td>MCC • 686</td>
<td></td>
</tr>
<tr>
<td>MDN • 687</td>
<td></td>
</tr>
<tr>
<td>Message Attribute Branching • 663, 666, 676</td>
<td></td>
</tr>
<tr>
<td>Message content • 642, 648, 653</td>
<td></td>
</tr>
<tr>
<td>Message Data Branching • 613, 625</td>
<td></td>
</tr>
<tr>
<td>Message example • 52, 233</td>
<td></td>
</tr>
<tr>
<td>Message parameters • 51, 231, 232</td>
<td></td>
</tr>
<tr>
<td>Message tokens • 642, 643, 647, 648, 652, 653</td>
<td></td>
</tr>
<tr>
<td>Messaging Manager • 687, 694</td>
<td></td>
</tr>
<tr>
<td>Messaging Manager Profile Fields • 13, 613, 629, 663</td>
<td></td>
</tr>
<tr>
<td>MIN • 687</td>
<td></td>
</tr>
<tr>
<td>MM • 687, 694</td>
<td></td>
</tr>
<tr>
<td>MMX EDR • 630, 635</td>
<td></td>
</tr>
<tr>
<td>MNC • 687</td>
<td></td>
</tr>
<tr>
<td>MNP • 687</td>
<td></td>
</tr>
<tr>
<td>MO • 687</td>
<td></td>
</tr>
<tr>
<td>Modify • 291, 302</td>
<td></td>
</tr>
<tr>
<td>Modify Credit Card Details • 98, 109</td>
<td></td>
</tr>
<tr>
<td>MoLI codes • 548</td>
<td></td>
</tr>
<tr>
<td>MOX • 687</td>
<td></td>
</tr>
<tr>
<td>MOX tokens • 657</td>
<td></td>
</tr>
<tr>
<td>MS • 687</td>
<td></td>
</tr>
<tr>
<td>MSC • 687</td>
<td></td>
</tr>
<tr>
<td>MSID • 687</td>
<td></td>
</tr>
<tr>
<td>MSIN • 687</td>
<td></td>
</tr>
<tr>
<td>MSISDN • 688</td>
<td></td>
</tr>
<tr>
<td>MSRN • 688</td>
<td></td>
</tr>
<tr>
<td>MT • 688</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Named Event • 38, 64</td>
</tr>
<tr>
<td>Nested subtrees • 426</td>
<td></td>
</tr>
<tr>
<td>Network Feature Nodes • 383</td>
<td></td>
</tr>
</tbody>
</table>
483, 486, 494, 495, 502, 504, 507, 510, 515, 519, 555, 558, 580, 599
Profile Branching • 292, 308
Profile Counting • 292, 310
Profile Date Compare • 547, 554
Profile Date Store • 547, 556
Profile Field Conversion Rules • 296
Profile selection through tag# • 2
Promotion rules • 258
Proportional Distribution • 24, 32
PSTN • 689

Q
Query • 530

R
Read Secret Code • 119, 166
Recharge Menu • 181, 183
Refresh Subscriber Information • 119, 168
Reject • 630, 637
Related documents • xi
Remote Access Service • 119, 169
Remove geography entries from a branch subtree • 428
Response • 530
Response defaults • 333
Retrieve Credit Cards for Subscriber • 98, 112
RIMS • 689
RIMS Feature Nodes • 529
RIMS Feature Nodes List • 529
RIMS Nodes Use Cases • 529
RTCC • 689

S
SCCP • 689
SCCP Address • 689
SCI • 689
Scope • xi
SCP • 690
Scratch Card Recharge • 181, 186
Scratch Card Recharge Alternate Subscriber • 181, 190
SCTP • 690
Search patterns • 435, 437
Segment Number Branching • 663, 671
Select Credit Transfer • 223, 260
Select Language • 119, 171
Select Voucher Scenario • 181, 199, 207
Selection Dependent Routing • 330, 348
Selection keys • 511
Send Buffer • 561, 565
Send Notification • 330, 351
Send Request • 275, 282
Send Short Message • 354
Send Short Message Notification • 630, 638
Send USSD Message • 630, 644, 650
Send USSD Notification • 630, 650
Service domains • 6
Service Handover • 446, 468
Service Provider • 690
SES • 690
SES Feature Nodes • 537
SES Feature Nodes List • 537
Session • 690
Set • 292, 312
Set Active Domain • 38, 70
Set BE EDR • 38, 73
Set Carrier Code • 9, 446, 470
Set Cut and Paste • 384, 405
Set Data Coding • 664, 672
Set Discount • 38, 77
Set Indicator • 384, 406
Set Message Attribute • 664, 673, 676
Set Message Routing • 630, 658
Set My Zone • 357, 362
Set Originating Address • 630, 660
Set Pending TN from Profile • 5, 482, 492
Set Presence • 521, 524
Set Product Type • 119, 173
Set Tariff Code • 446, 472
Set Tariff Plan Rule • 38, 80
Set Time Zone Message Attribute • 664, 673, 676
Setting the Fast Timeout Period • 348, 351
Setting Variable Part Announcements • 570, 571, 575, 576
SGML • 690
SGSN • 690
Short Message Charging • 545
Shortcut key • 494
Shortcut keys • 24, 28, 30, 33, 35, 344, 348, 419, 421, 425, 482, 549, 551, 559
SIM • 690
SIP • 690
SK • 690
SLC • 690
SLEE • 690
Sleep • 24, 473
SMCB Feature Node • 545
SME • 691
SMP • 691
SMPP • 691
SMS • 203, 691
SMS Lown Balance • 223, 262
SMS notification • 59
SMSC • 691
SN • 691
SOAP • 691
Source Profile Tag • 331, 333
Specifying values in profile selection fields • 411, 448
SRF • 691
SRI • 691
SS7 • 691
SSN • 691
SSP • 692
Standard profile block list • 3
Start • 24, 33
Statistic Increment • 446, 475
Store My Location • 357, 364
Store My Network ID • 357, 366
Sub Control Plan • 446, 476
Subscriber Creation/ Deletion • 174
Subscriber data • 6
Subscribers Per Credit Card Branching • 98, 115
Sub-tags • 5, 299, 339, 432
Supported profile data types • 635
Switching Point • 692
System Administrator • 692
System generated EDR tags • 450, 452

T
Table Lookup • 416, 439
Target Selection • 333, 336
Tariff Plan Override • 38, 83
TCAP • 692
TCAP Handover • 384, 409
TCP • 692
TDP • 692
Telco • 692
Telecommunications Provider • 692
Temporary Storage Profile Fields • 13
Terminate to Pending TN • 482, 486, 494, 692
Terminate Unchanged • 24, 34
Termination node • 692
Termination Number • 692
Test Data Coding • 664, 677
Test Pending TN Type • 482, 495
Text Content Branching • 614, 625
Threshold example • 237, 244
Time configuration • 332, 335
Time Feature Nodes • 547
Time Feature Nodes List • 547
Time of Day • 547, 559
Time Remaining • 223, 264
Time zone list • 548
Time Zones • 377, 548, 550, 552, 560
Tracker Account State Branch • 223, 268
Transmission Type Branching • 384, 413
Treat Target as Prefix • 299
Typographical Conventions • xii

U
UCAI • 692
UIS • 693
UIS Portal Feature Nodes • 561
UIS Portal feature nodes list • 561
Unconditional Termination • 24, 35, 692
Universal ATB • 39, 85
UPC • 693
Updateable ACS profiles • 6
URI • 693
Use Stored Sub-Tag • 299
User Input • 561, 568
User Interaction Configuration • 331
User Selection • 561, 572
Using MAP ATI Plug-in • 358
Using POSREQ Plug-in • 358
Using SRI-MSRN Plug-in • 359
Using the node • 539, 540, 541, 543
USSD • 693

V
Variable Amount Recharge • 39, 90
Version Branching • 561, 577
View Operation Script • 281
VLR • 693
VMSC • 693
Voice Call • 693
Voice Call Cost • 39, 93
Voice or USSD • 203
Voucher Recharge • 182, 206
Voucher Redeemed • 182, 213
Voucher Type Balance Information • 182, 215
Voucher Type Recharge • 182, 218
VPN • 693
VPN Analyze • 579, 580, 585
VPN Caller is On-Net • 580, 589
VPN CLI Lookup • 579, 590
VPN Feature Nodes • 579
VPN Feature Nodes List • 579
VPN Get Hunting Number • 580, 592
VPN Load Station • 579, 593
VPN Lookup • 579, 595
VPN Mobile Analyze • 579, 580, 597
VPN Originating CUG • 580, 600
VPN primary tags • 584
VPN Redirection Counter Branching • 580, 601
VPN Set Redirection Counter • 580, 603
VPN Set Tariff Code From Profile • 580, 604
VPN Subscriber Lookup • 580, 606
VPN Terminating CUG • 580, 608
VPN Voice Mail Number Configuration • 580, 611
VSSP • 693
VWS • 693

W
Wallet Life Cycle Period Branching • 223, 269
Wallet State Update • 223, 272
What is a profile block • 2
What is an ACS buffer? • 7
What's New • 119, 177
When are limitation defaults used • 499
WSDL • 693

X
XDR • 693
XML • 694
XMS • 687, 694
XMS Content Feature Nodes • 13, 613
XMS Content Feature Nodes List • 613
XMS Control Feature Node List • 629
XMS Control Feature Nodes • 13, 629
XMS Parameters Feature Nodes • 13, 663
XMS Parameters Feature Nodes List • 663

Z
Zones • 585