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Contents

About This Document...........................................................................................................v
Document Conventions .....................................................................................................vi

Chapter 1
System Overview ......................................................................................................................... 1

Overview................................................................................................................................. 1
What is the Virtual Private Network Service?........................................................................... 1
Main Components of VPN ....................................................................................................... 3
Statistics ................................................................................................................................... 7
EDRs ....................................................................................................................................... 10

Chapter 2
Configuration .............................................................................................................................. 11

Overview................................................................................................................................. 11
Configuring the SLEE.cfg ........................................................................................................ 11
Configuring acs.conf for the SLC .......................................................................................... 12
eserv.config Configuration .................................................................................................... 14
VPN service loader configuration .......................................................................................... 16
VPN Specific Announcements ............................................................................................... 20
Defining the VPN Screen Labels Language ......................................................................... 24
Defining the VPN Help Screen Language ............................................................................. 25
Setting up the Screens ............................................................................................................ 25

Chapter 3
Background Processes .............................................................................................................. 29

Overview................................................................................................................................. 29
libvpnService .......................................................................................................................... 29
libvpnMacroNodes ............................................................................................................... 30
libvpnChassisActions .......................................................................................................... 30

Chapter 4
Tools and Utilities .................................................................................................................... 33

Overview................................................................................................................................. 33
Examining Network and Station Profiles .............................................................................. 33

Chapter 5
About Installation and Removal ............................................................................................ 37

Overview................................................................................................................................. 37
Installation and Removal Overview ....................................................................................... 37
Checking the SMS Installation .............................................................................................. 38
Checking the SLC Installation ............................................................................................... 39
Restarting the Stats Daemon ................................................................................................. 39
About This Document

Scope
The scope of this document includes all the information required to install, configure and administer the Virtual Private Network (VPN) application.

Audience
This guide was written primarily for system administrators and persons installing, configuring and administering the Virtual Private Network (VPN) application. However, sections of the document may be useful to anyone requiring an introduction to the application.

Prerequisites
Although there are no prerequisites for using this guide, familiarity with the target platform would be an advantage.

A solid understanding of Unix and a familiarity with IN concepts are an essential prerequisite for safely using the information contained in this technical guide. Attempting to install, remove, configure or otherwise alter the described system without the appropriate background skills, could cause damage to the system; including temporary or permanent incorrect operation, loss of service, and may render your system beyond recovery.

This manual describes system tasks that should only be carried out by suitably trained operators.

Related documents
The following documents are related to this document:

- SMS Technical Guide
- ACS Technical Guide
- VPN 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>
<tbody>
<tr>
<td><strong>Special Bold</strong></td>
<td>Items you must select, such as names of tabs. Names of database tables and fields.</td>
</tr>
<tr>
<td><strong>Italics</strong></td>
<td>Name of a document, chapter, topic or other publication. Emphasis within text.</td>
</tr>
</tbody>
</table>
| **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.
Overview

Introduction

This chapter provides a high-level overview of the application. It explains the basic functionality of the system and lists the main components.

It is not intended to advise on any specific Oracle Communications Network Charging and Control (NCC) network or service implications of the product.

In this chapter

This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the Virtual Private Network Service?</td>
<td>1</td>
</tr>
<tr>
<td>Main Components of VPN</td>
<td>3</td>
</tr>
<tr>
<td>Statistics</td>
<td>7</td>
</tr>
<tr>
<td>EDRs</td>
<td>10</td>
</tr>
</tbody>
</table>

What is the Virtual Private Network Service?

Introduction

The Virtual Private Network (VPN) service provides a fully IN-based, feature-rich VPN solution with intuitive user interfaces, available on industry-standard platforms. Whilst being simple and easy to use, it also provides enhanced functionality for more experienced users.

The basic VPN service connects multiple locations together. Each VPN network has its own private numbering plan for mapping numbers in the private plan to the numbers required to correctly route the call through the PSTN (or mobile network). In addition to this simple number translation service, additional processing can be performed to further add value to the offered service.

Individual phone numbers can be provided with profiles that specify the available phone operations. The most obvious of these is outgoing call barring which prevents certain types of calls being made. The complete list of features includes:

- Originating
- Terminating
- Management Hotline
- Global Service
- IN

These are the features of the VPN service. Clearly, there are many other notable features of the NCC SLC platform, of the ACS framework, and of the SMS management subsystem that have a wider scope than just VPN.

The facility to access a corporate VPN from points outside the VPN (off-net) is provided, effectively giving access to the corporate telephone network from any phone. Access to this very powerful feature requires rigorous security to prevent fraudulent use.
Users of off-net access can also inherit the features of the service they have in their office, such as speed-dial codes, and the ability to divert calls from their office phone, etc.

**Originating features**

Here is the list of VPN originating features:

- Called party options: on-net, off-net, speed dial
- Station PIN
- Station "Roaming" feature
- Account code feature (un-validated entry, or explicit list)
- Network and station level speed dials
- Network and station level destination filtering lists
- Station off-net call bar (optional PIN override)
- Optional filtering bypass for Network speed dials
- Tariffing
- Network site code (inter-network dialing)
- Mapped network prefixes
- Closed user groups (restricted and non-restricted)

**Terminating features**

Here is the list of VPN terminating features:

- Incoming barring options (all, off-net, none)
- Network and station incoming off-net filtering lists
- Follow me number
- Time of day, time of week and day of year hunting scheduling
- Hunt on busy/no-answer/unconditional flags
- Sequential hunting list
- Routing failure alternate number
- Administrator restriction of forwarding addresses
- Choice of addressing mechanisms
  - On-net address
  - PSTN address
  - Virtual DDI address
  - Global virtual numbering system (GVNS) addressing
- Simple network-level carrier pre-select
  - National prefix replacement
  - International prefix replacement
- CLI presentation options
  - Calling line display: extension address or full address
  - CLI restricted
- Tariffing
- Closed user groups
  - Restricted
  - Non-restricted
  - PIN access requirement
Management hotline features

Here is the list of VPN management hotline features:

- Access management hotline through private or public address
- Per-station management feature restriction
- Off-net calling through management hotline
- Set follow-me/routing failure number
- Set new PIN
- Set station speed dials

Global service features

Here is the list of VPN global service features:

- Optional/configurable help line for VPN members
- Optional/configurable help announcements

IN features

Here is the list of VPN IN features:

- Option A. Re-trigger for originating/terminating processing
- Option B. Internal service handover without re-trigger
- Configurable digit prefixing for termination numbers
- Generic number normalization
- Service bypass for emergency numbers

Main Components of VPN

Diagram

The VPN system components are split between the Service Management System (SMS) and the Service Logic Controller (SLC).
This diagram shows the relationship between the major components on each system, and the ACS framework, in the context of NCC components.

**Description**

The component diagram shows how the VPN service integrates with, and interacts with, the layered ACS and SMS components.

The VPN service:

- Has a specific ACS service library. This is implemented as a shared library using the standard ACS mechanism described in *ACS Technical Guide*.
- Uses service specific feature nodes and service specific chassis actions. These are implemented as shared libraries using the standard ACS pluggable feature node/chassis action mechanisms.
- Uses the SMS for two-way replication.
- Runs all processes as the "acs_oper" user, created by ACS.
Database tables are owned by the "acs_admin" Oracle user, created by ACS.

Provides seven sample control plans that the operator can save on the SMS. These provide the operator with a sample set of services. To use the sample control plans and services, they must first be copied on to the client machine, and then compiled using the standard ACS tools. The sample control plans are:

- Fixed Line Originating
- Mobile Originating
- Terminating
- Management
- Originating Alternative
- Terminating Alternative
- Management Alternative

They can be selected as the default control plans to be used by new VPN networks for originating, terminating, and management functions.

The system administrator can modify the sample control plans to give site specific behavior. In addition, individual VPNs can be given their own dedicated call plans to replace any of the default call plans.

### VPN Profile Block list

Here are the profile blocks available when VPN is installed.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| VPN Network Profile| 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 |
| VPN Station Profile| 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 |

### VPN primary tags

Here is a list of the profile primary tags used in the VPN service.

**Note:** These tags are only present for VPN and are displayed on the ACS Configuration screen, Profile Tag Details tab.

<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>Description</td>
<td>Hex</td>
<td>Decimal</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------</td>
<td>---------</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>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>
</tbody>
</table>


### Statistics

#### Introduction

Macro nodes are feature nodes that are used by ACS using the ACS Control Plan Editor, but are not part of the ACS product. They are supplied by other NCC applications, but require the presence of ACS for use.

Macro nodes require some configuration to be entered into the `eserv.config` file. The macro node reads the global configuration file (`eserv.config`) on initialization. Should the configuration of a macro node be changed, the configuration files must be re-read.

The following section details the configuration that is necessary for the macro node used for VPN.

#### Mobile analyze

This table defines the statistics generated in the VPN Mobile Analyze macro node.

<table>
<thead>
<tr>
<th>Call Type</th>
<th>Description</th>
<th>Calling (cg) - Called (cd) Number Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOC</td>
<td>Mobile originating call where the calling number is 'on-net' and the called number is 'on-net'.</td>
<td>on-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>MOC</td>
<td>Mobile originating call where the calling number is 'on-net' and the called number is 'off-net'.</td>
<td>on-net (cg) -&gt; off-net (cd)</td>
</tr>
<tr>
<td>MOC</td>
<td>Mobile originating call where the calling number is 'on-net' and the called number is 'speed_code_on-net'.</td>
<td>on-net (cg) -&gt; speed_code_on-net (cd)</td>
</tr>
<tr>
<td>MOC</td>
<td>Mobile originating call where the calling number is 'on-net' and the called number is 'speed_code_off-net'.</td>
<td>on-net (cg) -&gt; speed_code_off-net (cd)</td>
</tr>
<tr>
<td>MFC</td>
<td>Mobile forwarded call where the calling number is 'on-net' and the called number is 'on-net'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>MFC</td>
<td>Mobile forwarded call where the calling number is 'on-net' and the called number is 'off-net'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; off-net (cd)</td>
</tr>
<tr>
<td>MFC</td>
<td>Mobile forwarded call where the calling number is 'on-net' and the called number is 'speed_code_on-net'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; speed_code_on-net (cd)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<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>
Call Type | Description | Calling (cg) - Called (cd) Number Description
--- | --- | ---
MFC | Mobile forwarded call where the calling number is 'on-net' and the called number is 'speed_code_off-net'. The forwarded call is determined when the called number does not equal the redirecting party id. | on-net (cg) -> speed_code_off-net (cd)

### Analyze

This table defines the statistics generated in the VPN Analyze macro node.

<table>
<thead>
<tr>
<th>Call Type</th>
<th>Description</th>
<th>Calling (cg) - Called (cd) Number Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
<td>Fixed line originating call where the calling number is 'on-net' and the called number is 'on-net'.</td>
<td>on-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>FOC</td>
<td>Fixed line originating call where the calling number is 'on-net' and the called number is 'off-net'.</td>
<td>on-net (cg) -&gt; off-net (cd)</td>
</tr>
<tr>
<td>FOC</td>
<td>Fixed line originating call where the calling number is 'on-net' and the called number is 'speed_code'.</td>
<td>on-net (cg) -&gt; speed_code (cd)</td>
</tr>
<tr>
<td>FOC</td>
<td>Fixed line originating call where the calling number is 'on-net' and the called number is 'alternate_station'.</td>
<td>on-net (cg) -&gt; alternate_station (cd)</td>
</tr>
<tr>
<td>FFC</td>
<td>Fixed line forwarded call where the calling number is 'on-net' and the called number is 'on-net'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>FFC</td>
<td>Fixed line forwarded call where the calling number is 'on-net' and the called number is 'off-net'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; off-net (cd)</td>
</tr>
<tr>
<td>FFC</td>
<td>Fixed line forwarded call where the calling number is 'on-net' and the called number is 'speed_code'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; speed_code (cd)</td>
</tr>
<tr>
<td>FFC</td>
<td>Fixed line forwarded call where the calling number is 'on-net' and the called number is 'alternate_station'. The forwarded call is determined when the called number does not equal the redirecting party id.</td>
<td>on-net (cg) -&gt; alternate_station (cd)</td>
</tr>
</tbody>
</table>
### CLI Lookup

This table defines the statistics generated in the VPN CLI Lookup macro node.

<table>
<thead>
<tr>
<th>Call Type</th>
<th>Description</th>
<th>Calling (cg) - Called (cd) Number Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTC</td>
<td>Mobile terminating call where the calling number is ‘on-net’ and the called number is ‘on-net’. The vpn_station.STATION_TYPE is determined as fixed(0) or mobile(1).</td>
<td>on-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>MTC</td>
<td>Mobile terminating call where the calling number is ‘off-net’ and the called number is ‘off-net’. The vpn_station.STATION_TYPE is determined as fixed(0) or mobile(1).</td>
<td>off-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>FTC</td>
<td>Fixed line terminating call where the calling number is ‘on-net’ and the called number is ‘on-net’. The vpn_station.STATION_TYPE is determined as fixed(0) or mobile(1).</td>
<td>on-net (cg) -&gt; on-net (cd)</td>
</tr>
<tr>
<td>FTC</td>
<td>Fixed line terminating call where the calling number is ‘off-net’ and the called number is ‘on-net’. The vpn_station.STATION_TYPE is determined as fixed(0) or mobile(1).</td>
<td>off-net (cg) -&gt; on-net (cd)</td>
</tr>
</tbody>
</table>

### Service Loader

This table defines the statistics generated in the VPN Service Loader macro node.

<table>
<thead>
<tr>
<th>Control Plan Type Trigger</th>
<th>Description</th>
<th>Calling (cg) - Called (cd) Number Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originating</td>
<td>Calling number is physical address.</td>
<td>physical address (cg)</td>
</tr>
<tr>
<td>Originating</td>
<td>Calling number is VDDI address.</td>
<td>VDDI address (cg)</td>
</tr>
<tr>
<td>Originating</td>
<td>Calling number is VPN station address.</td>
<td>VPN station address (cg)</td>
</tr>
<tr>
<td>Terminating</td>
<td>Calling number is physical address.</td>
<td>physical address (cd)</td>
</tr>
<tr>
<td>Terminating</td>
<td>Calling number is GVNS address.</td>
<td>GVNS address (cd)</td>
</tr>
<tr>
<td>Terminating</td>
<td>Calling number is VDDI address.</td>
<td>VDDI address (cd)</td>
</tr>
<tr>
<td>Terminating</td>
<td>Calling number is VPN station address.</td>
<td>VPN station address (cd)</td>
</tr>
</tbody>
</table>
EDRs

EDR tags

Here is the list of EDR tags generated by the ACS service, but used exclusively for the VPN service.

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGNA</td>
<td>Global Calling Network Address</td>
</tr>
<tr>
<td>CPNI</td>
<td>Calling Private Network ID</td>
</tr>
<tr>
<td>CS</td>
<td>Connect Status (Status 9 only is VPN)</td>
</tr>
<tr>
<td>PCNA</td>
<td>Calling Private Network Address</td>
</tr>
<tr>
<td>PTNA</td>
<td>Private Terminating Network Address</td>
</tr>
<tr>
<td>TGNA</td>
<td>Global Terminating Network Address</td>
</tr>
<tr>
<td>TPNI</td>
<td>Terminating Private Network ID</td>
</tr>
</tbody>
</table>

For a full description, refer to *NCC Event Detail Record Reference Guide*. 
Overview

Introduction

This chapter explains how to configure the Oracle Communications Network Charging and Control (NCC) application.

In this chapter

This chapter contains the following topics.

- Configuring the SLEE.cfg
- Configuring acs.conf for the SLC
- eserv.config Configuration
- VPN service loader configuration
- VPN Specific Announcements
- Defining the VPN Screen Labels Language
- Defining the VPN Help Screen Language
- Setting up the Screens

Configuring the SLEE.cfg

Introduction

Apart from the ServiceEntry in acs.conf, in the SLC, calls are routed to application services by using service keys. The configuration of service keys, service names and application services is done in the SLC configuration file, SLEE.cfg.

ACS is the application that runs all VPN services. ACS is labeled as slee_acs in the SLEE.cfg:

```
APPLICATION=slee_acs slee_acs.sh /IN/service_packages/ACS/bin 1 1 1000
```

The VPN services are attached to ACS by including their configuration entries in the SLEE.cfg. The structures of these entries are:

```
SERVICE=service_name priority application_name service_handle
SERVICEKEY=key_type key_value service_name
```

Service names are used to link service keys to service handles. The service handles enable the service application to distinguish between the different services it handles.

**Note:** In VPN, all service names have the same name as their respective service handle.

SLEE.cfg entries

The VPN installation adds the following SERVICE and SERVICEKEY entries to the SLEE.cfg:

```
SERVICE=VPN_Terminating 1 slee_acs VPN_Terminating
SERVICE=VPN_Originating 1 slee_acs VPN_Originating
SERVICE=VPN_Management 1 slee_acs VPN_Management
```

```
SERVICEKEY=INTEGER 112 VPN_Terminating
```
SERVICEKEY=INTEGER 113 VPN_Originating
SERVICEKEY=INTEGER 114 VPN_Management

The SLEE.cfg is located in /IN/service_packages/SLEE/etc. Refer to SLEE Technical Guide for a complete description of SLEE.cfg

Note: You may need to change the SERVICEKEY numbers if there is a conflict with existing SERVICEKEY numbers.

Three control plans per company

You are able to set up three control plans for each company, by appending a 4 character company code, in format Type_of_callCompany_information.

Example:

\[\text{service key a = service key handle: VPN-OriginatingCMP1}\]
\[\text{service key a = service key handle: VPN-TerminatingCMP1}\]
\[\text{service key a = service key handle: VPN-ManagementCMP1}\]
\[\text{service key a = service key handle: VPN-OriginatingABCD}\]
\[\text{service key a = service key handle: VPN-TerminatingABCD}\]
\[\text{service key a = service key handle: VPN-ManagementABCD}\]

Use of VPN_Originating, VPN_Terminating, VPN_Management service key handles, as described in SLEE.cfg entries, does not preclude manipulation of number buffers within control plans, using nodes such as Set Buffer, Set Carrier Code and Set Pending TN.

Configuring acs.conf for the SLC

Introduction

The VPN tools and processes are integrated within the ACS application and depend on its configuration file, acs.conf. acs.conf is located in the $(ACS_ROOT)/etc directory. For more information about acs.conf, see ACS Technical Guide.

acs.conf file

The acs.conf configuration file consists of several sections named for the executable they control. Each section contains a name value pair representing a single configuration option. Leading '#' characters represent comments and are ignored by the system. Each section must be terminated by a ':' character.

The acs.conf is part of the ACS application, however, the few variables that are specific to VPN are described in this topic. Any configuration options in the acs.conf file that are not described here are required by ACS, and should not be changed.

For a complete description of acs.conf and how to edit it, see ACS Technical Guide.

acsChassis

Service entries are specified in the acs.conf file. ServiceEntry is a standard acsChassis parameter, and is described in detail in ACS Technical Guide.

The VPN installation adds the following ServiceEntry items to acs.conf:

\[
\begin{align*}
\text{ServiceEntry} & \ (\text{VPN-Originating,libvpnService.so}) \\
\text{ServiceEntry} & \ (\text{VPN-Terminating,libvpnService.so}) \\
\text{ServiceEntry} & \ (\text{VPN-Management,libvpnService.so})
\end{align*}
\]

Check the acs.conf file to ensure that these lines have been added.

acsChassis plugins

The VPN installation automatically adds entries for the VPN-specific feature nodes and chassis actions.
The following lines are added to the `acsChassis` section:

```plaintext
MacroNodePluginFile libvpnMacroNodes.so
ChassisPlugin libvpnChassisActions.so
```

### VPN section

The VPN-specific section of `acs.conf` supports the following parameters.

**SendIdenticalCallingPartyNumber**

**Syntax:**

`SendIdenticalCallingPartyNumber 0|1`

**Description:**

Send unchanged CallingPartyNumber in Connect for all VPN networks.

**Type:**

Boolean

**Optionality:**

Optional (default used if not set).

**Allowed:**

0 (false), 1 (true)

**Default:**

1

**Notes:**

Example:

`SendIdenticalCallingPartyNumber 1`

**MatchUndefinedExtensions**

**Syntax:**

`MatchUndefinedExtensions 0|1`

**Description:**

Match undefined extension numbers.

If this parameter is set to true (1) and the following conditions apply, then the call will be treated as though it is from a station in the network. The station profile will be set to the network profile:

- A call is made from a number for which there is no entry in the VPN_STATION table
- The Calling Party Number starts with the site code of a VPN network
- The length of the calling party number = length of this site code + extension length for this network
- The network has the Match Undefined Extensions flag on the Edit VPN Network screen set to true

**Type:**

Boolean

**Optionality:**

Optional (default used if not set).

**Allowed:**

0 (false), 1 (true)

**Default:**

0

**Notes:**

0 means do not do this for any VPN network

Example:

`MatchUndefinedExtensions 1`

**LocInfoLocNumExtensionBuffer**

**Syntax:**

`LocInfoLocNumExtensionBuffer value`

**Description:**

Normalize the IDP.LocationInformation.LocationNumber (if present) into the given extension buffer.

**Type:**

Integer

**Optionality:**

Optional (default used if not set).

**Allowed:**

0 - 9

**Default:**

0
Chapter 2

Example: LocInfoLocNumExtensionBuffer 1

AllowTermFromOrigKey

Syntax: AllowTermFromOrigKey = 0|1:

Description: Try to look up terminating call plan if originating lookup fails.

Type: Boolean

Optionality: Optional (default used if not set).

Allowed: 0 (false), 1 (true)

Default: 0

Notes: 0 means do not do this for any VPN network.

The colon marks the end of a configuration section in acs.conf and must be included immediately after the value of the last parameter in the section.

Example: AllowTermFromOrigKey 0:

GetHuntNumCliSource

Syntax: GetHuntNumCliSource str

Description: What part of the call context the Get Hunting feature node should use to determine the CLI for the current call.

Type: String

Optionality: Optional (default used if not set).

Allowed: NORMALISED_NETWORK Using the calling number.
NORMALISED_LOGICAL Use the logical number.
CALLING Use the normalized network number.

Default: CALLING

Example: GetHuntNumCliSource CALLING

Example acs.conf for VPN

Here is an example of the VPN-specific section of acs.conf.

VPN
SendIdenticalCallingPartyNumber 1
MatchUndefinedExtensions 1
LocInfoLocNumExtensionBuffer 1
AllowTermFromOrigKey 0
GetHuntNumCliSource:

eserv.config Configuration

Introduction

The eserv.config file is a shared configuration file, from which many NCC applications read their configuration. Each NCC machine (SMS, SLC, and VWS) has its own version of this configuration file, containing configuration relevant to that machine. The eserv.config file contains different sections; each application reads the sections of the file that contains data relevant to it.

The eserv.config file is located in the /IN/service_packages/ directory.

The eserv.config file format uses hierarchical groupings, and most applications make use of this to divide up the options into logical groupings.
Configuration file format

To organize the configuration data within the eserv.config file, some sections are nested within other sections. Configuration details are opened and closed using either { } or [ ].

- Groups of parameters are enclosed with curly brackets - { }
- An array of parameters is enclosed in square brackets - [ ]
- Comments are prefaced with a # at the beginning of the line

To list things within a group or an array, elements must be separated by at least one comma or at least one line break. Any of the following formats may be used, as in this example:

```plaintext
{ name="route6", id = 3, prefixes = [ "00000148", "0000473"] }
{ name="route7", id = 4, prefixes = [ "000001049" ] }
```

or

```plaintext
  { name="route6"
    id = 3
    prefixes = [ "00000148"
                 "0000473"
    ]
  }
  { name="route7"
    id = 4
    prefixes = [ "000001049"
    ]
  }
```

or

```plaintext
  { name="route6"
    id = 3
    prefixes = [ "00000148", "0000473" ]
  }
  { name="route7", id = 4
    prefixes = [ "000001049" ]
  }
```

eserv.config files delivered

Most applications come with an example eserv.config configuration in a file called eserv.config.example in the root of the application directory, for example, /IN/service_packages/eserv.config.example.

Editing the file

Open the configuration file on your system using a standard text editor. Do not use text editors, such as Microsoft Word, that attach control characters. These can be, for example, Microsoft DOS or Windows line termination characters (for example: ^M), which are not visible to the user, at the end of each row. This will cause file errors when the application tries to read the configuration file.

Always keep a backup of your file before making any changes to it. This will ensure you have a working copy to which you can return.

Loading eserv.config changes

If you change the configuration file, then you must restart the appropriate parts of the service to enable the new options to take effect.
Restarting

The following processes are restarted after configuration changes as indicated.

<table>
<thead>
<tr>
<th>Process</th>
<th>Restart Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>slee_acs</td>
<td>Restart of slee_acs or restart of the SLEE.</td>
</tr>
<tr>
<td></td>
<td>For more information about how to restart the SLEE, see SLEE Technical Guide.</td>
</tr>
</tbody>
</table>

VPN service loader configuration

Introduction

libvpnService is configured in the VPN section of eserv.config file. When the service loader is started, it checks the eserv.config file and loads the plug-ins specified in the PLUGINS array.

Note: It is not recommended to change the values of this section. Please contact Oracle before modifying this configuration.

Parameters

Here are the VPN service loader configuration parameters.

stripPrefix

Syntax: stripPrefix = true|false
Description: Use the Speed Dial Prefix or Off Net Prefix profiles to strip the prefix before matching on the terminating number.
Type: Boolean
Optionality: Optional (default used if not set).
Allowed: true Use prefix stripping.
false Do not alter prefix.
Default: false
Notes: Used when checking for station and network speed dials and for on-net to off-net calls.
Example: stripPrefix = true

vpnPluginExtend

The vpnPluginExtend section of the VPN service loader configuration hold the parameters to configure additional plug-in libraries, allowing the service loader to use the extra functionality provided by the new plug-in.

These are the vpnPluginExtend parameters:

SERVICE_HANDLE

Syntax: SERVICE_HANDLE = "name"
Description: Calls using this SLEE service handle will be processed using the configuration in this Services section.
Type: String
Optionality: Optional (default used if not set).
Allowed:
Chapter 2

Default: Empty string
Notes: When a new call is presented to the application, the service handle indicates the particular service for which the call is intended.
If this string does not match a service handle in SLEE.cfg, no calls will be processed using this service configuration.
Example:

```
SERVICE_HANDLE = "VPN_Originating_V"
SERVICE_HANDLE = "EAX_MO"
```

**PLUGINS**

**Syntax:**

```
PLUGINS = [
    {LIBRARY = lib_config}
    ...
]
```

**Description:** The plug-ins that should be called after loading the main service.
**Type:** Array
**Optionality:** Optional (no plug-ins used if not set).
**Allowed:** None
**Default:** None
**Notes:** As plug-ins will not be loaded if they are not configured here, this parameter must include any plug-ins which are needed to supply application functions.
Applies to calls which use the service handle defined in SERVICE_HANDLE (on page 16).
An example of a plug-in library is the MM plug-in which is used to extract SMS information for slee_acs.

**Example:**

```
LIBRARY = "lib,acsChassisFn,call acsChassis fn with null,acsPrePORFn"
```

**LIBRARY**

**Syntax:**

```
LIBRARY = "lib,acsChassisFn,call acsChassis fn with null,acsPrePORFn"
```

**Description:** Configuration for the service plug-ins.
**Type:** Array
**Optionality:** Optional
**Allowed:** None
**Default:** None
**Notes:** This is the first parameter in the LIBRARY (on page 17) parameter array.

**Example:**

```
LIBRARY =
    "libxmlsSvcLibCallContext.so,xmsSvcLibCallContextCreate,False
    ,xmsSvcLibCallContextExtend"
```

**lib**

**Syntax:**

```
lib.so
```

**Description:** The filename of the service loader plug-in library.
**Type:** String
**Optionality:** Required (must be present to load the plug-in)
**Allowed:** None
**Default:** None
**Notes:** This is the first parameter in the LIBRARY (on page 17) parameter array.
Example: libChargingPlugin.so

acsChassisFn

Syntax: \texttt{acsChassisFn}

Description: Name of the acsChassisLoadService function used to create a call context to the required application.

Type: String

Optionality: Required

Allowed: Any valid function name.

Default:

Notes: This is the second parameter in the \textit{LIBRARY} (on page 17) parameter array. For more information about the functions which can be used with a library, see the technical guide for the application which provides the plug-in library.

Example: xmsSvcLibCallContextCreate

call acsChassis fn with null

Syntax: \texttt{call_acsChassis_fn_with_null}

Description: Defines whether the acsChassisLoadService function should accept a null value as input or not.

Type: Boolean

Optionality: Required

Allowed

<table>
<thead>
<tr>
<th>True</th>
<th>Accept null</th>
</tr>
</thead>
<tbody>
<tr>
<td>False</td>
<td>Do not accept null</td>
</tr>
</tbody>
</table>

For more information about whether to set this parameter to False or True, see the technical guide for the application which provides the plug-in library.

Default:

Notes: This value only controls whether the plug-in acsChassisLoadService function should be called with a null value parameter, or not. If a non-null value is passed, the VPN service loader will always call the acsChassisLoadService function.

This is the third parameter in the \textit{LIBRARY} (on page 17) parameter array.

Example: False

acsPrePORFn

Syntax: \texttt{acsChassisPrePOR}

Description: Name of the acsChassisPrePOR function used to extend the MM call context.

Type: String

Optionality: Required

Allowed

<table>
<thead>
<tr>
<th>function name</th>
<th>The name of the library's function.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Do not call a PrePOR function.</td>
</tr>
</tbody>
</table>

For more information about the functions which can be used with a library, see the technical guide for the application which provides the plug-in library.

Default:

Notes: This is the second parameter in the \textit{LIBRARY} (on page 17) parameter array.

Example: xmsSvcLibCallContextExtend
Example configuration

Here is an example of the VPN section in the eserv.config.

```
VPN = {
    StripPrefix = true
    GetHuntNumCliSource = "Normalised_Network"
    vpnPluginExtend = [
        {
            SERVICE_HANDLE = "VPN_Originating"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
                {LIBRARY = "libxmsSvcLibCallContext.so,xmsSvcLibCallContextCreate,False,xmsSvcLibCallContextExtend"}
            ]
        }
        {
            SERVICE_HANDLE = "VPN_Originating_V"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
            ]
        }
        {
            SERVICE_HANDLE = "VPN_Originating_M"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
            ]
        }
        {
            SERVICE_HANDLE = "VPN_Terminating_V"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
            ]
        }
        {
            SERVICE_HANDLE = "VPN_Terminating_M"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
                {LIBRARY = "libxmsSvcLibCallContext.so,xmsSvcLibCallContextCreate,False,xmsSvcLibCallContextExtend"}
            ]
        }
        {
            SERVICE_HANDLE = "VPN_Terminating"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
                {LIBRARY = "libxmsSvcLibCallContext.so,xmsSvcLibCallContextCreate,False,xmsSvcLibCallContextExtend"}
            ]
        }
        {
            SERVICE_HANDLE = "VPN_Management_V"
            PLUGINS = [
                {LIBRARY = "libeaxChargingPlugin.so,createEAXCallContext,True,None"}
            ]
        }
    ]
}```
VPN Specific Announcements

Introduction

Before the VPN control plans can actually use the VPN announcements, the announcements must be recorded on an IP available to the network, and the IP announcement IDs must be entered into the Announcements tab on the ACS Configuration screen.

All announcements for each language must have correctly mapped IP announcements IDs for that language.

Originating announcements

Here is the list of announcements used by the VPN Originating call plan. You can customize these announcements if required.

<table>
<thead>
<tr>
<th>Announcement name and Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originating Decode Fail</td>
<td>101</td>
</tr>
<tr>
<td>&quot;Cannot decode entered digits, or speed dial out of valid range&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Invalid Alternate Station ID</td>
<td>102</td>
</tr>
<tr>
<td>&quot;The alternate [roaming] station address you specified in your dialing string does not exist on this network&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Roaming Not Allowed</td>
<td>103</td>
</tr>
<tr>
<td>&quot;The alternate [roaming] station address you specified in your dialing string is not authorized to use the roaming feature&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Unknown Speed Dial</td>
<td>104</td>
</tr>
<tr>
<td>&quot;The station or network speed dial dialed is not defined for your station or network&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Cannot Complete On-Net</td>
<td>105</td>
</tr>
<tr>
<td>&quot;The dialed on-net address does not exist on your network&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating OffNet Access Barred</td>
<td>106</td>
</tr>
<tr>
<td>&quot;This station has barred off-net access, and the user does not have permission to override, or could not enter the PIN for this station after multiple attempts&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Number is Barred</td>
<td>107</td>
</tr>
<tr>
<td>&quot;The dialed off-net address is barred, or not allowed for this station or this network&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Invalid Account Code</td>
<td>108</td>
</tr>
<tr>
<td>&quot;A correct account code was not entered after multiple attempts&quot;</td>
<td></td>
</tr>
</tbody>
</table>
### Originating announcements

- **Originating Chain Count Exceeded**
  "I'm sorry, your call cannot be processed due to a system error"
  
  **Note:** Too many chained call plans - this should not be possible.

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originating Roaming PIN Required</td>
<td>110</td>
</tr>
<tr>
<td>&quot;A PIN is required for station roaming, please enter it now&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Roaming PIN Wrong</td>
<td>111</td>
</tr>
<tr>
<td>&quot;Your PIN is not correct, please re-enter it now&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Call Bar Override PIN Required</td>
<td>112</td>
</tr>
<tr>
<td>&quot;A PIN is required in order to override the off-net call bar on this station, please enter it now&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Call Bar Override PIN Wrong</td>
<td>113</td>
</tr>
<tr>
<td>&quot;Your PIN is not correct, please re-enter it now&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Account Code Required</td>
<td>114</td>
</tr>
<tr>
<td>&quot;A PIN is required for station roaming&quot;</td>
<td></td>
</tr>
<tr>
<td>Originating Account Code Reprompt</td>
<td>115</td>
</tr>
<tr>
<td>&quot;The account code you entered is not valid, please enter a valid code&quot;</td>
<td></td>
</tr>
</tbody>
</table>

### Terminating announcements

Here is the list of announcements used by the VPN Terminating call plan. You can customize these announcements, if required.

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminating Manager Unavailable</td>
<td>201</td>
</tr>
<tr>
<td>&quot;I'm sorry, your call cannot be processed due to a system error&quot;</td>
<td></td>
</tr>
</tbody>
</table>
  
  **Note:** This probably indicates that the management call plan has been deleted, or not correctly built. If you wish to remove Management functionality, you should remove the ServiceHandover node in the Terminating call plan.

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminating Incoming Barred</td>
<td>202</td>
</tr>
<tr>
<td>&quot;This station cannot receive calls from your location&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminating Invalid Forward Number</td>
<td>203</td>
</tr>
<tr>
<td>&quot;This station has been forwarded to another station, however the remote station is not valid&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminating Too Many Forwards</td>
<td>204</td>
</tr>
<tr>
<td>&quot;A call forwarding loop has been detected&quot;</td>
<td></td>
</tr>
</tbody>
</table>

  **Note:** A call forwarding loop is the only realistic explanation for this event.
Management announcements

Here is the list of announcements used by the VPN Management call plan. You can customize these announcements if required.

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Station ID Required &quot;Please enter your station ID&quot;</td>
<td>301</td>
</tr>
<tr>
<td><strong>Note:</strong> You only see this prompt if the call is received from off-net. Calls from on-net will not need to prompt for a caller station ID.</td>
<td></td>
</tr>
<tr>
<td>Management Station ID Reprompt &quot;That is not a known station, please enter your station ID&quot;</td>
<td>302</td>
</tr>
<tr>
<td><strong>Note:</strong> Only required for manager calls from off-net.</td>
<td></td>
</tr>
<tr>
<td>Management Authorization Required &quot;A PIN is required to use the management functions, please enter your PIN now&quot;</td>
<td>303</td>
</tr>
<tr>
<td><strong>Note:</strong> PIN entry is not required if the user is on-net, and has previously entered a PIN.</td>
<td></td>
</tr>
<tr>
<td>Management Authorization Reprompt &quot;Your PIN is not correct, please re-enter it now&quot;</td>
<td>304</td>
</tr>
<tr>
<td><strong>Note:</strong> Only required for manager calls from off-net.</td>
<td></td>
</tr>
<tr>
<td>Management Main Menu Prompt &quot;Please select a function. Press &quot;1&quot; to store a speed code Press &quot;2&quot; to set your forwarding address for Network Failure Press &quot;5&quot; to set your follow me address, all calls will be forwarded to the specified destination. Press &quot;6&quot; to change your PIN Press &quot;9&quot; to make a call now Press &quot;0&quot; to hear a more detailed help message&quot;</td>
<td>305</td>
</tr>
<tr>
<td>Management Main Menu Bad Digit &quot;I'm Sorry, but that option is not known&quot;</td>
<td>306</td>
</tr>
<tr>
<td>Management Goodbye &quot;Thank you, have a nice day&quot;</td>
<td>307</td>
</tr>
<tr>
<td>Management Not Allowed &quot;I'm sorry, this station is not authorized to use the station management feature. Please contact your network administrator&quot;</td>
<td>308</td>
</tr>
<tr>
<td>Management Main Please make a selection from the list (Same as 305, except read more slowly, and LOUDER!)</td>
<td>309</td>
</tr>
<tr>
<td>Management Feature Prohibited &quot;I'm Sorry, you are not authorized to use this feature&quot;</td>
<td>310</td>
</tr>
<tr>
<td><strong>Note:</strong> This is played if the user fails to enter a PIN at this point (if they haven't already entered one), or if the user does not have the appropriate permission flag.</td>
<td></td>
</tr>
<tr>
<td>Management Destination Number Prompt &quot;Enter the number you wish to dial. This may include an off-net prefix&quot;</td>
<td>311</td>
</tr>
<tr>
<td>Management Destination Number Reprompt &quot;Re-prompt for destination. Input time-out, too few, too many digits&quot;</td>
<td>312</td>
</tr>
<tr>
<td>Management Invalid Address</td>
<td>313</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>&quot;The destination number you wish to store is not valid, it must be an on-net address, or an off-net number with the off-net prefix&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> Speed dials, account codes, PINs and alternate stations are not permitted.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Processing Failed</th>
<th>317</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I'm sorry, your call cannot be processed due to a system error&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> This should not happen under normal circumstances.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Alternate Prompt</th>
<th>321</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Please enter the new destination number to store&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> This announcement is used for both Speed Dial and Forwarding numbers. The announcement is very poorly named.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Alternate Reprompt</th>
<th>322</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Invalid entry, please enter the new destination number to store&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> Timeout or insufficient digits. This announcement is used for both Speed Dial and Forwarding numbers. The announcement is very poorly named.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Invalid Destination</th>
<th>323</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;The destination number you wish to store is not valid, it must be an on-net address, or an off-net number with the off-net prefix&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> Speed dials, account codes, PINs and alternate stations are not permitted.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Cannot Forward</th>
<th>324</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I'm sorry, the entered destination is not a permitted forwarding destination&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> This could fail on either the network or station Barred/Allowed list.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Cannot Store</th>
<th>325</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I'm sorry, the number you entered cannot be saved&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Update Confirmed</th>
<th>326</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Your station profile has been changed successfully&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Speed Code Prompt</th>
<th>327</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Please enter the Speed Dial Code you wish to update, in the range 100-199&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Speed Code Reprompt</th>
<th>328</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;That Speed Dial Code is not in the valid range 100-199, please enter the Speed Dial Code you wish to update&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management PIN Entry</th>
<th>329</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Please enter your new PIN&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management PIN Entry Reprompt</th>
<th>330</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Invalid number of digits, please re-enter your new PIN&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management Unknown Station</th>
<th>331</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;The number you have entered as your station ID is not known on this network&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Note:</strong> This message is played after all permitted (possibly multiple) attempts to enter your station address have failed.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management PIN Required</th>
<th>332</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;A PIN is required to access this feature, please enter your PIN&quot;</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Management PIN Required Reprompt</th>
<th>333</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Your PIN is not correct, please re-enter it now&quot;</td>
<td></td>
</tr>
</tbody>
</table>
Non control plan specific announcements

Here is the list of announcements that may be used by any control plan. You can customize these announcements if required.

<table>
<thead>
<tr>
<th>Announcement name &amp; Announcement</th>
<th>Diagram Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect PIN Introduction &quot;A PIN is required to access this feature, please enter your PIN&quot;</td>
<td>401</td>
</tr>
<tr>
<td>Invalid PIN Entered &quot;Your PIN is not correct, please re-enter it now&quot;</td>
<td>402</td>
</tr>
<tr>
<td>Maximum Allowed PIN Attempts Reached &quot;You have reached the maximum number of PIN attempts for this feature&quot;</td>
<td>403</td>
</tr>
<tr>
<td>Silence Announcement &quot;Your PIN is not correct, please re-enter it now&quot;</td>
<td>404</td>
</tr>
</tbody>
</table>

Note: This is an empty announcement.

Note

These announcement mappings are not installed automatically because in most cases, the required values are customer specific.

If you wish to configure these values, you can enter them manually in the ACS or VPN announcement screens or you can run the provided configuration script as acs_oper.

/IN/service_packages/ACS/db/install/install_vpn/vpn_language_mappings.sh

Defining the VPN Screen Labels Language

Introduction

The system administrator uses a default language file to define the "default" language of the system. This determines what language is used to display the login screen.

A file called Default.lang is created in the language directory. This contains a soft-link to the actual language file.

Example:

If Russian is the default language, then create a soft-link from the Default.lang file to the Russian.lang file.

If a Default.lang file is not specified or has not been created, then English.lang is used.

Once a Default.lang file is created, a user must explicitly set their language to English (or other required language), otherwise the default language is used.

Procedure

Follow these steps to modify the default language file.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Go to /IN/html/Vpn_Service/language</td>
</tr>
</tbody>
</table>
| 2    | Is the Default.lang soft-link resident?  
  If Yes, then enter:  
  ls -l to determine which language file it points to.  
  Note: The default is "English.lang". |
### Defining the VPN Help Screen Language

#### Introduction

You define the default language of the help system in the default helpset file, `Default_service_name.hs`.

#### Procedure

Follow these steps to create a default helpset file.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Go to <code>/IN/html/Vpn_Service/helpText/</code> directory.</td>
</tr>
<tr>
<td>2</td>
<td>Ensure that the required file is resident: <code>language_service_name.hs</code>&lt;br&gt;Where:&lt;br&gt;<code>language</code> is your language&lt;br&gt;<code>service_name</code> is the name of the service you are installing&lt;br&gt;Example: <code>Russian_vpn_service.hs</code></td>
</tr>
<tr>
<td>3</td>
<td>Enter: <code>ln -s language_service_name.hs Default_service_name.hs</code></td>
</tr>
</tbody>
</table>

### Setting up the Screens

#### Accessing VPN

There are several ways to access the VPN user interface (UI) using an Internet browser. For example:

- Use Java Webstart to open the Virtual Private Network default page on the `SMS_hostname`, and then click the WebStart link.<br>Where `SMSHostname` is the hostname of an SMS in the IN.
- Use SMS Webstart by entering the following url: `http://SMS_hostname/vpn.jnlp`
- Open the Service Management System application, and select the VPN Service option from the Services menu.

You can also start the VPN UI from the Windows command line by entering the following command:

```
c:/> javaws http://SMSService/VPN/UI/VPNUIService/jnlp/application.jsp
```

Where `SMSService` is the hostname of an SMS in the IN.
Chapter 2

For more information about the VPN UI, see *VPN User's Guide*.

**About customizing the UI**

You can customize the VPN UI by setting applet parameters in the `vpn.jnlp` file located in the `/IN/html/Vpn_Service/` directory. You set applet parameters in the *applet-desc* section of the *jnlp* file, by using the following syntax:

```xml
<param name="parameter" value="value" />  
```

Where:

- *parameter* is the name of the applet parameter
- *value* is the value to which that parameter will be set

**About applet parameters in .html files**

The ability to customize the NCC UI by setting applet parameters in the following .html files has been deprecated:

- `acs.html`
- `sms.html`
- `vpn.html`

If you upgraded from an earlier version of NCC, you may continue to set applet parameters in these files. However, you must ensure that any parameters that you set are also set to the same value in the corresponding .jnlp file:

- `acs.jnlp`
- `sms.jnlp`
- `vpn.jnlp`

**Note:** You use the following syntax to set applet parameters in the .html files:

```xml
<param name="parameter" value="value" />
```

Where:

- *parameter* is the name of the Java applet parameter
- *value* is the value to which that parameter will be set

**Java applet parameters**

The following applet parameters are available to customize the UI:

**host**

**Syntax:** See example  
**Description:** The address of the SMS host machine.  
**Type:** IP address  
**Optionality:** Required  
**Allowed:**  
**Default:** No default  
**Notes:** Set at installation  
**Example:** ```xml
<param name="host" value="192.168.16.52" />
```
Chapter 2

Optionality: Required
Allowed: 
Default: 1521
Notes: Set at installation
Example: <param name="port" value="1521" />

database
Syntax: See example
Description: The Oracle SID of the database.
Optionality: Required
Allowed: 
Default: SMF
Notes: Set upon installation
Example: <param name="database" VALUE="SMF" />

INProtocol
Syntax: See example
Description: The IN protocol to use.
Optionality: Required
Allowed: 
Default: 
Notes: Set at installation
Example: <param name="INProtocol" value="ETSI" />

dBUser
Syntax: See example
Description: The database user name
Optionality: Optional (default used if not set)
Allowed: 
Default: acs_public
Notes: Do not change this value.
Example: <param name="dBUser" VALUE="acs_public" />

dBPassword
Syntax: See example
Description: The database password
Optionality: Optional (default used if not set)
Allowed: 
Default: acs_public
Notes: Do not change this value.
Example: <param name="dBPassword" value="acs_public" />

jnlp resources and applet parameters
Here is an example of the resources and applet parameter definitions in the vpn.jnlp file.
For more information about applet parameters and .jnlp files, see SMS Technical Guide.
Overview

Introduction

This chapter explains the processes which run automatically as part of the application. These processes are started automatically by one of the following:

- inittab
- crontab
- Service Logic Execution Environment SLEE

Note: This chapter also includes some plug-ins to background processes which do not run independently.

In this chapter

This chapter contains the following topics.

libvpnService 29
libvpnMacroNodes 30
libvpnChassisActions 30

libvpnService

Purpose

libvpnService is the VPN service library plug-in for slee_acs which handles initial set up of VPN calls. It:

- Sets up VPN call processing (including populating the call context from the IDP)
- Uses the configuration to determine the correct control plan to load and run from cache

Location

This library is located on SLCs.

Startup

If libvpnService is configured in acs.conf, it is made available to slee_acs when slee_acs is initialized. It is included in the acsChassis section of acs.conf by the ServiceEntry parameter(s).

For more information ServiceEntries for libvpnService in acs.conf, see acsChassis (on page 12).

Configuration

libvpnService supports the global VPN configuration in acs.conf. For more information about this configuration, see VPN section (on page 13).

libvpnService is also configured in the VPN section of eserv.config. For more information about this configuration, see VPN service loader configuration (on page 16).
libvpnMacroNodes

Purpose
This slee_acs plug-in provides the VPN macro nodes. There are no configuration file settings for these macro nodes, as they are all configured in the Control Plan Editor node configuration screens.

For more information about the:
- Nodes, see VPN User's Guide.
- Macro node libraries, see ACS Technical Guide.
- CPE, see CPE User's Guide.

Location
This library is located on SLCs.

Startup
If libvpnMacroNodes is configured in acs.conf, it is made available to slee_acs when slee_acs is initialized. It is included in the acsChassis section of acs.conf in a MacroNodePluginFile entry as follows:

```
acsChassis
    MacroNodePluginFile libvpnMacroNodes.so
```

For more information about this entry in acs.conf, see acsChassis plug-ins (see "acsChassis plugins" on page 12).

Configuration
libvpnChassisActions are configured in acs.conf. For more information about configuring the VPN chassis actions, see VPN section (on page 13).

libvpnChassisActions

Purpose
This slee_acs plug-in implements the chassis actions which are used by the VPN macro nodes when they need to interact with entities outside slee_acs.

Location
This library is located on SLCs.

Startup
If libvpnChassisActions is configured in acs.conf, it is made available to slee_acs when slee_acs is initialized. It is included in the acsChassis section of acs.conf in a ChassisPlugin entry.

```
acsChassis
    ChassisPlugin libvpnChassisActions.so
```

For more information about this entry in acs.conf, see acsChassis plugins (on page 12).
Configuration

libvpnChassisActions are configured in `acs.conf`. For more information about configuring the VPN chassis actions, see *VPN section* (on page 13).
Chapter 4

Tools and Utilities

Overview

Introduction

This chapter explains the procedures for maintaining the VPN application.

In this chapter

This chapter contains the following topics.

Examining Network and Station Profiles

Examining Network and Station Profiles

Introduction

You can view network and station profile details using the vpnProfile utility.

vpnProfile

vpnProfile is shipped with both the vpnSms and vpnScp packages. It is located in

IN/service_packages/ACS/bin.

Refer to Technical Support for more information about using this tool, and for details on the format of

VPN profiles for networks and stations, and how to interpret them.

Station profile

Follow these steps to determine the contents of a station profile.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Log on as acs_oper.</td>
</tr>
</tbody>
</table>
| 2    | Enter: ./vpnProfile -S N  
Where:  
s = Station  
N = The station ID. This will be a numeric value, for example, 1. |

Note: You may need to set your path to the script location.  
Result: The profile for the requested station appears.

Example station profile

Here is an example of the output from vpnProfile.

$ ./vpnProfile -S 2  
Connecting as smf/smf
Station '2000' on Network 'network2'
Profile is (1216 bytes) and (21 tags).

<table>
<thead>
<tr>
<th>Tag</th>
<th>Desc</th>
<th>Len</th>
<th>HexData...</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x000009</td>
<td>Out BA Typ 1</td>
<td>02</td>
<td></td>
</tr>
<tr>
<td>0x00000a</td>
<td>Out BA Lst 12</td>
<td>00</td>
<td>00 00 00 01 00 00 00 31 00 00 00 01</td>
</tr>
<tr>
<td>0x00000b</td>
<td>Inc BA Typ 1</td>
<td>02</td>
<td></td>
</tr>
<tr>
<td>0x00000c</td>
<td>Inc BA Lst 12</td>
<td>00</td>
<td>00 00 00 01 00 00 00 31 00 00 00 01</td>
</tr>
<tr>
<td>0x000010</td>
<td>Divert RSF 6</td>
<td>02</td>
<td>36 37 38 39 30</td>
</tr>
<tr>
<td>0x000013</td>
<td>Divt FlwMe 6</td>
<td>02</td>
<td>31 32 33 34 35</td>
</tr>
<tr>
<td>0x000015</td>
<td>PIN Digits 4</td>
<td>31</td>
<td>32 33 34</td>
</tr>
<tr>
<td>0x000017</td>
<td>OffNet Bar 1</td>
<td>00</td>
<td></td>
</tr>
<tr>
<td>0x000019</td>
<td>Stn is Mgr 1</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>0x00001a</td>
<td>Speed List 24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (1):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000000</td>
<td>01 31 30 30 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x00001b</td>
<td>Dvt BA Typ 1</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>0x00001c</td>
<td>Dvt BA Lst 12</td>
<td>00</td>
<td>00 00 00 01 00 00 00 33 00 00 00 01</td>
</tr>
<tr>
<td>0x000025</td>
<td>Language 4</td>
<td>00</td>
<td>00 00 00 01</td>
</tr>
<tr>
<td>0x000034</td>
<td>HuntOnBusy 1</td>
<td>00</td>
<td></td>
</tr>
<tr>
<td>0x000035</td>
<td>HuntOnNoAn 1</td>
<td>00</td>
<td></td>
</tr>
<tr>
<td>0x000036</td>
<td>HuntAlways 1</td>
<td>00</td>
<td></td>
</tr>
<tr>
<td>0x030003</td>
<td>V.BarAllIn 4</td>
<td>36</td>
<td>37 38 39 30</td>
</tr>
<tr>
<td>0x030004</td>
<td>V.BarOffIn 4</td>
<td>00</td>
<td>00 00 00 01</td>
</tr>
<tr>
<td>0x030020</td>
<td>V.HuntConf 824</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (2):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.HntLtTg 544</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (2):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.ListNo1 228</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (4):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNo1 56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (3):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNum 5</td>
<td>31</td>
<td>30 30 30 31</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.OnNetFg 4</td>
<td>00</td>
<td>00 00 00</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TimeOut 4</td>
<td>00</td>
<td>00 00 00 01</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.TermNo2 52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (3):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNum 4</td>
<td>31</td>
<td>30 30 32</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.OnNetFg 4</td>
<td>00</td>
<td>00 00 00</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TimeOut 4</td>
<td>00</td>
<td>00 00 00 02</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TermNo3 52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (3):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNum 4</td>
<td>31</td>
<td>30 30 33</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.OnNetFg 4</td>
<td>00</td>
<td>00 00 00</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TimeOut 4</td>
<td>00</td>
<td>00 00 00 03</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.Default 14</td>
<td>68</td>
<td>75 6e 74 69 6e 67 20 6c 69 73 74 20 31</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.ListNo2 288</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (5):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNo1 52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (3):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNum 4</td>
<td>32</td>
<td>30 30 31</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.OnNetFg 4</td>
<td>00</td>
<td>00 00 00</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TimeOut 4</td>
<td>00</td>
<td>00 00 00 01</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.TermNo2 52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (3):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNum 4</td>
<td>32</td>
<td>30 30 32</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.OnNetFg 4</td>
<td>00</td>
<td>00 00 00</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TimeOut 4</td>
<td>00</td>
<td>00 00 00 02</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TermNo3 52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SubTags (3):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x000001</td>
<td>V.TermNum 4</td>
<td>32</td>
<td>30 30 33</td>
</tr>
<tr>
<td>0x000002</td>
<td>V.OnNetFg 4</td>
<td>00</td>
<td>00 00 00</td>
</tr>
<tr>
<td>0x000003</td>
<td>V.TimeOut 4</td>
<td>00</td>
<td>00 00 00 03</td>
</tr>
</tbody>
</table>
Follow these steps to view the contents of a network profile.

### Step | Action
--- | ---
1 | Log on as acs_oper.
2 | Enter: `./vpnProfile -N N`  
Where: 
N = network
N = the network ID. This will be a numeric value, for example, 1.  
**Note:** You may need to set your path to the script location.

**Result:** The requested network profile is displayed.

### Example network profile

Here is an example of the output for a VPN network profile:

```
$ ./vpnProfile -N 2  
Connecting as smf/smf  
Network 'networ2'  
Profile is (536 bytes) and (27 tags).  

<table>
<thead>
<tr>
<th>Tag</th>
<th>Desc</th>
<th>Len</th>
<th>HexData...</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x000004</td>
<td>A/C Max Le</td>
<td>04</td>
<td></td>
</tr>
<tr>
<td>0x000009</td>
<td>Out BA Typ</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>0x0000a</td>
<td>Out BA Lst</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>0x0000b</td>
<td>Inc BA Typ</td>
<td>01</td>
<td></td>
</tr>
</tbody>
</table>
```
Chapter 4

0x00000c Inc BA Lis 12 00 00 00 01 00 00 00 31 00 00 00 01
0x00000d A/C Values 52 00 00 00 01 00 00 32 32 ff ff ff ff 00 00 60 02 ff ff ff ff
30 30 00 00 00 00 03 00 00 03 00 00 00 01 00 00 00 31 00 00 00 01 00 00 00 32
00 00 00 01
0x00000e A/C Policy 1 01
0x00000f PIN Rights 4 00 00 03 f7
0x000010 Speed List 24
SubTags (1):
0x000000 5 02 32 30 30 30
0x000011 Break Limit 1 04
0x000012 LCR OldNat 4 31 31 31 31
0x000013 LCR NewNat 5 31 31 31 31 31
0x000014 LCR OldInt 5 32 32 32 32 32
0x000015 LCR NewInt 6 32 32 32 32 32 32
0x000016 SilentDisc 1 00
0x000017 HlpLinAddr 5 02 31 31 31 31
0x030001 V.SdNoChck 4 00 00 00 00
0x030002 V.PrsntPrv 4 00 00 00 01
0x030003 V.PinPrefx 2 39 38
0x030004 V.AcctPrfx 2 39 37
0x030005 V.AltStPrf 2 39 39
0x030006 V.OfNetPrf 2 39 35
0x030007 V.SpdDlPrf 2 39 36
0x030008 V.PinLngth 4 00 00 00 04
0x030009 V.StnLngth 4 00 00 00 04
0x03000a V.RstrAddr 4 00 00 00 01
0x03000b V.AllSrtXt 4 00 00 00 01
Total Size: 536
$
Chapter 5

About Installation and Removal

Overview

Introduction

This chapter provides details of the installation and removal process for the application.

In this chapter

This chapter contains the following topics.

Installation and Removal Overview 37
Checking the SMS Installation 38
Checking the SLC Installation 39
Restarting the Stats Daemon 39

Installation and Removal Overview

Introduction

For information about the following requirements and tasks, see *NCC Installation Guide*:

- NCC system requirements
- Pre-installation tasks
- Installing and removing NCC packages

VPN packages

An installation of VPN includes the following packages, on the:

- SMS:
  - vpnSms
- SLC:
  - vpnScp

Environment variables

During the installation of the acsSms package you are prompted for cluster related information. This information determines which environment variables are written to the *variables_sms.sh* file. The environment variables are used during the installation of vpnSms.

The table below shows which environment variables are created, and when they are created.

<table>
<thead>
<tr>
<th>Install acsSMS prompt</th>
<th>Result</th>
<th>Environment Variables Created</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Install ACS SMF schema on database SMF (on this node)?</td>
<td>If you reply &quot;Y&quot;, then prompt 2, below, appears.</td>
<td>INSTALL_DATABASE</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>If you reply 'N', then the database is</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Environment variables for vpnScp

The following environment variables are created by the acsScp package installation process. They are defined in the `variables_scp.sh` file:

- DATAFILEPATH1
- DATAFILEPATH2
- DATAFILEPATH3

These environment variables are required for the installation of the vpnScp package.

**Note:** The variables must contain the full data file path.

Checking the SMS Installation

**Introduction**

Use the SMS check script to check that VPN has been successfully installed on the SMS. This script checks that the VPN tables and triggers are installed correctly.

**Procedure**

Follow these steps to check the VPN installation on the SMS.

**Step** | **Action**
---|---
1 | Log into the SMS platform as acs_oper.
2 | Enter the following:
   `/IN/service_packages/ACS/bin/smsInstallCheck -u acs_admin/acs_admin -f /IN/service_packages/ACS/etc/vpn_sms.check`
   Where:
   - `-u` User ID
   - `-f` File containing items to check
   **Note:** The command does not contain the line break shown in the text above.
3 | Check the output from the script to confirm that the VPN installation was successful.

**Example**

Here is an example command and output script.

```
smsInstallCheck -u acs_admin/acs_admin -f /IN/service_package/ACS/etc/vpn_sms.check
```

**CHECKING:** This program is run with `-u ACS_ADMIN/<password>`.

---

Chapter 5

Table: Not installed on this node, for example, because it is the secondary node in the cluster.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Install ACS SMF schema on database SMF in clustered mode?</td>
<td>If you reply 'Y', then you are prompted to populate the <code>acs_devices.sh</code> file.</td>
</tr>
<tr>
<td></td>
<td>If you reply 'N', then you are prompted to enter the OSF mount points. You must enter the full path to the data files.</td>
</tr>
</tbody>
</table>
Checking the SLC Installation

Introduction

Use the SCP check script to check that VPN has been successfully installed on the SLC. This script checks that the VPN tables and triggers are installed correctly.

Procedure

Follow these steps to check the VPN installation on the SLC.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Log into the SLC platform as acs_oper.</td>
</tr>
</tbody>
</table>
| 2    | Enter the following: 

`/IN/service_packages/ACS/bin/smsInstallCheck -u acs_admin/acs_admin -f /IN/service_packages/ACS/etc/vpnScp.check -n`

Where:

- `u` User ID
- `f` File containing items to check
- `n` No authentication. Without this option, the script will fail.

**Note:** The command does not contain the line breaks shown in the text above.

| 3    | Check the output from the script to confirm that the VPN installation was successful. |

Example

Here is an example command and output script.

```
$ smsInstallCheck -u acs_admin/acs_admin -f /IN/service_packages/ACS/etc/vpnScp.check -n

CHECKING: This program is run with -u ACS_ADMIN/<password>.
... OK

CHECKING: Logged OraUser (ACS_ADMIN) has 6 tables like 'VPN_%'.
... OK
loggedError(10018) <SYSLOG>: smsInstallCheck: Passed all 2 tests.
```

Restarting the Stats Daemon

Introduction

VPN defines a number of statistics installed on the SMS package.
**Enabling the statistics**

To enable the new statistic definitions, you must restart the smsStatsDaemon on the SLC.

**Procedure**

Follow these steps to restart the smsStatsDaemon.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Log into the SCP as smf_oper.</td>
</tr>
</tbody>
</table>
| 2    | Enter: `ps -ef |grep smsStatsDaemon`  
 Result:  
 The PID of the smsStatsDaemon appears. |
| 3    | Enter a command in the following format:  
 `Kill -9PID_of_the_smsStatsDaemon`  
 Result:  
 The smsStatsDaemon is restarted by the inittab. |
NCC Glossary of Terms

ACS
Advanced Control Services configuration platform.

ANI
Automatic Number Identification - Term used in the USA by long-distance carriers for CLI.

CLI
Calling Line Identification - the telephone number of the caller. Also referred to as ANI.

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 nnnnnn from a phone at location xxx then put the call through to bb bbb bbbb".

cron
Unix utility for scheduling tasks.

crontab
File used by cron.

DP
Detection Point

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.

GVNS
Global Virtual Numbering Scheme - When multiple VPNs are in use by a customer, the capability to route calls between these VPNs requires a numbering scheme that uses destination addresses based on a customer id and extension number. These GVNS addresses can then be interpreted to provide inter VPN operation.

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.

**IDP**

INAP message: Initial DP (Initial Detection Point)

**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.

**IP**

1) Internet Protocol

2) Intelligent Peripheral - This is a node in an Intelligent Network containing a Specialized Resource Function (SRF).

**IP address**

Internet Protocol Address - network address of a card on a computer

**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).

**MM**

Messaging Manager. Formerly MMX, see also XMS (on page 44) and Messaging Manager (on page 42).

**Oracle**

Oracle Corporation

**PIN**

Personal Identification Number
PSTN
Public Switched Telephone Network - a general term referring to the variety of telephone networks and services.

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.

SGML

SLC
Service Logic Controller (formerly UAS).

SLEE
Service Logic Execution Environment

SMS
Depending on context, can be:
- Short Message Service
- Service Management System platform
- NCC Service Management System application

SQL
Structured Query Language - a database query language.

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).

SSP
Service Switching Point

VDDI
Virtual Direct Dial In
**VPN**

The Virtual Private Network product is an enhanced services capability enabling private network facilities across a public telephony network.

**VWS**

Oracle Voucher and Wallet Server (formerly UBE).

**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 42) service and the Short Message Service. The published code is *MM* (on page 42) (formerly MMX).
Index

A
About applet parameters in .html files • 27
About customizing the UI • 26
About Installation and Removal • 39
About This Document • v
Accessing VPN • 26
ACS • 43
acs.conf file • 12
acsChassis • 12, 31
acsChassis plugins • 13, 32
acsChassisFn • 18
acsPrePORFn • 19
AllowTermFromOrigKey • 14
Analyze • 8
ANI • 43
Audience • v

B
Background Processes • 31

C
call acsChassis fn with null • 18
Checking the SLC Installation • 41
Checking the SMS Installation • 40
CLI • 43
CLI Lookup • 9
Configuration • 11, 31, 32, 33
Configuration file format • 15
Configuring acs.conf for the SLC • 12
Configuring the SLEE.cfg • 11
Copyright • ii
CPE • 43
cron • 43
crontab • 43

D
database • 28
dBPassword • 28
dBUser • 28
Defining the VPN Help Screen Language • 26
Defining the VPN Screen Labels Language • 25
Description • 4
Diagram • 3
Document Conventions • vi
DP • 43
DTMF • 43

E
Editing the file • 16
EDR • 43
EDR tags • 10
EDRs • 10
Enabling the statistics • 42

Environment variables • 39
Environment variables for vpnScp • 40
eserv.config Configuration • 15
eserv.config files delivered • 15
Examining Network and Station Profiles • 35
Example • 41
Example acs.conf for VPN • 14
Example configuration • 19
Example network profile • 37
Example station profile • 35

G
GetHuntNumCliSource • 14
Global service features • 3
GVNS • 43

H
host • 27
HTML • 43
Hunting • 44

I
IDP • 44
IN • 44
IN features • 3
INAP • 44
Initial DP • 44
INProtocol • 28
Installation and Removal Overview • 39
Introduction • 1, 7, 11, 12, 15, 16, 20, 25, 26,
35, 39, 40, 41, 42
IP • 44
IP address • 44

J
Java applet parameters • 27
jnlp resources and applet parameters • 28

L
lib • 18
LIBRARY • 17, 18, 19
libvpnChassisActions • 32
libvpnMacroNodes • 32
libvpnService • 31
Loading eserv.config changes • 16
Location • 31, 32
LocInfoLocNumExtensionBuffer • 13

M
Main Components of VPN • 3
Management announcements • 22
Management hotline features • 3
MatchUndefinedExtensions • 13
Messaging Manager • 44, 46
MM • 44, 46
Mobile analyze • 7