Oracle® Communications Network Charging and Control

ACS Users Guide

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Contents

About This Document

Scope

The scope of this document includes all functionality a user must know in order to effectively operate the Advanced Control Services (ACS) application. It does not include detailed design of the service.

Audience

This guide is written primarily for administrators of the ACS application. However, the overview sections of the document are useful to anyone requiring an introduction.

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 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:

- *Control Plan Editor User's Guide*
- *Advanced Control Services Technical Guide*
- *Service Management System User's Guide*
- *Feature Nodes Reference Guide*

Document Conventions

Typographical Conventions

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

Formatting Convention	Type of Information
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 with an actual value.
menu option > menu option >	Used to indicate the cascading menu option to be selected. Example: **Operator Functions > Report Functions**
hypertext link	Used to indicate a hypertext link.

Specialized terms and acronyms are defined in the glossary at the end of this guide.

Chapter 1

System Overview

Overview

Introduction

This chapter describes the main features of ACS and describes the basic functionality of the system.

In this chapter

This chapter contains the following topics.

What is ACS?

Definition

Advanced Control Services (ACS) is a service that allows customers to specify and configure the routing of calls to the telephone numbers of their choice. ACS is installed and run as a network service by a Telecommunications Operator (telco). The telco that has installed ACS can then offer its customers a range of service control-routing services using ACS.

ACS provides operators with the core capabilities and tools to deploy innovative call handling and charging services including:

- Personal numbering
- Incoming and outgoing call screening
- Free rate calling
- Premium rate calling
- Split rate calling
- Televoting

In combination with the ACS Control Plan Editor (CPE) tools, ACS provides intuitive high-level graphical tools that enable the operator to build services and features incorporating user interaction, call routing and charging features.

CPE Feature Nodes

ACS CPE feature nodes can be used to define:

- User interaction features
- Number analysis processing
- Customer profile access
- Time and day decisions
- Event driven decisions

- Geographic or proportional routing
- Database access network and user status decisions
- Call completion features

Control Plan Editor

CPE Introduction

The ACS Control Plan Editor (CPE) is a feature of ACS, that you access by clicking the **Control Plans** button on the ACS main screen.

The CPE is a graphical interface that allows you to build control plans. Service providers use control plans to route calls according to factors such as geographic location, or time of day, or to collect statistical information from the call as it is made. Other services, such as toll free, PIN authorization, call diversion, or announcements can also be configured using the feature nodes available in the ACS Control Plan Editor.

This topic provides CPE overview information in direct reference to the ACS main screen functions only. For example, the control plan and control plan template functions available from the ACS Numbers screen are documented within this guide.

For more information about the ACS Control Plan Editor, see *CPE User's Guide*.

What is a Control Plan?

The call-routing information for each customer is recorded in an ACS control plan. A control plan is a flowchart defining the decisions and actions made to determine the routing of a call. Control plans are created and maintained using the CPE.

Customers can have many control plans that route calls to many different telephone numbers. For example, a customer may be using a free phone service through ACS. The customer may want calls to be routed to a **tollfree** number during business hours, but outside business hours the customer may want all calls routed to a voice mailbox.

The control plan for that customer in ACS records these decisions (that is, send the call down different routes depending on time-of-day) and the resulting actions (that is, terminate the call to a **tollfree** number or terminate the call to a voice mailbox number).

The decisions and actions that can be made in a control plan are implemented in ACS using feature nodes.

Feature Nodes

Feature nodes are drag and drop icons used to create control plans. Feature nodes contain the call-routing information required for control plan construction.

A control plan may consist of many different feature nodes. Each feature node has one input and a number of outputs determined by the type of feature node. Each feature node output can lead to another feature node.

The output used when exiting a feature node during call processing is determined by the functionality of that feature node. For example, a "Day-of-Week" node has multiple outputs.

The output that is eventually used to process a call will depend on the current day of the week and an internal customer-defined mapping of the day of week to a particular output. Although a control plan defines the possible decisions that can be made while processing a call, it does not define the criteria used within the feature nodes to process an individual call (for example, the days of the week that map to the outputs on the node).

The feature node data that is required to execute a control plan for a particular customer is known as the control plan data. It is the control plan data that defines a particular customer's customization of a control plan.

ACS also allows data to be collected based on the operations performed by the processing of the service. For example, a customer can use the Event Counting feature node to record the number of calls that were routed to a service number. This may help the customer decide the number of telephone lines and customer service operators needed to manage the volume of calls coming in.

ACS Customer and User Information

CPE Requirements

The following information needs to be configured before the ACS customer can begin to build control plans in ACS.

Step	Action
1	The customer's name must be registered in ACS by the system administrator.
2	A number of users should be registered for each customer. These users will be able to manage the ACS data for that customer.
3	All approved users must have a registered ACS user name and password to access the system.
4	The system administrator needs to configure toll free numbers and termination numbers for each customer.
5	Event counters must be registered if required by the customer.
6	All authorization codes must be mapped to termination numbers.

The information listed here is managed in ACS using the various tabs in the Customer, Numbers and Resources screens.

Feature Node Requirements

Before a customer can use certain feature nodes in their control plans, the following information must be specified in the Configuration screen.

Step	Action
1	The feature nodes that the customer has in their control plans need to be specified using the *Feature Sets tab* (on page 75).
2	Definitions for the dialed or dialed no prefixes numbers associated with each geographic region need to be configured on the *Geography tab* (on page 46). This information is used by the Geographical Routing feature node.
3	The days of the year that can be defined as holidays (non-working days) need to be set up on the *Holidays tab* (on page 54). This information is used by the Day-of Year feature node.
4	You need to specify names for each announcement that can be used in ACS. Announcements are usually recorded on the SSP or an IP and are set up on the *Announcements tab* (on page 59). This information is essential for feature nodes that play announcements such as the Selection-dependent Routing node and the Play Announcement node.

About Customer Resources

Making Public Holiday Sets

Public holiday sets are holiday sets that are available to all customers for use in their control plans. Using public holiday sets helps to prevent unnecessary duplication.

For example, it may be useful for the telecommunications provider to configure a public holiday set containing all the public holidays for the year. This will enable all customers to use the set of public holidays where their business may be closed, rather than each customer configuring their own set of public holiday days.

You configure public holiday sets on the **Holidays** tab in the ACS Configuration window. You must have system administrator level privileges. Only new holiday sets may be saved as public holiday sets. Once saved, it is not possible to change a public holiday set to non-public, or a non-public holiday set to public.

To save a holiday set as a public, select the **Public** check box in the New Holiday Set window. For more information about configuring holiday sets, see *Holidays* (on page 53).

Making Public Announcement Sets

Announcement sets are announcements that are grouped together for convenience. By making some announcement sets public, the telco is able to provide certain announcements to all their customers without duplication. Public announcement sets are available to all customers for use in their control plans.

You configure announcement sets in the **Announcements** tab in the ACS Configuration window. You must have system administrator level privileges. Only new announcement sets may be saved as public announcement sets. Once saved, it is not possible to change a public announcement set to non-public, or to change a non-public announcement set to public.

To save an announcement set as a public, select the **Public** check box in the New Announcement Set window. For more information about configuring announcements, see *Announcements* (on page 58).

Making Public Geography Sets

Public geography sets are geographical entries that are grouped together for convenience and that may be used in control plans by all customers. Making a geography set public helps the telecommunications provider to prevent duplication.

You configure public geography sets in the **Geography** tab in the ACS Configuration window. You must have System Administrator level privileges. Only new geography sets may be saved as public geography sets. Once saved, it is not possible to change a public geography set to non-public, or a non-public geography set to public.

To save a geography set as a public, select the **Public** check box in the New Geography Set window. For more information, see *Geography Sets* (on page 44)

Chapter 2

Initial Configuration

Overview

Introduction

This chapter explains the steps necessary to initially set up ACS to run calls. As ACS is a highly configurable and flexible application, for brevity only the minimum configuration necessary to achieve the running of a basic call has been detailed in this chapter. For full details of all options and configuration please see chapters following.

In this chapter

This chapter contains the following topics.

Before You Begin

Setting up ACS to run a call

The basic steps required to set up ACS to run a basic call are detailed later in this chapter. In summary, they are as follows:

Step	Action	Refer to...
1	Log on to the system: • Different methods to log on to ACS	*Logging on to the System* (on page 6)
2	Create reusable resource sets: • Feature node sets • Announcement sets • Holiday sets • Geography sets	*Creating Resource Sets* (on page 6)
3	Map announcements to network resources: • Variable announcement rules (VARS) sets • Map ACS announcement entries to resources that play the announcements	*Mapping Announcements to Network Resources* (on page 8)

Step	Action	Refer to...
4	Create an ACS customer: • Add a new customer	*Creating an ACS Customer* (on page 8)
5	Add resources for the customer: • Assign feature node sets to the customer • Assign geography, announcement and holiday sets - if required • Create variable part announcements, if required • Set number of resources that customer may use	*Adding Resources for the Customer* (on page 9)
6	Enter numbers for the customer: • Create a service number • Enter termination numbers	*Creating Customer Numbers* (on page 9)
7	Create a control plan: • Create a control plan	*Creating a Control Plan* (on page 10)
8	Attach the control plan to the service number: • Attach the control plan to the service number	*Attaching a Control Plan to a Service Number* (on page 10)
9	Configure ACS for your network by editing the **acs.conf** file.	*Configuring ACS for Your network* (on page 10)

Step 1 - Logging on to the System

Introduction

To begin configuring the ACS application to run a call, you must first log on to the system. There are several methods for accessing ACS, using any one of the following:

- Through the SMS application
- Using the ACS desktop icon
- Using Java WebStart

For details about logging on to ACS, see *Getting Started* (on page 11).

Step 2 - Creating Resource Sets

Introduction

ACS allows reusable sets of resources to be created. These sets may be accessed by several customers for use within their control plans. The access to these sets is determined on a per customer basis in the **Customer Resource Limits** (on page 119) on the Customer screen.

The reusable resource sets available are:

- Geography sets
- Holiday sets
- Announcement sets
- Feature nodes sets

See *ACS Configuration* (on page 43) for details.

Feature Node Sets

A feature nodes set consists of permissions to use a group of feature nodes in a control plan. Feature node sets can only be created and changed by a system administrator; see *Who is the System Administrator* (on page 20) for details.

Feature nodes sets are created using the **Feature Sets** tab on the Configuration screen. See *Feature Sets* (on page 74) for further details.

Geography Sets

A geography set contains a tree structure of named dialed number prefixes.

Geography sets are used in the ACS Geographical Routing feature node.

Geography sets are created using the **Geography** tab on the Configuration screen. See *Geography Sets* (on page 44) for further details.

Holiday Sets

A holiday set contains a group of holiday entries. A holiday entry is a named day (or run of days) that have been grouped together into a set.

Holiday sets are used in the ACS Day of Year feature node:

Holiday sets are created using the **Holiday** tab on the Configuration screen. See *Holiday Sets* (on page 53) for further details.

Announcement Sets

An announcement set contains a group of standard announcement entries. Announcement sets can only be created and changed by a system administrator; see *Who is the System Administrator* (on page 20) for details.

Announcement sets are used in the following ACS feature nodes:

- Play Announcement
- Selection Dependant Routing
- PIN Authorisation
- Account Code
- Collect Digits to Subtag
- *Variable Announcement Rule Sets* (on page 66)
- Number Lookup and Translate
- Collect Digits to Buffer
- Collect Digits to Pending TN Buffer
- Activate Control Plan
- Load Profile

Announcement sets are created using the **Announcement** tab on the Configuration screen. See *Announcements* (on page 58) for further details.

Step 3 - Mapping Announcements to Network Resources

Introduction

For an announcement to play to a caller whose call runs through an ACS control plan, all ACS announcement entries must be mapped to the actual resource on the network that plays these announcements and to each individual announcement recorded on that resource.

There are two types of ACS announcement entries:

- Standard announcement entries
- Variable announcement rules entries

Mapping announcements

Announcements may be mapped by one of the following methods:

- Specifying the resource name and ID of the resource on the network that plays the announcement
- Selecting the named VARS mapping, for variable part announcements.

Announcement entries are mapped to the network resource using the **Announcements** tab on the Configuration screen. See the chapter on *ACS Configuration* (on page 43) for details of how to use this screen.

Variable Announcement Rules

Variable announcement rules (VARS) are useful where the text to speech translation for "zero", "one", and "many" are different. Where variable announcement rules are required, these must be created using the following tabs on the Configuration screen:

- **VARS** tab, to create the rules for the variable announcement
- **VARS Mapping** tab for each VARS rule a mapping must be made to the network resource that plays the appropriate announcement when this rule is true.
- **Announcements** tab. Announcement entries may be mapped to a variable announcement rule set

See *ACS Configuration* (on page 43) for details of how to use this screen.

Creating the VARS rules

A VARS contains a named set of rules that determine the behavior of the announcement parts. VARS rule sets are created using the **VARS** tab on the Configuration screen. See *Variable Announcement Rule Sets* (on page 66) for details of how to use this screen.

Mapping VARS Rules

The VARS must also be mapped to the resources on the network that will play the announcements. For each rule within a VARS, a mapping must be made to the network resource on which is recorded the announcement to be played if that rule is true. Each rule set may have multiple named mappings.

Variable announcement rules are mapped using the **VARS Mapping** tab on the Configuration screen. See *VARS Mapping* (on page 70) for details of how to use this screen.

Step 4 - Creating an ACS Customer

Introduction

Once you have logged on to ACS, an ACS customer must be created. On install, the system creates a customer called "Boss"; however it is recommended that a new customer be created.

ACS customers are created using the **Customer** tab on the Customer screen, see *ACS Customer Screen* (on page 113) for details on this screen.

Step 5 - Adding Resources for the Customer

Introduction

Once a customer is created, they need to be given access to the resources that they are permitted to use. The resources are assigned in the **Resource Limits** tab of the Customer screen. See *ACS Customer* (on page 113) for details of how to use this screen.

Assigning resources

The following will need to be assigned to a customer in order for them to use these resources:

- Feature node sets
- Geography sets - if the geographical routing feature is to be used in control plans
- Announcement sets - if announcements are to be used in control plans
- Holiday sets - if the holiday routing feature is to be used in control plans

For details on how to add resources for a customer, see *Customer Resource Limits* (on page 119).

Step 6 - Creating Customer Numbers

Introduction

There are several numbers that need to be entered into the system for a customer.

- Service numbers
- Calling line identifier (CLI) numbers, if required
- Termination numbers

Service Numbers

A service number is the number that is dialed by other parties when contacting the customer. Service numbers are created using the **Service Numbers** tab on the Numbers screen. See *ACS Numbers* (on page 133) for further details.

CLI Numbers

A CLI number is used to identify the telephone number that calls originate from. CLI numbers are created using the **CLI Numbers** tab on the Numbers screen. See *ACS Numbers* (on page 133) for further details.

Termination Numbers

A termination number is the number of the actual telephone that is to ring. Termination numbers are specified in the system as ranges of numbers using the **Termination Ranges** tab on the Resources screen. See *Termination Ranges* (on page 162) for details on this screen.

Step 7 - Creating a Control Plan

Introduction

A control plan is similar to a flow chart. It defines the decisions and actions made to determine the routing of a call.

Control plans are created using the ACS Control Plan Editor (CPE) For details on creating control plans, see *CPE User's Guide*.

Step 8 - Attaching a Control Plan to a Service Number

Introduction

In order for a call to be routed through a control plan, the control plan must be attached to a service number, using the schedule option. Control plans are scheduled to be used by a specific service number on the **Service Number** tab of the Numbers screen. See *ACS Numbers* (on page 133) for further details.

Step 9 - Configuring ACS for Your Network

Introduction

Once all data is set up in ACS and a customer has active control plans scheduled, calls to the service numbers entered into the system will be routed through the control plans activated.

Ensure that all network configuration has been completed, and that the **acs.conf** file has been configured for your particular network. This will only need to be carried out on first installation of ACS. See *ACS Technical Guide* for details on configuration of ACS.

Chapter 3

Getting Started

Overview

Introduction

This chapter explains how to access the ACS application and describes the contents of the main menu.

In this chapter

This chapter contains the following topics.

Accessing the ACS Main Screen

Introduction

You can access the ACS service by using either of the following methods:

- *Accessing ACS using SMS* (on page 11)
- *Accessing ACS as a Standalone Application* (on page 12)

Accessing ACS using SMS

Introduction

You can access the application by logging into SMS and selecting it from the Service Management System **Services** menu.

For more information about logging into SMS, see *SMS User's Guide*.

Accessing ACS from SMS main screen

Follow these steps to open the ACS Service from the Service Management System main screen.

Step	Action
1	Select the **Services** menu from the Service Management System main screen.

Step	Action
	
2	Select **ACS Service**. **Result:** You see the *ACS Main screen* (on page 17).

Accessing ACS as a Standalone Application

Introduction

You can access ACS directly using Java Webstart. See *Launching ACS using WebStart* (on page 12).

This provides access to the ACS Logon screen. See *Logging on to ACS* (on page 16).

Launching ACS using WebStart

Follow these steps to launch Advanced Control Services using Java WebStart. You can use this process to install a shortcut to the ACS on your desktop.

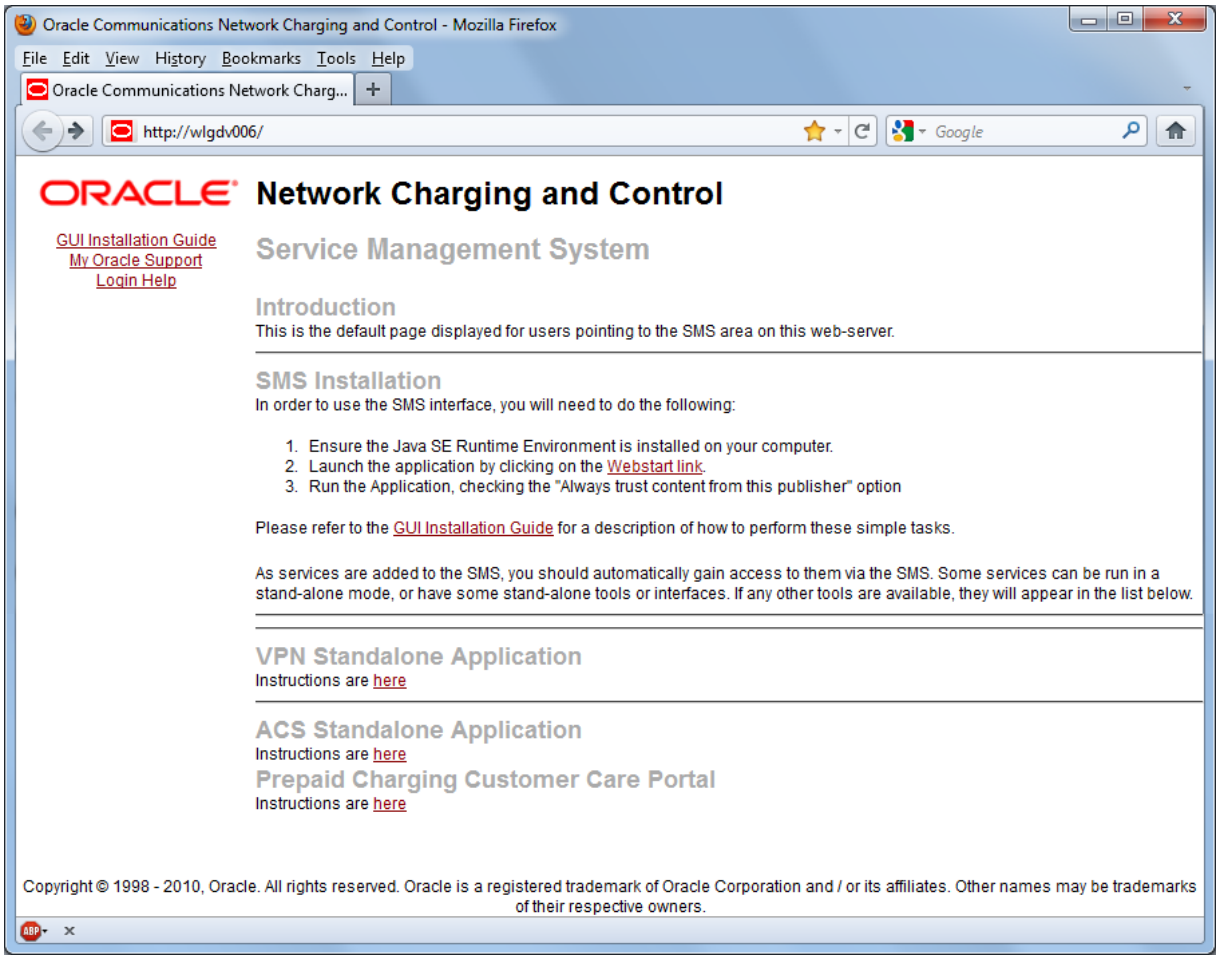
Note: To launch GUI applications via Java WebStart, ensure that the Web server supports the JNLP file type. For more information, see *Setting up the Screens* in *SMS Technical Guide*.

Step	Action
1	Using a Web browser, perform the following steps: • Open the *Service Management System default page* (See example on page 14) on the `SMS_hostname`. • Click the **here** link in the sentence below the heading **ACS Standalone Application**. This opens the *Advanced Control Services default page* (See example on page 14). • Click the **WebStart** link. **Tip:** You can also open ACS WebStart directly. The address is in the format: `http://SMS_hostname/acs.jnlp` Where *SMS_hostname* is the hostname of the SMS or cluster which is running the ACS application. **Result:** You see the Opening **acs.jnlp** download screen.

Step	Action
2	Select **Open with** and click **OK**. **Result:** The following screens open: • A Java screen. • The ACS Logon screen. See *Logging on to ACS* (on page 16). **Note:** When launching ACS for the first time using WebStart, a shortcut icon is downloaded and displayed on the Desktop.  This enables you to open the ACS UI directly by double-clicking the shortcut icon. The icon is removed every time you clear the system cache and downloads again when launching ACS through WebStart after clean up.

Service Management System Default Page

Here is an example Service Management System default page that is displayed for users navigating to the SMS on a web-server.



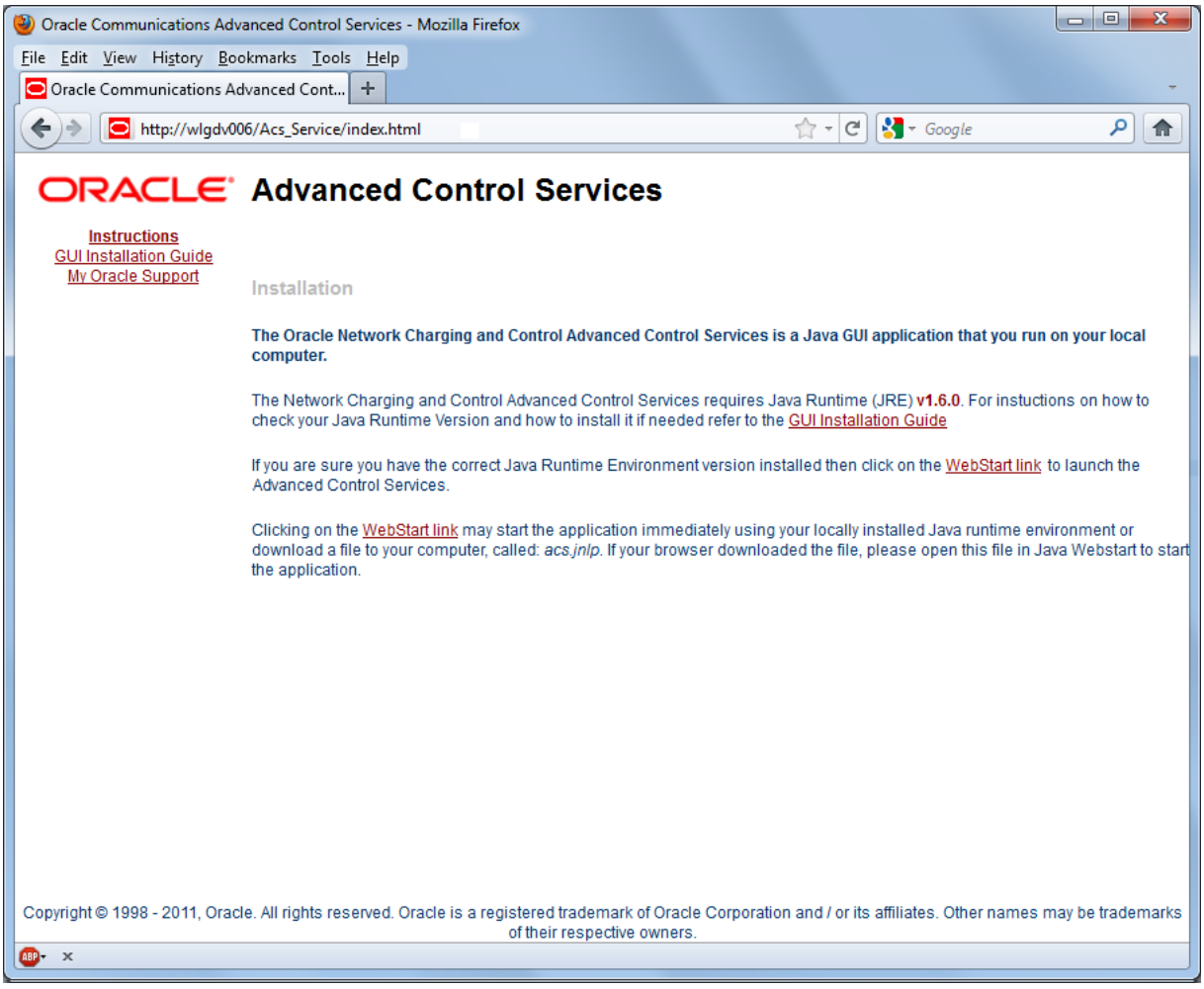
This page provides access to ACS Standalone Application. Click the link on the **here** link to access the instructions. For more information, see *Advanced Control Services default page* (See example on page 14).

Note: If you upgraded the NCC product from an earlier version, you will continue to have the option to launch the application using the acs.html file.

Advanced Control Services Default Page

Here is an example Advanced Control Services default page. The format of the address of this page is:

`http://SMS_hostname/Acs_Service/index.html`



Note: If you upgraded the NCC product from an earlier version, you will continue to have the option to launch the application using the **acs.html** file.

ACS Logon Screen

Here is the ACS Logon screen.

Note: This screen does not appear when ACS is opened through the SMS, and the user is taken directly to the ACS main screen. This is because the user has already logged on to the system using the SMS security mechanism. See *SMS User's Guide* for details on SMS security.

Logging on to ACS

Follow these steps to log on to ACS using the *ACS Logon Screen* (on page 16).

Step	Action
1	In the **Customer** field, enter your ACS customer's name.
2	In the **User** field, enter your username.
3	In the **Password** field, enter your password.
4	Click **OK**.
	Result: If your log on details are correct, you will see the *ACS main screen* (on page 17).

Note: All fields are case sensitive.

You have three attempts to enter a correct user name and password before the user ID is locked. If this happens, you must see your system administrator.

ACS Main Screen

Introduction

The Advanced Control Services main screen is displayed when you successfully log in to the ACS UI. This screen displays icons that represent the configuration options available in ACS. Click a button in the Advanced Control Services main screen to open the configuration screen for that option.

Note: The ACS Events feature has been deprecated in the current release of NCC because it requires JRE 1.7. However, you can configure your system to display the previous version of the Advanced Control Services main screen that includes this configuration option by setting the `ACSStartScreenVersion` Java application property in the **sms.jnlp** file. See *SMS Technical Guide* for more information.

ACS Main Screen

The following screen example shows the Advanced Control Services main screen.

Access to elements of this screen are controlled by user permissions. If you cannot see some of the functionality described for this screen, your permissions may have been set to restrict access to that element.

ACS Configuration Options

The following table describes the Advanced Control Services configuration options.

Configuration Option	Function
Control Plans	Accesses the Control Plan Editor Overview where you configure your ACS control plans.
Numbers	Accesses the *Numbers screen* (on page 133) where you configure the access numbers that trigger control plans such as service numbers (SN) or caller line identifier (CLI) numbers.
Configuration	Accesses the *Configuration screen* (on page 43) where you configure the ACS resources used in control plans such as geography sets, holidays and announcements.
Resources	Accesses the *Resources screen* (on page 161) where you configure service provider resources such as termination ranges and number translations.
Customer	Accesses the *Customer screen* (on page 113) where you configure service provider information such as resource limits and contact information.
Tools	Accesses the *Tools screen* (on page 27) where you configure system defaults such as system languages, SMS user access, networks, and termination ranges.
Password	**Note:** This option is not available to users who access ACS through the SMS. For SMS logins, ACS uses the SMS security mechanism, so the user's password must be changed through the SMS. Accesses the Change Password screen. Users who can access this screen can set up user passwords.

Defining the Security Levels

Introduction

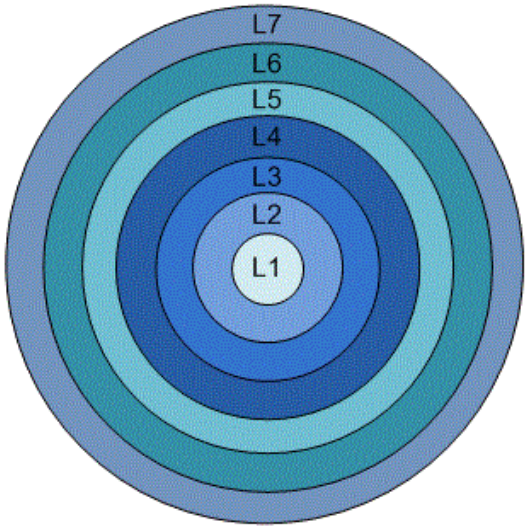
ACS maintains its own security system that is distinct from the system provided by SMS. When ACS is accessed through the SMS, the SMS security settings take precedence over the ACS security settings. In this case ACS will assume that the user has ACS security permissions of level 7.

When ACS is not accessed via the SMS, it uses its own security system. When a user logs on to the system using the ACS Log-on screen, they are allowed to access to the database based on their user privileges.

Each user has a privilege level set by the ACS system administrator. Privilege levels range from 1 to 7, as defined below.

Security Level Diagram

This diagram illustrates the different security levels available for ACS users.



Security Level Permissions

Here are the permissions granted to each security level.

Level	User Type	Permission
1	User	Has read-only access to information for their customer May change own password
2	User	Has access of permission 1 Can change any Switch feature nodes to point to other output branches
3	User	Has access of permission 2 and can: • Alter feature node data • Add and remove event counters • Edit the effective date and time and control plan used by a service number or CLI
4	User	Has access of permission 3 and can: • Edit customer control plan structures • Schedule control plans against service numbers or CLIs owned by the user's customer • Add, edit and delete customer contacts and authorization codes • Add, edit and delete private holiday and geography sets
5	User	Has access of permission 4 and can: • Add users • Delete users • Change passwords • Change privileges
6	System Administrator	Has access to add, delete and modify all aspects of ACS including all public data and announcements Can add and delete ACS customers and termination numbers

Level	User Type	Permission
		Can set resource allocations for users
7	Super User	Has full access to ACS system Can add and delete level 6 (System Administrator) users

Who is the ACS Super User?

The ACS super user (SU) is the user created when ACS is installed. This user has a system privilege level of 7 and has full access to all parts of the system and can manage level 6 (ACS system administrator) users. The ACS super user will initially be given a default customer name, user name and password, as shown below:

Customer:	*Boss*
User Name:	*Boss*
Password:	*ssob*

To ensure the security of the system, these default super user settings should be changed when ACS is used for the first time. There can be only ever one ACS super user in the system. The super user cannot be deleted.

Who is the ACS System Administrator?

The ACS system administrator is a user of system privilege level 6. This gives them full access to all parts of the system - but they do not have the ability to add or delete level 6 and 7 Users.

Note: The ACS help pages use the term "ACS system administrator" to refer to all ACS users of system privilege 6 and 7.

Passwords

ACS User Passwords

For security reasons, the first time a customer uses ACS, they should change the user name and password of the administrator user that the system provides for them. It is important to inform the customer of this. This option is not available to users who open ACS through the Service Management System (SMS).

Note: This is part of the ACS internal security mechanism, which is not required when run through the SMS.

Changing Password

Note: This procedure can only be performed if you access the system via the ACS login screen. If you log in to ACS through the SMS you will be unable to change your password using this procedure.

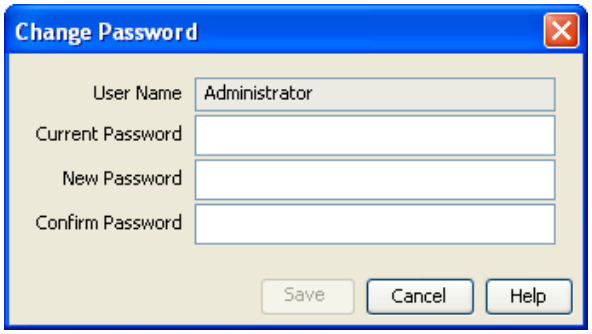
Follow these steps to change your ACS user password.

Step	Action
1	Click **Password** on the ACS main screen. **Result:** The *Change Password* (See example on page 21) screen appears.
2	Enter your current password.
3	Enter your new password.
4	Enter your new password again in the **Confirm Password** field.

Step	Action
5	Click **Save**.

Change Password Screen

Here is an example Change Password screen.



Chapter 4

User Interface

Overview

Introduction

This chapter explains the functionality provided by the ACS user interface (UI).

In this chapter

This chapter contains the following topics.

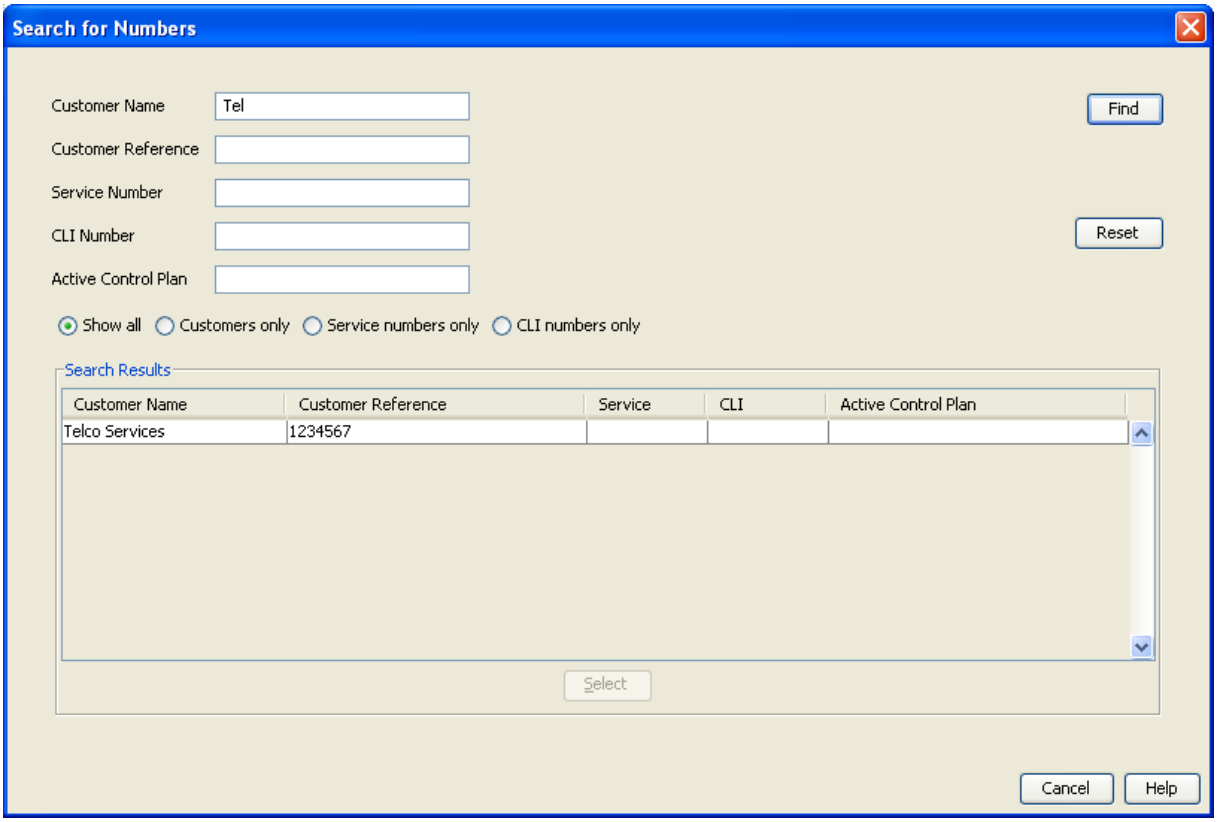
Using the Search Option

Introduction

The search function enables a specific number to be found.

Search Screen Example

Here is an example of the Search for Numbers screen.



Searching for Numbers

Follow these steps to find a number.

Step	Action
1	From the Numbers screen, click **Search**. **Result:** The *Search for Numbers* (See example on page 24) screen displays.
2	Enter selection criteria in one or more query fields. • Customer Name • Customer Number • Toll Free Number • CLI Number **Tip:** If a field is left empty, then the search will ignore that field.
3	Select one of the result filter options: • Show all • Customers only • Service numbers only • CLI numbers only
4	Click **Find** to start the search. **Result:** All matches are displayed in the **Search Results** section of the screen.
5	To clear the selection fields, click **Reset**.

Step	Action
6	To close the search screen, click **Cancel**. **Result:** The Numbers screen displays again.
7	To select a found number, click the record line and click **Select**. **Result:** The Numbers screen displays again.

Chapter 5

ACS Tools

Overview

Introduction

This chapter explains the functions of the ACS Tools screen.

In this chapter

This chapter contains the following topics.

Tools Screen

Introduction

The Tools screen is used to set and maintain system-wide defaults. It contains these tabs:

- *Language* (on page 28)
- *Access Management* (on page 31)
- *Networks* (on page 33)
- *Default Termination Range* (on page 37)
- *Global Configuration* (on page 40)

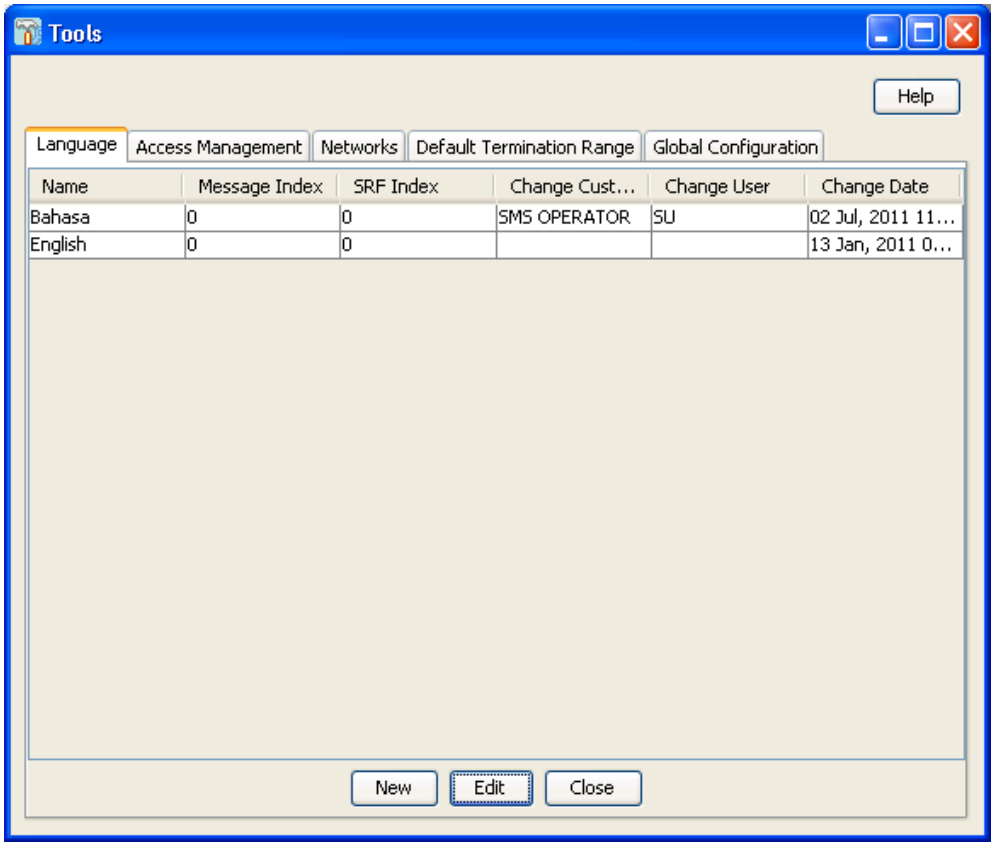
Accessing the Tools Screen

To open this screen, click **Tools** on the ACS main screen.

For more information, see *ACS Main Screen* (on page 17).

Tools Screen Example

Here is an example Tools screen. The screen is displayed with the **Language** tab open by default.



Language

Introduction

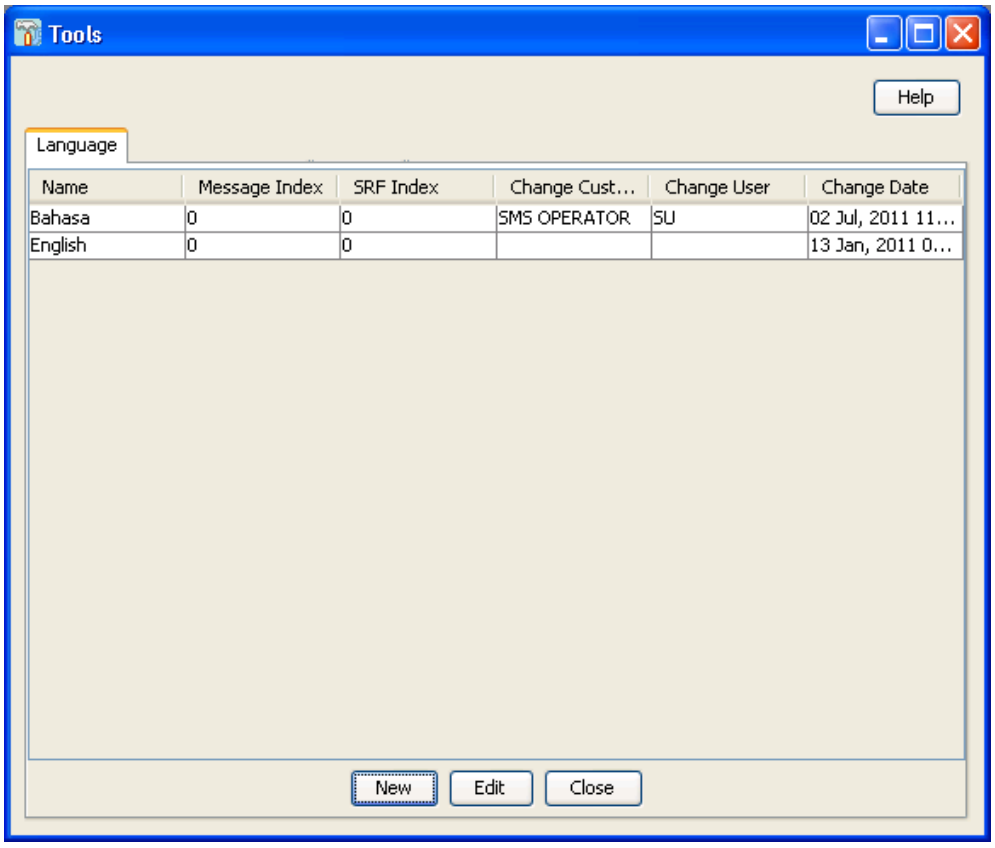
You use the **Language** tab on the Tools screen to specify the languages that you require for ACS.

Note: ACS has the English language set as the default option.

If you require additional languages then you must add them using the steps outlined in this section. To view the system Language options you need to click the **Tools** button in the ACS main screen. The Tools screen is displayed with the **Language** tab open by default.

Language Tab

Here is an example **Language** tab.



Languages and Announcements

The table on the **Language** tab displays the languages that are currently available in the system.

Languages are used mainly by announcements. Each recording of an announcement that is entered into the system must have a language associated with it. This allows the announcements to be selected for a customer by language. It is important to define a default language for the entire system.

Note: Languages can only be edited and maintained by the ACS system administrator. Details cannot be edited directly into the table. If you want to make any changes to the language entries, you must click **Edit**.

Language Fields

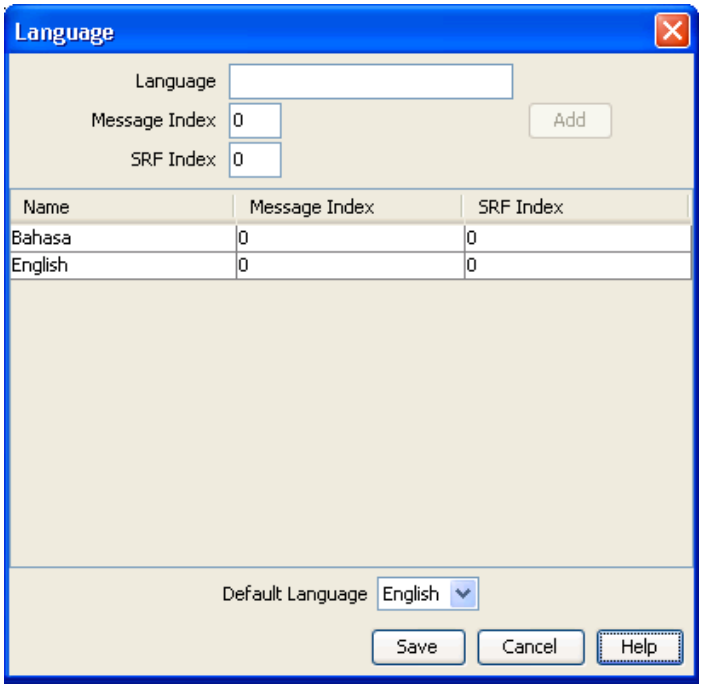
Here is a description of the fields used when setting a language.

Field	Description
Name	The language currently configured for ACS
Message Index	The language that will be used for customer text messaging. This index number is specified when the message is being sent and ACS applies the appropriate language.

Field	Description
SRF Index	Some SRF (Specialized Resource Function) announcement boxes support an optional language parameter. This parameter can be used with features such as speaking account balances to ensure that the appropriate language translation algorithm is used. If you are using an SRF box that does not support this parameter, or if you are not using announcements with dynamically generated content, then this field does not need to be specified.
Change Customer	The customer name
Changer User	The name of the user who allocated or edited the record
Change Date	The date when the record was allocated or last edited

Language Screen

Here is an example Language screen.



Setting the Language Maps

Follow these steps to configure your ACS language maps.

Step	Action
1	On the **Language** tab, click **New**. **Result:** The *Language screen* (See example on page 30) displays. See *Language Fields* (on page 29) for details.
2	In the **Language** field, enter the new name of the language.
3	If you are using Short Text Messaging, enter the appropriate index number in the **Message Index** field.
4	If you are using SRF, enter the appropriate index number in the **SRF Index** field.

Step	Action
5	Click **Add**. **Result:** The new language map appears in the list.
6	Select the **Default Language** for the language mapping.
7	Click **Save** to save the changes to the database.

Changing Language Maps

Follow these steps to change your ACS language maps.

Step	Action
1	On the **Language** tab, click **Edit**. **Result:** The *Language screen* (See example on page 30) is displayed. See *Language Fields* (on page 29) for details.
2	Select the language from the table.
3	Change the details in the fields, as required.
4	Click **Change** to implement changes.
5	Click **Save** to record your changes.

Removing Languages

Follow these steps to remove a language from your ACS language maps.

Step	Action
1	On the **Language** tab, click **Edit**. **Result:** The *Language screen* (See example on page 30) is displayed.
2	Select the language from the table and click **Remove**. **Result:** The Confirm Language Removal prompt is displayed.
3	Click **Ok**.
4	Click **Save** to record your changes.

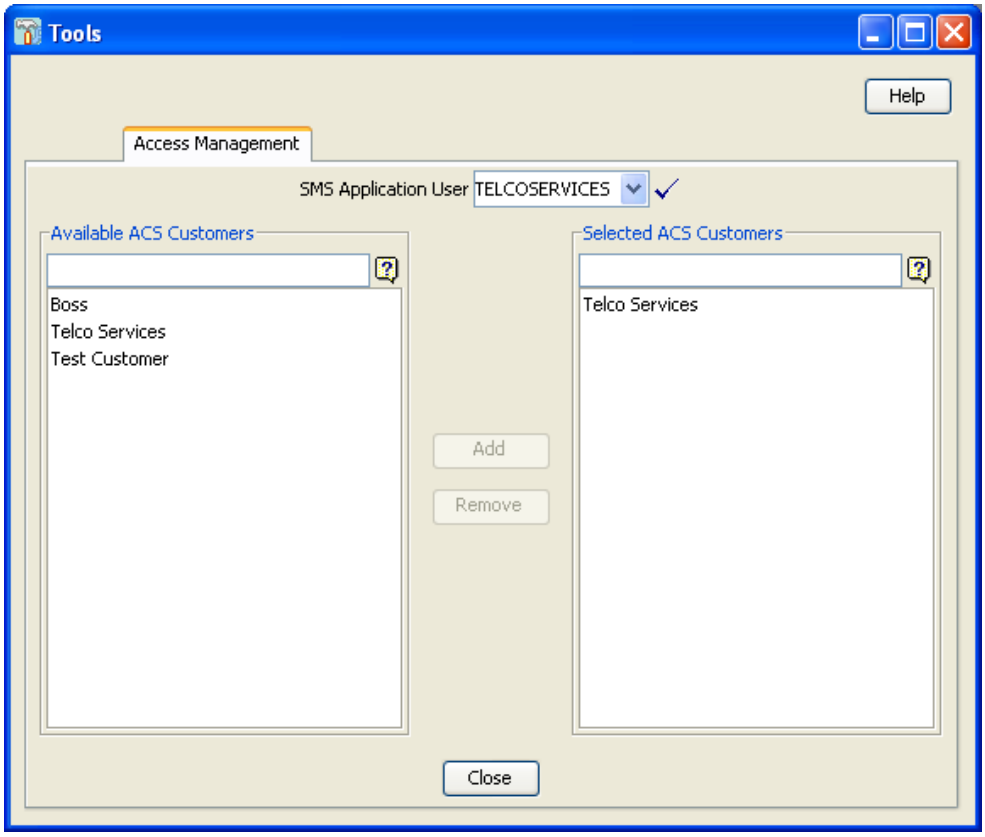
Access Management

Introduction

You use the **Access Management** tab in the Tools screen to allocate the customers that are visible to the SMS user. This screen has a limiting function as SMS users automatically have full access to all ACS customers, an SMS user's access is only limited when ACS customers are selected and placed in this list. Therefore an empty Selected ACS Customers list gives full access to all SMS users.

Access Management Tab

Here is an example **Access Management** tab.



Access Management Fields

Here is a description of the fields used when managing access.

Field	Description
SMS Application User	Use this field to select the SMS application user whose ACS customers you wish to view or configure. You can search for a user on this box. Refer to Searching the database. Any records found are displayed in the area below this field.
Available ACS Customers	Use this box to search for the available ACS customers that have been configured for the current SMS application user. Refer to Searching the database. Any records found are displayed in the area below this field.
Selected ACS Customers	Use this field to search for the selected ACS customers that have been configured for the current SMS application user. Refer to Searching the database. Any records found will be displayed in the area below this field.

Adding Access to an ACS Customer

Follow these steps to add access to an ACS customer.

Step	Action
1	From the **SMS Application User** drop down list, select the user for whom the ACS customer access is to be granted.
2	Search and select the customer(s) that you wish to give the SMS application user access to in the **Available ACS Customers** field. Click **Add**. **Result:** The new customer(s) will appear in the Selected ACS Customers list. The SMS application user will now be able view and manage data for the ACS customer(s) added to the Selected ACS Customers list only.

Removing Access to an ACS Customer

Follow these steps to remove access to an ACS customer.

Step	Action
1	Select the SMS application user, for whom the ACS customer access is to be granted, from the drop down list.
2	Search and select the customer(s) that you wish to give the SMS application user access to in the **Available ACS Customers** field. Click **Remove**. **Result:** The new customer(s) will be removed from the Selected ACS Customers list.

Networks

Introduction

You use the **Networks** tab of the Tools screen to configure networks in ACS.

This tab displays all the networks that have been configured in the system.

Note: Each network is maintained separately.

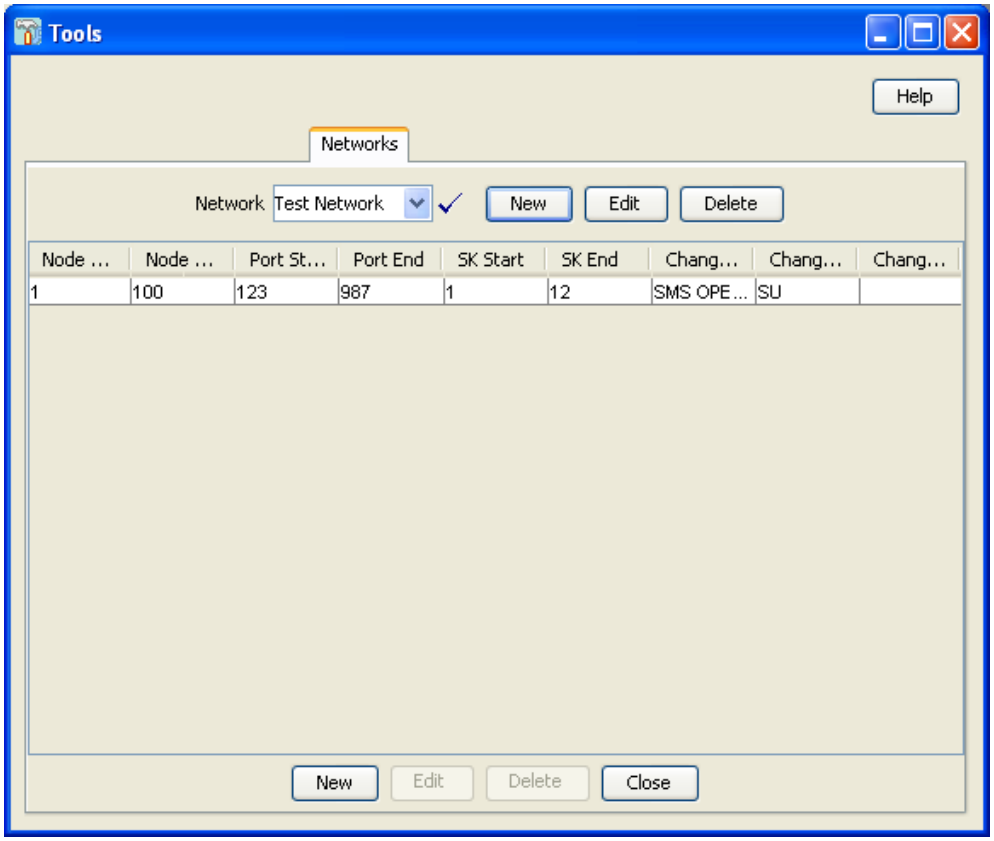
Only ACS users with permission level 6 or above can access this tab.

Control plans are selected based on a service number (SN) and network pair. This allows users of the same SN on different networks to be routed to different control plans, if required. Any number of network keys may be configured as identifiers for each network. The system matches the set keys with the information contained in an incoming call to identify the originating network and route the call accordingly.

It is not possible to delete a network that is currently in use by a compiled control plan. Editing a network will cause all compiled control plans that use that record to be recompiled.

Networks Tab

Here is an example **Networks** tab.



Networks Tab Fields

Here is a description of the fields used when managing networks.

The table on the tab displays the network keys that have been configured for the selected network. Any number of network keys may be configured as identifiers for each network. The system matches the set keys with the information contained in an incoming call, to identify the originating network and route the call accordingly.

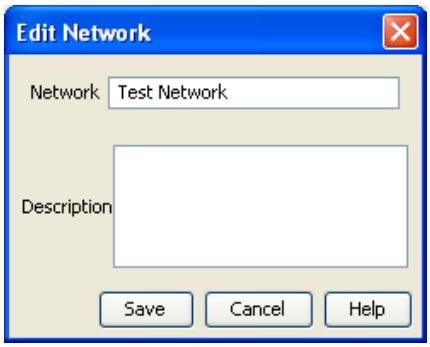
Note: While no two network keys can be identical, it is possible for the individual node, port, or service key ranges to overlap. For example, two network keys may have overlapping node and port ranges, as long as the service key ranges do not overlap.

Field	Description
Network	Use to navigate through the list of configured networks
Node Start	The number of the first node in the range of nodes for the selected network
Node End	The number of the last node in the range of nodes for this network
Port Start	The number of the first port in the range of ports for this network
Port End	The number of the last port in the range of ports for this network
SK Start	The number of the first service key in the range of service keys for this network
SK End	The number of the last service key in the range of service keys for this network

Field	Description
Change Customer	The customer name
Change User	The name of the user who allocated or edited the record
Change Date	The date when the record was allocated or last edited

Network Screen

Here is an example Network screen.



Adding Networks

Follow these steps to add a new network.

Step	Action
1	On the **Networks** tab, click **New** (beside the Network drop-down list). **Result:** The New *Network screen* (See example on page 35) is displayed.
2	In the **Network** field, enter the name of the new network.
3	In the **Description** field, enter a description of the new network.
4	Click **Save**. **Result:** The changes are saved and you return to the **Networks** tab.

Editing Networks

Follow these steps to edit an existing network.

Step	Action
1	On the **Networks** tab, select the network to edit from the Network table.
2	Click **Edit** (beside the Network drop-down list). **Result:** The Edit *Network screen* (See example on page 35) is displayed.
3	Change the network name and description as required.
4	Click **Save**. **Result:** The changes are saved and you return to the main window.

Deleting Networks

Follow these steps to remove a redundant network configuration.

Step	Action
1	On the **Networks** tab, select the Network to delete from the Network table.
2	Click **Delete** (beside the Network drop-down list). **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The network is removed from the database.

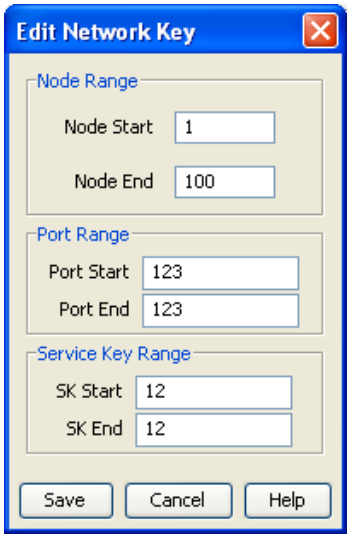
Adding Network Keys

Follow these steps to add a new network key to the selected network configuration.

Step	Action
1	On the **Networks** tab, select the network to add a key to from the **Network** drop down list.
2	Click **New** at the bottom of the tab. **Result:** The New *Network Key screen* (See example on page 36) is displayed. See *Networks Tab Fields* (on page 34) for details. **Tip:** You are not required to enter ranges, but if the start of a range is entered, an end of a range must also be entered. The end of a range must be greater than or equal to the start of a range.
3	In the **Node Start** and **Node End** fields, enter the start and end of the node range. The node is the originating point code.
4	In the **Port Start** and **Port End** fields, enter the start and end of the port range. The port is the destination subsystem number.
5	In the **SK Start** and **SK End** fields, enter the start and end of the service key range.
6	Click **Save**. **Result:** The details are saved and you return to the **Networks** tab.

Network Key Screen

Here is an example Network Key screen.



Editing Network Keys

Follow these steps to edit network keys.

Step	Action
1	On the **Networks** tab, select the network to edit from the **Network** drop down list.
2	Select the network key from the table.
3	Click **Edit** at the bottom of the tab.
	Result: The Edit *Network Key screen* (See example on page 36) is displayed.
4	Change the details as described in *Networks Tab Fields* (on page 34).
5	Click **Save**.
	Result: The changes are saved and you return to the main window.

Deleting Network Keys

Follow these steps to remove redundant network keys from the selected network.

Step	Action
1	On the **Networks** tab, select the network to edit from the **Network** drop down list.
2	Select the network key from the table.
3	Click **Delete** at the bottom of the tab.
	Result: The Confirm Delete prompt is displayed.
4	Click **OK**.
	Result: The network key record is deleted from the database.

Default Termination Range

Introduction

The **Default Termination Range** tab enables you to add, edit and delete the default termination number ranges that apply to the following feature nodes:

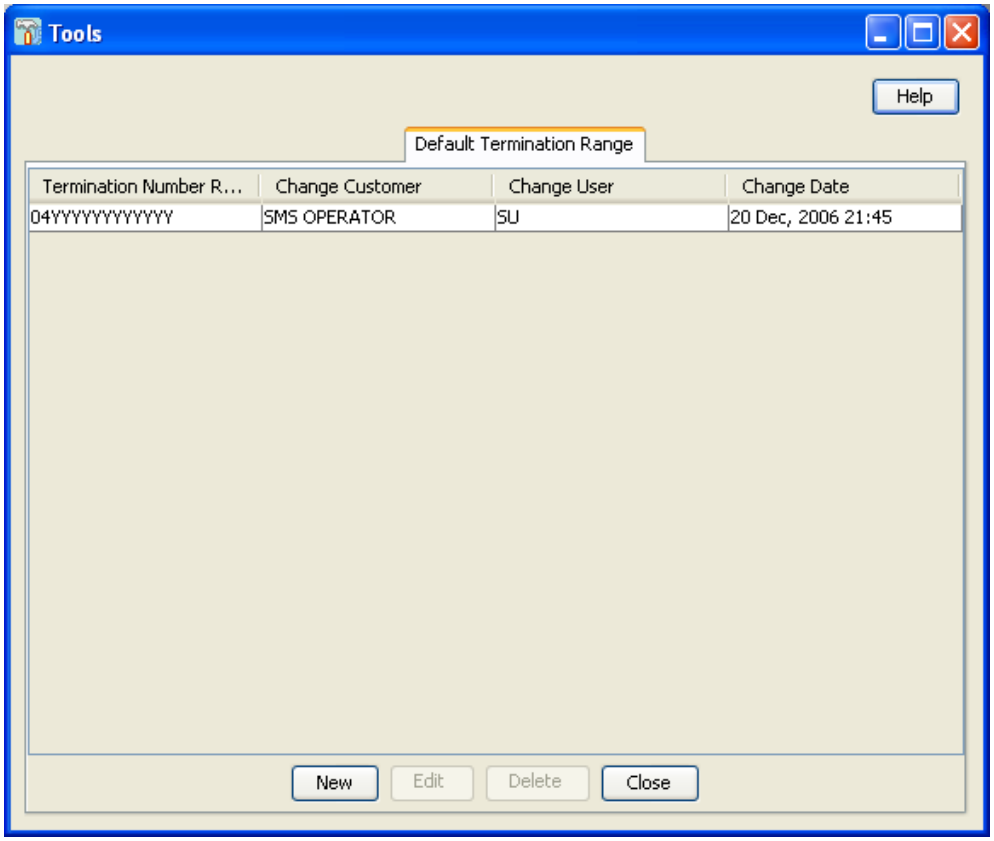
- Unconditional Termination
- Attempt Termination
- No Lookup and Translation
- Follow Me Number

These default ranges are assigned to the customer on the New Customer dialog box of the *ACS Customer Screen* (on page 114).

Note: For more information about setting up individual customer termination number ranges see the **Termination Ranges tab** (on page 162) of the ACS Resources screen procedure.

Default Termination Range Tab

Here is an example of the **Default Termination Range** tab.



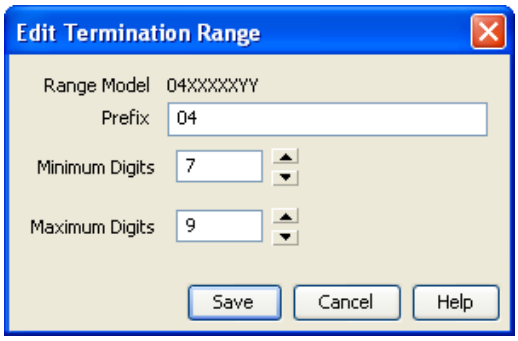
Default Termination Range fields

Here is a description of the fields used when managing default termination ranges.

Field	Description
Termination Number Range	The default termination number ranges that are currently configured for ACS.
Prefix	The prefix of the termination number.
Minimum Digits	The minimum number of digits permitted for the termination number.
Maximum Digits	The maximum number of digits permitted for the termination number.

Termination Range Screen

Here is an example Termination Range screen.



Adding a Default Termination Range

Follow these steps to add a new default termination range.

Step	Action
1	On the **Default Termination Range** tab, click **New**. **Result:** The New *Termination Range screen* (See example on page 39) is displayed. See *Default Termination Range fields* (on page 38) for details.
2	In the **Prefix** field, enter the prefix for the termination number.
3	In the **Minimum Digits** field, enter the minimum number of digits.
4	In the **Maximum Digits** field, enter the maximum number of digits. **Result:** As you type, the **Range Model** field displays the termination range, with the minimum digits after the prefix displayed as Xs and the maximum digits displayed as Ys, for example `0800XXYYYY`.
5	Click **Save**.

Editing a Default Termination Range

Follow these steps to edit an existing default termination range.

Step	Action
1	On the **Default Termination Range** tab, select the default termination range to edit.
2	Click **Edit**. **Result:** The Edit *Termination Range screen* (See example on page 39) is displayed.
3	Change the value as required. See *Default Termination Range fields* (on page 38) for details.
4	Click **Save**.

Deleting a Default Termination Range

Follow these steps to remove an existing default termination range.

Step	Action
1	On the **Default Termination Range** tab, from the table, select the default termination range to delete.

Step	Action
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**.

Global Configuration

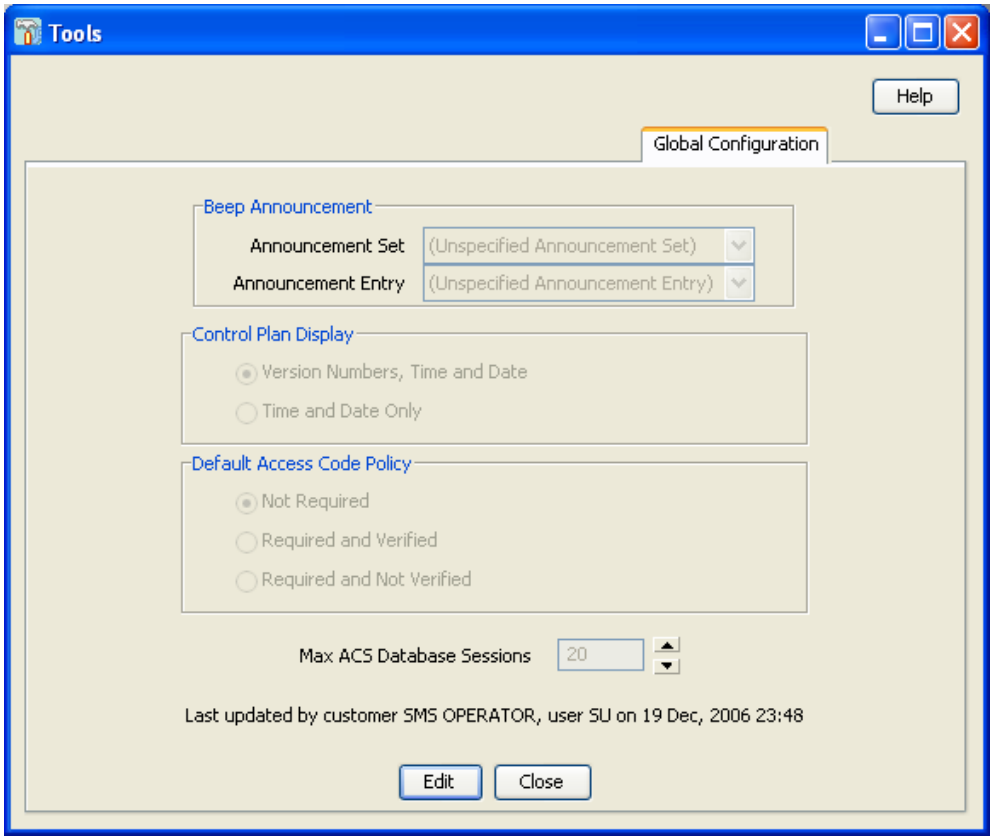
Introduction

The **Global Configuration** tab enables you to:

- Set the announcement set and entry to be used for the Beep announcement.
  Important: These announcements must be on a CS2 INMAP capable SSP in order to work correctly. See *ACS Technical Guide* for more information.
- Choose to display the time, date and version numbers or just the time and date on the **Control Plans** table on the *ACS Numbers* (on page 133).
- Set the default access code policy that is referenced from the **Access Code List** on the *Service Numbers* (on page 135) tab and *CLI Numbers* (on page 140) tab on the ACS Numbers screen.
- Increase or decrease the maximum number of ACS self management sessions allowed.

Global Configuration Tab

Here is an example of the **Global Configuration** tab.



Global Configuration Fields

This table describes the function of each field on the **Global Configuration** tab.

Field	Description
Beep Announcement:	
Announcement Set	The announcement set to be used for the Beep announcement.
Announcement Entry	The announcement entry to be used for the Beep announcement. **Note:** See *Announcements* (on page 58) for more information about announcement entries.
Control Plan Display:	
Version Numbers, Time and Date	Select to display the version numbers on the control plan tables on the ACS Numbers screen.
Time and Date Only	The time and date is always displayed. Select this option to ensure that the versions numbers are not displayed on the Control Plan tables on the ACS Numbers screen. **Note:** See *ACS Numbers* (on page 133) for more information about managing control plans on the ACS Numbers screen.
Default Access Code Policy: This function applies to the Access Code Entry node.	
Not Required	The user is not required to enter an access code.
Required and Verified	The user is required to enter an access code and the code will be verified against the list in the **Access Code Management** frame on the Service Number screen or CLI screen.
Required and Not Verified	The user is required to enter an access code but the code will not be verified. **Note:** See *Service Numbers* (on page 135) and *CLI Numbers* (on page 140) for more information.
Max ACS Database Sessions	Increase or decrease the maximum number of ACS self management sessions allowed. **Warning:** Ensure that this number *does not exceed* the total maximum number of system sessions allowed. Contact your system administrator for more information.

Editing the Global Configuration Settings

Follow these steps to edit the Global Configuration settings.

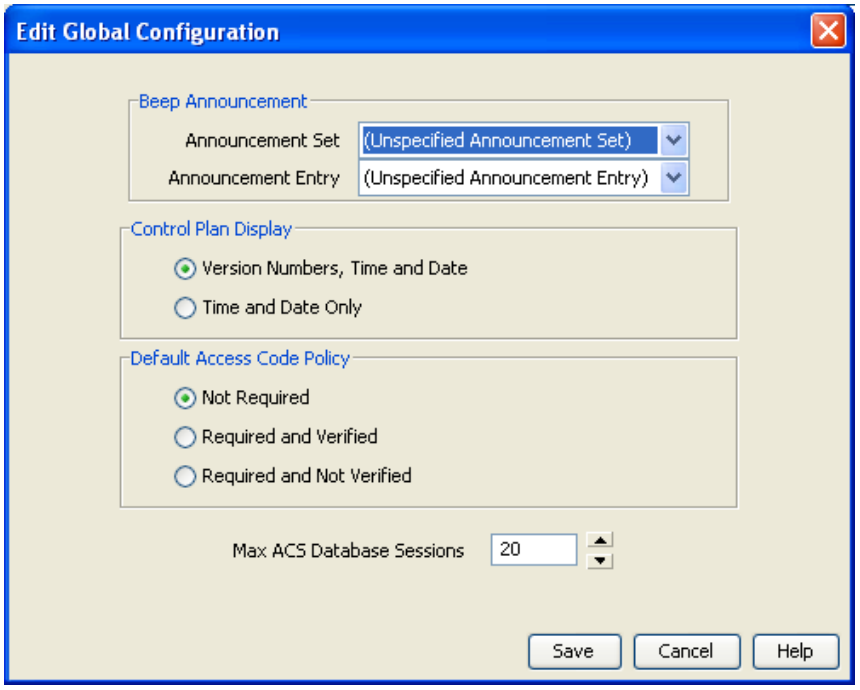
Note: There is only one set of Global Configuration settings within the system.

Step	Action
1	On the **Global Configuration** tab click **Edit**. **Result:** The *Edit Global Configuration screen* (See example on page 42) appears. See the *Global Configuration Fields* (on page 41) for this screen for more information.
2	In the Beep Announcement frame, for the Beep announcement, from the drop down lists, select the appropriate: • Announcement set • Announcement entry

Step	Action
3	In the Control Plan Display frame, select the option you wish to have displayed on the control plan. The options are: • **Version Numbers, Time and Date** • **Time and Date Only**
4	In the Default Access Code Policy frame, select the option for the appropriate default access code policy. The options are: • **Not Required** • **Required and Verified** • **Required and Not Verified**
5	In the **Max ACS Database Sessions** field, enter or select the required maximum number of database sessions that can exist at the same time.
6	Click **Save** to save the new settings. **Result:** The screen will return to the **Global Configuration** tab; note that this will now display the most recent setting update information above the buttons at the bottom of the screen.

Edit Global Configuration Screen

Here is an example Edit Global Configuration screen.



Chapter 6

ACS Configuration

Overview

Introduction

This chapter explains how to configure the various sets used with ACS.

In this chapter

This chapter contains the following topics.

ACS Configuration Screen

Introduction

The ACS Configuration screen allows you to configure the various sets used with ACS. It contains these tabs:

- *Geography* (on page 44)
- *Holidays* (on page 53)
- *Announcements* (on page 58)
- *VARS* (on page 66)
- *VARS mapping* (on page 70)
- *Feature Sets* (on page 74)
- *Notifications* (on page 91)
- *Profile Tag Details* (on page 77)
- *Profile Tag Mapping* (on page 82)

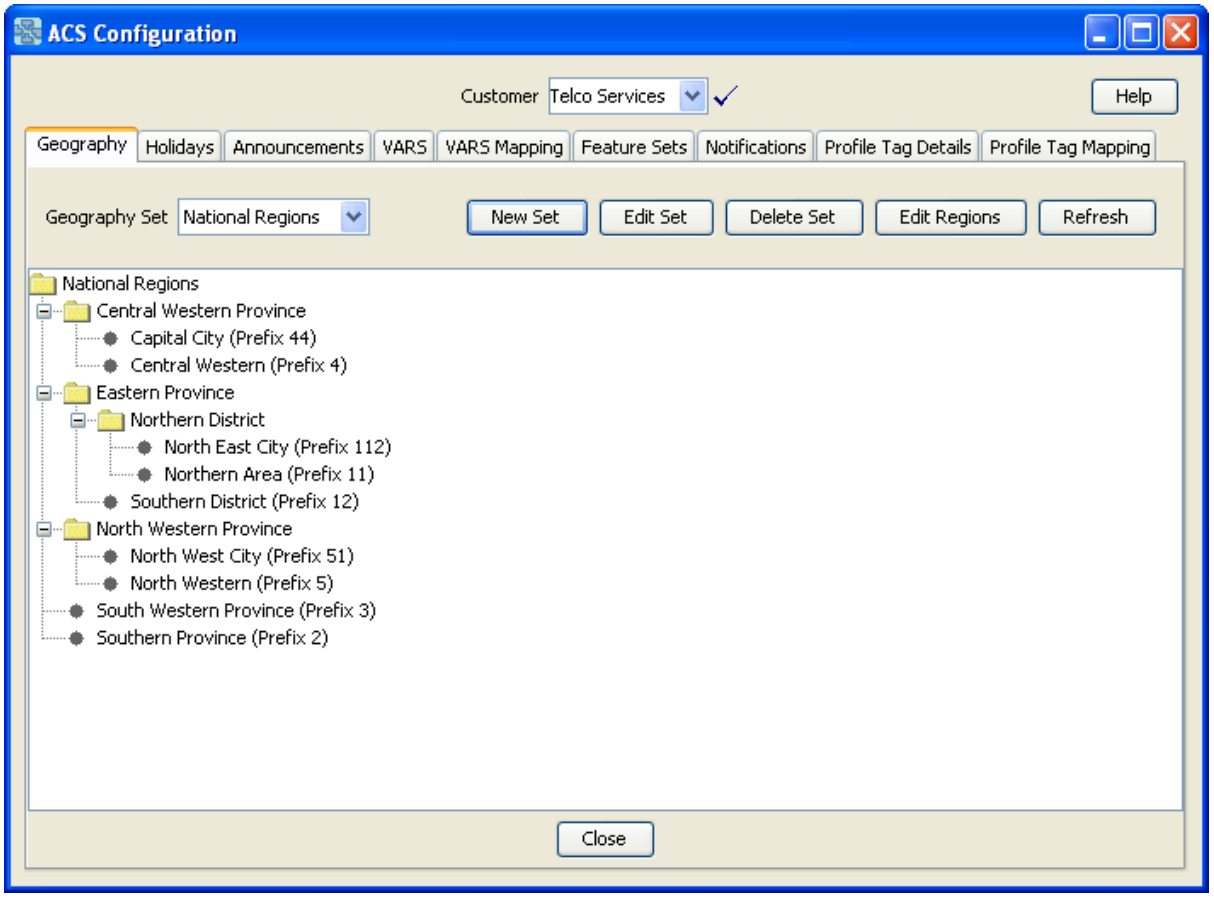
Accessing the ACS Configuration Screen

To open this screen, click **Configuration** on the ACS main screen.

For more information, see *ACS Main Screen* (on page 17).

ACS Configuration Screen Example

Here is an example ACS Configuration screen. The screen is displayed with the **Geography** tab open by default.



Geography Sets

Introduction

The **Geography** tab of the ACS Configuration screen is used to add, edit and remove geography sets and their respective entries.

Note: It is never possible to delete a geography set or entry that is currently in use by a compiled control plan. Deleting a geography set will delete all entries in that set. Editing a geography set or entry will cause all compiled control plans that use that geography set to be recompiled.

Geography Set Definition

A geography set is a group of geography entries. A geography set may belong to a specific customer, or may be public — usable by any customer. Here are some example geography sets:

- North/South Island (Public)

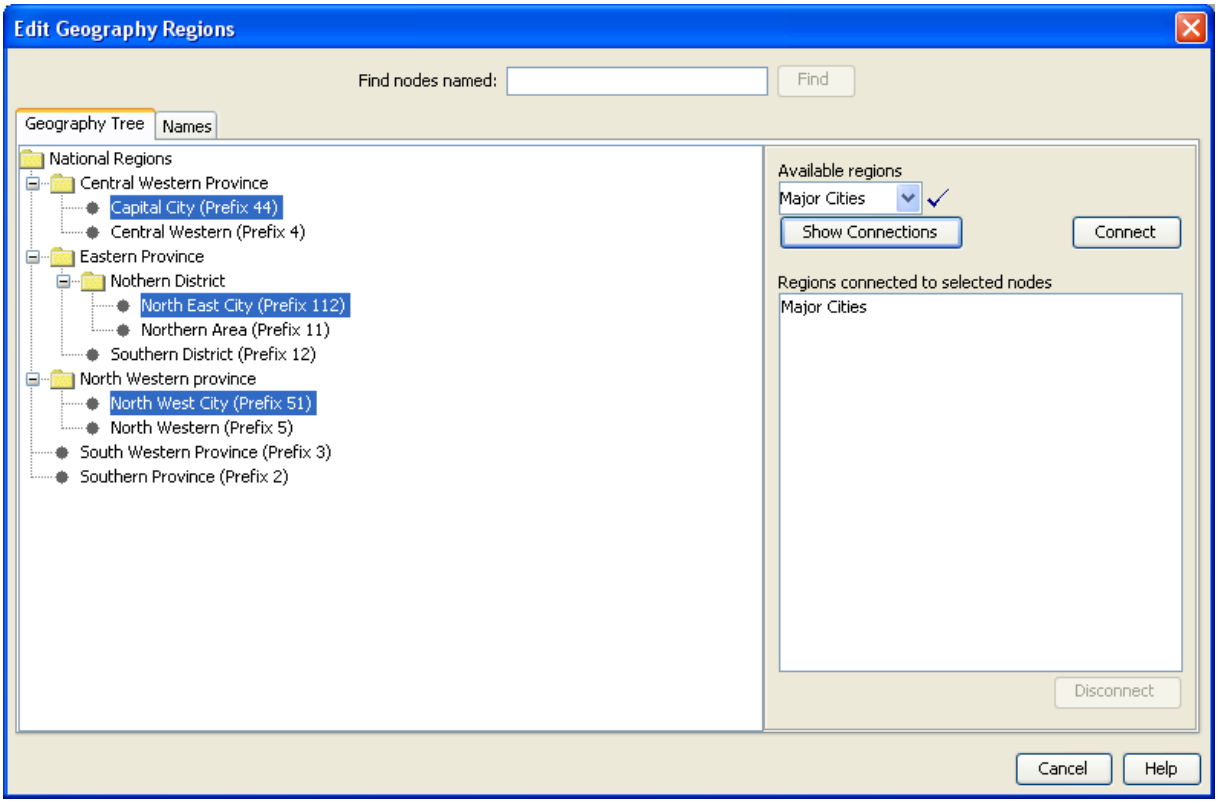
- Major City Breakdown (Public)
- Pizza delivery company nearest call center to each major exchange (service provider specific).

Geography Entry Definition

A geography entry is a calling area defined by a prefix in the dialed number. The prefix is a code for the given location and can be used in whatever way ACS requires. For example, in the geographic routing feature node it is matched to the calling party number.

Geography Region Definition

A Geography region is a group of geography entries. This screen shows an example of a geography region.

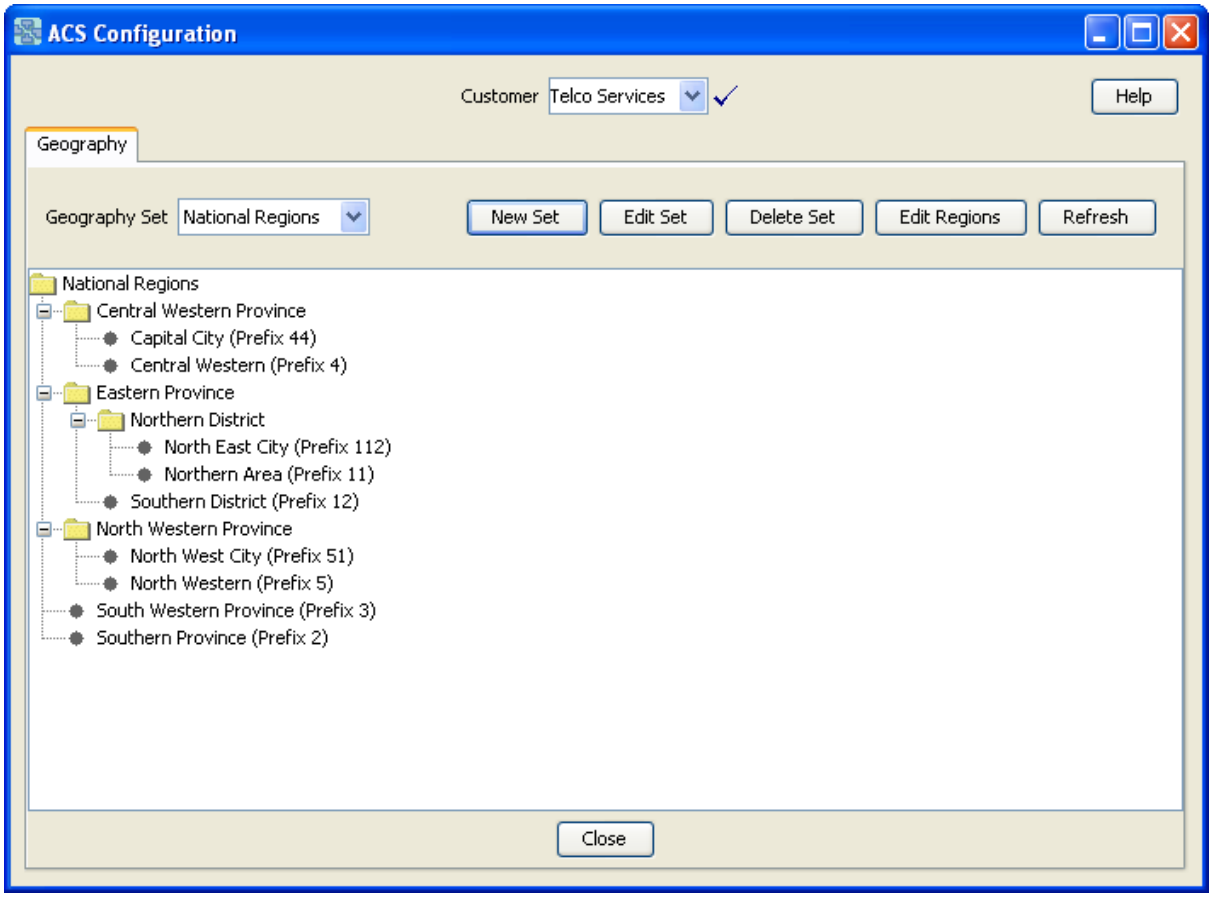


In the example, all of the highlighted entries are members of the `Major Cities` region even though they belong to different branches of the geography tree.

The Geographical Routing feature node can make use of geography regions. In this way, the node can route calls to one geography region rather than to many individual prefixes.

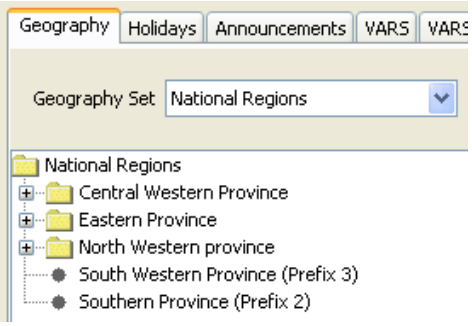
Geography Tab

Here is an example **Geography** tab.



The Geography Tree

The geography tree displays the geography entries for the current geography set. You can expand and contract the tree by clicking the various nested folders in the structure. This allows you to view the current entries and prefixes for the selected geography set.



Geography Sets and Entries

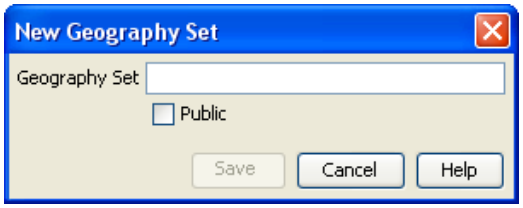
Adding Geography Sets

Follow these steps to add a new geography set.

Step	Action
1	On the **Geography** tab, click **New Set**. **Result:** The *New Geography Set screen* (See example on page 47) is displayed.
2	In the **Geography Set** field, enter the name of the set. Geography set names must be unique for each customer. Sets do not need to be unique between customers unless they are to be public, in which case they must be unique. The name can be up to 50 alphanumeric characters in length, but may not be left blank.
3	If you require a: • Public geography set (that is, you want the new set to be available to all users), select the **Public** box • Customer-specific geography set, leave the box not selected **Note:** A private set may not be edited and made public, nor may a public set be edited to become private.
4	Click **Save** to add the geography set to the database. **Result:** The new geography set will be available in the drop-down list

New Geography Set Screen

Here is an example New Geography Set screen.



Adding Geography Entries

Follow these steps to add a new geography entry to a geography set.

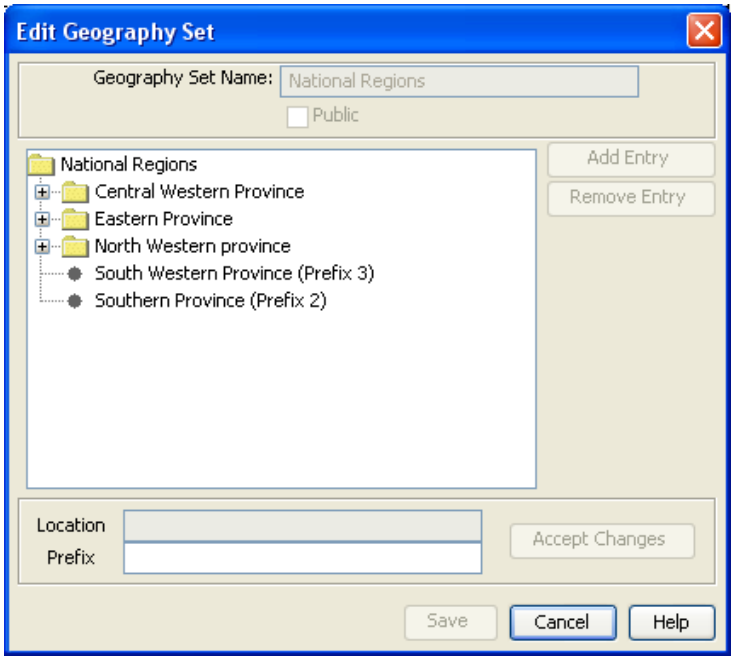
Step	Action
1	On the **Geography** tab, select the geography set to edit from the **Geography Set** drop down list.
2	Click **Edit Set**. **Result:** The *Edit Geography Set screen* (See example on page 48) is displayed.
3	Select the folder you would like to add the new entry to. **Result:** Once selected, the folder name is displayed in the **Location** field.
4	Click **Add Entry**. **Result:** The *Add Entry Screen* (on page 48) appears.
5	In the **Name for New Entry:** field, enter the name of the new geography entry.
6	Click **Save**. **Result:** The geography entry will be added as a branch under the geography set name.

Step	Action
7	Select the new geography entry from the Edit Geography Set screen.
8	If required, enter a prefix for the entry in the **Prefix** field.
9	Click **Accept Changes**.
	Note: If the geography entry contains nested entries, a prefix is not required and the **Accept Changes** button remains unavailable. If the geography entry does not contain nested entries, the **Accept Changes** button becomes available when the **Prefix** field is populated.
10	Click **Save**. **Result:** The geography set changes are added to the database.

Note: If the set is used in a compiled control plan, the compiler will attempt to recompile all control plans that use the set and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

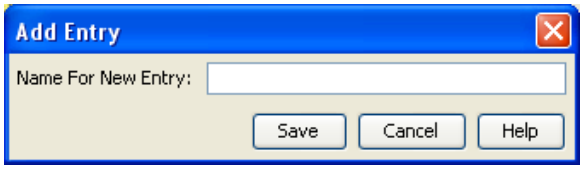
Edit Geography Set Screen

Here is an example Edit Geography Set screen.



Add Entry Screen

Here is an example Add Entry screen.



Editing Geography Entry Prefixes

Follow these steps to add or edit prefixes for existing geography entries.

Step	Action
1	On the **Geography** tab, select the geography set to edit from the **Geography Set** drop down list.
2	Click **Edit Set**. **Result:** The *Edit Geography Set screen* (See example on page 48) is displayed.
3	Select the entry you would like to change the prefix for. **Result:** Once selected, the entry name is displayed in the **Location** field.
4	In the **Prefix** field, make the necessary changes to the prefix.
5	Click **Accept Changes**. **Note:** The **Accept Changes** only becomes available for entries that have no nested entries below them.
6	Click **Save**. **Result:** The geography set changes are saved to the database.

Note: If the edited geography set is used in a compiled control plan, the compiler will attempt to recompile all control plans that use the set and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Deleting Geography Entries

Follow these steps to remove a geography entry.

Step	Action
1	In the *Edit Geography Set screen* (See example on page 48), select the geography entry to delete.
2	Click **Remove Entry**. **Result:** The geography entry is deleted.
3	Click **Save**. **Result:** The geography set changes are saved to the database.

Note: Deleting a geography entry will cause all compiled control plans that use that geography set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Deleting Geography Sets

Follow these steps to remove an existing geography set from the database.

Step	Action
1	On the **Geography** tab, select the geography set to delete from the **Geography Set** drop down list.
2	Click **Delete Set**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The geography set is deleted.

Step	Action
	Tip: It is not possible to delete a geography set that is used in a control plan. To delete this geography set, the control plans that use the geography set must first be changed to use another set. Once this set is not used by any node in any control plan, then it may be deleted.

Geography Regions

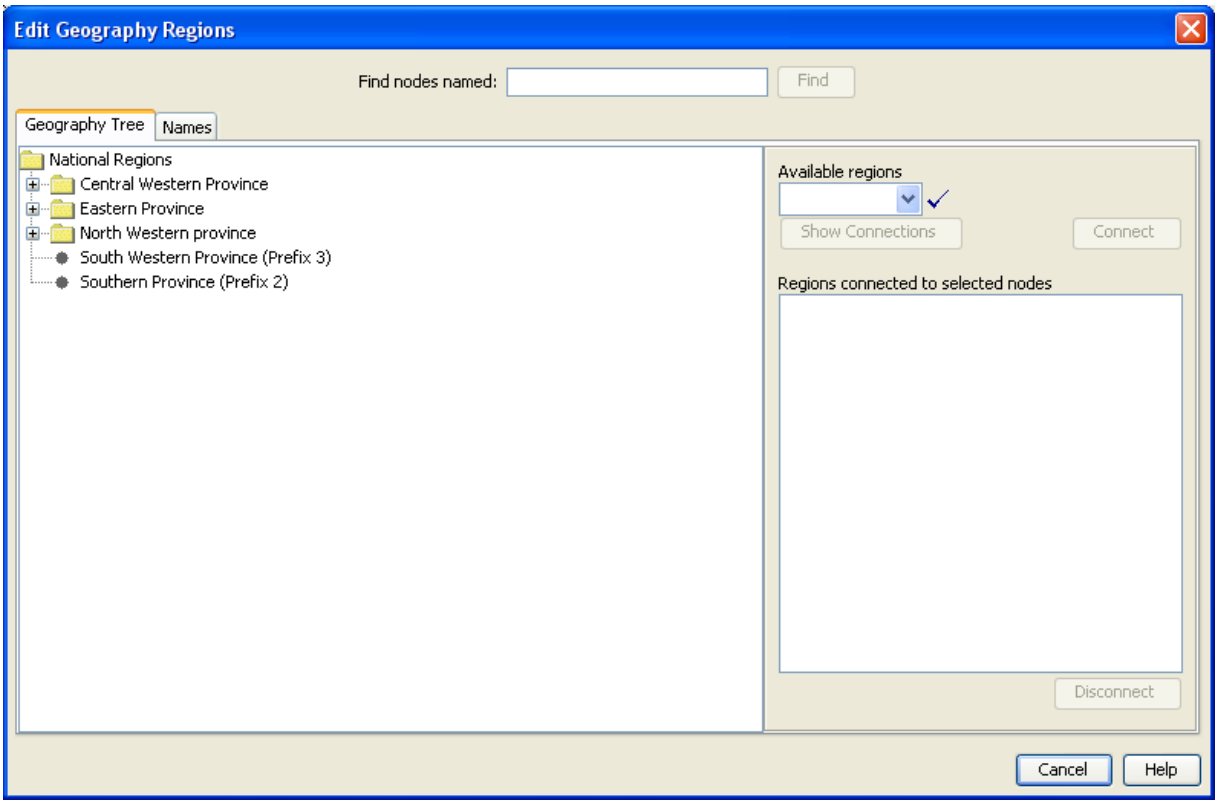
Adding Geography Regions

Follow these steps to create a geography region, and add geography entry prefixes to that region.

Step	Action
1	On the **Geography** tab, click **Edit Regions**. **Result:** The *Edit Geography Regions screen* (See example on page 51) is displayed.
2	In the **Available regions** field, enter the name of the region. This field may be used to search for and select existing regions or create new regions.
3	From the **Geography Tree**, select the geography entry or geography prefix that is to be part of the selected region.
4	Click **Connect** to connect the selected geography entry or prefix to the selected region.
	Note: Where a geography entry is connected to a region, then all prefixes below that entry are also connected to the same region unless a prefix is specifically connected to a different region.
5	Add all entries and prefixes to the region as required.
6	Once the region is complete, click **Cancel** to return to the **Geography** tab.
	Note: All changes to a region are automatically saved to the database.

Edit Geography Regions Screen

Here is an example Edit Geography Regions screen.



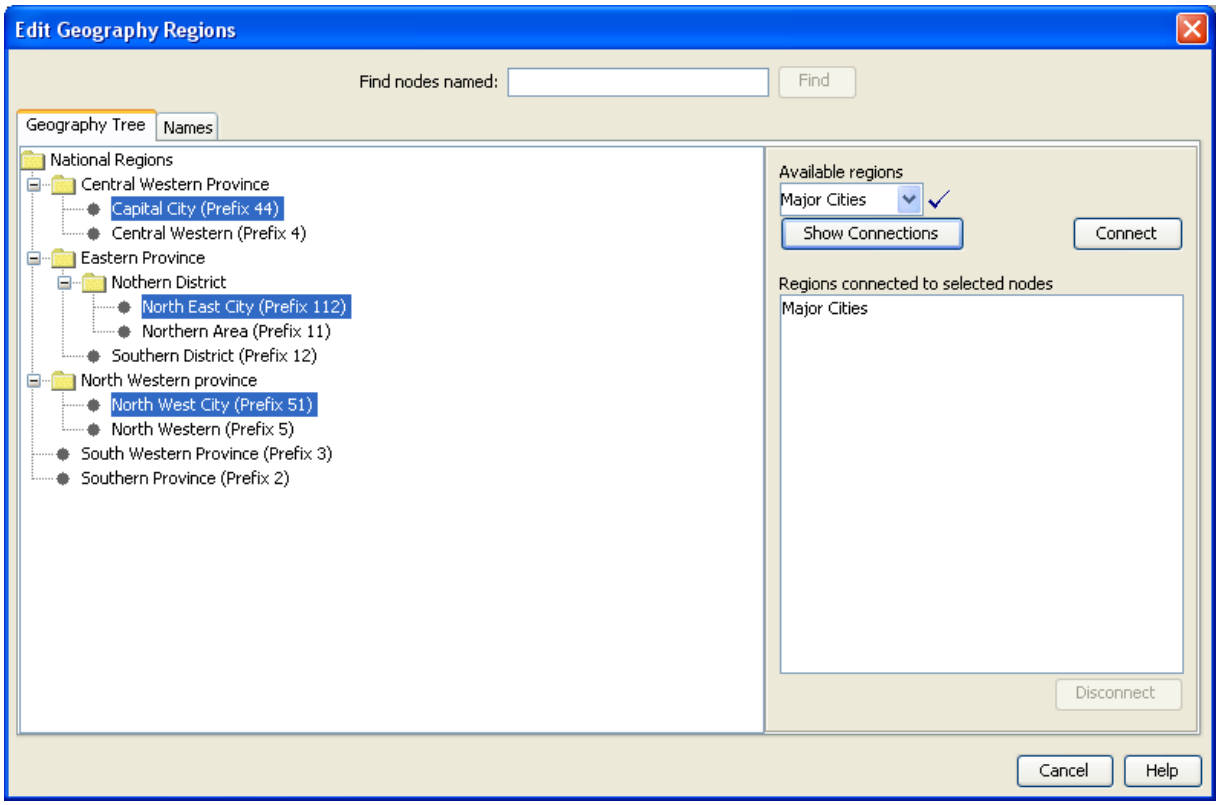
Displaying all Nodes in a Region

Follow these steps to display all nodes (that is, geography entries and prefixes) that are connected to a specified region.

Step	Action
1	In the **Available Regions** combo box, either enter a new name or select a name from the drop-down list. **Note:** The combo box may be used to search for and select existing regions or create new regions. See Combo boxes for details on how to use this field.
2	Click **Show Connections**. **Result:** The entries and prefixes that are connected to the region will be highlighted in the **Geography Tree** (See example on page 52).

Geography Tree Tab with Highlighted Entries

Here is an example **Geography Tree** tab, with the entries and prefixes that are connected to the region highlighted.



Disconnecting from a Region

Follow these steps to disconnect a geography entry or prefix from a region.

Step	Action
1	From the **Geography** tab, click **Edit Regions**. **Result:** The *Edit Geography Regions screen* (See example on page 51) opens, with the **Geography Tree** tab active.
2	From the geography tree, select the geography entry or prefix to disconnect. **Result:** If the geography entry or prefix has nodes associated with it, node names will appear in the **Regions connected to selected nodes** field of the **Geography Tree** (See example on page 52) tab.
3	In the **Regions connected to selected nodes** field, click the node to disconnect.
4	Click **Disconnect**.
5	Click **Cancel** to return to the **Geography** tab.
	Note: The changes will still be saved to the database.

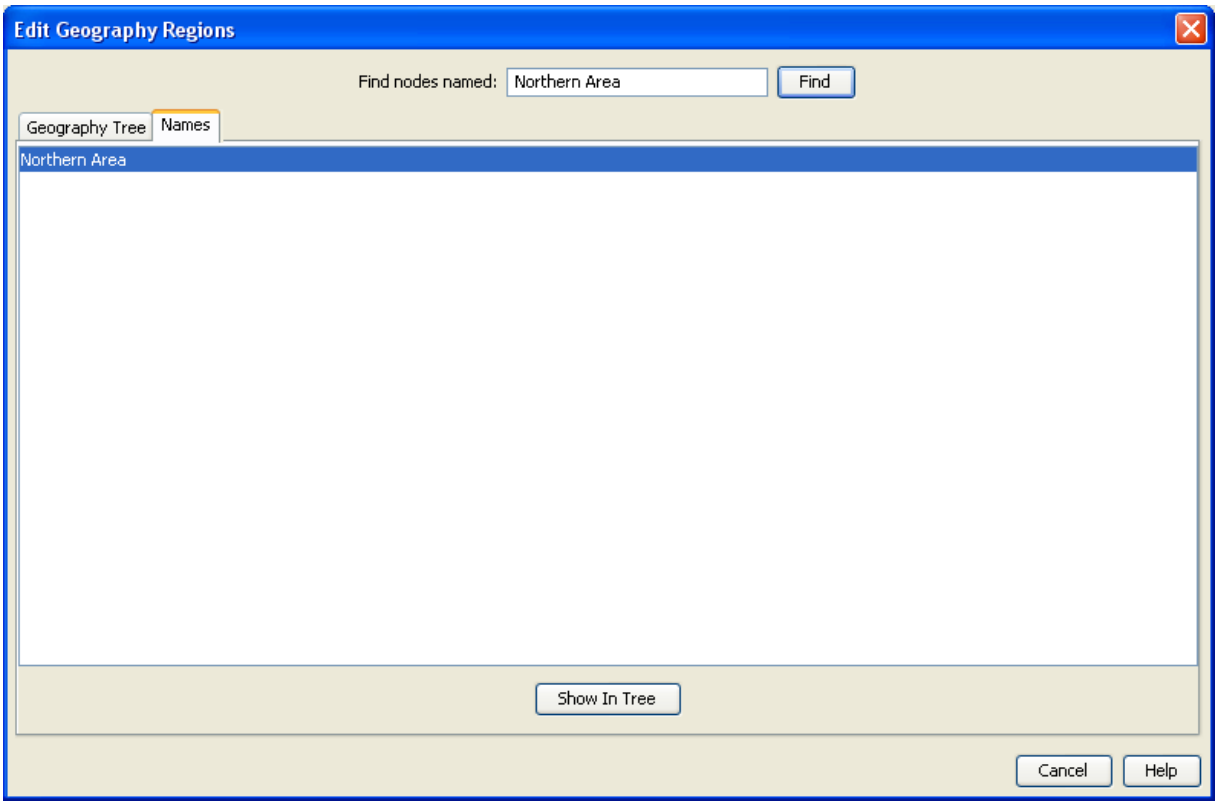
Finding a Geography entry

Follow these steps to locate a geography entry (node) in a geography tree by name.

Step	Action
1	On the **Geography** tab, click **Edit Regions**. **Result:** The *Edit Geography Regions screen* (See example on page 51) is displayed.
2	In the **Find nodes named** field, enter the name of the node (geography entry) to searched for.
3	Click **Find**. **Result:** Entries that match the search criteria will be displayed on the **Names** *tab* (See example on page 53).
4	Select the entries to be located in the geography tree and click **Show In Tree**. **Result:** The **Geography Tree** *tab* (See example on page 52) is displayed with the selected entries highlighted.

Names Tab

Here is an example Edit Geography Regions screen, **Names** tab.



Holidays

Introduction

You use the **Holidays** tab to configure holiday sets and holiday records for each of your customers.

A holiday set is a set of day-of-year records that mark specific days as being "holiday" days.

About Updated Holiday Set Data in Control Plans

Customers can use holiday set data in Day Of Year feature node configurations in their control plans (for example, to route calls to a messaging service when their businesses are closed).

When you update the entries in a holiday set, all the control plans that reference the updated holiday set in a Day Of Year feature node are recompiled automatically. However, if a control plan was already in the control plan cache when the holiday set data was updated, because the control plan is being triggered by platform traffic, then the updates will not be available until the recompiled control plan is reloaded into the cache. This creates a delay between recompilation and new data being available on the SLC.

Control plans are reloaded into the control plan cache at regular intervals, and when the SLEE is restarted. You may be able to configure the frequency with which the control plan cache is flushed for some services. For example, you configure when to flush the control plan cache for the CCS service by configuring the following parameters in the `ccsSvcLibrary` section of the **eserv.config** configuration file:

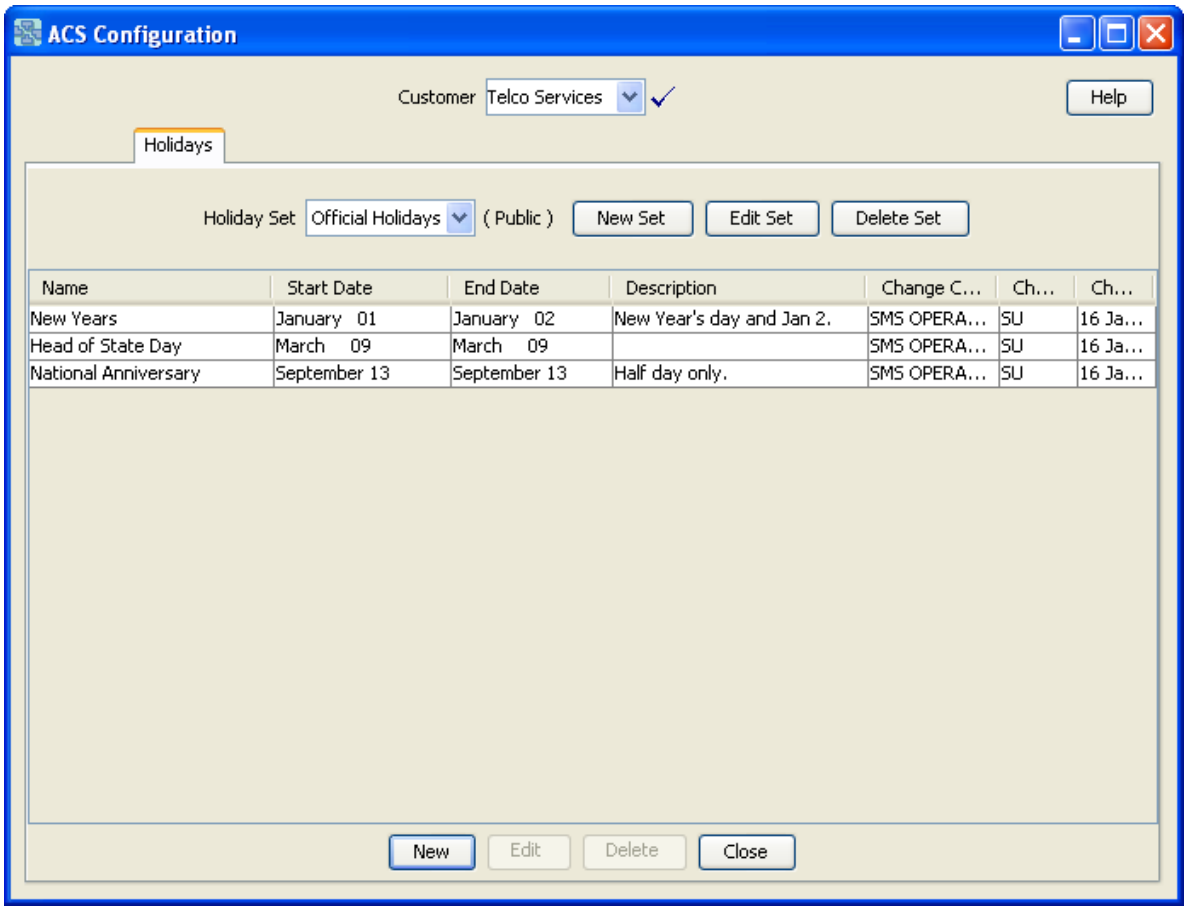
- `callPlanAndDataCacheFlushTime`
- `callPlanAndDataCacheMaxAge`

For more information, see *CCS Technical Guide*.

For information about control plan configuration, see *CPE User's Guide*.

Holidays Tab

Here is an example **Holidays** tab.



Adding Holiday Sets

Follow these steps to add a new holiday set.

Step	Action
1	On the **Holidays** tab, click **New Set**. **Result:** The New *Holiday Set screen* (on page 55) is displayed.
2	In the **Holiday Set** field, enter the name of the set. **Note:** Each holiday set name must be unique for a particular customer - but two different customers may have sets with the same name. If the holiday set is to be saved as a public set, then the name must be unique. The set name may be up to 50 alphanumeric characters in length, but cannot be left blank.
3	In the **Description** field, enter a description of the set.
4	If you require a: • Public holiday set, select the **Public** check box. • Customer-specific holiday set, leave the box not selected. **Note:** A private set may not be edited and made public, nor may a public set be edited to become private.
5	Click **Save** to add the new holiday set to the database.

Editing Holiday Sets

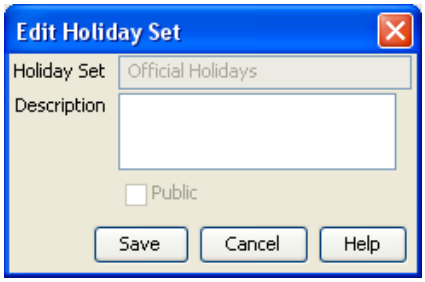
Follow these steps to edit an existing holiday set.

Step	Action
1	On the **Holidays** tab, select the holiday set to edit from the **Holiday Set** drop down list.
2	Click **Edit Set**. **Result:** The Edit *Holiday Set screen* (on page 55) is displayed.
3	Make the necessary changes to the description. **Note:** You cannot change the Holiday Name or change the public/customer-specific status.
4	Click **Save**. **Result:** The holiday set changes are saved to the database.

Note: Editing a holiday set or holiday entry causes all compiled control plans that use that holiday set to recompile. The compiler report gives details about the status of each affected control plan.

Holiday Set Screen

Here is an example Holiday Set screen.



Deleting Holiday Sets

Follow these steps to delete an existing holiday set.

Note: Deleting a holiday set will delete all holiday entries in that set. It is not possible to delete a holiday set that is currently in use by a compiled control plan.

Step	Action
1	From the **Holidays** tab, select the holiday set to delete.
2	Click **Delete Set**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The holiday set is removed from the database. **Tip:** It is not possible to delete a holiday set that is used in a control plan. To delete this holiday set, the control plans that use the holiday set must first be changed to use another set. Once this set is not used by any node in any control plan, then it may be deleted.

Adding Holiday Entries

Follow these steps to add a new holiday entry to an existing holiday set.

Step	Action
1	On the **Holidays** tab, select the holiday set to add a new holiday entry to from the **Holiday Set** drop down list.
2	Click **New**. **Tip:** The **New** button is located at the bottom of the screen. The new button at the top of the screen is **New Set**. **Result:** The New *Holiday screen* (See example on page 57) is displayed.
3	In the **Name** field, enter the name of the holiday entry.
4	From the **Start Date** and **End Date** drop down boxes, select a start and end date. **Tip:** Holiday entries may not overlap. Each day may only belong to one holiday within the holiday set.
5	In the **Description** field, enter a description of the holiday entry.
6	Click **Save** to add the holiday entry to the holiday set selected in step 1.

Note: Adding an entry to a set that is used in compiled control plans will cause all control plans that use that set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Editing Holiday Entries

Follow these steps to edit an existing holiday entry in a holiday set.

Step	Action
1	On the **Holidays** tab, select the holiday set which contains the holiday entry to edit.
2	From the table, select the holiday entry to edit.
3	Click **Edit**. **Tip:** The **Edit** button is located at the bottom of the screen. The edit button at the top of the screen is **Edit Set**. **Result:** The Edit *Holiday screen* (See example on page 57) is displayed.

4 Make the necessary changes to the Start and End dates and description.

Note: You cannot edit the **Name** field.

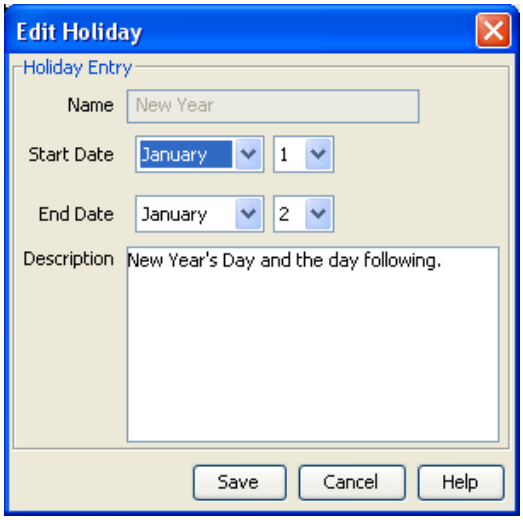
5 Click **Save**.

Result: The holiday entry changes are saved to the database.

Note: Editing a holiday set or holiday entry will cause all compiled control plans that use that holiday set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Holiday Screen

Here is an example Holiday screen.



Deleting Holiday Entries

Follow these steps to delete an existing holiday entry from a holiday set.

Step	Action
1	On the **Holidays** tab, select the holiday set which contains the holiday entry to delete.
2	From the table, select the holiday entry to delete.
3	Click **Delete**.
	Tip: The **Delete** button is located at the bottom of the screen. The delete button at the top of the screen is **Delete Set**.
	Result: The Confirm Delete prompt is displayed.
4	Click **OK**.
	Result: The holiday entry is removed from the holiday set in the database.
	Tip: It is not possible to delete a holiday entry that is used in a control plan. To delete this holiday entry, the control plans that use it must first be changed to use another holiday entry. Once this entry is not used by any node in any control plan, then it may be deleted.

Note: Deleting a holiday entry will cause all compiled control plans that use that holiday set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Announcements

Introduction

All the announcements that are used in your customer control plans must belong to an announcement set. Announcement sets are a convenient way of grouping common announcements together.

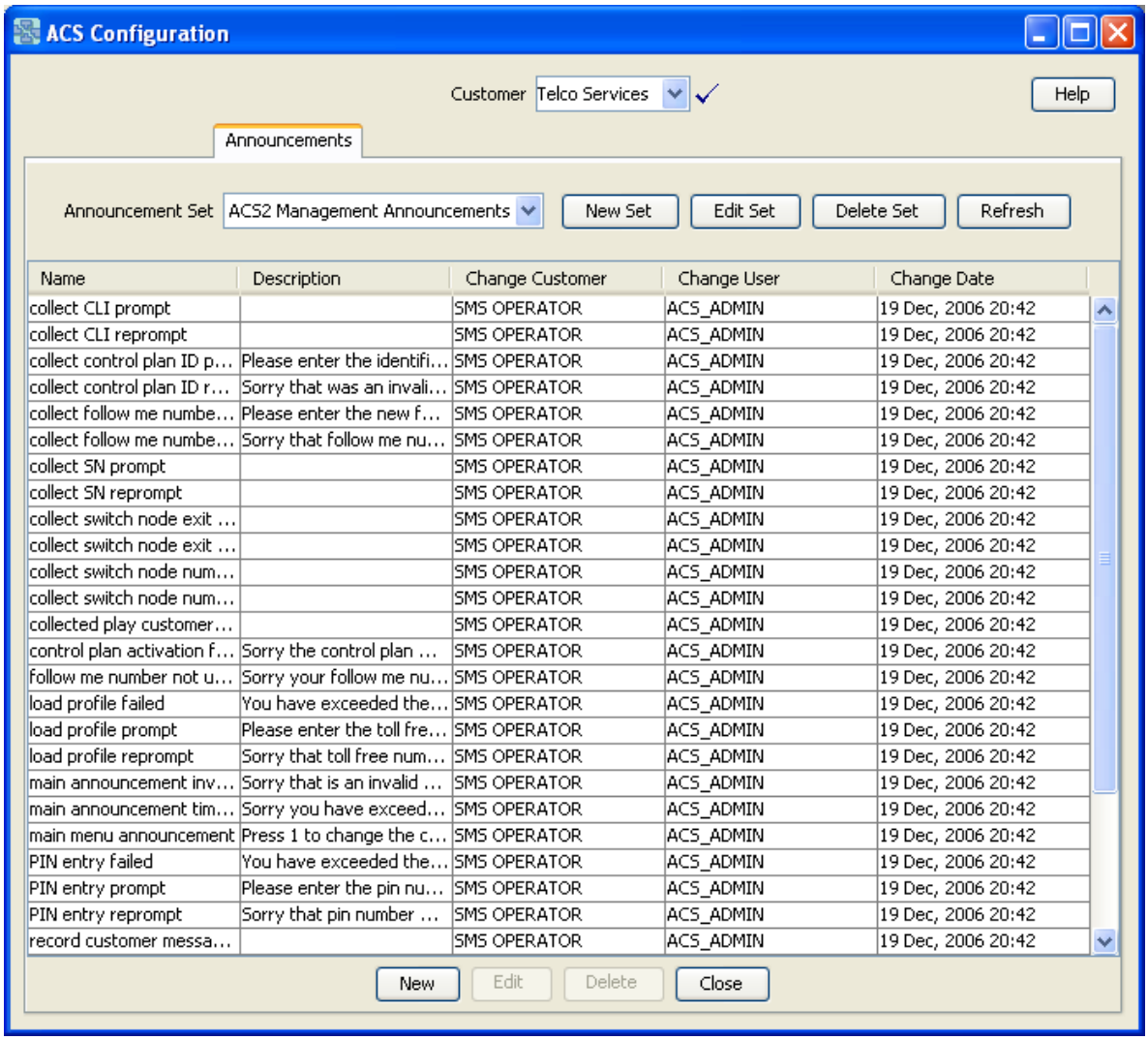
An announcement set may belong to a specific customer or may belong to no customer, in which case the announcements it contains are public (that is, they can be used by any customer). For example:

- General announcements (public)
- Please hold announcements (public)
- Warehouse mail order announcements (customer-specific)
- Warehouse head office announcements (customer-specific)

Note: It is not possible to delete an announcement set that is currently in use by a compiled control plan. Deleting an announcement set will delete all announcement records in that set. Editing an announcement set or announcement entry will cause all compiled control plans that use that announcement set to be recompiled.

Announcements Tab

Here is an example **Announcements** tab.



Announcement Set Screen

Here is an example Announcement set screen.

Announcement Set Fields

This table describes each field of an Announcement Set screen.

Field	Description
Announcement Set	The name of the set. **Note:** This field cannot be changed after it is first saved.
Description	A description of the set.
Public	Controls the availability of this set. If selected, the set is a public announcement set and can be used by all users of the system. If not selected, the set is customer-specific and can only be used by the ACS customer which created it. **Notes:** • A private set may not be edited and made public, nor may a public set be edited to become private. • This field cannot be changed after it is first saved.

Adding Announcement Sets

Follow these steps to add a new announcement set.

Step	Action
1	On the **Announcements** tab, click **New Set**. **Result:** The New *Announcement Set screen* (See example on page 59) is displayed.
2	Configure this record by entering data in the fields on this screen. For information about the fields on this screen, see *Announcement Set Fields* (on page 60).
3	Click **Save** to save the details to the database. **Result:** The new announcement set will be available from the announcement set drop down list.

Editing Announcement Sets

Follow these steps to edit an existing announcement set.

Step	Action
1	On the **Announcements** tab, select the announcement set to edit from the **Announcement Set** drop down list.
2	Click **Edit Set**. **Result:** The Edit *Announcement screen* (See example on page 59) is displayed.
3	Edit the fields to make the required changes. For information about the fields in this screen, see *Announcement Set Fields* (on page 60).
4	Click **Save**. **Result:** The announcement set changes are saved to the database.

Note: Editing an announcement set will cause all compiled control plans that use that announcement set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Deleting Announcement Sets

Follow these steps to delete an existing announcement set.

Warning: Deleting an announcement set will delete all announcement entries in that set.

Step	Action
1	On the **Announcements** tab, select the announcement set to delete from the **Announcement Set** drop down list.
2	Click **Delete Set**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The announcement set and all its announcement entries are removed from the database. **Tip:** It is not possible to delete an announcement set that is used in a control plan. To delete this announcement set, the control plans that use the announcement set must first be changed to use another set. Once this set is not used by any node in any control plan, then it may be deleted.

Announcement Entries

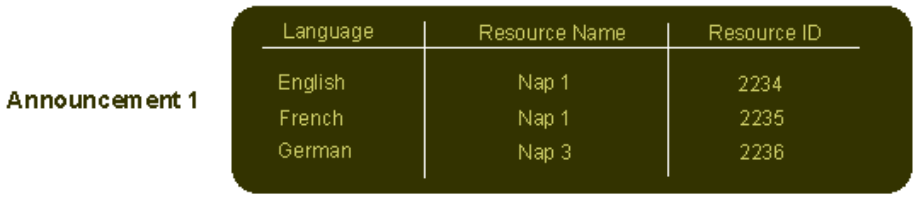
Announcement entries are contained within an announcement set. The telecommunications provider must record each announcement onto a Specialized Resource Function (SRF). This announcement must be assigned a:

- Resource Name (the name or location of the SRF on which it is stored)
- Resource ID (the identification of the audio file on the SRF that gives the exact location of the announcement)

The ACS system requires the following for each announcement entry:

- Language
- Resource Name
- Resource ID

This allows ACS to determine exactly where the announcement recording is located and the language in which it is recorded - as shown in the diagram below:



A preferred language is set for each ACS customer. This is the language in which all announcements are played in control plans for that customer. If an announcement mapping does not exist for the selected language, the system will use the announcement mapping for the system's default language for that particular instance.

The system needs an address to locate the announcement. For this reason, the *Announcements screen* (See example on page 63) should not be closed until at least one of the announcement mappings defined uses the default language.

When a control plan encounters this announcement, it will attempt to use the customer's preferred language. If no mapping exists for that announcement/language, then it will attempt to use the default language. If a mapping does not exist for the announcement in the default language, then the announcement cannot be played (a system error will be logged and the call will be terminated).

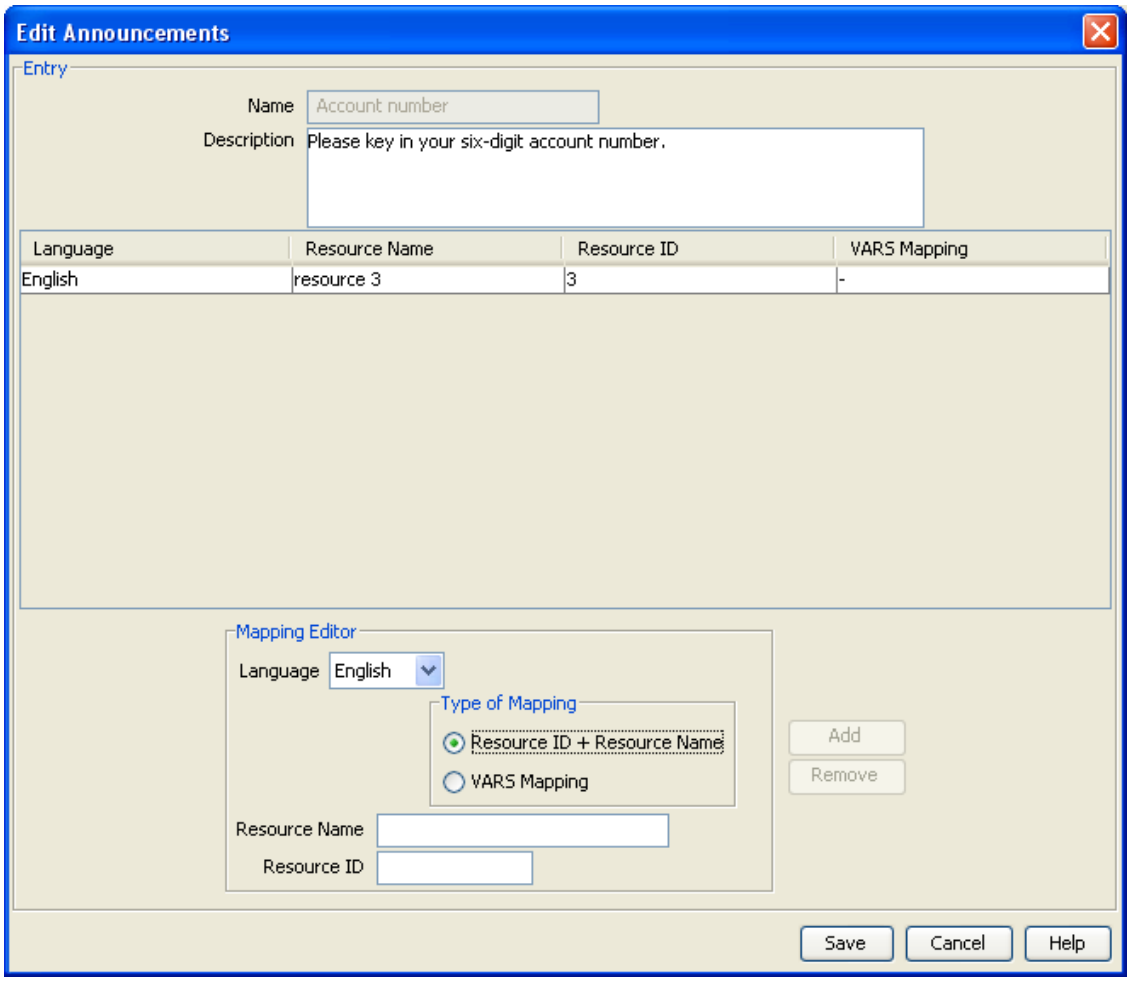
Announcement Entry Fields

This table describes the function of each field.

Field	Description
Name	The name of the new announcement entry. **Note:** This field cannot be changed after it has been saved for the first time.
Description	A description of the new announcement entry.
Language	The default language for the announcement. This field is populated by the **Language** tab on the ACS Tools screen.
Resource Name	The name of the SRF which will play the announcement. **Note:** This must match the *srfName* parameter in the **acs.conf** file. See *ACS Technical Guide*.
Resource ID	The ID number of the audio file of the announcement.
VARS Mapping	The VARS mapping to use to construct the announcement. This field is populated by the **VARS Mapping** tab.

Announcements Screen

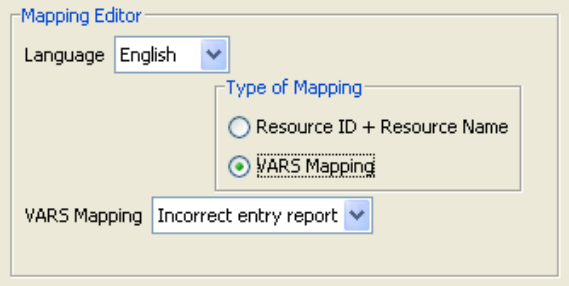
Here is an example Announcements screen.



Adding Announcement Entries

Follow these steps to add announcement entries to an existing announcement set.

Step	Action
1	On the **Announcements** tab, select the announcement set to add an announcement entry to.
2	Click **New**. **Tip:** The **New** button is located at the bottom of the screen. The new button at the top of the screen is **New Set**. **Result:** The New *Announcements screen* (See example on page 63) is displayed. For a description of each field on this screen, see *Announcement Entry Fields* (on page 62).
3	Complete the **Name** and **Description** fields.
4	In the **Mapping Editor** section, add the announcement mapping. Select a language and type of mapping for the announcement entry: • For standard announcements, select the **Resource ID + Resource Name** option. Go

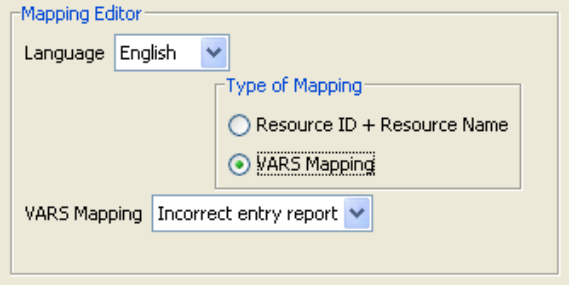
Step	Action
	to Step 5. • For announcements that have variable announcement rules specified, select the **VARS Mapping** option. Go to Step 6. For more information, see *VARS Mapping* (on page 70).
5	If **Resource ID + Resource Name Mapping** was selected in step 4: • Configure the **Resource Name** and **Resource ID**. • Click **Add**. • Go to step 8. **Result:** The language and resource mapping are added to the announcement entry.
6	If **VARS Mapping** was selected at step 4: • Select a name from the **VARS Mapping** drop-down list.  • Click **Add**. **Result:** The language and VARS mapping are added to the announcement entry.
7	Click **Save**. **Result:** The announcement entry will be added to the announcement set selected in step 1.

Note: Adding an entry to a set that is used in compiled control plans will cause all control plans that use that set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Editing Announcement Entries

Follow these steps to edit an existing announcement entry, or remove a language mapping.

Step	Action
1	On the **Announcements** tab, select the announcement set which contains the announcement entry to edit.
2	From the table, select the announcement entry to edit.
3	Click **Edit**. **Tip:** The **Edit** button is located at the bottom of the screen. The edit button at the top of the screen is **Edit Set**. **Result:** You see the Edit *Announcements screen* (See example on page 63).
4	If required, change the description in the **Description** field. For more information about the fields on this screen, see *Announcement Entry Fields* (on page 62).
5	To change a language mapping, select the mapping to change. **Result:** The mapping is displayed in the Mapping Editor area. Update the fields and click **Add**.
6	To add a new mapping, enter new details in the Mapping Editor section. Select a language and type of mapping for the announcement entry:

Step	Action
	For standard announcements, select the **Resource ID + Resource Name** option. Go to Step 6. • For announcements that have variable announcement rules specified, select the **VARS Mapping** option. Go to Step 7.
7	If **Resource ID + Resource Name Mapping** was selected in step 5: • Configure the **Resource Name** and **Resource ID**. • Click **Add**. • Skip step 7. **Result:** The language and resource mapping will be added to the announcement entry.
8	If **VARS Mapping** was selected at step 5: • Select a name from the **VARS Mapping** drop-down list.  • Click **Add**. **Result:** The language and VARS mapping will be added to the announcement entry.
9	To remove a mapping from the table, select it and click **Remove**.
10	Click **Save**. **Result:** The announcement entry changes are saved to the database.

Note: Editing an announcement entry will cause all compiled control plans that use that announcement set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Deleting Announcement Entries

Follow these steps to delete an announcement entry from a selected announcement set.

Step	Action
1	On the **Announcements** tab, select the announcement set which contains the announcement entry to delete.
2	From the table, select the announcement entry to delete.
3	Click **Delete**. **Tip:** The **Delete** button is located at the bottom of the screen. The delete button at the top of the screen is **Delete Set**. **Result:** The Confirm Delete prompt is displayed.
4	Click **OK**. **Result:** The announcement entry is removed from announcement set in the database. **Tip:** It is not possible to delete an announcement entry that is used in a control plan. To delete this announcement entry, the control plans that use it must first be changed to use another announcement entry. Once this entry is not used by any node in any control plan, then it may be deleted.

Note: Deleting an announcement entry will cause all compiled control plans that use that announcement set to be recompiled and will display the compiler report. The compiler report gives details of all the control plans that were affected by the change and provides a report on status of each control plan.

Variable Announcement Rule Sets

Introduction

The **VARS** tab is used to define the rules for a Variable Announcement Rule Set (VARS). VARS are used for announcements that vary depending on the grammatical rules of the language. Variable announcement rule sets allow these grammatical rules to be observed within the played announcement.

The VARS name (set name) is unique. It is used by the **VARS Mapping** tab to identify which VARS to map. Each rule is comprised of at least one or more expressions. Multiple expressions are concatenated with either a logical AND or logical OR.

Each expression conforms to the following syntax:

variablePart operator1 argument1 [*operator2 argument2*]

The syntax supports a maximum of five tokens. The last two tokens (operator2, argument2) are optional. These are only required depending on the operator1 operation. 'variablePart' represents one of the variable announcement parts.

A grouping policy can be optionally applied to each rule where the order of evaluation is important.

How VARS is Used in an Announcement Entry

The following example illustrates how a VARS is used in an announcement entry.

An announcement contains two placeholder parts:

"On *date* your balance is *variable*"

The *variable* part of the announcement will play a different audio file depending upon the number of free SMSs that the subscriber has remaining.

- 0 free SMSs (rule 1)
- 1 free SMs (rule 2)
- A pair of SMSs (rule 3)
- *n* free SMSs (rule 4)

The *variable* part is set up on the **VARS** *tab* (See example on page 67) as follows:

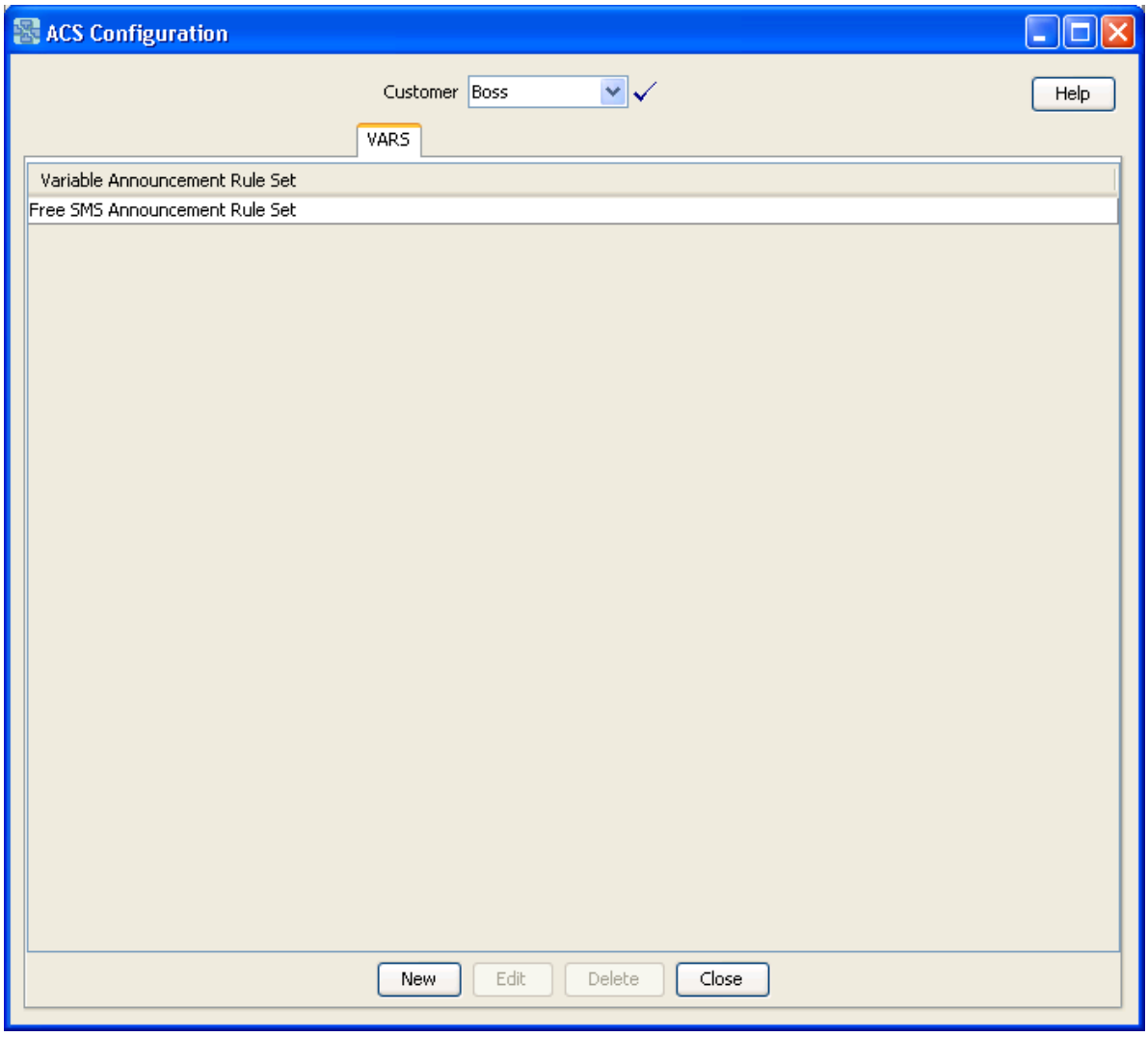
- Rule 1 is `IF [Part 2] = 0`
- Rule 2 is `IF [Part 2] = 1`
- Rule 3 is `IF [Part 2] = 2`
- Rule 4 is `IF [Part 2] > 2`

Using the **VARS Mapping** *tab* (See example on page 71), each rule is mapped to the resource name (that is, SRF) and resource ID of each audio file.

Using the **Announcements** *tab* (See example on page 59), the VARS mapping is specified for an announcement entry.

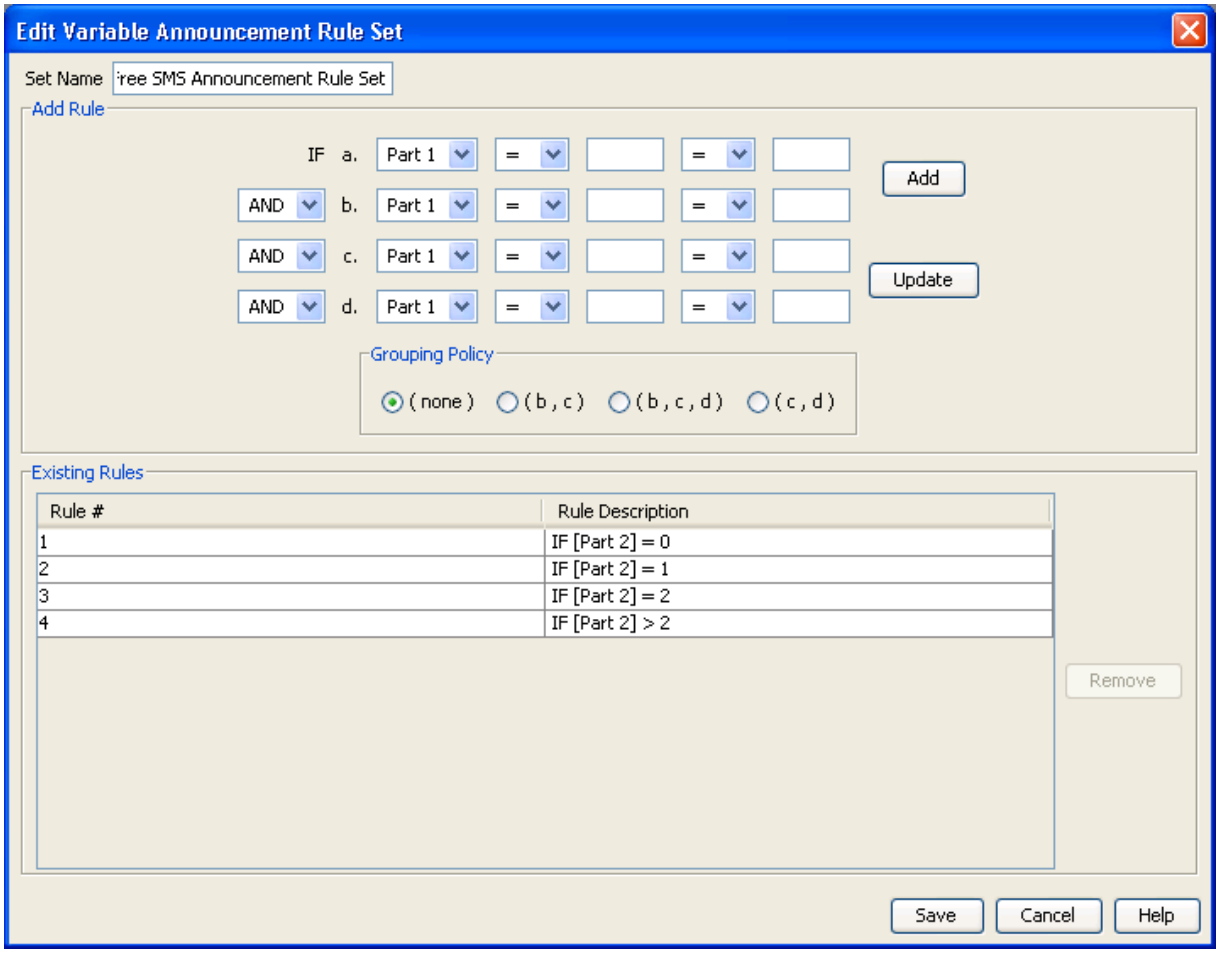
VARS Tab

Here is an example **VARS** tab.



Variable Announcement Rule Set Screen

Here is an example Variable Announcement Rule Set screen.



Variable Announcement Rule Set Fields

This table describes the function of each field.

Field	Description
Add Rule	You can construct up to four parts to a rule using the operator fields.
Part	Select the part of the expression that the line applies to.

Field	Description
Comparison operators	Select from: = equal to != not equal to > greater than < less than >= greater than or equal to <= less than or equal to % percentage + plus - minus * multiply / divide
Boolean operators	Select from: • AND • OR
Grouping Policy	Allows you to place brackets around the selected parts of the expression where the order of evaluation is important.
Existing Rules	Displays each rule and its boolean expression.

Adding a VARS

Follow these steps to add a new VARS and add rules to the rule set.

Step	Action
1	From the **VARS** tab, click **New**. **Result:** The New *Variable Announcement Rule Set screen* (See example on page 68) is displayed. See *Variable Announcement Rule Set Fields* (on page 68) for a description of each field.
2	In the **Set Name** field, enter the VARS name.
3	In the **Add Rule** area, configure the new rule by constructing the boolean expression.
4	Click **Add**. The new rule will be added to the VARS and will be displayed in the **Existing Rules** table.
5	Click **Save** to save the changes to the database.

Editing a VARS

Follow these steps to edit an existing VARS.

Step	Action
1	On the **VARS** tab, select the VARS to edit.
2	Click **Edit**. **Result:** The Edit *Variable Announcement Rule Set screen* (See example on page 68) is displayed. See *Variable Announcement Rule Set Fields* (on page 68) for a description of each field.
3	Make the changes required.

Step	Action
	To add a rule, follow the procedure described in *Adding a VARS* (on page 69). To remove a rule, select it in the **Existing Rules** table and click **Remove**. To change a rule: a. Select the rule in the table. **Result:** The details will be displayed in the **Add Rule** area. b. Change the rule details and click **Update**.
4	Click **Save** to save the changes to the database.

Deleting a VARS

Follow these steps to delete an existing VARS.

Step	Action
1	On the **VARS** tab, select the VARS to delete.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK** to delete the VARS record.

VARS Mapping

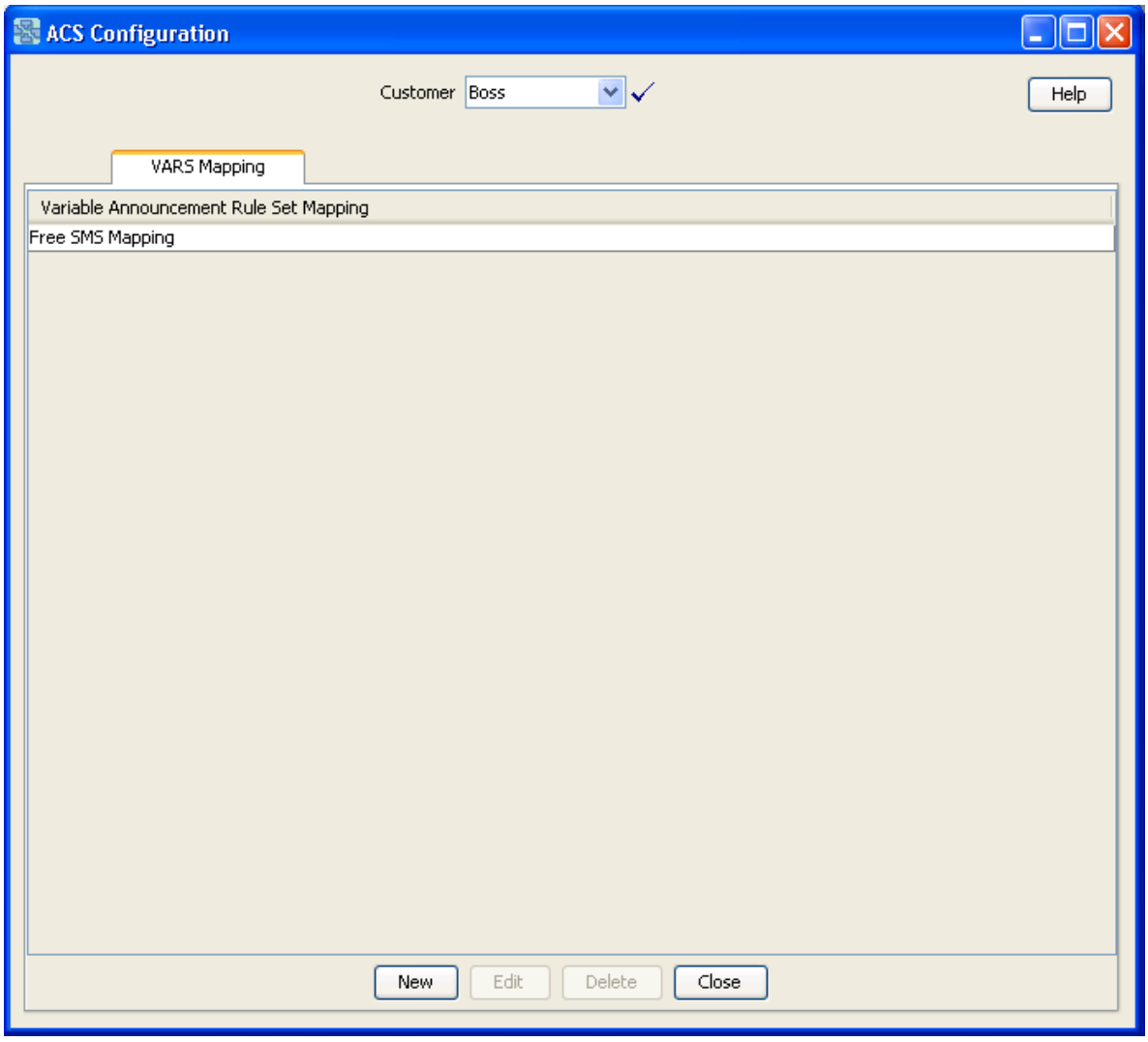
Introduction

The **VARS Mapping** tab on the ACS Configuration screen is used to map each rule in a VARS to a unique resource name and resource ID combination. This combination is used to determine the elementary message ID that is forwarded to the switch.

The mapping name is unique. It is used by the *Announcement Entries* (on page 61) to determine which VARS to map to.

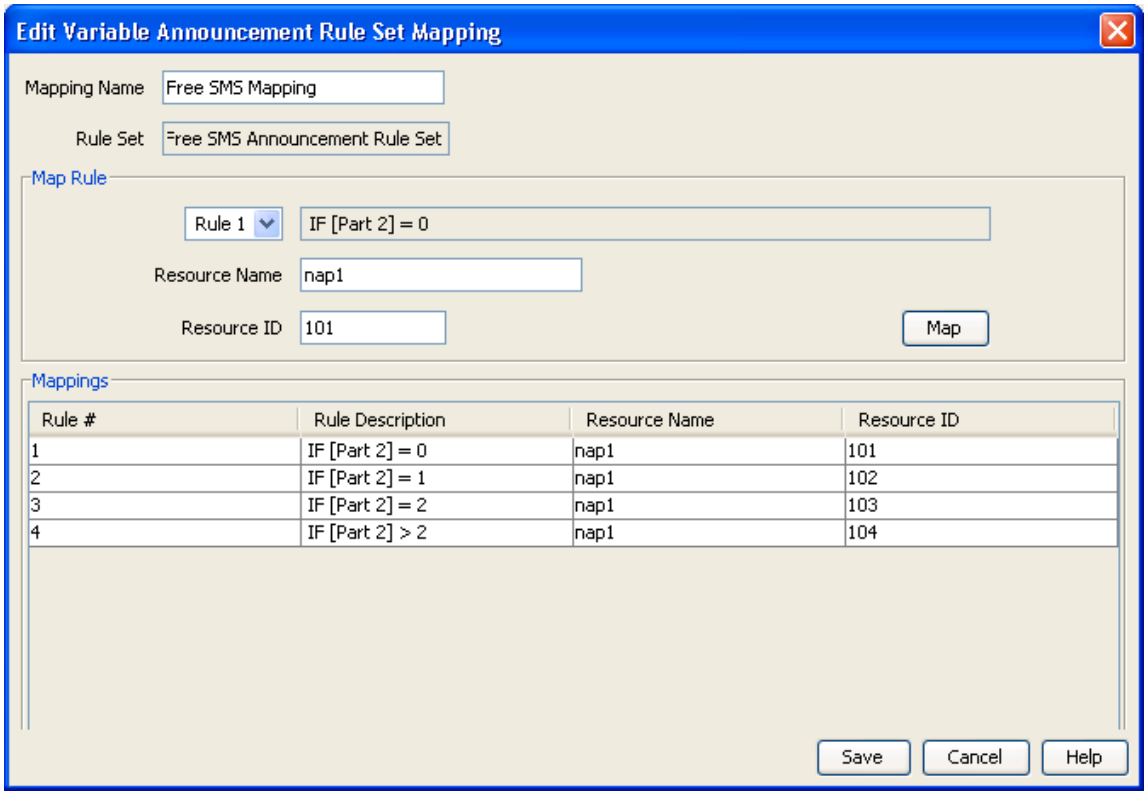
VARS Mapping Tab

Here is an example **VARS Mapping** tab.



Variable Announcement Rule Set Mapping Screen

Here is an example Variable Announcement Rule Set Mapping screen.



VARS Mapping Fields

This table describes the function of each field.

Field	Description
Mapping Name	The name of the mapping.
Rule Set	The name of the rule set. **Note:** This field cannot be changed after it has been saved for the first time.
Rule	List of VARS rules, with the rule description, as listed on the **VARS** tab. For more information, see *Variable Announcement Rule Sets* (on page 66).
Resource Name	The name of the SRF which will play the announcement. **Note:** This must match the `srfName` parameter in the **acs.conf** file. See *ACS Technical Guide*.
Resource ID	The ID number of the audio file of the announcement.
Mappings	Displays the mappings for each rule against the Resource name and ID.

Adding a VARS Mapping

Follow these steps to add a new VARS mapping.

Step	Action
1	On the **VARS Mapping** tab, click **New**.

Step	Action
	Result: The New *Variable Announcement Rule Set Mapping screen* (See example on page 72) is displayed. For a description of each field on this screen, see *VARS Mapping Fields* (on page 72).
2	In the **Mapping Name** field, enter the name for this VARS mapping.
	Tip: The VARS mapping name must be unique for the customer, although two different customers may have the same VARS mapping name.
3	From the **Rule Set** drop down list, select the VARS which contains the rule to map to a resource.
	Tip: This drop down list only contains previously configured VARS. To add a new VARS, see *Variable Announcement Rule Sets* (on page 66).
4	In the **Map Rule** section, select the rule from the top left drop down box.
5	In the **Resource Name** field, enter the name of the SRF which will play the announcement.
	Note: This must match the `srfName` parameter in the **acs.conf** file. See *ACS Technical Guide*.
6	In the **Resource ID** field, enter the ID number of the audio file which contains the announcement.
7	Click **Map** to process the VARS mapping rule. **Result:** The mapped rule will appear in the **Mappings** table.
	Tip: You must enter a VARS mapping for each rule in the rule set.
8	Click **Save** to save the new VARS mapping to the database.

Editing VARS Mappings

Follow these steps to edit an existing VARS mapping.

Step	Action
1	On the **VARS Mapping** tab, select the VARS mapping to edit.
2	Click **Edit**. **Result:** The Edit *Variable Announcement Rule Set Mapping screen* (See example on page 72) is displayed. For a description of each field on this screen, see *VARS Mapping Fields* (on page 72).
3	Amend the VARS mapping as required.
	Tip: To display the details of an existing mapping in the **Map Rule** area, select it from the **Mappings** table. Click **Map** to update the mapping's details.
4	Click **Save** to save the changes to the database.

Deleting a VARS Mapping

Follow these steps to delete an existing VARS mapping.

Step	Action
1	On the **VARS Mapping** tab, select the VARS mapping to delete.
2	Click **Delete**.

Step	Action
	Result: The Confirm Delete prompt is displayed.
3	Click **OK** to remove the VARS mapping from the database.

Feature Sets

Introduction

Feature node sets must be set up to allow customers to use feature nodes in their control plans.

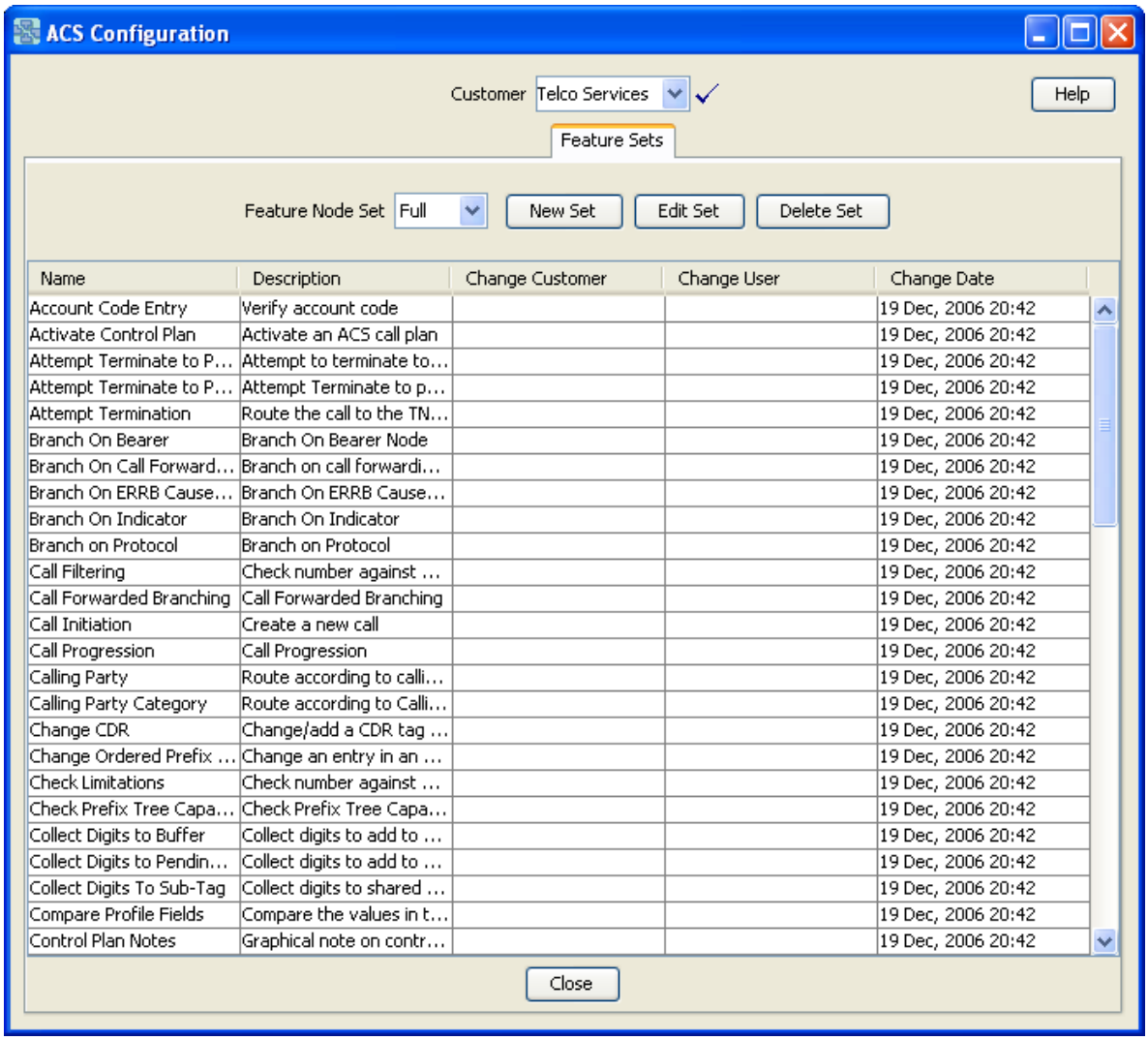
You use the **Feature Sets** tab to configure and maintain the ACS feature sets. A feature set is a convenient way of grouping feature nodes. Customers are generally allocated one or more feature sets. The feature nodes from those feature sets can be used in any control plan the customer creates.

When a feature set (or group of feature sets) has been configured for a customer, only the feature nodes associated with the set (or sets) will be available in the control plan feature palette. The customer will only be able to use these nodes when they are creating their control plans.

Feature sets are created and maintained by the ACS system administrator. Therefore, this screen is only available to the ACS system administrator.

Feature Sets Tab

Here is an example **Feature Sets** tab.



Note: The nodes available in this screen will vary between users, depending on the applications installed.

Adding Feature Sets

Follow these steps to add a new feature node set.

Step	Action
1	On the **Feature Sets** tab, click **New Set**.
	Result: The New Feature Node Set screen is displayed.
2	Enter the name of the new feature set in the **New set name** field.
3	Click **Save**.
	Result: The new feature set is saved to the database.

Tip: The feature node set is created with all nodes cleared. Follow the procedure below to **Edit** the feature node set.

Editing Feature Sets

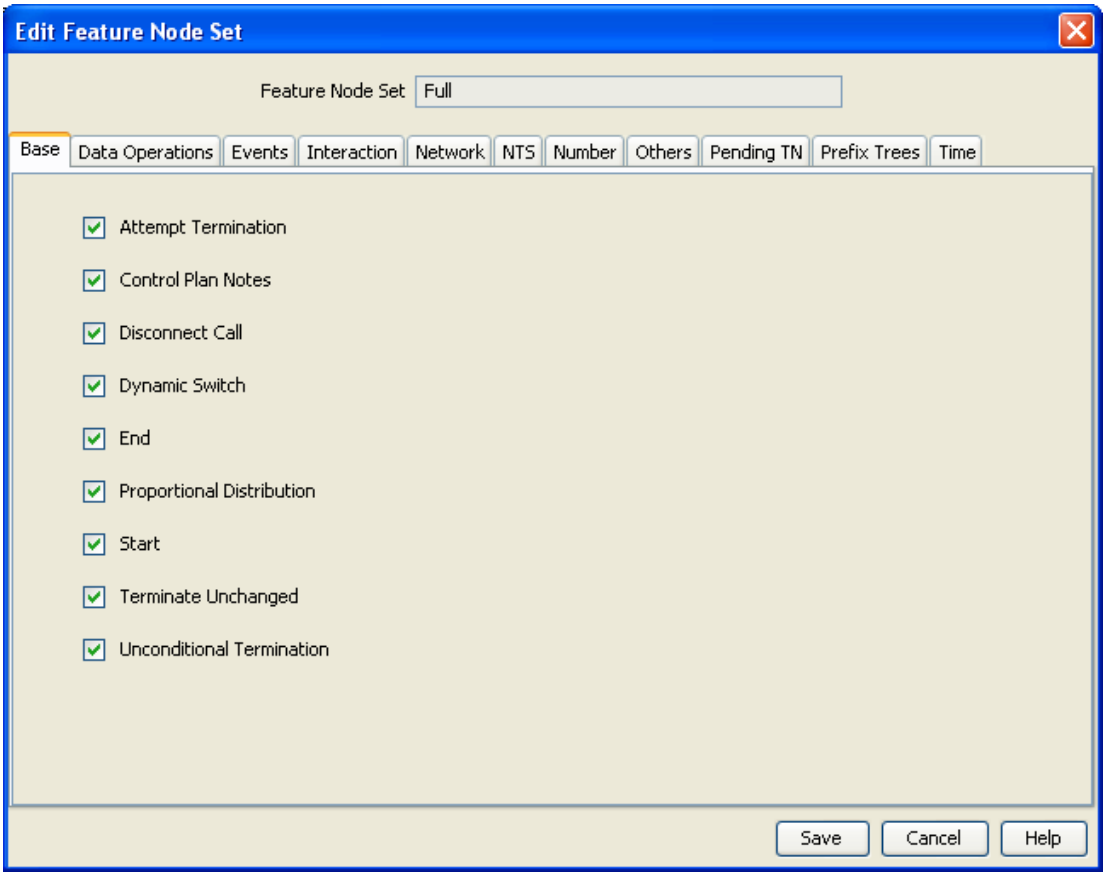
Follow these steps to edit a feature set, and configure the feature nodes available to the selected customer.

Step	Action
1	On the **Feature Sets** tab, select the feature set you require from the feature node list.
2	Click **Edit Set**. **Result:** The *Edit Feature Node Set screen* (See example on page 76) is displayed.
3	The screen contains all the available feature nodes. For ease of use, all nodes have been grouped according to use, under one of these tabs.. Navigate between the tabs and select the check boxes beside each node to select the feature nodes you require for your customer. To make a feature node: • Available to the customer, ensure the relevant check box is selected. • Not available to the customer, ensure the relevant check box is not selected.
4	Click **Save** to save the feature set changes to the database.

Note: When the feature set is saved, ACS will recompile any control plans that use that feature set. If feature nodes that are used in compiled control plans are removed from a feature node set, customers who use this set may no longer be able to successfully compile their control plans.

Edit Feature Node Set Screen

Here is an example Edit Feature Node Set screen.



Deleting Feature Sets

Follow these steps to delete an existing feature set.

Step	Action
1	On the **Feature Sets** tab, select the feature set from the feature node set drop down list.
2	Click **Delete Set**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK** to remove the feature set from the database.

Warning: You cannot delete a feature set that is being used in a current customer control plan.

Profile Tag Details

Introduction

In a service application like CCS, you may want to set up subscriber profile groups. One of the fields of a subscriber profile group is the profile field. The contents of the profile field are obtained from an ACS customer profile group.

To use subscriber profiles, you must first set up customer profiles in ACS. You do this from the **Profile Tag Details** tab of the ACS configuration screen.

Profiles can also be established for:

- Prefix trees
- Ordered prefix trees
- Arrays

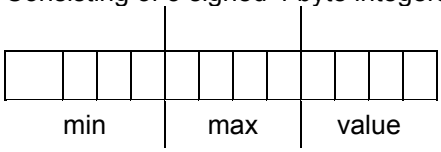
For detailed information, see the Profile Blocks and Fields topic in *Feature Nodes Reference Guide*.

Profile Tag Types

The tag names for profile fields are defined on the **Profile Tag Details** tab in the ACS Configuration screen.

The following hard coded profile data types are supported:

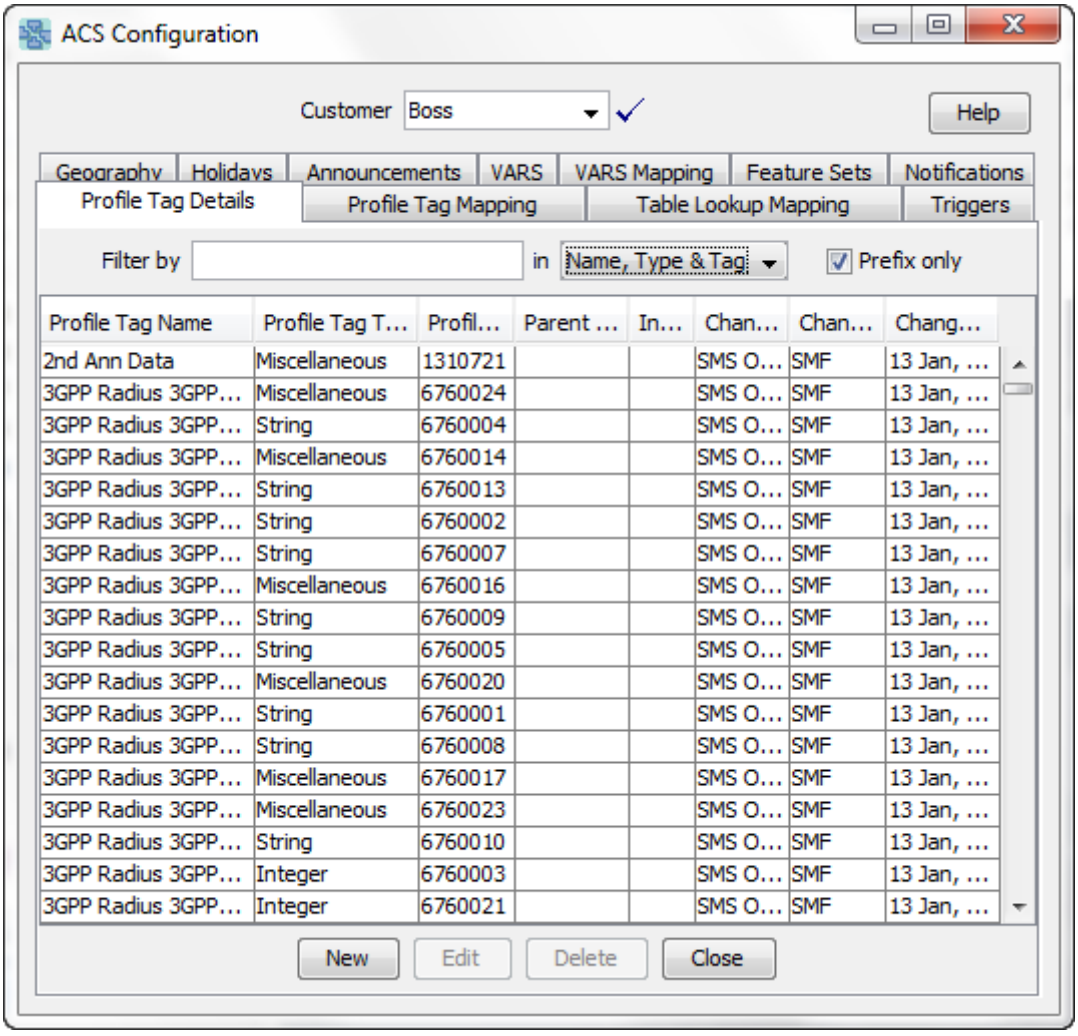
<table>
<tr><th>Data Type</th><th>Description</th></tr>
<tr><td>Announcement Data</td><td>(Ann Id, Lang) -> SDF Name and SDF Ann ID. Used by the Global Profile - Internal use</td></tr>
<tr><td>Array</td><td>An array is a series of elements of the same type placed in contiguous memory locations that can be individually referenced by adding an index to a unique identifier.
Example: Tag 123456 array:
<table>
<tr><td rowspan="2">123456</td><td>1</td><td>123457 - boolean
123458 - string
123459 - integer</td></tr>
<tr><td>2</td><td>123457
123458
123459</td></tr>
</table></td></tr>
<tr><td>Boolean</td><td>true, false (1 or 0)</td></tr>
<tr><td>Byte</td><td>A single byte integer (0 to 255).</td></tr>
<tr><td>Date</td><td>A date, in Unix time, that is, seconds since January 1 1970 GMT.</td></tr>
</table>

Data Type	Description
Discount Specification	4 bytes for 1st discount, 4 bytes for 2nd discount, 8 bytes for maximum charge in the subunit of the currency, for example, in cents.
Hunting Config	An array of structure, each structure containing the details for each number in a hunting list. **1** Addr - numeric string. This is the telephone number to ring. **2** VPN Network ID - unsigned 32-bit integer. 0 meaning off-net. **3** Timeout - unsigned 32-bit integer. This is how long to let it ring for before going on the the next number.
Integer	64-it signed or 32-bit signed integer. 32 bits will be used for values which can be represented by 32 bits.
Limited Numeric String	A limited numeric string. Valid characters are 0-9. **Note:** The limit and the value are each stored in a separate profile block, but with the same tag code: • The limit is stored in either the product type profile, or customer profile. • The value is stored in the profile block configured in the Check Limitations feature node. For example, if tag 78787878 is a limited numeric string, the maximum length can be stored as an integer under tag 78787878 in the product type profile and the actual value can be stored as a string under tag 78787878 in the subscriber profile.
Long Triple	Consisting of 3 signed 4 byte integers (12 bytes).  Used for switch node exits in the control plan Profile.
Limited Ordered Prefix Tree	A limited ordered prefix tree is made up of a limited list of numbers. **Note:** The limit and the value are each stored in a separate profile block, but with the same tag code. These are stored in the profile blocks configured in the Check Prefix Tree Capacity feature node.
Miscellaneous	Can contain anything
Numeric String	A string, but can contain only numbers. Valid characters are 0-9.
Number List	Sub-profile block containing prefix string maps. Used in the Number Lookup and Translation node.
Ordered Prefix String	An ordered prefix tree comprising an ordered list of numbers
Patterns	Stores patterns, in the format used by the Number Matching node
Prefix Tree	Mapping of digit prefixes to integer. **Example:** "111" maps to 10 "222" maps to 20

Data Type	Description
Prefix String Map	Mapping of digit prefixes to digit string. **Example:** "111" maps to "234" "222" maps to "456"
Price	The price, without the currency symbol or decimal point. Example: "1143" for $11.43
Profile Block	A mapping of integer tags
Raw Data	Arbitrary bytes of any length
Short	Signed 16-bit integer
String	A non limited ASCII string
Time	The 24 hour time, without the colon between hours and minutes. Example: "2357" for 23:57
Unsigned 32-bit Integer	32-bit unsigned integer
Unsigned 64-bit Integer	64-bit unsigned integer
VARS	Used in the Global Profile. Stores variable announcement rule set in the same format as that created on **VARS** tab of ACS Configuration screen.
VARS Mapping	Used in the Global Profile. Stores variable announcement rule set mapping in the same format as that created on **VARS Mapping** tab of ACS Configuration screen.
VXML Announcement	Voice XML announcement location. A string containing a URL. Used in the DAP Play VXML Announcement node.
Zone	A set of shape definitions for the area covered by the zone. Shapes may be circular or rectangular and are defined by their coordinates. **Note:** You can set up and populate zone tags but they may only be used if the Location Capabilities Pack (LCP) is installed.

Profile Tag Details Tab

Here is an example **Profile Tag Details** tab.



Filtering Profile Tags

You can filter Profile tags to reduce the time it takes to locate tags in the list, allowing you to define and create services more efficiently. You can filter Profile tags by the name, type, or tag (ID) value or you can specify **Name, Type & Tag** to search all three columns. The procedure is the same for each option.

Follow these steps to filter Profile tags on the Profile Tag Details screen:

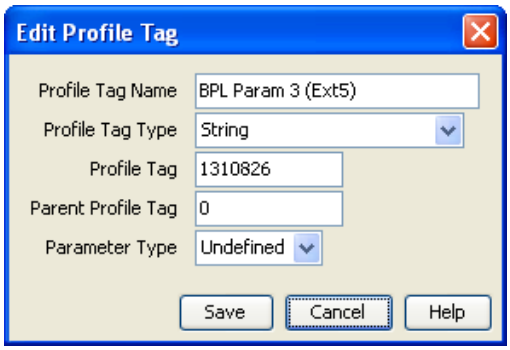
Step	Action
1	In the **Filter by** text-input field, enter the value that you want to match in the list. You can enter a value that matches either the entire target value, or a portion of it. For example, you might have several items in the list that have abc as part of the name and you want to select all of them.
2	Select the column you want to search from the **Name, Type & Tag** drop down list. If you select the **Name, Type & Tag** item, ACS attempts to match the value against all three columns.

Step	Action
3	Select the **Prefix only** checkbox if you want to match your search value against only the beginning of the target value. For example, if you entered abc as your search value and you want to match only values in the **Name** column that *begin* with "abc", select the **Prefix only** checkbox. If, however, you want to match both abcdef and fedabc in the **Name** column, do not select **Prefix only**.

Selection occurs as soon as you enter a value in the **Filter by** text-input field, based on the current criteria in the **Name**, **Type & Tag** drop down list and the **Prefix only** checkbox. If you change the search criteria, selection occurs again based on the new values that you specify.

Profile Tag Screen

Here is an example Profile Tag screen.



Adding Profile Tags

Follow these steps to add new profile tags to the list .

Step	Action
1	On the **Profile Node Details** tab, click **New**. **Result:** The New *Profile Tag screen* (See example on page 81) displays.
2	In the **Profile Tag Name** field, enter a name to identify the tag.
3	In the **Profile Tag Type** drop-down list, select the required property.
4	In the **Profile Tag** and **Parent Profile Tag** fields, enter the decimal value of the tags. **Note:** These values should be within the value range allocated.
5	In the **Parameter Type** drop down list, select one of the following parameter types: • Undefined – Use this setting if you are creating the profile tag for any profile block other than Call Context. This is the default. • Input – Used by the Call Context profile block only. When incoming profile data is mapped to the Call Context profile block, the data value is inserted in the InitialDP for the call. • Output – Used by the Call Context profile block only. When outgoing profile data is mapped to the Call Context profile block, nothing happens. **Note:** The Call Context profile block is supported for backwards compatibility only. If you map this profile tag to a Call Context profile bock, you will see a "–" in the **Profile Block Type** field of the **Profile Tag Mapping** tab.
6	Click **Save**. **Result**: The new profile tag appears in the list and is stored in the database.

Editing Profile Tags

To edit an existing profile tag, follow these steps.

Step	Action
1	On the **Profile Tag Details** tab, select the profile you require from the profile list.
2	Click **Edit**. **Result**: The Edit *Profile Tag screen* (See example on page 81) displays.
3	Make the changes required. **Warning:** If you change the profile tag type for a profile tag that is accessed by a feature node in your control plans, then you must perform the following steps to ensure the new data type is used by the feature node. For each affected control plan and feature node: **1** Re-open and then save the feature node configuration in the control plan. **2** Save and recompile the control plan.
4	Click **Save**. **Result:** The updated profile tag row appears in the list and its details are stored in the database.

Deleting Profile Tags

Follow these steps to remove a profile tag.

Step	Action
1	On the **Profile Tag Details** tab, select the profile from the profile list.
2	Click **Delete**. **Result:** The Confirm Delete screen displays.
3	Click **Ok**. **Result**: The profile tag is removed from both the list and the database.

Profile Tag Mapping

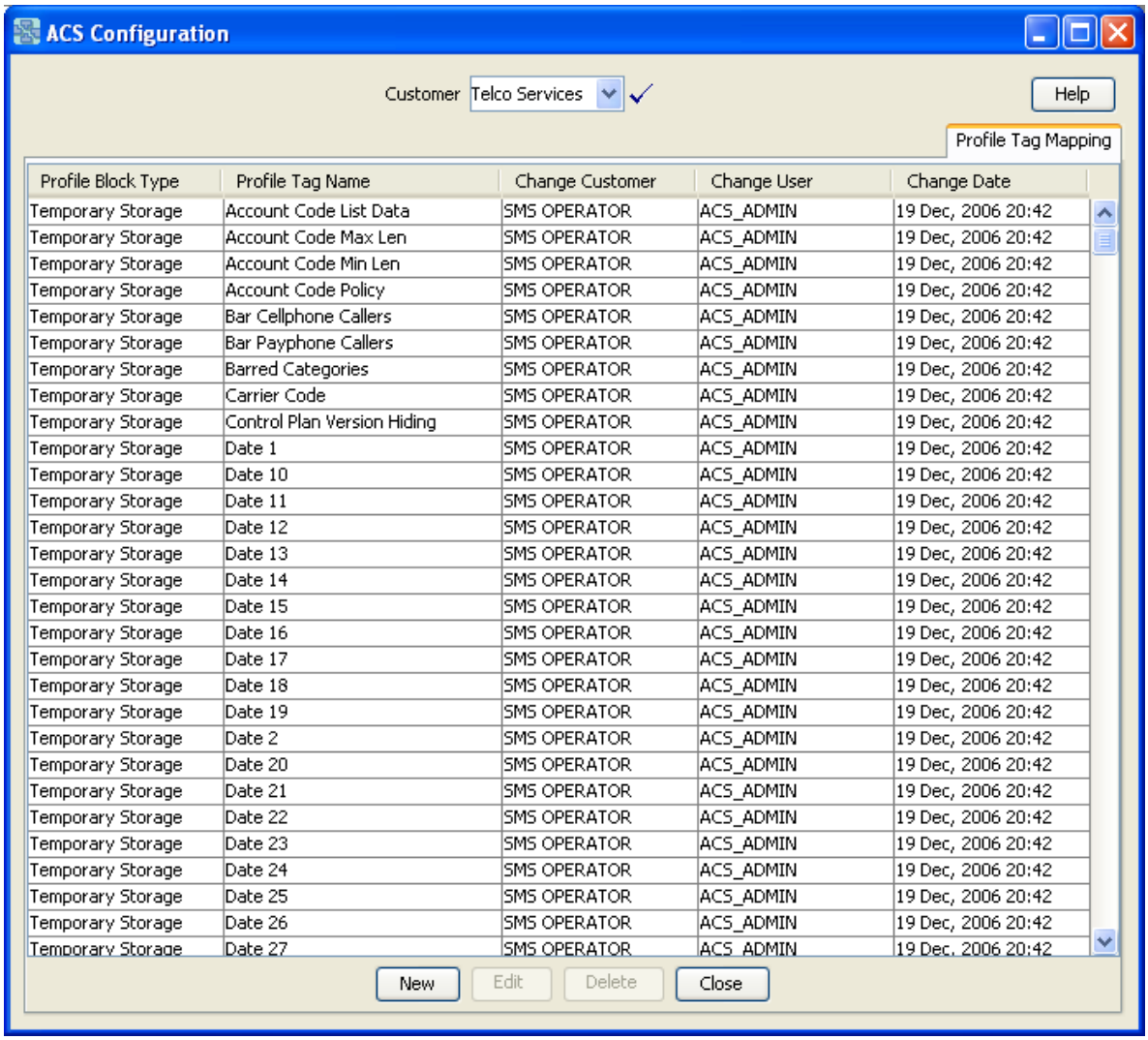
Introduction

The **Profile Tag Mapping** tab enables you to map a profile tag to a profile block.

For more information about profiles, see *CPE User's Guide*.

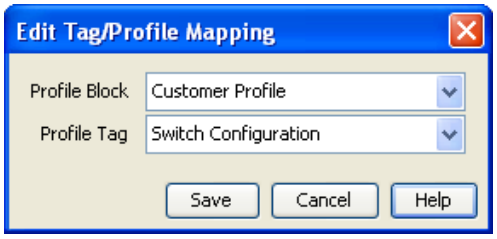
Profile Tag Mapping tab

Here is an example **Profile Tag Mapping** tab.



Tag/Profile Mapping Screen

Here is an example Tag/Profile Mapping screen.



Adding Profile Tag Mappings

Follow these steps to add a new profile tag mapping.

Step	Action
1	On the **Profile Tag Mapping** tab, click **New**.
	Result: The New *Tag/Profile Mapping screen* (See example on page 83) displays.
2	From the **Profile Block** drop-down list, select the profile block.
3	From the **Profile Tag** drop-down list box, select the required tag.
4	Click **Save**.
	Result: The new profile tag mapping appears in the list and is stored in the database.

Editing Profile Tag Mapping

Follow these steps to edit an existing profile tag mapping.

Step	Action
1	On the **Profile Tag Mapping** tab, select the profile you require from the profile list.
2	Click **Edit**.
	Result: The Edit *Tag/Profile Mapping screen* (See example on page 83) displays.
3	Make the changes required.
4	Click **Save**.
	Result: The updated profile tag row appears in the list and its details are stored in the database.

Deleting Profile Tag Mapping

Follow these steps to remove a profile tag mapping.

Step	Action
1	On the **Profile Tag Mapping** tab, select the mapping from the list.
2	Click **Delete**.
	Result: The Confirm Delete screen displays.
3	Click **Ok**.
	Result: The profile tag mapping is removed from both the list and the database.

Table Lookup Mapping

Introduction

The **Table Lookup Mapping** tab enables you to search a customer's table lookup datasets for prefix number and code mappings.

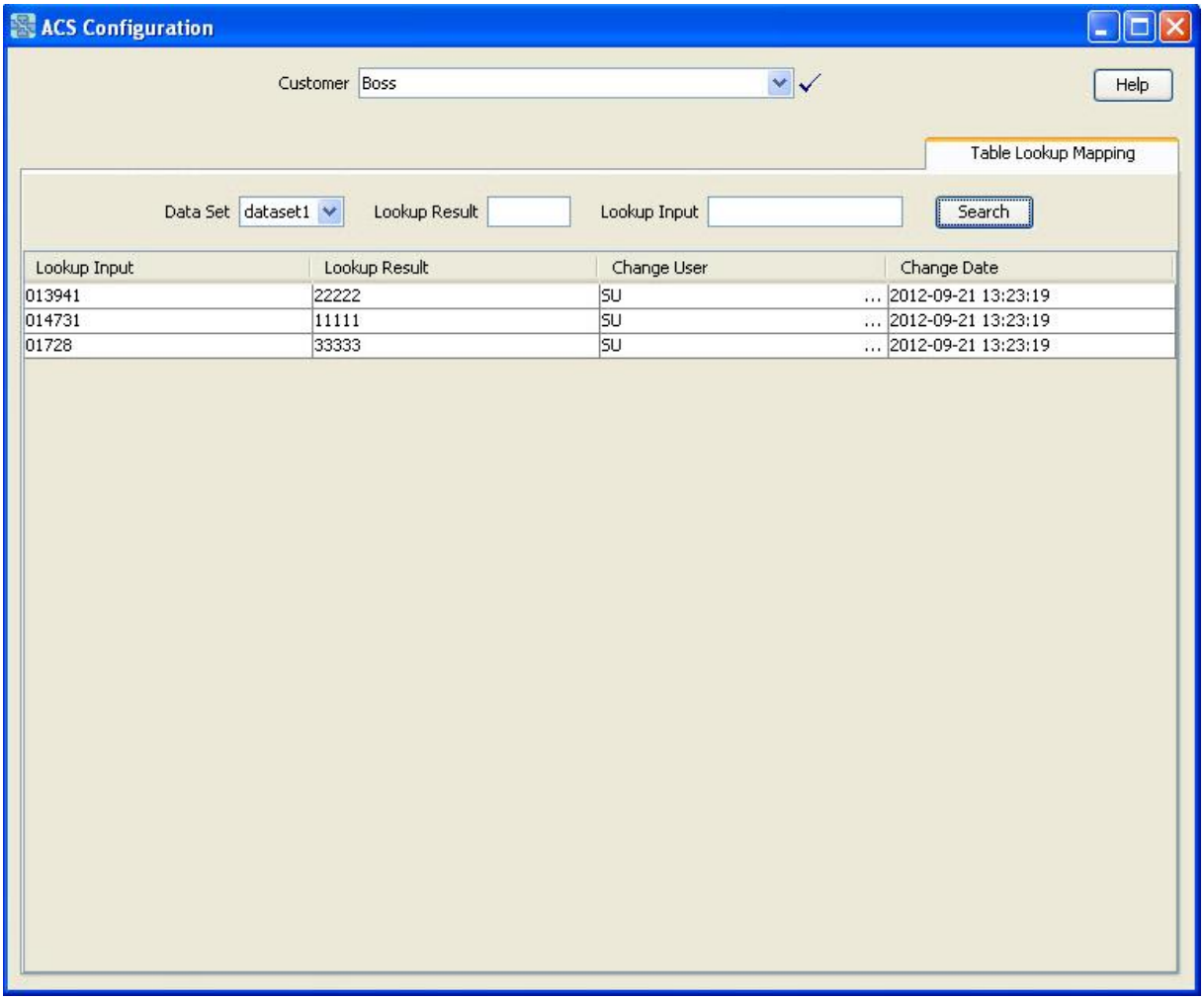
Each available table lookup dataset contains the prefixes and code mappings for a group of related codes, for example, for a specific geographic area or suburb.

Public and Private Table Lookup Datasets

A table lookup dataset can be public or private. A privately owned 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 publicly owned table lookup dataset is available to all customers.

Table Lookup Mapping Tab

Here is an example **Table Lookup Mapping** tab.



Searching a Dataset for a Prefix or a Mapping Code

To search a customer's table lookup dataset for a prefix number or a mapping code:

Step	Action
1	In the ACS Configuration window, select the customer from the **Customer** list.
2	On the **Table Lookup Mappings** tab, select the required table lookup dataset from the **Dataset** list.
3	(Optional) To search for prefixes that are mapped to a specific code, enter the code or the initial digits of the code in the **Lookup Result** field.
4	(Optional) To search for the codes mapped to a specific prefix number, enter the prefix or the initial digits of the prefix in the **Lookup Input** field.

Step	Action
5	Click **Search**. The table on the **Table Lookup Mapping** tab lists the prefixes and codes that match the criteria you entered. The prefixes are listed in the **Lookup Input** field and their corresponding codes are listed in the **Lookup Result** field. **Tip:** To view all the prefixes and code mappings in a dataset leave both search fields blank.

Triggers

Introduction

Oracle Communications Billing and Revenue Management (BRM) is able to trigger end user notifications at any point during a call or session based on actual and forecast usage, to ensure the notifications are delivered at the earliest possible moment. The following real-time notification scenarios are currently possible with BRM:

- Threshold notifications (for example, low balance threshold breach)
- Subscription expiry warning notifications
- Recurring usage notifications (for example, notifications for every specified number of MB of usage)
- Tariff change notifications (for example, peak -to off-peak rate change, or free minutes exhaustion)

Note: Tariff change notifications are not currently supported in NCC.

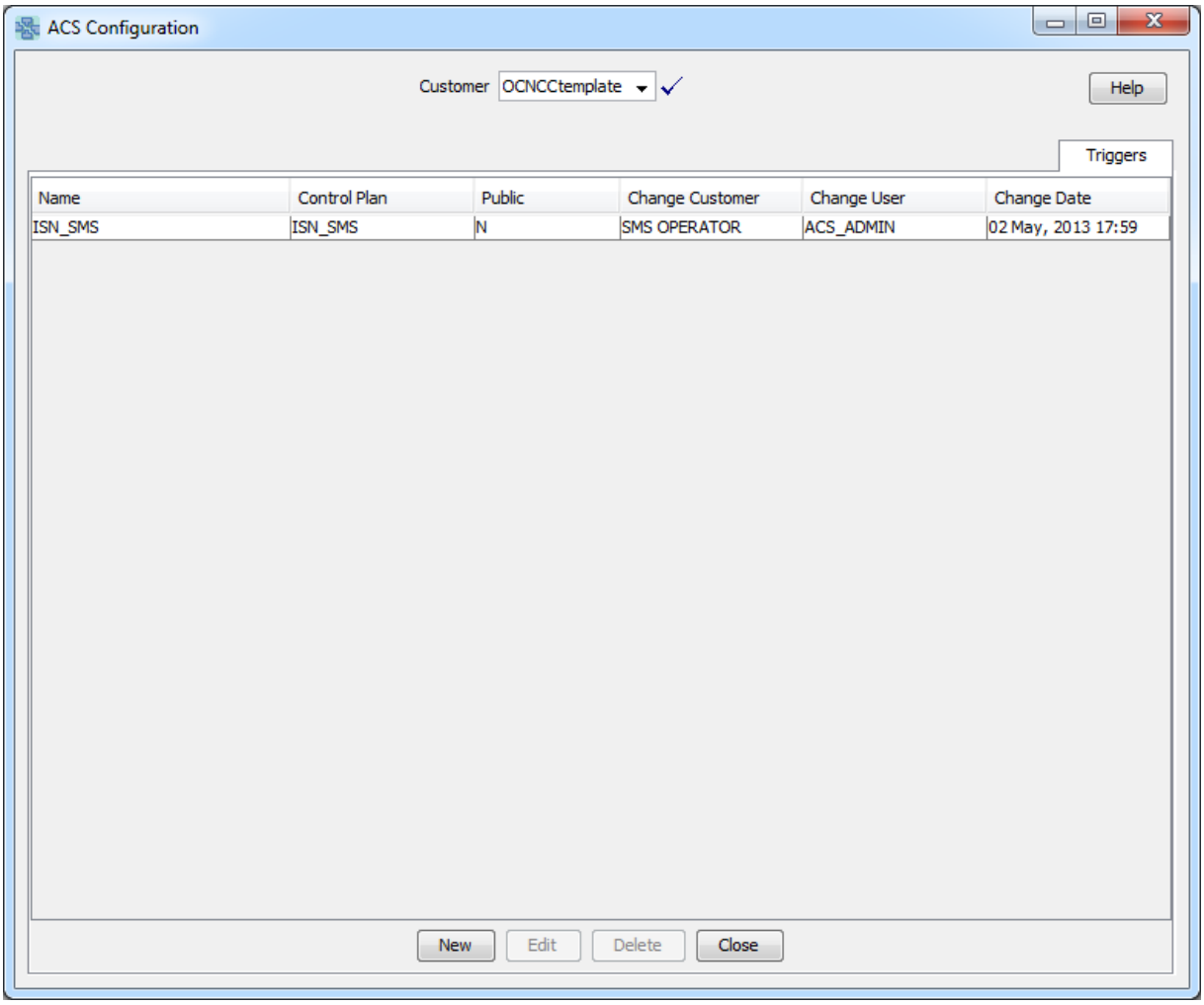
NCC receives the BRM in-session notifications (embedded in authorization and reauthorization responses) through the BRM Charging Driver (BCD). The BCD actions extract any BRM notifications and stores them in specified ACS profile fields.

Each authorization or reauthorization response from BRM may contain zero or more in-session notifications. The notifications can trigger control plans at the point they are received. It is possible to deliver a notification or announcement for each in-session notification provided in each response.

You use the **Triggers** tab to configure control plan trigger definitions for each of your customers. A trigger specifies the control plan to use and the profile tags to pass to the triggered control plan in its incoming session data.

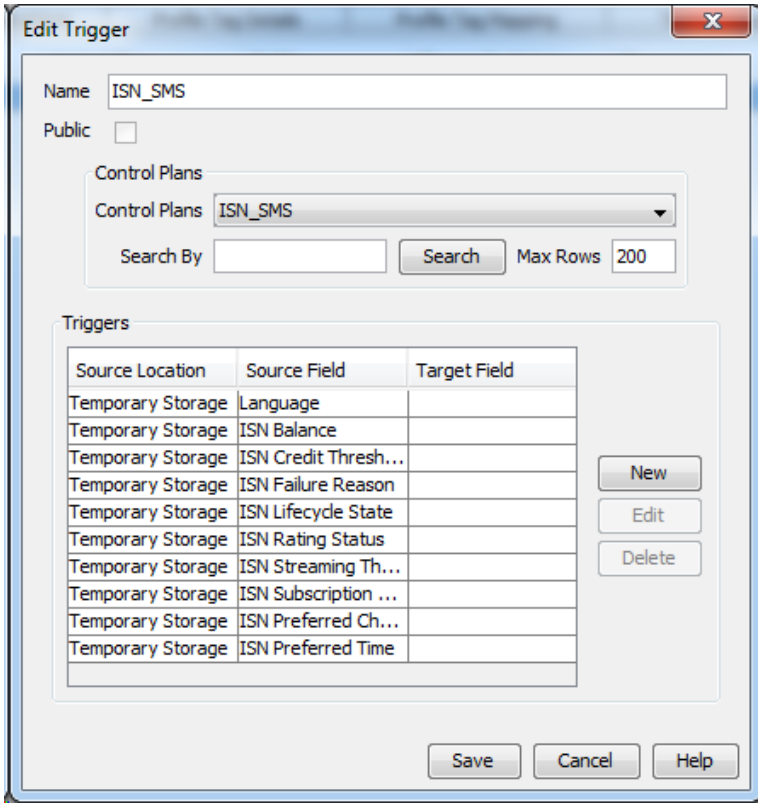
Triggers Tab

Here is an example **Triggers** tab.



Trigger Screen

Here is an example Trigger screen.



Trigger Fields

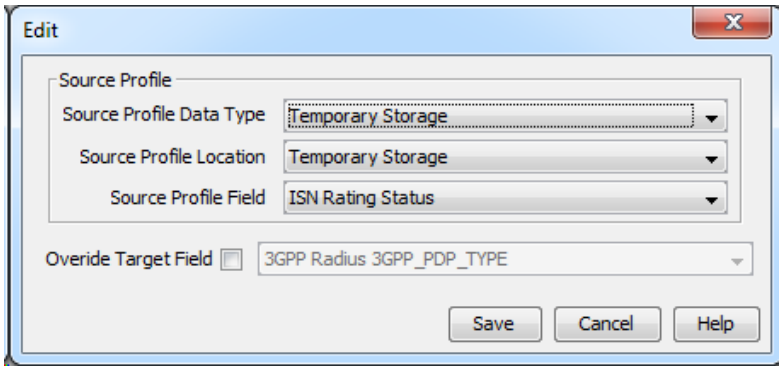
This table describes the function of each field.

Field	Description
Name	The name of the trigger.
Public	A control plan trigger definition can be made public, which will make it available to any service provider, or private, which will make it available only to the owning service provider.
Control Plans	The control plan invoked by this trigger definition. The control plan is run when the trigger is invoked by NCC, for example; to handle BRM in-session notifications. The control plan drop down list displays all the control plans a subscriber can use. **Tip:** This list can be shortened by using the **Search By** field and then **Search**.
Search By	Use initial characters of the control plan name or combine with % (match on any number of characters), or _ (match on a single character). **Examples:** Search for `e%SMS` will find all control plan names beginning with e and containing SMS. Search for `e_han%SMS` will find all control plan names beginning with e, containing the string han in positions 3 to 5, and containing SMS. The list can be further restricted by entering a maximum number of names to show in the **Max Rows** field.

Field	Description
Profile Tags	This table displays a list of source profile tags to be copied into the Incoming Session Data of the triggered control plan.

Trigger Tag Window

Here is an example Edit trigger tag window.



Adding Control Plan Triggers

Follow these steps to add a new control plan trigger.

Step	Action
1	On the **Triggers** tab, click **New**. **Result:** The New *Trigger screen* (See example on page 88) displays.
2	Configure this record by entering data in the fields on this screen. For information about the fields on this screen, see *Trigger Fields* (on page 88).
3	*Add Trigger Tags* (on page 90) or *Edit Trigger Tags* (on page 90), or *Edit Trigger Profiles* (on page 90) the trigger tags listed in the table.
4	Click **Save**. **Result**: The new trigger appears in the list and is stored in the database.

Editing Control Plan Triggers

Follow these steps to edit an existing control plan trigger.

Step	Action
1	On the **Triggers** tab, select the trigger you require from the table.
2	Click **Edit**. **Result**: The Edit *Trigger screen* (See example on page 88) displays.
3	Make the changes required. For information about the fields on this screen, see *Trigger Fields* (on page 88).
4	*Add Trigger Tags* (on page 90) or *Edit Trigger Tags* (on page 90), or *Edit Trigger Profiles* (on page 90) the trigger profiles listed in the table.
5	Click **Save**. **Result:** The updated trigger appears in the list and its details are stored in the database.

Deleting Control Plan Triggers

Follow these steps to delete a control plan trigger.

Step	Action
1	On the **Triggers** tab, select the trigger to delete from the table.
2	Click **Delete**. **Result**: The confirm delete dialog displays.
3	Click **OK** to confirm.

Adding Trigger Tags

Follow these steps to add a source profile tag to the list of tags for this trigger.

Step	Action
1	On the New Trigger or Edit Trigger window, click **New**. **Result:** The New trigger tag window is displayed. Note that the *Edit trigger tag window* (See example on page 89) displays the same fields.
2	Select from the **Data Type**, **Location** and **Field** drop down lists the profile field containing the source tag. The in-session notification tags are prefixed with `ISN`.
3	To select the override target field, select the **Override Target Field** check box, then select the field from the drop down. Click **Save**.

Editing Trigger Tags

Follow these steps to edit the source profile tag details.

Step	Action
1	On the New Trigger or Edit Trigger window, select the trigger tag to edit in the table.
2	Click **Edit**. **Result:** The *Edit trigger tag window* (See example on page 89) is displayed.
3	Update the fields, described in *Adding Trigger Tags* (on page 90), as required.
4	Click **Save**.

Editing Trigger Profiles

Follow these steps to delete trigger profile tags from a trigger.

Step	Action
1	On the New Trigger or Edit Trigger window, select the trigger profile tag to delete in the table.
2	Click **Delete**. **Result:** The delete confirmation dialog is displayed.
4	Click **Apply** to confirm.

Notifications

Introduction

You can create templates for notification messages.

Templates are used by some ACS feature nodes. They can also be used by other applications (for example, CCS).

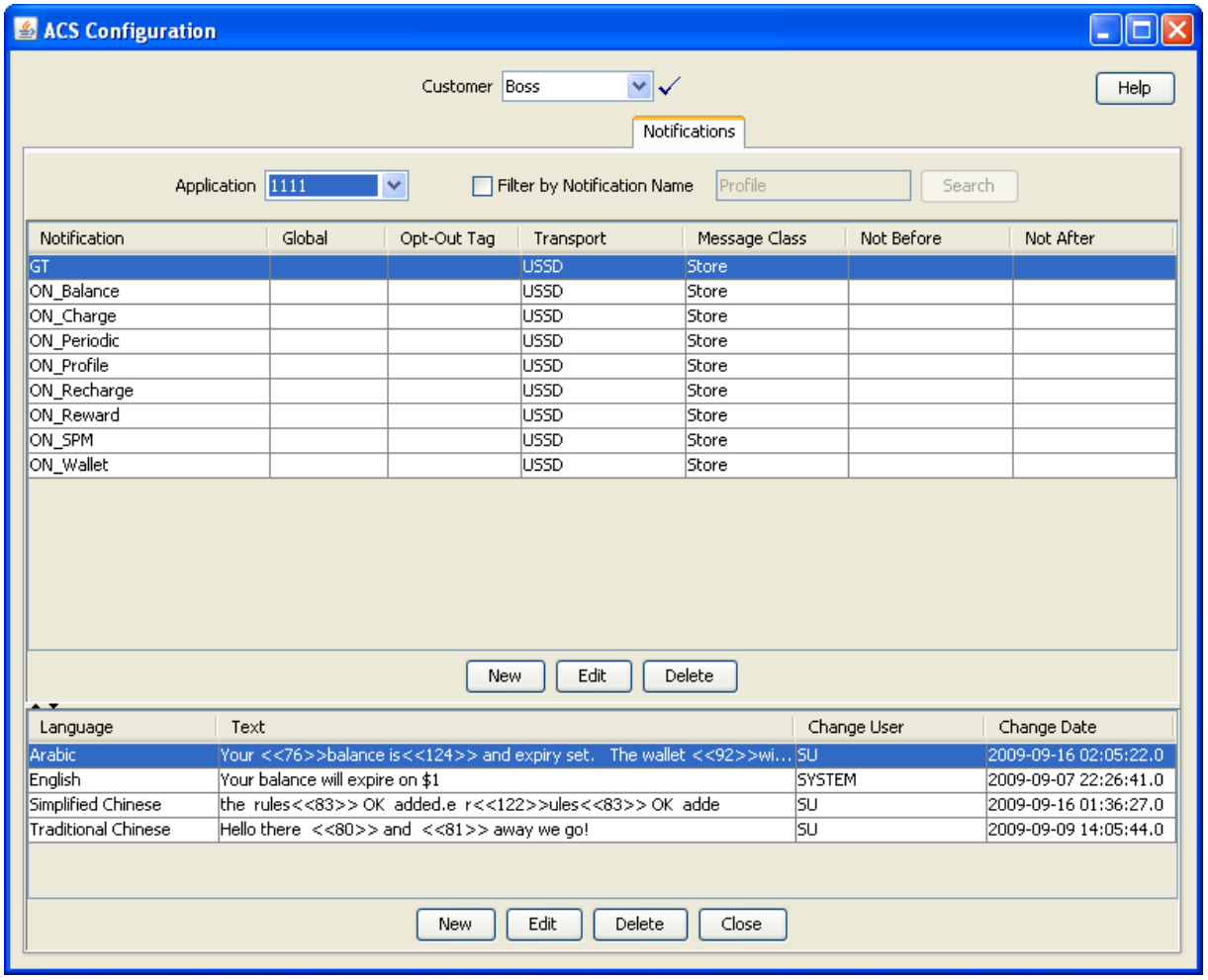
Examples of activities that other applications can use notification templates for are:

- Control plans
- Business process logic (BPL tasks)
- Credit transfers
- Periodic charges
- Profile updates
- Real-time notifications
- Heavy user bonuses.

Templates incorporate provision for selecting the way the notification message is transported, whether it is through Messaging Manager or a notification interface.

Notifications Tab

Here is an example **Notifications** tab.



Notification Types

In ACS, SMS notification templates are classified and stored by application and type. A combination of application and type is called a notification type. A notification type may contain more than one notification template but each template must use a different language.

Finding Notification Type

This function is used to lessen the number of rows in the table.

Follow these steps to find an existing notification template.

Step	Action
1	On the **Notifications** tab, select the **Filter by Notification Name** check box. **Result:** The **Search** button and search criteria field become available.

Step	Action
2	Enter the search criteria in the text field. **Note:** The search is not case sensitive, the characters must appear sequential, but start anywhere in the Notification name. For example, `ON` will return any Notification that has `ON` or `on` somewhere in the name.
3	Click **Search**. **Result:** All matches will be listed in the tab table.

Template Matching

Template matching is based on customer ID, template ID and language ID (either the subscriber's language, or the language specified in the node dialog) in the following order:

Customer	Template	Language
Control Plan	Node	Node or subscriber profile
Control Plan	Node	Global default
NULL (Global)	Node	Node or subscriber profile
NULL (Global)	Node	Global default

Note:

- When the notification feature node is executed it shall attempt to retrieve the template based upon the language ID, template ID and customer ID.
- If no template is found for the specified language, the node will attempt to find a template based on the customer, default language and template ID
- If no template is found for the customer and language, the node will attempt to find a global template based on language and template ID

Languages

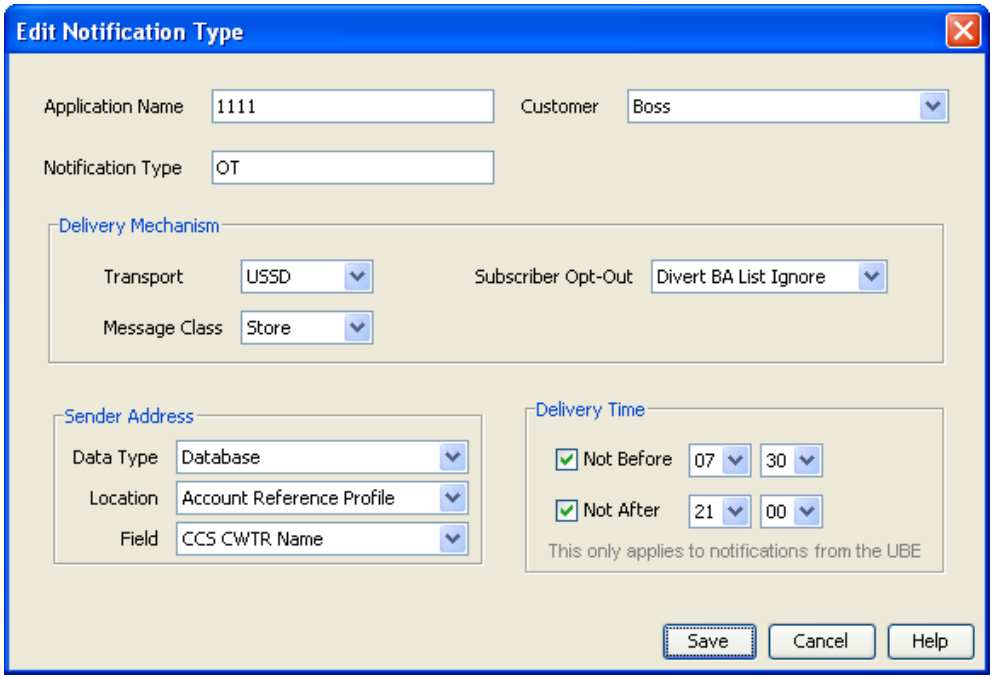
Templates can be prepared in multiple languages. If possible, a notification is sent in the language of the receiving party. If the language of the receiving party is not on the notification template, a message in the default language is sent.

The default language is defined for the customer or service provider.

You set up other languages using the ACS Tools screen. See *Language* (on page 28).

Notification Type Screen

Here is an example Notification Type screen.



Adding a Notification Type

Follow these steps to a create a notification type.

Step	Action
1	In the upper part of the **Notifications** tab, click **New**. **Result:** The New *Notification Type screen* (See example on page 94) is displayed.
2	In the **Customer** field, select the customer specific or global option for notification delivery. **Note:** This field is only available when the user has permission to edit global notifications.
3	In the **Application Name** field, type a name that identifies the application to you. **Notes:** • You must not leave the **Application Name** field blank. • You may enter up to 16 alphabetical or numerical characters. • The name may have to match the application that sends the notification. For example, CCS notifications from the VWS all have application name `CCS`.
4	In the **Notification Type** field, enter a name that identifies the type of notification to you. **Notes:** • You must not leave the **Notification Type** field blank. • You may type up to 32 alphabetical or numerical characters. **Result:** The **Save** button becomes active.
5	In the **Delivery Mechanism** section, select the: • **Transport** from the drop down list - this is the method by which the notification is sent.

Step	Action
	• **Message Class** from the drop down list - this determines whether a SMS is stored in the phone's SIM (that is, normal behavior), or presented to the subscriber as a flash message and not stored. • **Subscriber Opt-Out** from the drop down list - this determines what notification types the subscriber can opt out from receiving.
	Notes: • The message class list changes depending on the transport selected, and is used for SMS notifications only. • Opt-Out option --Not Used-- means that subscribers cannot opt out of this notification.
6	In the **Sender Address** frame, perform one of the following actions: • Select the profile location containing the sender address from the **Data Type**, **Location** and **Field** drop down lists • Enter a specific address - select **Fixed Value** from the **Data Type** drop down list and then type the address in the **Fixed Value** field.
7	In the **Delivery Time** frame, optionally set a delivery time restriction: • Select the **Not Before** check box to force delivery of the message to be after the time selected in the two drop down lists of hours and minutes. • Select the **Not After** check box to force delivery of the message to before the time selected in the two drop down lists of hours and minutes.
	Notes: • The delivery time options apply to VWS notifications only. • If the Not Before time is after the Not After time, then notifications are delivered between the not before time on one day and the not after time on the next day.
8	Click **Save**. **Result**: The new notification type is added to the **Notifications** tab table.
	Tip: If the search feature has been used and the new entry is not a match against the search criteria, it will not appear in the table. Either change the search criteria or deselect the **Find by** check box.

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

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- 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).

Editing a Notification Type

To a edit a notification type, follow these steps.

Step	Action
1	On the **Notifications** tab, find the notification type to edit. See *Finding Notification Type* (on page 92).
2	Select the notification type to change in the table row.

Step	Action
3	Click **Edit**. **Result:** The Edit *Notification Type screen* (See example on page 94) is displayed.
4	Change the relevant drop down list options as required.
5	Click **Save**.

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

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- 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).

Deleting a notification

To delete a notification type, follow these steps.

Step	Action
1	On the **Notifications** tab, find the notification type to delete. See *Finding Notification Type* (on page 92).
2	Select the notification type to delete in the table row.
3	Click **Delete**. **Result:** The Delete Notification? screen displays.
4	Click **Delete**. **Result**: The notification type is removed from the Notifications table.

Rules for Recharge Notifications

When a user recharges the account, the system searches the database for the notification to trigger. The search is based on a search string formed by a combination of voucher name, EDR scenario, balance type, and service provider. The search string is formed in the following order and looked for in the database:

1 If the voucher name exist in the database, follow this order:
   a) Voucher Name + EDR Scenario + Service Provider
   b) Voucher Name + EDR scenario + NULL
   c) Skip to search string 3.

2 If voucher name does not exist in the database, follow this order:
   a) "AccountRecharge" + BalanceTypeString + Service Provider
   b) "AccountRecharge" + BalanceTypeString + NULL

3 "AccountRecharge" + Service Provider

4 "AccountRecharge" + NULL

Notification Template Editor

Introduction

Notification templates are used to create messages containing variable information embedded within them.

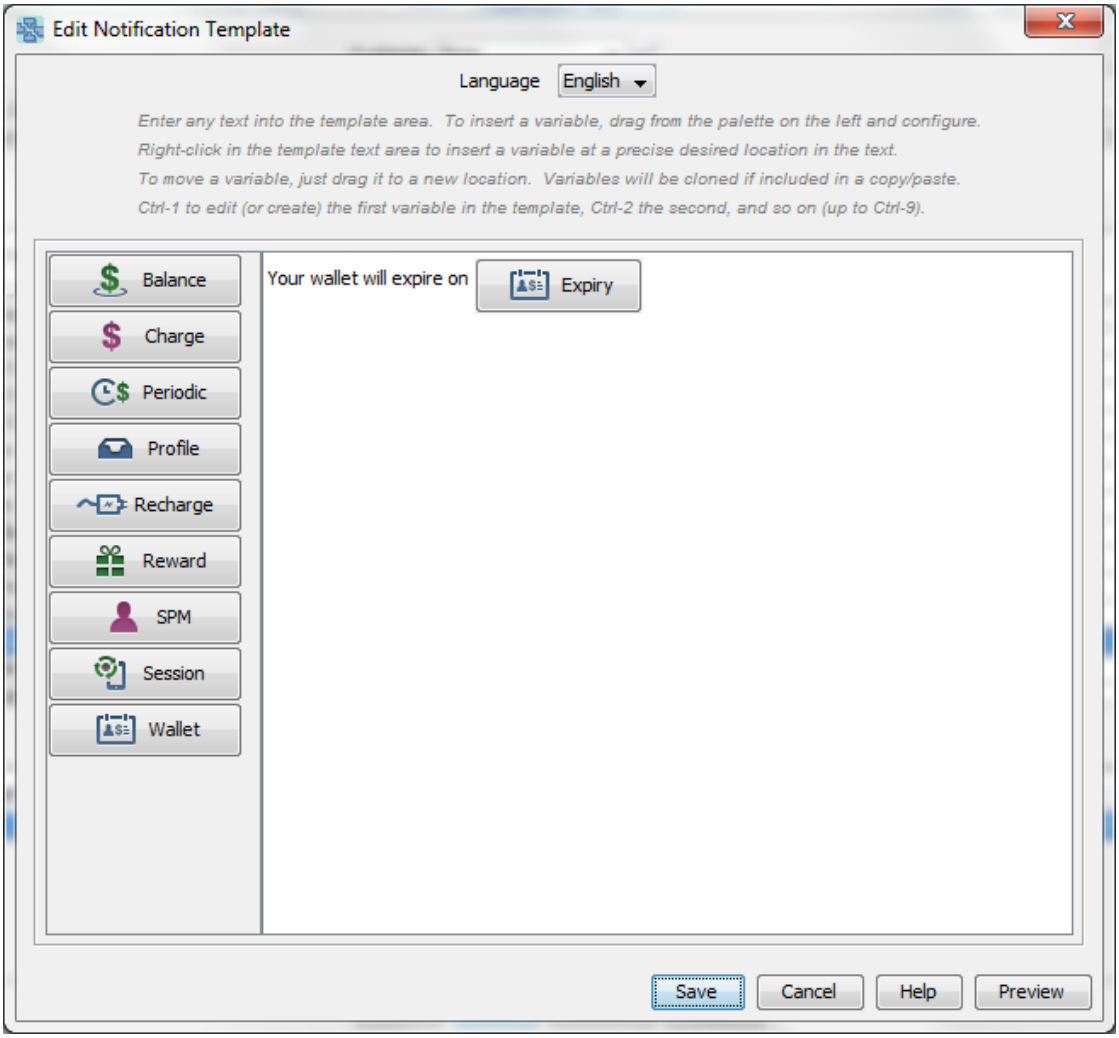
For example, a message might be:

```
Your current balance is 20 dollars.
```

Where the 20 dollars would be a variable part that changes every time the template is used.

Notification Template Screen

Here is an example Notification Template screen.



Adding a Notification Template

To create a notification template, follow these steps.

Step	Action
1	On the **Notifications** tab, find the notification type to add templates to. See *Finding Notification Type* (on page 92).
2	Select the notification type to add templates to from the table row.
3	In the lower part of the screen, click **New**. **Result:** The New *Notification Template screen* (See example on page 97) is displayed.

Step	Action
	Note: Variable parts are only available if **Open Notifications** has been activated
4	If necessary, select a language from the **Language** drop-down list box.
	Note: You must select a language which has not already been assigned to a notification template listed under the notification type you chose in step 1.
5	In the work area, enter the text of the message that the template will contain.
	Notes: • You may enter up to 512 alphabetical or numerical characters. • If the Arabic language was selected at step 3, you may enter Arabic characters. However whichever language is selected you can enter any Unicode characters. • You must not leave the work area blank.
	Result: The **Save** button becomes active.
6	If a template containing variable parts is required, use the icon list on the left side to insert the required parts. Click and drag an icon to the place in the text that it is required and release the mouse. **Result:** The Notification Variable screen opens, with the variable part option selected in **Source Group** field matching the icon name. Each variable part can have one of several configuration options, depending on the field/ profile tag selected as the source of the variable part. See *Value Formatting Types* (on page 101) for more information. This is the list of variable parts avalible in the **Source Group** field. • **Balance** - enables you to insert balance information into the template. • **Charge** - enables you to insert charging information into the template. • **Periodic** - enables you to insert periodic charge information into the template. • **Profile** - enables you to insert subscriber information into the template. • **Recharge** - enables you to insert recharge information into the template. • **Reward** - enables you to insert rewards information into the template. • **SPM** - enables you to insert subscriber management information into the template. • **Session** - enables you to insert session information into the template. • **Wallet** - enables you to insert subscriber wallet information into the template. See *Variable Part Fields* (on page 100) for information about which variable part type is available for each source group.
7	Click **Preview** to review what the notification will be like. **Result:** The Template Preview dialog displays the notification.
8	Click **OK**. **Result:** The notification template is stored in the database, classified for the notification type you chose at Step 1.

Note: When saved, each field entry used for a variable part has an associated ON profile tag defined which is used to store the value of the field when an open notification reaches the SLC.

Editing a Notification Template

Follow these steps to edit a notification template.

Step	Action
1	On the **Notifications** tab, find the notification type associated with the template requiring

Step	Action
	changes. See *Finding Notification Type* (on page 92).
2	Select the notification type to edit from the table row. **Result:** All the templates for the notification are listed.
3	Select the template to change by clicking in the template table row.
4	In the lower part of the screen, perform one of the following actions: • Click **Delete** to remove the template • Click **Edit** to change the template **Result:** If editing, the Edit *Notification Template screen* (See example on page 97) is displayed.
	Notes: Each variable part can have one of several configuration options, depending on the field or profile tag selected as the source of the variable part. See *Value Formatting Types* (on page 101) for more information. This is the list of variable parts. • **Balance** – Enables balance information to be inserted into the template. • **Charge** – Enables charging information to be inserted into the template. • **Periodic** – Enables periodic charge information to be inserted into the template. • **Profile** – Enables subscriber information to be inserted into the template. • **Recharge** - enables recharge information to be inserted into the template. • **Reward** - enables rewards information to be inserted into the template. • **SPM** - enables subscriber management information to be inserted into the template. • **Session** - enables session information to be inserted into the template. • **Wallet** - enables subscriber wallet information to be inserted into the template.
5	If required, select a different language from the **Language** drop-down list.
	Note: You must not select a language already assigned to a notification template listed under the notification type you chose at step 1. If you do, an error message appears when you try to save the notification template at step 6.
6	Edit the **Text** field as needed. The template variable part icons can be: • Moved to another position – Click on the icon and drag the red line to the new insertion point. • Deleted – Click on the icon to open the Notification Variable dialog and then click **Delete**. • Added – Click on the required icon and drag it to the desired location in the text. • Edited – Click on the icon to open the Notification Variable dialog. The relevant Notification Variable screen for the variable part opens.
7	Click **Preview** to review what the notification will be like. **Result:** The Template Preview dialog displays the notification.
8	Click **OK**.

Note: When saved, each field entry used for a variable part has an associated ON profile tag defined which is used to store the value of the field when an open notification reaches the SLC.

Deleting a Notification Template

Follow these steps to delete a notification template.

Step	Action
1	On the **Notifications** tab, find the notification type associated with the template requiring deletion. See *Finding Notification Type* (on page 92).
2	Select the notification type to edit from the table row. **Result:** All the templates for the notification are listed.
3	Select the template to delete, by clicking in the template table row.
4	In the lower part of the screen, click **Delete**. **Result:** The Confirm Delete screen is displayed.
5	Click **Ok**. **Result:** The notification template is removed from the database.

Variable Part Fields

This table lists the field drop down list options for each variable part source and the variable part type of data.

	Source Group Variable Part						
Field Option	**Balance**	**Charge**	**Periodic**	**Recharge**	**Reward**	**Wallet**	**Session**
Balance Expiry				Date/Time			
Balance Expiry Set				Boolean			
Called Party							String
Calling Party							String
Credit	Integer						
Credit Limit	Integer						
Date			Date/Time				
Description					String		
Expiry	Date/Time			Date/Time		Date/Time	
Expiry Set	Boolean					Boolean	
Grace Date						Date/Time	
Grace State						String	
Low Balance Threshold							Integer
Low Credit Threshold							String
Name			String				
Paying Party							String
Product Type						String	

	Source Group Variable Part						
Start	Date/Time						
State	String		String				
Type						String	
Unreserved Credit	Integer						
Unreserved Value	Integer						
Value	Integer	Integer		Integer			
Wallet Expiry				Date/Time			

Note:

- **Profile** variable part field options depend on the selected **Data Type**, **Location** and **Field** fields.
- **SPM** variable part field options are any defined SPM fields with **Group** and **Field** fields.

Value Formatting Types

Introduction

Any notification template can have any number of variable parts, configured using the Notification Variable screen. Each variable part can have one of several configuration options, depending on the field/ profile tag selected as the source of the variable part. See *Notification Template Editor* (on page 96) for more information about notification templates.

Notes:

- Each of the variable parts may have extra fields to choose from in the top panel. For example, when you choose a `Balance` source group, you get a combo-box to choose which balance type you want. When you select `Profile`, you get the standard combo-boxes to choose a profile tag.
- Some of the variable parts let you choose **Server to determine** in the formatting panel. This means use the formatting specified for that type of data in another part of the system, see *Defined Definitions* (on page 101) for examples.

The available format types for variable parts are:

- *Setting Boolean Configuration* (on page 108)
- *Setting DateTime Configuration* (on page 109)
- *Setting Integer Configuration* (on page 110)
- *Setting Prefix Tree Configuration* (on page 111)
- *Setting String Configuration* (on page 112)

Defined Definitions

These are examples of definitions defined elsewhere in the system. This is not an exhaustive list, just a sample.

Definitions on the **Wallet Management > Balance Type Translations** tab for balance formatting:

- Balance / Value

- Charge / Value
- Recharge / Value

Definitions on the **Wallet Management > Balance Type Translations** tab for balance expiry formatting for:

- Balance / Expiry
- Recharge / Expiry

Definition on the **Wallet Management > Wallet Name Translation** tab for:

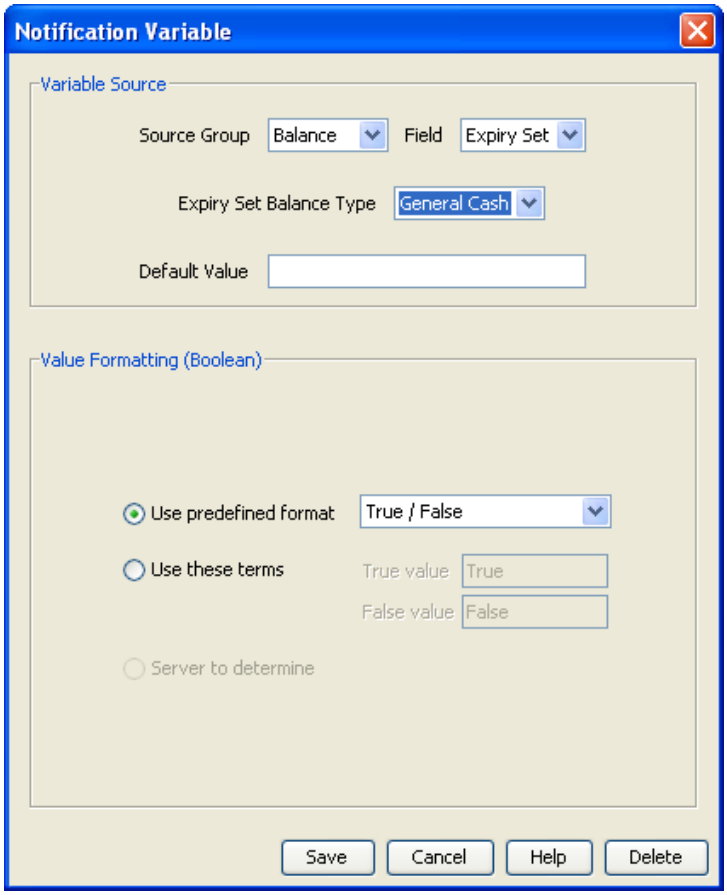
- Wallet / Expiry

Notification Variable Screen

Here are examples of the Notification Variable screen. The fields in the two frames in the screen differ depending on the source group and field selected. See *Variable Part Fields* (on page 100) for a list of which fields in the **Variable Source** frame will display which **Value Formatting** frame.

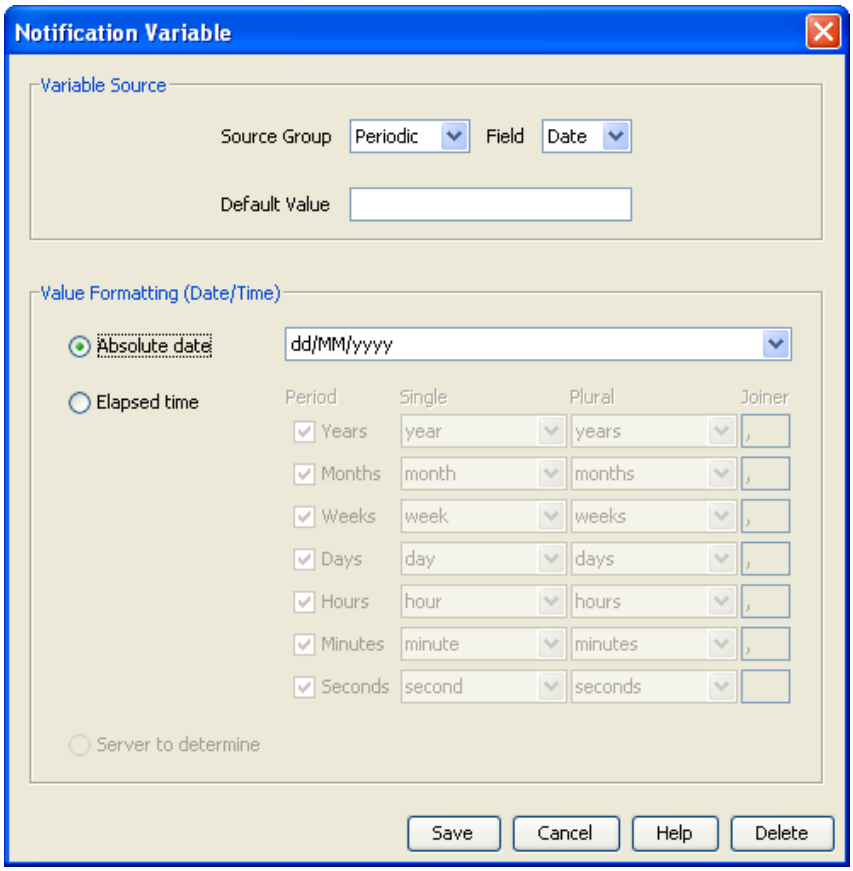
Boolean

Here is an example Notification Variable screen, displaying the **Value Formatting (Boolean)** fields.



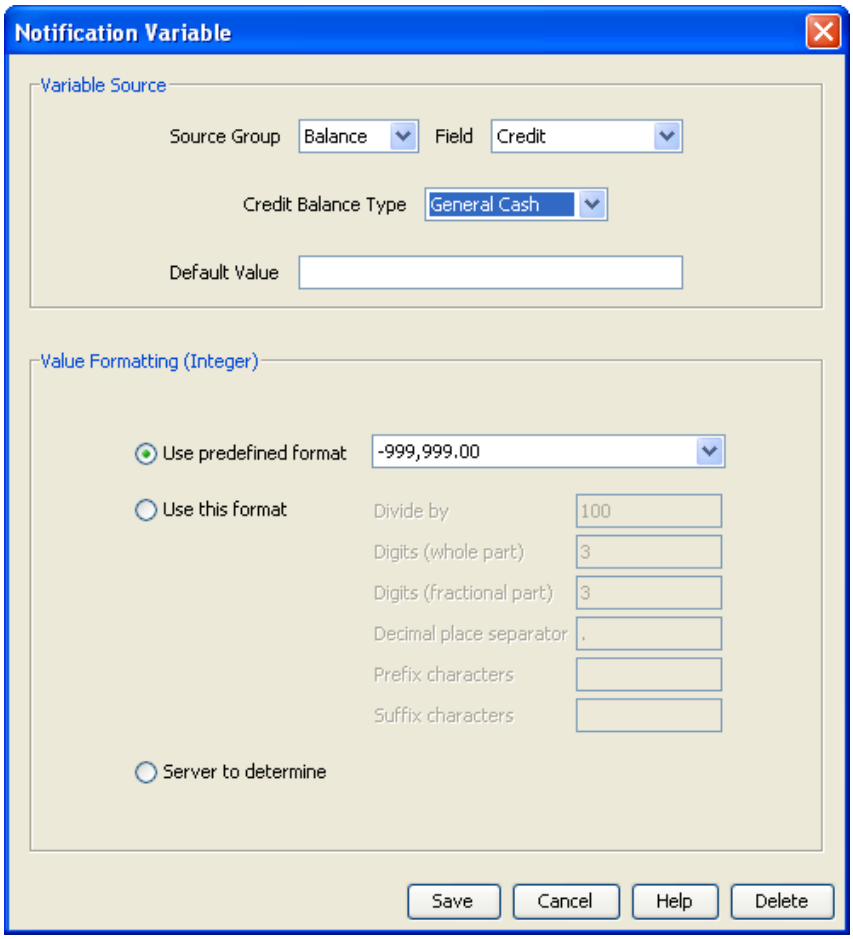
Date/Time

Here is an example Notification Variable screen, displaying the **Value Formatting (Date/Time)** fields.



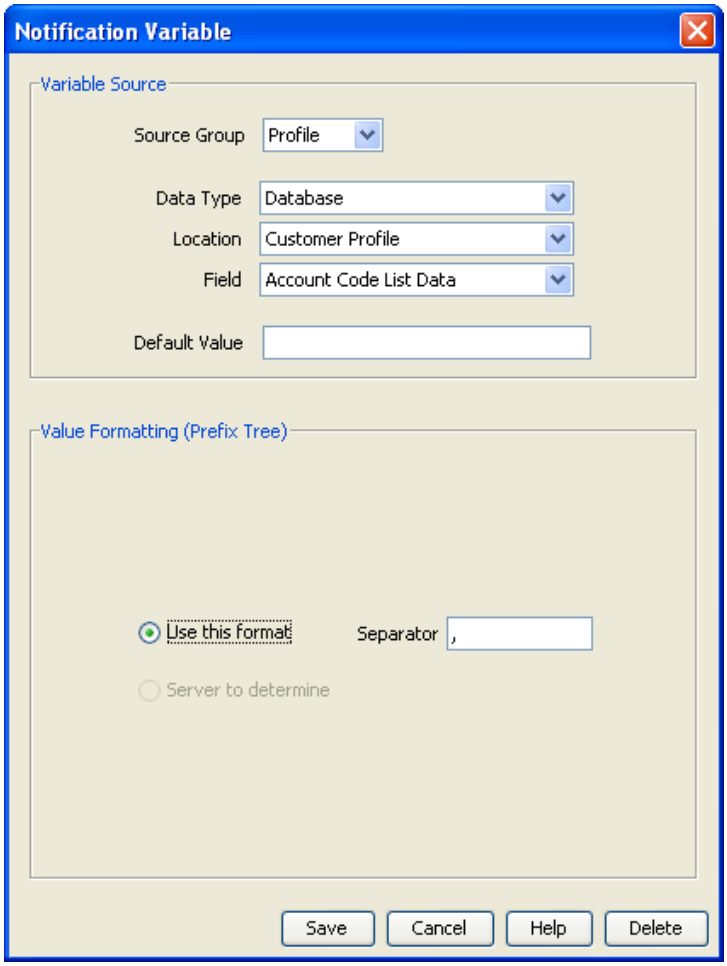
Integer

Here is an example Notification Variable screen, displaying the **Value Formatting (Integer)** fields.



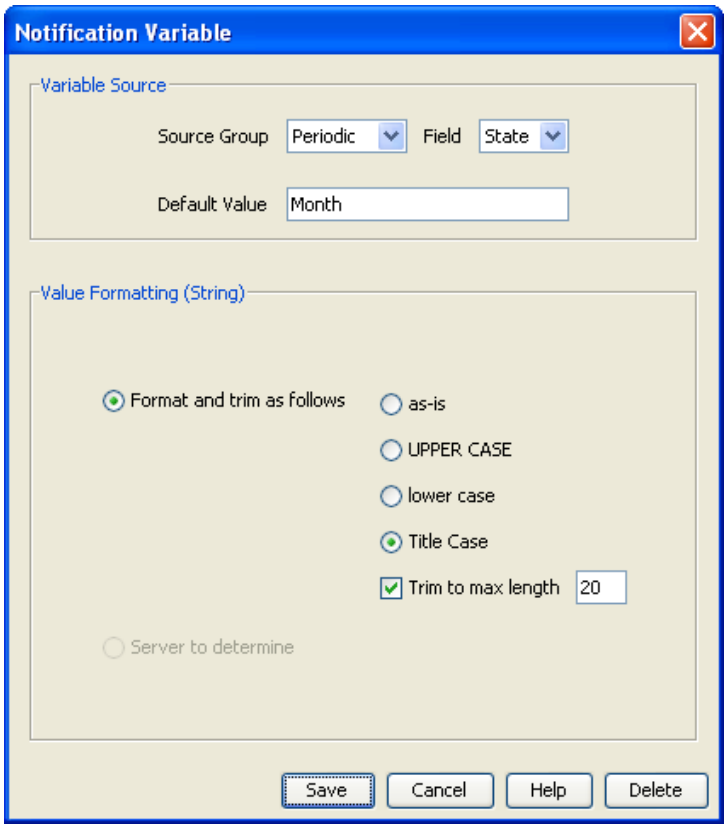
Prefix Tree

Here is an example Notification Variable screen, displaying the **Value Formatting (Prefix Tree)** fields.



String

Here is an example Notification Variable screen, displaying the **Value Formatting (String)** fields.



Boolean Format Type

Follow these steps to designate location and formating for a boolean variable part.

Step	Action
1	In the **Variable Source** frame, select the variable part source from the **Field** drop down list.
	Warning: The **Source Group** drop down list shows the variable part type associated with the icon selected in the *Notification Template screen* (See example on page 97) and should be not be changed.
2	Select the **Balance Type** from the drop down list.
	Note: The field balance type matches the **Field** selected.
3	Enter a **Default Value** that is used when there is no content or problem with the source location.
4	Configure the **Value Formatting (..)** frame, appropriate to the variable source. See: • *Setting Boolean Configuration* (on page 108) • *Setting DateTime Configuration* (on page 109) • *Setting Integer Configuration* (on page 110) • *Setting Prefix Tree Configuration* (on page 111) • *Setting String Configuration* (on page 112)

Date/Time Format Type

Follow these steps to designate location and formating for a date/time variable part.

Step	Action
1	In the **Variable Source** frame, select the variable part source from the **Field** drop down list. **Warning:** The **Source Group** drop down list shows the variable part type associated with the icon selected in the *Notification Template screen* (See example on page 97) and should be not be changed.
2	Enter a **Default Value** that is used when there is no content or problem with the source location.
3	Configure the **Value Formatting (..)** frame, appropriate to the variable source. See: • *Setting Boolean Configuration* (on page 108) • *Setting DateTime Configuration* (on page 109) • *Setting Integer Configuration* (on page 110) • *Setting Prefix Tree Configuration* (on page 111) • *Setting String Configuration* (on page 112)

Integer Format Type

Follow these steps to designate location and formatting for an integer variable part.

Step	Action
1	In the **Variable Source** frame, select the variable part source from the **Field** drop down list **Warning:** The **Source Group** drop down list shows the variable part type associated with the icon selected in the *Notification Template screen* (See example on page 97) and should be not be changed.
2	Select the source **Balance Type** from the drop down list. **Note:** The field balance type matches the **Field** selected.
3	Enter a **Default Value** that is used when there is no content or problem with the source location.
4	Configure the **Value Formatting (..)** frame, appropriate to the variable source. See: • *Setting Boolean Configuration* (on page 108) • *Setting DateTime Configuration* (on page 109) • *Setting Integer Configuration* (on page 110) • *Setting Prefix Tree Configuration* (on page 111) • *Setting String Configuration* (on page 112)

Prefix Tree Format Type

Follow these steps to designate profile location and formating for a variable part.

Step	Action
1	In the **Variable Source** frame, leave the **Source Group** and **Field** with their default profile and empty values. **Warning:** The **Source Group** drop down list shows the variable part type associated with the icon selected in the *Notification Template screen* (See example on page 97) and should

Step	Action
	be not be changed.
2	Select the source location using the **Data Type**, **Location** and **Field** drop down lists.
3	Enter a **Default Value** that is used when there is no content or problem with the source location.
4	Configure the **Value Formatting (..)** frame, appropriate to the variable source. See: • *Setting Boolean Configuration* (on page 108) • *Setting DateTime Configuration* (on page 109) • *Setting Integer Configuration* (on page 110) • *Setting Prefix Tree Configuration* (on page 111) • *Setting String Configuration* (on page 112)

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

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- 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).

String format type

Follow these steps to designate string location and formating for a variable part.

Step	Action
1	In the **Variable Source** frame, select the variable part source from the **Field** drop down list. **Warning:** The **Source Group** drop down list shows the variable part type associated with the icon selected in the *Notification Template screen* (See example on page 97) and should be not be changed.
2	Enter a **Default Value** that is used when there is no content or problem with the source location.
3	Configure the **Value Formatting (..)** frame, appropriate to the variable source. See: • *Setting Boolean Configuration* (on page 108) • *Setting DateTime Configuration* (on page 109) • *Setting Integer Configuration* (on page 110) • *Setting Prefix Tree Configuration* (on page 111) • *Setting String Configuration* (on page 112)

Setting Boolean Configuration

Follow these steps to set boolean formating.

Step	Action
1	In the **Value Formatting (Boolean (See example on page 102))** section of the Notification Variable screen, select the options for setting the boolean values.
2	To use a predefined format, select **Use predefined format**, then select the format from the drop down list.
3	To specify a format, select **Use these terms**, then enter what text will be displayed for true and false values.
4	To save the changes, click **Save**.

Step	Action
	To exit without saving anything, click **Cancel**. To remove the variable part from the notification, click **Delete**.

Setting DateTime Configuration

Follow these steps to format a date/time variable part.

Step	Action
1	In the **Value Formatting (Date/Time (See example on page 103))** section of the Notification Variable screen, select the options for setting the date and time values.
2	To use a definite date and time, select **Absolute date**, then select the predefined date and time format from the drop down list. For date and time format descriptions see *Date formats* (on page 109) and *Time formats* (on page 110).
3	To insert the amount of time between now and the date/time being formatted, select **Elapsed time**, then select the check boxes as required. **Examples:** • Select **Months**,and **Days** for "x months, y days" • Select **Weeks**, **Days**, **Hours** for "x weeks, y days, z hours" **Note:** Change the joiner value to make grammatically correct messages, for example replace `,` with `and` for the Days row would change the example to "x weeks, y days and z hours"
4	To save the changes, click **Save**. To exit without saving anything, click **Cancel**. To remove the variable part from the notification, click **Delete**.

Date Formats

This table list the date formats and their examples.

Format	Format Example
d/MM/yyyy	10/07/2009
MM/d/yyyy	07/10/2009
dddd, d MMMM yyyy	Friday, 10 July 2009
d MMMM yyyy	10 July 2009
d/MM/yy	10/07/09
MM/d/yy	07/10/09
yyyy-MM-dd	2009-07-10
d-MMM-yy	10-Jul-09
d.MM.yyyy	10.07.2009
d MMM. yy	10 Jul. 09
d MMMM yyyy	10 July 2009
MMMM yy	July 09
MMM-yy	Jul-09

Date Format Key

This table describes the symbols used in the date formats.

Symbol	Description
d	Day of month
dd	Two-digit day of month
dddd	Name of day of week
MM	Two-digit month
MMM	Abbreviated month name
MMMM	Full month name
yy	Two-digit year
yyyy	Four-digit year

Time Formats

This table lists the time formats and their examples.

Field	Description
h:mm am/pm	4:03 pm
h:mm:ss am/pm	4:03:54 pm
hh:mm am/pm	04:03 pm
hh:mm:ss am/pm	04:03:54 pm
HH:mm	16:03
HH:mm:ss	16:03:54

Time Format Key

This table describes the symbols used in the time formats.

Symbol	Description
h	Hour, 0-12
hh	Two-digit hour, 0-12
HH	Hour, 0-23
mm	Two-digit minute
ss	Two-digit second
am/pm	am/pm indicator

Setting Integer Configuration

Follow these steps to format an integer variable part.

Step	Action
1	In the **Value Formatting (Integer (See example on page 104))** section of the Notification Variable screen, select the option for setting the integer value.
2	To use a predefined format, select **Use predefined format** and then select the format from the drop down list.
3	To specify a format, select **Use this format** and then enter the values as relevant. • **Divide by** – The number to divide by to convert the output value from small units to

Step	Action
	large units. This specifies how to interpret the number being presented. • **Digits (whole part)** – The number of digits before an assumed decimal point, this is the minimum space allocated width of the whole part of the number. May cause padding to the left. • **Digits (fractional part)** – The number of digits after the decimal point. • **Decimal place separator** – The character that signifies the decimal point, this will be skipped if there is no fractional part. • **Prefix characters** – Characters to add to the front of the number. • **Suffix characters** – Characters to add after the number, this will be skipped if there is no fractional part. For example: Received number to be formatted: 12345 • Divide by: 100 • Digits (whole part): 4 • Digits (fractional part): 2 • Decimal place separator: , • Prefix characters: $ • Suffix characters: c Output: $ 123,45c
4	To save the changes, click **Save**. To exit without saving anything, click **Cancel**. To remove the variable part from the notification, click **Delete**.

Setting Prefix Tree Configuration

Follow these steps to format a prefix tree variable part.

Step	Action
1	In the **Value Formatting (Prefix Tree (See example on page 105))** section of the Notification Variable screen, select the option for setting the prefix tree values.
2	Enter the prefix tree field **Separator** to use in the notification. The prefix tree will be presented as a list of items separated by the text in this box.
3	To save the changes, click **Save**. To exit without saving anything, click **Cancel**. To remove the variable part from the notification, click **Delete**.

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

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- 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).

Setting String Configuration

Follow these steps to format a string variable part.

Step	Action
1	In the **Value Formatting (String (See example on page 106))** section of the Notification Variable screen, select the options for setting the string values.
2	Select the **Format and trim as follows** option as required: • **as-is** – Whatever the profile or default content is already saved as. • **UPPER CASE** – Source is changed to all upper case characters. • **lower case** – Source is changed to all lower case characters. • **Title Case** – Source is changed to upper case characters for start of each word.
3	Optionally, select the **Trim to max length** check box, then entry the maximum length allowed. **Note:** The source string will be truncated to this value by removing characters from the end of the string.
4	To save the changes, click **Save**. To exit without saving anything, click **Cancel**. To remove the variable part from the notification, click **Delete**.

Chapter 7

ACS Customer

Overview

Introduction

This chapter explains how to configure, manage and display information about ACS customers.

In this chapter

This chapter contains the following topics.

ACS Customer Screen

Introduction

You use the ACS Customer screen to configure, manage and display information about customers, including the customer for the telecommunications service provider. The ACS Customer screen has the following tabs:

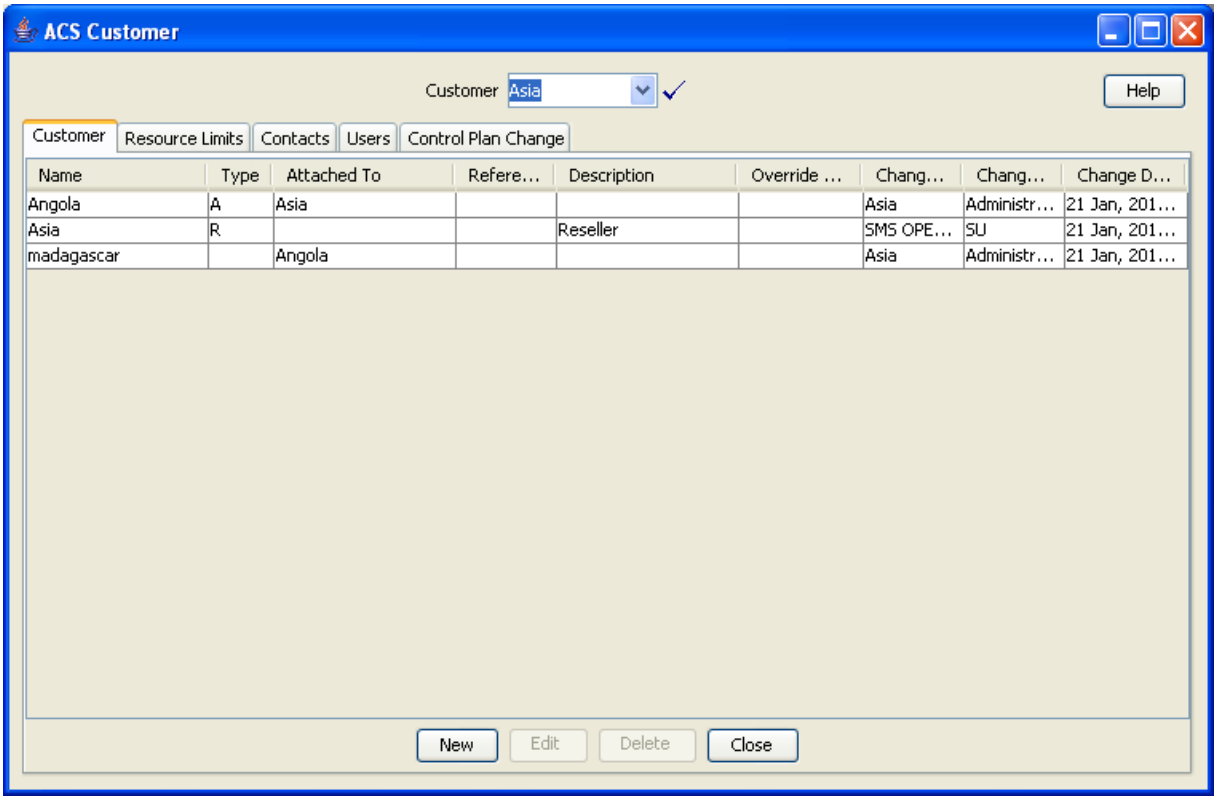
- *Customer* (on page 114)
- *Resource Limits* (on page 119)
- *Contacts* (on page 123)
- *Users* (on page 123)

Accessing the ACS Customer Screen

To open this screen, click **Customer** on the ACS main screen.

Customer Screen Example

Here is an example ACS Customer screen.



Note: The ACS Customer screen can only be accessed by users with permissions of Level 5 and above. However, some tabs are visible only to system administrators.

Customers

Introduction

This topic explains how to configure customers in ACS.

Tiered Customer Structure

ACS allows the telco to directly provision individual resource-limited customers, or alternatively to create a wholesale customer with a (larger) set of resource limits, and delegate to them the ability to create individual customers, the sum of whose resource limits must never exceed those of the wholesaler. This feature is called tiered customer management. A reseller is a wholesaler that may in turn create and manage 'normal' customers, and/or other wholesale customers (agents). Agents can only create normal customers.

The concept of telco-managed customers is unchanged by the advent of tiered customer management. Telco managed customers are simply customers that never log into ACS but are managed explicitly (and without resource limits) by the Telco.

The hierarchy of customer management thus looks like this:

- Telco
- Reseller
- Agent

- Customer

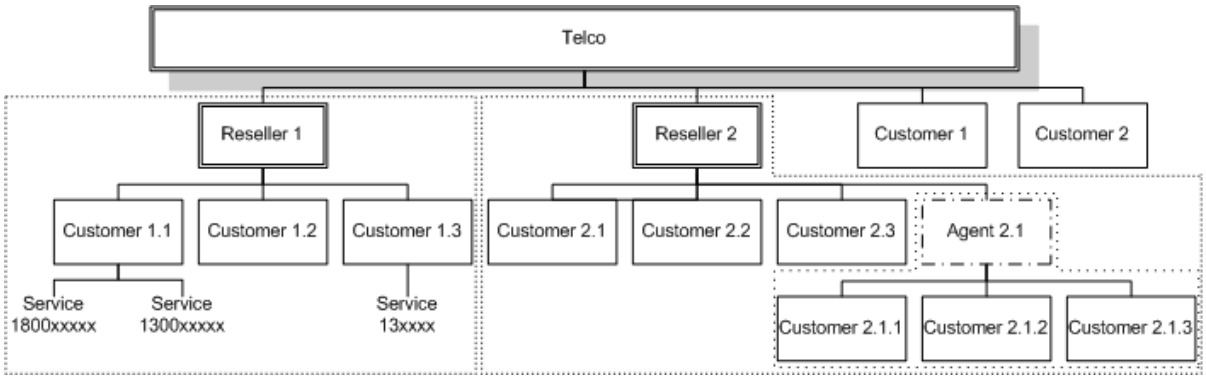
Resellers and agents are both implemented as ACS customers, because they both need to have resource limits allocated to them. Resellers and agents can only set resource limits for all their customers up to a combined total value that is less than or equal to their own resource limits.

This allows them to be a kind of super-user in relation to those ACS customers attached to them, for example. those customers that directly refer to them as their parent customer, or indirectly (via one level of indirection only) as in the case of a reseller who can also see the customers attached to their agents.

Resellers and agents may select any of their attached customers in the main customer combo box at the top of various windows and 'become' that customer. It means the reseller/agent has the means to edit their customers' configurations as desired.

Tiered Hierarchy

Here is an example structure of a tiered hierarchy of customers.



Security Rules

When a customer is created, if the **Create User for Customer** check box is selected, an administrator user, with level 5 permission, is also created. See *Adding Customers* (on page 117). A reseller may choose to change the permission level of an agent, to restrict what the agent is able to do.

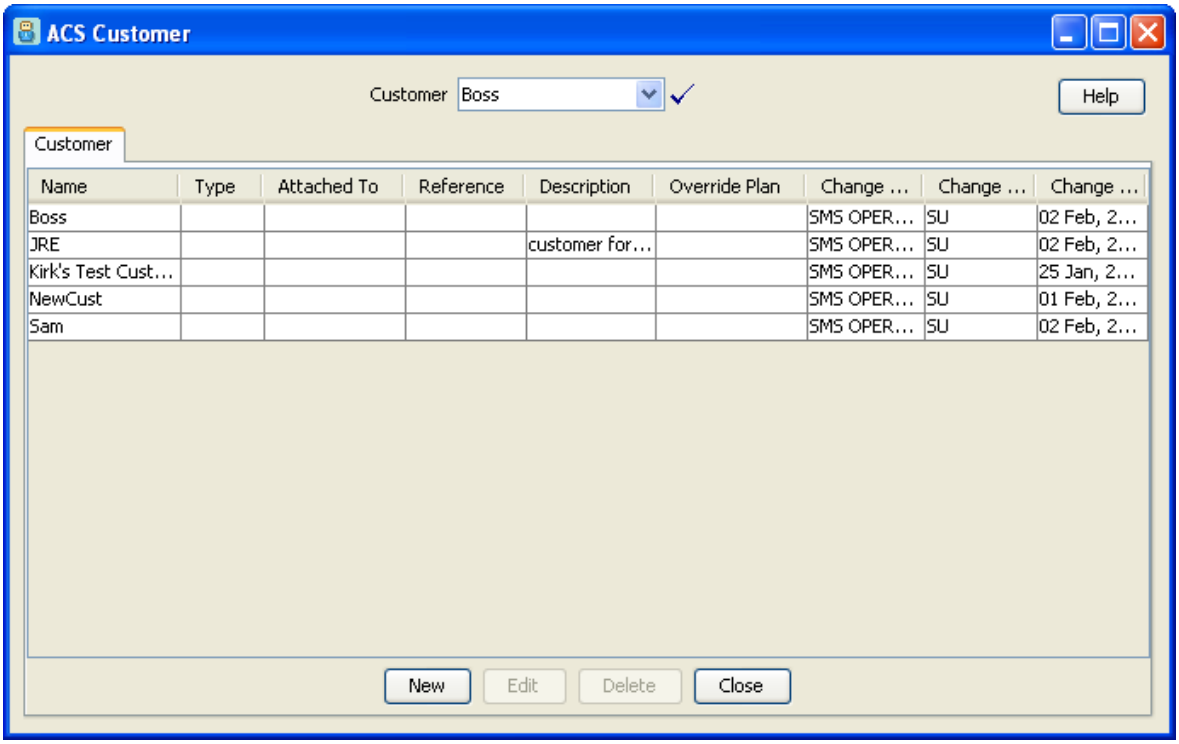
As well as performing all tasks defined in *Security Level Permissions* (on page 19), a user with permission level:

- 5 or more (Reseller) can create and edit agents and customers, as long as the resource limits allocated to them do not exceed those given to the reseller by the telco. Within the *tiered hierarchy* (on page 115), a reseller may allocate, or move to other agents, customers under them. A reseller cannot allocate customers to other resellers or their agents.
- 4 cannot create agents, but can create normal customers.

See *Defining the Security Levels* (on page 18) for details of ACS security levels.

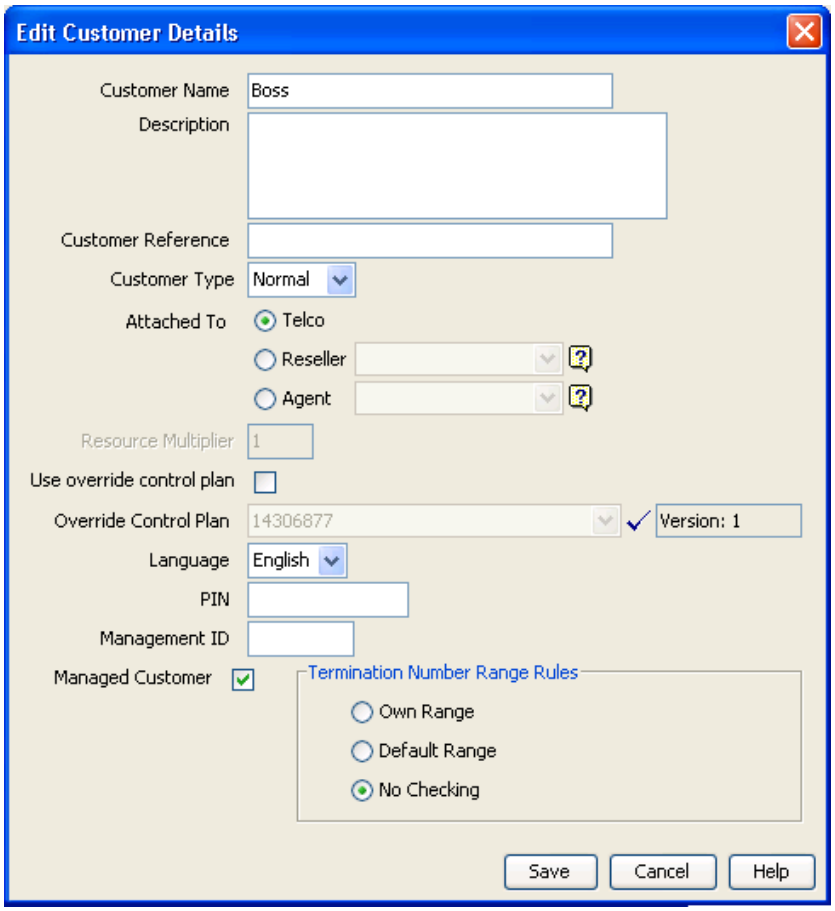
Customer Tab

Here is an example **Customer** tab.



Customer Details Screen

Here is an example Customer Details screen.



Note: The New Customer screen also includes a **Create User for Customer** field.

Adding Customers

Follow these steps to add new a customer to the database.

Step	Action
1	On the **Customer** tab, click **New**. **Result:** The New *Customer screen* (See example on page 117) is displayed.
2	In the **Customer Name** field, enter the name of the new customer.
3	In the **Description** field, enter a description of the new customer.
4	In the **Customer Reference** field, enter a reference number for the new customer. **Note:** This field is optional, unless the parameter shown below is present in the **acs.jnlp** (if you have logged on to ACS directly) or **sms.jnlp** (if you have logged on through the SMS application) file, in which case it becomes mandatory. `<param name=requireCustomerReference value="TRUE" />`
5	Select the **Customer Type** from the drop down box. This can be: • Normal • Reseller [R]

Step	Action
	• Agent [A]
6	Select what customer the new customer is attached to **If type is... then you...** Normal — Can attach to any of the options. Reseller — Are attached to telco. Agent — Can attach to a reseller. **Note:** Only the Telco (super-user) can see the **Telco** option.
7	A **Resource Multiplier** can be specified for a reseller or an agent. The resource multiplier is used to scale the default resource limits that will be allocated to the new customer. See *the default resource limits* (on page 121) for details. Default values are: • Reseller – 10 • Agent – 5
8	If: • All the new customers' calls for service numbers and CLIs will use an override control plan that is owned by the telco, select the **Use override control plan** check box and go to Step 9. • An override control plan is not required, leave this box cleared and go directly to Step 10.
9	If you selected the **Use override Control Plan** check box in Step 8, select the **Override Control Plan** that is to be used from the list.
10	From the **Language** drop down list, select the applicable language for your customer.
11	If required, enter a PIN in the **PIN** field.
12	If required, enter a management ID in the **Management ID** field.
13	If the customer is to be managed by the ACS administrator, select the **Managed Customer** check box. By default this is selected. **Important:** This indicates that this is not a self managed customer.
14	If you want ACS to allocate a user for your new customer, select the **Create User for Customer** check box. **Note:** If the **Create user for Customer** check box is selected the user name "Administrator" and password "admin" will be allocated. It is important that the customer changes the password for this user when they use the system for the first time. When a new customer is added, a user of privilege level 5 will be supplied by the system.
15	In the **Termination Number Range Rules** screen section, select: • **Own Range** to use the termination ranges set up on the *Termination Ranges tab* (on page 162) of the ACS Resources screen. • **Default Range** to use the default termination range set up on the *Default Termination Range tab* (on page 37) of the ACS Tools screen. • **No Checking** to accept the termination numbers without validation (Default).
16	Click **Save**. **Result:** The new customer's details are saved in the database. To change the default resource limits, go to *Customer Resource Limits* (on page 119) for details.

Editing Customers

Follow these steps to edit customer information in the database.

Step	Action
1	In the table on the **Customer** tab, select the customer to edit.
2	Click **Edit**. **Result:** The Edit *Customer Details screen* (See example on page 117) is displayed.
3	Change the customer details as required. See *Adding Customers* (on page 117) for details about the fields. **Note:** You cannot change the override control plan. If you wish to change a reseller or agent that this customer is attached to, first clear the combo box and press **Enter** to display the list to pick from.
5	Click **Save**. **Result:** The details are saved and the screen will return to the main window.

Deleting Customers

Follow these steps to delete a customer from the database.

Warning: Deleting a customer record will delete all other configuration used by the customer.

Step	Action
1	In the table on the **Customer** tab, select the customer to delete.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The customer is removed from the database. **Note:** You cannot delete a customer if it is: • A reseller (Type R) with an agent or customer • An agent (Type A) with a customer You will see an error message. You must delete, or re-attach to other resellers or agents, all attached customers and/or agents first. See *Tiered hierarchy* (on page 115).

Customer Resource Limits

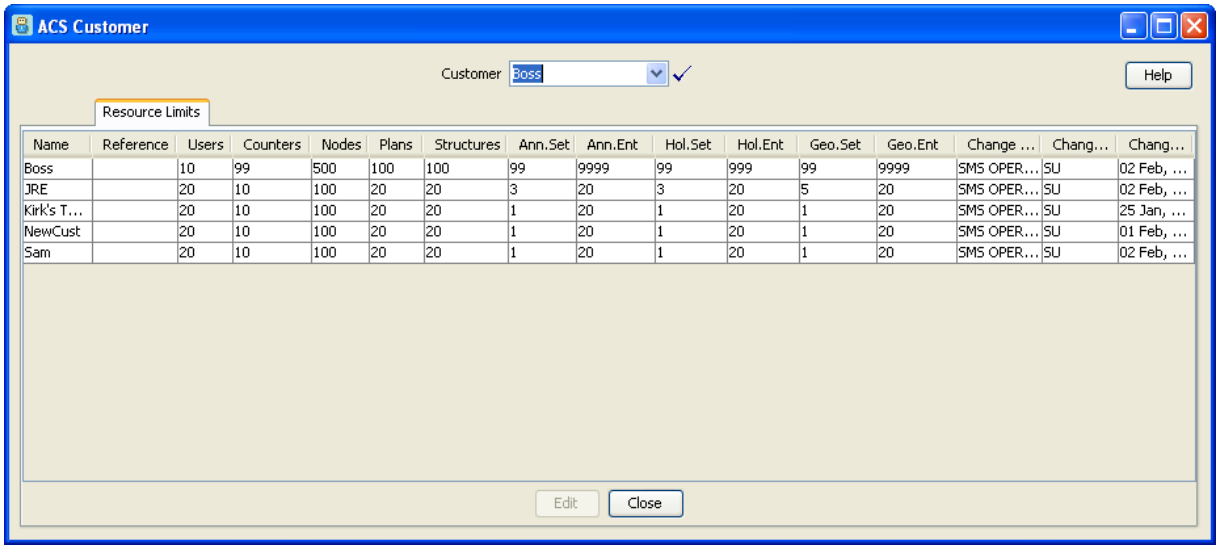
Introduction

The **Resource Limits** tab of the ACS Customer screen is used to manage and display the resource limitations for each of your customers.

Only ACS system administrators have access to this tab. Users with privilege levels less than 6 will not see this tab.

Resource Limits Tab

Here is an example **Resource Limits** tab.



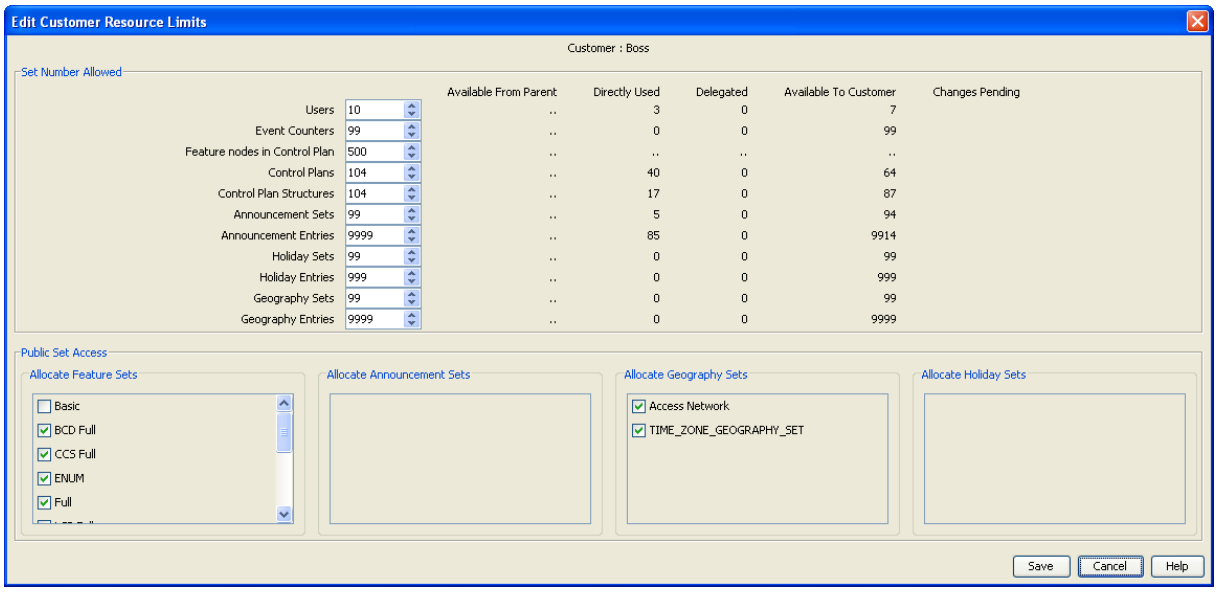
Setting the Resource Limits

Follow these steps to set the resource limits for each of a customer.

Step	Action
1	On the **Resource Limits** tab, select the customer record to edit the resource limits for.
2	Click **Edit**. **Result:** The *Edit Customer Resource Limits screen* (See example on page 121) is displayed. The groups within the **Public Set Access** frame are populated with the names of sets made public on the appropriate tabs on the ACS Configuration screen.
3	Select the maximum number for each of the fields in the **Set Number Allowed** frame. Refer to *Set Number Allowed Fields* (on page 121) and *Set Number Allowed Columns* (on page 122) for a description for each field. **Note:** As you change the value in a field, the **Available from Parent**, **Available To Customer** and **Changes Pending** fields are updated to track the change made.
4	Managed customers gain default access to all **Public Set Access** options. Alternatively, select the appropriate check boxes to allocate sets for each group in the *Public Set Access* (on page 122) frame.
5	Click **Save**. **Result:** If there is available resource, the details are saved and the screen will return to the main window. If you have set a number to less than the available resources (that is, the Available field displays a negative value), you will see an error. You will need to change the value before saving.

Edit Customer Resource Limits Screen

Here is an example Edit Customer Resource Limits screen.



Edit Customer Resource Limits Fields

Here are the descriptions of fields and areas on the Edit Customer Resource Limits screen.

Set Number Allowed Fields

Field	Sets the maximum number of...	Range	Default
Users	Users that the customer can configure.	0 - 1000	20
Event Counters	Statistics counters that the customer can configure. See *Event Counters* (See example on page 168).	0 - 100000	10
Feature nodes in Control Plan	Feature nodes that the customer can use in a single control plan (including all sub control plans).	0 - 2000	100
Control Plans	Control plans that the customer can use.	1 - 1000000	20
Control Plan Structures	Control plan structures that the customer may create. Control plans are made up of control plan data and a control plan structure. It is possible for many control plans to use the same structure, provided they each have their own data.	3 - 1000000	20
Announcement Sets	Announcement sets that the customer can configure. See *Announcements* (on page 58). **Tip:** You should set this value to 3 or more.	0 - 1000	1
Announcement Entries	Announcement entries that the customer can configure per announcement set. See *Announcement Entries* (on page 61).	0 - 100000	20

Field	Sets the maximum number of...	Range	Default
Holiday Sets	Holiday sets that the customer can configure. See *Holidays* (on page 53).	0 - 1000	1
Holiday Entries	Holiday entries that the customer can configure. See *Adding Holiday Entries* (on page 56).	0 - 10000	20
Geography Sets	Geography sets that the customer can configure. See *Geography Sets* (on page 44).	0 - 1000	1
Geography Entries	Geography entries that the customer can configure. See *Geography Sets and Entries* (on page 47).	0 - 20000	20

Set Number Allowed Columns

This table describes the function of each read-only display field to the right of the **Set Number Allowed** fields.

Column	Description
Available From Parent	Displays how many of each resource limit is available from the parent level. If the user is at the top level, this column will display two dots, meaning not applicable.
Directly Used	Displays how many of the allocated resources are being (directly) used by the customer.
Delegated	Displays how many have been delegated (as limits) to sub-customers - this will only have non-zero values for resellers and agents. These resources consume the customer's available count in the same way as direct usage.
Available To Customer	Displays how many of each resource limit is still available for the customer to either use or delegate.
Changes Pending	The numbers in the first four columns total that in the set number allowed field for that resource. As you change the number, the **Available to Customer** and **Changes Pending** fields for that resource will change to track the difference. After you save, this field will reset to blank.

Public Set Access

The groups of check boxes in the **Public Set Access** frame display all the public sets that are available to the customer. Select the check boxes to allocate the specific public sets that the customer will be allowed to access. Refer to:

- *Feature Sets* (on page 75)
- *Announcements* (on page 58)
- *Geography Sets* (on page 44)
- *Holiday Sets* (on page 53)

Tip: Only previously configured sets will appear in each list of sets.

Customer Contacts

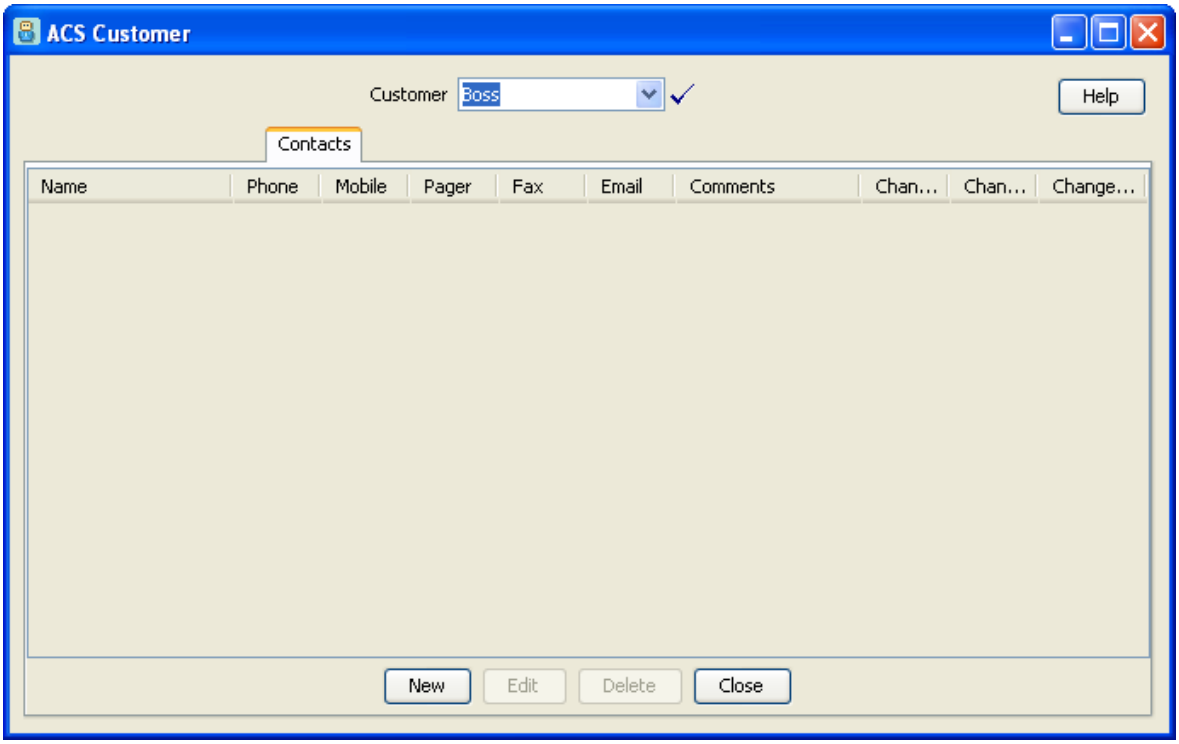
Introduction

The **Contacts** tab of the ACS Customer screen is used to manage and display the contact information for each customer.

The customer displayed in the **Customer** field is the customer for which the contacts are displayed and managed.

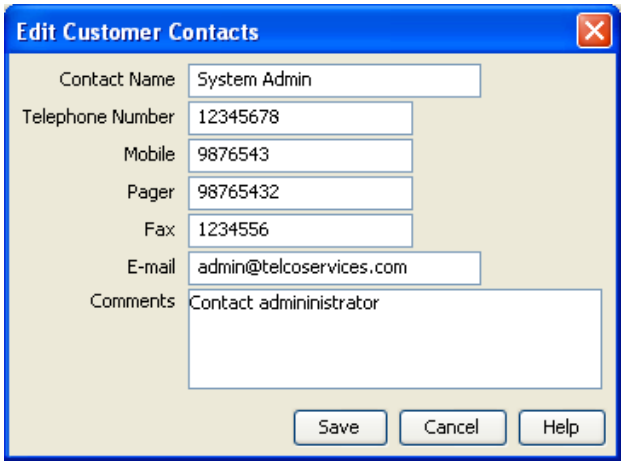
Contacts Tab

Here is an example **Contacts** tab.



Customer Contacts Screen

Here is an example Customer Contacts screen.



Customer Contacts Fields

This table describes the function of each field.

Field	Description
Contact Name	The name of this contact
Telephone Number	The main telephone number for this contact **Note:** You can only enter digits in the number fields.
Mobile	The mobile telephone number for this contact
Pager	The pager number for this contact
Fax	The fax number for this contact
E-mail	The email address for this contact
Comments	Any required comments about this contact

Adding Customer Contacts

Follow these steps to add new customer contacts for a customer.

Step	Action
1	On the **Contacts** tab, click **New**. **Result:** The New *Customer Contacts screen* (See example on page 124) is displayed.
2	Enter details for the contact, as described in *Customer Contacts Fields* (on page 124).
3	Click **Save**. The new customer contact's details are saved in the database.

Editing Customer Contacts

Follow these steps to edit customer contact information for the customer.

Step	Action
1	From the **Contacts** tab, select the customer contact to edit.

Step	Action
2	Click **Edit**. **Result:** The Edit *Customer Contacts screen* (See example on page 124) is displayed.
3	Change the contact details, as described in *Customer Contacts Fields* (on page 124).
4	Click **Save**. **Result:** The details are saved and the screen will return to the main window.

Deleting Customer Contacts

Follow these steps to delete a customer contact for a customer.

Step	Action
1	From the **Contacts** tab, select the customer contact to delete.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The customer contact record is removed from the database.

Users

Introduction

The **Users** tab of the ACS Customer screen is used to configure and display users for each customer.

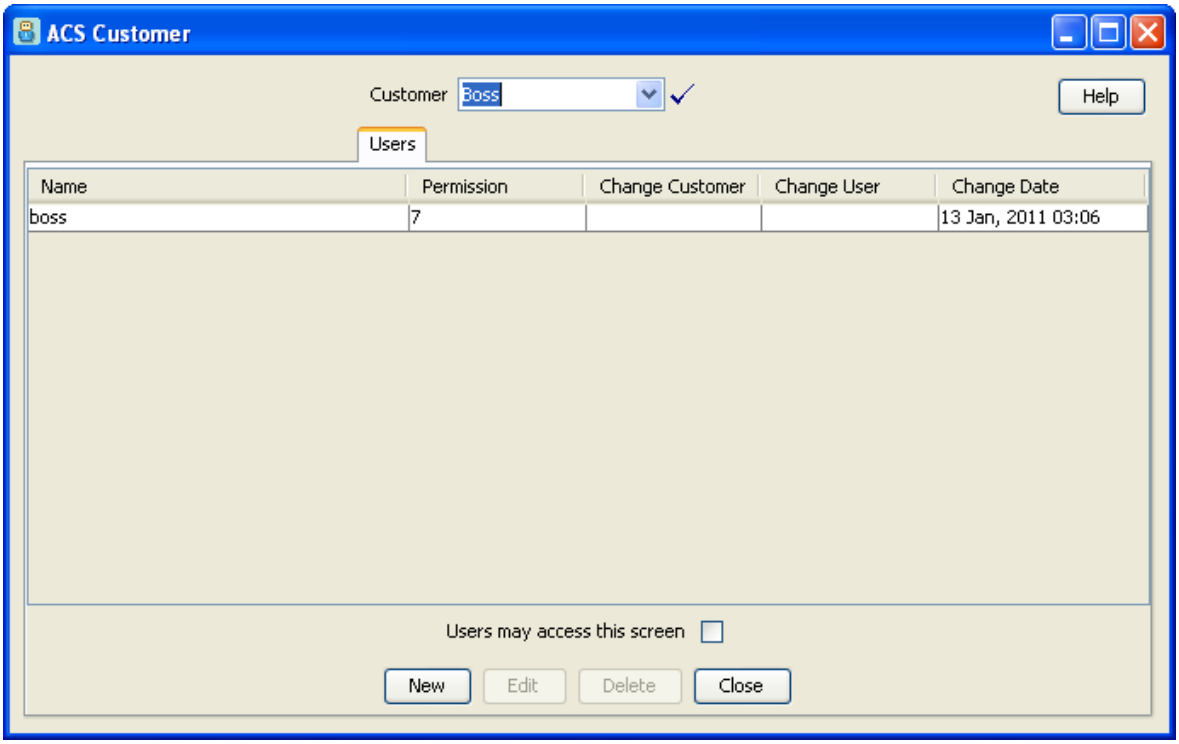
A user is an individual who can access ACS on behalf of the customer. A customer is the person or company who purchases their telecommunication services from the telco.

Only users of privilege level 5 and above may add, edit or delete other users. Users of below level 5 privilege may be prevented from seeing this tab by leaving the **Users may access this screen** check box clear.

Note: This tab can only be accessed by the *ACS system administrator* (on page 20).

Users Tab

Here is an example **Users** tab.



Supplied User

For customers who wish to access ACS themselves, users must be set up. For customers who are to be completely managed by the telecommunications provider, the **Managed Customer** check box should be selected for the customer on the Edit Customer screen; this will allow the telco to skip the following set up steps:

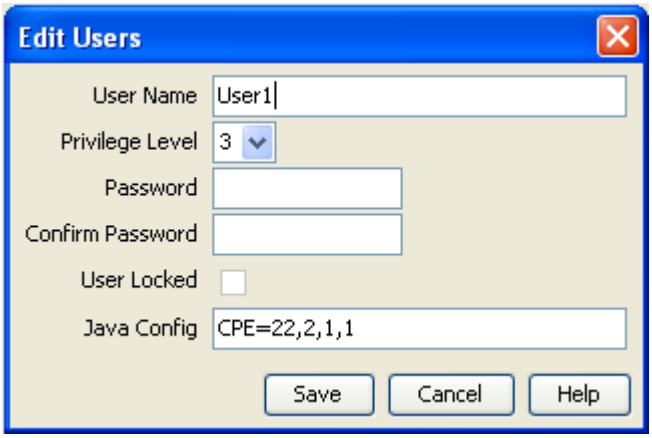
- Set up a privilege level 5 user in the **Users** tab
- Add termination ranges for the customer in the **Termination Ranges** tab on the ACS Resources screen
- Allocate the resources that the customer can use in the **Resource Limits** tab

Each customer must have at least one user of privilege level 5 to enable them to effectively use the ACS service themselves. When a new customer is added to ACS, the system assigns a level 5 user with a user name and password of `Administrator`. Using this user ID, the customer may set up other users of privilege level 5 or below as they wish. Additional users are set up on the **Users** tab of the Customer screen.

Important: For security reasons, the first time the customer uses ACS, they should change the username and password of the administrator user that the system provides for them. It is important to inform the customer of this.

Users Screen

Here is an example Users screen:



Users Fields

This table describes the function of each field in the ACS Users dialog.

Field	Description
User Name	The user name must be unique for the customer, although there may be several customers with a user “Mary Smith”, there may only be one user “Mary Smith” for each customer.
Privilege Level	Use the list to select the privilege level for the user. Privilege levels are described in *Defining the Security Levels* (on page 18). When creating new users, they may be assigned a privilege level. Level 5 and 6 users may create users of privilege levels 1-5.
Password	This field allows you to enter the user's password. For security reasons, this will not display the characters that are actually entered. The password will be displayed as a line of asterisks. Users are required to enter a password.
Confirm Password	This field allows you to enter the user's password for a second time, to confirm that the entry of the password is correct. If the entries in both the logon **Password** and the **Confirm Password** fields are not the same, then the user cannot be saved. For security reasons, the password will be displayed as a line of asterisks. The user may not be saved until a password has been entered and confirmed correctly.
User Locked	The check box indicates the lock status for the user. This check box has two functions: • It shows if the user is currently locked out of the system. A user may become locked out of the system if they have attempted to log on unsuccessfully three times. • It allows a user of privilege level 5 or above to manually unlock a user who has become locked out of the system if required; otherwise they will be automatically unlocked in 12 hours. A locked user may not log on, even with the correct password, until they are unlocked. This added security mechanism prevents unauthorized users from guessing at a password until they get it correct, thus gaining unauthorized

Field	Description
	access to the system. **Note:** You cannot manually lock a user. If necessary, to prevent a user from accessing the system, the system administrator should either delete the user or change their password. The **User Locked** check box is part of the ACS internal security mechanism. If ACS has been opened through the SMS, this functionality will not be available because the SMS security mechanism will be used instead.
Java Config	Allows you to set Java configuration parameters to customize the ACS User Interface (UI) for the user. For example, you can define initial settings for the Control Plan Editor (CPE) window by setting the CPE parameter. For more information, see the discussion on Configuring Control Plan Editor in *CPE User's Guide*.

Adding Users

Follow these steps to add a new user.

Step	Action
1	On the **Users** tab, click **New**. **Result:** The New *Users screen* (See example on page 127) is displayed.
2	Create the user details by filling in the fields, as described in *Users Fields* (on page 127).
3	Click **Save**. **Result:** The details are saved and you return to the **Users** tab.
4	If you wish users with privilege level 5 or less to have access this screen, select the **Users may access this screen** check box (in the main **Users** tab).

Editing Users

Follow these steps to edit an existing user.

Step	Action
1	On the **Users** tab, select the user to edit.
2	Click **Edit**. **Result:** The Edit *Users screen* (See example on page 127) is displayed.
3	Change the details, as described in *Users Fields* (on page 127), as required.
4	Click **Save**. **Result:** The details are saved and you return to the **Users** tab.

Deleting Users

Follow these steps to delete a user.

Step	Action
1	On the **Users** tab, select the user to delete.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The user is removed from the database.

Control Plan Change

Introduction

The **Control Plan Change** tab allows you:

- To replace the termination number in the termination node of a control plan
- For each service number on the ACS Numbers screen, to override the scheduled control plan, with the predefined alternative control plan

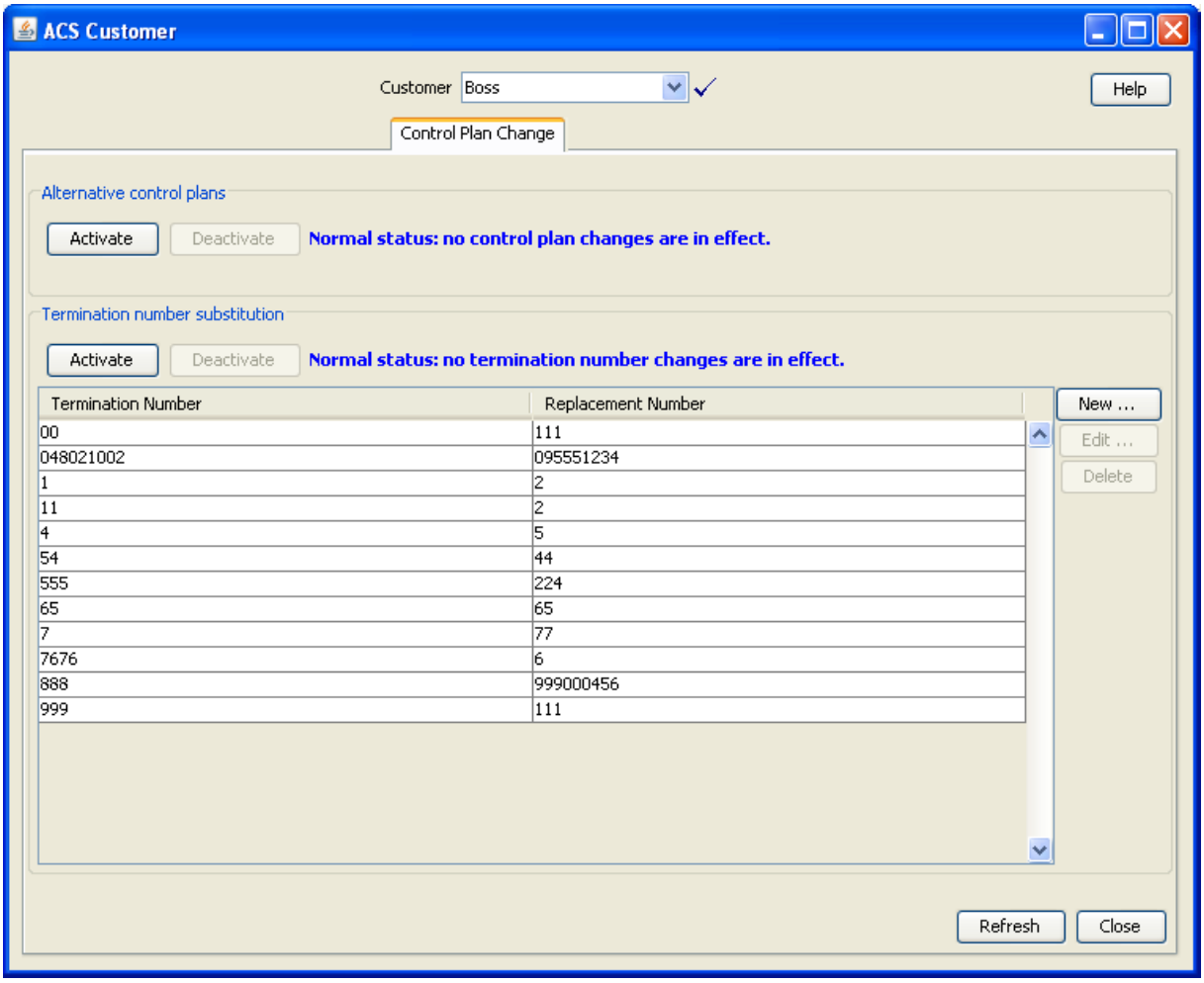
Note: To override a scheduled control plan, the alternative control plan name must follow this syntax: `<ServiceNumber><alternativeCallPlanNamePostfix>`

For example, if service number 0800123456 uses control plan "ABC", the alternative control plan for this service number must be named 0800123456_*alternativeCallPlanNamePostfix*.

Where *alternativeCallPlanNamePostfix* is the value specified in the `alternativeCallPlanNamePostfix` parameter of the **acs.conf** file. For more information, see *ACS Technical Guide*.

Control Plan Change Tab

Here is an example **Control Plan Change** tab.



Tab Areas

This table describes the function of each area of the tab.

Field	Description
Alternative control plans	Allows you to activate or deactivate the alternative control plans.
State	Text displays the current state of control plan activation: • "Normal status: no control plan changes in effect." • "Emergency control plans activated."
Termination number substitution	Allows you to activate or deactivate the termination number substitution. You can add, edit, and delete the termination number/replacement number pair.
State	Text displays the current state of number substitution: • "Normal status, no termination number changes in effect." • "Termination numbers substituted."

Activating Alternative Control Plan Changes

Follow these steps to activate the alternative control plan changes.

Step	Action
1	On the **Control Plan Change** tab, in the **Alternative control plans** area, if currently deactivated, you can click **Activate**. **Result:** The Activation Confirmation dialog appears.
2	Click **Activate**. **Result:** Activates the control plans. The text (see *Tab Areas* (on page 130)) at the top of the following tabs changes to display the new state of activation and substitution: • **Control Plan Change** tab • **Service Numbers** tab of the Numbers screen (if any are activated)

Deactivating Alternative Control Plan Changes

Follow these steps to deactivate the alternative control plan changes.

Step	Action
1	On the **Control Plan Change** tab, in the **Alternative control plans** area, if currently activated, you can click **Deactivate**. **Result:** The Deactivation Confirmation dialog appears.
2	Click **Deactivate**. **Result:** Deactivates the control plans. The text (see *Tab Areas* (on page 130)) at the top of the following tabs changes to display the new state of activation and substitution: • **Control Plan Change** tab • **Service Numbers** tab of the Numbers screen (if any are activated)

Activating Termination Number Substitution

Follow these steps to activate the termination number substitution.

Step	Action
1	On the **Control Plan Change** tab, in the termination number substitution area, if currently deactivated, you can click **Activate**. **Result:** The Activation Confirmation dialog appears.
2	Click **Activate**. **Result:** • The termination number substitution is activated • The text (see *Tab Areas* (on page 130)) changes to display the new state of activation and substitution at the top of the **Control Plan Change** tab and the **Service Numbers** tab of the Numbers screen (if any are activated)

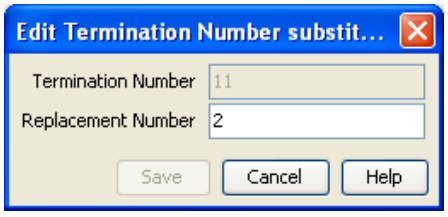
Deactivating Termination Number Substitution

Follow these steps to deactivate the termination number substitution.

Step	Action
1	On the **Control Plan Change** tab, in the **Termination number substitution** area, if currently activated, you can click **Deactivate**. **Result:** The Deactivation Confirmation dialog appears.
2	Click **Deactivate**. **Result:** The: • Termination number substitution is deactivated • The text (see *Tab Areas* (on page 130)) changes to display the new state of activation and substitution at the top of the: ▪ **Control Plan Change** tab ▪ **Service Numbers** tab of the Numbers screen (if any are activated)

Termination Number Substitution Screen

Here is an example Termination Number substitution screen.



Adding a Termination Number Substitution

Follow these steps to add a termination number substitution.

Step	Action
1	On the **Control Plan Change** tab, click **New...** **Result:** The New *Termination Number substitution screen* (See example on page 131) is displayed.

Step	Action
2	Enter the termination number and the replacement number.
3	Click **Save**.

Editing a Termination Number Substitution

Follow these steps to edit a termination number substitution.

Step	Action
1	On the **Control Plan Change** tab, select a termination number/replacement number pair from the table and click **Edit...** **Result:** The Edit *Termination Number substitution screen* (See example on page 131) is displayed.
2	Make changes to the termination number and the replacement number.
3	Click **Save**.

Deleting a Termination Number Substitution

Follow these steps to delete a termination number substitution.

Step	Action
1	On the **Control Plan Change** tab,select a termination number/replacement number from the table and click **Delete**. **Result:** The Deletion Confirmation dialog is displayed, with a confirmation of the termination and replacement number pair.
2	Click **Delete** to delete the substitution.

Chapter 8

ACS Numbers

Overview

Introduction

This chapter explains how to access the Numbers screens and provides step-by-step procedures detailing how to perform the functions available within the screens.

In this chapter

This chapter contains the following topics.

Accessing the Numbers Screen

To open this screen, click **Numbers** on the main ACS screen.

Numbers Screen

Introduction

The Numbers screen enables you to manage all aspects of a service number or CLI number and the control plans that are used by those service numbers and CLI numbers.

- **Service Number** is the number that is dialed by other parties when they contact the customer.
- **CLI Numbers** are used to identify the phone number that calls originate from.

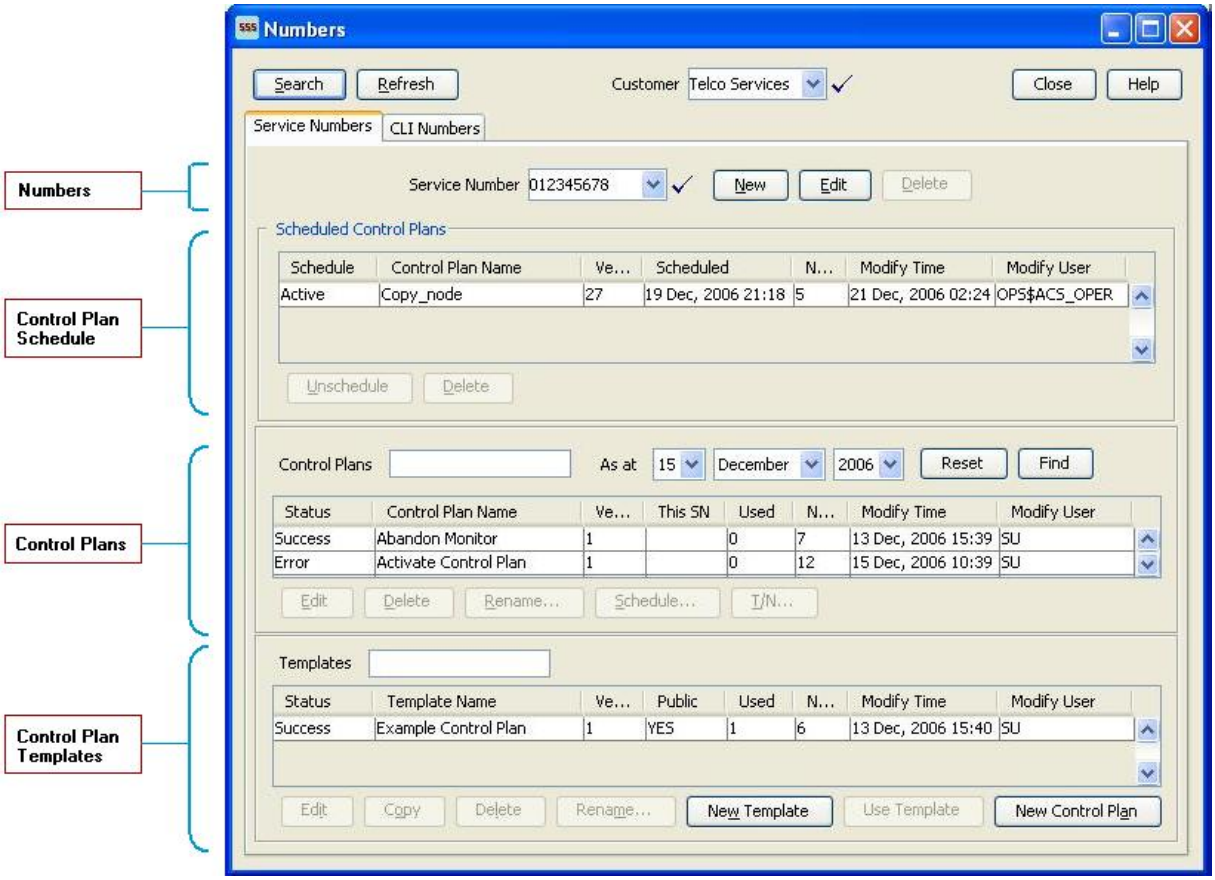
Note: In order for the functions on the **CLI Numbers** tab to work, a line based trigger must be defined and its respective service key developed, see *ACS Technical Guide* for further information.

The Numbers screen contains the following number type tabs:

- *Service Numbers* (on page 135)
- *CLI Numbers* (on page 140)

Numbers Screen Example

Here is an example of the Numbers screen, showing the different areas of the screen.



Screen areas

Both tabs on the Numbers screen allow the following functionality:

Numbers

- Create a new number
- Edit an existing number

Refer to *Service Numbers* (on page 135) and *CLI Numbers* (on page 140) for details.

Control Plan Schedule

- Schedule and un-schedule a control plan
- Delete historical control plan scheduling

Refer to *Control Plan Schedule* (on page 145) for description of how to use this area.

Control Plans

- Edit an existing control plan by launching the CPE
- Rename an existing control plan
- Edit termination numbers for a control plan that contains only one termination node
- Delete an existing control plan
- Schedule a control plan

Refer to *Control Plans* (on page 147) for a description of how to use this area.

Control Plan Templates

- Create a new control plan template by launching the CPE
- Edit an existing template by launching the CPE
- Rename an existing template within the Numbers screen
- Create a new control plan based on an existing template by launching the CPE
- Delete an existing and unattached (not used by a control plan) template
- Refer to *Templates* (on page 152) for a description of how to use this area.

Important: The Control Plan and Control Plan Template topics provide CPE overview information in direct relevance to the Numbers screen in ACS, and its functions, only. See *CPE User's Guide* for more information about the Control Plan Editor.

Screen Features

There are several features at the top of the Numbers screen.

Section	Description
Search	This button activates the Search for Numbers screen. This allows you to search the database to locate a specific customer, service number, CLI number or control plan. See *Search for Numbers* (on page 157) for details on how to use this feature.
Refresh	This button refreshes all the data on screen from the database.
Customer	This field is a searchable combo allowing you to search for a specific customer. Once a customer is selected, the screen will show only data that is owned by the selected customer.

Alt Key Navigation

This screen has **Alt** key navigation capability. Press the **Alt** key and the underlined character to activate the button, for example, pressing **Alt+N** invokes the **New** button (New Number screen appears).

Tip: There are several buttons that have the same underlined character, for example, **Search** and **Schedule** buttons. When both buttons are available (not grayed out), pressing **Alt+S** will activate the first occurrence (**Search** button), pressing **Alt+SS** activates the nearest item on the Search panel matching **S**. You will not be able to activate a second button having the same underscore.

Service Numbers

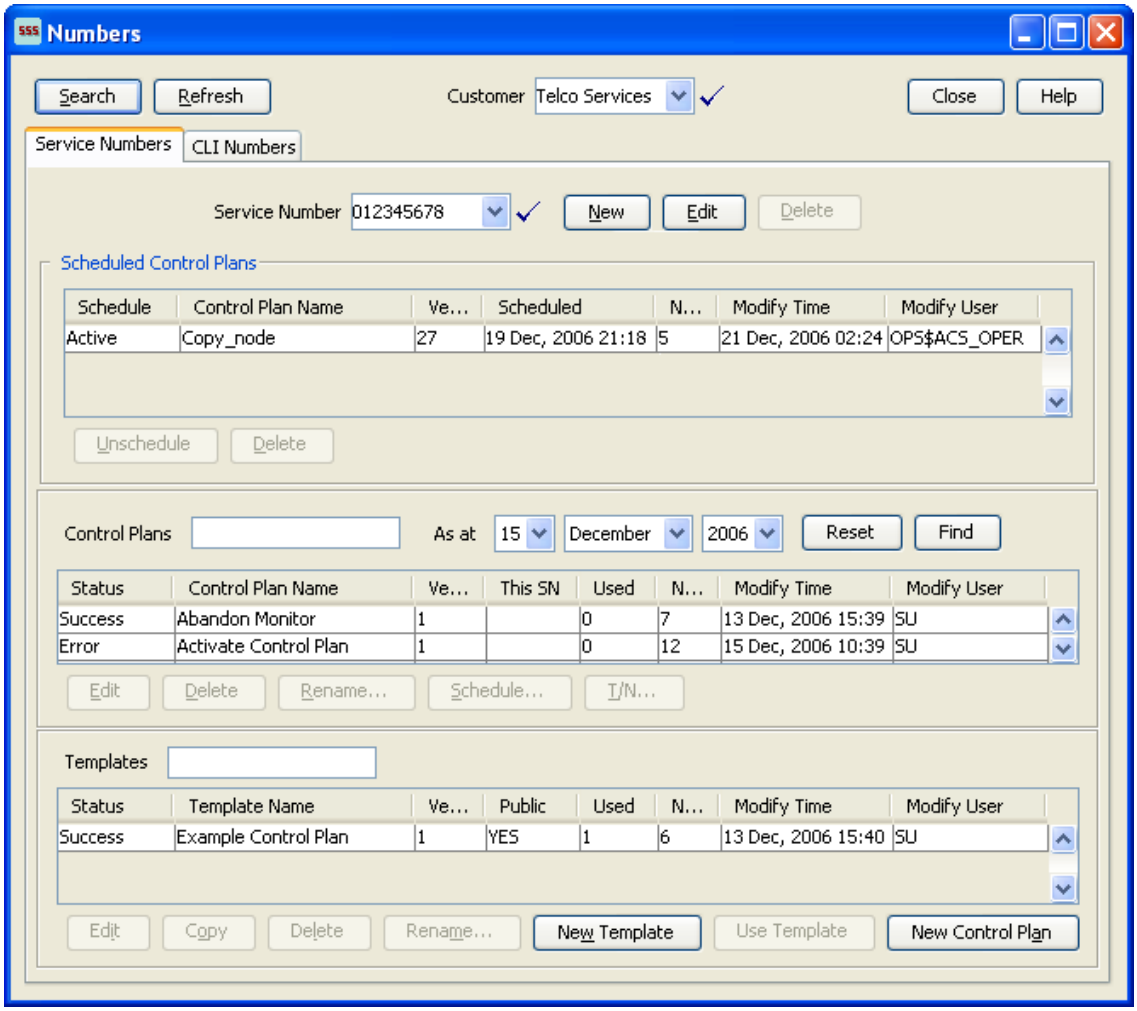
Introduction

A service number is the number that is dialed by other parties when they contact the customer.

Note: Service numbers can only be deleted by an ACS system administrator.

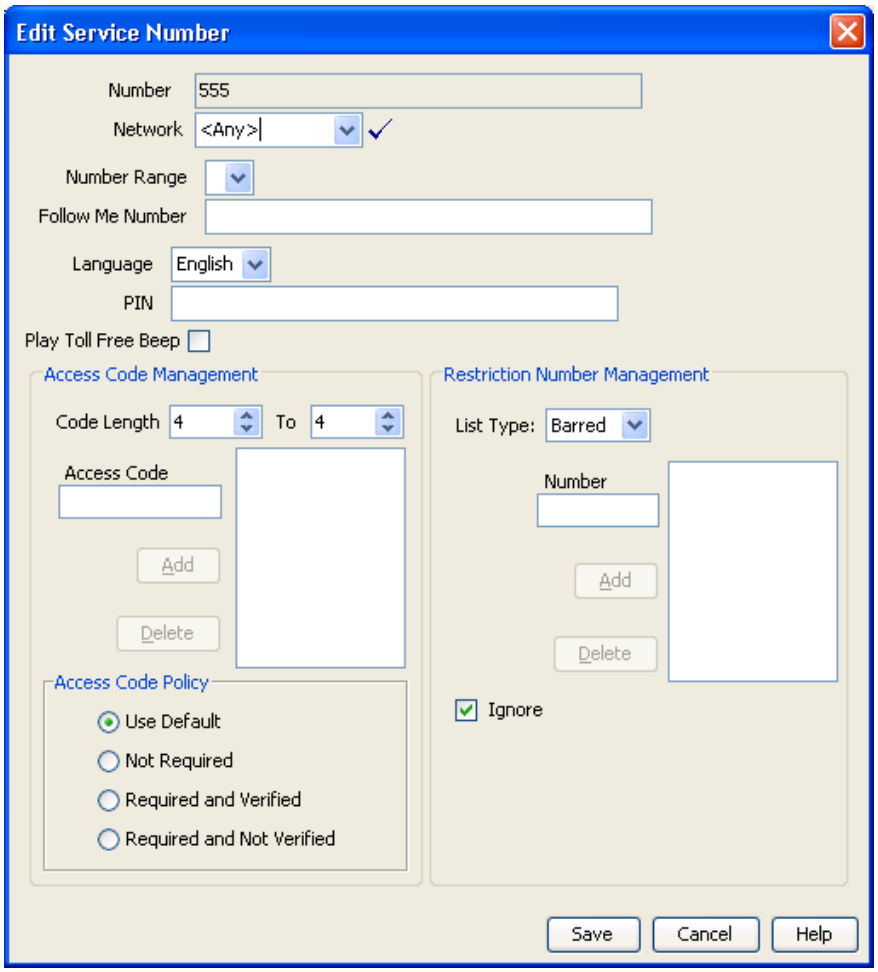
Service Numbers Tab

Here is an example **Service Numbers** tab.



Service Number Screen

Here is an example Service Number screen.



Service Number Fields

This table describes the function of each field when adding and editing a service number.

Field	Description
Number	Use to specify the number that will be dialed by a caller, (for example: 0800747733). The number may be up to 32 numeric characters in length (dependant on your network configuration) but may not be left blank. **Warning:** Each individual service number must be unique. New service numbers can only be added by the ACS administrator.
Allocated To	The name of the reseller or agent this number is allocated to. **Note:** This field is only visible if you are a reseller, or agent, (See *Tiered Customer Structure* (on page 114)) and you have logged into ACS as a standalone application (See *Accessing ACS as a Standalone Application* (on page 12)).
Network	Select the network or accept the 'Any' network default.

Field	Description
	Control plans are selected based on a service number and network pair. This allows users of the same service numbers on different networks to be routed to different call plans, if required. Any number of network keys may be configured as identifiers for each network. Networks are set up on the *Networks* (on page 33) of the ACS Tools screen. The system matches the set keys with the information contained in an incoming call to identify the originating network and route the call accordingly.
Number Range	Select an existing number range for the customer if required. This is dependant on what termination range policy is set at the customer level. This number range is used by the follow me number (described below).
Follow Me Number	Used to put the follow me number into the service number profile, which is used by the Set Pending TN From Profile node. See *CPE User's Guide* for more information about follow me numbers. **Note:** This must be within the selected number range (described above) or if no number range selected, may be left blank.
Language	The default language for interactions (announcements and notifications) with this number.
PIN	Use to specify the PIN that will be put into the service number profile, which is used by PIN Authorisation node.
Play Toll Free Beep	Select to play the toll free beep. The toll free beep announcement set and entries are set up on the **Global Configuration** tab of the *ACS Tools* (on page 27) screen.
Access Code Management:	
Code Length	Select the minimum and maximum number of digits for the access codes for the customer.
Access Code	Enter the access code and then click **Add** to send it to the list.
Access Code Policy:	
Use Default	Use the default access code policy that is set up on the **Global Configuration** tab of the *ACS Tools* (on page 27) screen.
Not Required	The user is not required to enter an access code.
Required and Verified	The user is required to enter an access code and the code will be verified against the above access code list.
Required and Not Verified	The user is required to enter an access code but the code will not be verified against the above access code list.
Restriction Number Management:	
List Type	The service number has an incoming restriction list. The list must be classed as either "Allowed" or "Barred" but cannot be both. If list type is: • **Allowed:** populate this list with numbers/prefixes that are to be allowed for use. All numbers/prefixes outside of this list will not be allowed. For example, from a prefix list of 09, 07, 04 and 03, if you enter 07 into the allowed list then all other prefixes will not be allowed - except 07. • **Barred:** Set the number to bar at an individual service number level.

Field	Description
	Tip: The actual filtering is implemented using the Prefix Tree Branching feature node in a control plan.
Number	Use this field to add a new number to the barred/allowed numbers list. Enter the new number then click **Add** to send it to the list. **Tip:** You can enter the full number, a partial number or a prefix in this field.
Ignore	Select this check box if you want to ignore the barred/allowed numbers list displayed.

Adding Service Numbers

Follow these steps to create a new service number.

Step	Action
1	On the **Service Numbers** tab, click **New** to the right of the **Service Number** field. **Result:** The New *Service Number screen* (See example on page 137) is displayed.
2	Populate the appropriate fields with the required data, referring to *Service Number Fields* (on page 137) for detailed input descriptions.
3	Click **Save**. **Result:** The new service number is created and you are returned to the **Service Numbers** tab.

Editing a Service Number

Follow these steps to edit an existing service number.

Step	Action
1	From the **Service Numbers** tab, select the number to edit from the **Service Number** field.
2	Click **Edit**. **Result:** The Edit *Service Number screen* (See example on page 137) is displayed.
3	Populate the appropriate fields with the required data, referring to *Service Number Fields* (on page 137) for detailed input descriptions.
4	Click **Save**. **Result:** The edited service number is saved and you are returned to the **Service Numbers** tab.

Deleting a Service Number

Follow these steps to delete an existing service number.

Step	Action
1	From the **Service Numbers** tab, select the number to delete from the drop down list.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK** to confirm the deletion of the number. **Result:** The service number is deleted and you are returned to the **Service Numbers** tab.

Associating FCI Data with a Service Number

Follow these steps to specify the FCI data that you want to associate with a service number.

Note: The FCI data is stored in the FCI profile fields in the service number profile block.

Step	Action
1	In the ACS UI, open the Numbers window and select the ACS customer from the **Customer** list.
2	On the **Service Numbers** tab, select the service number you want from the **Service Number** list.
3	Click **Edit**. The Edit Service Number window opens.
4	In the **FCI Data Management** area, enable or disable FCI inap interaction by selecting or deselecting **FCI On**.
5	Specify the FCI service code in the **FCI Service Code** field. Enter an integer in the range 0 (zero) to 65535.
6	Specify the FCI country code in the **FCI Country Code** field. Enter a string of up to three hexadecimal digits.
7	Click **Save**. The FCI data for the selected service number is saved to the FCI profile tags in the service numbers profile block.

CLI Numbers

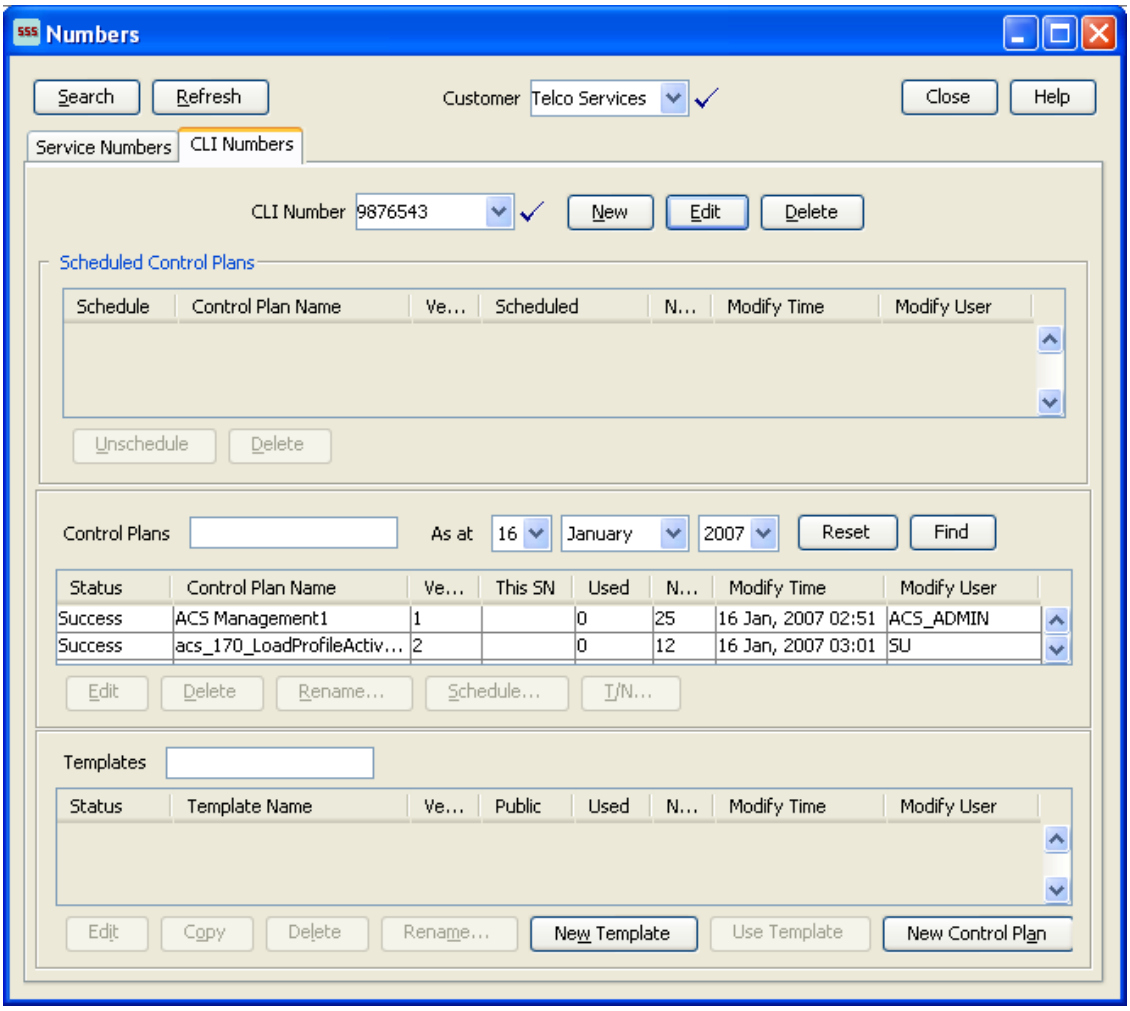
Introduction

A calling line identifier (CLI) number is used to identify the phone number that call originates from.

Note: CLI numbers can only be deleted by an ACS system administrator.

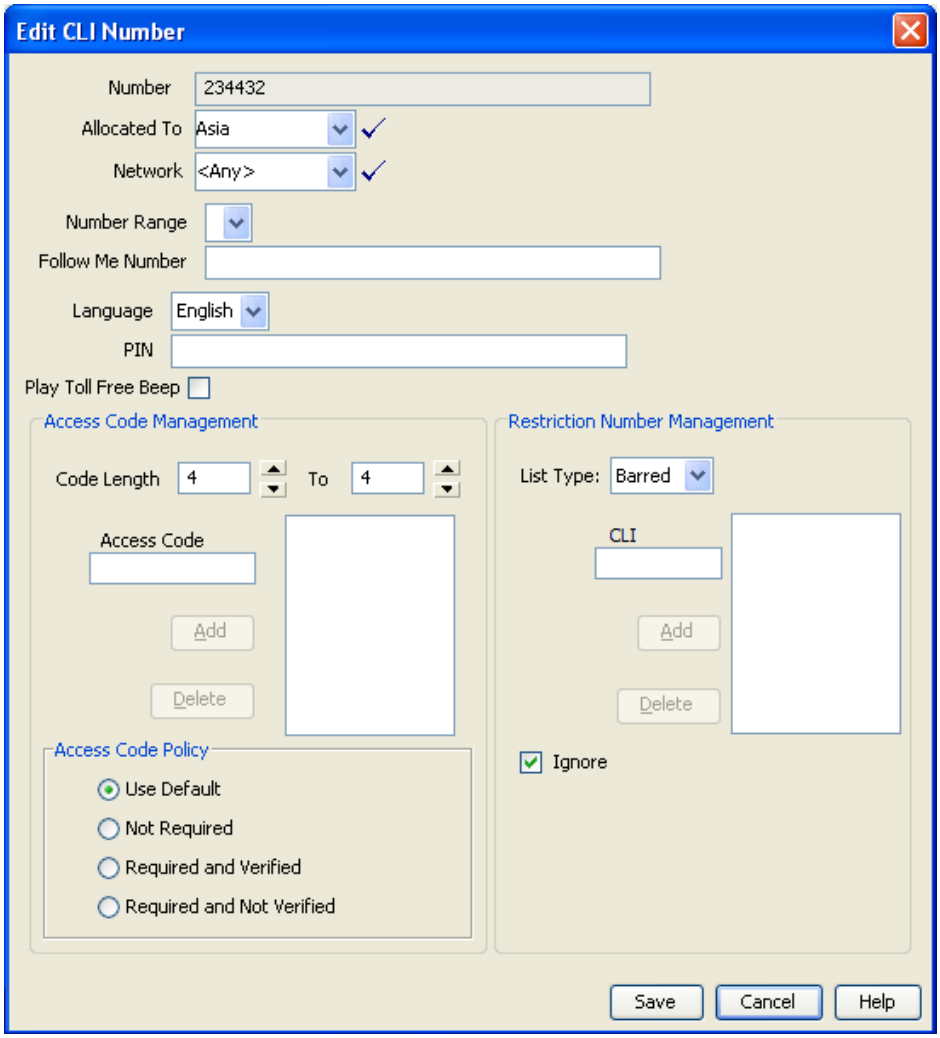
CLI Numbers Tab

Here is an example **CLI Numbers** tab.



CLI Number Screen

Here is an example CLI Number screen.



CLI Number Fields

This table describes the function of each field when adding and editing a CLI number.

Field	Description
Number	Caller line identification (CLI). This is the telephone number of the calling party.
Allocated To	The name of the reseller or agent this number is allocated to. **Note:** This field is only visible if you are a reseller or agent (See *Tiered Customer Structure* (on page 114)) and you have logged into ACS as a standalone application (See *Accessing ACS as a Standalone Application* (on page 12)).
Network	Select the network or accept the 'Any' network default. Control plans are selected based on a service number and network pair. This allows users of the same service numbers on different networks to be routed to different call plans, if required. Any number of network keys may

Field	Description
	be configured as identifiers for each network. Networks are set up on the **Networks** (on page 33) tab of the ACS Tools screen. The system matches the set keys with the information contained in an incoming call to identify the originating network and route the call accordingly.
Number Range	Select an existing number range for the customer if required. This is dependant on what termination range policy is set at the customer level. This number range is used by the follow me number (described below).
Follow Me Number	Used to put the follow me number into the CLI profile, which is used by the Set Pending TN From Profile node. See *CPE User's Guide* for more information about follow me numbers. **Note:** This must be within the selected number range (described above) or if no number range selected, may be left blank.
Language	The default language for interactions (announcements and notifications) with this number.
PIN	Use to specify the PIN that will be put into the CLI number profile, which is used by PIN Authorisation node.
Play Toll Free Beep	Select to play the toll free beep. The toll free beep announcement set and entries are set up on the **Global Configuration** (on page 40) tab of the ACS Tools screen.
Access Code Management:	
Code Length	Select the minimum and maximum number of digits for the access codes for the customer.
Access Code	Enter the access code and then click **Add** to send it to the list.
Access Code Policy:	
Use Default	Use the default access code policy that is set up on the **Global Configuration** (on page 40) tab of the ACS Tools screen.
Not Required	The user is not required to enter an access code.
Required and Verified	The user is required to enter an access code and the code will be verified against the above access code list.
Required and Not Verified	The user is required to enter an access code but the code will not be verified against the above access code list.
Restriction Number Management:	
List Type	The CLI number has an outgoing restriction list. The list must be classed as either "Allowed" or "Barred" but cannot be both. If list type is: • **Allowed:** Populate this list with numbers/prefixes that are to be allowed for use. All numbers/prefixes outside of this list will not be allowed. For example, from a prefix list of 09, 07, 04 and 03, if you enter 07 into the allowed list then all other prefixes will not be allowed - except 07. • **Barred:** Set the number to bar at an individual service number level. **Tip:** The actual filtering is implemented using the Prefix Tree Branching feature node in a control plan.

Field	Description
CLI	Use this field to add a new number to the barred/allowed numbers list. Enter the new number then click **Add** to send it to the list. **Tip:** You can enter the full number, a partial number or a prefix in this field.
Ignore	Select this check box if you want to ignore the barred/allowed numbers list displayed.

Adding CLI Numbers

Follow these steps to create a new CLI number.

Step	Action
1	On the **CLI Numbers** tab, click **New** to the right of the **CLI Number** field. **Result:** The New *CLI Number Screen* (on page 142) is displayed.
2	Populate the appropriate fields with the required data, referring to *CLI Number Fields* (on page 142) for detailed input descriptions.
3	Click **Save**. **Result:** The new CLI number is created and you are returned to the **CLI Numbers** tab.

Editing a CLI Number

Follow these steps to edit an existing CLI number.

Step	Action
1	From the **CLI Numbers** tab, select the number that to edit from the **CLI Number** field.
2	Click **Edit**. **Result:** The Edit *CLI Number Screen* (on page 142) is displayed.
3	Populate the appropriate fields with the required data, referring to *CLI Number Fields* (on page 142) for detailed input descriptions.
4	Click **Save**. **Result:** The edited CLI number is saved and you are returned to the **CLI Numbers** tab.

Deleting a CLI Number

Follow these steps to delete an existing CLI number.

Step	Action
1	From the **CLI Numbers** tab, select the number to delete from the drop down list.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK** to confirm the deletion of the number. **Result:** The CLI number is deleted and you are returned to the **CLI Numbers** tab.

Control Plan Schedule

Introduction

The ACS Numbers screen enables you to perform the following control plan scheduling tasks for a service number or CLI number.

Call Schedule

- Schedule or un-schedule a control plan
- Delete historical control plan schedules

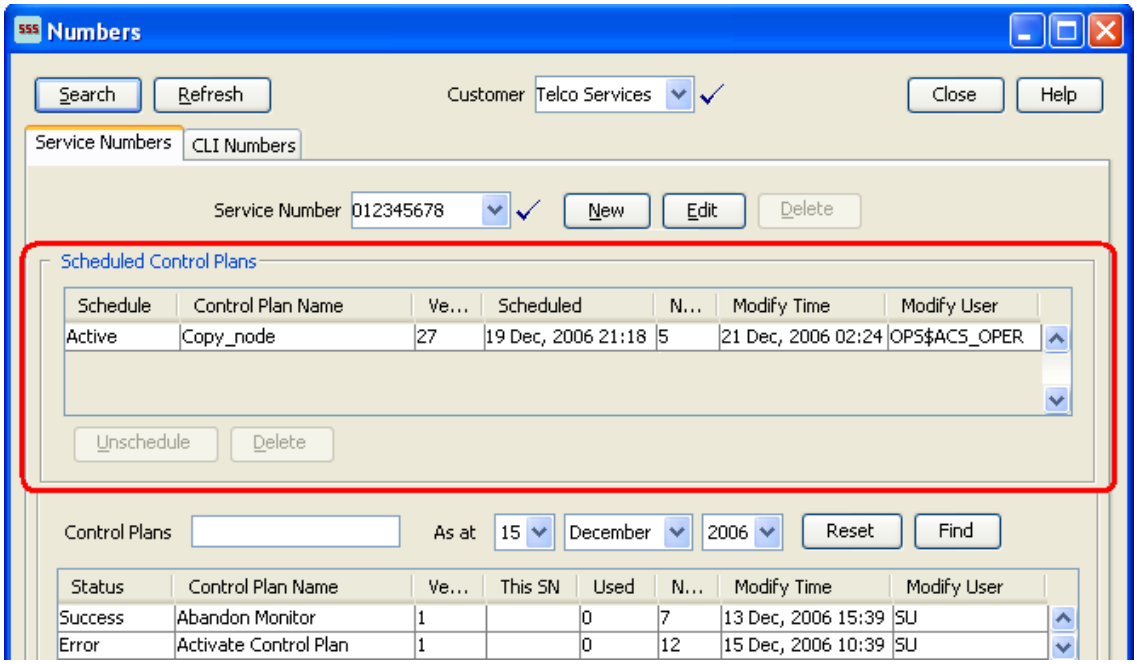
What is a Control Plan?

A control plan is similar to a flow chart. Control plans essentially define the decisions and actions that are made when a call is routed from source to destination. A control plan may consist of multiple unique decision points or actions called feature nodes. Control plans are constructed in ACS using the ACS Control Plan Editor (CPE).

Important: This topic provides CPE overview information in direct relevance to the Numbers screen in ACS and its functions only. Refer to *CPE User's Guide* for further information.

Control Plan Schedule

Here is an example of the **Scheduled Control Plans** frame of the Numbers screen.



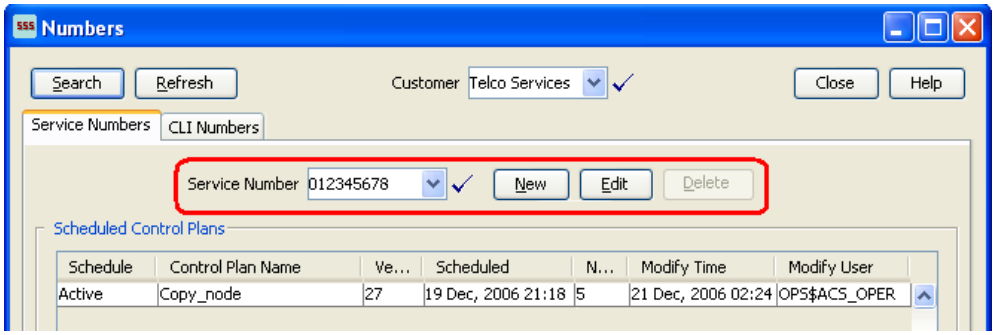
Using Control Plan Schedules

Follow these steps to unschedule control plans for service numbers or CLI numbers from the ACS Numbers screen and to delete historical schedule entries.

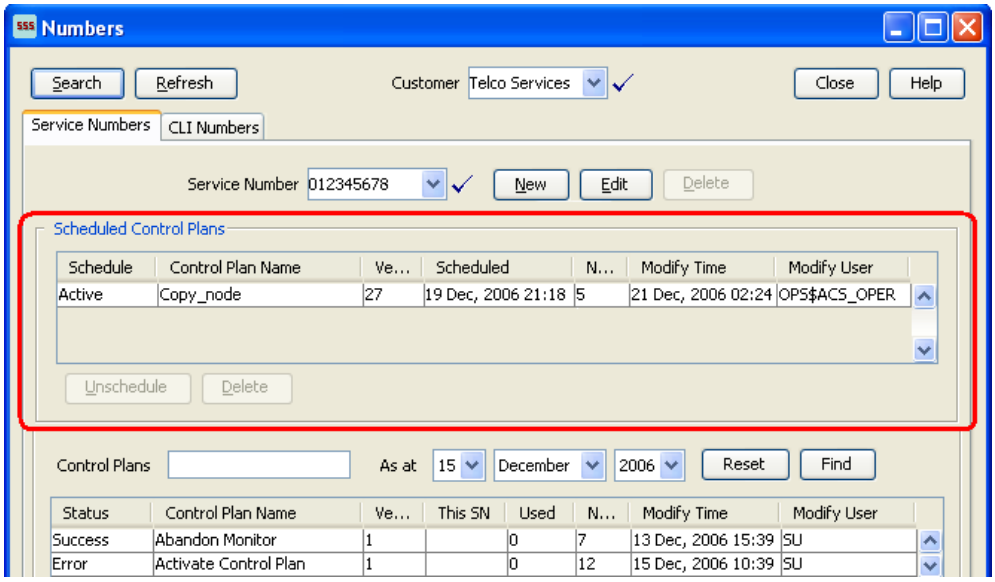
The table allows many scheduling entries to be entered for the selected number, but each instance must have a different effective date. This allows a customer to schedule changes to the control plans a service number or CLI number uses.

Tip: This topic provides CPE overview information in direct relevance to the Numbers screen in ACS, and its functions, only. You must see *CPE User's Guide* for further information.

Step	Action
1	On the relevant tab of the Numbers screen, select the number that scheduling changes are required for, in the Numbers area of the screen.



2	Select an existing scheduled control plan from the **Scheduled Control Plans** table.



Tip: When you select a scheduled control plan, the control plan is highlighted in the **Control Plans** table, and the template is highlighted in the **Templates** table.

3	The following functions are now available to you on the **Scheduled Control Plans** frame of the screen, as shown on the example screen above: • **Unschedule** – Go to step 4 to detach a control plan from the current service. • **Delete** – Go to Step 5 to remove the selected control plan from the system.
4	Click **Unschedule** to detach this control plan from the current service. **Result:** The control plan now displays as historical and is therefore no longer scheduled for activity within the current service.
5	With the control plan selected on the **Scheduled Control Plans** table, click **Delete**. **Tip:** Only historical control plans are able to be deleted from this table as they are no longer scheduled for activity within the current service. **Warning:** Unscheduling all control plans for a service number or CLI number will discontinue processing of calls for that number. Click **Delete** to confirm.

Step	Action
6	See Using Templates on the Numbers Screen for more Numbers screen information.

Control Plans

Introduction

The **Control Plans** frame of the ACS Numbers screen enables you to perform the following control plan functions for a service number or CLI number.

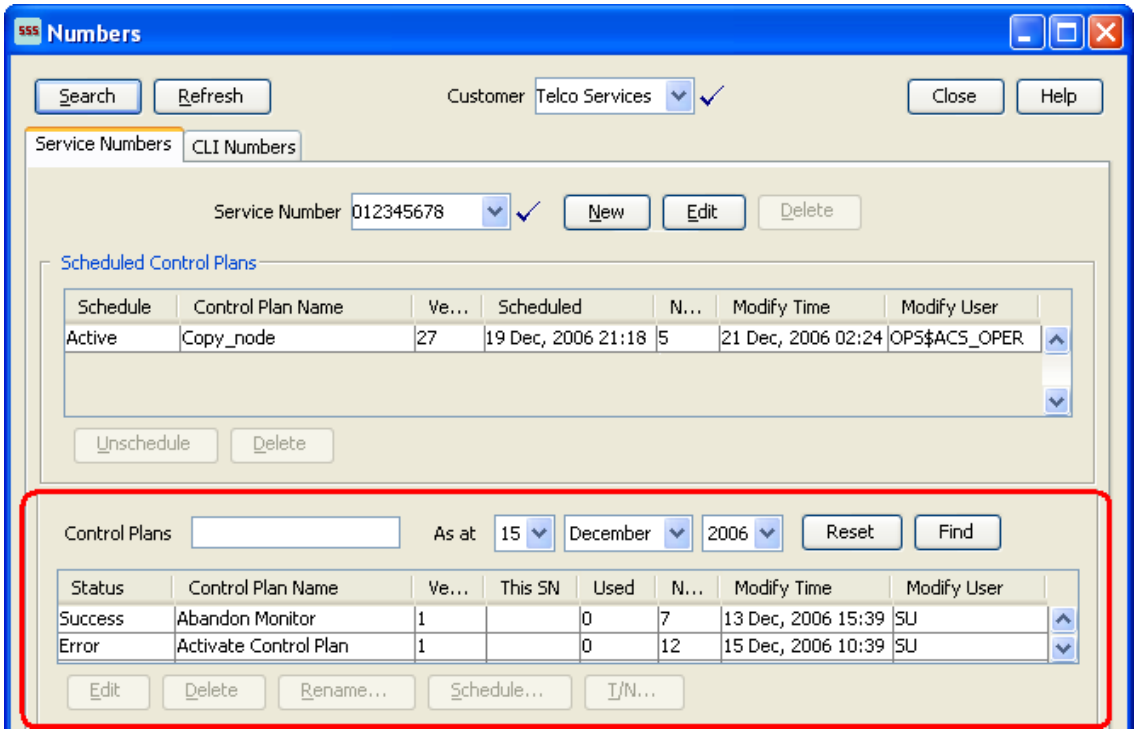
Control Plans

- Edit an existing control plan by launching the CPE
- Rename an existing control plan
- Schedule a control plan
- Edit termination numbers for a control plan that contains only one termination node
- Delete an existing control plan

Important: This topic provides ACS Control Plan Editor overview information in direct relevance to the Numbers screen in ACS and its functions only. Refer to *CPE User's Guide* for further information.

Control Plans on Numbers Screen Example

Here is an example of the Numbers screen showing control plans and control plan functionality.

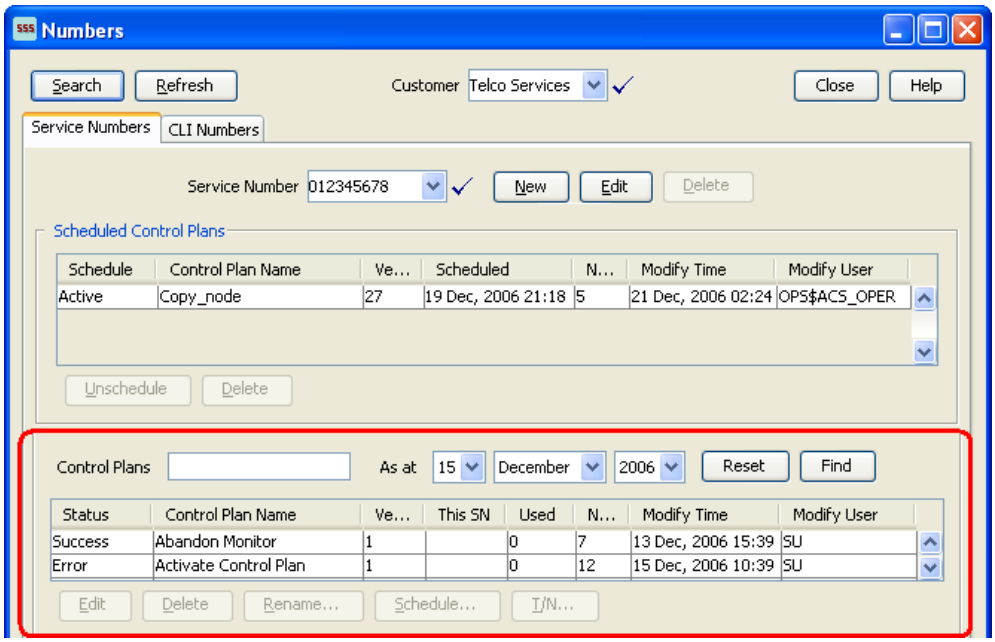


Using Control Plans on the Numbers screen

Follow these steps to manage control plans for service numbers or CLI numbers from the ACS Numbers screen.

Important: This topic provides CPE overview information in direct relevance to the Numbers screen in ACS, and its functions, only. Refer to *CPE User's Guide* for further information.

Step	Action
1	In the **Control Plans** frame on the Numbers screen perform one of the following actions: • Select an existing control plan from the table • Enter the control plan name in the **Control Plans** field and click **Find** **Notes:** • The **As at** date fields are available to aid you in your search for the 'most recent' version(s) of a control plan. • Click **Reset** to restore the date default and clear your search results from the **Control Plans** field. • Press **Enter** to restore the full control plan list in the table, after performing a search which displays only a selection of control plans.



Tip: When you select a control plan, the control plan's template is also highlighted in the **Templates** table below.

2 The following functions are now available to you on the **Control Plans** frame of the screen, as shown on the example screen above:

- **Edit** – See Editing a Control Plan.
- **Delete** – See *Deleting a Control Plan* (on page 149).
- **Rename** – See *Renaming a Control Plan* (on page 150).
- **Schedule** – See *Scheduling a Control Plan* (on page 150).
- **T/N** – See *Editing Termination Numbers* (on page 151).

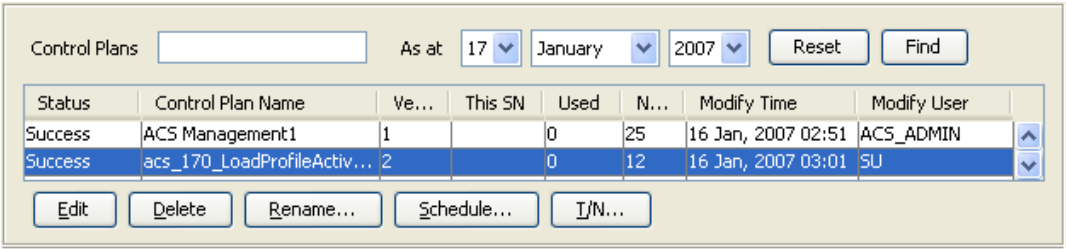
Tip: See Using Templates on the Numbers Screen for more ACS Numbers screen information.

To create a new control plan from this screen, you click **New Control Plan** in the **Templates** frame. See *Creating a Control Plan* (on page 156).

Editing a Control Plan

Follow these steps to edit a control plan, using the **Numbers** screen.

Step	Action
1	Highlight the control plan to edit in the table in the control plans area of the **Numbers** screen, and click **Edit**.



Result: The Edit Control Plan prompt appears.

2 Make your selection:

- Click **Read Only** to open the template (on which the control plan was created) as read only. This means that the structure cannot be changed; no nodes can be added or deleted.
- Click **Writable** to open the template (on which the control plan was created) in edit mode. This means that you are able to change the structure; nodes can be added and deleted.

Result: The control plan is opened in the ACS Control Plan Editor window.

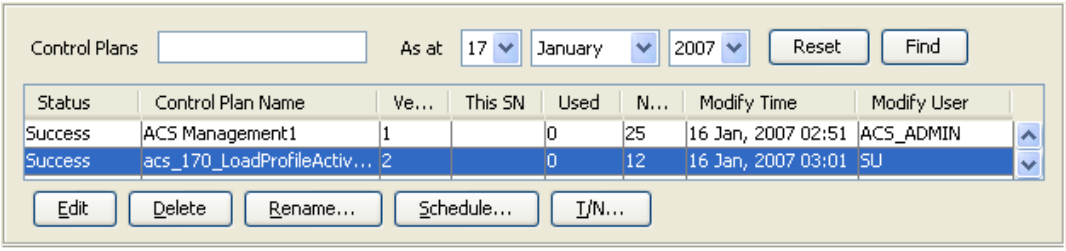
3 Make your edits and **Save** as per the standard CPE procedure.

Result: You are returned to the ACS Numbers screen, with the updated control plan displayed in the control plan table.

Deleting a Control Plan

Follow these steps to delete a control plan, using the Numbers screen.

Step	Action
1	With the control plan selected in the table in the **Control Plans** frame of the Numbers screen, click **Delete**.



Notes:

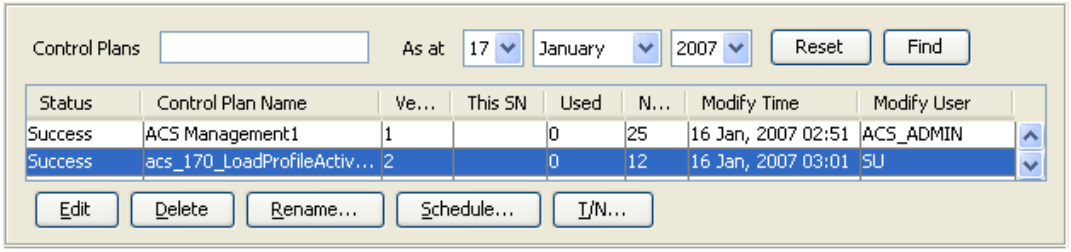
- The delete button is not enabled if a control plan is displayed on the **Scheduled Control Plans** table, irrespective of schedule status (Scheduled, Active or Historical).
- This action completely removes the control plan from the system, it will not be able to be reinstated. The **Delete** button in the **Scheduled Control Plans** frame above simply removes the scheduling of the control plan for use within the system at the scheduled time, and leaves the control plan within the system for future use if required.

Step	Action
	Result: You see a delete confirmation prompt.
2	Click **Delete** to confirm. **Result:** The control plan is deleted from the system.

Renaming a Control Plan

Follow these steps to rename a control plan, using the Numbers screen.

Step	Action
1	With the control plan selected in the table in the **Control Plans** frame of the Numbers screen, click **Rename**.



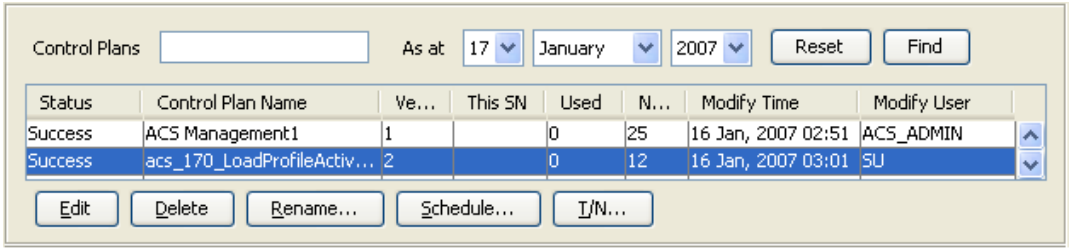
Result: The Rename Control Plan screen is displayed.

2	In the **New name** field, enter the new control plan name and click **Save**. **Result:** You are returned to the Numbers screen, with the updated control plan displayed in the **Control Plans** table.

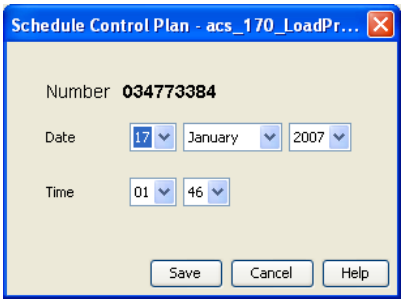
Scheduling a Control Plan

Follow these steps to schedule a control plan, using the Numbers screen.

Step	Action
1	With the control plan selected in the table in the **Control Plans** frame of the Numbers screen, click **Schedule**.



Result: The Schedule Control Plan screen is displayed.

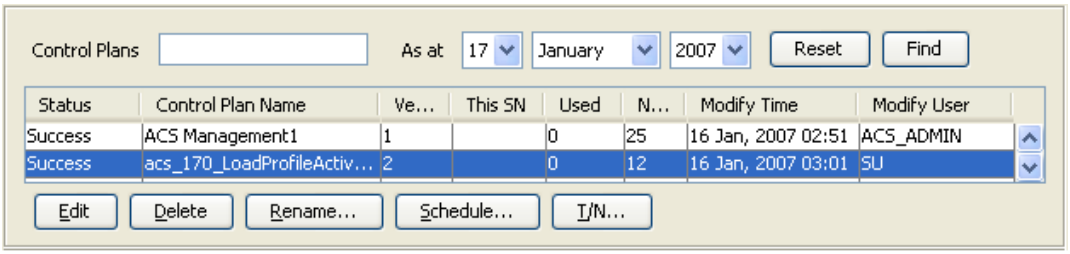
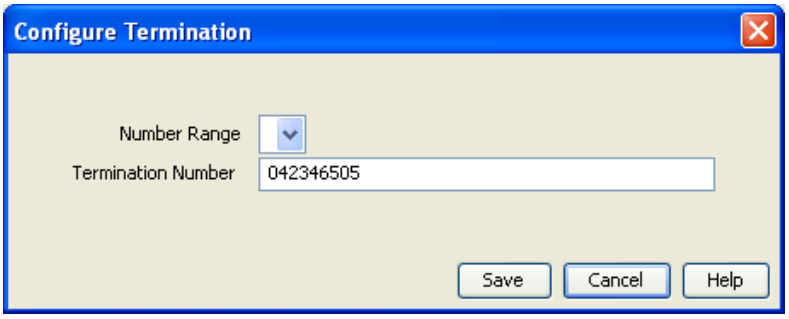


2	From the **Date** and **Time** drop down boxes, select the date and time required and click

Step	Action
	Save. **Result:** You are returned to the Numbers screen, with the control plan now displaying in the **Scheduled Control Plans** table. **Notes:** • Each control plan scheduled must have a unique date and time pair so that the system can determine which control plan to use at any given time. • The date and time entered in this screen determine when the system is to begin using this control plan for calls made to the service number or CLI number. This scheduling entry will be used until the next scheduling entry (in time order) becomes active; the system date is 'equal to' or 'after' the date/time pair set for this schedule entry.

Editing Termination Numbers

If a control plan contains only one termination node, follow these steps to edit the termination number, using the Numbers screen.

Step	Action
1	With the control plan selected in the table in the **Control Plans** frame of the Numbers screen, click **T/N**.  **Result:** If the control plan: • Contains a termination node, the Configure Termination screen appears. Go to Step 2.  • Has no termination nodes, you see an error.
2	From the **Number Range** drop down box, select the number range. In the **Termination Number** field, enter or edit the termination number for the control plan. Click **Save**. **Result:** You are returned to the Numbers screen and a new instance of the control plan appears in the **Control Plan** table. **Note:** You are now able to schedule this control plan as required.

Templates

Introduction

The **Templates** frame of the ACS Numbers screen enables you to perform the following control plan template functions for a service number or CLI number.

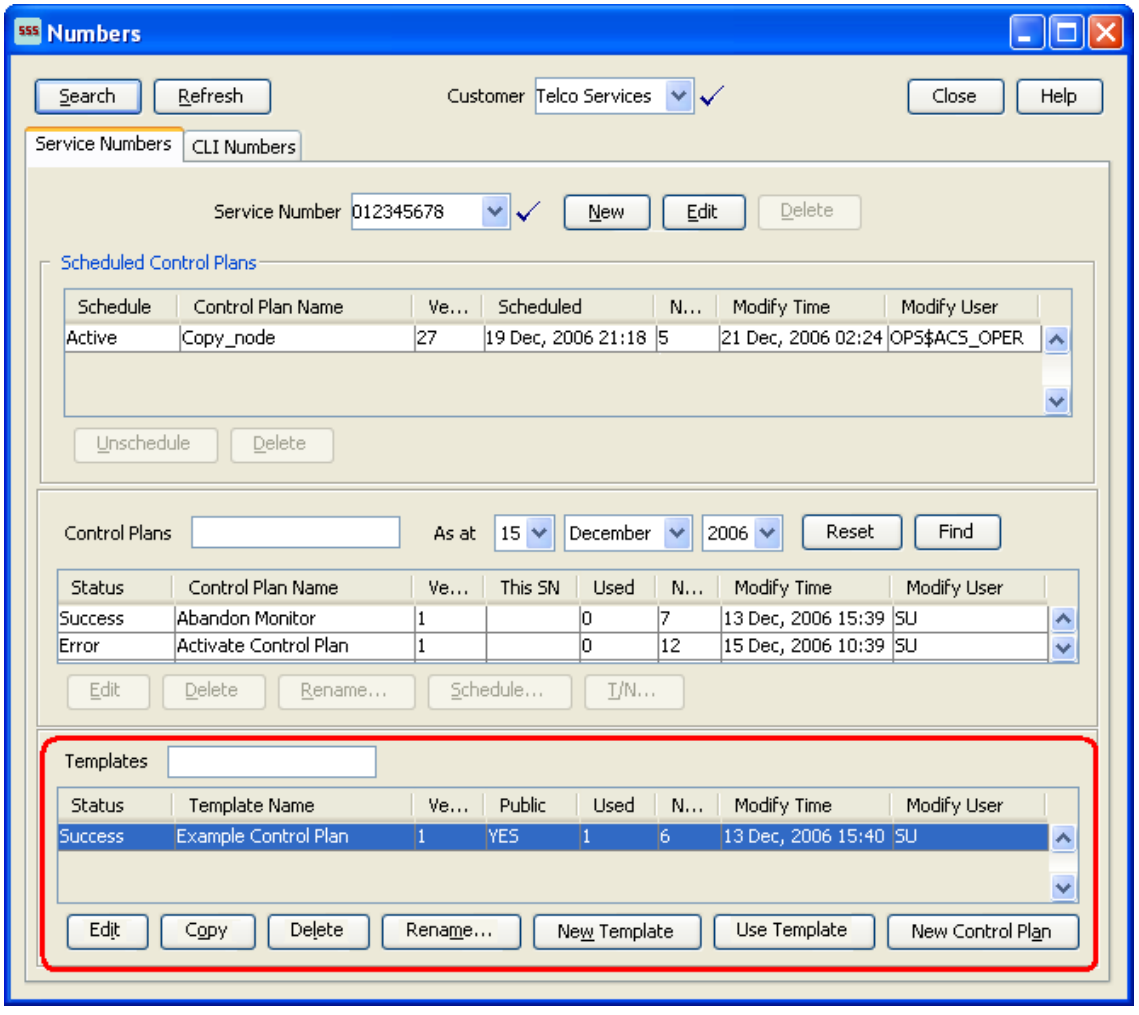
Control plan templates:

- Create a new control plan template by launching the CPE
- Edit an existing template by launching the CPE
- Rename an existing template within the Numbers screen
- Create a new control plan based on an existing template by launching the CPE
- Delete an existing and unattached (not used by a control plan) template

Important: This topic provides ACS Control Plan Editor overview information in direct relevance to the Numbers screen in ACS and its functions only. Refer to *CPE User's Guide* for further information.

Templates on the Numbers Screen

Here is an example of the Numbers screen showing control plan templates functionality.

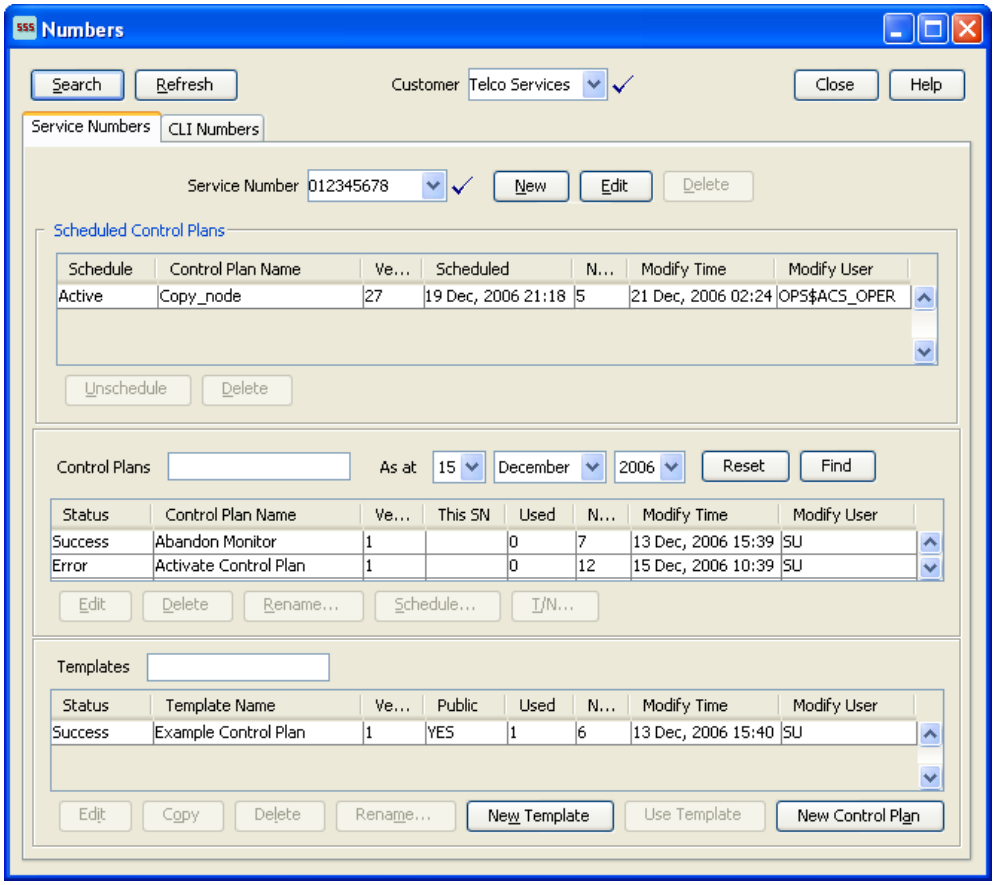


Using Templates on the Numbers Screen

Follow these steps to manage control plan templates for service numbers or CLI numbers from the Numbers screen.

Important: This topic provides CPE overview information in direct relevance to the Numbers screen in ACS, and its functions, only. Refer to *CPE User's Guide* for further information.

Step	Action
1	In the **Templates** frame on the Numbers screen, perform one of the following actions: • Select an existing template from the **Templates** table • Enter the template name in the **Templates** field and press **Enter** **Tip:** To clear your search results from the **Templates** table, delete the search data in the **Templates** field and press **Enter**. The **Templates** table now displays the full template list.

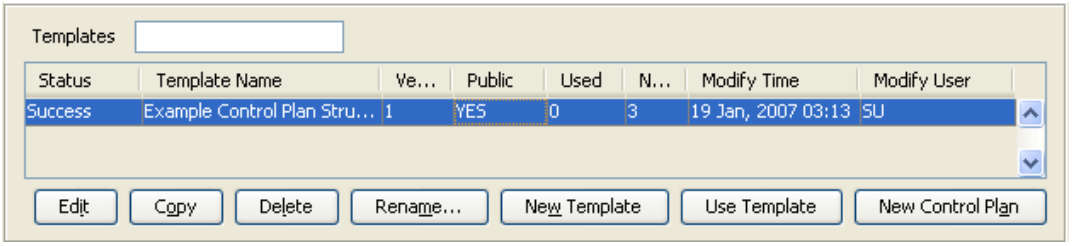


Tip: If the template selected is associated with a control plan then the control plan is also highlighted in the **Control Plans** table above.

Step	Action
2	The following functions are now available to you on the **Templates** frame of the screen, as shown on the example screen above: • **Edit** – See Editing a Control Plan Template. • **Copy** – See *Copying a Control Plan Template* (on page 154). • **Delete** – See *Deleting a Control Plan Template* (on page 155). • **Rename** – See *Renaming a Control Plan Template* (on page 155). • **New Template** – See *Creating a new Control Plan Template* (on page 155) • **Use Template** – See *Creating a Control Plan based on a Template* (on page 156). • **New Control Plan** – See *Creating a Control Plan* (on page 156). **Tip:** See the *Using Control Plans on the Numbers screen* (on page 147) procedure for more Numbers screen information.

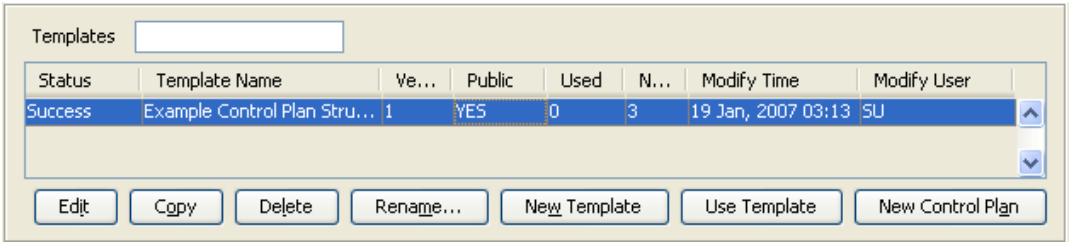
Editing a Control Plan Template

Follow these steps to edit a control plan template, using the Numbers screen.

Step	Action
1	Highlight the control plan template to edit in the table in the **Templates** frame of the Numbers screen, and click **Edit**.  **Result:** The selected template is opened in the ACS Control Plan Editor window.
2	In the CPE, make your edits and **Save** the control plan template. **Result:** You are returned to the Numbers screen in ACS, with the updated template displayed in the templates table.

Copying a Control Plan Template

Follow these steps to copy a control plan template, using the Numbers screen.

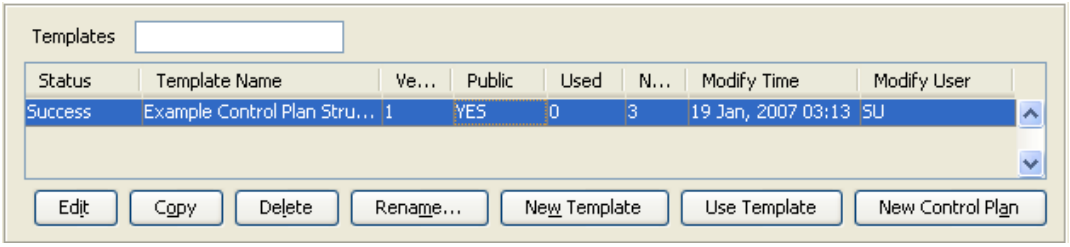
Step	Action
1	With the control plan template selected in the table in the **Templates** frame of the Numbers screen, click **Copy**.  **Result:** The control plan template will be copied, compiled and saved; you see a screen, showing the progress of the copy procedure.
2	Click **Close**.

Step	Action
	Result: You are returned to the Numbers screen, with the new control plan template, named "Copy of *original control plan template name*", displayed in the **Control Plan Template** table.

Deleting a Control Plan Template

Follow these steps to delete a control plan template, using the Numbers screen.

Step	Action
1	With the control plan template selected in the table in the **Templates** frame of the Numbers screen, click **Delete**.



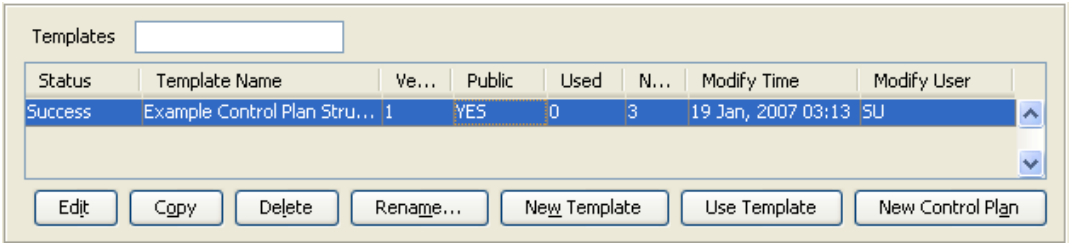
Result: The Really delete? prompt is displayed.

2	Click **Delete** to confirm and the template is removed from the **Templates** table. Click **Don't Delete** to retain the template. **Result:** You are returned to the ACS Numbers screen.

Renaming a Control Plan Template

Follow these steps to rename a control plan template, using the Numbers screen.

Step	Action
1	With the control plan template selected in the table in the **Templates** frame of the Numbers screen, click **Rename**.



Result: The Rename Template - *template name* screen is displayed.

2	In the **New name** field, enter the new template name and click **Save**. **Result:** You are returned to the Numbers screen, with the updated template displayed in the **Templates** table.

Creating a new Control Plan Template

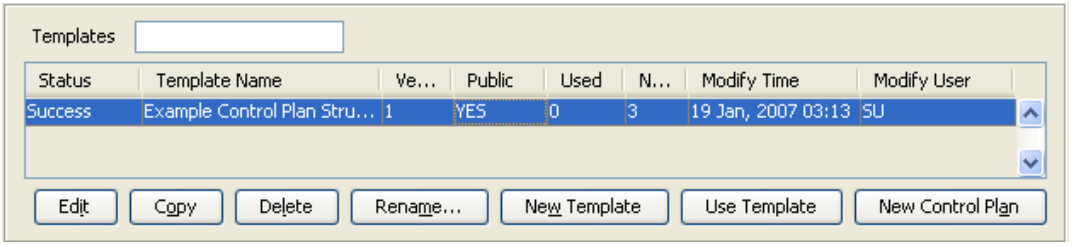
Follow these steps to create a new template, using the Numbers screen.

Step	Action
1	On the Numbers screen, click **New Template**.

Step	Action
	Result: The New Template prompt appears.
2	Make your selection: • Click **Control Plan and Template** to create a new template and control plan. • Click **Template Only** to create a new template only. **Result:** The CPE is then launched displaying the new template and/or control plan, as illustrated in Editing a Control Plan Template.
3	Create your new template and/or control plan and click **Save** as per the standard CPE procedure. **Result:** You are returned to the Numbers screen in ACS, with the new template and/or control plan displayed in the **Templates** table.

Creating a Control Plan based on a Template

Follow these steps to create a new control plan based on a template, using the Numbers screen.

Step	Action
1	With the control plan template selected in the table in the **Templates** frame of the Numbers screen, click **Use Template** to create a new control plan based on the selected template.  **Result:** The New Control Plan based on Existing Template prompt appears.
2	Make your selection: • Click **Read Only** to open the template (that is to be used for the control plan) as read only. This means that the structure cannot be changed; no nodes can be added or deleted. • Click **Writable** to open the template (that is to be used for the control plan) in edit mode. This means that you are able to change the structure; nodes can be added and deleted. **Result:** The CPE is launched displaying the new template and/or control plan, as illustrated in Editing a Control Plan Template. **Tip:** The "Control Plan Name" will be the service number or CLI number selected.
3	Create your new control plan and click **Save** as per the standard CPE procedure. **Result:** You are returned to the Numbers screen in ACS, with the new template and/or control plan displayed in the **Templates** and/or **Control Plans** table.

Creating a Control Plan

Follow these steps to create a control plan, using the Numbers screen.

Step	Action
1	With the control plan template selected in the table in the **Templates** frame of the Numbers screen, click **New Control Plan**.

Step	Action

Result: The CPE is then launched ready for a new template and/or control plan to be created.

Tip: The "Control Plan Name" will be the service number or CLI number selected.

2 Create your new control plan and click **Save** as per the standard CPE procedure.

Result: You are returned to the Numbers screen in ACS, with the new template and/or control plan displayed in the **Templates** and/or **Control Plans** table.

Search for Numbers

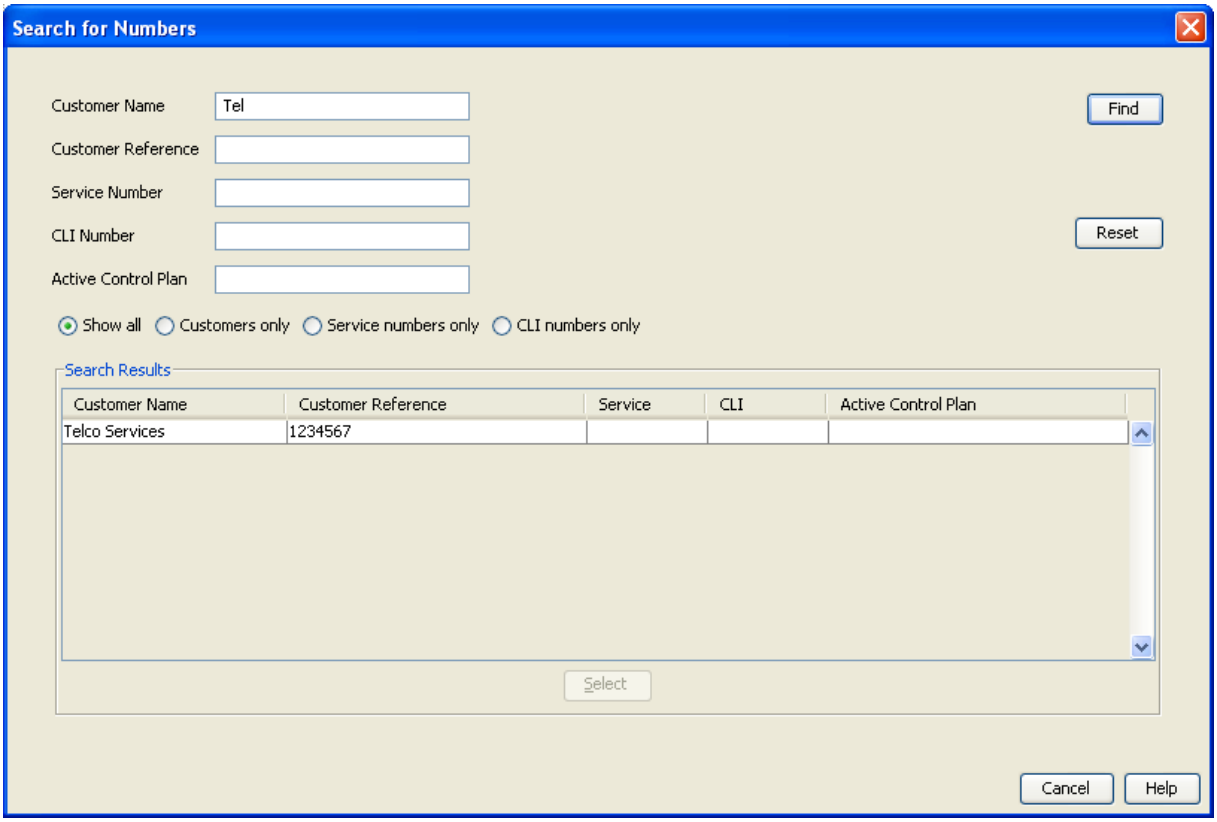
Introduction

The Search for Numbers screen allows you to search the database for records that match the criteria entered into the fields on the screen. You can provide pattern criteria for the service number and CLI numbers to look for, as well as for other associated values, including customer name, customer number and active control plan.

To access the Search for Numbers screen, on the Numbers screen, click **Search**.

Search for Numbers Screen

Here is an example of the Search for Numbers screen.



Searching for Numbers

Follow these steps to search for a specific database record, using the Search for Numbers screen.

Step	Action
1	Enter the search criteria into all required fields. **Tip:** Any fields left blank will show all records in the database. Blank fields do not limit the search at all.
2	Click **Find** to display the results in the database that match all entered fields.
3	Select the line in the Search Results table that is required. Click **Select.** **Result:** The Search for Numbers screen will close and the **CLI Numbers** or **Service Numbers** tab of the Numbers screen will be populated with the selected database record.

Search for Numbers Fields and Buttons

This table describes the function of each field and button.

Field	Description
Customer Name	Allows you to specify a pattern to match customer names. The search will match any customer name starting with the provided pattern.
Customer Number	Allows you to specify a pattern to match customer numbers (also called

Field	Description
	customer references). The search will match any customer number starting with the provided pattern.
Service Number	Allows you to specify a pattern to match service numbers. The search will match any existing service number containing the pattern as a prefix.
CLI Number	Allows you to specify a pattern to match CLI numbers. The search will match any existing CLI containing the pattern as a prefix.
Active Control Plan	Allows you to specify a pattern to match existing control plans. The search will match any existing control plan containing the pattern as a sub-string (not has to be necessarily a prefix).
Find	Click this button to launch the search function. The button will be disabled if no pattern is provided through any of the text fields.
Reset	Click this button to clear the content of all text fields.
Search filter options	This group of options will further restrict the entries to be displayed by the **Search Results** table: • **Show all** will displayed all found data • **Customer only** will just display customer name and customer Number • **Service numbers only** will restrict the output to matched service numbers • **CLI numbers only** will restrict the output to matched CLI numbers
Search Results	This table shows the results from the search after clicking the find button. It presents five columns to show the customer name, customer number, service number, CLI number and active control plan.
Select	When this button is clicked after you have selected one entry from the **Search Results** table, the screen closes and the selected data is displayed in the corresponding Service Numbers or CLI Numbers panel in the Numbers screen.

Search Criteria

The entries in the **Search Results** table will be displayed according to the following criteria:

- CLI and service numbers are searched independently and displayed together in the same table
- In order for a CLI or service number to be displayed, the customer name, customer number, service number and active control plan must be matched
- An empty pattern in a field is considered to be an automatic match for that field
- An empty pattern in the **Active Control Plan** field will match the active control plan for any CLI or service number including those without an active control plan
- In any case, you must fill in at least one pattern field in order to make the **Find** button active

Chapter 9

ACS Resources

Overview

Introduction

This chapter explains the procedures used to configure ACS.

In this chapter

This chapter contains the following topics.

ACS Resources Screen

Introduction

You use the ACS Resources screen to allocate the resources used by a customer. It contains these tabs:

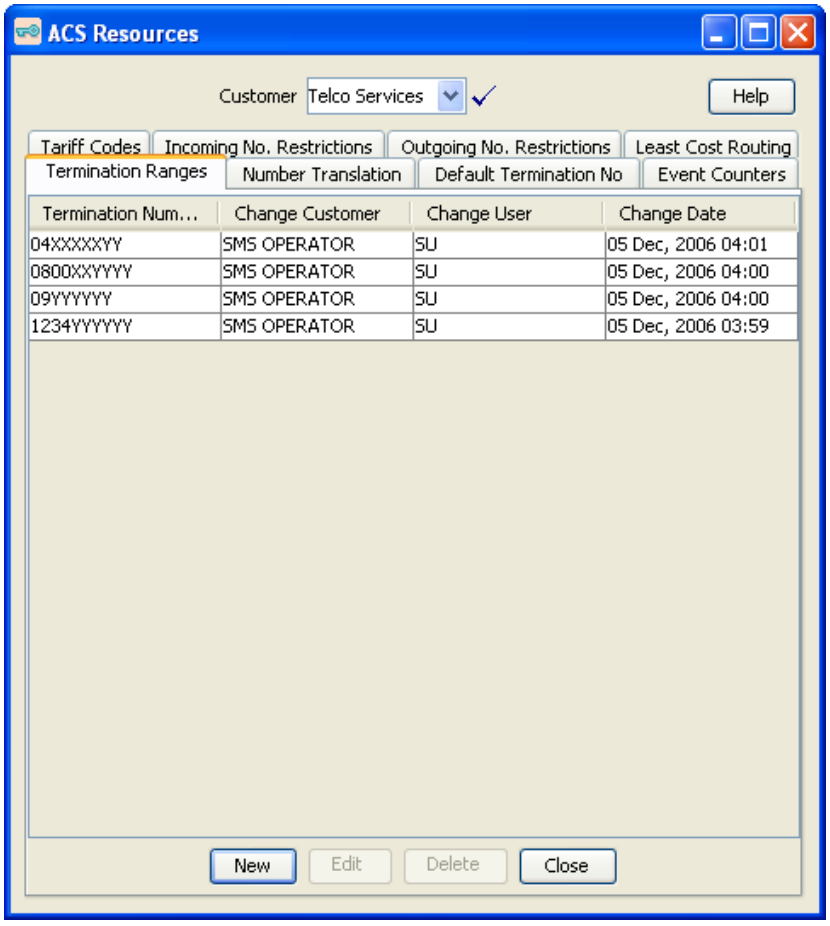
- *Termination Ranges* (on page 162)
- *Number Translation* (on page 164)
- *Default Termination Number* (on page 166)
- *Event Counters* (on page 168)
- *Tariff Codes* (on page 170)
- *Incoming Number Restrictions* (on page 172)
- *Outgoing Number Restrictions* (on page 172)
- *Least Cost Routing* (on page 177)

Accessing the ACS Resources Screen

To open this screen, click **Resources** on the ACS main screen.

Resources Screen Example

Here is an example **ACS Resources** screen.



Termination Ranges

Introduction

Termination number ranges are set up on the **Termination Ranges** tab of the ACS Resources screen.

A termination range is a mask used to validate the input of a termination number.

The ACS system administrator must assign termination number ranges for each customer. A customer may use their own termination numbers in their control plans, but they cannot edit the termination ranges that are assigned to them. Only the ACS system administrator can edit termination number ranges.

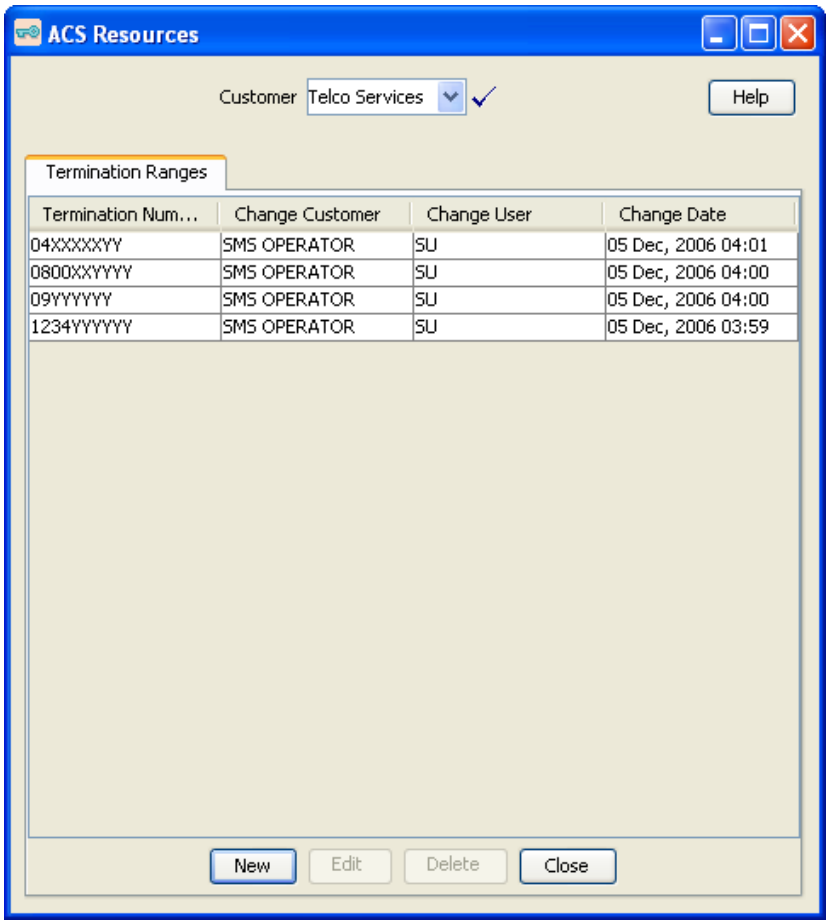
Tip: It is not necessary to set termination ranges in this screen if the customer is a managed customer (that is, the Adding customers check box on the Customer screen was selected).

Termination ranges can only be added, edited or deleted by the ACS system administrator. When editing a termination number range that is currently being used by a compiled control plan, the control plan will be recompiled and the compiler report will be displayed. There may be several control plans to be compiled, so this process may take some time.

Note: It is not possible to delete a termination range that is currently in use by a customer control plan. Editing a termination range will cause all compiled control plans that use that range to be recompiled.

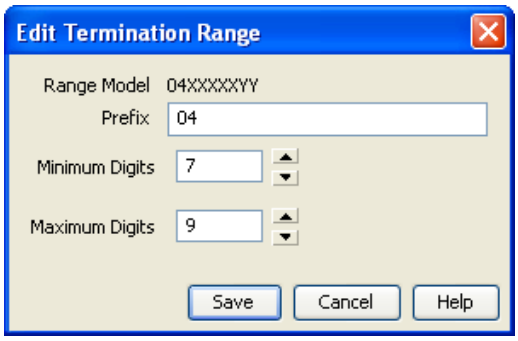
Termination Ranges Tab

Here is an example **Termination Ranges** tab.



Termination Range Screen

Here is an example Termination Range screen.



Adding Termination Ranges

Follow these steps to add a new termination range.

Step	Action
1	On the **Termination Ranges** tab, click **New**.

Step	Action
	Result: The New *Termination Range screen* (See example on page 163) is displayed.
2	In the **Range Model Prefix** field, enter the prefix for the termination number, for example an area code, such as 04, restricting the number to that national area code.
3	From the **Minimum Digits** and **Maximum Digits** boxes, select the minimum and maximum length of the termination number.
4	Click **Save**.
	Result: The details are saved and the screen returns to the main window. If the new termination number is used in a compiled control plan, the compiler report will be displayed. The compiler report gives details of all the control plans that this change caused to be recompiled and their status.

Editing Termination Ranges

Follow these steps to edit an existing termination range.

Step	Action
1	On the **Termination Ranges** tab, select a termination range to edit.
2	Click **Edit**.
	Result: The Edit *Termination Range screen* (See example on page 163) is displayed.
3	Make the required changes to the fields.
4	Click **Save**.
	Result: The details are saved and the screen will return to the main window. If the new record is used in a compiled control plan, the compiler report will be displayed. The compiler report gives details of all the control plans that this change caused to be recompiled and their status.

Deleting Termination Ranges

Follow these steps to delete an existing termination range.

Step	Action
1	From the **Termination Ranges** tab, select the termination range you want to delete.
2	Click **Delete**.
	Result: The Confirm Delete prompt is displayed.
3	Click **OK**.
	Result: The termination range is removed from the database.

Number Translations

Introduction

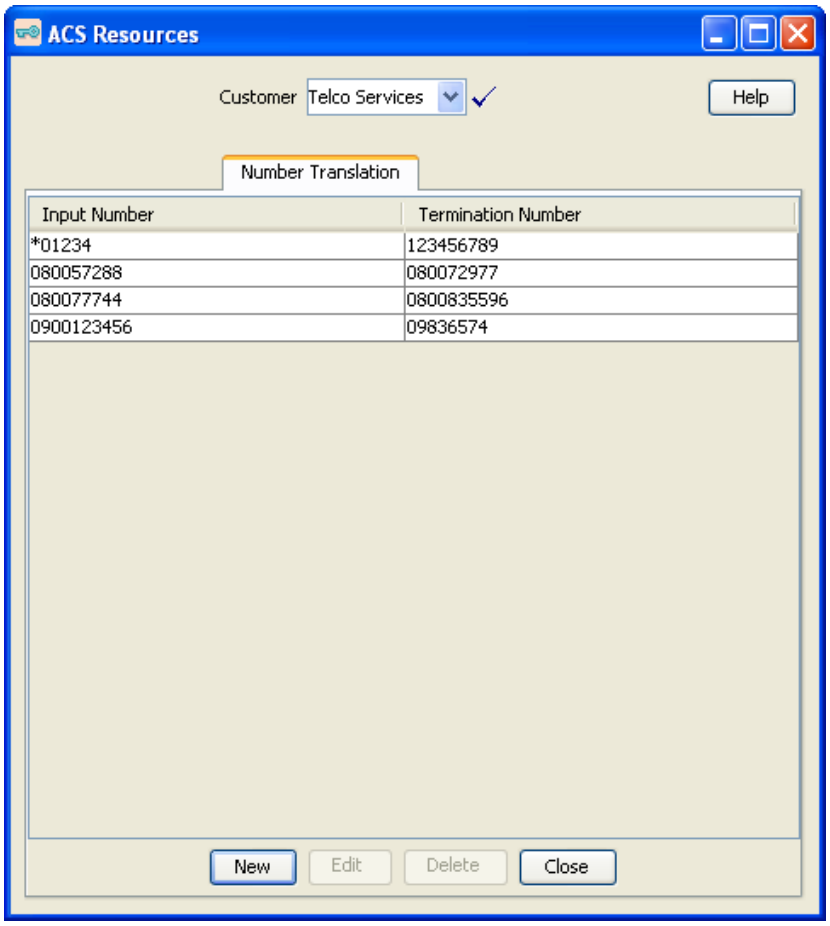
Use the **Number Translations** tab on the ACS Resources screen to map numbers to a termination range. Several numbers may map to the same termination range if required. Number translations are used in the Number Lookup node.

This node will look up a number that has been entered by the caller and translate it to a termination number.

The number translation mappings may be viewed by all users, but may only be added, edited, or deleted by users with permission level 4 and above.

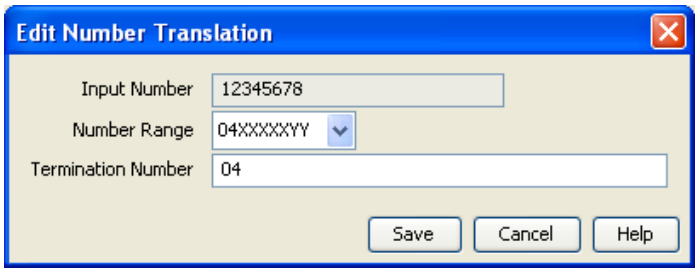
Number Translation Tab

Here is an example **Number Translation** tab.



Number Translation Screen

Here is an example Number Translation screen.



Adding Number Translations

Follow these steps to configure number translations.

Step	Action
1	On the **Number Translation** tab, click **New**.
	Result: The New *Number Translation screen* (See example on page 165) is displayed.
2	In the **Input Number** field, enter the input number.
	Note: The input number must be unique for the customer and will accept up to 20 valid characters, where valid characters are 0-9, A-F, * and #.
3	From the **Number Range** drop down list, select the termination range.
4	In the **Termination Number** field, enter the termination number.
5	Click **Save**.
	Result: The details are saved and the screen returns to the main window.

Editing Number Translations

Follow these steps to edit an existing number translation.

Step	Action
1	On the **Number Translation** tab, select from the table the number translation record to edit.
2	Click **Edit**.
	Result: The Edit *Number Translation screen* (See example on page 165) is displayed.
3	Change the details as required.
4	Click **Save**.
	Result: The changes are saved to the database.

Deleting Number Translations

Follow these steps to delete an existing number translation.

Step	Action
1	From the **Number Translation** tab, select the number translation to delete.
2	Click **Delete**.
	Result: The Confirm Delete prompt is displayed.
3	Click **OK**.
	Result: The number translation is removed from the database.

Default Termination Numbers

Introduction

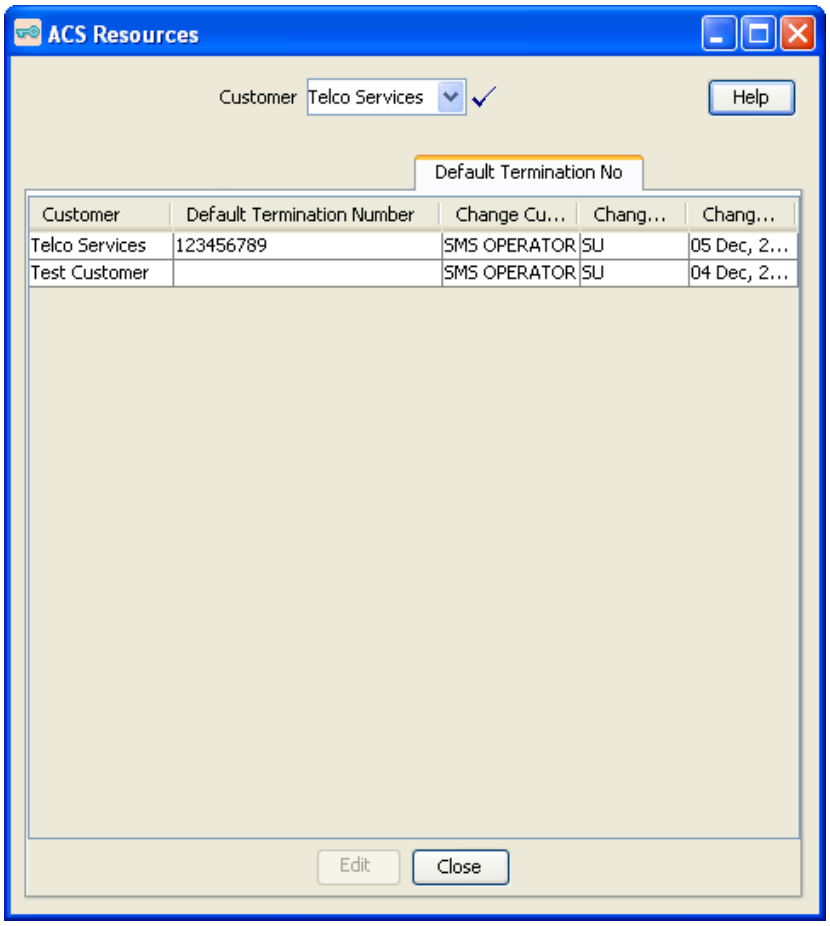
You use the **Default Termination No** tab of the ACS Resources screen to allocate default termination numbers for your customers.

Default termination numbers are used where a search does not locate a termination number in a control plan.

A customer can only have one default termination number, and it is necessary that the termination number is within the range of termination numbers that have been allocated to that customer.

Default Termination No Tab

Here is an example **Default Termination No** tab.



Allocating Default Termination Numbers

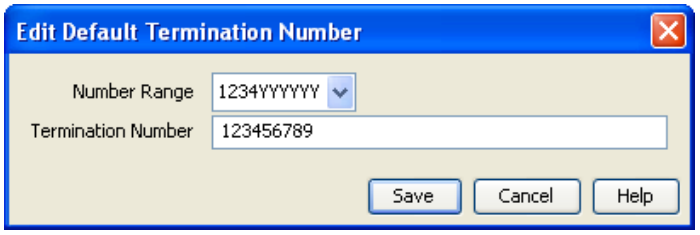
Follow these steps to allocate a default termination number.

Step	Action
1	On the **Default Termination No** tab, select the customer to allocate a default termination number to.
2	Click **Edit**. **Result:** The *Edit Default Termination Number screen* (See example on page 168) is displayed.
3	From the **Number Range** drop down list, select the number range of the termination number.
4	In the **Termination Number** field, enter the termination number.
5	Click **Save**. **Result:** The details are saved. If the new record is used in a compiled control plan, the compiler report will be displayed.

The compiler report gives details of all the control plans that this change caused to be recompiled and their status.

Edit Default Termination Number Screen

Here is an example Edit Default Termination Number screen.



Event Counters

Introduction

The **Event Counters** tab of the ACS Resources screen displays the event counters for each customer. Each event counter is maintained separately.

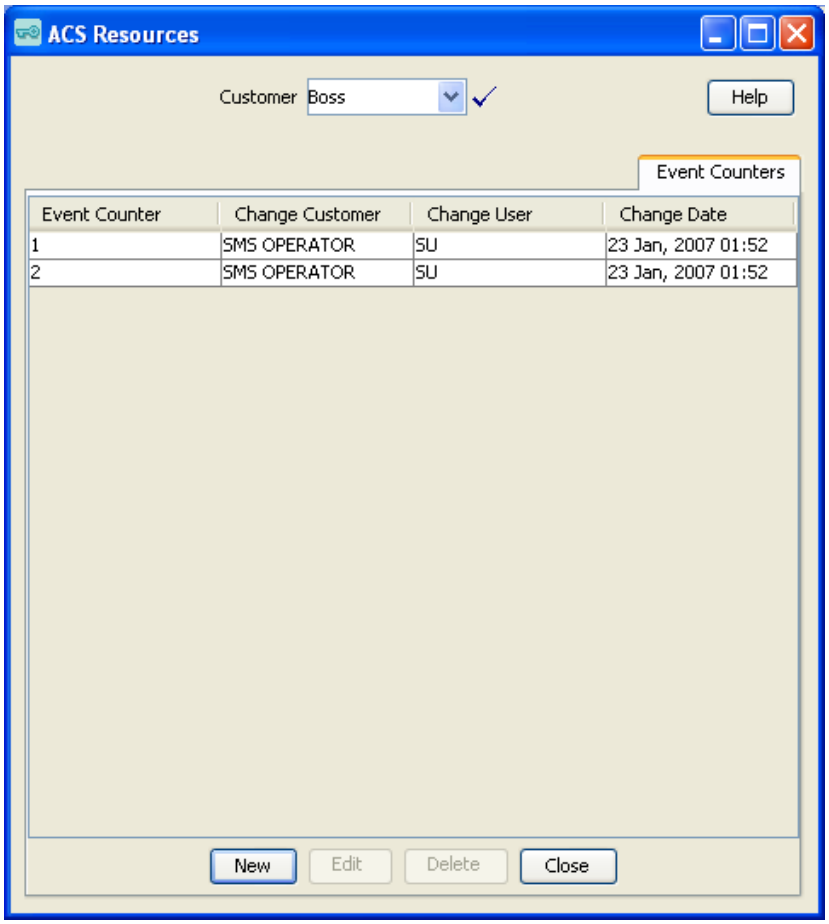
Event counters simply count an event. They may be accessed at runtime and can be used, for example, for televoting. Counters can be queried in real-time on the Statistics Chart screen.

It is not possible to delete an event counter that is currently in use by a compiled control plan. Editing an event counter will cause all compiled control plans that use that record to be recompiled.

The ACS system administrator allocates customers a maximum number of counters on the Edit Customer Resource Limits screen. Users of sufficient privilege (level 4 and above) may add, delete, and rename their event counters within that limit.

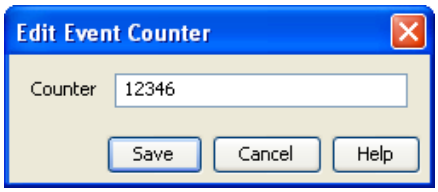
Event Counters Tab

Here is an example **Event Counters** tab.



Event Counter Screen

Here is an example Event Counter screen.



Adding Event Counters

Follow these steps to add a new event counter.

Step	Action
1	On the **Event Counters** tab, click **New**. **Result:** The New *Event Counter screen* (See example on page 169) is displayed.
2	In the **Counter** field, enter the name of the event counter. **Note:** Event counter names must be unique for that customer, that is, two customers may

Step	Action
	have counters called 'Stats1', but a customer may not have two counters called 'Stats1'.
3	Click **Save**. **Result:** The details are saved and you return to the **Event Counters** tab.

Editing Event Counters

Follow these steps to edit an existing event counter.

Step	Action
1	On the **Event Counters** tab, select from the table the event counter record to edit.
2	Click **Edit**. **Result:** The Edit *Event Counter screen* (See example on page 169) is displayed.
3	Change the details as required.
4	Click **Save**. **Result:** The changes are saved to the database.

Deleting Event Counters

Follow these steps to delete an existing event counter.

Step	Action
1	On the **Event Counters** tab, select the event counter to delete.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed
3	Click **OK**. **Result:** The event counter is removed from the database.

Tariff Codes

Introduction

Use the **Tariff Codes** tab on the ACS Resources screen to add new tariff codes for your customer. Tariff codes are used to return charging information to the switch. This information can be sent either in an SCI or an FCI operation.

The component type (SCI or FCI) will determine how the tariff code is delivered to the service switching point (SSP).

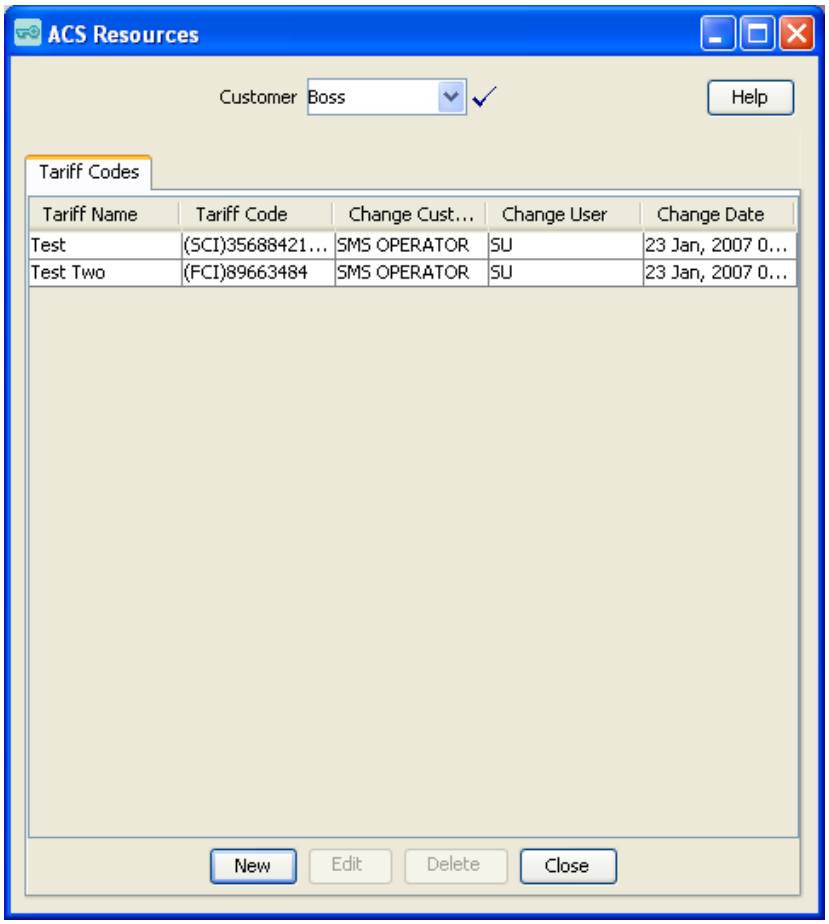
If the component type is set to:

- SCI, then the tariff code will be sent to the switch in an INAP Send Charging Information operation
- FCI, then the tariff code will be sent to the switch in an INAP Furnish Charging Information operation

Tariff codes are used by the Set Tariff Code node to send charging information to the switch.

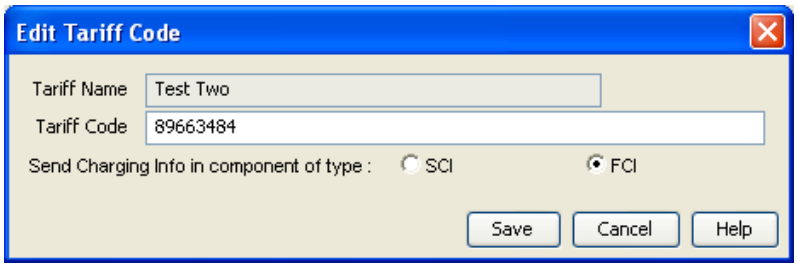
Tariff Codes Tab

Here is an example **Tariff Codes** tab.



Tariff Code Screen

Here is an example Tariff Code screen.



Adding Tariff Codes

Follow these steps to add a new tariff code for your customer.

Step	Action
1	On the **Tariff Codes** tab, click **New**. **Result:** The New *Tariff Code screen* (See example on page 171) is displayed.
2	In the **Tariff Name** field, enter a name for the new tariff code.

Step	Action
3	In the **Tariff Code** field, enter a code for the new tariff code.
4	Select whether the tariff code should be marked to be sent in an SCI component or FCI component.
	Note: The tariff code is a hexadecimal code that is usually provided by the switch manufacturer. The tariff code can only be added by the system administrator or ACS Level 6 users.
5	Click **Save**. **Result:** The details are saved and the screen returns to the **Tariff Codes** tab.

Editing Tariff Codes

Follow these steps to edit an existing tariff code.

Step	Action
1	On the **Tariff Codes** tab, select the tariff code to edit.
2	Click **Edit**. **Result:** The Edit *Tariff Code screen* (See example on page 171) is displayed.
3	Change the details as required.
4	Click **Save**. **Result:** The changes are saved to the database.

Deleting Tariff Codes

Follow these steps to delete an existing tariff code.

Step	Action
1	On the **Tariff Codes** tab, select the tariff code to delete.
2	Click **Delete**. **Result:** The Confirm Delete prompt is displayed.
3	Click **OK**. **Result:** The tariff code is removed from the database.

Incoming Number Restrictions

Introduction

Allowed and barred numbers in the ACS Resources screen are provisioned on a per customer basis.

Each customer has one incoming and one outgoing list. Each of these lists must be classed as either “Allowed” or “Barred”.

- **Allowed** numbers are allowed only if they occur in the list. If the list is empty then no numbers are allowed – everything is barred.
- **Barred** numbers are barred only if they occur in the list. If the list is empty then no numbers are barred – everything is allowed.

Use with Call Filtering Node

While the primary use of the lists is to allow or bar, based on service number (incoming, or CLI (outgoing) they may in fact be used to compare against any type of number available in the Call Filtering feature node in the ACS Control Plan Editor.

The lists can be applied in control plans by selecting the service number profile or CLI profile in the Call Filtering node in the CPE. As mentioned earlier, these lists may be used to match against any type of number but are labeled “Incoming” and “Outgoing” for convenience.

Examples:

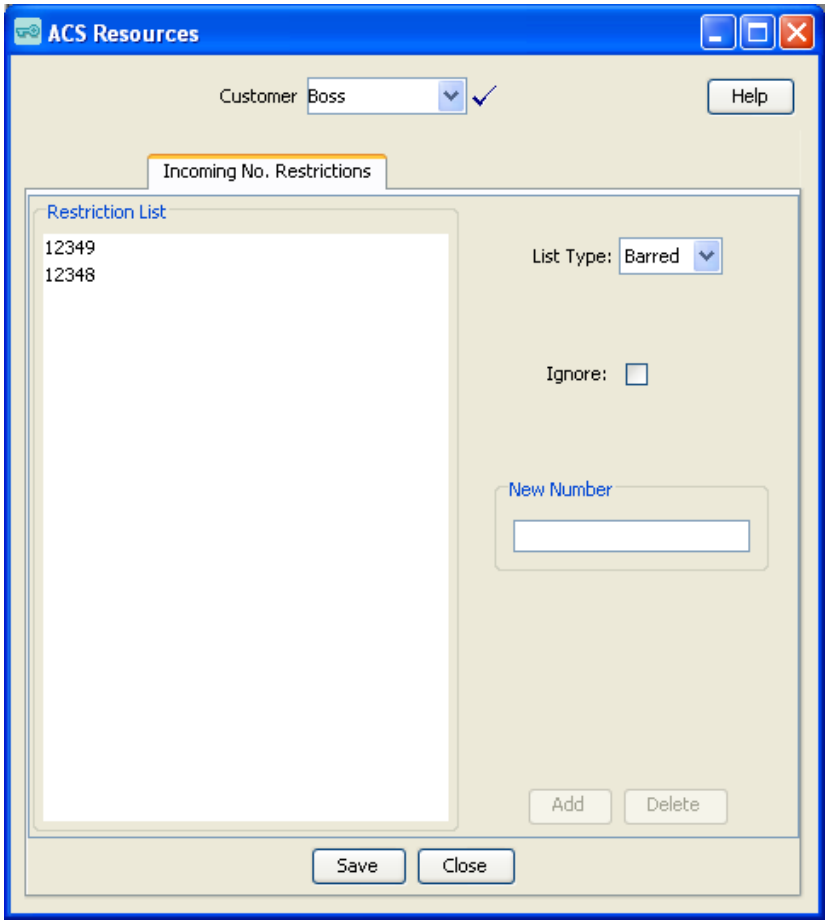
1. You have an INCOMING ALLOWED list containing the numbers 555-1234, 555-1235, and 555-1236. Calls to the service numbers 555-1234, 555-1235, and 555-1236 are allowed but calls to all other numbers are not allowed, so a call to 444-5555 would not be allowed.
2. You have an INCOMING BARRED list containing the same numbers. Calls to the service numbers listed will not be allowed; calls to all other service numbers are allowed.
3. You have an OUTGOING ALLOWED list containing the same numbers. An outgoing call to CLI 555-1234 would be allowed (as would 555-1235 and 555-1236). Outgoing calls to any other CLI would be be barred.
4. You have an OUTGOING BARRED list containing the same numbers. An outgoing call to CLI 555-1234 would be barred (as would 555-1234 and 555-1236). Outgoing calls to any other CLI would be allowed.

Use with Prefix Tree Branching Node

The Prefix Tree Branching node allows you to select incoming or outgoing list data and branch on whether the number is in that list or not. Used in conjunction with other nodes, such as Profile Branching, you can determine whether it is the barred or allowed list and branch accordingly.

Incoming No. Restrictions Tab

Here is an example **Incoming No. Restrictions** tab.



Number Restrictions Tab Fields

Here is a description of the fields used when setting incoming and outgoing number restrictions.

Field	Description
Restriction List	Displays the list of restricted numbers in the number profile. You can: • Add new numbers to the list using the **New Number** field • Delete numbers in this list by highlighting the number and clicking **Delete**
List Type	Each ACS customer has one incoming and one outgoing restriction list. The list must be classed as either "Allowed" or "Barred". If list type is: • **Allowed** – Numbers are allowed only if they occur in the list. If the list is empty then no numbers are allowed - everything is barred. • **Barred** – Numbers are barred only if they occur in the list. If the list is empty then no numbers are barred - everything is allowed.
Ignore	Select this check box if you want to ignore the restricted numbers list displayed.
New Number	Use this field to add a new number to the restricted numbers list. Enter the new number then click **Add** to send it to the list.

Editing Incoming No. Restrictions

Follow these steps to edit numbers in an incoming number restrictions list.

Tip: You can set number restrictions at the SN or CLI level in the Numbers screen.

Step	Action
1	On the **Incoming No. Restrictions** tab, select the type of list from the **List Type** drop down list. If you select `Allowed`, only listed numbers will be allowed. If you select `Barred`, all numbers are allowed, except for the listed numbers.
2	If you want the incoming number restrictions to be ignored for this customer, select the **Ignore** check box.
3	In the **New Number** field, enter a number to add to the list and click **Add**. **Result:** The number will be added to the restriction list.
4	From the **Restriction List**, select a number to remove and click **Remove**. **Result:** The number will be removed from the restriction list.
5	Click **Save**. **Result:** The changes will be saved to the database.

Outgoing Number Restrictions

Introduction

Allowed and barred numbers in the ACS Resources screen are provisioned on a per customer basis.

Each customer has one incoming and one outgoing list. Each of these lists must be classed as either “Allowed” or “Barred”.

- **Allowed** numbers are allowed only if they occur in the list. If the list is empty then no numbers are allowed – everything is barred.
- **Barred** numbers are barred only if they occur in the list. If the list is empty then no numbers are barred – everything is allowed.

Use with Call Filtering Node

While the primary use of the lists is to allow or bar, based on service number (incoming, or CLI (outgoing) they may in fact be used to compare against any type of number available in the Call Filtering feature node in the ACS Control Plan Editor.

The lists can be applied in control plans by selecting the service number profile or CLI profile in the Call Filtering node in the CPE. As mentioned earlier, these lists may be used to match against any type of number but are labeled “Incoming” and “Outgoing” for convenience.

Examples:

1. You have an INCOMING ALLOWED list containing the numbers 555-1234, 555-1235, and 555-1236. Calls to the service numbers 555-1234, 555-1235, and 555-1236 are allowed but calls to all other numbers are not allowed, so a call to 444-5555 would not be allowed.
2. You have an INCOMING BARRED list containing the same numbers. Calls to the service numbers listed will not be allowed; calls to all other service numbers are allowed.
3. You have an OUTGOING ALLOWED list containing the same numbers. An outgoing call to CLI 555-1234 would be allowed (as would 555-1235 and 555-1236). Outgoing calls to any other CLI would be be barred.

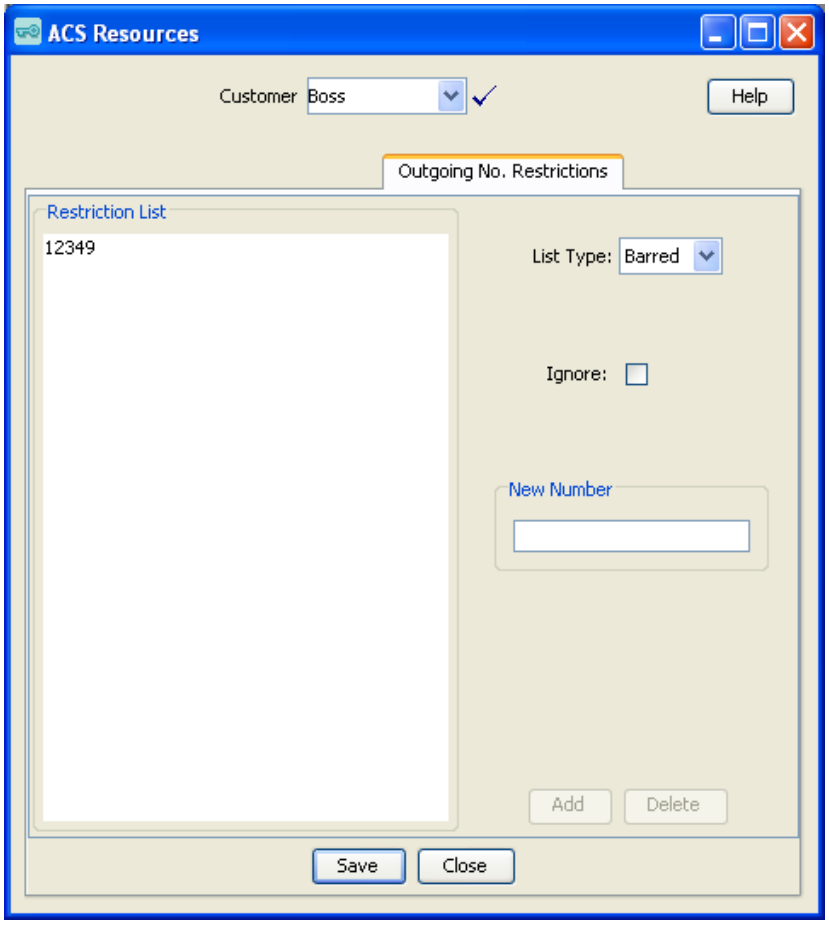
4 You have an OUTGOING BARRED list containing the same numbers. An outgoing call to CLI 555-1234 would be barred (as would 555-1234 and 555-1236). Outgoing calls to any other CLI would be allowed.

Use with Prefix Tree Branching Node

The Prefix Tree Branching node allows you to select incoming or outgoing list data and branch on whether the number is in that list or not. Used in conjunction with other nodes, such as Profile Branching, you can determine whether it is the barred or allowed list and branch accordingly.

Outgoing No. Restrictions Tab

Here is an example **Outgoing No. Restrictions** tab.



Number Restrictions Tab Fields

Here is a description of the fields used when setting incoming and outgoing number restrictions.

Field	Description
Restriction List	Displays the list of restricted numbers in the number profile. You can: • Add new numbers to the list using the **New Number** field • Delete numbers in this list by highlighting the number and clicking **Delete**
List Type	Each ACS customer has one incoming and one outgoing restriction list. The list must be classed as either "Allowed" or "Barred".

Field	Description
	If list type is: • **Allowed** – Numbers are allowed only if they occur in the list. If the list is empty then no numbers are allowed - everything is barred. • **Barred** – Numbers are barred only if they occur in the list. If the list is empty then no numbers are barred - everything is allowed.
Ignore	Select this check box if you want to ignore the restricted numbers list displayed.
New Number	Use this field to add a new number to the restricted numbers list. Enter the new number then click **Add** to send it to the list.

Editing Outgoing No. Restrictions

Follow these steps to edit numbers in an outgoing number restrictions list.

Tip: You can set number restrictions at the SN or CLI level in the Numbers screen.

Step	Action
1	On the **Outgoing No. Restrictions** tab, select the type of list from the **List Type** drop down list. If you select `Allowed`, only listed numbers will be allowed. If you select `Barred`, all numbers are allowed, except for the listed numbers.
2	If you want the outgoing number restrictions to be ignored for this customer, select the **Ignore** check box.
3	In the **New Number** field, enter a number to add to the list and click **Add**. **Result:** The number will be added to the restriction list.
4	From the **Restriction List**, select a number to remove and click **Remove**. **Result:** The number will be removed from the restriction list.
5	Click **Save**. **Result:** The changes will be saved to the database.

Least Cost Routing

Introduction

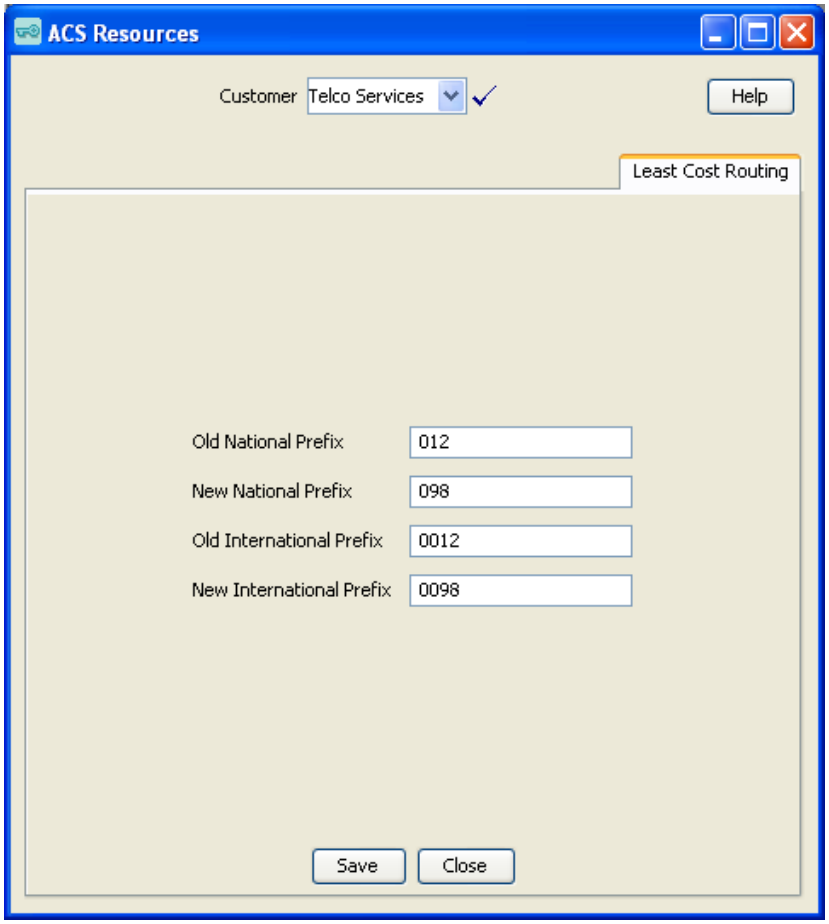
Use the **Least Cost Routing** tab on the ACS Resources screen to manage and maintain least cost routing configuration. Least cost routing enables calls to be routed differently by replacing prefixes to the destination address.

The tab updates the Simple LCR fields in the "Customer" profile. They are applied in control plans using any of the following feature nodes:

- Terminate to Pending TN
- Attempt Terminate to Pending TN
- Attempt Terminate to Pending TN with Duration

Least Cost Routing Tab

Here is an example **Least Cost Routing** tab.



Using Least Cost Routing

Follow these steps to add or edit the least cost routing for the selected customer.

Step	Action
1	Select the customer for whom least cost routing is to be added.
2	Enter the prefixes that are to be used for least cost routing.

Old National	The 'National' prefix that is to be matched in the normalized number for least cost routing to be applied.
New National	The prefix that is to replace the "Old National prefix" in numbers that matched the old national prefix.
Old International	The 'International' prefix that is to be matched in the normalized number for least cost routing to be applied.
New International	The prefix that is to replace the "Old International prefix" in numbers that matched the old international prefix.

3	Click **Save** to commit the changes to the database.
	Note: This least cost routing will be applied to all calls for the selected customer.

Chapter 10

Dial-up Control Plan Management in ACS

Overview

Introduction

This chapter explains the procedures you need to carry out when configuring control plans in ACS.

What is a Control Plan?

A control plan is similar to a flow chart. Control plans essentially define the decisions and actions that are made when a call is routed from source to destination. A control plan may consist of multiple unique decision points or actions called feature nodes. Control plans are constructed in ACS using the ACS Control Plan Editor (CPE).

Note: This chapter provides a general overview of control plans and their implementation in the CPE. You can view CPE Help for more specific CPE information.

In this chapter

This chapter contains the following topics.

Using Self Management Control Plans

Introduction

ACS provides an ACS management control plan. This plan enables telcos to provide a dial-up control plan which enables the telco's customers to make changes to their control plans using prompts and actions from their phone.

The control plan uses standard feature nodes and makes specific use of the NTS nodes.

The ACS Management Control Plan

To use the dial-up feature of the ACS management control plan, the telco can connect the ACS management control plan to a service number (SN) and allocate it to a customer. This feature is managed using the **Service Numbers** tab.

The customer can then dial this SN and change a number of control plan settings using a touch-tone phone. The following control plan settings can be managed by ACS customers using a valid SN. See:

- *Activating a control plan for a service number* (on page 183)
- *Activating a control plan for a CLI* (on page 183)
- *Changing the switch node exit in an existing control plan* (on page 184)
- *Setting the follow me number* (on page 184)

Control plans that can be edited by the customer must be assigned an MF Identifier when saved. The MF Identifier is a unique code that allows the application to determine which control plan is to be changed when the ACS management control plan is dialed. The MF Identifier may be set by the user when the control plan is saved.

Note: In order to use the ACS management control plan through a dial-up phone, the customer must have a PIN and a management ID. These requirements are configured using the **Customer** *tab* (on page 114).

Process

This table describes the process of using the ACS management control plan to make ACS customer control plan updates is.

Stage	Description
1	The user dials the SN the ACS management control plan is scheduled against.
2	The control plan starts. The first interaction (before any settings can be altered), requires the user to provide a correct account number and PIN. If unsuccessful, the call is disconnected.
3	The caller is prompted to select the setting that is to be changed.
4	The user is then guided by a series of instructions that allow them to change their control plan settings.

Warning: This feature is unavailable when run on MVAM 2.2.0c0.

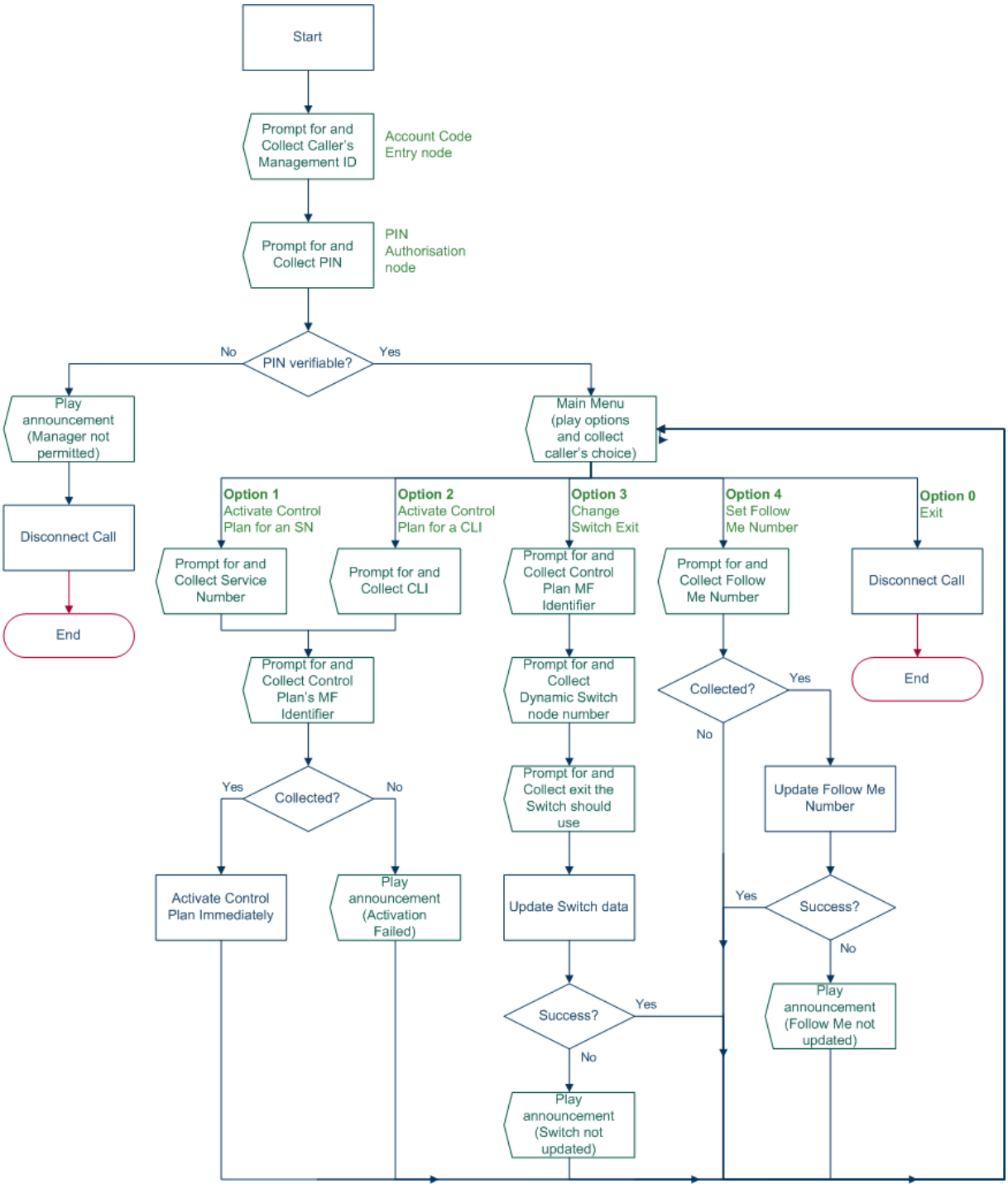
Using the ACS Dial-up Manager

Introduction

The dial-up feature of the ACS management control plan is used by dialing a specified number and following the options presented.

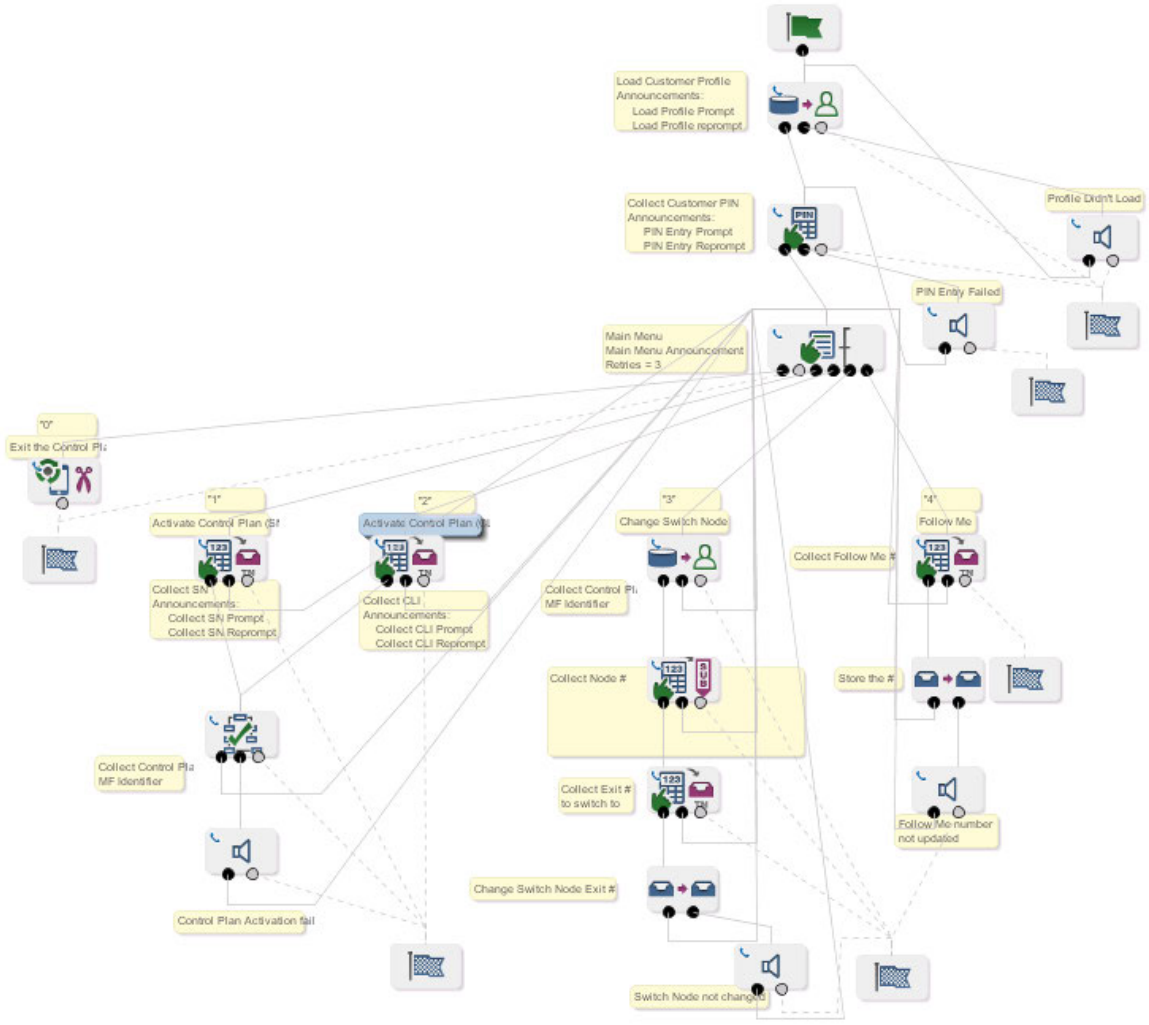
Dial-up Logic Flow Diagram

This diagram illustrates the flow of the dial-up feature of the ACS management control plan.



ACS Management Control Plan Example

The following figure shows the ACS management control plan, and the feature nodes used in the control plan for dial-up management.



Using Dial-up Self-management

Follow these steps to use the dial-up management feature.

Step	Action
1	Dial the service number which is connected to the ACS management control plan. This is the number the telco has scheduled the ACS management control plan against.
2	Enter your management ID (to identify yourself).
3	Enter your customer PIN.
	Note: No more than 32 digits can be entered at any one time.
	Result: The system checks the PIN is correct. If it is not correct within the allowed number of retries, the call is disconnected.

Step	Action
4	Listen to the announcement which lists the options which you can change. The options are: a. Activate a control plan attached to a service number (SN) b. Activate a control plan attached to a caller line identifier (CLI) c. Change the exit that is used in a switch node d. Set the follow me number e. End the call
5	Press the digit which corresponds to the required option. **Tip:** A selection may be made at any time; it is not necessary to wait until the message is finished. Once a selection is made, the call will proceed to the menu for the option you selected.

The detailed interaction for each option is listed below.

Activating a Control Plan for a Service Number

Follow these steps to activate a control plan for a service number.

Note: To access this functionality you must have entered 1 at the main menu.

Step	Action
1	At the prompt, enter the service number for the active control plan you want to change.
2	At the prompt, enter the MF Identifier that is to be made active for the supplied service number. **Results:** • If everything is correct, the system will update the service number and attach the specified control plan to it with an effective date and time of now (the time and date at which the call to the ACS Dial-up Manager is made). • If for any reason, the service number is not changed, you return to the main menu to try again.

Activating a Control Plan for a CLI

Follow these steps to activate a control plan for a CLI.

Note: To initiate this functionality you must have entered 2 at the main menu.

Step	Action
1	At the prompt, enter the CLI for the active control plan you want to change.
2	At the prompt, enter the MF identifier that is to be made active for the supplied CLI. **Results:** • If everything is correct, the system will update the CLI and attach the specified control plan to it with an effective date and time of now (the time and date at which the call to the ACS Dial-up Manager is made). • If for any reason, the CLI is not changed, you return to the main menu to try again.

Changing the Switch Node Exit

Follow these steps to update the exit a Dynamic Switch feature node will route to.

Note: To initiate this functionality you must have entered 3 at the main menu.

Step	Action
1	At the prompt, enter the MF Identifier for the control plan that the switch node is in.
2	At the prompt, enter the node number for the Dynamic Switch node you want to change.
3	At the prompt, enter the exit number the Dynamic Switch node should now exit to. **Results:** • If everything is correct, the system will update the control plan. • If for any reason, the switch node exit is not changed (that is, you entered the incorrect node number and the number entered was not for a switch node, or the exit specified does not exist), you return to the main menu to try again.

Setting the Follow Me Number

Follow this procedure to set your follow me number.

Note: To initiate this functionality you must have entered 4 at the main menu.

Step	Action
1	At the prompt, enter the new follow me number. **Results:** • If everything is correct, the system will update the follow me number and return to the main menu. • If for any reason, the follow me number is not updated successfully, you will be informed and returned to the main menu to try again.

Glossary of Terms

AAA

Authentication, Authorization, and Accounting. Specified in Diameter RFC 3588.

ACS

Advanced Control Services configuration platform.

ANI

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

C7

See SS7.

CCS

1) Charging Control Services component.

2) Common Channel Signalling. A signalling system used in telephone networks that separates signalling information from user data.

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*".

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.

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.

FCI

Furnish Charging Information. An INAP operation sent from ACS to the SSP to control the contents of EDRs produced by the SSP.

GUI

Graphical User Interface

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.

IN

Intelligent Network

INAP

Intelligent Network Application Part - a protocol offering real time communication between IN elements.

IP

1) Internet Protocol

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

LCP

Location Capabilities Pack - set of software components used by other applications to look up the location of mobile devices.

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 189) and *Messaging Manager* (on page 186).

PIN

Personal Identification Number

SCI

Send Charging Information. An INAP operation sent from ACS to the SSP to control real time charging by the SSP.

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.

Session

Diameter exchange relating to a particular user or subscriber access to a provided service (for example, a telephone call).

SGML

Standard Generalized Markup Language. The international standard for defining descriptions of the structure of different types of electronic document.

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.

SK

Service Key

SLC

Service Logic Controller (formerly UAS).

SLEE

Service Logic Execution Environment

SMS

Depending on context, can be:

- Service Management System hardware platform
- Short Message Service
- Service Management System platform
- NCC Service Management System application

SN

Service Number

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

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.

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.

Telco

Telecommunications Provider. This is the company that provides the telephone service to customers.

Telecommunications Provider

See Telco.

Termination Number

The final number that a call terminates to. Can be set in control plan nodes such as Attempt Termination and Unconditional Termination for re-routing numbers such as Toll Free or Follow Me numbers.

URL

Uniform Resource Locator. A standard way of specifying the location of an object, typically a web page, on the Internet.

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).

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 `metalanguage' — 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 186) service and the Short Message Service. The published code is *MM* (on page 186) (formerly MMX).

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