

**Oracle® Communications
Convergent Charging Controller**

Charging Control Services User's Guide

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About This Document

Scope

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

Audience

This guide is written primarily for CCS administrators. 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.

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:

- *Advanced Control Services User's Guide*
- *Feature Nodes Reference Guide*
- *Control Plan Editor User's Guide*
- *Customer Care Portal User's Guide*
- *Subscriber Profile Manager User's Guide*
- *Voucher Manager User's Guide*
- *Charging Control Services Technical Guide*
- *Promotion Manager User's Guide*
- *Service Management System User's Guide*

Document Conventions

Typographical Conventions

The following terms and typographical conventions are used in the Oracle Communications Convergent Charging Controller documentation.

Formatting Convention	Type of Information
Special Bold	Items you must select, such as names of tabs. Names of database tables and fields.
<i>Italics</i>	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.
<i>variable</i>	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.

Terminology

This topic explains any terminology specific to this manual.

Term	Definition
ACS Customer	ACS customers are set up in the ACS Customer screen. They configure systems to provide services to subscribers.
Service Provider	CCS service providers are the same as ACS customers and are set up in the ACS Customer screen. There is additional service provider configuration provided in CCS.
Customer	Customers in CCS refer to the customers configured on the Subscriber Management screen.
Subscriber	A subscriber account is set up for each MSISDN which uses services provided by the service provider.

System Overview

Overview

Introduction

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

In this chapter

This chapter contains the following topics.

What is CCS and VWS?	1
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What is CCS and VWS?

Overview

Charging Control Services (CCS) and Voucher and Wallet Server (VWS) are prepaid and post-paid services. They offer flexibility and control over billing methods and telephony services in general.

They operate at the service application level of the network.

Features

Features of CCS and the VWS include:

- Customization of call / session management and routing according to factors such as:
 - Geography
 - Demographics
 - Availability of resources
 - User preference
 - Call screening
 - Validation of subscriber credit prior to routing of calls

- Free call options (for example, to customer service)
- Flexible wallet states (such as active and frozen) adaptable to customer requirements
- Variable levels of credit and selection for different services for complex promotion logic
- Options for customers with low credit ratings through extensive rating plans
- Forced disconnection on credit exhaustion
- Fraud control (detection of unauthorized simultaneous subscriber ID entry, credit card use, or bad PIN)
- Links to VWS to provide wallet and balance management, including:
 - Individual or group subscriber accounts
 - Monetary and time-based wallet balances
 - Rechargeable, single use, debit or credit subscriber accounts
- Option to split wallet management across separate charging and tracking domains
- User interaction:
 - On-line credit recharge and balance query through a www CGI interface
- Home and roaming network support through CAMEL 2 / 3
 - Support for GSM, 2G, 2.5G and 3G circuit-switched and packet networks

ACS functionality

CCS works in conjunction with the Advanced Control Services product for added processing capability. Many of the features of CCS are accessed through ACS, for example:

- Customer-managed control plans
- Graduated levels of security
- Management of all outgoing and incoming calls
- Statistics generation
- Announcements.

See *ACS User's Guide* for the full functionality provided with CCS.

CCS Macro Nodes

The feature nodes that are available to CCS within the Control Plan Editor are listed in the *Feature Nodes Reference Guide*.

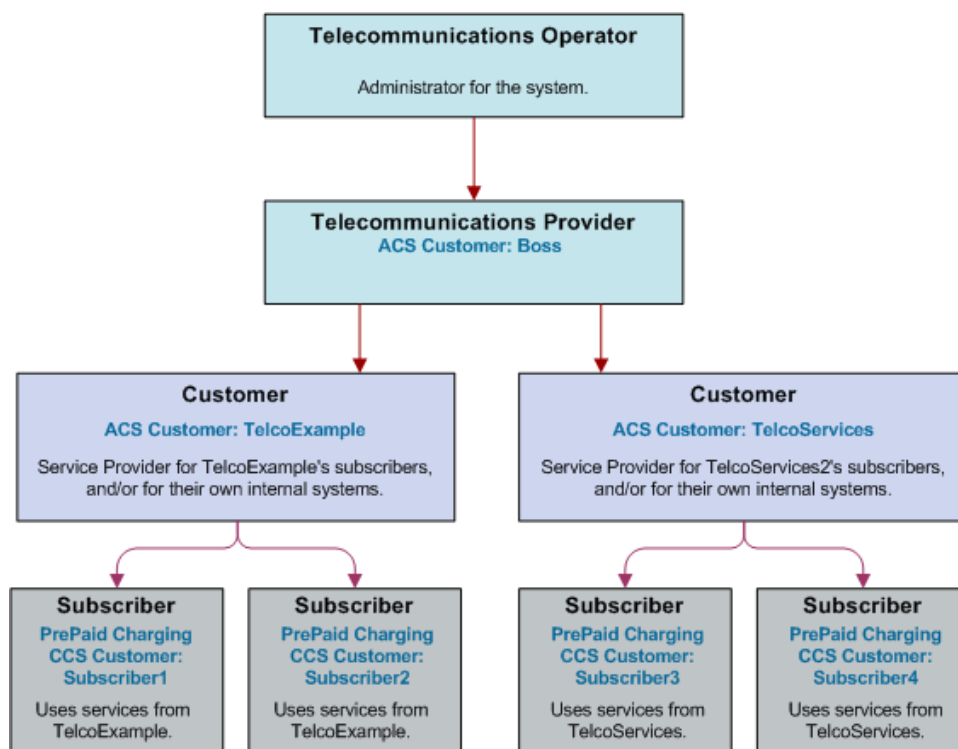
For information on using the CPE see *CPE User's Guide*.

Service providers

The Voucher and Wallet Server is installed and run as a network service by a Telecommunications Operator (telco). It enables the Telco to create service providers and to create customers and subscribers for those service providers. Although the customer is able to monitor subscriber details and recharge wallet balances through the web interface, the telco retains full control over all aspects of the wallet.

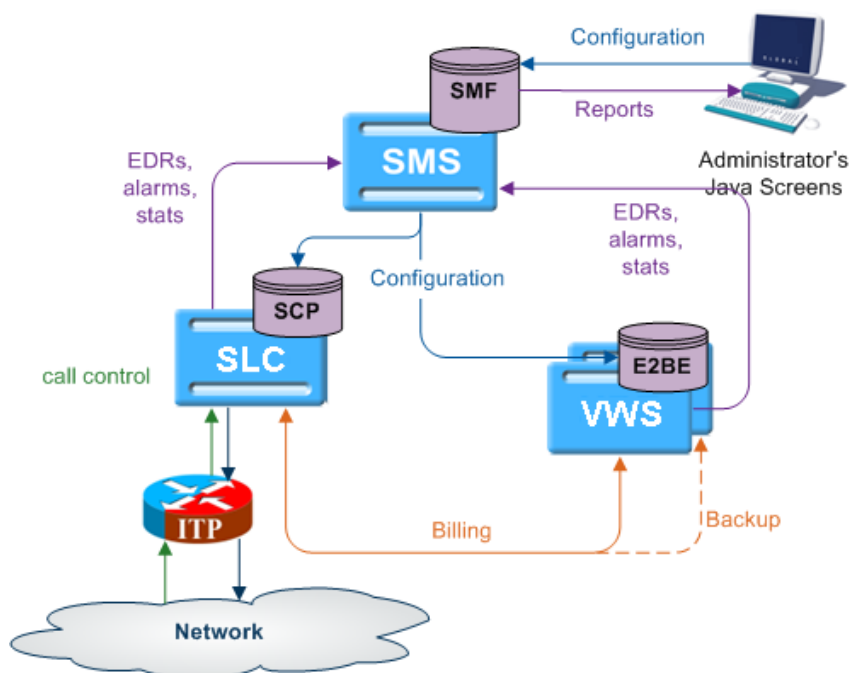
CCS structure

Here is an example of the roles of telco, service provider, and customer in CCS.



Hardware deployment

This diagram shows the how the machines in a CCS deployment interact.



Domains

Domains

CCS uses domains to control which service is provided by a specific network element.

A domain defines the functionality CCS uses a set of one or more domain nodes for. Domain nodes are network elements that provide one or more of the following functions:

- Rating
- Billing
- Wallet management
- Voucher management

An example of a domain would be a pair of Oracle Voucher and Wallet Servers.

Domains enable CCS to separate traffic for a dedicated service such as voucher redemption.

BCD Domain

The BCD domain is used for subscriber accounts stored on the Billing and Revenue Management (BRM) system. For these accounts, the following Convergent Charging Controller charging features will have no effect if used:

- Periodic Service/Charge logic (for example, the ability to perform logic based on periodic charge subscriptions in BRM)
- Balance cascade overrides
- Service logic derived discounts
- Text notification of mid-call tariff change (for example, text notification of mid-call tariff change will not be available).

Note: Convergent Charging Controller does not require a subscriber to have a subscriber record stored locally on Convergent Charging Controller. If subscriber information is not present on Convergent Charging Controller, Convergent Charging Controller uses the subscriber's logical calling number as the subscriber reference.

Domain Types

Domain types enable CCS to handle groups of domain nodes that share a common technology. This can reflect the communication protocol, and/or make and model of the node.

Examples: The following are domain types:

- VWS
- DIAMETER
- Intec

For more information about configuring these domain types, see *Domain* (on page 441).

Changing Domains During Call Processing

The Set Active Domain feature node enables the domain type to be changed at any point within a control plan. For example, if TUS is installed with a default Voucher Domain type of '2', the domain type can be changed mid-call to VWS.

For more information about the Set Active Domain feature node, see *Feature Nodes Reference Guide*.

Distributed Wallet Management

You can distribute wallet management across two domains. The wallet management functionality is split between the following two elements:

- Charging management
- Tracking management

A domain can be configured to support one or both of these elements. This allows chargeable balances to be held on the charging domain, and fraud and expense balances to be held separately on a tracking domain.

Note: Tracking domains can only be configured for a VWS domain type. Charging domains can be configured for any domain type.

What Services Does CCS Provide?

Introduction

As a prepaid and post-paid service, CCS offers profitable alternate billing options to a telecommunications provider.

- Single Use Debit (Prepaid) phone-cards generate a profit for the telco, due to breakage (the remaining, unusable balance on a phone card at expiry).
- Expiry of balance and voucher expiry have an effect similar to breakage, making fixed line or mobile phones equally profitable for the telco.

Wallet flexibility

Combinations of prepaid and post-paid facilities can be tailor-made to suit individual service providers and to meet the business needs of the telco.

The rich system of prepaid services enables services to be offered to everyone wherever they are. CCS enables the telco to offer these customers the flexibility and convenience of multiple services on a single wallet, in a manageable and user-controlled form.

Wallet configuration options

Some examples of wallet flexibility are illustrated below:

- 1 A wallet can be one of the following:
 - Single-use debit wallet (non-rechargeable prepaid)
 - Debit wallet (rechargeable prepaid)
 - Limited-credit wallet (rechargeable prepaid with some post-paid facility)
 - Credit wallet (rechargeable, fully post-paid).
- 2 A single wallet can provide two services:
 - PIN access from any phone
 - Access from a registered telephone line number (CLI) used for any telephony service (phone, internet).
- 3 Wallets can be recharged through the web interface, using a voucher or a credit card.
- 4 A single subscriber can have a single wallet with up to two services.
- 5 A single subscriber can have multiple access devices, all drawing on the same wallet balance.
- 6 A group of subscribers can have access to a single wallet, in the name of one customer. Each subscriber in the group would access the wallet using the same physical phone line, or using the same PIN.

- 7 A group of subscribers can have multiple devices drawing on the same wallet balance. Each subscriber in the group would have his or her own named wallet. She or he would access the wallet using a different physical phone line or using a unique PIN.
- 8 Wallets can be set up anonymously, where a subscriber is not named as in the case of phonecards purchased for resale, or of single-use debit wallets.

Example 1 - single wallet

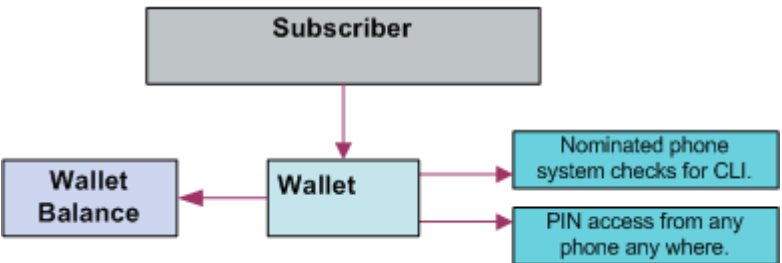
In this example, a subscriber has a single wallet.

A wallet can be accessible by a CLI (the number of a physical phone line used to access the wallet. This can be a mobile or fixed phone.) or by using a PIN. It is only required to select one method of access (PIN or CLI), but it is possible to have both. In this example, the subscriber has both a CLI and a PIN.

This enables the subscriber to use the wallet from any phone, using the PIN, or from a specific phone, where the CLI has been associated with the wallet.

Diagram - single wallet

Here is an example of a single user with single wallet balance, a single wallet and two access mechanisms.



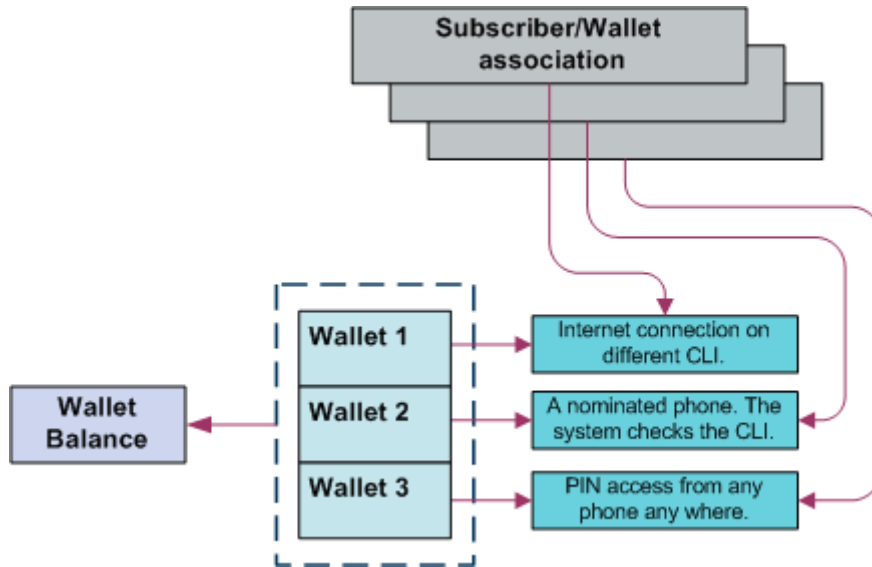
Example 2 - multiple devices

A single subscriber can have an internet connection, a mobile phone and a prepaid card, all drawing on the same wallet and rechargeable through the web interface.

Scenario	Description
1	The internet connection requires a phone connection, which has a CLI. This CLI is registered to a subscriber. Since a subscriber can only have one CLI, no other phone line can be used to access this subscriber/wallet association without a PIN.
2	The subscriber wishes to use a mobile phone without a PIN. The internet connection has been registered as the CLI, so a second subscriber must be created. The new subscriber draws on the same wallet balance as the first subscriber, but is based on the CLI of the mobile phone.
3	The subscriber wishes to have a PIN, in order to access the wallet from any fixed or mobile phone. It is possible to add a PIN to either of the two wallets created above, which would allow this feature to be used independently. However, the subscriber in this example has elected to create a completely new subscriber/wallet association. It draws on the same balance as the first two, but has a PIN and no CLI.

Diagram

Here is an example of a single user with single wallet balance, and three subscriber/wallet associations, one for each of three services.



Example 3 - client group

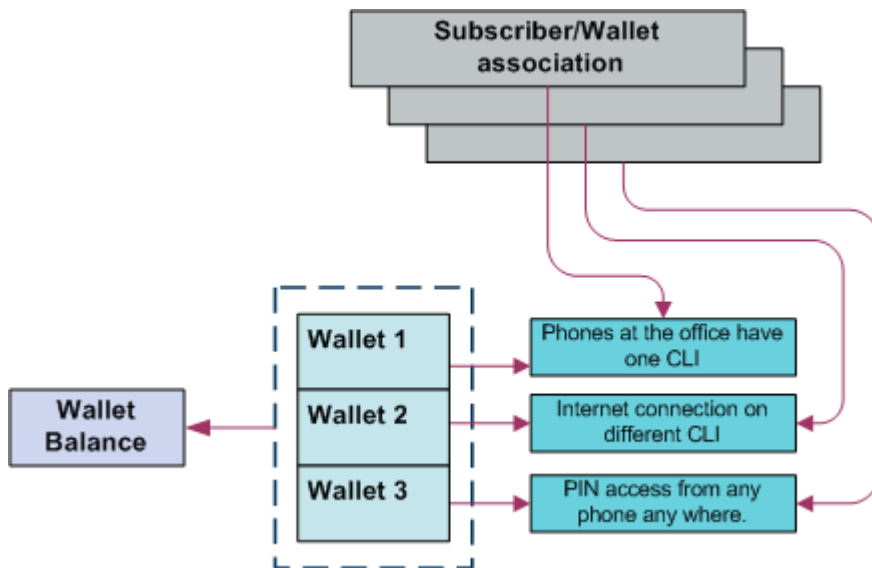
Alternatively, several individual subscribers can have associations with a single wallet. The service provider can monitor each subscriber/wallet association without the inconvenience of maintaining a separate wallet for each subscriber. In a business setting, this has positive implications.

Within an organization, all employees can be issued with a calling card, giving them access to a common wallet. This would allow employees to work off-site, while retaining full access to their usual telephony services. The organization can also run an internet connection through this same wallet, as well as any specific fixed or mobile phones that are registered on the CCS system. This could be achieved through three subscriber/wallet associations, drawing on one wallet.

Scenario	Description
1	The telephone system at the office runs on a single telephone line. A subscriber/wallet association is set up, based on the CLI of that phone line. Any call made from the office will draw on the same wallet. If an organization had more than one phone line, or more than one office, each of these phone lines could have an individual subscriber/wallet association drawing on the same wallet.
2	The office internet connection requires a telephone connection, which has a CLI. The CLI is registered to a new subscriber using the same wallet as before. Since a subscriber can only have one CLI, no other phone line can be used to access this subscriber record without a PIN. It is possible for a subscriber to have both a CLI and a PIN, so the internet connection CLI could be on the same subscriber record as the PIN described above. In this example, the customer wishes to keep these subscriber records separate.
3	The customer wishes to issue calling cards to all employees. A subscriber/wallet association is set up with a PIN, but with no CLI. All employees are given cards with the subscriber ID printed on them. They are given the PIN to access the wallet. All employees can then access the wallet from any fixed or mobile phone, using the PIN. If it is preferred that each employee has an independent PIN, then each employee must have a separate subscriber record. A subscriber record can only have one PIN.

Diagram

Here is an example of multiple users with a common wallet balance, three subscriber/wallet associations for each of three services.



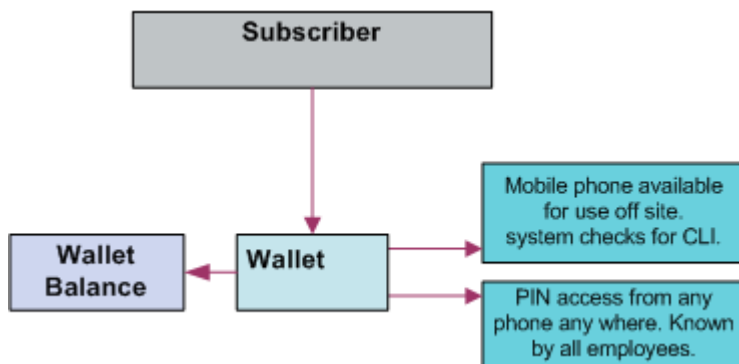
Example 4 - shared single account

Customers may prefer to manage their services on a single wallet. The flexibility of CCS makes this a viable option. Even with a single wallet, it is still possible to manage an internet connection through the CLI, as well as PIN access from any phone. This means that the CLI registered on the subscriber record is that of the internet connection, while the registered PIN enables access to the wallet from any phone.

Alternatively, the registered CLI could refer to the office phone line or to a specific mobile phone. As long as the subscriber/wallet association is registered with only one CLI and one PIN, the service provider can use the wallet according to its requirements.

Diagram

Here is an example of multiple users with one wallet balance, one wallet and two services.



Example 5 - branded prepaid cards

A further opportunity enabled by CCS is branded prepaid. Branded prepaid allows service providers to market customized prepaid cards (either single-use debit wallets of a set value or rechargeable debit cards) with their own company logo. This can be a novel means of advertising for the service provider, particularly if the prepaid cards include special rates and discounts not available elsewhere. This is easily configurable in CCS.

The convenience and economy of the card is in itself a selling point, but the service provider also benefits from the longevity of the advertisement – especially in the case of rechargeable cards. A subscriber is far less likely to discard an advertisement printed on a phonecard.

In this example, the card is a \$5 single-use debit wallet, which means that each card printed has a subscriber record and wallet of its own.

Making a Call in CCS

Introduction

After a subscriber has been assigned a subscriber ID and PIN or a CLI, it is possible for them to make a call against a CCS subscriber/wallet association.

Calling from a registered phone

Here is the process followed when a subscriber makes a call from a registered fixed or mobile phone (CLI).

Stage	Action
1	The subscriber dials the toll-free number corresponding to the country in which they are located. Note: The telco supplies this number to the service provider.
2	CCS checks the CLI against the subscriber information. As the phone is registered, a dial tone will indicate that the CLI has been accepted. Note: If the information is invalid, then the call will not be connected.
3	The subscriber enters the required phone number, followed by #. Result: The call will be connected and charged to the subscriber's wallet, using the appropriate tariffs for that specific date and time of day.

Calling from any phone

Here is the process followed when a subscriber makes a call from a fixed or mobile phone that is not registered, using CCS.

Stage	Description
1	The subscriber dials the toll-free number corresponding to the country in which they are located. Note: The telco supplies this number to the service provider.
2	CCS checks the CLI against the subscriber information. As the phone is not registered, a 'beep' will indicate that the system requires entry of phone subscriber identification details.
3	The subscriber enters the subscriber ID and PIN as a single number, followed by #. The subscriber ID consists of 6 digits, including a 2-digit prefix specific to the service provider. The PIN can have up to 20 digits. Example: The subscriber with a subscriber ID of 445678 and a PIN of 9900 would enter the number 4456789900#.

Stage	Description
4	A dial tone will indicate that the subscriber ID and PIN have been accepted. Note: If the information is invalid, the call will not be connected.
5	The subscriber enters the required phone number, followed by #. Result: The call will be connected and charged to the subscriber's wallet using the appropriate tariffs for that specific date and time of day.

Subscriber Accounts and Wallets

Subscriber accounts

A subscriber account is the unique record in CCS which records the details of a person (subscriber) who is purchasing services from the telecommunications provider.

A subscriber account is identified by a unique E.164 number. This is referred to as the MSISDN of the subscriber.

Wallets

Each subscriber account has one associated primary wallet. The subscriber can also have a secondary wallet. Wallets can be shared between subscriber accounts. A wallet is a group of balances owned by the subscriber and available to pay for prepaid services offered by the platform.

Example: A subscriber could have a "General Cash" balance and a "Free SMS" balance in their wallet. Each balance has its own expiry date, which means that any value left in the balance after this date is removed.

Wallets are associated with a specific VWS Voucher and Wallet Server pair. For more information about this relationship, see *Voucher and Wallet Server Technical Guide*. For more information about moving wallets from one VWS pair to another, see *UBE Account Balancing* (on page 78).

Wallet states

The wallet has a state which:

- Indicates what phase of the life cycle the associated subscriber account currently is in
- Determines whether the subscriber can use his or her services

This table describes the available wallet states.

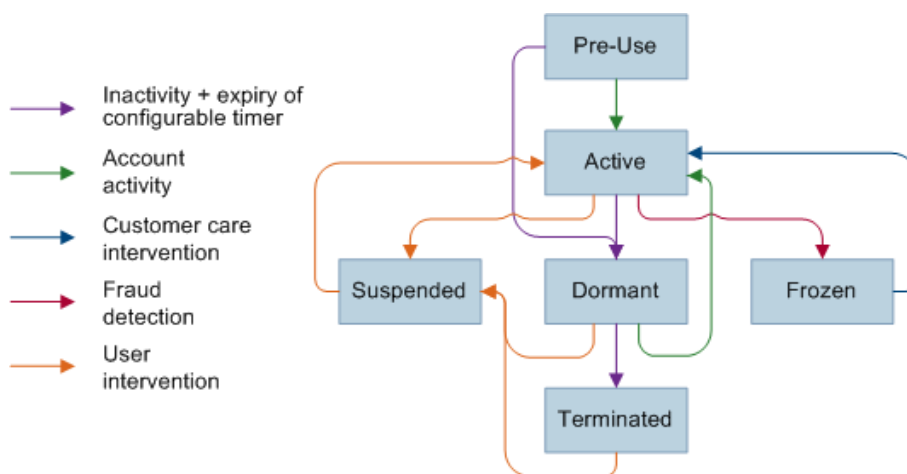
State	Description
Pre-use	The first state after the subscriber account/wallet is created.
Active	The state during which normal wallet operations are handled. All services can be used. When a subscriber uses their account for the first time (via any paid service), the wallet moves from the Pre-use state into the Active state. The initial expiry dates for the balances and the wallet are set when the wallet is activated.
Dormant	If the subscriber does not use any services for a configurable period of time, the account/wallet is put in the Dormant state. The Dormant state is useful for reporting inactive subscribers. All services are still accessible.
Frozen	If fraudulent activity is detected on the subscriber account, the subscriber account/wallet is changed into the Frozen state. All services are disabled until manual intervention by an operator.

State	Description
Suspended	The suspended state can be used by the operator to temporarily disable a subscriber's account.
Terminated	When the wallet's expiry date is reached, the subscriber account/wallet is moved into the terminated state.

Note: Wallets may also be affected by expiry dates. For more information about wallet and bucket expiry, see Wallet and Bucket Expiry in *Voucher and Wallet Server Technical Guide*.

Wallet lifecycle

This diagram shows the states in a standard life cycle of a wallet.



Balance units

Balance units define how a wallet treats a type of currency (for example, treating SMSs differently from cash). All balance types have a balance unit.

Balance types

Balances of different sorts of value are distinguished by balance type. Balance types enable Service Providers to separate a subscriber's cash/units into logically separate areas such as:

- Promotional (have 1 day to use 20 SMSs)
- Normal (recharges done by a subscriber)

When a new balance type is created, you must list the services it can be used for.

Balance Types can be dedicated to particular services. A Promotional Cash Balance might only be for services which are high value for the subscriber, but can be delivered at minimal cost to the operator.

Example: National voice calls to other of the operator's subscribers.

Internal balance types

Some balance types are only used internally in CCS, for example, periodic charge subscription balances.

Balance expiry

When the expiry date of a balance is reached, the credit of that balance is lost.

Credit Cards

Maintaining credit card details

Credit card details can be created and edited in the following Subscriber Management screens:

- **Credit Cards** tab – See *Credit Cards* (on page 45)
 - Create credit cards. See *Adding credit cards* (on page 48). You can then register a subscriber to the credit card. See *Registering subscribers to credit cards* (on page 51).
 - Edit credit cards. See *Editing credit cards* (on page 49).
- **Subscriber** tab – From the New and the Edit Subscriber screens - *Credit Card* (on page 100) option
 - New – Create credit card registered to the subscriber. See *Adding credit cards* (on page 48)
 - Register – See *Registering credit cards to subscribers* (on page 102)
 - Deregister – Deregister a credit card from the subscriber
 - Freeze – Freeze a credit card
 - Confirm – Confirm the credit card to the subscriber
 - Delete – Delete the credit card

Credit card and subscriber maximums

Each subscriber can recharge the account using up to the specified number of credit cards, for example, 4. Each credit card can be used to recharge up to the specified number of calling cards. These limits are set:

- Globally on the **Global Configuration** tab. See *Setting global credit card maximums* (on page 468).
- Per service provider on the **Resource Limits** tab. See *Setting Subscriber Credit Card Limits* (on page 486).

Credit card control plans

Each action executed by clicking a button on a credit card related screen executes a Business Process Logic (BPL) that runs a control plan to carry out the action.

Here are the default control plans associated with credit card BPLs.

BPL	Control Plan
BPL Add Credit Card	BPL-AddCC
BPL Edit Credit Card	BPL-EditCC
BPL Register Credit Card	BPL-RegisterCC
BPL Deregister Credit Card	BPL-DeregisterCC
BPL Delete Credit Card	BPL-DeleteCC

Product Types

Product types

A product type defines the:

- Services that are available to a subscriber
- Tariffs which apply to the subscriber's services
- Control plans that are executed when a service is used
- Wallet life cycle policy

Product types are assigned to a subscriber and wallet combination. This enables the subscriber to have two different product types, if they have two wallets. If a wallet is shared between subscribers, each subscriber can have a different product type for that wallet.

Activation credits/promotions

You can associate product types with wallet activation promotions, with configurable:

- Balances (one of the predefined balance types, or one of the operator-defined balance types)
- Values
- Validity periods

Example: A wallet activation promotion that adds 10 EUR to the Promotional Cash balance with a validity period of 2 months can be associated with the Bronze product type. This results in each Bronze subscriber receiving 10 EUR on their Promotional Cash balance when they use a service for the first time. The expiry date of the balance is set to 2 months after the activation date.

Rating and Tariffs

Introduction

The charge for a call or data session is set by subscriber's product type. Product types include the tariff plans which define the service charge. Tariff plans can be associated with multiple product types. A different set of tariffs can be defined for each product type.

Tariff plans define which rate table applies to a product type at a particular time.

Tariff plans and product types can also be associated with a named event catalog through the Tariff Plan Selector. The named event catalog defines:

- A list of specific events (named events) that can be charged
- The actual charge for the included events

The charges are applied whenever the named event occurs.

More information

For more detailed information about voice call rating in CCS, see:

- *Rating Management* (on page 323)
- *CCS Technical Guide*
- *Voucher and Wallet Server Technical Guide*

Recharges

Introduction

Subscribers can recharge their balances through a range of recharge mechanisms, including:

- Voucher recharge through IVR
- Voucher recharge through direct dial
- External recharge through provisioning interface (for example: ATM, credit card, web interface)

In addition to the nominal value of the recharge, a bonus can be given when a recharge is made.

After the recharge, a notification SMS is sent to the subscriber.

Recharge promotions

You can reward a subscriber with a promotion bonus when a custom recharge is performed. The promotion bonus is given when two conditions are met:

- 1 The CCS PI `EXTRA_EDR` parameter must be set to:
`EXTRA_EDR = "CHANNEL=CHANNEL_NAME"`
- 2 The recharge value passed in the PI command exceeds the balance value condition associated with the applicable promotion.

Example: If a promotion is defined with channel “ATM” and balance value event condition 10 EUR, a PI recharge with reference ATM20080110123000 and value 20 EUR will trigger the promotion to be awarded.

Promotions can be configured with various parameters. For more information, see *Promotion Manager User's Guide*.

Balance expiry

Recharges extend the expiry periods of the balances and/or the wallet being recharged.

When a balance is recharged, its expiry date is set to the current date plus the balance expiry period specified in the recharge's voucher type. If the current expiry date of the balance is already greater than this date, the current date is kept.

Wallet expiry

Recharges extend the expiry periods of the wallet being recharged.

When a wallet is recharged, its expiry date is set to the current date plus the wallet expiry period specified in the recharge's voucher type. If the current expiry date of the wallet is already greater than this date, the current date is kept.

Failed recharges

You can set the maximum number of failed recharge attempts that are allowed within a 24 hour period (allowed values 2-99). If the maximum number of failed recharge attempts is exceeded, the account of the recharging subscriber is moved into the frozen state.

Voucher batches

You can use the CCS Voucher Management screens to create vouchers in batches of up to 10000 vouchers.

Each voucher batch is encrypted during the batch creation process using a PGP public/private key pair. You can upload voucher reseller's PGP public keys to encrypt a batch so that it can only be decoded by the retailer.

For security reasons, after the creation of a voucher batch, the batch remains in “Created” state until it is moved into the “Active” state manually by an operator.

Voucher recharge methods

This table describes the methods subscribers can use to recharge their account with a voucher.

Method	Description
Self-care	Subscribers use IVR to interact with the self-care function. For more information about self-care, see <i>Subscriber Self-care</i> (on page 23).

Method	Description
Web	Subscribers use a web interface to enter the voucher details. The website is developed by the operator and uses PI commands to integrate with the CCS PS.
SMS Direct Access	Subscribers send an SMS to a dedicated short code on the CCS PS with the voucher number inside the SMS. Example: A subscriber sends voucher number 12345678901234 inside an SMS to short code 4001. The subscriber's account balance is recharged with voucher 12345678901234.
Direct Dial	Subscribers dial a dedicated number that connects them to the CCS PS with the voucher number appended to it. After CCS PS attempts the recharge, an announcement is played indicating success or failure of the recharge. Example: If the special direct dial recharge number is 4123, a call to 412312345678901234 will recharge the account of the subscriber with voucher 12345678901234.
Customer Care	Subscribers call the customer service center, and the operator recharges the accounts by entering the voucher details into the Voucher Management screen.

External recharge methods

The Provisioning Interface provides an interface to CCS's recharge facility. Using the interface, you can integrate CCS with another system (for example: a web-based self-care system or a banking system such as ATM or credit card).

Recharges using the PI can include custom details, including:

- Configurable recharge amount
- Balance and expiry dates

Subscription Services

Introduction

Periodic charges enable a telco to set up ongoing charging. Services which are provided using control plans (such as service bundle discounts) can use the Periodic Charge State Branching node to check whether a subscriber has a valid subscription to a service before providing any benefits.

While periodic charges are generally used to apply regular charges, they can also be used for other functions such as resetting balances. This can be done with or without notifying the subscriber.

Types of periodic charges

Periodic charges have three main actions:

- 1 Debit a subscriber's wallet
- 2 Recharge a subscriber's wallet
- 3 Send SMS notifications to a subscriber

These actions can be combined in various ways to implement different types of services.

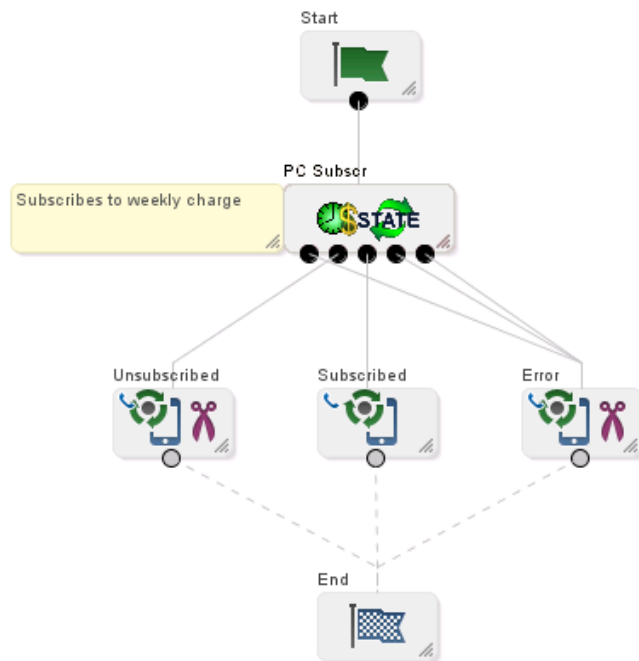
Subscribing and Unsubscribing

Changing a subscriber's service subscription state is controlled using BPL tasks. These tasks can be made available to subscribers using self-care facilities such as IVR or web, and can be made available to Customer Care Representatives on the Customer Care Portal.

The BPL tasks use the Periodic Charge Subscription feature node to change the subscriber's periodic charge state to subscribed, unsubscribed or terminated. For more information about the Periodic Charge Subscription feature node, see *Feature Nodes Reference Guide*. For more information about setting up BPL tasks, see *Task Management* (on page 541).

Example Periodic Charge Subscription Control Plan

This figure shows an example control plan that could be used for a simple BPL task which subscribes the subscriber to a periodic charge.

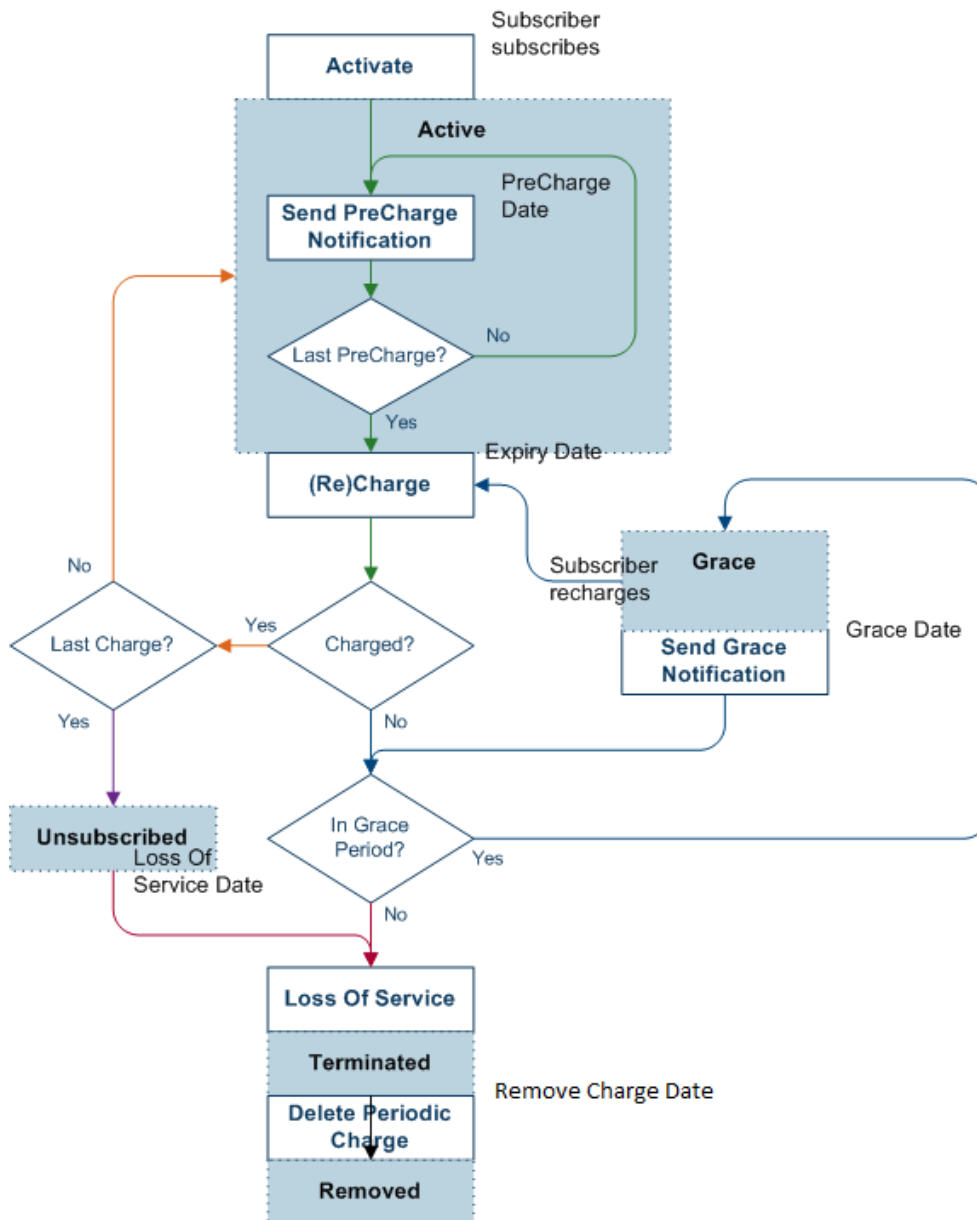


Notes:

- The Periodic Charge Subscription feature node attempts to subscribe the subscriber to the weekly charge. Depending on the result of the operation, the BPL task is routed to a different exit.
- The Unconditional Terminate feature node called Subscribed returns a 103 to the BPL task running the control plan.
- The Disconnect feature node called Unsubscribed returns a 102 error to the BPL task running the control plan.
- The Disconnect feature node called Error returns a 99 error to the BPL task running the control plan.

Periodic charge life cycle diagram

This diagram shows the standard life cycle of a periodic charge.



Periodic charge life cycle

This table describes the periodic charge life cycle shown in *Periodic charge life cycle diagram* (on page 17).

Transition	Description
Activate	The activate transition sets up the periodic charge for a subscriber's wallet. The periodic charge is active after this stage has finished. During the active stage, any configured pre-charge notifications are sent. Note: There is a unique periodic charge for each subscriber who uses a wallet. The subscriber's product type defines which periodic charges they can use.
Send Pre-Charge Notification	The first, second or third pre-charge notification is sent to the subscriber.
(Re)Charge	The charge transition is triggered by the expiry date defined in the When option of the periodic charge. The recharge transition is triggered when the subscription is in a grace state and the subscriber recharges their wallet. The charge or recharge transition attempts to apply the charges (if any) and then the recharges (if any) defined in the <i>What</i> (on page 303) option for the periodic charge. • If a charge or recharge succeeds and it is not the final charge, the State is set to Active. If a successful charge or a recharge success notification is configured, it is sent. • If a charge or recharge succeeds and it is the final charge, the state is set to unsubscribed. If a final success notification is configured, it is sent. • If a charge or recharge fails (whether or not it is the final charge) and a grace notification is configured, the periodic charge state is set to grace. If a failed charge or recharge failure notification is configured, it is sent. • If a charge or recharge fails (whether or not it is the final charge) and no grace notifications are defined, the periodic charge state is set to terminated. If a loss of service notification is configured, it is sent.
Send Grace SMS	The first or second grace notification is sent to the subscriber.
Loss Of Service	The loss of service transition is triggered by the expiry date defined in the Loss Of Service field. The loss of service transition changes the state of the periodic charge to terminated and sends out the loss of service notification (if any).
Delete Periodic Charge	The delete periodic charge transition is triggered by the expiry date defined in the Remove Charge field. The delete periodic charge transition removes the periodic charge from the subscriber's wallet.

Period calculations

This table shows how the intervals between transitions for periodic charges are defined.

Interval	State	Description
Activation Date to Charge Date	Active	Activation uses the When option configuration (specifically Period) to define the interval between the activation date and the charge date. The charge date defines when the periodic charge is applied. Notes: - For monthly, quarterly, semi-annual, and annual charges, the day of the month to apply the charge is configured. If the day specified is invalid for a particular month, the charge is applied on the last day of the month. For example, if you specify the 31st, the charge is applied on the 30th for months with only 30 days or on the 28th/29th for February. - While periodic charges are held in buckets, the product type's Recharge Minimum Balance Expiry Period Extension field does not affect the expiry calculation.
PreCharge Notification Dates to Charge Date	PreCharge (Active)	The interval between the precharge notifications being sent and the charge date is defined by the Days Before Charge field which corresponds to the notification being sent. Note: The notifications must be at least 1 day apart, 1 day before the charge date and 1 day within the smallest possible activation to charge interval.
Charge Date to Charge Date	Active	The interval between charge dates is defined by the period of the charge (as defined on the When option).
Charge Date to Grace Notification Dates	Grace	The interval between the charge date and the grace notification dates are calculated forward from charge date. Note: The notifications must be at least 1 day apart, 1 day after the charge date and 1 day within the smallest possible charge to loss of service interval.
Charge Date to Loss Of Service Date	Unsubscribed	The interval between charge date and loss of service date is defined by the normal period of the charge period. Note: A periodic charge moves immediately from charged to terminated if either occurs: - No grace notifications are configured - The subscriber is specifically terminated by a BPL or IVR event
Loss Of Service or Grace Notification Dates to Remove After Date	Terminated	Defined by the Remove Charge field on the Notifications option for the periodic charge. Note: This is true, even if a subscriber terminates while in a grace state.

Note: The transitions are executed after the specified date. The exact time depends on the platform's specific circumstances. For more information about when transitions are triggered, see *CCS Technical Guide*.

Applying periodic charges

Periodic charges are applied according to the these rules:

- Periodic charges apply to product types they have been assigned to. You can assign more than one periodic charge to a particular product type.
- Periodic charges are applied on a per-wallet basis based on which periodic charges the subscribers who use the wallet have subscribed to. This means if more than one subscriber uses a wallet, the wallet is debited/credited for each of the charges as they are applied to the subscribers.
- Debit charges are applied before credit charges.

Transferring Subscriptions

Subscribers can transfer from one subscription in a periodic charge group to another subscription in a periodic charge group. This can be triggered from a control plan (enabling IVR or BPL task implementations) or using the CCP Dashboard.

Control plan-based transfers are executed using the Periodic Charge Transfer feature node. For more information about this node, see *Feature Nodes Reference Guide*.

For more information about setting up transfers using the CCP Dashboard, see *Customer Care Portal User's Guide*.

Warning: Subscribers should only be subscribed to one periodic charge in a group at any one time. This restriction is not strictly enforced by the VWS, so it must be enforced by the design of the service.

Promotions

Introduction

Promotions can be used to increase subscriber activity by rewarding subscribers with more attractive packages for specific behavior. Promotional bonuses can be implemented using one of the following:

- In-built rewards and bonus schemes configured in Promotion Manager
- Free form configuration such as control plans and/or profile fields

In-built reward and bonus types

This table describes the types of in-built rewards and bonuses provided to CCS through Promotion Manager.

Type	Description
Tracker threshold promotions	Awarded to subscribers whose total usage exceeds a set threshold. Promotional reward can change the subscriber's product type (and applicable tariff), and/or award one or more bonus credits. Promotion notifications can be sent to subscribers specifying how much more they need to spend to upgrade.
Wallet activation promotions	Triggered when a subscriber activates their account. Defines a time period from subscriber creation to activation. If a subscriber activates their account in this period, they are given free SMS messages.

Type	Description
Balance recharge promotions	Awards a promotional cash bonus to subscribers if they recharge their account and the recharge is above a specified threshold.

Expenditure balances

Tracker threshold promotional activity is recorded in expenditure balance types. These expenditure balance types are used as counters and are incremented according to the qualifying expenditure a subscriber incurs. Counters can be measures of:

- Cash
- Time
- Units of other activities

Expenditure plans

Expenditure plans are collections of expenditure balances. They define the expenditure balances which are increased by qualifying charges.

Each CLI-DN or named event can specify a single expenditure plan to contribute to. The expenditure balances included in the expenditure plan are increased by charges against qualifying balances in the balance type cascade specified by the CLI-DN or named event.

A qualifying balance is a chargeable balance which:

- Is in the CLI-DN or named event's balance type cascade
- Has the Contributes to Expenditure check box enabled on its balance type record

For more information about configuring expenditure plans, see *Expenditure Plan* (on page 390).

Expenditure promotions benefits

The benefits provided by a promotion are defined by the promotion type. For more information about the benefits which can be provided by a promotion type, see *Promotion Manager User's Guide*.

Multi-balance type example

If you have an expenditure plan with the following expenditure balance types:

- Daily cash
- Daily time
- Weekly cash
- Monthly unit

A call comes in lasting for 60 seconds costing 50 cents.

Daily cash and monthly cash would be incremented by 50 cents. Daily time would be incremented by 60 seconds and monthly unit would be incremented by 1.

Example - cash balance type

Configuration:

Standard calls between on-net locations are charged under the HPLNM-MO rate table, and the Onnet x Onnet CLI-DN.

The CLI-DN uses the voice balance type cascade which uses these balances in descending order:

- More cash
- Promotional cash
- General cash

The more cash balance does not contribute to expenditure. Promotional and general cash both have the **Contributes to Expenditure** check box selected.

Charges under the Onnet x Onnet CLI-DN contribute to the "Standard" expenditure plan. The "Standard" expenditure plan includes the monthly and yearly expenditure balances. Both expenditure balances have a corresponding reward (monthly reward and yearly reward).

The system also has an international reward program. Like the Onnet x Onnet CLI-DN, the international CLI-DN uses the voice balance type cascade, but it contributes to the "International" expenditure plan, not the standard expenditure plan. The "International" expenditure plan includes the "International" expenditure balance, which has a corresponding "International" reward.

Example 1:

Caller Ahmed places a Onnet to Onnet call and talks for 12 minutes. Following the voice balance type cascade, CCS charges \$2 to his more cash balance, \$3 to his promotional cash balance and 1\$ to his general cash balance.

Because more cash does not contribute to expenditure, his expenditure balances are not increased by his more cash charge. However, because the promotional and general cash both contribute to expenditure, \$4 is added to all the Expenditure balances in the Onnet x Onnet CLI-DN's specified expenditure plan (that is, \$4 is added to the yearly and monthly expenditure balances).

The international expenditure balance is not changed.

Example 2:

Caller Bernice places an Onnet to international call and talks for 12 minutes.

Following the voice balance type cascade, CCS charges \$2 to her more cash balance, \$3 to her promotional cash balance, and \$15 to her general cash balance. Because more cash does not contribute to expenditure, her expenditure balances are not increased by her more cash charge.

However, because the promotional and general cash both contribute to expenditure, \$18 is added to all the expenditure balances in the international CLI-DN's specified expenditure plan (that is, \$4 is added to the International expenditure balance).

The yearly and monthly expenditure balances are not changed.

Wallet Activation Promotions

Wallet activation promotions are benefits which are provided when a subscriber activates their account.

To apply wallet activation promotions, a subscriber must be routed through the Account Activation feature node in a control plan. For more information about the Account Activation feature node, see *Feature Nodes Reference Guide*.

Recharge bonuses

Balance recharge promotions are cash bonuses applied to a subscriber's account if they recharge by more than a specified amount to a specified balance. The bonuses can be one of the following:

- A percentage of the recharge amount
- A benefit defined by a voucher type

More information

Promotions are configured in Promotion Manager. For more detailed information about promotions, see *Promotion Manager User's Guide*.

Subscriber Self-care

Introduction

Subscriber self-care enables the subscriber to manage their own account. It includes these features:

- Requesting information on the current subscriber account and service status (for example: balance and wallet status, product information)
- Modifying certain parameters of their account within the limitations imposed by the operator (for example: change language, change product)
- Recharging their account

Main menu

When subscribers access the IVR self-care facility, they are routed through a single main menu. The menu provides an overview of the available self-care features and enable the subscribers to navigate to the sub-menus for the individual self-care features.

Voucher recharge

Subscribers can use self-care to redeem a voucher which recharges their own account and recharges another subscriber's account.

IVR system

Subscribers can use the self-care feature through a CS1-compatible IVR reached by calling a special number (short code), set by the operator.

The IVR uses announcements created by the operator in each supported language. The announcements are used by the language extension in the PA/PACUI operations executed by the IVR. When subscribers who have not yet set their preferred language make a voice call, the system automatically connects them to an IVR menu to select their preferred language.

Web

Subscribers can use the self-care feature through a separate website. The website uses the PI commands to trigger events in CCS.

The development, testing, integration and support of the web-based self-care interface is the sole responsibility of the operator.

Notifications

Introduction

Notifications are any short message sent by CCS to a subscriber's handset. CCS generates notifications which are sent to the subscriber to inform them about specific events.

CCS sets up notifications which are delivered by other applications. Different delivery applications are used depending on the type of network and destination.

Some examples of notifications that can be sent include:

- Balance expiry
- Service expiry
- Recharge notification

ACS Notification Templates

You define the content to include in notifications by configuring ACS notification templates. For more information, see *ACS User's Guide*.

Examples of CCS activities that can use ACS notification templates are:

- Feature nodes in control plans
- Business process logic (BPL) tasks
- Credit transfers
- Periodic charges
- Profile updates
- Real-time notifications
- Promotions

Notification Languages

Notifications can use any language configured on the system. They are sent in the subscriber's preferred language (if set) or in the system's default language.

For more information about configuring:

- Languages, see *ACS User's Guide*
- Notification translations, see *CCS User's Guide*

Delivery methods

You can use any of the following methods to deliver notifications:

- Messaging Manager FDA (First Delivery Attempt) to deliver notification SMS directly to the handset of the subscriber
- EMI protocol to submit notification SMS to an EMI interface of the operator's SMSC
- SMPP protocol to submit notification SMS to an SMPP interface of the operator's SMSC

The CCS PS uses one of these delivery/submission attempt sequences:

- 1 Try FDA delivery first, if it fails try EMI submission
- 2 Try FDA delivery first, if it fails try SMPP submission
- 3 Try EMI submission
- 4 Try SMPP submission

In all cases, if all attempts fail, the message is discarded (no Store-and-Forward is performed).

Basic notifications

Notifications are sent to subscribers when:

- The number of days until the expiry date of his wallet is less than a pre-configured threshold (the warning period can be configured for each product type)
- One or more of his balance(s) has (have) been recharged (the SMS contains the new balance values)

Friends and Family/Destination Discount Configuration

Discount Overview

The Friends & Family (F&F) discount module seeks to apply a configured discount to calls made to numbers defined in a list, of up to 10 entries, for a particular subscriber when made from an MSISDN associated with that subscriber.

The discount percentage is the accumulative amount that is to be discounted in total for Friends & Family numbers.

The only time when an individual call is discounted by the amount configured for the Friends & Family product associated with a subscriber is when that subscriber has only one Friends & Family number configured.

Friends & Destination discounting applies either to a single number prefix or a group of number prefixes. The percentage defined is discounted from all calls with the discount prefix, or a prefix in the same group as the discount prefix (prefixes belong to the same group if they share the same announcement).

Note: Whether discounting applies to a single number prefix or a group depends on whether or not Multi-Destination is selected in the Friend/Destination Discount Node in the control plan. For more details, see *Feature Nodes Reference Guide*.

What will be discounted

Only dialed numbers that exactly match the configured Friends & Family numbers are discounted. However, numbers prefixed with the Friends & Destination number are discounted.

No discount

There is no discount if:

- There is no discount set up
- Discount is set to 0
- There are no numbers defined to match
- The numbers defined do not match
- There is an error

Discount example

If the Friends & Family discount percentage is 10% and:

- There is only 1 Friends & Family number configured, any calls to that number are discounted by 10%.
- There are 10 Friends & Family numbers configured, any calls to those numbers are discounted by 1%.

The Wallet Life Cycle

Introduction

Traditionally the life cycle of a wallet in the Prepaid Charging product is simple and non-customizable. There is a predefined list of states, with fixed rules for transition between these states.

The Wallet Life Cycle functionality described in this document defines a flexible user-definable method for enhancing the life cycle of the wallet. In addition, a user-definable life cycle is available for individual balances of a wallet.

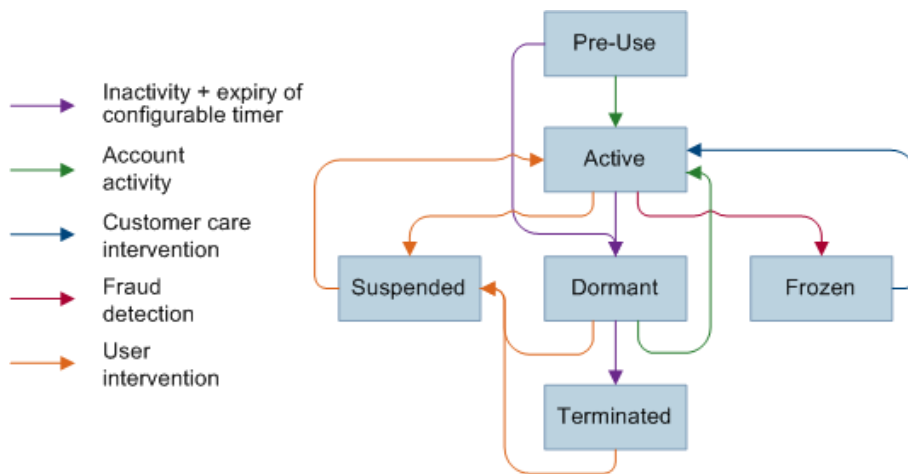
Requirements

The principal requirements for the user-definable wallet life cycle are as follows:

- The user can define their own user-named periods within the wallet life cycle
- The wallet life cycle is definable per product (each product may have a different life cycle for the wallet)
- The user can define the durations of each period in the life cycle
- The user can define the basic services that are available during each period of the wallet life cycle:
 - Session Charges
 - General Charges and Recharges
 - Named Event operations
- The user may optionally define a control plan that will be run at the beginning of a period (control plans offer far more flexibility in terms of the actions that may be performed at key points in the wallet life cycle).
- The user may also optionally define notifications that will be triggered at the beginning of a period.

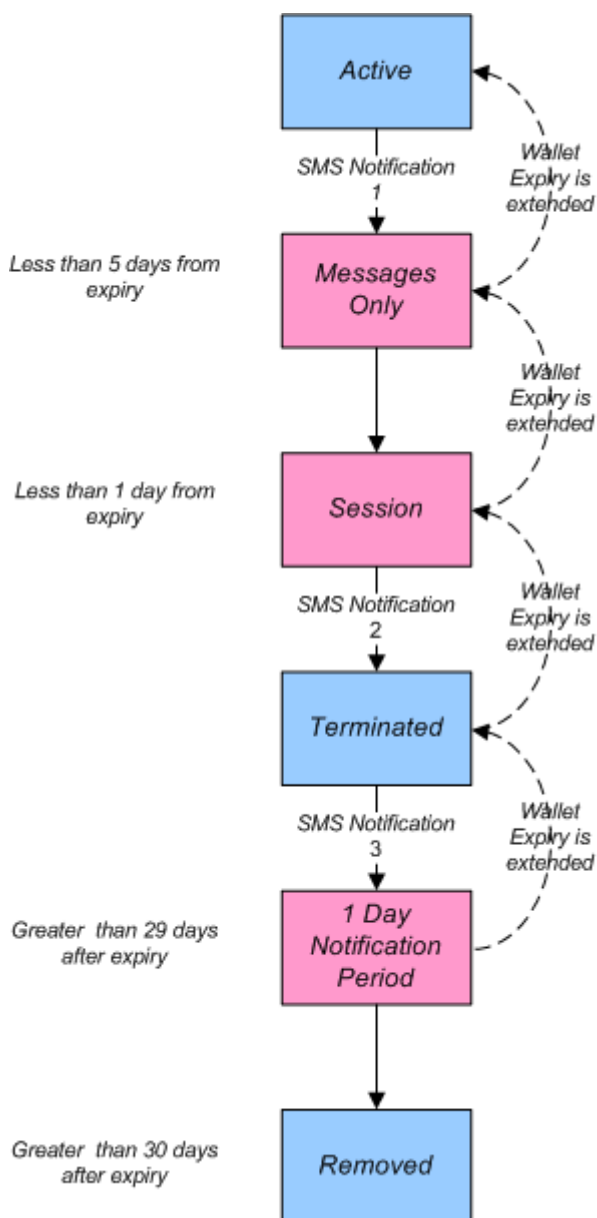
Example default wallet life cycle

This diagram shows the states in a standard life cycle of a wallet.



Example user-defined wallet life cycle

Here is an example user-defined wallet life cycle.



Description of example

The above diagram shows a wallet life cycle with the usual states (Active, Terminated, Removed) extended by 3 periods. The periods are sub states that are definable per product (whereas the usual states are common to all products) to increase the granularity between states. Transitions between those periods are defined by offsets (in number of days) from the expiry date of the wallet.

For example, the state 'Messages Only' is defined as 5 days prior to wallet expiry hence it is configured as -5, whereas the state '1 Day Notification Period' is defined as 29 Days after expiry, hence is configured with a value of 29.

When the wallet is in a given state of the life cycle, only certain services may be allowed. For example, in the period 'Session' the 'Session Charges' feature is disabled, so no outgoing calls will be allowed for that wallet. Should a charge/reservation be requested for a named event or an outgoing (MO) call for example, the billing engine will respond to the request with a NACK representing a restriction to the service.

As the wallet moves from one period in the life cycle to another, certain actions may be triggered. For example, as the wallet moves beyond 29 days after the wallet expiry, the wallet enters the '1 Day Notification Period'. This is configured to trigger a named control plan. The named control plan is configured to deliver an SMS notification of imminent wallet removal.

Tasks

Introduction

Task Management comprises a set of Business Process Logic tasks that fall within the defined business rules of the service provider, and that can be executed for individual subscribers. Each business process is configured in the control plan referenced in the BPL task. The feature nodes in the control plan implement the actions of the business process.

For more information, see *Task Management* (on page 541).

Purpose

The following list provides some examples of the processes that can be executed through a BPL task:

- Product Type Swaps
- Profile updates
- Voucher Type recharges
- Wallet State changes
- Credit Transfers

Charging and notification

In the BPL task control plan you can configure extended functionality, including:

- A charge for the service provided
- Wallet state changes
- Profile updates
- Send notifications

If you have the Voucher Management functionality, you can also recharge vouchers. For more information about vouchers, see *Voucher Management*.

Feature nodes

This table describes the core feature nodes used in BPL control plans.

Note: Other nodes available in the Control Plan Editor can be included in BPL control plans if required. For more information on the available feature nodes, see *Feature Nodes Reference Guide*.

Node	Description
Account State Branch	Use this feature node to determine whether the subscriber's wallet is in the correct state to enable the BPL to execute.
Business Prefix Branch	Use this feature node to select the wallet type the BPL actions apply to, based on the called party number.

Node	Description
Disconnect Call	When a call passes through this feature node, it indicates that the BPL has failed to execute. The cause value for the feature node must be set to a response number configured for a 'Not Acceptable' BPL response on the BPL Response Mapping tab. Warning: The default value of 31 should not be used.
Named Event	Use this feature node to charge the subscriber for the business process. Use to: • Reserve funds for the BPL • Confirm the reservation after the BPL has completed • Allow for a negative wallet balance
Send Short Message	Use this feature node to send notifications for the BPL. The message to send is configured in the feature node.
Set BE EDR	Use this feature node to update any EDRs generated by the actions of the BPL, such as a named event or a voucher type recharge.
Set Wallet Type	Use this feature node to set the wallet type the BPL actions apply to. Warning: Announcements configured in this feature node are not used in the BPL.
Store Profile	Use this feature node to update a specified profile with the data configured in the feature node. Warning: Updates to profile data can also trigger a DAP or notification. These must be configured on the Profile Notifications tab.
Terminate Unchanged	When a call passes through this feature node, it indicates that the BPL has executed successfully. The 'OK' BPL response is reported.
Unconditional Termination	When a call passes through this feature node, it indicates that the BPL has executed successfully. The termination number for the feature node must be set to the number configured for the 'Found' BPL response on the BPL Response Mapping tab.
Voucher Type Recharge	Use this feature node to recharge the subscriber's wallets using the voucher type configured for the feature node. Tip: The 'Unsupported' exit is taken if the domain for the subscriber does not support voucher type redemptions.
Wallet State Update	Use this feature node to change the state of the subscriber's wallet to the state configured in the feature node.

User access

After a BPL has been defined, it can be accessed from:

- The Edit Subscriber screen
- The CCP Dashboard

User access to BPLs on the Edit Subscriber screen and the CCP Dashboard is managed through the user templates defined in the SMS User Management screen. For information about creating and maintaining user templates, see *SMS User's Guide*.

You can configure which BPLs appear on the CCP Dashboard by using the Subscriber Profile Manager screen. For more information, see *Subscriber Profile Manager User's Guide*.

Processing

BPL execution is managed by the smsTrigDaemon process. For more information about smsTrigDaemon, see *SMS Technical Guide*.

Alarms, Statistics, Reports and EDRs

Introduction

CCS uses the centralized management services of SMS to assist the administration of the services.

Alarms

CCS uses the SMS integrated alarms collection, viewing, and forwarding system. The alarms generated by all components of CCS are consolidated on the SMS and stored in a centralized alarm database.

The operator can:

- View the alarms through the alarm viewer built into the SMS screens
- Forward all alarms to an integrated external fault management system using SNMP v1 or v3

Alarms can be automatically deleted from the SMF alarm database after a configurable period.

For more information about:

- Specific alarms generated by CCS, see *Charging Control Services Alarms Guide*
- SMS alarms subsystem, see *SMS User's Guide*

Statistics

Across CCS, statistics are collected at both the system and application levels, which provide information on the performance and load of the platform. All measurements are consolidated on the SMS and stored in a centralized statistics database.

You can view the statistics through the SMS screens.

Ccs_Service statistics

This table describes the statistics produced by CCS activity.

Note: These statistics are reported as Ccs_Service statistics.

Statistic	Description
CCS_PD_FAIL	Number of failed DAP requests.
CCS_PD_SUCS	Number of successful DAP requests.
NUM_BE_FAIL	Number of calls rejected due to VWS failure.
NUM_BUSY	Number of calls terminated to busy number.
NUM_IDP	Number of InitialDP triggering CCS service.
NUM_NO_ANSWER	Number of calls terminated but not answered.
NUM_NSF	Number of calls rejected for insufficient funds.
NUM_RSF	Number of calls causing route selection failure.
NUM_TERM	Number of calls terminated successfully.

E2BE statistics

This table describes the statistics produced or changed by CCS activity on the VWS.

Note: These statistics are reported as E2BE statistics, and not as CCS statistics.

Statistic	Description
NUM_ATC_REQ	Number of Apply Tariff Charge requests (ATC_Req) sent to the VWS.
NUM_BPIN_REQ	Number of Bad Password Pin requests (BPIN) that were sent to the VWS.
NUM_CARR_REQ	Number of Commit Amount Reservation requests (CARR_Req) made to the VWS.
NUM_CNER_REQ	Number of Confirm Named Event Reservation requests (CNER_Req) made to the VWS.
NUM_CR_REQ	Number of Commit Reservation requests (CR_Req) made to the VWS.
NUM_CVR_REQ	Number of Commit Voucher Redeem requests (CVR_Req) made to the VWS.
NUM_DA_REQ	Number of Amount Charge (DA_Req) requests sent to the VWS.
NUM_EXTRA_EXPENDITUR E_BALANCES_UPDATED	This counter is incremented when an expenditure plan contribution is made. The statistics counter is incremented with a value of (x-1) where x is the number of expenditure balances being contributed to by the expenditure plan. Examples: • Contribution to Yearly and Monthly expenditure balance - Counter incremented by 1 • Contribution to Yearly, Monthly and Weekly expenditure balance - Counter incremented by 2 • Contribution to Monthly expenditure balance - Counter is not incremented
NUM_IARR_REQ	Number of Initial Amount Reservation requests (IARR_Req) made to the VWS.
NUM_INER_REQ	Number of Initial Named Event Reservation requests (INER_Req) made to the VWS.
NUM_IR_REQ	Number of Initial Reservation requests (IR_Req) made to the VWS.
NUM_LDMF_REQ	Number of MFile Reload requests (LDMF) made to the VWS.
NUM_NER_REQ	Number of Named Event Rate requests (NER_Req) sent to the VWS.
NUM_NE_REQ	Number of Named Event requests (NE_Req) sent to the VWS.
NUM_PC_CREDIT_ATTEMP T	Number of periodic charge credit attempts (Direct Credit (WGR_Req) or Voucher Type Recharge (VTR_Req) sent by ccsVWARSPeriodicCharge as part of a charge attempt. Note: Backlogged charges report a statistic for each credit attempt.
NUM_PC_DEBIT_ATTEMPT	Number of periodic charge debit attempts (NE_Req for periodic charges). Note: Backlogged charges report a statistic for each Named Event. Also, a statistic is reported during the first charge attempt following a

Statistic	Description
	wallet recharge.
NUM_PC_STATE_CHANGE	Number of periodic charge state changes (that is, when a new VALUE and EXPIRY are written to a periodic charge bucket). Note: Only one statistic is reported when processing backlogged charges.
NUM_RARR_REQ	Number of Revoke Amount Reservation requests (RARR_Req) sent to the VWS.
NUM_RNER_REQ	Number of Revoke Named Event Reservation requests (RNER_Req) sent to the VWS.
NUM_RR_REQ	Number of Revoke Reservation requests (RR_Req) sent to the VWS.
NUM_RVR_REQ	Number of Revoke Voucher Redeem requests (RVR_Req) sent to the VWS.
NUM_SARR_REQ	Number of Subsequent Amount Reservation requests (SARR_Req) sent to the VWS.
NUM_SNER_REQ	Number of Subsequent Named Event Reservation requests (SNER_Req) sent to the VWS.
NUM_SR_REQ	Number of Subsequent Reservation requests (SR_Req) sent to the VWS.
NUM_TOTAL_REQ	Total number of requests sent to the VWS. Note: This statistic is produced, not by CCS, but by VWS processes. However, CCS increments it when an expenditure plan contribution is made. The increment is (x-1) as explained above for the statistic, NUM_EXTRA_EXPENDITURE_BALANCES_UPDATED.
NUM_USR_REQ	Number of Unit Seconds Rate requests (USR_Req) sent to the VWS.
NUM_VI_REQ	Number of Voucher Information requests (VI_Req) sent to the VWS.
NUM_VRW_REQ	Number of Voucher Redeem Wallet requests (VRW_Req) sent to the VWS.
NUM_VR_REQ	Number of Voucher Redeem requests (VR_Req) sent to the VWS.
NUM_VU_REQ	Number of Voucher Update requests (VU_Req) sent to the VWS.
NUM_WC_REQ	Number of Wallet Create requests (WC_Req) sent to the VWS.
NUM_WD_REQ	Number of Wallet Delete requests (WD_Req) sent to the VWS.
NUM_WGR_REQ	Number of Wallet General Recharge requests (WGR_Req) sent to the VWS.
NUM_WI_REQ	Number of Wallet Information requests (WI_Req) sent to the VWS.
NUM_WR_REQ	Number of Wallet Recharge requests (WR_Req) sent to the VWS.
NUM_WU_REQ	Number of Wallet Update requests (WU_Req) sent to the VWS.

Note: All statistics are collected with a period of 1,800 seconds.

For more information about the request messages these statistics measure, see *Voucher and Wallet Server Technical Guide*.

Reports

CCS has a set of standard reports which analyze the statistics gathered on the platform.

The statistics can be off-loaded from the database to an external statistical processing platform (for example, a data warehouse) for further analysis.

For more information about reports, see *CCS Reports* (on page 577).

EDRs

EDRs are written whenever an action occurs in CCS that affects a wallet or subscriber, including when a:

- Call is processed
- SMS is sent or received
- Recharge is attempted
- Wallet changes state

EDRs are automatically uploaded to the SMS where they are added to a centralized database.

EDRs can be:

- Viewed per subscriber through the SMS screens (see *View EDRs* (on page 137))
- Post-processed in a flat file format, including being offload through SFTP

For more information about the EDR format, see *Event Detail Record Reference Guide*.

For more information about managing EDRs, see *EDR Management* (on page 555).

Getting Started

Overview

Introduction

This chapter explains how to access the CCS application and describes some of the common functionality of the CCS screens.

In this chapter

This chapter contains the following topics.

Signing on to CCS	35
Services Menu	36

Signing on to CCS

Accessing the application

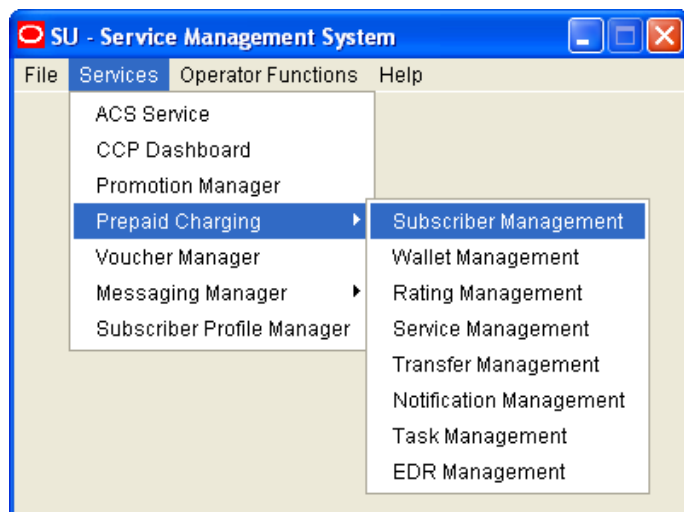
To access the CCS application, click a desktop icon for:

- SMS
- CCS

Note: The CCS product works in conjunction with ACS. If CCS is accessed through a standalone icon, you must start the CCS application as well.

SMS main menu

Here is an example of the SMS main menu showing the Prepaid Charging menu options.



SMS Login screen

Here is an example of the SMS Login screen.



Logging into SMS

Follow these steps to log into SMS.

Step	Action
1	In the User Name field, type your username.
2	In the Password field, type your password.
	Notes: • Passwords are case sensitive. • You have three attempts to enter a correct username and password before the User ID is locked. If this happens, you must see your System Administrator to re-activate it.
3	Click OK .
	Result: You see the Service Management System main screen.

Services Menu

Prepaid Charging menu options

This table describes the menu options accessible from the Prepaid Charging menu.

Menu	Description
Subscriber Management	Accesses the screens to create and maintain subscribers. For more information, see <i>Subscriber Management</i> (on page 43).

Menu	Description
Wallet Management	Accesses the screens to create and maintain wallets. For more information, see <i>Wallet Management</i> (on page 219).
Rating Management	Accesses the screens to create and maintain rates applying to subscribers. For more information, see <i>Rating Management</i> (on page 323).
Service Management	Accesses the configuration screens to create and maintain services: For more information, see <i>Service Management</i> (on page 437).
Transfer Management	Accesses the screens to create and maintain credit transfers. For more information, see <i>Transfer Management</i> (on page 519).
Notification Management	Accesses the screens to create and maintain profile notifications. For more information, see <i>Notifications Management</i> (on page 529).
Task Management	Accesses the screens to create and maintain business processes and tasks. For more information, see <i>Task Management</i> (on page 541).
EDR Management	Accesses the screens to create and maintain EDRs. For more information, see <i>EDR Management</i> (on page 555).

Initial Configuration

Overview

Introduction

This chapter explains the steps required to perform basic functions using the software.

In this chapter

This chapter contains the following topics.

Setting Up CCS for the First Time	39
Implementing a New Service	40

Setting Up CCS for the First Time

Default Customer - BOSS

The system is shipped with a default system customer, "BOSS".

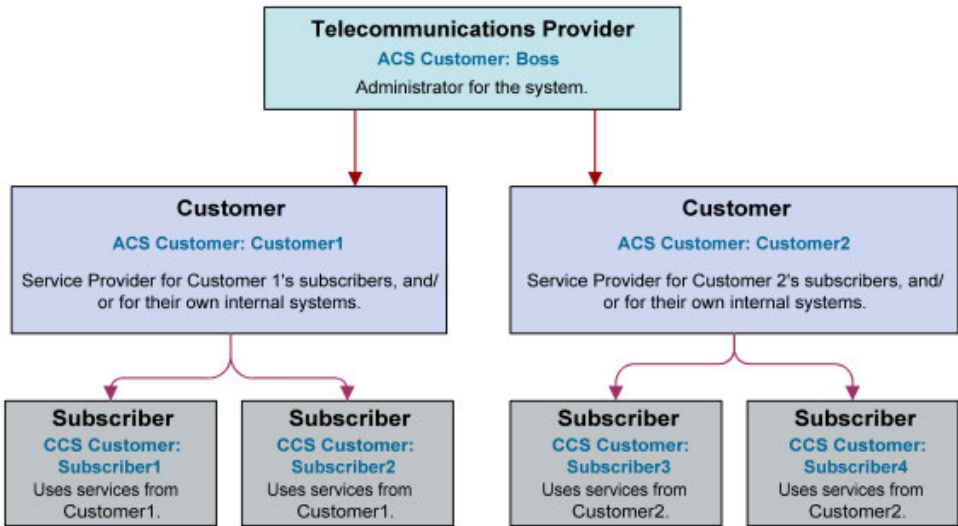
You must use this service provider when setting up CCS.

topic title

Syntax:	<code>parameter = value</code>
Description:	The number of seconds
Type:	Integer, Decimal, Array, Parameter list, String, Boolean
Optionality:	Optional (default used if not set)
Allowed:	
Default:	
Notes:	
Example:	<code>parameter =</code>

Customer hierarchy

Here is an example showing the Customer hierarchy.



Creating a global Control Plan

Only the system administrator is able to create a global Control Plan using the Control Plan Editor.

The global Control Plan contains all the features of ordinary Control Plans, following the guidelines in *CCS User's Guide*. However, the global Control Plan takes precedence over any Control Plan associated with it.

Any nodes in the global Control Plan that require telephony action (unconditional terminate, disconnect, terminate unchanged) result in the main Control Plan being abandoned.

Example: If the Global Screening CCS Control Plan included a disconnect node, the caller would hear the announcement advertising Customer Garden Center and then the call would be disconnected. The Control Plan created by Customer Pizza is never enacted.

Implementing a New Service

Introduction

This quick start procedure to implementing a new service assumes that a CCS service provider has been created to attach the new tariff plan to. The attributes of a CCS service provider are just its default language and contact details.

A tariff plan is created using tabs in the Rating Management screen. For details on this screen, see *Rating Management* (on page 323).

Procedure

Follow these steps to implement a new service.

Step	Action	For details, see...
1	On the Tariff Plan tab, create a tariff plan.	<i>Tariff Plans</i> (on page 326)

Step	Action	For details, see...
2	On the Rate Tables tab, add a new rate table object, and select the applicable geography and holiday set. Warning: If a geography set and a holiday set have not been created, a rate table cannot be saved. Refer to <i>ACS User's Guide</i>.	<i>Rate Tables</i> (on page 332)
3	On the Tariff Plan Selector tab, set the following: • Tariff plan this rate table belongs to • Date from which this rate table is effective	<i>Tariff Plan Selectors</i> (on page 329)
4	On the Discount Sets tab, create the discount set(s) that are to be attached to this rate table. A discount set is just a placeholder object, without attributes.	<i>Discount Sets</i> (on page 341)
5	On the Charge Periods tab, create as many charge periods sets as required. After a charge period set is created, use this tab to create the individual charge periods within that set. Example: first minute, next 2 minutes, next 7 minutes	<i>Charge Periods</i> (on page 380)
6	On the Discount Periods tab, create as many discount period sets as required. After the discount set is created, the individual discount periods, with a % discount in each discount period can be created in each set. Example: 5% on tariff in Charge Period 1, 10% in Charge Period 2, 30% in Charge Period 3.	<i>Discount Periods</i> (on page 377)
7	On the Balance Type Cascades tab, create cascades of balance types to use for rating. A balance type cascade determines the order in which different balance types are debited. Example: "Weekend Calls cascade": first a promotional cash balance, then a weekend balance, then the general cash balance.	<i>Balance Type Cascades</i> (on page 387)
8	On the Weekly tab, set the following for each rate table: • Discount set • Discount periods set • Maximum charge • Balance cascade • Period of the week these setting are to apply for This tab is used to set, for each rate table, a discount set to be applied for selected periods of the week.	<i>Weekly Tariffs</i> (on page 359)
9	On the Holiday tab, set the following, for each rate table: • Holiday • Discount periods set • Discount period • Maximum charge • Balance cascade Discount periods can be set for each holiday contained in the ACS Holiday Set that is associated with this rate table, each of these have a minimum charge and a cascade balance associated with it.	<i>Holiday Tariffs</i> (on page 363)

Step	Action	For details, see...
10	For a given rate table, the CLI-DN tab specifies the rate to be used for calls from each source geography (Calling Line ID, CLI) to each destination geography (Destination Number, DN). This enables you to specify, for the CLI-DN combination, the following attributes: • Free call disposition • Charge period: – Maximum charge – Minimum length (s) – Minimum charge period (s) • Low credit warning at (s) • Cascade: the balance cascade to be used If no tariff is specified for a given CLI-DN combination, the rating algorithm attempts to: • Search for a higher level DN' range (with defined CLI-DN' combination) containing the requested DN range; • If this does not succeed, for each higher level CLI' range, search again to find a CLI'-DN or CLI'-DN' combination defined in the rate table.	<i>CLI-DN</i> (on page 348)
11	On the Named Event tab, create named event set(s), then the individual named events: • Indicating cost and a few extra attributes • To allow charging of SMS, product type swaps, and the rest.	<i>Named Event</i> (on page 369)

Subscriber Management

Overview

Introduction

This chapter explains how to specify subscriber details for service providers.

In this chapter

This chapter contains the following topics.

Subscriber Management Module	43
Credit Cards	45
Subscriber Batch	53
Customer	58
Closed User Groups	60
Friends and Family Black List.....	64
Friends and Destination Black List	66
Friends and Destination Prefix Map	68
Profile Group Fields	71
UBE Account Balancing	78

Subscriber Management Module

Introduction

The Subscriber Management screen lets you configure the subscribers to CCS customers. It contains these tabs:

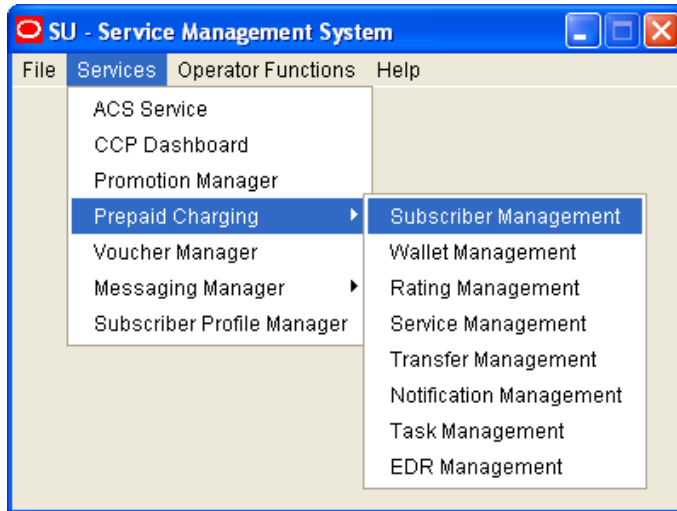
- *Closed User Groups* (on page 60)
- *Credit Cards* (on page 45)
- *Customer* (on page 58)
- *Friends and Destination Black List* (on page 66)
- *Friends and Destination Prefix Map* (on page 68)
- *Friends and Family Black List* (on page 64)
- *Product Type* (on page 151)
- *Profile Group Fields* (on page 71)
- *Subscriber* (on page 91)
- *Subscriber Batch* (on page 53)
- *UBE Account Balancing* (on page 78)

Note: The **Subscriber** and **Product Type** tabs are documented in separate chapters.

Accessing the Subscriber Management screen

Follow these steps to open the Subscriber Management screen.

Step	Action
1	Select the Services menu from the SMS main screen.



Note: The services which are available under the **Services** menu depend on the components which have been installed, and the permissions of the user. The services displayed in this screen shot may not match the services you have available on your system.

2	Select Prepaid Charging > Subscriber Management . Result: You see the Subscriber Management screen.

Subscriber Management screen

Here is an example Subscriber Management screen.

Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.

Credit Cards

Introduction to credit cards

The **Credit Cards** tab enables credit card data to be managed securely. You can perform the following tasks from the **Credit Cards** tab:

- *Search for credit cards* (on page 47)
- *Add credit cards* (on page 48)
- *Register subscribers to credit cards* (on page 51)
- *Edit credit card details* (on page 49)
- *Delete credit cards* (on page 52)

You can also manage a subscriber's credit cards from the Add Subscriber or Edit Subscriber screens. See *Subscriber Management - Subscribers* (on page 91) for details.

Note: To use the legacy credit card options, the **SMS.html** or **SMS.jnlp** applet configuration must include the parameter `LegacyCC=True`. See *SMS Technical Guide* for more information about applet parameters.

About Auditing Credit Card Changes

The EDR auditing feature keeps track of changes to subscribers credit cards. When EDR auditing is enabled, a user who is updating a subscriber's credit card details is forced to enter a reason for the change in a special **Change Reason** dialog box; for example, when:

- Adding a new credit card
- Editing or deleting an existing credit card
- Registering or deregistering a credit card
- Freezing a credit card

The reason for the change, and the user who made the change are reported in the **Change Reason**, and **Operator Name** fields in the BE EDR. You can view this information by displaying the BE EDR in the EDR Viewer.

Credit card auditing is enabled by the EDR auditing global configuration option. For more information, see the discussion on EDR auditing in *Global Configuration* (on page 463).

Credit Cards tab

Here is an example of the Subscriber Management, **Credit Cards** tab.

The screenshot shows the 'Subscriber Management' window with the 'Credit Cards' tab selected. At the top, there is a 'Service Provider' dropdown menu set to 'Boss' and a 'Help' button. Below this are several tabs: 'Friends and Family Black List', 'Friends and Destination Black List', 'Subscriber', 'Product Type', 'Subscriber Batch', 'Customer', 'Closed User Groups', 'Friends and Destination Prefix Map', 'UBE Account Balancing', and 'Credit Cards'. The 'Credit Cards' tab is active, showing a 'Masking rule' dropdown set to 'Global- Suffix: 4'. Below this are input fields for 'Display number', 'Calling card ID', and 'Tokenized number', followed by a 'Search' button. At the bottom of the search section are checkboxes for 'State' with options 'Active' (checked), 'Frozen' (checked), and 'Deleted' (unchecked). The main area is a table with columns: 'Display Number', 'Tokenised Number', 'Name on Card', 'Expiry Date', and 'Card State'. The table is currently empty. At the bottom of the window are buttons for 'New', 'Edit', 'Delete', and 'Close'.

Searching for credit cards

Follow these steps to search for existing credit cards.

Step	Action
1	On the Credit Cards tab, select the credit card masking rule from the Masking rule list. For more information about masking rules, see <i>About Credit Card Security</i> (on page 508).
2	Specify the search criteria by entering search values in one or more of the following search fields: • Display Number – To search on the credit card display number • Calling card ID – To search for credit cards already registered to the subscriber with the specified subscriber ID • Tokenised number – To search on a tokenized credit card number
3	Select the credit card states to search for. The Active and Frozen states are selected by default.
4	Click Search . The table displays the first 100 records that match the search criteria. If the credit cards

Step	Action
	you want are not displayed and the search returns more than 100 records, enter a longer search strings in the search fields, and click Search again.

Adding credit cards

Follow these steps to add a credit card record on the **Credit Card** tab.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	Click New on the Credit Card tab. The <i>New Credit Card screen</i> (See example on page 48) displays.
3	Fill in the credit card details. For more information, see <i>New Credit Card fields</i> (on page 49).
4	(Optional) Register a subscriber to the credit card. See <i>Registering subscribers to credit cards</i> (on page 51) for details. Registered new cards can be in a frozen or an active state. Unregistered new cards must be set to the frozen state.
5	Click Save .
6	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.
7	Click OK . You are returned to the Credit Cards tab. To see the card just added, select the relevant search criteria and click Search .

New Credit Card screen

Here is an example of the New Credit Card screen.

The screenshot shows a 'New Credit Card' dialog box. It includes a 'Help' button in the top right corner. The main area contains the following fields and controls:

- Subscriber ID**: A text input field with a **Subscriber** button to its right.
- Full Credit Card Number**: A text input field.
- Masking Rule**: A dropdown menu currently set to 'Global-Suffix: 4'.
- Expiry Date**: A date selector showing 'January' and '2014'.
- Name on Card**: A text input field.
- CVC**: A text input field.
- Frozen**: A checkbox that is currently unchecked.

At the bottom of the dialog are **Save** and **Cancel** buttons.

New Credit Card fields

This table describes the function of each field on the New Credit Card screen.

Field	Description
Subscriber ID	Displays the ID of the subscriber. If you create a credit card through: - A subscriber screen, this field is set automatically and cannot be changed. For more information, see <i>Adding Subscribers</i> (on page 95) and <i>Editing and Deleting Subscribers</i>. - The Credit Card tab, this field is blank. You can register this credit card to a subscriber immediately by clicking Subscriber, or you can register the credit card at a later date. Once registered, the ID of the selected subscriber displays in this field. For more information, see <i>Registering subscribers to credit cards</i> (on page 51).
Full Credit Card Number	The full credit card number, with no spaces between the digits. Note: This field is available only on the New Credit Card screen. All other credit card screens contain the display name and the tokenized number.
Masking Rule	The rule used to mask the credit card number. For more information about masking rules, see <i>About Credit Card Security</i> (on page 508).
Expiry Date	The credit card's expiry date. Select the month and year from the month and year lists.
Name on Card	(Optional) The name of the account holder as it is written on the credit card.
CVC	The three or four digit credit verification code (CVC) that is printed on the credit card. The CVC provides the credit card owner with additional security when making purchases.
Frozen	When selected, the credit card is in a frozen state. When not selected, the state is active. Registered new cards can be frozen or active. Unregistered new cards can only be frozen. Note: This field is visible only when you open the New Credit Card screen from the Edit Subscriber, Credit Cards option.
Warning	Displays a warning message at the bottom of the screen if the checksum failed.

Editing credit cards

Follow these steps to edit a credit card record.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	Click the Credit Card tab, and select the credit card to edit from the table on the tab. For information about searching for credit cards, see <i>Finding credit cards</i> (on page 47).
3	Click Edit . The Edit Credit Card screen displays and shows a list of all the registration records for the credit card. For information about the displayed fields, see <i>Edit Credit Card fields</i> (on

Step	Action
	page 50).
4	(Optional) Change the following details as required: • Expiry date details • Name on card • CVC number • Freeze or make active the credit card state
5	(Optional) To register a subscriber to the credit card, click Register . See <i>Registering subscribers to credit cards</i> (on page 51).
6	(Optional) To deregister a subscriber from the credit card: - Select the subscriber from the table and click Deregister. - Click Deregister to confirm.
	Note: You cannot deregister the primary subscriber.
7	(Optional) To freeze a subscriber's primary wallet: - Select the subscriber and click Freeze Wallet. - Click Freeze. - If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK.
8	If the Registration State is <i>Pending</i> , and you want to confirm the subscriber's registration to the credit card, click Confirm .
9	If there is more than one subscriber registered to a frozen credit card, register the primary subscriber by selecting the required subscriber, and then clicking Primary .
10	Click Save .
11	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.
12	Click OK .

Edit Credit Card fields

This table describes the function of each field on the Edit Credit Card screen.

Field	Description
Display Number	The credit card number (prefix + padding + suffix), as specified by the associated masking rule. For more information about masking rules, see <i>About Credit Card Security</i> (on page 508).
Tokenised Number	The tokenized credit card number.
Expiry Date	The credit card's expiry date. Select the month and year from the month and year lists.
Name on Card	(Optional) The name of the account holder as written on the credit card.
CVC	The three or four digit credit verification code (CVC) that is printed on the back of the credit card. The CVC provides the credit card owner with additional security when making purchases.
Frozen	When selected the credit card is in a frozen state. When not selected the state is active. You can unfreeze a credit card only if it is registered.

Field	Description
Registered Subscribers	This table displays the: - Subscriber ID - Registration state – The registration state (Primary, Secondary, Pending, or New) of the registered subscriber - Primary wallet state – The registered subscriber's primary <i>Wallet states</i> (on page 10)

Registering subscribers to credit cards

Follow these steps to register a subscriber to a credit card from the New Credit Card screen or the Edit Credit Card screen.

Step	Action
1	Do one of the following: - From the New Credit Card screen, click Subscriber. - From the Edit Credit Card screen, click Register. The Register Subscriber to Credit Card screen appears.
2	Enter one or more initial digits of the subscriber number in the Subscriber ID field.
3	Select: Exact Match to search for the matching subscriber. Prefix Match to search for all subscribers with IDs that match the entered prefix.
4	Click Search. The search returns a maximum of 100 records.
5	From the search results table, select the subscriber you want to register to the credit card and click Register .
6	If EDR auditing is enabled, the Change Reason dialog displays. In the Change Reason field, enter the reason for the change and click OK. The reason can be up to 200 characters long.

Register Subscriber to Credit Card screen

Here is an example of the Register Subscriber to Credit Card screen.

Deleting credit cards

Follow these steps to delete credit card records.

Step	Action
1	Search for the credit card to delete. See <i>Finding credit cards</i> (on page 47).
2	Select the credit card to delete, and then click Delete .
3	If EDR auditing is enabled, the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.
4	Click Delete . The credit card is removed from the results list.
Note: A credit card is removed from the database only if it is in the primary state. When you delete a frozen credit card, it is moved to a deleted state, but it is not removed from the database.	

Subscriber Batch

Introduction

The **Subscriber Batch** tab lets you view, add, modify and delete batches of subscribers.

Tip: It is also possible to work with subscribers using the ccsAccount command line tool. For more information about this tool, see *CCS Technical Guide*.

Subscriber Batch tab

Here is an example **Subscriber Batch** tab.

Service Provider: Boss Help

Subscriber Batch

Subscriber ID: Search

Batch State: Created

Batch ID	Start Card Number	End Card Number	Activatio
41	0	0	
56	1034567890161	1034567890163	
58	1034567890164	1034567890166	
59	1034567890167	1034567890169	
60	1034567890171	1034567890173	
61	1034567890174	1034567890176	
62	1034567890177	1034567890179	
84	0	0	
101	0	0	

New Edit Delete Close

Finding subscriber batches

To find specific subscriber batches in the **Subscriber Batch** tab:

Step	Action
1	Enter the first few characters of the subscriber ID and select a batch state.
2	Click Search .
	Result: The table displays the first 100 records which match the search criteria. Results include creation date. If the subscriber batch you want is not displayed and more than 100 records were returned, enter a longer search string and click Search again.

Adding subscriber batches

Follow these steps to add a new subscriber batch.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Subscriber Batch tab in the Subscriber Management screen, click New . Result: You see the <i>New Subscriber Batch screen</i> (See example on page 55).
3	Fill in the fields, as described in New subscriber batch fields. Once you have filled in all the fields, the Save button becomes active.
4	Click Save . Result: If successful, you see a message confirming the subscriber batch has been created.
5	Click OK .

New Subscriber Batch screen

Here is an example New Subscriber Batch screen.

Subscriber Batch Fields

This table describes the function of each field.

Field	Description
Batch Size	The number of subscribers in the batch.
Subscriber List Filename	Name of the file containing the list of subscribers to use when creating the batch. Each line of the file can include either one subscriber or a range of them. Comments are ignored. Example: Subscriber List file content. <pre># this is a comment 482345932 482464935-482464945</pre>

Field	Description
Result Filename	The name of the file to create for the batch.
Charging Domain	List of domains on which wallets for this subscriber batch can be stored. This drop down list is populated by the domains configured on the Domain (on page 441) tab on the Service Management screen.
Tracking Domain	List of available domains for fraud tracking and promotional balance types. This drop down list is populated by the domains configured on the Domain (on page 441) tab on the Service Management screen. Note: The tracking domain must be a VWS domain and will be available if the charging domain is not a VWS domain.
Product Type	List of available product types. This drop down list is populated by the product types configured on the Product Type (on page 151) tab on the Subscriber Management screen.
Wallet Currency	The currency the wallet created with these subscribers should use. This drop down list is populated by the currencies configured on the Currency (on page 453) tab on the Service Management screen.
Maximum Concurrent Accesses	Sets the default total number of accesses that can be supported against the subscriber at any one time.
Use Subscriber ID	When selected, the card number range fields are grayed out and the subscriber ID is used to provide the card number.
Allocate in Range	The starting and ending points for the card number range.
Encryption File	The context string to be used for encryption. This can have different values, depending on your setup. Acceptable values for the supported DES encryption method include a PIN length that should be a number between 4 and 20.
Add PINS to accounts	When selected, the card number has an associated PIN generated from the selected Encryption Method and PIN Length fields. When not selected there is no PIN associated with the card number.
Encryption Method	The pluggable authentication module which will be used for generation of encrypted of PINs for this batch. The module is used to generate random PINs of the length specified (PIN Length), and then encrypt them for storing in the database.
Creation Date	Indicates the creation date of the batch.
PIN Length	The length of the PIN that will be generated for accounts in this batch. This is the actual length of the non encrypted PIN and must be a minimum of 4 digits to a maximum of 20 digits.
Subscriber ID to Wallet Reference	Subscriber ID and related wallet reference. Example: 123456 ref1334

Editing subscriber batches

Follow these steps to edit an existing subscriber account batch.

Tip: By editing a subscriber batch, you will change the batch state. Changing the batch state enables you to activate subscriber batches.

Note: The **Subscriber Batch** tab and **Edit Subscriber Batch** tab have a creation date read-only value which preserves the creation date when a batch is edited.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	In the table on the Subscriber Batch tab, select the record to edit.
3	Click Edit . Result: You see the <i>Edit Subscriber Batch screen</i> (See example on page 57).
4	You can only change the Batch State field. Changing the batch state to active activates the subscriber batch.
5	Click Save .

Edit Subscriber Batch screen

Here is an example Edit Subscriber Batch screen.

Deleting subscriber batches

Follow these steps to delete an existing subscriber batch.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	In the table on the Select Batch tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database.

Customer

Introduction

This screen enables you to add, modify or delete customers.

The Customer screen displays the customers that have been set up for the service provider.

Once you have set up customers, you can assign subscriber accounts to a specific customer.

Customer tab

Here is an example **Customer** tab.

Service Provider: Boss Help

Customer

Name: Search

Name	Description	Reference	Change Us
Tree Tamers	Small Business	1234-0123456	SU

New Edit Delete Close

Finding customers

To find a specific customer in the **Customer** tab, enter the first few characters of the customer's name, and click **Search**.

Result: The grid will display the first 100 records which begin with the characters searched for. If the required customer is not displayed and more than 100 records were returned, enter a longer search string and click **Search** again.

Adding customers

Follow these steps to add a new customer for a service provider.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Customer tab, click New . Result: You see the New Customer screen.

3	In the Name field, enter the name of the new customer. The name must be completed. Customer names must be unique for the service provider. Special characters and case do not make a distinction between names. For example, Super Savers is the same as Super saver's.
4	In the Description field, enter the description of the new customer.
5	In the Reference field, enter a reference for the new customer.
6	Click Save .

Editing customers

Follow these steps to edit an existing customer.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Customer tab, select the customer record to edit. Tip: If the required customer is not displayed, you can try searching for them as described in <i>Finding customers</i> (on page 58).
3	Click Edit . Result: You see the Edit Customer screen.

Step	Action

- 4 Edit the details as described in *Adding customers* (on page 59).
- 5 Click **Save**.

Deleting customers

Follow these steps to delete an existing customer.

Step	Action

- 1 In the Subscriber Management screen, select the service provider from the **Service Provider** list.
- 2 On the **Customer** tab, select the customer to delete.
Tip: If the required customer is not displayed, you can try searching for them as described in *Finding customers* (on page 58).
- 3 Click **Delete**.
Result: You see the Delete Confirmation prompt.
- 4 Click **OK** to delete the record from the database.
Result: The record is deleted and you see the Customer prompt.
- 5 Click **OK**.

Closed User Groups

Introduction

The **Closed User Groups** tab lets you define groups of users (Closed User Groups), that use an alternative tariff plan when both the calling and the called numbers are part of the same group. The alternative tariff plan normally reduces the rate of calls or provides free calls.

A CUG has the following membership rules:

- A CUG is defined for a specific service provider, therefore only the subscribers of that service provider may belong to that CUG.
- Subscribers may be members of more than one CUG.

A CUG Feature node must be included in the control plan to determine whether the calling and the called numbers are in the same CUG.

Closed user groups may also contain **Virtual Members**. Virtual members are defined as single numbers or number ranges. An MSISDN calling a number that resides in any virtual member range in any CUG in which that MSISDN is also a member is deemed to be making a closed user group call, and can be billed accordingly.

Tip: You can also define CUG membership through the Subscriber screens.

Closed User Groups tab

Here is an example **Closed User Groups** tab.

Subscriber Management

Service Provider: Boss

Help

Closed User Groups

Name:

MSISDN: 0 Search

Name	Tariff Plan	Members	Change User
SG	Silver HPLMN MO	1	PPP

New Edit Delete Close

Adding closed user groups

Follow these steps to add a Closed User Group (CUG) and its members.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Closed User Groups tab, click New . The <i>New Closed User Group dialog</i> (on page 62) displays. For information about the fields on this screen, see <i>Closed User Group fields</i> (on page 63).
3	For each member that you want to add, enter the subscriber MSISDN in the MSISDN field, and click Add .

Step	Action
4	For each virtual CUG member that you want to add, perform the following steps: a. Select either Single number, Range, or Pattern. b. Depending on your previous selection, specify the virtual member number, number range, or prefix and length. c. Click Add.
5	When you have completed adding members to the CUG, click Save .

New Closed User Group Dialog

Here is an example New Closed User Group dialog.

The screenshot shows a dialog box titled "New Closed User Group" with a standard Windows-style title bar (minimize, maximize, close buttons). The dialog is organized into several sections:

- Top Section:** Contains a "Name" text input field and a "Tariff Plan" dropdown menu currently set to "Bronze Callback". A "Help" button is located in the top right corner of the dialog.
- Members Section:** A large empty list box on the left. To its right is an "MSISDN" text input field with "Add" and "Delete" buttons below it.
- Virtual Members Section:** Another large empty list box on the left. To its right is a "Virtual Member" configuration area with three radio button options:
 - Single number:** Selected by default, followed by a single text input field.
 - Range:** Unselected, followed by "From" and "To" text input fields.
 - Pattern:** Unselected, followed by a "Prefix" text input field and a "Length" dropdown menu."Add" and "Delete" buttons are located at the bottom of this section.

At the bottom of the dialog are "Save" and "Cancel" buttons.

Closed User Group fields

This table describes the function of each field in the New and Edit Closed User Group dialogs.

Field	Description
Name	Unique name for this closed user group. After saving a new closed user group you can view, but not edit the closed user group name.
Tariff Plan	The tariff plan to apply to phone calls between members of this closed user group.
Members	Lists the subscriber accounts who are part of this closed user group. You create a member by adding the subscriber's MSISDN to the list of members. Tip: Subscribers can be members of more than one CUG.
Virtual Members	Lists the virtual members of the CUG. You create virtual members by providing a single number, a start and end number, or a prefix and a number length.

Editing closed user groups

Follow these steps to edit an existing closed user group (CUG).

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Closed User Groups tab, select the CUG to edit. Tip: You can search for a specific CUG or MSISDN by entering the details in the Name and MSISDN fields on the tab, and clicking Search .
3	Click Edit . The Edit Closed User Group dialog opens. For more information about the closed user group fields, see <i>Closed User Group fields</i> (on page 63).
4	Edit the list of members as required. To: - Add a new member, enter the MSISDN in the MSISDN field, and click Add. - Delete an existing member, select the member's MSISDN in the Members list and click Delete.
5	Edit the list of virtual members as required. To: - Add a new entry, enter either the number, number range, or prefix and length for the virtual member entry, and then click Add. - Delete an entry from the Virtual Members list, select the entry in the list and click Delete.
6	Click Save .

Deleting closed user groups

Follow these steps to delete an existing closed user group (CUG).

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Closed User Groups tab, select the CUG to delete.

Step	Action
	Tip: You can search for a specific CUG or MSISDN by entering the details in the Name and MSISDN fields on the tab, and clicking Search .
3	Click Delete . The Delete Confirmation prompt displays.
4	Click OK to delete the record from the database. The record is deleted and the Closed User Groups prompt displays.
5	Click OK .

Friends and Family Black List

Introduction

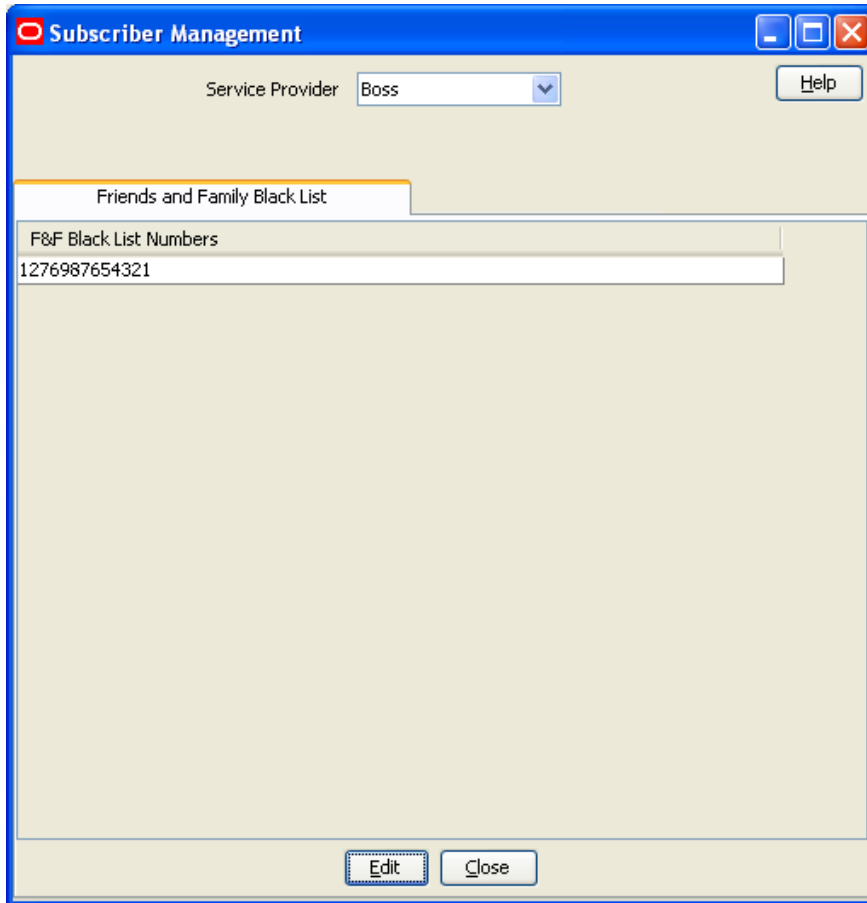
Friends and Family Black List numbers are numbers that may not be added to a subscriber's friends and family list (using the Friends and Family IVR configuration service).

The **Friends and Family (F&F) Black List** tab displays all F&F black list entries. Up to 100 numbers may be added, each up to 32 digits long.

Note: Friends and Family discounts are also configured in a subscriber's product type. For details, see *FF White List* (on page 169).

Friends and Family Black List tab

Here is an example **Friends and Family Black List** tab.



Editing the F&F Black List

Follow these steps to edit the numbers in the friends and family black list.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Friends and Family Black List tab, click Edit . Result: You see the Edit F&F Black List Numbers screen.

Step	Action

The screenshot shows a Windows-style dialog box titled "Edit F&F Black List Numbers". It features a standard title bar with a close button (X). The main area is divided into sections. At the top right is a "Help" button. Below it, on the left, is a "Black List" section containing a "Number List" box. This box has a list of numbers, with "01206" currently selected. To the right of the "Number List" is a "New Number" input field containing the text "01255". Below the "Number List" and "New Number" fields are two buttons: "Add" and "Delete". At the bottom of the dialog are two more buttons: "Save" and "Cancel".

- 3 To add a black listed number, enter the number in the **New Number** field and click **Add**.
Result: The number is added to the friends and family black list for this service provider.
- 4 To delete a number, select the number to remove from the list and click **Delete**.
Result: The number is removed from the list.
- 5 Click **Save**.

Friends and Destination Black List

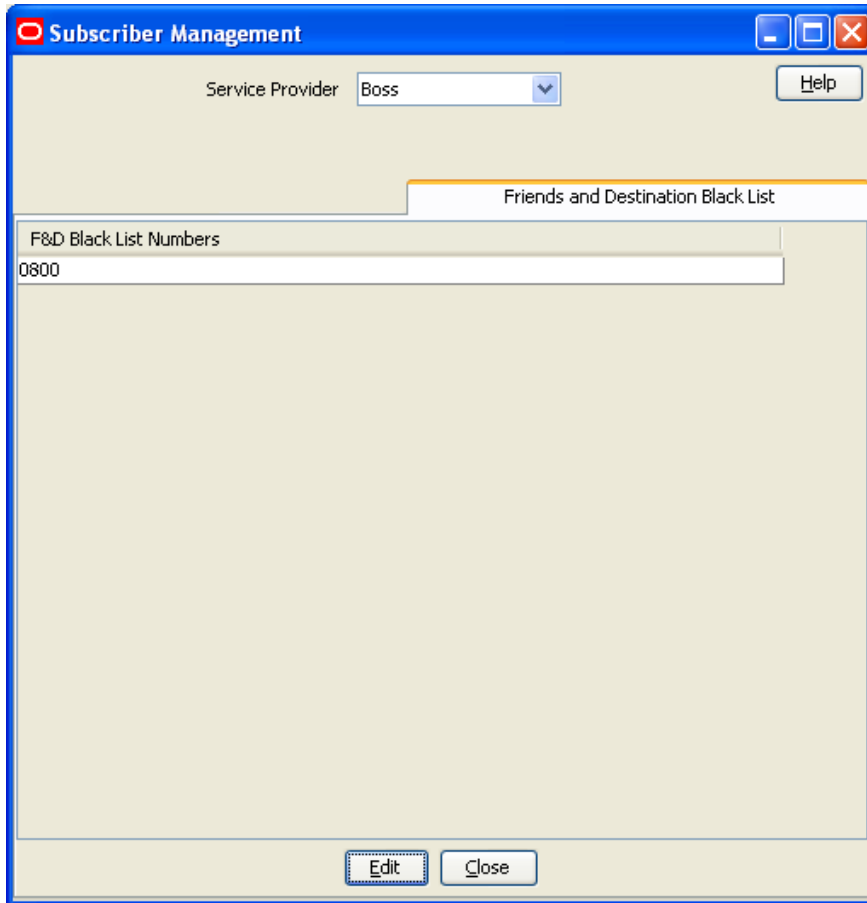
Introduction

Subscribers may not use prefixes contained in the friends and destination black list when setting their Friends and Destination prefix using the Friends and Destination IVR configuration service.

The **Friends and Destination (F&D) Black List** tab displays all F&D black list entries. Up to 100 prefixes may be added, each up to 32 digits long.

Friends and Destination Black List tab

Here is an example Friends and Destination Black List tab.



Adding numbers to the Black List

Follow these steps to edit the numbers in the Friends and Destination Black List.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Friends and Destination Black List tab, click Edit . Result: You see the Edit F&D Black List Numbers screen.

Step	Action

- 3 To add a black listed number, enter the number in the **New Number** field and click **Add**.
Result: The number is added to the friends and destination black list for this service provider.
- 4 To delete a number, select the number to remove from the list and click **Delete**.
Result: The number is removed from the list.
- 5 Click **Save**.

Friends and Destination Prefix Map

Introduction

The friends and destination prefix map entries are used to configure the announcements corresponding to a particular friends and destination prefix. These announcements are played to the caller when using the friends and destination IVR configuration service.

You can create groups of prefixes (for example, by region) by mapping all the prefixes in the group to the same announcement. These prefix groups can then be used to apply a discount to multiple destinations instead of to a single number prefix.

Tip: You can order prefixes by prefix or by mapped announcement by clicking on the column title on the **Friends and Destination Prefix Map** tab.

Note: Up to 100 prefix maps can be added.

Friends and Destination Prefix Map tab

Here is an example Friends and Destination Prefix Map tab.

Prefix	Mapped Announcement
3214	FD Area 1
3215	FD Area 1
322	FD Area 2
323	FD Area 1
329	FD Area 3

Friends and Destination Prefix Map fields

This table describes the function of each field.

Field	Description
Prefix	The prefix for the friends and destination destination number.
Announcement Set	The ACS announcement set which contains the announcement which should be played for this prefix.
Announcement Entry	The announcement which should be played for this prefix. Note: Prefixes which use the same announcement entry will be grouped together.

For more information about ACS announcements, see *ACS User's Guide*.

Adding Friends and Destination Prefix Mappings

Follow these steps to add a new Friends and Destination Prefix Announcement Mapping.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service

Step	Action

Provider list.

- 2 On the **Friends and Destination Prefix Map** tab, click **New**.
Result: You see the New Prefix Announcement Mapping screen.

- 3 Configure this record by entering data in the fields on this screen.
 For more information about the fields on this screen, see *Friends and Destination Prefix Map fields* (on page 69).
- 4 Click **Save**.

Editing Friends and Destination Prefix Mappings

Follow these steps to edit an existing Friends and Destination Prefix Announcement Mapping.

Step	Action

- 1 In the Subscriber Management screen, select the service provider from the **Service Provider** list.
- 2 In the grid on the **Friends and Destination Prefix Map** tab, select the record you want to edit.
- 3 Click **Edit**.

Result: You see the Edit Prefix Announcement Mapping screen.

- 4 Edit the fields to reflect the changes you need to make.
 For more information about the fields in this screen, see *Friends and Destination Prefix Map fields* (on page 69).
- 5 Click **Save**.

Deleting Friends and Destination Prefix Mappings

Follow these steps to delete an existing Friends and Destination Prefix Announcement Mapping.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	In the table on the Friends and Destination Prefix Map tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the F&D Prefix Map prompt.
5	Click OK .

Profile Group Fields

Introduction

The **Profile Group Fields** tab lets you define and manage subscriber profile groups and fields dynamically. You can:

- Specify a set of Profile Groups
- Specify the fields to include in each group

Two types of profile group fields may be specified:

- BPL tasks (defined on the Task Management screen)
- Profile Fields (defined on the **Profile Details** tab in the ACS Configuration screen)

You can view and edit the Profile Group field values, and execute the BPL tasks on the Edit Subscriber screen.

Note: Some other applications, for example Messaging Manager, will configure profile group fields on installation. Refer to the appropriate guide for information about specific profile group fields.

For more information about setting up BPL tasks, see *Task Management* (on page 541).

Profile tags

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

This table describes the supported data types for profile tags.

Profile Field Tag Type	Description
BOOLEAN	A single value which is either true or false
BYTE	A single byte integer (0 to 255).
DATE	A date.
DISCOUNT	A discount specification comprising: • First discount percentage (an integer between -100 and 100) • Second discount percentage (an integer between -100 and 100) • Reserved (integer) • Maximum charge (integer)
INTEGER	32 bit integer value (signed).

Profile Field Tag Type	Description
LNSTRING	A limited numeric string. Valid characters are 0-9. Note: The limits for LNSTRING field values may be set for the product type or in resource limits.
LOPREFIX	A limited ordered prefix tree. This is made up of a limited list of numbers. Note: The limits for LOPREFIX field values may be set for the product type or in resource limits.
NSTRING	Numeric string. Valid characters are 0-9.
OPREFIX	An ordered prefix tree comprising an ordered list of numbers.
PREFIX	A prefix tree comprising a list of numbers.
STRING	A non limited ASCII string.
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: Zones may only be included in profile groups if the Location Capabilities Pack (LCP) is installed.

Configuring zone profile tags

You can define a set of zones that can be used to determine the location of a subscriber.

To define a zone, you must first define the zone profile group field using a ZONE profile tag.

ZONE profile tags are configured in ACS. The LCP ZONE profile tags, Home and Work, are all configured at installation. All other zone profile tags are user defined and must conform to the configuration shown in this table.

Profile Tag Name	Profile Tag Type	Profile Tag	Parent Profile Tag	Comment
LCP ZONES	Profile Block	4128769		Configured during installation.
Home	ZONE	4128770	4128769	Configured during installation.
Work	ZONE	4128771	4128769	Configured during installation.
ZoneName	ZONE	An integer value in the range: 4128772 to 4194305	4128769	User defined. Warning: The parent profile tag must be set to 4128769 (the profile tag value for LCP ZONES).

For more information about profile tags, see *ACS User's Guide*.

User access

Users can access profile group fields and profile group BPLs from the Profile Groups option in the Edit Subscriber screen, provided the users have sufficient privileges.

You manage user access to profile groups, profile fields, and BPLs through the User Templates defined in the SMS User Management screen. It can be set for all fields and BPLs in the profile group, or for selected fields and BPLs. The required level of access privilege for each individual field or BPL must be added manually to the template.

This table describes the privileges that may be assigned to each profile field and BPL.

Privilege	Description
Read/Only	The field's value (if present) will be visible to the user through the screens, but they will not be able to edit, create, or delete it.
Read/Modify	The field's value (if present) will be visible to the user through the screens, and they will be able to edit it, but they will not be able to create or delete it.
Create/Delete	The field's value (if present) will be visible to the user through the screens, and they will be able to edit, create and delete it.
Execute	This BPL will be visible to the user through the screens, and they will be able to execute it.

Note: For information about creating and maintaining user Templates, see *SMS User's Guide*.

Profile Group Fields tab

Here is an example Profile Group Fields tab.

Subscriber Management

Service Provider: Boss

Profile Group Fields

Group: Account_Details

New Group Edit Group Delete Group

Group	Group Order	Sub Order	Field Type	BPL	BPL Perm
Account_Details	1	1	Business Process Logic	Update Account	Telco Serv
Account_Details	1	1	Profile Field		
Account_Details	1	2	Profile Field		
Account_Details	2	1	Profile Field		
Account_Details	2	2	Profile Field		

New Edit Delete Close

Adding profile tag groups

Follow these steps to add a new profile tag group.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service

Step	Action

Provider list.

- 2 On the **Profile Group Fields** tab, click **New Group**.
Result: You see the New Profile Tag Group screen.

- 3 In the **Name** field, enter the name for this profile tag group.
- 4 The **Permission Name** field displays the permission name for this group. It is used when configuring the user template in ACS.
 To set the permission name to the standard name, ensure the **Auto Populate Permission Name** check box is selected.
 The standard format is:
`<Service Provider>-<Profile Tag Group Name>`
 To set the Permission Name to something other than the standard name:
 - Clear the **Auto Populate Permission Name** check box
 - In the **Permission Name** field, enter the name for this profile tag group.
- 5 Click **Save**.

Editing profile tag groups

Follow these steps to edit an existing Profile Tag Group.

Step	Action

- 1 In the Subscriber Management screen, select the service provider from the **Service Provider** list.
- 2 On the **Profile Group Fields** tab, select the **Group** you want to edit.
- 3 Click **Edit Group**.
Result: You see the Edit Profile Tag Group screen.

- 4 Edit the **Name** for the profile tag group.
Note: The **Permission Name** field is not editable.
- 5 Click **Save**.

Adding a new profile group field

Follow these steps to add a profile group field to a profile group.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list. On the Profile Group Fields tab, select the Group you want from the drop down list.
2	Click New . Result: You see the New Profile Group Field screen.
3	Select Profile Field from the Field Type drop down list. Result: You see the Profile Field options in the New Profile Group Field screen:

- 4 In the **Group Order** field, set the number of the line this field should be displayed in. Lower numbers are closer to the top of the screen.
Tip: The combination of group and sub order determines how profile group fields are displayed on the Edit Subscriber screen.
- 5 In the **Sub Order** field, set the number which defines where this field is displayed relative to other fields in its group. Lower numbers are closer to the left.
- 6 In the **Display Name** field, type the name you want to give to the field.
- 7 From the **Profile Tag Name** drop down list, select the profile tag this field will be in. This list is populated from the profile tags defined on the ACS Configuration screen.
- 8 The **Permission Name** field displays the permission name for this field. It is used when configuring the user template in ACS.
If you want to set the permission name to the standard name, ensure the **Auto Populate Permission Name** check box is selected.
The standard format is:
ServiceProvider-ProfileGroup-DisplayName
If you want to set the permission name to something other than the standard name:
 - Deselect the **Auto Populate Permission Name** check box,
 - In the **Permission Name** field, enter the name for this profile group field.

Step	Action
9	Click Save .

Adding BPL fields

Follow these steps to add a BPL to a profile group.

Note: You will only be able to use this functionality if you have the Task Management license.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list. On the Profile Group Fields tab, select the Group you want from the drop down list.
2	Click New . Result: You see the New Profile Group Field screen.
3	Select Business Process Logic from the Field Type drop down list. Result: You see the Business Process Logic options in the New Profile Group Field screen.

- 4 In the **Group Order** field, set the number of the line this field should be displayed in. Lower numbers are closer to the top of the screen.
Tip: The combination of group and sub order determines how profile group fields are displayed on the Edit Subscriber screen.
- 5 In the **Sub Order** field set the number which defines where this field is displayed relative to other fields in its group. Lower numbers are closer to the left.
- 6 From the **BPL** drop down list, select the BPL to include in the profile group. This list is populated from the BPL tasks defined in the Task Management screen. For more information about setting up BPL tasks, see *Task Management* (on page 541).
Tip: The **Permission Name** field is for reference only. It displays the permission name for this BPL which is used when configuring the User Template in ACS.
- 7 Click **Save**.

Editing a profile group field

Follow these steps to edit an existing profile group field or BPL for a profile group.

Note: The **Field Type**, **Profile Tag Name** and **Permission Name** fields are not editable.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Profile Group Fields tab, select the Group you want to edit.
3	In the table, select the row to edit.
4	Click Edit Field .

Result: You see the Edit Profile Group Field screen. The screen fields differ depending on whether you are changing a Business Process Logic or Profile Field:

The screenshot shows the 'Edit Profile Group Field' dialog box with the following fields:

- Field Type:** Business Process Logic (dropdown menu)
- Group Order:** 1 (spin box)
- Sub Order:** 1 (spin box)
- Business Process Logic:**
 - BPL:** BPL 1 (dropdown menu)
 - Permission Name:** Boss_BPL1 (text field)
- Buttons:** Save, Cancel

The screenshot shows the 'Edit Profile Group Field' dialog box with the following fields:

- Field Type:** Profile Field (dropdown menu)
- Group Order:** 2 (spin box)
- Sub Order:** 2 (spin box)
- Profile Field:**
 - Display Name:** Profile Update tag (text field)
 - Profile Tag Name:** GS tag 01 (BOOLEAN) (dropdown menu)
 - Permission Name:** Boss-GS_profile_group-Profile Update tag (text field)
- Buttons:** Save, Cancel

- 5 Edit the **Group Order** and **Sub Order** for the profile group field.

Tip: The combination of group and sub order determines how profile group fields are displayed on the Edit Subscriber screen.

Step	Action
6	If required, edit the profile group field details. - For BPLs, you can select a different BPL from the drop down list. - For profile tags, you can enter a new display name.
7	Click Save .

Deleting profile groups and fields

Follow these steps to delete an existing Profile Group or Profile Field.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Profile Group Fields tab, select the Group you want from the drop down list.
3	To delete the group and all its associated fields, click Delete Group .
4	To delete a specific field from the group, in the table, select the row containing the field to delete and click Delete . Result: You see the Delete Confirmation prompt.
5	Click OK to delete the record from the database. Result: The record is deleted. A confirmation prompt is displayed.
6	Click OK .

UBE Account Balancing

Introduction

The UBE Account Balancing tab enables you to move wallets from one VWS domain to another. This may be used to:

- Redistribute wallets and buckets after a hardware upgrade or the addition of more Voucher and Wallet Servers
- Move wallets and buckets off a VWS that is being decommissioned

For more information about wallets, see *Subscriber Accounts and Wallets* (on page 10).

For more information about domains, see *Domains* (on page 4).

UBE Account Balancing tab

Here is an example UBE Account Balancing tab.

Subscriber Management

Service Provider: Boss Help

UBE Account Balancing

Complete ☒ Running ☒ Pending ☒ Refresh

Source Domain	Target Domain	Batch ID	Start Date	End Date/Progress	S
11	88	83	2008-06-10 10:27:46	2008-06-10 10:27:46	M
11	88	83	2008-06-10 10:49:52	2008-06-10 10:49:52	M
11	88	84	2008-06-10 22:10:32	0%	R
11	88	84	2008-06-10 22:41:29	2008-06-10 22:41:45	F
11	88	84	2008-06-10 22:42:29		P
11	88	84	2008-06-10 23:15:44	2008-06-10 23:15:44	C
11	88	84	2008-06-10 23:13:25		S
11	88	84	2008-06-10 22:54:34		N
11	88	84	2008-06-10 25:51:40	2008-06-10 25:52:15	I
11	88	84	2008-06-10 25:59:29		H

Priority Restart Pause Report Cancel

New Edit Delete Close

Migration states

This table describes the possible states a migration can have.

State	Row Color	Description
P	White	Pending
N	Light yellow	Priority (run Next regardless of insertion order)
H	White	On Hold (pending but marked to not run yet)
S	Light orange	Paused (Stopped by the user)
C	Orange	Canceled
F	Red	Failure (all or some wallets not moved successfully; they were either not on the source VWS VWS or did not have one of the specified wallet states)
M	Blue	Migrated
I	Yellow	Incomplete (Maximum Wallets reached before the end of the batch)
R	Green	Running

Tip: Highlighted migrations are shown in dark blue. Table text is always black.

UBE Account Balancing buttons

This table describes the function of each field.

Field	Description								
Refresh	Refreshes the table with migrations of the states which correspond to the selected check boxes. The states are: <table> <tr> <th>Check box</th><th>States</th></tr> <tr> <td>Complete</td><td>M, C, I and F</td></tr> <tr> <td>Running</td><td>R</td></tr> <tr> <td>Pending</td><td>N, P, H, S, I and F</td></tr> </table>	Check box	States	Complete	M, C, I and F	Running	R	Pending	N, P, H, S, I and F
Check box	States								
Complete	M, C, I and F								
Running	R								
Pending	N, P, H, S, I and F								
Priority	Changes the state of a selected migration to the priority (N) state. Tip: Disabled if the selected migration has any of these states: N, C, R or M.								
Restart	Changes the state of a selected migration to the pending (P) state. Tip: Disabled if the selected migration has any of these states: P, C, R or M.								
Pause	Changes the state of a selected migration to the paused (S) state. Tip: Disabled if the selected migration is not in the Running (R) state. Notes: - After the Pause button is clicked, the system takes up to 5 seconds to react to the change. Any migrations started before the pause is recognized are completed. - If the selected migration is in the Paused (P) state, this button turns into the Hold button.								
Hold	Changes the state of a selected migration to the On Hold (H) state. The Pause button turns into the Hold button if the selected migration is in the Paused (P) state.								
Cancel	Changes the state of a selected migration to the canceled (C) state. A report on which wallets were migrated is compiled and saved. Tip: Disabled if the selected migration has any of these states C, R, M, F, S or I.								
Report	Opens a Report screen displaying the report. For more information about what you can do with the Report screen, see <i>Saving unmigrated accounts to input file</i> (on page 87). Tip: Disabled if there is no report for the selected migration.								

UBE Account Balancing fields

This table describes the function of each field in the **UBE Account Balancing** tab and the New/Edit Migration screen.

Field	Description
Source Domain	The name of the VWS domain the wallets are being moved from. Can only be changed if state is P, N or H.
Target Domain	The name of the VWS domain the wallets are being moved to. Can only be changed if state is P, N or H.

Field	Description
Batch ID	The ID of the subscriber batch the wallets belong to. This field is required for moving subscriber accounts which were generated in a batch.
Start Date	The day the migration started. For second attempts or continuation when in Incomplete (I) state, this is reset to the latest start time. Shows blank if the migration has not been started.
Ed Date/Progress	If the migration is complete (states M or F), or interrupted (states C, I or S), this field shows the date the migration finished. If the migration has not started, this field is blank. If the migration is in progress (state R) this field shows the progress of the migration as a percentage of the wallets which have successfully been migrated.
State	The state of the migration. For more information about migration states, see <i>Migration states</i> (on page 79).
Input File	Input filename. Shows blank if the migration has no input file. Note: This file is the same as Input File below.
Subscribers to migrate	Defines the criteria which will be used to determine which subscriber accounts will be moved. One of the radio buttons is selected. Can only be changed if state is P, N or H.
Range Start	If the subscriber range option is selected, this field defines the lowest subscriber account number in the range to move. Cannot be edited after it is first saved.
Range End	If the subscriber range option is selected, this field defines the highest subscriber account number in the range to move. Cannot be edited after it is first saved.
Account Batch	The ID of the batch of subscriber accounts to move. This field is populated by the Subscriber Batch tab. For more information about subscriber batches, see <i>Subscriber Batch</i> (on page 53). This field can only be edited if: • State is P, N or H • the migration was not first saved with a range or input file
Input File	The file which lists the subscriber accounts to migrate. This field is displayed in the UBE Account Balancing tab as Input File. Cannot be edited after it is first saved.
Product Type	The product type of the wallets to migrate. This field is populated by the Product Type field. For details, see <i>Subscriber Management - Product Type</i> (on page 151). This field can only be edited if: • State is P, N or H • The migration was not first saved with a range or input file.
Wallet States to migrate	Each selected wallet state indicates that the migration should include wallets which are in this state. If this option is selected, at least one check box must be selected. For more information about wallet states, see <i>VWS Technical Guide</i> . Can only be changed if state is P, N or H.

Field	Description
Maximum Wallets	The maximum number of wallet move requests to send in one set of requests. If this value is set to less than the number of wallets which need migrating, the migration will stop after this number of wallets and change to the Incomplete (I) state. Optional. If not set, no limit is applied. Can only be changed if state is P, N, H, I, F or S.
Throttle	The maximum number of wallet move requests to send to the VWS Voucher and Wallet Servers in one second. Optional. Value can be between 1 and 9999. Note: The actual maximum is the lowest of this number and the throttle parameter in the ccsDomainMigration configuration. For more information about ccsDomainMigration, see <i>CCS Technical Guide</i>. Can only be changed if state is P, N, H, I, F or S.
Save the remaining subscribers to a file	The filename of the file which stores the details of any subscriber account which is not successfully moved. Tip: This file can be used as an Input File for a rerun of the migration. Only enabled if state is P, N, H, I, F or S.

Adding migrations

Follow these steps to add a migration.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the UBE Account Balancing tab, click New . Result: You see the New Account Balance Domain Migration screen.

Step

Action

New Account Balance Domain Migration

Source UBE domain: UBE Domain 1 Target UBE domain: UBE Domain 1 Check Accounts

Subscribers to migrate

☒ Range Start Range End

☐ Account Batch

☐ Input File Select

☐ Product Type

Wallet states to migrate

☒ Pre-Use ☒ Active ☒ Dormant ☒ Suspended ☒ Frozen ☒ Terminated

UBE domain protection

Maximum Wallets Throttle

Save remaining subscribers to file Select Save

Save Cancel

3 Enter data in the fields to configure this record.

For more information about the fields on this screen, see *UBE Account Balancing fields* (on page 80).

4 You can check the number of wallets and subscribers on the source and target domains, using the **Check Accounts** button. For more information about how to use this feature, see *Reviewing domain records* (on page 85).

5 When you have completed configuring the migration, click **Save**.

Result: The Confirmation Dialog prompt shows the migration details. and asks for the confirmation.

6 Click **Confirm**.

Results:

- The migration record details are saved to the database, the migration is started, and the New Account Balance Domain Migration screen is closed.
- If the migration is successful, the details in the SMF database are updated. After the screen data is refreshed (for example, by clicking **Refresh**), the migration is shown as having a Migrated (M) state.
- If the migration has errors all changes are rolled back, and the migration is shown as having a Failure (F) state.

Editing migrations

Follow these steps to edit an existing migration.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the UBE Account Balancing tab, click Edit . Result: You see the Edit Account Balance Domain Migration screen.
3	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>UBE Account Balancing fields</i> (on page 80).
4	You can check the number of wallets and subscribers on the source and target domains, using the Check Accounts button. For more information about how to use this feature, see <i>Reviewing domain records</i> (on page 85).
5	When you have completed changing the details, click Save . Note: The Save button is not available if the migration has a migrated (M) state. Result: The Confirmation Dialog prompt shows the migration details and asks for confirmation to make the changes.
6	Click Confirm . Results: - The migration record changes are saved to the database, the migration is restarted, and the Edit Account Balance Domain Migration screen is closed. - If the migration is successful, the details in the SMF database are updated. After the screen data is refreshed (for example, by clicking Refresh), the migration is shown as having a Migrated (M) state. - If the migration has errors all changes are rolled back, and the migration is shown as having a Failure (F) state.

Reviewing domain records

Follow these steps to review the wallets and subscribers on the source and target domains in a migration.

Step	Action
1	On the New Account Balance Domain Migration, or the Edit Account Balance Domain Migration screen, select the source and target UBE domains and click Check Accounts . Result: You will see the details in the Accounts Summary screen.

The Accounts Summary window displays four tables organized into two sections: Source UBE and Target UBE. Each section contains a 'Wallet Count' table and a 'Subscriber Count' table.

Source UBE Wallet Count

Wallet State	Number of Wallets
Active	10055
Frozen	2
Preuse	1080
Suspended	1
Terminated	40
TOTAL	11178

Source UBE Subscriber Count

Product Type	Number of Subscribers
Bronze	7254
Gold	2981
Silver	1608
TOTAL	11843

Target UBE Wallet Count

Wallet State	Number of Wallets
Active	10067
Frozen	1
Preuse	126
Suspended	1
Terminated	12
TOTAL	10207

Target UBE Subscriber Count

Product Type	Number of Subscribers
Bronze	6124
Gold	3418
Silver	772
TOTAL	10314

Close

- 2 The **Source UBE Wallet Count** table shows the number of wallets in each state which are on the source Voucher and Wallet Server.
- The **Source UBE Subscriber Count** table shows the number of subscribers linked to wallets in the source Voucher and Wallet Server. The subscribers are grouped by product type.
- The **Target UBE Wallet Count** table shows the number of wallets in each state which are on the destination Voucher and Wallet Server.
- The **Target UBE Subscriber Count** table shows the number of subscribers linked to wallets in the target Voucher and Wallet Server. The subscribers are grouped by product type.

Step	Action
3	When you have finished reviewing the details, click Close . Result: The Accounts Summary screen will close and you will be returned to the New or Edit Account Balance Domain Migration screen.

Viewing migration details

Follow these steps to view the details of an existing migration.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the UBE Account Balancing tab, click Edit . Result: You see the Edit Account Balance Domain Migration screen.
3	View the details of the record. For more information about the fields in this screen, see <i>UBE Account Balancing fields</i> (on page 80).
4	When you have completed viewing the details, click Cancel . Result: The Edit Account Balance Domain Migration screen is closed without saving any changes.
5	With the migration still selected, click Report . Result: The Report screen appears showing the migration report.

Step	Action

6 To export the report, perform one of the following actions:

- Enter the filename into the field
- Click **Browse** and select a destination file.

Click **Save**.

Result: The report will be exported to the specified file.

Example: For an example of an exported report, see *Example exported report* (on page 88).

7 When you have finished looking at the report, click **Close**.

Result: The Report screen will close.

Saving unmigrated accounts to input file

Follow these steps to save a list of unmigrated account MSISDNs to a file. This file can then be used as an Input file for a rerun of the migration.

Step	Action
1	On the UBE Account Balancing tab, select the migration to save the file for, and click Edit .

Step	Action
	Result: The Edit Account Balance Domain Migration screen appears showing the migration details.
2	Specify the name of the file to write the report to. Perform one of the following actions: - Click Select and browse to the file to write the report to - Enter the name of the output file.
3	Click Save . Result: The details of the migration report are saved to the file specified in step 2. Example: This text shows an example of a export of unmigrated MSISDNs: <pre> 971559101709 971559101701 971559101702 971559101703 971559101704 971559101705 971559101706 971559101707 971559101708 </pre>
4	Click Cancel . Result: The Edit Account Balance Domain Migration screen closes.

Example exported report

This text shows an example of an exported report. It can be used as an input file to run another migration.

```

State: Migrated

Source UBE: 11

Target UBE: 88

Batch: 84

Allowed Wallet States: PDSFT

Migration Start: 20080610102746

Migration End: 20080610102813

Migrations Completed: 42/50 (84%)

Subscribers Not Migrated:
4416030026 Primary: Wrong state
4416030027 Primary: Wrong state
4416030028 Primary: Wrong state
4416030029 Primary: Wrong state
4416030030 Primary: Doesn't exist in source domain
4416030031 Primary: Doesn't exist in source domain
4416030032 Primary: Doesn't exist in source domain
4416030033 Primary: Doesn't exist in source domain
Shared wallet subscribers also migrated:
None

Wallet Id failed deletion on source UBE:
None

```

Deleting subscriber account migrations

Follow these steps to delete an existing subscriber account migration record.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	In the table on the UBE Account Balancing tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click Yes to delete the record from the database.

Subscriber Management - Subscribers

Overview

Introduction

This chapter explains the subscriber configuration screens.

In this chapter

This chapter contains the following topics.

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Subscriber

Introduction

The **Subscriber** tab displays the subscriber accounts created for the selected service provider.

A subscriber account may take the form of a prepaid card or be assigned to a subscriber ID or CLI. The subscriber has a card printed with the calling card number, which is used when making a call. In the case of subscriber ID-based records, the wallet is set up to recognize a physical phone number. This enables any user of that line to access the wallet. Group wallets are created when multiple subscribers are established on a single wallet reference.

About Auditing Changes to Subscriber Data

The EDR auditing feature enables you to monitor changes to the financial data held for subscribers. When EDR auditing is enabled, a user is forced to enter a reason for changes they make to financial data in a special **Change Reason** dialog box; for example, when editing a subscriber to:

- Update the subscriber's credit cards
- Update the subscriber's wallets
- End a reservation
- Reverse charges in the EDR Viewer

The reason for the change, and the user who made the change are reported in the **Change Reason**, and **Operator Name** fields in the corresponding VWS EDR. You can view this information by displaying the EDR in the EDR Viewer.

The EDR auditing feature is enabled by the EDR auditing global configuration option. For more information, see the discussion on EDR auditing in *Global Configuration* (on page 463).

Subscriber tab

Here is an example **Subscriber** tab.

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.

Component options summary

This table lists all the available subscriber configuration options and their functionality.

Note: The options available to you will depend on how your system has been set up, and will be a subset of this list.

Option	Description
Details	Sets the service details for this subscriber. See <i>Details</i> (on page 96) for set up

Option	Description
	information.
Call Barring	Use to add and maintain the barred/allowed numbers list that applies to a subscriber. See <i>Call Barring</i> (on page 98) for set up information.
Number Translation	Use to view and maintain the short codes that are mapped to specific termination numbers for a subscriber. See <i>Number Translation</i> (on page 99) for set up information.
Credit Card	Use to view and maintain the credit card details for a subscriber. See <i>Credit Card</i> (on page 100) for set up information.
Remote Access	Sets the subscriber's access to the remote access service. See <i>Remote Access</i> (on page 103) for set up information.
Friends and Family	Configures the list of Friends and Family or the Friends and Destination numbers for a subscriber. This screen enables you to: • View the discount prefix for the number, see how many changes have been made to the number listing and the most recent date of the change • Add or delete numbers from the Friends and Family or the Friends and Destination list See <i>Friends and Family</i> (on page 104) for set up information.
Closed User Groups	Use to view and modify the list of closed user groups (CUG) that the subscriber belongs to. See <i>Closed User Groups</i> (on page 105) for set up information.
Balance Topup Rules	Use to view the active topup rules defined for the subscriber. The rules are used to allocate additional items, such as additional notifications, to specified balance types on a regular basis. See <i>Balance Topup Rules</i> (on page 107) for details.
Peer-to-Peer	Use to perform the subscriber's peer-to-peer credit transfers. See <i>Perform Credit Transfers</i> (on page 147) for details. Notes: • This configuration option may only be accessed through the Edit Subscriber screen. • You can only execute peer-to-peer credit transfers if you have purchased the license for this functionality and you have been allocated sufficient User privileges.
Service Bundle	Use to view and configure the subscriber's service bundle credit transfers. See <i>Perform Credit Transfers</i> (on page 147) for details. Notes: • This configuration option may only be accessed through the Edit Subscriber screen. • You can only execute service bundle credit transfers if you have purchased the license for this functionality and have been allocated sufficient user privileges.

Finding subscribers

Follow these steps to search for an existing subscriber.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Subscriber tab, enter the search strings to use to find the required subscriber. Enter the first few characters of the corresponding string in one of the following fields: • Wallet Reference • Card Number • Subscriber ID • Customer Tip: If you enter characters in more than one field, the Search button will be disabled.
3	Specify whether to search for an exact match, or for a prefix match. Select: • Exact Match to search for the subscriber with the specified subscriber ID • Prefix Match to search for all subscribers with subscriber IDs that match the specified prefix
4	Click Search . The search returns a maximum of 100 rows. If the required subscriber is not displayed and more than 100 rows were returned, enter a longer search string and click Search again. Note: If a subscriber has more than one wallet then the search returns additional rows for the subscriber; one for each wallet. The wallet type is displayed next to the wallet reference number.

Black List

The Details option provides a **Blacklisted** check box, which lets you add or remove a subscriber from the black list.

By default subscribers are not blacklisted. However, a subscriber is automatically blacklisted if they fail, three times in succession, to recharge their wallet with a valid voucher number. The blacklisted subscriber remains active, however any future attempts at recharging with a voucher number will also require the matching scratch card serial number.

Deleting subscribers

Follow these steps to delete an existing subscriber.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	In the table on the Subscriber tab, select the subscriber to delete.
3	Click Delete . Result: The Delete Confirmation prompt appears.
4	Click OK . Note: The record is deleted and the Subscriber tab is refreshed as if you had clicked Search . If the subscriber has both a primary and a secondary wallet, both wallets will be deleted.

Adding Subscribers

Introduction

All configuration options must be completed to finalize a new subscriber record, however the configuration can be saved at any point by clicking **Save**.

Note: When you save a new subscriber, you are presented with the New Wallet screen. You need to configure the wallet to finish configuring the new subscriber. See Wallets for details. After adding the wallet, the subscriber is saved. To fill in any of the options that you have not completed for the subscriber, you need to search for, then edit the subscriber. See Editing and Deleting Subscribers.

New subscriber options

Here is a list of options available on the New Subscriber screen.

- Details
- *Call Barring* (on page 98)
- *Number Translation* (on page 99)
- *Credit Card* (on page 100)
- *Remote Access* (on page 103)
- *Friends and Family* (on page 104)
- *Closed User Groups* (on page 105)
- *Balance Topup Rules* (on page 107)

Subscriber screen example

Here is an example New Subscriber screen.

Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.

The screenshot shows a 'New Subscriber' window with a sidebar on the left containing 'Subscriber' and 'Profile' categories. Under 'Subscriber', 'Details' is selected. The main area is titled 'Details' and contains the following fields and options:

- Card Number: 11
- Subscriber ID: [Empty field]
- Description: [Empty text area]
- PIN: [Empty field]
- Confirm PIN: [Empty field]
- Language: No Language Selected (dropdown menu)
- Subscriber ID Restricted: ☐
- Disable Incoming Calls When Roaming: ☐
- Blacklisted: ☐
- Disable Notifications: ☐
- Is Defined: ☐

Buttons: 'Help' (top right), 'Save' and 'Cancel' (bottom center).

Details

Follow these steps to configure basic details for a new subscriber or edit the details of a current subscriber.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Subscriber tab, to: - Create a new subscriber, click New. - Edit a subscriber, select the subscriber from the table and click Edit. Result: You see the <i>New Subscriber screen</i> (See example on page 95) or the <i>Edit Subscriber screen</i> (See example on page 113), with the Subscriber, Details option selected.
3	In the Card Number field, enter the card number for this subscriber. This field is required.
	Tip: Most commonly, this is the same as the subscriber ID.

Step	Action
4	In the Subscriber ID field, enter the Calling Line Identifier (CLI) for this subscriber. This identifies the line which the call is being placed from. When a call is made using CCS, the system determines which wallet to charge based on the subscriber ID of the caller. If the subscriber ID is not recognized, the card number and PIN is used to determine the subscriber and validity of the call. The subscriber ID is mandatory.
5	In the Description field, enter a description for the new subscriber.
6	To add a PIN for this subscriber, select the Is Defined PIN check box. This will enable the PIN and Confirm PIN fields for entry.
7	Skip this step if a PIN is not required for this subscriber. If a PIN is required, configure the PIN by doing the following: - In the PIN field, enter the PIN number. - In the Confirm PIN field, re-enter the same PIN number. The two fields must match before the new subscriber record can be saved. To use the PIN, the eserv.config parameter <code>AccountLength</code> must be set to the required length for card numbers, or a large value for variable length card numbers, for example 50, (default = 10). For more information, see the <i>CCS Technical Guide</i>. When using the PIN option to recharge vouchers, the length of the Wallet Reference number must equal the <code>AccountLength</code> parameter (that is, variable length wallet references cannot be used). A PIN is also used in credit transfers (service bundle or peer-to-peer) that are configured to require a PIN on execution. Tip: A PIN is recommended for security reasons.
8	From the Language drop down box, select the language to use for announcements for this subscriber. The list displays all languages available to the current service provider. Languages are configured on the Tools screen. To create a new language or give a service provider permission to use a language, see <i>ACS User's Guide</i>.
9	If the subscriber should be allowed to set the presentation restricted indicator in the outgoing connect message for all services other than CCS_ROAM, select the Subscriber ID Restriction check box.
10	If this subscriber should not be able to receive incoming calls while roaming, select the Disable Incoming Calls When Roaming check box.
11	If this subscriber should be: - Able to use the service, ensure the Blacklisted check box is not selected. - Stopped from using the service, select the Blacklisted check box. For more information about blacklisted subscribers, see <i>Black List</i> (on page 94).
12	If the subscriber should not be sent SMS notifications, select the Disable SMS Notifications check box.
13	Select another option to configure for this subscriber or click Save .
	Note: When you save a new subscriber, you will see the New Wallet screen. See <i>Wallets</i> (on page 107) for more information.

Call Barring

Follow these steps to add or edit call barring configuration details for a subscriber.

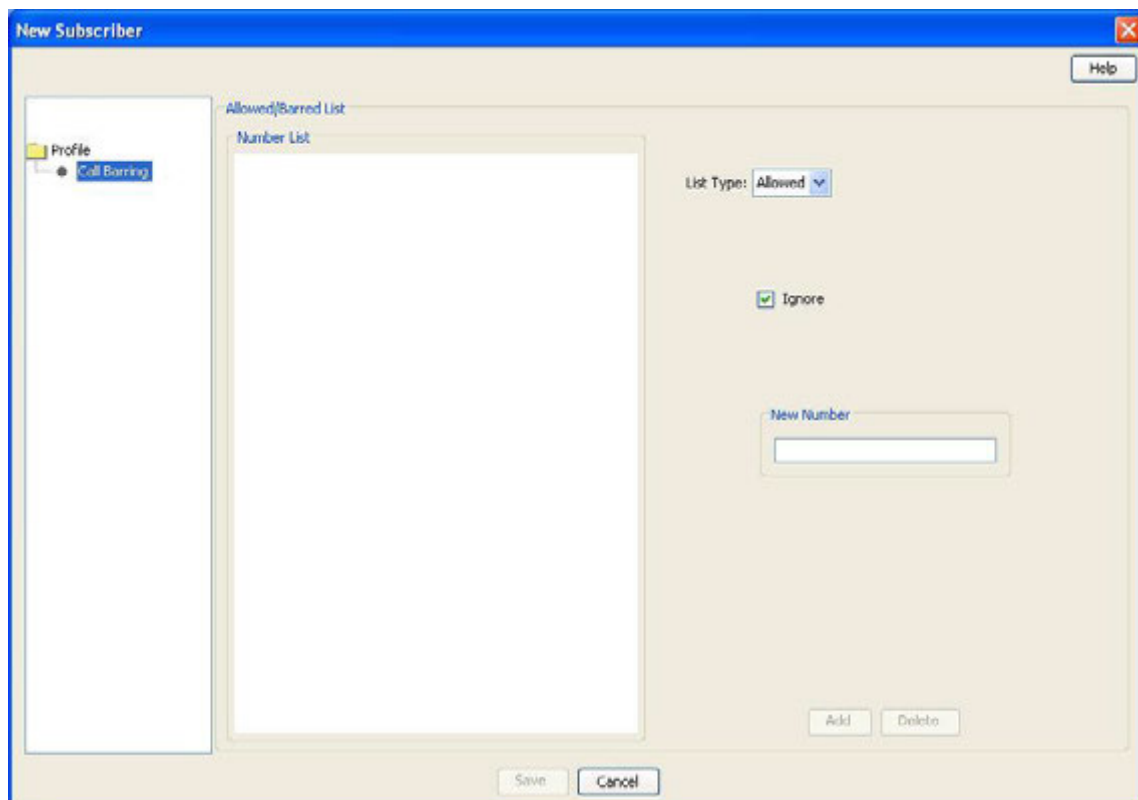
Note: Allowed/barred lists can also be configured at the following levels:

- System-wide
- Service provider (see the *Barred List* (on page 487) tab)
- Product type (see *Call Barring* (on page 167) option).

Step	Action
1	In the New or the Edit Subscriber screen, select the Profile, Call Barring option from the left hand menu. Result: You see the <i>Call Barring</i> (See example on page 98) configuration option fields.
2	In the Allowed/Barred List section, select whether the listed numbers will be allowed or barred from the List Type drop down list. Tip: Depending on the list type, all numbers in the list are allowed, or all numbers are barred for this subscriber. It is not possible to have some allowed and some barred numbers in the list.
3	If you want the service to ignore the allowed/barred list for this subscriber, select the Ignore check box.
4	To add a number to the list, enter the number in the New Number field and click Add .
5	To delete a number from the list, select it in the Number List and click Delete .
6	Repeat steps 4 and 5 as required to complete the number list.
7	Select another option to configure for this subscriber or click Save . Note: When you save a new subscriber, you will see the New Wallet screen. Refer to <i>Wallets</i> (on page 107) to finish configuring the new subscriber.

Call Barring option

Here is an example New Subscriber screen, **Call Barring** option.



Number Translation

Follow these steps to add the number translation details to a new subscriber.

Note: Number translation can also be configured at the following levels:

- System-wide
- Service provider
- Product type.

Step	Action
1	In the New Subscriber screen, select the Profile, Number Translation option from the left hand menu. Result: You see the <i>Number Translation</i> (See example on page 100) configuration option fields.
2	In the Short Codes section, edit the number list. • To add a number to the list: – In the In field, enter the service short code to translate – In the Out field, enter the termination number to translate the short service code to – Click Add • To delete a number from the list: – Select the number in the Number list – Click Delete
3	Repeat step 2 until the number list contains all the required numbers.
4	Select another option to configure for this subscriber or click Save .

Step	Action

Note: When you save the new subscriber, you will see the New Wallet screen. Refer to *Wallets* (on page 107) to finish configuring the new subscriber.

Number Translation option

Here is an example New Subscriber, **Number Translation** option.

The screenshot shows a software window titled "New Subscriber". On the left is a sidebar menu with a folder icon labeled "Profile" and a sub-item labeled "Number Translation". The main content area is titled "Short Codes" and contains a "Number List" table. The table has two columns: "In" and "Out". Both columns are currently empty. To the right of the table are two input fields, one labeled "In" and one labeled "Out". At the bottom right of the table area are "Add" and "Delete" buttons. At the bottom center of the window are "Save" and "Cancel" buttons. A "Help" button is located in the top right corner of the window.

Credit Card

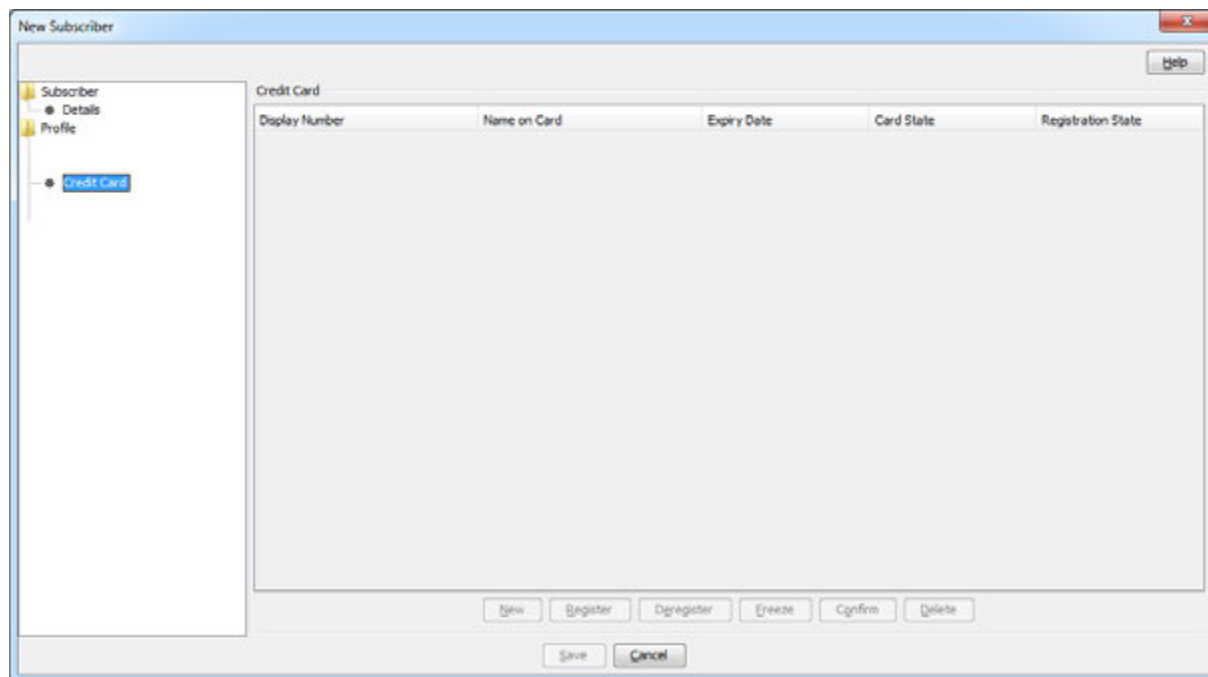
Follow these steps to configure and update credit card details for a subscriber.

Step	Action
1	In the New or the Edit Subscriber screen, select the Profile, Credit Card option from the left hand menu. The <i>Credit Card</i> (See example on page 101) table displays, listing the details of the subscriber's credit cards.
2	(Optional) Create a new credit card registered to the subscriber by performing the following steps: a. Click New. The New Credit Card dialog displays. b. Enter the credit card details in the credit card fields, and click Save. For information about credit card fields, see <i>New Credit Card fields</i> (on page 49). The credit card is added to the Credit Card table.

Step	Action
3	If you want to: - Register an existing credit card to the subscriber, click Register and then follow the credit card registration procedure. See <i>Registering credit cards to subscribers</i> (on page 102) for details - Confirm the credit card to the subscriber, select the credit card in the table and click Confirm. - Delete a credit card, select the credit card in the table and click Delete.
4	If you want to deregister a credit card from the subscriber: - Select the credit card in the table and click Deregister. The Deregister Credit Card confirmation panel displays. - Click Deregister.
5	If you want to freeze a credit card: - Select the credit card in the table and click Freeze. The Freeze Credit Card confirmation panel displays. - Click Freeze.
6	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK. The reason can be up to 200 characters long.
7	Select another option to configure for this subscriber or click Save. Note: When you save a new subscriber, the New Wallet screen displays. For more information, see <i>Wallets</i> (on page 107).

Credit Card option

Here is an example New Subscriber, **Credit Card** option.



Registering credit cards to subscribers

Follow these steps to register a credit card to a subscriber.

Step	Action
1	Search for the credit card to register. See <i>Finding credit cards</i> (on page 47).
2	Select the credit card to register.
3	Click Register . Note: The Register button is disabled if the subscriber already has the allowed number of credit card registrations.
4	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.

Register Credit Card to Subscriber screen

Here is an example of the Register Credit Card to Subscriber screen.

Register Credit Card to Subscriber

Help

Subscriber ID1234

Masking ruleGlobal-Suffix: 4

Display number

Calling card ID

Tokenized number

Search

State☒ Active☒ Frozen☐ Deleted

Display Number	Name on Card	Expiry Date

Register

Cancel

Remote Access

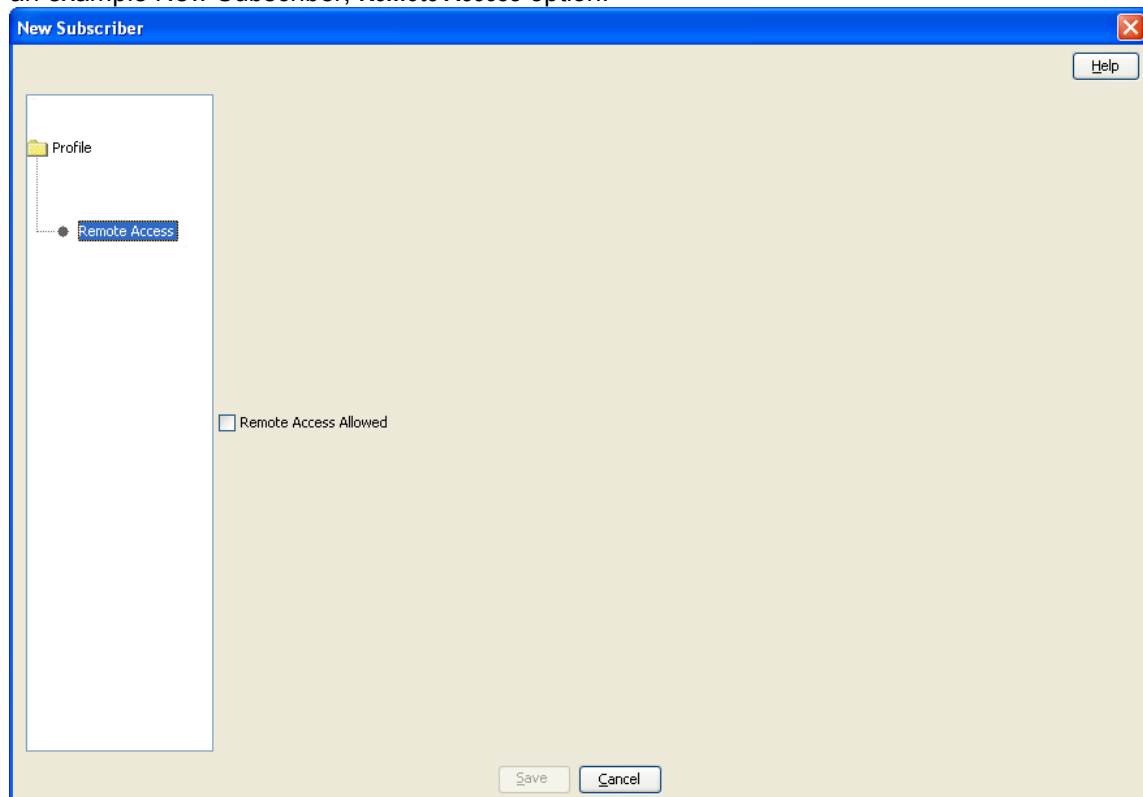
Follow these steps to add remote access to a new subscriber.

Step	Action
1	In the New Subscriber screen, select the Profile, Remote Access option from the left hand menu. Result: You see the <i>Remote Access</i> (See example on page 104) configuration option.
2	If you want the subscriber to have remote access, select the Remote Access Allowed check box. Note: The subscriber will only be able to use remote access IVR if their product type also

Step	Action
	has the Remote Access check box selected. For details, see <i>Remote Access</i> (on page 189).
3	Select another option to configure for this subscriber or click Save . Note: When you save the new subscriber, you will see the New Wallet screen. Refer to <i>Wallets</i> (on page 107) to finish configuring the new subscriber.

Remote Access option

Here is an example New Subscriber, **Remote Access** option.



Friends and Family

Follow these steps to add Friends and Family configuration details to a new subscriber.

Step	Action
1	In the New Subscriber screen, select the Profile, Friends and Family option from the left hand menu. Result: You will see the <i>Friends and Family</i> (See example on page 105) configuration option.
2	From the Active Service options, select the service that should be active for the subscriber.
3	In the Friends & Destination Settings frame, select the discount prefix for Friends and Destination from the Discount Prefix drop down list.
4	In the Change Count field, enter the total number of change counts for the subscriber.
5	From the Change date drop down list, select the day, month, year, hour and minute of the most recent change to the subscriber.

Step	Action
6	From the Friends & Family Settings frame, enter the number of times the subscriber has been changed in the Change count field.
7	From the Change date : drop down list, select the day, month, year, hour and minute of the most recent change to the subscriber.
8	In the Friends & Family Numbers frame, edit the number list. To: - Add to the list, enter a required number in the New Number field and click Add. - Delete from the list, in the Number List, select the number and click Delete.
9	Select another option to configure for this subscriber or click Save .
Note: When you save the new subscriber, you will see the New Wallet screen. Refer to <i>Wallets</i> (on page 107) to finish configuring the new subscriber.	

Friends and Family option

Here is an example New Subscriber screen, **Friends and Family** option.

The screenshot shows the 'New Subscriber' window with the 'Friends and Family' option selected in the left sidebar. The main area contains the following sections:

- Active Service:** Radio buttons for F&F (selected), F&D, and None.
- Friends & Destination Settings:**
 - Discount prefix: (N/A)
 - Change Count: [input field]
 - Change date: 8 May 2007 13:19
- Friends & Family Settings:**
 - Change count: [input field]
 - Change date: 8 May 2007 13:19
- Friends & Family Numbers:**
 - Number List:** A table with columns for 'Number' and 'Status'. It is currently empty.
 - New Number:** [input field]
 - Add** and **Delete** buttons.

At the bottom of the window are **Save** and **Cancel** buttons.

Closed User Groups

Follow these steps to update the closed user groups (CUG) a subscriber belongs to.

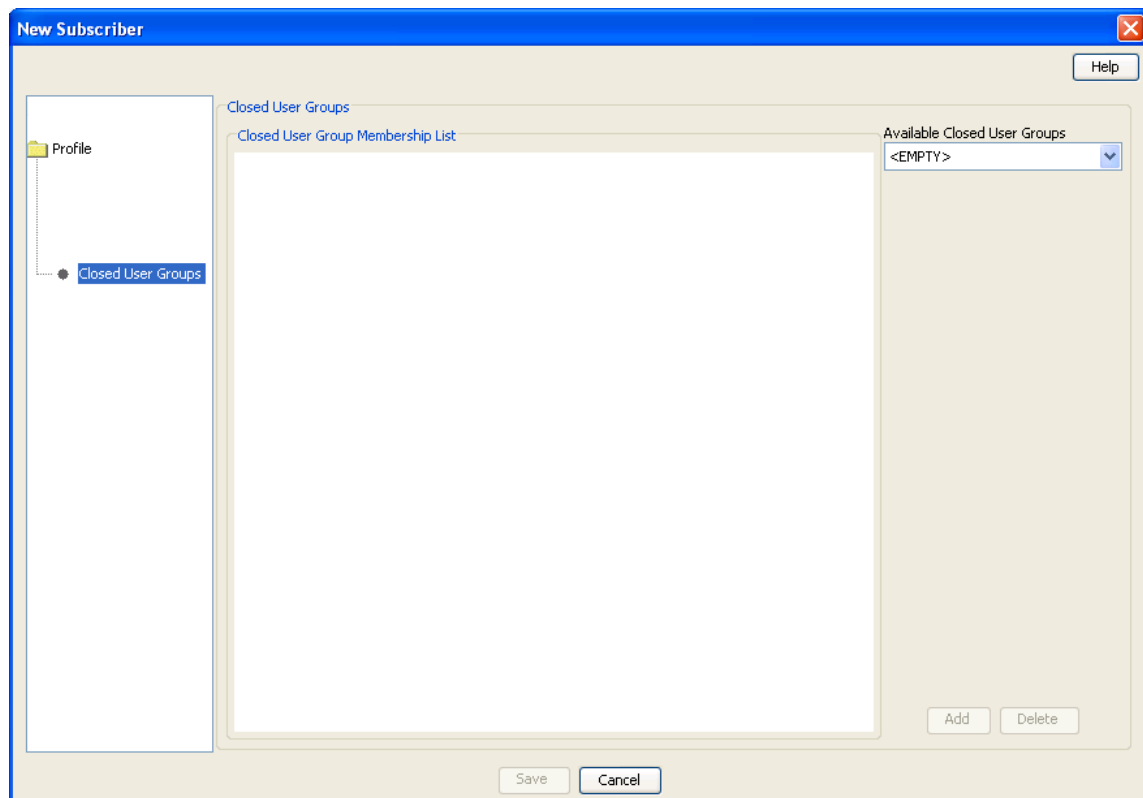
Warning: This functionality is only available where rating management for the subscriber is either handled by the VWS, or a third-party domain that supports closed user groups.

Step	Action
1	In the New or the Edit Subscriber screen, select the Profile, Closed User Groups option from the left hand menu. Result: You see the Closed User Groups (See example on page 106) configuration options.
2	Update the Closed User Group Membership List for the subscriber as required. To: • Add a closed user group, ▪ Select the CUG you want from the Available Closed User Groups drop down list. ▪ Click Add. • Remove a CUG from the list, ▪ Select it in the Closed User Group Membership List ▪ Click Delete. Result: The closed user group name appears in the list. Result: The closed user group name is moved from the membership list to the available list.
3	Select another option to configure for this subscriber or click Save . Note: When you save the new subscriber, you will see the New Wallet screen. Refer to <i>Wallets</i> (on page 107) to finish configuring the new subscriber.

Note: You can also assign CUG membership on the **Closed User Group** tab of the Subscriber Management screen. For more information, see *Editing closed user groups* (on page 63).

Closed User Groups option

Here is an example New Subscriber, **Closed User Groups** option.



Balance Topup Rules

The Balance Topup Rules option lets you view the active topup rules defined for the subscriber, and when they were last activated. The rules are used to allocate additional items, such as additional notifications, to specified balance types on a regular basis. For details on creating and activating balance topup rules, see *CCS Technical Guide*.

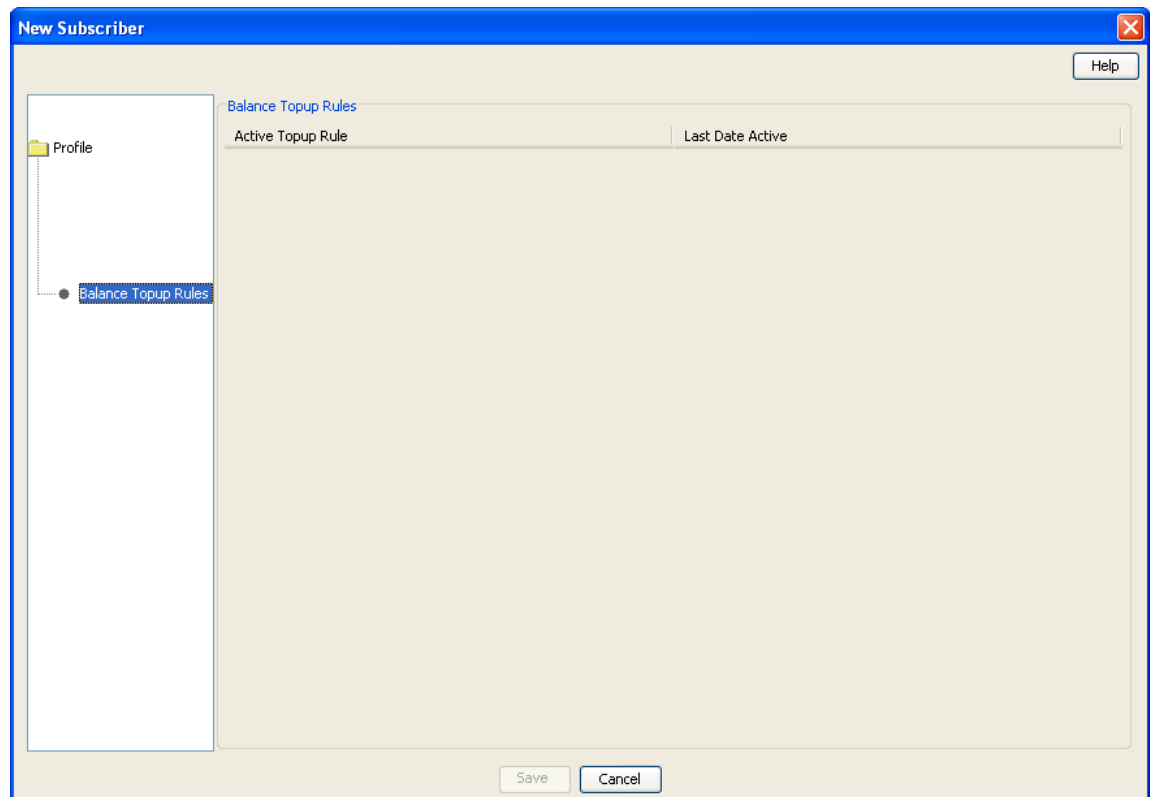
Warning: This functionality is only available where rating management for the subscriber is handled by the VWS.

Follow these steps to view the active balance topup rules for a subscriber.

Step	Action
1	In the New or the Edit Subscriber screen, select the Balance Topup Rules option from the left hand menu. Result: You see the Balance Topup Rules (See example on page 107) configuration option.
2	Select another option to configure for this subscriber or click Save . Note: When you save the new subscriber, you will see the New Wallet screen. Refer to <i>Wallets</i> (on page 107) to finish configuring the new subscriber.

Balance Topup Rules option

Here is an example New Subscriber screen, **Balance Topup Rules** option.



Wallets

The New Wallet screen appears when you first save the configuration for a new subscriber, or when you click **New Wallet** in the Edit Subscriber screen. The new wallet can be a:

- New private wallet
- Link to a shared wallet

Distributed wallets

When you add a new wallet for a subscriber you can specify that the wallet balances should be distributed across separate charging and tracking domains.

For a distributed wallet the charging domain:

- Will hold chargeable balances
- Can be either a VWS or a Diameter domain type

The tracking domain:

- Will hold fraud and expenditure balances
- Must be a VWS domain type

Wallet rules

The following rules apply when creating a new wallet for a subscriber:

- 1 By default, a new wallet will be created on a VWS charging domain and not distributed across a charging domain and a tracking domain.
- 2 You can only specify a charging and a tracking domain for a subscriber's wallet when you add the new wallet. If you add a non-distributed wallet for subscriber (that is, specify a charging domain only for the wallet), then you will not be able to edit the wallet later to add a tracking domain.
- 3 If you specify a VWS domain type for the charging domain then you must specify the same VWS instance for the tracking domain.
- 4 Only balances held on a VWS domain type will be accessible through the Edit Subscriber screen.
- 5 If a subscriber's wallet is distributed across an external charging domain and a VWS tracking domain, then you will only be able to access fraud and expenditure balances in the Edit Subscriber screen. That is, you will only be able to access balances where the balance category is set to 'Expenditure Balance' or 'Fraud Balance'.

New Wallet screen

Here is an example New Wallet screen.

New Wallet for Subscriber 4409548

Type of Wallet

Link To Existing Wallet ☐

Charging Domain PCDEV

Tracking Domain None

Wallet Reference

Product Type BL 1

Display Currency GBP

Wallet Currency United Kingdom (Great Britain), Pound Sterling

Customer No Customer Selected

Limit Type Prepaid

Minimum Credit 0.00

Maximum Concurrent Accesses 1

OK Cancel

New Wallet fields

This table describes the function of each field.

Field	Description
Link To Existing Wallet	Selecting this option indicates that the wallet is shared. This field will be disabled for non-VWS charging domains.
Charging Domain	The domain to use for chargeable balance types. The drop down list will display all available domains. This field will be disabled if Link To Existing Wallet is selected. Note: For distributed wallets the system will support either Diameter or VWS charging domains.
Tracking Domain	The domain for balance types used for tracking promotions and fraud. The drop down list will display all available VWS domains. Note: A VWS must be used.
Wallet Reference	The wallet reference for one of: - The wallet on a VWS or external charging domain - For a shared wallet on a VWS charging domain If this field is left blank, then the wallet reference will be generated automatically. Note: This field becomes enabled if Link to Existing Wallet is selected or if a non VWS charging domain is selected.
Product Type	The product type associated with the wallet. For more information on product types, see <i>Product Type</i> (on page 151).

Field	Description
Display Currency	The currency used to display the value in the Minimum Credit field.
Wallet Currency	The currency used to hold monetary values in this wallet.
Customer	The customer who has access to this wallet.
Limit Type	Indicates if the limit type associated with this wallet is: • Prepaid • Single Use • Postpaid • Limited Postpaid
Minimum Credit	For limited postpaid wallets, this is the minimum credit value for the wallet.
Maximum Concurrent Accesses	The total number of accesses that can be supported against the wallet at any one time. Note: Setting this field to more than 1 may change the way charges are applied to balances. For more information about how this parameter affects balance charges, see <code>alwaysUsePreferred</code> parameter in <i>CCS Technical Guide</i> .

Adding a new VWS wallet

Follow these steps to add a new wallet to a subscriber on a VWS domain.

See *New Wallet fields* (on page 109) for a description of the fields on the New Wallet screen.

Step	Action
1	In the New Wallet screen, ensure Link To Existing Wallet is not selected.
2	From the Charging Domain drop down list select a VWS domain. This field is populated by the Domain tab. For more information, see <i>Domain</i> (on page 441).
3	From the drop down list, select the Product Type that will be associated with this wallet. This field is populated by the Product Type tab. For more information, see <i>Subscriber Management - Product Type</i> (on page 151).
4	From the Display Currency drop down list, select the currency that the Minimum Credit field will be displayed in.
5	From the Wallet Currency drop down list, select the currency that will be used for monetary values for this wallet. All available currencies are displayed in this list.
6	If required, select the Customer from drop down list who will have access to this wallet. This field is populated by the Customer tab. For more information, see <i>Customer</i> (on page 58).
7	Select the Limit Type from the drop down list that will be used for this wallet.
8	If you selected <code>Limited Postpaid</code> for the limit type, enter the minimum credit value for this wallet in the Minimum Credit field.
9	In the Maximum Concurrent Accesses field, enter the total number of accesses that can be supported against the wallet at any one time.
10	Click OK to save the new wallet.

Adding a third party domain wallet

Follow these steps to add a new non distributed wallet to a subscriber using a third party domain.

See *New Wallet fields* (on page 109) for a description of the fields on the New Wallet screen.

Step	Action
1	Ensure Link To Existing Wallet is not selected.
2	From the Charging Domain drop down list, select the third party domain for the wallet. This field is populated by the Domain tab. For more information, see <i>Domain</i> (on page 441).
3	From the Tracking Domain drop down list, ensure None is selected.
4	Enter the identifier for the wallet in the Wallet Reference field. If you leave this field blank then the external wallet reference is auto-generated using the value of the wallet ID.
5	Click OK to save the new Wallet.

Adding a distributed wallet

Follow these steps to add a new distributed wallet to a subscriber.

See *New Wallet fields* (on page 109) for a description of the fields on the New Wallet screen.

Step	Action
1	In the New Wallet screen, ensure Link To Existing Wallet is not selected.
2	From the Charging Domain drop down list, select the domain to use for chargeable balances. This field is populated by the Domain tab. For more information, see <i>Domain</i> (on page 441).
3	From the Tracking Domain drop down list, select the VWS domain to use for expense and fraud balances.
4	If you selected a third party charging domain then in the Wallet Reference field type the external wallet reference.
5	From the drop down list, select the Product Type that will be associated with this wallet. This field is populated by the Product Type tab. For more information, see <i>Subscriber Management - Product Type</i> (on page 151).
6	From the Display Currency drop down list, select the currency that the Minimum Credit field will be displayed in.
7	From the Wallet Currency drop down list, select the currency that will be used for monetary values for this wallet. All available currencies are displayed in this list.
8	If required, select the Customer from the drop down list who will have access to this wallet. This field is populated by the Customer tab. For more information, see <i>Customer</i> (on page 58). Note: This field will be disabled if a non VWS charging domain is selected.
9	Select the Limit Type from the drop down list that will be used for this wallet. Note: This field will be disabled if a non VWS charging domain is selected.
10	If you selected Limited Postpaid for the limit type, enter the minimum credit value for this Wallet in the Minimum Credit field. Note: This field will be disabled if a non VWS charging domain is selected.

Step	Action
11	In the Maximum Concurrent Accesses field, enter the total number of accesses that can be supported against the wallet at any one time. Note: This field will be disabled if a non VWS charging domain is selected.
12	Click OK to save the new wallet.

Adding a linked wallet

Follow these steps to add a new link to an existing wallet for a subscriber.

See *New Wallet fields* (on page 109) for a description of the fields on the New Wallet screen.

Step	Action
1	In the New Wallet screen, select Link To Existing Wallet .
2	Enter the identifier for the shared wallet in the Wallet Reference field. You must enter an existing wallet ID.
3	If this is a distributed wallet, select the Tracking Domain from the drop down list of available VWS domains.
4	Select the Product Type from the drop down list that will be associated with this wallet. This field is populated by the Product Type tab. For more information, see <i>Subscriber Management - Product Type</i> (on page 151).
5	From the drop down list, select the Display Currency to use to display the minimum credit for the wallet.
6	Click OK to save the new linked wallet.

Editing Subscribers

Introduction

The Edit Subscriber screen allows you to *Editing subscriber configuration* (on page 114) and profile configuration options.

From this screen you can also:

- *Record subscriber comments* (on page 115)
- *Configure subscriber zones* (on page 117)
- *Edit wallets* (on page 121)
- *Edit wallet balances* (on page 125)
- *Change wallet balance adjustment limits* (on page 130)
- *Merge wallets* (on page 132)
- *Reservations* (on page 133)
- *View EDRs* (on page 137)
- *Execute business process logic* (on page 143)
- *View subscriber promotions* (on page 145)
- *Perform credit transfers* (on page 147)

If the Convergent Charging Controller EDR auditing feature is enabled, and you update the financial data for a subscriber; for example, by updating their wallets, then you will be required to record the reason for the change when you save the subscriber record. For more information, see *About Auditing Changes to Subscriber Data* (on page 91).

Edit subscriber screen layout

The configuration and layout for the Edit Subscriber screen is defined in the Subscriber Profile Manager (SPM). When you open the Edit Subscriber screen, the fields and options you see depend on the configuration defined in the SPM for the subscriber's product type and service provider (see following screen example). This means that you may see one of the following:

- The default configuration for the Edit Subscriber screen containing all the fields and options available as a standard
- A customized Edit Subscriber screen containing a subset of the standard fields and options, plus any subscriber profile groups, fields and zones that have been configured specifically for you. The labels given to the fields and options may also be different from the default labels

You see the available options listed in the menu on the left hand side of the screen. To view or edit the fields for a particular option, select the option in the list.

Note: For information on configuring the Edit Subscriber screen, refer to *Subscriber Profile Manager User's Guide*.

Example Edit Subscriber screen

Here is an example Edit Subscriber screen configured to show subscriber details when the Details option is selected.

The screenshot shows the 'Edit Subscriber 123456781 - Primary Wallet' window. On the left is a tree view with 'Details' selected. The main panel contains the following fields and controls:

- Buttons: New Wallet, Merge Wallet, View EDRs
- Card Number: 13 12345678
- Subscriber ID: 123456781
- Description: (empty text box)
- PIN: (masked with dots) [Is Defined checkbox]
- Confirm PIN: (masked with dots)
- Language: No Language Selected (dropdown)
- Subscriber ID Restricted: (checkbox)
- Disable Incoming Calls When Roaming: (checkbox)
- Blacklisted: (checkbox)
- Subscriber Information section:
 - Wallet Types: Primary Only
 - Total Swaps Used: 0
 - Total Free Swaps Used: 0
 - Subscriber Batch ID: 0
 - Authentication Module: DES
- Buttons: Save, Cancel, Revert

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.

Reverting unsaved changes

You can revert any unsaved changes to a subscriber's configuration by clicking **Revert**. The data will revert to the most recently saved version of the subscriber's configuration.

For details see *Reverting subscriber edits* (on page 115).

Subscriber details fields

This table describes the function of the standard subscriber details fields that may be available in the Edit Subscriber screen.

Note: Some of these fields may have been given different labels in your screens depending on how the Edit Subscriber screen has been configured.

Field	Description
Card Number	Specifies the card number for the subscriber.
Subscriber ID	The Calling Line Identifier (CLI) for this subscriber. This identifies the line that the call is being placed from. When a call is made, the system determines which wallet to charge based on the subscriber ID of the caller.
Description	A description for this subscriber.
Is Defined	Either removes a subscriber's PIN (unselected), or enables adding or editing a subscriber's PIN (selected)
PIN	Sets the subscriber's PIN (Is Defined must be selected).
Confirm PIN	Confirmation of the subscriber's PIN (Is Defined must be selected).
Language	Sets the language to use for announcements for this subscriber.
Subscriber ID Restricted	Sets whether or not the subscriber may set the presentation restricted indicator in the outgoing connect message for services. For further information refer to <i>CCS User's Guide</i> .
Disable Incoming Calls When Roaming	Sets whether or not the subscriber may receive incoming calls while roaming.
Blacklisted	Sets whether or not the subscriber may use the service. When selected, the service will be disabled. For more information about blacklisted subscribers, see <i>Adding Subscribers</i> (on page 95).
Disable SMS Notifications	Sets whether or not the subscriber may receive SMS notifications.
Subscriber Information	Core information about the subscriber. For information purposes only.

Editing subscriber configuration

Follow these steps to edit the configuration for an existing subscriber.

Note: You can also access the Edit Subscriber screen and edit subscriber configuration from the CCP Dashboard. For details, refer to *Customer Care Portal User's Guide*.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Subscriber tab, search for the subscriber to edit. For details see <i>Finding subscribers</i> (on page 94).
3	Select the row in the search results for the subscriber to edit.

Step	Action
	Note: If the subscriber has both a primary and a secondary wallet, there will be a row in the search results for each wallet. The wallet type is displayed next to the wallet reference number. Select the row for the wallet type to edit.
4	Click Edit . Result: You see the Edit Subscriber screen with the wallet type indicated in the screen title bar.
5	Edit the subscriber details fields as required. See <i>Editing configuration options</i> (on page 115).
6	Edit the subscriber profile options as described in <i>Adding Subscribers</i> (on page 95).
7	Edit the wallets for the subscriber as required. See <i>Edit Wallets</i> (on page 121).
8	Execute business process logic actions as required. See <i>Execute Business Process Logic</i> (on page 143).
9	Perform credit transfers as required. See <i>Perform Credit Transfers</i> (on page 147).
10	Click Save .
11	If EDR auditing is enabled and you have changed the financial status of the subscriber, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long. See <i>About Auditing Changes to Subscriber Data</i> (on page 91) for more information.

Editing configuration options

Follow these steps to edit the configuration options for a subscriber account.

Step	Action
1	In the Edit Subscriber screen, select the option from the left hand menu that holds the field to edit.
2	Enter the new details as required.
3	Repeat steps 1 and 2 for all the fields to edit.
4	When you have completed your edits, click Save .

Reverting subscriber edits

Follow these steps to revert unsaved changes to the subscriber configuration.

Step	Action
1	In the Edit Subscriber screen, click Revert . Result: Any unsaved changes to the subscriber configuration will be reversed and the subscriber will be redisplayed using the original data.

Record Subscriber comments

Introduction

The **Comments** panel, available from the Edit Subscriber screen, allows you to add notes about the subscriber's account. You can add, edit and delete comments in the panel.

User access

You can access comments in the Edit Subscriber screen provided you have been given sufficient privileges.

This table describes the privileges for comments.

Privilege	Description
Read/Only	The Comments panel will be visible through the screens, but no buttons will be available and you will not be able to edit, create, or delete comments.
Read/Modify	The Comments panel will be visible through the screens, and the Add and Edit buttons will be available. You will be able to create and edit your own comments, but you will not be able to edit the comments of other users.
Create/Delete	The Comments panel will be visible through the screens, and the Add , Edit and Delete buttons will be available. You will be able to create, edit and remove any existing comments.

Note: Access permissions are managed through the user templates defined in the Service Management System User Management screen. For information on creating and maintaining user templates, see *SMS User's Guide*.

Comments panel

Here is an example **Comments** panel in the Edit Subscriber screen.

Adding a comment

Follow these steps to add a comment to a Subscriber record.

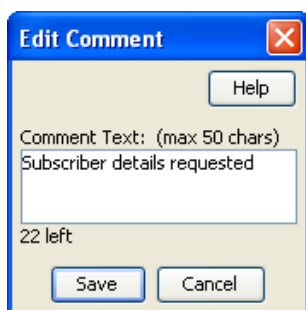
Step	Action
1	On the left hand panel in the Edit Subscriber screen, select the option containing the Comments panel.
2	Click Add .
	Result: You see the Add Comment screen.

Step	Action
3	In the Comment Text field type in your comment. The comment can be up to 50 characters long.
4	Click Save . Result: You are returned to the Edit Subscriber screen

Editing a comment

Follow these steps to edit a comment on a subscriber record.

Step	Action
1	On the left hand panel in the Edit Subscriber screen, select the option containing the Comments panel.
2	Click Edit . Result: You see the Edit Comment screen.



3	Modify the comment in the Comment Text field, as required..
4	Click Save . Result: You are returned to the Edit Subscriber screen

Deleting a comment

Follow these steps to delete a comment from a subscriber record.

Step	Action
1	On the left hand panel in the Edit Subscriber screen, select the option containing the Comments panel.
2	Click Delete . Result: You see the Delete Confirmation screen for the comment.
3	Click Yes . Result: The comment is deleted and you are returned to the Edit Subscriber screen.

Configure Subscriber Zones

Introduction

Zones provide the facility to customize the services provided to the subscriber depending on their location. For example, a home zone could be defined where the subscriber may obtain cheaper calls.

A subscriber may have up to nine zones. Each zone can be configured to include a group of up to five rectangular and circular shapes. The location and area covered by each shape is determined by its coordinates (defined in latitude and longitude format). If required, the shapes may overlap.

Note: This functionality is only operational if the Convergent Charging Controller Location Capabilities Pack (LCP) package is installed.

User access

You can access zones in the Edit Subscriber screen provided you have been given sufficient privileges.

This table describes the privileges that may be assigned to zone.

Privilege	Description
Read/Only	The zone will be visible through the screens, but you will not be able to edit, create, or delete it.
Read/Modify	The zone will be visible through the screens, and you will be able to edit it, but you will not be able to create or delete it. This means that you will be able to add, edit and delete shapes for the zone. However, if there is only one shape defined for the zone you will not be able to delete it because this would also delete the zone itself.
Create/Delete	The zone will be visible to the user through the screens, and you will be able to add, edit, and delete shapes for it even if there is only one shape defined for the zone. If you delete the only remaining zone shape, then the zone's profile tag will also be removed from the subscriber's profile.

Note: Access permissions are managed through the user templates defined in the Service Management System User Management screen. For information on creating and maintaining user templates, see *Service Management System User's Guide*.

Zone group

Zones are defined in zone group panels in the Edit Subscriber screen. A zone group panel can be included where needed using the Subscriber Profile Manager.

Zone group panel

Here is an example zone group panel.

The screenshot shows a web interface for managing zone groups. On the left is a vertical navigation bar with a 'Home' link. The main content area has two sections: 'Circular Shapes' and 'Rectangular Shapes'. The 'Circular Shapes' section has three input fields: 'Centre X-Longitude', 'Centre Y-Latitude', and 'Circle Radius'. The 'Rectangular Shapes' section has four input fields: 'Top-Left X-Longitude', 'Top-Left Y-Latitude', 'Bottom-Right X-Longitude', and 'Bottom-Right Y-Latitude'. Below these sections are three buttons: 'New' (highlighted in blue), 'Edit', and 'Delete'.

Adding a new zone shape

Follow these steps to add a new shape to a zone.

Step	Action
1	In the Edit Subscriber screen, select the option that holds the zone to add a shape to.
2	In the group for the zone, click New . Result: You see the <i>New Zone screen</i> . (See example on page 120)
3	Select the option for the zone shape, select one of: • Circular Shapes • Rectangular Shapes
4	If you are specifying a circular zone shape, in the boxes enter the coordinates for the center of the circle and its radius. • X (Deg): The longitude coordinate. Restricted to between -179.99999 (W) and 180.00000 (E) degrees. • Y (Deg): The Latitude coordinate. Restricted to between -90.00000 and 90.0000 degrees. • R (Kms): The radius. Restricted to between 0.0000000 and 99999999.9999999 kilometers.
5	If you are specifying a rectangular zone shape, enter the coordinates for the top left and bottom right corners of the rectangle. Top-Left Corner: • X (Deg): The longitude west coordinate. Restricted to between -179.99999 (W) and 180.00000 (E) degrees and must not equal the value for the longitude east coordinate. • Y (Deg): The latitude north coordinate. Restricted to between -90.00000 and 90.0000 degrees and must be a higher number than the latitude south coordinate. Bottom-Right Corner: • X (Deg): The longitude east coordinate. Restricted to between -179.99999 (W) and 180.00000 (E) degrees and must not equal the value for the longitude west coordinate. • Y (Deg): The latitude south coordinate. Restricted to between -90.00000 and 90.0000 degrees and must be a lower number than the latitude north coordinate.
6	Click Save .

Zone screen

Here is an example Zone screen.

Editing a zone shape

Follow these steps to edit a Zone shape.

Step	Action
1	In the Edit Subscriber screen, select the option where the zone to edit is defined.
2	In the zone group select the shape to edit and click Edit . Result: You see the <i>Edit Zone screen</i> (See example on page 120).
3	Edit the shape definition as described in <i>Adding a new zone shape</i> (on page 119).
4	Click Save .

Deleting a zone shape

Follow these steps to delete a Zone shape.

Step	Action
1	In the Edit Subscriber screen, select the option where the zone shape to delete is defined.
2	In the zone group select the shape to delete and click Delete . Result: The zone shape is deleted.

Edit Wallets

Introduction

The wallet information available in the Edit Subscriber screen will depend on the configuration defined for the product type and service provider for the subscriber (see following screen examples). This means that you may see one of the following:

- The default wallet configuration where all the standard wallet information fields are displayed under a single Wallet option.
- The Edit Subscriber screen may have been customized to contain a subset of the standard wallet information fields. This information may be available under a single option listed in the panel on the left hand side of the screen, or it may be split over more than one option. The labels given to the fields and options may also be different.

You see the available options listed in the menu on the left hand side of the screen. To view or edit the fields for a particular option, select the option in the list.

If EDR auditing is enabled in Convergent Charging Controller, and you update the wallets for a subscriber, then you will be required to record the reason for the change in a special **Change Reason** dialog that displays when you save the subscriber record. For more information, see *About Auditing Changes to Subscriber Data* (on page 91).

Example wallet details

Here is an example Edit Subscriber screen configured to provide wallet details when the Wallets option is selected. It shows the primary and secondary wallets on separate tabs.

Edit Subscriber 104022113344 - Primary Wallet

Subscriber: Details, **Wallets**, Business Process Logic

Profile: Call Barring, Number Translation, Credit Card, Remote Access, Friends and Family, Closed User Groups, Balance Topup Rules

Profile Groups: Periodic Charges

Credit Transfers: Peer-to-Peer Transfer, Service Bundle

Wallets

Display Currency: GBP Number of CDRs To Display: 5 View EDRs New Wallet Merge Wallet Details

Primary Secondary

Balance Type	Limit Type	Total Value	First Expiry Date
General Cash	Prepaid	0.00	
Promotional Cash	Prepaid	0.00	
Bad Pin		0	
Monthly Exp		0.00	
Yearly Exp		0.00	
Free SMS	Prepaid	0	
Time	Prepaid	0 (0:00.00)	

Wallet Reference: 1079 Wallet Currency: United Kingdom (Great ...)

Private/Shared: Private Wallet State: Pre-use

Product Type: BL 1 Bill for Product Swap: ☐

Promotional Destination Messages: 0

Maximum Concurrent Accesses: 1 Customer: No Customer Selected

Wallet Expiry Details

Define Wallet Expiry Date: ☐ Wallet Expiry Date: <Not Set>

Wallet History

Date Last Use		Last Activation Date	
Initial Activation Date		Previous Wallet Expiry Date	
Last Product Type Swap		Previous Balance Expiry Date	
Balance Before Last Recharge	0.00	Date of Last Recharge	
Most Recently Expired Credit	0.00	Total Expired Credit	0.00
Date of Last Credit Card Recharge		Last State Change Reason	

Save Cancel

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.

Example wallet details

Here is an example Edit Subscriber screen configured to provide wallet details when the Wallets option is selected. It shows how the information appears if the CCP is enabled on your system.

Edit Subscriber 4411 Primary Wallet

Buttons: New Wallet, Merge Wallet, View EDRs, Help

Display Currency: GBP | Details | Add Balance | All Balance Categories

Balance Type	Limit Type	Total Value	First Expiry Date	Category
General Cash	Prepaid	91.84		Chargeat
Promotional Cash	Prepaid	10.00	2010-10-19 15:10	Chargeat
Bad Pin		0		Internal t
Monthly Exp		0.00		Expendit
Yearly Exp		0.00	2011-10-19 15:20	Expendit
Free SMS	Prepaid	1		Chargeat

Wallet Information

Wallet Reference: 2 | Wallet Currency: Britain (Great Britain), I
 Private/Shared: Private | Maximum Concurrent Accesses: 1
 Promotional Destination Messages: 0 | Bill for Product Swap: ☐

Product Type: PT1 | Wallet State: Active | Customer: No Customer Selected

Wallet Expiry Details

Define Wallet Expiry Date: ☒ | Wallet Expiry Date: 03-Oct-2009 15:00:00

Wallet History

Date Last Use	2007-11-01 16:28:45	Last Activation Date	2007-10-25 08:10:41
Initial Activation Date	2007-10-25 08:10:41	Previous Wallet Expiry Date	2009-10-02 15:00:00
Last Product Type Swap		Previous Balance Expiry Date	
Balance Before Last Recharge	94.34	Date of Last Recharge	2007-11-01 16:28:45
Most Recently Expired Credit	0.00	Total Expired Credit	0.00

Buttons: Save, Cancel, Revert

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.

Default wallet configuration

The default configuration for the Edit Subscriber screen contains the following categories of information and fields for subscribers' wallets. Depending on how your screens have been configured, you will be able to edit some or all of this data:

- Wallet information
- Wallet expiry details
- Wallet history
- Wallet balances
- Product type
- Wallet state
- Customer

Wallet type

The Edit Subscriber screen lets you look at the wallet details for the primary and secondary wallets. In a standard installation the primary and the secondary wallets appear on separate tabs in the Edit Subscriber screen. You can select the wallet by selecting its tab.

If the CCP is enabled on your system then you will only be able to access either the primary or the secondary wallet from the Edit Subscriber screen, but not both. The wallet type will:

- Depend on which row you selected in the subscriber search results table
- Be clearly indicated in the Edit Subscriber screen title

Wallet field groups

This table describes the function of the standard groups of fields that may be available with a wallet in the Edit Subscriber screen. Each group contains a standard set of fields, some of which may be editable.

Note: This table shows the default labels given to the information groups. These labels may be different in your screens depending on how the Edit Subscriber screen has been configured.

Group Label	Description
Balance Types panel	A panel showing the available wallet balances. For details, see <i>Edit Wallet Balances</i> (on page 125).
Wallet Information	Core information about the wallet. For details, see <i>Editing wallet information</i> (on page 123).
Product Type, Wallet State, and Customer fields	Wallet attributes. For details, see <i>Product Type, Wallet State and Customer fields</i> (on page 124).
Wallet Expiry Details	Describes wallet expiry date (if any). For details, see <i>Setting wallet expiry dates</i> (on page 125).
Wallet History	For information purposes only. Provides details about the wallet history.

Wallet Information group

Here is an example **Wallet Information** group.

Wallet Information

Wallet Reference: 43 Wallet Currency: United Kingdom (Great ...)

Private/Shared: Private Maximum Concurrent Accesses: 1

Promotional Destination Messages: 0 Bill for Product Swap: ☐

Editing wallet information

Follow these steps to edit the details in the Wallet Information group.

Warning: Although the names of the fields in the group remain the same, the group name will depend on how the Edit Subscriber screen has been configured.

Step	Action
1	From the left hand menu in the Edit Subscriber screen, select the option containing the Wallet Information group of fields.
2	In the Wallet Information panel select a different Wallet Currency from the drop down list, if required. This defines the currency used for monetary values for this Wallet.

Step	Action
3	If required, enter a new number for the Maximum Concurrent Accesses that can be supported against the subscriber at any one time.
4	If you have changed the subscriber's product type and you want to charge for this change then select the Bill for Product Swap check box. Tip: This charge is made when the current subscriber edits are saved. The next time you edit this subscriber this check box will have been cleared.
5	If you have completed your subscriber edits, click Save .
6	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.

Product Type, Wallet State and Customer fields

This table describes the function of each field.

Field	Description
Product Type	The product type which applies when this subscriber uses this wallet.
Wallet State	The state the current wallet is in. A wallet's state controls what features of the service a wallet can use, and reflects where in the wallet life cycle the wallet is. For more information about the wallet life cycle, see <i>Wallet lifecycle</i> (on page 11).
Customer	The customer the wallet is associated with. For more information about customers, see <i>Customer</i> (on page 58).

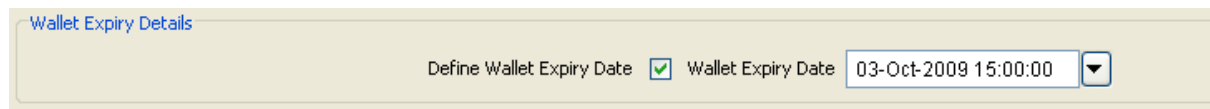
Activating a wallet

Follow these steps to set a wallet state to active.

Step	Action
1	From the left hand menu in the Edit Subscriber screen, select the option containing the Wallet State field.
2	From the Wallet State drop down list, select <i>Active</i> .
3	Click Save . Result: The subscriber record will be saved and the wallet state will be set to active. Any wallet activation promotions which have been configured for the subscriber or product type will be applied. Note: If a wallet activation promotion has been configured for a balance type that exceeds the maximum balance value defined for the balance type and the maximum balance policy is: - Limit additional credits, the wallet state will be set to active and the balance will be set to the maximum balance value. - Reject credits over, the wallet state and wallet balances will not be updated.
4	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.

Wallet Expiry Details group

Here is an example of the Wallet Expiry Details group fields.



Setting wallet expiry dates

Follow these steps to set the expiry date for a wallet.

Step	Action
1	From the left hand menu in the Edit Subscriber screen, select the option containing the Wallet Expiry Details group of fields.
2	In the Wallet Expiry Details group ensure Define Wallet Expiry Date is selected.
3	Select the Wallet Expiry Date from the drop down window. For more information about setting dates, see Time and Date panels.
4	If you have completed editing the subscriber, click Save .
5	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.

Edit Wallet Balances

Introduction

You can view and edit balances for the wallets on the CCS VWS domain.

Note: If the wallet is on a third party domain then you will not be able to access balance type information in the Edit Subscriber screen.

If EDR auditing is enabled in Convergent Charging Controller, and you update the wallet balances for a subscriber, then you will be required to record the reason for the change in a special **Change Reason** dialog that displays when you save the subscriber record. For more information, see *About Auditing Changes to Subscriber Data* (on page 91).

For each balance type, you can specify:

- A set of bucket values and expiry dates
- Offset dates for bucket balances
- The limit type
- The minimum credit (only available on general cash balances)
- The display currency (not valid for non-cash balances such as time or notifications).

Bucket values are used to update balances. When you add a new bucket for a balance type, the bucket value is added to its current balance. When you edit a bucket value, the balance is changed to the new value.

Bucket expiry dates are used to define when the bucket balance will expire. When a bucket expiry date is reached, its balance is subtracted from the current balance value of the balance type.

Note: For time balance types, you specify bucket values in seconds. The value is shown on screen in both minutes and seconds. This functionality is only available if you have the appropriate license.

Distributed wallet balances

If the wallet has been distributed across separate charging and tracking domains, then you may not be able to edit all wallet balances through the Edit Subscriber screen. If the wallet has been configured to use:

- A VWS domain for charging and tracking, you will be able to view and edit all wallet balances
- A third party charging domain and no tracking domain, you will not be able for view or edit any wallet balances
- A third party charging domain and a VWS tracking domain, you will only be able to view or edit expense and fraud balances

Maximum balance values

You can set a maximum value for prepaid balance types. If set, the total value held in the wallet for the balance type may not be updated to exceed the defined maximum value.

Maximum values are configured on the **Balance Types** tab in the wallet management screen. For details, see *Balance Types* (on page 227).

Offset dates

You can specify an offset date for a bucket balance which defines a future date from which the bucket balance will become available. You can specify offset dates for these balance type categories:

- Chargeable
- Cross balance discount

Balance Types panel

Here is an example Balance Types panel in the Edit Subscriber screen.

Display Currency GBP Details Add Balance All Balance Categories					
Balance Type	Limit Type	Total Value	First Expiry Date	First Offset Date	Category
General Cash	Prepaid	77.00			Chargeable Balance
Promotional Cash	Prepaid	50.00		2009-09-01 10:53	Chargeable Balance
Bad Pin		0			Fraud Balance
Monthly Exp		0.00	2009-09-24 00:00		Expenditure Balance
Yearly Exp		0.00	2010-08-24 00:00		Expenditure Balance
Free SMS	Prepaid	0			Chargeable Balance
General Time	Prepaid	0 (0:00.00)			Chargeable Balance

Changing the display currency

Follow these steps to change the currency used to display balance values.

Step	Action
1	On the left hand panel in the Edit Subscriber screen, select the Wallets option, containing the Balance Type area.
2	Select a different display currency from the drop down list. Result: The Total Value column in the Balance Type table will be re-displayed using the currently selected display currency.

Displaying balances by category

Follow these steps to display a selected balance category in the Balance Types panel.

Step	Action
1	On the left hand panel in the Edit Subscriber screen, select the option containing the Balance Types panel.
2	Select the Balance Category you want to display from the drop down list. Result: The Balance Types grid is redisplayed showing only the balances for the selected balance category. Here is an example Balance Types panel showing balances for the Expenditure Balance Category.

Display Currency		GBP	Details	Add Balance	Expenditure Balance Category
Balance Type	Limit Type	Total Value	First Expiry Date	First Offset Date	Category
Monthly Exp		0.00	2009-09-24 00:00		Expenditure Balance
Yearly Exp		0.00	2010-08-24 00:00		Expenditure Balance
Daily Expenditure		0.00			Expenditure Balance

Adding a new balance

Follow these steps to add a new balance to a wallet.

Warning: Once you have added a wallet balance and saved the subscriber record you will not be able to delete the balance.

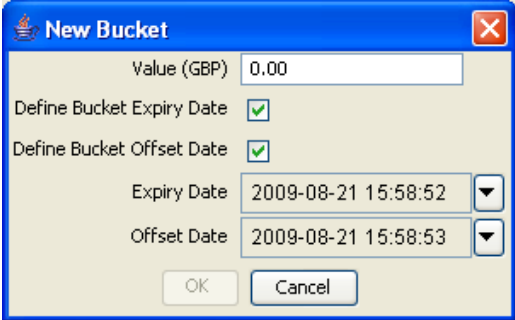
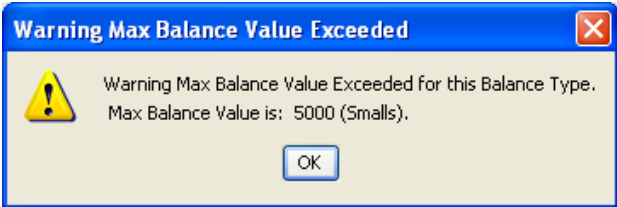
Step	Action
1	On the left hand panel in the Edit Subscriber screen, select the option containing the Balance Types panel.
2	Click Add Balance . Result: You see the Add Balance for Subscriber screen.

3	Select the Balance Type to add from the drop down list. Note: You will only be able to choose a balance type that has not been added already.
4	In the Value field, enter the current value for the balance.
5	To set an expiry date for the balance: - Select the Define Bucket Expiry Date check box - Select the Expiry Date from the drop down window For details on selecting a date, see Time and Date panels.
6	Click OK . You are returned to the Edit Subscriber screen.

Warning: The changes to the wallet balances will be saved only when you save the subscriber record.

Adding a new bucket balance

Follow these steps to add a new bucket for a balance type.

Step	Action
1	In the details screen for the selected balance type, click New. Result: You see the New Bucket screen for the balance type. 
2	In the Value field, type the new balance. Note: If a maximum value has been specified for the balance type then you must enter a value that will not cause the total value for the balance type to exceed the maximum set.
3	To specify an expiry date for the new bucket, check the Define Bucket Expiry Date field. Result: The Expiry Date field is populated with today's date.
4	If required, select a different Expiry Date. For details, see Time and Date panels.
5	To specify an offset date for the new bucket, check the Define Bucket Offset Date field. This defines the date from which the bucket balance will become available. Result: The Offset Date field is populated with today's date.
6	If required, select a different Offset Date. For details, see Time and Date panels. Note: You must specify a date between the current date and the bucket expiry date, if set.
7	Click OK. If a maximum value has been set for the balance type and the new total value for the balance type exceeds this amount, you will see the Warning Max Balance Value Exceeded prompt. 
8	Click OK. The new bucket balance displays in a new row in the Buckets table. You must edit the value of the bucket value so that the total value for the balance type is below or equal to the maximum value allowed. Note: Offset balance values which are not currently available are not taken into account when evaluating whether or not the maximum balance has been exceeded.
9	Click OK to return to the Edit Subscriber screen. Result: The balance for the new bucket is added to the existing balance for the balance

Step	Action
	type.

Editing wallet balance details

Follow these steps to edit the balance details for a selected balance type for a wallet.

Step	Action
1	From the left hand menu in the Edit Subscriber screen, select the option containing the Balance Types panel.
2	Highlight the row in the Balance Types table for the balance to edit and click Details . Result: You see the details screen for the selected balance.

3 To edit a bucket for the balance type, highlight the bucket in the Buckets table, and click **Edit**. Edit the details as described in *Adding a new bucket balance* (on page 128).

To delete a bucket for the balance type, highlight the bucket in the Buckets table, and click **Delete**.

4 Edit the **Balance** fields as required.

Notes:

The list of options for **Limit Type** depends on the setting of the **Allow Credit** setting (Wallet Management, **Balance Types** tab, Balance Type screen. See *Balance Type Details fields* (on page 232)) and whether the Balance Type is a default or not.

For default Balance Type (Allow Credit always set), the options are:

- Prepaid
- Single Use
- Postpaid
- Limited Postpaid

For non-default balance type and allow credit set, the options are:

Step	Action
	• Prepaid • Limited Postpaid For non default balance type and allow credit not set, the options are: • Prepaid Tip: If you set the Limit Type for a cash balance to Limited Postpaid, then you can specify its minimum credit.
5	Click OK to return the Edit Subscriber screen.
	Warning: The updated wallet balance is saved only when you save the subscriber record.

Change Wallet Balance Adjustment Limits

Introduction

The Adjustments panel in the Edit Subscriber screen enables you to adjust the subscriber's wallet balances by the specified amount. The adjustment amount can be added to, or subtracted from the selected wallet balance for the subscriber.

This feature is available only if:

- The wallet is on a VWS domain.
- The Adjustments panel is included in the configuration defined for the Edit Subscriber screen for the subscriber's product type in the Subscriber Profile Manager. For more information about configuring the Edit Subscriber screen, see the *SPM User's Guide*.

Adjustment limits

Adjustment limits are configured in the Edit Product Type screen and determine the minimum and maximum amount by which a balance type can be adjusted. The limits can be set at the following levels:

- Product type
- Individual user

If you are executing an adjustment for the current user, and limits have been configured for them, then these limits will be used. If no limits have been configured for the current user, then the product type limits will be used. For details on configuring adjustment limits, see *Adjustments* (on page 204).

Maximum balance value

If a maximum value has been defined for the balance type, then the maximum balance policy will be applied to adjustment amounts which exceed the defined maximum.

For more information on:

- Maximum balance values, see *Maximum balances* (on page 229)
- Maximum balance policy, see *Maximum balance policy* (on page 230)

Adjustment panel

Here is an example Adjustment panel in the Edit Subscriber screen.

Adjusting a wallet balance

Follow these steps to adjust a selected balance.

Step	Action
1	From the left hand menu in the Edit Subscriber screen, select the option containing the Adjustment group of fields.
2	From the Balance Type drop down list in the Adjustment panel select the balance type that you want to adjust.
3	Type the value of the adjustment you want to make in the Amount field. If you want the amount to be subtracted from the current balance, then type a minus sign (-) in front of the amount.

Notes:

- The minimum and maximum values that you can specify for an adjustment are displayed in the panel.
- You will only be able to make a negative adjustment if the minimum value is set to a negative amount.

- 4 Click **Adjust**.
Result: You see the Adjustment Confirmation screen.

- 5 Do one of the following:
- If you want to execute the adjustment without saving any updates to the subscriber configuration, click **Execute Only**.
 - If you want to save the updates you have made to the subscriber configuration, and then execute the adjustment, click **Save & Execute**.
- 6 If you clicked **Save & Execute**, and EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
- 7 When the Adjustment Success prompt displays, click **OK**.

Merge Wallets

Introduction

The Merge Wallets option in the Edit Subscriber screen provides the facility to merge primary and secondary wallets. Typically you use this option to merge the wallets for a subscriber with the wallets of another subscriber. If required, you can also use the merge process to consolidate the primary and secondary wallets for a subscriber.

Note: You can only use the merge wallet facility if both the source and target wallets are on the VWS. If either wallet is on a third party domain then you will not be able to use this facility.

Merge wallet rules

The following rules apply to wallet merges:

- 1 Only one wallet pair may be merged at a time. Therefore two merge operations are required to merge both the primary and the secondary wallets for a subscriber with those of a different subscriber.
- 2 If the source wallet is in a pre-use state, then the wallet is activated and the activation bonus is applied prior to the merge.
- 3 Once the merge has taken place, the source and target subscribers will share the same wallet. Normally, the target wallet will be shared and the source wallet will be deleted. However, if a secondary wallet is specified as the target, and a secondary wallet has not yet been created for the target subscriber, then the source wallet is shared.
- 4 After the merge, the state of the shared wallet will normally be set to that of the target wallet. If the target wallet does not yet exist then it is set to the state of the source wallet.

Merge wallet expiry policy

The expiry policy for the merged wallet will be set to one of the following:

- Best – This means that the best of both wallet expiry dates will be used. In other words, if the target wallet expires before the source wallet, the expiry date of the target wallet is extended to match that of the source wallet.
- Ignore – This means that the expiry date of the target wallet is not changed.

The policy applies to the target wallet.

For more information on configuring the wallet expiry policy see *CCS Technical Guide*.

Merge bucket expiry policy

The bucket expiry policy for the merged wallet will be set to one of the following:

- Merge – This means that buckets in the source wallet may be merged with buckets in the target wallet. For this to happen:
 - A source wallet bucket must have an expiry date
 - The target wallet bucket must be of the same balance type
 The merged bucket takes the latest date of both buckets.
- Move – This means that buckets in the source wallet may be moved to the target wallet. For this to happen, a source wallet bucket must have an expiry date. The expiry date of the moved bucket is not changed.

For more information on configuring the bucket expiry policy see the *CCS Technical Guide*.

Source wallet state

The merge can only be processed if the source wallet is in an allowable state. For more information on configuring the allowable source wallet states, see *CCS Technical Guide*.

Merging a wallet

Follow these steps to merge either the primary or secondary wallet for the current subscriber with another wallet.

Step	Action

- 1 In the panel at the top of the Edit Subscriber screen click **Merge Wallet**. The Merge Wallets screen displays.

- 2 In the **Source MSISDN** field, enter the CLI of the subscriber holding the source wallet for the merge.

Note: The **Target MSISDN** field contains the CLI of the subscriber currently being edited. It is for reference only and cannot be changed.

- 3 Select the **Source Wallet Type** for the merge.

- 4 Select the **Target Wallet Type** for the merge

- 5 Click **Save & Merge**.

Changes to the subscriber configuration made in the Edit Subscriber screens are saved, and the source and target wallets are merged.

- 6 If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Reservations

Introduction

Data reservations can be maintained for a long time against an account without being charged.

The Reservation screens give the ability to view any outstanding reservations along with the wallet balances and to then action the reservation.

Because of the real time nature of reservation values changing, these screens are in effect a snap shot of the reservations. However any actions taken will be for the current values at the time of the action. See *Reservation example* (on page 136).

Notes:

- Every time you select to display a subscriber's reservations in the Edit Subscriber screen, the Balances and Reservations sections are blank. To populate, click **Refresh**.
- By default, when **Refresh** is clicked, the reservations shown are for the first balances row.
- The tab for the subscriber's primary wallet displays when you view the reservations for a subscriber. The tab for the secondary wallet is present only when there is a secondary wallet for the subscriber.
- The reservations for a balance will show either the balance type used for the reservation, or (multiple) when more than one balance type has been used for the reservation.

Reservations option

Here is an example Edit Subscriber screen showing the reservations for a subscriber.

Edit Subscriber 49393520 - Primary Wallet

Subscriber: 49393520

Primary | Secondary

Display Currency: NZD | Balance Category: All Balance Categories | Refresh

Balances

Balance Type	Total Value	Uncommitted Reservations	Available Balance
General Cash	1.50	1.50	0.00
Promotional Cash	0.50	0.50	0.00
Bad Pin	0	0	0
Monthly Exp	0.00	0.00	0.00
Yearly Exp	0.00	0.00	0.00
Free SMS	0	0	0

Reservations

One reservation found for this wallet

Balance Type	Expires	Reserved	Used	How Ended
(Multiple)	13/May/2010 03:30:48	(Multiple)	(Multiple)	

View Detail

Save Cancel

Reservation columns and buttons

This table describes the function of each field or button.

Field	Description
Display Currency	Drop down list of available currencies the information can be displayed in.
Balance Category	Drop down list of all the balance categories for which information can be shown. Used to filter the amount of information shown on the screen.
Refresh	Button that will re-display the screen contents according to the Display Currency and Balance Category selection options. Both the Balances and Reservations sections will be populated.
Balances	
Balance Type	The balance type for that row item.
Total Value	The total value in the selected currency for this balance type.

Field	Description
Uncommitted Reservation	The value of reservation not yet committed for this balance type.
Available Balance	The amount still available for reserving for this balance type.
Reservations	
Balance Type	The balance type for this reservation.
Expires	The date and time when this reservation is due to expire.
Reserved	The amount currently reserved for this reservation.
Used	The amount currently used by the reservation.
How Ended	The cause for the ending of this reservation.
View Details	Button that shows the details for the selected Reservation row.

View reservation details

Follow these steps to view and then optionally perform an action on a reservation.

Step	Action
1	From the Edit Subscriber screen, select the Reservations option in the left hand list. The <i>Reservation option</i> (on page 134) displays in the Edit Subscriber screen.
2	(Optional) Select the currency from the Display Currency list.
3	(Optional) Filter the number of reservations displayed by selecting the display option from the Balance Category list.
4	Click Refresh to obtain the latest snap shot of the subscriber reservations.
5	Select the row in the Balances section for the balance type of the reservations you want to see. Result: The Reservations section is populated with the reservations data.
6	Select the reservation to view from the Reservations section.
7	Click View Details . Result: The Reservation Detail panel shows the reservation details.

Reservation Detail - SCP/Call Id 117610500/40238

Last Updated: 13/May/2010 03:21:38,604301 Done

Balance Type	Expires	Reserved	Used
General Cash	13/May/2010 03:30:48	1.50	0.00
Promotional Cash	13/May/2010 03:30:48	0.50	0.00

Help Commit Revoke Delete

Step	Action
8	Optionally perform an action on a reservation to: • Close the reservation without charging the subscriber • Close the reservation and charge the customer • Close the reservation and either charge, or do not charge the subscriber, depending on configuration setting for this subscriber See <i>Action reservation</i> (on page 136).
9	Click Done to close the details panel.
Note: The Balances and Reservations sections will be empty on returning to the Reservations screen.	

Action reservation

Follow these steps to perform one or more actions on a reservation.

Step	Action
1	Select the reservation to action.
Note: Each action explains the result of doing the action.	
2	If you want to charge the subscriber for the uncommitted usage, perform the following steps: - Click Commit to have the subscriber charged for the uncommitted usage. The Commit This Reservation? confirmation dialog displays. - Click Commit to confirm the action.
3	If you want to cancel the reservation so that the subscriber is not charged for any uncommitted usage, perform the following steps: - Click Revoke. The Revoke This Reservation? confirmation dialog displays. - Click Revoke to confirm the action.
4	If you want to delete the reservation, perform the following steps: - Click Delete. The Delete This Reservation? confirmation dialog displays. - Click Delete to confirm the action. Note: When you delete a reservation, the subscriber is either charged or not charged for any uncommitted usage depending on reservation configuration for the CLI-DN tariff for the call. For more information, see the discussion on Rating Management, CLI-DN configuration.
5	If EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the reservation action in the Change Reason field, and click OK . The reason can be up to 200 characters long.
6	Click Done .

Reservation example

This is an example explaining the difference between what is seen in the snap shot and what is charged to the subscriber.

- 1 When **Refresh** is pressed the reservation amount is \$3.40 and the used amount is \$1.70.
- 2 In the background the billing engine does a subsequent reservation and the current reservation amount is \$5.10 and the used amount is \$3.60.

- 3 **Refresh** has NOT been pressed so the amounts shown on the screen are still \$3.40 and \$1.70 respectively.
- 4 The user commits the reservation.
- 5 The values committed are for the current reservation of \$5.10 and \$3.60.
- 6 The values displayed on the screen are still \$3.40 and \$1.70.

The user can look at the EDR viewer to determine the actual values on the action taken.

View EDRs

Introduction

From the Edit Subscriber screen you can search for and view the EDRs that have been generated for the subscriber. For each EDR you can:

- View the EDR details
- Reverse any associated charges

If the EDR auditing feature is enabled, then you can monitor operator updates to a subscriber's financial data by viewing the reason entered by the operator for any updates that have been made through the Subscriber Management screens. The reason displays in the **Change Reason** field in the resulting EDR. For more information, see *About Auditing Changes to Subscriber Data* (on page 91).

View EDRs for Subscriber screen

Here is an example View EDRs for Subscriber screen. This screen appears when you click **View EDRs** in the Edit Subscriber screen.

View EDRs for Subscriber 4414733578

Display Currency: GBP

Use Start Date: ☒ 2010-12-09 10:49

Use End Date: ☒ 2010-12-11 10:39

Wallet Types: Primary

Number of EDRs: 100

Called Number:

Include Partial EDRs: ☐

EDR Tag:

EDR Tag Value:

Call Duration:

Discount:

Use Call Cost: ☐ Cash £ 0.00

Unit Type: Cash

Search

EDR Search Categories

Available List

Selected List

- Amount Charge
- Bad Pin
- Call Barring Changes
- Control Plan Service Invoke
- Credit Card Free Form Recharge
- Data Call

M	Date	Balance Types	Old Balances	Cost	New Balances	EDR Type
Y	2010-12-09 11:16:33	Promotional Cash	0.00	-10.00	10.00	Recharge
Y		Bonus_Counter	5	1	4	
	2010-12-09 11:16:33	General Cash	10.00	-20.00	30.00	Free Form Recharge
Y	2010-12-09 11:16:33	Promotional Cash	25.00	-30.00	55.00	Recharge
Y		Bonus_Counter	3	1	2	
Y	2010-12-09 11:16:33	Promotional Cash	10.00	-15.00	25.00	Recharge
Y		Bonus_Counter	4	1	3	
	2010-12-09 11:15:52	General Cash	50.00	40.00	10.00	Operator Update
	2010-12-09 10:49:14	See Details - Declined				Free Form Recharge

Close Display Reverse Charge

EDR Masking

You can set masking for EDR fields to prevent users from viewing part of the displayed values. To set masking for EDR fields see *Adding EDR elements* (on page 565) and *Editing EDR elements* (on page 566). To specify the masking rules for EDR fields, see *Editing EDR Viewer Display Masking* (on page 469).

You can disable masking of EDR fields for a user by specifying the EDR Viewer NO MASKING permission when you create a user template.

Note: The system administrator user receives the EDR Viewer NO MASKING permission by default.

See Creating User Templates in *SMS User's Guide* for information on creating a user template. See Assigning a template to a user in *SMS User's Guide* for information on assigning a template to a user.

View EDRs for Subscriber fields

This table describes the function of each field.

Field	Description
Display Currency	The currency for which the costs and balances should be displayed.
Use Start Date	If Use Start Date check box is selected, EDRs that have been generated after a specified date and time will be displayed. Note: The start date field is populated with the current date and time. Select a different date and time if required. For details, see Time and Date panels.
Use End Date	If Use End Date check box is selected, EDRs that have been generated before a specified date and time will be displayed. Note: The end date field is populated with the current date and time. Select a different date and time if required. For details, see Time and Date panels.
Wallet Types	The type of wallet for which the EDRs will be displayed. The options are: • Primary • Secondary
Number of EDRs	The maximum number of EDRs to search for. This can be left blank to find all the EDRs.
Called Number	A specific called party number dialed by the subscriber for which the EDRs will be displayed. This value is derived from the TN field of the resulting EDR.
EDR Tag	The operator defined EDR tag.
EDR Tag Value	The tag values of the EDRs describe the type and length of data required, and a description of the value per EDR.
Include Partial EDRs	By default only completed EDRs are shown. Select this box to also show intermediate partial EDRs.
Call Duration	The duration of the entire call, that is, the length of call in seconds. This value is derived from the DURATION field of the resulting EDR.
Discount	A list of discounts that exist for this call. This value is derived from the following fields of the resulting EDR: • DISCOUNT, • DISCOUNTS • CBTD_DISCOUNTS
Unit Type	The balance unit type for which the call cost is displayed. This is one of: • Cash • Time • Units
Call Cost	The call cost is based on the sum of all the associated costs (recharge or charge) for a specified balance unit type for the call. This value is derived from the COSTS field of the resulting EDR. Note: The cost for a recharge will be a negative value; the cost for a charge will be a positive value.

Finding EDRs

Follow these steps to find the EDRs that have been generated for a subscriber.

Note: The view EDRs panel is now pre-populated with default search conditions for the current subscriber. The search parameters are defined in the `sms.jnlp` and `ccp.jnlp` file. If no parameters are defined, search defaults to 2 days and all categories.

Step	Action
1	In the Edit Subscriber Screen, click View EDRs. Result: You see the <i>View EDRs for Subscriber screen</i> (See example on page 138) for the current subscriber, pre-populated with default search results. Note: If no parameters are found, this defaults to two days and all categories.
2	Enter the desired search criterion. For more information about the fields on this screen, see <i>View EDRs for Subscriber fields</i> (on page 139).
3	Add the EDR Search Categories to search for to the Selected List. To: • Add a search category to the list, select it in the Available List and click >. • Add all the search categories to the list, click >>. • Remove a search category from the list, select it in the Selected List and click <. • Remove all the search categories from the list, click <<. Note: If no search categories are selected then all the EDRs that match the search criteria will be returned.
4	Click Search. Result: All the EDRs that match the search criteria are displayed in the EDR search results table at the bottom of the screen. Tip: The text <i>See Details</i> in the Balance Types column indicates either that more than one balance type was used to charge for that EDR or that no charge was made and hence you must go into the details of the EDR itself.

EDR search results order

The EDR search results initially appear in date order with the most recent first. You can re-order EDRs based on the columns described in the following table.

Click this column	To...
Date	Order EDRs by date. The most recent EDR will be at the top of the list. Click on this column again to place records in reverse date order.
Balance Types	Place EDRs in ascending order of balance type ID. Note: This is the internal reference number for the balance type and not the balance type name.
Cost	Order EDRs by cost, from highest cost to lowest cost.
EDR Type	Place EDRs in ascending order of EDR type. Click on the column again to place records in descending order. Note: A secondary sort is used to place EDRs with the same EDR type in date order.

Re-ordering search results

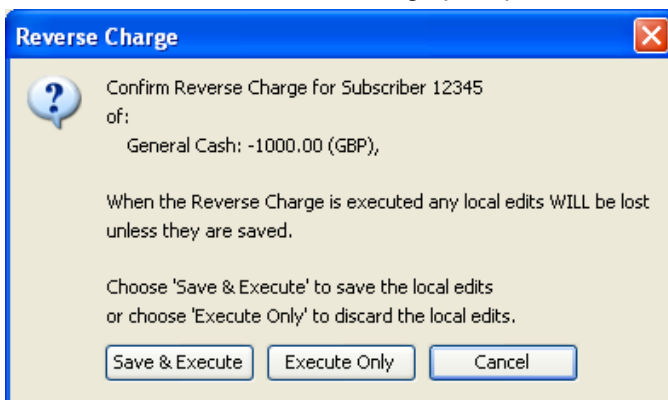
Follow this step to re-order the search results.

Step	Action
1	Click on the column in the search results table to use for re-ordering. Result: The search results are re-ordered based on the values in the column.

Reversing a charge

Follow these steps to reverse a charge detailed in an EDR record.

Step	Action
1	In the EDRs for Subscriber screen, search for the EDR record to reverse. For details on searching for EDRs see Finding EDRs.
2	Highlight the record in the search results table.
3	Click Reverse Charge . Result: You see the Reverse Charge prompt.



4	Do one of the following: • If you want to reverse the charge without saving any updates to the subscriber configuration, click Execute Only. • If you want to save the updates you have made to the subscriber configuration, and then reverse the charge, click Save & Execute.
5	If you clicked Save & Execute , and EDR auditing is enabled, then the Change Reason dialog displays. Enter the reason for the change in the Change Reason field, and click OK . The reason can be up to 200 characters long.
6	Click OK when the Reverse Charge prompt displays. The charge is reversed for all the affected balance types and the subscriber data is reloaded. You are then returned to the Edit Subscriber screen.

Viewing EDR details

Follow these steps to view the details for a selected EDR.

Step	Action
1	Select the EDR record to view in the search results table in the <i>View EDRs for Subscriber</i> (See example on page 138) screen. Click Display. Result: You see the <i>EDR Details for Subscriber</i> (See example on page 143) screen. Note: The screen layout and available fields depend on the category and template definition configured for the EDR in CCS. For details, see <i>EDR Templates</i> (on page 569).
2	To change the currency used to display costs and balances, select the Display Currency drop down list.
3	When you have finished viewing that EDR record, click Close. Result: You return to the View EDRs for Subscriber screen.
4	When you have finished viewing EDR records, click Close. Result: You return to the Edit Subscriber screen.

EDR Details for Subscriber screen

Here is an example EDR Details for Subscriber screen.

EDR Details for Subscriber 1234

Help

EDR Details

EDR Type: Operator Update

Display Currency: EUR

Operator Name: SU

Wallet Type:

Record Date: 2014-02-21 11:05:24

Balance Name	Original Value	Cost	Old Expiry Date	New Expi
Bad Pin	0	0		
Data	0	0		
Free SMS	0	0		
General Cash	0.00	-5.00		
Monthly Exp	0.00	0.00		
Promotional Cash	0.00	0.00		
Wallet Exp	0.00	0.00		
Yearly Exp	0.00	0.00		

Product Type: Bronze

Previous State:

New State: Pre-use

Old Wallet Expiry:

New Wallet Expiry: Never Expires

Pi Identification:

Subscriber IDs: 1234

Change Reason:

Close

Execute Business Process Logic

Introduction

A business process logic (BPL) task comprises a set of actions that fall within the defined business rules of the service provider, and that may be executed for the subscriber. Each business process is defined in the control plan referenced in the BPL record. When the BPL is executed, this control plan is invoked for the current subscriber.

Depending on how the BPL task has been configured, a charge may be imposed for the service provided and SMS notifications may be sent out. For information on how to configure BPL tasks, see *Task Management* (on page 541).

Notes:

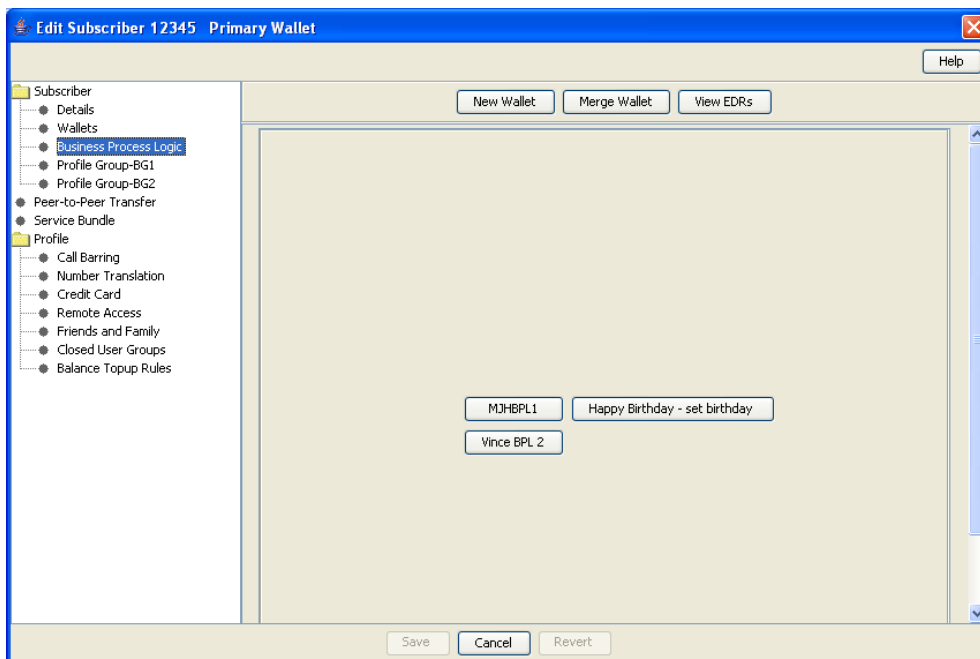
- Business process logic tasks are also referred to as tasks.
- This functionality will only be available to you if you have an appropriate license.

Executing a BPL

Follow these steps to execute a BPL for a subscriber.

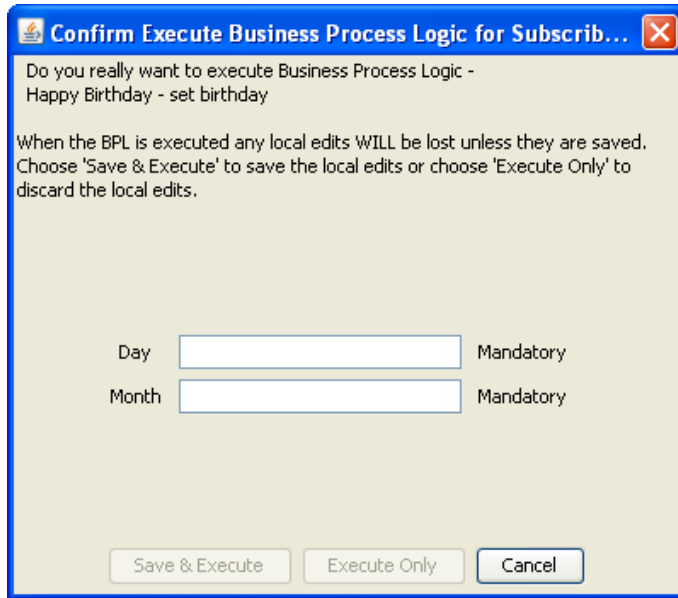
Note: BPLs can only be executed for existing subscribers.

Step	Action
1	In the Edit Subscriber screen select the Subscriber option where the BPL to execute is located. Result: You see a button, such as in this example, for each of the available BPLs.



- 2 Click the button for the BPL to execute.
Result: You see the Confirm Execute Business Process Logic for Subscriber prompt.

Step	Action



Confirm Execute Business Process Logic for Subscriber...

Do you really want to execute Business Process Logic - Happy Birthday - set birthday

When the BPL is executed any local edits WILL be lost unless they are saved. Choose 'Save & Execute' to save the local edits or choose 'Execute Only' to discard the local edits.

Day Mandatory

Month Mandatory

Save & Execute Execute Only Cancel

- 3 If any parameters have been defined for the BPL, enter values for these as prompted.
Warning: You must enter a value for all mandatory parameters.
- 4 To save any changes you have made to the subscriber configuration in the Edit Subscriber screens and then execute the BPL, click **Save & Execute**.
 To execute the BPL without saving changes to the subscriber configuration, click **Execute Only**.
Result: You see the Execute BPL Result prompt.
- 5 Click **OK**.

View Subscriber Promotions

Introduction

The Edit Subscriber screen can be configured to display the following types of promotion information:

- Subscriber promotion panel showing the list of promotions for which the currently selected subscriber is eligible
- Promotion information for a specific promotion

For more information on promotions, see *Promotion Manager User's Guide*.

Subscriber Promotion Panel

Here is an example Subscriber Promotion Panel in the Edit Subscriber screen.

Promotion	Status	Expiry Date
BVset01	Unset	
BVset02	Unset	
BVset021	Unset	
GC Bonus Set01	Unset	
RichardsBonusSet	Unset	
Vince Promo 1	Unset	
Vince Promo 2	Unset	
Vince Promo 3	Unset	

Subscriber promotion panel fields

This table describes the function of each field.

Field	Description
Promotion	Lists the promotions for which the current subscriber is eligible.
Status	Displays the global limited liability status value for each promotion. Options are: - Unset - Eligible - Ineligible
Expiry Date	Displays the global limited liability status expiry date for each promotion.

Promotion Info Field example

Here is an example Promotion Info Field in the Edit Subscriber screen. This field has been configured with the **Monthly Spend** Display Name.

The screenshot shows a form titled "Monthly Spend" with the following fields:

- Name: Monthly Spend
- Status: Active
- Tracker Balance Value: 0.00
- Tracker Balance Expiry Date: 2009-12-25 16:46
- Individual Limited Liability Balance: (empty)
- Individual Limited Liability Expiry Date: (empty)
- Max Individual Limited Liability: (empty)
- Global Liability Status: Unset

Promotion info field fields

The Promotion Info Field displays status, balance and expiry details for a specified promotion. The promotion is specified when the Promotion Info Field is configured in the Subscriber Profile Manager.

This table describes the function of each field.

Field	Description
Name	Promotion name.
Status	Promotion status. Either active or inactive.
Tracker Balance Value	The total value of the tracker balance used to trigger the promotion for the subscriber.
Tracker Balance Expiry Date	Displays the first expiry date for the tracker balance. If an expiry date has not been specified, then "Does not expire" will be displayed. Note: This field will only be visible if the Show Expiry Date check box was selected when this Promotion Info Field was configured in the SPM.
Individual Limited Liability Balance	The subscriber's total balance held in the limit balance type configured for the promotion.
Individual Limited Liability Expiry Date	Displays the first expiry date for the individual limited liability balance. If an expiry date has not been specified, then <code>Does not expire</code> will be displayed.
Max Individual Limited Liability	Maximum individual limited liability configured for the promotion.
Global Liability	The options are

Field	Description
Status	• Unset • Eligible • Not Eligible

Note: For more information on promotions, see *Promotion Manager User's Guide*.

Perform Credit Transfers

Introduction

The **Credit Transfers** option in the Edit Subscriber screen lets you perform credit transfers. A credit transfer moves credit from one subscriber to another. For information on how to configure credit transfers, see *Transfer Management* (on page 519).

Note: The credit transfer functionality will only be available to you if you have an appropriate license.

Maximum balance value

If a maximum value has been set for a balance type, then the maximum balance policy will be applied to credit transfers which exceed the defined maximum.

For more information, see:

- *Maximum balances* (on page 229)
- *Maximum balance policy* (on page 230)

Credit transfer types

Two types of credit transfer may be performed:

- Service bundle
- Peer-to-peer

Peer-to-Peer credit transfers

You use peer-to-peer credit transfers to one of the following:

- Transfer credit between the primary and secondary wallets held by an individual subscriber
- Transfer credit between the wallets held by two different subscribers

Service Bundle credit transfers

You use service bundle credit transfers to one of the following:

- Transfer credit between different balances held by an individual subscriber in the same wallet
- Transfer credit between two subscribers that share the same wallet

Credit transfer voucher type

When a credit transfer is performed, cash credit from the purchasing subscriber is used to buy a specified voucher type which is then applied to the recipient's wallet. The voucher type definition may include any of the following:

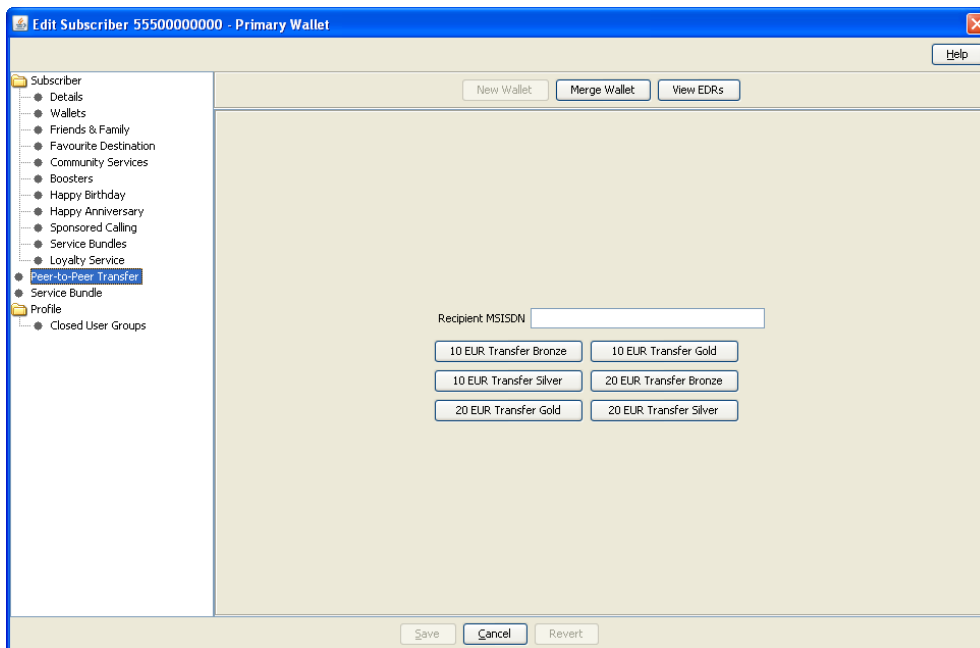
- A list of balance types where the value and/or the expiry periods have changed
- An extension to the recipient's wallet expiry period

- A product type swap on the recipient's wallet
- A limited list of available product types (the credit transfer will only succeed if the product type for the recipient matches one of the product types in the list)
- Multiple balance types which may also be associated with a limited list of product types

Performing a credit transfer

Follow these steps to make a credit transfer for a subscriber.

Step	Action
1	In the Edit Subscriber screen choose the credit transfer option you require from the left hand menu: • To make a peer-to-peer credit transfer, select Peer-to-Peer Transfer. • To make a service bundle credit transfer, select Service Bundle. Result: You see a series of buttons on the Edit Subscriber screen such as in this example. There is one button for each of the available credit transfer definitions.



- 2 In the **Recipient MSISDN** field, enter the CLI for the subscriber who will receive the credit.

Tip: This field is optional. If you do not enter a value, then the current subscriber ID is used.

- 3 Click the button for the credit transfer to make.

Result: You see the Confirm Credit Transfer prompt.

Step

Action

Confirm Credit Transfer for Subscriber 55500000000

When the Credit Transfer is executed any local edits WILL be lost unless they are saved. Choose 'Save & Execute' to save the local edits or choose 'Execute Only' to discard the local edits.

Credit Transfer: 10 EUR Transfer Bronze

Purchaser

MSISDN: 55500000000

Wallet Type: ☒ Primary ☐ Secondary

Security PIN:

Recipient

MSISDN: 55500000000

Wallet Type: ☒ Primary ☐ Secondary

Buttons: Save & Execute, Execute Only, Cancel

4 If the subscriber has two wallets, then **Wallet Type** selection will be enabled for the purchaser/recipient. Select the required wallet types for the transfer.

5 If the **Security PIN** field is enabled then you must enter the PIN for the purchaser subscriber.

Warning: The PIN must be already configured in the subscriber details.

6 To save any changes you have made to the subscriber configuration in the Edit Subscriber screens before making the credit transfer, click **Save & Execute**.

To make the credit transfer without saving changes to the subscriber configuration, click **Execute Only**.

7 If you clicked **Save & Execute**, and EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Subscriber Management - Product Type

Overview

Introduction

This chapter explains the Product Type configuration screens.

In this chapter

This chapter contains the following topics.

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Product Type

Introduction

The **Product Type** tab lets you view, add, edit, copy and remove product types. For more information about product types, see *Product Types* (on page 12).

For more information about the aspects of a product type which can be configured, see Configuration options summary.

Product Type tab

Here is an example Product Type tab.

Service Provider: Boss Help

Product Type

Name	Description	Expiry Period	Minimum B.
Bronze		180 Days	
Gold		180 Days	
Silver		180 Days	

New Edit Delete Copy Close

Before you add a product type

Before you start to add a new product type, ensure you have configured any elements you will use. Product types may use:

- ACS configuration:
 - Languages
 - Announcement sets
 - Holiday sets
 - Geography sets
 - LNSTRING and LOPREFIX group profile fields
 - Control plans which subscribers with this product type will be sent to
 For more information, see *ACS User's Guide*, *ACS Configuration* chapter.
- CCS configuration:
 - Tariffs
 - Named events
 For more information, see *Rating Management* (on page 323).

Adding product types

Follow these steps to add a new product type.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Product Type tab, click New . Result: You see the New Product Type screen, as shown in the example below.
Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.	

New Product Type

Help

- Name & Periods
- Control Plans
- Announcements
- Call Barring
- FF White List
- Number Translations
- Bypass Numbers
- Creditcard Recharge Rules
- Second Currency
- What's New
- Help & Info
- Product Type Swaps
- Node Options
- Remote Access
- Friends and Destination
- Friends and Family
- Promotional Destination Rates
- Cumulative Balances
- Real-Time Wallet Notifications
- Periodic Charges
- Adjustments
- Wallet Life Cycle
- Discounts

Name And Periods

Display Currency: CAD ☐ Set as default

Name:

Description:

Initial Wallet Expiry Period: days hours

Initial Balance Expiry Period: days hours

Pre-use Subscriber Batch Wallet Expiry Period: days hours

Recharge Minimum Wallet Expiry Period Extension: days hours

Recharge Minimum Balance Expiry Period Extension: days hours

Wallet Expiry Warning Threshold: days

Balance Expiry Warning Threshold: days

Maximum Call Length (secs):

Active to Dormant: days hours

Dormant to Terminated: days hours

Terminated to Removed: days hours

Initial Value: 0.00 \$

Number Of Free Swaps Allowed:

Save Cancel

- Configure this record by completing the required details on the different option panels on this screen.
All configuration options must be completed to finalize a product type. However, once the name and the control plans have been defined for the Product Type the configuration can be saved at any point by clicking **Save**.
For more information about the available options, see Configuration options summary.
- Click **Save**.

Configuration options summary

This table lists all the product type configuration options and their functionality.

Option	Description	More Information
Name and Periods	Defines the core details of the product type including	<i>Name and Periods</i> (on

Option	Description	More Information
	name and expiry periods.	page 158)
Control Plans	Defines the control plans which are used for subscribers who have this product type.	<i>Control Plans</i> (on page 161)
Announcements	Sets the product type-dependant announcements for some interaction feature nodes.	<i>Announcements</i> (on page 165)
Call Barring	This option: - Configures the call barring for the selected product type. - Shows the numbers that are allowed or barred at a product type level.	<i>Call Barring</i> (on page 167)
FF White List	Use to create and edit the list of number prefixes that all friends and family numbers must begin with. Typically, the white list covers all local networks and local areas. Tip: Friends and family numbers can only be accepted if they are included in the FF White List, but are not included in the friends and family black list for this service provider. For more details, see <i>Friends and Family Black List</i> (on page 64).	<i>FF White List</i> (on page 169)
Number Translations	Use to view and maintain the number translation short codes that are mapped to specific termination numbers for the selected product type.	<i>Number Translations</i> (on page 171)
Bypass Numbers	Use to view and maintain the bypass numbers that are allowed or barred at the product type level for the selected product type. A bypass number is a number that has a discount applied to it. The discount that applies to bypass numbers is set: - At the service level, on the in the Service Management, Edit Resource Limits screen. For details, see <i>Resource Limits</i> (on page 472). - At product type level, in the Discounts option.	<i>Bypass Numbers</i> (on page 173)
Creditcard Recharge Rules	Use to set the rules for credit card recharge. These rules will then apply to any credit card recharge that is attempted on wallets associated with the selected product type.	<i>Creditcard Recharge Rules</i> (on page 175)
Second Currency	Configures a second currency for wallets associated with the selected product type.	<i>Second Currency</i> (on page 179)
What's New	Use to enable the What's New feature node. This node plays the caller an advertising message and offers the option to divert the call to a service number for further information. For more information about the What's New feature node, see <i>Feature Nodes Reference Guide</i> .	<i>What's New</i> (on page 180)
Help & Info	Use to enter details for the Help Info Menu feature node. For more information about the Help Info Menu feature node, see <i>Feature Nodes Reference Guide</i> .	<i>Help & Info</i> (on page 182)

Option	Description	More Information
Product Type Swaps	Use to create a product type swap menu. This entails setting a number of options in various parts of the system. There are two stages to this procedure: 1 Create a named event. Perform this once to create the set and event. 2 Modify the product that you wish to enable swapping from. You need to repeat this stage for every product that has the swap option enabled.	<i>Product Type Swaps</i> (on page 184)
Node Options	Use to select the options that are offered to the caller on the Main Menu and Personal Options Menu feature nodes in Control Plans associated with this product type. For more information about these feature nodes, see <i>Feature Nodes Reference Guide</i> .	<i>Node Options</i> (on page 187)
Remote Access	Use to configure access to remote access for subscribers with this product type. Note: Subscribers must also have the Remote Access check box selected in their subscriber details. For more information, see <i>Remote Access</i> (on page 103).	<i>Remote Access</i> (on page 189)
Friends and Destination	Use to configure the product type level settings for the F&D service.	<i>Friends and Destination</i> (on page 191)
Friends and Family	Use to configure the product type level settings for the F&F service.	<i>Friends and Family</i> (on page 193)
Promotional Destination Rates	Lets you apply a discount to short messages, when a subscriber has sent a certain amount of short messages in the month already.	<i>Promotional Destination Rates</i> (on page 195)
Cumulative Balances	Defines the cumulative balance plan to use with this product type.	<i>Cumulative Balances</i> (on page 198)
Real-Time Wallet Notifications	Defines the notifications which are sent out due to real-time events such as wallet recharges. Note: This functionality is only available for the VWS domain.	<i>Real-Time Wallet Notifications</i> (on page 200)
Periodic Charges	Defines which periodic charges can apply to wallets with this product type. The charges are applied on a regular basis to all the wallets with this product type. Each charge either credits or debits the specified balance type. Note: This functionality is only available for the VWS domain.	<i>Periodic Charges</i> (on page 201)
Adjustments	Use to set the value for the minimum and maximum adjustments that may be made to the subscriber's balances. Note: This functionality is only available for the VWS domain.	<i>Adjustments</i> (on page 204)
Wallet Life Cycle	Defines the WLC periods which control feature	<i>Wallet Life Cycle</i> (on

Option	Description	More Information
	availability around wallet expiry dates. Note: This functionality is only available for the VWS domain.	page 210)
Discounts	Used to set the discounts applied to a product type bypass number.	Discounts
Subscriber Profile Limitations	Use to set product type limits for LNSTRING and LOPREFIX profile field types. The limits set here override the limits set in the Service Management, Resource Limits screen. Note: Profile field limitations may only be set in the Edit product type screen.	<i>Subscriber Profile Limitations</i> (on page 213)
Profile	Use to configure the profile fields (excluding LNSTRING and LOPREFIX profile field types) that have been added to the product type. Note: Profile fields can only be set in the Edit Product Type screen.	<i>Profile Fields</i> (on page 216)

Editing product types

Follow these steps to edit an existing product type.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	From the Product Type tab, select the product type to edit.
3	Click Edit . Result: You see the Edit Product Type screen, as shown in the example below. Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.

Step	Action
Edit Product Type	
- Name & Periods - Control Plans - Announcements - Call Barring - FF White List - Number Translations - Bypass Numbers - Creditcard Recharge Rules - Second Currency - What's New - Help & Info - Product Type Swaps - Node Options - Remote Access - Friends and Destination - Friends and Family - Promotional Destination Rates - Cumulative Balances - Real-Time Wallet Notifications - Periodic Charges - Adjustments - Wallet Life Cycle - Discounts - Subscriber Profile Limitations - Profile	
Name And Periods	
Display Currency: EUR ☐ Set as default	
Name: Premium	
Description: Premium account	
Initial Wallet Expiry Period: 30 days 0 hours	
Initial Balance Expiry Period: 30 days 0 hours	
Pre-use Subscriber Batch Wallet Expiry Period: days hours	
Recharge Minimum Wallet Expiry Period Extension: 0 days 0 hours	
Recharge Minimum Balance Expiry Period Extension: 0 days 0 hours	
Wallet Expiry Warning Threshold: 0 days	
Balance Expiry Warning Threshold: 0 days	
Maximum Call Length (secs):	
Active to Dormant: days hours	
Dormant to Terminated: days hours	
Terminated to Removed: days hours	
Initial Value: 0.00 \$	
Number Of Free Swaps Allowed: 0	
Save Cancel	

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.

- 4
- Check or update the details on the different option panels as necessary.
For more information about the available options, see Configuration options summary.
- 5
- If you have made changes to the product type's details, click **Save**.
If you do not want to make changes to the product type's details, click **Cancel**.

Deleting Product Types

Follow these steps to delete an existing product type.

Note: You cannot delete a product type that is in use.

Step	Action
1	In the Subscriber Management screen, select the service provider from the Service Provider list.
2	On the Product Type tab, select the product type to delete.
3	Click Delete . Result: You see the Delete confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Product Type successfully deleted prompt.
5	Click OK . Result: You are returned to the Product Type tab.

Rules for Expiry Period Extensions

The system will take the maximum value of the following:

- 1 Existing expiry period
- 2 Today's date plus recharge rule expiry period (voucher or credit card)
- 3 Today's date plus product type minimum expiry extension

Example: If you have:

- A wallet with an expiry date one month in the future
- A credit card or voucher with an expiry date extension of seven days
- Your product type has a minimum expiry date extension of two months

When you recharge, your account expiry period will be today plus two months.

Name and Periods

Introduction

The Name & Periods option sets general information about the product type, including:

- Name and description
- Currency defaults
- Expiry and recharge minimums
- Wallet state periods

For more information, see *Wallet states* (on page 10).

Name & Periods option

Here is an example New Product Type screen showing the Name and Periods option.

New Product Type

Help

- Name & Periods
- Control Plans
- Announcements
- Call Barring
- FF White List
- Number Translations
- Bypass Numbers
- Creditcard Recharge Rules
- Second Currency
- What's New
- Help & Info
- Product Type Swaps
- Node Options
- Remote Access
- Friends and Destination
- Friends and Family
- Promotional Destination Rates
- Cumulative Balances
- Real-Time Wallet Notifications
- Periodic Charges
- Adjustments
- Wallet Life Cycle
- Discounts

Name And Periods

Display Currency: NZD ☐ Set as default

Name:

Description:

Initial Wallet Expiry Period: days hours

Initial Balance Expiry Period: days hours

Pre-use Subscriber Batch Wallet Expiry Period: days hours

Recharge Minimum Wallet Expiry Period Extension: days hours

Recharge Minimum Balance Expiry Period Extension: days hours

Wallet Expiry Warning Threshold: days

Balance Expiry Warning Threshold: days

Maximum Call Length (secs):

Active to Dormant: days hours

Dormant to Terminated: days hours

Terminated to Removed: days hours

Initial Value: 0.00 \$

Number Of Free Swaps Allowed:

Save Cancel

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.

Name & Periods fields

This table describes the function of each field.

Field	Description
Display Currency	The currency cash records for this product type are stored in.
Set as default	Whether or not the display currency should be used as the default currency for the Edit Subscriber screen.
Name	The name of this product type.
Description	A description of this product type. Maximum of 2000 characters.
Initial Wallet Expiry Period	The number of days and hours between activating wallets with this product type and their expiry. The maximum is 999 days and 23 hours. If this field is left blank, wallets of this type will never expire.
Initial Balance Expiry Period	The number of days and hours between activating balances and buckets within wallets with this product type and their expiry.

Field	Description
Pre-use Subscriber Batch Wallet Expiry Period	The number of days and hours between creating wallets with this product type and their expiry if they are not activated. Note: This expiry date is deactivated when the wallet becomes active.
Recharge Minimum Wallet Period Extension	The minimum number of days and hours a wallet with this product type can have its expiry period extended by when it is recharged. 0 (zero) value in this field means there is no set minimum expiry period for this product type.
Recharge Minimum Balance Expiry Period Extension	The minimum number of days and hours a balance or bucket within a wallet with this product type can have its expiry period extended when it is created or updated. 0 (zero) value in this field means there is no set minimum expiry period for this product type.
Wallet Expiry Warning Threshold	The number of days before the wallet expiry date when a warning about the wallet expiry will be sent to subscribers with this product type.
Balance Expiry Warning Threshold	The number of days before the balance expiry date when a warning about the balance expiry will be sent to subscribers with this product type.
Maximum Call Length (secs)	The maximum number of seconds a call using this product type can last for.
Active to Dormant	The number of days and hours a wallet with this product type can have no activity before its status is changed from active to dormant. A dormant wallet may be used, and when it is used, its status will return to active.
Dormant to Terminated	The number of days and hours a wallet with this product type can have no activity before its status is changed from dormant to terminated. A terminated wallet may not be used and has all existing credit removed.
Terminated to Removed	The number of days and hours after its expiry date has passed before a wallet with this product type is removed from the system. A manual intervention is required to change the status back to active or dormant.
Initial Value	The amount (in currency subunits) of the initial balance of wallets of this product type.
Number Of Free Swaps Allowed	The number of times wallets with this product type may be swapped to to wallets of with a different product type. If a wallet with this product type is changed to a different product type, the number of free swaps allowed is modified to reflect the new product type. Example: • Product Type 1 is allowed two free swaps. • Product Type 2 is allowed only one free swap. • Wallet A is set up as Product Type 1, so it is allowed two free swaps. Wallet A uses one of its two free swaps to change to Product Type 2. As Product Type 2 only allows a single free swap, any further wallet swaps will incur a charge. • Wallet B is set up as Product Type 2, so it is allowed a single free swap. • Wallet B uses its free swap to change to Product Type 1. As Product Type 1 allows two free swaps, Wallet B may change to another Product Type without incurring a charge.

Adding Name & Period details

Follow these steps to add the name & period details for a product type.

Step	Action
1	In the New Product Type screen, select the Name & Periods option from the left hand list. Result: You see the Name & Periods configuration options. For an example screen of the Name & Periods options, see Name & Periods option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Name & Periods fields</i> (on page 159).

Editing Name & Period details

Follow these steps to view or change the name & period details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Name & Period option from the left hand menu. Result: You see the Name & Period options. For an example screen of the Name & Period options, see Name and Periods option.
2	Check or update the name & period details as necessary. For more information about the fields in this option, see <i>Name & Periods fields</i> (on page 159).

Control Plans

Introduction

The Control Plans option configures the control plans to use for incoming and outgoing calls made using subscriber accounts which are associated with this product type.

Control Plans option

Here is an example New Product Type screen showing the Control Plans option.

The screenshot shows a software window titled "New Product Type". On the left is a sidebar with a list of options, including "Control Plans" which is highlighted. The main content area is titled "Control Plans" and features a "Default Tariff Plan" dropdown menu. Below this is a table with three columns: "CCS Capability", "Control Plan", and "Tariff Plan Override". The table is currently empty. At the bottom of the window are buttons for "New", "Edit", "Delete", "Save", and "Cancel".

Control Plan fields

This table describes the function of each field.

Field	Description
Default Tariff Plan	The tariff plan that will be used by any service which does not set its own override tariff. Tip: This field is only available on the Control Plan option panel.
CCS Capability	The service type which will use this configuration. The list displays all the CCS Capabilities a service provider can use.
Control Plan	The control plan subscribers who have this product type and are using this service will use. 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. Note: If a subscriber calls the CCS service and no control plan exists for the applicable product type, then their call will be released.

Field	Description
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.
Tariff Plan Override	Whether or not to override the default tariff plan set in the Control Plan option panel. Tip: This field is only available on the Control Plan option panel.
Override Tariff Plan with	If the Tariff Plan Override check box is selected, calls using this service will use the tariff plan selected in this drop down list. Notes: • This tariff plan overrides the default tariff plan set in the Control Plan option panel. • This drop down list is populated by the Tariff Plan tab on the Rating Management screen. For more information about Tariffs, see <i>Tariff Plans</i> (on page 326).
Trigger Override	Select the check box if you wish to override the in-session notification trigger for the selected call capability and product type combination.
Override Trigger With	Select the trigger from the drop down list.

Control Plan screen

Here is an example of a Control Plan screen used to add or edit a control plan for a product type.

Adding Control Plans

Follow these steps to add the control plan configuration to a product type.

Step	Action
1	In the New Product Type screen, select the Control Plans option from the left hand list. Result: You see the Control Plans configuration options. For an example screen of the Control Plan options, see <i>Control Plans option</i> (on page 162).
2	Click New . Result: You see the New <i>Control Plan screen</i> (See example on page 164).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Control Plan fields</i> (on page 162).
Note: The Override Tariff Plan With field drop down list can only be changed if the Tariff Plan	

Step	Action
	Override check box is selected. The Override Trigger With field drop down list can only be changed if the Trigger Override check box is selected.
4	Click Apply. Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

Editing control plans

Follow these steps to view or edit the control plan details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Control Plans option from the left hand list. Result: You see the Control Plans configuration options.
2	In the Control Plans table select the record to change and click Edit. Result: You see the Edit <i>Control Plan screen</i> (See example on page 164).
3	Check or update the control plan details as necessary. For more information about the fields in this option, see <i>Control Plan fields</i> (on page 162). Note: The Override Tariff Plan with drop down list can only be changed if the Tariff Plan Override check box is selected. The Override Trigger With field drop down list can only be changed if the Trigger Override check box is selected.
4	Click Update.

Deleting control plans

Follow these steps to delete a control plan from a product type.

Step	Action
1	In the Edit Product Type screen, select the Control Plans option from the left hand list. Result: You see the Control Plans configuration options.
2	In the Control Plans table, select the record to delete and click Delete. Result: You see the Delete Confirmation prompt.
3	Click OK.

Announcements

Introduction

The Announcements option configures the announcements which will be played to incoming and outgoing calls made using subscriber accounts which are associated with this product type.

Announcements option

Here is an example New Product Type screen showing the Announcements option.

The screenshot shows the 'New Product Type' window. On the left is a sidebar with a list of options: Name & Periods, Control Plans, **Announcements**, Call Barring, FF White List, Number Translations, Bypass Numbers, Creditcard Recharge Rules, Second Currency, What's New, Help & Info, Product Type Swaps, Node Options, Remote Access, Friends and Destination, Friends and Family, Promotional Destination Rates, Cumulative Balances, Real-Time Wallet Notifications, Periodic Charges, Adjustments, Wallet Life Cycle, and Discounts. The 'Announcements' option is highlighted. The main content area is divided into two sections. The 'Time Left Announcement' section has two dropdown menus: 'Announcement Set' (selected: CCS Announcements) and 'Announcement Entry' (selected: Account Reference Prompt Announcement). The 'Product Name Announcement' section also has two dropdown menus: 'Announcement Set' (selected: CCS Announcements) and 'Announcement Entry' (selected: Account Reference Prompt Announcement). At the bottom of the window are 'Save' and 'Cancel' buttons. A 'Help' button is located in the top right corner.

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.

Announcements fields

This table describes the function of each field.

Field	Description
Announcement Set	Under the Time Left Announcement section, this field indicates the Announcement Set which contains the Announcement Entry that will be played to Subscribers when they have a limited amount of credit remaining. The drop-down list displays all the Announcement Sets a Service Provider can use.
Announcement Entry	Under the Time Left Announcement section, this field indicates the Announcement Entry that will be played to Subscribers when they have a limited amount of credit remaining. The time period is set in the CLI-DN tab of the Rating Management screen. The drop-down list displays all the Announcement Entries from the selected Time Left Announcement Set.

Field	Description
Announcement Set	Under the Product Name Announcement section, this field indicates the Announcement Set which contains the Announcement Entry that will be played to Subscribers when their wallet is swapped from this product type to another type. The drop-down list displays all the Announcement Sets a Service Provider can use.
Announcement Entry	Under the Product Name Announcement section, this field indicates the Announcement Entry that will be played to Subscribers when their wallet is swapped from this product type to another type. The time period is set in the CLI-DN tab of the Rating Management screen. The list displays all the Announcement Entries from the selected Product Name Announcement Set.

Adding Announcement details

Follow these steps to add the Announcement details for a product type.

Step	Action
1	In the New Product Type screen, select the Announcements option from the left hand list. Result: You see the Announcements configuration options. For an example screen shot of the Announcements options, see Announcements option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Announcements fields</i> (on page 166).

Editing Announcements details

Follow these steps to view or change the Announcements details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Announcements option from the left hand menu. Result: You see the Announcements options. For an example screen shot of the Announcements options, see Announcements option.
2	Check or update the Announcements as necessary. For more information about the fields in this option, see <i>Announcements fields</i> (on page 166).

Call Barring

Introduction

The Call Barring option defines which numbers can be called by subscribers with this product type.

Note: Allowed/barred lists can also be configured at the following levels:

- System-wide
- Service Provider (see the *Barred List* (on page 487) tab)

- Subscriber account (see New/Edit Subscriber screen, *Call Barring* (on page 98) option).

Call Barring option

Here is an example New Product Type screen showing the Call Barring option.

The screenshot shows a software interface titled "New Product Type". On the left is a sidebar with a list of options: Name & Periods, Control Plans, Announcements, **Call Barring** (highlighted), FF White List, Number Translations, Bypass Numbers, Creditcard Recharge Rules, Second Currency, What's New, Help & Info, Product Type Swaps, Node Options, Remote Access, Friends and Destination, Friends and Family, Promotional Destination Rates, Cumulative Balances, Real-Time Wallet Notifications, Periodic Charges, Adjustments, Wallet Life Cycle, and Discounts. The main area is titled "Product Type Allowed/Barred List" and contains a large empty box labeled "Number List". To the right of this box is a "List Type" dropdown menu currently set to "Allowed". Below that is a checkbox labeled "Ignore" which is checked. At the bottom right of the main area is a "New Number" label above a text input field. At the very bottom of the window are four buttons: "Add", "Delete", "Save", and "Cancel". A "Help" button is located in the top right corner.

Call Barring fields

This table describes the function of each field.

Field	Description
Number List	The numbers or number prefixes which cannot be called by subscribers with this product type.
List Type	Whether the numbers in the Number List will be allowed or barred. Note: Depending on the list type, all the numbers in the list will be either allowed or barred for this product type. It is not possible to have some allowed and some barred numbers in the list.
Ignore	Whether the service should ignore the allowed/barred list for this product type.

Adding Call Barring details

Follow these steps to add the Call Barring details for a product type.

Step	Action
1	In the New Product Type screen, select the Call Barring option from the left hand list. Result: You see the Call Barring configuration options. For an example screen shot of the Call Barring options, see Call Barring option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Call Barring fields</i> (on page 168). For more information about how to configure the Number List, see Number lists.

Editing Call Barring details

Follow these steps to view or change the Call Barring details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Call Barring option from the left hand menu. Result: You see the Call Barring options. For an example screen shot of the Call Barring options, see Call Barring option.
2	Check or update the Call Barring details as necessary. For more information about the fields in this option, see <i>Call Barring fields</i> (on page 168). For more information about how to configure the Number List, see Number lists.

FF White List

Introduction

The FF White List option sets the numbers which subscribers with this product type can nominate for their Friends and Family list.

For more information about the Friends and Family feature, see *Friends and Family/Destination Discount Configuration* (on page 25).

FF White List option

Here is an example New Product Type screen showing the FF White List option.

FF White List fields

This table describes the function of each field.

Field	Description
Number List	The numbers or number prefixes which cannot be nominated as friends and family discounted numbers by subscribers with this product type.
List Type	Whether the numbers in the Number List will be allowed or barred. Note: Depending on the list type, all the numbers in the list will be either allowed or barred for this product type. It is not possible to have some allowed and some barred numbers in the list.
Ignore	Whether the service should ignore the allowed/barred list for this product type.

Adding FF White List details

Follow these steps to add the FF White List details for a product type.

Step	Action
1	In the Edit Product Type screen, select the FF White List option from the left hand list. Result: You see the FF White List configuration options. For an example screen shot of the FF White List options, see FF White List option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>FF White List fields</i> (on page 170). For more information about how to configure the Number List, see Number lists.

Editing FF White List details

Follow these steps to view or change the FF White List details for a product type.

Step	Action
1	In the Edit Product Type screen, select the FF White List option from the left hand menu. Result: You see the FF White List configuration options. For an example screen shot of the FF White List options, see FF White List option.
2	Check or update the FF White List details as necessary. For more information about the fields in this option, see <i>FF White List fields</i> (on page 170). For more information about how to configure the Number List, see Number lists.

Number Translations

Introduction

The Number Translations option defines the short number translations which apply to calls by subscribers with this product type.

Note: Number Translation can also be configured at the following levels:

- System-wide
- Service Provider (see the *Number Translation List* (on page 493) tab), and
- Subscriber account (see New/Edit Subscriber screen, *Number Translation* (on page 99) option).

Number Translations option

Here is an example New Product Type screen showing the Number Translations option.

The screenshot shows a software window titled "New Product Type". On the left is a vertical list of options, with "Number Translations" highlighted. The main area is titled "Product Type Short Codes" and contains a "Number List" table. The table has two columns: "In" and "Out". To the right of the table are two input fields, one for "In" and one for "Out". At the bottom right of the main area are "Add" and "Delete" buttons. At the bottom center of the window are "Save" and "Cancel" buttons. A "Help" button is located in the top right corner.

Number Translations fields

This table describes the function of each field.

Field	Description
Number List	The short number mappings which apply to subscribers with this product type.
In	The string of digits which are called to access the short number.
Out	The destination number calls to the corresponding In number will be terminated to.

Adding number translation details

Follow these steps to add the Number Translation details for a product type.

Step	Action
1	In the New Product Type screen, select the Number Translations option from the left hand list. Result: You see the Number Translations configuration options. For an example screen shot of the Number Translations options, see Number Translations option.

Step	Action
2	Configure this record by entering data in the fields on this screen. Edit the Number List as required: - To add a number to the list: - in the In field, type the service short code you want to translate from - in the Out field, type the termination number you want to translate the short service code to, and click Add. - To remove a number from the list, select the number in the Number List grid and click Delete. For more information about the fields on this screen, see <i>Number Translations fields</i> (on page 172).

Editing Number Translation details

Follow these steps to view or change the Number Translation details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Number Translation option from the left hand menu. Result: You see the Number Translations options. For an example screen shot of the Number Translations options, see Number Translations option.
2	Check or update the Number Translations details as necessary. Edit the Number List as required: - To add a number to the list: - in the In field, type the service short code you want to translate from - in the Out field, type the termination number you want to translate the short service code to, and click Add. - To remove a number from the list, select the number in the Number List grid and click Delete. For more information about the fields in this option, see <i>Number Translations fields</i> (on page 172).

Bypass Numbers

Introduction

The Bypass Numbers option defines the destination numbers which subscribers with this product type can call with the bypass discount being applied.

Notes:

Bypass Number discounts are applied at the rate set in the *Bypass Number Discount* (on page 482) options in the Resource Limits for the Service Provider.

Bypass Numbers can also be configured at the following levels:

- System-wide`
- Service Provider (see the Edit Resource Limits - *Bypass Numbers* (on page 481) option).

Bypass Numbers option

Here is an example New Product Type screen showing the Bypass Numbers option.

The screenshot shows the 'New Product Type' window with the 'Product Type Bypass Numbers' tab active. On the left, a sidebar lists various product type options, with 'Bypass Numbers' highlighted. The main content area features a large 'Number List' text box, a 'List Type' dropdown menu currently set to 'Allowed', a checked 'Ignore' checkbox, and a 'New Number' input field. At the bottom of the window are buttons for 'Add', 'Delete', 'Save', and 'Cancel'. A 'Help' button is located in the top right corner.

Bypass Numbers fields

This table describes the function of each field.

Field	Description
Number List	The numbers or number prefixes which subscribers with this product type can call and receive the bypass numbers discount.
List Type	Whether the numbers in the Number List will be allowed or barred from receiving the bypass numbers discount. Note: Depending on the list type, all the numbers in the list will be either allowed or barred for this product type. It is not possible to have some allowed and some barred numbers in the list.
Ignore	Whether the service should ignore the allowed/barred list for this product type.

Adding Bypass Number details

Follow these steps to add the Bypass Numbers details for a product type.

Step	Action
1	In the New Product Type screen, select the Bypass Numbers option from the left hand list. Result: You see the Bypass Numbers configuration options. For an example screen of the Bypass Numbers options, see <i>Bypass Numbers option</i> (on page 174).
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Bypass Numbers fields</i> (on page 174). For more information about how to configure the Number List, see Number lists.

Editing Bypass Numbers details

Follow these steps to view or change the Bypass Numbers details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Bypass Numbers option from the left hand menu. Result: You see the Bypass Numbers options. For an example screen of the Bypass Numbers options, see <i>Bypass Numbers option</i> (on page 174).
2	Check or update the Bypass Numbers details as necessary. For more information about the fields in this option, see <i>Bypass Numbers fields</i> (on page 174). For more information about how to configure the Number List, see Number lists.

Creditcard Recharge Rules

Introduction

Creditcard recharge rules control how subscribers can use their credit cards to recharge their accounts.

Note: This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server, or a third party Voucher and Wallet Server that supports the credit card recharge rules.

Creditcard Recharge Rules option

Here is an example New Product Type screen showing the Creditcard Recharge Rules option.

The screenshot shows a software window titled "New Product Type". On the left is a sidebar with a list of product type options, including "Creditcard Recharge Rules" which is highlighted. The main area of the window is titled "Creditcard Recharge Rules" and contains a table with the following headers: "Order", "Amount (smalls)", "Currency", "Balance Expiry Period", and "Wallet Expiry Period". The table body is empty. Below the table are buttons for "Edit", "Insert", and "Delete". At the bottom of the window are buttons for "Save" and "Cancel". A "Help" button is located in the top right corner.

Creditcard Recharge Rules fields

This table describes the function of each field.

Field	Description
Order	Where in the recharge options list this entry should appear. The list is played to a caller as a series of recharge options when the caller attempts a credit card recharge.
Amount (littles)	The amount (in subunits of currency) of recharge which will be added to wallets with this product type when this option in a credit card recharge is completed.
Currency	The currency to make the recharge in. The list displays all the currencies a Subscriber can use. For more information about creating new currencies, see <i>Currency</i> (on page 453).
Balance Expiry Period	The number of days after wallet activation at which wallets with this product type will have their balance reduced to 0. If this field is left blank, the wallet balance will never expire. The setting in this field overrides the setting on the Name & Periods option when a credit card recharge is made.

Field	Description
Wallet Expiry Period	The number of days after wallet activation at which wallets with this product type will expire. If this field is left blank, the wallet will never expire. The setting in this field overrides the setting on the Name & Periods option when a credit card recharge is made.

Adding Creditcard Recharge Rule details

Follow these steps to configure the Creditcard Recharge Rules for this product type.

Step	Action

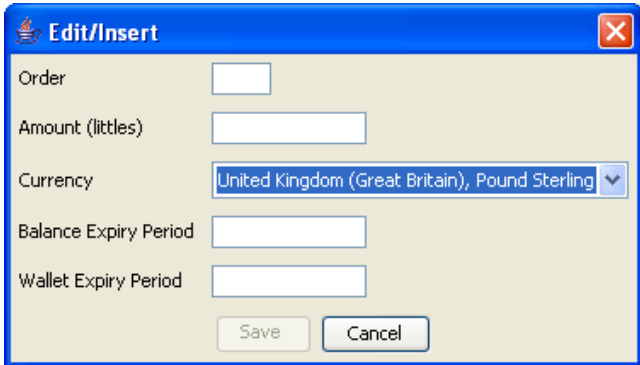
- 1 In the New Product Type screen, select the Creditcard Recharge Rules option from the left hand menu.
Result: You see the Creditcard Recharge Rules configuration options.
For an example screen shot of the Creditcard Recharge Rules options, see Creditcard Recharge Rules option.

- 2 Click **Insert**.
Result: You see the Edit/Insert screen.

- 3 Configure this record by entering data in the fields on this screen.
For more information about the fields on this screen, see *Creditcard Recharge Rules fields* (on page 176).
- 4 Click **Save** to save the details to the database and return to the New Product Type screen.
Result: Your changes will be temporarily saved and will be displayed in the New Product Type screen.
- 5 If required, repeat steps 2-4 until all the recharge options have been configured.

Editing Creditcard Recharge Rule details

Follow these steps to configure the Creditcard Recharge Rules for this product type.

Step	Action
1	In the Edit Product Type screen, select the Creditcard Recharge Rules option from the left hand menu. Result: You see the Creditcard Recharge Rules configuration options. For an example screen shot of the Creditcard Recharge Rules options, see Creditcard Recharge Rules option.
2	In the Creditcard Recharge Rules grid, select the record you want to change and click Insert. Result: You see the Edit/Insert screen.
	
3	Check or update the Creditcard Recharge Rules details as necessary. For more information about the fields on this screen, see <i>Creditcard Recharge Rules fields</i> (on page 176).
4	Click Save to save the details to the database and return to the Edit Product Type screen. Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.
5	If required, repeat steps 2-4 until all the recharge options have been configured.

Deleting Creditcard Recharge Rule details

Follow these steps to delete a Creditcard Recharge Rule from a product type.

Step	Action
1	In the Edit Product Type screen, select the Creditcard Recharge Rules option from the left hand menu. Result: You see the Creditcard Recharge Rules configuration options. For an example screen shot of the Creditcard Recharge Rules options, see Creditcard Recharge Rules option.
2	In the Creditcard Recharge Rules table, select the record to delete and click Delete. Result: You see the Delete Confirmation prompt.
3	Click OK.
4	If required, repeat steps 2 and 3 until all the Creditcard Recharge Rules to delete have been deleted.

Second Currency

Introduction

A product type's Secondary Currency provides an additional currency which can be used in subscriber interfaces. All values are stored in the main product type currency, but can be translated into the secondary currency using the exchange rate between the currency.

For more information about currencies, see *Currency* (on page 453).

For more information about exchange rates, see *Exchange Rates* (on page 469).

Note: This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server, or a third party Voucher and Wallet Server that supports the use of second currencies.

Second Currency option

Here is an example New Product Type screen showing the Second Currency option.

The screenshot shows a 'New Product Type' dialog box with a blue title bar and a 'Help' button in the top right corner. On the left is a list of configuration options, each preceded by a radio button. The 'Second Currency' option is selected and highlighted with a blue background. The main area of the dialog is light beige. It contains a checkbox labeled 'Play balance in 2nd currency' which is currently unchecked. Below this is a dropdown menu labeled '2nd Currency' showing 'American Samoa, US Dollar (USD)'. At the bottom of the dialog are 'Save' and 'Cancel' buttons.

New Product Type

Help

- Name & Periods
- Control Plans
- Announcements
- Call Barring
- FF White List
- Number Translations
- Bypass Numbers
- Creditcard Recharge Rules
- **Second Currency**
- What's New
- Help & Info
- Product Type Swaps
- Node Options
- Remote Access
- Friends and Destination
- Friends and Family
- Promotional Destination Rates
- Cumulative Balances
- Real-Time Wallet Notifications
- Periodic Charges
- Adjustments
- Wallet Life Cycle
- Discounts

Play balance in 2nd currency ☐

2nd Currency American Samoa, US Dollar (USD) ▼

Save Cancel

Second Currency fields

This table describes the function of each field.

Field	Description
Play balance in 2nd currency	Whether wallets with this product type should have a balance which will be announced in the secondary currency. Selecting this option enables the Dual Currency announcements set in the Configure Announcements panel of the New/Edit Currency screen. For more information about creating new currencies, see <i>Currency</i> (on page 453).
2nd Currency	The currency which will be the alternate currency for wallets with this product type.

Adding Second Currency details

Follow these steps to add the Second Currency details for a product type.

Step	Action
1	In the New Product Type screen, select the Second Currency option from the left hand menu. Result: You see the Second Currency configuration options. For an example screen shot of the Second Currency options, see Second Currency option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Second Currency fields</i> (on page 180).

Editing Second Currency details

Follow these steps to view or change the Second Currency details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Second Currency option from the left hand menu. Result: You see the Second Currency options. For an example screen shot of the Second Currency options, see Second Currency option.
2	Check or update the Second Currency as necessary. For more information about the fields in this option, see <i>Second Currency fields</i> (on page 180).

What's New

Introduction

The What's New configuration option defines how the What's New feature node behaves when used in a control plan for this product type. For more information about using the What's New feature node, see the *Feature Nodes Reference Guide*.

What's New option

Here is an example New Product Type screen showing the What's New option.

The screenshot shows a window titled "New Product Type" with a blue title bar. On the left is a sidebar with a list of product type options, each preceded by a radio button. The "What's New" option is selected and highlighted. The main area of the window is light beige and contains the following controls:

- A "Help" button in the top right corner.
- A "Whats new enabled" checkbox, which is currently unchecked.
- An "Announcement" section containing two dropdown menus labeled "Set" and "Entry".
- A "Dialled number" text input field.
- "Save" and "Cancel" buttons at the bottom center.

What's New fields

This table describes the function of each field.

Field	Description
Whats new enabled	Whether the What's New feature node should be available to control plans for subscriber accounts with this product type.
Announcement	The announcement which will be played to a caller when the call traverses the What's New node in the control plan.
Dialed number	The number to route the caller to if they choose to hear more about the advertised feature.

Adding What's New details

Follow these steps to add the What's New details for a product type.

Step	Action
1	In the New Product Type screen, select the What's New option from the left hand menu. Result: You see the What's New configuration options. For an example screen shot of the What's New options, see What's New option .
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>What's New fields</i> (on page 181).

Editing What's New details

Follow these steps to view or change the What's New details for a product type.

Step	Action
1	In the Edit Product Type screen, select the What's New option from the left hand menu. Result: You see the What's New options. For an example screen shot of the What's New options, see What's New option .
2	Check or update the What's New details as necessary. For more information about the fields in this option, see <i>What's New fields</i> (on page 181).

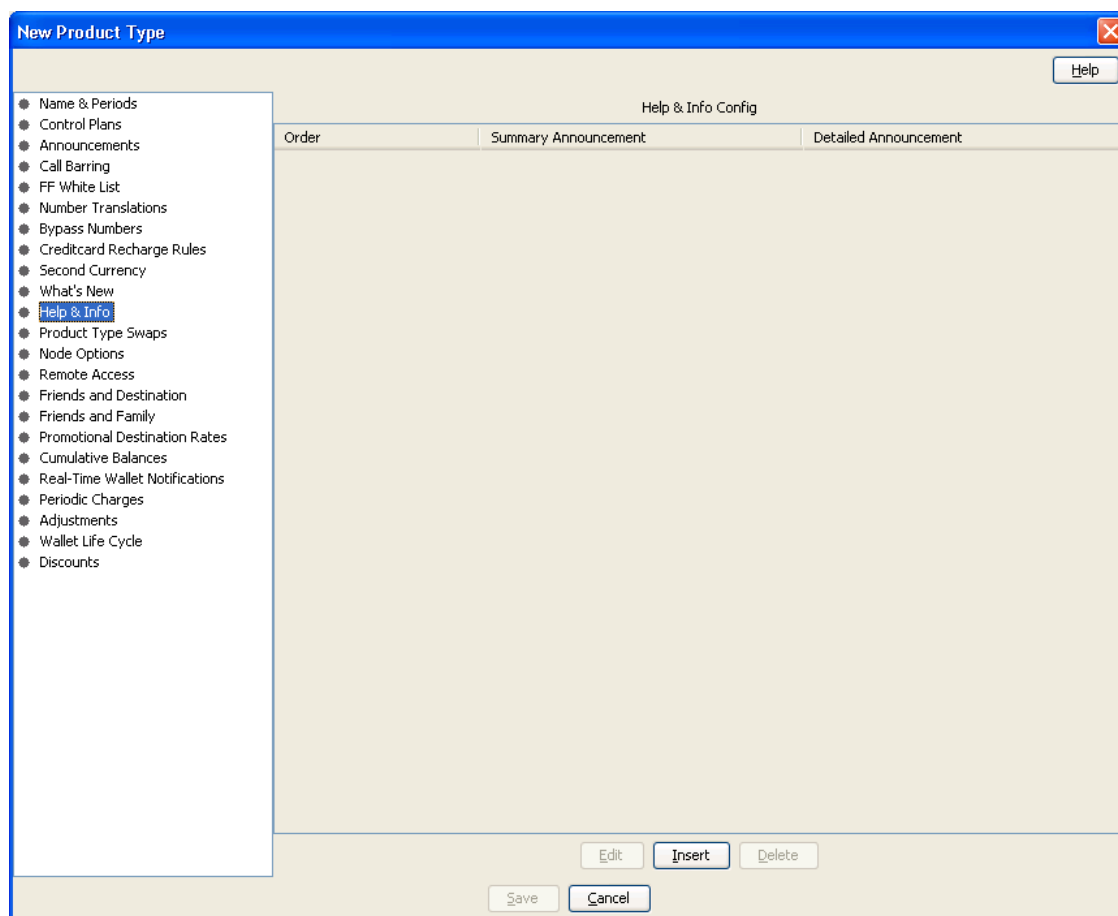
Help & Info

Introduction

The Help & Info configuration defines how the Help Information feature node behaves when used in a control plan for this product type. For more information about using the Help Information feature node, see the *Feature Nodes Reference Guide*.

Help & Info option

Here is an example New Product Type screen showing the Help & Info option.



Help & Info fields

This table describes the function of each field.

Field	Description
Order	The number specifying where in the options list this entry should appear. The list is played to a caller as a series of help menu options when the caller accesses the Help & Info menu.
Summary Announcement	The Announcement Entry to play to callers to summarize the contents of this help menu item.
Detailed Announcement	The Announcement Entry to play to callers who choose to listen to the detailed contents of this help menu item.

Adding Help & Info details

Follow these steps to add the Help & Info details for a product type.

Step	Action
1	In the New Product Type screen, select the Help & Info option from the left hand menu. Result: You see the Help & Info configuration options. For an example screen shot of the Help & Info options, see Help & Info option .
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Help & Info fields</i> (on page 183).

Editing Help & Info details

Follow these steps to view or change the Help & Info details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Help & Info option from the left hand menu. Result: You see the Help & Info options. For an example screen shot of the Help & Info options, see Help & Info option .
2	Check or update the Help & Info details as necessary. For more information about the fields in this option, see <i>Help & Info fields</i> (on page 183).

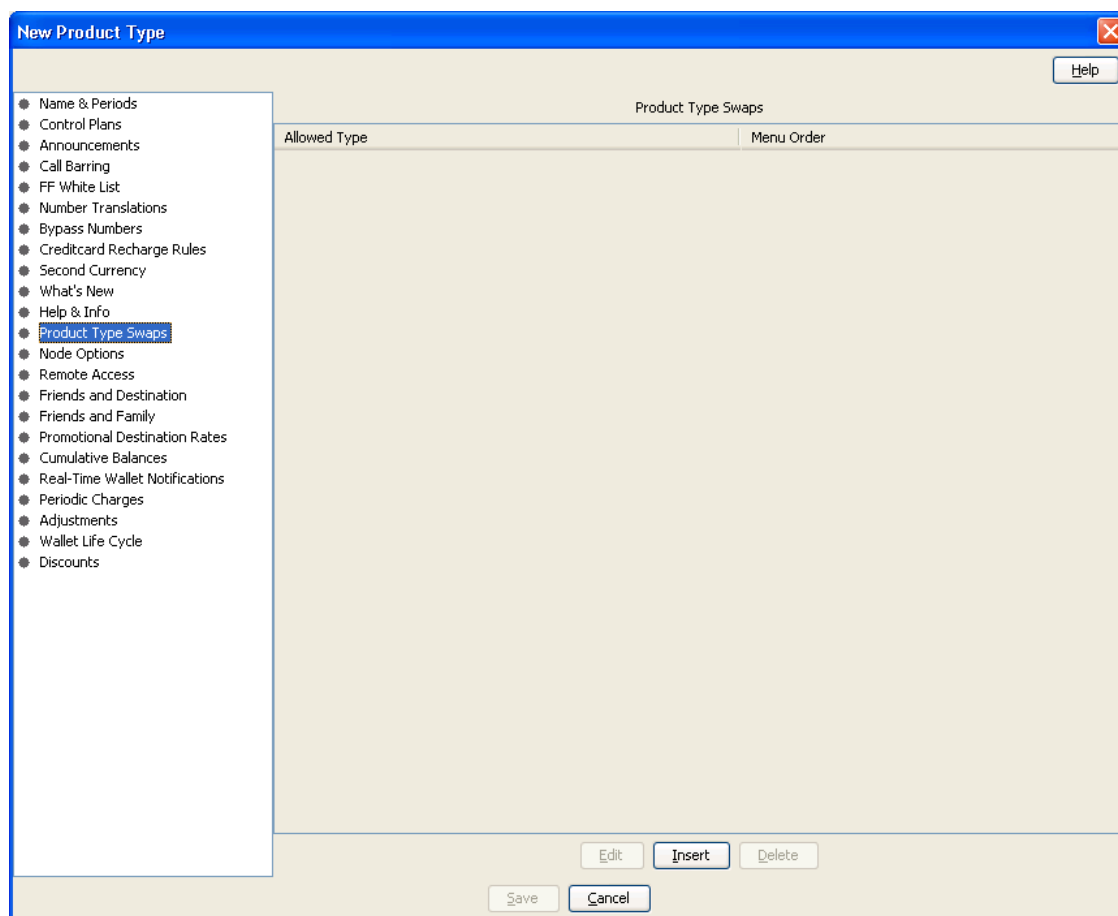
Product Type Swaps

Introduction

The Product Type Swap configuration defines how the Product Type Swap feature node behaves when used in a control plan for this Product Type. For more information about using the Product Type Swap feature node, see *Feature Nodes Reference Guide*.

Product Type Swaps option

Here is an example New Product Type screen showing the Product Type Swaps option.



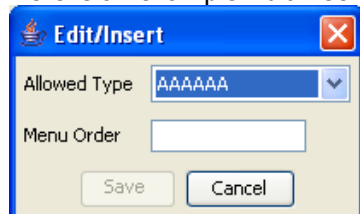
Product Type Swap fields

This table describes the function of each field.

Field	Description
Allowed Type	The product type the subscriber can choose for this menu item.
Menu Order	The number value specifying where in the list of product type menu options this choice occurs.

Edit/Insert screen

Here is an example Edit/Insert screen.



Adding Product Type Swap details

Follow these steps to add the Product Type Swap details for a product type.

Warning: To use product type swaps, you must also have configured a named event set called "Product Type" and it must have a named event in the set called "Product Type Swap". The Product Type Swap named event must have the **Contributes to Monthly Expenditure** check box selected. These values must be exact, or the product type swap will fail.

Step	Action
1	In the New Product Type screen, select the Product Type Swap option from the left hand menu. Result: You see the Product Type Swap configuration options. For an example screen shot of the Product Type Swap options, see Product Type Swap option.
2	Click Insert . Result: You see the <i>Edit/Insert screen</i> (See example on page 185).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Product Type Swap fields</i> (on page 185).
4	Click Save to save the details to the database and return to the New Product Type screen. Result: Your changes will be temporarily saved and will be displayed in the New Product Type screen.
5	If required, repeat steps 2-4 until all the recharge options have been configured.

Editing Product Type Swap details

Follow these steps to configure the Product Type Swaps for this product type.

Step	Action
1	In the Edit Product Type screen, select the Product Type Swaps option from the left hand menu. Result: You see the Product Type Swaps configuration options. For an example screen of the Product Type Swaps options, see Product Type Swap option.
2	In the Product Type Swap table, select the record to change and click Insert . Result: You see the <i>Edit/Insert screen</i> (See example on page 185).
3	Check or update the Product Type Swap details as necessary. For more information about the fields on this screen, see <i>Product Type Swap fields</i> (on page 185).
4	Click Save to save the details to the database and return to the Edit Product Type screen. Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.
5	If required, repeat steps 2-4 until all the recharge options have been configured.

Deleting Product Type Swap details

Follow these steps to delete a Product Type Swap from a product type.

Step	Action
1	In the Edit Product Type screen, select the Product Type Swap option from the left hand menu. Result: You see the Product Type Swap configuration options. For an example screen shot of the Product Type Swap options, see Product Type Swap option.
2	In the Product Type Swap table, select the record to delete and click Delete. Result: You see the Delete Confirmation prompt.
3	Click OK.
4	If required, repeat steps 2 and 3 until all the Product Type Swaps to delete have been deleted.

Node Options

Introduction

The Node Options option sets product type-specific configuration for these feature nodes:

- Main Menu, and
- Personal Options Menu.

Node Options option

Here is an example New Product Type screen showing the Node Options option.

New Product Type

- Name & Periods
- Control Plans
- Announcements
- Call Barring
- FF White List
- Number Translations
- Bypass Numbers
- Creditcard Recharge Rules
- Second Currency
- What's New
- Help & Info
- Product Type Swaps
- **Node Options**
- Remote Access
- Friends and Destination
- Friends and Family
- Promotional Destination Rates
- Cumulative Balances
- Real-Time Wallet Notifications
- Periodic Charges
- Adjustments
- Wallet Life Cycle
- Discounts

☐ Allow product type swaps

☐ Allow fixed line maintenance

☐ Allow outcall

☐ Enable help and info

☐ Enable voucher recharge

Balance status warning threshold (system currency : littles)

Node Options fields

This table describes the function of each field.

Field	Description
Allow product type swaps	Whether the Product Swap functionality should be available as a product type swap option on the Main Menu and the Personal Options Menu nodes.
Allow fixed line maintenance	Whether the option to add a fixed line for a prepaid subscriber should be available as an option on the Main Menu and the Personal Options Menu.
Allow outcall	Whether the option making follow-on calls out of the Main Menu node should be available.
Enable help and info	Whether the option of finding more information from the Help & Info Menu should be available on the Main Menu node.
Enable voucher recharge	Whether the option to recharge vouchers should be available.
Balance status warning threshold (system currency: littles)	The amount below which an announcement will be played to the caller warning them about a low account balance. The balance amount will be in the currency of the account.

Adding Node Options details

Follow these steps to add the Node Options details for a product type.

Step	Action
1	In the New Product Type screen, select the Node Options option from the left hand list. Result: You see the Node Options configuration options. For an example screen shot of the Node Options options, see Node Options option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Node Options fields</i> (on page 188).

Editing Node Options details

Follow these steps to view or change the Node Options details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Node Options option from the left hand menu. Result: You see the Node Options options. For an example screen shot of the Node Options options, see Node Options option.
2	Check or update the Node Options details as necessary. For more information about the fields in this option, see <i>Node Options fields</i> (on page 188).

Remote Access

Introduction

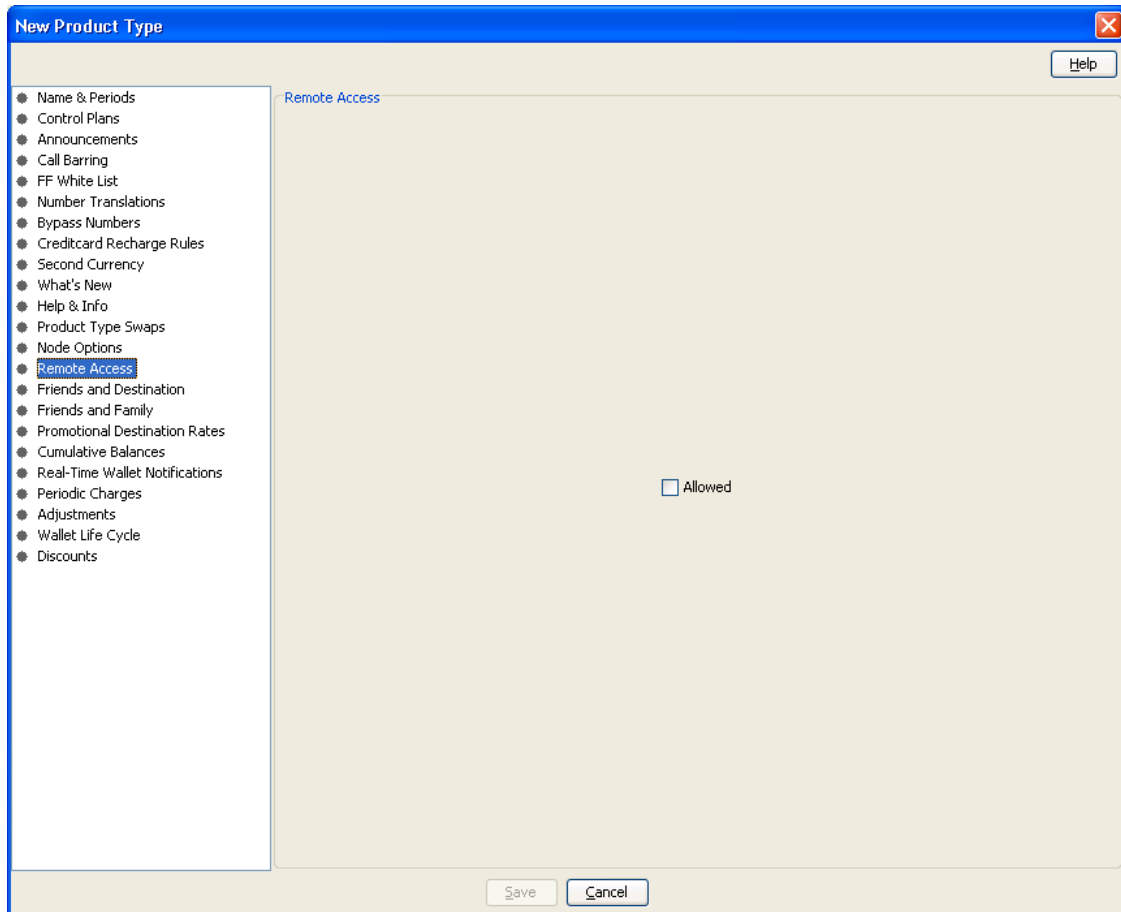
The Remote Access option defines whether or not subscribers with this product type can use the IVR system.

Note: Subscribers may not be able to access to the IVR system if:

- no IVR control plan is set up, or
- the subscriber's account denies access to the IVR system.

Remote Access option

Here is an example New Product Type screen showing the Remote Access option.



Adding Remote Access details

Follow these steps to add the Remote Options details for a product type.

Step	Action
1	In the New Product Type screen, select the Remote Options option from the left hand list. Result: You see the Remote Options configuration options. For an example screen of the Remote Options options, see Remote Access option.
2	To enable access to the IVR system for subscribers with this product type, select the Allowed field. Note: Subscribers must also have the Remote Access check box selected in their Subscriber details. For more information, see <i>Remote Access</i> (on page 103).

Editing Remote Access details

Follow these steps to add the Remote Options details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Remote Options option from the left hand list. Result: You see the Remote Options configuration options. For an example screen shot of the Remote Options options, see Remote Access option.
2	To enable access to the IVR system for subscribers with this product type, select the Allowed check box. To disable access to the IVR system for subscribers with this product type, clear the Allowed check box. Note: To access the IVR system, subscribers must also have the Remote Access check box selected in their Subscriber details. For more information, see <i>Remote Access</i> (on page 103).

Friends and Destination

Introduction

The Friends and Destination option defines charging for the friends and destination service.

For more information about the Friends and Destination feature, see *Friends and Family/Destination Discount Configuration* (on page 25).

Friends and Destination option

Here is an example New Product Type screen showing the Friends and Destination option.

The screenshot shows a software window titled "New Product Type". On the left is a vertical list of product types, including "Name & Periods", "Control Plans", "Announcements", "Call Barring", "FF White List", "Number Translations", "Bypass Numbers", "Creditcard Recharge Rules", "Second Currency", "What's New", "Help & Info", "Product Type Swaps", "Node Options", "Remote Access", "Friends and Destination" (which is highlighted), "Friends and Family", "Promotional Destination Rates", "Cumulative Balances", "Real-Time Wallet Notifications", "Periodic Charges", "Adjustments", "Wallet Life Cycle", and "Discounts". The main area of the window is titled "Friends & Destination Product Type" and contains two input fields: "Total Discount %:" and "Free changes allowed:". At the bottom of the window are "Save" and "Cancel" buttons. A "Help" button is located in the top right corner.

Friends and Destination fields

This table describes the function of each field.

Field	Description
Total Discount %:	The total discount for dialed numbers falling within the subscriber's Friends & Destination prefix.
Free changes allowed:	The maximum number of free changes the subscriber can make to their Friends & Destination configuration.

Adding Friends and Destination details

Follow these steps to add the Friends and Destination charging details for a product type.

Step	Action
1	In the New Product Type screen, select the Friends and Destination option from the left hand list. Result: You see the Friends and Destination configuration options. For an example screen shot of the Friends and Destination options, see Friends and Destination option.

Step	Action
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Friends and Destination fields</i> (on page 192).

Editing Friends and Destination details

Follow these steps to view or change the Friends and Destination details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Friends and Destination option from the left hand menu. Result: You see the Friends and Destination options. For an example screen shot of the Friends and Destination options, see Friends and Destination option.
2	Check or update the Friends and Destination details as necessary. For more information about the fields in this option, see <i>Friends and Destination fields</i> (on page 192).

Friends and Family

Introduction

The Friends and Family configuration defines some details about how the friends and family feature works with this product type.

For more information about the Friends and Family feature, see *Friends and Family/Destination Discount Configuration* (on page 25).

Friends and Family option

Here is an example New Product Type screen showing the Friends and Family option.

The screenshot shows a software window titled "New Product Type". On the left is a list of product types with radio buttons. "Friends and Family" is selected. The main area is titled "Friends & Family Product Type" and contains three input fields: "Total Discount %:", "Free changes allowed:", and "Maximum F&F numbers allowed:". At the bottom are "Save" and "Cancel" buttons. A "Help" button is in the top right corner.

Friends and Family fields

This table describes the function of each field.

Field	Description
Total Discount %:	The total discount applied to calls made to the subscriber's Friends & Family numbers. Note: This percentage is distributed evenly amongst all Friends & Family numbers.
Free changes allowed:	The maximum number of free changes the subscriber can make to the Friends & Family configuration.
Maximum F&FD Numbers allowed:	The maximum number of Friends & Family entries the subscriber can add to their Friends & Family list.

Adding Friends and Family details

Follow these steps to add the Friends and Family details for a product type.

Step	Action
1	In the New Product Type screen, select the Friends and Family option from the left hand list. Result: You see the Friends and Family configuration options. For an example screen shot of the Friends and Family options, see Friends and Family option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Friends and Family fields</i> (on page 194).

Editing Friends and Family details

Follow these steps to view or change the Friends and Family details for a product type.

Step	Action
1	In the Edit Product Type screen, select the Friends and Family option from the left hand menu. Result: You see the Friends and Family options. For an example screen shot of the Friends and Family options, see Friends and Family option.
2	Check or update the Friends and Family details as necessary. For more information about the fields in this option, see <i>Friends and Family fields</i> (on page 194).

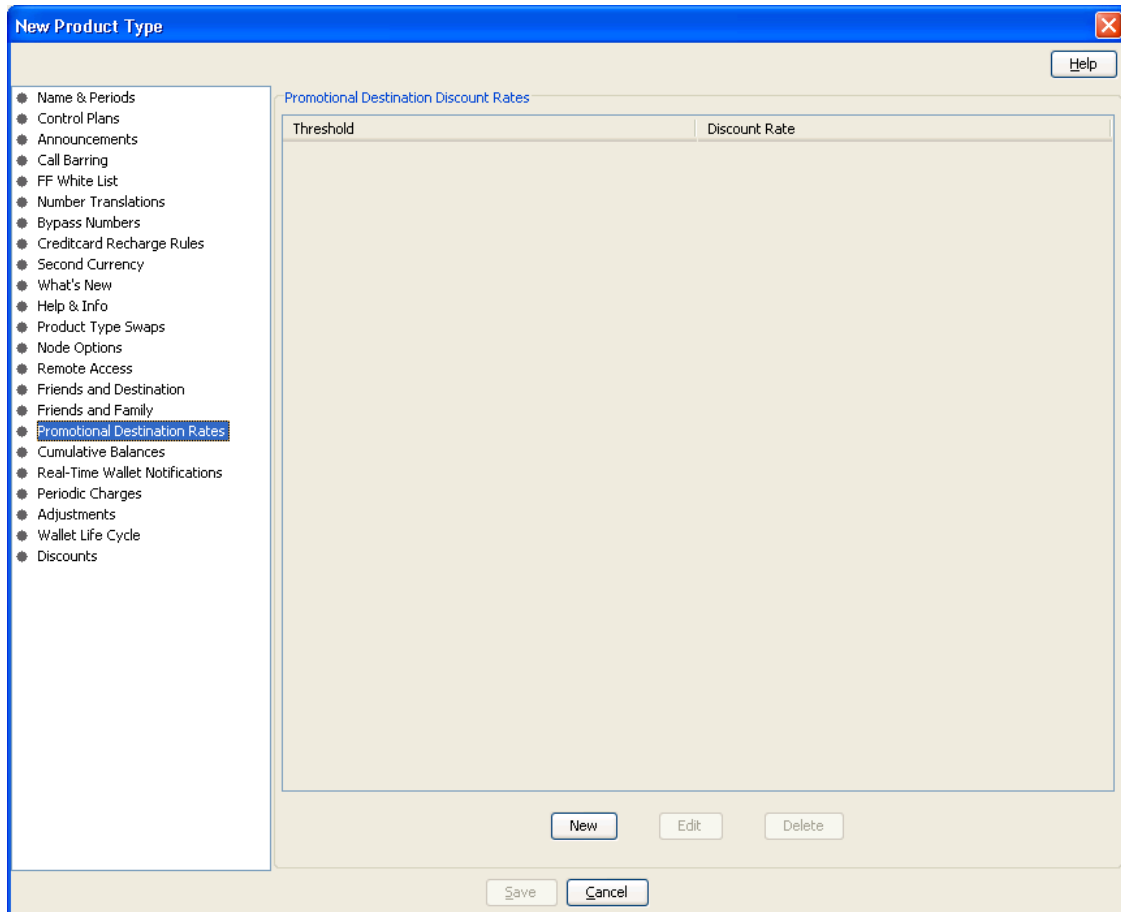
Promotional Destination Rates

Introduction

The Promotional Destination Rates option provides configuration for discounting short messages.

Promotional Destination Rates option

Here is an example New Product Type screen showing the Promotional Destination Rates option.



Promotional Destination Rates fields

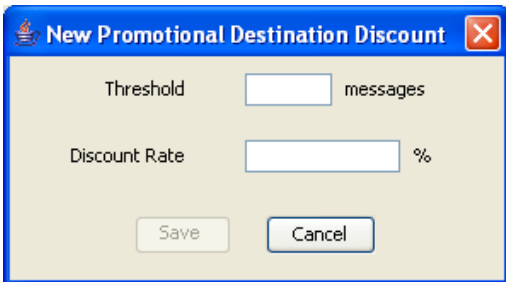
This table describes the function of each field.

Field	Description
Threshold	The number of non discounted short messages which must be sent before the discount will be applied.
Discount Rate	The percentage of discount which will be applied to qualifying short messages.

Adding Promotional Destination Rate details

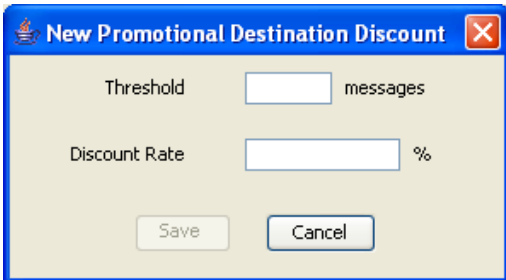
Follow these steps to add Promotional Destination Rates to a product type.

Step	Action
1	In the New Product Type screen, select the Promotional Destination Rates option from the left hand list. Result: You see the Promotional Destination Rates configuration options. For an example screen shot of the Promotional Destination Rates options, see Promotional Destination Rates option.
2	Click New .

Step	Action
	Result: You see the New Promotional Destination Discount screen. 
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Promotional Destination Rates fields</i> (on page 196).
4	Click Save. Result: Your changes will be temporarily saved and will be displayed in the New Product Type screen.

Editing Promotional Destination Rate details

Follow these steps to view or edit Promotional Destination Rates to a product type.

Step	Action
1	In the Edit Product Type screen, select the Promotional Destination Rates option from the left hand list. Result: You see the Promotional Destination Rates configuration options. For an example screen shot of the Promotional Destination Rates options, see Promotional Destination Rates option.
2	Click Edit. Result: You see the New Promotional Destination Discount screen. 
3	Check or update the Promotional Destination Discount details as necessary. For more information about the fields in this option, see <i>Promotional Destination Rates fields</i> (on page 196).
4	If you have made changes to the promotional destination rate's details, click Save. Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen. If you do not want to make changes to the promotional destination rate details, click Cancel.

Deleting Promotional Destination Rule details

Follow these steps to delete a Promotional Destination Rule from a product type.

Step	Action
1	In the Edit Product Type screen, select the Promotional Destination Rules option from the left hand menu. Result: You see the Promotional Destination Rules configuration options. For an example screen shot of the Promotional Destination Rules options, see Promotional Destination Rates option.
2	In the Promotional Destination Rules table, select the record to delete and click Delete . Result: You see the Delete Confirmation prompt.
3	Click OK .
4	If required, repeat steps 2 and 3 until all the Promotional Destination Rules to delete have been deleted.

Cumulative Balances

Introduction

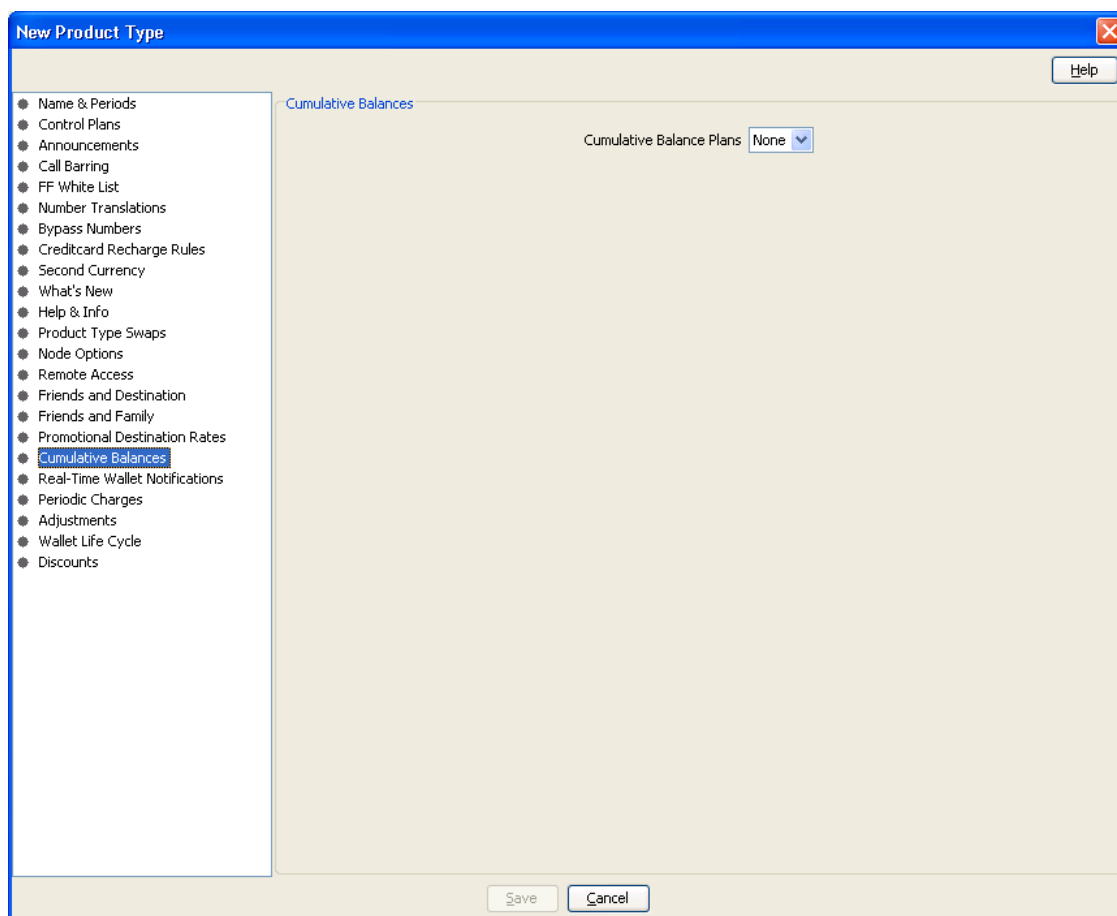
The Cumulative Balances option configures the default cumulative balance plan for a product type. The cumulative balance plan defines the set of cumulative balance categories for which announcements can be played using the Cumulative Balances feature node.

For more information about the Cumulative Balances node, see *Feature Nodes Reference Guide*. For details on configuring cumulative balance plans, see *Cumulative Balance Plans* (on page 285).

Note: Balances that have not been assigned to a cumulative balance category cannot be played by the node.

Cumulative Balances option

Here is an example New Product Type screen showing the Cumulative Balances option.



Configuring the cumulative balances option

Follow these steps to configure the default cumulative balance plan for a Product Type.

Step	Action
1	In the New/Edit Product Type screen, select the Cumulative Balances option from the left hand list. Result: You see the Cumulative Balances configuration options. For an example screen shot, see <i>Cumulative Balances option</i> (on page 199).
2	From the Cumulative Balance Plans drop down list, select the default cumulative balance plan for the Product Type. The balance categories defined for the plan will be used by the Cumulative Balances node to play cumulative balance announcements. Notes: • The default value can be overridden by specifying a value in the node. • If None is selected, this indicates there is no default cumulative balance plan associated with the Product Type. • Cumulative balance plans and cumulative balance categories are configured in the Wallet Management screen.

Real-Time Wallet Notifications

Introduction

The Real-Time Wallet Notifications option enables real-time wallet notifications for a Product Type. The real-time wallet notifications listed in this option will apply to all wallets with this Product Type.

Notes:

- This functionality is only available where Rating Management is handled by the VWS.
- For details on defining the criteria used for generating real-time notifications, see *Adding real-time wallet notifications* (on page 266).

Real-Time Wallet Notifications option

Here is an example New Product Type screen showing the Real-Time Wallet Notifications option.

The screenshot shows a software window titled "New Product Type". On the left is a sidebar with a list of configuration options, including "Real-Time Wallet Notifications" which is highlighted. The main content area is titled "Real-Time Wallet Notifications" and contains a section labeled "Real-Time Wallet Notifications List" which is currently empty. To the right of this list is a dropdown menu labeled "Available Notifications" showing "<EMPTY>". At the bottom of the window are "Save" and "Cancel" buttons. A "Help" button is located in the top right corner.

Real-Time Wallet Notifications fields

This table describes the function of each field.

Field	Description
Real-Time Notifications List	Displays all real-time wallet notifications enabled for this product type.

Field	Description
Available Notifications	Displays real-time wallet notifications available for adding to this product type. This field is populated by the Real-Time Wallet Notifications tab on the Wallet Management screen. For more information about this tab, see <i>Real-Time Wallet Notifications</i> (on page 262).

Editing real-time wallet notification details

Follow these steps to view or change the Real-Time Wallet Notifications which are active for a Product Type.

Step	Action
1	In the Edit Product Type screen, select the Real-Time Wallet Notifications option from the left hand list. Result: You see the Real-Time Wallet Notifications options. For an example screen shot of the Real-Time Wallet Notifications options, see Real-Time Wallet Notifications option.
2	Check or edit the Real-Time Notifications List. - To add a notification, select the one you want from the Available Notifications drop down list, and click Add. - To delete a notification, select the one you want to delete in the list, and click Delete. For more information about the fields, see <i>Real-Time Wallet Notifications fields</i> (on page 200).
3	If you have made changes to the product type's details, click Save. If you do not want to make changes to the product type's details, click Cancel.

Periodic Charges

Introduction

The Periodic Charges option configures:

- which periodic charges can be applied to subscribers who have a wallet which uses this product type, and
- (optionally) which ccsPeriodicCharge process should process which periodic charges.

For more general information about periodic charges, see *Subscription Services* (on page 15).

VWS domain functionality

This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server.

For more information about domains, see *Domain* (on page 441).

Periodic Charges option

Here is an example New Product Type screen showing the Periodic Charges option.

The screenshot shows a window titled "New Product Type" with a sidebar on the left containing a list of options. The "Periodic Charges" option is highlighted. The main content area has three tabs: "Periodic Charge", "Apply to Activating", and "Apply to Existing". The "Periodic Charge" tab is active. At the bottom of the window, there is a section with the label "Available Charges" followed by a dropdown menu, and buttons for "Add", "Delete", "Up", and "Down". To the right of these buttons is a "Daemon" dropdown menu set to "1". At the very bottom are "Save" and "Cancel" buttons.

Periodic Charges fields

This table describes the function of each field.

Field	Description
Periodic Charge	Displays all periodic charges enabled for this product type. Note: The default system setting allows assigning a maximum of 15 periodic charges per product type. To change the number of periodic charges per product type allowed in the Convergent Charging Controller UI, set the MaxProductTypePeriodicCharges applet parameter to the desired number of charges in the sms.jnlp file. See the section on setting up the screens in <i>Charging Control Services Technical Guide</i> for more information.
Apply To Activating	Whether or not this periodic charge should be automatically applied to all subscribers who activate a wallet with this product type.
Apply To Existing	Whether this periodic charge should be automatically applied to all existing subscribers who currently have this product type.
Available Charges	Displays periodic charges which can be added to this product type.

Field	Description
Daemon	The ccsPeriodicCharge daemon process id which should process periodic charges from this group. Note: You can have 1 - 5 daemons running. The number is set by the numbers configured on this screen. The highest number available to select will be one more than the current highest set number across a service provider's products, with a maximum of 5. So if: • none yet set, the maximum is 1 • "1" is already set, maximum is 2 • "2" is already set, maximum is 3 • "3" is already set, maximum is 4 • "4" is already set, maximum is 5 • "5" is already set, maximum is also 5 For more information about the ccsPeriodicCharge process, see <i>CCS Technical Guide</i>.

The records and details shown in these fields are populated by the **Periodic Charges** tab for this service provider. For more information about managing periodic charges, see *Wallet Management - Periodic Charges* (on page 297).

Editing applicable periodic charges

Follow these steps to view or change the periodic charges which are active for a Product Type.

Step	Action
1	In the Edit Product Type screen, select the Periodic Charges option from the left hand list. Result: You see the Periodic Charges options. For an example screen shot of the Periodic Charges options, see Periodic Charges option.
2	Check or edit the Periodic Charges List. • To add a periodic charge, select the one you want from the Available Charges drop down list, and click Add. • To delete a periodic charge, select the one you want to delete in the list, and click Delete. • To move a periodic charge up the list, select it from the Periodic Charges List and click Up. • To move a periodic charge down the list, select it from the Periodic Charges List and click Down. For more information about the fields, see Periodic Charges fields.
3	If you want to balance the load of processing periodic charges by assigning different periodic charges to more than one ccsPeriodicCharge process, select a ccsPeriodicCharge process id from the Daemon field. The ccsPeriodicCharge with this id will process the selected periodic charge.
4	If you have made changes to the product type's details, click Save. If you do not want to make changes to the product type's details, click Cancel.

Adjustments

Introduction

Adjustment option configuration sets the limits for balance type Adjustments for a new Product Type. The Adjustments will apply to all Wallets with this Product Type. A further limit can be set for individual users. The limits set at the user level take precedence over the limits set for the Product Type.

On the Adjustment Users tab in the New/Edit Adjustment screen you can configure the minimum and maximum balance type adjustments allowed for specified users. You can add, edit, and delete adjustment amounts for individual users for the balance type selected on the Adjustment tab.

Note: This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server.

Adjustments option

Here is an example New Product Type screen showing the Adjustments option.

The screenshot shows a software window titled "New Product Type". On the left is a sidebar with a list of configuration options, including "Name & Periods", "Control Plans", "Announcements", "Call Barring", "FF White List", "Number Translations", "Bypass Numbers", "Creditcard Recharge Rules", "Second Currency", "What's New", "Help & Info", "Product Type Swaps", "Node Options", "Remote Access", "Friends and Destination", "Friends and Family", "Promotional Destination Rates", "Cumulative Balances", "Real-Time Wallet Notifications", "Periodic Charges", "Adjustments" (which is highlighted), "Wallet Life Cycle", and "Discounts". The main area of the window is titled "Adjustments" and contains a table with three columns: "Balance Type", "Min Amount", and "Max Amount". The table is currently empty. At the bottom of the window are five buttons: "New", "Edit", "Delete", "Save", and "Cancel".

Adjustments fields

This table describes the function of each field.

Field	Description
Balance Type	The balance type these adjustment limits apply to.

Field	Description
Min Amount	The minimum value for an adjustment to the balance. Specify minor units for currency amounts and seconds for time amounts. Tip: To specify a negative value, type the minus sign (-) in front of the amount.
Max Amount	The maximum value allowed for an adjustment to the balance. Note: The value for Max Amount must be greater than the value for Min Amount.

Adding Adjustment details

Follow these steps to add Adjustment limits to a product type.

Step	Action
1	In the New Product Type screen, select the Adjustments option from the left hand list. Result: You see the Adjustments configuration options. For an example screen of the Adjustments options, see Adjustments option.
2	Click New . Result: You see the New Adjustment screen, Adjustment tab.

3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Adjustments fields</i> (on page 204).
4	To configure adjustment limits for the balance type for specific users, select the Adjustment Users tab. Result: You see the Adjustment Users table on the tab.

Step	Action

- 5 Configure user adjustments as required. For details see:
 - *Adding user adjustment limits* (on page 208)
 - *Editing user adjustment limits* (on page 209), and
 - *Deleting user adjustment limits* (on page 209).
- 6 Click **Save**.

Editing Adjustments details

Follow these steps to edit the Adjustment limits configured for a product type.

Step	Action

- 1 In the Edit Product Type screen, select the Adjustments option from the left hand list.
Result: You see the Adjustments configuration options.
 For an example screen of the Promotional Destination Rates options, see Adjustments option.
- 2 In the Adjustments table, select the record to change and click **Edit**.
Result: You see the Edit Adjustment screen, **Adjustment** tab.

Step

Action

Edit Adjustment

Help

Adjustment Adjustment Users

Balance Type General Cash

Min Amount (NZD)

Max Amount (NZD)

Save Cancel

- 3 Check or update the Promotional Destination Discount details as necessary. For more information about the fields in this option, see *Adjustments fields* (on page 204).
- 4 To modify the adjustment limits configured for specific users, select the **Adjustment Users** tab.

Result: You see the Adjustment Users table on the tab.

Edit Adjustment

Help

Adjustment Adjustment Users

User Name	Min Amount	Max Amount
ACS_ADMIN	-5.00 (NZD)	15.00 (NZD)
SU	-10.00 (NZD)	10.00 (NZD)

New Edit Delete

Save Cancel

- 5 Configure user adjustments as required. For details, see:
 - *Adding user adjustment limits* (on page 208)
 - *Editing user adjustment limits* (on page 209)
 - *Deleting user adjustment limits* (on page 209)

Step	Action
6	Click Save to save the configuration and return to the Edit Product Type screen. If you have made changes to the adjustment's details, click Save . Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen. If you do not want to make changes to the adjustment details, click Cancel .

Deleting adjustments

Follow these steps to delete adjustment configuration from a product type.

Note: When you delete the adjustment configuration for a balance type, the associated user adjustment configuration will also be deleted.

Step	Action
1	In the Edit Product Type screen, select the Adjustments option from the left hand list. Result: You see the Adjustments configuration options. For an example screen of the Adjustments options, see Adjustments option.
2	In the Adjustments table, select the record to delete and click Delete . Result: You see the Delete Confirmation prompt.
3	Click OK .

Adding user adjustment limits

Follow these steps to add balance type adjustment limits for a selected user.

Step	Action
1	In the New/Edit Adjustment screen, select the Adjustment Users tab and click New . Result: You see the New User Adjustment screen.

Note: The **Balance Type** field is for information only and cannot be changed in this screen. It displays the balance type that this configuration will apply to.

- From the **User Name** drop down list, select the user for whom to define adjustment limits.
 - In the **Min Amount** field type the minimum value for a balance type adjustment. Specify minor units for currency amounts and seconds for time amounts.
- Tip:** To specify a negative value, type the minus sign (-) in front of the amount.

Step	Action
4	In the Max Amount field type the maximum value allowed for adjustment to the balance. Note: The value for Max Amount must be greater than the value for Min Amount.
5	Click Save . Result: You are returned to the New/Edit Adjustment screen.
6	Click Save to save the configuration.

Editing user adjustment limits

Follow these steps to edit balance type adjustment limits for a selected user.

Step	Action
1	In the New/Edit Adjustment screen, select the Adjustment Users tab.
2	Highlight the record to edit on the table and click Edit . Result: You see the Edit User Adjustment screen.

Note: The **Balance Type** field is for information only and cannot be changed in this screen. It displays the balance type that this configuration will apply to.

3	If required, select a different user from the User Name drop down list.
4	If required, in the Min Amount field type a different minimum value for adjustments to the balance.
5	If required, in the Max Amount field type a different maximum value allowed for adjustments to the balance. Note: The value for Max Amount must be greater than the value for Min Amount.
6	Click Save . Result: You are returned to the New/Edit Adjustment screen.
7	Click Save to save the configuration.

Deleting user adjustment limits

Follow these steps to delete the adjustment limits configured for a specified user and balance type.

Step	Action
1	Select the Adjustment Users tab in the New/Edit Adjustment screen. Result: You see a list of user adjustment limits in the table.

Step	Action
2	In the table, highlight the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK . Result: The record is deleted and you are returned to the New/Edit Adjustment screen.
5	Click Save to save your changes.

Wallet Life Cycle

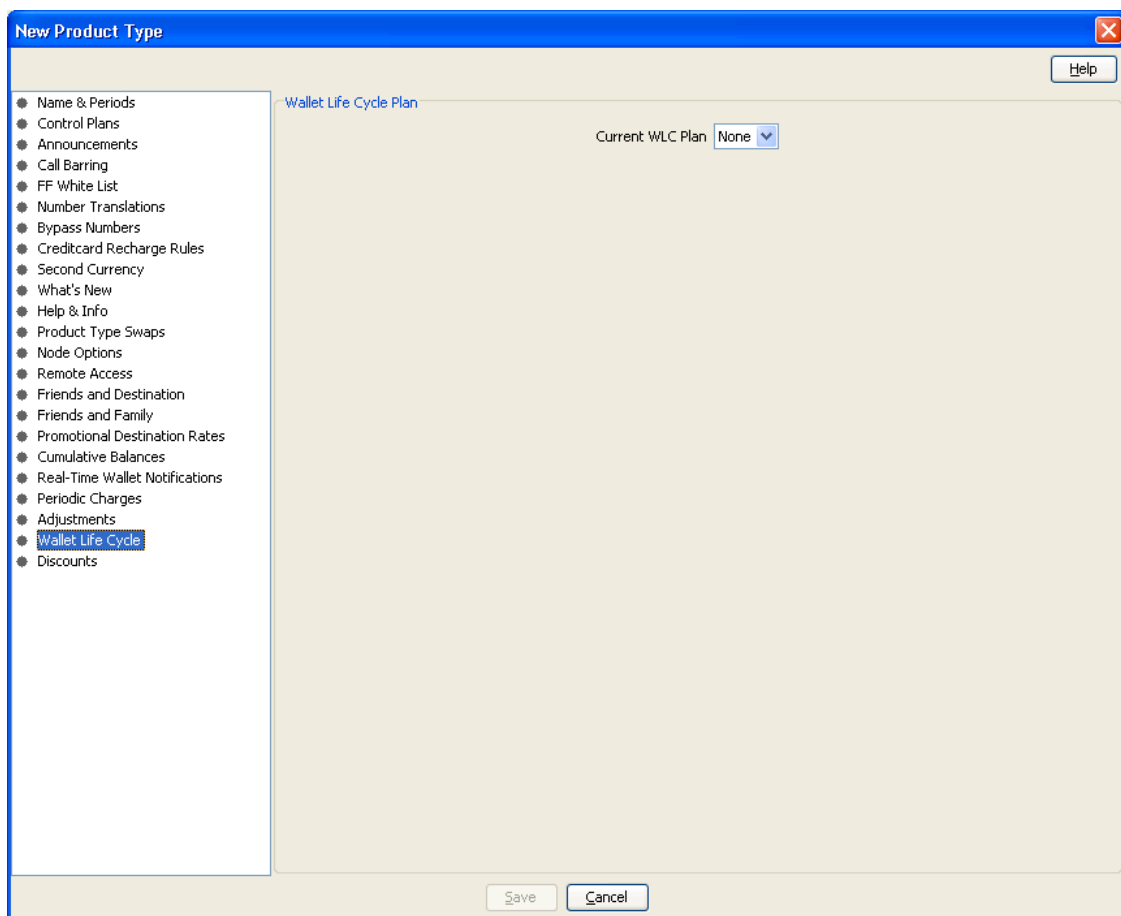
Introduction

The WLC option is available only if the WLC service is installed.

You configure Wallet Life Cycles on a Product Type basis.

Wallet Life Cycle option

Here is an example New Product Type screen showing the Wallet Life Cycle option.



Selecting the current WLC plan

Follow these steps to select a Wallet Life Cycle Plan for a product type.

Step	Action
1	In the Edit Product Type screen, select the Wallet Life Cycle option from the left hand list. Result: You see the Wallet Life Cycle Plan configuration option.
2	Select the current WLC Plan from the drop down list. Note: By selecting <code>None</code> you disassociate the current WLC Plan without associating another WLC Plan.
3	Click Save . Result: If you save a different WLC Plan to the one currently saved for the Product Type, then there will be an impact for all Subscribers currently assigned to the Product Type. The system will disassociate them from the old WLC Plan (if any) and associate them to the new WLC Plan (if any). This operation will be performed next time the Subscriber's Wallet is accessed or when the Subscriber's bucket expired and is grovelled by beGroveler or when the wallet is grovelled by the ccsSLEEChangeDaemon process.

Discounts

Introduction

The Discounts option is used to set the discounts applied to a Product Type Bypass Number.

Note: To enable the discount, you must include the Set Discount node in the control plan. For details on how to configure the node, see the Set Discount feature node in *Feature Nodes Reference Guide*.

Discounts option

Here is an example New Product Type screen showing the Discounts option.

The screenshot shows a software window titled "New Product Type". On the left is a vertical list of options, with "Discounts" highlighted. The main area on the right is titled "Discounts" and contains the following elements:

- A "Display Currency" dropdown menu currently showing "NZD".
- Three input fields: "Period One %", "Period Two %", and "Max. Charge".
- At the bottom of the window are "Save" and "Cancel" buttons.

Editing discounts

Follow these steps to view or change the discounts which are applied to a bypass number for a product type.

Step	Action
1	In the Edit Product Type screen, select the Discounts option from the left hand list. Result: You see the Discounts option. For an example screen of the Discount option, see <i>Discounts option</i> (on page 212).
2	Select the currency code which the maximum charge will be displayed in from the Display Currency drop down box.
3	Type the percentage which will be discounted during the first discount period in the Period One % field.
4	Type the percentage which will be discounted during the second discount period in the Period Two % field.
5	Type the maximum total charge the subscriber will be charged for any one call in the Max. Charge field.
6	If you have made changes to the product type's details, click Save . If you do not want to make changes to the product type's details, click Cancel .

Subscriber Profile Limitations

Introduction

You can set Product Type limits for LNSTRING and LOPREFIX profile field types. The limits set here override the limits set in the Service Management, Resource Limits screen.

Profile groups

The profile fields for which you can set limits are available from the Subscriber Profile Limitations folder in the left hand panel in the Edit Product Type screen. Each group listed in the Subscriber Profile Limitations folder contains the limited profile fields that have been added to that Subscriber group through the SPM. If a field has been added to more than one group then it will be listed more than once.

Note: For more information on:

- Configuring profile fields in ACS, see the *ACS User's Guide*
- Using the SPM to add profile fields to a Subscriber group, see the *SPM User's Guide*

Editing profile field limitations

Follow these steps to set the limits for a product type for a selected profile field where the field type is LNSTRING.

Tip: You can configure service provider limits for profile fields in the **Service Management**>Edit Resource Limits screen.

Step	Action
1	From the left hand list in the Edit Product Type screen, expand the Subscriber Profile Limitations group containing the LNSTRING field you want.
2	Select the LNSTRING field in the group. Result: You see the LNSTRING profile field limitations configuration options, such as in this example.

Step	Action

- 3 Select the **Ignore Limitations** check box, if required:
 - When selected, the limits set for the product type are ignored and the resource limits are used.
 - When not selected, the limits set here for the product type are used.
- 4 In the **Min Number Length** field, enter the minimum numeric value for the profile field. Defaults to zero if no value is specified.
- 5 In the **Max Number Length** field, enter the maximum numeric value for the profile field. Defaults to 255 if no value is specified.
- 6 Select the **Limitation Prefix Tree Type** from the drop down list. If you select:
 - Allowed – The profile field value must match an entry in the number list.
 - Barred – The profile field value must not match an entry in the number list.
- 7 Edit the **Number List**. To:
 - Add to the list,
 - Enter a required number in the **New Number** field
 - Click **Add**.
 - Delete from the list
 - In the **Number List**, select the number
 - Click **Delete**.
- 8 Repeat step 7 until all the numbers you want are included.
- 9 Click **Save**.

Editing profile field limitations

Follow these steps to set the limits for a Product Type for a selected profile field where the field type is LOPREFIX.

Tip: You can configure Service Provider limits for profile fields in the Service Management>Edit Resource Limits screen.

Step	Action

1	From the left hand list in the Edit Product Type screen, expand the Subscriber Profile Limitations group containing the LOPREFIX field you want.
2	Select the LOPREFIX field in the group. Result: You see the LOPREFIX profile field limitations configuration options, such as in this example.

3	Tick the Ignore Limitations check box, if required: - When selected, the limits set for the product type are ignored and the resource limits are used. - When not selected, the limits set here for the product type are used.
4	In the Max Number of Entries field, type the maximum number of prefixes that may be included in the Number List. Defaults to 100 if no value is specified.
5	In the Min Number Length field, type the minimum numeric value for the LOPREFIX field. Defaults to zero if no value is specified.
6	In the Max Number Length field, type the maximum numeric value for the LOPREFIX field. Defaults to 255 if no value is specified.
7	Select the Limitation Prefix Tree Type from the drop down list. If you select: - Allowed – The LOPREFIX field value must match an entry in the Number List. - Barred – The LOPREFIX field value must not match an entry in the Number List.

Step	Action
8	Edit the Number List . To: • Add to the list: Type a required number in the New Number field and then click Add. • Delete from the list: In the Number List, select the number, and then click Delete.
9	Repeat step 8 until all the numbers you want are included.
10	Click Save .

Profile Fields

Introduction

You can configure the profile fields that have been added to the product type through the SPM. The available profile fields are listed by product type group in the Profile folder in the Edit Product Type screen.

Note: Profile field tags are configured in ACS. The SPM can then be used to add the profile fields to a group in the Edit Product Type screen. For more information on:

- Setting up profile fields in ACS, see *ACS User's Guide*.
- Using the SPM to add profile fields to the product type groups, see the *SPM User's Guide*.

Edit Product Type screen - profile fields example

Here is an example Edit Product Type screen. In this example you see the profile fields that have been added to the PT1 Profile Fields group.

The screenshot shows the 'Edit Product Type' window. On the left is a tree view under the 'Profile' folder, containing 'MJH_PT_Panel' and 'PT1 Profile Fields' (which is selected). The main area contains form fields for 'Product Number', 'Access network', and 'Creation Date' (with a dropdown arrow and a 'Use Date' checkbox). At the bottom are 'Save' and 'Cancel' buttons. A 'Help' button is in the top right corner.

Configuring profile fields

Follow these steps to configure the profile fields in a selected product type group.

Step	Action
1	From the left hand menu in the Edit Product Type screen, select the Profile group you want to configure. Result: The available profile fields are displayed in the screen. Tip: If the profile groups are not currently visible, double click the Profile folder in the left hand menu to expand it.
2	Edit the profile field data entry boxes.
3	Click Save .

Copying Product Types

Introduction

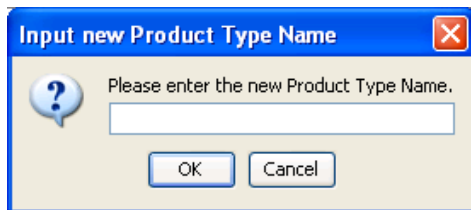
You can copy product types on the **Product Type** tab. This facility creates a new product type by copying all the configuration details from a selected product type to a new product type name. Once the new product type has been created, you can edit its configuration in the Edit Product Type screen.

Copying a product type configuration

Follow these steps to copy a selected product type configuration to a new product type.

Step	Action
1	In the Subscriber Management screen, select the Service Provider from the drop down box.
2	From the Product Type tab, select the Product Type to copy.
3	Click Copy .

Result: You see the Input New Product Type Name screen.



4	Type in the name of the product type to be created.

5	Click OK .

Result: The configuration for the selected product type is copied to the new product type. The **Product Type** tab is refreshed and the copied product type appears in the list of product types.

Wallet Management

Overview

Introduction

This chapter explains how to configure the components used to manage wallets.

Warning: The Wallet Management screens are only available if the Rating Management module has been installed on your system and if you are using the VWS domain. If you are using a third party domain, then you will not be able to access these screens.

In this chapter

This chapter contains the following topics.

Wallet Management Module.....	219
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Cumulative Balance Plans.....	285
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Wallet Management Module

Introduction

The Wallet Management screen lets you configure components of wallets. It contains the following tabs which are covered in the chapter:

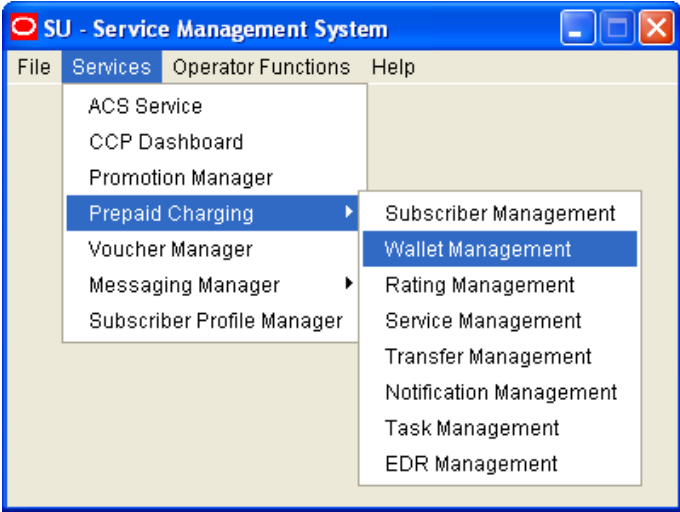
- *Balance Type Translations* (on page 241)
- *Balance Types* (on page 227)
- *Balance Units* (on page 225)
- *Bonus Types* (on page 278)
- *Bonus Values* (on page 281)
- *Cumulative Balance Plans* (on page 285)
- *Free Form Recharge* (on page 268)
- *Real-Time Wallet Notifications* (on page 262)

- *Reward Product Translations* (on page 256)
- *Rewards* (on page 246)
- *Tracker Plans* (on page 222)
- *Wallet Life Cycle* (on page 270)
- *Wallet Name Translation* (on page 259)

In addition it contains the **Periodic Charges** tab. This tab is covered in the *Wallet Management - Periodic Charges* (on page 297) chapter.

Accessing the Wallet Management screen

Follow these steps to open the Wallet Management screen.

Step	Action
1	Select the Services menu from the Service Management System main screen. 
2	Select Prepaid Charging > Wallet Management. Result: You see the Wallet Management screen.

Wallet Management screen

Here is an example Wallet Management screen.

Service Provider: Boss

Help

Bonus Types Bonus Values Cumulative Balance Plans

Balance Type Translations Periodic Charges Free Form Recharge

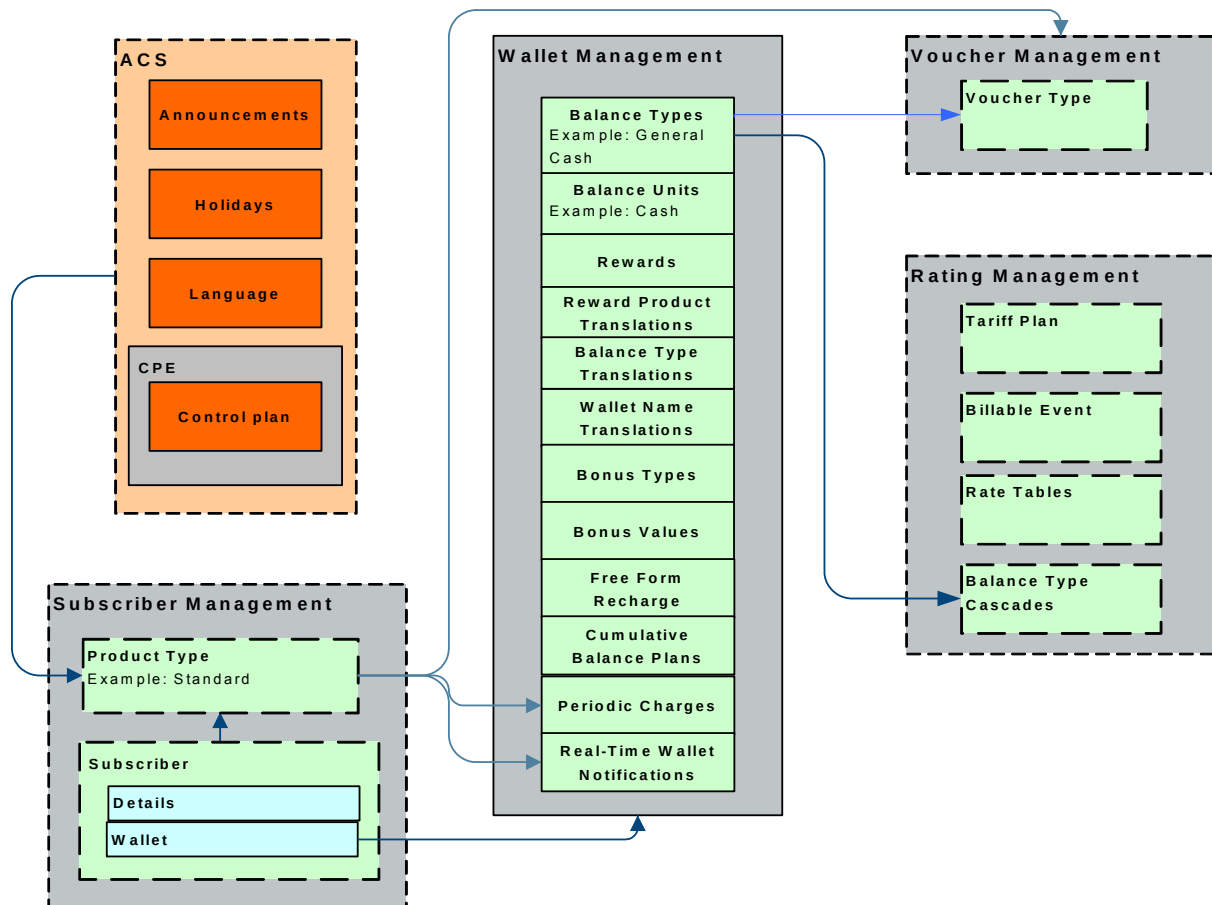
Balance Units Balance Types Rewards Reward Product Translations Wallet Name Translation

Name	Change User	Change Date
Bad Pin	SU	2009-06-03 11:33:51
Cash	SU	2009-06-03 11:33:51
Days to wallet expiry	SU	2009-06-03 11:33:51
SMSs	SU	2009-06-03 11:33:51
Time	SU	2009-06-03 11:33:51

New Edit Delete Close

Wallet Management relationships

This diagram shows the relationships between the various screens available in the Wallet Management module.



Tracker Plans

Introduction

The **Tracker Plans** tab lets you add, modify or delete tracker plans.

A tracker plan is associated to an expenditure plan. It sets a preference for recharging a certain balance type depending on the rules defined by the expenditure plan. Operators can use tracker plans during promotions when they want to:

- Define counters which track a subscriber's usage or expenditure within a configured promotion period
- Reward the subscriber based on their expenditure, either in real time or at the end of the period

Each counter is linked to a service (such as voice calls or SMS) and a configured rating scenario consisting of the following:

- A corresponding balance type
- Period of promotion (daily, weekly, monthly or yearly)
- The amount of activity (cash, time or number of events) which will trigger the reward

When each service and rating scenario is defined, the counters which should be updated are chosen. This gives the operator full control over which services will be used as part of the promotion.

Tracker Plans tab

Here is an example of the **Tracker Plans** tab.

Wallet Management

Service Provider: Boss

Help

Tracker Plans

Balance Type: Bad Pin

Name	Bearer	Channel	Reference

New Edit Delete Close

Tracker Plan fields

This table describes the function of each field.

Field	Description
Name	A unique name for the tracker plan.
Tracker Plan	Indicates the expenditure plan that determines which balance types are tracked for promotion rewards.
Bearer	Selecting this check box allows you to select the type of service to which the tracking plan applies.
Channel	Selecting this check box allows you to select the method of recharge to which the tracking plan applies.

Field	Description
Reference	Selecting this check box enables a text box where you can enter a short description of the tracking plan.

Note: The bearer, channel or reference values are matched during voucher recharge. If they are not set, the voucher will be recharged using standard voucher information.

Tracker Plan screen

Here is an example Tracker Plan screen.

Adding tracker plans

Follow these steps to add a new tracker plan.

Step	Action
1	In the Wallet Management screen, select the service provider from the drop down box.
2	On the Tracker Plans tab, select the balance type to which the new tracker plan will be linked.
3	Click New . Result: You see the <i>New Tracker Plan screen</i> (See example on page 224).
4	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tracker Plan fields</i> (on page 223).
5	When you have completed configuring the new tracker plan, click Save .

Editing tracker plans

Follow these steps to edit an existing tracker plan.

Step	Action
1	In the Wallet Management screen, select the service provider from the drop down box.
2	On the Tracker Plans tab, select the balance type to display all associated tracker plans.
3	In the table, select the record to edit and click Edit . Result: You see the <i>Edit Tracker Plan screen</i> (See example on page 224).

Step	Action
4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Tracker Plan fields</i> (on page 223).
5	Click Save .

Deleting tracker plans

Follow these steps to delete an existing tracker plan.

Step	Action
1	In the Wallet Management screen, select the service provider from the drop down box.
2	On the Tracker Plans tab, select the balance type to display all associated tracker plans.
3	In the table, select the record to delete and click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: You see the Tracker Plans prompt.
5	Click OK .

Balance Units

Introduction

This screen enables you to view, add, edit and remove balance units.

Balance units are the type of unit used in balance types. Balance units are either cash or non-cash. Non-cash units include:

- Notifications
- Bad PIN counts,
- Promotional Counters
- Time
- Data.

Note: The functionality that uses time balance units is only available if you have the appropriate license.

Balance Units tab

Here is an example Balance Units tab.

The screenshot shows a window titled "Wallet Management" with a blue title bar. At the top, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tab labeled "Balance Units". The main area contains a table with three columns: "Name", "Change User", and "Change Date". The table lists five items: "Bad Pin", "Cash", "Days to wallet expiry", "Notifications", and "Time". Each item has "SU" as the change user and a timestamp as the change date. At the bottom of the window are four buttons: "New", "Edit", "Delete", and "Close".

Name	Change User	Change Date
Bad Pin	SU	2009-06-03 11:33:51
Cash	SU	2009-06-03 11:33:51
Days to wallet expiry	SU	2009-06-03 11:33:51
Notifications	SU	2009-10-21 09:47:21
Time	SU	2009-06-03 11:33:51

Balance Unit screen

Here is an example Balance Unit screen.

The screenshot shows a dialog box titled "Edit Balance Unit" with a blue title bar and a red close button. It has a "Help" button in the top right corner. The main area contains a "Name" label followed by a text input field containing the word "Cash". At the bottom are two buttons: "Save" and "Cancel".

Adding balance units

Follow these steps to add a new balance unit.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Balance Units tab, click New . Result: You see the <i>New Balance Unit screen</i> . (See example on page 226)
3	In the Name field, enter the name of the balance unit.
4	Click Save .

Editing balance units

Follow these steps to edit an existing balance unit.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Balance Units tab, select the balance unit you want to edit.
3	Click Edit . Result: You see the <i>Edit Balance Unit screen</i> (See example on page 226).
4	Edit the details as described in Adding balance units.
5	Click Save .

Deleting balance units

Follow these steps to delete an existing balance unit.

Warning: If you delete a balance unit which is associated with a balance type, your system may become unstable.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Balance Units tab, select the balance unit to delete.
3	Click Delete . Result: A Delete Confirmation screen appears, similar to that shown below. The type of balance unit shown in the screen will depend on the name of the unit you are deleting.
4	Click OK . Result: The record will be deleted from the database.

Balance Types

Introduction

The **Balance Types** tab on the Wallet Management screen allows you to view, add, and edit balance types.

Note: The units used for balance types can be either cash, time, data, or units.

Balance type categories

This table describes the different categories of wallet balance types.

Balance Type	Description
Chargeable Balance	Holds the balance types used to cover charges to subscribers. For example: General Cash. These are the only balances that can contribute to expenditure.
Cross Balance	Used to apply a cross balance discount to calls that have a cash charge.
Expenditure Balance	Used to accrue daily, weekly, monthly, annual, and total wallet expenditure. Expenditure is calculated based on charges applied to chargeable wallet balance types that have the 'Contributes to Expenditure Plans' flag set.
Fraud Balance	Holds fraud balance types. For example: Bad PIN balances.
Internal Balance	Used by the system for internal accounting purposes. Any balance type that is not chargeable, cross, expenditure, or fraud should be set to internal.
Quota Balance	Used to accrue data quotas. As part of a multi-tariff rating definition, it can then be used to track, and limit, the use of another charging balance cascade.

Cross balance types

The cross balances are collected into cross balance type cascades. Charges against the subscriber's wallet also debit the cross balances in the cross balance cascade. As each cross balance reaches zero, the debit passes to the next cross balance. The discount which applies is the discount configured for the cross balance which is highest in the cross balance cascade and has a positive balance.

Each cross balance type cascade applies to the CLI-DNs which include it in their configuration.

Charges from CLI-DNs are cumulative. For more information about cross balance type cascades, see *Cross Balance Type Cascades* (on page 393). For more information about CLI-DNs, see *CLI-DN* (on page 348).

Expenditure balance types

Expenditure balance types can have one of the following expenditure types:

- Daily
- Weekly
- Monthly
- Yearly
- Wallet

Monthly, yearly, and wallet are always installed, but daily and weekly are only available if you have the Promotion Manager license.

All other balance types must have the **Expenditure Type** field set to `None`. Expenditure is updated by expenditure against chargeable balances which:

- Have the 'Contributes to Expenditure Plans' flag set to 'Y'
- Are included in an expenditure plan which is included in a CLI-DN or named event

Expenditure balance types are also used as a basis for calculating promotions. For more information about promotions, see *Promotion Manager User's Guide*.

Expenditure expiry dates

The expiry date for an expenditure balance is first set when the wallet is activated and then reset when the balance expires. The date set will depend on the expenditure type and the date basis used.

The date basis determines which day of the month and month of the year is assigned to the balance. The options are:

- Balance creation date (default)
- Fixed date
- Wallet activation date
- Wallet expiry date

The expenditure type determines the period used to extend the expiry date. When the expenditure type is:

- Daily, the expiry date will be extended by one day
- Weekly, the expiry date will be extended by seven days
- Monthly, the expiry date will be extended by one month
- Yearly, the expiry date will be extended by one year
- Wallet, the expiry date will be extended to match the current expiry date for the wallet

Example 1

If you set the expiry date calculation basis to 'Fixed Date' for a monthly expenditure balance type, then the specified day of the month will be used to extend the expiry date.

Example 2

If you set the expiry date calculation basis to 'Wallet Activation Date' for a yearly expenditure balance type, then the day and month of the year the wallet was activated will be used to extend the expiry date.

Distributed wallet balances

Subscribers can have wallet balances distributed across separate charging and tracking domains. If the subscriber's charging domain is a Diameter domain type, then all chargeable balance types will need to be updated externally. Only balance types with the following balance type categories will be available through the Edit Subscriber screen:

- Expenditure Balance
- Fraud Balance

Maximum balances

You can set a maximum balance value for a balance type. If set, then this value may not be exceeded when a wallet is recharged or updated.

When applying a wallet recharge or update, the maximum balance value will be evaluated against currently available balances only. Any offset balances defined for the wallet will not be included in the total balance value.

Note: This functionality is applicable to prepaid balance types only.

Maximum balance policy

You can specify the policy to associate with the maximum balance value. This table describes the available policy options.

Policy	Description
Limit Additional Credits	A wallet recharge or wallet update will be restricted to the maximum balance value configured for the balance type for all applicable balances. Any unused balance values will be recorded in the EXCEEDED_BALANCE_TYPES and EXCEEDED_VALUES tags in the resulting VWS EDR.
Reject Credits Over	The default option. You will not be able to apply a wallet recharge or update which would exceed the maximum value configured for any of the balance types in the wallet. This will result in failure and no balances will be updated or recharged. The balance types causing the failure will be recorded in the FAILED_BALANCE_TYPES tag in the resulting VWS EDR.

Quota Notifications

You can define quota notifications that will be sent to users when their balance breaches a configured threshold.

On the **Quota Notifications** tab, the following fields are displayed:

- Quota Notification 1
- Notification
- Threshold (%)

The **Quota Notifications** tab enables you to define up to three quota notifications per service provider. For each quota notification, you define the notification to send and the threshold value.

Thresholds are a percentage of the used quota that is in the Quota Tag Set profile fields. When a subscriber's balance breaches a quota of the specified threshold, the defined notification is sent.

For example, if the quota retrieved from the Quota Tag Set Profile field is 50% and the threshold value is 1000 (£10.00), the notification is sent when the subscriber's balance reaches 50% of the defined threshold value, £5.00.

The thresholds apply to all subscribers. However, they can be customized at the subscriber level by using the PI command to set the **Quota Value** and **Quota Threshold** profile fields.

See *CCS Provisioning Interface Commands* for more information about using PI commands to change subscriber profile fields.

Balance Types tab

Here is an example **Balance Types** tab.

Name	Unit	Default Type	Display to Spend Rate
General Cash	Cash	Yes	
Promotional Cash	Cash	No	
Bad Pin	Bad Pin	No	
Monthly Exp	Cash	No	
Yearly Exp	Cash	No	
Free SMS	Notifications	No	
Last expiry offset	Days to wallet ex...	No	
Units	Days to wallet ex...	No	
Bonus	Cash	No	
Daily Expenditure	Cash	No	
Additional time	Time	No	
General Time	Time	No	
Vince No Max Balance Time	Time	No	
Other Cash	Cash	No	
Vince Max Balance Cash	Cash	No	3.0
Vince Max Balance Time	Time	No	
Vince Max Balance Unit	Days to wallet ex...	No	
Promotion exp 1	Cash	No	
Loyalty expenditure	Cash	No	
_pr_NedC	State	No	

Balance Types help

For help with a new Balance Type screen, see Adding balance types.

For help with editing an existing Balance Type screen, see *Editing balance types* (on page 239).

Balance Type screen

The New Balance Type and Edit Balance Type screens contain tabs which enable you to configure:

- Balance Type Details
- Balance Type Announcements
- Quota Notifications

Balance Type Details tab

Here is an example **Balance Type Details** tab on the Edit Balance Type Screen.

The screenshot shows a window titled "New Balance Type Screen" with a "Help" button. It has three tabs: "Balance Type Details" (selected), "Balance Type Announcements", and "Quota Notifications". The "Balance Type Details" tab contains the following fields and controls:

- Name:** A text input field.
- Unit:** A dropdown menu set to "Cash".
- Default Type:** A dropdown menu set to "No".
- Display to Spend Ratio:** A text input field.
- Exclude from Creation:** A checkbox.
- Play Announcement if Zero Balance:** A checkbox.
- Category:** A dropdown menu set to "Chargeable Balance".
- Primary Quota Tag Set:** A dropdown menu set to "Quota Tag Set 1".
- Secondary Quota Tag Set:** A dropdown menu set to "Quota Tag Set 1".
- Allow Credit:** A checkbox.
- Expenditure Type:** A dropdown menu set to "None".
- Contributes to Expenditure Plans:** A checkbox.
- Include in Reward Notification:** A checkbox.
- Re-create Bucket on Expiry:** A checkbox.
- Delete After Last Bucket Expiry:** A checkbox.
- Cross Balance Type Discount %:** A text input field.
- Max Balance:** A section containing:
 - Cash \$:** A text input field with "0.00".
 - Policy:** A dropdown menu set to "Reject Credits Over".
- Expiry Date Calculation:** A section containing:
 - Based On:** A dropdown menu set to "Balance Creation Date".
 - Fixed Date:** A date picker.

At the bottom right are "Save" and "Cancel" buttons.

Balance Type Details fields

This table describes the function of each field on the **Balance Type Details** tab.

Field	Description
Name	Enter the name of the balance type. This field is required.
Unit	The balance unit associated with this balance type. The drop-down list displays all available balance units. Note: For more information about configuring balance units, see <i>Balance Units</i> (on page 225).
Default Type	Indicates if the unit selected in the Unit field is the default cash balance type. Tip: Only one balance type in CCS should be set as the default type.
Display to Spend Ratio	The ratio value applied to this balance type. This increases the value of this balance type by the entered value when it is used within a rating solution. Notes:

Field	Description
	- Valid range is 0 to 9.99. The default value is 1.00. - This value can only be entered when the <code>expenditure type</code> is set to <code>None</code>.
Delete After Last Bucket Expiry	Select this check box to delete this balance type when the last bucket expires. Note: You may not set this option for fraud balances or the default balance type (normally the General Cash balance type).
Exclude from Creation	Select this check box to exclude this balance type from all new wallets when they are created. Deselecting this check box adds this balance type to all newly created wallets.
Play Announcement if Zero Balance	Select this check box to play an announcement to the caller when the caller's balance is zero. Tip: This configuration option is used by feature nodes that inform a subscribers about their balances.
Category	Indicates if the balance type is: - Chargeable - Cross - Expenditure - Fraud - Internal - Quota For more information about balance type categories, see <i>Balance type categories</i> (on page 228). Notes: - The <code>Quota Balance</code> option is available only to users with Quota Balances SMS permission. - When the quota balance is selected, the Primary Quota tag Set and Secondary Quota Tag Set fields and the Quota Notifications tab become available.
Primary Quota Tag Set	Select the quota limit value for the primary wallet. Note: This is available when <code>category</code> is set to <code>Quota Balances</code>.
Secondary Quota Tag Set	Select the quota limit value for secondary wallet.
Allow Credit	Select this check box if this balance type can have a credit limit. Credit limits are configured in the Prepaid Charging, Subscriber Management, Wallets screen.
Expenditure Type	If <code>Category</code> is set to Expenditure Balance, set this field to how frequently the balance is reset to zero. Notes: - If <code>Category</code> is set to Expenditure Balance, this field is required. - If this balance type is used in a reward that has the Reset Counter field selected, the period may be overridden.

Field	Description
Contributes to Expenditure Plans	Select this check box if charges against balances of this type can increase expenditure balances. Notes: - To contribute to the expenditure balance, the charging mechanism (CLI-DN or named event) must specify an expenditure plan. The expenditure balances in the expenditure plan will be increased. - This check box is available for only if Category is set to Chargeable Balances.
Include in Reward Notification	Selecting this check box indicates that this balance type will be included in SMS notifications. Note: This check box is available for only if Category is set to Chargeable Balances.
Re-create Bucket on Expiry	Select this check box to recreate a bucket belonging to this balance type on expiry. Note: This check box is enabled only if Category is set to Expenditure Balance.
Delete After Last Bucket Expiry	Select this check box to delete balances of this type when the last bucket expires. Note: This check box is not enabled for fraud balances or the default balance types (the general cash balance type).
Cross Balance Type Discount %	The discount percentage to be applied for a cross balance type. Notes: - Valid range is 0 to 100.0000. - This discount will be applied to voice calls where the rating solution includes this cross balance type in a cross balance type cascade.
Max Balance	(Optional) sets the maximum value a balance of this type may have. May be set for these balance categories: - Balance Chargeable - Balance Cross - Balance Fraud In the cash field, type the required value in the units of the balance type and select the Policy to use from the drop down list. Notes: - For more information on maximum balances, see <i>Maximum balances</i> (on page 229). - This field is available to help prevent fraud, and therefore recharges and wallet updates that would take the balance over the configured maximum may be rejected depending on the policy selected.
Expiry Date Calculation	Base the balance type expiry date for tracker balances on one of the following: - Fixed Date - Balance Creation Date - Wallet Expiry Date - Wallet Activation Date

Field	Description
	If you select <code>Fixed Date</code> , you must select the date using the date selector.

Balance Type Announcements tab

Here is an example **Balance Type Announcements** tab on the Edit Balance Type Screen.

The screenshot shows the 'Edit Balance Type Screen' window. At the top, there's a title bar with the text 'Edit Balance Type Screen' and standard window controls. Below the title bar, there's a 'Name' field containing the text 'Data' and a 'Help' button. The main area is titled 'Balance Type Announcements' and contains several rows of fields. Each row has a label and a dropdown menu. The labels are: 'Expiry Announcement Set', 'Expiry Announcement Entry', 'Single Day Expiry Announcement Set', 'Single Day Expiry Announcement Entry', 'Positive Announcement Set', 'Positive Announcement Entry', 'Negative/No Credit Announcement Set', and 'Negative/No Credit Announcement Entry'. The dropdown menus for the 'Set' fields are currently set to 'No Announcement'. Below these fields, there are five tabs: 'Currency One', 'Currency Two', 'Positive Ann', 'Negative Ann', and 'Change User'. At the bottom of the window, there are buttons for 'New', 'Edit', 'Delete', 'Save', and 'Cancel'.

Balance Type Announcements fields

This table describes the function of each field on the **Balance Type Announcements** tab.

Field	Description
Name	Name of the balance type. This field is required and must be the same as for the Balance Type Details tab.

Field	Description
Expiry Announcement Set	The announcement set to play from when the subscriber's balance expires.
Expiry Announcement Entry	The announcement entry to play to the subscriber if their balance expires.
Single Day Expiry Announcement Set	The announcement set to play from when the subscriber's balance is due to expire in a day.
Single Day Expiry Announcement Entry	The announcement entry to play to the subscriber if their balance is due to expire in a day.
Positive Announcement Set	The announcement set to play from if the subscriber's non-cash balance is positive. Note: This field cannot be set if <code>Cash</code> is selected in the Unit field (Balance Type Details tab).
Positive Announcement Entry	The announcement entry to play to the subscriber if their non-cash balance is positive. Note: This field cannot be set if <code>Cash</code> is selected in the Unit field (Balance Type Details tab).
Negative/No Credit Announcement Set	The announcement set to play from if the subscriber's balance is negative or has no credit. Note: This field cannot be set if <code>Cash</code> is selected in the Unit field (Balance Type Details tab).
Negative/No Credit Announcement Entry	The announcement entry to play to the subscriber if their balance is negative or has no credit. Note: This field cannot be set if <code>Cash</code> is selected in the Unit field (Balance Type Details tab).

Quota Notifications tab

Here is an example **Quota Notifications** tab on the Edit Balance Type Screen.

The screenshot shows the 'Edit Balance Type Screen' with the 'Quota Notifications' tab selected. The 'Name' field is set to 'Data'. There are three notification settings, each with a 'Notification' dropdown and a 'Threshold (%)' text field. The 'Save' and 'Cancel' buttons are at the bottom right.

Quota Notifications fields

This table describes the function of each field.

Field	Description
Name	Name of the balance type.
Notification	Select the notification to send to the subscriber from the list.
Threshold (%)	The threshold at which a notification is sent to the subscriber. A maximum of three thresholds can be set. Note: Thresholds are the percent of the used quota in the profile location selected in the Primary Quota Tag Set and Secondary Quota Tag Set fields. The Threshold field gets enabled when you select the notification to send the subscriber.

Adding balance types

Follow these steps to add a new balance type.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Balance Types tab, click New . Result: You see the New Balance Type Screen, Balance Type Details tab (See example on page 232).
3	Enter detail data in the available fields on this tab to configure this record. For more information about the fields on this tab, see <i>Balance Type Details fields</i> (on page 232). Note: Some fields are unavailable depending on selections in other fields on this tab.
4	Select the Balance Type Announcements tab.
5	Configure the announcements from the available drop down lists on this tab. For more information about the fields on this tab, see <i>Balance Type Announcements fields</i> (on page 235). Note: Depending on the Unit selection (on Balance Type Details tab), some of these fields will be unavailable.
6	Click New to add, edit and delete a currency to announcement maps. See <i>Currency to Announcement Maps</i> (on page 239). Tip: The New button will be available when the Unit is Cash (Balance Type Details tab).
7	Select the Quota Notifications tab (See example on page 237). Note: This tab is only available when Category is set to Quota Balance on the Balance Type Details tab. For more information about the fields on this tab, see <i>Quota Notifications fields</i> (on page 237).
8	For each quota notification, specify the quota notification thresholds by doing the following: - From the Notifications list, select the notification to send. - In the Threshold % field, enter the threshold value. Note: These notifications are sent to the subscriber when the thresholds set here have been breached. The thresholds are the percent of the used quota in the profile location selected in the Primary Quota Tag Set field and Secondary Quota Tag Set field. Tip: When saved, the quota notification sets are sorted largest to smallest, so when adding a threshold value, any of the sets can be used. However the notifications are sent in ascending percentage order. For example; thresholds for 60, 30 and 90 percent are set in that order, after saving, the list will be in 90, 60 and 30 order, but the first notification is sent after 30% of quota has been used, a second when 60% and a third after 90%.
9	Click Save .

Editing balance types

Follow these steps to edit an existing balance type.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Balance Types tab, select the balance type to edit from the table.
3	Perform one of the following: - Click Edit - Double-click on the record Result: You see the Edit Balance Type Screen.
4	Edit the fields with the required changes on the Balance Type Details tab. For information about the available fields, see <i>Balance Type Details fields</i> (on page 232).
5	Edit the fields with the required changes on the Balance Type Announcements tab. For information about the available fields, see <i>Balance Type Announcements fields</i> (on page 235).
6	If the balance unit is <i>Cash</i> , you can add, edit and delete a currency to announcement map for Positive and Negative/No Credit announcements. See <i>Currency to Announcement Maps</i> (on page 239).
7	If the Category of the balance type is <i>Quota Balance</i> , you can configure notifications for the quota on the Quota Notifications tab (See example on page 237). For information about the available fields, see <i>Quota Notifications fields</i> (on page 237).
8	Click Save .

Deleting balance types

To ensure ongoing stability between CCS and the VWS, the delete function for balance types is not available.

Currency to Announcement Maps

Introduction

As part of setting up a balance type, you can configure currency to announcement maps. Announcements are used in the Cumulative Balances feature node.

Currency to Announcement Mapping screen

Here is an example Currency to Announcement Mapping screen.

Adding a currency to announcement map

Follow these steps to add a currency to announcement map for a cash unit balance type.

Step	Action
1	Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of <i>Editing balance types</i> (on page 239).
2	Click New . Result: You see the <i>Currency to Announcement Mapping screen</i> (See example on page 240).
3	From the Currency One drop down box, select the primary currency this balance type will use.
4	If this service provider has a second currency configured, select the second currency from the Currency Two drop down box.
5	From the Positive Announcement Set drop down box, select the announcement set which contains the announcement entry which should be played to the subscriber if their balance is positive.
6	From the Positive Announcement drop down box, select the announcement entry which should be played to the subscriber if their balance is positive.
7	From the Negative Announcement Set drop down box, select the announcement set which contains the announcement entry which should be played to the subscriber if their balance is negative.
8	From the Negative Announcement drop down box, select the announcement entry which should be played to the subscriber if their balance is negative.
9	Click Save to save the changes to the database and return to the Balance Type screen. The mapping will appear in the table.

Editing a currency to announcement map

Follow these steps to edit a currency to announcement map for a cash unit balance type.

Step	Action
1	Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of <i>Editing balance types</i> (on page 239).
2	Select a mapping from the table and click Edit . Result: You see the <i>Currency to Announcement Mapping screen</i> (See example on page 240).
3	Edit the details, as described in Adding a currency to announcement map.
4	Click Save .

Deleting a currency to announcement map

Follow these steps to delete a currency to announcement map for a cash unit balance type.

Step	Action
1	Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of <i>Editing balance types</i> (on page 239).
2	Select a mapping from the table and click Delete . Result: You see the Delete Confirmation prompt.
3	Click OK to remove the mapping and return to the Balance Type screen.

Balance Type Translations

Introduction

The **Balance Type Translations** tab lets you view, add, edit and remove translations of balance types. All SMS Notifications which include balance amounts use these translations. Short messages which use this method of displaying balances include:

- Short messages generated by the Call Info Text Message feature node
- Reward notification short messages
- Recharge confirmation short messages.

Notes:

- If your system lets you specify time costs, then you can define translations for time balance messages. The time balances are displayed in both seconds and in minutes and seconds. This functionality is only available if you have the appropriate license.
- If no translations of a balance type are provided here for a language, no references to that balance type will be displayed in any short message generated in that language.

Message values

Cash balances

Cash balances in a notification have this format:

[Translated Balance Type Name] [Currency Code][Wallet Balance] [Separator]
where

- [Translated Balance Type Name] is entered in the **Translated Name** field
- [Currency Code] is the default currency's currency code
- [Wallet Balance] is the subscriber's currency wallet balance
- [Separator] is the character, entered in the **Separator** field, used to separate the main units of the balance value from its sub units.

Example: If the translated name is 'Gen' and the separator is '.', then the translated short message will be:

```
"Your account balance is Gen PLN400.00"
```

Non cash balance messages

A non cash balance notification has this format:

```
[Translated Balance Type Name] [Wallet Balance]
```

Where:

- [Translated Balance Type Name] is entered in the **Translated Name** field
- [Wallet Balance] is the subscriber's balance in the appropriate units

Example: If the translated name is 'Time', and the balance in seconds is 300, then the short message will be:

```
"Your Time balance is 300 seconds"
```


Balance Type Translations tab

Here is an example **Balance Type Translations** tab.

Service Provider: Boss Help

Balance Type Translations

Single Balance C...	Dual Balance Cur...	Language	Default Name	Translated M
Great Britain, Poun...	Great Britain, Poun...	English	General Cash	Gen Bal
Afghanistan, Afgha...	Afghanistan, Afgha...	English	Promotional Cash	PROMO
Great Britain, Poun...	Great Britain, Poun...	English	Promotional Cash	Promo Bal

New Edit Delete Close

Balance type translations fields

This table describes the balance-type translation fields.

Field	Description
Language	The language the short message is being translated to. This field cannot be changed after the record is first saved. This list is populated by the Language tab on the ACS Tools screen. For more information about configuring languages, see <i>ACS User's Guide</i>.

Field	Description																							
Balance Type	The balance type this translation will be for. This list is populated by the records configured in the Balance Types (on page 227) tab. This field cannot be changed after the record is first saved. Tip: You can create only one balance-type translation for each language and balance-type combination.																							
Single Balance Currency Type	If required, you can select a different single balance currency type to use for the balance type. Note: This field is available only if the Balance Type field is set to a balance type that has a unit of cash.																							
Dual Balance Currency Type	If required, you can select a different dual-balance currency type to use for the balance type. Note: This field is available only if the Balance Type field is set to a balance type that has a unit of cash.																							
Translated Name	The translated balance-type name to send to the subscriber in short messages. If nothing is entered in this field, this part of the message will not be sent. Tip: The maximum number of characters allowed is 20.																							
Single Format for Balance	The structure of the data to send to the subscriber in short messages for a single (or first) currency. - For balance types with a cash unit, the structure of the data to send to the subscriber in short messages when the balance is in one currency. The subscriber's actual details are inserted into the variables. The variables must include the following, in order: %s %d %c %02d Where:<table><tr><th>Variable</th><th>Replaced by...</th><th>Example</th></tr><tr><td>%s</td><td>Currency Code</td><td>AUD</td></tr><tr><td>%d</td><td>Main unit of the currency</td><td>\$</td></tr><tr><td>%c</td><td>Separator</td><td>.</td></tr><tr><td>%02d</td><td>Subunit of the currency</td><td>c</td></tr></table> - For balance types with non-cash units (for example, time balances are in seconds), you may only include the %d variable in the text in the Single Format for Balance field.<table><tr><th>For balance type unit</th><th>%d variable is replaced by</th></tr><tr><td>Time</td><td>Time balance in seconds</td></tr><tr><td>SMS</td><td>Number of named events</td></tr><tr><td>Bad PIN</td><td>Number of bad PIN attempts during the last 24 hours.</td></tr></table>	Variable	Replaced by...	Example	%s	Currency Code	AUD	%d	Main unit of the currency	\$	%c	Separator	.	%02d	Subunit of the currency	c	For balance type unit	%d variable is replaced by	Time	Time balance in seconds	SMS	Number of named events	Bad PIN	Number of bad PIN attempts during the last 24 hours.
Variable	Replaced by...	Example																						
%s	Currency Code	AUD																						
%d	Main unit of the currency	\$																						
%c	Separator	.																						
%02d	Subunit of the currency	c																						
For balance type unit	%d variable is replaced by																							
Time	Time balance in seconds																							
SMS	Number of named events																							
Bad PIN	Number of bad PIN attempts during the last 24 hours.																							
Dual Format for Balance	The structure of the data to send to the subscriber in short messages for the second currency. Note: This field is not available for non-cash balance types or balance types																							

Field	Description
	that have only one currency.
Separator	The character to use to separate the different balances when put together in an SMS Notification. Example: If you enter a comma (,) and there are two balances, General Cash and Promotional Cash, the short message sent in response to a balance inquiry looks like this: General Cash balance \$20.00 , Promotional Cash balance \$10.00 .
Balance Expiry	The balance-expiry text. Warning: You must include '%d' in the text. This variable will be converted to the number of days remaining until the balance expires.
No Balance Expiry	The text to output for balances that have no expiry date.

Balance Type Translation screen

Here is an example Balance Type Translation screen.

Adding balance type translations

Follow these steps to add a new balance type translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Balance Type Translations tab, click New . Result: You see the New <i>Balance Type Translation</i> screen (See example on page 245).
3	Enter data in the fields to configure this record. For more information about these fields, see <i>Balance type translations fields</i> (on page 243). Note: The Single Balance Currency Type and Dual Balance Currency Type fields and the Dual Format for Balance field are only available if you select a balance type which has a balance

Step	Action
	unit of cash from the Balance Type drop down list.
4	Click Save .

Editing balance type translations

Follow these steps to edit an existing balance type translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Balance Type Translations tab, select the balance type translation to edit.
3	Click Edit . Result: You see the Edit <i>Balance Type Translation</i> screen (See example on page 245).
4	Edit the fields with the changes to make. For more information about the fields on this screen, see <i>Balance type translations fields</i> (on page 243). Note: The Language and Balance Type fields cannot be edited.
5	Click Save .

Deleting balance type translations

Follow these steps to delete an existing balance type translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Balance Type Translations tab, select the balance type translation to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database and return to the Balance Type Translations tab.

Rewards

Introduction

The **Rewards** tab lets you view, add, edit and remove rewards.

You use rewards to:

- Configure product type changes based on the amount of activity a subscriber did in a defined period
- Specify the message to output to a subscriber when they receive a reward
- Grant additional cash or equivalent bonuses

Any combination of product type change and cash reward can be defined, including:

- Cash rewards only (where there is no product type change)
- Product type changes only (where there is no associated cash reward)
- Both cash rewards and product type rewards

Multiple balance type

You can add more than one balance type to a reward type. When a reward is triggered, all balance types associated with the reward type are recharged. This can include both monetary balance types (such as general cash or promotional cash) and non-monetary balance types (such as free SMS or time).

More than one entry can be added for the same balance type, with different details for each entry, including:

- Balance values and balance policies
- Unique expiry dates and extension policies
- Balance availability dates that will be applied when the selected balance type entry is recharged

Offset date rules

Here are the rules which apply when setting a balance offset date.

- 1 You may only set balance offset dates for the following balance type categories:
 - Chargeable
 - Cross balance discount
- 2 If you set the balance offset date to a specific date then the balance expiry policy options will be disabled.
- 3 If you set the balance offset date to a specified number of days or months, then the balance offset date will be determined by extending the current system date by the configured value.
- 4 If you set the balance offset date (either as a specific date or as a number of days/months) then you can also set a balance expiry date. The balance expiry date will be calculated from the specified balance offset date.

Notifications

Notifications can be sent when a reward is triggered. To send a notification when the subscriber's account is close to triggering a reward, specify an additional reward with no value, which includes the notification.

Example: You have a reward which is triggered when the subscriber has used 100 short messages. You want to send subscribers who have sent 90 short messages a notification which will encourage them to send 10 more (for example: "You have nearly reached the bonus SMS level.").

Create a new reward which is triggered when a subscriber has used 90 short messages. The new reward will not change any balances, but it will send out the message as a notification.

Triggering rewards

Rewards are triggered on VWS Voucher and Wallet Servers for one of the following:

- The reward type balance type threshold is reached.
- The relevant expenditure balance expires.

Expiration examples

This table provides examples of when a reward is triggered.

Period	Expiration	Example
Daily	Midnight same day	Activated @ 1:30 pm. Expires midnight same day.

Period	Expiration	Example
Weekly	Midnight	Activated @ 1:30 pm Tuesday. Expires midnight following Monday.
Monthly	Midnight following month	Activated @ 1:30 pm 5th of the month. Expires midnight of 4th of the following month.
Yearly	Midnight following year	Activated @ 1:30 pm 5th March. Expires midnight 4th March following year.
Wallet	24 hours before the wallet expires @ 1:30pm 5th March.	Expires 1:30pm 4th March If less than 24 hours exist before wallet expiry, wallet will not be recreated.

Note: Unlike other expenditure balance types, the wallet expenditure balance type cannot be used again on expiry. Once the wallet expires, the system will not recreate or add to the wallet expenditure balance, until the wallet expiry date/time is extended to be more than 24 hours in the future. The wallet expenditure balance is recreated and will be used once more after the wallet expiry extension.

Rewards tab

Here is an example **Rewards** tab.

Service Provider: Boss Help

Rewards

Reward Type	Current Product	Start Amount	Reward Product	Reward Description
Monthly Exp	Basic PT	10.00	Basic PT	Basic Reward
Reward exp 1	GOLD	100.00	GOLD	Reward credit 1 exp
Loyalty expenditure	Basic PT	50.00	Basic PT	Loyalty expenditure (bronze)

New Edit Delete Close

Rewards fields

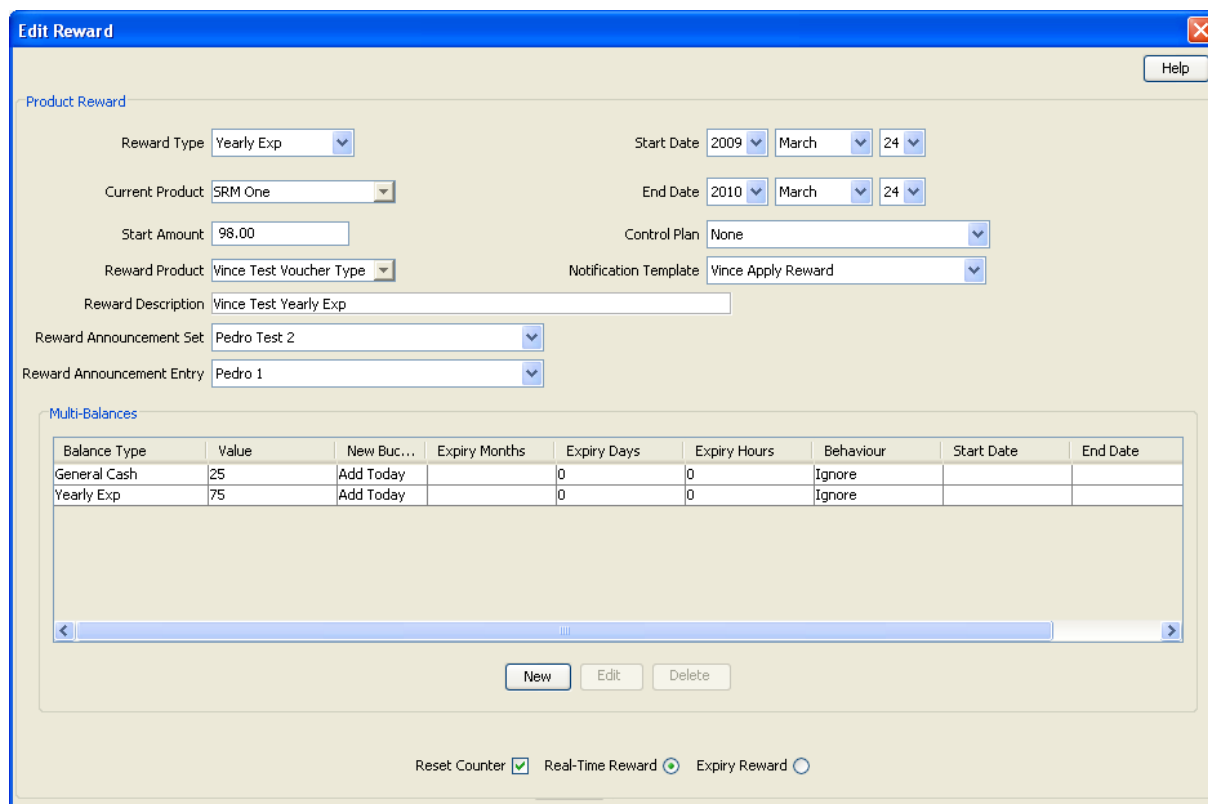
This table describes the function of each field.

Field	Description
Reward Type	The expenditure balance type where the activity qualifying the subscriber for the reward is recorded.
Current Product	The product type from which the subscriber's account is being transferred. Tip: Selecting <code>ALL PRODUCTS</code> from the drop down list will set this reward to apply to any product type.

Field	Description
Start Amount	The amount which will trigger the change of product type. Warning: Rewards must be defined for all monthly totals within a product type. For example, if you want to have a reward which is triggered when a subscriber has a total of \$50 of activity in a month/year, you will also need to configure a reward for subscribers who have a smaller monthly total and the same current product.
Reward Product	The product type to which the subscriber's account is being transferred. Note: Selecting <code>NO PRODUCT</code> from the drop down list means the subscriber's account will not be transferred.
Reward Description	A brief description of the reward.
Start Date	The start date of the period during which the subscriber's expenditure will be tracked for earning this reward.
End Date	The end date of the period during which the subscriber's expenditure will be tracked for earning this reward.
Notification Template	The notification sent to the subscriber when they receive a reward. Note: For information about setting up notifications, see <i>ACS User's Guide</i>.
Reset Counter	Whether to reset the expenditure balance type specified in the Reward Type field when the reward is triggered. Note: This check box is only available if you have selected the Real-Time Reward option.
Real-Time Reward	Indicates that the reward is applied as soon as the expenditure threshold is reached.
Control Plan	Defines the control plan that will be used to apply the reward for subscribers who are on a non VWS charging domain. Note: The control plan must contain the Voucher Type Recharge node.
Reward Announcement	Defines the announcement to play when the reward is selected using the Play Reward node.

Reward screen

Here is an example Reward screen.



Edit Reward

Product Reward

Reward Type: Yearly Exp Start Date: 2009 March 24

Current Product: SRM One End Date: 2010 March 24

Start Amount: 98.00 Control Plan: None

Reward Product: Vince Test Voucher Type Notification Template: Vince Apply Reward

Reward Description: Vince Test Yearly Exp

Reward Announcement Set: Pedro Test 2

Reward Announcement Entry: Pedro 1

Multi-Balances

Balance Type	Value	New Buc...	Expiry Months	Expiry Days	Expiry Hours	Behaviour	Start Date	End Date
General Cash	25	Add Today		0	0	Ignore		
Yearly Exp	75	Add Today		0	0	Ignore		

New Edit Delete

Reset Counter ☒ Real-Time Reward ☒ Expiry Reward ☐

Adding rewards

Follow these steps to add a new reward.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Rewards tab, click New . Result: You see the <i>New Reward screen</i> (See example on page 251).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see Rewards fields.
4	Click Save .

Editing rewards

Follow these steps to edit an existing reward.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Rewards tab, select the reward to edit.
3	Click Edit . Result: You see the <i>Edit Reward screen</i> (See example on page 251).

Step	Action
4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see Rewards fields.
5	Click Save .

Deleting rewards

Follow these steps to delete an existing reward.

Warning: When you delete a reward, any associated freeform SMS messages are also deleted.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Rewards tab, select the reward to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database and return to the Rewards tab.

Multi-Balances fields

This table describes the function of each field.

Field	Description
Balance Type	The balance type you want the reward to apply to. This field is populated by the records on the <i>Balance Types</i> (on page 227) tab. Note: Any valid balance type can be selected. This includes non cash balance types, such as time.
Value	The reward amount for balances of the balance type selected in the Balance Type field.
Tax Plan	The tax plan associated with this voucher type. Note: For inclusive tax, the tax component will be removed before crediting the subscriber.
Balance Expiry Period	The period between when the reward is activated and when the balance will expire. Depending on the selection in the expiry period type options, enter one of: - Days and hours - Months Note: Month expiries set expiry dates measured in calendar months. If a bucket is created on the 31 st of the month, and the expiry will be on month which has 30 days or less, the expiry date is set for the 1 st of the month after. For example, a two-month bucket created on the 31 st of December will expire on the 1 st of March. Tip: The <code>expireAtMidnight</code> configuration option in <code>eserv.config</code> overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For further information about this configuration option, see <i>VWS Technical Guide</i> .
Expiry Period Type	The unit the balance expiry period is calculated in.

Field	Description
	Select either: - Hours - the balance expiry is calculated in days and hours. - Months - the balance expiry is calculated in months.
Applicable Start Date	Optional start date when balances of this type can be rewarded by rewards of this type. To activate this field, select the check box to the right of the field, then, in the date selection boxes, select the day, month and year for the start date.
Applicable End Date	Optional end date when balances of this type can no longer be rewarded using rewards of this type. To activate this field, select the check box to the right of the field, then, in the date selection boxes, select the day, month and year for the end date.
Offset Date	Optional offset date fields used to configure the offset date to apply when balances of this type are recharged. To activate these fields, select the check box to the right of the offset date fields area. To enter: A specific offset date Select the Date option and in the date selection boxes, select the required day, month and year. An offset date which is an extension to the current system date Select either the Days/Hours or the Months option. In the available field(s), type the required number of days and hours, or months by which the system date should be extended to create the offset date. Note: For details on the rules applying to offset dates, see <i>Offset date rules</i> (on page 247).
Missing Balance Policy	What to do, if this balance type does not already exist in the wallet when the reward is applied. Choose one of: - Allow - the system will create the balance type and apply the reward - Fail - the reward will fail - Ignore - the reward is applied, but the system will not create the balance type
Expiry Policy	How to apply the expiry period for this balance type when rewards of this type are applied. Choose: - Ignore - no change is made to the current expiry period - Extend - the current expiry period is extended by the specified days and hours - Extend From Today - the current expiry period to be extended the specified number of days and hours from today's date - Best - The system will select the best policy option for the subscriber depending on their particular circumstances
New Bucket	Whether to create a new bucket for the balance type when the reward is applied.
Replace Balance	Whether to replace the existing balance for the balance type with the new value when the reward is applied. Note: You can only set the replace balance option providing there are no overlapping reward balances for the same balance type with this option set.
Allowed Product	The product types which rewards of this type can apply to.

Field	Description
Types	Tip: An empty Allocated list means that the balance type can be rewarded for all product types.

Multi-Balance screen

Here is an example Multi-Balance screen.

Edit Multi-Balance

Help

Balance Type: 100 Free Minutes

Value: 0

Tax Plan: None

Balance Expiry Period: 0 Days 0 Hours

Expiry Period Type: ☒ Hours ☐ Months

Applicable Start Date: 2010 July 30 ☐ Enable

Applicable End Date: 2010 July 30 ☐ Enable

Offset Date: ☒ Date ☐ Days/Hours ☐ Months
 2010 July 30 ☐ Enable
 0 Days 0 Hours

Missing Balance Policy: ☐ Allow ☐ Fail ☒ Ignore

Expiry Policy: ☐ Best ☐ Extend ☐ Ignore ☒ From Today

Scenario: ☐ New Bucket ☐ Replace Balance

Allowed Product Types (none allocated means any allowed)

Available		Allocated
Prepaid	>>	
PostPaid	<<	
Lohit		
Lohit-Bill		
test		
delay		
HILLARY_BUNDLE		
Periodic Charge		

Save Cancel

Adding balance types to a reward

Follow these steps to add a balance type to the current reward type.

Note: To add multiple balance types to the reward type, repeat this process as required.

Step	Action
1	In the Multi-Balances area at the bottom of the New Reward screen or Edit Reward screen, click New . Result: You see the New <i>Multi-Balance screen</i> (See example on page 254).
2	Start to configure this record by entering data in the fields in the top of this screen. For more information about the fields on this screen, see Multi-Balances fields.
3	In the Allowed Product Types section select the product types for which the reward can be applied to this balance type. To: - Allocate a product type, select it in the Available list and click the '>>' button - Remove an allocated product type, select it in the Allocated list and click the '<<' button. Tip: An empty Allocated list means that the balance type can be rewarded for all product types.
4	Click Save . Result: The balance type details are saved, and you return to the Reward screen.

Editing balance types for a reward

Follow these steps to edit an existing balance type for the current reward type.

Step	Action
1	In the New Reward screen or Edit Reward screen, select the balance type record to edit in the Multi-Balances area.
2	Click Edit . Result: You see the Edit <i>Multi-Balance screen</i> (See example on page 254).
3	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see Multi-Balances fields.
4	If required, in the Allowed Product Types section select the product types for which this balance type can be rewarded. To: - Allocate a product type, select it in the Available list and click the '>>' button - Remove an allocated product type, select it in the Allocated list and click the '<<' button. Tip: An empty Allocated list means that the balance type can be rewarded for all product types.
5	Click Save . Result: The modified balance type record is saved, and you return to the Reward screen.

Deleting balance types for a reward

Follow these steps to delete an existing balance type from a reward.

Step	Action
1	In the New Reward screen or Edit Reward screen, select the balance type record to delete in the Multi-Balances area.
2	Click Delete . Result: You see the Delete Multi-Balance prompt.
3	Click Apply to delete the record from the database.

Reward Product Translations

Introduction

The **Reward Product Translations** tab lets you view, add, edit and remove the translations used by the Call Info Text Message feature node.

A translation is required for each language, source product and destination product. The reward translations are specified separately for each service provider.

Reward Product Translations tab

Here is an example Reward Product Translations tab.

The screenshot shows a window titled "Wallet Management" with a blue title bar. At the top, there is a "Service Provider" dropdown menu with "Boss" selected and a "Help" button. Below this is a tabbed interface with the "Reward Product Translations" tab selected. The tab contains a table with the following data:

Reward Type	Original Product	Reward Product	Language
Daily Cash	PT1	PT2	English

Below the table is a large empty area. At the bottom of the window, there are four buttons: "New", "Edit", "Delete", and "Close".

Reward Product Translation screen

Here is an example Reward Product Translation screen.

The screenshot shows a dialog box titled "Edit Reward Product Translation" with a blue title bar. It contains the following fields and values:

- Reward Type: Monthly Exp
- Original Product Type: Chris PT
- Reward Product Type: Chris PT
- Language: Arabic
- Translation: ChrisPT Trans

At the bottom, there are "Save" and "Cancel" buttons. A "Help" button is located in the top right corner.

Adding reward product translations

Follow these steps to add a new reward product translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Reward Product Translations tab, click New . Result: You see the <i>New Reward Product Translation screen</i> (See example on page 257).
3	From the Reward Type drop down list, select the balance type the reward applies to. Tip: The available reward types are a sub-set of the balance types that have been configured where the expenditure type is not <i>None</i> .
4	From the Original Product Type drop down box, select the subscriber's previous product type.
5	From the Reward Product Type drop down box, select the product type the subscriber is being transferred to. Tip: If an invalid product type transfer has been chosen, the instructions under the Translation field will indicate that an invalid original/reward combination was selected. The original and reward product types must match a current and reward product type pair in a reward.
6	From the Language drop down box, select the language the message sent to the subscriber should be in. This will be sent instead of the default text for this system.
7	In the Translation field, type the text which should be sent to the subscriber when their product type is changed as part of a reward. Tip: If the text entered in this field is invalid, the instructions under the Translation field will indicate that text entered is invalid.
8	Click Save .

Editing reward product translations

Follow these steps to edit an existing reward product translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Reward Product Translations tab, select the reward product translation to edit.
3	Click Edit . Result: You see the <i>Edit Reward Product Translation screen</i> (See example on page 257).
4	The Translation field is the only editable field. Tip: The details of the fields are described in <i>Adding reward product translations</i> (on page 258).
5	Click Save .

Deleting reward product translations

Follow these steps to delete an existing reward product translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Reward Product Translations tab, select the reward product translation to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database and return to the Reward Product Translations tab.

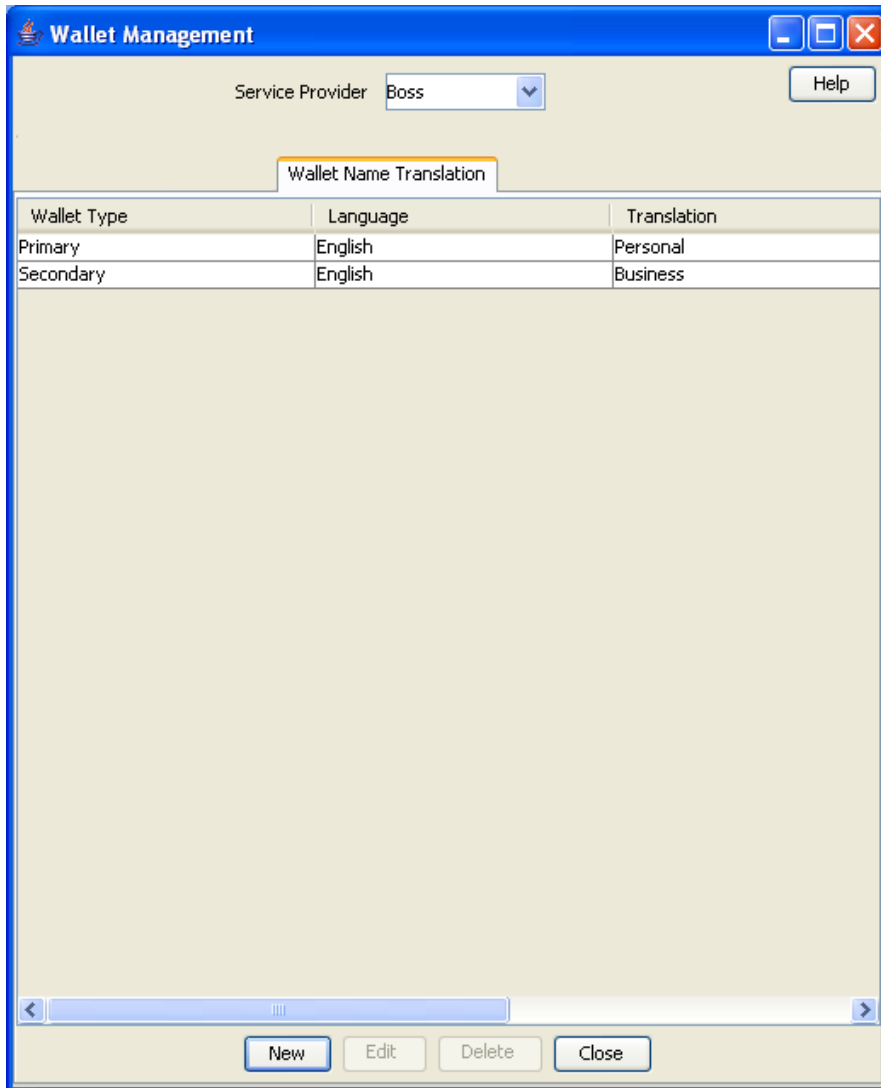
Wallet Name Translation

Introduction

The **Wallet Name Translation** tab lets you view, add, edit and remove translations of wallet type names to the subscriber's language for real-time wallet notifications. A translation is required for each wallet type and language. The wallet name translations are specified separately for each service provider.

Wallet Name Translation tab

Here is an example Wallet Name Translation tab.

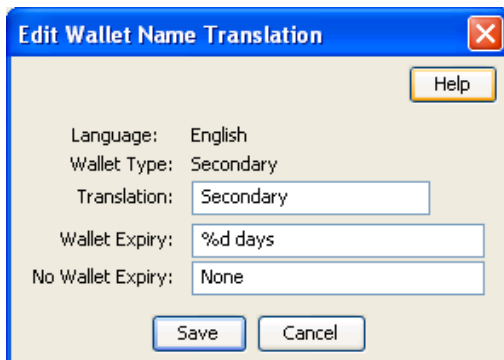


The screenshot shows the 'Wallet Management' application window. At the top, there is a 'Service Provider' dropdown menu set to 'Boss' and a 'Help' button. Below this is the 'Wallet Name Translation' tab. The tab contains a table with three columns: 'Wallet Type', 'Language', and 'Translation'. The table has two rows: 'Primary' with 'English' and 'Personal', and 'Secondary' with 'English' and 'Business'. Below the table is a large empty area. At the bottom of the window are buttons for 'New', 'Edit', 'Delete', and 'Close'.

Wallet Type	Language	Translation
Primary	English	Personal
Secondary	English	Business

Wallet Name Translation screen

Here is an example Wallet Name Translation screen.



The screenshot shows the 'Edit Wallet Name Translation' dialog box. It has a 'Help' button in the top right corner. The fields are: 'Language' set to 'English', 'Wallet Type' set to 'Secondary', 'Translation' set to 'Secondary', 'Wallet Expiry' set to '%d days', and 'No Wallet Expiry' set to 'None'. At the bottom are 'Save' and 'Cancel' buttons.

Language: English
Wallet Type: Secondary
Translation: Secondary
Wallet Expiry: %d days
No Wallet Expiry: None

Adding wallet name translations

Follow these steps to add a new translation for a wallet type name.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Wallet Name Translation tab, click New . Result: You see the <i>New Wallet Name Translation screen</i> (See example on page 260).
3	From the Language drop down box, select the language the wallet type name will be translated to.
4	From the Wallet Type drop down box, select the wallet type that will be translated.
5	In the Translation field, type the text which will be sent to the subscriber in the short message. This will be sent instead of the default text for this system. Tip: If there is a problem with the translation text, the instructions under this field will indicate one of the following: • A translation is required (because there is no text in the Translation field) • The translation is too long (because there are more than 12 characters in it) In the Wallet Expiry field, type in the balance expiry text. Warning: You must include '%d' in the text. This variable will be converted to the number of days remaining until the wallet expires. In the No Wallet Expiry field, type the text to output for wallets that have no expiry date.
6	Click Save .

Editing a wallet name translation

Follow these steps to edit an existing Wallet Name Translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Wallet Name Translation tab, select the wallet name translation to edit.
3	Click Edit . Result: You see the <i>Edit Wallet Name Translation screen</i> (See example on page 260).
4	Edit the details as described in <i>Adding wallet name translations</i> (on page 261). Note: The Language and Wallet Type fields are for reference only, they are not editable.
5	Click Save .

Deleting a wallet name translation

Follow these steps to delete an existing wallet name translation.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Wallet Name Translation tab, select the wallet name translation to delete.
3	Click Delete .

Step	Action
	Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database and return to the Wallet Name Translation tab.

Real-Time Wallet Notifications

Introduction

The **Real-Time Wallet Notifications** tab lets you configure when to trigger real-time notification messages for a subscriber, based on the following events:

- Wallet expired
- Wallet state changed
- Balance Expired
- Balance Charged
- Balance Recharged

For more information about how real-time wallet notifications are delivered, see *CCS Technical Guide*.

Tip: You choose which real-time wallet notifications to enable on the Product Type screens (**SMS > Services > Subscriber Management > Product Type** tab, then for a product type, **Real-Time Wallet Notification** option) see *Convergent Charging Controller Subscriber Management User's Guide*).

Real-Time Wallet Notifications tab

Here is an example Real-time Notifications tab.

Service Provider: Boss Help

Name	Threshold	Notification Type	Old State
Balance Expiry	0	Balance Expiry	
Balance Recharged	0	Recharging	
Low Balance	120	Balance Expiry	
Wallet Expiry		Wallet Expiry	
Wallet not used		Wallet State Change	Active

New Edit Delete Close

Real-Time Notifications fields

This table describes the function of each field.

Field	Description
Name	A unique name for the real-time notification message.
Notification Type	The type of event that triggers the notification.

Field	Description
Threshold	The total balance that triggers the notification. For charging notifications, the message is triggered when a balance that was above the threshold changes so it is equal to or below the threshold. For recharging notifications, the message is triggered when a balance that was below the threshold changes so it is equal to or above the threshold. Tip: For time thresholds, this value is in seconds. Note: This field is optional. If no value is entered, no threshold check is made and a notification is triggered on any charge or recharge event.
Above credit limit	Include the subscriber's credit limit with the threshold to determine notification triggering. Note: This check box is on the New and Edit Real-Time Notification screens and not on the tab table.
Excluding reservations	To determine notification triggering, exclude all current uncommitted reservations from the balance for comparison with the threshold. The default is to include all uncommitted reservations in the balance for comparison with the threshold. Note: This check box is on the New and Edit Real-Time Notification screens and not on the tab table.
Old State	Indicates the state a wallet must be changed from when triggering a <code>Wallet State Change</code> notification. Note: This option is only available if <code>Wallet State Change</code> is selected in the Notification Type field.
New State	Indicates the state a wallet must be changed to when triggering a <code>Wallet State Change</code> notification. Notes: • This option is only available if <code>Wallet State Change</code> is selected in the Notification Type field. • A notification is triggered only if the old and new states are different.
Balance Type	The balance type associated with the notification. Tip: This field applies to charging, recharging and balance expiry notifications.
DAP Operation	The name of the DAP operation to use to output the notification message. Choosing <code>No DAP</code> will only output a notification. Tip: This field is populated by the XML templates set up in the DAP application. For more information on templates, see <i>DAP User's Guide</i>.
Suppress DAP	Indicates whether DAP notifications should be suppressed for certain events. Individual subscribers can opt-out of receiving DAP notifications by having the value <code>true</code> in their profile at the drop-down tag selected here. Tip: If <code>Not Used</code> is selected the notifications will be sent in all cases.
Notification Template (SMS Template)	The name of the notification template to use to output a notification. Choosing <code>No SMS</code> will only send a DAP Notification. Tip: This field is populated by the notification templates set up in ACS. For

Field	Description
	more information, see <i>ACS User's Guide</i> .
Suppress Notification (Suppress SMS)	Indicates whether notifications should be suppressed. No notifications will be sent if this field is set to <code>true</code> . Tip: If <code>Not Used</code> is selected the notifications will be sent in all cases
Wallet Type	The wallet type associated with the notification. Options are: • Primary • Secondary
Reference	Reference

Trigger notification example

This example is for a charging notification.

If the:

- threshold is \$30
- actual balance is \$30
- credit limit is \$10, and
- an outstanding reservation for \$5

This table shows how the comparison value is computed for these values:

	Above credit limit	
Excluding reservations	No	Yes
No	Actual balance = \$30 Notification triggered (comparison = threshold)	Actual balance + Credit Limit \$30 + \$10 = \$40 No notification (comparison > threshold)
Yes	Actual balance - Reservations \$30 - \$5 = \$25 Notification triggered (comparison < threshold)	Actual balance - Reservations + Credit Limit \$30 - \$5 + \$10 = \$35 No notification (comparison > threshold)

Real-Time Wallet Notifications screen

Here is an example Real-Time Wallet Notifications screen.

Adding real-time wallet notifications

Follow these steps to add the configuration for a real-time wallet notification.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Real-Time Wallet Notifications tab, click New . Result: You see the <i>New Real-Time Wallet Notifications screen</i> (See example on page 266).
3	In the Name field enter a unique name for the real-time notification message.
4	From the Notification Type drop down box, select the type of notification to generate.
5	Fill in the fields, depending upon notification type selected: - For notification types Charging or Recharging, enter data as follows: Threshold field - the threshold for the notification. Above credit limit check box - select to use any credit limit with the threshold. Exclude reserved funds check box - select to exclude uncommitted reservations from the balance that is compared with the threshold value; leave clear to include uncommitted reservations with the balance. Balance Type drop down list - select the applicable balance type.
Tip: For time thresholds, the Threshold value is in milliseconds. - For notification type Wallet State Change, enter data in the Old State and New State drop down boxes. - For notification type Balance Expiry, select a record from the Balance Type drop down box.	

Step	Action
6	Configure the rest of this record by selecting the required option from the the remaining drop down lists on this screen. For more information about the fields on this screen, see <i>Real-Time Notifications fields</i> (on page 263).
7	Click Save . Warning: Real-time wallet notifications are not usable until they are associated with one or more product types. To use this new notification for a subscriber, the wallet product type for the subscriber must now be configured. To check which product type the wallet uses, see SMS > Services > Subscriber Management > Subscriber tab, then edit the required subscriber details, followed by the Wallets option. To configure the product types that may use this new real-time wallet notification see SMS > Services > Subscriber Management > Product Type tab, then for a product type, Real-Time Wallet Notification option, see <i>Real-Time Wallet Notifications</i> (on page 200).

Editing real-time wallet notifications

Follow these steps to edit an existing real-time wallet notification.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Real-Time Wallet Notifications tab, select the wallet notification to edit.
3	Click Edit . Result: You see the Edit <i>Real-Time Wallet Notifications screen</i> (See example on page 266).
4	Edit the fields with the required changes. For more information about the fields in this screen, see <i>Real-Time Notifications fields</i> (on page 263) and <i>Adding real-time wallet notifications</i> (on page 266).
5	Click Save .

Deleting real-time wallet notifications

Follow these steps to delete an existing real-time notification configuration.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Real-Time Wallet Notifications tab, select the real-time wallet notification to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: You see the Real-time Notifications confirmation message and the record is removed from the database.

Free Form Recharge

Introduction

The **Free Form Recharge** tab lets you recharge a subscriber's wallets. It can be used when the subscriber has experienced problems with either the voucher or credit card recharge.

Free Form Recharge tab

Here is an example **Free Form Recharge** tab.

The screenshot shows a software window titled "Wallet Management" with a standard Windows-style title bar (minimize, maximize, close buttons). Inside the window, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tabbed interface with the "Free Form Recharge" tab selected. The main area contains several input fields and radio buttons:

- Subscriber ID:** A text box containing "123456789".
- Wallet Type:** A section with two radio buttons: "Primary Wallet" (selected) and "Secondary Wallet".
- Balance Expiry Period:** Two text boxes for "Days" (containing "5") and "Hours" (containing "0").
- Wallet Expiry Period:** Two text boxes for "Days" (containing "15") and "Hours" (containing "0").
- Amount:** A text box containing "20.00".
- Reference:** A text box containing "Promotion failed to increase credit".
- Type Of Recharge:** A section with three radio buttons: "Free Form Recharge" (selected), "Credit Card Recharge", and "Voucher Recharge".

At the bottom of the form area are two buttons: "Recharge" and "Close".

Recharging Rules - Wallet Expiry Date

The following recharge rules apply to the wallet expiry date when performing a free form recharge.

The date is calculated by determining the greatest value of the following:

- Current date + period entered in screen
- Current wallet expiry date

If the wallet is in the pre-use period, the initial wallet expiry period is used to calculate the current wallet expiry date before the comparison of the above date.

The free form recharging rules differ in that they ignore the recharge minimum wallet expiry periods specified at product type level.

Note: Non-expiry wallets ignore the expiry periods.

A subscriber's wallet with a 'Pre-Use' or 'Dormant' state will have its status changed to 'Active'.

Recharging Rules - Balance Expiry Date

The following recharge rules apply to the balance expiry date when performing a free form recharge.

The date is calculated by calculating the greatest value of the following:

- Current date + period entered in screen.
- Current balance expiry date.

If the wallet is in pre-use, the initial balance expiry period is used to calculate the current balance expiry date before the comparison of the above date.

The free form recharging rules differ in that they ignore the recharge minimum balance expiry periods specified at product type level.

Note: Non-expiry wallets ignore the expiry periods.

A subscriber's wallet with a 'Pre-Use' or 'Dormant' state will have its status changed to 'Active'.

Completing free form recharges

Follow these steps to perform a free form recharge on a subscriber's wallet.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the Free Form Recharge tab, enter the Subscriber ID .
3	From the Wallet Type options, select one of the following: • Primary Wallet • Secondary Wallet.
4	In the Balance Expiry Period fields, enter the days and hours to be added to the subscriber's balance expiry period. Tip: The <code>expireAtMidnight</code> configuration option overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For more information about this configuration option, see the <i>VWS Technical Guide</i>.
5	In the Wallet Expiry Period fields, type the days and hours to be added to the wallet expiry period. Note: The <code>expireAtMidnight</code> configuration option overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For more information about this configuration option, see the <i>VWS Technical Guide</i>.
6	In the Amount field, enter the amount which will be added (or subtracted in the case of a negative value) to the wallet balance. Tip: The amount is in the system currency.
7	In the Reference field, enter the recharge reference ID. Tip: The recharge may include a bonus award if the reference matches a Bonus Type Component field.

Step	Action
8	From the Type Of Recharge options, select the type of recharge to be completed. Select one of the following: • Free Form Recharge to indicate a free form recharge will be performed (EDR type 8). • Credit Card Recharge to indicate a credit card recharge will be performed (EDR type 9) • Voucher Recharge to indicate the customer tried to perform voucher recharge (EDR type 10) Notes: • Credit card recharges require a properly configured credit card to be available. • Voucher recharges requires the balance type to allow vouchers.
9	Click Recharge to create an EDR of the type specified in step 7. Note: If a maximum value has been configured for the balance type being recharged, then the maximum value policy will be applied to amounts which exceed the configured maximum. For more information on: • Maximum balance values, see <i>Maximum balances</i> (on page 229) • Maximum value policy, see <i>Maximum balance policy</i> (on page 230)

Error Messages

There are six possible types of error messages that may be reported when **Recharge** is clicked. The messages are:

- Invalid CLI. Recharge was not performed.
- This account does not have any credit card details. Recharge was not performed.
- This account does not allow voucher recharges. Recharge was not performed.
- This account is in state frozen. Recharge was not performed.
- This account is in state suspended. Recharge was not performed.
- This account is in state terminated. Recharge was not performed.

Wallet Life Cycle

WLC plans

A wallet life cycle plan is defined at service provider level.

Wallets may be shared by many subscribers and these subscribers may have different product types and hence different wallet life cycle plans to apply.

A WLC plan contains a list of WLC periods, which are actioned in their offset order.

WLC periods

A wallet life cycle period is associated to the account, which is a single subscriber-wallet association. If a subscriber has multiple wallets, each subscriber-wallet association could have its own distinct WLC period.

In a shared wallet environment, the current wallet life cycle period to apply is calculated from the wallet expiry and the wallet life cycle plan associated with the specific subscriber and the product type linked to that subscriber-wallet association.

When viewing the defined wallet life cycle periods within the **Wallet Life Cycle Plan** tab, the periods are ordered in ascending wallet expiry offset order, for example, -5 days before, then -2 days before, +1 days after. See *Wallet Life Cycle Period fields* (on page 276).

Duration of period

A WLC period starts at its expiry offset date and continues until the next period starts, or the wallet is removed.

Example 1

WLC Plan 1 contains 3 periods:

- WLC Period 1 (-10 days)
- WLC Period 2 (0 days)
- WLC Period 3 (10 days)

WLC period 1 starts 10 days before expiry and finishes on wallet expiry, when WLC period 2 starts.

Example 2

WLC Plan 2 contains 2 periods:

- WLC Period 4 (-20 days)
- WLC Period 5 (+20 days)

WLC period 4 starts 20 days before expiry and finishes 20 days after wallet expiry, when WLC period 5 starts.

Product Type swap

The wallet life cycle plan for a given product type will apply to all subscribers of that product type.

When a subscriber swaps to a different product type, the wallet life cycle period for the new product type will be calculated based on the wallet expiry date, and the control plan for the new period will be executed.

On product type swap the wallet life cycle period “On Backout” actions (if configured) and the “On Entry” actions (if configured) will be executed when the product type swap action will be treated by the system.

Note: There will be a delay between the moment when the product type swap was requested and the moment when all actions are executed.

Wallet Life Cycle tab

Here is an example **Wallet Life Cycle** tab, displaying the wallet life cycle plans.

Service Provider: Test Customer [v] [Help]

Wallet Life Cycle

Name: [] [Search] ☐ Marked For Deletion

Name	Change User	Changed Date	D
PAL_copyFirstOne	SU	2010-02-01 12:45:43.0	☐
PAL_firstOne	SU	2010-01-29 15:41:51.0	☐
UKE Wallet Life Cycle Plan 01	SU	2010-02-03 14:43:15.0	☐
UKE Wallet Life Cycle Plan 02	SU	2010-02-04 11:13:57.0	☐
pouet	SU	2010-02-03 09:56:14.0	☐
toto	SU	2010-02-03 10:03:27.0	☐

[New] [Edit] [Copy] [Delete] [Close]

Finding a WLC plan

Follow these steps to search for an existing wallet life cycle plan..

Step	Action
1	In the Wallet Management screen, select the service provider from the drop down list.
2	On the Wallet Life Cycle tab, enter the search criteria you are using to find the required WLC plan.
3	You can select the Marked For Deletion check box to include plans in the process of being deleted in the search results (row will be grayed).
Note: By default the check box is cleared and the search will ignore deleted plans.	

Step	Action
4	Click Search . Result: The WLC plan table displays the first 100 records matching the search criteria entered in steps 2 and 3. If the required plan is not displayed and more than 100 records were returned, enter different search criteria and click Search again.

Adding a WLC plan

Follow these steps to add a new wallet life cycle plan.

Step	Action
1	On the Wallet Life Cycle tab, click New . Result: You see the New Wallet Life Cycle Plan screen.
2	In the Name field, enter the name of the wallet life cycle plan.
3	Click Save . Result: The new plan is created. To add periods to the plan, you need to edit the plan. See <i>Editing a WLC plan</i> (on page 274).

Copying a WLC plan

Follow these steps to copy a wallet life cycle plan.

Step	Action
1	On the Wallet Life Cycle tab, select the wallet life cycle plan you want to copy from the table and click Copy . Result: You see the Copy Wallet Life Cycle Plan screen.
2	Name the wallet life cycle plan.
3	Click Save . Result: The plan is added to the list in the table. The copied plan will contain the same periods as the original plan.

Modifying a currently active/associated plan

Here is the recommended method to modify a currently active/associated wallet life cycle plan.

Step	Action
1	Copy the WLC plan.
2	Make the required changes to the plan copy.
3	Re-associate the appropriate product types to the new plan.
4	Delete the original plan when transition to the new plan is deemed successful.

Editing a WLC plan

Follow these steps to edit a wallet life cycle plan.

Step	Action
1	On the Wallet Life Cycle tab, select the wallet life cycle plan you want to edit from the table and click Edit . Result: You see the <i>Edit Wallet Life Cycle Plan</i> screen (See example on page 274).
2	The screen displays the wallet life cycle periods, in ascending wallet expiry offset order, for this plan. At the bottom of the screen, you can: • <i>Adding a WLC period</i> (on page 275) • <i>Editing a WLC period</i> (on page 277) • <i>Changing a WLC plan name</i> (on page 278) • <i>Deleting a WLC period</i> (on page 278)

Edit Wallet Life Cycle Plan screen

Here is an example Edit Wallet Life Cycle Plan screen.

UKE Wallet Life Cycle Plan 01

Name	Display Name	Offset
UKE_WalletLifeCyclePeriod-...	UKE_WalletLifeCyclePeriod-...	-10
UKE_WalletLifeCyclePeriod-...	UKE_WalletLifeCyclePeriod-...	0
UKE_WalletLifeCyclePeriod-...	UKE_WalletLifeCyclePeriod-...	10

New Edit Update Delete Close

Deleting a WLC plan

Follow these steps to delete an existing wallet life cycle plan.

Step	Action
1	On the Wallet Life Cycle tab, select the wallet life cycle plan to delete from the table and click Delete . Result: You see the Delete Confirmation prompt.
2	Click OK . Result: You see a second prompt.
3	Click OK . Result: The plan is removed from the table on the tab. It will be deleted from the system after all subscribers have been disassociated from the WLC Plan. Note: You can search for deleted WLC plans by first selecting the Marked for Deletion check box.

Adding a WLC period

Follow these steps to add a new wallet life cycle period to a wallet life cycle plan.

Step	Action
1	On the Edit Wallet Life Cycle Plan screen, click Add . Result: You see the New <i>Wallet Life Cycle Period</i> screen (See example on page 276).
2	Fill in the fields, select disabled features and allow or disallow named event classes, as described in <i>Wallet Life Cycle Period fields</i> (on page 276). Note: If the wallet life cycle period defines no functions to be disabled when the period is entered, then a notification or control plan operation is required.
3	Click Save .

Wallet Life Cycle Period screen

Here is an example Wallet Life Cycle Period screen.

Edit Wallet Life Cycle Period

[Help](#)

Period

Name:

Display Name:

Expiry Offset (days):

Disabled Features

☐ Session Charges

☐ General Charges

☐ General Recharges

Named Event Classes

Allowed Classes

UKE BillableEventSet
patrice_event

Disallowed Classes

FnF FnD Events

>>

<<

Notifications

On Entry: On Backout:

Control Plans

On Entry: On Backout:

[Save](#) [Cancel](#)

Wallet Life Cycle Period fields

This table describes the function of each field.

Field	Description
Name	Unique name for the WLC period.
Display Name	The display name of the WLC period. Note: Although a Wallet Life Cycle period name must be unique within the Wallet Lifecycle Plan, the Display Name may be non-unique and used within the CCP screens across multiple subscribers and product types.

Field	Description
Expiry Offset (days)	Number of days offset, from expiry of the wallet, to start the period. - Negative is days <i>before</i> expiry - Positive is days <i>after</i> expiry Only one Wallet Life Cycle period will be applicable (active) for any given expiry offset within a defined Wallet Life Cycle Plan. Example: '-10' evaluates to 10 days before expiry, or '+5' evaluates to 5 days after expiry. Creating one period with offset -10 results in a single period active from 10 days before expiry right up to removed date. Creating a second period with offset +5 will immediately curtail the first period, ending it at +4. It will be invalid to create two periods with the same offset.
Disabled feature	You can select the check box(es) to disable: - Session charges - General charges - General recharges
Named Event Classes	Select and move the available and disallowed Named Event classes using the >> and << buttons. If the period is: <i>Prior</i> to the Wallet expiry date, then Named Event Classes will all be allowed by default and will be disallowed as the exception. <i>On or after</i> the Wallet expiry date, then Named Event Classes will all be disallowed by default and will be allowed as the exception.
Notifications	If required, select the notifications to send on: - Entry - Backout. For more information about configuring SMS Notifications, see <i>ACS User's Guide</i>.
Control Plans	If required, select the control plans to run on: - Entry - Backout

Editing a WLC period

Follow these steps to edit a wallet life cycle period.

Step	Action
1	On the Edit Life Cycle Plan screen, select the wallet life cycle period to edit from the table and click Edit. Result: You see the <i>Edit Wallet Life Cycle Period screen</i> (See example on page 276).
2	Edit the fields and named event classes, as described in <i>Wallet Life Cycle Period fields</i> (on page 276). Note: If the wallet life cycle period defines no functions to be disabled when the period is entered, then a notification or control plan operation is required.
3	Click Save.

Deleting a WLC period

Follow these steps to delete an existing wallet life cycle period.

Step	Action
1	On the Edit Wallet Life Cycle Plan screen, select the WLC period to delete from the table and click Delete . Result: You see the Delete Confirmation prompt.
2	Click OK . Result: You see a second prompt.
3	Click OK . Result: The period is greyed out in the WLC Period table. The period will be deleted from the system after all subscribers have been disassociated from the WLC Period.

Changing a WLC plan name

Follow these steps to change the name of an existing wallet life cycle plan.

Step	Action
1	On the Edit Wallet Life Cycle Plan screen, change the WLC plan name.
2	Click Update . Result: You return to the Wallet Life Cycle tab. The name is updated.

Bonus Types

Introduction

The **Bonus Types** tab lets you view, add, edit and remove bonus types.

Bonuses allow awards to be given to subscribers who recharge their wallets, where the recharge value is within a specified range of values.

Bonus types defines the following:

- Which awards are available for each type of recharge
- What balances the award is added to

Bonus Types tab

Here is an example **Bonus Types** tab.

Service Provider:

Bonus Types

Bonus Type	Component	Bonus Set Name	Promotional Balanc...	Chan
Credit Card		Credit card recharge	General Cash	SU
Custom	Web	Web recharge	General Cash	SU

Bonus Types fields

This table describes the function of each field.

Field	Description
Bonus Type	The type of recharge to which this bonus type will apply.
Component	If Custom is selected in the Bonus Type field, this field indicates the component reference value. This is used to specify the PI recharge required for this bonus type, and as the reference for free form recharges. Tip: A Bonus Set will only be applied when the Free Form Recharge Reference field and the Bonus Type Component field match.
Bonus Set	The bonus values set containing the promotional balance to which this bonus type will be applied.
Promotional Balance	The balance type to which this bonus type will be applied. Note: If the Percentage field is filled out in a bonus value used with this bonus type, the recharge bonus will be added to this balance type.

Adding bonus types

Follow these steps to add a new Bonus Type.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	From the Bonus Types tab, click New . Result: You see the New Bonus Type screen.

3	From the Bonus Type drop down list, select the type of recharge this Bonus Type will apply to.
4	If you have selected Custom from the Bonus Type box, in the Component field type in the component reference value.
5	Configure the rest of this record by entering data in the remaining fields on this screen. For more information about the fields on this screen, see <i>Bonus Types fields</i> (on page 279).
6	Click Save .

Editing bonus types

Follow these steps to edit an existing Bonus Type.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Bonus Types tab, select the record you want to edit.
3	Click Edit . Result: You see the Edit Bonus Type screen.

4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Rewards fields</i> .
5	Click Save .

Deleting bonus types

Follow these steps to delete an existing bonus type.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Bonus Types tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: You see the Error prompt.
5	Click OK .

Bonus Values

Introduction

The **Bonus Values** tab lets you view, add, edit and remove Bonus Values.

Bonus Values are used in Bonus Types to define:

- the amount which triggers the award
- the value of the award, and
- the balance which must be recharged to qualify for the reward.

Awards may be either:

- a bonus percentage applied to the amount the Balance is recharged by, or
- a Voucher Type.

The entries in a Bonus Set must cover the full range of values from 0 to the highest End value. If there is a gap in the covered values, the Bonus Set will fail. The Bonus Set may contain both percentage bonus values and voucher type bonus values.

For more information about Voucher Types, see *Voucher Manager User's Guide*.

Example 1

To create a Bonus Value which applies a 5% bonus to all Voucher recharges of more than \$20, you must also configure a Bonus Value which applies a 0% bonus to recharges of \$0 to \$19.

Example 2

Three recharge Bonuses have been specified in the example screen below.

- For a recharge of 0 to 1,000 cents, a Bonus of 8% of the recharge amount is added to the Balance.
- For a recharge of 1,001 cents to 4999 cents, a Bonus of 10% of the recharge amount is added to the Balance.
- For a recharge of over 5000 cents, a Bonus of 12.5% of the recharge amount is added to the Balance.

Bonus Values tab

Here is an example **Bonus Values** tab.

Service Provider: Boss [Help]

Bonus Values

Bonus Set Name: Credit card recharge [New Set] [Edit Set] [Delete Set]

Trigger Balance	Start Range	End Range	Percentage	Voucher Ty
General Cash	0	1000	8.00	
General Cash	1001	5000	10.00	
General Cash	5001	10000	12.50	

[New] [Edit] [Delete] [Close]

Adding bonus values sets

Follow these steps to add a new Bonus Values Set.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	From the Bonus Values tab, click New Set . Result: You see the New Bonus Values Set screen.

New Bonus Values Set [X]

[Help]

Name: [Text Field]

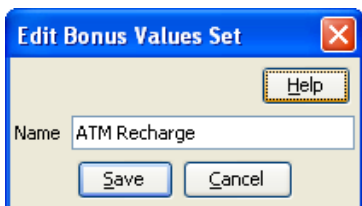
[Save] [Cancel]

3	In the Name field, type the name of the new Bonus Values Set.
4	Click Save .

Editing bonus values sets

Follow these steps to edit an existing Bonus Values Set.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	From the Bonus Values tab, in the Bonus Set Name drop down box, select the record you want to edit.
3	Click Edit Set . Result: You see the Edit Bonus Values Set screen.



4	Edit the set name as required.
5	Click Save .

Deleting bonus values sets

Follow these steps to delete an existing Bonus Set.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	From the Bonus Values tab, in the Bonus Set Name drop down box, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: You see the Bonus Value Set prompt.
5	Click OK .

Bonus Values fields

This table describes the function of each field.

Field	Description
Trigger Balance	This bonus value will be triggered when recharges are made to this balance. If not set, the trigger balance will be general cash.
Start	The low end of the range of recharge value that will trigger this bonus. Note: At least one bonus value in the set must start at 0.
End	The high end of the range of recharge value that will trigger this bonus.
Percentage	The percentage of the recharge amount to add to the recharge as a bonus when this bonus is triggered. Notes:

Field	Description
	- The additional recharge amount will be applied to the balance type specified in the <i>Bonus Types fields</i> (on page 279). - This field cannot be set if a voucher type is selected in the Voucher Type field.
Voucher Type	The voucher type which defines the reward which will be given to the subscriber when the bonus is triggered. Notes: - This field is populated by the entries in the Voucher Type tab. For more information, see Voucher Type. - Selecting an entry from this drop down list will clear any value from the Percentage field, and lock the field.

Adding bonus values

Follow these steps to add a new Bonus Value.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Bonus Values tab, select the Bonus Set Name to add bonus values to, from the drop down list.
3	Click New .

Result: You see the New Bonus Values screen.

4	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Bonus Values fields</i> (on page 283).
5	Click Save .

Editing bonus values

Follow these steps to edit an existing Bonus Value.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Bonus Values tab select the Bonus Set Name that contains the values you want to edit.
3	In the grid on the tab, select the record you want to edit and click Edit .

Step	Action

Result: You see the Edit Bonus Values screen.

- 4 Edit the fields to reflect the changes you need to make.
For more information about the fields in this screen, see *Bonus Values fields* (on page 283).
- 5 Click **Save**.

Deleting bonus values

Follow these steps to delete an existing Bonus Value.

Step	Action

- 1 In the Wallet Management screen, select the service provider from the **Service Provider** list.
- 2 On the **Bonus Values** tab, select the Bonus Set Name that contains the value to delete from the drop down box.
- 3 In the table, select the record to delete and click **Delete**.
Result: You see the Delete Confirmation prompt.
- 4 Click **OK** to delete the record from the database.
Result: You see the Bonus Value Set prompt.
- 5 Click **OK**.

Cumulative Balance Plans

Introduction

The Cumulative Balance Plans tab lets you:

- configure the balance categories included in your cumulative balance plans and
- assign balance types to the different balance categories.

The Cumulative Balances node will sum the balances for each balance category in a selected cumulative balance plan and play the relevant announcements.

Cumulative Balance Plans tab

Here is an example Cumulative Balance Plans tab.

Service Provider: Boss Help

Name	Change User	Change Date
Plan 1	SU	2009-08-28 15:24:36

New Edit Delete Close

Cumulative Balance Plan fields

This table describes the function of each field.

Field	Description
Name	Cumulative balance plan name.
Unit Type	Lists the available unit types for balance categories.
Available <i>Unit_Type</i> balances	Lists the available balance types for the selected unit type.
<i>Unit_Type</i> categories	Lists the categories that have been configured for the selected unit type. The balance types that have been assigned to each category are listed below the category heading.

Field	Description
Playback Order	- Category - Lists all the categories that have been configured for the cumulative balance plan irrespective of unit type. - Play Order - Lists the order in which balance category announcements will be played by the Cumulative Balances feature node.

Adding cumulative balance plans

Follow these steps to add a cumulative balance plan.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Cumulative Balance Plans tab, click New .
Result: You see the New Cumulative Balance Plan screen.	

- In the **Name** field, type in the new cumulative balance plan name.
- For each relevant **Unit Type**, add the required balance categories. For details, see Adding balance categories.
- Use drag and drop to add the required balances to each balance category. To:
 - add a balance to a balance category, select it in the available balances list and drag it to the required balance category
 - remove a balance from a balance category, select in the categories list and drag it to the available balances list.

Step	Action
	Tip: You can add a balance type to more than one category if required.
6	If required, change the order in which balance categories are played. You can see the current order in the Playback Order section. To change the position of a Category in the play order, select it in the Playback Order section and click either the UP or DOWN button. Note: All the configured categories appear in the Playback Order section irrespective of their Unit Type.
7	Click Save .

Editing cumulative balance plans

Follow these steps to edit a cumulative balance plan.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Cumulative Balance Plans tab, select the required cumulative balance plan and click Edit .
	Result: You see the Edit Cumulative Balance Plan screen.

Edit Cumulative Balance Plan

Name: Plan 1

Unit Type: Cash

Buttons: Add Category, Modify Category, Delete Category

Balance Categories

- Available Cash balances
 - General Cash
 - Promotional Cash
 - Vince Max Balance Cash
 - Bonus
 - Other Cash
- Cash categories
 - Gen cash
 - General Cash
 - Other Cash
 - Prom Cash
 - Promotional Cash
 - Total Cash
 - General Cash

Playback Order

Category	Play Order
Gen cash	1
Prom Cash	2
Total Cash	3

Buttons: UP, DOWN

Buttons: Save, Cancel

Step	Action
3	Make the required changes in the available fields. For more information on: • cumulative balance plan fields, see <i>Cumulative Balance Plan fields</i> (on page 286). • adding balance categories, see Adding balance categories • editing balance categories, see Editing balance categories, or • deleting balance categories, see <i>Deleting balance categories</i> (on page 293).
4	Click Save .

Deleting cumulative balance plans

Follow these steps to delete an existing Cumulative Balance Plan.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Cumulative Balance Plans tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database.

Balance Category fields

This table describes the function of each field.

Field	Description
Category Name	A unique name for the balance category. The name can be up to 30 alphanumeric characters long.
Announcement Set	• Category Announcements section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers who belong to this balance category. • Positive section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers with a positive balance in their wallet. • Negative / No Credit section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers with a negative balance in their wallet. • Days until balance expiration section, this field indicates the the Announcement Set which contains the Announcement Entry to be played for Subscribers when their balance is about to expire within days. • Balance Expiration in one day section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers when their balance is about to expire within 24 hours.

Field	Description
Announcement Entry	• Category Announcements section, this field indicates the Announcement Entry that will be played to Subscribers who belong to this balance category. • Positive section, this field indicates the Announcement Set which contains the Announcement Entry that will be played to Subscribers with a positive balance in their wallet. • Negative / No Credit section, this field indicates the Announcement Entry that will be played to Subscribers when they run out of credit or have a negative balance in their wallet. • Days until balance expiration section, this field indicates the Announcement Entry that will be played to Subscribers when their balance is about to expire soon. • Balance Expiration in one day section, this field indicates the Announcement Entry that will be played to Subscribers when their balance is about to expire within 24 hours.
Use unreserved balances	When selected, exclude uncommitted reservations in the available funds played in the announcements (the uncommitted reservation amount is subtracted from the available funds value).
Play Zero Cumulative Balance announcement	To play the announcements even if the cumulative balance for the category is zero, select this check box.
Play Expiry announcement	To play expiry announcements, select this check box.

Adding balance categories

Follow these steps to add a balance category to a cumulative balance plan.

Step	Action
1	In the Balance Categories area in the New/Edit Cumulative Balance Plan screen, select the Unit Type for which to define balance categories from the drop down list. Result: You see the list of available balance types for the Unit Type, and the list of available balance categories.
2	Click Add Category. Result: You see the Add Balance Category screen.

Step	Action

- 3 Configure this record by entering data in the fields on this screen.
For more information about the fields on this screen, see Balance Category fields.
- 4 Click **Apply**.
Result: You will be returned to the New/Edit Cumulative Balance Plan screen and the new category will be displayed in the balance categories list.

Editing balance categories

Follow these steps to view or edit a cumulative balance category for a Cumulative Balance Plan.

Step	Action

- 1 In the **Balance Categories** area in the New/Edit Cumulative Balance Plan screen, select the **Unit Type** to view or edit balance categories for from the drop down list.
Result: You see the list of available balance types for the Unit Type, and the list of available balance categories.
- 2 Select the category to view or change and click **Modify Category**.

Step	Action

Result: You see the Modify Balance Category screen.

Modify Balance Category

Category Name:

Category Announcements

Category

Announcement Set: ACS2 Management Announcements

Announcement Entry: collect follow me number prompt

Positive

Announcement Set: ACS2 Management Announcements

Announcement Entry: collect follow me number prompt

Negative / No credit

Announcement Set: ACS2 Management Announcements

Announcement Entry: collect follow me number prompt

Days until balance expiration

Announcement Set: ACS2 Management Announcements

Announcement Entry: collect follow me number prompt

Balance Expiration in one day

Announcement Set: ACS2 Management Announcements

Announcement Entry: collect follow me number prompt

☐ Play Zero Cumulative Balances announcement

☐ Play Expiry announcement

☐ Use unreserved balances

Apply Cancel

- 3 Check or update the Balance Category as necessary.

For more information about the available fields, see Balance Category fields.

- 4 If you have made changes to save, click **Apply**.

If you do not want to make changes to the balance category, click **Cancel**.

Result: You are returned to the New/Edit Cumulative Balance Plan screen.

- 5 Use drag and drop to modify the list of balance types included in the balance category.

Tip: You can add a balance type to more than one category if required.

- 6 If required, change the order in which balance categories are played. You can see the current order in the **Playback Order** section.

To change the position of a Category in the play order, select it in the **Playback Order** section and click either the **UP** or **DOWN** button.

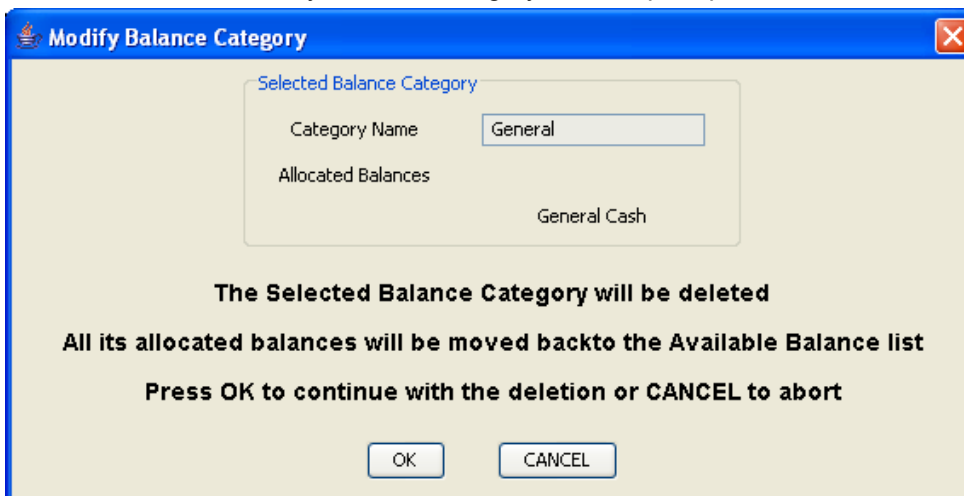
Note: All the configured categories appear in the Playback Order section irrespective of their Unit Type.

- 7 Click **Save**.

Deleting balance categories

Follow these steps to delete a cumulative balance category from a Cumulative Balance Plan.

Step	Action
1	In the New/Edit Cumulative Balance Plan screen, select the Unit Type which holds the balance category you want to delete.
2	Select the balance category record you want to delete and click Delete Category . Result: You see the Modify Balance Category deletion prompt.



3	Click OK .

Periodic Charge Groups

Introduction

Periodic charge groups control which periodic charges a subscriber can transfer to using the Periodic Charge Transfer node, or through the CCP screen. Subscribers can only transfer to periodic charges which are in the same group as the periodic charge they want to transfer from.

Warning: CCS determines which subscription will be transferred from, by locating the current subscription which is in the periodic charge group specified by the Periodic Charge Transfer node or a periodic charge field in CCP. If a subscriber has two subscriptions within the same periodic charge group, their transfer will fail. You must ensure the design of the service restricts subscriptions appropriately.

Periodic Charge Groups tab

Here is an example of the **Periodic Charge Groups** tab.

The screenshot shows a software window titled "Wallet Management". At the top, there is a "Service Provider" dropdown menu currently showing "OCNCCtemplate" and a "Help" button. Below this is a tabbed interface with the "Periodic Charge Groups" tab selected. Under the tab, there is a search section with a "Name" label, a text input field, and a "Search" button. The main content area below the search section contains a list with one item, "Boost 1". At the bottom of the window, there are four buttons: "New", "Edit", "Delete", and "Close".

Periodic charge group fields

This table describes the function of each field.

Field	Description
Name	The unique name of the periodic charge group.
Charges	The periodic charges listed in the Allocated list are members of this group. The periodic charges which are in these lists are populated from the records on the <i>Periodic Charges</i> (on page 297) tab. Notes: • A periodic charge can belong to more than one group. • The periodic charge group can be saved with no periodic charges in the Allocated list. For more information about how to use these fields and buttons, see Selection

Field	Description
	lists.

Adding periodic charge groups

Follow these steps to add a new periodic charge group.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Periodic Charge Groups tab, click New .

Result: You see the New Periodic Charge Group screen.

- Configure this record by entering data in the fields on this screen.
For more information about the fields on this screen, see *Periodic charge group fields* (on page 294).
- When you have completed configuring the new periodic charge group, click **Save**.

Editing periodic charge groups

Follow these steps to edit an existing periodic charge group.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Periodic Charge Groups tab, select the periodic charge group you want to edit. Tip: You can search for a specific periodic charge group by entering the periodic charge group's name in the Name field on the tab, and clicking Search . You can also use % as a wildcard.
3	Click Edit . Result: You see the Edit Periodic Charge Group screen.

Step	Action

- 4 Edit the fields to reflect the changes you need to make.
For more information about the fields in this screen, see *Periodic charge group fields* (on page 294).
- 5 Click **Save**.

Deleting periodic charge groups

Follow these steps to delete an existing periodic charge group.

Step	Action

- 1 In the Wallet Management screen, select the service provider from the **Service Provider** list.
- 2 On the **Periodic Charge Groups** tab, select the periodic charge group to delete.
Tip: You can search for a specific periodic charge group by entering the periodic charge group's name in the **Name** field on the tab, and clicking **Search**.
- 3 Click **Delete**.
Result: You see the Delete Confirmation prompt.
- 4 Click **OK** to delete the record from the database.

Wallet Management - Periodic Charges

Overview

Introduction

This chapter explains the Periodic Charges configuration screens.

In this chapter

This chapter contains the following topics.

Periodic Charges	297
What	303
When	306
Notifications	311
Subscription Pro-Rating.....	314
Charge Alignment Pro-Rating	317
Unsubscription Pro-Rating.....	319

Periodic Charges

Introduction

The **Periodic Charges** tab enables you to define subscriber charges which are applied regularly. For example, you can define periodic charges for providing a phone service, or for rental of services and equipment.

You can also define periodic charges for sending SMS notifications and for performing voucher type recharges.

Note: Each time a periodic charge occurs, it is logged in an EDR.

For more overview information about periodic charges, see *Subscription Services* (on page 15).

Compatibility information

There are some configuration items for the voucher type definition that are not relevant for use with periodic charge pro-rating.

These should not be configured, however, if configured, the following should be noted:

- **Pre-use Expiry Period** -- Uncertain action
- **Product Swap Rules** -- Product type swap applied if specified
- **Scenario** -- All multi balances applied, irrespective of scenarios
- **Multi-Balances** - Where for each multi-balance entry
 - **Applicable Start Date** -- Can stop balance being processed
 - **Applicable End Date** -- Can stop balance being processed
 - **Offset Date** -- Can stop balance being processed
 - **Scenario** -- All multi balances applied, irrespective of scenarios

Periodic Charges tab

Here is an example **Periodic Charges** tab.

Service Provider: Boss Help

Periodic Charges

Name:

Period: <Any> Search ☐ Show Marked For Deletion

Name	Based On	Period
15th Monthly	Fixed Date	Daily
BackCharge	Service Activation	Monthly
ChgState	Service Activation	Monthly
CreditPlan	Service Activation	Weekly
MJH_Basic1	Reference Date	Quarterly
None_ControlPlan_ServiceA...	Service Activation	Monthly
None_CreditPlan_FixedDate	Fixed Date	Daily
None_CreditPlan_RefDate	Reference Date	Monthly
None_CreditPlan_ServiceAc...	Service Activation	Monthly
None_CreditPlan_WalletActi...	Wallet Activation	Quarterly
None_Credit_FixedDate	Fixed Date	Annually
None_Credit_RefDate	Reference Date	Custom
None_Credit_ServiceActivat...	Service Activation	Monthly
None_Credit_WalletActivation	Wallet Activation	Weekly
None_DebCredPlan_FixedD...	Fixed Date	Weekly
None_DebCredPlan_RefDate	Reference Date	Monthly
None_DebCredPlan_Service...	Service Activation	Quarterly
None_DebCredPlan_Wallet...	Wallet Activation	Monthly
None_DebitCredit_FixedDate	Fixed Date	Monthly
None_DebitCredit_RefDate	Reference Date	Custom
None_DebitCredit_ServiceA...	Service Activation	Monthly
None_DebitCredit_WalletAc...	Wallet Activation	Half Yearly
None_Debit_FixedDate1	Fixed Date	Weekly
None_Debit_RefDate	Reference Date	Monthly

New Edit Delete Close

Periodic Charges tab fields

This table describes the function of each field in the table on the **Periodic Charge** tab.

Field	Description
Name	See <i>What</i> (on page 303)
Based On	See <i>When</i> (on page 306)
Period	See <i>When</i> (on page 306)
Custom Type	
Custom Value	
Tag Date Field	
Time	Notification Time - see <i>When</i> (on page 306)
Day of Week	See <i>When</i> (on page 306)
Day of Month	See <i>When</i> (on page 306)

Field	Description
Month	Trigger month - see <i>When</i> (on page 306)
Charge on Activation	Whether or not to charge on activation
Charge States	Wallet state - selected states - see <i>When</i> (on page 306)
Wallet Type	
Voucher Type	
Event Class	See <i>What</i> (on page 303)
Event Name	See <i>What</i> (on page 303)
Insufficient Funds Action	See <i>What</i> (on page 303)
Balance Type	See <i>What</i> (on page 303)
Recharge Amount	See <i>What</i> (on page 303)
Recharge Action	See <i>What</i> (on page 303)
Balance Expiry Update Policy	See <i>What</i> (on page 303)
Balance Expiry Extension	See <i>What</i> (on page 303)
Wallet Expiry Update Policy	See <i>What</i> (on page 303)
Success Notification	See <i>Notifications</i> (on page 311)
Failure Notification	See <i>Notifications</i> (on page 311)
ID	ID allocated to this record
Deletion Date	Displays the actual date that a periodic charge that has been deleted will finally be deleted. This date is calculated as the current date + one Period + the greatest number of any Days After Failed Charge for grace or loss of service notifications + 1.

Finding periodic charges

Follow these steps to search for an existing periodic charge.

Step	Action
1	In the Wallet Management screen, select the Service Provider from the drop down list.
2	On the Periodic Charges tab, enter the search criteria you are using to find the required periodic charge. Enter the first few characters of the Name and select the Period you want from the drop down box.
3	Select the Show Marked For Deletion check box to include charges that have been deleted, but have not yet been removed from the database, in the search results (row will be grayed). Note: By default the check box is deselected and the search will ignore deleted periodic charges.
4	Click Search . Result: The table displays the first 100 records matching the search criteria entered in steps 2 and 3. If the required periodic charge is not displayed and more than 100 records were returned, enter different search criteria and click Search again.

Adding periodic charges

Follow these steps to add a new periodic charge.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Periodic Charges tab, click New . The New Periodic Charge window opens and displays the What option.
3	In the Name field, enter a new name for the periodic charge. The name must be unique. Maximum length is 46 characters.
4	Add the details on the different option panels as necessary. See: • <i>What</i> (on page 303) • <i>When</i> (on page 306) • <i>Notifications</i> (on page 311) • <i>Subscription Pro-Rating</i> (on page 314) • <i>Charge Alignment Pro-Rating</i> (on page 317) • <i>Unsubscription Pro-Rating</i> (on page 319)
5	Click Save .

Notes:

- To apply a periodic charge to a subscriber, you must assign it to their product type. For more information, see *Periodic Charges* (on page 201).
- To add a periodic charge to a periodic charge group, you must edit the periodic charge group to add it to. For more information, *Periodic Charge Groups* (on page 293).

Configuration options summary

This table lists the configuration options for periodic charges and their functionality.

Option	Description
<i>What</i> (on page 303)	Configures the type of periodic charge to be applied.
<i>When</i> (on page 306)	Defines when to apply the periodic charge.
<i>Notifications</i> (on page 311)	Configures the notifications which can be sent to the subscriber.
<i>Subscription Pro-rating</i> (on page 314)	Configures the rules for pro-rating a subscriber's periodic charge subscription.
<i>Charge Alignment Pro-rating</i> (on page 317)	Configures the rules for aligning a subscriber's periodic charge subscription to a common cycle point.
<i>Unsubscription Pro-Rating</i> (on page 319)	Configures the rules for pro-rating a subscriber's periodic charge subscription refund.

Editing periodic charges

Follow these steps to edit an existing periodic charge.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	On the Periodic Charges tab, select the periodic charge to edit.

Step	Action
	Tip: You can search for a specific periodic charge. See <i>Finding periodic charges</i> (on page 299).
3	Click Edit . The Edit Periodic Charges window opens and displays the What option. Note: If a periodic charge is marked for deletion, all components will be grayed out, or read-only, except for the Loss of Service Notifications field on the <i>Notifications</i> (on page 311) option.
4	Check or update the details on the different option panels as necessary. For more information about the available options, see: • <i>What</i> (on page 303) • <i>When</i> (on page 306) • <i>Notifications</i> (on page 311) • <i>Subscription Pro-Rating</i> (on page 314) • <i>Charge Alignment Pro-Rating</i> (on page 317) • <i>Unsubscription Pro-Rating</i> (on page 319)
5	If you have made changes to the periodic charge's details, click Save . If you do not want to make changes to the periodic charge's details, click Cancel .

Notes:

- To change which subscribers a periodic charge applies to, see *Periodic Charges* (on page 201).
- To change which periodic charge group a periodic charge belongs to, see *Periodic Charge Groups* (on page 293).

Deleting periodic charges

Follow these steps to delete an existing periodic charge.

Step	Action
1	In the Wallet Management screen, select the service provider from the Service Provider list.
2	In the table on the Periodic Charges tab, select the periodic charge to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: If the periodic charge has pre-charge and grace notifications configured, you see the <i>Deleting Periodic Charge with notifications</i> (on page 302). If not, the periodic charges confirmation prompt appears. Note that once deleted, a record with the same name cannot be recreated.
5	Click OK to return to the Periodic Charges tab. Note: The periodic charge is still present until the final deletion date.

Note: You can search for deleted periodic charges on the **Periodic Charges** tab by selecting the **Show Marked for Deletion** check box, before making the search. See *Periodic Charges tab fields* (on page 298) for a description of a deletion date.

Deleting Periodic Charge with notifications

When deleting a periodic charge that has any pre-charge and grace *Notifications* (on page 311) configured, a screen opens allowing you to define different notifications to be used during the period it takes to delete the charge.

Step	Action
1	If the periodic charge you are deleting from the Periodic Charge tab has pre-charge and grace notifications configured, you see the Delete Periodic Charge screen.

- 2 If required, change the notifications to be sent during the period before the deleted periodic charge is removed from the database.
The following notifications may need to be configured:
 - A separate **Pre-charge notification** for every pre-charge notification already configured (up to 3)
 - A single **Grace notification** for all currently configured grace notifications; only a single grace state will be available when the periodic charge definition has been deleted; if both grace periods are defined, the single Grace period available after periodic charge definition is deleted will correspond to the second grace period.
 - **Loss of Service** notification if loss of service notification is configured in the periodic charge to be deleted
- 3 Click **OK** to delete the record from the database.
Result: The Periodic Charges confirmation prompt appears. Note that once deleted, a record with the same name cannot be recreated.
- 4 Click **OK** to return to the **Periodic Charges** tab.
Note: The periodic charge is still present until the final deletion date.

Note: You may search for deleted periodic charges on the **Periodic Charges** tab, by selecting the **Show Marked for Deletion** check box, then making the search. See *Periodic Charges tab fields* (on page 298) for a description of a deletion date.

What

Introduction

The what configuration configures what happens when the periodic charge runs. This can include specifying charges and/or recharges.

What option

Here is an example of the **What** option in the New Periodic Charge screen.

New Periodic Charge

Help

What

Name

ChargeType: Debit

Debit

Event Class: DCA Sample Events

Event Name: Cent

Insufficient Funds Action: Do not make charge

Retain Without Credit: ☐

Credit Plan

Control Plan

Credit

Recharge Action

Balance Type

Recharge Amount: 1

Balance Expiry Extension: Days Hours

Balance Expiry Update Policy

☒ Date ☐ Extension ☐ Use Offset Date

Balance Offset Date: Days Hours

Wallet Expiry Extension: Days Hours

Wallet Expiry Update Policy

Save Cancel

What configuration fields

This table describes the function of each field on the **What** configuration option on the New or the Edit Periodic Charge screen.

Field	Description
Charge Type	The type of charge. The options are: • Debit • Debit and Credit Plan • Debit and Credit

Field	Description
	• Credit • Credit Plan • Notification Only • Control Plan The fields you can use will be defined by the type of charge you have chosen.
Debit / Debit and Credit Plan / Debit and Credit Charge Types	
Event Class	The event class for the charge. This field is populated by the named event sets configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen. This field is available and mandatory for any Debit action.
Event Name	The event name for the charge. This field is populated by the named events configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen. This field is available and mandatory for any Debit action.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge. The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance. • Do not make charge - No charge is made. This field is available for any Debit action.
Retain Without Credit	Selecting this option provides for excluding grace states in the event of a debit failure while continuing to retain the periodic service. Once selected, if a debit action fails, the credit due from a promotion is not implemented, but the periodic service will continue to the next "Active" state. This periodic service is only applicable to the following Charge Types: • Debit and Credit Plan • Debit and Credit By default, the check box is not selected.
Credit Plan / Debit and Credit Plan Charge Types	
Credit Plan	The credit plan which defines the recharge and product type swap which is executed when this periodic charge is triggered. This drop down list is populated by records from the Voucher Type tab. Note: If the application of the voucher type's expiry policy would result in a periodic charge's expiry date being reduced (that is, moved closer) the original expiry date will not be changed. This field is available for any credit plan action.
Control Plan Charge Type	
Control Plan	The control plan for this periodic charge to trigger. This drop down list is populated from all the control plans that have been saved with an association to the OSD operation set periodic charge.
Credit / Debit and Credit Charge Types	
Recharge Action	Specifies from the list the way a credit is to be applied. The options are: • Replace current value with amount credited (updates existing bucket with new value)

Field	Description
	- Update using an existing bucket (updates existing bucket by increasing it by the specified value) - Add new bucket with amount (creates a new bucket to hold the new value) This field is available for any credit action. It is not available for credit plan actions.
Balance Type	The balance type to be credited with the recharge amount. This drop down list shows all chargeable balance types for the current service provider. For more information about balance types, see <i>Balance Types</i> (on page 227). This field is available for any Credit action.
Recharge Amount	The credit recharge value, in units of the balance type. The allowed range is 1 to 4294967294. This field is available for any Credit action.
Balance Expiry Extension Days and Hours	The number of days and hours by which to extend the current balance expiry period for the balance type specified in the Balance Type field. Allowed range is 1 hour to 999999 days. This field is available for any Credit action where the Balance Expiry Update Policy is not set to Ignore.
Balance Expiry Update Policy	Controls how the balance's expiry date is extended by the recharge. The options are: - Best - if you want the system to select the best policy option for the subscriber depending on their particular circumstances, - Ignore - if you do not want to change the current expiry period, - Extend - if you want to extend the current expiry period by the days and hours specified, - Extend From Today - if you want the current expiry period to be the number of days and hours specified from today's date. This field is available for any Credit action.
Balance Offset Date (Use Offset Date)	Optional balance offset date that will be applied when the selected balance type is recharged. Creates a new bucket for the balance type that will be available from the balance offset date. To activate these fields, select the Use Offset Date check box, then select: Date - if you want to set the balance offset date to a specific date. Select the date you want via  button. Extension - if you want to base the balance offset date on the current system date extended by the specified number of Days and Hours. Allowed range for days is 1-999999. Allowed range for hours is 1-23.
Wallet Expiry Extension Days and Hours	The number of days and hours by which to extend the current wallet expiry date. This field is available for any Credit charge where the Wallet Expiry Update Policy is not set to Ignore.
Wallet Expiry Update Policy	Controls how the wallet's expiry date is extended by the recharge. See the Balance Update Expiry Policy field description for the list of

Field	Description
	options. This field is available for any Credit action.
Notification Only Charge Type	
	No fields are available for this Charge Type.

Adding What configuration options

Follow these steps to configure what happens when the periodic charge runs.

Step	Action
1	In the New Periodic Charge screen, select What from the left hand menu. You see the What option fields.
2	From the Charge Type list, select the type of actions this periodic charge should take. The available fields on which charge type you select.
3	Configure this record by entering data in the fields on this screen as defined by the type of periodic charge you are adding. For an overview of the fields on this screen and when they are available, see What configuration fields.

Editing What configuration

Follow these steps to view or change what happens when the periodic charge runs.

Step	Action
1	In the Edit Periodic Charge screen, select the What option from the left hand menu. Result: You see the What option.
2	Check or update the configuration as necessary. For more information about the fields in this option, see What configuration fields.

When

Introduction

The periodic charge when configuration sets the frequency and timing of when the periodic charge is triggered. Periodic charges which are scheduled to occur at exactly the same time are handled in alphabetical order.

For more information about how periods are calculated, see *Period calculations* (on page 19).

About Scheduling Periodic Charges

You define a schedule for a periodic charge by using the periodic charge **When** option. The periodic charge schedule depends on the type of date you select in the **Based On** field. Select:

- **Fixed Date** to schedule a particular day or date that the periodic charge period will run from. For example, you could schedule a weekly charge that occurs every Friday, or you could schedule a monthly charge that occurs on the 28th day of every month, and so on.
- **Service Activation** to schedule a periodic charge based on the date that the subscriber subscribed to the periodic charge. For example, if a subscriber subscribes to a monthly periodic charge on the 15th of the month, then the next charge will occur on the 15th of the next month.

- **Wallet Activation** to schedule a periodic charge based on the date that the subscriber's wallet was activated. The date of the next charge is determined by adding the period selected for the charge to the Subscriber's wallet activation date. If this date is in the past, then this process is repeated until a date in the future is determined. For example, if the wallet is activated on 1st December 2012 and the charge period is weekly, then one week is added to the activation date to give a date for the next charge of 8th December 2012. If this date is in the past then another week will be added, and so on, until a future date for the next charge is determined.
- **Reference Date** to schedule a periodic charge based on a specific date. You can specify a reference date that is in the past or in the future. If you specify a future date then this will be the first charge date. If you specify a past date, then the date of the first charge is determined by adding the charge period to the specified reference date, and repeating this process until a date in the future is determined.

You can specify how many times a periodic charge is applied by specifying the number of repeats for the periodic charge in the **Number of Repeats** field. For periodic charges that are based on a specified reference date, you can select whether to count the number of repeats from the reference date or from the date of the first charge. If you select to count repeats from the reference date, then the charges count from the reference date itself even if this date is in the past.

Number of repeats example:

In this example, the reference date is set to two weeks in the past, the period is set to weekly, and the number of repeats is set to three. If the number of repeats is counted from:

- The reference date, then two charges will already have been counted, and therefore the next and last charge will occur the following week.
- The date of the first charge, then the three charges will be applied from the anniversary of the period (the following week).

For more information about how periods are calculated, see *Period calculations* (on page 19).

When option

Here is an example of the **When** option in the New Periodic Charge screen.

The screenshot shows the 'New Periodic Charge' window with the 'When' option selected in the left sidebar. The main area contains the following fields:

- Name:** A text input field.
- Schedule:**
 - Based On:** A dropdown menu set to 'Fixed Date'.
 - Period:** A dropdown menu set to 'Daily'.
 - Custom Period:** A text input field.
 - Days / Months:** Radio buttons, with 'Days' selected.
 - Number of Repeats:** A text input field.
 - Notification Hour:** A dropdown menu set to '08 / 8AM'.
 - Timezone:** A dropdown menu set to 'US/Central'.
 - From Reference Date / From First Charge Date:** Radio buttons, with 'From First Charge Date' selected.
 - Remove Charge:** A text input field.
 - Days After Loss of Service:** A text input field.
- Apply to:**
 - Existing Subscribers:** A checkbox.
 - Activating Subscribers:** A checkbox.
- Fixed Date:**
 - Charge Hour:** A dropdown menu set to '10 / 10AM'.
 - Day of Week:** A dropdown menu.
 - Day of Month:** A text input field.
 - Trigger Month:** A dropdown menu.
- Wallet State:**
 - Active:** A checked checkbox.
 - Dormant:** A checked checkbox.
 - Suspended:** An unchecked checkbox.
 - Terminated:** An unchecked checkbox.
 - Frozen:** An unchecked checkbox.

At the bottom of the window are 'Save' and 'Cancel' buttons.

When configuration fields

This table describes the **When** configuration fields in the Periodic Charge screen.

Field	Description
Based On	Sets the type of date to use as a basis for scheduling the periodic charge. Select one of the following: - Fixed Date - Service Activation - Wallet Activation - Reference Data For more information, see <i>About Scheduling Periodic Charges</i> (on page 306).
Period	Sets the frequency with which this periodic charge is run.

Field	Description
Custom Period	Allows you to specify the number of days or months for which a custom periodic charge should apply. Notes: - These fields are available only if you select <code>Custom</code> from the Period list. - If the custom period starts on a fixed date, and the month is set to the past, then Convergent Charging Controller uses the specified day in the current month to calculate the period for the charge.
Number of Repeats	Sets the number of times to run this periodic charge. After this number of charges, the periodic charge becomes unsubscribed automatically. Note: The normal behavior for unsubscribing a subscriber for failed charges is not affected.
Notification Hour	Defines when to send pre-charge notifications and grace notifications. Leave this field blank if you want to send notifications at midnight (as set by the <code>notificationMidnightTZ</code> parameter in the <code>eserv.config</code> file, see <i>CCS Technical Guide</i> for more information). Note: The actual notification time may be influenced by other factors on the VWS.
Timezone	(Optional) Defines the time zone that will be used when applying the charge. Overrides the default time zone set by the <code>TZ</code> java applet parameter. For more information, see <i>SMS Technical Guide</i>. Note: The Timezone field applies only to fixed date periodic charges.
Remove Charge	Sets the number of days to allow, after sending the Loss Of Service notification, before deleting the periodic charge from the subscriber's wallet. Must be more than the number of days specified in the Days After Failed Charge field. If this field is not set, the periodic charge is removed after 1825 days (5 years).
Existing Subscribers	Whether this periodic charge should apply to existing subscribers. This will apply to all wallets with a specific product type when the periodic charge is applied to that product type. Note: You cannot apply a period charge to existing subscribers if you set Based On to <code>Service Activation</code>.
Activating Subscribers	Whether a named event should be charged when the wallet is activated. For more information about named events, see <i>Named Event</i> (on page 369).
Charge Hour	Sets the hour when the charge will be applied on the charge date.
Day of Week	The full name of the day of the week on which the periodic charge should run. Note: Applies only if Period is set to weekly.
Day of Month	The day of the month the periodic charge should run on. Allowed values: 1-31. Notes: If the charge is set to 29, 30 or 31, and is applied in a month which does not include the specified day; the charge will be applied on the last day of

Field	Description
	the month. Applies only if Period is set to monthly, quarterly, half-yearly, annual, or custom.
Trigger Month	The month that the periodic charge's cycle should start on. Note: Applies only if Period is set to quarterly, half-yearly or annual.
Active	Whether or not to run the periodic charge on wallets which are in the active state.
Dormant	Whether or not to run the periodic charge on wallets which are in the dormant state.
Frozen	Whether or not to run the periodic charge on wallets which are in the frozen state.
Suspended	Whether or not to run the periodic charge on wallets which are in the suspended state.
Terminated	Whether or not to run the periodic charge on wallets which are in the terminated state.

For more information about wallet states, see *Wallet states* (on page 10).

Notes:

- Periodic charges can be configured to apply only to some wallet states. When the periodic charge is triggered, CCS checks whether the periodic charge is allowed for the wallet state before taking any action. If the wallet state is disallowed, notifications will be skipped but the expiry logic will continue as normal (that is, the periodic charge will be processed as if the charge failed).
- Periodic charges are never applied to wallets which are in the pre-use state.

Adding When configuration

Follow these steps to configure the frequency and timing of when the periodic charge is triggered.

Step	Action
1	In the New Periodic Charge screen, select the When option from the left hand list. Result: You see the <i>When option</i> (on page 308).
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>When configuration fields</i> (on page 308).

Editing When configuration

Follow these steps to view or change the frequency and timing of when the periodic charge is triggered.

Step	Action
1	In the Edit Periodic Charge screen, select the When option from the left hand menu. Result: You see the <i>When option</i> (on page 308).
2	Check or update the configuration as necessary. For more information about the fields in this option, see <i>When configuration fields</i> (on page 308).

Notifications

Introduction

The notifications configuration enables you to configure which notifications are sent when different periodic charge-related events occur.

Note: If a subscriber account's profile sets **Suppress Notifications** to true, no notifications will be sent, even if they are configured to be sent here. For more information about the **Suppress Notifications** field, see [Details](#).

Notifications option

Here is an example of the **Notifications** option in the New Periodic Charge screen.

The screenshot shows the 'New Periodic Charge' dialog box with the 'Notifications' tab selected. The dialog includes a sidebar on the left with a tree view where 'Notifications' is highlighted. The main content area is divided into four sections:

- Pre-Charge Notifications:** Contains three rows for 'First', 'Second', and 'Third' notifications. Each row has a dropdown menu and a 'Days Before Charge' text input field.
- Charge Notifications:** Contains 'Successful Charge' and 'Failed Charge' dropdown menus, both set to 'None', and a 'Final Success' dropdown menu.
- Grace Notifications:** Contains 'First Grace', 'Second Grace', and 'Recharge Success' dropdown menus, all set to 'None'. It also has 'Days After Failed Charge' and 'Recharge Failure' text input fields.
- Loss of Service Notifications:** Contains a 'Loss of Service' dropdown menu set to 'None' and a 'Days After Failed Charge' text input field.

At the bottom of the dialog are 'Save' and 'Cancel' buttons. A 'Help' button is located in the top right corner.

Notifications fields

This table describes the function of each field.

Field	Description
Pre-Charge Notifications	
	Note: If None is selected in the drop down lists: - No notification will be sent. - The corresponding Days Before Charge field is cleared and made unavailable.
First	A notification to send to the subscriber before the charge is applied. The corresponding Days Before Charge field defines how many days before the charge this notification should be sent.

Field	Description																
	Note: If the frequency is daily, this field is not available.																
Days Before Charge	The number of days before the periodic charge is first applied to send the notification specified in the drop down list which corresponds to this field. If this field is available, it must have a value between 1 and the periodic charge frequency measured in days, minus 1. This table shows the maximum value depending on the value of the Period and Custom Period fields specified in the When option. <table border="1"> <thead> <tr> <th>Period</th><th>Maximum value (days)</th></tr> </thead> <tbody> <tr> <td>Weekly</td><td>6</td></tr> <tr> <td>Monthly</td><td>27</td></tr> <tr> <td>Quarterly</td><td>88</td></tr> <tr> <td>Half-Yearly</td><td>180</td></tr> <tr> <td>Annually</td><td>364</td></tr> <tr> <td>Custom-Days</td><td>Days specified, minus 1</td></tr> <tr> <td>Custom-Months</td><td>(months specified x 28), minus 1</td></tr> </tbody> </table> Each field must have a lower value than the field directly above it.	Period	Maximum value (days)	Weekly	6	Monthly	27	Quarterly	88	Half-Yearly	180	Annually	364	Custom-Days	Days specified, minus 1	Custom-Months	(months specified x 28), minus 1
Period	Maximum value (days)																
Weekly	6																
Monthly	27																
Quarterly	88																
Half-Yearly	180																
Annually	364																
Custom-Days	Days specified, minus 1																
Custom-Months	(months specified x 28), minus 1																
Second	A notification to send to the subscriber before the charge is applied. The corresponding Days Before Charge field defines how many days before the charge this notification should be sent. Note: If the frequency is less than every 7 days, this field is not available.																
Third	A notification to send to the subscriber before the charge is applied. The corresponding Days Before Charge field defines how many days before the charge this notification should be sent. Note: If the frequency is less than every 7 days, this field is not available.																
Charge Notifications																	
	Note: If None is selected in the drop down lists no notification will be sent.																
Successful Charge	A notification to send to the subscriber when the charge is applied successfully.																
Failed Charge	A notification to send to the subscriber when the charge is not applied successfully.																
Final Success	A notification to send to the subscriber when the charge is applied successfully and it is the last time the periodic charge will run. Note: This field is only available if the Number of Repeats field in the When option has a value.																
Grace Notifications																	
	Notes: - If None is selected for the drop down lists, the corresponding Days After Failed Charge field is cleared and made unavailable. - If No Notification is selected for the drop down lists, the corresponding Days After Failed Charge field is available, but no notification will be sent.																

Field	Description
First Grace	A notification to send to the subscriber when the periodic charge defined for this service has initially failed. The charges for has entered a grace period (that is, the periodic charge has failed).
Days After Failed Charge	The number of days after the periodic charge has failed to send the notification specified in the drop down list which corresponds to this field. If this field is available, it must have a value between 1 and the frequency the periodic charge is applied in measured in days -1 as shown in Days Before Charge field. Notes: This field sets the period before the periodic charge is set to Terminated, and (if there is one) the Loss of Service notification is sent.
Second Grace	A notification to send to the subscriber when the service this periodic charge defines the charges for has entered a grace period (that is, the periodic charge has failed).
Recharge Success	A notification to send to the subscriber when the subscriber successfully recharges their wallet while in a grace period (that is, the periodic charge has previously failed).
Recharge Failure	A notification to send to the subscriber when the subscriber tries to recharge their wallet while in a grace period and the recharge fails (that is, the periodic charge has previously failed and has failed again).
Loss of Service Notification	
	Notes: - If None is selected for the drop down list, the corresponding Days After Failed Charge field is cleared and made unavailable. - If No Notification is selected for the drop down list, the corresponding Days After Failed Charge field is available, but no notification will be sent.
Loss of Service	A notification to send to the subscriber when their service has been discontinued (that is, this periodic charge has failed and exited any available grace period).
Days After Failed Charge	The number of days after a subscriber's service has been disabled to send the Loss of Service notification. Must be greater than the Days After Failed Charge for the Second Grace notification (or First Grace if Second Grace is not set).

Note: The drop down lists on this screen are populated by the Type records configured in the CCS Application set in the **Notifications** tab on the ACS Configuration screen. For more information about the ACS Configuration screen, see *ACS User's Guide*.

Adding Notifications configuration

Follow these steps to configure the notifications which can be sent out by a periodic charge.

Step	Action
1	In the New Periodic Charge screen, select the Notifications option from the left hand list. Result: You see the Notifications option.
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Notifications fields</i> (on page 311).

Editing Notifications configuration

Follow these steps to view or change the notifications configuration.

Step	Action
1	In the Edit Periodic Charge screen, select the Notifications option from the left hand menu. Result: You see the Notifications option.
2	Check or update the notifications as necessary. For more information about the fields in this option, see <i>Notifications fields</i> (on page 311).

Subscription Pro-Rating

Introduction

The subscription pro-rating configuration allows periodic services to be seamlessly charged from the subscription start in a manner that is transparent to the service being offered by the operator.

Subscription Pro-Rating option

Here is an example of the **Subscription Pro-Rating** option in the New Periodic Charge screen.

The screenshot shows the 'New Periodic Charge' dialog box. On the left is a tree view with 'Subscription Pro-Rating' selected. The main area contains the following fields:

- Name:** A text input field.
- Charge Type:** A dropdown menu set to 'Debit'.
- Pro-Rating Type:** A dropdown menu set to 'Proportional and Fixed Charge'.
- First Charge:** A section containing:
 - ☒ **Use Unique First Charge**
 - Event Class:** A dropdown menu set to 'DCA Sample Events'.
 - Event Name:** A dropdown menu set to 'Cent'.
 - Insufficient Funds Action:** A dropdown menu set to 'Take balance negative'.
- Fixed Charge:** A section containing:
 - Event Class:** A dropdown menu set to 'DCA Sample Events'.
 - Event Name:** A dropdown menu set to 'Cent'.
 - Insufficient Funds Action:** A dropdown menu set to 'Take balance negative'.

At the bottom are 'Save' and 'Cancel' buttons. A 'Help' button is in the top right corner.

Subscription configuration fields

This table describes the function of each field.

Field	Description
Name	Name of the periodic charge

Field	Description
Charge Type	The type of charge. The options are: • Debit • Debit and Credit Plan • Debit and Credit • Credit • Credit Plan The fields you can use will be defined by the type of charge you have chosen.
Pro-Rating Type	The Pro-rating method to apply. Options are: • None - No pro-rating at all, charges are applied without respecting the actual date and periodic charge start time. • Proportional - The actual date defines the start of the subscription period, the charge to be applied is defined by calculating the remaining period of the subscription from the start point to the end of the subscription period using the defined granularity units. This is then applied as a percentage reduction to the full subscription charge or subscription elements (for example, bundles). • Proportional and Fixed - This is calculated in exactly the same manner as proportional, described above, but an option to add a fixed additional subscription charge or appropriate elements such as SMSs in a bundle is made. This charge has optional units, either in currency or in additional periodic units.
Use Unique First Charge	Allow an initial charge that differs from subsequent charges. Note: This charge is a substitute for the first charge. It will also be pro-rated if specified, unlike the fixed charge which is not pro-rated.
Event Class	The event class for the charge (used for both first and all subsequent charges). This field is populated by the named event sets configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen. This field is available and mandatory for any Debit charge.
Event Name	The event name for the charge (used for both first and all subsequent charges). This field is populated by the named events configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen. This field is available and mandatory for any Debit charge.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge (used for both first and all subsequent charges). The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance. • Do not make charge - No charge is made. This field is available for any Debit charge.

Adding Subscription configuration

Follow these steps to configure the subscription pro-rating for a periodic charge.

Step	Action
1	In the New Periodic Charge screen, select the Subscription Pro-Rating option from the left

Step	Action
	hand list.
	Result: You see the <i>Subscription Pro-Rating option</i> (on page 314).
2	Select the Pro-Rating Type from the drop down list. See <i>Subscription configuration fields</i> (on page 314) for the options and their usage.
3	Configure this record by entering data in the fields on this screen as defined by the type of periodic charge and rating being added. For an overview of the fields on this screen, see <i>Subscription configuration fields</i> (on page 314).
	Note: The Charge Type and Pro-Rating Type dictate the fields that can be use for pro-rating. See <i>Field Matrix</i> (on page 316).
4	Select the Use Unique First Charge check box if the initial charge differs from the subsequent charges.
5	Click Save .

Editing Subscription configuration

Follow these steps to view or change the subscription pro-rating configuration.

Step	Action
1	In the Edit Periodic Charge screen, select the Subscription Pro-Rating option from the left hand menu. Result: You see the <i>Subscription Pro-Rating option</i> (on page 314).
2	View or update the subscription pro-rating as necessary. For more information about the fields in this option, see <i>Subscription configuration fields</i> (on page 314). Note: The Charge Type and Pro-Rating Type dictate the fields that can be use for pro-rating. See <i>Field Matrix</i> (on page 316).
3	Click Save .

Field matrix

This table describes the relationships between the pro-rating actions and the field sets available.

Charge Types	Subscription	Charge Alignment	Unsubscription	Pro-Rating Types
Debit	First Charge			None
	First Charge			Proportional
	First Charge Fixed Charge		Fixed Charge	Proportional & Fixed Charge
Debit & credit Plan	First Charge			None
	First Charge			Proportional
	First Charge Fixed Charge	Fixed Charge		Proportional & Fixed Charge
Debit & Credit	First Charge			None
	First Charge			Proportional

Charge Types	Subscription	Charge Alignment	Unsubscription	Pro-Rating Types
	First Charge Fixed Charge	Fixed Charge	Fixed Charge	Proportional & Fixed Charge
Credit				None
				Proportional
	Fixed Charge	Fixed Charge	Fixed Charge	Proportional & Fixed Charge
Credit Plan				None
				Proportional
	Fixed Charge	Fixed Charge		Proportional & Fixed Charge
Notification Only				None
				Proportional
				Proportional & Fixed Charge
Control Plan				None
				Proportional
				Proportional & Fixed Charge

Charge Alignment Pro-Rating

Introduction

The charge alignment pro-rating configuration allows you to move the billing date for a periodic service further into the future or closer to the present date. The charge for the billing date change can be applied as required based on the existing periodic service definition.

Charge Alignment Pro-Rating option

Here is an example of the **Charge Alignment Pro-Rating** option in the New Periodic Charge screen.

The screenshot shows the 'New Periodic Charge' dialog box. On the left, a sidebar lists several options, with 'Charge Alignment Pro-Rating' highlighted. The main area contains the following fields:

- Name:** A text input field.
- Charge Type:** A dropdown menu set to 'Debit and Credit'.
- Pro-Rating Type:** A dropdown menu set to 'Proportional and Fixed Charge'.
- Fixed Charge:** A section containing three dropdown menus:
 - Event Class:** Set to 'DCA Sample Events'.
 - Event Name:** Set to 'Cent'.
 - Insufficient Funds Action:** Set to 'Take balance negative'.

At the bottom of the dialog are 'Save' and 'Cancel' buttons, and a 'Help' button in the top right corner.

Charge Alignment configuration fields

This table describes the function of each field.

Field	Description
Name	Name of the periodic charge
Charge Type	The type of charge. The available options are: • Debit • Debit and Credit Plan • Debit and Credit • Credit • Credit Plan The fields you can use will be defined by the type of charge you have chosen.
Pro-Rating Type	The pro-rating method to apply. If the periodic charge is based on: • 'Fixed Date' or 'Wallet Activation' then pro-rating method will be None • 'Service Activation' or Reference Date' then all pro-rating methods will be available The available options are: • None • Proportional • Proportional and Fixed Note: Charge alignment pro-rating can only be performed for fixed charges. Other options prevent the configuration from being set up.
Event Class	The event class for the charge (used for both first and all subsequent charges). This field is populated by the named event sets configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen.
Event Name	The event name for the charge (used for both first and all subsequent charges). This field is populated by the named events configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge (used for both first and all subsequent charges). The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance. • Do not make charge - No charge is made.

Adding Charge Alignment configuration

Follow these steps to configure the charge alignment pro-rating for a periodic charge subscription.

Step	Action
1	In the New Periodic Charge screen, select the Charge Alignment Pro-Rating option from the left hand list. Result: You see the <i>Charge Alignment Pro-Rating option</i> (on page 317).
2	Select the Pro-Rating Type from the drop down list. See <i>Charge Alignment configuration fields</i> (on page 318) for the options and their usage.
3	Configure this record by entering data in the fields on this screen as defined by the type of periodic charge and rating being added.

Step	Action
	For an overview of the fields on this screen, see <i>Charge Alignment configuration fields</i> (on page 318). Note: The Charge Type and Pro-Rating Type dictate the fields that can be use for pro-rating. See <i>Field Matrix</i> (on page 316).
4	Click Save .

Editing Charge Alignment configuration

Follow these steps to view or change the charge alignment pro-rating configuration.

Step	Action
1	In the Edit Periodic Charge screen, select the Charge Alignment Pro-Rating option from the left hand menu. Result: You see the see <i>Charge Alignment Pro-Rating option</i> (on page 317).
2	View or update the charge alignment pro-rating as necessary. For more information about the fields in this option, see <i>Charge Alignment configuration fields</i> (on page 318). Note: The Charge Type and Pro-Rating Type dictate the fields that can be use for pro-rating. See <i>Field Matrix</i> (on page 316).
3	Click Save .

Unsubscription Pro-Rating

Introduction

The unsubscription pro-rating configuration sets the rules for refunding "unused" amounts of the periodic charge subscription when a subscription is stopped.

Unsubscription Pro-Rating option

Here is an example of the **Unsubscription Pro-Rating** option in the New Periodic Charge screen.

The screenshot shows a software window titled "New Periodic Charge" with a blue border and a "Help" button in the top right corner. On the left is a vertical list of menu items with bullet points; "Unsubscription Pro-Rating" is highlighted with a blue background. The main area of the window contains the following fields and controls:

- Name:** A text box containing "15th Monthly".
- Charge Type:** A text box containing "Debit and Credit".
- Pro-Rating Type:** A dropdown menu showing "Proportional and Fixed Charge".
- Fixed Charge section:** A group box containing three dropdown menus:
 - Event Class:** "DCA Sample Events"
 - Event Name:** "Cent"
 - Insufficient Funds Action:** "Take balance negative"
- At the bottom are two buttons: "Save" and "Cancel".

Unsubscription configuration fields

This table describes the function of each field.

Field	Description
Name	Name of the periodic charge
Charge Type	The type of charge. The available options are: • Debit • Debit and Credit • Credit The fields you can use will be defined by the type of charge you have chosen.
Pro-Rating Type	The pro-rating method to apply. The available options are: • None • Proportional • Proportional and Fixed Note: Unsubscribing can only be performed for fixed charges. Other options prevent the configuration from being set up.
Event Class	The event class for the charge (used for both first and all subsequent charges). This field is populated by the named event sets configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen.
Event Name	The event name for the charge (used for both first and all subsequent charges). This field is populated by the named events configured on the <i>Named Event</i> (on page 369) tab on the Rating Management screen.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge (used for both first and all subsequent charges). The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance • Do not make charge - No charge is made

Adding Unsubscription configuration

Follow these steps to configure the unsubscription pro-rating for a periodic charge.

Step	Action
1	In the New Periodic Charge screen, select the Unsubscription Pro-Rating option from the left hand list. Result: You see the <i>Unsubscription Pro-Rating option</i> (on page 319).
2	Select the Pro-Rating Type from the drop down list. See <i>Unsubscription configuration fields</i> (on page 320) for the options and their usage.
3	Configure this record by entering data in the fields on this screen as defined by the type of periodic charge and rating being added. For an overview of the fields on this screen, see <i>Unsubscription configuration fields</i> (on page 320). Note: The Charge Type and Pro-Rating Type dictate the fields that can be use for pro-rating. See <i>Field Matrix</i> (on page 316).
4	Click Save.

Editing Unsubscription configuration

Follow these steps to view or change the unsubscription pro-rating configuration.

Step	Action
1	In the Edit Periodic Charge screen, select the Unsubscription Pro-Rating option from the left hand menu. Result: You see the <i>Unsubscription Pro-Rating option</i> (on page 319).
2	View or update the unsubscription pro-rating as necessary. For more information about the fields in this option, see <i>Unsubscription configuration fields</i> (on page 320). Note: The Charge Type and Pro-Rating Type dictate the fields that can be use for pro-rating. See <i>Field Matrix</i> (on page 316).
3	Click Save .

Rating Management

Overview

Introduction

This chapter explains how to manage the rates for a service provider.

In this chapter

This chapter contains the following topics.

Rating Management Module	323
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Rating Management Module

Introduction

The Rating Management screen lets you configure the rates that can be applied to subscribers on the VWS domain.

For information about how CCS charges, see *Rating and Tariffs* (on page 13).

Note: The Rating Management screen is only available if the CCS Rating Management module has been installed on your system and if you are using the VWS. If you are using a 3rd party domain, then you will not be able to access this screen.

Components

The Rating Management screen contains the following tabs:

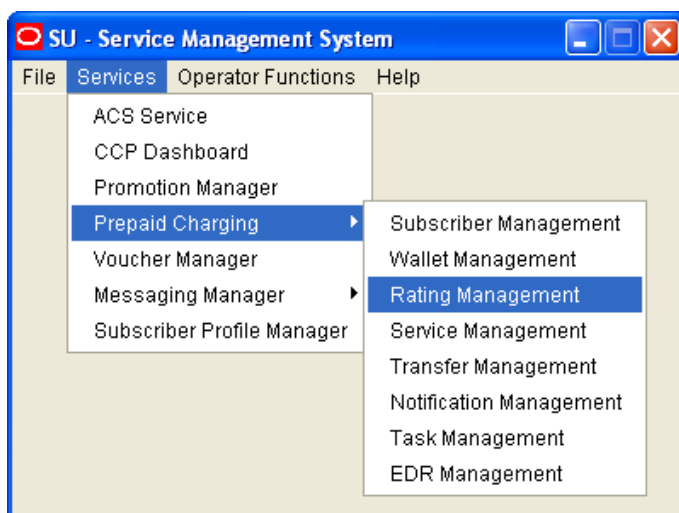
- *Balance Type Cascades* (on page 387)
- *Charge Periods* (on page 380)
- *CLI-DN* (on page 348)
- *Cross Balance Type Cascades* (on page 393)
- *Discount Periods* (on page 377)
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- *Expenditure Plan* (on page 390)
- *Holiday* (on page 363)
- *Named Event* (on page 369)
- *Rating Management - Named Event Catalogues* (on page 413)
- *Rate Tables* (on page 332)
- *Reservation Config* (on page 396)
- *Tariff Plan* (on page 326)
- *Tariff Plan Selector* (on page 329)
- *Weekly* (on page 359)

Accessing the Rating Management screen

Follow these steps to open the Rating Management screen.

Step	Action

- 1 Select the **Services** menu from the SMS main screen.



- 2 Select **Prepaid Charging > Rating Management**.
Result: You see the Rating Management screen.

Rating Management screen

Here is an example of the Rating Management screen.

Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.

Rating Management

Service Provider: ECE_SP Help

Holiday | Named Event | Discount Periods | Charge Periods | Balance Type Cascades
 Tariff Plan | Tariff Plan Selector | Rate Tables | Discount Sets | CLI-DN | Weekly
 Named Event Catalogue | Low Credit Notification Config | Tax Plan
 Expenditure Plan | Cross Balance Type Cascades | Reservation Config

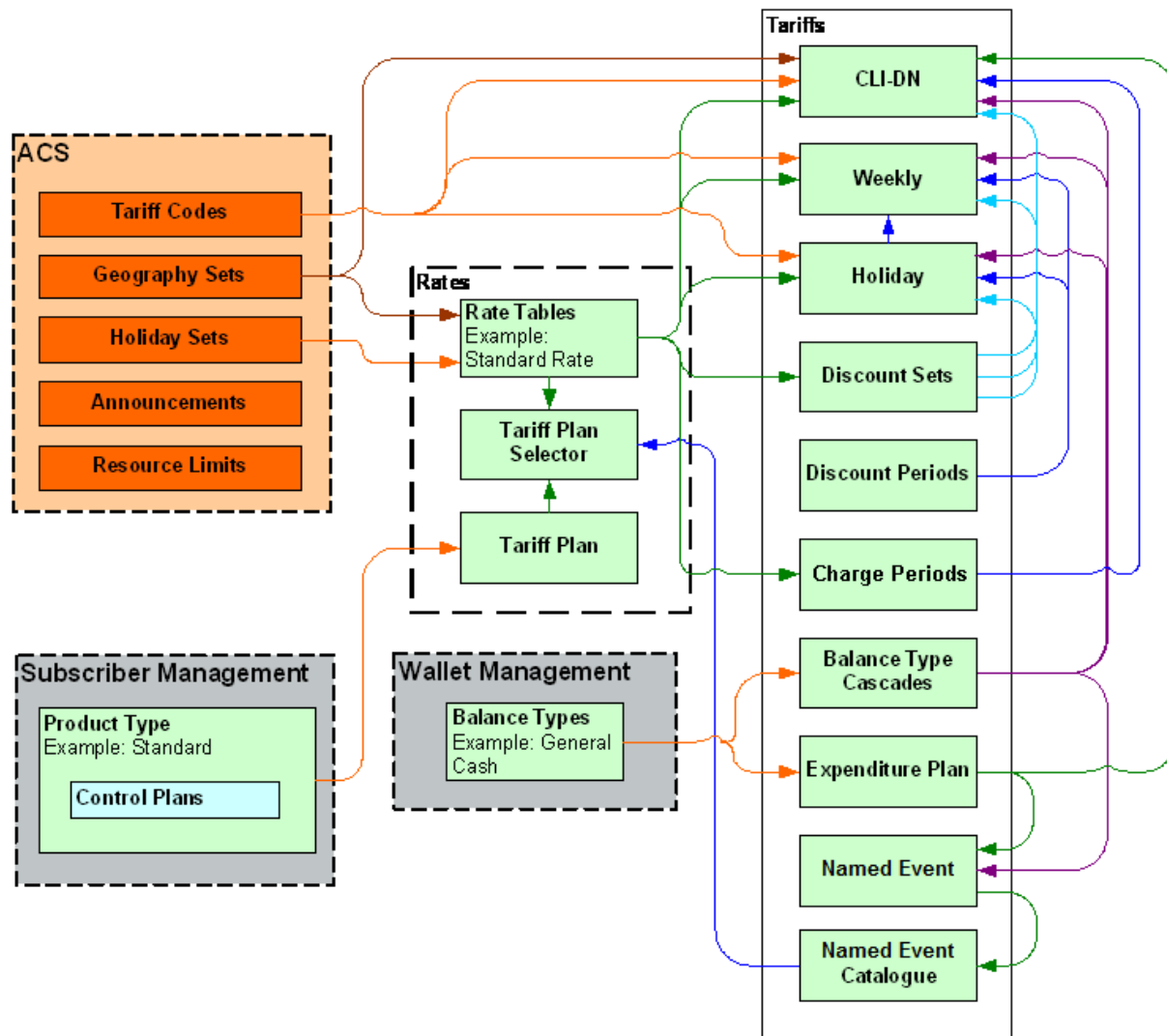
Name	Hold...	Req ...	Commit Volume ...	Request Time

New Edit Delete Close

Rating Management relationships

This diagram shows the relationships between the various screens available in the Rating Management module.

Note: The lines are colored differently for clarity and have no other meaning.



Tariff Plan

Introduction

The **Tariff Plan** tab lets you set up and maintain tariff plans for the selected customer.

The tariff plan is used in the Control Plans option of the product type to select the tariff plan to use in the Attempt Termination with Billing nodes.

Once a tariff plan has been created, assign these items to it in the *Tariff Plan Selector* (on page 329):

- Rate table
- Named event catalogue
- Effective date

Tariff Plan tab

Here is an example Tariff Plan tab.

Rating Management

Service ProviderBossHelp

Tariff Plan

Name	Announcement Name	Change
GC TestPlan		SU
HANDI_TariffPlan		SU
MJH_TariffPlan		SU
MJHTP1		SU
MJHTP1 (343)		CCS_Adf
SL_TestTariff		SU
SL_TestTariff (106)		CCS_Adf
SL_TestTariff (203)		CCS_Adf
SLauto_TariffPlan		SU
SRM Tariff 1		CCS_Adf
SRM Tariff 2		CCS_Adf
SRM Tariff 3		CCS_Adf
SRM Tariff 4		CCS_Adf
SRM Tariff 5		CCS_Adf

NewEditDeleteClose

Tariff Plan fields

This table describes the function of each field.

Field	Description
Name	The name of the tariff plan. Notes: - Tariff plan names must be unique within a customer's set of tariff plans. - Special characters and case do not make a distinction between names. For example, Super Savers is the same as Super Saver's.

Field	Description
	This is a mandatory field.
Name Announcement Set	The announcement set containing the announcement entry you want to play.
Name Announcement Entry	The entry name for the announcement to be played when the tariff plan is selected by the Tariff Plan Announcement node. Note: Announcement sets and their entries are configured in the ACS Configuration screen. Refer to <i>ACS User's Guide</i> for details.

Tariff Plan screen

Here is an example Tariff Plan screen.

Adding tariff plans

Follow these steps to add a new tariff plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Tariff Plan tab, click New . Result: You see the <i>New Tariff Plan screen</i> (See example on page 328).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tariff Plan fields</i> (on page 327).
4	Click Save .

Editing tariff plans

Follow these steps to edit an existing tariff plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Tariff Plan tab, select the tariff plan to edit.
3	Click Edit . Result: You see the <i>Edit Tariff Plan screen</i> (See example on page 328).
4	Make the required changes to the fields. For more information on this screen, see <i>Tariff Plan fields</i> (on page 327).
5	Click Save .

Deleting tariff plans

Follow these steps to delete an existing tariff plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Tariff Plan tab, select the tariff plan to delete. Tip: You cannot delete a tariff plan which is being used by a tariff plan Selector.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: • If the tariff plan is not used by a tariff plan selector, the record is deleted and you see the tariff plans prompt. • If the tariff plan is used by a tariff plan selector, you see an error dialog. In this case, you first need to change the tariff plan selected on the Edit Tariff Plan Selector screen for the Tariff Plan Selector tab, before you can delete the record.
5	Click OK .

Tariff Plan Selector

Introduction

The **Tariff Plan Selector** tab allows you to set up and maintain the details for tariff plans for the selected customer. The tariff plan selector enables you to:

- Link a rate table and a named event catalogue to a tariff plan
- Specify from when the tariff plan will be effective

Tariff Plan Selector tab

Here is an example Tariff Plan Selector tab.

Service Provider: Boss Help

Tariff Plan Selector

Tariff Plan	Rate Table	Named Event Catalogue	Ef
Bronze Callback	Bronze Callback	Bronze	201
Bronze HPLMN MO	Bronze HPLMN MO	Bronze	201
Bronze NGN	Bronze NGN	Bronze	201
Bronze VPLMN MO	Bronze VPLMN MO	Bronze	201
Bronze VPLMN MT	Bronze VPLMN MT	Bronze	201
CS Tariff Plan	CS Tariff Plan	Default	201
CS Tariff Plan	CS Tariff Plan	Default	201
CUG Tariff Plan 1	CUG Tariff Plan 1	Default	201
CUG Tariff Plan 1	CUG Tariff Plan 1	Default	201
CUG Tariff Plan 2	CUG Tariff Plan 2	Default	201
CUG Tariff Plan 2	CUG Tariff Plan 2	Default	201
CUG Tariff Plan 3	CUG Tariff Plan 3	Default	201
CUG Tariff Plan 3	CUG Tariff Plan 3	Default	201
CUG Tariff Plan 4	CUG Tariff Plan 4	Default	201
CUG Tariff Plan 4	CUG Tariff Plan 4	Default	201
CUG Tariff Plan 5	CUG Tariff Plan 5	Default	201
CUG Tariff Plan 5	CUG Tariff Plan 5	Default	201
Gold Callback	Gold Callback	Gold	201
Gold HPLMN MO	Gold HPLMN MO	Gold	201
Gold NGN	Gold NGN	Gold	201
Gold VPLMN MO	Gold VPLMN MO	Gold	201
Gold VPLMN MT	Gold VPLMN MT	Gold	201
Overdraft Bronze	Overdraft Bronze	Default	201
Overdraft Bronze	Overdraft Bronze	Default	201
Overdraft Gold	Overdraft Gold	Default	201
Overdraft Gold	Overdraft Gold	Default	201
Overdraft Silver	Overdraft Silver	Default	201
Overdraft Silver	Overdraft Silver	Default	201
Silver Callback	Silver Callback	Silver	201

New Edit Delete Close

Tariff Plan Selector fields

This table describes the function of each field.

Field	Description
Tariff Plan	The tariff plan to which a rate table, named event catalogue and effective date will be assigned.
Rate Table	The rate table which will be assigned to the selected tariff plan. Note: This list will display all the rate tables a service provider can use.
Named Event Catalogue	The named event catalogue to assign to the selected tariff plan. This field is populated by the records on the Named Event Catalogue tab. For more information, see <i>Named Event Catalogue</i> (on page 413).

Field	Description
	Note: Select the special value "Use Default" to always use the current default named event catalogue in the selected tariff plan.
Effective Date	The year, month, day and hour at which the tariff plan will begin to use the rate table. Tip: Setting the effective date to a past date will make the change effective immediately.

Tariff Plan Selector screen

Here is an example Tariff Plan Selector screen.

Adding tariff plan selectors

Follow these steps to add a new tariff plan selector.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Tariff Plan Selector tab, click New . Result: You see the <i>New Tariff Plan Selector screen</i> (See example on page 331).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tariff Plan Selector fields</i> (on page 330).
4	Click Save .

Editing tariff plan selectors

Follow these steps to edit an existing tariff plan selector.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Tariff Plan Selector tab, select the record to edit.
3	Click Edit .

Step	Action
	Result: You see the Edit <i>Tariff Plan Selector</i> screen (See example on page 331).
4	Edit the details as described in <i>Tariff Plan Selector fields</i> (on page 330).
5	Click Save .

Deleting tariff plan selectors

Follow these steps to delete an existing tariff plan selector.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Tariff Plan Selector tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record will be deleted and you see the Tariff Plan Selector prompt.
5	Click OK .

Rate Tables

Introduction

The **Rate Tables** tab lets you set up and maintain rate tables. It also provides the facility to import and export rate table data. See *Importing and Exporting Rate Data* (on page 338) for details.

Rate tables are used to map currency to a geography set and a holiday set.

- Geography set: an ACS reusable resource set, defining the set of geographies. Each single Geography is based on an E.164 number range.
- Holiday set: an ACS reusable resource set, representing the calendar of predefined annual holidays.

These are then used in the **Tariff Plan Selector** tab to assign rate tables and effective dates to tariff plans.

When a call is made, the system uses the rate table for the wallet/product type to determine:

- 1 The basic tariff for that rate table (these are the CLI DN tariffs)
- 2 Any weekly tariffs that may apply
- 3 Any holiday tariffs that may apply

There is no limitation on the number of rate plans that can be defined. You can set a rate plan for a number range or an individual.

Holiday tariffs override any weekly tariff that may apply to the call and weekly tariffs override charges set in the CLI-DN tariffs.

For more information about setting up geography sets and holiday sets, see *ACS User's Guide*.

About testing new rate tables

You can test your rating configuration by performing a test call at a date and time that you specify in the CCS Call Date profile field. This feature allows you to test key elements of the rating system, such as:

- Time of day tariffs
- Day of week tariffs

- Holiday tariffs

The CCS Call Date profile field is held in temporary storage. You can set it to a specific date and time by using a Set feature node prior to the UATB feature node in your control plan. When set, the current system date and time will be overwritten by the profile field value in message requests sent to the VWS by the UATB feature node.

For more information about the UATB feature node, see the *Feature Nodes Reference Guide*. For more information about configuring control plans, see *Control Plan Editor User's Guide*.

Rate Tables fields

This table describes the function of each field.

Field	Description
Based on Rate Table	The rate table used to define the new rate table. Note: The charge period sets belonging to the rate table selected in the Base on Rate Table field will be copied and associated with the new rate table. The charge period detail for the copied charge period sets will be retained and the newly created charge period sets will appear in the Charge Periods tab.
Default Reservation Config	This indicates what the default reservation values are. The default reservation parameters are configured in SMS > Services > Prepaid Charging > Rating Management, Reservation Config tab
Rate Table	The name of the new rate table. Notes: • Tariff plan names must be unique within a customer's set of tariff plans. • Special characters and case do not make a distinction between names. For example, Super Savers is the same as Super Saver's. • This is a mandatory field.
Geography Set	The geography set which this rate table will map a currency to. Notes: • All rate tables must have a geography set selected for them. This list displays all the geography sets which a customer can use. If no geography sets are displayed, geography sets must first be created and assigned to the customer. Geography sets are created using the ACS Configuration screen. Access to public sets is assigned using the Service Provider Details screen. For details on creating geography sets, see <i>ACS User's Guide</i>.
Holiday Set	The holiday set which this rate table will map a currency to. Notes: • All rate tables must have a holiday set selected for them. This list box displays all the holiday sets which a customer can use. If no holiday sets are displayed, holiday sets must first be created and assigned to the customer. Holiday sets are created using the ACS Configuration screen. Access to public sets is assigned using the Service Provider Details screen. For details on creating holiday sets, see <i>ACS User's Guide</i>.

Field	Description
Billing Indicator	This indicates whether the rate table is time or data based. Note: This is used for display purposes, and does not affect the rating, just what is displayed. The effect of the billing indicator when changing from a data unit to a time value is to display the rate per minute instead of per second. Hence the time rate will be 60x the data rate.

Rate Table screen

Here is an example Rate Table screen.

Adding rate tables

Follow these steps to add a new rate table.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Rate Tables tab, click New . Result: You see the <i>New Rate Table screen</i> (See example on page 334).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see Rate Tables fields.
4	Click Save .

Editing rate tables

Follow these steps to edit an existing rate table.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Rate Tables tab, select the record to edit.

Step	Action
3	Click Edit . Result: You see the <i>Edit Rate Table screen</i> (See example on page 334).
4	Edit the details as described in Rate Tables fields.
5	Click Save .

Deleting rate tables

Follow these steps to delete an existing rate table.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Rate Tables tab, select the record that you want to delete. Note: You cannot delete a rate table which is associated with a billing period, CLI-DN, discount set, holiday, week, or a tariff plan selector.
3	Click Delete . The Delete Confirmation prompt appears.
4	Click OK . The rate table is deleted from the database and the prompt appears. Note: An error displays if the rate table is associated with any of the following data: a billing period, CLI-DN, discount set, holiday, week, or a tariff plan selector. Remove the associations to the rate table by editing the relevant data on the other tabs in the Rating Management window before attempting to delete the record again.
5	Click OK .

Rounding During Rating Calculations

Introduction

Rounding is applied to rating calculations when a voice call or data session is charged by CCS and the Voucher Wallet Servers (VWS).

Basically, Convergent Charging Controller uses the following process to convert the units to be charged into a cost:

- 1 Determine the number of units to be charged, which takes into account the number of units already committed or charged and might be adjusted, for example, to suit the minimum call length definition.
- 2 Round the units up to the nearest multiple of the Billing Resolution.
For example, for units to be charged of 22.5 seconds:
 - If Billing Resolution is 1 second, then the rounded units is 23 seconds
 - If Billing Resolution is 10 seconds, then the rounded units is 30 seconds
- 3 Multiply the units by the rate or rates defined for the Billing Periods.

- 4 Apply bankers rounding, also known as symmetric rounding, to the calculated cost.

Notes:

- This basic scenario can be complicated by using billing periods with different tariffs, cross balance tariffs, and so on. However, the rounding that is applied is fundamentally the same.
- Charging can occur at the end of a call or throughout the call, depending on the Commit Volume Threshold defined in the Reservation Configuration used to rate the call. If Mid-Session Commit is enabled, rounding occurs at each charge commit.

Banker's Rounding

Convergent Charging Controller applies bankers rounding, also known as symmetric rounding, to the calculated cost of a call or data session.

Bankers rounding is a way of performing neutral rounding of higher precision values to lower precision values. When converting floating point values to integers, it works as follows:

- Values with a fractional part above 0.5, round up to the nearest whole number
- Values with a fractional part below 0.5, round down to the nearest whole number
- Values with a fractional part equal to 0.5, round to the nearest *even* whole number

For example:

- 3.50 will be rounded to 4
- 4.25 will be rounded to 4
- 4.50 will be rounded to 4
- 4.75 will be rounded to 5
- 5.50 will be rounded to 6

Note: Rounding to the nearest even whole number guarantees neutral, or fair, rounding with a large sample.

Examples

The following examples illustrate how rounding is applied for a single charge per call. The following conditions apply:

- Mid-session commit (Reservation Configuration) is not configured
- Minimum Call Length: 0 seconds (CLI-DN Tariff)
- Billing Resolution: 1 second (CLI-DN Tariff)
- Rate: 15c/min (Billing Period)
- Duration is 49.1s and cost is 12c

The rating calculation is as follows:

- units to charge = 49.1s
- units rounded up = 50s
- cost (units * rate) = $50 * (15/60) = 50/4 = 12.5c$
- cost after bankers rounding = 12c

Example: Multiple Charges Per Call

The following examples illustrate how rounding is applied for a call with multiple charges:

- Mid-session commit - Commit Volume Threshold: 20 seconds (Reservation Configuration)
- Minimum Call Length: 0 seconds (CLI-DN Tariff)

- Billing Resolution: 1 second (CLI-DN Tariff)
- Rate: 15c/min (Billing Period)
- Total duration is 52.1s and cost is 13c

The rating calculation is as follows:

- 1 Processing first Subsequent Reservation (SR) Request
 - call duration = 29.7s
 - units to charge = 29.7s
 - units rounded up = 30s
 - cost (units * rate) = $30 * (15/60) = 30/4 = 7.5$
 - cost after bankers rounding = 8c
- 2 Processing second SR
 - call duration = 36.5s
 - already charged for 30 seconds, so units to charge = 6.5s
 - 6.5s is less than Commit Threshold of 20s so the units are not committed
- 3 Processing third SR
 - call duration = 50.6s
 - already charged for 30s, so units to charge = 20.6s
 - units rounded up = 21s
 - cost = $21/4 = 5.25c$
 - cost after bankers rounding = 5c
- 4 Processing Commit Reservation (CR) Request
 - call duration = 52.1s
 - already charged for 51s, so units to charge = 1.1s
 - units rounded up = 2s
 - cost = $2/4 = 0.5c$
 - cost after bankers rounding = 0c

Example: Single Charge Per Call with Rate Change During Call

The following examples illustrate how rounding is applied for a single charge per call with a rate change during the call:

- Mid-session commit - Commit Volume Threshold: 20 seconds (Reservation Configuration)
- Minimum Call Length: 0 seconds (CLI-DN Tariff)
- Billing Resolution: 1 second (CLI-DN Tariff)
- Rates: 15c/min for first 60s, 10c/min after the first 60s (Billing Period)
- Total duration is 110.1s and cost is 24c

The rating calculation is as follows:

- Processing Commit Reservation (CR) Request
- call duration = 110.1s
- units rounded up = 111s

The charge for the first 60s is calculated as:

- units to charge = 60s
- cost (units * rate) = $60 * (15/60) = 60/4 = 15c$

The charge for the remaining duration is calculated as:

- already charged for 60s so units to charge is 51s
- cost (units * rate) = $51 * (10/60) = 51/6 = 8.5c$

The total charge = $15 + 8.5 = 23.5c$

- cost after bankers rounding = 24c

Importing and Exporting Rate Data

Introduction

The **Import** and **Export** buttons on the **Rate Tables** tab allow you to import and export rate tables and associated public data. Use this facility to create and modify rate data externally, using third party tools, before importing it into the system.

Note: Rate data is exported to a file and imported from a file in XML format. Refer to the files in the `/IN/html/Ccs_Service/xml/rateTable` directory on the SMS for more information.

Data import

Use the import facility to import the following data from a file:

- New rate tables
- New public data
- Updates to existing public data

When you import rate data, the import file is pre-parsed to check that it conforms to the import file specification.

When there are errors in the import file, the following occurs:

- The import process fails
- Any database changes are rolled back
- Details about the import file lines or sections that contain errors are reported to the user

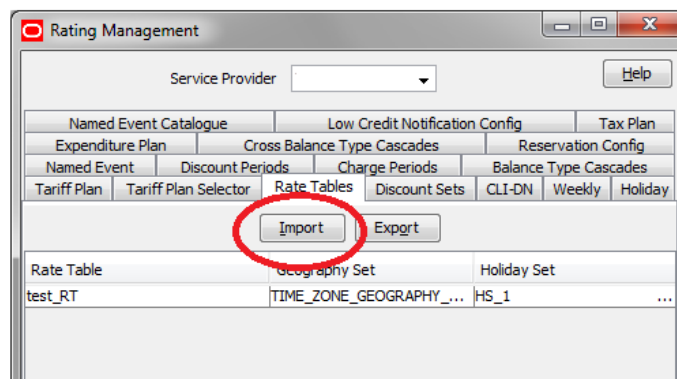
Warning: You cannot update existing rate tables or delete rate data using this facility.

Importing rate data

Follow these steps to import rate data from file.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Rate Tables tab, click Import .

Result: You see an Import screen.

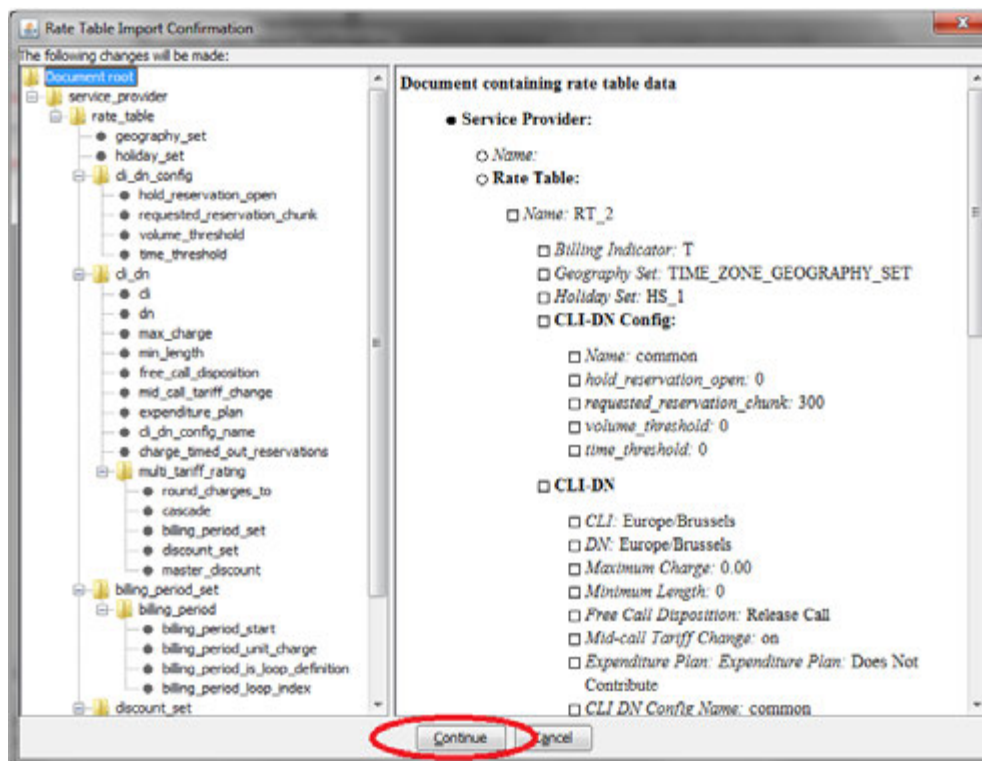


- 3 Select the folder which holds the import file.
- 4 In the **File name** field, type the import file name.

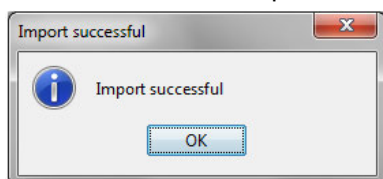
Warning: The import file type must be XML.

Step	Action

5

Click **Import**.**Result:** You see the Rate Table Import Confirmation screen.

6

Click **Continue**.**Result:** You see the Import successful prompt.

Note: If there are errors in the XML file, a list of the errors in the XML file will be displayed instead of the Import successful prompt. Correct these errors and click **Import** to try again.

7

Click **OK**.

Data export

Use the export facility to export a rate table or the public data associated with rate tables to a specified file.

When you export a rate table, the system exports all data that is privately related to the selected rate table, including:

- Name of the geography set being used
- CLI-DN listings and related tariffing details
- Rate table specific charge periods

- Associated weekly and holiday discount sets

When you export public data, the system exports all data that is publicly available to any rate table set up for this service provider, including:

- Public charge periods
- Balance type cascades
- Public discount periods
- Named events

Exporting a rate table

Follow these steps to export a rate table and its related data to file.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Rate Tables tab, select the rate table to export and click Export . Result: You see the Export Rate Table or Public Data prompt.
3	Click Rate Table . Result: You see an Export screen.
4	Select the folder in which you want to store the export file.
5	In the File name field, type the export file name. Warning: The export file type must be set to XML.
6	Click Export . Result: You see the Export successful prompt.
7	Click OK .

Exporting public data

Follow these steps to export public data to file.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Rate Tables tab, click Export . Result: If a rate is currently selected on the tab, you see the Export Rate Table or Public Data prompt. Click Public Data .
3	If none of the rates on the tab were selected, or you clicked Public Data , you see an Export screen.
4	Select the folder in which you want to store the export file.
5	In the File name field, type the export file name. Warning: The export file type must be set to XML.
6	Click Export . Result: You see the Export successful prompt.
7	Click OK .

Discount Sets

Introduction

The **Discount Sets** tab lets you add, modify, and delete discount sets.

Discount sets are placeholder records which are used to connect rate tables and discounts. Discount sets are used by the following tariffs:

- *CLI-DN* (on page 348)
- *Weekly Tariffs* (on page 359)
- *Holiday Tariffs* (on page 363)

Discount Sets tab

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

Rating Management

Service Provider: Boss

Help

Discount Sets

Rate Table: GCRT01

Name	Description	Change User
GCdisc01	test	SU

New Edit Delete Close

Discount Sets fields

This table describes the function of each field.

Field	Description
Rate Table	Displays the rate table selected on the Discount Sets tab.
Name	The name of the discount set.
Description	A brief description of the discount set.

Discount Set screen

Here is an example Discount Set screen.

Adding discount sets

Follow these steps to add a new discount set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Discount Sets tab, select, from the Rate Table drop down box, the rate with which to associate a discount set.
3	Click New . Result: You see the New <i>Discount Set</i> screen (See example on page 342). The Rate Table field displays the rate table selected in step 2.
4	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Discount Sets fields</i> (on page 342).
5	Click Save .

Editing the discount sets

Follow these steps to edit an existing discount set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.

Step	Action
2	In the table on the Discount Sets tab, select the discount set to edit.
3	Click Edit . Result: You see the Edit <i>Discount Set</i> screen (See example on page 342).
4	Edit the details as described in <i>Discount Sets fields</i> (on page 342).
5	Click Save .

Deleting discount sets

Follow these steps to delete an existing discount set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Discount Sets tab, select the discount set to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Discount Sets prompt.
5	Click OK .

Deriving a CLI-DN Tariff for a Call

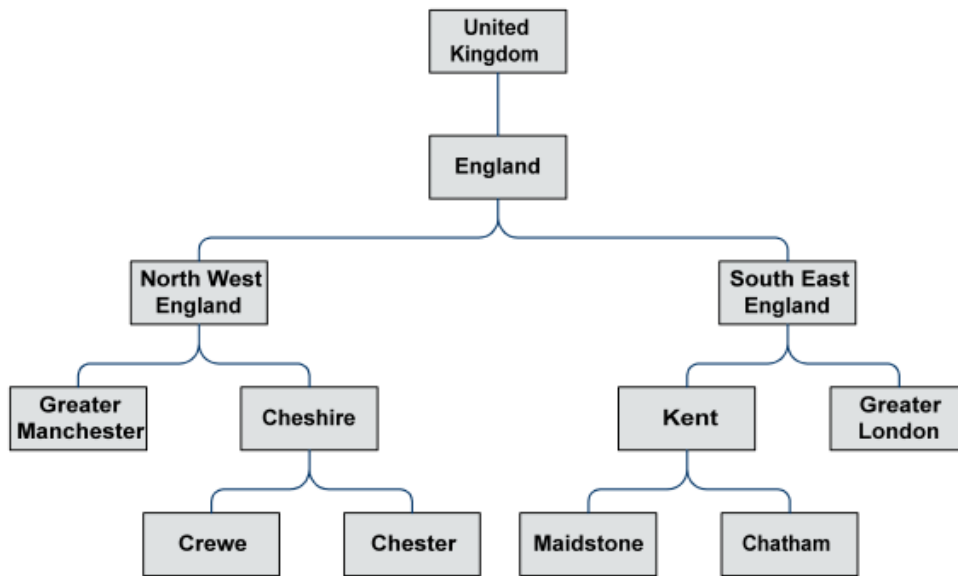
Introduction

The CLI-DN tariff for a call is always chosen according to the closest matching link across a geography set. The system searches for:

- 1 a direct link first, then
- 2 looks for the nearest available link if a direct link is not available.

If no link between the two points is recognized, the call is disconnected. Location is based on the CC Calling Network Address tag from the call context profile.

Example: This diagram demonstrates the algorithm for obtaining the tariff. For simplicity's sake, all calling significant entries are on the left of England and all destination significant entries are on the right.



Calling number X destination number

The following table shows the links that are available for mapping calls.

Calling Number	Destination Number
North West England	Maidstone
North West England	Kent
Cheshire	Greater London
Cheshire	South East England
Chester	South East England

Destination geography map

The following table shows the links mapping DN (Destination Numbers).

Significant_Entry	Lowest_Entry	Level	Usage
Greater London	Greater London	3	1
Kent	Chatham	3	1
Kent	Maidstone	3	1
Maidstone	Maidstone	4	1
South East England	Chatham	2	2
South East England	Greater London	2	2
South East England	Maidstone	2	2

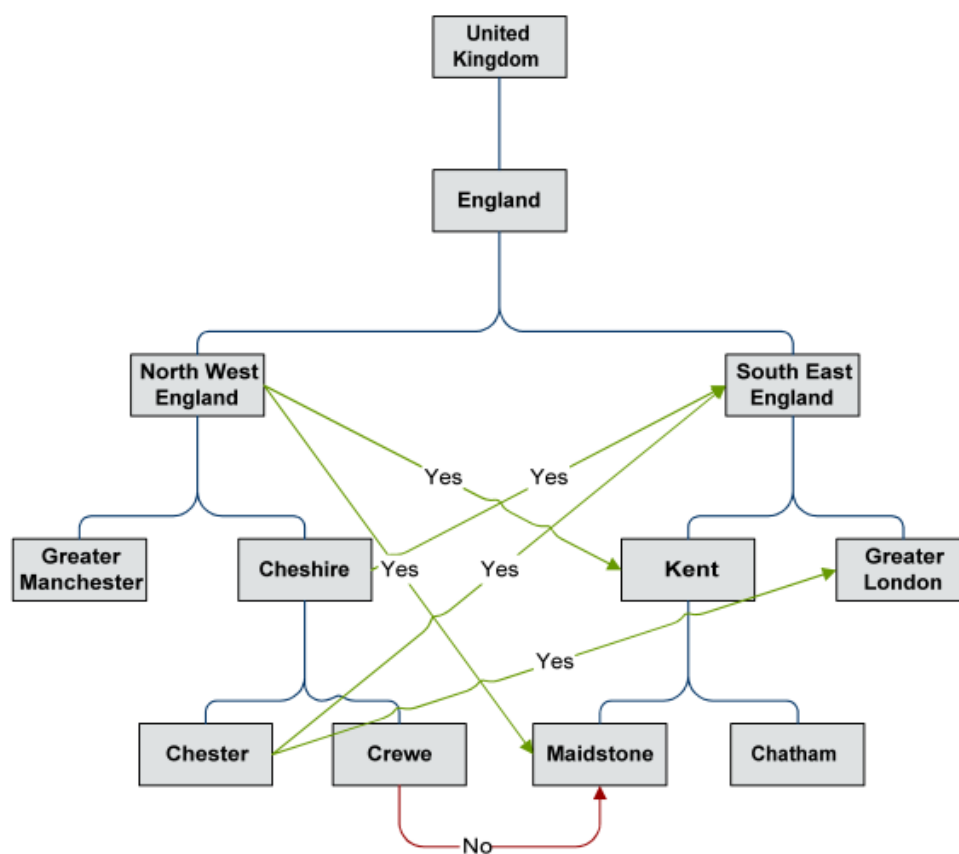
Calling geography map

The following table shows the links mapping CLI (Calling Line Identifiers).

Significant_Entry	Lowest_Entry	Level	Usage
Cheshire	Chester	3	2
Cheshire	Crewe	3	2
Chester	Chester	4	1
North West England	Chester	2	2
North West England	Crewe	2	2
North West England	Greater Manchester	2	2

Example CLI-DN tariff

Here is an example showing a call from Crewe to Maidstone, where 'yes' shows existing call links and 'no' shows that no link exists between Crewe and Maidstone.



To find a tariff, the system will return all significant entries for a CLI and DN and then rank them in CLI/DN level entry descending order and select the first hit. Where no record is found, the call is disconnected.

First attempt

A call made from Crewe to Maidstone does not have a direct link mapped. Failing to find a link to Maidstone, the system will search for the most direct link. An attempt is made at each location along the same branch as Maidstone. The DNs on the Maidstone branch of the geography tree are Kent and South East England. There are no direct links from Crewe to either of these destinations.

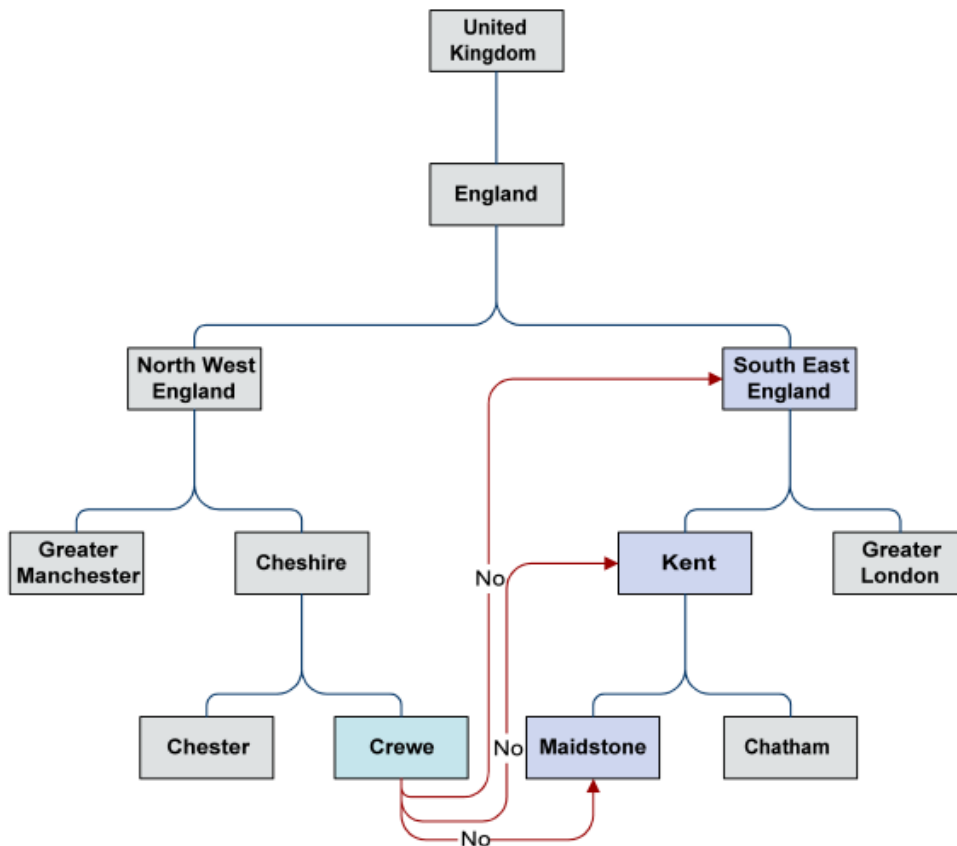
DN significant entry

The following table shows the destination significant entries on the geography tree. A destination significant entry is a destination or the parent entry of a destination, or any parent entry of any destination significant entry.

Destination Significant Entry	Level
Maidstone	4
Kent	3
South-East England	2

Deriving a tariff - first attempt

Here is an example depicting the previous table and showing that there are no direct links from Crewe to any of the DN significant entries.



The first attempt to connect a call from Crewe to Maidstone searches for a direct link to a DN along the Maidstone branch of the geography tree.

Second attempt

The system then searches from the next CLI along the same branch as Crewe, in an attempt to make a direct link.

The CLIs on the Crewe branch of the geography tree are Cheshire and North West England. There is no direct link from Cheshire to Kent, but there is a link from Cheshire to South East England (see *Destination geography map* (on page 344)). There is then no need to search for any links from North West England. The system will charge the call using Cheshire to South East England as the CLI-DN Tariff.

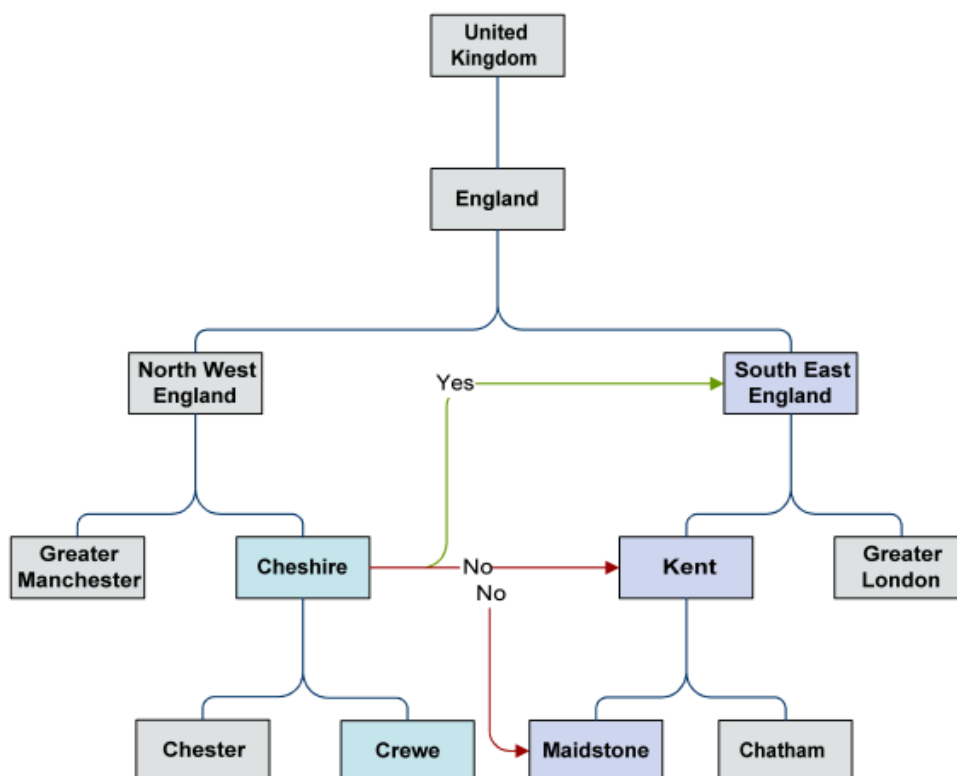
CLI significant entry

The following table shows the calling significant entries on the geography tree. A calling significant entry is a CLI (calling location) or the parent entry of a CLI, or any parent entry of any calling significant entry.

Calling Significant Entry	Level
Cheshire	3
North West England	2

Deriving a tariff - second attempt

Here is an example depicting the previous table and showing that there are no direct links from Crewe to any of the DN significant entries.



The second attempt to connect a call from Crewe to Maidstone searches for a direct link to a DN along the Crewe branch of the geography tree.

CLI-DN

Introduction

The **CLI-DN** tab lets you set up and maintain Calling Line Identifier (CLI) to Dialed Number (DN) tariffs for the selected customer. For more information, refer to *Deriving a CLI-DN Tariff for a Call* (on page 343).

Once a CLI-DN tariff has been created for a rate table, it may be used by a tariff plan to set geographical area to geographical area tariffs. The tariffs set in the **CLI-DN** tab are the basic tariffs that are used for the rate table. These are the tariffs that will be used for a call, unless it is overridden by a *Weekly Tariffs* (on page 359) or *Holiday Tariffs* (on page 363) tariff.

CLI-DN tab

Here is an example **CLI-DN** tab.

Multi-Tariffs	Rate Table	CLI	DN	Maximum Charge	M
	CS Tariff Plan	On-net	On-net		1

Finding CLI-DN tariffs

Follow these steps to search for the CLI-DN tariffs for a selected rate table.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.

Step	Action
2	On the CLI-DN tab, select the Rate Table to search from the drop down list. Result: You see the geography set for the selected rate table in the top half of the screen.
3	If required, select the CLI to search on from the list and click Set .
4	If required, select the DN to search on from the list and click Set .
5	Click Search . Result: The CLI-DN tariffs that have be defined for the rate table and that match the search criteria are displayed in the table. Only the first 1000 matching records are returned.
Notes: • If you leave both the CLI and DN fields empty when specifying your search criteria then all the configured CLI-DN tariffs will be returned for the rate table. • If you select either a CLI or a DN to search on, then the results will be restricted to the CLI-DN tariffs which exactly match the selected CLI or DN. • If you select a CLI and a DN to search on, the results will only include CLI-DN tariffs which exactly match both the selected CLI and the selected DN.	

Using the CLI-DN tab

You use the **CLI-DN** tab to search for, and configure CLI-DN tariffs.

The tab operates as a split screen. In the top half of the screen you see:

- The selected rate table.
- A tree structure showing the geographical areas assigned to the rate table.
- The CLI and DN search fields.

In the bottom half of the screen you see a table for the search results. The CLI-DN tariffs that match the search criteria and that have been configured for the selected rate table are listed in the table.

You can expand either half of the screen to fill more of the tab by clicking on the up and down arrows between the two halves:

- To expand the top half of the screen to see more geographical areas, click the down arrow.
- To expand the bottom half of the screen to see more CLI-DN tariffs, click the up arrow.

Configuring CLI-DN Tariffs

Introduction

You can configure any of these types of tariffs:

- Single tariff
- Multi-tariff

Multi-tariff CLI-DNs

Multi-tariff CLI-DNs provide the facility to split the CLI-DN tariff into its different revenue components. Each revenue component is identified by a specific service id and the tariff charging details are associated with it.

Whenever an EDR is generated from the CLI-DN tariff, it will include the revenue details for each service ID. This information can then be used for accounting purposes.

Accessing the New CLI-DN Tariff screen

You use the New CLI-DN Tariff screen to configure new:

- Single tariff CLI-DNs
- Multi-tariff CLI-DNs

Follow these steps to access the New CLI-DN Tariff screen.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the CLI-DN tab, select the rate table from the drop down list for which you want to configure a CLI-DN tariff. Result: You see a tree structure in the top half of the screen. It shows the geography set for the rate table and the list of all the available geographical areas.
3	Click New . Result: You see the New CLI-DN Tariff screen.
4	To configure a single tariff CLI-DN, see <i>Adding a single tariff CLI-DN</i> (on page 355).
5	To configure a multi-tariff CLI-DN, see <i>Adding a multi-tariff CLI-DN</i> (on page 356).
6	Click Save .

CLI-DN tariff fields

This table describes the function of each field.

Field	Description
Rate Table	The rate table that the CLI-DN tariff applies to. This is set by the rate table which is selected from the Rate Table field in the CLI-DN tab when the record was first configured.
CLI	Sets the CLI area for the tariff. This is the geographical area that calls are coming from.
DN	Sets the free dialed number area for the tariff. This is the geographical area that calls are going to.
Free Call Disposition	Determines how a call is handled when a "freeCallIndicator" is received from the network. An indicator such as this is occasionally received via INAP. It informs CCS that the call should be free, regardless of any defined tariff. CCS can handle a "freeCallIndicator" in one of three ways: • Release a Call. It can release the call if it was told the call should be free. • Honour. It can take notice of the indication, and give the call for free (that is, honor the indication). • Ignore. It can ignore the indication and carry on and charge the call as defined in the tariffs. Note: Not applicable to CAMEL/ISUP networks.

Field	Description
Maximum Charge	Sets the maximum amount that may be charged for calls made using this tariff. The unit of currency is displayed in brackets in the field name. Warning: A value of zero (0) or a blank field means that there is no maximum charge.
Minimum Length (secs), Minimum Volume (data units)	Sets the minimum volume of time (seconds) or data (data units) which will be charged for a single call, even if the caller uses less time/data. Tip: This must be a multiple of the billing resolution value or zero.
Expenditure Plan (also listed as Contributes to Expenditure)	Determines whether this CLI-DN contributes to expenditure calculations, and what expenditure plan it contributes to. This field is populated by the Expenditure Plan tab. For more information, see <i>Expenditure Plan</i> (on page 390). Tip: When "Does Not Contribute" is selected the CLI-DN is excluded from all expenditure calculations.
Cross Balance Type Cascade	Sets the cross balance type cascade for the CLI-DN tariff. This defines when a cross balance discount may apply, and also the cross balance type cascade to debit for charged calls using this CLI-DN. For more information, see <i>Cross Balance Type Cascades</i> (on page 393).
Tariff Code	Sets the tariff code to use for 16KHz charging. Tip: Tariff codes are defined on the Tariff Codes tab in the ACS Resources screen. For more information, see <i>ACS User's Guide</i>.
Tax Plan	Defines the tax plan to associate with this CLI-DN. Tip: Tax plans are define on the Tax Plan tab in the Rating Management screen. For more information, see <i>Tax Plan</i> (on page 406).
Mid-call Tariff Change	A switch which controls whether to apply, or stop applying, a discount to a call on this rate after the call has started. Tip: When left deselected, the current discounted or non-discounted rate applies for the entire duration of the call.
Low Credit Notification Config	Defines the low credit configuration to use when explaining low credit to a subscriber. See <i>Low Credit Notification Config</i> (on page 403).
Charge on Reservation Timeout	Select this check box to indicate that charging is to be applied for reservations that timeout. Note: Charge on timeout will currently only commit used units and not granted units.
Reservation Config ID	Select the applicable reservation configuration to use, as defined in the Reservation Config tab. For more information, see <i>Reservation Config</i> (on page 396).
Billing Resolution (secs) Billing Resolution (data units)	Sets the unit length for billing calls either in seconds (SS) and hundredths of seconds (HH), or units of data. Uses the following format for time: SS.HH. Example: 1.25 (One and a quarter seconds)

Field	Description
	Tip: The minimum length must be multiples of the billing resolution value.
Balance Type Cascade (also listed as Cascade)	Sets the balance type cascade for the CLI-DN tariff. This field is populated by the records in the Balance Type Cascades tab. For more information, see <i>Balance Type Cascades</i> (on page 387).
Charge Period	Sets the charge period for the CLI-DN tariff. This field is populated by the records in the Charge Periods tab. Tip: Charge periods that are not attached to a specific rate table are indicated by placing (G) after the charge period name (G for Global). For more information, see <i>Charge Periods</i> (on page 380).
Discount Set	Sets the discount set for the CLI-DN tariff. This field is populated with the available discount sets for the selected rate table. For more information, see <i>Discount Sets</i> (on page 341).
Service Id	A text field of up to 15 characters that sets the Service Id to use for the CLI-DN tariff. This field: • Is required for multi-tariff CLI-DNs (it is used to identify the separate revenue elements contained within the whole rate). • Is optional for single-tariff CLI-DNs.
Master Discount	Identifies the tariff for which any associated discount will be used to override the global settings as well as the local billing resolution and cascade. Tip: Only one of the definitions in a multi-tariff CLI-DN may be set to be the master discount tariff.

CLI-DN Tariff screen

Here is an example CLI-DN Tariff screen.

The screenshot shows the 'Edit CLI-DN Tariff' window. At the top, the 'Rate Table' is set to 'Bronze Callback'. Below this is a tree view of 'ChargingMax Geography Set' with expandable categories: Fixed, Free, International, Off-net, On-net, and Premium. The 'CLI' field is set to 'Zone 1' and the 'DN' field is set to 'Fixed', each with 'Set' and 'Clear' buttons. The main configuration area is split into two columns. The left column includes 'Free Call Disposition' (Ignore), 'Maximum Charge (\$)' (empty), 'Minimum Length (secs)' (60), 'Low Credit Notification Config' (None), and 'Charge On Reservation Timeout' (checkbox). The right column includes 'Expenditure Plan' (Does Not Contribute), 'Cross Balance Type Cascade' (None), 'Tariff Code' (None), 'Tax Plan' (None), 'Mid-call Tariff Change' (checkbox), and 'Reservation Config' (-Rate Table Default -). The bottom section contains 'Billing Resolution (secs)' (1.00), 'Balance Type Cascade' (Voice), 'Charge Period' (CALLBACK-IZ1-FX), 'Discount Set' (No discounts), 'Service Id' (empty), and 'Master Discount' (checked). A 'More' button is located below the 'Master Discount' checkbox. At the bottom of the window are 'Save' and 'Cancel' buttons.

Note: This example displays single-tariff mode. In Multi-tariff mode the bottom half of the screen is different.

Using the New/Edit CLI-DN Tariff screen

You use the New and Edit CLI-DN Tariff screen to add new CLI-DN tariffs and edit existing ones.

Like the CLI-DN tab these screens are split into two halves. In the top half of the screen you see:

- The rate table for the CLI-DN
- A tree structure showing the geographical areas assigned to the rate table
- The CLI and DN fields

In the bottom half of the screen you see details of the CLI-DN tariff configuration.

You can expand the view of either half to fill the screen by clicking on the up and down arrows between the two halves:

- To expand the top half of the screen to see more geographical areas, click the down arrow.

- To expand the bottom half of the screen, click the up arrow.

When you add or edit a CLI-DN tariff and your cursor hovers over one of the following fields for two or three seconds, SMS displays the current configuration for the field in a popup window. This alleviates the need to obtain the information from other screens while configuring a CLI-DN tariff:

- Free Call Distribution
- Expenditure Plan
- Cross Balance Type Cascade
- Tariff Code
- Low-Credit Notification Config
- Tax Plan
- Reservation Config
- Balance Type Cascade
- Charge Period
- Discount Set

Single-tariff mode

When you are in single tariff CLI-DN mode, the bottom half of the screen looks like this:

The screenshot shows a configuration window for a CLI-DN tariff in single-tariff mode. The window is split into two horizontal panes. The top pane contains the following fields and controls:

- Free Call Disposition: Release Call (dropdown)
- Expenditure Plan: Does Not Contribute (dropdown)
- Maximum Charge (\$): (text input)
- Cross Balance Type Cascade: None (dropdown)
- Minimum Length (secs): (text input)
- Tariff Code: None (dropdown)
- Low Credit Notification Config: -- No Notifications -- (dropdown)
- Tax Plan: None (dropdown)
- Charge On Reservation Timeout: ☐
- Mid-call Tariff Change: ☒
- Reservation Config: - Rate Table Default - (dropdown)

The bottom pane contains the following fields and controls:

- Billing Resolution (secs): 60 (text input)
- Balance Type Cascade: SMS (dropdown)
- Charge Period: HPLMN-MO-ON-IZ1 (dropdown)
- Discount Set: Silver HPLMN MO (dropdown)
- Service Id: (text input)
- Master Discount: ☒

At the bottom of the window are three buttons: Save, Cancel, and a More button.

Note: This example is for a data rate table, the labels will change slightly for a voice rate table.

You switch to multi-tariff mode by clicking the **More** button. This button becomes enabled when you specify a value in the **Service Id** field.

Multi-tariff mode

When you are in multi-tariff mode, the bottom half of the screen looks like this:

Free Call DispositionRelease Call

Maximum Charge (\$)

Minimum Length (secs)

Low Credit Notification Config-- No Notifications --

Charge On Reservation Timeout☒

Expenditure PlanDoes Not Contribute

Cross Balance Type CascadeNone

Tariff CodeNone

Tax PlanNone

Mid-call Tariff Change☒

Reservation Config- Rate Table Default -

Master Discount	Billing Resolution (secs)	Balance Type Cascade	Charge Period	Discount Set	Service Id
Y	60.00	FD Free Changes	VPLMN-MT-ON-IZ1	No discounts	1
N	45.00	PromoVoice	VPLMN-MT-ON-IZ1	No discounts	32

NewEditDeleteSet Master Discount

SaveCancel

Note: This example is for a data rate table, the labels will change slightly for a voice rate table.

In multi-tariff mode you can:

- Add multi-tariff charges to the CLI-DN tariff configuration
- Edit multi-tariff charges
- Delete multi-tariff charges

Adding a single tariff CLI-DN

Follow these steps to add a new single tariff CLI-DN.

Tip: For more information about a particular field in the New CLI-DN Tariff screen, see *CLI-DN tariff fields* (on page 350).

Step	Action
1	In the New CLI-DN Tariff screen, with the bottom half of the screen in single-tariff mode, select the CLI area for the tariff from the geography set in the top half of the screen and click Set .
2	Select the free DN area for the tariff from the geography set and click Set .
3	Configure this record by entering data in the rest of the fields on this screen. For more information about the fields on this screen, see <i>CLI-DN tariff fields</i> (on page 350).
4	Click Save .

Editing a single tariff CLI-DN

Follow these steps to edit an existing single tariff CLI-DN.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the CLI-DN tab, search for the record to edit. See <i>Finding CLI-DN tariffs</i> (on page 348) for details.
3	Select the CLI-DN tariff in the table in the bottom half of the screen and click Edit . Result: You see the Edit CLI-DN Tariff screen, with the bottom half of the screen in single-tariff mode.
4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>CLI-DN tariff fields</i> (on page 350).
5	Click Save .

Adding a multi-tariff CLI-DN

Follow these steps to add a new multi-tariff CLI-DN.

Tip: For more information about a particular field in the New CLI-DN Tariff screen, see *CLI-DN tariff fields* (on page 350).

Step	Action
1	In the New CLI-DN Tariff screen, from the geography set in the top half of the screen, select the CLI area for the tariff and click Set .
2	From the geography set select the free DN area for the tariff and click Set .
3	Specify values for the rest of the CLI-DN fields as described in <i>Adding a single tariff CLI-DN</i> (on page 355). Note: You must enter the Service Id for the CLI-DN tariff.
4	Click More . Note: The More button becomes enabled when you enter the service Id. Result: You see the New CLI-DN Tariff screen re-displayed in multi-tariff mode. The tariff details you have just entered appear in the first row in the table at the bottom of the screen.
5	Click New . Result: You see the New Multi-Tariff Charge screen.
6	Add a new charge. For details, see <i>Adding a new multi-tariff charge</i> (on page 357).
7	Repeat steps 5 and 6 until all the charges required to complete the configuration for the multi-tariff CLI-DN have been added.
8	Click Save . Note: The Save button only becomes enabled when all the required fields for the CLI-DN have been entered correctly.

Multi-Tariff Charge screen

Here is an example Multi-Tariff Charge screen.

Note: When your cursor hovers over one of the following fields for two or three seconds, SMS displays the current configuration for the field in a popup window. This alleviates the need to obtain the information from other screens while configuring a multi-tariff.

- Balance Type Cascade
- Charge Period
- Discount Set

Adding a new multi-tariff charge

Follow these steps to add a new multi-tariff charge to a CLI-DN tariff.

Tip: For more information about a particular field, see *CLI-DN tariff fields* (on page 350).

Step	Action
1	In the New Multi-Tariff Charge screen, set the Billing Resolution for the charge. Note: The minimum length and low credit warning field values specified for the CLI-DN tariff must be multiples of the billing resolution value.
2	Select the Cascade for the charge from the drop down list.
3	Select the Charge Period for the charge from the drop down list.
4	Select the Discount Set for the charge from the drop down list.
5	Type in the Service Id for the charge. Note: This is a required field.
6	If you want to set this charge to be the master discount charge, select the Master Discount check box..
7	Click Save .

Editing a multi-tariff CLI-DN

Follow these steps to edit an existing multi-tariff CLI-DN.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the CLI-DN tab, search for the record you want to edit. See <i>Finding CLI-DN tariffs</i> (on page 348) for details.
3	Select the multi-tariff CLI-DN in the table in the bottom half of the screen and click Edit . Tip: A multi-tariff CLI-DN is indicated in the table by a tick in the Multi-Tariffs column. Result: You see the Edit CLI-DN Tariff screen in multi-tariff mode.
4	Edit the following fields as required: • Free Call Disposition • Maximum Charge • Minimum Length • Low Credit Notification Config • Charge On Reservation Timeout • Expenditure Plan • Cross Balance Type Cascade • Tariff Code • Tax Plan • Mid-call Tariff Change • Reservation Config For more information about a particular field, see <i>CLI-DN tariff fields</i> (on page 350). Tip: You can also reset the CLI and DN fields if required.
5	Add additional multi-tariff charges and edit existing multi-tariff charges as required: • To add an additional charge, click New. Result: You see the New Multi-Tariff Charge screen. • To edit an existing charge, select it in the table at the bottom of the screen, and click Edit. Result: You see the Edit Multi-Tariff Charge screen.
6	In the New/Edit Multi-Tariff Charge screen, specify the multi-tariff charge details as described in <i>Adding a new multi-tariff charge</i> (on page 357).
7	Delete any multi-tariff charges that are no longer required: • To delete a charge, select it in the table and click Delete.
8	Click Save .

Deleting CLI-DNs

Follow these steps to delete an existing CLI-DN.

Warning: When you delete a multi-tariff CLI-DN, then all the multi-tariff charges defined for the CLI-DN are also deleted.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the CLI-DN tab, search for the record to delete. See <i>Finding CLI-DN tariffs</i> (on page

Step	Action
	348) for details.
3	In the table in the bottom half of the screen, select the record to delete.
4	Click Delete . Result: You see the Delete Confirmation prompt.
5	Click OK to delete the record from the database. Result: The record is deleted and you see the CLI-DN Tariff prompt.
6	Click OK .

Weekly Tariffs

Introduction

The **Weekly** tab lets you set up and maintain weekly tariffs for the selected customer. You can:

- Assign a cost or volume to specified days of the week
- Assign the tariff to a rate table

Example: A tariff may be set up for a rate table so that all calls from 18:00 on Friday to 06:00 on Monday will have a maximum charge of \$5.95.

Weekly tariffs override the basic tariffs that are set for the rate table in the **CLI-DN** tab.

Weekly tab

Here is an example **Weekly** tab.

Rating Management [Service Provider: **MCNCtemplate**] [Help]

Weekly

Rate Table	Discount Set	Start Time (GMT)	End Time (GMT)
Bronze HPLMN MO	Bronze HPLMN MO	Sunday 00:00	Monday 07:00
Bronze HPLMN MO	Bronze HPLMN MO	Monday 18:00	Tuesday 07:00
Bronze HPLMN MO	Bronze HPLMN MO	Tuesday 18:00	Wednesday 07:00
Bronze HPLMN MO	Bronze HPLMN MO	Wednesday 18:00	Thursday 07:00
Bronze HPLMN MO	Bronze HPLMN MO	Thursday 18:00	Friday 07:00
Bronze HPLMN MO	Bronze HPLMN MO	Friday 18:00	Saturday 24:00
Bronze NGN	Bronze NGN	Sunday 00:00	Monday 07:00
Bronze NGN	Bronze NGN	Monday 18:00	Tuesday 07:00
Bronze NGN	Bronze NGN	Tuesday 18:00	Wednesday 07:00
Bronze NGN	Bronze NGN	Wednesday 18:00	Thursday 07:00
Bronze NGN	Bronze NGN	Thursday 18:00	Friday 07:00
Bronze NGN	Bronze NGN	Friday 18:00	Saturday 24:00
Gold HPLMN MO	Gold HPLMN MO	Sunday 00:00	Monday 07:00
Gold HPLMN MO	Gold HPLMN MO	Monday 18:00	Tuesday 07:00
Gold HPLMN MO	Gold HPLMN MO	Tuesday 18:00	Wednesday 07:00
Gold HPLMN MO	Gold HPLMN MO	Wednesday 18:00	Thursday 07:00
Gold HPLMN MO	Gold HPLMN MO	Thursday 18:00	Friday 07:00
Gold HPLMN MO	Gold HPLMN MO	Friday 18:00	Saturday 24:00
Gold NGN	Gold NGN	Sunday 00:00	Monday 07:00
Gold NGN	Gold NGN	Monday 18:00	Tuesday 07:00
Gold NGN	Gold NGN	Tuesday 18:00	Wednesday 07:00
Gold NGN	Gold NGN	Wednesday 18:00	Thursday 07:00
Gold NGN	Gold NGN	Thursday 18:00	Friday 07:00
Gold NGN	Gold NGN	Friday 18:00	Saturday 24:00
Silver HPLMN MO	Silver HPLMN MO	Sunday 00:00	Monday 07:00
Silver HPLMN MO	Silver HPLMN MO	Monday 18:00	Tuesday 07:00
Silver HPLMN MO	Silver HPLMN MO	Tuesday 18:00	Wednesday 07:00
Silver HPLMN MO	Silver HPLMN MO	Wednesday 18:00	Thursday 07:00

[New] [Edit] [Delete] [Close]

Weekly Tariff screen

Here is an example Edit Weekly Tariff screen.

Edit Weekly Tariff

Help

Rate Table

Bronze NGN

Discount Set

Bronze NGN

Start Time (GMT)

Monday

18:00

End Time (GMT)

Tuesday

07:00

Discount Period

Bronze weekly discount

Maximum Charge (E)

Minimum Length (secs)

Billing Resolution (secs)

Low Credit Configuration

-- No Notifications --

Cascade

Voice

Tariff Code

Save

Cancel

Weekly Tariffs fields

This table describes the function of each field.

Field	Description
Rate Table	The rate table assigned to this tariff. Notes: - The drop down list displays all the rate tables available to the customer. - This field cannot be edited after assigned to the weekly tariff.
Discount Sets	The discount set assigned to this weekly tariff. Tip: The drop down list displays all the discount sets available to the customer.
Start Time (GMT)	The time and day of the week when this tariff activates. Note: This time is in the GMT time zone.
End Time (GMT)	The time and day of the week when this tariff stops being active. Note: This time is in the GMT time zone.

Field	Description
Discount Period	The discount period you want to assign to this weekly tariff.
Maximum Charge	The maximum charge that can be applied to any call using this tariff. This value will be in the same currency as selected for the rate table in the Rate Table field. This may be a time based charge or a monetary unit based charge. Warning: If the value in this field is set to 0, calls using this tariff will not be charged. Either the Maximum Charge field must be populated, or both the Initial Discount and the Remaining Discount fields must contain a value greater than 0.
Minimum Length (secs/data unit)	The minimum period for which the calls will be charged for using this tariff. Note: This value is the minimum length of time or data that will be charged for a single call, even if the caller uses lesser time or data.
Billing Resolution (secs/data unit)	The unit length to use for billing calls using this weekly tariff. - For time, the unit length is defined in seconds (SS) and hundredths of seconds (HH) using the format: SS.HH - For data, the unit length is an integer. Examples: - Telco A, charging by the minute (rounding up to the next full minute) would have this configured as 60.00 - Telco B, charging by the second (rounding up to the next full second) would have this configured as 1.00 - Telco C, charging for each 1000 data units would have this configured as 1000
Low Credit Config	The notification template(s) to use when a credit value has reached a trigger value(s). Usually used for low credit warnings. To create or maintain these templates, see <i>Low Credit Notification Config</i> (on page 403).
Cascade	The balance type cascade which will be assigned to this weekly tariff. Note: This drop down list displays all the balance type cascades available to a customer. To create new balance type cascades, see <i>Balance Type Cascades</i> (on page 387).
Tariff Code	The tariff code to use for 16 KHz charging. The tariff codes listed are defined on the Tariff Codes tab in the ACS Resources screen.

Adding weekly tariffs

Follow these steps to add a new weekly tariff.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Weekly tab, click New . Result: You see the New Weekly Tariff screen relevant to the billing indicator.
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Weekly Tariffs fields</i> (on page 361).
4	Click Save .

Editing weekly tariffs

Follow these steps to edit an existing weekly tariff.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Weekly tab, select the record you want to edit.
3	Click Edit . Result: You see the Edit Weekly Tariff screen relevant to the billing indicator.
4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Weekly Tariffs fields</i> (on page 361). Note: The Rate Table field is grayed out and cannot be changed.
5	Click Save .

Deleting weekly tariffs

Follow these steps to delete an existing weekly tariff.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Weekly tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the weekly tariff prompt.
5	Click OK .

Holiday Tariffs

Introduction

You use the **Holiday** tab to configure holiday tariffs for the service provider and to assign them to rate tables. The billing indicator set for the rate table determines whether the tariff is based on the call length or the data volume. For more information about rate tables, see *Rate Tables* (on page 332).

You can configure a holiday tariff for a single day or for a range of days, and you can configure tariffs for multiple time periods within a holiday.

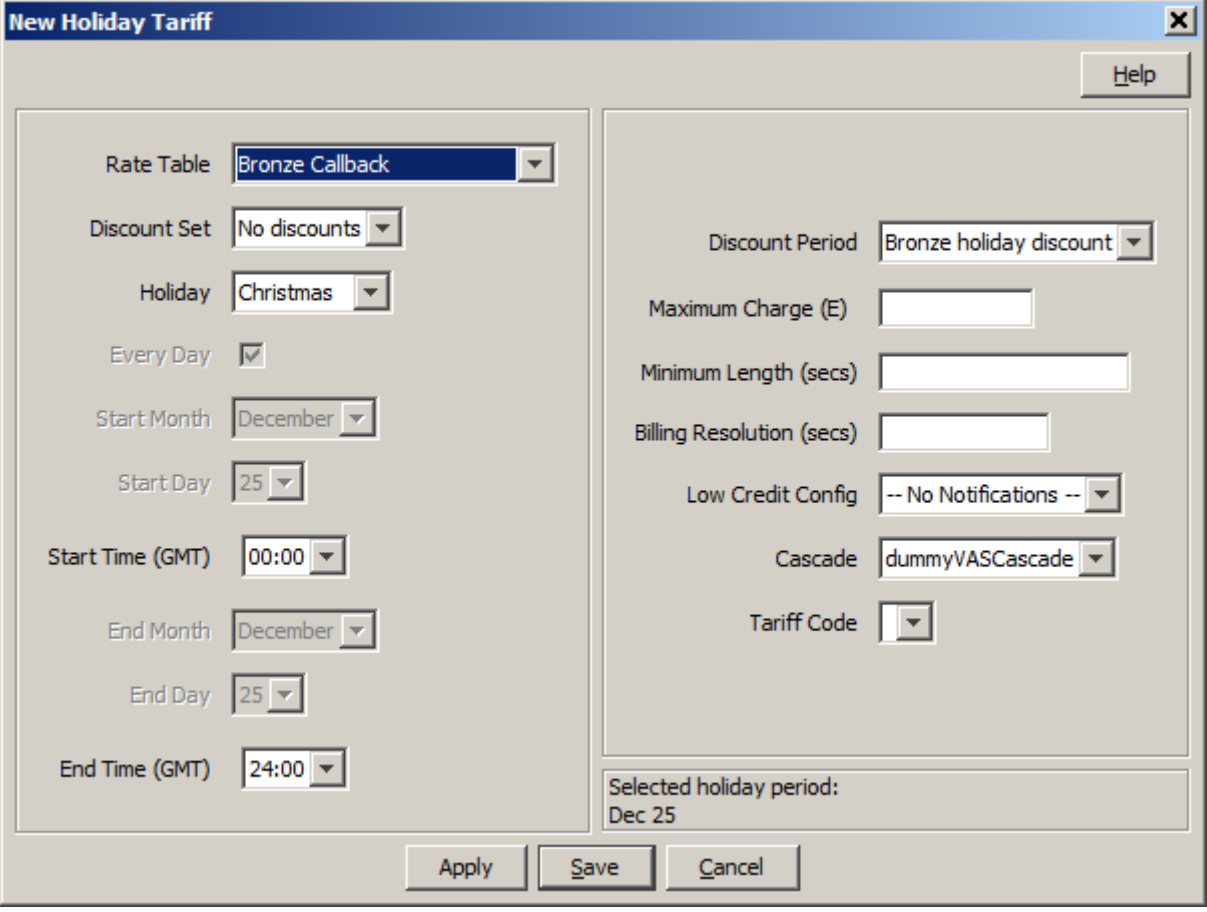
Example 1: A holiday tariff could be configured so that all calls on Christmas Day have a 50% discount.

Example 2: A holiday tariff could be configured for a three day period that applies a 50% discount at night and a 25% discount during the day.

Note: Holiday tariffs override weekly tariffs and the basic tariffs that are set for the rate table in the **CLI-DN** tab.

Holiday Tariff Dialog

Here is an example holiday tariff dialog.



The dialog box is titled "New Holiday Tariff" and contains two main sections for configuring a holiday tariff. The left section includes fields for Rate Table, Discount Set, Holiday, Every Day, Start Month, Start Day, Start Time (GMT), End Month, End Day, and End Time (GMT). The right section includes fields for Discount Period, Maximum Charge (E), Minimum Length (secs), Billing Resolution (secs), Low Credit Config, Cascade, and Tariff Code. A status bar at the bottom right shows the selected holiday period as "Dec 25".

Field	Value
Rate Table	Bronze Callback
Discount Set	No discounts
Holiday	Christmas
Every Day	☒
Start Month	December
Start Day	25
Start Time (GMT)	00:00
End Month	December
End Day	25
End Time (GMT)	24:00
Discount Period	Bronze holiday discount
Maximum Charge (E)	
Minimum Length (secs)	
Billing Resolution (secs)	
Low Credit Config	-- No Notifications --
Cascade	dummyVASCascade
Tariff Code	
Selected holiday period:	Dec 25

Buttons: Apply, Save, Cancel, Help

Holiday tab

Here is an example **Holiday** tab.

Rating Management

Service Provider: CNCCtemplate

Help

Holiday

Rate Table	Discount Set	Holiday
Bronze HPLMN MO	Bronze HPLMN MO	Christmas
Bronze HPLMN MO	Bronze HPLMN MO	Labour Day
Bronze HPLMN MO	Bronze HPLMN MO	New Year
Bronze NGN	Bronze NGN	Christmas
Bronze NGN	Bronze NGN	Labour Day
Bronze NGN	Bronze NGN	New Year
Gold HPLMN MO	Gold HPLMN MO	Christmas
Gold HPLMN MO	Gold HPLMN MO	Labour Day
Gold HPLMN MO	Gold HPLMN MO	New Year
Gold NGN	Gold NGN	Christmas
Gold NGN	Gold NGN	Labour Day
Gold NGN	Gold NGN	New Year
Silver HPLMN MO	Silver HPLMN MO	Christmas
Silver HPLMN MO	Silver HPLMN MO	Labour Day
Silver HPLMN MO	Silver HPLMN MO	New Year
Silver NGN	Silver NGN	Christmas
Silver NGN	Silver NGN	Labour Day
Silver NGN	Silver NGN	New Year

New Edit Delete Close

Holiday Tariffs Fields

This table describes the fields in the **New Holiday Tariff** and **Edit Holiday Tariff** dialogs.

Field	Description
Rate Table	The rate table that this tariff is assigned to. All the rate tables that are available to the service provider (ACS customer) appear in the Rate Table list. Note: After saving a holiday tariff, you can no longer change the rate table assigned to it.
Discount Set	The discount set assigned to this holiday tariff. All the discount sets that are available to the service provider appear in the Discount Set list.
Holiday	The holiday set that this tariff applies to.

Field	Description
	This list displays all the holiday sets that a service provider can use. For information about creating holiday sets or granting permission to a service provider to use a holiday set, see <i>ACS User's Guide</i> .
Every Day	(Optional) Select to specify daily tariffs. Note: This is the default and must be selected when the holiday period defined in the selected holiday set is for a single day. If you deselect Daily Tariff , you must specify the start and end month, and start and end day, for the holiday tariff.
Start Month	(Optional) Specifies the first month in which this holiday tariff applies.
Start Day	(Optional) Specifies the day in the month to start applying this holiday tariff.
Start Time (GMT)	Sets the time of day, in the GMT time zone, when this holiday tariff becomes active.
End Month	(Optional) Specifies the last month in which this holiday tariff applies.
End Day	(Optional) Specifies the day in the month to stop applying this holiday tariff.
End Time (GMT)	Sets the time of day, in the GMT time zone, when this holiday tariff stops being active.
Discount Period	Sets the discount period for the selected time period, in the local time zone, that you want to assign to this holiday tariff. The discount period determines the percentage discount to apply. See <i>Discount Periods</i> (on page 377) for more information.
Maximum Charge	(Optional) Sets the maximum charge, in units of the global currency, that you want to apply to any call using this tariff. Note: The symbol for the global currency is displayed next to the Maximum Charge field name. Specify a currency value of up to nine digits by using the following format: <i>Main_unitsSeparatorSub_units</i> where: <i>Main_units</i> is the currency main units value. You can specify a value that is up to seven digits long <i>Separator</i> is the separator defined for the global currency <i>Sub_units</i> is the currency sub-units value. You can specify a value that is up to two digits long Note: A value of zero (0) or a blank field means that there is no maximum charge.
Minimum Length (secs) or Minimum Volume (data unit)	Sets the minimum length of time (in seconds) or volume of data (in data units) to charge for calls that use this tariff. If the caller uses less time or data, they are still charged this amount. Note: The charge type depends on the billing indicator set for the selected rate table.
Billing Resolution (secs/data unit)	Sets the unit length to use for billing calls using this holiday tariff. For units of: - Time, the unit length is defined in seconds <i>SS</i> and hundredths of seconds <i>HH</i> by using the format: <i>SS.HH</i> - Data, the unit length is an integer value. Examples: - Telco A, charging by the minute (rounding up to the next full minute) would have this configured as 60.00

Field	Description
	- Telco B, charging by the second (rounding up to the next full second) would have this configured as 1.00 - Telco C charging for each 1000 data units would have this configured as 1000
Low Credit Config	The notification templates to use when a credit value reaches a threshold value for sending low credit warnings. To create or maintain these templates, see <i>Low Credit Notification Config</i> (on page 403).
Cascade	The balance type cascade to assign to this holiday tariff. Note: The Cascade list displays all the balance type cascades available to a service provider. For information about configuring balance type cascades, see <i>Balance Type Cascades</i> (on page 387).
Tariff Code	(Optional) The tariff code to use for 16 KHz charging. You define the available tariff codes on the Tariff Codes tab in the ACS Resources screen.
Selected holiday period	Displays the holiday period start and end dates, time period start and end times, and a list of the discount periods that have been defined within those dates and times.

Adding Holiday Tariffs

Follow these steps to add a new holiday tariff.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Holiday tab, click New . The <i>New Holiday Tariff Dialog</i> (See example on page 364) opens. For information about the holiday tariff fields, see <i>Holiday Tariffs Fields</i> (on page 365).
3	Select the rate table, discount set, and holiday set for this tariff.
4	Do one of the following: - To configure a daily tariff for the holiday, select Every Day. The Every Day option is automatically selected for holidays that are for only one day, and cannot be changed. - To configure a tariff for a specific date range, deselect Every Day and select the date range for the holiday tariff from the lists in the Start Month, Start Day, End Month and End Day fields.
5	Select the time period during which this tariff will apply from the lists in the Start Time (GMT) and End Time (GMT) fields.
6	Complete the tariff configuration by performing the following steps: - Select the holiday discount to apply from the Discount Periods list. - If required, enter values for the maximum charge, minimum length, and billing resolution for this tariff. - Select the low credit warning notifications to send from the Low Credit Config list. - Select the balance type cascade to use from the Cascade list. - If you want to send SCI or FCI charging information, select the tariff code to use from the Tariff Code list.

Step	Action
7	(Optional) If you want to configure additional time periods for this holiday tariff, perform the following steps for each additional period: - Click Apply. - Repeat steps 5 and 6. The configured periods display in the Defined periods list. Important: You must ensure that periods do not overlap when configuring multiple discount periods for a holiday tariff.
8	Click Save .

Editing holiday tariffs

Follow these steps to edit an existing holiday tariff.

Note: To configure additional time periods for an existing holiday tariff, see *Adding Multiple Time Periods to an Existing Holiday Tariff* (on page 368).

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Holiday tab, select the record you want to edit.
3	Click Edit . The Edit Holiday Tariff dialog displays.
4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Holiday Tariffs Fields</i> (on page 365). Note: The Rate Table field is grayed out and cannot be changed.
5	Click Save .

Adding Multiple Time Periods to an Existing Holiday Tariff

Follow these steps to add one or more time periods to an existing holiday tariff.

Step	Action
1	On the Holiday tab, click New. The New Holiday Tariff Dialog (See example on page 364) opens. For information about the holiday tariff fields, see <i>Holiday Tariffs Fields</i> (on page 365).
2	Select the rate table, discount set, holiday set, and holiday dates for the existing holiday tariff. The holiday periods that are already defined for the holiday tariff display in the Defined periods list.
3	Select the time period that you want to add to this tariff from the lists in the Start Time (GMT) and End Time (GMT) fields. Ensure that the time period does not overlap an existing time period.

Step	Action
4	Complete the tariff configuration by performing the following steps: - Select the holiday discount to apply from the Discount Periods list. - If required, enter values for the maximum charge, minimum length, and billing resolution for this tariff. - Select the low credit warning notifications to send from the Low Credit Config list. - Select the balance type cascade to use from the Cascade list. - If you want to send SCI or FCI charging information, select the tariff code to use from the Tariff Code list.
5	(Optional) For each additional time period that you want to configure, perform the following steps: - Click Apply. - Repeat steps 3 and 4. The configured periods display in the Defined periods list. Important: You must ensure that periods do not overlap when configuring multiple discount periods for a holiday tariff.
6	Click Save .

Deleting holiday tariffs

Follow these steps to delete an existing holiday tariff.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Holiday tab, select the record to delete.
3	Click Delete . You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. The record is deleted and you see the Holiday Tariffs prompt.
5	Click OK .

Named Event

Introduction

The **Named Event** tab allows you to set up and maintain activities, other than calls, that may incur a charge. The values you specify here are the base values for the events, and may be overridden by values specified in a *Named Event Catalogue* (on page 413).

The event may be sending a short text message, a product type swap, a credit transfer, or a connection to recharge facilities. The named events can be changed by the Named Event feature node for that event in the control plan.

Event subscription

A named event catalogue event subscription is a named event that allows a subscriber to 'subscribe' to an unlimited use of a particular service without being charged during the subscribed period.

As such it will be possible to define a subscribable named event that is charged on first use and sets up a subscription to allow future uses in the subscription period to be charge free.

When this named event is used, an automatic subscription to the service is created which will then follow a normal life cycle.

If the subscription is already active, the user will not pay for the named event until the subscription expires.

Note: Event Subscription is not available if the UBE domain does not have 'Charging Management' configured or when there is no UBE domain configured.

Balance type cascades

Events can be configured to be billed across multiple balance types in a pro-rata fashion.

Example: If the Cash cost for an event is \$10 and the Time cost is 120 seconds, and you only have a cash balance of \$5, then the event would use your remaining \$5, and then 60 seconds to pay for the rest of the event.

Named Event tab

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

Service Provider: Boss [v] [Help]

Named Event

Event Set: DCA Sample Events [v] [New Set] [Edit Set] [Delete Set]

Named Event	Cash Cost	Time Cost	Data Cost
Cent	\$0.01		
Money Refund	-\$0.01		
Second		1.00	
Time Refund		-1.00	

[New] [Edit] [Delete] [Close]

Named Event grid

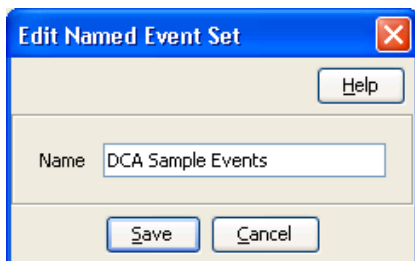
This table describes the content of each table column on the **Named Event** tab.

Field	Description
Named Event	The name of the named event.
Cash Cost (\$)	The amount which will be charged if using a cash balance to pay for this event.
Time Cost (secs)	The time that will be charged if using time balance to pay for this event.
Data Cost (data units)	The data units that will be charged if using a data balance to pay for this event.

Field	Description
Unit Cost	The charge when balance types are not any of: • Cash • Time • Data
Free Event	Indicates that this event has a zero cost.
Expenditure Plan	Determines whether this CLI-DN contributes to expenditure calculations, and what expenditure plan it contributes to. This field is populated by the Expenditure Plan tab. For more information, see <i>Expenditure Plan</i> (on page 390).
Tax Plan	The tax plan associated with this named event. Tip: Tax plans are configured on the Tax Plan tab on the Rating Management screen. For more information, see <i>Tax Plan</i> (on page 406).
Contributes to PD	Whether or not this named event is included in the promotional destination calculations.
Single Balance	Whether or not the cost of the event should be taken from a single balance. Notes: • If this field is selected and there is no single balance that can cover the entire cost of an event, the event is declined with insufficient credit. • If this field is not selected, and providing the entire cost of the event can be satisfied with the selected cascade, the seconds, cash, data costs and generic units are taken pro-rata as necessary from each balance.

Named Event Set screen

Here is an example Named Event Set screen.



Named Event screen

Here is an example Named Event screen.

Named Event fields

This table describes the function of each field on the New Named Event and the Edit Named Event screens.

Field	Description
Name - Named Event	The name of the named event.
Free Event	Indicates that this event has a zero cost.
Cash Cost (\$)	The amount which will be charged if using a cash balance to pay for this event. Tip: Select the Enabled check box to access this field.

Field	Description
Time Cost (secs)	The time that will be charged if using time balance to pay for this event. Tip: Select the Enabled check box to access this field.
Data Cost (data units)	The data units that will be charged if using a data balance to pay for this event. Tip: Select the Enabled check box to access this field.
Units Cost	The charge when balance types are not any of: • Cash • Time • Data Tip: Select the Enabled check box to access this field.
Tax Plan	The tax plan associated with this event. This field is populated by the Tax Plan tab. For more information, see <i>Tax Plan</i> (on page 406).
Event Type	The type of event to be billed, can be either Direct (bill now) or Reserved (reserve this amount) or either type. The default is Any (either type).
Expenditure Plan	Determines whether this event contributes to expenditure calculations, and what expenditure plan it contributes to. This field is populated by the Expenditure Plan tab. For more information, see <i>Expenditure Plan</i> (on page 390).
Contributes to PD	Whether or not to include this named event in the promotional destination calculations.
Event Cascade	The balance type cascade, which defines the order for using the balances, for the named event. Notes: • This is a mandatory field. • This field is populated by the records on the Balance Type Cascade tab. For more information, see <i>Balance Type Cascades</i> (on page 387).
Use Single Cascade Balance	Whether or not the cost of the event should be taken from a single balance. Notes: • If this check box is selected and there is no single balance that can cover the entire cost of an event, then the event is declined with insufficient credit. • If this check box is not selected, and providing the entire cost of the event can be satisfied with the selected cascade, then seconds, cash, data costs and generic units are taken pro-rata as necessary from each balance.
Available Named Event Catalogues	List of available named event catalogues which can be allocated this named event. This field is populated by the records on the Named Event Catalogue tab.
Allocated Named Catalogues	List of named event catalogues which have been allocated this named event. Note: Allocating a named event catalogue to an event adds this event to the list of allowed named events in the named event catalogue record.

Adding named event sets

Follow these steps to add a new named event set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event tab, click New Set . Result: The New <i>Named Event Set</i> screen (on page 372) appears.
3	In the Name field, type the name of the new named event set.
4	Click Save .

Editing named event sets

Follow these steps to edit an existing named event set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Events tab, select the named event to edit from the Event Set drop down box.
3	Click Edit Set . Result: You see the Edit <i>Named Event Set</i> screen (on page 372).
4	Modify the Name as required.
5	Click Save .

Deleting named event sets

Follow these steps to delete an existing named event set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Events tab, select the named event set to delete from the Event Set drop down box.
3	Click Delete Set . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Named Events prompt.
5	Click OK .

Adding named events

Follow these steps to add a new named event to a named event set.

Note: The following named event functionality is only available if you have the appropriate license:

- Specifying time costs

- Setting the Use Single Cascade Balance flag

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Events tab, select the required Event Set from the drop down box.
3	Click New . Result: You see the <i>New Named Event screen</i> (on page 373).
4	Configure this record by entering data in the fields on this screen. For field information, see <i>Named Event fields</i> (on page 373).
5	Click Save .

Note: The **Save** button only becomes enabled when you specify the event name.

Editing named events

Follow these steps to edit an individual named event in a selected named event set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Events tab, select the Event Set from the drop down box.
3	In the table on the tab, select the record to edit.
4	Click Edit . Result: You see the <i>Edit Named Event screen</i> (on page 373).
5	Edit the details as described in <i>Named Event fields</i> (on page 373).
6	Click Save .

Deleting named events

Follow these steps to delete an existing named event.

Note: When you delete a named event, the named event is automatically removed from any named event catalogues to which it has been allocated.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list. On the Named Events tab, select the Event Set from the drop down box.
2	In the table on the tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Named Events prompt.
5	Click OK .

Discount Periods

Introduction

A discount period is used to specify the discount percentage to be applied to each charge period, as created in *Charge Periods* (on page 380).

Discount periods are used by the weekly and holiday tariffs.

Discount Periods tab

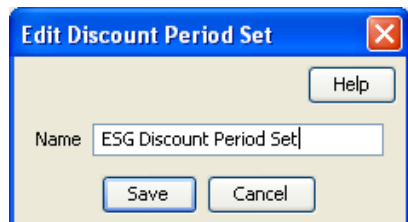
Here is an example **Discount Periods** tab.

The screenshot shows a window titled "Rating Management" with a blue border. At the top, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tab labeled "Discount Periods". Under the tab, there is a "Discount Period" dropdown menu set to "SL_DiscountPeriod...", and three buttons: "New Set", "Edit Set", and "Delete Set". Below these is a table with four columns: "Period", "Percentage Dis...", "Change User", and "Change Date". The table contains three rows of data. At the bottom of the window, there are four buttons: "New", "Edit", "Delete", and "Close".

Period	Percentage Dis...	Change User	Change Date
1	0.1000	SU	2009-09-09 11:41:06
2	20.0000	SU	2009-09-09 08:54:56
3	25.0000	SU	2009-09-09 08:55:00

Discount Period Set screen

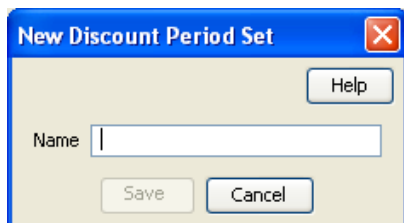
Here is an example Discount Period Set screen.



Adding discount period sets

Follow these steps to add a new discount period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Discount Periods tab, click New Set . Result: You see the New <i>Discount Period Set</i> screen (See example on page 378).



3	In the Name field, type the name of the new discount period set.
4	Click Save .

Editing discount period sets

Follow these steps to edit an existing discount period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Discount Periods tab, select the discount period set to edit from the Discount Period drop down box.
3	Click Edit Set . Result: You see the Edit <i>Discount Period Set</i> screen (See example on page 378).
4	Modify the Name as required.
5	Click Save .

Deleting discount period sets

Follow these steps to delete an existing discount period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.

Step	Action
2	On the Discount Periods tab, select the discount period set to delete from the Discount Period drop down box.
3	Click Delete Set . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Discount Periods prompt.
5	Click OK .

Adding discount periods

Follow these steps to add a new discount period to a discount period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Discount Periods tab, select the Discount Period Set from the Discount Period drop down box.
3	Click New . Result: You see the New <i>Discount Period</i> (See example on page 379) screen. The Period field will display the amount of time before the charge is initiated. Note: This will already have been populated and cannot be changed. The period will increase by 1 for each new record.
4	In the Percentage Discount field, enter the numeric percentage of the discount to be applied to the charge period.
5	Click Save .

Discount Period screen

Here is an example Discount Period screen.

Editing discount periods

Follow these steps to edit an individual discount period in an existing discount set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Discount Periods tab, select the Discount Period set to edit from the drop down box.
3	In the table, select the record to edit.

Step	Action
4	Click Edit . Result: You see the Edit <i>Discount Period</i> (See example on page 379).
5	Type a new value for the Percentage Discount to be applied to the charge period. Note: The Period field cannot be edited after the discount period is first saved.
6	Click Save .

Deleting discount periods

Follow these steps to delete an existing discount period from a discount set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Discount Periods tab, select the Discount Period set from the drop down box.
3	Select the record to delete in the table on the tab.
4	Click Delete . Result: You see the Delete Confirmation prompt.
5	Click OK to delete the record from the database. Result: The record is deleted and you see the Discount Periods prompt.
6	Click OK .

Charge Periods

Introduction

A charge period controls the charge rates applied to specific periods of time within a call. For example, you may wish to charge a lower-than-standard rate to the first 60 minutes of a call and then charge the full rate to the duration. Charge periods are used by the CLI-DN tariffs.

You may have up to ten charge periods per set, and any number of charge period sets. You may also define one charge period loop per charge period set.

Note: Charge period sets may be rate table specific, or global. Global charge period sets will be available to all rate tables when creating CLI-DN mappings.

Charge period loops

Charge period loops repeat selected charge periods from the set, after the call has been through the normal charge period set. All the charge periods from the set can be included in the loop, however each charge period may only appear in it once.

To define a charge period loop, designate the last charge period in the set as a special 'Loop Period'. You can then:

- Select which charge periods to include in the loop
- Specify the order to apply them in

When you set up a charge period loop, the **Length In Loop** field for each of the included charge periods defines how long each charge period will last during loop processing. If you leave this field blank when defining a new charge period, then the length in loop defaults to the charge period length (that is, the difference between the charge period start time and the start time of the next charge period).

When you edit the start time for a charge period in a charge period loop, the **Length In Loop** field is not automatically updated to reflect the new start time. To change this value, you must edit it manually in the Edit Charge Period screen.

See *Adding a loop period* (on page 385) and *Defining a charge period loop* (on page 386).

Charge Periods tab

Here is an example **Charge Periods** tab.

Rating Management

Service Provider: OCNCCTemplate

Help

Charge Periods

Display Filters

Charge Period Name: Rate Table Filter: No Filter

Charge Period	Rate Table	Billing Indicator
CALLBACK-IZ1-FR	Bronze Callback	Time
CALLBACK-IZ1-FR	Gold Callback	Time
CALLBACK-IZ1-FR	Silver Callback	Time
CALLBACK-IZ1-FX	Bronze Callback	Time
CALLBACK-IZ1-FX	Gold Callback	Time
CALLBACK-IZ1-FX	Silver Callback	Time
CALLBACK-IZ1-IZ1	Bronze Callback	Time
CALLBACK-IZ1-IZ1	Gold Callback	Time
CALLBACK-IZ1-IZ1	Silver Callback	Time
CALLBACK-IZ1-IZ2	Bronze Callback	Time

New Set Edit Set Delete Set Define Loop

Start Time Charge/min Change User Change Date

New Edit Delete Close

Adding charge period sets

Follow these steps to add a new charge period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, click New Set .
Result: You see the <i>New Charge Period Set screen</i> (See example on page 382).	

Step	Action
3	In the Name field, type the name of the new charge period set.
4	If required, select the rate table to use for the charge period from the drop down list. Tip: The rate tables list is populated by the entries made on the Rate Tables tab.
5	If available, select the required Billing Indicator : • Time - for duration billing rates • Data - for volume billing rates Note: This can only be done if a rate table is not selected. If a rate table is selected then that rate tables billing indicator is applied and these options are unavailable.
6	Click Save . Note: Charge periods that do not have a rate table associated with them are global.

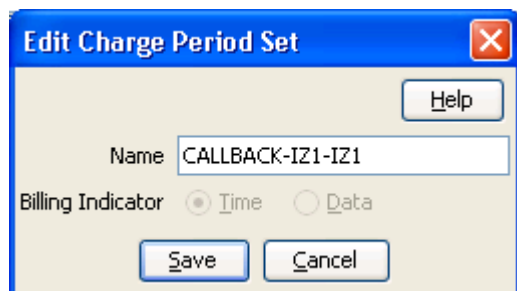
Editing charge period sets

Follow these steps to edit an existing charge period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set to edit from the list displayed in the table.
3	Click Edit Set . Result: You see the <i>Edit Charge Period Set screen</i> (See example on page 382).
4	Modify the Name as required.
5	If available, select the required Billing Indicator : • Time - for duration billing rates • Data - for volume billing rates Note: This can only be done if a rate table is not selected. If a rate table is selected then that rate tables billing indicator is applied and these options are unavailable.
6	Click Save .

Charge Period Set screen

Here is an example Charge Period Set screen.



Deleting charge period sets

Follow these steps to delete an existing charge period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set to delete from the list displayed in the table.
3	Click Delete Set . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the charge period prompt. Tip: The charge period set may only be deleted if there are no CLI-DN tariffs that use this set.
5	Click OK .

Charge period fields

This table describes the function of each field.

Field	Description
Period Start (secs) Volume Start (data units)	The start time or volume for the charge period. If the charge period set has a loop, then the start time or volume must be before the start time or volume for the loop period. This field cannot be edited after the first time it is saved. Allowed values: Positive integers. Tip: There must be one charge period with a period start (secs) or volume start (data units) value of 0 to enable short calls to be charged.
Charge (<i>CurrencyMinor</i> /min or data unit)	The amount which will be charged for this charge period. Allowed values: Positive integers. You can only edit this field if the Loop Period check box is not selected. Note: The record with the highest start period will effectively have no upper limit on its period. Tip: As this field only defines the cash rate per min or data unit, the time and data rates is always one to one.
Loop Period	Defines whether or not this charge period loops. Note: If you select this check box, the values in the Charge (<i>CurrencyMinor</i>/min) and Length in Loop (secs) fields will be cleared. For more information about charge period loops, see <i>Charge period loops</i> (on page 380).

Field	Description
Length in Loop (secs) Loop Size (data units)	The length of time/volume the charge period will last during loop processing. Only enter a value here if you want the charge period to have a different time/volume length when it is in the loop. Allowed values: Positive integers You can only edit this field if the Loop Period check box is not selected. Note: This field defaults to the charge period length if left blank (that is, the difference between charge period start time/volume and the start time/volume for the next charge period). However, once the charge period has been created, the length in loop value will be unaffected by any changes to the charge period start time/volume. It will maintain its original value. To change the length in loop value, you must edit it in the Edit Charge Period screen.

Charge Period screen

Here is an example Charge Period screen.

Adding charge periods

Follow these steps to add a new charge period to a charge period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set to add a new charge period to from the list displayed in the table.
3	Click New . Result: You see the <i>New Charge Period screen</i> (See example on page 384) for the relevant billing indicator.
4	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Charge period fields</i> (on page 383). Note: Ensure Loop Period is not selected.
5	Click Save .

Adding a loop period

Follow these steps to add a loop period to a charge period.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set to add a loop period to from the list displayed in the table.
3	Click New . Result: You see the <i>New Charge Period screen</i> (See example on page 384) for the billing indicator of the charge period set.
4	For time charging: • In the Period Start (secs) field, enter the start time for the loop period • This must be after the start time for all other periods in the set For data charging: • The Volume Start (data units) field defaults to zero
5	Select the Loop Period check box.
6	Click Save .

Editing charge periods

Follow these steps to edit an individual charge period within an existing charge period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set that contains the charge period to edit from the list displayed in the table.
3	In the table at the bottom of the Charge Periods tab, select the record to edit.
4	Click Edit . Result: You see the <i>Edit Charge Period screen</i> (See example on page 384) relevant to the billing indicator.
5	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Charge period fields</i> (on page 383).
	Notes: • The Period/Volume Start field cannot be edited in the first charge period created. • The Length In Loop value will be unaffected by any changes to the charge period start time. For more information, see <i>Charge period loops</i> (on page 380).
6	Click Save .

Deleting charge periods

Follow these steps to delete an existing charge period from a charge set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set that contains the charge period to edit from the list displayed in the table.
3	In the table at the bottom of the Charge Periods tab, select the record to delete from the table.
4	Click Delete . Result: You see the Delete Confirmation prompt.
5	Click OK to delete the record from the database. Result: The record is deleted and you see the Charge Periods prompt.
6	Click OK .

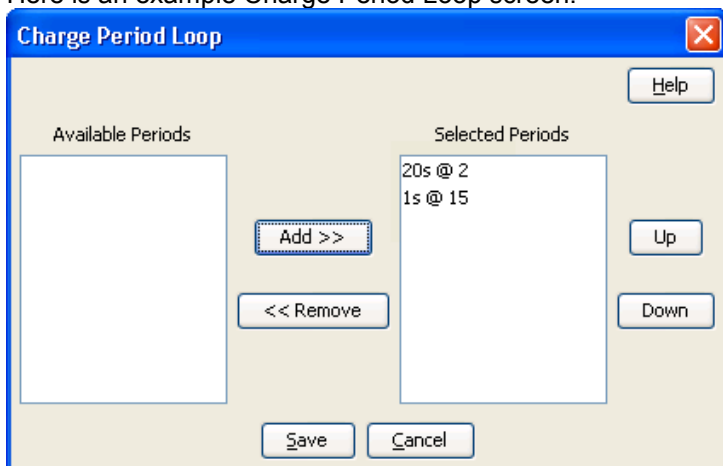
Defining a charge period loop

Follow these steps to define a charge period loop for a charge period set.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Charge Periods tab, select the charge period set.
3	Define a loop period for the charge period set as described in <i>Adding a loop period</i> (on page 385).
4	Click Define Loop . Result: You see the <i>Charge Period Loop screen</i> (See example on page 387).
5	In the Selected Periods list, specify the charge periods to be in the loop. To: • Add a period to the list, select it in the Available Periods list and click Add. • Remove a period from the list, select it in the Selected Periods list and click Remove.
6	Use the Up and Down buttons to set the order in which the selected charge periods will be processed in the loop.
7	Click Save .

Charge Period Loop screen

Here is an example Charge Period Loop screen.



Balance Type Cascades

Introduction

The **Balance Type Cascade** tab lets you specify which balance types are to be used, and in what order, to pay for a call. Please see the following examples:

- Standard
 - Promotional Balance
 - General Cash Balance
- Promotional Named Event
 - Free SMS
 - Promotional Balance
 - General Cash Balance

Tip: In order to use cascade plans, ensure that `ccsNamedEventHandler` has been correctly configured. For more information, see *CCS Technical Guide*.

Balance Type Cascade tab

Here is an example Balance Type Cascade tab.

Name	Change User	Change Date
ahunt.full	SU	2009-07-25 14:38:33
ahunt_badpin	SU	2009-07-21 14:10:58
ahunt_time	SU	2009-07-23 21:20:11
Basic Cascade	SU	2009-07-07 17:36:43
ME	SU	2009-08-16 14:45:34
NamedEventCascade	SU	2009-08-19 08:55:14
SamBTC	SU	2009-09-14 09:02:24

Balance Type Cascade fields

This table describes the function of each field.

Field	Description
Name	The unique name of the balance type cascade.
Available Balance Types	The balance types which could be part of the balance type cascade, but are not.
Selected Balance Types	The balance types which are charged when this balance type cascade is used. Note: The balance types are used in the same order they appear in the list, starting with the top and working down.

Balance Cascade screen

Here is an example Balance Cascade screen.

Adding balance type cascades

Follow these steps to add a new balance type cascade.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Balance Type Cascades tab, click New .

Result: You see the *New Balance Cascade* screen (See example on page 389).

- 3 Configure this record by entering data in the fields on this screen.
For more information about the fields on this screen, see *Balance Type Cascade fields* (on page 388).

Step	Action
4	Click Save .

Editing balance type cascades

Follow these steps to edit an existing balance type cascade.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the grid on the Balance Type Cascades tab, select the record to edit.
3	Click Edit . Result: You see the Edit <i>Balance Cascade screen</i> (See example on page 389).
4	Edit the fields to reflect the required changes. For more information about the fields on this screen, see <i>Balance Type Cascade fields</i> (on page 388).
5	Click Save .

Deleting balance type cascades

Follow these steps to delete an existing balance type cascade.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Balance Type Cascades tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK . Result: The record is deleted from the database.

Expenditure Plan

Introduction

The **Expenditure Plan** tab allows you to configure which balance types to include in expenditure plans. You use expenditure plans to determine the contributions to make to expenditure through named events and CLI-DN tariffs.

Only balance types that have been set up to hold expenditure contributions are available for inclusion in expenditure plans. The exact value of the expenditure will be charged to the included balance types.

Note: For named events, the charge is applied to the included balance types as follows:

- For cash only named events, it is only applied to cash expenditure balance types
- For time only named events, it is only applied to time expenditure balance types
- For cash and time named events, it is applied to all expenditure balance types included in the plan

For more information about setting up:

- CLI-DN tariffs which contribute to expenditure plans, see *Configuring CLI-DN Tariffs* (on page 349)

- Named events which contribute to expenditure plans, see *Named Event* (on page 369)

Expenditure Plan tab

Here is an example **Expenditure Plan** tab.

Rating Management

Service Provider: Boss

Help

Expenditure Plan

Name	Change User	Change Date
MJHEP1	SU	2009-06-24 10:03:46
SL_ExpPlan	SU	2009-08-17 09:12:44
SRM Expenditure	CCS_ADMIN	2009-07-10 09:40:37

New Edit Delete Close

Expenditure Plan fields

This table describes the function of each field.

Field	Description
Name	The unique name of the expenditure plan.
Available Balance Types	The balance types which could be part of the expenditure plan, but are not.
Selected Balance Types	The balance types which expenditure attributed to this expenditure plan is added to.

Expenditure Plan screen

Here is an example Expenditure Plan screen.

Adding expenditure plans

Follow these steps to add a new expenditure plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Expenditure Plan tab, click New . Result: You see the New <i>Expenditure Plan</i> screen (See example on page 392).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Expenditure Plan fields</i> (on page 391).
4	Click Save .

Editing expenditure plans

Follow these steps to edit an existing expenditure plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Expenditure Plan tab, select the record to edit.
3	Click Edit . Result: You see the Edit <i>Expenditure Plan</i> screen (See example on page 392).
4	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Expenditure Plan fields</i> (on page 391).
5	Click Save .

Deleting expenditure plans

Follow these steps to delete an existing expenditure plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Expenditure Plan tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: You see the expenditure plans record successfully deleted prompt.
5	Click OK .

Cross Balance Type Cascades

Introduction

The **Cross Balance Type Cascade** tab lets you specify which cross balance types are to be used for calculating cross balance type discounts. It also lets you specify the order in which they are used.

The discounts are applied to cash balance types being debited during voice calls. During a call the chargeable balance types that will be used to pay for the call are listed in a balance type cascade.

Notes:

- Only cash balance types are discounted. Time or other non-cash balance types cannot be discounted.
- Cross balance type discounts are compounded with any applicable weekly or holiday discounts.

For more information about cross balance types, see *Cross balance types* (on page 228).

Rules applying to cross balance type cascades

During a call, the balance types in the cross balance type cascade are debited according to the following rules:

- 1 If the first cross balance type to be debited is neither cash nor time, it will be debited by one. There will be no further processing of the cross balance type cascade and no further discounting will be applied.
- 2 If a cash or a time cross balance type currently being debited becomes exhausted and the next cross balance type in the cascade is neither cash nor time, then this next cross balance type will not be debited. There will be no further processing of the cross balance type cascade and no further discounting will be applied.
- 3 If a cash or a time cross balance type currently being debited becomes exhausted and it is the last cross balance type in the cascade or all the remaining cross balance types are also exhausted, then there will be no further processing of the cross balance type cascade. No further discounting will be applied.

Cross Balance Type Cascade tab

Here is an example Cross Balance Type Cascade tab.

The screenshot shows a window titled "Rating Management" with a blue title bar. Inside the window, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tabbed interface with the "Cross Balance Type Cascades" tab selected. The tab contains a table with three columns: "Name", "Change User", and "Change Date". The table has one row with the values "SG CBT", "SU", and "2009-10-06 14:23:07". At the bottom of the window, there are four buttons: "New", "Edit", "Delete", and "Close".

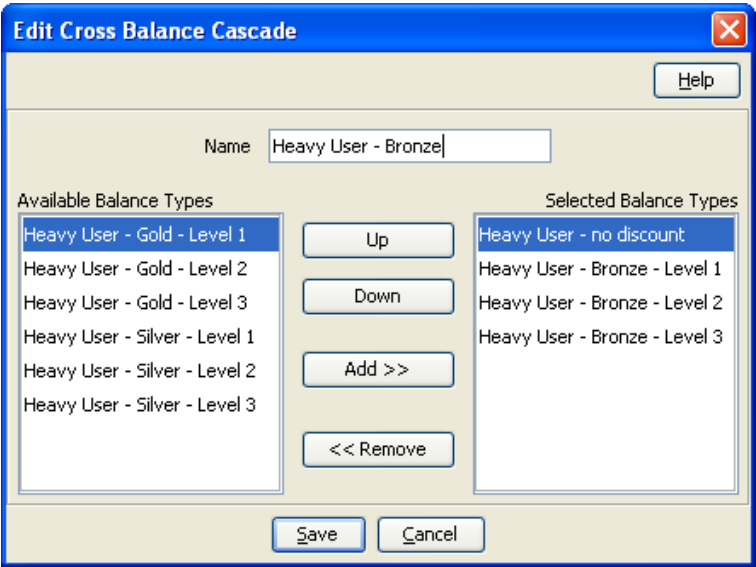
Cross Balance Type fields

This table describes the function of each field.

Field	Description
Name	The unique name of the cross balance type.
Available Balance Types	The balance types which could be part of the cross balance type, but are not.
Selected Balance Types	The balance types which are used for cross balance type discounts during voice calls which use this cross balance type. Note: The balance types are used in the same order they appear in the list, starting with the top and working down.

Cross Balance Cascade screen

Here is an example Cross Balance Cascade screen.



Adding cross balance type cascades

Follow these steps to add a new cross balance type cascade.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Cross Balance Type Cascades tab, click New . Result: You see the <i>New Cross Balance Cascade screen</i> (See example on page 395).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Cross Balance Type fields</i> (on page 394).
4	Click Save .

Editing cross balance type cascades

Follow these steps to edit an existing cross balance type cascade.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Cross Balance Type Cascades tab, select the record to edit.
3	Click Edit . Result: You see the <i>Edit Cross Balance Cascade screen</i> (See example on page 395).
4	Edit the fields to reflect the required changes. For more information about the fields in this screen, see <i>Cross Balance Type fields</i> (on page 394).
5	Click Save .

Deleting a cross balance type cascade

Follow these steps to delete a cross balance type cascade.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Cross Balance Type Cascades tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK . Result: The record is deleted from the database

Reservation Config

Introduction

The **Reservation Config** tab allows you to configure reservation settings. In the case of, for example, network failure, this allows the debit of known usage from the subscriber's account.

The reservation configurations are used in conjunction with the *Configuring CLI-DN Tariffs* (on page 349).

You can enable **Adaptive Reservations** and set **Adaptive Data Parameters** for reservation configurations using this tab. Adaptive Data ensures that when charging data with a DCA, ACS, or CCS:

- The data amount reserved on the VWS equals the amount which the subscriber would consume during the validity time at the current rate of consumption. The reservation size is still subject to upper and lower reservation size limits and the subscriber's available funds.
- The validity time in a Diameter Credit-Control-Answer (CCA) for an idle data session is longer than the validity time for an active data session.
- The validity time with the lowest value is used when a subscriber uses more than a single service concurrently.

Adaptive Reservations updates reservation amounts by comparing a subscriber's usage rate to the reservation configuration and the subscriber's available resources. The following example shows how reservation amounts are determined during a session with variable data usage rates.

Note: Access to the **Reservation Config** tab is controlled by user permissions. This tab is only visible to users with the relevant permission. See *Creating User Templates in SMS User's Guide*.

Example

This example shows Adaptive Reservations for a subscriber with varying usage rates during a single data session. The subscriber has sufficient resources for the entire session. See Reservation Config screen for more information on the available configuration fields. Not all configuration fields are shown in this example.

The following table shows the reservation configuration for this example.

Field	Configured Value
Hold Reservation Open (secs)	630 seconds
Requested Reservation Chunk (units)	100 Units (500Kb)

Field	Configured Value
Commit Volume Threshold	100 Units (500Kb)
Request Time Threshold	300 seconds
Adaptive Data	Check box
Idle Validity Time	300 seconds
Active Validity Time	30 seconds
Minimum Requested Reservation Chunk (units)	1 Unit (5Kb)

Each row in the following table shows the subscriber's usage during the session and the resulting Adaptive Reservations behavior.

Subscriber Usage	Adaptive Reservations Behavior
The subscriber initiates a new data session	The CCS provides a reservation equaling 1 Unit with a validity time of 300 seconds based on the Minimum Requested Reservation Chunk .
The subscriber consumes no data in 5 minutes (300 seconds)	The configured Idle Validity Time is exceeded, triggering usage reporting. Adaptive Reservations determines that the session is idle based on the following calculation: $\text{Rate} = \text{Units Consumed} / \text{Time to Consume Units}$ The usage rate calculated for the example is: $0 \text{ units/sec} = 0 \text{ units} / 300 \text{ sec}$ Non-usage results in the extension of the existing reservation of 5Kb for 300 seconds. The session is not terminated because the Hold Reservation Open value is configured to 630 seconds.
The subscriber consumes 1 data unit (5Kb) in 10 seconds.	Adaptive Reservations determines that the session is active based on the following usage rate calculation: $0.1 \text{ units/sec} = 1 \text{ unit} / 10 \text{ sec}$ The CCS increases the subscriber's reservation based on the new rate using the following calculation for additional units: $\text{Additional Units} = \text{Rate} \times \text{Active Validity Time}$ The existing reservation of 1 unit is augmented with 3 additional units: $3 \text{ units} = 0.1 \text{ units/sec} \times 30 \text{ seconds}$ The reservation is now 4 units.
The subscriber consumes 3 data units (15Kb) in 1 second before the reservation expires.	The CCS increases the subscriber's reservation by the number of units calculated using the new rate of: $3 \text{ units/sec} = 3 \text{ units} / 1 \text{ sec}$ The existing reservation of 4 units is augmented with 90 additional units: $90 \text{ units} = 3 \text{ units/sec} \times 30 \text{ sec}$ The reservation is now 94 units.
The subscriber consumes 90 data units (450Kb) in 15 seconds before the reservation expires.	The CCS calculates a new rate of 6 units/sec and increases the reservation by the maximum allowed chunk of 100 units. A reservation size of 180 units (6 X 30) is not allowed because of the Requested Reservation Chunk value is set to 100 units. The reservation is now 194 units.

Subscriber Usage	Adaptive Reservations Behavior
The subscriber consumes 60 data units (300Kb) in 30 seconds before the reservation expires.	The CCS performs a mid-session commit of the subscriber's usage because the usage exceeds the Commit Volume Threshold of 100 units. The committed usage at this point totals 154 units (770Kb). The CCS calculates a new rate of 2 units/sec and reserves 60 additional units. The reservation now totals 214 units (154 committed units and 60 reserved but not committed units).
The subscriber consumes 3 data units (15Kb) in 30 seconds before the reservation expires.	The CCS attempts to reserve 3 additional units based on the new data consumption rate. The existing unused reservation of 60 units exceeds the new required amount. In this case, the CCS performs another mid-session commit of the 3 data units used by the subscriber. The committed usage at this point totals 157 units (785Kb). The reservation adapts to a new value of 3 units with a 30 sec validity time.
The subscriber consumes 2 data units (10Kb) in 15 seconds then terminates the session.	The CCS commits the 2 used units based on the session termination. The total committed usage for the session is 159 units (795Kb). No outstanding reservations against the subscriber's resource balance for this session exist.

About Mid-Session EDR Configuration

You can use the following options to control how partial EDRs are generated:

- You can configure to generate partial EDRs by volume.
- You can configure a time interval to generate partial EDRs. For example, you can create a partial EDR every hour. A partial EDR is created even if no volume has been consumed.
- You can configure to generate a partial EDR at a specified time of day based on a configured time zone. For example, an EDR could be generated at midnight. A partial EDR is created even if no volume has been consumed.

Note: This option can result in an increased load on system resources at the designated time.

These configuration options can be used in combination; for example:

- You can create partial EDRs at 100-MB intervals and once a day for the same session.
- You can create partial EDRs based on a time interval and a specified time of day. If both time-based intervals occur at the same time, only one partial EDR is created.

Reservation Config tab

Here is an example **Reservation Config** tab.

The screenshot shows a window titled "Rating Management" with standard window controls (minimize, maximize, close). Below the title bar, there is a "Service Provider" dropdown menu set to "ECE_SP" and a "Help" button. A series of tabs are visible, including "Holiday", "Named Event", "Discount Periods", "Charge Periods", "Balance Type Cascades", "Tariff Plan", "Tariff Plan Selector", "Rate Tables", "Discount Sets", "CLI-DN", "Weekly", "Named Event Catalogue", "Low Credit Notification Config", "Tax Plan", "Expenditure Plan", "Cross Balance Type Cascades", and the active "Reservation Config" tab. The "Reservation Config" tab displays a table with the following headers: "Name", "Hold...", "Req ...", "Commit Volume ...", and "Request Time". The table body is currently empty. At the bottom of the window, there are four buttons: "New", "Edit", "Delete", and "Close".

Reservation config fields

This table describes the function of the reservation configuration fields.

Field	Description
Configuration Name	The name of the configuration.

Field	Description
Hold Reservation Open (secs)	This value defines the minimum period of time in seconds that can elapse before a reservation will be timed out by the billing engine. If set, this value overrides both the Reservation Period Override (RPO) field in an Initial Reservation, and the Reservation Length Tolerance specified in VWS configuration for the CCS beVWARS Reservation Handler. Hold Reservation Open is a total figure and not a delta based on the maxReservationLength configured in the eserv.config file on the VWS. This means that if your reservation size is 200 seconds, you need to configure the Hold Reservation Open for a period greater than 200 seconds, otherwise you are going to trigger a timeout during the period of the reservation. Note: If you enable Adaptive Data, this value must be greater than the combined time set in the Request Time Threshold and Idle Validity Time.
Requested Reservation Chunk (units)	Requested Reservation Chunk defines the amount that the VWS shall attempt to return upon receipt of a reservation request, assuming that the subscriber has sufficient funds: • Upon receipt of an Initial Reservation, the VWS will attempt to reserve the specified number of units. • Upon receipt of a Subsequent Reservation Request (SRR), the VWS will examine the number of units consumed so far (specified in the SRR), and then return enough units to bring the total un-used reservation up to the Requested Reservation Chunk (RRC) value. So, the formula used is as follows: Returned Reservation = RRC – (Un-Used Reservation MOD RRC) Note: The RRC value is subject to precision value, depending on the switch used, specified in IR REQ. For example, if the UATB node is configured for a: • CS2 (CAMEL) switch, it sends an IR REQ with "[PREC] = 'TEN'", which results in beVWARS returning a reservation with the value = 10 x <RRC value>. • Nokia switch, it uses the configured RRC value.
Commit Volume Threshold	Any non-committed time, that has been confirmed as being used, will be committed once the total goes above this threshold. Note: This field is active when the Enabled check box has been selected.
Request Time Threshold	UATB can decide not to request more funds if there is enough of the reservation remaining. If however, the Request Time Threshold is reached, then an SR will be sent regardless. Its purpose is to stop the reservation expiring on the VWS. Note: This field is active when the Enabled check box has been selected.
Go Greedy Reservation Length Limit (units)	If less than this number of units would be returned for the reservation, return the total number of units available instead. Note: Selecting the Use Global check box defaults the limit to the greedyReservationLengthLimit value configured in the eserv.config file.

Field	Description
Adaptive Data	Whether to use the Adaptive Data parameters configured in the following fields for Adaptive Reservations. Note: If you enable Adaptive Reservations, you must also provide a value greater than zero for the Commit Volume Threshold and select the Enabled check box for this field. Enabling a commit volume threshold allows reservation to be committed in the middle of active sessions when the threshold is reached. This behavior is required when using Adaptive Reservations.
Idle Validity Time	The validity time (in seconds) to send to DCA if the connection is idle. The connection is idle if one of the following is true: No data has been used yet. • The data used last period is less than the Minimum Requested Reservation Chunk. • The length of the last session is less than the Idle Validity Time. A value of 0 means do not send validityTime in the Diameter CCA message. When configured this way, the Gateway GPRS Support Node (GGSN) chooses the validity time.
Active Validity Time	The validity time (in seconds) to send the DCA if the connection is active. See Idle Validity Time for how an idle session is defined. A value of 0 means do not send validityTime in the Diameter CCA message. When configured this way, the GGSN chooses the validity time.
Minimum Requested Reservation Chunk (units)	The minimum reservation size in units. If a value of 0 is used, the adaptive data parameters are turned off.
Mid-Session EDRs	Enables the feature.
Commit Time Threshold	This defines the amount of time at which point a partial EDR is produced (Duration of time since the last commit is greater than the Commit Time Threshold).
Commit Time	This defines a specific time to create a partial EDR, according to the configured time zone.
Timezone	The time zone to use for the commit time

Reservation Config screen

Here is an example New Reservation Config screen.

The screenshot shows a 'New Reservation Config' dialog box with a title bar containing a close button (X). Inside the dialog, there is a 'Help' button in the top right corner. The main area contains several configuration fields and checkboxes:

- Configuration Name**: A text input field.
- Hold Reservation Open (secs)**: A text input field.
- Requested Reservation Chunk (units)**: A text input field.
- Commit Volume Threshold**: A text input field followed by an ☐ **Enabled** checkbox.
- Request Time Threshold**: A text input field followed by an ☐ **Enabled** checkbox.
- Go Greedy Reservation Length Limit (units)**: A text input field containing '60' followed by an ☐ **Use Global** checkbox.
- Adaptive Data**: An ☐ **Enabled** checkbox.
- Adaptive Data Parameters**: A group box containing:
 - Idle Validity Time**: A text input field.
 - Active Validity Time**: A text input field.
 - Minimum Requested Reservation Chunk (units)**: A text input field.
- Mid-Session EDRs**: An ☐ **Enabled** checkbox.
- Mid-Session EDRs Parameters**: A group box containing:
 - Commit Time Threshold**: A text input field.
 - Commit Time**: A dropdown menu showing '00:00' followed by an ☐ **Enabled** checkbox.
 - Timezone**: A dropdown menu showing '<Not Set>'.

At the bottom of the dialog are two buttons: **Save** and **Cancel**.

Editing a reservation config

Follow these steps to edit a reservation config.

Step	Action
1	In the table on the Reservation Config tab, select the record to edit.
2	Click Edit or Double-click on the record. Result: The Edit Reservation Config screen appears.
3	Edit the details as described in <i>Reservation config fields</i> (on page 399).
4	Click Save .

Adding a reservation config

Follow these steps to add a reservation config.

Step	Action
1	On the Reservation Config tab, click New . Result: The New Reservation Config screen appears.
2	Fill in the fields, as described in <i>Reservation config fields</i> (on page 399).
3	Click Save .

Deleting a reservation config

Follow these steps to delete an existing Reservation config.

Step	Action
1	In the table in the Reservation Config tab, select the record to delete.
2	Click Delete . Result: You see the Delete Confirmation prompt.
3	Click OK to delete the record from the database. Result: The record is deleted and you see the Reservation Config success message.
4	Click OK .

Low Credit Notification Config

Introduction

The **Low Credit Notification Config** tab allows for notifications to be sent based on credit values.

These notifications are messages; to configure a 'beep' notification, see *CCS Feature Nodes - UATB node configuration*.

The low credit threshold configured in these screens control **when** the beep would be played, the macro node controls if it should be played.

Low Credit Notification Config tab

Here is an example of the Low Credit Notification Config tab.

Rating Management

Service Provider: Boss

Help

Low Credit Notification Config

Name	Low Balance Threshold	DAP Operation	Suppress DAP	Notification Template
CLIXDN Threshold 26	25	-- No DAP --		-- No Notification --
CLIXDN Threshold 42	75	-- No DAP --		-- No Notification --
CLIXDN Threshold 61	50	-- No DAP --		-- No Notification --

New Edit Delete Close

Low Credit Notification Config fields

This table describes the function of each field.

Field	Description
Name	The unique low credit notification config name.
Low Balance Threshold	The threshold value that will trigger the notification. Setting this to less than 30 seconds can result in the in-band low credit tone not being generated. Some network equipment, or signaling implementations, use a fixed warning period of 30 seconds and anything less than that turns the tone off.

Field	Description
DAP Operation	The name of the DAP operation to use for this notification. This list is configured in the DAP application SMS screen at SMS > Services > DAP > Resources then Operations tab. For more information about DAP see <i>Data Access Pack User's and Technical Guide</i> .
Suppress DAP	Suppress DAP or not indicator location. This is a boolean profile tag for this customer, which if set to True will suppress the DAP notification. Profile tags are configured in SMS > ACS Service > Configuration > Profile Tag Details tab.
Notification Template	The notification template to use for this notification. This list is configured in SMS > ACS Service > Configuration > Notifications tab.

Low Credit Notification Config screen

Here is an example Low Credit Notification Config screen.

Adding a Low Credit Notification Config

Follow these steps to add a low credit notification item.

Step	Action
1	In the Rating Management screen, select the Service Provider from the drop down box.
2	Select the Low Credit Notification Config tab and click New . Result: You see the <i>New Low Credit Notification Config screen</i> (See example on page 405).
3	Configure this record by entering data in the fields or selecting from the drop down lists on this screen. For more information about the fields on this screen, see Low Credit Notification Config fields. Note: The Suppress DAP list becomes available when a DAP operation is selected.
4	Click Save .

Editing a Low Credit Notification Config

Follow these steps to edit a low credit notification item.

Step	Action
1	In the Rating Management screen, select the Service Provider from the drop down box.
2	Select the Low Credit Notification Config tab.
3	Select a config record and click Edit or double-click on a config record. Result: You see the <i>Edit Low Credit Notification Config screen</i> (See example on page 405).
4	Edit the details as described in Low Credit Notification Config fields. Note: The Suppress DAP list becomes available when a DAP operation is selected.
5	Click Save .

Deleting a Low Credit Notification Config

Follow these steps to delete an existing Low Credit Notification Config.

Step	Action
1	In the table in the Low Credit Notification Config tab, select the record to delete.
2	Click Delete . Result: You see the Delete Confirmation prompt.
3	Click OK to delete the record from the database. Result: The record is deleted and you see the Low Credit Notification Config success message.
4	Click OK .

Tax Plan

Introduction

The **Tax Plan** tab lets you set up and maintain tax plans. Tax plans are used in calculating the tax component of charges and recharges in Prepaid Charging.

Online charging transactions use tax plans to:

- Acquire the tax amount to be applied to the charging activity
- Calculate tax as inclusive to the charging definitions
- Calculate tax as additional to the charging definitions.

A tax plan is a name that can be referenced in rating, much like rate tables. Definitions of how to calculate the tax for charges/credits with the tax plan will use the definitions associated with this plan.

Applying tax

Currently, tax can be applied at three points during the charging transaction:

- Session rating
- Named event rating
- Redemption - voucher or promotional

Tax information is reported in the corresponding EDR and a tax report is made available indicating the tax liability for the platform.

Session rating

Session rating (such as voice calls) use the CLI-DN rating tables. A single tax plan can be optionally associated with each CLI-DN mapping. This tax plan applies to all the tariffs of a multi-tariff CLI-DN. For mid-tariff moment changes, the tax plan associated with each of the CLI-DN mappings applies only to that part of the cost.

Example:

If after 10 minutes of a 15 minute call, the tariff plan changes from T1 to T2, the tax plan for T1 will only apply to the cash costs for the first 10 minutes, while the tax plan associated with T2 will apply for the last five minutes.

Note: Tax is calculated only for cash balance types of CLI-DN mappings.

Named event

Named event rating for SMSes or one-off charges use the named event rating tables. A single tax plan can be optionally associated with each named event base definition.

This tax plan applies only to the cash cost of a named event.

Computation methods

Each tax plan can be configured to calculate the associated tax definitions using one of the following methods:

- Compound
- Cumulative

Compound tax

In the compound method, multiple tax definitions are calculated by applying the tax percentage to each subtotal obtained during the computation.

Tax amount is initially calculated on the initial cost and subtotaled. The second tax is then applied to this subtotal and the process is repeated for each additional tax definition in the tax plan. This addition to the original amount means the tax is itself taxed in the compound method.

Example:

Tax plan (T1) has the two tax definitions linked to it:

TD1_1: 20%

TD1_2: 10%

Now if a \$100 charge were to be taxed using the *compound* method the following calculation would occur:

$\$100 * 20/100 = \$20$

Sub Total: \$120

$\$120 * 10/100 = \$12$

Total: \$132

Cumulative tax

Cumulative tax is calculated on the base charge and all the tax amounts are added together at the end. This makes no difference for a tax plan with a single tax definition in it.

Example:

Tax plan (T1) has the two tax definitions linked to it:

TD1_1: 20%

TD1_2: 10%

Now if a \$100 charge were to be taxed using the *cumulative* method the following calculation would occur:

$\$100 * 20/100 = \$20$

$\$100 * 10/100 = \$10$

Total: $\$100 + \$20 + \$10 = \$130$

Tax Plan tab

Here is an example **Tax Plan** tab.

Rating Management

Service Provider: Boss

Help

Name	Inclusive	Combine Method	EDR Tag
Eurozone Tax1	Y	Compound	EURO1

New Edit Delete Close

Tax Plan fields

This table describes the function of each field.

Field	Description
Name	The name of the tax plan. Notes: • Tax plan names must be unique within a customer's set of tax plans. • Special characters and case do not make a distinction between names. • This is a mandatory field.
Inclusive	Selecting this check box indicates the tax plan is of type inclusive, that is, the tax is already included in the cost.
Combine Method	Indicates how multiple tax definitions are calculated for a single tax plan. Select one of: • Compound: each definition is calculated on the subsequent total. • Cumulative: each definition is calculated on the base charge and tax amounts added. See <i>Compound tax</i> (on page 407) and <i>Cumulative tax</i> (on page 407) for more information.
EDR Tag	Name used to identify this tax plan in an EDR.

Tax Plan screen

Here is an example Tax Plan screen.

The screenshot shows the 'Edit Tax Plan' window with the following fields and values:

- Name:** Eurozone Tax1
- Combine Method:** Compound (selected), Cumulative
- Inclusive:** ☒
- EDR Tag:** EURO1

Below these fields is a section titled 'Tax Definitions - for compound combine method order is important.' containing a table:

Name	Percentage	EDR Tag	Change User
Basic	5	EURO_BASIC	SU

At the bottom of the window are buttons for 'New', 'Edit', 'Delete', 'Up', 'Down', 'Save', and 'Cancel'.

Adding tax plans

Follow these steps to add a new tax plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Tax Plan tab, click New . Result: You see the <i>New Tax Plan screen</i> (See example on page 409).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tax Plan fields</i> (on page 409). To add tax definitions to the plan, see <i>Adding tax definitions</i> (on page 410).
4	Click Save .

Editing tax plans

Follow these steps to edit an existing Tax Plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Tax Plan tab, select the record to edit.
3	Click Edit . Result: You see the <i>Edit Tax Plan screen</i> (See example on page 409).
4	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tax Plan fields</i> (on page 409). To add tax definitions to the plan, see <i>Editing tax definitions</i> (on page 412).
5	Click Save .

Deleting tax plans

Follow these steps to remove a tax plan.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Tax Plan tab, select the record to delete and click Delete . Result: You see the Delete Confirmation prompt.
3	Click OK to delete the record from the database.

Adding tax definitions

Follow these steps to add a new tax definition.

Step	Action
1	On the New or the Edit <i>Tax Plan screen</i> (See example on page 409), click New . Result: You see the <i>New Tax Definition screen</i> (See example on page 411).

Step	Action
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tax plan definition fields</i> (on page 411).
3	Click Save . Result: You will be returned to the Tax Plan screen and the new record will be displayed in the Tax Definitions table.

Tax definitions

Tax definitions define the actual percentage of the tax to be applied. The final amount of tax payable is dependent on the calculation method defined in the tax plan and the available account balances. The tax is only applied to cash balances and costs.

A tax plan can have multiple tax definitions associated to it.

Tax Definition screen

Here is an example Tax Definition screen.

Tax plan definition fields

This table describes the function of each field.

Note: All fields are mandatory.

Field	Description
Name	A unique name of the tax definition.
Percentage	The actual tax percentage to be applied. Notes: • Tax plan names must be unique within a customer's set of tax plans. • Percentage figures can include up to two decimal places. • Allowed range is within 0 to 100.
EDR Tag	Name used to identify this tax definition in an EDR. An abbreviated tax definition name appears in the EDR.

Editing tax definitions

Follow these steps to edit an existing tax definition.

Step	Action
1	In the New or the Edit Tax Plan screen, select the tax plan in the table and click Edit . Result: You see the Edit <i>Tax Definition screen</i> (See example on page 411).
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Tax plan definition fields</i> (on page 411).
3	Click Save . Result: You will be returned to the Edit Tax Plan screen and the new record will be displayed in the Tax Definitions table.

Deleting tax definitions

Follow these steps to delete an existing tax definition.

Step	Action
1	In the New or the Edit Tax Plan screen, select the tax plan in the table and click Delete . Result: You see the Delete Confirmation prompt.
2	Click OK to delete the record from the database.

Rating Management - Named Event Catalogues

Overview

Introduction

This chapter explains how to configure named event catalogues.

In this chapter

This chapter contains the following topics.

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Named Event Catalogue

Introduction

A named event catalogue defines a list of named events and their overrides. On the **Named Event Catalogue** tab you can configure:

- The list of named events to include in the current catalogue
- General event overrides
- Time based event overrides, for example to cover holiday periods

Note: An override defines a period of time when the costs associated with the named event will be different or when the named event may be allowed or barred.

Tariff plan

You assign a named event catalogue to a tariff plan using the tariff plan selector. The named events included (and allowed) in the catalogue will then be available to all the product types that use this tariff plan.

When you assign a catalogue to a tariff plan, this also sets the date when the named event catalogue will become active.

For more information on the tariff plan selector, see *Tariff Plan Selector* (on page 329).

Note: You can assign the same named event catalogue to more than one tariff plan.

Default catalogue

The default catalogue defines the default list of named events and event overrides. A product type will use the default catalogue if there is no tariff plan selector entry for the product type's tariff plan at the current time.

You can choose to include the default catalogue configuration in a named event catalogue by selecting the **Include Default** option.

If the current catalogue includes the default catalogue configuration, then the default configuration for the included events will be used unless specifically overridden by the configuration in the current catalogue.

Event rules

An event included in the named event catalogue can be either allowed or barred. This will depend on the overrides configured for the event.

Here are the rules used to determine whether or not an event will be allowed.

- 1 If no overrides have been configured for the event then it will be allowed by default.
- 2 If there is a general override in the current catalogue allowing the event then it will be allowed.
- 3 If there is a general override in the current catalogue barring the event then it will be barred.
- 4 If any time based overrides have been configured for the event to allow it or bar it, then the event will be either allowed or barred during the specified time period.

Here are the additional rules applying to the event if the default catalogue is included in the current catalogue:

- 1 The event will be barred if there is no general override in the current catalogue and there is a default general override barring the event.
- 2 A default time based override will override a general override in both the default and the current catalogue. This means that if any default time based overrides have been configured for the event to allow it or bar it, then the event will be either allowed or barred during the specified time period.
- 3 If a time based override has been configured for the same period in the default catalogue and in the current catalogue, then the override in the current catalogue will take precedence.

Named Event Catalogue tab

Here is an example **Named Event Catalogue** tab.

Note: The current default named event catalogue name is shown on the tab. The row containing the default catalogue is highlighted in bold at the top of the list of catalogues on the tab.

Service Provider: Boss Help

Named Event Catalogue

Import Export

Default Catalogue: GCPT01

Name	Default Catalogue	Include Default	Use Holiday Set
GCPT01	Yes	No	
AHUNT_PR	No	No	
Default	No	No	
DT	No	Yes	Dave HS
MJHPT1	No	Yes	
SL ActivationCredits	No	No	
SL_Product1	No	No	
SL_Product2	No	No	
SLauto_ProdType	No	No	

New Edit Copy Delete Make Default Close

Named Event Catalogue tab columns

This table describes the content of each column.

Field	Description
Name	The catalogue name. Note: The first catalogue in the list is the current default catalogue.
Default Catalogue	Flag to indicate which is the default catalogue.
Include Default	Flag to indicate if the this catalogue also includes the default catalogue.
Use Holiday Set	The name of a Holiday set when one is used in this catalogue.

Setting the default named event catalogue

Follow these steps to set the default named event catalogue.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	In the table on the Named Event Catalogue tab, select the named event catalogue that you want to make into the default. Note: You must choose a named event catalogue which has the Include Default column set to 'No'.
3	Click Make Default . Result: You see the Confirm Change Default Catalogue prompt.
4	Click Yes to confirm. Result: The Named Event Catalogue table will be refreshed and the new default catalogue will be highlighted in bold at the top of the list.

Copying named event catalogues

You can copy the configuration for a named event catalogue to a new catalogue. This will copy:

- The include default value
- The use holiday set value
- Included named events
- Allow in catalogue values
- Event override configuration

Follow these steps to copy a named event catalogue.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event Catalogue tab, select the catalogue to copy.
3	Click Copy . Result: You see the Copy Existing Named Event Catalogue screen. The name of the catalogue you are copying is displayed in the screen.
4	In the Name field, type the name you want to use for the new catalogue that will be created by the copy process.
5	Click Copy . Result: The catalogue and its configuration is copied to the new name. The Named Event Catalogue tab is refreshed and you see the new catalogue listed on the tab.

Deleting named event catalogues

Follow these steps to delete a named event catalogue.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event Catalogue tab, select the catalogue to delete.

Step	Action
	Note: You may not delete any of: - The default catalogue - Any catalogue that has been associated with a tariff plan on the Tariff Plan Selector tab.
3	Click Delete .
	Result: You see the Delete Confirmation prompt.
4	Click Ok .
	Result: The catalogue is removed from any named event records included in the catalogue and the catalogue is deleted.

Named Event Catalogue screen

Here is an example Named Event Catalogue screen.

Edit Named Event Catalogue

Name: Include Default (Bronze): ☐ Use Holiday Set:

Named Events

Display Filters

Event Sets: Include In Catalogue: Max Rows:

Event Name: Allowed in Catalogue:

Event Set	Named Event	Cash Cost	Time Cost	Data Cost	Unit Cost	More Info
BOOST	☒ Boost 1 Periodic Fee	\$0.30			1	
	☒ Boost 2 Periodic Fee	\$0.40			1	
	☒ Boost 3 Periodic Fee	\$0.50			1	
	☒ Boost 4 Periodic Fee	\$0.60			1	
	☒ Boost 5 Periodic Fee	\$0.70			1	
CS	☒ Change Fee	\$0.30			1	
	☒ Monthly Fee	\$3.00			1	
FD	☒ Change Fee	\$0.30			1	
	☒ Monthly Fee	\$3.00			1	
FF	☒ Change Fee	\$1.00			1	
	☒ Monthly Fee	\$5.00			1	
HA	☒ HA	\$0.00			1	
Loyalty	☒ Point	\$0.01			1	

Named Event Override Configuration

Event Name:

Override Name	Cash Cost	Time Cost	Data Cost	Unit Cost	Free	A	Gen...
Change Fee	\$0.01				1 No	true	Yes

Named Event Catalogue fields

These tables describe the function of each field on the New and the Edit Named Event Catalogue screens.

Field	Description
Name	The name of the named event catalogue.
Include Default	Select this check box to automatically include the named events and event overrides from the default named event catalogue in this named event catalogue.
Use Holiday Set	The Holiday Set to use for time based overrides. This field is populated by the Holiday tab. For more information, see <i>Holiday Tariffs</i> (on page 363). Note: When set to "None" you will only be able to specify time based overrides for weekly and daily periods. You will not be able to specify time based overrides for holiday periods.

Display Filters

Field	Description
Event Sets	Filters the named events listed in the Named Events table based on the selected event set. When "All Sets" is selected, all the event sets configured for the current service provider will be listed. This field is populated by the Named Event tab. For more information, see <i>Named Event</i> (on page 369).
Event Name	The name of the specific event to search for in the selected event set.
Include In Catalogue	Filters the events listed in the named events table based on the selected inclusion option. Select one of: • Included - to list only events that have been included in the catalogue • Included in Current and Default - to list only events included in the current and default catalogues • Included & Not Included - to list all events • Not Included - to list only events that are not included in the catalogue Note: This field is disabled for new named event catalogues and therefore appears grayed out in the New Named Event Catalogue screen.
Allowed In Catalogue	Filters the events listed in the Named Events table based on whether or not they have been allowed in the named event catalogue. Select one of: • Allowed - to list only events that have been allowed in the catalogue • Allowed & Barred - to list both allowed and barred events • Barred - to list only events that are barred in the catalogue Note: This field is disabled for new named event catalogues and therefore appears grayed out in the New Named Event Catalogue screen.
Max Rows	Defines the maximum number of rows that will be returned in the Named Events table. Defaults to 999.
Filter button	Activates the selected filters when clicked. Result: The Named Events table is populated with the filter results.

Named Events grid

Field	Description
Event Set	List of event set names used.
I	Included flag. Events with this check box selected will be included in the catalogue. Note: Included events are automatically allowed in the catalogue. If you want to bar an event you must set up an override to do this.
Named Event	List of events grouped by event set name.
A	Allowed flag. Events with this check box selected will be allowed in the catalogue. Note: This check box cannot be changed in this screen. This check box is automatically set when either or both of the following are configured for the event: • General overrides • Time based overrides
Cash Cost	Lists the cash cost associated with each event. Note: This value is automatically updated by general overrides configured for the event.
Time Cost (Secs)	Lists the time cost associated with each event. Note: This value is automatically updated by general overrides configured for the event.
More Info	(+) in this column indicates that time based overrides have been configured for the event.

Note: Cost values of all types (Cash, Time, Data and Unit) are automatically updated by general overrides configured for the event.

Named Event Override Configuration grid

Field	Description
Override Name	Unique name for the event override
Cash Cost	The cash amount to charge each time this named event occurs during the override period.
Time Cost (secs)	The time to charge each time this named event occurs during the override period.
A	Allowed flag. Events with this check box selected will be allowed in the catalogue.
General	Flag that indicates a general or time override. • Yes - no time based overrides are associated with this override • No - time based overrides have been configured

Adding named event catalogues

Follow these steps to add a new named event catalogue.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event Catalogue tab, click New . Result: You see the New <i>Named Event Catalogue screen</i> (See example on page 417).
3	In the Name field, type a unique name for the new catalogue. Warning: Data may be lost up until the Save is clicked.
4	To include the default named event catalogue definition, select the Include Default check box.
5	To specify time based overrides for holiday periods, select the required holiday set from the Use Holiday Set drop down list.
6	Optionally, use the Display Filters section in the New or Edit Named Event Catalogue screen to specify the criteria to constrain the entries in the Named Events table. For more information on the fields in this section, see <i>Named Event Catalogue fields</i> (on page 418).
7	Optionally, click Filter . Result: All the events that match the specified filter criteria are listed on the Named Events table. For an example showing a list of filtered events, see <i>Named Events table example</i> (See example on page 422).
8	In the Named Events table, select the check box in the "I" column for the events to include in the catalogue. Result: The event is highlighted in bold.
9	Add overrides to the included events as required. For more information on adding: • A general override, see <i>Adding a general override</i> (on page 427) • Time based overrides, see <i>Adding a time based override</i> (on page 427)
10	Perform one of the following actions: • Click Save to save the record without closing the New Named Event Catalogue screen • Click Save and Close to save the record and return to the Named Event Catalogue tab

Editing named event catalogues

Follow these steps to edit an existing named event catalogue.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event Catalogue tab, select the catalogue to change and click Edit . Result: You see the Edit <i>Named Event Catalogue screen</i> (See example on page 417). Note: If you are editing the default catalogue you will see a warning at the top of the screen.
3	Edit the fields in this screen to reflect the changes you need to make. For more information on the fields in this screen, see <i>Named Event Catalogue fields</i> (on page 418).

Step	Action
4	If you want to include some events that are not currently included in the catalogue, you will need to filter the events list. For details, see <i>Filtering Named events</i> (on page 422). Tip: Select "Included and Not Included" from the Include In Catalogue drop down list to see a full list of events for the selected Event Set.
5	Select the check box in the "I" column for the events you want to include in the catalogue.
6	Add, edit and delete overrides for the included events as required. For more information, see <i>Configuring Overrides</i> (on page 426). Note: Any changes you make to the defined overrides will be shown in the Edit Named Event Catalogue screen. However, they will not be saved to the database until you save the named event catalogue record itself.
7	Perform one of the following actions: - Click Save to save the record without closing the Edit Named Event Catalogue screen - Click Save and Close to save the record and return to the Named Event Catalogue tab

Named Events Grid

Introduction

The table in the **Named Events** area of the New and the Edit Named Event Catalogue screen displays a list of named events. When you open:

- The New Named Event Catalogue screen, all the available events are displayed
- The Edit Named Events Catalogue screen, only the events currently included in the catalogue are displayed

You can filter the events listed to display a different set of events. For more information on filtering events, see *Filtering named events* (on page 422).

Event display attributes

Events are displayed with the following attributes:

- bold** – If they are included in the current catalogue
- normal font – If they are included in the default catalogue but have not been included in the current catalogue
- italics* – If they are not included in either the current catalogue or the default catalogue

Named events grid example

Here is an example table in the **Named Events** area of the New or the Edit Named Event Catalogue screen showing the list of events that match the specified filter criteria.

Named Events

Display Filters

Event Sets: Include In Catalogue: Max Rows:

Event Name: Allowed in Catalogue:

Event Set	I	Named Event	A	Cash Cost	Time Cost	Data Cost	Unit Cost	More Info
DCA Sample Events	☒	Cent	☒	£0.10			1	
FnF FnD Events	☒	FnD Config Change	☒	£0.45	0.25		1	
	☒	FnF Config Change	☒	£0.50			1	
PC Events	☒	1_Pound	☒	£1.00				
	☐	50_Pence	☐	£0.50				
	☐	MUE2	☐	£10.00	3000.00	22	34	
	☐	Multi_Unit_Event	☐	£0.25	40.00	4	2	
	☐	Negative_Event	☐	-£1.50				

Filtering named events

Follow these steps to filter the events listed in the **Named Events** table so that only relevant events are displayed.

Step	Action
1	In the fields in the Display Filters section in the New or the Edit Named Event Catalogue screen, specify the criteria to use to filter named events. For more information on the fields in this section, see <i>Named Event Catalogue fields</i> (on page 418).
2	Click Filter . Result: All the events that match the specified filter criteria are listed on the <i>Named Events table</i> (See example on page 422).

Event Details

Introduction

You can view details for an event selected in the **Named Events** table. The details show the derived values for the event after applying general overrides from the default and current catalogues.

Note: The event details do not show how the event will be affected by any time based overrides that have been configured.

Event Details screen

Here is an example Event Details for *event_name* screen.

Event Parameter	Derived Value	Base Event
Allowed / Barred Setting	Allowed	Allowed
Cost Type	Cash Only	Cash Only
Cash Cost	\$0,50	\$0,50
Time Cost	0,00	0,00
Expenditure Plan		
Contributes to Promotional Destination	No	No
Event Cascade		
Use Single Balance	No	No
Event Subscription	No	No
Subscription Period	0 Days	0 Days
Expires At Midnight	No	No
Expiry Notification	No Notification	No Notification

Viewing event details

Follow these steps to view the details for a selected event.

Note: Time based overrides are not taken into account when determining the derived values for the event.

Step	Action
1	In the Named Events table in the New or the Edit Named Event Catalogue screen, select the event for which you wish to view details. Result: The View Details button becomes enabled.
2	Click View Details . Result: You see the <i>Event Details screen</i> (See example on page 423) for the selected event. Note: The columns listed in the screen will vary depending on default and override configuration for the event.
3	Click Close when you have finished viewing the event details.

Event details fields

This table describes the function of each field in the table in the Event Details screen.

Field columns	Description
Event Parameter	Lists the names of the event parameters.
Derived Value	Lists the derived values for the event parameters after any general overrides have been applied. Note: A general override will only be applied if the Allowed parameter for the override is set to Allowed.

Field columns	Description
Current General Override	Lists the general override values configured for this event in the current catalogue. Note: This column will only appear if a general override has been configured for the event in the current catalogue.
Default General Override	Lists the general override values configured for this event in the default catalogue. Note: This column will only appear if the default catalogue includes this event and a general override is configured for it.
Base Event	Lists the base values configured for the event on the Named Events tab.

Named Event Overrides Grid

Introduction

The table in the **Named Event Override Configuration** area lists the overrides that have been configured for the currently selected Named Event in the New and the Edit Named Event Catalogue screen or defined as a default override for the default catalogue. You can:

- Add, modify and delete non-default overrides for the event in the current catalogue
- View the overrides configured for the event in the default catalogue

For more information about:

- Adding and modifying non-default overrides, see *Configuring Overrides* (on page 426)
- Deleting non-default overrides, see *Deleting overrides* (on page 430)

Override display attributes

Overrides are displayed in:

- **bold** – If they have been configured for the event in the current catalogue
- *italics* – If they have been configured for the event in the default catalogue

Default overrides

The overrides configured for the event in the default catalogue will be displayed in the list of overrides if the default catalogue is included in the current catalogue.

If the default catalogue is not included in the current catalogue, then only overrides configured for the event in the current catalogue will be listed.

Named event override list example

Here is an example **Named Event Override Configuration** area showing the overrides configured for an event.

Named Event Override Configuration

Event Name: Product Type Swap

Override Name	Cash Cost	Time Cost (Secs)	...	General
TypeExtra	£3660.00	200.00	☒	No

New Edit Delete Select All

For more information on the fields in this section, see *Named Event Override Configuration grid* (on page 419).

Viewing default overrides

Follow these steps to view the override configuration defined for an event in the default catalogue.

Step	Action
1	In the Named Events table select the required event. Result: The overrides defined for the event are listed in the table in the Named Event Override Configuration area.
2	In the Event Overrides table, select the <i>default override</i> to view. Result: The View button replaces the Edit button. Note: Default overrides are displayed in the table in <i>italics</i>.
3	Click View. Result: You see the <i>View Named Event Override Dialog screen</i> (See example on page 426). Note: This is a non-editable screen.
4	When you have finished viewing the override, click Cancel. Result: You are returned to the previous screen.

View Named Event Override Dialog

Here is an example View Named Event Override Dialog.

View Named Event Override Dialog

Help

Override Name: General

Class: FnF FnD Events
Name: FnD Config Change
Allowed: ☒

Override Values

Free Event: ☐

Cash Cost (£): 0.40 ☒ Override

Time Cost (secs): ☐ Override

Data Cost (data units): 0 ☐ Override

Unit Cost: 0 ☐ Override

Expenditure Plan: ☐ Override

Contributes to Promotional Destination: ☐ ☐ Override

Event Cascade: ☐ Override

Use Single Balance: ☐ ☐ Override

Time Periods

Type	Start Time (Local TZ)	End Time (Local TZ)	Holiday

New View Delete

Cancel

Configuring Overrides

Introduction

You can configure overrides for the events included in the named event catalogue. The override values will be used instead of the base or default values defined for the event. An override can be:

- General
- Time based

General override

You can configure one general override only for each event included in the current catalogue. This will be active at all times except during the specific periods when a time based override is active.

Time based override

You can configure any number of time based overrides for the events included in the current catalogue. Each override can have multiple time periods associated with it. These define the time periods during which the override will be active.

Adding overrides

Follow the procedure below, to add a named event override, depending upon the override being:

- *Adding a general override* (on page 427)
- *Adding a time based override* (on page 427)

Adding a general override

A general override is one that has no time based overrides.

Follow these steps to add a general override.

Step	Action
1	On the Named Events table in the New or the Edit <i>Named Event Catalogue screen</i> (See example on page 417), select the event to add a general override to. Note: You will not be able to add more than one general override to an event.
2	Ensure the event is included in the catalogue. Tip: To include an event, select the I (included) check box for the event.
3	In the Named Event Override Configuration section, click New . Result: You see the New <i>Named Event Override Dialog</i> (See example on page 430).
4	In the Override Name field, type the name of the override.
5	To bar the event, ensure the Allowed check box is not selected. Note: The event will be allowed by default.
6	In the Override Values section, select the Override check box for fields to override, then specify the required override values. For more information about these fields, see <i>Named event override fields</i> (on page 428).
7	Do not add any time period data.
8	Click Update . Result: The override will be listed in the Named Event Override Configuration table and the: • General column for the override will be set to <i>Yes</i>. • The "A" column for the override will be selected.

Adding a time based override

Follow these steps to add a new time based override.

Note: Adding a time based override to a named event, sets the **More Info** column for the event in the **Named Events** table to (+).

Step	Action
1	On the Named Events table in the New or the Edit <i>Named Event Catalogue screen</i> (See example on page 417), select the event to add the override to.
2	Ensure the event is included in the catalogue.

Step	Action
	Tip: To include an event, select the I (included) check box for the event.
3	In the Named Event Override Configuration area, click New . Result: You see the <i>New Named Event Override Dialog</i> (See example on page 430).
4	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Named event override fields</i> (on page 428).
5	In the Time Periods area, add the required time periods. For more information, see <i>Adding time periods</i> (on page 433).
6	Click Update . Result: The: • Override will be listed in the Named Event Override Configuration table. • General column for the override will be set to NO, and • More Info column for the event in the Named Events table is set to (+).

Named event override fields

This table describes the function of each field.

Field	Description
Override Name	Unique name for the event override
Allowed	Sets whether the event is allowed or barred when the override is in effect. Note: This field will be set to Allowed by default.
Free Event	When selected, this event has zero charge.
Override check boxes	Select these as relevant to enable the override field to be set.
Cash Cost	The new cash amount to charge for this named event override.
Time Cost (secs)	The new time amount to charge for this named event override.
Data Cost (data units)	The new data amount to charge for this named event override.
Unit Cost	The new units amount to charge for this named event override. Note: The Unit Cost is charged for balances that do not have cash, time, or data units (for example, SMSes).
Expenditure Plan	Sets whether this cost is included in expenditure calculations and defines the expenditure plan to use. To select an expenditure plan from the drop down list, select the Override check box. This field is populated by the Expenditure Plan tab. For more information, see <i>Expenditure Plan</i> (on page 390).
Contributes to Promotional Destination	Sets whether this cost is included in the promotional destination calculations. To enable this field, select the Override check box.
Event Cascade	The balance type cascade that defines the order for using the balances for this named event. To enable this field, select the Override check box. This field is populated by the records on the Balance Type Cascades tab. For more information, see <i>Balance Type Cascades</i> (on page 387).

Field	Description
Use Single Balance	Sets whether the cost of the event should be taken from a single balance. To enable this field, select the Override check box. Notes: • If this field is selected and there is no single balance that can cover the entire cost of an event, the event is declined with insufficient credit. • If this field is not selected, the event will be accepted, providing its entire cost can be satisfied with the selected cascade. The seconds and cash costs are taken pro-rata as necessary from each balance.
Time Periods table	Lists the time periods when these override values will be used instead of base, default or general override values for this event. • Types – The override type • Start Time – The start time when the override values will apply • End Time – The end time after which the override values will no longer apply • Holiday – The named event catalogue holiday set used Note: If no time periods are defined, this override configuration will be classed as a general override.

Editing overrides

Follow these steps to modify an override for an event.

Tip: The "+" value in the **More Info** column for an event in the **Named Events** table indicates that one or more time based overrides have been defined for it.

Step	Action
1	On the Named Events table in the New or the Edit <i>Named Event Catalogue</i> screen (See example on page 417), select the event where the override to modify is defined. Result: The overrides that have been defined for the event will be displayed in the Named Event Override Configuration table. Note: You must select an event that is included in the catalogue.
2	In the Named Event Override Configuration table, select the override to modify and click Edit. Result: You see the Edit <i>Named Event Override Dialog</i> (See example on page 430).
3	Edit the fields in this screen to reflect the changes you need to make. For information on: • Override fields, see <i>Named event override fields</i> (on page 428) • Adding time periods, see <i>Adding time periods</i> (on page 433) • Editing time periods, see <i>Editing time periods</i> (on page 433) • Deleting time periods, see <i>Deleting time periods</i> (on page 434)
4	Click Update .

Named Event Override Dialog

Here is an example Named Event Override Dialog.

Edit Named Event Override Dialog

Help

Override Name:

Class: Loyalty
Name: Point
Allowed: ☒

Override Values

Free Event: ☐

Cash Cost (\$): ☒ Override

Time Cost (secs): ☐ Override

Data Cost (data units): ☐ Override

Unit Cost: ☒ Override

Expenditure Plan: ☐ Override

Contributes to Promotional Destination: ☐ ☐ Override

Event Cascade: ☒ Override

Use Single Balance: ☐ ☐ Override

Time Periods

Type	Start Time (Local TZ)	End Time (Local TZ)	Holiday

New Edit Delete

Update Cancel

Deleting overrides

You can delete overrides that have been configured for events. You can delete:

- All the configured overrides for one or more selected events
- One or more selected overrides for a specific event

Deleting overrides for selected events

Follow these steps to delete all the configured overrides for a selected event or a group of events.

Tip: The "(+)" value in the **More Info** column for an event in the **Named Events** table indicates that one or more time based overrides have been defined for it.

Step	Action
1	On the Named Events table in the New or the Edit <i>Named Event Catalogue screen</i> (See example on page 417), select the event(s) for which to delete all overrides. To select: • All the events in the table, click Select All • A group of events in the table, select the first event in the group and then hold down the Shift key while selecting the last event in the group Tip: You can de-select a single event in a group by holding down Ctrl while selecting the event again.
2	Click Delete Overrides. Result: You see the Delete Confirmation prompt for the selected events.
3	Click OK. Result: The overrides are deleted. Note: If you are in the Edit Named Event Catalogue and you close it without saving, then any deletions you have made will be lost.

Deleting selected overrides

Follow these steps to delete one or more overrides for a selected event.

Tip: The "(+)" value in the **More Info** column for an event in the **Named Events** table indicates that one or more time based overrides have been defined for it.

Step	Action
1	On the Named Events table in the New or the Edit <i>Named Event Catalogue screen</i> (See example on page 417), select the event where the overrides to delete are configured. You must select an event that is included in the catalogue. Result: The overrides that have been configured for the event will be displayed in the Named Events Override Configuration table.
2	In the Named Event Override Configuration table, select the override(s) to delete. You can select more than one. To select: • All the overrides, click Select All in the Named Events Override Configuration area • A group of overrides, select the first override in the group and then select the last override in the group while holding down the Shift key Tip: You can de-select an override by pressing Ctrl and selecting the override at the same time.
3	Click Delete. Result: You see the Delete Confirmation prompt for the selected override(s).
4	Click OK. Result: The selected overrides are removed from the Named Events Override Configuration table. Note: If you are in the Edit Named Event Catalogue screen and you close it without saving, then any deletions you have made will be lost.

Time Periods

Time period fields

This table describes the function of each Time Period field.

Field	Description
Type	Lists the available time period types. Only relevant fields will be enabled for the selected type. Available types are: • Daily • Weekly • Holiday Note: Holiday type time periods will only be available if a holiday set has been specified in the named event catalogue definition.
Holiday fields	Description
Holiday	Lists the available holiday periods. This field is populated from the holidays defined for the named event catalogue's holiday set.
Start Time (Local TZ)	Sets the start time on the first day of the holiday period when the override will become active.
End Time (Local TZ)	Sets the end time on the last day of the holiday period after which the override will no longer be active.
Weekly fields	Description
Start Day	Defines the first day of the week that the override will apply on.
End Day	Defines the last day of the week that the override will apply on.
Start Time (Local TZ)	Sets the start time on the first day of the week when the override will become active.
End Time (Local TZ)	Sets the end time on the last day of the week after which the override will no longer apply.
Daily fields	Description
Day check boxes	A select in a check box for a day means that overrides will apply on that day. Tip: You can select more than one day.
Start Time	Sets the start time when the override values will apply for each day included in Daily periods.
End Time	Sets the end time after which the override values will no longer apply for each day included in Daily periods.

Time Period Dialog

Here is an example Time Period Dialog.

The screenshot shows the 'Edit Time Period Dialog' window. It features a title bar with a close button. A 'Help' button is located in the top right corner. The 'Type' dropdown menu is set to 'Weekly'. The dialog is divided into three sections: 'Holiday', 'Weekly', and 'Daily'. The 'Holiday' section includes a 'Holiday' dropdown menu and 'Start Time (Local TZ)' and 'End Time (Local TZ)' dropdown menus. The 'Weekly' section includes 'Start Day' and 'End Day' dropdown menus, and 'Start Time (Local TZ)' and 'End Time (Local TZ)' dropdown menus. The 'Daily' section includes checkboxes for each day of the week (Monday through Sunday) and 'Start Time' and 'End Time' dropdown menus. At the bottom of the dialog are 'Update' and 'Cancel' buttons.

Adding time periods

Follow these steps to add a new time period to an event override.

Step	Action
1	In the Time Periods area in the New or the Edit <i>Named Event Override Dialog</i> (See example on page 430), click New . Result: You see the New <i>Time Period Dialog</i> (See example on page 433).
2	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Time period fields</i> (on page 432).
3	Click Update . Result: The new period is listed in the Time Periods table.

Editing time periods

Follow these steps to edit a time period for an event override.

Step	Action
1	In the Time Periods area in the New or the Edit <i>Named Event Override Dialog</i> (See example on page 430), select the time period to change and click Edit . Result: You see the Edit <i>Time Period Dialog</i> (See example on page 433).
2	Edit the fields to reflect the changes you need to make. For more information about the fields on this screen, see <i>Time period fields</i> (on page 432).

Step	Action
3	Click Update .

Deleting time periods

Follow these steps to delete a time period for an override.

Step	Action
1	In Time Periods area in the New or the Edit <i>Named Event Override Dialog</i> (See example on page 430), select the time period to delete.
2	Click Delete . Result: You see the Delete Confirmation record.
3	Click OK .

Importing and Exporting Named Event Catalogues

Introduction

The **Import** and **Export** buttons on the **Named Event Catalogue** tab allow you to import and export named event catalogue data. Use this facility to create named event catalogue data externally, using third party tools, before importing it into CCS.

Note: Named event catalogue data is exported to file and imported from file in XML format. Refer to the files in the `/IN/html/Ccs_Service/xml/productCatalogue` directory on the SMS for more information.

Data import

Use the import named event catalogue facility to import new named event catalogue definitions from file.

When you import a named event catalogue, the import file is pre-parsed to check that it conforms to the import file specification. If there are any errors in the import file then the import process will fail. Any changes that have been made to the database will be rolled back and the details of the lines/sections in the import file containing the error will be reported to the user.

Warning: You cannot update or delete existing named event catalogues using this facility.

Data export

Use the export facility to export a named event catalogue definition to a specified file.

When you export a named event catalogue definition, all the data that is related to the selected catalogue is exported. This includes the following data:

- The name of the selected catalogue
- Include default value
- Associated holiday set
- Included values
- Allowed values
- Override configuration (general and time-based)

Importing named event catalogues

Follow these steps to import a named event catalogue from file.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event Catalogue tab, click Import . Result: You see an Import screen.
3	Select the folder which holds the import file.
4	In the File name field, enter the import file name. Warning: The import file type must be XML.
5	Click Import . Result: You see the Confirmation screen.
6	Click Continue . Result: You see an Import successful prompt.
7	Click OK .

Exporting named event catalogues

Follow these steps to export a named event catalogue and its related data to file.

Step	Action
1	In the Rating Management window, select the service provider from the Service Provider list.
2	On the Named Event Catalogue tab, select the catalogue to export and click Export . Result: You see an Export screen.
3	Select the folder in which to store the export file.
4	In the File name field, enter the export file name. Warning: The export file type must be set to XML.
5	Click Export . Result: You see an Export successful dialog.
6	Click OK .

Service Management

Overview

Introduction

This chapter explains the service management section of CCS.

In this chapter

This chapter contains the following topics.

Service Management Module	437
Domain	441
Currency Code	451
Currency	453
Global Configuration	463
Exchange Rates	469
Resource Limits	472
Barred List	487
Capability	489
Number Translation List	493
MFile Generation	496
Balance Type Mapping	499
Security	502
About Voucher Security	503
About Credit Card Security	508
Splash Screen Configuration	511
Channel	515

Service Management Module

Introduction

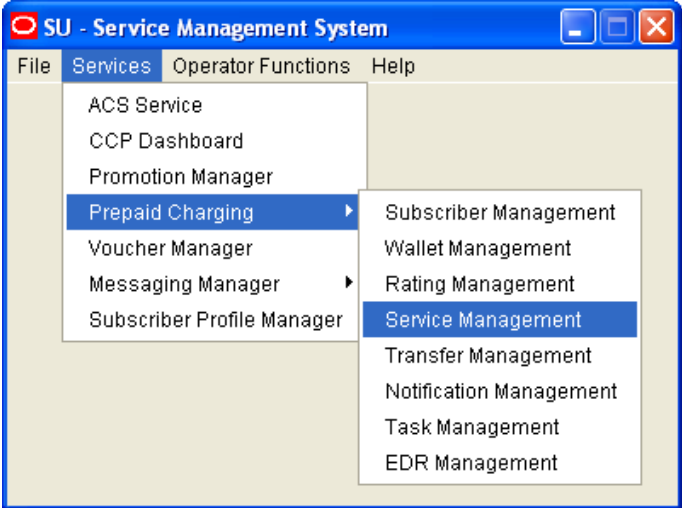
The Service Management screen enables you to configure the service management section of CCS. It contains these tabs:

- *Balance Type Mapping* (on page 499)
- *Barred List* (on page 487)
- *Capability* (on page 489)
- *Channel* (on page 515)
- *Currency* (on page 453)
- *Currency Code* (on page 451)
- *Domain* (on page 441)
- *Exchange Rates* (on page 469)
- *Global Configuration* (on page 463)
- *MFile Generation* (on page 496)

- *Number Translation List* (on page 493)
- *Resource Limits* (on page 472)
- *Security* (on page 502)
- *Splash Screen Configuration* (on page 511)

Accessing the Service Management screen

Follow these steps to open the Service Management screen.

Step	Action
1	Select the Services menu from the SMS main screen. 
2	Select Prepaid Charging > Service Management . Result: You see the Service Management screen.

Service Management screen

Here is an example Service Management screen. The screen is displayed with the **MFile Generation** tab open by default.

Service Management

Service Provider: Boss Help

Number Translation List | Splash Screen Configuration | Security | Channel

Exchange Rates | Global Configuration | Balance Type Mapping | Barred List

MFile Generation | Resource Limits | Capability | Domain | Currency | Currency Code

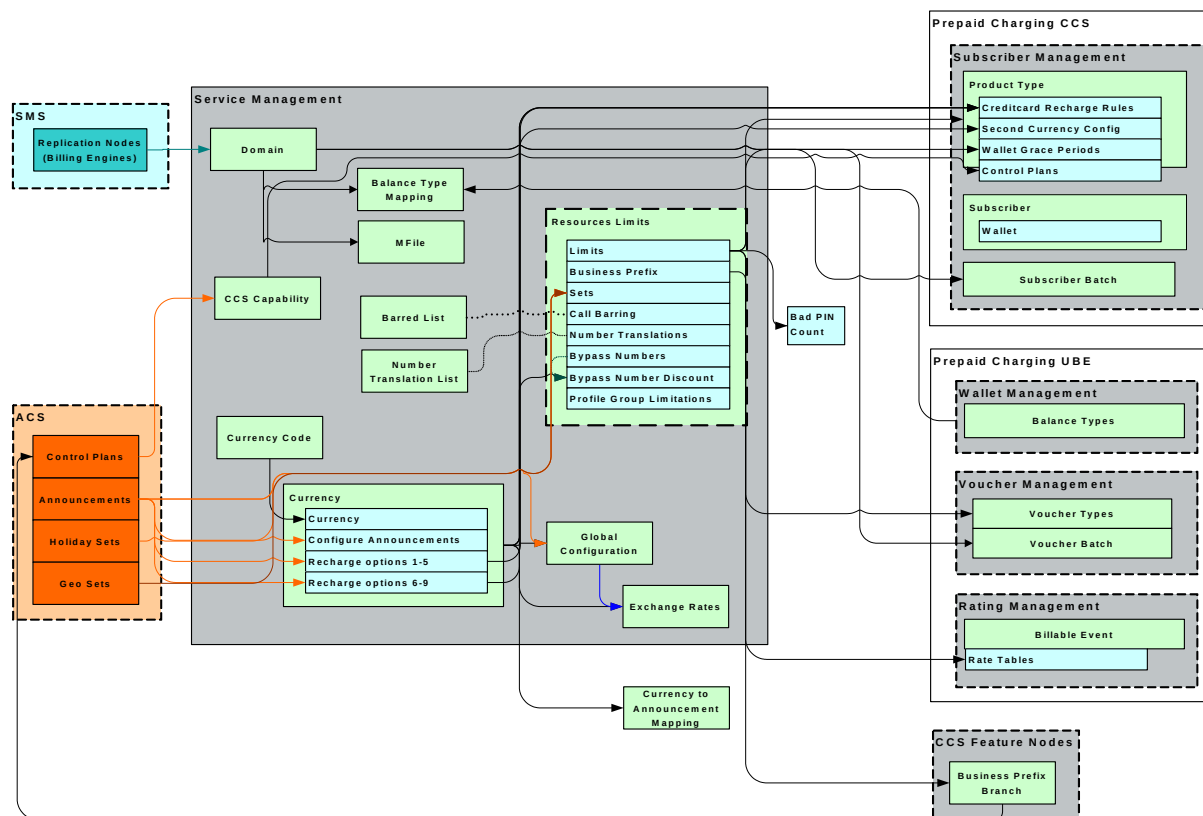
Billing Engine	Requested Date	Type
3	2011-01-25 22:31:28	Rating
3	2011-01-25 22:31:41	Product Catalogue
3	2011-01-26 01:45:46	Rating
3	2011-01-26 01:48:06	Rating
3	2011-01-26 02:11:09	Rating
3	2011-01-26 02:15:09	Rating
3	2011-01-26 02:48:26	Rating
3	2011-01-26 02:49:43	Rating
3	2011-01-26 03:06:29	Rating
3	2011-01-26 03:15:13	Rating
3	2011-01-26 03:43:29	Rating
3	2011-01-26 07:17:45	Rating
3	2011-01-26 07:17:57	Product Catalogue
3	2011-01-26 20:19:04	Rating
3	2011-01-26 20:26:37	Rating
3	2011-01-27 02:17:48	Rating
3	2011-01-27 02:55:08	Rating
3	2011-01-27 03:50:43	Product Catalogue
3	2011-01-27 23:02:46	Rating
3	2011-01-27 23:02:55	Product Catalogue
3	2011-01-28 00:03:45	Rating
3	2011-01-28 00:12:08	Rating
3	2011-01-28 00:12:24	Rating
3	2011-01-28 00:31:26	Rating
3	2011-01-28 00:33:30	Rating
3	2011-01-28 01:14:51	Rating
3	2011-01-28 01:24:39	Rating

New Edit Delete Close

Tip: Some screens (the **Currency** tab for example) require scrolling to view all the columns.

Service Management relationships

This diagram shows the relationships between the various screens available in the Service Management module.



The arrows show which screen populates a drop down field on the target screen and consequently the order in which screens must be filled in. The objects in shaded boxes are screens in different modules or applications which have a relationship with this module.

Configuration sequence

This table lists the configuration sequence required to correctly set up the service management part of CCS.

Note: Same numbers indicate configuration independence within the sequence.

Sequence	Data Type
1	<i>Domain</i> (on page 441)
1	<i>Currency Code</i> (on page 451)
2	<i>Currency</i> (on page 453)
3	<i>Global Configuration</i> (on page 463)
3	<i>Resource Limits</i> (on page 472)
4	<i>Exchange Rates</i> (on page 469)
4	<i>Capability</i> (on page 489)
5	<i>Product Type</i> (on page 151)
6	<i>Barred List</i> (on page 487)
6	<i>Number Translation List</i> (on page 493)

Sequence	Data Type
6	<i>Security</i> (on page 502)
6	<i>Splash Screen Configuration</i> (on page 511)
6	<i>Balance Type Mapping</i> (on page 499)
6	<i>Channel</i> (on page 515)

Domain

Introduction to domains

You use the **Domain** tab to configure the following types of domains:

- VWS (Voucher and Wallet Server)
- DIAMETER
- Third-party
- BRM

The tab displays a list of the domains that have been configured. You can configure new domains, and edit, or delete existing domains.

About Domain Configuration Issues

When you add a new domain or edit an existing domain, the system displays a list of issues in the **Configuration Issues** area of the Domain screen, for any domains that are incorrectly configured. The system automatically updates this list as you resolve the issues by updating the domain configuration. You must resolve all the domain configuration issues before saving the domain.

The following table lists the possible configuration issues, and their resolutions:

Configuration Issue	Resolution
Invalid Name	Specify a unique name for the domain in the Name field.
Not Enough Checkboxes	Select the check boxes in the Manages area for the features you require. You must select at least one check box.
Invalid Maximum Accounts	Specify a valid number in the Maximum Accounts field.
Invalid Maximum Queue Messages	If specified, the value for Maximum Queue Messages must be greater than the value for Minimum Queue Messages .
Not Enough Domain Nodes	For VWS and DIAMETER domains, you must configure at least one domain node in the Nodes / Realms area.
Invalid Username	For BCD domains, you must specify a valid user name of at least one character.
Invalid Password	For BCD domains, you must specify a valid password of at least one character.

Domain tab

Here is an example of the **Domain** tab contents.

The screenshot shows a window titled "Service Management" with a blue title bar. Inside the window, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tabbed interface with the "Domain" tab selected. The "Domain" tab contains a table with three columns: "Name", "Type", and "Maximum Accounts". The table lists three domains: "UBE Domain" (Type: UBE, Maximum Accounts: 100000), "Test Domain" (Type: UBE, Maximum Accounts: 1000), and "Kirk's domain" (Type: UBE, Maximum Accounts: 10000). Below the table is a large empty area. At the bottom of the window, there is a horizontal scrollbar and four buttons: "New", "Edit", "Delete", and "Close".

Name	Type	Maximum Accounts
UBE Domain	UBE	100000
Test Domain	UBE	1000
Kirk's domain	UBE	10000

Domain screen

Here is an example Domain screen.

The screenshot shows the 'Edit Domain' window with the following sections:

- BE Section:**
 - Name: UBE
 - Type: UBE (dropdown)
 - Maximum Accounts: 100
 - ☐ Update Username and Password
 - Username: (empty field)
 - Password: (empty field)
- Third-Party Section:**
 - Minimum Queue Messages: (empty field)
 - Maximum Queue Messages: (empty field)
 - Connection Retry: (empty field)
 - Message Timeout: (empty field)
 - Guidance Cache Size: (empty field)
 - ☐ Allow Adaptation
 - ☐ Enable Guidance
- Nodes / Realms Section:**

Name	Node Num...	Address	Client Port	Internal Port	ID
slc04ipu.us....	351	10.240.150....	1500	1501	1

Buttons: New, Edit, Delete
- Manages Section:**
 - Wallet Management
 - ☒ Charging
 - ☒ Tracking
 - ☒ Voucher Management
- Configuration Issues:** (empty section)

Buttons: Save, Cancel, Help

Domain fields

This table describes the domain fields in the **BE** area of the Domain screen.

Field	Description
Name	(Required) The unique name of the domain.
Type	(Required) Sets the domain type for this domain. The domain type defines the network element type (such as a Voucher and Wallet Server) for the domain nodes in this domain. The list of available domain types is populated when applications are installed. The domain type for the Voucher and Wallet Server is always available. Once you have added a node to a domain, this field becomes non-editable. For more general information about domain types, see <i>Domain Types</i> (on page 4). For information about the domain type to choose for an additional installed application, see the application's technical guide.
Maximum Accounts	(Required) Sets the maximum number of subscriber accounts that can be supported by the domain.
Update Username and	Select to allow a BCD Client to connect to the BRM communication

Field	Description
Password	managers.
Username	Sets the username to use to connect to the BRM communication managers.
Password	Sets the username's password.
Wallet Management Charging	Whether or not wallet management charging functionality is supported for this domain. 'Y' means wallet management charging functionality is supported by the domain and 'N' means it is not. For more information about wallet functionality, see: • <i>Wallet Management</i> (on page 219) • <i>Edit Wallets</i> (on page 121)
Wallet Management Tracking	Whether or not wallet management tracking functionality is supported for this domain. 'Y' means wallet management tracking functionality is supported by the domain and 'N' means it is not. Note: Wallet management tracking is only available to UBE domain types.
Voucher Management	Whether or not voucher management (including voucher redemption) is supported for this domain. 'Y' means voucher functionality is supported by the domain and 'N' means it is not. For more information about voucher functionality, see <i>Voucher Management</i>.

Third-Party domain fields

This table describes the fields in the **Third-Party** area of the Domain screen. For details on a particular field, see the technical documentation for the application that provides connectivity with the required network element.

Field	Description
Minimum Queue Messages	Minimum queue messages value for third-party billing.
Maximum Queue Messages	Maximum queue messages allowed before the connection is deemed congested.
Allow Adaption	Select if adaption is required for third party billing.
Connection Retry	The number of connection retries allowed.
Enable Guidance	Select if guidance is required for third-party billing. The guidance cache size field becomes enabled.
Message Timeout	Message timeout value for third-party billing.
Guidance Cache Size	Guidance cache size for third-party billing.

Creating a Domain

When you add a new domain, the system displays a list of issues in the **Configuration Issues** area of the Domain screen, warning you about any configuration that is incorrect. The system automatically updates this list as you configure the domain. For more information about configuration issues, see *About Domain Configuration Issues* (on page 441).

Follow these steps to add a new domain.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Click New on the Domain tab. Result: The <i>New Domain screen</i> (on page 443) displays. For information about the fields and check boxes in the New Domain screen, see <i>Domain fields</i> (on page 443).
3	In the Name field, enter a unique name for the domain.
4	From the Type list, select one of the following domain types: • UBE • A third-party type BE • A domain type with a DIAMETER prefix • BCD (for BRM) The domain type you select determines which fields are enabled. Fields that are disabled, appear grayed out. Note: The domain type for the Voucher and Wallet Server is UBE.
5	Complete the fields as required. For details about the data to enter for the type of domain you want to create, see: • <i>Specifying a UBE Domain</i> (on page 445) • Third-party domain fields • <i>Specifying a Diameter Domain</i> (on page 446) • <i>Specifying a BRM Domain</i> (on page 446)
6	Click Save . Result: The new domain is saved, and listed on the Domain tab.

Specifying a UBE Domain

To specify a UBE domain, complete the following fields:

- Type the number of allowed accounts in the **Maximum Accounts** field.
- Select the **Manages** check boxes for the features you require.
- Add at least one domain node to this domain. See *Adding nodes to domains* (on page 446).
You can edit or delete domain nodes as required. For information about editing domain nodes, see *Editing domain nodes* (on page 450). For information about deleting domain nodes, see *Deleting domain nodes or realms* (on page 451).

For more information about the fields and check boxes on the Domain screen, see *Domain fields* (on page 443).

Specifying a Third-Party Domain

To specify a third-party domain, complete the following fields:

- Type the number of allowed accounts in the **Maximum Accounts** field.
- Select the **Manages** check boxes for the features you require.
- In the **Third-Party** area, fill in the relevant fields, as described in *Third-Party domain fields* (on page 444).
- Add at least one domain node to this domain. See *Adding nodes to domains* (on page 446).
You can edit or delete domain nodes as required. For information about editing domain nodes, see *Editing domain nodes* (on page 450). For information about deleting domain nodes, see *Deleting domain nodes or realms* (on page 451).

For more information about the non-third-party fields and check boxes on the Domain screen, see *Domain fields* (on page 443).

Specifying a Diameter Domain

To specify a Diameter domain, complete the following fields:

- Type the number of allowed accounts in the **Maximum Accounts** field.
- Select the **Manages** check boxes for the required features.
- In the **Third-Party** area, fill in the **Minimum Queue Messages**, **Maximum Queue Messages** and **Connection Retry** fields, as described in *Third-Party domain fields* (on page 444).
- Add at least one realm to this domain. See *Adding realms to domains* (on page 448).
You can edit or delete realms as required. For information about editing domain realms, see *Editing domain realms* (on page 451). For information about deleting domain realms, see *Deleting domain nodes or realms* (on page 451).

For more information about the non-third-party fields and check boxes on this screen, see *Domain fields* (on page 443).

Specifying a BRM Domain

To specify a BRM domain, complete the following fields:

- In the **Name** field, enter **BRM**
- From the **Type** list, select **BCD**
- In the **Maximum Accounts** field, enter the maximum number of accounts in this domain.
- Select the **Update Username and Password** check box and enter values for **Username** and **Password**, which are used by the BCD Client to connect to the BRM communication managers.
- (Optional) In the **Manages** area, select the **Charging** and **Voucher Management** check boxes.

For more information about the fields and check boxes on the Domain screen, see *Domain fields* (on page 443).

Adding nodes to domains

Follow these steps to add a node to a domain.

Step	Action
1	From either the New Domain or Edit Domain screen, click New . Result: The New <i>Domain Node</i> screen (on page 448) appears.
2	Type a unique name for the node in the Name field.

Step	Action
3	Select the Node Number from the drop down list (the node number must be unique). This is a required field for UBE domains, and optional for third-party domains. Notes: • Where there is more than one node for a domain, the primary node has the lower number. • UBE is the domain type for a Voucher and Wallet Server.
4	Type the IP address for the node in the Address field. Note: This field is automatically populated if you select a Node Number. You can edit this address if required.
5	Type the client port address in the Client Port field.
6	Type the internal port address in the Internal Port field.
7	If this is a third-party domain, enter values for the following fields. See the relevant third-party billing technical documentation for more information: • Minimum Weight • Maximum Weight • Stable Weight • Unstable Weight Note: These fields appear grayed out for UBE domain nodes.
8	Click Save. Result: The new node is saved and then listed in the Nodes / Realms area of the New or Edit Domain screen.

Domain Node screen

Here is an example Domain Node screen.

Adding realms to domains

Follow these steps to add a realm to a diameter domain.

Step	Action
1	From either the New Domain or Edit Domain screen, click New . Result: The <i>New Domain Realm screen</i> (on page 449) appears.
2	Type a unique name for the realm in the Name field.
3	Type the identity of the realm in the Identity field. Example: realm1.telcoexample.com
4	(Optional) Enter a value in the Stable Weight field. Defaults to 1.
5	Click Save . Result: The new realm is saved and then listed in the Nodes / Realms area of the New or Edit Domain screen.

Domain Realm screen

Here is an example Domain Realm screen.

Editing Domains

When you edit a domain, the system displays a list of issues in the **Configuration Issues** area of the Domain screen, warning you about any configuration that is incorrect. The system automatically updates this list as you edit the domain configuration. For more information about configuration issues, see *About Domain Configuration Issues* (on page 441).

Follow these steps to edit a domain.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the domain to edit from the table in the Domain tab.
3	Click Edit . Result: The <i>Edit Domain screen</i> (on page 443) appears.
4	Change the following fields as required: - Domain name in the Name field - Maximum number of accounts in the Maximum Accounts field Wallet Management Charging and Wallet Management Tracking check boxes (Tracking is not available when Domain Type is BCD) Voucher Management check box. See <i>Domain fields</i> (on page 443) for a description of these fields and check boxes.
5	If this is a non-UBE domain, you may also change the following fields as required. If the domain is: - BCD: Update Username and Password check box Username

Step	Action
	– Password • third-party: – Minimum Queue Messages – Maximum Queue Messages – Connection Retry – Allow Adaptation check box – Message Timeout – Enable Guidance check box and Guidance Cache Size • DIAMETER: – Minimum Queue Messages – Maximum Queue Messages – Connection Retry For details, see the relevant BCD, third-party billing or Diameter technical documentation. Note: UBE is the domain type for a Voucher and Wallet Server.
6	Depending on the type of domain: • For UBE and third-party domains, you can edit the domain nodes as required. See <i>Adding nodes to domains</i> (on page 446), <i>Editing domain nodes</i> (on page 450) or <i>Deleting domain nodes or realms</i> (on page 451) procedures. • For DIAMETER domains, you can edit the domain realms as required. See <i>Adding realms to domains</i> (on page 448), <i>Editing domain realms</i> (on page 451), or <i>Deleting domain nodes or realms</i> (on page 451).
7	Click Save. Result: The domain changes are saved and reflected in the Domain tab table.

Editing domain nodes

Follow these steps to edit a domain node.

Step	Action
1	From the table in the Nodes / Realms area in either the New Domain or Edit Domain screen, select the node you want to update and click Edit. Result: The <i>Edit Domain Node screen</i> (on page 448) appears.
2	Update the following fields as required: • Node address in the Address field • Client port address in the Client Port field • Internal port address in the Internal Port field
3	If this is a third-party domain, update the following fields as required. See the relevant third-party billing technical documentation for more information: • Minimum Weight • Maximum Weight • Stable Weight • Unstable Weight Note: These fields appear grayed out for UBE domain nodes.
4	Click Save. Result: The node is saved.

Editing domain realms

Follow these steps to edit a domain realm.

Step	Action
1	From the table in the Nodes / Realms area of either the New Domain or Edit Domain screen, select the realm you want to update and click Edit . Result: The <i>Edit Domain Realm screen</i> (on page 449) appears.
2	Update the following fields as required: • Identity • Stable Weight
3	Click Save . Result: The realm is saved.

Deleting domains

Follow these steps to delete a domain.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the domain to delete from the table in the Domain tab.
3	Click Delete . Result: The Delete Confirmation screen appears.
4	Click OK . Result: The domain is deleted from the Domain tab table.

Deleting domain nodes or realms

Follow these steps to delete a node or a realm from a domain.

Step	Action
1	From the table in the Nodes / Realms area of either the New Domain, or Edit Domain screen, select the node or realm that you want to delete, and click Delete . Result: The delete confirmation screen appears.
2	Click Apply . Result: The node or realm is marked for deletion. It is then deleted from the database when you click Save in the Edit or New Domain screen. Note: To be able to save the domain in the Domain screen, the domain must have at least one node or realm configured.

Currency Code

Introduction

The **Currency Code** tab enables you to view, create, edit and delete the currency codes that are available in the system.

Currency Code tab

Here is an example of the **Currency Code** tab.

Code	Description
AED	United Arab Emirates, Dirham (AED)
AFA	Afghanistan, Afghani (AFA)
ALL	Albania, Lek (ALL)
AMD	Armenia, Dram (AMD)
ANG	Sint Eustatius, Netherlands Antilles Guilder (ANG)
ANG	Bonaire, Netherlands Antilles Guilder (ANG)
ANG	Curaco, Netherlands Antilles Guilder
ANG	Sint Maarten, Netherlands Antilles Guilder (ANG)
ANG	Netherlands Antilles, Guilder (ANG)
ANG	Saba, Netherlands Antilles Guilder (ANG)
ANG	Aruba, Netherlands Antilles Guilder (ANG)
AOA	Angola, Angolan Kwanza (AOA)
ARS	Argentina, Peso (ARS)
AUD	Norfolk Island, Australian Dollar (AUD)
AUD	Nauru, Australian Dollar (AUD)
AUD	Kiribati, Australian Dollar (AUD)
AUD	Cocos (Keeling) Islands, Australian Dollar (AUD)
AUD	Australia, Dollar (AUD)
AUD	Christmas Island, Australian Dollar (AUD)
AUD	Tuvalu, Australian Dollar (AUD)
AWG	Aruba, Florin (AWG)
AZM	Azerbaijan, Manat (AZN)
BAK	Herzegovina and Bosnia, Convertible Mark (BAK)
BAM	Bosnia and Herzegovina, Convertible Mark (BAM)
BBD	Barbados, Dollar (BBD)
BDT	Bangladesh, Taka (BDT)
BGN	Bulgaria, Lev (BGN)

Currency Code screen

Here is an example Currency Code screen.

Adding a Currency Code

Follow these steps to add a new currency code.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On the Currency Code tab, click New . Result: You see the <i>New Currency Code screen</i> (on page 452).
3	Enter the three-letter currency code in the Code field.
4	Enter a description of the currency code in the Description field.
5	Click Save .

Editing a Currency Code

Follow these steps to edit an existing currency code.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the currency code to edit from the table on the Currency Code tab.
3	Click Edit . Result: You see the <i>Edit Currency Code screen</i> (on page 452).
4	If required, change the three-letter currency code in the Code field.
5	If required, change the description of the currency code in the Description field.
6	Click Save .

Deleting a Currency Code

Follow these steps to delete an existing currency code.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the currency code to delete from the table on the Currency Code tab.
3	Click Delete . Result: The Delete Confirmation prompt appears.
4	Click OK to delete the record from the database. Result: The record is deleted and the Currency prompt is displayed.
5	Click OK .

Currency

Introduction

The **Currency** tab enables you to:

- Configure the default system currency

- View currencies which have been set up in the system

When setting up the system for the first time, it is important to set the default currency before configuring the rest of the system (and after configuring the VWSs).

For each new currency entered into the system, a rate of exchange between the new currency and the system currency must be set. This exchange rate is set on the **Exchange Rates** (on page 469) tab of the Service Management screen.

Currency entry components

When adding a new currency to CCS, a number of inter-related components must be completed before the new currency can be used.

These components are configurable from the New Currency and Edit Currency screens, and are as follows:

- Configure Announcements
- Configuring Recharge Options 1-5
- Configuring Recharge Options 6-9

Recharging Credit Cards - required components

The following currency components are required for recharging credit cards.

- Configuring Recharge Options 1-5
- Configuring Recharge Options 6-9

The actual recharge options are defined in the **Product Type** tab, Creditcard Recharge Rules.

Each caller has a maximum of nine recharge options per currency available. The announcement entry and set are selected for each option. The option announcements work as follows:

Caller options	The system will play the balance announcement...
1	followed by the "Press * to cancel" as defined by the announcement set selected in the One option section.
2	followed by the "Press * to cancel" as defined by the announcement set selected in the Two options section.
3	followed by the "Press * to cancel" as defined by the announcement set selected in the Three options section.
4	followed by the "Press * to cancel" as defined by the announcement set selected in the Four options section.
5	followed by the "Press * to cancel" as defined by the announcement set selected in the Five options section.
6	as defined by the announcement set selected in the Five options and on section. <i>Plus</i> the recharge announcement set selected in the Recharge option six section followed by the "Press * to cancel"
7	as defined by the announcement set selected in the Five options and on section. <i>Plus</i> the recharge announcement set selected in the Recharge options 6-7 section followed by the "Press * to cancel"
8	as defined by the announcement set selected in the Five options and on section. <i>Plus</i> the recharge announcement set selected in the Recharge options 6-8 section followed by the "Press * to cancel"

Caller options	The system will play the balance announcement...
9	as defined by the announcement set selected in the Five options and on section. <i>Plus</i> the recharge announcement set selected in the Recharge options 6-9 section followed by the "Press * to cancel"

Example announcements

A caller has six options for their account.

The first announcement, defined in the **Five options and on** field, is configured to play the following:

"Your balance is x *Big_Currency* and y *Small_Currency*
 To recharge by *Recharge_Option_1 Big_Currency*, press 1
 To recharge by *Recharge_Option_2 Big_Currency*, press 2
 To recharge by *Recharge_Option_3 Big_Currency*, press 3
 To recharge by *Recharge_Option_4 Big_Currency*, press 4
 To recharge by *Recharge_Option_5 Big_Currency*, press 5"

The next announcement, defined in the **Recharge option six** field, will play the following:

"To recharge by *Recharge_Option_6 Big_Currency*, press 6
 Press * to cancel."

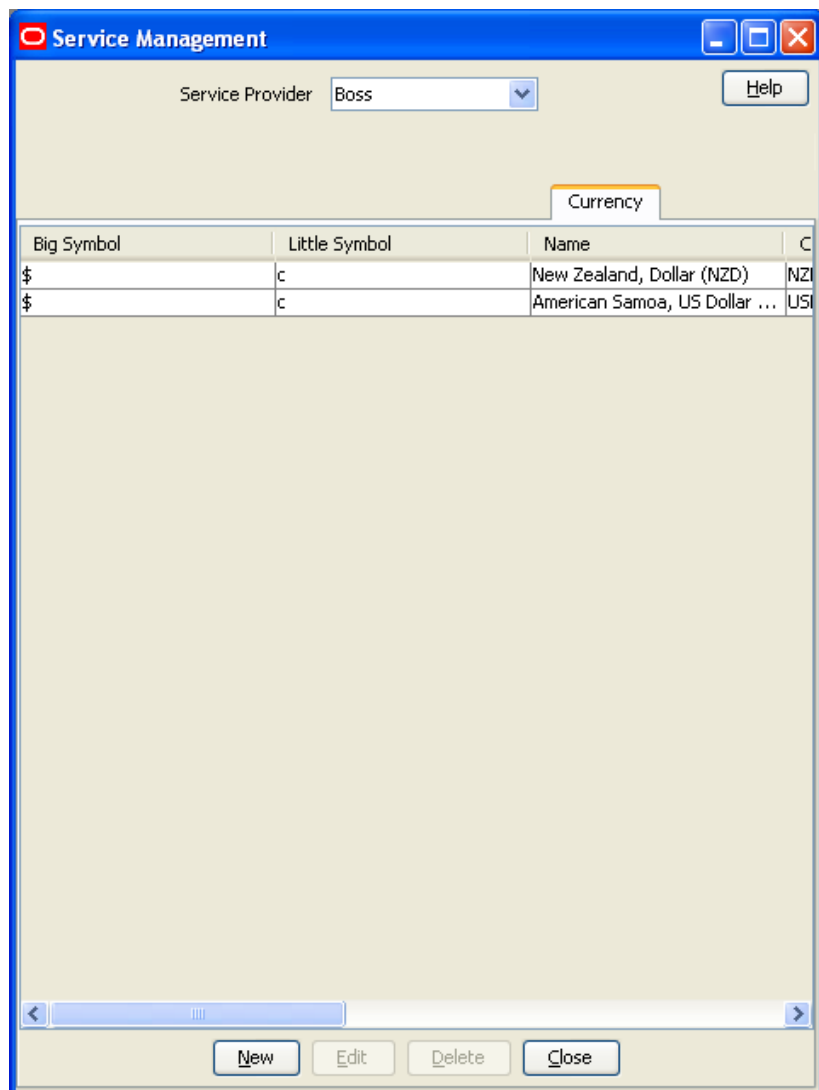
If *Big_Currency* is dollars and *Small_Currency* is cents, the announcements played would be like this:

"Your balance is two dollars and twenty five cents
 To recharge by five dollars press 1
 To recharge by ten dollars press 2
 To recharge by twenty dollars press 3
 To recharge by fifty dollars press 4
 To recharge by one hundred dollars press 5"

"To recharge by two hundred dollars, press 6
 Press * to cancel."

Currency tab

Here is an example of the **Currency** tab.



Currency details

All configuration options must be completed to finalize a currency so it can be used. However, the configuration can be saved at any point by clicking **Save**.

To configure a currency as a default currency for the system, configure the currency here, and then set it as the default in the *Global Configuration* (on page 463) screen.

Follow these steps to add currency details for a new currency.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On the Currency tab, click New . Result: The New Currency screen displays with the Currency options.
3	Enter the symbol that represents the main unit of the currency in the Big Symbol field (for example, € for euros).

Step	Action
4	Enter the symbol that represents the subunit of the currency in the Little Symbol field (for example, ¢ for cents).
5	Select the currency name from the Name drop down box.
	Note: Only valid currency names are available from the list.
	Result: The Currency Code field is populated by the system. This shows the currency code that identifies the currency.
6	Enter the separator used to separate the main unit from the subunit of the currency in the Separator field.
	Examples: In the currency of: - Euros - the separator is a comma (for example, 3,20) - Dollars - the separator is a decimal point (for example, \$4.00)
7	Enter the ratio of subunits to main units of currency in the Base field.
	Example: 100 cents per euro = a ratio of 100.
8	Click Save .
9	Configure the <i>Announcements</i> (on page 458).
10	Configure the announcements for <i>Recharge options 1-5</i> (on page 459).
11	Configure the announcements for <i>Recharge options 6-9</i> (on page 461).

Currency screen

Here is an example Currency screen.

Announcements

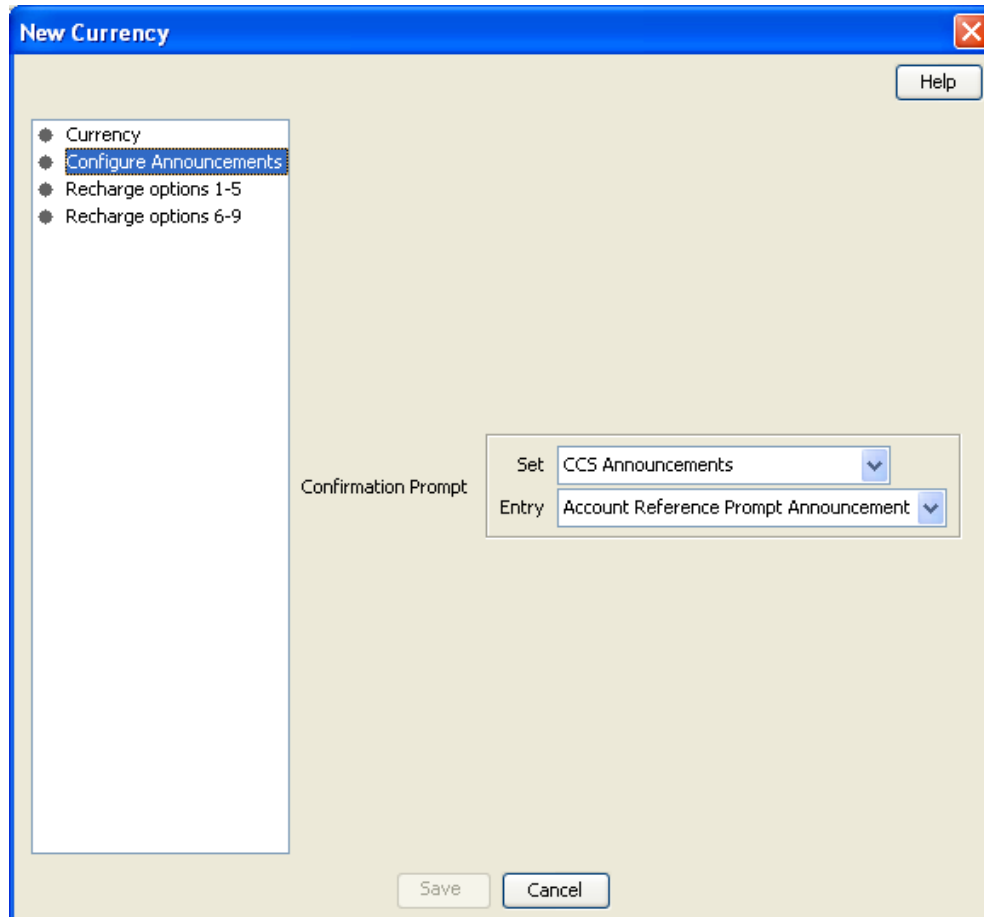
Follow these steps to add the confirmation prompt announcement for a new currency.

Step	Action
1	Select the Configure Announcements option in the New Currency screen. Result: You see the <i>Configure Announcements option</i> (on page 459), displaying the Confirmation Prompt configuration.
2	Select from the Confirmation Prompt section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a caller when prompting for caller confirmation of a recharge
3	Click Save .

Note: This announcement is used by the Do Credit Card Recharge feature node.

Configure Announcements option

Here is an example Configure Announcements option.



Recharges 1-5

Follow these steps to add the announcements for recharge options 1-5 for a new currency.

Step	Action
1	Select the Recharge options 1-5 option in the New Currency screen. Result: You see the <i>Recharge options 1-5</i> (on page 460), displaying announcements for currency Recharge one to five, plus more than five.
2	Select from the One option section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a caller if they have one recharge option
3	Select from the Two options section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a caller if they have two recharge options.
4	Select from the Three options section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a

Step	Action
	caller if they have three recharge options.
5	Select from the Four options section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a caller if they have four recharge options.
6	Select from the Five options section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a caller if they have five recharge options.
7	Select from the Five options and on section: - The Announcement Set from the Set drop down box - The Announcement Entry from the Entry drop down box that is to be played to a caller if they have more than five recharge options.
8	Click Save .

Recharge options 1-5

Here is an example Recharge options 1-5.

The screenshot shows the 'New Currency' dialog box with a sidebar on the left containing a tree view with the following items: Currency, Configure Announcements, Recharge options 1-5 (highlighted), and Recharge options 6-9. The main area of the dialog is divided into sections for different numbers of recharge options: One option, Two options, Three options, Four options, Five options, and Five options and on. Each section contains two dropdown menus: 'Set' and 'Entry'. In all sections, the 'Set' dropdown is set to 'CCS Announcements' and the 'Entry' dropdown is set to 'Account Reference Prompt Announcement'. At the bottom of the dialog are 'Save' and 'Cancel' buttons. A 'Help' button is located in the top right corner of the dialog area.

Recharges 6-9

Follow these steps to add the announcements for recharge options 6-9 for a new currency.

Step	Action
1	Select the Recharge options 6-9 option from the New Currency screen. Result: You see the <i>Recharge options 6-9</i> (on page 462), displaying announcements for currency recharge six to nine.
2	Select from the Recharge option six section: • The Announcement Set from the Set drop down box • The Announcement Entry from the Entry drop down box that is to be played to a caller if they have six recharge options. This will include the announcements set from Five options and on.
3	Select from the Recharge options 6-7 section: • The Announcement Set from the Set drop down box • The Announcement Entry from the Entry drop down box that is to be played to a caller if they have seven recharge options. This will include the announcements set from Five options and on.
4	Select from the Recharge options 6-8 section: • The Announcement Set from the Set drop down box • The Announcement Entry from the Entry drop down box that is to be played to a caller if they have eight recharge options. This will include the announcements set from Five options and on.
5	Select from the Recharge options 6-9 section: • The Announcement Set from the Set drop down box • The Announcement Entry from the Entry drop down box that is to be played to a caller if they have nine recharge options. This will include the announcements set from Five options and on.
6	Click Save.

Recharge options 6-9

Here is an example Recharge options 6-9.

The screenshot shows the 'New Currency' dialog box with a sidebar on the left containing a tree view with the following items: Currency, Configure Announcements, Recharge options 1-5, and Recharge options 6-9 (which is selected and highlighted). The main area of the dialog contains four identical sections, each with a label on the left and a form on the right:

- Recharge option six:** Set (dropdown menu showing 'CCS Announcements'), Entry (dropdown menu showing 'Account Reference Prompt Announcement').
- Recharge options 6-7:** Set (dropdown menu showing 'CCS Announcements'), Entry (dropdown menu showing 'Account Reference Prompt Announcement').
- Recharge options 6-8:** Set (dropdown menu showing 'CCS Announcements'), Entry (dropdown menu showing 'Account Reference Prompt Announcement').
- Recharge options 6-9:** Set (dropdown menu showing 'CCS Announcements'), Entry (dropdown menu showing 'Account Reference Prompt Announcement').

At the bottom of the dialog are 'Save' and 'Cancel' buttons. A 'Help' button is located in the top right corner.

Editing a currency

Follow these steps to edit the details of an existing Currency record.

To configure a Currency as a Default Currency for the system, configure the Currency here, and then set it as the default in the *Global Configuration* (on page 463) screen.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to edit from the Currency tab table.
3	Click Edit . Result: The Edit Currency screen displays, showing the Currency options.
4	Edit the currency details as described in <i>Currency details</i> (on page 456). Warning: You cannot change the Base once set.
5	Click Save .

Deleting a currency

Follow these steps to delete an existing currency configuration record.

To remove a currency as a default currency for the system, see the *Global Configuration* (on page 463) screen.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to delete from the Currency tab table.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and the Currency prompt displays.
5	Click OK .

Global Configuration

Introduction

You set the following global configuration on the **Global Configuration** tab in the Service Management window:

- The system currency. The required currency must have already been added to the system using the procedures in *Currency* (on page 453).
- The mapping of languages that the system currency is announced in. See *Adding or editing a language map* (on page 466) and *Deleting a language map* (on page 467).
- Whether EDR auditing is required. See *EDR Auditing and Reporting* (on page 468) for more information.
- The global masking configuration for displaying EDR fields in the EDR Viewer. See *Editing a Masking Rule* for more information.

You set the following global maximums on the **Global Configuration** tab:

- Credit cards per subscriber
- Subscribers per credit card

For details, see *Setting global credit card maximums* (on page 468).

Global Configuration tab

Here is an example Global Configuration tab.

Service Management

Service Provider: Boss Help

MFile Generation Resource Limits Capability Domain Currency Currency Code
 Number Translation List Splash Screen Configuration Security
 Exchange Rates **Global Configuration** Channel Balance Type Mapping Barred List

System Currency: European EMU, Euro (EUR)

EDR Auditing Required: ☒

Language Menu Option Mapping	
Language	Key Mapping
English	1
French	2

EDR Viewer Display Masking

No Masking ☐ Last Characters ☒ Regular Expression ☐

Last Characters: 3

Pattern:

Replacement:

Maximum Credit Cards Per Subscriber: 8

Maximum Subscribers Per Credit Card: 8

Edit Close

System Currency

Here is an example Edit Global Configuration screen, displaying the **System Currency** option.

The screenshot shows a window titled "Edit Global Configuration". On the left is a sidebar with a list of configuration options, each preceded by a gear icon. The options are: "System Currency" (highlighted in blue), "EDR Auditing Required", "Language Menu Option Mapping", "Credit Cards", and "EDR Viewer Display Masking". The main content area on the right is light gray and contains the text "System Currency" followed by a dropdown menu currently displaying "European EMU, Euro (EUR)". At the bottom of the window are two buttons: "Save" and "Cancel".

Language Menu Mapping

Here is an example Edit Global Configuration screen, displaying the **Language Menu Option Mapping** option.

The screenshot shows a window titled "Edit Global Configuration". On the left is a sidebar with a list of configuration options: System Currency, EDR Auditing Required, Language Menu Option Mapping (highlighted), Credit Cards, and EDR Viewer Display Masking. The main area is titled "Language Menu Option Mapping" and contains a table with two columns: "Language" and "Key Mapping". The table has two rows: "French" with a key mapping of "2", and "English" with a key mapping of "1". At the bottom of the window are five buttons: "Save", "Cancel", "Edit", "Insert", and "Delete".

Language	Key Mapping
French	2
English	1

Adding or editing a language map

Language maps determine what language the system currency is announced in.

Follow these steps to add a new, or edit an existing language map.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Global Configuration tab, click Edit . Result: You see the Edit Global Configuration screen.
3	Select the <i>Language Menu Option Mapping</i> option (See example on page 466). Result: The screen displays the Language menu option mapping section.
4	To add a new mapping: - Click Insert To edit an existing mapping: - Select the Language item to change from the table - Click Edit Result: You see the Edit/Insert screen.
5	Select the Language from the drop down list.
6	For a new mapping, enter the key mapping number in the Key Mapping field.
	Warning: This cannot be changed once saved.

Step	Action
7	Click Save to update the table.
8	Click Save to the details to the database.

Deleting a language map

Follow these steps to delete a language map.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Global Configuration tab, click Edit . Result: You see the Edit Global Configuration screen.
3	Select the <i>Language Menu Option Mapping</i> option (See example on page 466). Result: The screen displays the Language menu option mapping section.
4	Select the Language item to delete from the table.
5	Click Delete .
6	Click Save to the details to the database.

EDR Auditing Required

Here is an example Edit Global Configuration screen, displaying the **EDR Auditing Required** option.

The screenshot shows a window titled "Edit Global Configuration" with a close button in the top right corner. On the left side, there is a list of configuration options, each preceded by a gear icon. The options are: "System Currency", "EDR Auditing Required" (which is highlighted with a blue selection bar), "Language Menu Option Mapping", "Credit Cards", and "EDR Viewer Display Masking". The main area of the window is a light gray rectangle. In the lower right portion of this area, the text "EDR Auditing Required" is displayed next to a checked checkbox. At the bottom of the window, there are two buttons: "Save" and "Cancel".

EDR Auditing and Reporting

The EDR auditing feature keeps track of changes to subscriber data. When EDR auditing is enabled, a user who is updating a subscriber record is forced to enter a reason in a special **Change Reason** dialog box each time they change the financial status of a subscriber; for example, when:

- Updating a subscriber's wallets
- Updating a subscriber's credit cards

The reason for the change, and the user who made the change are reported in the **Change Reason**, and **Operator Name** fields in the VWS EDR. You can view this information by displaying the VWS EDR in the EDR Viewer.

To enable EDR auditing, select the **EDR Auditing Required** check box in the **Edit Global Configuration** dialog.

Note: The EDR Auditing Required profile field in the CCS global profile block is set to true when you enable EDR auditing. For more information about the CCS global profile block, see *CCS Technical Guide*.

Credit Cards

Here is an example Edit Global Configuration screen, displaying the **Credit Cards** option.

The screenshot shows a window titled "Edit Global Configuration". On the left, there is a list of configuration options with radio buttons: "System Currency", "EDR Auditing Required", "Language Menu Option Mapping", "Credit Cards" (which is selected and highlighted in blue), and "EDR Viewer Display Masking". The main area of the window is currently empty. At the bottom of the window, there are "Save" and "Cancel" buttons.

Setting global credit card maximums

Follow these steps to set the global maximum number of credit cards per subscriber and subscribers per credit card.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Global Configuration tab, click Edit .

Step	Action
	The Edit Global Configuration screen displays.
3	Select the Credit Cards option. The screen displays the <i>Credit Cards option</i> (See example on page 468), limits section.
4	In the fields, select the maximum: • Credit cards per subscriber • Subscribers per credit card
5	Click Save to save the details to the database.

Note: You can also set credit card maximums per service provider on the **Resource Limits** tab in the Service Management window. The maximums you set for a service provider override the global credit card maximums.

Editing EDR Viewer Display Masking

The EDR Viewer Display Masking option allows you to globally configure the masking rules that should be applied to EDR fields for which masking is specified. See *EDR Elements tab* (on page 565) for more information about specifying which EDR fields require masking.

Follow these steps to edit the options for EDR Viewer Display Masking.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Global Configuration tab, click Edit . Result: You see the Edit Global Configuration screen.
3	On the Edit Global Configuration screen, select EDR Viewer Display Masking . Result: You see the EDR Viewer Display Masking configuration options.
4	Select the masking options you want to use, or select No Masking if you do not want to apply masking to EDR fields.
5	If you selected the Last Characters masking option, then enter the number of characters at the end of the EDR field to mask in the Last Characters field.
6	If you selected the Regular Expression masking option then perform the following steps: - Enter the regular expression to use to match the characters to be masked in the Pattern field. - Enter the characters to use as replacements in the Replacement field.
7	Click Save to save the masking rule.

Exchange Rates

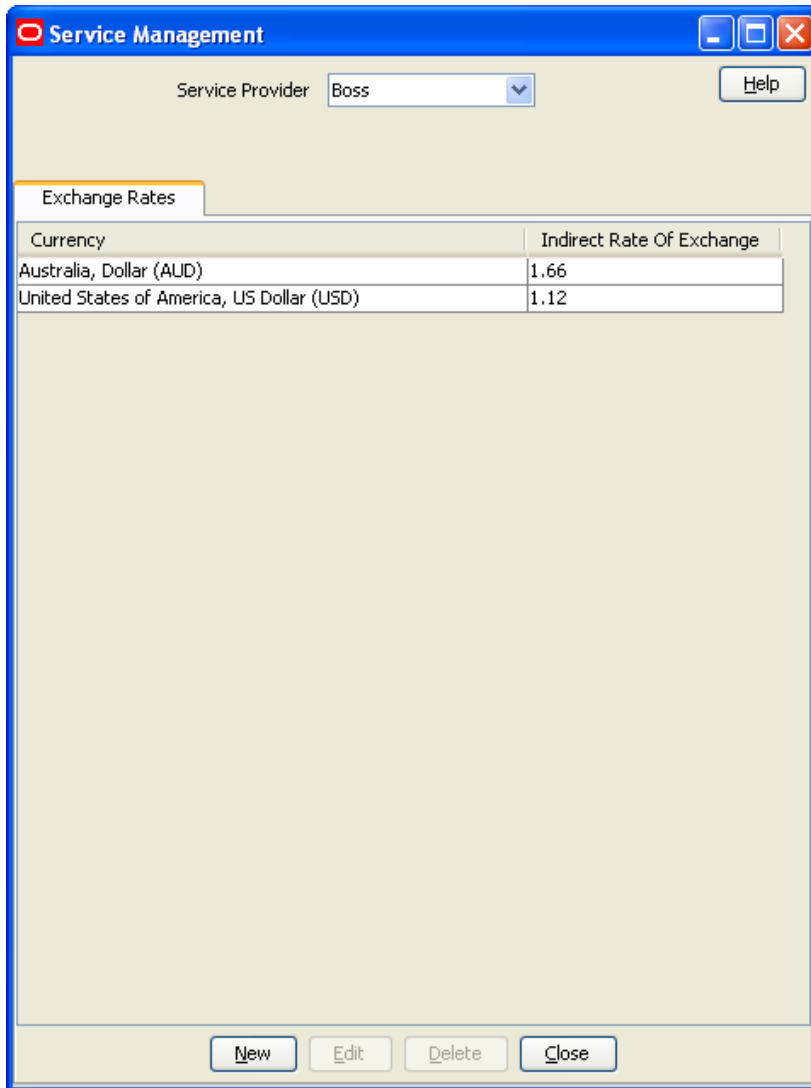
Introduction

The **Exchange Rates** tab allows you to view, add, edit and delete the Exchange Rates that are available in the system.

Account balances are stored in the System Currency, then converted to the user's selected Currency by the indirect rate of exchange set in this tab.

Exchange Rates tab

Here is an example of the **Exchange Rates** tab.

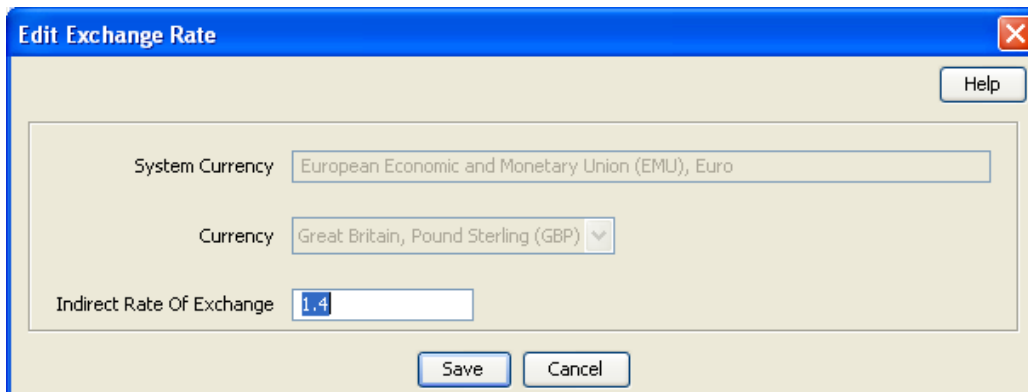


The screenshot shows a window titled "Service Management" with a blue title bar. Inside, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tab labeled "Exchange Rates". The tab contains a table with two columns: "Currency" and "Indirect Rate Of Exchange". The table lists two entries: "Australia, Dollar (AUD)" with a rate of 1.66, and "United States of America, US Dollar (USD)" with a rate of 1.12. At the bottom of the window are buttons for "New", "Edit", "Delete", and "Close".

Currency	Indirect Rate Of Exchange
Australia, Dollar (AUD)	1.66
United States of America, US Dollar (USD)	1.12

Exchange Rate screen

Here is an example Exchange Rate screen.



The screenshot shows a window titled "Edit Exchange Rate" with a blue title bar and a red close button. Inside, there is a "Help" button. The main area contains three fields: "System Currency" with a text box containing "European Economic and Monetary Union (EMU), Euro", "Currency" with a dropdown menu set to "Great Britain, Pound Sterling (GBP)", and "Indirect Rate Of Exchange" with a text box containing "1.4". At the bottom are "Save" and "Cancel" buttons.

System Currency: European Economic and Monetary Union (EMU), Euro

Currency: Great Britain, Pound Sterling (GBP)

Indirect Rate Of Exchange: 1.4

Adding an exchange rate

Follow these steps to add a new Exchange Rate record.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Exchange Rates tab, click New . Result: The New <i>Exchange Rate</i> screen (on page 470) appears with the default System Currency displayed in the System Currency field.
3	Select the Currency to convert the System Currency to from the Currency drop down box. The list will display all available Currencies that are set up on the Currency tab.
4	Type the value which the System Currency will be multiplied by to establish the Currency value in the Indirect Rate of Exchange field. The indirect rate of exchange is the value of 1 unit of System Currency in the selected Currency. Example: If the Indirect Rate of Exchange is set to 4, 1 unit of the System Currency will result in 4 of the configured Currency units. Consequently if an Account Balance is 100 Zloty, and the Exchange Rate to Euros is set at 0.22, the Account Balance will be converted to 22 Euros.
5	Click Save .

Editing an exchange rate

Follow these steps to edit an existing Exchange Rate.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Exchange Rates tab, select the Exchange Rate to edit.
3	Click Edit . Result: The Edit <i>Exchange Rate</i> screen (on page 470) appears.
4	Enter the value which the System Currency will be multiplied by to establish the Currency value in the Indirect Rate of Exchange field. The indirect rate of exchange is the value of 1 unit of System Currency in the selected Currency. Example: If the Indirect Rate of Exchange is set to 4, 1 unit of the System Currency will result in 4 of the configured Currency units. Consequently if an Account Balance is 100 Zloty, and the Exchange Rate to Euros is set at 0.22, the Account Balance will be converted to 22 Euros.
5	Click Save .

Deleting exchange rates

Follow these steps to delete an existing Exchange Rate record.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Exchange Rates tab, select the Exchange Rate to delete.

Step	Action
3	Click Delete . Result: The Delete Confirmation prompt appears.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Exchange Rate successfully deleted message.
5	Click OK .

Resource Limits

Introduction

The Resource Limits screens enable the service provider's resource limits to be specified. These limits prevent a service provider from using more than the specified number of:

- Product types
- Voucher types
- Rate tables

All configuration options must be completed to finalize a resource limit; however the configuration can be saved at any point by clicking **Save**.

Notes:

- All service providers must have resource limits configured for them.
- Resource limits can only be set for existing service providers. Service providers are added as ACS customers in the ACS Customers screen. For more information about adding new service providers, see *ACS User's Guide*.

Resource Limits tab

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

Resource Limits tab fields

The **Resource Limits** tab contains display-only fields, showing the limits and the current usage of the resource. The following table shows where you set the value in each limit field.

Field	Where Set
Maximum Product Types Maximum Voucher Types	Edit Resource Limits screen, <i>Limits</i> (on page 477) option.

Field	Where Set
Maximum Rate Tables Grace Period (seconds) Maximum Bad PIN Count	
Number of Product Types Used	Subscriber Management screen, Product Type (on page 151) tab.
Number of Voucher Types Used	Voucher Management screen, Voucher Types tab. For more information about the Voucher Types tab, see <i>Voucher Type</i> .
Number of Rate Tables Used	Rating Management screen, Rate Tables (on page 332) tab.
Number of Promotion Notifications Sent	Subscriber Management, Adding Product Types screen, Activation Credits option.
Number of Promotion SMSs Sent	Displays number of promotion SMS messages that have been sent.
Global Business Prefix Account Number Prefix	Edit Resource Limits screen, Business Prefix option.
EDR Viewer Display Masking Last Characters Pattern Replacement	Edit Resource Limits screen, EDR Viewer Display Masking. See <i>Editing EDR Viewer Display Masking</i> (on page 486).
Maximum Credit Cards Per Subscriber Maximum Subscribers Per Credit Card	Edit Resource Limits screen, <i>Setting Subscriber Credit Card Limits</i> (on page 486) option.

Edit Resource Limits screen

Here is an example Edit Resource Limits screen.

The screenshot shows the 'Edit Resource Limits' window. The left sidebar contains a list of configuration categories, with 'Limits' currently selected. The main panel displays five settings, each with a text input and a spinner control:

- Maximum Product Types: 6
- Maximum Voucher Types: 100
- Maximum Rate Tables: 100
- Grace Period (seconds): 0
- Maximum Bad PIN Count: 3

At the bottom of the window are 'Save' and 'Cancel' buttons.

Configuration options summary

This table lists all the resource limits configuration options and their functionality.

Note: The service provider is also known as the customer in ACS.

Option	Description
Limits	Sets the resource limits for a service provider that prevent the service provider from using more than the specified number of product types, voucher types and rate tables.
Business Prefix	Sets: - The global business prefix that a subscriber enters at the beginning of a dialed telephone number to ensure that the call charge is logged against the primary business wallet of their account - The account number prefix for a service provider. When you create a new subscriber, the first two digits of the subscriber card number are automatically set to the specified account number prefix. You must specify a unique value in the range of 10 to 99, or leave blank if you do not want to use a specified account number prefix.
Sets	Sets which public resource sets are available to a service provider.

Option	Description
Call Barring	Sets the numbers that are allowed or barred at service provider level.
Number Translations	Sets number translation mappings for the service provider, and displays them in the Short Codes list. The service short codes are mapped to termination numbers. When the short code is dialed, the call is routed to the termination number.
Bypass Numbers	Sets the bypass numbers that are allowed or barred at service provider level. A bypass number is a number that has a discount applied to it. The discount that applies to bypass numbers is set in the Bypass Discount panel.
Bypass Number Discounts	Sets the allowed bypass number discounts. To use this feature you must include the Set Discount feature node in the control plan. For more information, see the <i>Feature Nodes Reference Guide</i> .
Profile Group Limitations	Sets default limits for LNSTRING and LOPREFIX profile group fields. The limits set for the product type will override the limits set here. For more information about setting product type limits, see <i>Subscriber Profile Limitations</i> (on page 213).
Promotions	Lists the global limited liability status for all the available promotions for the service provider. You configure promotions in Promotion Manager. For more information, see <i>Promotion Manager User's Guide</i> .
EDR Viewer Display Masking	Defines the masking rules that apply on a service provider basis when you display EDRs in the EDR Viewer. You set whether to apply the masking rules to an individual EDR tag in the EDR tag configuration. For more information, see <i>EDR Management</i> (on page 555).
Credit Cards	Sets the maximum number of credit cards per subscriber and maximum number of subscribers per credit card at a service provider level.

For information on setting each resource limit, see *Editing resource limits* (on page 476).

Editing resource limits

Follow these steps to edit an existing resource limit.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Click Edit on the Resource Limits tab. The <i>Edit Resource Limits</i> screen (See example on page 475) displays.
3	Select the required options and edit the details of the record. See: <i>Limits</i> (on page 477) <i>Business Prefix</i> (on page 477) <i>Sets</i> (on page 478) <i>Call Barring</i> (on page 479) <i>Number Translations</i> (on page 480) <i>Bypass Numbers</i> (on page 481) <i>Bypass Number Discount</i> (on page 482) <i>Profile Group Limitations</i> (on page 483) <i>Promotions</i> (on page 485) <i>Editing EDR Viewer Display Masking</i> (on page 486) <i>Setting Subscriber Credit Card Limits</i> (on page 486)

Step	Action
4	Click Save .

Limits

Follow these steps to add limits to Resource Limits for a service provider.

Step	Action
1	Select the customer from the Service Provider drop down box.
2	From the Resource Limits tab of the Resources screen, click Edit . The configurable limits display in the <i>Edit Resource Limits screen</i> (See example on page 475). For more information, see <i>Resource Limits tab fields</i> (on page 473).
3	In the relevant fields, set the maximum number of the following resources that the service provider may use: • Product types • Voucher types • Rate tables Tip: It is not possible to set the resources allowed to a value lower than the number of resources already used, as displayed on the Resource Limits tab (on page 473). To reduce the numbers that the service provider may use in the case where the maximum number has been reached, you must first reduce the number that the service provider uses.
4	In the Grace Period (seconds) field, type the period of time (in seconds) to elapse before a call begins to be charged. If a call ends before the grace period has been reached, the call is free. If a call continues beyond the grace period, the whole call incurs a charge, including the grace period. The grace period applies on a per customer basis.
5	Set the maximum number of times that an invalid PIN may be entered into the system in the Maximum Bad PIN Count field. If a customer exceeds this number of attempts in a 24 hour period, their account is frozen.
6	Click Save .

Business Prefix

Follow these steps to configure the Global Business Prefix number for the service provider.

Step	Action
1	Select Business Prefix in the left hand menu in the Edit Resource Limits screen. The <i>Business Prefix option</i> (on page 478) fields display.
2	(Optional) Specify the global business prefix by entering the digits and special characters for the prefix in the Global Business Prefix field. You can include any of the following allowed values in the prefix: 0-9, #, and *. The subscriber must enter this prefix at the beginning of a dialed telephone number to enable the call to be charged to their business wallet instead of their personal wallet. You must include the Business Prefix Branch feature node in the control plan to enable the global business prefix feature. For more information about control plans, see the <i>CPE User's Guide</i> . For more information about the Business Prefix Branch feature node, see <i>Feature Nodes Reference Guide</i> .
3	(Optional) Specify the prefix that will be prepended to a subscriber's card ID by entering

Step	Action
	the two digit prefix in the Account Number Prefix field. Specify a value between 10 and 99 that is unique to this service provider, or leave blank if you do not want to use account number prefixes.
4	Click Save .

Business Prefix option

Here is an example Business Prefix option panel on the Edit Resource Limits screen.

Global Business Prefix

Account Number Prefix

Save Cancel

Sets

Follow these steps to configure private reusable data set limits for service providers.

Step	Action
1	Select the Sets option from the left hand menu in the Edit Resource Limits screen. The <i>Sets option</i> (on page 479) displays, and shows a list of all the public data sets.
2	In the Allocation Public Geography Sets section, select the check box for each geography set that you want to make available to the service provider. You create geography sets on the Geography tab of the ACS Configuration screen.
3	In the Allocate Public Announcement Sets section, select the check box for each announcement set that you want to make available to the service provider. You create announcement on the Announcements tab of the ACS Configuration screen.
4	In the Allocate Public Holiday Sets section select the check box for each holiday set that you want to make available to the service provider. You create holiday sets on the Holidays tab of the ACS Configuration screen.
5	Click Save .

For more information about the ACS Configuration screen, see *ACS User's Guide*.

Sets option

Here is an example Sets option on the Edit Resource Limits screen.

The screenshot shows a dialog box titled 'Allocate Public Geography Sets'. It is divided into three main sections. The first section, 'Allocate Public Geography Sets', contains four checkboxes: 'MJHGS' (checked), 'TIME_ZONE_GEOGRAPHY_SET' (checked), 'Access Network' (checked), and 'Joseph_Geo_Set' (unchecked). The second section, 'Allocate Public Announcement Sets', contains two checkboxes: 'Another set' (unchecked) and 'Joseph_Announcement' (unchecked). The third section, 'Allocate Public Holiday Sets', contains one checkbox: 'Joseph_Holiday_Set' (unchecked). At the bottom of the dialog are two buttons: 'Save' and 'Cancel'.

Call Barring

This manages allowed/ barred lists for service providers.

Allowed/barred lists can also be set at these levels:

- System-wide
- Product type (see the New or the Edit Product Type screen *Call Barring* (on page 167) option)
- Subscriber account (see the New or the Edit Subscriber screen, *Call Barring* (on page 98) option)

Follow these steps to configure call barring for customers.

Step	Action
1	Select the Call Barring option from the left hand menu in the Edit Resource Limits screen. The <i>Call Barring option</i> (on page 480) displays, showing the Allowed/Barred List configuration for the service provider.
2	Select whether the listed numbers will be allowed or barred from the List Type drop down list in the Service Allowed/Barred List section. Note: All numbers in the list are allowed, or all numbers are barred, according to the list type. It is not possible to have some allowed and some barred numbers in the list.
3	Select the Ignore check box if you want the service to ignore the allowed/barred list.
4	Edit the number list in the Service Provider Allowed/Barred List section. To: • Add numbers to the list: ▪ In the New Number field, enter the number ▪ Click Add. • Delete numbers from the list: ▪ Select the number in the Number List field

Step	Action
	Click Delete.
5	If required, repeat step 4 until the number list is complete.
6	Click Save .

Call Barring option

Here is an example Call Barring option on Edit Resource Limits screen.

Number Translations

This manages number translation lists for service providers.

You can also set number translations at these levels:

- Global
- Product type
- Subscriber account

Follow these steps to configure the number translation list limits for the service provider.

Step	Action
1	Select the Number Translations option from the left hand menu in the Edit Resource Limits screen. The <i>Number Translations option</i> (on page 481) displays, listing the configured short codes.
2	Edit the number list in the Short Codes section. To add a number to the list: - In the In field, enter the service short code to translate. - In the Out field, enter the termination number that the short service code translates to.

Step	Action
	c. Click Add .
	To delete a number from the list:
	a. Select the number in the Number List table.
	b. Click Delete .
3	Repeat step 2 until all the codes are included.
4	Click Save .

Number Translations option

Here is an example Number Translations-Short Codes option on the Edit Resources screen.

Bypass Numbers

Follow these steps to configure the bypass numbers at a service provider level.

Tip: Bypass Numbers can also be configured at the following levels:

- Global
- Product type

Step	Action
1	Select the Bypass Numbers option from the left hand menu in the Edit Resource Limits screen. The <i>Bypass Numbers option</i> (on page 482) displays, showing the bypass numbers configuration for the service provider.

Step	Action
2	Select the List Type from drop down box in the Service Provider Bypass Numbers section. Note: The list type determines whether the listed bypass numbers are all barred, or all allowed.
3	Select the Ignore check box if the service is to ignore the number list.
4	Edit the number list in the Service Provider Bypass Numbers section. To add a number to the list: a. Enter a bypass number in the New Number field b. Click Add . To delete a number from the list: a. Select the number from the Number List b. Click Delete .
5	Repeat step 4 until the number list is complete.
6	Click Save .

Bypass Numbers option

Here is an example Bypass Numbers option on the Edit Resources screen.

Service Provider Bypass Numbers

Number List

List Type: Allowed

☒ Ignore

New Number

Add Delete

Save Cancel

Bypass Number Discount

Follow these steps to configure the limits for bypass number discounts.

Tip: To enable bypass number discounts limits, you must include the Set Discount feature node in the control plan. For more information about the Set Discount feature node, see *Feature Nodes Reference Guide*.

Step	Action
1	Select the Bypass Number Discount option from the left hand menu in the Edit Resource Limits screen. The <i>Bypass Number Discount option</i> (on page 483) displays, showing the bypass number discount configuration for the service provider.
2	Select the currency code in which the Max. Charge field will be displayed from the Display Currency list.
3	Type the percentage discount to apply during the first discount period in the Period One % field.
4	Type the percentage discount to apply during the second discount period in the Period Two % field.
5	Type the maximum total charge to charge the subscriber for any one call in the Max. Charge field.
6	Click Save .

Bypass Number Discount option

Here is an example Bypass Number Discount option on the Edit Resource Limits screen.

Bypass Number Discount

Display Currency: EUR ▼

Period One %:

Period Two %:

Max. Charge:

Save Cancel

Profile Group Limitations

Follow these steps to configure the service provider-level limits for LNSTRING and LOPREFIX profile field types.

Tip: You can override the limits set here by setting the profile field type limits for the product type.

Step	Action
1	Open the Profile Group Limitations group in the Edit Resource Limits screen, and select the profile field that you want to set limits for. The <i>Profile Group Limitations option</i> (on page 485) displays the configuration for the selected field.
2	Select the Ignore Limitations check box if required: - When selected, the limits are ignored and the system default resource limits are used. - When not selected, the limits set here are used.
3	In the Max Number of Entries field, if present, type the maximum number of prefixes that may be included in the Number List. Defaults to 100 if no value is specified.
	Note: This field is only available for LOPREFIX type fields.
4	In the Min Number Length field type the minimum numeric value for the Profile Group Field. Defaults to zero if no value is specified.
5	In the Max Number Length field type the maximum numeric value for the profile group field. Defaults to 255 if no value is specified.
6	Select the Limitation Prefix Tree Type from the drop down list. If you select: - Allowed – The profile group field value must match an entry in the Number List. - Barred – The profile group field value must not match an entry in the Number List.
7	Edit the Number List. To add a number to the list: - Enter a required number in the New Number field. - Click Add. To delete a number from the list: - Select the number from the Number List, select the number. - Click Delete.
8	Repeat step 7 until the number list is complete.
9	Click Save.

Profile Group Limitations option

Here is an example Profile Group Limitations option on the Edit Resource Limits screen.

The screenshot shows a window titled "Number List" with a large empty list box on the left. On the right side, there are several configuration options:

- Ignore Limitations:** A checkbox that is checked.
- Max Number of Entries:** A text box containing the value 100.
- Min Number Length:** A text box containing the value 0.
- Max Number Length:** A text box containing the value 255.
- Limitation Prefix Tree Type:** A dropdown menu with "Barred" selected.

Below these options is a section titled "New Number" with a text input field and two buttons: "Add" and "Delete". At the bottom of the window are "Save" and "Cancel" buttons.

Promotions

Follow these steps to view the global limited liability status of the promotions defined for the currently selected service provider.

Step	Action
1	Select the Promotions option from the left hand menu in the Edit Resource Limits screen. The <i>Promotions option</i> (on page 486) displays, listing the promotions for the current service provider.
2	Click Save .

For more information about the configuring promotions, see *Promotion Manager User's Guide*.

Promotions option

Here is an example Promotions option on the Edit Resource Limits screen.

Promotion	Active	Status	Expiry Date
ATM Recharge_Bronze	Active	Unset	
ATM Recharge_Gold	Active	Unset	
ATM Recharge_Silver	Active	Unset	
Bronze Activation	Active	Unset	
Credit Reward 1 Exp Bronze	Active	Unset	
Credit Reward 1 Exp Gold	Active	Unset	
Credit Reward 1 Exp Silver	Active	Unset	
Credit Reward 2 Exp Bronze	Active	Unset	
Credit Reward 2 Exp Gold	Active	Unset	
Credit Reward 2 Exp Silver	Active	Unset	
Credit Reward 3 Exp Bronze	Active	Unset	
Credit Reward 3 Exp Gold	Active	Unset	
Credit Reward 3 Exp Silver	Active	Unset	
Gold Activation	Active	Unset	
Loyalty Reward Bronze	Active	Unset	
Loyalty Reward Gold	Active	Unset	
Loyalty Reward Silver	Active	Unset	
Manual Limited Liability Example	Inctive	Unset	
Overdraft Bonus Bronze	Active	Unset	
Overdraft Bonus Gold	Active	Unset	
Overdraft Bonus Silver	Active	Unset	
Reward Tariff Bronze - Bronze	Active	Unset	
Reward Tariff Bronze - Gold	Active	Unset	
Reward Tariff Bronze - Silver	Active	Unset	
Reward Tariff Gold - Bronze	Active	Unset	
Reward Tariff Gold - Gold	Active	Unset	
Reward Tariff Gold - Silver	Active	Unset	
Reward Tariff Silver - Bronze	Active	Unset	
Reward Tariff Silver - Gold	Active	Unset	
Reward Tariff Silver - Silver	Active	Unset	

Save Cancel

Editing EDR Viewer Display Masking

The EDR Viewer Display Masking option allows you to set rules on a service provider basis pertaining to masking EDR fields in the EDR Viewer. See *EDR Elements tab* (on page 565) for information about specifying which EDR fields require masking.

Follow these steps to edit the options for EDR Viewer Display Masking

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the Resource Limits tab, click Edit . Result: The Edit Resource Limits screen displays.
3	Select EDR Viewer Display Masking . Result: The EDR Viewer Display Masking screen configuration options display in the Edit Resource Limits screen.
4	Select the masking option you want, or select Global Masking to apply the global masking rules set on the Global Configuration tab.
5	Click Save to save the masking limits.

Setting Subscriber Credit Card Limits

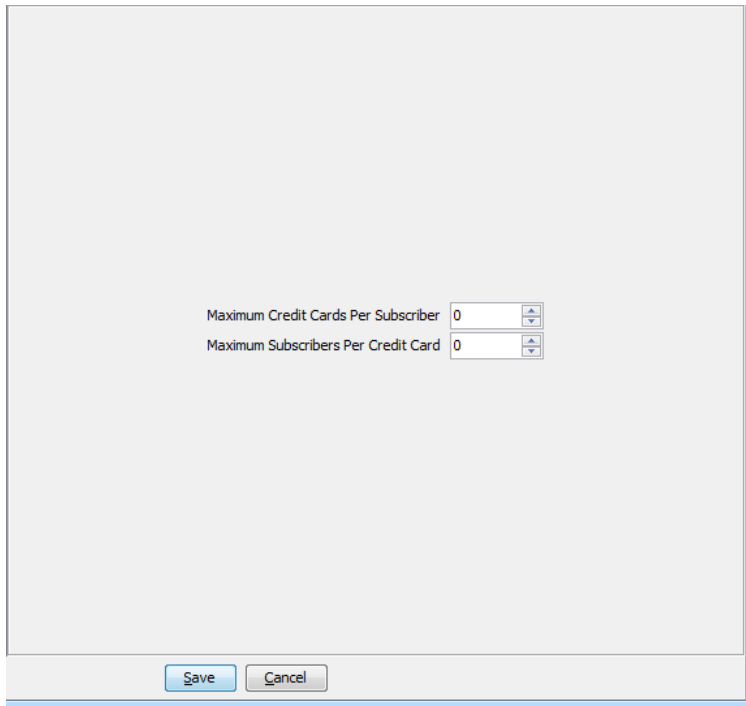
To set the maximum number of credit cards per subscriber and the maximum subscribers per credit card for the service provider:

Step	Action
1	Select the service provider from the Service Provider list in the Service Management

Step	Action
	screen.
2	In the Resource Limits tab, click Edit . The Edit Resource Limits screen displays.
3	Select the Credit Cards option.
4	Set the required maximums for the selected service provider in the following fields: • Maximum Credit Cards Per Subscriber • Maximum Subscribers Per Credit Card Note: The maximums you set for a service provider override the global credit card maximums. See <i>Setting global credit card maximums</i> (on page 468).
5	Click Save to save the details to the database.

Credit Cards option

Here is an example Credit Cards option on the Edit Resource Limits screen.



Maximum Credit Cards Per Subscriber 0

Maximum Subscribers Per Credit Card 0

Save Cancel

Deleting resource limits

Customers must have resource limits. You can only change the values, not delete them.

Barred List

Introduction

The **Barred List** tab enables you to view, add or delete numbers that are either allowed or barred from use.

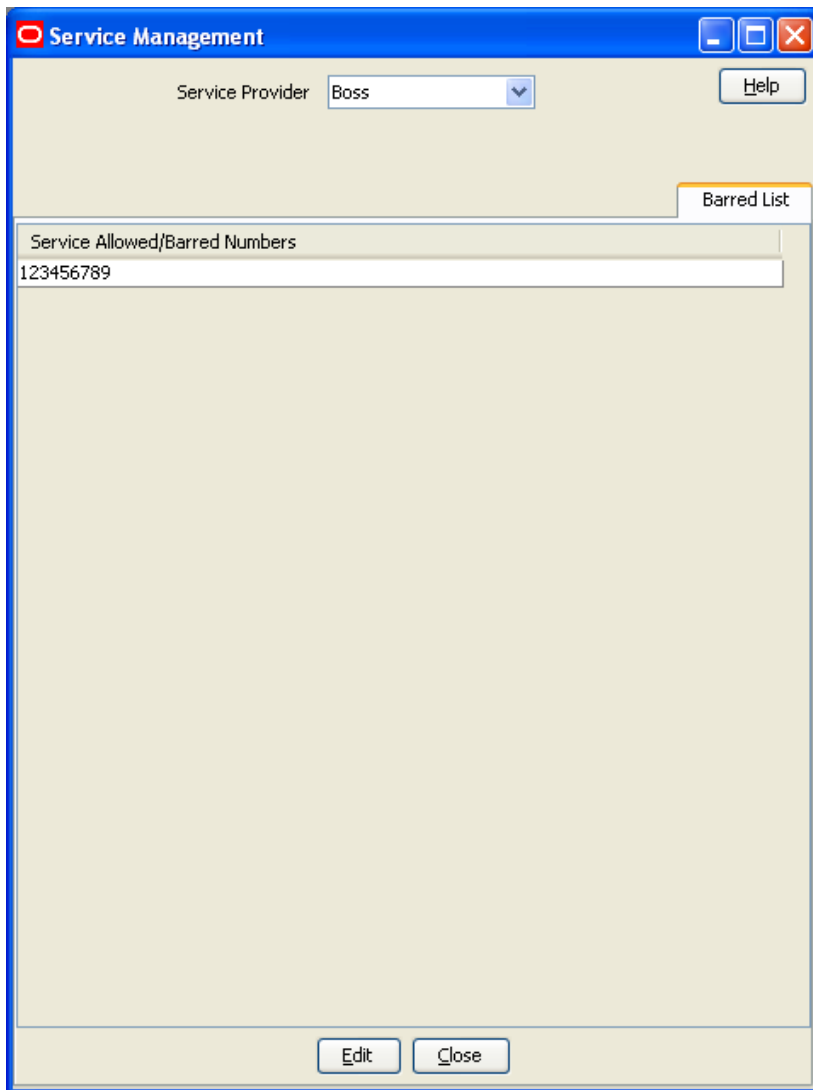
This list manages allowed/ barred lists system wide.

You can also set barred allowed lists at these levels:

- Service provider
- Product type. See *Call Barring* (on page 167).

Barred List tab

Here is an example of the **Barred List** tab.



Adding numbers to the barred list

Follow these steps to edit the service allowed/barred numbers list.

Step	Action
1	From the Barred List tab, click Edit . Result: You see the <i>Edit Service Allowed/Barred Numbers List</i> screen (on page 489).
2	In the Service Allowed/Barred List section, select the List Type from the drop down list. This determines whether the listed numbers will be allowed or barred.

Step	Action
	Note: All numbers in the list are allowed, or all numbers are barred, according to the list type. It is not possible to have some allowed and some barred numbers in the list.
3	If you want the service to ignore the allowed/barred list, select the Ignore check box.
4	To edit the Number List : • Add a number: ▪ Enter the number to add in the New Number field ▪ Click Add • Delete a number: ▪ Select the number to remove from the list ▪ Click Delete
5	If required, repeat step 4 until all the numbers are listed.
6	Click Save .

Edit Service Allowed/Barred Numbers List screen

Here is an example Edit Service Allowed/Barred Numbers List screen.

Capability

Introduction

The **Capability** tab allows you to define global capabilities. You can specify the default control plan for the capability, the service trigger, called party number, and the EDR type to output.

Capabilities are associated with *control plans* (on page 161) in the Product Type screen.

The default capabilities are VOICE_MO (originating) and VOICE_MT (terminating).

Capability tab

Here is an example **Capability** tab.

Name	Service
ACS_Notification	ACS_Notification
BPL	CCS_BPL
Callback	USSDCB_BLeg
Callback (A-leg)	USSDCB_ALeg
Calling Card	CCS
HPLMN MO	CCS
IVR Self Care	CCS
NGN	NGN
NGN SMSMO	NGN_SM_MO
SMSMO	CCS_SM_MO
USSD Balance Status	USC
USSD Self Care	USC
USSD Voucher Recharge	USC
VPLMN MO	CCS_VPLMN_MO
VPLMN MT	CCS_ROAM

Capability fields

This table describes the function of each field.

Field	Description
Name	The name given to this capability definition. The name is used as the identifier in the <i>Control Plans</i> (on page 161) option in the Product Type screen.
Service	The service name that triggers this capability. Service names are defined in <code>/IN/service_packages/ACS/etc/acs.conf</code> For more information about configuring service names, see <i>ACS Technical Guide</i> .
CdPN (Called Party Number on New and Edit screens)	The called party number used when matching the capability definition. (Optional.)

Field	Description
Default Control Plan	The default control plan invoked by this capability definition. The default control plan is run when the calling party number is not a known subscriber. 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.
Statistics Category	In license reports, calls on this capability will be reported against the service specified in this field. For more information about License reports, see <i>License</i> (on page 586).
Statistics Protocol	In license reports, calls on this capability will be reported against the protocol specified in this field.
Bearer Capability	The bearer capability (InitialDP itc field (information transfer capability)) used when matching the capability definition. (Optional.)
CDR Type	The regular call EDR type to use for the capability.
In-Session Notifications	You can select an in-session notifications trigger for the call capability, if required. The trigger defines the control plan to invoke, and the associated session data to pass to it to handle in-session notifications reported by the charging system.

Capability Screen

Here is an example Capability screen.

Adding a capability

Follow these steps to add a new Capability definition.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On the Capability tab, click New . Result: You see the <i>New Capability Screen</i> (on page 492).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Capability fields</i> (on page 490).
4	Click Save . Warning: You must restart the SLEE in order for the changes to take effect. For more information about restarting the SLEE, see <i>SLEE Technical Guide</i> .

Editing a capability

Follow these steps to edit a Capability definition.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On table on the Capability tab select the record to edit and click Edit . Result: You see the <i>Edit Capability Screen</i> (on page 492).

Step	Action
3	Edit the fields to reflect the required changes. For more information about the fields on this screen, see <i>Capability fields</i> (on page 490).
4	Click Save .
Warning: The SLEE will need to be restarted in order for the changes to take effect.	

Deleting a capability

Follow these steps to delete an existing Capability definition.

Warning: Caution should be used when deleting existing capabilities as the system may become unstable if a capability is deleted that is used by a configured service, such as CCS_BPL.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to delete from the table on the Capability tab.
3	Click Delete . Result: The Delete Confirmation displays.
4	Click OK . Results: • The record is deleted from the database. • The Capability confirmation prompt displays.
5	Click OK .
Warning: The SLEE will need to be restarted in order for the changes to take effect.	

Number Translation List

Introduction

The **Number Translation List** tab enables you to view, add, edit and delete the service short codes that are mapped to specific termination numbers within the CCS service.

In this tab, the numbers which are displayed in the **In** column are service short codes which are mapped to the termination numbers displayed in the **Out** column. Incoming calls use the service short codes, which are then routed to the outgoing termination numbers.

This manages number translation lists system-wide.

The translation list exists at three other levels, in the order they are set. These are:

- Level 1 Service Provider
- Level 2 Product Type
- Level 3 Subscriber account Level

These are checked in the order they are placed in the control plan.

Number Translation List tab

Here is an example Number Translation List tab.

The screenshot shows a window titled "Service Management" with a blue title bar. Inside the window, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tab labeled "Number Translation List". The tab contains a table with two columns: "In" and "Out". The table has two rows of data. At the bottom of the window, there are "Edit" and "Close" buttons.

In	Out
A1234	123459271
B999	1234519476

Edit Service Short Codes/Number Translation List screen

Here is an example Edit Service Short Codes/Number Translation List screen.

Short Codes

Number List

In	Out
324	765
678	789

In

Out

Add Delete

Save Cancel

Editing numbers in the translation list

Follow these steps to edit the numbers on the Number Translation List.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	From the Number Translation List tab, click Edit . Result: You see the <i>Edit Service Short Codes/Number Translation List screen</i> (on page 495).
3	In the Service Short Codes section, edit the Number List as required. To: • Add a number pair: ▪ In the In field, enter the service short code you want to map to a termination number ▪ In the Out field, enter the termination number you want to translate the short service code to ▪ Click Add • Delete a number pair: ▪ In the Number List table, select the number ▪ Click Delete.
4	If required, repeat step 3 to add/delete more numbers in the Number List.
5	Click Save .

MFile Generation

Introduction

MFiles are used to store data which is not changed very often (for example, tariffs). MFiles are compiled on the Voucher and Wallet Server nodes to provide a fast lookup for a subset of the data in the E2BE database. You can generate a separate CCS Rating MFile and CCS Product Catalogue MFile for each service provider. This enables you to manage MFiles separately for each service provider. You generate MFiles from the **MFile Generation** tab.

Note: All the relevant tariff information must be established before the **MFile Generation** tab is available.

For more information about MFiles, see *VWS Technical Guide*.

MFile distribution process

This table describes the MFile distribution process.

Stage	Description
1	Through the New or Edit MFile Generation screen, the administrator updates the details contained in the MFile and clicks Save . Result: The data and an update request are transferred to the VWS nodes.
2	When the update request arrives on the VWS, ccsMFileCompiler : a. Creates a new MFile from the updated data in the E2BE database b. Sends a request to the beServer to reload the MFile
3	Then ccsMFileLoader : a. Reloads the new MFile b. Updates the E2BE database to indicate that the new MFile has been reloaded

MFile Generation Tab

Here is an example **MFile Generation** tab. The **MFile Generation** tab displays the list of MFiles that have been generated for the service provider.

Billing Engine	Requested Date	Type	Description
1	2015-05-07 15:34:10	Named Event Catalogue	Prod
1	2015-05-07 15:34:10	Rating	Ratir
1	2015-05-08 11:53:07	Rating	tony
1	2015-05-08 11:53:17	Named Event Catalogue	tony

MFile Fields

This table describes the function of each field.

Field	Description
Domain	The Voucher and Wallet Server pair you will send the MFile to. This field is populated by the Domain (on page 441) tab. This field cannot be edited once it is initially saved.

Field	Description
Description	The description of the MFile.
Request Date	The date the MFile was last requested to run. Note: This field is only available on the Edit MFile screen.
Type	Whether the MFile is for: - Rating - Named event catalogue

MFile Configuration screen

Here is an example Edit MFile Configuration screen.

Adding an MFile

Follow these steps to add a new MFile for a selected service provider.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	From the MFile Generation tab, click New . Result: You see the New <i>MFile Configuration</i> screen (on page 498).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>MFile Fields</i> (on page 497).
4	Click Save . Result: ccsMFileCompiler on the VWS nodes within the chosen domain builds up a new MFile and notifies the VWS processes.

Editing an MFile

Follow these steps to edit an existing MFile generation record.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the table on the MFile Generation tab, select the MFile generation record to edit.

Step	Action
3	Click Edit . Result: You see the Edit <i>MFile Configuration</i> screen (on page 498).
4	In the Description field, update the description of the MFile. For more information about the fields in this screen, see <i>MFile Fields</i> (on page 497).
5	Click Save .

Deleting an MFile

Follow these steps to delete an existing MFile generation record.

Note: There must be a current MFile when the Voucher and Wallet Servers are restarted.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the table on the MFile Generation tab, select the MFile to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK . Result: You see the MFiles confirmed delete prompt.
5	Click OK .

Balance Type Mapping

Introduction

The **Balance Type Mapping** tab is used for:

- Mapping third-party balance types to Convergent Charging Controller balance types
- Filtering wallet recharges for wallets distributed across a third-party charging domain and a VWS tracking domain

Balance type mapping allows the feature nodes that operate against Balance Types to function for third-party balance types as well as those on the VWS.

Note: If balance type mapping is not defined for a Balance Type then wallet recharges will be sent to the VWS by default.

Balance Type Mapping tab

Here is an example Balance Type Mapping tab.

Balance Type	Third-Party Resource	Third-Party Resource Scale	Domain Type
General Cash	978	100	BCD

Balance type mapping fields

This table describes the function of each field.

Field	Description
Balance Type	List of available balance types. This list is restricted to chargeable balance types. When None is selected the balance type mapping configuration will be used for filtering wallet recharges through for the charging and/or tracking domain. See Scenarios.
Third-Party Resource	A text field that allows letters, digits, and spaces. A string that specifies the name of the third-party balance to map to the Convergent Charging Controller balance type. Must be different from the Balance Type.
Third-Party Resource Scale	The scaling factor to apply to balances defined by the Third-Party Resource value for it to have a value that is equivalent to the Convergent Charging Controller balance type. For example, the Convergent Charging Controller product uses hundredths of seconds for time balances, whereas the BRM equivalent uses seconds, so the scaling factor converts the BRM seconds to the Convergent Charging Controller hundredths of seconds.
Domain Type	List of available non-VWS domain types. Domain Type associates the balance type mapping configuration with the specified domain.

Scenarios

This table describes the results of voucher redemptions in different balance type mapping scenarios.

Voucher Type	Result
Subscriber applies a split domain voucher type	Given a subscriber who has a wallet in both the VWS and BCD domains and a balance type that has balances defined in both domains: When the voucher is applied to the subscriber's wallet, the balances in both domains are modified at the same time.
Subscriber applies a VWS domain voucher type	Given a subscriber who has a wallet in both the VWS and BCD domains and a voucher that has balances only in the VWS domain: When the voucher is applied to the subscriber's wallet, only balances in the VWS domain are modified.
Subscriber applies a BCD domain voucher type	Given a subscriber who has a wallet in both the VWS and BCD domains and a voucher type that has balances in the BCD wallet domain: When the voucher is applied to the subscriber's wallet, only the balances in the BCD domain are modified.

This table describes the results of actions by a screen user who wants to associate a chargeable balance type with a domain.

Scenario	Result
Create a new mapping between a chargeable balance type and a domain	When the user selects a chargeable balance type and a domain type and clicks the Save button, the balance type will be associated with the domain type.
Creating a new mapping between a chargeable balance type and a non-VWS domain	When the user selects a chargeable balance type and a non-VWS domain and clicks the Save button, the balance type will be associated with the domain type.

Balance Type Mapping Configuration screen

Here is an example Balance Type Mapping Configuration screen.

The screenshot shows a window titled "New Balance Type Mapping". It contains the following fields and controls:

- Balance Type:** A dropdown menu currently set to "General Cash".
- Third-Party Resource:** A text input field containing the value "978".
- Third-Party Resource Scale:** A text input field containing the value "100".
- Domain Type:** A dropdown menu currently set to "BCD".
- Buttons:** "Help" (top right), "Save" (bottom left), and "Cancel" (bottom right).

Adding balance type mapping

Follow these steps to add a new balance type mapping.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On the Balance Type Mapping tab, click New . Result: You see the New Balance Type Mapping Configuration screen.
3	Configure this record by entering data in the fields on this screen. For more information about these fields, see Balance type mapping fields fields.
4	Click Save .

Editing balance type mapping

Follow these steps to edit an existing balance type mapping.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to edit from the table on the Balance Type Mapping tab.
3	Click Edit . Result: You see the Edit Balance Type Mapping Configuration screen.
4	Edit the fields to reflect the required changes. For more information about the fields in this screen, see Balance type mapping fields.
5	Click Save .

Deleting balance type mapping

Follow these steps to delete an existing balance type mapping.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to delete from the table on the Balance Type Mapping tab.
3	Click Delete . Result: The Delete Confirmation displays.
4	Click OK .

Security

Introduction

Please select which security function you wish to view the help for.

Select from:

- *About Voucher Security* (on page 503)
- *About Credit Card Security* (on page 508)

Introduction to security

The **Security** tab allows you to configure the security for vouchers and credit cards.

About Voucher Security

Introduction to voucher security

Authentication rules are used to ensure voucher security. Authentication rules must be created before they can be used for voucher batches.

For more information about vouchers, see *Voucher Manager User's Guide*.

The CB-10 voucher security features enable you to define authentication rules for CB-10 HRN encryption. This encryption method may be specified when creating voucher batches and redeeming vouchers.

The CB-10 voucher security features and the CB10 HRN authentication module must have been installed and activated on your system to be visible on your screens.

Note: CB-10 voucher security will only be available to you if you have an appropriate license. For more information about activation, see *CCS Installation and Removal Guide*.

Voucher security tab

Here is an example of the **Voucher Security** tab in the **Security** tab.

The screenshot shows the 'Service Management' window with the 'Security' tab selected. Under the 'Voucher Security' sub-tab, there is a 'CB10 HRNGEN Private Key Generation' section with a 'Generate' button. Below this is an 'Authentication Rules' table with one rule named 'NL10_PIN4'. At the bottom are buttons for 'Up', 'Down', 'Save', 'New', 'Edit', 'Delete', and 'Close'.

Name	PAM	Number Length	PIN Length
NL10_PIN4	DES	10	4

Security fields

This table describes the function of each field.

Note: The S, R1, R2, and R3 fields apply to CB10 HRN PAMs only and will only be visible in the screens if the CB-10 Voucher Security features have been activated. For more information about how these fields are related to each other, and how they are used in CB-10 authentication rules, see CB-10 field relationship diagram.

Field	Description												
Name	Name for the authentication rule. Maximum length 50 characters.												
PAM	Pluggable Authentication Module name. This field is populated by the system with the PAMs which have been enabled on this platform. Note: - To review the licenses which have been activated on your platform, see <i>CCS Installation and Removal Guide</i>. - The full list of PAMs is fixed at a code level and therefore cannot be edited.												
Number Length	Voucher number length. This field may only be edited for DES/DES Deprecated PAMs. <table><tr><th>PAM</th><th>Valid Values</th><th>Automatically Generated?</th></tr><tr><td>AltAuthMod</td><td>14</td><td>Yes</td></tr><tr><td>DES DES Deprecated</td><td>4 - 20</td><td>No</td></tr><tr><td>CB10 HRN</td><td>4 - 22</td><td>Yes. This field is set to: S+R1+R2+R3</td></tr></table>	PAM	Valid Values	Automatically Generated?	AltAuthMod	14	Yes	DES DES Deprecated	4 - 20	No	CB10 HRN	4 - 22	Yes. This field is set to: S+R1+R2+R3
PAM	Valid Values	Automatically Generated?											
AltAuthMod	14	Yes											
DES DES Deprecated	4 - 20	No											
CB10 HRN	4 - 22	Yes. This field is set to: S+R1+R2+R3											
PIN Length	Voucher PIN length (digits). If the PAM is AltAuthMod then this field is automatically set to 0. For DES/DES Deprecated PAMs enter a value between 4 to 20.												
Salt	This field applies to DES rule definition only. It is used to generate the voucher pin and will be automatically generated if left blank. It can be set to any 2 alpha-numeric characters. This field is not used with CB10 HRN authentication rules.												
S	Length of the serial number (the number must be between 0 and 20).												
R1	Length of the first redundancy layer (must be between 0 and 20). A higher number provides a greater level of security.												
R2	Length of the second redundancy layer (must be between 0 and 20). A higher number provides a greater level of security.												
R3	Length of the third redundancy layer (must be set to 0, 1 or 2). A higher number provides a greater level of security.												

Authentication rules

Authentication rules are used by the voucher batch creation and voucher redemption processes. The authentication rule associated with a voucher batch determines which encryption algorithm to use when generating the voucher numbers in the batch. Three encryption algorithms are supported:

- AltAuthMod
- DES
- CB10 HRN

Note: If an authentication rule has been used to create an existing voucher batch, then you will not be able to edit or delete it.

AltAuthMod encryption

Voucher batches created using AltAuthMod encryption will contain randomly generated voucher numbers, 14 digits long. A separate sequential serial number of 7 digits will also be generated for each voucher in the batch.

The AltAuthMod encryption method does not support voucher PINs and therefore the PIN length is always set to 0.

DES Encryption

DES Encryption supports separate voucher number and voucher PIN generation.

The generated voucher numbers will be determined using the start and end range values specified for the voucher batch, while the voucher PINs will be randomly generated.

The length of the voucher number and the voucher PIN will depend on the configuration specified for the DES encryption rule being used.

Where DES Encryption is used, gpg is used to encrypt the exported voucher batch file.

CB-10 HRN encryption

The CB10 HRN encryption provided by the CB10 HRN authentication module generates voucher numbers using the:

- CB-10 HRN private keys (K1, K2 and K3) for the service provider
- S, R1, R2 and R3 security parameters defined for the authentication rule

The CB-10 HRN encryption algorithm does not support voucher PINs and therefore the PIN length is always set to 0.

A unique set of CB-10 HRN private keys (K1, K2 and K3) is required for each service provider. These will be one of:

- Generated automatically when a new service provider is created
- Generated/regenerated for service providers who existed before the CB-10 HRN authentication was activated using the **Generate** button

Note: If a voucher batch has already been created for a service provider using the CB-10 encryption algorithm then you will not be able to:

- Regenerate the K1, K2, and K3 private keys for the selected service provider
- edit the associated authentication rule

Generating CB-10 HRN keys

Follow these steps to generate/regenerate CB-10 HRNGEN private keys for a service provider.

Note: You will not be able to regenerate the K1, K2, and K3 private keys for a selected service provider if a voucher batch has already been created for the service provider using the CB-10 encryption algorithm.

Step	Action
1	Select the customer from the Service Provider drop down box.
2	On the Security tab, click Generate . Note: This button will only be visible on the tab if the CB-10 Voucher Security features have been activated, and no HRNGEN private keys have been generated for this service provider. Result: You see the CB10 HRNGEN Private Key Generation screen prompt.
3	Click OK .

Rule priority

When redeeming vouchers the different encryption algorithms are matched against the voucher HRN (hidden resource number) based on the length of the HRN. If the length of the HRN cannot be uniquely matched to an encryption algorithm, then an attempted match is made against each authentication rule in turn. The priority given to each authentication rule is determined by the order in which they appear in the table in the tab.

Changing rule priority

Follow these steps to change the order of priority for an authentication rule.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the table on the Voucher Security tab, select the authentication rule to move.
3	Click: • Up - to move the rule up one row and raise its priority • Down - to move the rule down one row and lower its priority
4	Click Save .

Authentication Rule screen

Here is an example Authentication Rule screen.

Adding an authentication rule

Follow these steps to add a new authentication rule.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On the Security tab, select the Voucher Security tab, then click New . Result: You see the <i>New Authentication Rule screen</i> (See example on page 506).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Security fields</i> (on page 504). Notes: - To use the CB-10 HRN PAM, you must first <i>Generating CB-10 HRN keys</i> (on page 505). - Different fields will be enabled depending on which authentication module you select.
4	Click Save .

Editing an authentication rule

Follow these steps to edit an authentication rule.

Note: You will not be able to edit a rule for which there is an associated voucher batch.

Step	Action
1	Select the Service Provider from the drop down box.
2	Select the rule to edit from the table on the Voucher Security tab.
3	Click Edit . Result: You see the <i>Edit Authentication Rule screen</i> (See example on page 506).
4	Edit the fields to reflect the changes you need to make. For more information about the fields on this screen, see <i>Security fields</i> (on page 504). Note: Different fields will be enabled depending on which authentication module you select.
5	Click Save .

Deleting an authentication rule

Follow these steps to delete an existing authentication rule.

Note: You will not be able to delete a rule for which there is an associated voucher batch.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the table on the Voucher Security tab, select the authentication rule to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK .

About Credit Card Security

About Masking Rules for Credit Card Security

You configure masking rules for credit card security to prevent full credit card numbers from being displayed. A global masking rule is configured at installation. You can modify the global masking rule, if required, but you cannot delete it.

You can also define masking rules for service providers. A service provider masking rule is used instead of the global masking rule. You define masking rules on the **Security** tab in the Service Management window.

Global Masking Rule

The global masking rule is configured at installation to use the following defaults:

- Four digit suffix length
- No prefix
- Star (*) pad character to mask the credit card number display
- Allow tokenized card number searches

When displaying a credit card number, the total length of the number is 19 characters, including masked characters. For example, if the full credit card number is 4535123456789876, then the number displayed after applying the global masking rule is *****9876.

Credit card security tab

Here is an example of the **Credit Card Security** tab in the **Security** tab.

Service Management

Service Provider: Boss

Help

Security

Voucher Security | Credit Card Security

Credit Card Masking Rules

Name	Suffix Length	Prefix Length	Pad Character
Global- Suffix: 4	4		*
Prefix: 2 / Suffix: 4	4	2	#

New Edit Delete Close

Credit card security fields

This table describes the function of each field and area.

Field	Description
Warning label	Indicates that a rule has a prefix + suffix length greater than 12.
Table	Shows the current masking rules, one per row. The table shows rules for this service provider plus the global masking rule.
Name	The generated name of the masking rule, in the format - Prefix: <i>value</i> /Suffix: <i>value</i>
Suffix Length	The number of digits displayed at the end of the display number. Valid values are numbers 1 through 10.
Prefix Length	The number of digits displayed at the start of the display number. Valid values are numbers 1 through 9. Optional, defaults to no value.

Field	Description
Pad Character	The pad character, which is the substitute character to display in the display number when not in the prefix or suffix. Valid values are any non-numeric character. Optional. Default is *.
Searchable Tokenised Number	The tokenized credit card number can be searched for the rule if a tick is displayed. You can search on the <i>Finding credit cards</i> (on page 47), for example.

Masking Rule screen

Here is an example of the Edit Masking Rule screen. The new screen is very similar.

Adding a masking rule

Follow these steps to add a masking rule.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On the Security tab, select the Credit Card Security tab, then click New . Result: You see the <i>New Masking Rule screen</i> (See example on page 510).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Credit card security fields</i> (on page 509).
4	Click Save .

Editing a masking rule

Follow these steps to edit a masking rule.

Step	Action
1	Select the Service Provider from the drop down box.
2	Select the rule to edit from the table on the Credit Card Security tab.
3	Click Edit . Result: You see the <i>Edit Masking Rule screen</i> (See example on page 510).
4	Edit the fields to reflect the changes you need to make. For more information about the fields on this screen, see <i>Credit card security fields</i> (on page 509).

Step	Action
5	Click Save .

Deleting a masking rule

Follow these steps to delete an existing masking rule.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	In the table on the Credit Card Security tab, select the rule to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK .

Splash Screen Configuration

Introduction

The **Splash Screen Config** tab enables you to configure the splash screens which are displayed when a user logs into the Customer Care Portal.

For more information about the Customer Care Portal, see *Customer Care Portal User's Guide*.

Note: You can only configure one message of the day and one security warning message for a service provider. This means that you may not be able to add a splash screen configuration record, or you may not be able to change the message type of an existing message.

Splash Screen Configuration tab

Here is an example **Splash Screen Configuration** tab.

Service Management

Service Provider: Boss Help

Splash Screen Configuration

Message Type	Message Text
Message of the Day	< html><head><style type="text/css"> div.color { background:
Security Warning	< html><head><style type="text/css"> div.color { background:

New Edit Delete Close

Splash Screen configuration fields

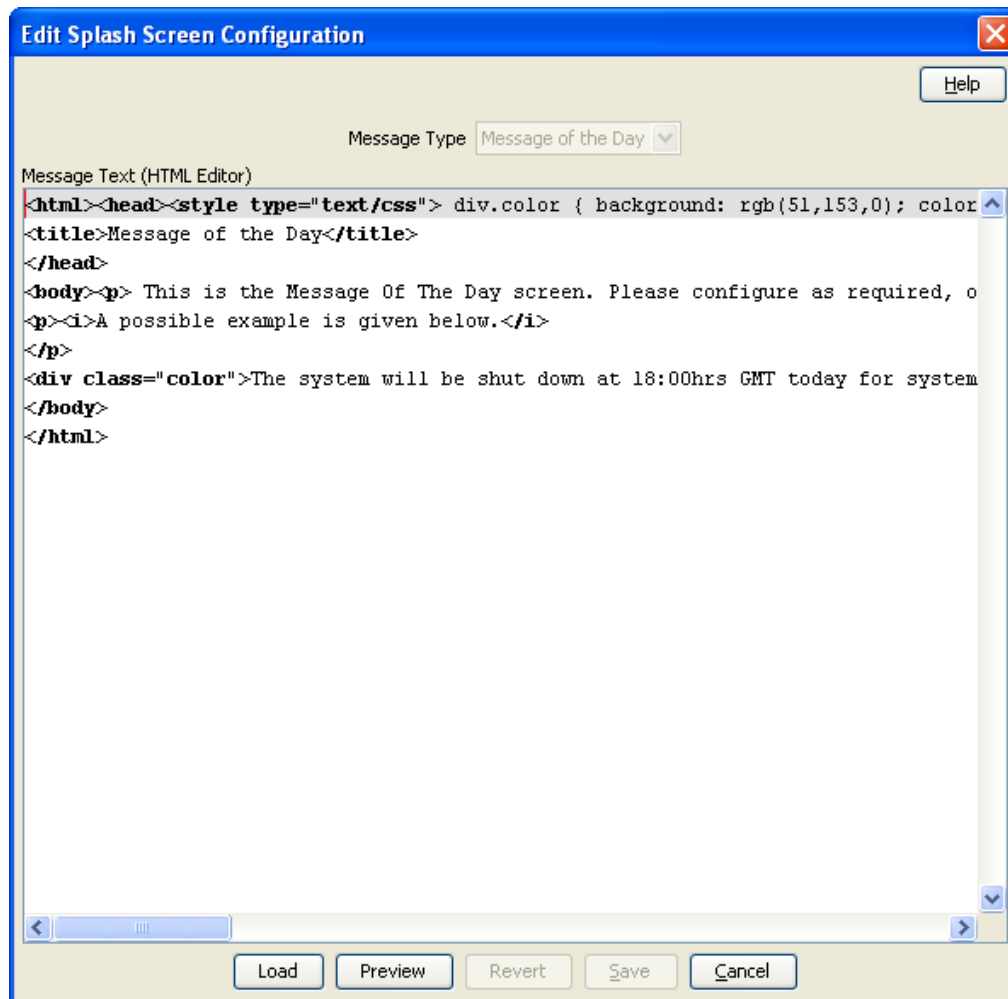
This table describes the function of each field.

Field	Description
Message Type	The type of splash screen message to configure. Note: There are only two options in this field. The system only supports one message of each type. You can only select a value in this field when no splash screen config is currently configured. Otherwise, this field will automatically be populated with the available value.
Message Text (HTML Editor)	The source html markup and text which defines the message which is displayed on the splash screen message when users log into the Customer Care Portal.

For more information about the Customer Care Portal, see *Customer Care Portal User's Guide*.

Splash Screen Configuration screen

Here is an example Splash Screen Configuration screen.



Adding splash screen configuration

Follow these steps to add a new splash screen configuration.

Step	Action
1	Select the Service Provider from the drop down box.
2	On the Splash Screen Configuration tab, click New . Result: You see the <i>New Splash Screen Configuration</i> screen (on page 513).
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Splash Screen configuration fields</i> (on page 512).
4	You can load the message from an external file. For more information, see <i>Importing a message from file</i> (on page 514).
5	You can preview the message. For more information, see <i>Previewing the message</i> (on page 514).
6	Click Save .

Importing a message from file

Follow these steps to import the source html markup and text from an external file.

Note: The Message Text (HTML Editor) does not:

- Support any non-standard HTML 3.2 constructs
- Handle any complex HTML generated by Microsoft Word.

Step	Action
1	On the Splash Screen Configuration screen, click Load . Result: You will see the Open screen.
2	Browse to the file which holds the html to import and select it.
3	Click Open . Result: The html from the file will be displayed in the Message Text (HTML Editor) screen.

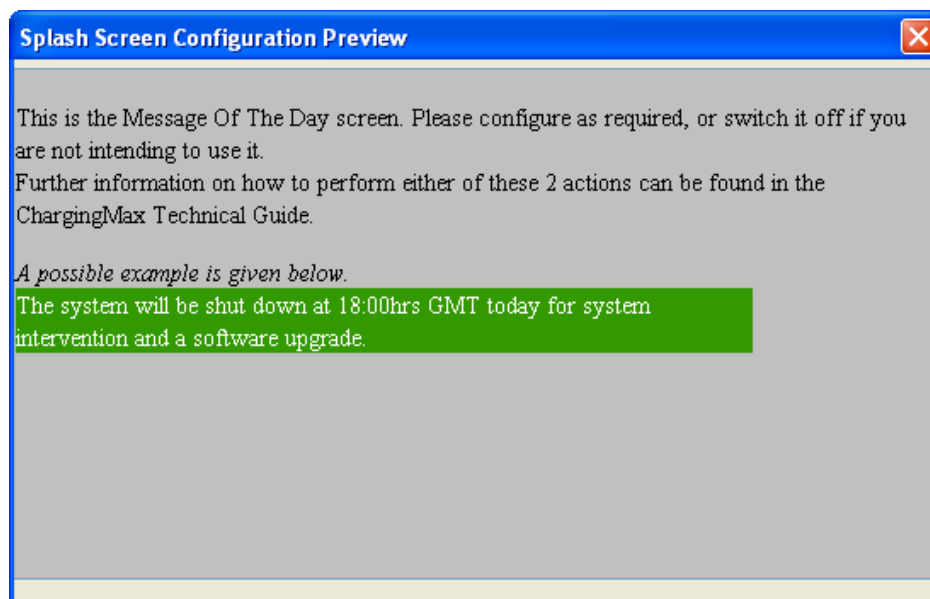
Previewing the message

Follow these steps to view an example of how the message will look to users who are logging into the CCP.

Step	Action
1	To see what the splash screen will look like, click Preview . Result: The <i>Splash Screen Configuration Preview</i> (on page 514) window opens displaying the splash screen. Close the screen when you have finished checking the message.
2	When you have finished viewing the preview, close the window by clicking the x in the top right corner of the screen.

Splash Screen Configuration Preview

Here is an example Splash Screen Configuration Preview window.



Editing splash screen configuration

Follow these steps to edit an existing splash screen configuration record.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	On table on the Splash Screen Configuration tab select the record to edit and click Edit . Result: You see the Edit <i>Splash Screen Configuration</i> screen (on page 513).
3	Edit the fields to reflect the changes you need to make. For more information about the fields in this screen, see <i>Splash Screen configuration fields</i> (on page 512).
4	You can load the new message from an external file. For more information, see <i>Importing a message from file</i> (on page 514).
5	You can preview the message. For more information, see <i>Previewing the message</i> (on page 514).
6	Click Save .

Deleting splash screen configuration

Follow these steps to delete an existing splash screen configuration.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to delete from the table on the Splash Screen Configuration tab.
3	Click Delete . Result: The Delete Confirmation displays.
4	Click OK . Results: The record is deleted from the database.

Channel

Introduction

The **Channel** tab allows you to configure the promotion channels for the Balance Recharge event in Promotion Manager.

Channel tab

Here is an example Channel tab.

The screenshot shows a window titled "Service Management" with a blue title bar. Inside the window, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. Below this is a tabbed interface with the "Channel" tab selected. The "Channel" tab contains a table with three columns: "Channel", "Global", and "Description". The table lists five channels: ATM, Any, MPoS, Other, and Voucher, all of which are marked as "Global". Below the table is a large empty area. At the bottom of the window, there is a horizontal scrollbar and four buttons: "New", "Edit", "Delete", and "Close".

Channel	Global	Description
ATM	Yes	ATM (Global)
Any	Yes	Any (Global)
MPoS	Yes	MPoS (Global)
Other	Yes	Other (Global)
Voucher	Yes	Voucher (Global)

Channel screen

Here is an example Channel screen.

Channel fields

This table describes the function of each field.

Field	Description
Channel	The name of the promotional channel. The following global channels are preconfigured upon installation: • ATM • Any • MPOS • Other • Voucher
Description	A description of the channel
Global	If selected, the channel is global, rather than specific to the selected service provider.

Adding a Channel

Follow these steps to add a new channel.

Step	Action
1	Select the Service Provider from the drop down box.
2	On the Channel tab, click New . Result: You see the New Channel screen.
3	Configure this record by entering data in the fields on this screen. For more information about the fields on this screen, see <i>Channel fields</i> (on page 517).
4	Click Save .

Editing a Channel

Follow these steps to edit an existing channel.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to edit from the table on the Channel tab.
3	Click Edit . Result: You see the Edit Channel screen.
4	Edit the fields to reflect the changes you need to make. For more information about the fields on this screen, see <i>Channel fields</i> (on page 517).
5	Click Save .

Deleting a Channel

Follow these steps to delete an existing channel.

Step	Action
1	Select the service provider from the Service Provider list in the Service Management screen.
2	Select the record to delete from the table on the Channel tab.
3	Click Delete . Result: The Delete Confirmation displays.
4	Click OK . Results: The record is deleted from the database.

Transfer Management

Overview

Introduction

This chapter explains how to configure Credit Transfers.

In this chapter

This chapter contains the following topics.

Transfer Management Module	519
Credit Transfer Definition.....	521
Credit Transfer Response Mapping	524

Transfer Management Module

Introduction

The **Transfer Management** screen lets you configure Credit Transfers. These can be used to convert cash credit into an alternative balance type for a Subscriber's own account or the account of another Subscriber.

The Transfer Management screen contains these tabs:

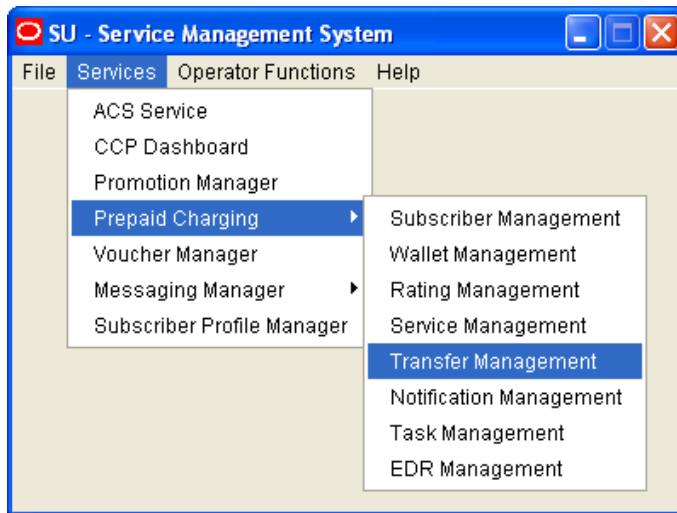
- *Credit Transfer Definition* (on page 521), and
- *Credit Transfer Response Mapping* (on page 524).

Accessing the Transfer Management screen

Follow these steps to open the Transfer Management screen.

Step	Action
1	Select the Services menu from the SMS main screen.

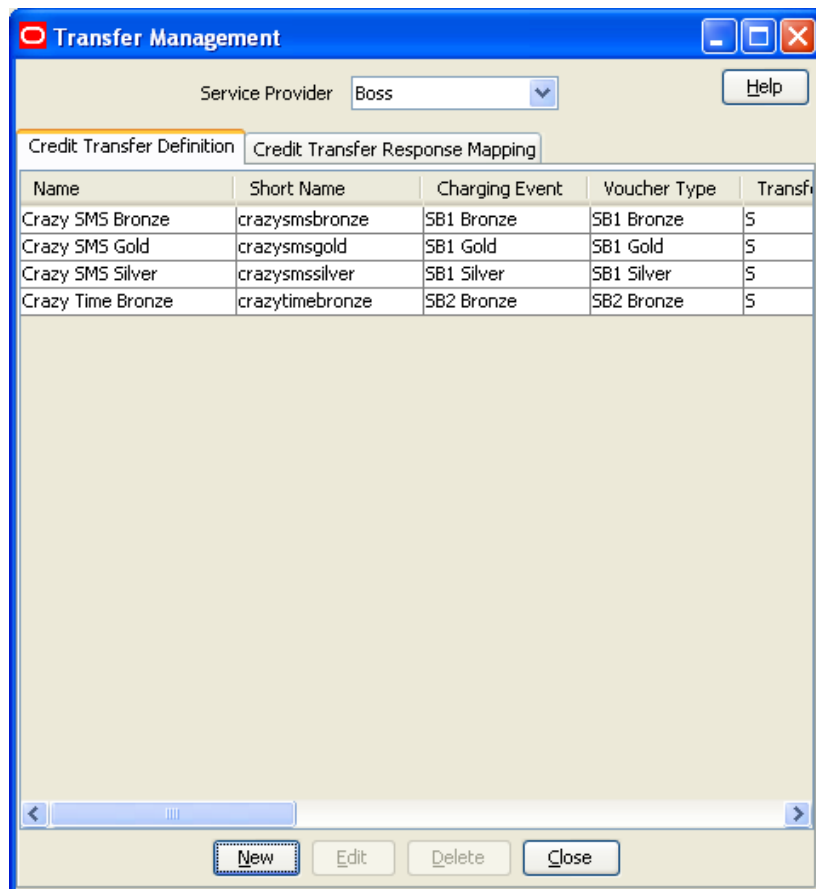
Step	Action



- 2 Select **Prepaid Charging > Transfer Management**.
Result: You see the Transfer Management screen.

Transfer Management screen

Here is an example Transfer Management 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.

Credit Transfer Definition

Introduction

The **Credit Transfer Definition** tab lets you add, modify or delete credit transfer definitions. The Credit Transfer can then be invoked either from the Edit Subscriber screen or through the PI.

Credit Transfer Definition tab

Here is an example **Credit Transfer Definition** tab.

Service Provider:

Credit Transfer Definition

Name	Short Name	Charging Event	Voucher Type	Transfer
Crazy SMS Bronze	crazysmsbronze	SB1 Bronze	SB1 Bronze	S
Crazy SMS Gold	crazysmsgold	SB1 Gold	SB1 Gold	S
Crazy SMS Silver	crazysmssilver	SB1 Silver	SB1 Silver	S
Crazy Time Bronze	crazytimebronze	SB2 Bronze	SB2 Bronze	S

Adding credit transfers

Follow these steps to add a new credit transfer definition.

Step	Action
1	In the Transfer Management screen, select service provider from the Service Provider drop down box.
2	On the Credit Transfer Definition tab, click New .
	Result: You see the New Credit Transfer screen.

Step	Action

The screenshot shows the 'New Credit Transfer' dialog box. It includes fields for Name, Short Name, Charging Class, Charging Event, and Voucher Type. There are radio buttons for Transfer Type (Peer to Peer, Service Bundle). Below these are dropdowns for Transfer Announcement (Announcement Set, Announcement Entry). A section for SMS Notifications includes a checkbox for Send SMS and a table for Success and Failure notifications for Purchaser, Recipient, and Combined. At the bottom, there are 'Available Product Types' and 'Limited Product Types' lists with navigation buttons, and 'Save' and 'Cancel' buttons.

- 3 In the **Name** field, enter a unique name for the credit transfer.

Note: The system automatically generates the value for the short name from the value you enter in the **Name** field.

- 4 From the **Transfer Type** area, select whether the credit transfer definition is for Peer or Service Bundle credit transfers.
For more information about Transfer Types, see *Credit transfer types*.
- 5 From the **Charging Class** drop down list, select the charging class to use when charging the purchaser of the credit transfer.
This drop down list is populated by the Billing Event Sets configured in the Wallet Management screen.
- 6 From the **Charging Event** drop down list, select the charging event to use when charging the purchaser of the credit transfer.
This drop down list is populated by the Billing Events configured in the Wallet Management screen.
- 7 From the **Voucher Type** drop down list, select the voucher type to use for the credit transfer.
For more information about Voucher Types, see *Voucher Management*.
- 8 If PIN authorization is required when performing this credit transfer, select the **PIN Required** check box.
- 9 If the recipient wallet type must be specified when performing this credit transfer, select the **Recipient Wallet Type Required** check box.
- 10 If the purchasing wallet type must be specified when performing this credit transfer, select the **Purchasing Wallet Type Required** check box.
- 11 From the Transfer Announcement area, select the announcement set and announcement entry to associate with the credit transfer. This announcement is played to the calling party when the call passes through the Select Credit Transfer node.
- 12 If you want to send a notification when this credit transfer occurs, perform the following in

Step	Action
	the SMS Notifications area: • Select the Send SMS check box • Select the SMS messages to send from the drop down lists The drop down lists are populated by the notifications configured in the Notifications tab of the ACS Configuration screen. For more information, see <i>ACS User's Guide</i>. Note: When the credit transfer fails, a combined failure notification is also sent to the purchaser when the purchaser and recipient have different MSISDNs.
13	If you want to limit the Product Types for which the credit transfer is available, select the Product Types from the Available Product Types list and move them to the Limited Product Types list. To move a product type from one list to the other, select it in the list and click the appropriate double arrow (>> or <<) button. Tip: If the Limited Product Types list is empty, the credit transfer will be available to all product types.
14	Click Save .

Editing credit transfers

Follow these steps to edit an existing credit transfer definition.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	On the Credit Transfer Definition tab, select the record to edit.
3	Click Edit .

Result: You see the Edit Credit Transfer screen.

Edit Credit Transfer

Name: SRM Bundle 1
Short Name: srmbundle1
Charging Class: SRM Events
Charging Event: SRM SMS
Voucher Type: SRM Bundle 1

☐ PIN Required
☐ Recipient Wallet Type Required
☐ Purchasing Wallet Type Required

Transfer Type
☐ Peer to Peer
☒ Service Bundle

Transfer Announcement
Announcement Set: No Announcement
Announcement Entry:

SMS Notifications
☐ Send SMS

	Success	Failure
Purchaser	-- No SMS --	-- No SMS --
Recipient	-- No SMS --	-- No SMS --
Combined	-- No SMS --	-- No SMS --

Limited Product Types (none limited means any allowed)

Available Product Types		Limited Product Types
	>>	SRM
	<<	

Save Cancel

4 Edit the details as described in Adding credit transfers.

Step	Action
5	Click Save .

Deleting credit transfers

Follow these steps to delete an existing credit transfer definition.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	In the table on the Credit Transfer Definition tab, select the record to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Credit Transfer prompt.
5	Click OK .

Credit Transfer Response Mapping

Introduction

The **Credit Transfer Response Mapping** tab lets you add, modify or delete credit transfer responses. Credit transfer responses are the error messages defined for credit transfers. It also lets you add, modify and delete the display message translations mapped to each response.

Warning: You must specify a display message in each language used and for each response.

Credit Transfer Response Mapping tab

Here is an example **Credit Transfer Response Mapping** tab.

The screenshot shows the 'Transfer Management' window with the 'Credit Transfer Response Mapping' tab selected. The 'Service Provider' is set to 'Boss'. The 'Response' dropdown is set to 'Not Acceptable (INAP 1)'. Below the dropdown are buttons for 'New Response', 'Edit Response', and 'Delete Response'. A table below shows the mapping for 'English' with the message 'Credit Transfer is Not Supported' and 'Change Use' set to 'SMF'. At the bottom are buttons for 'New Message', 'Edit Message', 'Delete Message', and 'Close'.

Language	Display Message	Change Use
English	Credit Transfer is Not Supported	SMF

Adding a credit transfer response

Follow these steps to add a new credit transfer response.

Tip: After you add a credit transfer response, you can add the message translations for it.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	On the Credit Transfer Response Mapping tab, click New Response . Result: You see the New Credit Transfer Response screen.

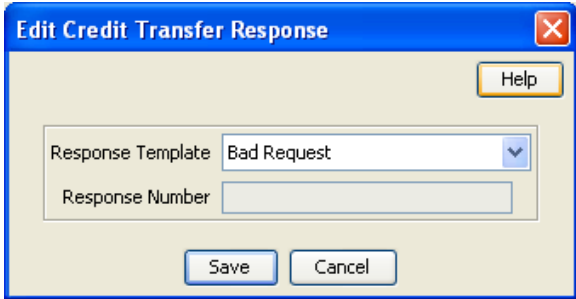
The screenshot shows the 'New Credit Transfer Response' dialog box. It has a 'Response Template' dropdown set to 'Bad Request' and an empty 'Response Number' text box. At the bottom are 'Save' and 'Cancel' buttons. A 'Help' button is in the top right corner.

3	From the drop down list, select the Response Template for which to add message translation mappings.

Step	Action
4	If the Response Number field is available, type in the response number. Notes: - You can add response numbers only to DAP templates that contain a variable. To create a variable in the DAP template, add the "%d" string to the template. - You will only be able to use DAP templates if you have DAP installed. For more information about: - Notifications, see <i>ACS User's Guide</i> - DAP templates, see <i>DAP User's Guide</i>
5	Click Save .

Editing a credit transfer response

Follow these steps to edit an existing credit transfer response.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	From the Response drop down list on the Credit Transfer Response Mapping tab, select the record to edit.
3	Click Edit .
	Result: You see the Edit Credit Transfer Response screen.
	
4	Edit the details as described in <i>Adding a credit transfer response</i> (on page 525).
5	Click Save .

Deleting a credit transfer response

Follow these steps to delete a credit transfer response and its related message mappings.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	On the Credit Transfer Response Mapping tab, select the Response to delete from the drop down list.
3	Click Delete Response .
	Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database.
	Result: The record is deleted and you see the Credit Transfer Responses prompt.
5	Click OK .

Adding credit transfer response mappings

Follow these steps to add a new message mapping to a credit transfer response.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	From the Response drop down list on the Credit Transfer Response Mapping tab, select the response for which you want to create a new message mapping.
3	Click New Message . Result: You see the New Credit Transfer Error Message screen.

4	From the drop down list, select the Language for the Display Message. For more information about configuring languages, see <i>ACS User's Guide</i> .
5	In the Display Message field, type in the message that maps to the selected response in the selected language.
6	Click Save .

Editing credit transfer response mappings

Follow these steps to edit an existing message mapping to credit transfer response.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	From the Response drop down list on the Credit Transfer Response Mapping tab, select the response which has the message mapping to edit.
3	Click Edit Message . Result: You see the Edit Credit Transfer Error Message screen.

4	If required, select a different Language for the Display Message from the drop down list.
5	If required, edit the Display Message using the selected language.
6	Click Save .

Deleting credit transfer response mappings

Follow these steps to delete a credit transfer response mapping

Warning: Caution should be used when deleting credit transfer response mappings. If all the mappings for a specific response are deleted, then the default smsTrigDaemon response will be output. The default messages may be hard for customers to understand.

For more information about the smsTrigDaemon, see *SMS Technical Guide*.

Step	Action
1	In the Transfer Management screen, select the Service Provider from the drop down box.
2	From the Response drop down list on the Credit Transfer Response Mapping tab, select the Response which has the message mapping to delete.
3	On the table, select the Display Message to delete and click Delete Message . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: The record is deleted and you see the Credit Transfer Response Mapping prompt.
5	Click OK .

Notifications Management

Overview

Introduction

This chapter explains how to configure Profile Notifications.

In this chapter

This chapter contains the following topics.

Notifications Introduction	529
Notification Management Module	531
Profile Notifications	532

Notifications Introduction

Profile Notifications

Profile notifications are SMSs which are sent to subscribers when their profile fields are changed. They can be used to inform subscribers about events which have happened to their accounts.

Profile notifications are different from real-time wallet notifications, control plan feature node notifications or periodic charge notifications, though all these notifications use SMS notifications and DAP templates.

Notifications can be delivered through the ACS Notifications subsystem, or the Data Access Pack notifications subsystem. To use the DAP notifications, you must have DAP installed.

For more information about how profile notifications are delivered, see *CCS Technical Guide*.

CCS component

Profile notifications are part of the Prepaid Charging solution and build on functionality provided by CCS. To fully understand how notifications work, you must also refer to *CCS User's Guide*.

Preconditions

Preconditions are used to determine when an update to the Subscriber profile will trigger a Profile Notification message. Each precondition is evaluated based on a selected profile field and the Precondition Type configured for it.

You can specify more than one precondition per notification message. If you specify more than one precondition, then these must all be joined together, either using an 'And' or an 'Or' operator. Use:

- And to generate the notification only if all the preconditions are met.
- Or to generate the notification if any of the preconditions are met.

Tip: If you do not specify any preconditions for the notification message, then it will be triggered unconditionally.

This table describes the available Precondition Types.

Precondition Type	Availability	Description
Field Created	All field types	The precondition is met when the selected profile field is not present in the old subscriber profile but is present in the new subscriber profile.
Field Modified	All field types	The precondition is met when the old and new values for the selected profile field are different.
Field Removed	All field types	The precondition is met when the selected profile field is present in the old subscriber profile but is no longer present in the new subscriber profile.
Check Old Value or Check New Value	Only available for integer, byte, Boolean and date field types	Compares the old or new value for the selected profile field with a specified value. See <i>Checking profile field values</i> (on page 530) for details.

Checking profile field values

The Check Old Value and Check New Value precondition types provide the facility to trigger Profile Notifications based on a precondition expression that compares the selected Profile Field with a specified value.

Precondition expressions have one of the following formats:

- 1 <Profile Field Value> <Compare Operator> <Compare Value 1>
- 2 (<Profile Field Value> '>' <Compare Value 1>) And (<Profile Field Value> '<' <Compare Value 2>)

Tips:

- If the selected Profile Field is a Boolean field, then its value may only be compared with the Boolean values 'True' or 'False'. The precondition is met if the Profile Field value matches the specified Boolean value.
- For format 2, the precondition is met if the profile field value is between 'Compare Value 1' and 'Compare Value 2'.

This table describes the parameters used in precondition expressions.

Parameter	Description
Profile Field Value	The value for the selected Profile Field from either the old or the new subscriber profile, depending on the Precondition Type.
Compare Operator	Determines how the comparison is made. If you select: = the expression evaluates to true if the value from the Profile Field is equal to the specified Compare Value != the expression evaluates to true if the value from the Profile Field is not equal to the specified Compare Value < the expression evaluates to true if the value from the Profile Field is less than the specified Compare Value > the expression evaluates to true if the value from the Profile Field is greater than the specified Compare Value Note: If you select Not Used, no comparison will be made.
Compare Value 1	The first value against which the Profile Field Value will be compared.

Parameter	Description
Compare Value 2	The second value against which the Profile Field Value will be compared. This must be greater than Compare Value 1. Note: Compare Value 2 may only be set if you selected the '>' Compare Operator for Compare Value 1.

User access

User access to the Notification Management functionality is managed through the User Templates defined in the SMS User Management screen. For more information on creating and maintaining user templates, refer to the *SMS User's Guide*.

Notification Management Module

Introduction

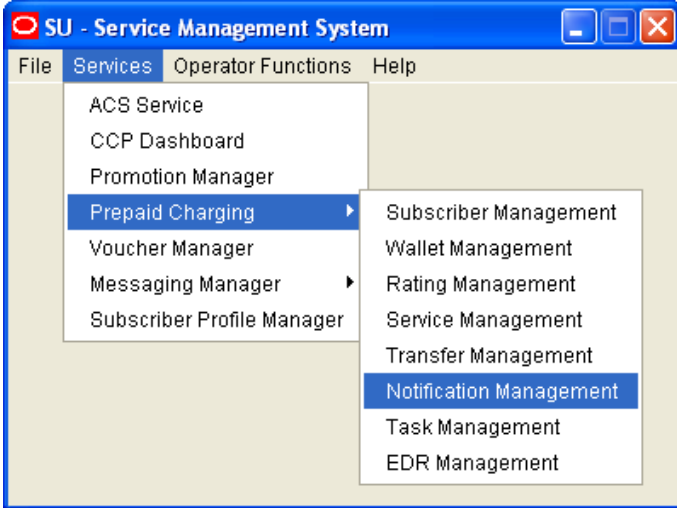
The **Notification Management** screen lets you configure Profile Notifications.

The Notification Management screen contains this tab:

- *Profile Notifications* (on page 532).

Accessing the Notification Management screen

Follow these steps to open the Notification Management screen.

Step	Action
1	Select the Services menu from the SMS main screen.
	
2	Select Prepaid Charging > Notification Management . Result: You see the Notification Management screen.

Notification Management screen

Here is an example Notification Management screen.

Notification Management

Service Provider: Boss Help

Profile Notifications

Name	DAP Operation	Suppress DAP	Precondition Join
Date 1 Notification			And

New Edit Delete Close

Profile Notifications

Introduction

The **Profile Notifications** tab lets you configure Profile Notifications that are triggered by changes to subscriber profiles.

Each profile notification is configured by specifying:

- whether a DAP and/or a notification is sent
- the Preconditions used to qualify when the notification will be triggered
- the DAP Template used to generate the DAP notification message, and
- the Profile Notification Fields that will be substituted for the parameters defined in the DAP Template.

For more information about configuring Notifications, see *ACS User's Guide*.

For more information about configuring DAP Templates, see *DAP User's Guide*.

Profile Notifications tab

Here is an example **Profile Notifications** tab.

The screenshot shows a window titled "Notification Management" with a blue header bar. Below the header, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. The "Profile Notifications" tab is selected, displaying a table with the following columns: Name, DAP Operation, Suppress DAP, and Precondition Join. The table contains one row: "Date 1 Notification", an empty cell, an empty cell, and "And". At the bottom of the window, there are four buttons: "New", "Edit", "Delete", and "Close".

Name	DAP Operation	Suppress DAP	Precondition Join
Date 1 Notification			And

Adding profile notifications

Follow these steps to add a new Profile Notification. This can trigger the relevant type of notification from the system.

Step	Action
1	In the Notification Management screen, select the Service Provider from the drop down box.
2	On the Profile Notifications tab, click New . Result: You see the New Profile Notification screen.

Step	Action

- 3 In the **Name** field, type the Profile Notification name.
- 4 Select the **DAP Operation** you want to use to construct the DAP notification message.
Tip: If you selected **No DAP** then a DAP notification will not be triggered and you must select an SMS Template for the notification instead.
- 5 From the **Suppress DAP Notification** drop down list, select **Not Used** if you do not want to suppress DAP notifications. To suppress DAP notifications, select the **Suppress Notification** field. All notifications for a profile update that include this field with a value set to True will be suppressed.
Note: The suppress field will be reset to false when a notification has been suppressed.
- 6 Select the **SMS Template** you want to use to construct the notification message.
Tip: If you selected **No SMS** then a notification will not be triggered and you must ensure a DAP Template is selected for the notification instead.
- 7 From the **Suppress Notification** drop down list, select **Not Used** if you do not want to suppress notifications. To suppress notifications, select the **Suppress Notification** field. All notifications for a profile update that include this field with a value set to True will be suppressed.
Note: The suppress field will be reset to false when a notification has been suppressed.
- 8 In the **Precondition Join** field select the operator to use to join the preconditions listed in the Preconditions table. Choose:

Step	Action
	• And to trigger a notification only when all the preconditions evaluate to true. • Or to trigger a notification if any of the preconditions evaluates to true.
9	In the Preconditions panel, specify the preconditions that will trigger the profile notification. For details, see <i>Adding profile preconditions</i> (on page 536).
10	In the Fields panel, configure a profile notification field for each parameter defined in the DAP Template. For details, see <i>Adding profile notification fields</i> (on page 538).
	Tip: It is recommended that you use the fields evaluated by the preconditions.
11	Click Save .

Editing profile notifications

Follow these steps to edit an existing Profile Notification.

Step	Action
1	In the Notification Management screen, select the Service Provider from the drop down box.
2	On the Profile Notifications tab, select the Profile Notification to edit.
3	Click Edit .
	Result: You see the Edit Profile Notification screen.

Edit Profile Notification

Help

Name: DAP Operation:

Suppress DAP Notification: SMS Template:

Suppress Notification: Precondition Join:

Preconditions

Field	Type	Compare Operator	Compare Value 1	Compare Value 2	Change User
Account Code Lis...	Field Modified				SU

Add Edit Delete

Fields

Field Name	Source Profile	DAP Parameter	Use Subscriber ID	Change Date	Chan...	ID

Add Edit Delete

Save Cancel

4	Edit the profile notification configuration as described in <i>Adding profile notifications</i> .

Step	Action
5	Click Save .

Deleting profile notifications

Follow these steps to delete an existing Profile Notification.

Step	Action
1	In the Notification Management screen, select the Service Provider from the drop down box.
2	On the Profile Notifications tab, select the Profile Notification to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK to delete the record from the database. Result: You see the Profile Notifications message box.
5	Click OK .

Adding profile preconditions

Follow these steps to add a precondition to a profile notification.

Step	Action
1	On the Preconditions panel in the New Profile Notification screen, click Add . Result: You see the Add Profile Precondition Field screen.

Add Profile Precondition Field

Help

Profile Field: BS warning threshold (INTEGER) ▼

Precondition Type: Check Old Value ▼

Compare Operator: = ▼

Compare Value 1: 4

(and >) Compare Value 2:

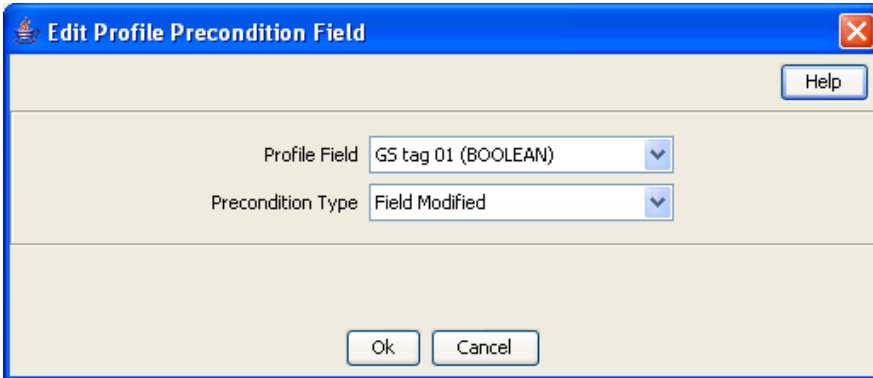
Ok Cancel

2	Select the Profile Field to evaluate in the precondition.

Step	Action
3	Select the Precondition Type from the drop down list. For more information on precondition types, see <i>Preconditions</i> (on page 529). Note: The list of available precondition types depends on the data type of the selected profile field.
4	If you selected either Check Old Value or Check New Value , follow steps 5 to 9. Otherwise go to step 9.
5	If the selected Profile Field is a BOOLEAN field, select True or False from the drop down list and go to step 9. Otherwise go to step 6. Note: The precondition is met if the Profile Field value and the selected BOOLEAN value are the same.
6	Select the Compare Operator from the drop down list. Note: If you select Not Used, no comparison will be made.
7	In the Compare Value 1 field, enter the value you want to compare with the value from the subscriber profile field. In the case of DATE type profile fields, select the date you want from the drop down lists.
8	If you selected the '>' Compare Operator, then you may enter a second compare value in the Compare Value 2 field if required. To enter a date in the Compare Value 2 field, select the Use Date check box. Note: The precondition is met if the profile field value is greater than Compare Value 1 and less than Compare Value 2.
9	Click Ok .

Editing profile preconditions

Follow these steps to edit an existing Precondition for a Profile Notification.

Step	Action
1	In the Preconditions panel in the New/Edit Profile Notification screen, select the row for the Precondition you want.
2	Click Edit . Result: You see the Edit Profile Precondition Field screen.
	
3	Edit the precondition details as described in <i>Adding profile preconditions</i> (on page 536).
4	Click Ok .

Deleting profile preconditions

Follow these steps to delete an existing Precondition for a Profile Notification.

Step	Action
1	In the Preconditions panel on the New/Edit Profile Notification screen, select the row for the Precondition to delete.
2	Click Delete .
3	Click Save .
	Result: The record is deleted from the database.

Tip: The record is not deleted from the database until you click **Save**. Prior to this point you can reverse any changes by clicking **Cancel**.

Adding profile notification fields

Follow these steps to add a field to a profile notification.

Step	Action
1	On the Fields panel in the New Profile Notification screen, click Add .
	Result: You see the Add Profile Notification Field screen.

- 2 If you need the MSISDN (subscriber ID) to be made available to DAP for the XML request, select the **Use Subscriber ID** check box.
 - 3 Select the **Profile Field** to use in the notification message.
 - 4 Select the **DAP Parameter** from the drop down list.
- Warning:** You must configure a profile notification field for all the DAP parameters defined in the DAP template. Once a DAP parameter has been used it is removed from the list of available parameters.
- 5 Select the **Source Profile**. Select:
 - Old - to substitute the Profile Field value from the old subscriber profile for the selected DAP parameter.
 - New - to substitute the Profile Field value from the new subscriber profile for the selected DAP parameter.
 - 6 Click **Ok**.

Editing profile notification fields

Follow these steps to edit the configuration for a Profile Notification field.

Step	Action
1	On the Fields panel in the New/Edit Profile Notification screen, select the row for the Profile Notification Field you want to edit.
2	Click Edit . Result: You see the Edit Profile Notification Field screen.

3	Edit the details as described in <i>Adding profile notification fields</i> (on page 538).
4	Click Ok .

Deleting profile notification fields

Follow these steps to delete an existing Field for a Profile Notification.

Step	Action
1	In the Fields panel on the New/Edit Profile Notification screen, select the row for the field to delete.
2	Click Delete .
3	Click Save .

Result: The record is deleted from the database.

Tip: The record is not deleted from the database until you click **Save**. Prior to this point you can reverse any changes by clicking **Cancel**.

Task Management

Overview

Introduction

This chapter explains how to configure BPL tasks.

In this chapter

This chapter contains the following topics.

Task Management Module	541
Business Process Logic	543
BPL Response Mapping	549
Response Mappings and Control Plans	552

Task Management Module

Introduction

The **Task Management** screen lets you configure Business Process Logic tasks. BPL tasks can be used to execute tasks specified in control plans.

The Task Management screen contains these tabs:

- *Business Process Logic* (on page 543), and
- *BPL Response Mapping* (on page 549).

Configuring BPL tasks overview

CCS enables you to configure complex actions which can be triggered from the Edit Subscriber screen using the Business Process Logic (BPL) task buttons. A BPL task executes a set of pre-configured actions which are defined in an associated control plan.

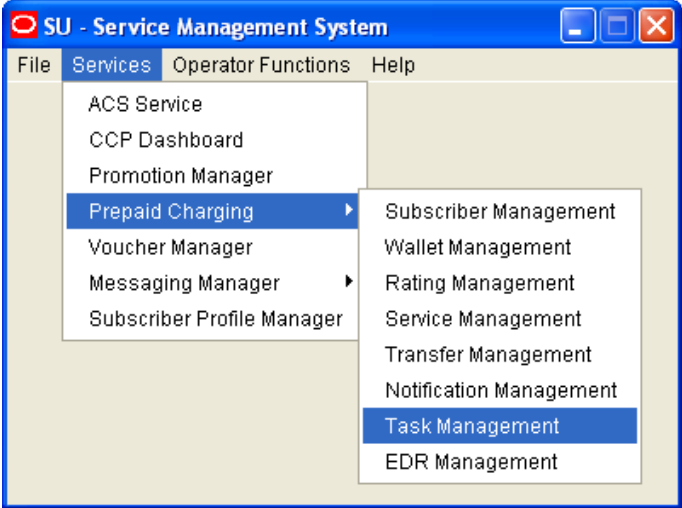
To configure a BPL task, complete following steps:

Step	Action
1	Configure the background building blocks required to set up the BPL's control plan, for example: • Profile fields • Notifications • Named events • Balance types
2	Using the CPE, build the control plan the BPL task will run. Note, the control plan defines the BPL logic. Feature nodes which require interaction cannot be used in BPL task control plans. For more information about the CPE, see <i>CPE User's Guide</i> .
3	On the <i>Business Process Logic</i> (on page 543) tab, define the BPL task (including

Step	Action
	mapping the control plan to the BPL).
4	On the <i>BPL Response Mapping</i> (on page 549) tab, configure the BPL Responses that translate the success and failure responses returned by the control plan into messages for the user who triggers the BPL task.
5	Using the Subscriber Profile Manager, configure the BPL task to appear on the Edit Subscriber screen from where it can be triggered. For more information about the Subscriber Profile Manager, see <i>SPM User's Guide</i> .

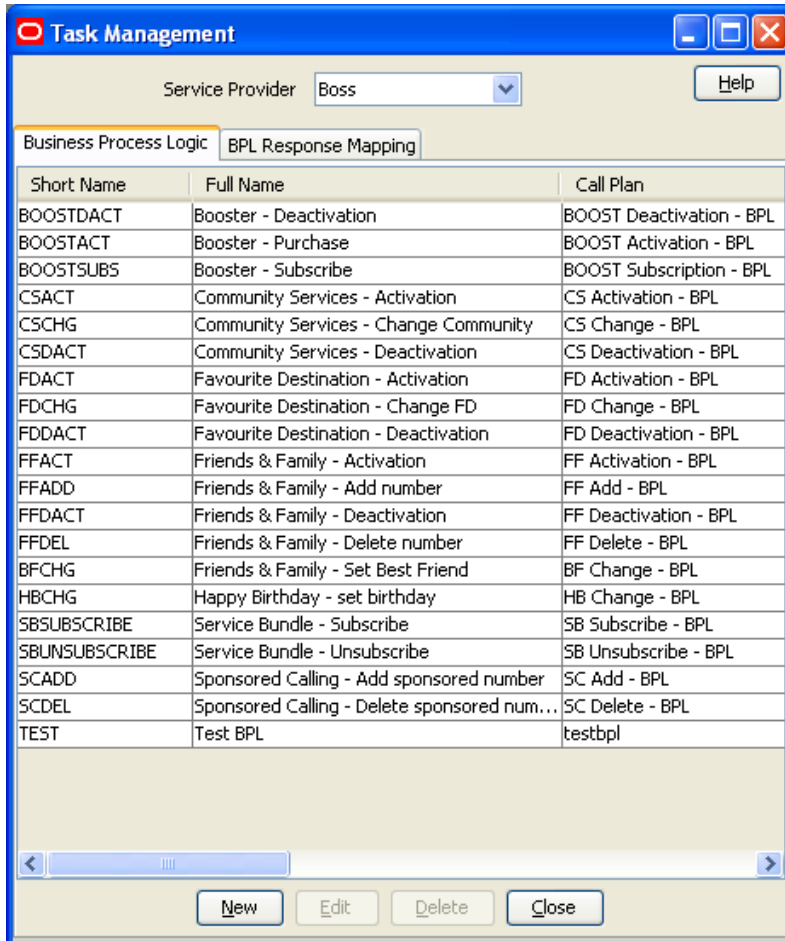
Accessing the Task Management screen

Follow these steps to open the Task Management screen.

Step	Action
1	Select the Services menu from the SMS main screen. 
2	Select Prepaid Charging > Task Management . Result: You see the Task Management screen.

Task Management screen

Here is an example Task Management screen.



The screenshot shows a window titled "Task Management" with a blue header bar. Below the header, there is a "Service Provider" dropdown menu set to "Boss" and a "Help" button. The main area has two tabs: "Business Process Logic" (selected) and "BPL Response Mapping". Below the tabs is a table with three columns: "Short Name", "Full Name", and "Call Plan". The table contains 20 rows of task entries. At the bottom of the window, there is a search bar and four buttons: "New", "Edit", "Delete", and "Close".

Short Name	Full Name	Call Plan
BOOSTDACT	Booster - Deactivation	BOOST Deactivation - BPL
BOOSTACT	Booster - Purchase	BOOST Activation - BPL
BOOSTSUBS	Booster - Subscribe	BOOST Subscription - BPL
CSACT	Community Services - Activation	CS Activation - BPL
CSCHG	Community Services - Change Community	CS Change - BPL
CSDACT	Community Services - Deactivation	CS Deactivation - BPL
FDACT	Favourite Destination - Activation	FD Activation - BPL
FDCHG	Favourite Destination - Change FD	FD Change - BPL
FDDACT	Favourite Destination - Deactivation	FD Deactivation - BPL
FFACT	Friends & Family - Activation	FF Activation - BPL
FFADD	Friends & Family - Add number	FF Add - BPL
FFDACT	Friends & Family - Deactivation	FF Deactivation - BPL
FFDEL	Friends & Family - Delete number	FF Delete - BPL
BFCHG	Friends & Family - Set Best Friend	BF Change - BPL
HBCHG	Happy Birthday - set birthday	HB Change - BPL
SBSUBSCRIBE	Service Bundle - Subscribe	SB Subscribe - BPL
SBUNSUBSCRIBE	Service Bundle - Unsubscribe	SB Unsubscribe - BPL
SCADD	Sponsored Calling - Add sponsored number	SC Add - BPL
SCDEL	Sponsored Calling - Delete sponsored num...	SC Delete - BPL
TEST	Test BPL	testbpl

Business Process Logic

Introduction

The **Business Process Logic** tab lets you configure the business processes that may be executed either through the Edit Subscriber screens or through the PI.

Business Process Logic tab

Here is an example Business Process Logic tab.



Business Process Logic screen

Here is an example Business Process Logic screen.

Adding business process logic tasks

Follow these steps to add a new business process logic (BPL) task.

Step	Action
1	In the Task Management screen, select the Service Provider from the drop down box.
2	On the Business Process Logic tab, click New . Result: You see the New <i>Business Process Logic</i> screen (See example on page 545).
3	In the Short Name field, enter a unique name for the BPL task. This can be up to 16 characters long. The short name is used to identify the BPL task in BPL execution requests to the smsTrigDaemon. Note: It is also used by the PI when initiating a BPL request using the CCSBPL=EXE command.

Step	Action
4	In the Full Name field, enter a unique full name for the BPL task. It can be up to 64 characters long. The full name appears in the Edit Subscriber screen on the label of the button associated with the BPL task.
5	From the Control Plan drop down list, select the control plan to be executed by the BPL task. The 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.
6	In the Description field, enter a description for the BPL task.
7	In the Service Handle field, enter the BPL service application name on the SLC. Warning: This field is required. It should be set to 'CCS_BPL' unless you are using a non-default configuration. In this case additional configuration of xmlTrigDaemon, SLEE and slee_acs is required. Refer to <i>XML TCAP Interface Technical Guide</i> for details.
8	In the PI Security Level field, enter the PI security level number. Valid values are in the range 0 to 99. Note: The PI security level is used to limit which users may execute the BPL task through the PI. Users who have a PI security level that is lower than the PI security level for the BPL task will not be able to execute it. For more information about the PI, see <i>PI User's Guide</i>.
9	Select the Wallet Selection check box if you want to be able to select the wallet the BPL task applies to, when the BPL task is executed through the screens.
10	Add any BPL parameters that may be required during execution of the BPL task. You can add up to six parameters. These parameters are filled out by the user on the Confirm Execute BPL prompt when the BPL is executed. For details see Adding a BPL parameter. Warning: BPLparameters must correspond to the extension parameters (4 to 9) defined in the acs.conf configuration file. For more information about the acs.conf, see <i>ACS Technical Guide</i>.
11	Click Save .

Editing business process logic tasks

Follow these steps to edit an existing business process logic task.

Step	Action
1	In the Task Management screen, select the Service Provider from the drop down box.
2	In the table on the Business Process Logic tab, select the task to edit.
3	Click Edit .
	Result: You see the Edit <i>Business Process Logic screen</i> (See example on page 545).
4	Edit the details as described in <i>Adding business process logic tasks</i> (on page 545).
5	Click Save .

Deleting business process logic tasks

Follow these steps to delete an existing business process logic task.

Step	Action
1	In the Task Management screen, select the Service Provider from the drop down box.
2	In the table on the Business Process Logic tab, select the task to delete.
3	Click Delete . Result: You see the Delete Confirmation prompt.
4	Click OK . Result: The BPL task and any associated BPL parameters are deleted from the database, and you see the Delete Successful prompt.
5	Click OK .

Adding BPL parameters

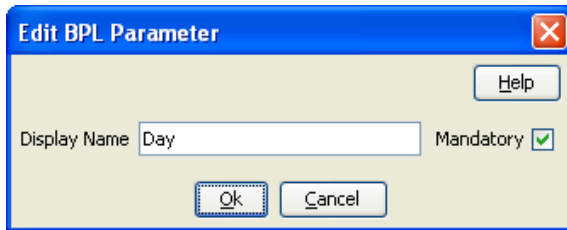
Follow these steps to add a new parameter to a BPL task.

Warning: This parameter must correspond to an INAP extension parameter configured in **acs.conf**. For more information about this configuration, see *ACS Technical Guide*.

Step	Action
1	In the New or the Edit Business Process Logic screen, click New . Result: You see the New <i>BPL Parameter</i> screen (See example on page 548).
2	In the Display Name field enter the parameter's name. This will be displayed next to a data entry box on the Confirm Execute BPL prompt when you execute the BPL task. For more information about executing BPL tasks, see <i>CCS User's Guide</i> .
3	If a value must be supplied for this parameter in order to execute this BPL task, select the Mandatory check box.
4	Click Ok . Result: The new parameter appears in the BPL Parameters table.
5	To change the order in which the parameter appears in the table, select it in the table and then: - Click Up to move the parameter up one row. - Click Down to move it down one row. Tip: The order in which the parameters appear in the table determines which INAP extension parameter they correspond to. The parameter in the first row corresponds to extension parameter 4. The parameter in the next row corresponds to extension parameter 5, and so on.
6	Click Save . Result: The changes are saved to the database.

BPL Parameter screen

Here is an example BPL Parameter screen.



Editing a BPL parameter

Follow these steps to edit an existing BPL parameter.

Step	Action
1	In the New or the Edit Business Process Logic screen, select the record to edit in the BPL Parameters table.
2	Click Edit . Result: You see the <i>Edit BPL Parameter screen</i> (See example on page 548).
3	In the Display Name field enter a new name for the parameter, if required.
4	Select or deselect the Mandatory check box as required. Warning: You must supply a value for this parameter at run time if this field is selected.
5	Click Ok .
6	To change the order in which the parameter appears in the table, use the Up and Down buttons: - Click Up to move the parameter up one row. - Click Down to move it down one row. Tip: The order in which the parameters appear in the table determines which INAP extension parameter they correspond to. The parameter in the first row corresponds to extension parameter 4. The parameter in the next row corresponds to extension parameter 5, and so on.
7	Click Save . Result: The changes are saved to the database.

Deleting BPL parameters

Follow these steps to delete an existing BPL parameter.

Step	Action
1	In the BPL Parameters table on the New or the Edit Business Process Logic screen, select the BPL parameter to delete.
2	Click Delete .
3	Click Save . Result: The record is deleted from the database. Tip: The record is not deleted from the database until you click Save . Prior to this point you can reverse any changes by clicking Cancel .

BPL Response Mapping

Introduction

The **BPL Response Mapping** tab lets you map user friendly messages and their translations to the responses received from the SLC when a BPL task is executed.

BPL Response Mapping tab

Here is an example BPL Response Mapping tab.

Task Management

Service Provider: Boss

Help

BPL Response Mapping

BPL: Booster - Deactivation

Response: Found (100)

New Response Edit Response Delete Response

Language	Display Message	Change U
English	Service deactivated	SMF
French	Service deactivated	SMF

New Message Edit Message Delete Message Close

BPL Response screen

Here is an example BPL Response screen.

Edit BPL Response

Help

Response Template: Found (%d)

Response Number: 100

Save Cancel

Adding BPL responses

Follow these steps to add a new BPL response.

Step	Action
1	In the Task Management screen, select the Service Provider from the drop down box.
2	Select the BPL Response Mapping tab.
3	From the BPL drop down box, select the BPL task for which to configure a new response, and click New Response . Result: You see the <i>New BPL Response screen</i> (See example on page 549).
4	From the Response Template drop down list, select the BPL response to configure.
5	If the Response Number field is available, enter the response number. Tip: This field is only available where the response template contains the '%d' variable. The '%d' is replaced by the response number when you save the response.
6	Click Save .

Editing BPL responses

Follow these steps to edit an existing BPL response.

Step	Action
1	In the Task Management screen, select the service provider from the Service Provider list.
2	Select the BPL Response Mapping tab.
3	From the BPL list, select the BPL task for which the response is configured.
4	From the Response list, select the response to edit and click Edit Response . Result: You see the <i>Edit BPL Response screen</i> (See example on page 549).
5	If required, select a different Response Template .
6	If required, specify a different Response Number .
7	Click Save .

Deleting BPL responses

Follow these steps to delete an existing BPL response and any related message mappings.

Step	Action
1	In the Task Management screen, select the Service Provider from the drop down box.
2	Select the BPL Response Mapping tab.
3	From the BPL drop down list, select the BPL task which has the error to delete. From the Response drop down list, select the response you want to delete.
4	Click Delete Response . Result: You see the Delete Confirmation prompt.
5	Click OK . Result: You see the BPL Responses delete success prompt.
6	Click OK . Result: The BPL response and any related message translations are deleted from the database.

Adding translations for BPL responses

Follow these steps to add a new translation for a BPL response.

Step	Action
1	On the BPL Response Mapping tab in the Task Management screen, select the BPL from the drop down box.
2	From the Response drop down list, select the response for which to map a new message translation.
3	Click New Message . Result: You see the <i>New BPL Response Message screen</i> (See example on page 551).
4	From the Language drop down box, select the language for the response message. Tip: The language to use is configured in the ACS Tools screen, Language tab. During execution, the configured screens runtime language will determine which message is shown. If a language is not specifically configured then the default screens language is used. This will be either the default language for the service provider, or the global default language (as configured in the ACS Tools screen). For more information about setting languages, see <i>ACS User's Guide</i> .
5	In the Display Message field, enter the message text.
6	Click Save .

BPL Response Message screen

Here is an example BPL Response Message screen.

Editing translations for BPL responses

Follow these steps to edit a translation for a BPL response message.

Step	Action
1	On the BPL Response Mapping tab in the Task Management screen, select the BPL from the drop down box.
2	From the Response drop down list, select the response.
3	In the table, select the message translation to edit and click Edit Message . Result: You see the <i>Edit BPL Response Message screen</i> (See example on page 551).
4	From the Language drop down box, select a different language if required.
5	Edit the Display Message as required.
6	Click Save .

Deleting translations for BPL responses

Follow these steps to delete message mapping for a BPL response.

Step	Action
1	On the BPL Response Mapping tab in the Task Management screen, select the BPL from the drop down box.
2	From the drop down list, select the Response you want.
3	Select the row in the table for the message mapping to delete and click Delete Message . Result: You see the Delete Confirmation prompt.
4	Click OK . Result: You see the BPL Response Mapping prompt.
5	Click OK . Result: The record is deleted from the database.

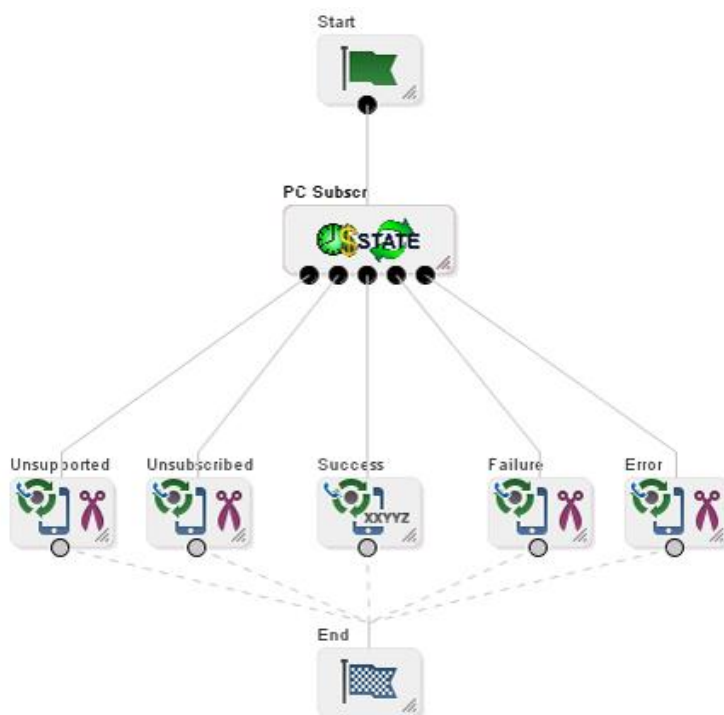
Response Mappings and Control Plans

Introduction

This section shows an example BPL control plan for a periodic charge subscription. It explains how to correctly set up the nodes in the control plan in conjunction with the response mappings configured in the Task Management screen.

Example Control Plan

Here is an example BPL control plan for a periodic charge subscription.



Success response mapping

In the example, the Success branch of the Periodic Charge Subscription node connects to a Terminate Unchanged feature node. When the control plan executes successfully a '200 OK' message will be returned to the triggering daemon. This is reported as a simple Success response for which no mapping is required.

Note: An alternative is to use a Found response to convey a particular message for success scenarios. This is triggered by the Unconditional Termination feature node entering your Connect To number (Termination Number), which will be used in the Found mapping.

Disconnect call response mappings

In the example, a Disconnect Call node is connected to each of the other exits from the Periodic Charge Subscription node:

- Not supported
- Unsubscribed
- Failure
- Error

When a Disconnect node exit is taken, this results in a '406 Not Acceptable' response with the configured Cause value. This means that the configured Cause value must be mapped to a Not Acceptable response mapping.

Note: You should not set the Cause value to 31 as this has a special meaning. It is interpreted as '404 Not Found' by the triggering daemon, which means that either the subscriber or the control plan has not been found. If you use this code then you will not be able to determine whether the error means one of the following:

- There has been an unexpected control plan error.
- The subscriber has not been found.

EDR Management

Overview

Introduction

This chapter explains how to configure the components used to manage EDRs.

Warning: The EDR Management screens are only available if the Subscriber Management module has been installed on your system and if you are using the VWS domain. If you are using a third party domain, then you will not be able to access these screens.

In this chapter

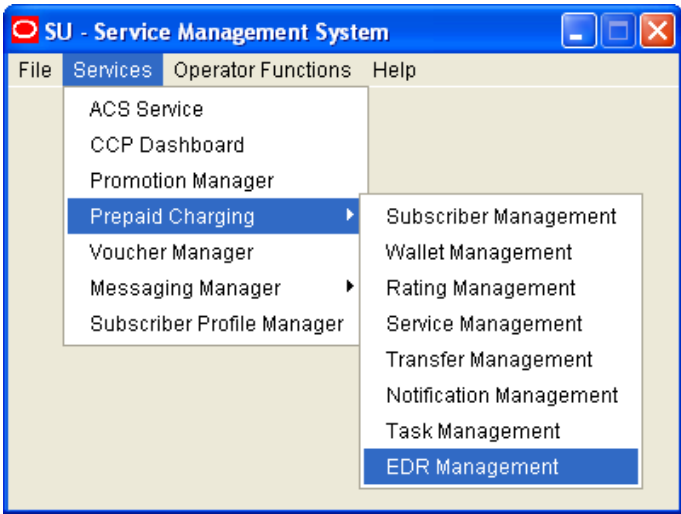
This chapter contains the following topics.

EDR Management Module	555
EDR Types	558
EDR Categories	561
EDR Elements	564
EDR Templates	569
EDR Viewer Columns	574

EDR Management Module

Accessing the EDR Management screen

Follow these steps to open the EDR Management screen.

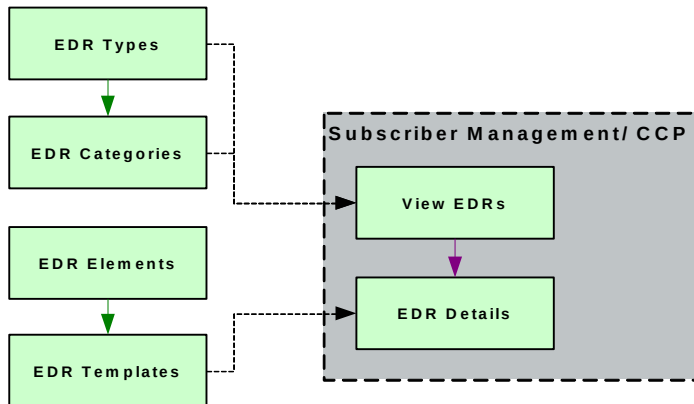
Step	Action
1	Select the Services menu from the SMS main screen.
	
2	Select Prepaid Charging > EDR Management .

Step	Action
	Result: You see the EDR Management screen.

EDR Management relationships

This diagram shows the relationships between the various screens available in the EDR Management module.

Note: The lines are colored differently for clarity and have no other meaning.



EDR Management screen

Here is an example EDR Management screen.

The screenshot shows the 'EDR Management' window. At the top, there is a 'Service Provider' dropdown menu set to 'Boss' and a 'Help' button. Below this are four tabs: 'EDR Types' (selected), 'EDR Categories', 'EDR Elements', and 'EDR Templates'. The main area contains a table with the following columns: 'Name', 'Type', 'Change User', and 'Change'. The table lists 33 items, each with a unique ID, a name, a type (all are 'SMF'), a change user, and a change date (all are '2011-01-1'). At the bottom of the window are four buttons: 'New', 'Edit', 'Delete', and 'Close'.

Name	Type	Change User	Change
Regular Call	1	SMF	2011-01-1
Operator Update	2	SMF	2011-01-1
Expiration	3	SMF	2011-01-1
Recharge	4	SMF	2011-01-1
Event Charge	5	SMF	2011-01-1
Amount Charge	6	SMF	2011-01-1
Control Plan Service Invoke	7	SMF	2011-01-1
Free Form Recharge	8	SMF	2011-01-1
Credit Card Free Form Recharge	9	SMF	2011-01-1
Voucher Free Form Recharge	10	SMF	2011-01-1
Roaming Call	11	SMF	2011-01-1
Short Message Named Event	12	SMF	2011-01-1
Short Message Tariffed	13	SMF	2011-01-1
Prepaid Data	14	SMF	2011-01-1
Voucher Redeem	15	SMF	2011-01-1
Rewards	16	SMF	2011-01-1
OSA CHAM Reservation Amount	21	SMF	2011-01-1
OSA CHAM Direct Amount	23	SMF	2011-01-1
OSA CHAM Reservation Seconds	24	SMF	2011-01-1
OSA CHAM Reservation Named Events	25	SMF	2011-01-1
OSA CHAM Direct Seconds	26	SMF	2011-01-1
OSA CHAM Direct Named Events	27	SMF	2011-01-1
Friends and Family Changes	28	SMF	2011-01-1
Setting Disable Incoming Calls while Ro...	29	SMF	2011-01-1
Call Barring Changes	30	SMF	2011-01-1
Product Type Swap	31	SMF	2011-01-1
PTS - Billing Event	32	SMF	2011-01-1
Bad Pin	33	SMF	2011-01-1
Voucher Type Recharge	47	SMF	2011-01-1

Introduction

The EDR Management screen lets you configure how EDRs are searched for and displayed in the *View EDRs* (on page 137) screen. It contains these tabs:

- *EDR Types* (on page 558)
- *EDR Categories* (on page 561)
- *EDR Elements* (on page 564)
- *EDR Templates* (on page 569)
- EDR Viewer Columns

EDR Types

Introduction

This screen enables you to add, modify or delete EDR types.

EDR types set records for each EDR type based on EDR type number. The EDR type number is reported as the CDR_TYPE field in each EDR.

Note: The standard CCS EDR types are configured on installation.

Example EDR 1 for single tariff rated call

```
BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|CDR_TYPE=1|RECORD_DATE=
20070423190107|ACCT_ID=83|
ACCT_REF_ID=83|CLI=01206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=49880|COSTS=12
0|ACCOUNT_TYPE=22|CASCADE_ID=44|RATES=60|LENGTHS=2810.00|DISCOUNTS=0|
MAX_CHARGE=500|DURATION=120.00|DURATION_CHARGED=120.00|TN=01473|TCS=20070423181310|
TCE=20070423181510|CS=S|DISCOUNT_TYPE=S*W*R|WALLET_TYPE=1|FCA=01473254338|END_CALL_R
EASON=14
```

EDR Types tab

Here is an example EDR Types tab.

EDR Management

Service Provider: Boss

EDR Types

Name	Type	Change User	Change
Regular Call	1	SMF	2011-01-1
Operator Update	2	SMF	2011-01-1
Expiration	3	SMF	2011-01-1
Recharge	4	SMF	2011-01-1
Event Charge	5	SMF	2011-01-1
Amount Charge	6	SMF	2011-01-1
Control Plan Service Invoke	7	SMF	2011-01-1
Free Form Recharge	8	SMF	2011-01-1
Credit Card Free Form Recharge	9	SMF	2011-01-1
Voucher Free Form Recharge	10	SMF	2011-01-1
Roaming Call	11	SMF	2011-01-1
Short Message Named Event	12	SMF	2011-01-1
Short Message Tariffed	13	SMF	2011-01-1
Prepaid Data	14	SMF	2011-01-1
Voucher Redeem	15	SMF	2011-01-1
Rewards	16	SMF	2011-01-1
OSA CHAM Reservation Amount	21	SMF	2011-01-1
OSA CHAM Direct Amount	23	SMF	2011-01-1
OSA CHAM Reservation Seconds	24	SMF	2011-01-1
OSA CHAM Reservation Named Events	25	SMF	2011-01-1
OSA CHAM Direct Seconds	26	SMF	2011-01-1
OSA CHAM Direct Named Events	27	SMF	2011-01-1
Friends and Family Changes	28	SMF	2011-01-1
Setting Disable Incoming Calls while Ro...	29	SMF	2011-01-1
Call Barring Changes	30	SMF	2011-01-1
Product Type Swap	31	SMF	2011-01-1
PTS - Billing Event	32	SMF	2011-01-1
Bad Pin	33	SMF	2011-01-1
Voucher Type Recharge	47	SMF	2011-01-1

New Edit Delete Close

Adding EDR types

Follow these steps to add a new EDR type.

Step	Action
1	In the EDR Management screen, select the Service Provider from the drop down box.
2	On EDR Types tab, click New . Result: You see the New EDR Type screen.

Step	Action

- 3 In the **Name** field, type a unique name for this EDR type.
- 4 In the **EDR Type** field, type a unique EDR type number. This must correspond to the value of the CDR_TYPE in EDRs of this type.
For more information about EDR type numbers, see *EDR Definitions Operations Guide*.
- 5 Click **Save**.

Editing EDR types

Follow these steps to edit an existing EDR type.

Step	Action

- 1 In the EDR Management screen, select the **Service Provider** from the drop down box.
- 2 On the EDR Types tab, select the EDR type you want to edit.
- 3 Click **Edit**.
Result: You see the Edit EDR Type screen.

- 4 Edit the details as described in *Adding EDR types* (on page 559).
- 5 Click **Save**.

Deleting EDR types

Follow these steps to delete an existing EDR type.

Step	Action

- 1 In the EDR Management screen, select the **Service Provider** from the drop down box.
- 2 On the EDR Types tab, select the EDR type you want to delete.
- 3 Click **Delete**.
Result: A Delete Confirmation prompt appears.
- 4 Click **OK**.
Result: The record is deleted and a confirmation prompt appears.

Step	Action
5	Click OK .

EDR Categories

Introduction

This screen enables you to add, modify or delete EDR categories.

EDR categories group EDR types into sets. You can search on EDR Category in the View EDRs for Subscriber screen.

Note: The standard CCS EDR categories are configured on installation.

EDR Categories tab

Here is an example EDR Categories tab.

EDR Management

Service Provider: Boss

EDR Categories

Name	Change User	Change Date
Amount Charge	SMF	2011-01-18 23:17:56
Bad Pin	SMF	2011-01-18 23:17:57
Call Barring Changes	SMF	2011-01-18 23:17:57
Control Plan Service Invoke	SMF	2011-01-18 23:17:56
Credit Card Free Form Recharge	SMF	2011-01-18 23:17:56
Data Call	SMF	2011-01-18 23:17:57
Event Charge	SMF	2011-01-18 23:17:56
Expiration	SMF	2011-01-18 23:17:56
Free Form Recharge	SMF	2011-01-18 23:17:56
Friends and Family Changes	SMF	2011-01-18 23:17:57
OSA CHAM Direct Amount	SMF	2011-01-18 23:17:57
OSA CHAM Direct Named Events	SMF	2011-01-18 23:17:57
OSA CHAM Direct Seconds	SMF	2011-01-18 23:17:57
OSA CHAM Reservation Amount	SMF	2011-01-18 23:17:57
OSA CHAM Reservation Named Events	SMF	2011-01-18 23:17:57
OSA CHAM Reservation Seconds	SMF	2011-01-18 23:17:57
Operator Update	SMF	2011-01-18 23:17:56
PTS - Billing Event	SMF	2011-01-18 23:17:57
Periodic Charging State	SMF	2011-01-18 23:17:57
Periodic Recharge	SMF	2011-01-18 23:17:57
Prepaid Data	SMF	2011-01-18 23:17:57
Product Type Swap	SMF	2011-01-18 23:17:57
Recharge	SMF	2011-01-18 23:17:56
Regular Call	SMF	2011-01-18 23:17:56
Rewards	SMF	2011-01-18 23:17:57
Roaming Call	SMF	2011-01-18 23:17:56
Setting Disable Incoming Calls while Ro...	SMF	2011-01-18 23:17:57
Short Message Named Event	SMF	2011-01-18 23:17:57
Short Message Tariffed	SMF	2011-01-18 23:17:57
Video Call	SMF	2011-01-18 23:17:57

New Edit Delete Close

Adding EDR categories

Follow these steps to add a new EDR category.

Step	Action
1	In the EDR Management screen, select the Service Provider from the drop down box.
2	On EDR Category tab, click New .
	Result: You see the New EDR Category screen.

3	In the Category Name field, type a unique name for this EDR category.
4	From the Available List field, select an EDR type to add to this EDR category.
	Notes: • The Available List is populated by the entries in the EDR Types tab. • It will display any EDR type which has not been used for any other EDR category.
5	Click > .
	Result: The EDR type highlighted in step 4 will be moved to the Selected list.
	Note: To move all EDR types to the Selected List, click >> .
6	Repeat steps 4 and 5 until you have moved all the EDR types which should be part of this EDR category are in the Selected List.
7	Click Save .

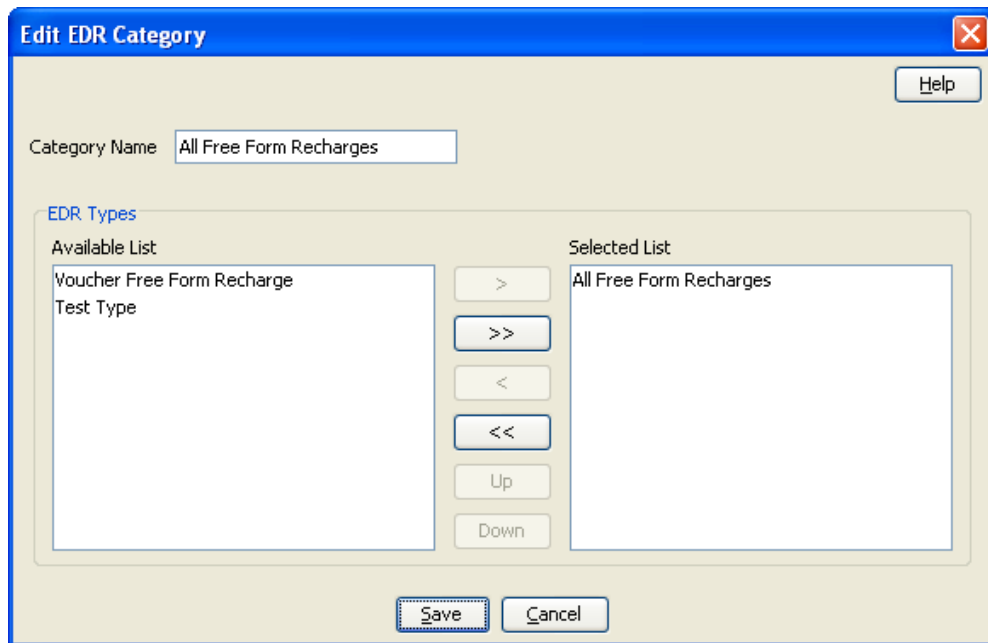
Editing EDR categories

Follow these steps to edit an existing EDR category.

Step	Action
1	In the EDR Management screen, select the Service Provider from the drop down box.
2	On the EDR Categories tab, select the EDR category you want to edit.
3	Click Edit .

Step	Action

Result: You see the Edit EDR Category screen.



- 4 Add any new EDR types to this EDR category as described in *Adding EDR categories* (on page 562).

- 5 If you want to remove any EDR types from this EDR category, select it from the Selected List and click <.

Note: To remove all EDR types from the list, click <<.

- 6 Click **Save**.

Deleting EDR categories

Follow these steps to delete an existing EDR category.

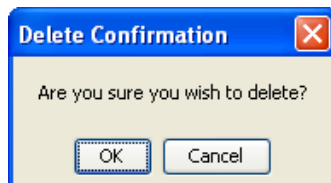
Step	Action

- 1 In the EDR Management screen, select the **Service Provider** from the drop down box.

- 2 On the EDR Categories tab, select the EDR category you want to delete.

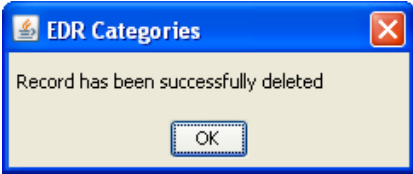
- 3 Click **Delete**.

Result: A Delete confirmation prompt appears.



- 4 Click **OK**.

Result: The EDR category is deleted and the EDR Categories prompt appears.

Step	Action
5	Click OK.

EDR Elements

Introduction

This screen enables you to add, modify or delete EDR elements. EDR elements define how data is handled in the graphic elements on the EDR Details for Subscriber screen. They are reusable and are used to define EDR templates.

Note: The standard CCS EDR elements are configured on installation.

EDR Elements tab

Here is an example EDR Elements tab.

Name	Field Type	EDR Tag	Display Masked
Bad Pins	CDR Text Field	BAD_PINS	
Balance Costs	Balances Table	BALANCE_TYPES,BALANCES,COSTS	
Balance Costs and Expiries	Balances Table	BALANCE_TYPES,BALANCES,COSTS,OLD_B...	
Balance Names	CDR Text Field	BALANCE_NAMES	
Barred List Type	CDR Text Field	BARRED_LIST_TYPE	
Bonus	General Table	RELOAD_BONUS,RELOAD_BONUS_AMOUN...	
CLI	CLI Table	CLI	
Call Duration	CDR Text Field	DURATION	
Call End Time	Date Field	TCE	
Call Start Time	Date Field	TCS	
Call Status	Call Status Field	CS	
Called Number	CDR Text Field	CALLED_NUMBER	
Calling Party	CDR Text Field	CALLING_PARTY	
Cascade Id	CDR Text Field	CASCADE_ID	
Change Reason	Scrollable Text Field	REASON	
Changed Tags	Profile Changed T...	CHANGED_TAGS	
Charged Call Duration	CDR Text Field	DURATION_CHARGE	
Closed User Group	CDR Text Field	CUG_NAME	
Control Plan	CDR Text Field	CONTROL_PLAN	
Credit Transfer Name	CDR Text Field	CT_NAME	
Credit Transfer Type	CDR Text Field	CT_TYPE	
Cross Balance Cascade Id	CBTD Cascade Ta...	CBTD_CASCADE_ID	
Cross Balance Costs	Cross Balance Table	CBTD_BALANCE_TYPES,CBTD_BALANCES,...	
Deleted Balance	CDR Text Field	DELETED_BALANCE	
Destination	CDR Text Field	DESTINATION	
Discount	Discount Field	DISCOUNT	
Discount Type	CDR Text Field	DISCOUNT_TYPE	
End Call Reason	CDR Text Field	END_CALL_REASON	
Event Class	CDR Text Field	EVENT_CLASS	

Adding EDR elements

Follow these steps to add a new EDR element.

Step	Action
1	In the EDR Management screen, select the Service Provider from the drop down box.
2	On EDR Elements tab, click New .
Result: You see the New EDR Element screen.	

Step	Action

3	In the Element Name field, type a unique name for this EDR element. This string will be used as the field name for this element in the EDR Details for Subscriber screen.
4	From the Field Type list, select the type of EDR field this element will correlate to.
5	If you selected a text field type from the Field Type list, enter the tag from the EDR in the EDR Tag field. This string must match the name of a field in an EDR exactly. For more information about the fields included in EDRs, see <i>EDR Definitions Operations Guide</i> .
6	If you would like to mask the field for users who do not have permission to view the content, select the Display Masked checkbox.
7	If you selected a table field type from the Field Type drop down list, complete the EDR Tags table as described in <i>Adding EDR Tag entries</i> (on page 567).
8	Click Save .

Editing EDR elements

Follow these steps to edit an existing EDR element.

Step	Action

1	In the EDR Management screen, select the Service Provider from the drop down box.
2	On the EDR Elements tab, select the EDR element you want to edit.
3	Click Edit .
Result: You see the Edit EDR Element screen.	

Step	Action

- 4 Edit the details as described in Adding EDR elements.
- 5 Click **Save**.

Deleting EDR elements

Follow these steps to delete an existing EDR element.

Step	Action

- 1 In the EDR Management screen, select the **Service Provider** from the drop down box.
- 2 On the EDR Elements tab, select the EDR element you want to delete.
- 3 Click **Delete**.
Result: A Delete confirmation prompt appears.
- 4 Click **OK**.
Result: The EDR element is deleted and the EDR Elements prompt appears.
- 5 Click **OK**.

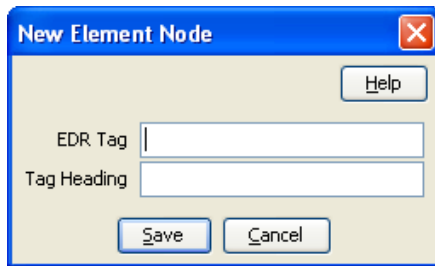
Adding EDR Tag entries

Follow these steps to add a new record to the EDR Tags table.

Step	Action

- 1 In the New EDR Element screen or the Edit EDR Element screen, click **New** in the EDR Tags area.
Result: The New Element Node screen will appear.

Step	Action



The 'New Element Node' dialog box has a blue title bar with a close button (X). It contains a 'Help' button in the top right. Below it are two text input fields: 'EDR Tag' and 'Tag Heading'. At the bottom are 'Save' and 'Cancel' buttons.

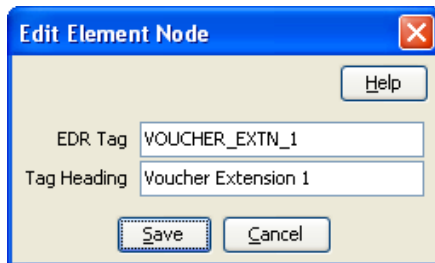
- 2 In the **EDR Tag** field, enter the tag from the EDR. This string must match the name of a field in an EDR exactly.
For more information about the fields which appear in EDRs, see *EDR Definitions Operations Guide*.
- 3 In the **Tag Heading** field, enter the name of the column this tag's details will appear under in the EDR Details for Subscriber screen.
- 4 Click **Save**.
Result: The EDR element node will be added to the EDR Tags table in the New EDR Element screen.

Editing EDR Tag entries

Follow these steps to add a new record to the EDR Tags table.

Step	Action

- 1 In the New EDR Element screen or the Edit EDR Element screen, select the EDR tag you want to edit from the EDR Tags table, and click **Edit**.
Result: The Edit Element Node screen will appear.



The 'Edit Element Node' dialog box has a blue title bar with a close button (X). It contains a 'Help' button in the top right. Below it are two text input fields: 'EDR Tag' (containing 'VOUCHER_EXTN_1') and 'Tag Heading' (containing 'Voucher Extension 1'). At the bottom are 'Save' and 'Cancel' buttons.

- 2 Edit the fields as described in *Adding EDR Tag entries* (on page 567).
- 3 Click **Save**.

Deleting EDR Tag entries

Follow these steps to add a new EDR element.

Step	Action

- 1 In the New EDR Element screen or the Edit EDR Element screen, select the EDR tag you want to delete from the EDR Tags table, and click **Delete**.
Result: The Delete Confirmation prompt will appear.
- 2 Click **OK**.

EDR Templates

Introduction

This screen enables you to add, modify or delete EDR templates. EDR templates are used on the EDR Details for Subscriber screen to display the information in the EDR.

Note: The standard CCS EDR templates are configured on installation.

EDR Templates tab

Here is an example EDR Templates tab.



Adding EDR templates

Follow these steps to add a new EDR template.

Step	Action
1	In the EDR Management screen, select the service provider from the Service Provider

Step	Action

- 2 On **EDR Templates** tab, click **New**.
Result: The New EDR Template screen is displayed.

- 3 In the **Template Name** field, type a unique name for this template.
- 4 From the **EDR Category** list, select the category EDRs with this template should be associated with.
- 5 From the **Available List** field, select an EDR element you want to display in this template and click **>**.

Note: To use all the EDR elements in the Available List, click **>>**.

- 6 The display order of the elements in the Selected List is used to set the order in which the fields appear in the View EDRs for Subscriber screen.
 To change the display order for an element in the Selected List, select the element you want to move, and click the **Up** or **Down** button.
- 7 Click **Save**.

Example template

These two screens show an EDR template, and the EDR Details screen using that EDR template.

Edit EDR Template

Help

Template Name: Operator Update

EDR Category: Operator Update

EDR Elements

Available List		Selected List
Bad Pins	>	Operator Name
Balance Costs	>>	Wallet Type
Balance Names	<	Record Date
Barred List Type	<<	Balance Costs and Expiries
Bonus	Up	Product Type
CLI	Down	Previous State
Call Duration		New State
Call End Time		Old Wallet Expiry
Call Start Time		New Wallet Expiry
Call Status		Pi Identification

Save Cancel

EDR Details for Subscriber 1234

Help

EDR Details

EDR Type: Operator Update

Display Currency: EUR

Operator Name: SU

Wallet Type:

Record Date: 2014-02-21 11:05:24

Balance Name	Original Value	Cost	Old Expiry Date	New Expi
Bad Pin	0	0		
Data	0	0		
Free SMS	0	0		
General Cash	0.00	-5.00		
Monthly Exp	0.00	0.00		
Promotional Cash	0.00	0.00		
Wallet Exp	0.00	0.00		
Yearly Exp	0.00	0.00		

Product Type: Bronze

Previous State:

New State: Pre-use

Old Wallet Expiry:

New Wallet Expiry: Never Expires

Pi Identification:

Subscriber IDs: 1234

Change Reason:

Close

Editing EDR templates

Follow these steps to edit an existing EDR template.

Step	Action
1	In the EDR Management screen, select the Service Provider from the drop down box.
2	On the EDR Templates tab, select the EDR template you want to edit.
3	Click Edit .
Result: You see the Edit EDR Template screen.	

Step	Action

- 4 Edit the details as described in *Adding EDR templates* (on page 569).
- 5 If you want to remove any EDR elements from this EDR template, select it from the Selected List and click <.

Note: To remove all EDR elements from the list, click <<.

- 6 Click **Save**.

Deleting EDR templates

Follow these steps to delete an existing EDR template.

Step	Action

- 1 In the EDR Management screen, select the **Service Provider** from the drop down box.
- 2 On the EDR Templates tab, select the EDR template you want to delete.
- 3 Click **Delete**.
Result: A Delete confirmation prompt appears.
- 4 Click **OK**.
Result: The EDR template is deleted and the EDR Templates prompt appears.
- 5 Click **OK**.

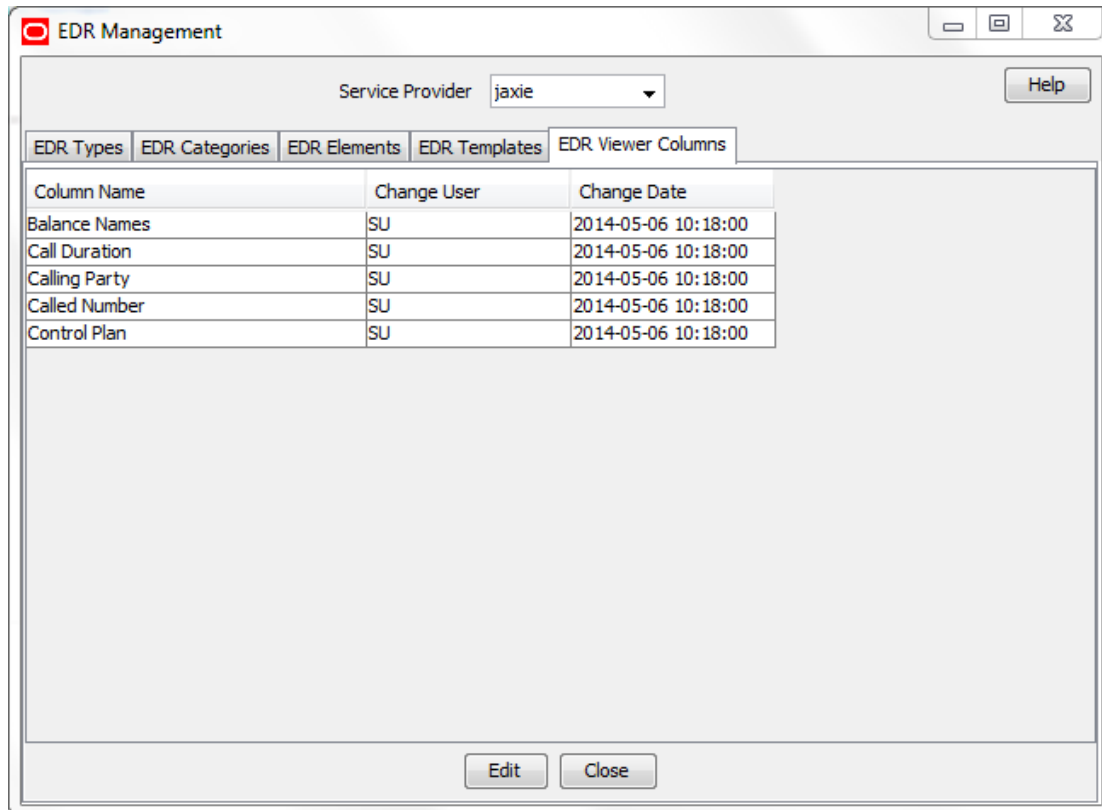
EDR Viewer Columns

Introduction

The EDR Viewer Columns tab enables you to edit the list of optional EDR fields that you can display in the EDR Viewer in addition to the standard fields that are displayed for each type of EDR. You access the EDR Viewer from the Edit Subscriber screen.

EDR Viewer Columns tab

Here is an example EDR Viewer Columns tab.

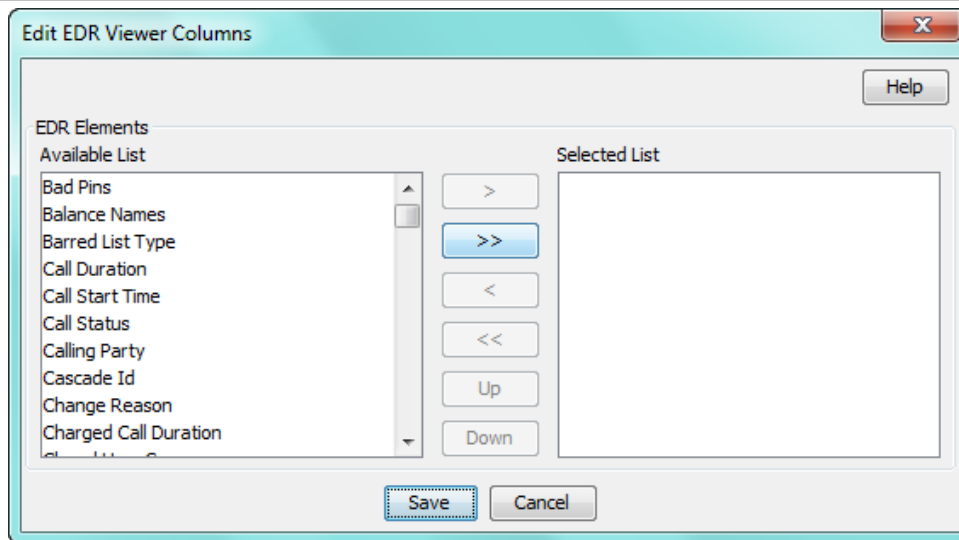


Editing optional EDR columns for display in the EDR Viewer

Follow these steps to edit the list of additional EDR elements that you can display in the EDR Viewer.

Step	Action
1	In the EDR Management screen, select the service provider from the Service Provider List.
2	On the EDR Viewer Columns tab, click Edit . Result: The Edit EDR Viewer Columns screen dialog opens and displays a predefined list of EDR elements.

Step	Action



- 3 Select each EDR element that you want to display in the EDR Viewer from the **Available List** in turn and move it to the **Selected List** by clicking **>**.

Note: To use all the EDR elements in the **Available List**, click **>>**. To remove an EDR element from the **Selected List** click **<**, or click **<<** to remove all the selected EDR elements

- 4 The display order of the elements in the **Selected List** is used to set the order in which the fields appear in the EDR Viewer.
To change the display order for an element in the **Selected List**, select the element you want to move, and click the **Up** or **Down** button.
- 5 Click **Save**.

CCS Reports

Overview

Introduction

This chapter explains how to perform CCS reports.

In this chapter

This chapter contains the following topics.

Running CCS Reports	577
CCS Reports	579

Running CCS Reports

Introduction

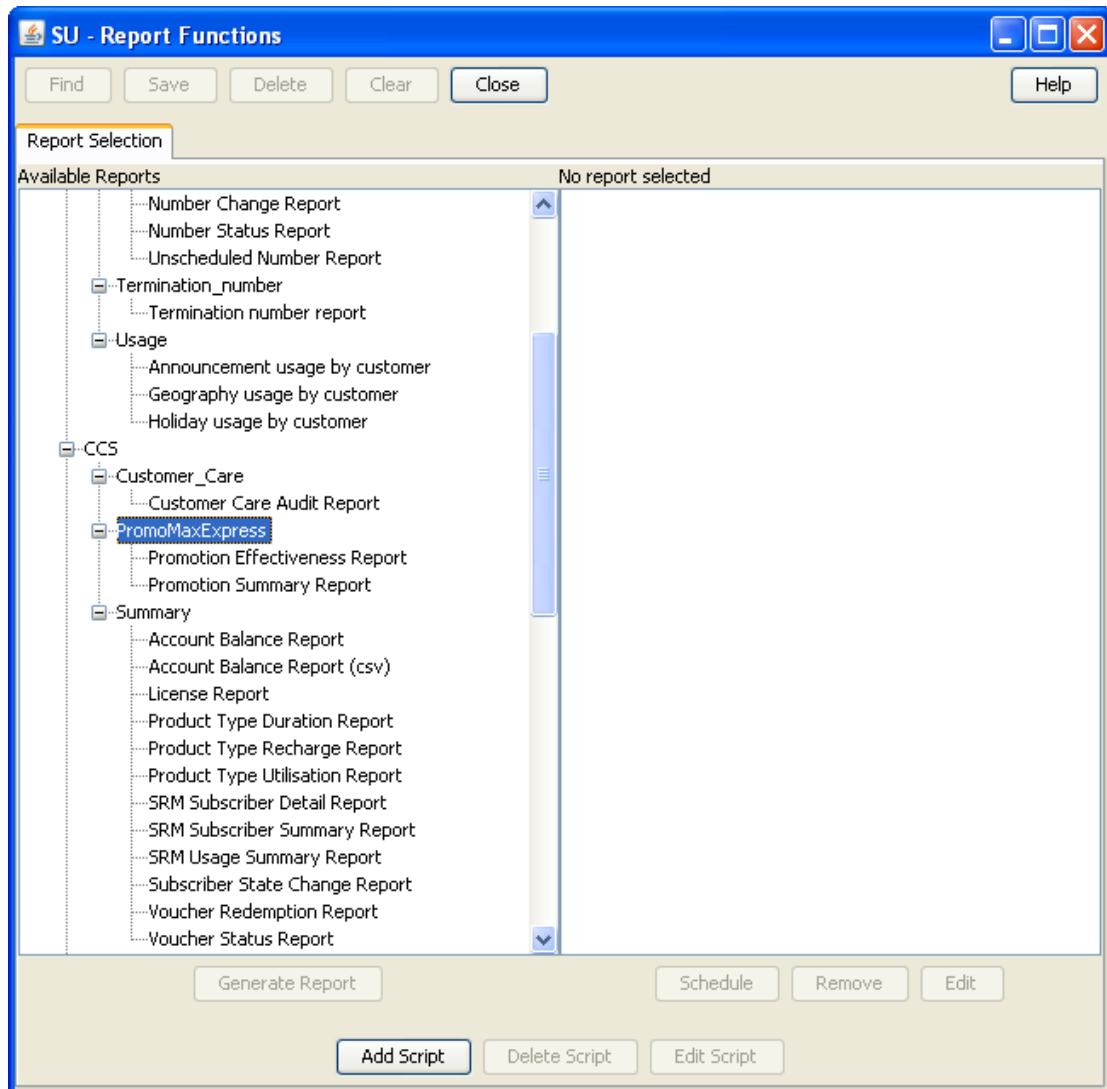
CCS provides a series of reports which enable operators to report on system activity. These reports are managed and run using the **Reports Function** screen.

Accessing the Report Functions menu

For instructions about how to access the Report Functions menu and how to use the reporting options, refer to the The Report Functions chapter in the *SMS User's Guide*.

Report Functions screen

CCS Reports are listed on the Report Functions screen under the CCS branch of the Available Reports tree.



Date ranges

The following EDR-based reports all have start and end date parameters:

- Product Type Utilisation
- Product Type Duration
- Product Type Recharge
- Reward Application Report
- Subscriber State Change
- Voucher Redemption

The start date specifies the beginning of the date range and is inclusive.

The end date specifies the end of the date range and is exclusive.

For example, 1/3/2006 – 1/4/2006 will include all EDRs in March, but none from April.

Date formats can be one of the following:

- YYYYMMDD
- Relative dates

Relative dates

To schedule periodic reports, a date range relative to the current date can be specified by using one of the following formats:

- 9991MMDD
MM and DD specify a number of months and days to go back from today's date
- 9992MMDD
MM and DD specify a number of months and days to go back from the start of the current month

Examples

Daily report: To report on the previous day:

- Start date: 99910001
- End date: 99910000

Weekly report: To report on the previous week:

- Start date: 99910007
- End date: 99910000

Monthly report: To report on the previous month:

- Start date: 99920100
- End date: 99920000

CCS Reports

Unit values all reports

For any reports:

- Monetary values are reported in system major currency; for example, US \$1.10 is reported as 1.10 where the currency base is 100 and the number of decimal places is 2.
- Dates are reported in YYYYMMDDHHMMSS format.
- Time values are reported in hundredths of seconds (1/100 seconds).
- SMS values are reported in numbers of SMS messages.

Note: Time values are stored in the database in hundredths of seconds, however, the PI outputs, and the UI displays time values in seconds.

Customer Care Audit

The Customer Care Audit report provides basic reporting detailing potentially suspicious account activity based around user screen operations.

This report uses the following EDR types to collate the information:

- 2 Operator Update
- 3 Account Delete
- 4 Recharge

- 8 Freeform Recharge
- 9 Credit Card Recharge
- 10 Freeform Voucher
- 33 Bad PIN
- 48 Voucher Update

The Generate Report screen has several optional fields that may be used to restrict the report information.

Notes:

- If either the "USER" or "MSISDN" fields are provided, the "Transaction Threshold" parameter will additionally limit the reporting information to the User Agent/ specified MSISDN combinations which exceed the threshold activity limit during the reporting period for all screen initiated operations.
- If "Transaction Threshold" is specified without "USER" or "MSISDN" values then the report will report only on those User Agents/MSISDN combinations which have breached the threshold activity limit during the reporting period.
- If the "Terminal" parameter is specified then the report will be based on values for the terminal whose ip address is specified. The ip address can include wildcards.
- The optional parameters may be used in any combination to generate the required report.
- The report will collate the results and group by User Agent and then MSISDN.
- The report may be run multiple times in parallel with various parameter combinations.
- If scheduling the report it will be possible to specify the period of the report without setting dates (for example: last 2 months, last 2 weeks).
- If there is no activity for a User Agent then the User Agent will not be reported upon.

Report example 1

Customer Care Report with optional MSISDN set.

PrePaid Charging - Customer Care Audit Report
 =====
 Reporting Period: January 2008 - January 2008

User Agent : All
 MSISDN : 441234567890
 Threshold : 0

JANUARY 2008

USER: ACS_ADMIN

MSISDN	All	Standard	Adjustments	Reversals
=====	=====	=====	=====	=====
441234567890	1	0	0	0
-----	-----	-----	-----	-----
Sub-total:	1	0	0	0

USER: ADMINISTRATOR

MSISDN	All	Standard	Adjustments	Reversals
=====	=====	=====	=====	=====
441234567890	0	1	1	0
-----	-----	-----	-----	-----
Sub-total:	0	1	1	0

USER: ALEX

MSISDN	All	Standard	Adjustments	Reversals
=====	=====	=====	=====	=====
441234567890	0	0	0	0

```

-----
Sub-total:          0          0          0          0

USER: CCS_ADMIN

MSISDN             All          Standard  Adjustments  Reversals
=====
441234567890       0          0          0            1
-----
Sub-total:          0          0          0            1

=====
Total:              1          1          1            1

```

Report example 2

Customer Care Report with no optional parameters set.

```

PrePaid Charging - Customer Care Audit Report
=====
Reporting Period: 2 January 2008 - 3 January 2008

```

```

User Agent      : All
MSISDN          : All
Threshold       : 0

```

JANUARY 2008

USER: ACS_ADMIN

```

MSISDN             All          Standard  Adjustments  Reversals
=====
441234567890       3          0          0            0
441234567891       0          2          0            0
441234567892       8          0          2            0
441234567893       7          0          1            2
-----
Sub-total:          18          2          3            2

```

USER: ADMINISTRATOR

```

MSISDN             All          Standard  Adjustments  Reversals
=====
441234567890       0          0          0            4
441234567894       0          0          2            0
-----
Sub-total:          0          0          2            4

=====
Total:              18          2          5            6

```

Report example 3

Customer Care Report with optional Terminal set.

```

PrePaid Charging - Customer Care Audit Report
=====
Reporting Period: 1 January 2008 - 31 January 2008

```

```

User Agent      : All
MSISDN          : All
Threshold       : 0
Terminal        : 192.168.24.57

```

JANUARY 2008

```

User Agent : SU
Terminal   : 192.168.24.57

```

```

MSISDN             All          Standard  Adjustments  Reversals

```

```

=====
3214123          1          1          0          0
448888          12         12          0          0
448889           1          1          0          0

User Agent : SU
-----
Sub-total:       14         14          0          0

=====
Total:           14         14          0          0

```

Promotion Effectiveness Report

This Promotion Effectiveness Report provides statistics on the effectiveness of promotion within the group of affected subscribers (subscribers that received promotion).

Promotion effectiveness is computed by comparing the number of subscribers eligible for the promotion to the number of subscribers who received the promotion.

The effectiveness report includes the following information:

- Promotion name
- Number of subscribers eligible for promotion, calculated when report is run.
- Number of subscribers who received a reward from the promotion, calculated when the report is run.
- Percentage figure indicating the effectiveness.

Example

```

Prepaid Charging - Promotion Effectiveness Report
=====
Reporting Period: 1 January 2009 - 1 January 2009

JANUARY 2009

Service Name: Boss
=====
Promotion Name          Eligible Subscribers Promotions Applied
Effectiveness
-----
-----
Monthly >10  Reward then Gen Cash +1          90          0
0 %
Monthly > 20 then Gen cash +1-50              90          0
0 %
sanity test                                    90          0
0 %
MJH_Reward                                    90          0
0 %
SL Reward 01                                  90          0
0 %
SL Reward 02                                  90          0
0 %
test reward                                    90          0
0 %
SL Test                                        90          0
0 %
TP_Promol                                      90          0
0 %
SL Test 2                                      90          0
0 %
SL Test ME 10                                 90          0
0 %
SL Test ME 20                                 90          0
0 %
Tonyl                                          90          0
0 %
testmbv-21                                    90          0
0 %

```

Activation Credit-106	90	0
0 %		
MJH_11-21	90	0
0 %		
act test-83	90	0
0 %		
Daily Start 21 Expiry	90	0
0 %		

Service Name: MigrationSP

Promotion Name	Eligible Subscribers	Promotions Applied
Effectiveness		

SL Test 04 with Reward Product	2	0
0 %		
MIG_Daily_EXP_010	2	0
0 %		
MIG_BV010	2	0
0 %		
MIG_BV0101	2	0
0 %		
MIG_BV0102	2	0
0 %		
MIG_BV0103	2	0
0 %		
MIG_BV0104	2	0
0 %		
MIG_BV020	2	0
0 %		
MIG_BV0201	2	0
0 %		
MIG_BV0202	2	0
0 %		
SL Test	2	0
0 %		
SL Test1	2	0
0 %		
SL Test2	2	0
0 %		
MIG_Daily_Time_RTR_020	2	0
0 %		
MIG_Wallet_SMS_RTR_030	2	0
0 %		
MIG_Act_4-109	2	0
0 %		
MIG_Act_1-108	2	0
0 %		
MIG_Act_2-108	2	0
0 %		
MIG_Act_3-108	2	0
0 %		
MIG_Credit_4-1564	2	0
0 %		
MIG_Credit_1-1567	2	0
0 %		
MIG_Credit_2-1567	2	0
0 %		
MIG_Credit_3 -1567	2	0
0 %		
test01	2	0
0 %		

Promotion Summary Report

The Promotion Summary Report provides promotion information over a specified period.

The summary report includes the following information:

- Promotion name
- Promotion status (Active or Inactive)
- Promotion global limited liability status (Unset, Eligible, Not Eligible)
- Promotion start date
- Promotion end date
- Total number of promotion rewards applied for the current promotion, calculated when the report is run.
- Total value of multi-balance rewards applied for the current promotion, calculated when the report is run.
- Total number of product type swaps for the current promotion, calculated when the report is run.

Example

Prepaid Charging - Promotion Summary Report

=====

Reporting Period: 1 January 2009 - 1 January 2009

JANUARY 2009

Service Name: Boss

=====

Promotion Name	Active	GLL Status	Start Date	End
Date Num Promos Value Prod Swaps				
Monthly >10 Reward then Gen Cash +1	Inactive	Unset	20091026000000	
20101026000000 0 0 0				
Monthly > 20 then Gen cash +1-50	Inactive	Unset	20090926000000	
20091224000000 0 0 0				
sanity test	Inactive	Unset	20091124000000	
20091224000000 0 0 0				
MJH_Reward	Inactive	Unset	20090820000000	
20091120000000 0 0 0				
SL Reward 01	Inactive	Unset	20081028000000	
20101028000000 0 0 0				
SL Reward 02	Inactive	Unset	20081028000000	
20101028000000 0 0 0				
test reward	Inactive	Unset	20091028000000	
20111028000000 0 0 0				
SL Test	Inactive	Unset	NULL	NULL
0 0 0				
TP_Promo1	Inactive	Unset	NULL	NULL
0 0 0				
SL Test 2	Inactive	Unset	NULL	NULL
0 0 0				
SL Test ME 10	Active	Unset	NULL	NULL
0 0 0				
SL Test ME 20	Active	Unset	NULL	NULL
0 0 0				
Tony1	Inactive	Unset	NULL	NULL
0 0 0				
testmbv-21	Inactive	Unset	20090819130016	
20090823170016 0 0 0				
Activation Credit-106	Inactive	Unset	20081123160027	
20101123160027 0 0 0				
MJH_11-21	Inactive	Unset	20091027060055	
20101027060055 0 0 0				
act test-83	Inactive	Unset	20081028100016	
20100828100016 0 0 0				
Daily Start 21 Expiry	Inactive	Unset	20091026000000	
20101026000000 0 0 0				

Service Name: MigrationSP

=====

Promotion Name	Active	GLL Status	Start Date	End
Date Num Promos Value Prod Swaps				
SL Test 04 with Reward Product	Active	Unset	20091115000000	
20101130000000 0 0 0				

MIG_Daily_EXP_010			Active	Unset	20091015000000	
20101015000000 0	0	0				
MIG_BV010			Active	Unset	NULL	NULL
0	0	0				
MIG_BV0101			Active	Unset	NULL	NULL
0	0	0				
MIG_BV0102			Active	Unset	NULL	NULL
0	0	0				
MIG_BV0103			Active	Unset	NULL	NULL
0	0	0				
MIG_BV0104			Active	Unset	NULL	NULL
0	0	0				
MIG_BV020			Active	Unset	NULL	NULL
0	0	0				
MIG_BV0201			Active	Unset	NULL	NULL
0	0	0				
MIG_BV0202			Active	Unset	NULL	NULL
0	0	0				
SL Test			Active	Unset	NULL	NULL
0	0	0				
SL Test1			Active	Unset	NULL	NULL
0	0	0				
SL Test2			Active	Unset	NULL	NULL
0	0	0				
MIG_Daily_Time_RTR_020			Active	Unset	20091015000000	
20101015000000 0	0	0				
MIG_Wallet_SMS_RTR_030			Active	Unset	20091015000000	
20101015000000 0	0	0				
MIG_Act_4-109			Active	Unset	20091102110031	
20091128110031 0	0	0				
MIG_Act_1-108			Active	Unset	20090926110035	
20100126150035 0	0	0				
MIG_Act_2-108			Active	Unset	20091026110042	
20101026110042 0	0	0				
MIG_Act_3-108			Active	Unset	20091026110042	
20091231230042 0	0	0				
MIG_Credit_4-1564			Active	Unset	20091026110058	
20101026110058 0	0	0				
MIG_Credit_1-1567			Active	Unset	20091026110005	
20101026110005 0	0	0				
MIG_Credit_2-1567			Active	Unset	20091026110009	
20101026110009 0	0	0				
MIG_Credit_3 -1567			Active	Unset	20091026120000	
20101026120000 0	0	0				
test01			Active	Unset	20090901000000	
20100904000000 0	0	0				

Account Balance

The Account Balance report details the wallet information for each subscriber. It is ordered by Product Type and Wallet State.

The report shows the current status of wallets at the time it was run. This means you may not get the same results if the report is re-run.

Tip: Balances for shared wallets will be identified by enclosing the Wallet ID in square brackets [].

Account Balance (csv)

The Account Balance (csv) report lists the following wallet information for each subscriber. Items in the report are comma separated:

CLI, wallet ID, product type name, wallet state, wallet expiry date, balance type name, balance value [, balance type name, balance value]

The balance type name and balance value is repeated for each balance. Values for:

- Monetary balances, are reported in system major currency; for example, US \$1.10 is reported as 1.10 where the currency base is 100 and the number of decimal places is 2.
- Time balances are reported in hundredths of seconds (1/100 seconds).
- SMS balances are reported in numbers of SMS messages; for example, the Free SMS balance would be the number of free SMS messages.

Note: No header or footer information is provided as this report is intended for use by third parties only.

License

The report provides statistics on licensable elements of CCS, such as:

- throughput figures for various protocols, and
- use of specific software components.

In this report, any lines of the following format are set by the Statistics Category field in the Capability configuration:

PrePaid Charging <Type>, Protocol=<protocol>, Domain Type=<domain>

For more information about configuring these entries, see *Capability* (on page 489).

Example

PrePaid Charging - License Report
=====

Reporting Period: 23 August 2007 - 21 November 2007

Service -----	Metric -----	Value -----
Universal Service Management System	Users	88784
Universal Service Management System - Cluster Pack	Users	0
Universal Application Server	Users	88784
Control Plan Editor	Feature	Enabled
PrePaid Charging Subscriber Profile Manager	Feature	Enabled
PrePaid Charging Voucher Management	Users	88784
PrePaid Charging Rewards	Users	0
PrePaid Charging Service Bundles	Users	88784
PrePaid Charging Peer to Peer	Users	88784
PrePaid Charging Data, Protocol=SMPP, Domain Type=UBE	SMAPS	0
PrePaid Charging Voice, Protocol=CAP3, Domain Type=UBE	CAPS	0
PrePaid Charging Voice, Protocol=CS1, Domain Type=UBE	CAPS	0
PrePaid Charging Voice, Protocol=ISUP, Domain Type=UBE	CAPS	0
USSD Self Care	Users	0
SMS Self Care	Users	0

Product Type Duration

The Product Type Duration report details the total call duration per month. This report documents the sum of the duration of inter-net (roaming) and intra-net (non-roaming) calls per month per product type.

The following EDR types are used:

- 1 Regular Call, and
- 11 Roaming Call.

Note: Partial EDR records may be produced for data charging when config parameter `createEDRForMidSessionCommit` is set to True. Partial EDR records are recognised by the tag and value `MID_SESSION=True`. These records are ignored for this report.

Product Type Recharge

The Product Type Recharge report details the number and amount of voucher recharges and other types of recharges (such as credit card recharge) per month per product type per balance type. The amount for each balance type is shown in a separate column.

Tip: Recharges for deleted balance types are listed under "Other Balance Type".

The following EDR types are used:

- 4 Voucher Recharge
- 8 Freeform Recharge
- 9 Creditcard Recharge
- 10 Voucher Freeform Recharge
- 15 Voucher Redeem, and
- 16 Rewards.

Note: Partial EDR records may be produced for data charging when config parameter `createEDRForMidSessionCommit` is set to True. Partial EDR records are recognised by the tag and value `MID_SESSION=True`. These records are ignored for this report.

Product Type Utilisation

The Product Type Utilisation report details the number of calls and notifications per month based on whether or not they are roaming.

This reports on the number of calls per month per product type for the following:

- Intra-net Calls (EDR type 1)
- Inter-net Calls (EDR type 11)
- Intra-net Notifications (EDR type 12)
- Inter-net Notifications (EDR type 13)

Note: Partial EDR records may be produced for data charging when config parameter `createEDRForMidSessionCommit` is set to True. Partial EDR records are recognised by the tag and value `MID_SESSION=True`. These records are ignored for this report.

Reward Application Report

The Reward Application Report details the number of rewards by Service Provider per Product Type for the date range.

When collating the report details, totals will be generated on the service provider boundary covering all product types within the service providers.

If a Product Type does not have any rewards applied it will still be detailed within the report count, with the value set to 0.

The following EDR types are used:

- 1 Regular Call.

Note: Partial EDR records may be produced for data charging when config parameter `createEDRForMidSessionCommit` is set to True. Partial EDR records are recognised by the tag and value `MID_SESSION=True`. These records are ignored for this report.

Report example

```
UBE WM - Reward Recharge
=====
```

Reporting Period: September 2006 - September 2006

SEPTEMBER 2006

Service Name: MVNO Alpha

Product Type	General	SMS	Data
Bronze	100	254	123
Silver	1432	432	54
Gold	6523	4321	1432
Hybrid	652	432	21
Student	21	120	0
Total	8728	5559	1630

Service Name: MVNO Beta

Product Type	Basic Reward	Product Swap	Mixed
Basic	0	0	123
Executive	1245	34	5234
Total	1245	34	5357

Subscriber State Change

The Subscriber State Change report indicates the number of subscribers that changed to a particular state per product type per month. If a subscriber has moved to the new state more than once in the reporting period, then each instance will be reported.

This report has a third report parameter (after start and end dates) that provides a drop-down list for selecting the new state to be reported on.

For example, selecting **Active** as the state will generate a report showing the number of subscribers that were activated.

The following EDR types are used:

- 1 Regular Call
- 2 Operator Updates
- 3 Expiration
- 4 Voucher Recharge
- 5 Friends & Family, Friends & Destination Config Change
- 6 Direct Amount Charge
- 8 Freeform Recharge
- 11 Roaming Call
- 12 Intra-net Notifications
- 13 Inter-net Notifications
- 14 GPRS Volume/Duration Charge
- 16 Rewards
- 31 Product Type Swap
- 32 Product Type Swap
- 33 Read Secret Code
- 49 Periodic Charge

Note:

- A subscriber may not be in the new state at the time this report is run, therefore no direct comparison with the results of this report and the current subscriber state can be made.

- Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value **MID_SESSION=True**. These records are ignored for this report.

Entering Relative Dates

Relative dates can be used in **Start Date (YYYYMMDD)** and **End Date (YYYYMMDD)** when configuring the **Generate Report 'Subscriber State Change Report'** parameters.

The fields accept a **YYYYMMDD** date format where **YYYY**, **MM**, and **DD** specify the Year, Month and Day, respectively. Setting the year as **9991** will allow you to set a relative date MM months and DD days before today. Setting the year as **9992** will allow you to set a relative date MM months and DD days before the first day of this month.

The following are some relative date input examples:

- 99910001** specifies yesterday (0 months and 1 day before today)
- 99910000** specifies today (0 months and 0 days before today)
- 99920100** specifies the first day of last month (1 month and 0 days before the first day of this month)
- 99920001** specifies the last day of last month (0 months and 1 day before the first day of this month)

Voucher Activity

The Voucher Activity report details all user activity associated with the creation and modification of vouchers.

Report example

This is an example Voucher Activity report with only dates set.

Voucher Activity Report
=====

Reporting Period: 17 January 2011 - 17 February 2011

User Name: OPS\$SMF_OPER

=====

Date of Change	Time of Change	Action
Voucher Number or Range		

30-JAN-11	20:15	Voucher Batch Created ()
1000012/1000020		
30-JAN-11	21:35	Voucher Batch Created ()
9100000/9100100		
30-JAN-11	21:43	Voucher Batch Created ()
9100000/9100100		
30-JAN-11	21:45	Voucher Batch Created ()
9100000/9100100		
30-JAN-11	22:26	Voucher Batch Created ()
8800000/8800100		
31-JAN-11	00:12	Voucher Batch Created ()
9100000/9100100		
31-JAN-11	00:23	Voucher Batch Created ()
8800000/8800100		
31-JAN-11	03:18	Voucher Batch Created ()
7700000/7700100		
31-JAN-11	03:21	Voucher Batch Created ()
7700000/7700100		
31-JAN-11	03:28	Voucher Batch Created ()
6600000/6600100		

Chapter 16

01-FEB-11 05:28 Voucher Batch Created ()
6100000/6100100

User Name: SU

=====

Date of Change	Time of Change	Action
Voucher Number or Range		

[illegible]

17-FEB-11	04:01	Voucher Recharged (Failure)
33300017165		
17-FEB-11	04:02	Voucher Recharged (Failure)
33300017165		
17-FEB-11	04:04	Voucher Recharged (Failure)
33300053126		
17-FEB-11	04:08	Voucher State Changed (A:)
3000025		
17-FEB-11	04:14	Voucher Recharged (Failure)
33300047331		
17-FEB-11	04:24	Voucher Recharged (Failure)
79790017616		
17-FEB-11	04:27	Voucher Recharged (Failure)
79790017616		

Voucher Redemption

The Voucher Redemption report details the number of vouchers redeemed per month per product type per voucher type. It also shows totals for each Voucher Type Scenario.

The following EDR type is used:

- 15 Voucher Redeem.

Note:

- Redemptions of deleted voucher types are listed under "Other Type".
- Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value **MID_SESSION=True**. These records are ignored for this report.

Report example

This is an example Vouchers report with only dates set.

UBE WM - Voucher Redemption Recharge

=====

Reporting Period: 1 January 2008 - 10 January 2008

JANUARY 2008

=====

Service Name: Boss

Product Type	Basic Recharge	Multi-Balance
Local Product	46	39
Standard Product	123	378
Premium Product	92	85
Premium Plus Product	2	5
Total:	243	507

Service Name: Test

Product Type	Test Voucher
Test Product	11
Total:	11

Voucher Status

The Voucher Status report details all vouchers in the system with details about their current state.

The generation of each report results in the creation of two files, namely a detail file and a control file. The format of the detail file is a CSV file.

Report example

This is an example Voucher Status report CSV data imported into a spreadsheet program.

VoucherNumber	VoucherState	VoucherRedeemingCLI	VoucherTopUpTime	VoucherBatchID	FreUseExpiryDate	VoucherType
1000000008	R	888888888893	2805201322003200	81	2805201415001400	\$10 Cash \$5 promo
1000000001	R	888888888893	2805201322052000	81	2805201415001400	\$10 Cash \$5 promo
1000000000	R	888888888893	2805201322223600	81	2805201415001400	\$10 Cash \$5 promo
1000000005	R	888888888893	2805201322414400	81	2805201415001400	\$10 Cash \$5 promo
1000000010	R	888888888893	2805201323291100	81	2805201415001400	\$10 Cash \$5 promo
1000000003	A			81	2805201415001400	\$10 Cash \$5 promo
1000000002	A			81	2805201415001400	\$10 Cash \$5 promo
1000000004	A			81	2805201415001400	\$10 Cash \$5 promo
1000000006	A			81	2805201415001400	\$10 Cash \$5 promo
1000000007	A			81	2805201415001400	\$10 Cash \$5 promo
3302000000	C			101		\$10 Cash \$5 promo
3302000001	C			101		\$10 Cash \$5 promo
3302000002	C			101		\$10 Cash \$5 promo

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.

CAMEL

Customized Applications for Mobile network Enhanced Logic

This is a 3GPP (Third Generation Partnership Project) initiative to extend traditional IN services found in fixed networks into mobile networks. The architecture is similar to that of traditional IN, in that the control functions and switching functions are remote. Unlike the fixed IN environment, in mobile networks the subscriber may roam into another PLMN (Public Land Mobile Network), consequently the controlling function must interact with a switching function in a foreign network. CAMEL specifies the agreed information flows that may be passed between these networks.

CC

Country Code. Prefix identifying the country for a numeric international address.

CCA

Credit-Control-Answer, used in Diameter by the credit-control server to acknowledge a Credit-Control-Request (CCR) from the credit-control client.

CCR

Credit-Control-Request, used in Diameter by the credit-control client to request credit authorization from the credit-control server.

CCS

- 1) Charging Control Services (or Prepaid Charging) component.
- 2) Common Channel Signalling. A signalling system used in telephone networks that separates signalling information from user data.

CDR

Call Data Record

Note: The industry standard for CDR is EDR (Event Detail Record).

CGI

Common Gateway Interface

CLI

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

Connection

Transport level link between two peers, providing for multiple sessions.

Convergent

Also “convergent billing”. Describes the scenario where post-paid and pre-paid calls are handed by the same service platform and the same billing system. Under strict converged billing, post-paid subscribers are essentially treated as “limited credit pre-paid”.

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*".

CS1

ETSI INAP Capability Set 1. An ITU standard.

CSV

A Comma-Separated Values file contains the values in a table as a series of ASCII text lines organized so that each column value is separated by a comma from the next column's value and each row starts a new line, for example:

```
Doe, John, 944-7077
Johnson, Mary, 370-3920
Smith, Abigail, 299-3958
(etc.)
```

A CSV file is a way to collect the data from any table so that it can be conveyed as input to another table-oriented application such as a relational database application. Microsoft Excel can read CSV files. A CSV file is sometimes referred to as a flat file.

DAP

Data Access Pack. An extension module for ACS which allows control plans to make asynchronous requests to external systems over various protocols including XML and LDAP.

Diameter

A feature rich AAA protocol. Utilises SCTP and TCP transports.

DP

Detection Point

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.

EMI

Exchange Message Interface protocol

ETSI

European Telecommunications Standards Institute

FCI

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

FDA

First Delivery Attempt - the delivery of a short message directly to the SME rather than relaying it through the MC.

GPRS

General Packet Radio Service - employed to connect mobile cellular users to PDN (Public Data Network- for example the Internet).

GSM

Global System for Mobile communication.

It is a second generation cellular telecommunication system. Unlike first generation systems, GSM is digital and thus introduced greater enhancements such as security, capacity, quality and the ability to support integrated services.

GUI

Graphical User Interface

HRN

Hidden Reload Number

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.

IDP

INAP message: Initial DP (Initial Detection Point)

IN

Intelligent Network

INAP

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

Initial DP

Initial Detection Point - INAP Operation. This is the operation that is sent when the switch reaches a trigger detection point.

IP

1) Internet Protocol

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

IP address

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

ISDN

Integrated Services Digital Network - set of protocols for connecting ISDN stations.

ISUP

ISDN User Part - part of the SS7 protocol layer and used in the setting up, management, and release of trunks that carry voice and data between calling and called parties.

ITU

International Telecommunication Union

IVR

Interactive Voice Response - systems that provide information in the form of recorded messages over telephone lines in response to user input in the form of spoken words or, more commonly, DTMF signalling.

LCP

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

MC

Message Centre. Also known as SMSC.

Messaging Manager

The Messaging Manager service and the Short Message Service components of Oracle Communications Convergent Charging Controller product. Component acronym is MM (formerly MMX).

MID

Measurement ID - used in Number Portability, counts the occurrences of an error.

MM

Messaging Manager. Formerly MMX, see also *XMS* (on page 600) and *Messaging Manager* (on page 596).

MO

Mobile Originated

MS

Mobile Station

MSC

Mobile Switching Centre. Also known as a switch.

MSISDN

Mobile Station ISDN number. Uniquely defines the mobile station as an ISDN terminal. It consists of three parts; the country code (CC), the national destination code (NDC) and the subscriber number (SN).

MT

Mobile Terminated

MTP

Message Transfer Part (part of the SS7 protocol stack).

PACUI

Play Announcement and Collect User Information

PC

Point Code. The Point Code is the address of a switching point.

Peer

Remote machine, which for our purposes is capable of acting as a Diameter agent.

PI

Provisioning Interface - used for bulk database updates/configuration instead of GUI based configuration.

PIN

Personal Identification Number

PLMN

Public Land Mobile Network

SCCP

Signalling Connection Control Part (part of the SS7 protocol stack).

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.

SLC

Service Logic Controller (formerly UAS).

SLEE

Service Logic Execution Environment

SME

Short Message Entity - an entity which may send or receive Short Messages. It may be located in a fixed network, a mobile, or an SMSC.

SMPP

Short Message Peer-to-Peer protocol

SMS

Depending on context, can be:

- Service Management System hardware platform
- Short Message Service
- Service Management System platform
- Convergent Charging Controller Service Management System application

SMSC

Short Message Service Centre - stores and forwards a short message to the indicated destination subscriber number.

SN

Service Number

SNMP

Simple Network Management Protocol. Usually responsible for notifying faults on a network.

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).

SS7

A Common Channel Signalling system used in many modern telecoms networks that provides a suite of protocols which enables circuit and non circuit related information to be routed about and between networks. The main protocols include MTP, SCCP and ISUP.

SSP

Service Switching Point

System Administrator

The person(s) responsible for the overall set-up and maintenance of the IN.

TCAP

Transaction Capabilities Application Part – layer in protocol stack, message protocol.

TCP

Transmission Control Protocol. This is a reliable octet streaming protocol used by the majority of applications on the Internet. It provides a connection-oriented, full-duplex, point to point service between hosts.

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.

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 Convergent Charging Controller *Messaging Manager* (on page 596) service and the Short Message Service. The published code is *MM* (on page 596) (formerly MMX).

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