Oracle® Communications Convergent Charging Controller

Charging Control Services Help

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1

Subscriber Management

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

This chapter contains the following topics.

Subscriber Management Module

Subscriber Batch

Customer

Profile Group Fields

Subscriber Management Module

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

- Customer
- Product Type
- Profile Group Fields
- Subscriber
- Subscriber Batch

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.

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 Batch

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*.

Topics:

Finding subscriber batches

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

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.

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 New Subscriber Batch screen.

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**.

Related topic

Subscriber Batch

Subscriber Batch Fields

This table describes the function of each field.

Field	Description
Batch Size	The number of subscribers in the batch.

Field	Description
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.
	# this is a comment
	482345932
	482464935-482464945
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** tab on the Service Management screen.
Product Type	List of available product types.
	This drop down list is populated by the product types configured on the **Product Type** tab on the Subscriber Management screen.
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.

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 Edit Subscriber Batch screen.

4. You can only change the **Batch State** field. Changing the batch state to active activates the subscriber batch.

5. Click **Save**.

Related topic

Subscriber Batch

Deleting account batches

Follow these steps to delete an existing subscriber batch.

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.

Related topic

Subscriber Batch

Customer

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.

Topics:

Finding customers

Adding customers

Editing customers

Deleting customers

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.

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.

4. 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`.

5. In the **Description** field, enter the description of the new customer.

6. In the **Reference** field, enter a reference for the new customer.

7. Click **Save**.

Related topic

Customer

Editing customers

Follow these steps to edit an existing customer.

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 Finding customers.

3. Click **Edit**.

   Result: You see the Edit Customer screen.

4. Edit the details as described in Adding customers.

5. Click **Save**.

Related topic

Customer

Deleting customers

Follow these steps to delete an existing customer.

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.

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**.

Related topic

Customer

Profile Group Fields

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.

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: • True • False
BYTE	A single digit integer (signed).
DATE	A date.
INTEGER	An integer value (signed).
LNSTRING	A limited numeric string. Valid characters are 0-9. **Note:** The limits for LNSTRING field values may be set for the Product Type (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
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 (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
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.

Profile Field Tag Type	Description
ZONE	A set of shape definitions for the area covered by the zone. Shapes may be circular or rectangular and are defined by their coordinates. **Note:** You can set up and populate zone tags but they may only be used if the Location Capabilities Pack (LCP) is installed.

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	NA	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*.

Adding profile tag groups

Follow these steps to add a new profile tag group.

1. In the Subscriber Management screen, select the service provider from the **Service 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**.

    Related topic

    Profile Group Fields

Editing profile tag groups

Follow these steps to edit an existing Profile Tag Group.

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**.

Related topic

Profile Group Fields

Adding a new profile group field

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

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 **DisplayName** 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.

9. Click **Save**.

Related topic

Profile Group Fields

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.

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.

    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.

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:

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.

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.

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**.

2
Subscriber Management - Subscribers

This chapter explains the subscriber configuration screens.

This chapter contains the following topics.

Subscriber

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.

Topics:

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 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.

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 Subscriber Details for set up information.
Call Barring	Use to add and maintain the barred/allowed numbers list that applies to a subscriber. See Call Barring 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 Number Translation 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 Balance Topup Rules for details.

Finding subscribers

Follow these steps to search for an existing subscriber.

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**

3. **Tip:** If you enter characters in more than one field, the **Search** button will be disabled.

4. 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

5. 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.

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.

   Related topic

   Subscriber

Adding Subscribers

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.

Topics:

New subscriber options

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

- Details
- Call Barring
- Number Translation
- Balance Topup Rules

Subscriber Details

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

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 New Subscriber screen or the Edit Subscriber screen, 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.

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.

8. To use the PIN, the **eserv.config** parameter `AccountLength` 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 *CCS Technical Guide*.

   When using the PIN option to recharge vouchers, the length of the Wallet Reference number must equal the `AccountLength` parameter (that is, variable length wallet references cannot be used).

   Tip: A PIN is recommended for security reasons.

9. 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 *ACS User's Guide*.

10. 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.

11. If this subscriber should not be able to receive incoming calls while roaming, select the **Disable Incoming Calls When Roaming** check box.

12. 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.

13. For more information about blacklisted subscribers, see Black List.

14. If the subscriber should not be sent SMS notifications, select the **Disable SMS Notifications** check box.

15. 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 Wallets for more information.

Related topic

Adding Subscribers

Call Barring

This manages allowed/ barred lists for service providers.

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

- System-wide

- Service provider (see the Barred List tab)

- Product type (see Call Barring option).

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

1. In the New or the Edit Subscriber screen, select the Profile, Call Barring option from the left hand menu.

   Result: You see the Call Barring 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 Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

Number Translation

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

Number translation can also be configured at the following levels:

- System-wide
- Service provider
- Product type.

1. In the New Subscriber screen, select the Profile, Number Translation option from the left hand menu.

   Result: You see the Number Translation 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**.

Note: When you save the new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

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*.

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

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** 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 Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

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

Related topic

Adding Subscribers

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.

2. You can only specify a charging domain for a subscriber's wallet when you add the new wallet.

3. Only balances held on a VWS domain type will be accessible through the Edit Subscriber screen.

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.
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 Product Type.
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 `alwaysUsePreferred` parameter in *CCS Technical Guide*.

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 for a description of the fields on the New Wallet screen.

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 Domain.

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.

SeeNew Wallet fields for a description of the fields on the New Wallet screen.

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 Domain.

3. If you selected a third party charging domain then in the **Wallet Reference** field type the external wallet reference.

4. 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 Subscriber Management - Product Type.

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 the drop down list who will have access to this wallet.

   This field is populated by the **Customer** tab. For more information, see Customer.

   Note: This field will be disabled if a non VWS charging domain is selected.

7. 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.

8. 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 for a description of the fields on the New Wallet screen.

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. 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 Subscriber Management - Product Type.

4. Click **OK** to save the new linked wallet.

Editing Subscribers

The Edit Subscriber screen allows you to edit subscriber configuration and profile configuration options.

From this screen you can also:

• Record Subscriber comments

• Configure Subscriber Zones

• Edit Wallets

• Change wallet balance adjustment limits

• View EDRs

• Execute Business Process Logic

• View Subscriber Promotions

• Perform credit transfers

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.

Topics:

Edit subscriber screen layout

Reverting unsaved changes

Subscriber details fields

Editing subscriber configuration

Editing configuration options

Reverting subscriber edits

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 Configuration.

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.

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 *CCS User's Guide*.
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 Adding Subscribers.
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.

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 Finding subscribers.

3. Select the row in the search results for the subscriber to edit.

   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 Editing configuration options.

6. Edit the subscriber profile options as described in Adding Subscribers.

7. Edit the wallets for the subscriber as required. See Edit Wallets.

8. Execute business process logic actions as required. See Execute Business Process Logic.

9. Perform credit transfers as required. See Perform Credit Transfers.

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 About Auditing Changes to Subscriber Data for more information.

Related topic

Editing Subscribers

Editing configuration options

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

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.

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

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.

Topics:

User access

Adding a comment

Editing a comment

Deleting a comment

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*.

Adding a comment

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

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.

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

   Related topic

   Record Subscriber comments

Editing a comment

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

1. On the left hand panel in the Edit Subscriber screen, select the option containing the **Comments** panel.

2. Click **Edit**.

3. **Result:** You see the Edit Comment screen.

4. Modify the comment in the **Comment Text** field, as required..

5. Click **Save**.

   Result: You are returned to the Edit Subscriber screen

   Related topic

   Record Subscriber comments

Deleting a comment

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

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.

   Related topic

   Record Subscriber comments

Configure Subscriber Zones

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.

Topics:

User access

Adding a new zone shape

Editing a zone shape

Deleting a zone shape

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*.

Adding a new zone shape

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

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 New Zone screen.

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**.

Related topic

Configure Subscriber Zones

Editing a zone shape

Follow these steps to edit a Zone shape.

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 Edit Zone screen.

3. Edit the shape definition as described in Adding a new zone shape.

4. Click **Save**.

Deleting a zone shape

Follow these steps to delete a Zone shape.

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

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.

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:

- External Wallet Reference
- Product type
- 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.
Wallet Information	Core information about the wallet. For details, see Editing wallet information.
Product Type and Customer fields	Wallet attributes. For details, see Product Type and Customer fields.

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.

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.

3. 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.

4. If you have completed your subscriber edits, 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.

Product Type 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.
Customer	The customer the wallet is associated with. For more information about customers, see Customer.

View EDRs

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.

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 and Editing EDR elements.

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.

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.

1. In the Edit Subscriber Screen, click **View EDRs**.

   Result: You see the View EDRs for Subscriber screen 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 View EDRs for Subscriber fields.

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 **<<**.

4. **Note:** If no search categories are selected then all the EDRs that match the search criteria will be returned.

5. 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 `See Details` 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.

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.
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.
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

Field	Description
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.

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.

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.

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**.

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.

1. Select the EDR record to view in the search results table in the View EDRs for Subscriber screen.

    Click **Display**.

    Result: You see the EDR Details for Subscriber screen.

    Note: The screen layout and available fields depend on the category and template definition configured for the EDR in CCS. For details, see EDR Templates.

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.

Execute Business Process Logic

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.

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.

1. In the Edit Subscriber screen select the Subscriber option where the BPL to execute is located.

   Result: You see a button 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.

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

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.

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 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 `Does not expire` will be displayed.
Max Individual Limited Liability	Maximum individual limited liability configured for the promotion.
Global Liability Status	The options are • Unset • Eligible • Not Eligible

3

Subscriber Management - Product Type

This chapter explains the Product Type configuration screens.

This chapter contains the following topics.

Product Type

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

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

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

Adding product types

Follow these steps to add a new product type.

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.

   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.

3. 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.

4. Click **Save**.

Related topic

Product Type

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 name and expiry periods.	Name and Periods
Control Plans	Defines the control plans which are used for subscribers who have this product type.	Control Plans
Announcements	Sets the product type-dependant announcements for some interaction feature nodes.	Announcements

Option	Description	More Information
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.	Call Barring
Number Translations	Use to view and maintain the number translation short codes that are mapped to specific termination numbers for the selected product type.	Number Translations
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 Resource Limits. • At product type level, in the Discounts option.	Bypass Numbers
Second Currency	Configures a second currency for wallets associated with the selected product type.	Second Currency
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 *Feature Nodes Reference Guide*.	What's New
Help & Info	Use to enter details for the Help Info Menu feature node. For more information about the Help Info Menu feature node, see *Feature Nodes Reference Guide*.	Help & Info

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.	Product Type Swaps
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 *Feature Nodes Reference Guide*.	Node Options
Cumulative Balances	Defines the cumulative balance plan to use with this product type.	Cumulative Balances
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.	Subscriber Profile Limitations
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.	Profile Fields

Editing product types

Follow these steps to edit an existing product type.

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.

   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**.

Related topic

Product Type

Deleting Product Types

Follow these steps to delete an existing product type.

Note: You cannot delete a product type that is in use.

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.

Related topic

Product Type

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

The Name & Periods option sets general information about the product type, including:

- Name and description
- Currency defaults
- Expiry and recharge minimums

Name and Periods fields

This table describes the function of each field.

Field	Description
Name	The name of this product type.
Description	A description of this product type. Maximum of 2000 characters.

Adding Name & Period details

Follow these steps to add the name & period details for a product type.

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.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Name and Periods fields.

Editing Name & Period details

Follow these steps to view or change the name & period details for a product type.

1. In the Edit Product Type screen, select the Name & Period option from the left hand menu.

   Result: You see the Name & Period options.

2. Check or update the name & period details as necessary.

   For more information about the fields in this option, see Name and Periods fields.

Control Plans

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 Plan fields

This table describes the function of each field.

Field	Description
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.
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.
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.

Adding Control Plans

Follow these steps to add the control plan configuration to a product type.

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 Control Plan option.

2. Click **New**.

   Result: You see the New Control Plan screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Control Plan fields.

   Note:

The **Override Tariff Plan With** field 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 **Apply**.

   Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

Related topic

Control Plans

Editing control plans

Follow these steps to view or edit the control plan details for a product type.

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 Control Plan screen.

3. Check or update the control plan details as necessary.

   For more information about the fields in this option, see Control Plan fields.

   Note:

   The **Override Trigger With** field drop down list can only be changed if the **Trigger Override** check box is selected.

4. Click **Update**.

Related topic

Control Plans

Deleting control plans

Follow these steps to delete a control plan from a product type.

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**.

Related topic

Control Plans

Announcements

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 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.
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.

1. In the New Product Type screen, select the Announcements option from the left hand list.

   Result: You see the Announcements configuration options.

2. Configure this record by entering data in the fields on this screen.

For more information about the fields on this screen, see Announcements fields.

Editing Announcements details

Follow these steps to view or change the Announcements details for a product type.

1. In the Edit Product Type screen, select the Announcements option from the left hand menu.

Result: You see the Announcements options.

2. Check or update the Announcements as necessary.

For more information about the fields in this option, see Announcements fields.

Call Barring

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 tab)
- Subscriber account (see New/Edit Subscriber screen, Call Barring option).

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.

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.

2. Configure this record by entering data in the fields on this screen.

For more information about the fields on this screen, see Call Barring fields.

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.

1. In the Edit Product Type screen, select the Call Barring option from the left hand menu.

   Result: You see the Call Barring options.

2. Check or update the Call Barring details as necessary.

   For more information about the fields in this option, see Call Barring fields.

   For more information about how to configure the Number List, see Number lists.

Number Translations

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 tab), and
- Subscriber account (see New/Edit Subscriber screen, Number Translation option).

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.

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.

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 Number Translations fields.

Editing Number Translation details

Follow these steps to view or change the Number Translation details for a product type.

1. In the Edit Product Type screen, select the Number Translation option from the left hand menu.

   Result: You see the Number Translations options.

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 Number Translations fields.

Bypass Numbers

The Bypass Numbers option defines the destination numbers which subscribers with this product type can call with the bypass discount being applied.

Note: Bypass Numbers can also be configured at the following levels:

- System-wide

- Service Provider (see the Edit Resource Limits - Bypass Numbers option).

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.

Field	Description
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.

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.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Bypass Numbers fields.

   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.

1. In the Edit Product Type screen, select the Bypass Numbers option from the left hand menu.

   Result: You see the Bypass Numbers options.

2. Check or update the Bypass Numbers details as necessary.

   For more information about the fields in this option, see Bypass Numbers fields.

   For more information about how to configure the Number List, see Number lists.

Second Currency

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.

For more information about exchange rates, see Exchange Rates.

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 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 Currency.
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.

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.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Second Currency fields.

Editing Second Currency details

Follow these steps to view or change the Second Currency details for a product type.

1. In the Edit Product Type screen, select the Second Currency option from the left hand menu.

   Result: You see the Second Currency options.

2. Check or update the Second Currency as necessary.

   For more information about the fields in this option, see Second Currency fields.

What's New

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 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.

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.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see What's New fields.

Editing What's New details

Follow these steps to view or change the What's New details for a product type.

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.

2. Check or update the What's New details as necessary.

   For more information about the fields in this option, see What's New fields.

Help & Info

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 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.

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.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Help & Info fields.

Editing Help & Info details

Follow these steps to view or change the Help & Info details for a product type.

1. In the Edit Product Type screen, select the Help & Info option from the left hand menu.

   Result: You see the Help & Info options.

2. Check or update the Help & Info details as necessary.

   For more information about the fields in this option, see Help & Info fields.

Product Type Swaps

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 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.

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.

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.

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 Product Type Swap fields.

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.

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.

2. In the Product Type Swap table, select the record to change and click **Insert**.

   Result: You see the Edit/Insert screen.

3. Check or update the Product Type Swap details as necessary.

   For more information about the fields on this screen, see Product Type Swap fields.

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.

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.

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

The Node Options option sets product type-specific configuration for these feature nodes:

- Main Menu, and
- Personal Options Menu.

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.

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.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Node Options fields.

Editing Node Options details

Follow these steps to view or change the Node Options details for a product type.

1. In the Edit Product Type screen, select the Node Options option from the left hand menu.

   Result: You see the Node Options options.

2. Check or update the Node Options details as necessary.

For more information about the fields in this option, see Node Options fields.

Cumulative Balances

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.

Note: Balances that have not been assigned to a cumulative balance category cannot be played by the node.

Configuring the cumulative balances option

Follow these steps to configure the default cumulative balance plan for a Product Type.

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.

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.

Subscriber Profile Limitations

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 - lnstring

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.

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.

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**.

Related topic

Subscriber Profile Limitations

Editing profile field limitations - loprefix

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.

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.

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.

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**.

Related topic

Subscriber Profile Limitations

Profile Fields

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*.

Configuring profile fields

Follow these steps to configure the profile fields in a selected product type group.

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**.

Related topic

Profile Fields

Copying Product Types

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.

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.

4

Wallet Management

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.

This chapter contains the following topics.

Wallet Management Module

Balance Units

Balance Types

Currency to Announcement Maps

Balance Type Translations

Wallet Name Translation

Cumulative Balance Plans

Wallet Management Module

The Wallet Management screen lets you configure components of wallets. It contains the following tabs which are covered in the chapter:

- Balance Type Translations
- Balance Types
- Balance Units
- Cumulative Balance Plans
- Wallet Name Translation

Balance Units

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.

Topics:

Adding balance units

Editing balance units

Deleting balance units

Adding balance units

Follow these steps to add a new balance unit.

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 New Balance Unit screen.

3. In the **Name** field, enter the name of the balance unit.

4. Click **Save**.

Related topic

Balance Units

Editing balance units

Follow these steps to edit an existing balance unit.

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 Edit Balance Unit screen.

4. Edit the details as described in Adding balance units.

5. Click **Save**.

Related topic

Balance Units

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.

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.

Related topic

Balance Units

Balance Types

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.

Topics:

Balance type categories

Expenditure balance types

Expenditure expiry dates

Maximum balances

Maximum balance policy

Quota Notifications

Balance Types help

Balance Type screen

Balance Type Details fields

Balance Type Announcements fields

Quota Notifications fields

Adding balance types

Editing balance types

Deleting balance types

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.

Balance Type	Description
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.

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.

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.

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 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.

Related topic

Balance Types

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 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 Balance Units.
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:** • Valid range is 0 to 9.99. The default value is 1.00. • This value can only be entered when `the expenditure type` is set to `None`.
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.

Field	Description
Category	Indicates if the balance type is: • Chargeable • Cross • Expenditure • Fraud • Internal • Quota For more information about balance type categories, see Balance type categories. **Notes:** • The `Quota Balance` 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 **category** is set to `Quota Balances`.
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 Convergent Charging, Subscriber Management, Wallets screen.
Expenditure Type	If **Category** is set to **Expenditure Balance**, set this field to how frequently the balance is reset to zero. **Note:** If **Category** is set to **Expenditure Balance**, this field is required.
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**.
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).

Field	Description
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 Maximum balances. • 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 If you select `Fixed Date`, you must select the date using the date selector.

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.
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 `Cash` is selected in the **Unit** field (**Balance Type Details** tab).

Field	Description
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 `Cash` 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 `Cash` 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 `Cash` is selected in the **Unit** field (**Balance Type Details** tab).

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.

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.

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 Balance Type Details fields.

   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 a vailable drop down lists on this tab. For more information about the fields on this tab, see Balance Type Announcements fields.

   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 Currency to Announcement Maps.

   Tip: The **New** button will be available when the **Unit** is `Cash` (**Balance Type Details** tab).

7. Select the **Quota Notifications** tab.

   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 Quota Notifications fields.

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**.

   Related topic

   Balance Types

Editing balance types

Follow these steps to edit an existing balance type.

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 Balance Type Details fields.

5. Edit the fields with the required changes on the **Balance Type Announcements** tab.

   For information about the available fields, see Balance Type Announcements fields.

6. If the balance unit is `Cash`, you can add, edit and delete a currency to announcement map for Positive and Negative/No Credit announcements. See Currency to Announcement Maps.

7. If the **Category** of the balance type is `Quota Balance`, you can configure notifications for the quota on the **Quota Notifications** tab.

   For information about the available fields, see Quota Notifications fields.

8. Click **Save**.

Related topic

Balance Types

Deleting balance types

To ensure ongoing stability between CCS and the VWS, the delete function for balance types is not available.

Related topic

Balance Types

Currency to Announcement Maps

As part of setting up a balance type, you can configure currency to announcement maps. Announcements are used in the Cumulative Balances feature node.

Topics:

Adding a currency to announcement map

Editing a currency to announcement map

Deleting a currency to announcement map

Adding a currency to announcement map

Follow these steps to add a currency to announcement map for a cash unit balance type.

1. Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of Editing balance types.

2. Click **New**.

   Result: You see the Currency to Announcement Mapping screen.

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.

1. Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of Editing balance types.

2. Select a mapping from the table and click **Edit**.

   Result: You see the Currency to Announcement Mapping screen.

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.

1. Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of Editing balance types.

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

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:

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 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 *ACS User's Guide*.

Field	Description
Balance Type	The balance type this translation will be for. This list is populated by the records configured in the **Balance Types** 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. See Single Format for Balance Field.
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 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.

Adding balance type translations

Follow these steps to add a new balance type translation.

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 Balance Type Translation screen.

3. Enter data in the fields to configure this record.

   For more information about these fields, see Balance Type Translations Fields.

   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 unit of cash from the **Balance Type** drop down list.

4. Click **Save**.

Related topic

Balance Type Translations

Editing balance type translations

Follow these steps to edit an existing balance type translation.

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 Balance Type Translation screen.

4. Edit the fields with the changes to make.

   For more information about the fields on this screen, see Balance Type Translations Fields.

   Note: The **Language** and **Balance Type** fields cannot be edited.

5. Click **Save**.

Related topic

Balance Type Translations

Deleting balance type translations

Follow these steps to delete an existing balance type translation.

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.

    Related topic

    Balance Type Translations

Wallet Name Translation

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.

Topics:

Adding wallet name translations

Editing a wallet name translation

Deleting a wallet name translation

Adding wallet name translations

Follow these steps to add a new translation for a wallet type name.

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 New Wallet Name Translation screen.

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)

6. 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.

7. In the **No Wallet Expiry** field, type the text to output for wallets that have no expiry date.

8. Click **Save**.

    Related topic

    Wallet Name Translation

Editing a wallet name translation

Follow these steps to edit an existing Wallet Name Translation.

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 Edit Wallet Name Translation screen.

4. Edit the details as described in Adding wallet name translations.

    Note: The **Language** and **Wallet Type** fields are for reference only, they are not editable.

5. Click **Save**.

Related topic

Wallet Name Translation

Deleting a wallet name translation

Follow these steps to delete an existing wallet name translation.

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**.

    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.

Related topic

Wallet Name Translation

Cumulative Balance Plans

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 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 *Unit_Type* balances	Lists the available balance types for the selected unit type.
Unit_Type 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.
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.

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.

3. In the **Name** field, type in the new cumulative balance plan name.

4. For each relevant **Unit Type**, add the required balance categories. For details, see Adding balance categories.

5. 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.

   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.**

Related topic

Cumulative Balance Plans

Editing cumulative balance plans

Follow these steps to edit a cumulative balance plan.

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.

3. Make the required changes in the available fields. For more information on:

   • cumulative balance plan fields, see Cumulative Balance Plan fields.

   • adding balance categories, see Adding balance categories

   • editing balance categories, see Editing balance categories, or

   • deleting balance categories, see Deleting balance categories.

4. Click **Save.**

Related topic

Cumulative Balance Plans

Deleting cumulative balance plans

Follow these steps to delete an existing Cumulative Balance Plan.

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.

Related topic

Cumulative Balance Plans

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.

Field	Description
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.
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).

Field	Description
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.

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.

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.

Related topic

Cumulative Balance Plans

Editing balance categories

Follow these steps to view or edit a cumulative balance category for a Cumulative Balance Plan.

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.**

   Result: You see the Modify Balance Category screen.

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.**

Related topic

Cumulative Balance Plans

Deleting balance categories

Follow these steps to delete a cumulative balance category from a Cumulative Balance Plan.

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**.

Related topic

Cumulative Balance Plans

5

Service Management

This chapter explains the service management section of CCS.

This chapter contains the following topics.

Service Management Module

Domain

Currency Code

Currency

Global Configuration

Exchange Rates

Barred List

Capability

Number Translation List

MFile Generation

Balance Type Mapping

Security

About Voucher Security

Channel

Named Event

Service Management Module

The Service Management screen enables you to configure the service management section of CCS. It contains these tabs:

- Balance Type Mapping
- Barred List
- Capability
- Channel
- Currency
- Currency Code
- Domain
- Exchange Rates
- Global Configuration

- MFile Generation

- Named Event

- Number Translation List

- Resource Limits

- Security

Accessing the Service Management screen

Follow these steps to open the Service Management screen.

1. Select the **Services** menu from the SMS main screen.

2. Select **Prepaid Charging > Service Management**.

   Result: You see the Service Management screen.

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	Domain
1	Currency Code
2	Currency
3	Global Configuration
3	Resource Limits
4	Exchange Rates
4	Capability
5	Product Type
6	Barred List
6	Number Translation List
6	Security
6	Balance Type Mapping
6	Channel

Domain

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 exiting domains.

Topics:

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 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 Domain Types.
	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 Password	Select to allow a BCD Client to connect to the BRM communication 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:
	• Wallet Management • Edit Wallets
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 Voucher Management.

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.

Follow these steps to add a new domain.

1. Select the service provider from the **Service Provider** list in the Service Management screen.

2. Click **New** on the **Domain** tab.

   Result: The New Domain screen displays.

   For information about the fields and check boxes in the New Domain screen, see Domain fields.

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.

6. Complete the fields as required. For details about the data to enter for the type of domain you want to create, see:

- • Specifying a UBE Domain

- • Third-Party domain fields

- • Specifying a Diameter Domain

- • Specifying a BRM Domain

7. Click **Save**.

   Result: The new domain is saved, and listed on the **Domain** tab.

   Related topic

   Domain

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.

  You can edit or delete domain nodes as required. For information about editing domain nodes, see Editing domain nodes. For information about deleting domain nodes, see Deleting domain nodes or realms.

For more information about the fields and check boxes on the Domain screen, see Domain fields.

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.

- • Add at least one domain node to this domain. See Adding nodes to domains.

  You can edit or delete domain nodes as required. For information about editing domain nodes, see Editing domain nodes. For information about deleting domain nodes, see Deleting domain nodes or realms.

For more information about the non-third-party fields and check boxes on the Domain screen, see Domain fields.

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.

- Add at least one realm to this domain. See Adding realms to domains.

  You can edit or delete realms as required. For information about editing domain realms, see Editing domain realms. For information about deleting domain realms, see Deleting domain nodes or realms.

For more information about the non-third-party fields and check boxes on this screen, see Domain fields.

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.

Adding nodes to domains

Follow these steps to add a node to a domain.

1. From either the New Domain or Edit Domain screen, click **New**.

   Result: The New Domain Node screen appears.

2. Type a unique name for the node in the **Name** field.

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.

    Related topic

    Domain

Adding realms to domains

Follow these steps to add a realm to a diameter domain.

1. From either the New Domain or Edit Domain screen, click **New**.

    Result: The New Domain Realm screen 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.

    Related topic

    Domain

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.

Follow these steps to edit a domain.

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 Edit Domain screen 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**

    - **Voucher Management** check box.

See Domain fields 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**
    – **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 Adding nodes to domains, Editing domain nodes or Deleting domain nodes or realms procedures.

  • For DIAMETER domains, you can edit the domain realms as required. See Adding realms to domains, Editing domain realms, or Deleting domain nodes or realms.

7. Click **Save**.

  Result: The domain changes are saved and reflected in the **Domain** tab table.

  Related topic

  Domain

Editing domain nodes

Follow these steps to edit a domain node.

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 Edit Domain Node screen 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.

Related topic

Domain

Editing domain realms

Follow these steps to edit a domain realm.

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 Edit Domain Realm screen appears.

2. Update the following fields as required:

- **Identity**

- **Stable Weight**

3. Click **Save**.

Result: The realm is saved.

Related topic

Domain

Deleting domains

Follow these steps to delete a domain.

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.

Related topic

Domain

Deleting domain nodes or realms

Follow these steps to delete a node or a realm from a domain.

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.

Related topic

Domain

Currency Code

The **Currency Code** tab enables you to view, create, edit and delete the currency codes that are available in the system.

Topics:

Adding a Currency Code

Editing a Currency Code

Deleting a Currency Code

Adding a Currency Code

Follow these steps to add a new currency code.

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 New Currency Code screen.

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**.

Related topic

Currency Code

Editing a Currency Code

Follow these steps to edit an existing currency code.

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 Edit Currency Code screen.

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**.

Related topic

Currency Code

Deleting a Currency Code

Follow these steps to delete an existing currency code.

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**.

Related topic

Currency Code

Currency

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** tab of the Service Management screen.

Topics:

Currency entry components

Recharging Credit Cards - required components

Currency details

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.

Caller options	The system will play the balance announcement...
6	as defined by the announcement set selected in the **Five options and on** section. *Plus* 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. *Plus* 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. *Plus* the recharge announcement set selected in the **Recharge options 6-8** section followed by the "Press * to cancel"
9	as defined by the announcement set selected in the **Five options and on** section. *Plus* 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 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 screen.

Follow these steps to add currency details for a new currency.

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).

4. Enter the symbol that represents the subunit of the currency in the **Little Symbol** field (for example, c 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 Announcements.

10. Configure the announcements for Recharge options 1-5.

11. Configure the announcements for Recharge options 6-9.

Related topic

Currency

Announcements

Follow these steps to add the confirmation prompt announcement for a new currency.

1. Select the **Configure Announcements** option in the New Currency screen.

   Result: You see the Configure Announcements option, 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**.

Recharges 1-5

Follow these steps to add the announcements for recharge options 1-5 for a new currency.

1. Select the **Recharge options 1-5** option in the New Currency screen.

   Result: You see the Recharge options 1-5, 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 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**.

Recharges 6-9

Follow these steps to add the announcements for recharge options 6-9 for a new currency.

1. Select the **Recharge options 6-9** option from the New Currency screen.

   Result: You see the Recharge options 6-9, 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**.

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 screen.

1. Select the service provider from the **Service Provider** list in the Service Management screen.

2. Select the record o 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 Currency details.

   Warning: You cannot change the **Base** once set.

5. Click **Save**.

Related topic

Currency

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 screen.

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**.

Related topic

Currency

Global Configuration

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.

- The mapping of languages that the system currency is announced in. See Adding or editing a language map and Deleting a language map.

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.

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 Language Menu Option Mapping option.

   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.

7. Click **Save** to update the table.

8. Click **Save** to the details to the database.

Related topic

Global Configuration

Deleting a language map

Follow these steps to delete a language map.

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 Language Menu Option Mapping option.

   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.

Related topic

Global Configuration

Exchange Rates

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.

Topics:

Adding an exchange rate

Adding an exchange rate

Follow these steps to add a new Exchange Rate record.

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 Exchange Rate screen 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**.

Related topic

Exchange Rates

Editing an exchange rate

Follow these steps to edit an existing Exchange Rate.

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 Exchange Rate screen 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**.

Related topic

Exchange Rates

Deleting exchange rates

Follow these steps to delete an existing Exchange Rate record.

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.

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**.

Related topic

Exchange Rates

Resource Limits

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

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*.

Topics:

Resource Limits tab fields

Configuration options summary

Editing Resource Limits

Limits

Business Prefix

Sets

Call Barring

Number Translations

Bypass Numbers

Profile Group Limitations

Deleting resource limits

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, Limits option.
Global Business Prefix Account Number Prefix	Edit Resource Limits screen, Business Prefix option.

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.
Call Barring	Sets the numbers that are allowed or barred at service provider level.

Option	Description
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.
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 Subscriber Profile Limitations.

For information on setting each resource limit, see Editing Resource Limits.

Editing Resource Limits

Follow these steps to edit an existing resource limit.

1. Select the service provider from the Service Provider list in the Service Management screen.

2. Click **Edit** on the **Resource Limits** tab.

   The Edit Resource Limits screen displays.

3. Select the required options and edit the details of the record. See:

   - Limits
   - Business Prefix
   - Sets
   - Call Barring
   - Number Translations
   - Bypass Numbers
   - Profile Group Limitations

4. Click **Save**.

Related topic

Resource Limits

Limits

Follow these steps to add limits to Resource Limits for a service provider.

1. Select the customer from the **Service Provider** drop down box.

ORACLE

2. From the **Resource Limits** tab of the Resources screen, click **Edit**.

   The configurable limits display in the Edit Resource Limits screen. For more information, see Resource Limits tab fields.

3. In the relevant fields, set the maximum number of the following resources that the service provider may use:

   - Product types
   - Voucher types

   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. 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. Click **Save**.

Related topic

Resource Limits

Business Prefix

Follow these steps to configure the Global Business Prefix number for the service provider.

1. Select **Business Prefix** in the left hand menu in the Edit Resource Limits screen.

   The Business Prefix option 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 *CPE User's Guide*. For more information about the Business Prefix Branch feature node, see *Feature Nodes Reference Guide*.

3. (Optional) Specify the prefix that will be prepended to a subsriber's card ID by entering 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**.

Related topic

Resource Limits

Sets

Follow these steps to configure private reusable data set limits for service providers.

1. Select the **Sets** option from the left hand menu in the Edit Resource Limits screen.

The Sets option 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*.

Related topic

Resource Limits

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 option)
- Subscriber account (see the New or the Edit Subscriber screen, Call Barring option)

Follow these steps to configure call barring for customers.

1. Select the **Call Barring** option from the left hand menu in the Edit Resource Limits screen.

The Call Barring option 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
    - Click **Delete**.

5. If required, repeat step 4 until the number list is complete.

6. Click **Save**.

Related topic

Resource Limits

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.

1. Select the **Number Translations** option from the left hand menu in the Edit Resource Limits screen.

The Number Translations option displays, listing the configured short codes.

2. Edit the number list in the **Short Codes** section.

To add a number to the list:

a. In the **In** field, enter the service short code to translate.

b. In the **Out** field, enter the termination number that the short service code translates to.

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**.

Related topic

Resource Limits

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

1. Select the **Bypass Numbers** option from the left hand menu in the Edit Resource Limits screen.

The Bypass Numbers option displays, showing the bypass numbers configuration for the service provider.

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**.

   Related topic

   Resource Limits

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.

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 Profile Group Limitations option 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:

a. Enter a required number in the **New Number** field.

b. Click **Add**.

To delete a number from the list:

a. Select the number from the **Number List**, select the number.

b. Click **Delete**.

8. Repeat step 7 until the number list is complete.

9. Click **Save**.

Related topic

Resource Limits

Deleting resource limits

Customers must have resource limits. You can only change the values, not delete them.

Related topic

Resource Limits

Barred List

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.

Topics:

Adding numbers to the barred list

Adding numbers to the barred list

Follow these steps to edit the service allowed/barred numbers list.

1. From the **Barred List** tab, click **Edit**.

   Result: You see the Edit Service Allowed/Barred Numbers List screen.

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.

   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**.

Related topic

Barred List

Capability

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 in the Product Type screen. See Control Plans.

The default capabilities are VOICE_MO (originating) and VOICE_MT (terminating).

Topics:

Capability fields

Adding a capability

Editing a capability

Deleting balance type mapping

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 Control Plans option in the Product Type screen.
Service	The service name that triggers this capability. Service names are defined in **/IN/service_packages/ACS/etc/acs.conf** For more information about configuring service names, see *ACS Technical Guide*.
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 License.
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.

Adding a capability

Follow these steps to add a new Capability definition.

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 New Capability screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Capability fields.

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 *SLEE Technical Guide*.

Related topic

Capability

Editing a capability

Follow these steps to edit a Capability definition.

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 Edit Capability screen.

3. Edit the fields to reflect the required changes.

   For more information about the fields on this screen, see Capability fields.

4. Click **Save**.

   Warning: The SLEE will need to be restarted in order for the changes to take effect.

Related topic

Capability

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.

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.

Related topic

Capability

Number Translation List

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.

Topics:

Editing numbers in the translation list

Editing numbers in the translation list

Follow these steps to edit the numbers on the Number Translation List.

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 Edit Service Short Codes/Number Translation List screen.

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**.

Related topic

Number Translation List

MFile Generation

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*.

Topics:

MFile distribution process

MFile Fields

Adding an MFile

Editing an MFile

Deleting an MFile

MFile distribution process

This topic describes the MFile distribution process.

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**:

3. Creates a new MFile from the updated data in the E2BE database

4. Sends a request to the beServer to reload the MFile

5. Then **ccsMFileLoader**:

6. Reloads the new MFile

7. Updates the E2BE database to indicate that the new MFile has been reloaded

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** tab. This field cannot be edited once it is initially saved.
Description	The description of the MFile.

Field	Description
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

Adding an MFile

Follow these steps to add a new MFile for a selected service provider.

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 MFile Configuration screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see MFile Fields.

4. Click **Save**.

   Result: ccsMFileCompiler on the VWS nodes within the chosen domain builds up a new MFile and notifes the VWS processes.

Related topic

MFile Generation

Editing an MFile

Follow these steps to edit an existing MFile generation record.

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.

3. Click **Edit**.

   Result: You see the Edit MFile Configuration screen.

4. In the **Description** field, update the description of the MFile.

   For more information about the fields in this screen, see MFile Fields.

5. Click **Save**.

Related topic

MFile Generation

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.

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**.

Related topic

MFile Generation

Balance Type Mapping

The **Balance Type Mapping** tab is used for:

- Mapping third-party balance types to Convergent Charging Controller balance types (for example, from ECE 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, wallet recharges are sent to the VWS by default.

Topics:

Balance type mapping fields

Scenarios

Adding balance type mapping

Editing balance type mapping

Deleting balance type mapping

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 you select None, Convergent Charging Controller uses the balance type mapping configuration for filtering wallet recharges through the charging and/or tracking domain. See Scenarios.

Field	Description
Third-Party Resource	The third-party balance ID to map to the Convergent Charging Controller balance type.
	This text field accepts letters, digits, and spaces.
Third-Party Resource Scale	The scaling factor for converting balance values between Convergent Charging Controller balance types and third-party balance types.
	For example, if Convergent Charging Controller uses hundredths of seconds for time balances, but the BRM equivalent uses seconds, the scaling factor converts the BRM seconds to the Convergent Charging Controller hundredths of seconds.
	Note: This field accepts:
	• Positive and negative numbers. A negative number means to apply sign inversion to the calculated value.
	• Number values up to 10000.
	• Numbers with up to 5 decimal places.
Domain Type	List of available non-VWS domain types. This field 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.
typeSubscriber applies 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.

Adding balance type mapping

Follow these steps to add a new balance type mapping.

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.

4. Click **Save**.

Related topic

Balance Type Mapping

Editing balance type mapping

Follow these steps to edit an existing balance type mapping.

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 this screen, see Balance type mapping fields.

5. Click **Save**.

Related topic

Balance Type Mapping

Deleting balance type mapping

Follow these steps to delete an existing balance type mapping.

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**.

Related topic

Balance Type Mapping

Security

The **Security** tab allows you to configure the security for vouchers.

About 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 SHA256, CB-10 HRN SHA512 and CB-10 HRN AES256 encryptions. Specify the encryption method when creating voucher batches and redeeming vouchers.

Ensure the following are installed and activated on your system to be visible on your screens:

- CB-10 voucher security features
- CB10 HRN SHA256 authentication module
- CB10 HRN SHA512 authentication module
- CB10 HRN AES256 authentication module

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*.

Security fields

This table describes the function of each field.

Note: The S, R1, R2, and R3 fields apply to CB10 HRN and SDK-developed 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.

Field	Description
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 *CCS Installation and Removal Guide.* • The full list of PAMs is a combination of a fixed list of product-provided PAMs plus any SDK-developed PAMs that have been installed.
Number Length	Voucher number length. This field is non-editable and is calculated for a PAM of CB10 HRN SHA256 or CB10 HRN SHA512 as the sum of S+R1+R2+R3.
PIN Length	Voucher PIN length (digits). This field is available only for existing vouchers and is non-editable.
Salt	This field applies to DES rule definition only. This field is available only for existing vouchers and is non-editable.
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. Following encryption algorithms are supported:

• CB10 HRN SHA256

• CB10 HRN SHA512

• CB10 HRN AES256

Note: You cannot edit or delete an authentication rule that is used to create a voucher batch. Voucher batches created in previous versions of the product can continue to use the old rules they were created with. Old authentication rules are not available for new voucher batches.

CB-10 HRN Creation

The CB10 HRN creation 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 creation 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 keys are generated in one of the following ways:

- Generated automatically when a new service provider is created
- Generated or regenerated for service providers who existed before the CB-10 HRN authentication was activated using the **Generate** button for one of the CB10 HRN SHA or AES PAM modules

Note: If a voucher batch is already created for a service provider using the CB-10 creation algorithm then you cannot:

- Regenerate the K1, K2, and K3 private keys for the selected service provider
- Edit the associated authentication rule

CB-10 HRN SHA Hashing

CB-10 HRN private keys are created when:

- a new service provider is created
- a **Generate** button is clicked for a CB10 or SDK PAM Authentication module and the service provider does not have any CB-10 vouchers created yet

Clicking a **Generate** button also generates hash/encryption keys for the specific PAM Authentication module that are used for hashing/encrypting the CB10 or SDK-created HRN. **Generate** buttons are disabled if the service provider already has a voucher batch created using the specific PAM Authentication module.

For example, after a voucher batch is created for a service provider using an authentication rule specifying a PAM of CB10 HRN SHA256, you cannot change or update the hash key for CB10 HRN SHA256.

PAMs that use SHA hashing can specify the number of hash iterations to apply, the default is 1 iteration.

Decryption to retrieve the HRN is not supported for SHA-based PAMs as the SHA operation is not reversible.

CB-10 HRN AES Encryption

Similar to CB-10 HRN SHA hashing, AES encryption keys are created when the **Generate** button for the CB10 HRN AES256 PAM or a SDK-developed PAM using AES Encryption is clicked.

Once a service provider has a voucher batch created with Authentication Rules using the PAM, the Generate button for the PAM is no longer enabled.

PAMs that use AES encryption do not use iterations and in this case the **Iterations** field for the Authentication Rule is set to 1.

Because AES-256 is a symmetric encryption algorithm, its encrypted value can be decrypted. If the capability of decrypting voucher private secrets is required those vouchers must be created using an Authentication rule that specifies either a PAM of CB10 HRN AES256 or an SDK-developed PAM that supports decryption.

Generating CB-10 HRN keys and SHA/AES hash/encryption keys

Follow these steps to generate or regenerate CB-10 HRNGEN private keys, SHA hash keys and AES keys for a service provider.

1. Select the customer from the **Service Provider** drop down box.

2. On the **Security** tab, click **Generate** for one of the following:

   • CB10 HRN SHA256 Key Generation

   • CB10 HRN SHA512 Key Generation

   • CB10 HRN AES256 Key Generation

   • SDK `Display Name` Key Generation

3. **Note:**`Display Name` is the chosen name for a PAM plugin developed with the SDK. The buttons are visible on the tab if the CB-10 Voucher Security features are activated. **Generate** buttons are disabled if a voucher is already created for the service provider using the associated voucher authentication PAM module.

   Result: You see the appropriate Key Generation completed message box appear.

4. 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.

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**.

Adding an authentication rule

Follow these steps to add a new authentication rule.

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 New Authentication Rule screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Security fields.

   Notes:

   • To use the selected PAM, you must first complete key generation. See Generating CB-10 HRN keys and SHA/AES hash/encryption keys.

   • Different fields will be enabled depending on which authentication module you select and in the case of an SDK-developed authentication module how that module has been configured.

4. Click **Save**.

Related topic

About Voucher Security

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.

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 Edit Authentication Rule screen.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this screen, see Security fields.

   Note: Different fields will be enabled depending on which authentication module you select.

5. Click **Save**.

Related topic

About Voucher Security

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.

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**.

Related topic

About Voucher Security

Channel

The **Channel** tab allows you to configure the promotion channels for the Balance Recharge event in Promotion Manager.

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.

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 Channel fields.

4. Click **Save**.

Related topic

Channel

Editing a Channel

Follow these steps to edit an existing channel.

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 Channel fields.

5. Click **Save**.

Related topic

Channel

Deleting a Channel

Follow these steps to delete an existing channel.

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.

Related topic

Channel

Named Event

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.

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 cacades

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 table

This table describes the content of each table column on the **Named Event** tab.

Field	Description
Named Event	The name of the named event.
Change User	Name of the user who created or modified the event.
Change Date	Date of creation or modification of event.

Adding named event set

Follow these steps to add a new named event set.

1. On the **Named Event** tab, click **New Set**.

   Result: The New Named Event Set screen appears.

2. In the **Name** field, type the name of the new named event.

3. Click **Save**.

   Related topic

   Named Event

Editing named event sets

Follow these steps to edit an existing named event set.

1. On the **Named Event** tab, select the named event to edit from the **Event Set** drop down box.

2. Click **Edit Set**.

3. Modify the **Name** as required.

4. Click **Save**.

Related topic

Named Event

Deleting named event sets

Follow these steps to delete an existing named event set.

1. On the **Named Event** tab, select the named event set to delete from the **Event Set** drop down box.

2. Click **Delete Set**.

   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 Named Events prompt.

4. Click **OK**.

Related topic

Named Event

Adding named events

Follow these steps to add a new named event to a named event set.

1. On the **Named Event** tab, select the required **Event Set** from the drop down box.

2. Click **New**.

3. Configure this record by entering data in the fields on this screen.

4. Click **Save**.

Related topic

Named Event

Editing named events

Follow these steps to edit an individual named event in a selected named event set.

1. On the **Named Event** tab, select the **Event Set** from the drop down box.

2. In the table on the tab, select the record to edit.

3. Click **Edit**.

4. Edit the details as required.

5. Click **Save**.

Related topic

Named Event

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.

1. On the **Named Event** tab, select the **Event Set** from the drop down box.

2. 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 record deleted confirmation message.

5. Click **OK**.

Related topic

Named Event

6

Notifications Management

This chapter explains how to configure Profile Notifications.

This chapter contains the following topics.

Notifications Introduction

Notification Management Module

Profile Notifications

Notifications Introduction

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*.

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.

Precondition Type	Availability	Description
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 Checking profile field values 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 parameters for the precondition expressions that determine when a Profile Notification message is triggered.

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.

Parameter	Description
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.
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.

Notification Management Module

The **Notification Management** screen lets you configure Profile Notifications.

The Notification Management screen contains this tab:

- Profile Notifications.

Accessing the Notification Management screen

Follow these steps to open the Notification Management screen.

1. Select the **Services** menu from the SMS main screen.

2. Select **Prepaid Charging > Notification Management**.

   Result: You see the Notification Management screen.

Profile Notifications

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*.

Topics:

Adding profile notifications

Follow these steps to add a new Profile Notification. This can trigger the relevant type of notification from the system.

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.

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:

    • **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 Adding profile preconditions.

10. In the **Fields** panel, configure a profile notification field for each parameter defined in the DAP Template. For details, see Adding profile notification fields.

    Tip: It is recommended that you use the fields evaluated by the preconditions.

11. Click **Save**.

Related topic

Profile Notifications

Editing profile notifications

Follow these steps to edit an existing Profile Notification.

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.

4. Edit the profile notification configuration as described in Adding profile notifications.

5. Click **Save**.

Related topic

Profile Notifications

Deleting profile notifications

Follow these steps to delete an existing Profile Notification.

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**.

Related topic

Profile Notifications

Adding profile preconditions

Follow these steps to add a precondition to a profile notification.

1. On the **Preconditions** panel in the New Profile Notification screen, click **Add**.

   Result: You see the Add Profile Precondition Field screen.

2. Select the **Profile Field** to evaluate in the precondition.

3. Select the **Precondition Type** from the drop down list. For more information on precondition types, see Preconditions.

   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**.

Related topic

Profile Notifications

Editing profile preconditions

Follow these steps to edit an existing Precondition for a Profile Notification.

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 Adding profile preconditions.

4. Click **Ok**.

Deleting profile preconditions

Follow these steps to delete an existing Precondition for a Profile Notification.

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.

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**.

Related topic

Profile Notifications

Editing profile notification fields

Follow these steps to edit the configuration for a Profile Notification field.

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 Adding profile notification fields.

4. Click **Ok**.

Related topic

Profile Notifications

Deleting profile notification fields

Follow these steps to delete an existing Field for a Profile Notification.

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**.

Related topic

Profile Notifications

7

Task Management

This chapter explains how to configure BPL tasks.

This chapter contains the following topics.

Task Management Module

Business Process Logic

BPL Response Mapping

Response Mappings and Control Plans

Task Management Module

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, and
- BPL Response Mapping.

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:

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 *CPE User's Guide*.

3. On the Business Process Logic tab, define the BPL task (including mapping the control plan to the BPL).

4. On the BPL Response Mapping 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 *SPM User's Guide*.

Accessing the Task Management screen

Follow these steps to open the Task Management screen.

1. Select the **Services** menu from the SMS main screen.

2. Select **Prepaid Charging > Task Management**.

   Result: You see the Task Management screen.

Business Process Logic

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.

Adding business process logic tasks

Follow these steps to add a new business process logic (BPL) task.

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 Business Process Logic screen.

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.

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 *XML TCAP Interface Technical Guide* 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 *PI User's Guide*.

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 *ACS Technical Guide*.

11. Click **Save**.

Related topic

Business Process Logic

Editing business process logic tasks

Follow these steps to edit an existing business process logic task.

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 Business Process Logic screen.

4. Edit the details as described in Adding business process logic tasks.

5. Click **Save**.

Related topic

Business Process Logic

Deleting business process logic tasks

Follow these steps to delete an existing business process logic task.

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**.

Related topic

Business Process Logic

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*.

1. In the New or the Edit Business Process Logic screen, click **New**.

   Result: You see the New BPL Parameter screen.

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 *CCS User's Guide*.

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.

Related topic

Business Process Logic

Editing a BPL parameter

Follow these steps to edit an existing BPL parameter.

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 Edit BPL Parameter screen.

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.

7. **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.

8. Click **Save**.

   Result: The changes are saved to the database.

Related topic

Business Process Logic

Deleting BPL parameters

Follow these steps to delete an existing BPL parameter.

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**.

Related topic

Business Process Logic

BPL Response Mapping

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.

Topics:

Adding BPL responses

Editing BPL responses

Deleting BPL responses

Adding translations for BPL responses

Editing translations for BPL responses

Deleting translations for BPL responses

Adding BPL responses

Follow these steps to add a new BPL response.

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 New BPL Response screen.

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**.

Related topic

BPL Response Mapping

Editing BPL responses

Follow these steps to edit an existing BPL response.

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 Edit BPL Response screen.

5. If required, select a different **Response Template**.

6. If required, specify a different **Response Number**.

7. Click **Save**.

Related topic

BPL Response Mapping

Deleting BPL responses

Follow these steps to delete an existing BPL response and any related message mappings.

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.

Related topic

BPL Response Mapping

Adding translations for BPL responses

Follow these steps to add a new translation for a BPL response.

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 New BPL Response Message screen.

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 *ACS User's Guide*.

5. In the **Display Message** field, enter the message text.

6. Click **Save**.

Related topic

BPL Response Mapping

Editing translations for BPL responses

Follow these steps to edit a translation for a BPL response message.

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 Edit BPL Response Message screen.

4. From the **Language** drop down box, select a different language if required.

5. Edit the **Display Message** as required.

6. Click **Save**.

Related topic

BPL Response Mapping

Deleting translations for BPL responses

Follow these steps to delete message mapping for a BPL response.

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.

Related topic

BPL Response Mapping

Response Mappings and Control Plans

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.

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.

8

EDR Management

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.

This chapter contains the following topics.

EDR Management Module

EDR Types

EDR Categories

EDR Elements

EDR Templates

EDR Viewer Columns

EDR Management Module

The EDR Management screen lets you configure how EDRs are searched for and displayed in the View EDRs screen. It contains these tabs:

- EDR Types
- EDR Categories
- EDR Elements
- EDR Templates
- EDR Viewer Columns

Accessing the EDR Management screen

Follow these steps to open the EDR Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > EDR Management**.

   Result: You see the EDR Management screen.

EDR Types

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=120|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_REASON=14

Adding EDR types

Follow these steps to add a new EDR type.

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.

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**.

Related topic

EDR Types

Editing EDR types

Follow these steps to edit an existing EDR type.

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.

5. Click **Save**.

Related topic

EDR Types

Deleting EDR types

Follow these steps to delete an existing EDR type.

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.

5. Click **OK**.

Related topic

EDR Types

EDR Categories

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.

Adding EDR categories

Follow these steps to add a new EDR category.

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**.

Related topic

EDR Categories

Editing EDR categories

Follow these steps to edit an existing EDR category.

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**.

    Result: You see the Edit EDR Category screen.

4. Add any new EDR types to this EDR category as described in Adding EDR categories.

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**.

Related topic

EDR Categories

Deleting EDR categories

Follow these steps to delete an existing EDR category.

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.

5. Click **OK**.

Related topic

EDR Categories

EDR Elements

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.

Adding EDR elements

Follow these steps to add a new EDR element.

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.

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 *EDR Definitions Operations Guide*.

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 Adding EDR Tag entries.

8. Click **Save**.

Related topic

EDR Elements

Editing EDR elements

Follow these steps to edit an existing EDR element.

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.

4. Edit the details as described in Adding EDR elements.

5. Click **Save**.

Related topic

EDR Elements

Deleting EDR elements

Follow these steps to delete an existing EDR element.

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**.

Related topic

EDR Elements

Adding EDR Tag entries

Follow these steps to add a new record to the EDR Tags table.

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.

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.

Related topic

EDR Elements

Editing EDR Tag entries

Follow these steps to add a new record to the EDR Tags table.

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.

2. Edit the fields as described in Adding EDR Tag entries.

3. Click **Save**.

Related topic

EDR Elements

Deleting EDR Tag entries

Follow these steps to add a new EDR element.

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**.

Related topic

EDR Elements

EDR Templates

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.

Adding EDR templates

Follow these steps to add a new EDR template.

1. In the EDR Management screen, select the service provider from the Service Provider List.

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**.

   Related topic

   EDR Templates

Example EDR template

These two screens show an EDR template, and the EDR Details screen using that EDR template.
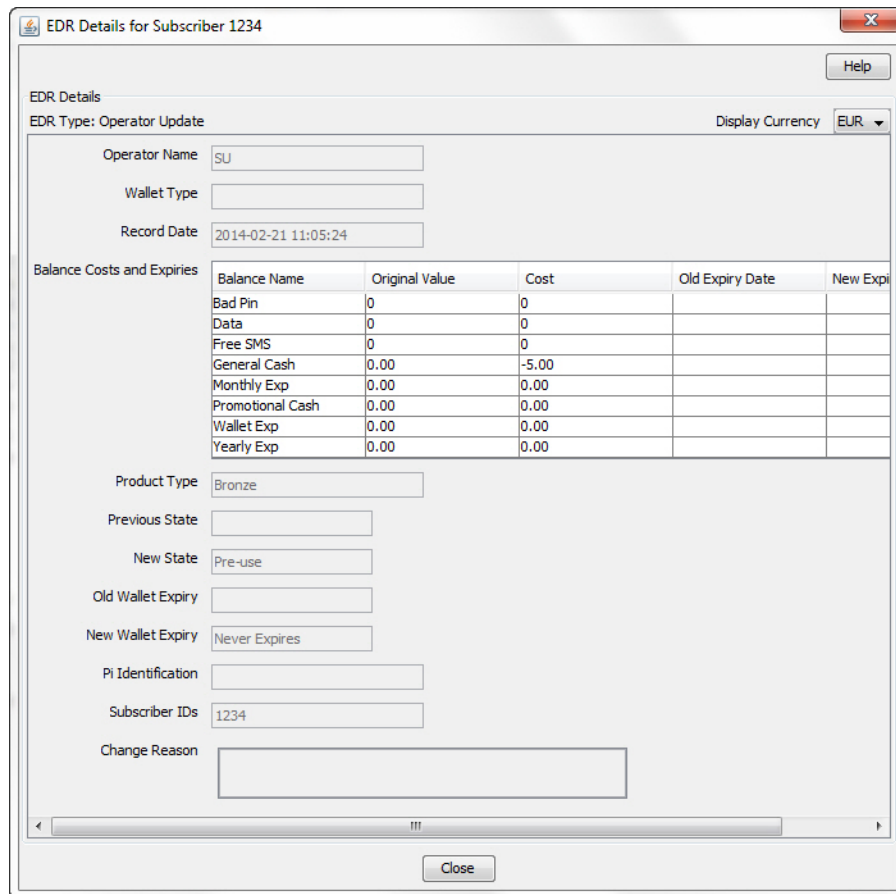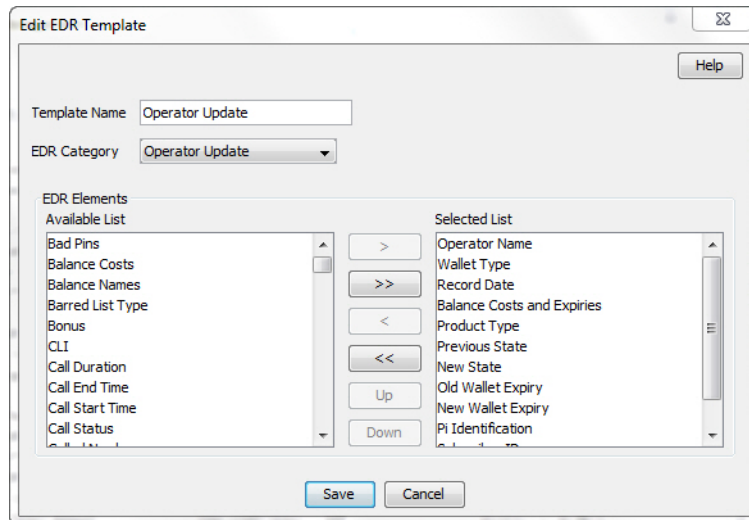
Editing EDR templates

Follow these steps to edit an existing EDR template.

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.

4. Edit the details as described in Adding EDR templates.

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**.

Related topic

EDR Templates

Deleting EDR templates

Follow these steps to delete an existing EDR template.

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**.

Related topic

EDR Templates

EDR Viewer Columns

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.

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.

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.

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**.

Related topic

EDR Viewer Columns

9

System Overview

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

This chapter contains the following topics.

Vouchers Introduction

Security

Power Charge Scenarios

Vouchers Introduction

Vouchers are credit coupons which are used to add value to wallet balances.

Telcos can create and distribute the vouchers according to their preference and need. They can be distributed in card form or as mail-out discount offers. They may be purchased from the telco.

CCS provides systems for:

- Creating voucher types and batches
- Securing vouchers (through PINs)
- Redeeming vouchers
- Automatic deletion of archived vouchers

Note: Vouchers are sometimes referred to as scratch cards.

Voucher data

Each voucher contains this data:

- Product types they can be used for
- Balance type to credit
- Amount to be credited
- Expiry date for each new bucket
  - Pre-Use expiry period sets date a voucher must first be used or its balance will expire
  - Balance expiry period sets the time after a voucher is first used after which any outstanding voucher balance will expire

Vouchers used for recharge may affect multiple balance types.

Voucher states

Here is the list of voucher and voucher batch states:

- Created

- Active

- Frozen

When you create a voucher batch the batch state is set to Created. You must set the batch state to Active if you want to redeem the vouchers in the batch. You may also need to set the state of each voucher within the batch to Active.

Note: A voucher may only be redeemed if it is in an active state and the voucher batch it belongs to is also in an active state.

Reported voucher state

The status of an individual voucher or a range of vouchers within a batch can be updated. This means that individual vouchers within the batch may have different states to the batch itself. When the batch and voucher states are different, the batch state may override the voucher state so that the reported state of the voucher is different to its actual state.

This table shows what the reported voucher state will be for the available voucher and batch states.

Actual Voucher State	Created Batch	Active Batch	Unavailable Batch
Created	Voucher reported as created	Voucher reported as created	Voucher reported as frozen
Active	Voucher reported as created	Voucher reported as active	Voucher reported as frozen
Frozen	Voucher reported as created	Voucher reported as frozen	voucher reported as frozen
Deleted	Voucher reported as created	Voucher reported as deleted	voucher reported as frozen

Redeeming vouchers

Vouchers can be redeemed by:

- Providing voucher details using the IVR menu set up in a control plan

- Customer service representatives using the Voucher Recharge tab on the Voucher Management screen.

Redeeming a voucher changes wallet balances and voucher status. Voucher recharges add value to the personal wallet by default. The business wallet can be selected using normal wallet selection features. If the subscriber only has one wallet, their recharge is automatically applied to that wallet. Wallet balance changes are made using VWS's voucher subsystem.

Automatic voucher deletion

Vouchers that have been redeemed will be archived on a weekly basis. The archived vouchers will be automatically deleted from the VWS after a configurable number of weeks have elapsed.

The number of weeks to keep archived vouchers is set on the AVD Configuration tab. This tab also displays the date ranges for which redeemed vouchers will be deleted.

Security

Voucher PINs

Vouchers generally come with a PIN. PINs validate the voucher by number.

Note: Voucher PINs are different from Bad-PIN counts for credit cards.

For more information about how PINs are generated and checked, see *CCS Technical Guide*.

Generating GPG keys

A public and private GPG key can be generated from a pass-phrase. The private key is held only by the print shop and used only to decode the encrypted batch file. The public key is used to encrypt the file and must therefore be supplied to the operator who will be responsible for generating the voucher batch file.

For more information about using GPG keys with exported files, see *Print Shop Operations Guide*.

CB-10 voucher security

If CB-10 voucher security functionality is installed and activated on your system and the HRNGEN private keys and SHA hash keys are generated, you can use CB10 and CB10 HRN encryption when creating voucher batches. The authentication rules for generating CB10 and CB10 HRN encryption parameters are configured on the **Security** tab on the CCS Service Management screen.

Note: For more information about CB10 authentication rules, see *CCS User's Guide*. For more information about enabling the CB10 voucher security feature, see *Installation Guide*.

Power Charge Scenarios

A scenario is an alternative set of multiple balances that is associated with a voucher type. When a voucher is redeemed, a subscriber can select a particular scenario from the different options available for redeeming the voucher.

Note: It is possible for a scenario to increment a balance, or extend the expiry date for the balance, or both.

Examples of scenarios

A single voucher can be redeemed in multiple ways, depending on the options available at redemption. The subscriber is presented with a list of scenarios and prompted to select one.

For example, a voucher can be redeemed one of the following ways:

- 120 minutes of international calling (180 minutes during a special promotion)
- 200 short messages made within a 30 day period (300 SMS during a special promotion)
- Gold customers will receive an additional 10% on their chosen option

Redemption rules

Scenarios are applied and redeemed according to the following rules:

- The default scenario value '0' will always be applied in addition to any selected scenario.
- The scenario name selected by the subscriber must match a scenario defined against the voucher type for the recharge to occur.
- If only one scenario exists against the voucher type, no scenario needs to be selected.

Redemption notifications

When a subscriber's account is changed due to a voucher being redeemed, a real-time wallet notification is sometimes sent to the subscriber's handset.

For vouchers which are redeemed with a scenario, a notification template must be configured for each scenario. The notification template is selected by matching the scenario number to the digit on the end of the notification template name.

Example: For a basic recharge notification with two scenarios, the following two notifications must be configured:

- BasicRecharge1
- BasicRecharge2

10

Voucher Management

This chapter explains how to create and manage vouchers.

This chapter contains the following topics.

Voucher Manager Module

The Voucher Management screen allows you to configure vouchers. It contains these tabs:

- Voucher Type
- Voucher Batches
- Vouchers
- Voucher Validation
- Voucher Ranges
- GPG Public Keys
- AVD Configuration

Accessing the Voucher Manager screen

Follow these steps to open the Voucher Manager screen.

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 **Voucher Manager**.

   Result: You see the Voucher Manager screen.

Voucher Type

The **Voucher Type** tab allows you to add, modify, or delete voucher types.

The voucher type determines the tariff plan, the restriction control plan, and the value of the calls for which recharges (including vouchers) are valid.

For each voucher type, you can:

- Define multiple balance types, see Multiple balance type
- Define power charge scenarios, see Power charge scenarios

Voucher types define core details and restrictions for recharges such as vouchers and the balance increase part of credit transfers.

For more information about redeeming vouchers, see Vouchers Introduction. For more information about credit transfers, see "Transfer Management" in *CCS User's Guide*.

Multiple balance type

You can add more than one balance type to a voucher type. When a recharge or voucher is redeemed, all balance types associated with the voucher 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). You can add more than one entry for the same balance type, with different details for each entry, including:

- Unique expiry dates and extension policies
- The period during which this balance type entry can be recharged
- The product types for which this balance type entry can be recharged

Power charge scenarios

You can associate recharge scenarios to a balance type for a voucher type. The voucher type can then be redeemed in multiple ways depending on the scenario options available when it is redeemed. Scenarios can include both monetary balance types, such as general cash or promotional cash, and non-monetary balance types, such as free SMS or time. You can do one or more of the following:

- Increment a balance
- Extend the expiry date for the balance

Note: The scenarios functionality will only be available in the screens if it has been activated. For more information about activating scenarios, see *CCS Technical Guide*.

Voucher Type fields

The following table describes the function of each field.

Field	Description
Name	A unique name for the voucher type.
	Note: If this voucher type uses scenarios and you will be sending real-time wallet notifications for recharges, this field must be reflected in the name of the template you use for the notification. For more information about the required format, see *CCS Technical Guide*.
CDR Description	The description to use for EDRs which are produced by vouchers with this voucher type.
	Tip: You can use a maximum of 100 characters.
Description	A brief description of the voucher type.
Pre-use Expiry Period	The period (in days and hours) between this voucher being issued and when it will expire.
	Example: If a voucher has a pre-use expiry period of seven days, the holder of the voucher has seven days from the date of issue to begin using the voucher. If not used in seven days, the voucher expires and is no longer valid.
Scenario	The scenarios to associate with the balance type when the voucher is redeemed.
	Tip: You can add multiple scenarios to the same balance type by adding different scenario values. You can also edit/delete the default scenario.
	Note: This panel will only be visible on the tab if the scenarios functionality has been activated. For more information about activating scenarios see *CCS Technical Guide*.
Multi-Balances	The details of the changes vouchers with this type make to balance types when the voucher is redeemed.
	For more information about the fields in these records, see Balance type fields.
	Tip: You can add multiple balance types to the same voucher type and you can specify the product type for each balance type. You can include the same balance type more than once.

Adding voucher types

Follow these steps to add a new voucher type.

1. In the Voucher Management screen, select the **Service Provider** from the drop down box.

2. From the **Voucher Type** tab, click **New**.

   Result: You see the New Voucher Type screen.

3. Start to configure this record by entering data in the fields in the top left of this screen. For more information about the fields on this screen, see Voucher Type fields.

4. If the Scenario panel is visible in the screen, then add the scenarios to associate with the balance type when vouchers of this type are redeemed. For details, see Adding scenarios to a voucher type.

   Tip: You can add multiple scenarios to the same balance type by adding different scenario values.

   Note: The Scenario panel will only be visible in the screen if the Scenarios functionality has been activated on your system.

5. Add the balance types that this type of voucher recharges when it is redeemed. For details, see Adding balance types to a voucher type.

   Tip: You can add multiple balance types to the same voucher type and you can specify the product type for each balance type. You can include the same balance type more than once.

6. Click **Save**.

Related topic

Voucher Type

Editing voucher types

Follow these steps to edit an existing voucher type.

1. In the Voucher Management screen, select the **Service Provider** from the drop down box.

2. On the **Voucher Type** tab, select the record to edit.

3. Click **Edit**.

   Result: You see the Edit Voucher Type screen. For information about voucher type fields, see Voucher Type fields.

4. Make the changes that you need to by editing the fields in this screen.

5. Add the scenarios to associate with the balance type when vouchers of this type are redeemed. For details, see Adding scenarios to a voucher type.

   Tip: You can add multiple scenarios to the same balance type by adding different scenario values.

6. Add the balance types that this type of voucher recharges when it is redeemed. For details, see Adding balance types to a voucher type.

   Tip: You can add multiple balance types to the same voucher type and you can specify the product type for each balance type. You can include the same balance type more than once.

7. Click **Save**.

Related topic

Voucher Type

Deleting voucher types

Follow these steps to delete an existing voucher type.

1. In the Voucher Management screen, select the **Service Provider** from the drop down box.

2. In the table on the **Voucher Type** 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 Voucher Type prompt.

5. Click **OK**.

Adding scenarios to a voucher type

Follow these steps to add a scenario to the scenario list on the New or Edit Voucher Type screens.

1. In the **Scenario** area, click **Add**.

   Result: The New Scenario window is displayed.

2. From the **Scenario ID** drop down list, select the scenario number to associate to the scenario.

3. In the **Scenario Name** field, enter a name for the scenario.

4. In the **Recharge Classification** field, enter a description for how the recharge will be made.

5. Click **OK**.

   Result: You are returned to the New/Edit Voucher Type screen and the new scenario is added to the list of scenarios.

Related topic

Voucher Type

Editing scenarios for a voucher type

Follow these steps to edit a scenario in the scenario list on the New, or Edit Voucher Type screen.

1. In the New or Edit Voucher Type screen, select the scenario to edit.

2. In the **Scenario** area, click **Edit**.

   Result: The Edit Scenario screen is displayed.

3. Edit the details as required. See Adding scenarios to a voucher type for field details.

4. Click **OK**.

Related topic

Voucher Type

Deleting scenarios for a voucher type

Follow these steps to delete a scenario in the scenario list on the New, or Edit Voucher Type screen.

1. In the New or the Edit Voucher Type screen, select the scenario to delete.

2. Click **Delete**.

   Result: The record is deleted from the list of scenarios.

   Related topic

   Voucher Type

Balance type fields

This table describes the function of each field.

Field	Description
Action	Provides three actions: • **Recharge** – The recharge value is added to the current balance value • **Replace Balance** – The recharge value replaces the current balance value • **Reload Counter** – The balance value is a counter for the number of reloads of the selected balance type
New Bucket	Whether to create a new bucket for the balance type when the voucher is redeemed.
Balance Type	The balance type to recharge when vouchers of this type are redeemed. This field is populated by the records on the Balance Types tab. **Note:** Any valid balance type can be selected. This includes non cash balance types, such as time.
Value	The amount to recharge the balances of the balance type selected in the **Balance Type** field.
Expiry Policy	How to apply the expiry period for this balance type when vouchers of this type are redeemed. Select: • **Best** – The system selects the best policy option for the subscriber depending on their particular circumstances. • **First** – The expiry is set to the date of the first use of the balance. The following fields exist when the `jnlp.ECEExtensions` application property is true. These fields are only applicable when using an ECE charging domain. Select: • **First Use with Offset** – The expiry is set a number of months or hours after the first use of the balance • **First Use** – Account Cycle – The expiry is set to the date of the first use of the balance, plus a number of account cycles • **First Use** – Bill Cycle – The expiry is set to the date of the first use of the balance, plus a number of billing cycles

Field	Description
Balance Expiry Period	The period between when the voucher is activated and when the balance expires. Depending on the selection in the expiry period type options, enter one of: • Days and hours • Months • Cycles (if **First Use- Account Cycle** or **First Use – Billing Cycle** is selected in **Expiry Policy**) **Example:** If a voucher has an expiry period of 30 days, the holder of the voucher has 30 days from the date the voucher is first used to use the outstanding voucher balance. At the end of the expiry period any outstanding voucher balance expires. **Note:** Month expiry dates measured in calendar months. If a bucket is created on the 31st of the month, and the expiry will be on month which has 30 days or less, the expiry date is set for the 1st of the month after. For example, a two-month bucket created on the 31st of December will expire on the 1st of March. **Tip:** The `expireAtMidnight` configuration option in **eserv.config** 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 *VWS Technical Guide*.
Credit Available	Select one of the following: • **Now** – Credit is available immediately • **In** – Activates **Dates/Hours** and **Months**, from which you can set when credit becomes available in specified number of days and hours, or months • **On** – Activates the date selector, from which you can set the exact date when credit becomes available **Note:** You can only specify **Credit Available** for chargeable or cross balance types.

Field	Description
Scenario	The scenario which will apply this balance. **Notes:** • This field will only be visible in the screen if the scenarios functionality has been activated. For more information about activating scenarios, see *CCS Technical Guide*. • Only required if more than one scenario has been defined for this voucher type. • The scenario value `'Default(All)'` indicates that the balance type applies to all scenarios. If scenarios have been defined, you cannot use the default scenario. • If only one scenario has been defined, you do not have to specify a scenario.
Allowed Product Types	The product types which vouchers of this type can recharge for this balance type. **Tip:** An empty **Allocated** list means that the balance type can be recharged for all product types.
Configuration Restriction	Restricts the day, month and year that a balance starts and ends. Select the following: • **Applies From** – Sets the date when balances of this type can be redeemed by vouchers of this type. To activate this field, select the check box to the left of the field, then, in the date selection boxes, select the day, month and year for the end date. • **Applies Until** – Sets the date when balances of this type can no longer be redeemed by vouchers of this type. To activate this field, select the check box to the left of the field, then, in the date selection boxes, select the day, month and year for the end date.

Adding balance types to a voucher type

Follow these steps to add a balance type to the current voucher type.

Note: To add multiple balance types to the voucher type, repeat this process as required.

1. In the Multi-Balances area at the bottom of the New or the Edit Voucher Type screen, click **New**.

   Result: You see the New Multi-Balance screen.

2. Start to configure this record by entering data in the fields in the top of this screen.

3. In the **Allowed Product Types** section select the Product Types for which the voucher can recharge 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 recharged for all product types.

4. Click **Save**.

Result: The balance type details are saved, and you return to the Voucher Type screen.

Related topic

Voucher Type

Editing balance types for a voucher type

Follow these steps to edit an existing balance type for the current voucher type.

1. In the New or Edit Voucher Type screen, select the balance type record to edit from the **Multi-Balances** table.

2. Click **Edit**.

3. Edit the fields to reflect the changes you need to make.

4. If required, in the **Allowed Product Types** section select the Product Types for which the voucher can recharge 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 recharged for all product types.

5. Click **Save**.

Result: The modified balance type record is saved, and you return to the Voucher Type screen.

Related topic

Voucher Type

Deleting balance types for a voucher type

Follow these steps to delete an existing balance type from a voucher type.

1. In the New or the Edit Voucher Type screen, select the balance type record to delete from the **Multi-Balances** table.

2. Click **Delete**.

Result: You see the Delete Multi-Balance prompt.

3. Click **Apply** to delete the record from the database.

Related topic

Voucher Type

Voucher Batches

The **Voucher Batches** tab lets you search, display, create, and delete batches of vouchers for the selected customer.

You use the New Voucher Batch screen to create a simple voucher batch file, eliminating the need to generate the batch from the command line.

Tip: Configuration for the voucher tool used to create voucher batches is defined in **eserv.config**. For more information about **eserv.config**, see *CCS Technical Guide*.

Topics:

Voucher Batch fields

Finding voucher batches

Adding voucher batches

Checking voucher batch status

Editing voucher batches

Deleting voucher batches

Voucher Batch fields

The following table describes the functions of Voucher Batch fields.

Field	Description
Batch Code	The identifier which will be used to group the vouchers in this batch. This field can be used to group vouchers from several batches. **Note:** This field is not available: • On the **Edit Voucher Batch** screen, and cannot be changed after the batch is generated
Batch Id	The batch ID for the voucher batch. This field is automatically populated when the vouchers are first generated. It cannot be changed and is only visible on the **Voucher Batches** tab.
Domain	The domain where the voucher batch was created. This field is only available on the **New Voucher Batch** screen.
Batch Name	The unique name for the batch. It can be up to 50 characters long and is optional.
Activation Date	Activation date of the voucher batch. This field cannot be changed after the batch is activated. **Note:** This field is not available on the **New Voucher Batch** screen.

Field	Description
Voucher Type	The type of the vouchers in this batch. This field is populated by the **Voucher Types** tab. For more information, see Voucher Type. This field cannot be changed after the batch is generated.
Expiry Date	The expiry date of the vouchers in this batch. This field enables you to specify the voucher batch expiry date, which sets a batch to expire on a specific day and shows users that a batch is no longer active and not available for use.
State	Displays the state of the voucher batch. Available states are: • Active • Created • Unavailable • Expired **Note:** This is different to the state of the individual vouchers within the batch. These states are available within the **Voucher Batch Search** screen but not in the **New Voucher Batch** screen.
Description	Reason for the voucher state change. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.

Field	Description
Initial Voucher State	The state new vouchers in a batch will be in when they are first generated.
	This field allows individual vouchers or ranges of vouchers in a voucher batch to be made **Active** as an additional security feature for service providers.
	In the **New Voucher Batch** screen a new batch should normally be created with the **Initial Voucher State** set to **Active**. This sets the individual voucher records in the batch to **Active** in the CCS_VOUCHER_REFERENCE table. Once the batch has been created, the **Voucher Batches** tab should be used to set the batch status to **Active**. This sets the batch record in CCS_VOUCHER_BATCH to **Active** enabling all vouchers in the batch.
	If a new batch is created with the **Initial Voucher State** set to **Created**, then vouchers can only be redeemed when their state has been reset to **Active** in the **Vouchers** tab (for individual activation) or in the **Voucher Ranges** tab (for a range of vouchers).
	To enable vouchers, set both the batch state and the voucher state to **Active**.
	Note: This is different to the state of the voucher batch (which is automatically set to **Created** when the batch is first generated.
	This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.
Voucher Number Length	The number of digits in the voucher number. This is set by the authentication rule for this voucher batch and cannot be changed after the batch is generated.
	Note: This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.
Start Voucher Number	Displays the number of the first voucher in the batch and the starting point for the voucher number range.
	Note: The length of the voucher number must match the voucher number length defined for the authentication rule being used. You can use a voucher number range more than once for CB10 HRN encrypted vouchers with or without GPG selected.
	Vouchers are generated from unused voucher numbers from the range.
	This field cannot be changed after the batch is generated.

Field	Description
End Voucher Number	Displays the number of the last voucher in the batch and the ending point for the number range. The value must be greater than the start of range value and have a matching number of digits. **Note:** This field cannot be changed after the batch is generated.
Start Serial Number	Displays the serial number of the first voucher in the batch. **Note:** This field is automatically populated and cannot be changed after the batch is generated. It is not available on the **New Voucher Batch** screen.
End Serial Number	Displays the serial number of the last voucher in the batch. **Note:** This field is automatically populated and cannot be changed after the batch is generated. It is not available on the **New Voucher Batch** screen.
Batch Size Original Count	The number of vouchers in this batch. This can be equal to or less than the difference between the start voucher number and the end voucher number. **Note:** This field cannot be changed after the batch is generated.
Authentication Rule	Indicates which encryption scheme the voucher batch has been created with. This field cannot be changed after the batch is generated. This list is populated by records from the **Security** tab in the Service Management screen. For more information about the **Security** tab, see *CCS User's Guide*.
GPG Public Key	The GPG Public key to use to encrypt the voucher batch export file. The key must have been imported and verified on the SMS. If you do not want to use a GPG Public key, select the blank entry. **Note:** This field is only available for voucher batch files generated using an authentication rule based on DES PIN encryption or CB10 HRN encryption. This field is only available on the **New Voucher Batch** screen. For more information about GPG public keys, see GPG Public Keys.

Field	Description
Pause Time	The time in seconds to pause after loading each 100 vouchers for writing to the export file. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.
Creation Date	The creation date of the batch.
CDR Description	Description to use for this voucher batch in any EDRs that are created for vouchers from this batch.
Remote Filename	The name of the voucher batch export file to write the details of the generated vouchers to. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.

Finding voucher batches

Follow these steps to search for an existing voucher batch.

1. In the Voucher Manager screen, choose the **Service Provider** from the drop down list.

2. On the **Voucher Batches** tab, enter the search strings you are using to find the required batch. Perform one of the following:

   - Enter the first few characters of the specified batch code in the **Code** field and click **Search**

   - Select the Voucher Batch state from the **State** drop down box and click **Search**

   Note: There are three states:

   - Active

   - Created

   - Unavailable

   Result: The **Voucher Batches** table will display the first 100 records matching the search criteria. Results include creation date.

3. If the required voucher batch is not displayed and more than 100 records were returned, enter a longer search string and click **Search** again.

Adding voucher batches

Follow these steps to add a new voucher batch.

Note: The values for the voucher number length and voucher PIN length are determined by the authentication rule selected and cannot be edited. The **GPG Public Key Description** field is for information only.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. From the **Voucher Batches** tab, click **New**.

   Result: You see the New New Voucher Batch Screen.

3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Voucher Batch fields.

4. Click **Save**.

   Result: The batch generation process is started and you see the Voucher Batch Generation prompt.

5. Click **OK**.

   Result: You see the Voucher Batch Progress bar. The COMPLETE message is displayed in the bar once the batch has been successfully created.

6. Click '**x**' to close the progress bar.

Related topic

Voucher Batches

Checking voucher batch status

Follow these steps to check the status of an existing voucher batch.

1. Read the ccsSmsORB output log. For more information about the ccsSmsORB, see *CCS Technical Guide*.

2. Check for any error messages from the actual voucher-creation process.

3. Go to the **/IN/service_packages/CCS/voucher/export/** directory.

4. Check that the following file exists:

   remote_filename **.lst.print**

   Where**:**

   remote_filename is the name entered in the **Remote Filename** field of the New Voucher Batch screen.

5. If the file exists, is larger than 0 bytes in size and contains full records, the voucher batch job has been created successfully.

   If the file does not exist, is 0 bytes in size or only contains headers, the voucher batch job has failed. You will need to repeat the procedure in Adding voucher batches.

Editing voucher batches

Follow these steps to edit an existing Voucher Batch.

Note: The **Voucher Batch, Edit Voucher Batch, and Vouchers** tabs have a creation date read-only value which preserves the creation date when a batch is edited.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. On the **Voucher Batches** tab enter the search criteria for the required voucher batch in the search fields and click **Search**. For details on finding voucher batches, see Finding voucher batches.

3. In the table on the tab, select the record you want to edit and click **Edit**.

Result: You see the Edit Voucher Batch Screen.

4. Edit the fields with the changes to make.

You can update only the following fields:

- **CDR Description**

- **Voucher Batch Status**

Tip: For descriptions of voucher batches fields, see Voucher Batch fields.

5. Click **Save**.

Related topic

Voucher Batches

Deleting voucher batches

Follow these steps to delete an existing voucher batch.

1. In the **Voucher Manager** screen, select the service provider from the **Service Provider** list.

2. On the **Voucher Batches** tab enter the search criteria for the voucher batch to delete and click **Search**.

For more information about finding voucher batches, see Finding voucher batches.

3. In the table on the tab, select the record to delete.

Note: Selecting **Delete** on an active batch will calculate if the batch is stale. Only active batches that are stale and unavailable batches can be deleted.

4. The **Delete Voucher Batch** prompt displays. Confirm your desire to delete the voucher batch by clicking **OK**.

Result: The voucher batch is deleted.

Related topic

Voucher Batches

Vouchers

The **Vouchers** tab allows you to view details of a voucher, change its status, and set voucher expiry.

The **Vouchers** tab has the following subtabs:

- Voucher
- Batch
- Subscriber
- Info
- History

Voucher

The **Voucher** subtab enables you to:

- View details of a voucher
- Change voucher status
- Set voucher expiry

Voucher fields

The following table describes the Voucher subtab fields.

Field	Description
Voucher Number	The voucher number.
Serial Number	The voucher serial number.
Private Secret	Encrypted voucher HRN or PIN.
Voucher Type	The type of the voucher in this batch. This field is populated by the **Voucher Types** tab.
Voucher Created	The voucher creation date.
Archive Date	The calculation date when archiving may take place.
Voucher Status	The status of the voucher. The available statuses are: • Active • Created • Frozen • Deleted
Voucher Expiry	The expiry date of the voucher. This field enables you to set a voucher to expire on a specific day. If an expiry date is already set for a voucher, this field displays the date and time when the voucher expires. You can set the date by clearing the **Remove** check box. **Note**:This field is enabled only if the **Remove** check box is cleared. By default, the **Remove** check box is selected.
Description	Additional information about the voucher state change or the voucher expiry date change.
Last State Change User	User name of the user who last changed the voucher state.

Changing voucher states

You can select a voucher owned by the selected service provider and set it to an 'active' or 'frozen' state.

In an 'active' voucher batch, if you set a voucher to the 'frozen' state, then the voucher can no longer be redeemed. If a voucher batch is in a 'created' or 'unavailable' state, then although you will be able to set a voucher within the batch to an 'active' state in this screen, you will not be able to redeem it. You may only redeem an active voucher if the voucher batch it belongs to is also in an 'Active' state.

Follow these steps to change the state of an existing voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. In the **Vouchers** tab, enter one of the following:

   • Voucher number or HRN in the **Voucher Number** field

   • Voucher serial number in the **Serial Number** field

   Click **Search**.

   Tip: When searching on the voucher number, the number entered must be the length of the voucher number as defined for the authentication rule for this voucher.

   Result: The **Voucher** subtab displays the details for the voucher searched for.

3. In the **Voucher** subtab, from the **Voucher Status** drop down box, select the status.

   Available statuses are:

   • Active

   • Frozen

   Note: If you want to be able to redeem the voucher, set the status to `Active`.

   If the voucher has been redeemed already:

   • This field is grayed out (indicating the value cannot be changed)

   • The status will be `Used`

   If the voucher has been deleted, this field is grayed out (indicating the value cannot be changed).

4. Click **Save**.

Decrypting voucher private secret

You can decrypt the private secret of a voucher to view its HRN.

Follow these steps to decrypt a voucher private secret.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. In the **Vouchers** tab, enter one of the following:

   • Voucher number or HRN in the **Voucher Number** field

   • Voucher serial number in the **Serial Number** field
     Click **Search**.

   Tip: When searching on the voucher number, the number entered must be the length of the voucher number as defined for the authentication rule for this voucher.

   Result: The **Voucher** subtab displays the details for the voucher searched for.

3. In the Voucher subtab, click **Decrypt**.
   Result: The **HRN** field displays the decrypted voucher private secret.

   The **Decrypt** button and the **HRN** field are displayed only if:

   • The user has an allocated template with the access permission for private secret decryption.

- The Authentication Rule associated with the voucher supports private secret decryption.

Setting voucher expiry

You can set a voucher to expire on any specific day beyond which it is not available for use.

Follow these steps to set an expiry date for a voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. In the **Vouchers** tab, enter one of the following:

    - Voucher number or HRN in the **Voucher Number** field
    - Voucher serial number in the **Serial Number** field

3. Click **Search**.

    Tip: When searching on the voucher number, the number entered must be the length of the voucher number as defined for the authentication rule for this voucher.

    Result: The **Voucher** subtab displays the details for the voucher searched for.

4. In the **Voucher** subtab, in the **Voucher Expiry** field, clear the **Remove** check box and click the date chooser icon.

    Result: The **Date Chooser** window is displayed.

    Note: The **Voucher Expiry** field is disabled if the **Remove** check box is selected. By default, the **Remove** check box is selected.

5. In the **Date Chooser** window, select a date and time when you want the voucher to expire.

6. Click **Save**.

Batch

The **Batch** subtab displays information related to voucher batches. It provides information about batch ID, batch name, batch state, and batch expiry.

Batch fields

The following table describes the Batch subtab fields.

Field	Description
Batch Name	The name of the voucher batch. This can be up to 50 characters long.
Batch ID	Unique ID for the voucher batch.
Batch Code	The batch code for the voucher batch that includes this voucher.
Batch State	The state of vouchers in the voucher batch. The batch states are: • Active • Created • Unavailable
Batch Activated	Activation date of the voucher batch.

Field	Description
Batch Expiry	The expiry date of the vouchers in this batch. This field enables you to specify the voucher batch expiry date, which sets a batch to expire on a specific day and shows users that a batch is no longer active and not available for use.

Subscriber

The **Subscriber** subtab displays voucher redemption, wallet reference, subscriber ID, and scenario information for a voucher.

Subscriber fields

The following table describes the Subscriber subtab fields.

Field	Description
Voucher Redeemed	The voucher redemption date.
Wallet Reference	The wallet reference of the redeeming wallet.
Subscriber ID	The ID of the subscriber redeeming the voucher.
Scenario	The voucher scenario used to redeem the voucher. **Note:** This field is visible only if scenarios have been installed and activated on your system. For more information about installing and activating scenarios, see *CCS Technical Guide*.

Info

The **Info** subtab displays details about distributor and retail channel and other additional information about a voucher.

Note:

The fields in **Info** subtab are editable only if the following conditions are met:

- The voucher status needs to be in active, created, or frozen state.
- The **Info** subtab needs to have CreateDelete or ReadModify permissions. You can modify the permissions under **User Management > Template Creation > CCS > Voucher Info Subtab**.

Info fields

The following table describes the Info subtab fields.

Field	Description
Barcode	The barcode number of the voucher. You can use a maximum of 12 digits.

Field	Description
Text	Description of the voucher. You can use a maximum of 50 characters.
Card Design	Version number of the voucher design. You can use a maximum of 4 digits.
Distributor Channel	Distributor of the voucher. You can use a maximum of 50 characters.
Retail Channel	Retailer of the voucher. You can use a maximum of 50 characters.
Provisioning Date	Date on which the voucher is created.
Free Text Field_1	Field for capturing business process information. You can use a maximum of 50 characters.
Free Text Field_2	Field for capturing business process information. You can use a maximum of 50 characters.
Free Text Field_3	Field for capturing business process information. You can use a maximum of 50 characters.

History

History subtab displays the history of changes made for that particular voucher.

History fields

This table describes the History subtab fields.

Field	Description
Date	Date when the voucher was modified.
Term	The host that modified the voucher.
User	User name of the user who made the changes.
Type	Type of the operation performed. Types are: • V: Voucher Recharge • S: Voucher State change • E: Voucher Expiry change • B: Both Voucher Expiry and Voucher State change
Description	The description of the changes made.

Voucher Validation

Use the **Voucher Validation** tab to test whether a given voucher signature (the voucher number and secret digits) is valid.

Note: You will only have access to this facility if you have sufficient user privileges.

Validating a voucher

Follow these steps to validate a voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. In the **Voucher Signature** field in the **Voucher Validation** tab, enter the voucher number or HRN. Do not include any spaces.

   Tip: The voucher number to use for searching must be the length of the voucher number as defined for the authentication rule for this voucher.

3. Click **Validate**.

   Result: The Voucher Status field shows the validity of the voucher.

Voucher validation results

This table lists the possible messages displayed when you validate a Voucher.

Message	Description
No Voucher to Check	You clicked **Validate** before entering the voucher signature.
Voucher Is Valid	The signature has been confirmed by the SMS.
Voucher Is Not Valid	The signature was not recognized by the SMS.

Voucher Ranges

The **Voucher Ranges** tab enables you to change the state of a group of vouchers. The vouchers are a defined range of voucher numbers.

Activating voucher ranges

Follow these steps to change the state of a range of vouchers.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. On the **Voucher Ranges** tab, from the **Voucher Batch** drop down list, select the voucher batch which contains the range to change.

   Note: The voucher batch corresponds with the **Batch ID** field in the Voucher Batches screen.

3. From the **Voucher State** drop down list, select the new state the vouchers in the range should be.

Note: If you want to be able to redeem the vouchers you must set the voucher state to active.

4. In the **Start Serial No** field, enter the lowest voucher serial number in the voucher range you want to change.

5. In the **End Serial No** field, enter the highest voucher serial number in the voucher range you want to change.

Note: The range must be 100,000 vouchers or less.

6. In the **Description** field, enter a description for the voucher range, if required.

7. Click **Change**.

Result: The Confirm Voucher Change Operation prompt will appear.

8. Click **OK**.

Result: The Voucher Change State prompt will appear.

9. Click **OK**.

GPG Public Keys

The **GPG Public Keys** tab allows you to:

- Import new GPG public keys into CCS
- Verify imported keys

GPG keys are used to increase security when creating voucher batch export files for printing.

Once a public key has been verified it can be used as part of the security mechanism for creating voucher batches.

Note: You cannot remove public keys from the SMF database or from the GPG key-ring store on the SMS.

Importing GPG public keys

Follow these steps to import new GPG public keys from a specified file.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. Select the **GPG Public Keys** tab.

3. In the **Import File** field, enter the path and filename of the file containing the new GPG public keys or click **Browse** to select the file.

4. Click **Import Keys**.

Note: This button becomes enabled once the import file has been specified.

Result: Any keys not currently in the system are imported from the file and you see the GPG Key Importation prompt.

5. Click **OK**.

Result: The **GPG Public Keys** tab is refreshed to include the new keys.

Verifying public keys

Follow these steps to verify a GPG public key.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. In the table on the **GPG Public Keys** tab, select the GPG Key to verify.

   Tip: If the value in the **Verified** column for this key is 'Y', then it has already been verified.

3. Click **Verify Key**.

   Result: You see the GPG Key Importation validation prompt.

4. Click **OK**.

Deleting GPG public keys

Follow these steps to delete GPG public keys.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.

2. In the table on the **GPG Public Public Keys** tab, select the public key to delete.

3. Click **Delete**.

   Result: The Confirmation prompt appears.

4. Click **OK** to confirm.

AVD Configuration

The **AVD Configuration** tab allows you to:

- Update the common configuration that will be used on the SMS and across all VWS voucher domains by the automatic voucher delete process.

- View the date ranges for vouchers that are in the process of being deleted for each of the configured VWS domain nodes.

Notes:

- Automatic voucher deletion (AVD) is performed on a regular basis by the ccsBeAvd binary processes. For information about ccsBeAvd, see *CCS Technical Guide*.

- You manage the configuration of ccsBeAvd from the **AVD Configuration** tab. This tab also lists the current tasks that the ccsBEAvd binary processes are required to perform. However, it does not show the progress of the deletion of the redeemed vouchers from the VWS domain nodes.

AVD Configuration fields

This table describes the configuration fields in the **AVD Configuration** tab.

Field	Description
Keep Redeemed Vouchers For	Sets the number of weeks for which redeemed voucher records will be kept on the SMS and VWS nodes. Must be between 1 and 26 weeks.

Field	Description
Archive Frozen Vouchers	Globally archives frozen vouchers.
Max Records to Process	Sets the maximum number of voucher records to delete per run of the automatic deletion process (ccsBeAvd) on the VWS. Must be between 1 and 999999. **Note:** The frequency and times that the ccsBeAvd process is run on each VWS node is controlled by the crontab for the ccs_oper user. For more information, see *Charging Control Services Technical Guide*.
Commit After Num Rows	Sets the number of redeemed voucher records for ccsBeAvd to delete on the VWS node before committing the changes to the database. You must specify a value between 1 and 9999. If the value you specify is • Less than the value for **Batch Size**, then ccsBeAvd commits the changes after deleting the number of vouchers defined by **Batch Size**. • More than the value for **Batch Size**, then ccsBeAvd continues to delete batches of voucher records until the value of **Commit After Num Rows** is exceeded. Then it commits the changes to the database. **Note:** It is not possible to roll back changes once they have been committed.
Batch Size	Sets the maximum number of redeemed voucher records to delete in a single batch. You must specify a value between 1 and 999999.
Sleep Time	Sets the amount of time (in seconds) for ccsBeAvd to wait after the number of vouchers defined by **Batch Size** are deleted. You must specify a value between 1 and 999999 seconds. **Note:** This allows the system processing time for other jobs.

Node Status fields

The **Node Status** table on the **AVD Configuration** tab lists the deletion tasks currently under progress by the automatic deletion process on each VWS node. If there are no entries it means that currently there are no vouchers to delete on any VWS node.

This table describes the fields listed in the **Node Status** table.

Note: These fields are read-only and cannot be changed. The values in these fields are updated automatically by the automatic voucher deletion process.

Field	Description
Domain Name	The voucher domains that are currently undergoing automatic voucher deletion processing. **Note:** You configure domains on the Domain tab in the Service Management screen. See the Service Management chapter in *CCS User's Guide* for details.
Node Name	The defined domain nodes from which voucher records to be deleted.
Redeem Start Date	The start date of the date range for which redeemed vouchers to be deleted.
Redeem End Date	The end date of the date range for which redeemed vouchers to be deleted.
Voucher Batch	The batch IDs of the the voucher batch to be deleted.
Voucher Serial	The serial number of the first voucher in each batch to be deleted.

Changing AVD configuration

Follow these steps to change AVD configuration.

1. In the Voucher Manager window, click on the **AVD Configuration** tab.

    Result: You see the current AVD configuration details. See AVD Configuration tab.

2. Edit the fields to reflect the changes you need to make.

    For more information about the fields on this tab, see AVD Configuration fields.

3. Click **Save**.

11

CCS Reports

This chapter explains how to perform CCS reports.

This chapter contains the following topics.

Running CCS Reports

CCS Reports

Running CCS Reports

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*.

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.
- 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_Promo1 90 0 0 %

SL Test 2 90 0 0 %

SL Test ME 10 90 0 0 %

SL Test ME 20 90 0 0 %

Tony1 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.

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 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.

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

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.

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

- • 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 - Billing Event

- 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

01-FEB-11 05:28 Voucher Batch Created () 6100000/6100100

User Name: SU

==

Date of Change Time of Change Action Voucher Number or Range

-------------- -------------- --

28-JAN-11 04:22 Voucher Type Created (Tax_Vouchers)

30-JAN-11 20:11 Voucher Type Created (Sam's Voucher Type)

30-JAN-11 21:08 Voucher Batch Edited (:Status Changed to A:) 1000012/1000020

30-JAN-11 21:08 Voucher Validated (Failure) 1000016

30-JAN-11 21:37 Voucher Batch Edited (:Status Changed to A:) 9100000/9100100

30-JAN-11 21:41 Voucher Batch Deleted () 9100000/9100100

30-JAN-11 21:44 Voucher Batch Deleted () 9100000/9100100

30-JAN-11 21:45 Voucher Batch Edited (:Status Changed to A:) 9100000/9100100

30-JAN-11 22:28 Voucher Batch Edited (:Status Changed to A:) 8800000/8800100

31-JAN-11 00:11 Voucher Batch Deleted () 9100000/9100100

31-JAN-11 00:13 Voucher Batch Edited (:Status Changed to A:) 9100000/9100100

31-JAN-11 00:23 Voucher Batch Deleted () 8800000/8800100

31-JAN-11 03:19 Voucher Batch Edited (:Status Changed to A:) 7700000/7700100

31-JAN-11 03:20 Voucher Batch Deleted () 7700000/7700100

31-JAN-11 03:29 Voucher Batch Deleted () 6600000/6600100

31-JAN-11 03:38 Voucher Batch Deleted () 7700000/7700100

01-FEB-11 05:28 Voucher Batch Edited (:Status Changed to A:) 6100000/6100100

06-FEB-11 22:22 Voucher Type Created (test)

06-FEB-11 22:23 Voucher Type Created (JRE)

06-FEB-11 22:30 Voucher Batch Deleted (JRE)

06-FEB-11 22:30 Voucher Type Created (JRE)

07-FEB-11 00:55 Voucher Validated (Failure) 1111

07-FEB-11 00:57 Voucher Validated (Failure) 1111

17-FEB-11 01:28 Voucher Validated (Success) 12300014886

17-FEB-11 01:28 Voucher Validated (Failure) 1230004886

17-FEB-11 01:28 Voucher Validated (Failure) 123000

17-FEB-11 01:41 Voucher State Changed (F:Frozen for Testing) 1230001

17-FEB-11 01:41 Voucher Validated (Success) 12300014886

17-FEB-11 02:01 Voucher State Changed (C:changed to created) 1230001

17-FEB-11 02:23 Voucher State Changed (D:Delete) 8880001

17-FEB-11 02:23 Voucher State Changed (D:Delete) 8880002

17-FEB-11 02:33 Voucher State Changed (A:Re-activated) 8880001

17-FEB-11 03:15 Voucher Type Deleted (long name
1111111111111111111111111111111111111111a)

17-FEB-11 04:01 Voucher Recharged (Failure) 33300017165

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	PreUseExpiryDate	VoucherType
1000000008	R	888888888893	2805201322003300	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

12

Subscriber Profile Manager Screen Layout

This chapter explains how to configure the screen layout for the Prepaid Charging Edit Subscriber screen and for the panels in the CCP Dashboard screen using Oracle Communications Convergent Charging Controller Subscriber Profile Manager.

The SPM provides the facility to define which fields will be displayed, and how they will be laid out in the screen. To configure a new panel you need to:

1. Assign groups to the node on a tab.

2. Configure the fields in the group which will be used on the screen

3. Configure the option which the fields will be displayed on

Details of these tasks are covered in this chapter.

This chapter contains the following topics.

Assigning Groups to Config

Field Type Definition and Layout

Field Type

Layout Details

Screen Preview

Assigning Groups to Config

This topic describes how to:

- Assigning a group to a node
- Editing a group assignment

Config tabs where you can assign groups

You can assign groups, or edit assignment of groups, on the following tabs on the Subscriber Profile Manager screen.

- **Subscriber Config** - to define the screen layout of the Prepaid Charging Edit Subscriber screen. For specific details, see Subscriber Panels.

- **Product Type Config** - to define the screen layout for profile tag fields in the Prepaid Charging Edit Product Type screen. For specific details, seeProduct Type Panels .

- **Sub-group Configuration**. For specific details, see Sub-Groups.

Note: Groups are configured on the **Group Configuration** tab of the Subscriber Profile Manager screen.

Assigning a group to a node

Follow these steps to assign a group to a node in a Config tree.

1. On the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** from the drop down lists.

2. Select the tab on which to assign a group. Tabs are listed in the Config tabs where you can assign groups topic.

3. Select the folder on the config tree on the left-hand side of the screen, for example:

   Result: The grid will display the groups which have been configured for the Config tree.

4. Click **New**.

   Result: You see the Assign Group Dialog screen.

5. From the Group Name drop down list, select the group you want to assign to the Config tree.

   Note: This field is populated with the relevant Group Type defined on the **Group Configuration** tab.

6. In the **Group Order** field type the order number for the group. This determines the position of the group on the node in the Config tree and in the screen you are configuring.

   Note: Groups with the same order number are ordered alphabetically.

7. Click **Save**.

Editing a group assignment

Follow these steps to edit the assignment of a group to a node in a Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. Select the tab on which to assign a group. Tabs are listed in the Config tabs where you can assign groups topic.

3. Select the folder on the config tree on the left-hand side of the screen.

   Result: The grid will display the groups which have been configured for the Config tree.

4. Select the group to change in the grid.

5. Click **Edit**.

    Result: You see the Assign Group Dialog screen.

6. If required, select a different **Group Name** from the drop down list.

    Note: This field is populated with the relevant Group Type defined on the **Group Configuration** tab.

7. If required, in the **Group Order** field edit the order number for the group. This determines the position of the group on the node in the Subscriber Config tree and in the Edit Subscriber screen.

    Note: Groups with the same order number are ordered alphabetically.

8. Click **Save**.

Deleting a group

Follow these steps to delete a group from a Config tree.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. Select the tab on which the assigned group to delete is located. Tabs are listed in the Config tabs where you can assign groups topic.

3. Select the folder on the config tree on the left-hand side of the screen.

    Result: The grid will display the groups which have been configured for the Config tree.

4. Select the group to delete in the grid.

5. Click **Delete**.

    Result: You see the Delete Confirmation prompt.

6. Click **OK**.

Field Type Definition and Layout

The Subscriber Profile Manager allows you to define which fields will be displayed on some Prepaid Charging and CCP Dashboard screens. You can perform the following actions:

- Adding a new field for group
- Editing a field from a group

Config tabs where you can define fields for groups

You can add fields to groups, or edit fields from groups, on the following tabs on the Subscriber Profile Manager screen.

- **Subscriber Config** - to define the screen layout of the Prepaid Charging Edit Subscriber screen. For specific details, see Subscriber Group Field Configuration.
- **Product Type Config** - to define the screen layout for profile tag fields in the Prepaid Charging Edit Product Type screen. For specific details, see Product Type Field Configuration.

- **CCP Dashboard Config** - to define the screen layout for the Quick View in the CCP Dashboard.
- **Sub-group Configuration**. For specific details, see Sub-Group Field Configuration.

Adding a new field for group

Follow these steps to add a field for a group.

Tip: You can create a basic layout for a field by specifying values only in the **Field Type**, **Display Name**, and **Grid Position** fields.

1. In the Subscriber Profile Manager screen, select the required **Service Provider** and **Product Type** from the drop down lists.

2. Select the tab where the group to add a field to is configured. Tabs are listed in the Config tabs where you can define fields for groups topic.

3. In the panel on the left, select the required group.

   Tip: If the group is not currently visible, double click on its node.

4. Click **New**.

   Result: You see the New Field for Group screen. The name of the currently selected group is appended to the screen title bar.

   For an example screen, see New Field for Group screen.

5. Select the **Field Type** from the drop down box.

   Result: You see the field configuration options for the selected field type in the panel below.

6. Specify the Field Type details. For more information, see Field Type fields.

7. Specify the **Layout Details** for the field. This will determine where the field will appear on the screen.

   For more information on the layout details options, refer to Layout Details.

8. Click **Save**.

Editing a field from a group

Follow these steps to edit a field included in a group in a Config tree.

1. In the Subscriber Profile Manager screen, select the required **Service Provider** and **Product Type** from the drop down lists.

2. Select the tab where the group to edit a field from is configured. The relevant tabs are:

   - Subscriber Config
   - Product Type Config
   - Sub-group Configuration

3. In the panel on the left, select the required group.

   Tip: If the group is not currently visible, double click on its node.

4. Select the field on the grid and click **Edit**.

Result: You see the Editing Field from Group screen. The name of the currently selected group is appended to the screen name.

For an example screen, see Editing Field from Group screen.

5. Edit the fields to reflect the changes you need to make. For more information, see:

- • Field Type fields
- • Layout Details.

6. Click **Save**.

Field Type

Each field used on a screen has a Field Type. The field type defines the features of the field, such as:

- • What actions a user can take with the field
- • Some elements of the field's appearance (such as whether it is a data entry field or a button)

Field Type fields

This table describes the fields in the field type area of the New/Edit Field for Group screen.

Note: Most of these fields will only be displayed for a specific Field Type.

Field	Description
Field Type	Defines the functions and appearance of the field. For more information about the different types of field which are available, see Field Types.
BPL	The BPL task to attach to this field. This drop down list is populated by records from the Task Management screen. **Note:** Only available if the Field Type is `Business Process Logic`.
Display Name	This is the label that will appear next to the field when the **Auto Create Label** check box is ticked. It is also used as part of the name of the access permission for this field. Access permissions are controlled in the SMS User Management screen. For more information about access permissions, see *NCCService Management System User's Guide*. **Note:** This field is required for all field types except `Business Process Logic`.
Profile Tag Name	The profile tag this field will provide access to. The list of available profile tags is populated by records configured in the ACS Configuration screen. For more information about profile tags, see Profile Tag Fields. **Note:** Only available if the **Field Type** value is `Profile Tag Field`.

Field	Description
Date Type	Defines whether or not a profile tag date field includes a time element. **Note:** Only available if the **Field Type** value is `Profile Tag Field`, and the **Profile Tag Name** displays a date type profile field.
Field	This will be either a database field or a search key field depending on the selected field type. **Note:** Only available if the **Field Type** value is `Database Field`.
Type	A predefined list of display options for the field. This information is used to define how to display a field in the Preview screen. **Note:** Only available if the **Field Type** value is `Database Field`.
Custom Type	A predefined group of fields. **Note:** Only available if the Field Type is `Custom Field` or `Custom Profile Field`.
Sub-Group	A group of fields included in a Sub-Group on the Subscriber Config tree. This drop down list is populated by sub-group records from the **Group Configuration** tab. **Note:** Only available if the **Field Type** value is `Sub-Group`.
Promotion	The promotions to associate with this field. **Note:** Only available in the Field Type is `Promotion Info Field`.
Show Expiry Date	Whether or not to display the promotion expiry date as part of this field. **Note:** Only available if the Field Type is `Promotion Info Field`.

Field Types

This table describes the function of the available fields for the different Field Types.

Field Type	Description	Screen
Business Process Logic	Provides a button which executes a BPL task. For more information about BPL task configuration, see *NCC Charging Control Services User's Guide.*	CCP Dashboard (Common Tasks option) Edit Subscriber

Field Type	Description	Screen
Profile Tag	Profile tags are flexible data fields which can be defined for subscribers or product types. Profile tags have different types depending on the type of data they store. For more information about profile tag configuration, see *NCC Advanced Control Services User's Guide*.	Edit Subscriber Edit Product Type
Database Field	A field which is specifically related to CCS functionality. These are usually predefined Profile Tags.	CCP Dashboard (Quick View and Vouchers options) Edit Subscriber
Sub-Group	A group of fields of other types.	CCP Dashboard (Quick View option) Edit Subscriber
Promotion Info Field	A field which displays a predefined list of promotion data including the promotion: • name • status • tracker balance value, and • limited liability balance and status information.	Edit Subscriber
Custom Field	A predefined list of special fields.	CCP Dashboard (Quick View option) Edit Subscriber
Wallet Life Cycle Field	Provides the Display Name of a Wallet Life Cycle Period.	CCP Dashboard (Quick View option) Edit Subscriber

Note: The availability of Field Types will depend on the screen the group is defined for. For example, the Vouchers group on the CCP Dashboard can only contain database fields.

Layout Details

You specify how a field will be displayed in the Layout Details panel in the New Field for Group and Edit Field From Group screens. For each field you can define its:

- Grid position
- External padding
- Auto resize option
- Anchor position
- Preferred size
- Label settings

Grid position

The SPM uses a grid to determine where a field is located on the screen. The grid position for a field defines which column and row it will be displayed on. Care must be taken when specifying the grid position to ensure fields do not overlap and that enough space is given to group field types. For example, you need to allow 5 columns to display the fields in the Wallet Information group.

Note: Rows and columns are not uniformly sized. Row height and column width is allocated dynamically and depends on how all the fields appearing in the screen have been configured.

Grid position fields

This table describes the function of each field.

Field	Description
Column	The column number defines which column the field will be displayed in. Valid column numbers are in the range 0 to 99, where '0' is the column furthest to the left of the screen. **Tips:** • The width of each column is allocated dynamically and depends on the length of the longest item to appear in the column. • Fields with the same column number will appear in a vertical line.
Row	Defines which row the field will be displayed on. Valid row numbers are in the range 0 to 99. **Tip:** It is a good idea to leave a gap between row numbers so that you can easily change a field's vertical position. This is especially important if you want to insert a new field or swap two fields around.
Width	Defines the number of columns required to display the field. **Note:** The field label will use one column, therefore you must set the width to more than one if the **Auto Create Label** check box is ticked.
Height	Defines the number of rows required to display the field.

External padding

You use the external padding fields to define the minimum amount of space between the field and the border of its display area. This helps to ensure that each of the fields displayed in the screen can be clearly identified.

Notes:

• Values must be specified in pixels.

- The display area is the whole cell in the grid.

Auto resize

You use the auto resize options to resize the field to fit the available display area.

Auto resize fields

This table describes the function of each field.

Field	Description
None	The displayed field is not resized.
Horizontal	The displayed field is stretched horizontally to fill the width of its display area.
Vertical	The displayed field is stretched vertically to fill the height of its display area.
Both	The displayed field is stretched horizontally and vertically to fill the available space.

Anchor position

The option you select for the Anchor position defines where the field will be placed within its display area. This feature is useful when the field you want to display is smaller than the display area specified for it.

Preferred size

You can override the default size used to display a field by setting a preferred size for it.

Note: The values specified for the preferred size may be ignored depending on which auto resizing option is selected.

Preferred size fields

This table describes the function of each field.

Field	Description
Height	Sets the display height for the field. Valid values are in the range 0 to 999 pixels. **Note:** This value will be ignored when the Auto Resize option is set to `Vertical` or `Both`.
Width	Sets the display width for the field. Valid values are in the range 0 to 999 pixels. **Note:** This value will be ignored when the Auto Resize option is set to `Horizontal` or `Both`.
Use Default	Use the default size to display the field. The Height and Width options will be ignored.

Label options

You can display a label next to each field in the screen. The Label options let you define the type, color and size of the text used for the label.

Tip: BPLs and Custom fields (excluding Label/Separator fields) do not normally required a label.

Label fields

This table describes the function of each field.

Field	Description
Auto Create Label	When selected, the Display Name specified for the field will be used as a label. **Note:** If selected you will need to allow an additional column for the label when specifying the Grid Position Width.
Text Type	Sets the type of the text used for the label.
Text Size	Sets the size of the text used for the label.
Text Colour	Displays text in the selected color for the label.

Screen Preview

You can preview the screen layout for a group of fields. This will help you to see what adjustments are needed to improve the screen layout.

Note: The preview is only an approximation of the screen layout which may appear slightly different on the real screen.

Previewing a subscriber screen

Follow these steps to preview how a group of fields will look in the Edit Subscriber screen.

Tip: You can display the Preview panel while making changes to the screen layout. Then you can refresh it as required by clicking **Refresh**.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.

2. On the **Subscriber Config** tab, select the **Product Type** from the drop down list.

3. In the panel on the left select the group that you want to preview.

   Tip: Double click on the node to see the list of groups assigned to the node, if these are not currently in view.

4. Click **Preview**.

   Result: You see the Previewing Panel for the selected group.

5. When you have finished previewing, click **Close**.

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Group Configuration

This chapter explains how to configure groups.

This chapter contains the following topics.

Group Configuration

Group Configuration

You configure groups on the **Group Configuration** tab on the Subscriber Profile Manager screen. Once you have configured a group, you can assign it to a tree node on the **Subscriber Config** tab or **Product Type Config** tab. You can then define which fields belong to the group.

Group Types

The Group Type determines whether the group can be assigned to a node in the Subscriber Config tree or Product Type Config Tree. The available group types are:

- Product Type
- Subscriber
- Sub-Group

Assigning groups to nodes

For details on assigning groups to nodes on the:

- Subscriber Config tree, see Subscriber Configuration
- Product Type Config tree, see Product Type Configuration
- Sub-Groups tree, see Sub-Group Configuration

Adding groups

Follow these steps to add a new group.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.

2. On the **Group Configuration** tab, click **New**.

   Result: You see the New Subscriber Profile Manager Group screen.

3. In the **Group Name** field, enter the name for this group.

4. Select the **Group Type** from the drop down list.

5. Click **Save**.

Related topic

Editing groups

Follow these steps to edit an existing group.

Note: You cannot change the group type.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.

2. On the **Group Configuration** tab, select the group to edit.

3. Click **Edit.**

   Result: You see the Edit Subscriber Profile Manager Group screen.

4. Enter a new **Name** for the group if required.

5. Click **Save**.

Deleting groups

Follow these steps to delete a group.

Warning: You cannot delete a group if it is currently assigned to a node on the **Subscriber Config** tab, the **Product Type Config** tab, or the **Sub-Group Config** tab.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.

2. On the **Group Configuration** tab, select the group to delete.

3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK**.

   Result: The record is deleted.

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Subscriber Configuration

This chapter explains how to configure the groups and fields available in the Prepaid Charging Edit Subscriber screens.

Note: Sub-groups are configured in the **Sub-Group Config** tab. Once the sub-group has been configured, you can add it to the Subscriber Config tree and the Edit Subscriber screen in the same way as adding a field.

This chapter contains the following topics.

Subscriber Config

The **Subscriber Config** tab allows you to configure the Prepaid Charging Edit Subscriber screen. You can:

- Define which options will appear in the left hand menu on the screen
- Define the fields belonging to each group
- Configure how each field is displayed on the screen
- Define profile rules for the profile tag fields in each group

For more information about the Edit Subscriber screen, see Editing and Deleting Subscribers.

Profile rules

You can define a set of profile rules for the profile tag fields configured to appear in the Edit Subscriber and Edit Product Type screens. The profile rules are applied at run time to help prevent invalid data from being entered in profile tag fields.

For details on defining profile rules, see Rule Definition.

Subscriber config definitions

You can set up a subscriber config definition for a specific service provider, or for a specific service provider and product type combination. The configuration is applied to a Subscriber based on the product type specified for the subscriber's wallet.

Default product type

The default product type is `None`. The configuration defined for this product type is used where no specific configuration has been defined for the subscriber's product type.

Set the default product type by selecting a product type from the **Product Type** drop down list at the top of the Subscriber Profile Manager screen.

Subscriber config rules

Here are the rules used to determine which subscriber config definition will be used to display subscriber information in the Edit Subscriber screen.

1. If the service provider and product type specified for the subscriber's wallet match a subscriber config product type definition, then this definition will be used.

2. If there is no match for the product type then the subscriber config definition for the service provider's default product type None will be used.

User access

The fields included in a subscriber group can be accessed in the Edit Subscriber screen provided the user has been given sufficient privileges.

User access permissions are managed through the User Templates defined in the SMS User Management screen. They can be set for all the fields in the subscriber group, or for selected fields.

This table describes the privileges that may be assigned to a field.

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	Valid for BPL tasks only. This BPL task will be visible to the user through the screens, and they will be able to execute it.

Note: For information on creating and maintaining user Templates, see *Convergent Charging Controller SMS User's Guide*.

Note about including wallet information

Where secondary or shared wallets are to be used, you are strongly advised to design screens that place the wallet information on a separate panel. You should not include any specific subscriber details in this panel.

Here is a list of all the items that relate to the wallet and which should be configured to appear on a separate wallet panel. All other details fields, profile tags and profile panel information relate to the subscriber:

• Balances table panel

• Wallet expiry details panel

- Wallet history panel (wallet history and creation date)
- Wallet info panel
- Wallet state
- Product type

Example

To see the importance of keeping wallet information separate, consider these two scenarios:

1. A subscriber has both a primary and a secondary wallet. In this case there will be independent wallet information for each wallet, and a single set of subscriber information (profile panel, details fields, and any profile tags).

2. Two subscribers have independent primary wallets and a shared secondary wallet. In this case the two subscribers will have independent subscriber and primary wallet information, and therefore independent profile panel, details fields and profile tags. However, there will be a single set of wallet information for the shared secondary wallet. This means that the profile panel, details fields and profile tags displayed when a user accesses the secondary wallet, will depend on which subscriber is selected.

Subscriber Panels

The **Subscriber Config** tab enables you to define the groups in the Subscriber Panels node tree. The groups which are assigned to nodes in the tree, are displayed under the Subscriber option on the left hand panel in the Edit Subscriber screen.

Once the group is defined, you can:

- Define the set of fields belonging to the group for the selected Service Provider and Product Type
- Specify the screen layout for each field.

For more information about:

- Configuring the fields which are in the group, see Subscriber Group Field Configuration
- How the fields are displayed, see Layout Details

Assigning a group

To assign a group to a node in the Subscriber Config tree, follow the procedure detailed in Assigning a group to a node.

Editing a group assignment

To edit the assignment of a group to a node in the Subscriber Config tree, follow the procedure detailed in Editing a group assignment.

Deleting a group

To delete a group assigned to a node in the Subscriber Config tree, follow the procedure detailed in Deleting a group.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

Subscriber Group Field Configuration

You can add, edit and delete the fields belonging to a group assigned to a node in the **Subscriber Config** tab. These fields will be displayed on the Edit Subscriber screen under the option which corresponds to the group they are configured in.

If you include any profile tag fields in your configuration, then you can also define the profile rules that will be applied to the profile tag fields at run-time. For details, see Rule Definition.

Adding new field for Subscriber Config group

Follow these steps to add a field for a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the left hand panel on the **Subscriber Config** tab select the group that you want to add the field to.

   Tip: Double click on a node to see which groups are assigned to it, if these are not currently visible.

3. Click **New**.

   Result: You see the New Field for Group screen. The name of the currently selected group is appended to the screen name.

4. Select the **Field Type** from the drop down box.

   Result: You see the field configuration options for the selected field type in the panel below.

5. If you are adding a:

Field Type	Specify These Database Fields
Database Field	• Display Name • Field • Type
BPL	• BPL
Profile Tag Field	• Display Name • Profile Tag Name • Date Type (if Tag field is a DATE)
Custom Field	• Display Name • Custom Type
Sub-Group	• Display Name • Sub-Group
Periodic Charge	• Display Name • Periodic Charge or Periodic Charge Group • Show Date Fields
Promotion Info Field	• Display Name • Promotion • Show Expiry Date

Field Type	Specify These Database Fields
Wallet Life Cycle Field	• Display Name

For more information, see Field Type fields.

6. Specify the **Layout Details** for the field. This will determine where the field will appear on the group panel in the Edit Subscriber screen.

For more information on the layout details options, refer to Screen Layout (Field Type Definition and Layout, Subscriber Profile Manager Screen Layout).

7. Click **Save**.

Editing field from Subscriber Config group

Follow these steps to edit a field included in a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the left hand panel on the **Subscriber Config** tab, select the group where the field to edit is configured.

   Tip: Double click on a node to see which groups are assigned to it, if these are not currently visible.

3. Select the field on the grid and click **Edit**.

   Result: You see the Editing Field from Group screen. The name of the currently selected group is appended to the screen name.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields at the top of this screen, see Field Type fields.

   For more information about the layout fields on this screen, see Layout Details.

5. Click **Save**.

Deleting a field

Follow these steps to delete a field from a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the left hand panel on the **Subscriber Config** tab, select the group where the field to delete is configured.

   Result: The grid will display the fields which have been configured for the group you have selected. For an example of this screen, see Subscriber Config tab - Details group.

3. Select the field you want to delete on the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK**.

   Result: The field is removed from the grid.

Profile Tag Fields

The facility to configure profile tag fields enables you to create customized fields which can then be:

- Accessed and populated through the CCP Dashboard, Edit Subscriber and Product Type screens

- Uused in control plans.

For more information about how profile fields are used in control plans, see *Convergent Charging Controller CPE User's Guide*.

Topics:

Profile tags

Configuring Zone Profile Tags

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: • True • False
BYTE	A single digit integer (signed).
DATE	A date.
INTEGER	An integer value (signed).
LNSTRING	A limited numeric string. Valid characters are 0-9. **Note:** The limits for LNSTRING field values may be set for the Product Type (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
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 (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
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.

Profile Field Tag Type	Description
ZONE	A set of shape definitions for the area covered by the zone. Shapes may be circular or rectangular and are defined by their coordinates. **Note:** You can set up and populate zone tags but they may only be used if the Location Capabilities Pack (LCP) is installed.

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	NA	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*.

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Product Type Configuration

This chapter explains how to configure the Profile groups and fields available in the Edit Product Type screen in CCS.

This chapter contains the following topics.

Product Type Config

The **Product Type Config** tab lets you:

- Add, edit and delete the Profile group options available in the Edit Product Type screen
- Add, edit and delete the profile tag fields belonging to each group
- Configure the screen layout for each field
- Define the profile rules for the profile tag fields in each group

Profile rules

You can define a set of profile rules for the profile tag fields configured to appear in the Edit Subscriber and Edit Product Type screens. The profile rules are applied at run time to help prevent invalid data from being entered in profile tag fields.

For details on defining profile rules, see Rule Definition.

User access

The profile tag fields included in a Product Type Group can be accessed in the Edit Product Type screen provided the user has been given sufficient privileges.

User access permissions are managed through the User Templates defined in the SMS User Management screen. They can be set for all the fields in the group, or for selected fields.

This table describes the privileges that may be assigned to a field.

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.

Privilege	Description
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.

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

Product Type Panels

You assign Product Type groups to the Product Type Panels node on the **Product Type Config** tab. You can then:

- define the set of fields belonging to each group for the selected Service Provider and Product Type, and
- specify the screen layout for each field.

The **Product Type Config** tab enables you to define the groups in the Product Type Panels node tree. The groups which are assigned to nodes in the tree are displayed under the Profile Fields option on the left hand panel in the Edit Product Type screen.

Once the group is assigned, you can specify the screen layout for each field. For more information about:

- Configuring the fields which are in the group, see Product Type Field Configuration
- How the fields are displayed, see Layout Details

Assigning a group

To assign a group to a node in the Product Type Config tree, follow the procedure detailed in Assigning a group to a node.

Editing a group assignment

To edit the assignment of a group to a node in the Product Type Config tree, follow the procedure detailed in Editing a group assignment.

Deleting a group

To delete a group assigned to a node in the Product Type Config tree, follow the procedure detailed in Deleting a group.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

Product Type Field Configuration

You can add, edit and delete the fields belonging to a group assigned to the Product Type Panels node on the **Product Type Config** tab. All the fields in the group must be either:

- profile tag fields, or
- custom profile fields.

If you include any profile tag fields in your configuration, then you can also define the profile rules that will be applied to the profile tag fields at run-time.

The following types of profile field are available to product types:

- DATE
- BOOLEAN
- BYTE
- INTEGER
- PREFIX
- OPREFIX
- STRING
- NSTRING
- DISCOUNT
- PATTERNS
- ZONE (the profile tag must be in the range 4128770 to 4194303)

You cannot include LOPREFIX profile fields in product type configurations.

Note: For more information on profile tag fields, see Profile Tag Fields. For details on defining profile rules, see Rule Definition.

Custom profile fields

Custom profile fields provide the facility to define profile tag fields where the data type is selected from a list of predefined Custom Types.

You can use custom profile fields to store the following items. The stored values can then be used in control plans:

- Balance Cascade name
- Domain name
- Product Type name
- Tariff Plan name, and
- Voucher Type name.

Adding new field for Product Type group

Follow these steps to add a field to a group in the Product Type Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the Product Type Panels list on left hand side of the **Product Type Config** tab, select the required group.

   Tip: Double click on the Product Type Panels node to see which groups are assigned to it, if these are not currently visible.

3. Click **New**.

Result: You see the New Field for Group screen. The name of the currently selected group is appended to the screen name.

4. In the **Field Type** drop down box select either:

   • Profile Tag Field, or

   • Custom Profile Field

5. In the **Display Name** field, type the label you want to appear next to the field in the Edit Product Type screen.

   Note: This label is only displayed if **Auto Create Label** is ticked.

6. From the **Profile Tag Name** drop down list, select the profile tag field you want to add.

7. If you are adding a Custom Profile Field, select the Custom Type from the drop down list of available custom types.

   If you are adding a DATE type Profile Tag Field, select the Date Type from the drop down list of available date types.

8. Specify the **Layout Details** for the field. This will determine where the field will appear on the group panel in the Edit Product Type screen.

   For more information on the layout details options, refer to Layout Details.

9. Click **Save**.

Editing field from Product Type group

Follow these steps to edit a field included in a group in the Product Type Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the Product Type Panels list on left hand side of the **Product Type Config** tab, select the required group.

   Tip: Double click on the Product Type Panels node to see which groups are assigned to it, if these are not currently visible.

3. Select the field on the table and click **Edit**.

   Result: You see the **Editing Field from Group** screen. The name of the currently selected group is appended to the screen name.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields at the top of this screen, see Field Type fields.

   For more information about the layout fields on this screen, see Layout Details.

5. Click **Save**.

Deleting a field

Follow these steps to delete a field from a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the left hand panel on the **Subscriber Config** tab, select the group where the field to delete is configured.

   Result: The grid will display the fields which have been configured for the group you have selected. For an example of this screen, see Subscriber Config tab - Details group.

3. Select the field you want to delete on the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK**.

   Result: The field is removed from the grid.

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Profile Rules

This chapter explains how to define profile rules.

This chapter contains the following topics.

Rule Definition

You can define sets of profile field rules to associate with the profile tag fields available in the Edit Subscriber and Edit Product Type screens. The rules will be evaluated when you open either the Edit Subscriber or the Edit Product Type screen, and applied immediately prior to saving them.

Profile field rules are:

- Defined on the **Subscriber Config** and **Product Type Config** tabs

- Associated with specific profile tag fields that have been configured to appear in either the Edit Subscriber or Edit Product Type screen

- Used in the screens to control the data entered into the profile tag fields. Only data that conforms to the rules will be accepted.

Topics:

Profile rule fields

This table describes the function of each field.

Field	Description
Rule Name	The name of the rule.
SPM Component	The SPM component that this rule applies to. This will be a profile tag field included in the currently selected group of fields. The following types of profile tag field are supported: • DATE • INTEGER • NSTRING • STRING

Field	Description
Comparator	The type of compare operation to perform. Valid values are: • = (Equal to) • != (Not equal to) • < (Less than) • <= (Less than or equal to) • > (Greater than) • >= (Greater than or equal to) • Range (Range of values)
Use Profile fields	Profile fields apply to rules that have been configured to compare the SPM Component against a profile field value or range of values. These fields can be configured when the Use Profile Fields option is selected.
Profile Field	The profile field containing the value to compare against. If the Range comparator is being used, then this will be the minimum value allowed.
Profile Field Max	If the Range comparator is being used, then this profile field contains the maximum value allowed in the range. Otherwise, this field will be disabled.
Compare Profile Block	Identifies the profile block containing the profile fields to use in the compare operation. Valid values are: • Product Type Profile • Subscriber Profile • Service Profile
Allow when profile field value unavailable	When set, the rule will be passed even if the specified profile field data is not available.
Use Fixed Value - Integer fields	Integer fields apply to rules that have been configured to compare the SPM Component against a fixed value or range of fixed values. These fields can be configured when: • the SPM Component field type is either INTEGER or NSTRING, and • the Use Fixed Value option as been selected.
Integer Value	The numeric value to compare against. If the Range comparator is being used, then this sets the minimum value allowed in the range.
Integer Value Max	If the Range comparator is being used, then this sets the maximum value allowed in the range. Otherwise this field is disabled.
Use Fixed Value - Date fields	Date fields apply to rules that have been configured to compare the SPM Component against a specific date or range of dates. These fields can be configured when: • the SPM Component field type is DATE, and • the Use Fixed Value option has been selected.

Field	Description
Date Value	The date to compare against. If the Range comparator is being used, then this sets the start date for the range. Dates may be entered using the following formats: • dd-Mon-yyy hh:mm:ss • dd-Mon-yyyy
Date Value Max	If the Range comparator is being used, then this sets the end date for the range. Otherwise this field is disabled.
Use Date And Time	Allows you to set an exact time for the specified date.
Use Run-Time Date	When set, the SPM Component will be compared against the current system time at run-time. **Note:** Setting this option disables the Compare Against fields.

Adding a new rule

Follow these steps to add a new profile rule definition for a Subscriber or Product Type group.

1. Select either the **Subscriber Config** tab, or the **Product Type Config** tab, as required.

2. In the Config tree, select the group you want to add the new rule definition to.

   Result: In the bottom part of the screen you see a grid listing the rules that are currently defined for the group.

3. Click **New Rule**.

   Result: You see the New Profile Rule for Group - <group> screen.

4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Profile rule fields.

   Note: The fields available in the Compare Against area will depend on the field type of the SPM Component and which of the following options you selected:

   • Use Fixed Value

   • Use Profile Fields, or

   • Use Run-Time Date

5. If you selected the **Use Profile Fields** option and you want the rule to be passed even if the selected profile fields are not available, then tick the **Allow when profile field value unavailable** check box.

6. Click **Save**.

   Related topic

   Rule Definition

Editing a rule

Follow these steps to edit a profile rule definition for a Subscriber or Product Type group.

1. Select either the **Subscriber Config** tab, or the **Product Type Config** tab, as required.

2. In the Config tree, select the group where the profile rule to edit is defined.

   Result: In the bottom part of the screen you see a grid listing the rules that are currently defined for the group.

3. Select the rule to edit in the grid, and click **Edit Rule**.

   Result: You see the Editing Profile Rule for Group - *Group* screen.

4. Edit the fields on this screen to reflect the changes you need to make.

   For more information about the fields on this screen, see Profile rule fields.

   Note: The fields available in the Compare Against area depend on the field type of the SPM Component and which of the following options have been selected:

   • Use Fixed Value

   • Use Profile Fields

   • Use Run-Time Date

5. If you selected **Use Profile Fields**, to ensure the rule is passed even when the selected profile field is not available, select the **Allow when profile field value unavailable** check box.

6. Click **Save**.

Related topic

Rule Definition

Deleting a rule

Follow these steps to delete a profile rule.

1. Select the **Subscriber Config** tab or the **Product Type Config** tab as required.

2. Select the group in the config tree where the rule to delete is defined.

   Result: In the bottom part of the screen you see the rules currently defined for the group listed in the grid.

3. On the grid, select the rule you want to delete.

4. Click **Delete Rule**.

   Result: You see the Delete Confirmation prompt.

5. Click **OK**.

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Sub-Group Configuration

This chapter explains how to configure sub-groups.

This chapter contains the following topics.

Sub-Groups

Sub-Group Field Configuration

Sub-Groups

Sub-groups groups are used to define a set of fields which can be displayed on the Edit Subscriber screen and/or the CCP Dashboard.

Sub-groups can be used as templates in the **Subscriber Config** and CCP Dashboard **Config** tabs.

Assigning a group

To assign a group to a node in the Sub-Groups tree, follow the procedure detailed in Assigning a group to a node.

Editing a group assignment

To edit the assignment of a group to a node in the Sub-Groups tree, follow the procedure detailed in Editing a group assignment.

Deleting sub-group groups

To delete a group assigned to a node in the Sub-Groups tree, follow the procedure detailed in Deleting a group.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

Sub-group Group fields

This table describes the function of each field.

Field	Description
Group Name	The name of the group. This drop down list is populated by the **Group Configuration** tab, and defines the label of the group which will appear on the Edit Subscriber screen or CCP Dashboard.
Group Order	This number controls the order the sub-groups will be displayed in in the **Sub-Group Configuration** tab. **Note:** Groups that have the same group order number will be ordered alphabetically.

Sub-Group Field Configuration

You can add, edit and delete the fields belonging to a sub-group assigned to a node in the **Sub-Group Configuration** tab. These fields will be displayed in the sub-group when it is displayed on the Edit Subscriber screen or the CCP Dashboard screen.

Note: To display the sub-group on the Edit Subscriber screen, you must add the sub-group as a field on the **Subscriber Config** tab. For more information, see Adding a new field. To display the sub-group on the CCP Dashboard screen, you must add the sub-group as a field on the CCP Dashboard **Config** tab.

Adding new field for Sub-Group group

Follow these steps to add a field for a sub-group group.

1. In the Subscriber Profile Management screen, select the Service Provider and Product Type this sub-group will be available for.

2. Select the **Sub-Group Configuration** tab.

3. In the Sub-Groups config tree on the left-hand side of the screen, select the sub-group to add a field to.

   Result: The grid will display the fields which have been configured for the sub-group you have selected. For an example of this screen, see Sub-Group Configuration tab - fields.

   Note: The grid will only display the fields which have been configured for the selected sub-group for the service provider and product type combination selected in step 1.

4. Click **New**.

   Result: You see the **New Field for Group** screen. The name of the currently selected group is appended to the screen name.

5. Select the **Field Type** from the drop down box.

   Result: You see the field configuration options for the selected field type in the panel below.

6. If you are adding a database field, specify:

   - **Display Name**
   - **Field**
   - **Type**

   If you are adding a BPL task, then select the BPL task name.

   If you are adding a profile tag field, then specify:

   - **Display Name**
   - **Profile Tag Name**
   - **Data Type**

   Note: You can add the following types of profile field to a sub-group: DATE, BOOLEAN, BYTE, INTEGER, PREFIX, OPREFIX, STRING, NSTRING,

DISCOUNT, PATTERNS, ZONE (the profile tag must be in the range 4128770 to 4194303). You cannot add LOPREFIX profile fields to a sub-group configuration.

If you are adding a custom field, then specify:

- **Display Name**
- **Custom Type**

If you are adding a Periodic Charge, then specify:

- **Display Name**
- **Periodic Charge**
- **Show Date Fields**

For more information, see Field Type fields.

7. Specify the **Layout Details** for the field. This will determine where the field will appear on the group panel in the Edit Subscriber screen.

    For more information on the layout details options, refer to Layout Details.

8. Click **Save**.

Editing field from Sub-Group group

Follow these steps to edit a field in a sub-group.

1. In the Subscriber Profile Management screen, select the Service Provider and Product Type the sub-group to change is associated with.

2. Select the **Sub-Group Configuration** tab.

3. In the Sub-Groups config tree on the left-hand side of the screen, select the sub-group which contains the field to edit.

    Result: The grid will display the fields which have been configured for the sub-group you have selected. For an example of this screen, see Sub-Group Configuration tab - fields.

4. Select the field on the grid and click **Edit**.

    Result: You see the Editing Field from Group screen. The name of the currently selected group is appended to the screen name.

5. Edit the fields to reflect the changes you need to make.

    For more information about the fields at the top of this screen, see Field Type fields.

    For more information about the layout fields on this screen, see Layout Details.

6. Click **Save**.

Deleting a field

Follow these steps to delete a field from a sub-group.

1. In the Subscriber Profile Management screen, select the Service Provider and Product Type the sub-group to remove is associated with.

2. Select the **Sub-Group Configuration** tab.

3. In the Sub-Groups config tree on the left-hand side of the screen, select the sub-group which contains the field to delete.

Result: The grid will display the fields which have been configured for the sub-group you have selected. For an example of this screen, see Sub-Group Configuration tab - fields.

4. Select the field to delete on the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

5. Click **OK**.

   Result: The field is removed from the grid.

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Copying and Deleting Configuration

This chapter explains how to copy and delete configuration.

This chapter contains the following topics.

Copying Configuration

Deleting Configuration

Copying Configuration

The Copy function allows you to copy the SPM configuration defined for the currently selected service provider and product type to a new service provider and/or product type.

Note: You can only copy periodic charges to a new product type with the same service provider, not to a new service provider.

Follow these steps to copy the configuration for a selected Service Provider and Product Type.

Note: The copy operation will only copy the configuration for the tab you have selected.

1. In the Subscriber Profile Manager screen, select the **Service Provider** that you want to copy from.

2. From the drop down list, select the **Product Type** you want to copy from.

    Note: Product type selection is disabled from the CCP Dashboard and Group Configuration tabs. To enable product type selection, click on the **Subscriber Config**, **Product Type Config**, or **Sub-Group Configuration** tabs.

3. Select the tab of the records to copy.

    To copy:

    • Edit Subscriber screen configuration, select the **Subscriber Config** tab.

    • Edit Product Type screen configuration, select the **Product Type Config** tab.

    • Sub-Groups, select the **Sub-Group Configuration** tab.

4. Click the **Copy <data>** button at the top of the screen.

    Result: You see the Copy Configuration screen showing details of the records you can copy with this operation.

5. To copy the configuration to a different Service Provider, select the new **Service Provider** from the drop down list.

    Note: Selecting a new Service Provider means that the CCP Dashboard configuration will also be copied.

6. Select the **Product Type** from the drop down list to which the configuration will be copied.

    Warning: You will not be able to copy configuration to a Product Type for which configuration has already been defined.

7.   Click **Copy**.

Deleting Configuration

The Delete Configuration function allows you to return some of the configuration for the currently selected Service Provider to the initial defaults.

Notes:

*   There are no defaults for product type and sub-group configuration, so returning to defaults will delete all existing configuration for those types of records.

*   You cannot delete the configuration defined for the Boss Service Provider.

Returning subscriber configuration to defaults

Follow these steps to return the subscriber configuration for a selected Service Provider to the defaults.

Note: Returning subscriber configuration does not delete any sub-groups which are used by the subscriber configuration.

1.   In the Subscriber Profile Manager screen, select the **Service Provider** whose configuration you want to delete.

2.   Select the **Subscriber Config** tab.

3.   Click **Reset Subscriber to Defaults**.

    Result: You see the Reset to Defaults Confirmation prompt.

4.   Click **OK**.

    Result: The unique Edit Subscriber screen configuration defined for the Service Provider and all its associated Product Types is deleted.

Deleting product type configuration

Follow these steps to delete the Edit Product Type screen configuration for a selected Service Provider.

1.   In the Subscriber Profile Manager screen, select the **Service Provider** whose configuration you want to delete.

2.   Select the **Product Type Config** tab.

3.   Click **Reset Product Type to Defaults**.

    Result: You see the Reset to Defaults Confirmation prompt.

4.   Click **OK**.

    Result: The Edit Product Type screen configuration defined for the Service Provider and all its associated Product Types is deleted.

Deleting sub-group configuration

Follow these steps to delete the Sub-groups configuration for a selected Service Provider.

Note: If the sub-groups are used for either Edit Subscriber screen configuration or CCP Dashboard screen configuration, you will not be able to delete them.

1. In the Subscriber Profile Manager screen, select the **Service Provider** whose configuration you want to delete.

2. Select the **Sub-Group Configuration** tab.

3. Click **Delete Sub-Group Configuration**.

   Result: You see the Reset to Defaults Confirmation prompt.

4. Click **OK**.

   Result: The Sub-Group configuration defined for the Service Provider and all its associated Product Types is deleted.

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User Access

This chapter explains the access permissions that must be given to a CSR or other user before they will be able to access the CCP Dashboard and Edit Subscriber screens through the CCP or CCS.

This chapter contains the following topics.

Access Permissions

User Management

Read Only Access

Access Permissions

Before a CSR or other user can view or edit subscribers in the CCP Dashboard and Edit Subscriber screens, they must be given appropriate screen access permissions. Access for an individual user must be set at the following levels:

- Service Provider
- Product Type.

Service provider access

For each Service Provider, you must assign appropriate access permissions to each eligible user. This gives the user access to the CCP Dashboard screen as configured for the specific Service Provider. In addition it will give them access to the Edit Subscriber screen as configured for the default product type, `None`.

Product type access

Where the Edit Subscriber screen has been configured for a specific product type, you must assign appropriate access permissions to each eligible user on a product type basis. This gives the user access to the Edit Subscriber screen as configured for the specific product type for subscribers with this product type.

Default product type

The default product type is `None`. The configuration defined for this product type is used where no specific configuration has been defined for the subscriber's product type.

Set the default product type by selecting a product type from the **Product Type** drop down list at the top of the Subscriber Profile Manager screen.

User Management

User access permissions are managed through the User Templates defined in the SMS User Management screen.

Note: For details on defining user templates, see the *SMS User's Guide*.

Permission groups

This table describes the permission groups that will give a user access to the information in the CCP Dashboard and Edit Subscriber screens when included in their user template.

Access permissions	Description
CCP_Dashboard	Provides access to the contents of the CCP Dashboard screen.
SPM	Provides access to the CCP Dashboard and Edit Subscriber screens. Access to individual fields must be defined at the service provider level, and may also be defined for individual product types.

Privileges

This table describes the privileges that may be assigned to items in the SMS User Management screen.

Privilege	Description
Access	The item (screen, panel or field) will be visible to the user through the screens.
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	Valid for BPL tasks/Common Tasks. The button will be visible to the user through the screens, and they will be able to execute it. Execute privilege is also required for the Voucher Redeem and Voucher Recharge buttons in the CCP Dashboard screen.

Read Only Access

You can define a user template that provides the user with read only screen access by setting all SPM permissions to Access or ReadOnly.

Note: A read only user may be able to execute common tasks and credit transfers. However, it is important to ensure that the option to save prior to executing a common task or credit transfer is disabled since this action is not relevant for read only users.

Disabling save and execute

To ensure the **Save & Execute** button is disabled in the Confirm Execute <task> dialog box, set the following CCS permissions to ReadOnly:

- Account Edit *balance*
- Account Edit *bpl*
- Account Edit *Service*
- Account Edit tab

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CCS Charging Feature Nodes

This chapter describes the Oracle Communications Convergent Charging Controller CCS charging feature nodes.

This chapter contains the following topics.

Balance Cascade Override

Billable Event

Business Prefix Branch

Call Information SMS

Cost Call Duration Branching

Credit Wallet Transfer

Declined Billing Cause

Direct Unit Charge Request

Get CUG Details

Named Event

Play Tariff Plan Announcement

Set Active Domain

Set BE EDR

Set Discount

Set Tariff Plan Rule

Set Wallet Type

Tariff Plan Override

Universal ATB

Variable Amount Recharge

Voice Call Cost

Balance Cascade Override

The Balance Cascade Override node is used to specify a balance cascade to override the balance cascade that otherwise would have been used for the next charging action.

The balance cascade can be specified in the node or defined in a profile field.

Node exits – Balance Cascade Override

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

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Success	The balance cascade has been overridden.

Configuration fields – Balance Cascade Override

This table describes the function of each field.

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

Configuring the node – Balance Cascade Override

Follow these steps to configure the node.

1. In the Balance Cascade Override area select either:

   • **From Profile**, or

   • **Manual Definition**.

2. **Result:** The relevant Balance Cascade Override fields are made available.

3. Select the Balance Cascade to override the balance cascade defined for the next charging action. If you selected:

   • **Manual Definition**, Select the **Balance Cascade** from the drop down list. Only valid balance cascades will be available.

- **From Profile**, Select the **TagID Data Type**, **Location** and **Field** containing the balance cascade you want to use from the drop down lists.

4. Click **Save**.

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

    Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Billable Event

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

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

The action is one of:

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

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

Node exits – Billable Event

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

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

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

Configuration fields – Billable Event

This table describes the function of each field.

Field	Description
Event Class	List of event types that can be billed.
Billable Event	List of events for the Event Class selected.
Number of Events	The number of events to bill the subscriber. This value can be obtained from: • **Number of Events** field, when the **Node dialog** option is selected, or • **Number of Events Field** location, when the **Profile** option is selected. **Note:** The number of events value is hexadecimal, for example: 10 in the **Number of Events** field is actually 16 events.
Discount Percentage	The percentage discount to apply to the billable event cost.

Field	Description
Allow Negative Balance	Indicates if the caller wallet balance is allowed to become negative as a result of this event billing (includes an already negative wallet balance before this billable event).
Billable Event Feature Selection	This node has five modes of operation: • Direct Event - requests the billing engine to charge the caller wallet with the cost of the event(s). • Reserve Event - requests the billing engine to reserve the cost of the event(s) against the caller wallet. • Confirm Event - confirms the previously reserved event cost. • Revoke Event - cancels the previously reserved event cost. • Cost of Event - requests the billing engine to return the cost of the event(s). **Note:** The option selected here will affect the list of available items to select in the Event Class and Billable Event.
Store Cost	Indicates if the billed cost is to be saved in the Charge Cost location.
Charge Cost	Location to save the billed cost into for later use.

Configuring the node – Billable Event

Follow these steps to configure the node.

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

1. Select the mode of operation for this instance of the node:

   • **Direct Event** - to bill the caller for the event cost.

   • **Reserve Event** - to reserve the event cost against the caller wallet balance.

   • **Confirm Event** - to confirm the reserved event cost.

   • **Revoke Event** - to cancel a previously made reserve request.

   • **Cost of Event** - to retrieve the cost of the event.

   Note: This affects content for Event Class and Billable Event lists.

2. From the **Event Class** drop down list, select the class of this billable event.

3. From the **Billable Event** drop down list, select the event to bill.

4. In the **Number of Events** section, select the option to use to obtain the number of events to bill.

   Either select:

   • **Node dialog** to obtain the value from this node, or

   • **Profile** to obtain the value from a location.

Result: The relevant Number of Events fields are made available.

5. If **Node dialog:** In the **Number of Events** field, type the number of events to bill.

   - If **Profile** :Select the **Number of Events Data Type**, **Location** and **Field** from the drop down lists.

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

6. In the **Discount** field, type the discount percentage to apply to the billed event cost.

7. To permit a negative wallet balance when reserving or billing, select the **Allow** check box.

8. If the mode of operation is:

   - Direct Event,

   - Confirm Event, or

   - Cost of Event

   and the cost is to be saved, select the **Store Cost** check box.

9. If the Store Cost check box has been selected, select the **ChargeCost Data Type**, **Location** and **Field** from the drop down lists.

10. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Business Prefix Branch

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

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

Node exits – Business Prefix Branch

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

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Set Personal	The caller has not dialed the Business Prefix.

Exit	Cause	Description
3	Set Business	The caller has dialed the Business Prefix.

Configuring the node – Business Prefix Branch

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

Call Information SMS

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

- The template to use to send the message (configured through the **ACS > Configuration > Notification** screens)

- The currency in which to display the cost of the call

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

- Duration - hours/minutes/seconds (available only after a call)

- Call cost (available only after a call)

- Wallet type

- Wallet expiry

- Balances

- Balance expiry

Notes:

The node will filter out all Expenditure Balance Types and not include them in the SMS notification message. See *CCS User's Guide - Balance Types* topic.

Node exits – Call Information SMS

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

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node, a text message has not been sent.
2	Success	A text message has been successfully sent to the short message service.

Configuring the node – Call Information SMS

Follow these steps to configure the node.

1. In the SMS Termination Number Selection panel, select the location of the number to which the SMS will be sent. Select either:

    • **Number Buffer**, or

    • **Profile String**

    Result: The relevant fields are made available.

2. If **Number Buffer:** Select from the **Number Buffer** drop down list.

    If **Profile String:** Select from the **Profile String Data Type**, **Location** and **Field** drop down lists.

3. Select the **Application** where the notification template is defined from the drop down list.

    Note: ACS will be used by default.

4. Select the notification **Type** from the drop down list.

    Defaults to CallInfoDurationCost for application ACS.

5. To use the subscriber's wallet currency when constructing the cost string for the SMS, select **Use Wallet Cost Currency**.

    • To use a different currency, select **Override Cost Currency** and select the currency you want from the drop down list.

6. Click **Save**.

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

Further reference:

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

• The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Message parameters – Call Information SMS

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

Here is a list of available parameters.

Parameter	Description
$1	Call length hours (not zero padded).
$2	Call length minutes (not zero padded).
$3	Call length seconds (not zero padded). Examples.

Parameter	Description
$4	The Balance Types details of the Wallet. Details include: • Balance description • Balance currency • Balance amount • Balance expiry (either the number of days to expiry or the no balance expiry text). **Note:** The balance details string is configured on the **Balance Type Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.
$5	The wallet expiry details. One of the following: • The number of days remaining before the wallet expires • The no expiry date text defined for wallets that have no expiry date set **Note:** The wallet expiry date text is configured on the **Wallet Name Translations** tab in the Wallet Management screen in CCS. See *CCS User's Guide* for details.
$6	The cost details including the currency and amount. **Note:** The cost string is configured on the **Balance Type Translations** tab in the Wallet Management screen in CCS. See *CCS User's Guide* for details.
$7	The wallet description. **Note:** The wallet description is configured on the **Wallet Name Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.
$8	The total call length in hours, minutes and seconds. Example: 1:16:51.
$9	The total call length in minutes and seconds. Example: 76:51 **Note:** Use parameters $8 or $9 instead of using parameters $1, $2 and $3.

Examples for parameters $1, $2, and $3:

Actual call length	$1	$2	$3
1 hour, 15 minutes and 23 seconds	1	15	23
28 minutes and 5 seconds	0	28	5

Message examples – Call Information SMS

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

Example 1

A template of:

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

will send the message:

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

Example 2

A template of:

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

will send the message:

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

Cost Call Duration Branching

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

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

This feature node is used for one of:

- Call cost branching
- Call duration branching

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

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

Node exits – Cost Call Duration Branching

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

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

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

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

Configuring the node – Cost Call Duration Branching

Follow these steps to edit the node configuration.

1. Select the **Branch Type** to use.

   Either:

   - **Cost**, or

   - **Call Duration**

   Result: The relevant fields are made unavailable.

2. If you selected **Cost**, select which balance type(s) to use.

   Either:

   - Tick the **Sum All** check box to use all cash balance types, or

   - Select from the **Balance Type** drop down list to use a single cash balance type.

   Note: The Balance Type drop down list shows all **Cash** balance types for the current ACS customer that can be used for charging. This excludes all **Expenditure** and **Cross Balance Type Discount** balances.

3. For both **Cost** and **Call Duration**, type the comparison balance or duration threshold to use in the **Threshold** field.

4. To store the call cost or duration tick the **Enabled** check box in the Store Cost/ Duration area. Then, select the **Destination** profile from the **Data Type**, **Location** and **Field** drop down lists.

5. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Credit Wallet Transfer

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

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

Node exits – Credit Wallet Transfer

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

Exit	Cause	Description
1	Unsupported	The current charging domain does not support all the required services needed by the feature node.
2	Success	Credit transfer completed successfully.
3	Unauthorised	The product type of the purchaser was not found in the limited product type list associated with this credit transfer.
4	Bad PIN	The PIN of the purchaser failed to validate. This may be due to the: • Supplied PIN was invalid • PIN was required but was not supplied • Subscriber does not have a PIN associated with this wallet
5	Invalid Transfer	The credit transfer short name specified was invalid.

Exit	Cause	Description
6	Error	Various general errors which may, amongst others, be: • Configuration related • Insufficient funds related • Purchaser or recipient wallet related

Configuration fields – Credit Wallet Transfer

This table describes the function of each field.

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

Field	Description
Credit Wallet Transfer	Select the Credit Wallet Transfer to use in the feature node. This is configured in the CCS Transfer Management screen. This option is enabled when the **Credit Wallet Transfer Name Selection** is set to **RetrieveFromNode**:
Credit Wallet Transfer Name	This field is enabled when the **Credit Wallet Transfer Name Selection** is set to **RetrieveFromBuffer**: • **CwTrName1** - The name of the Credit Wallet Transfer. These fields are enabled when the **Credit Wallet Transfer Name Selection** is set to **RetrieveFromProfile**: • **CwTrName2 Data Type** - The data type of the Credit Wallet Transfer name. • **CwTrName2 Location** - The location of the Credit Wallet Transfer name. • **CwTrName2 Field** - The second name field for the Credit Wallet Transfer.

Configuring the node – Credit Wallet Transfer

Follow these steps to configure the node.

1. From the **Recipient CLI** drop down list, select the buffer containing the phone number of the credit transfer recipient.

2. From the **Purchaser PIN** drop down list, select the buffer containing the purchaser wallet PIN.

3. From the **Recipient Wallet Type Category Selection** options, select the wallet to use or the location of the wallet to use.

   Note: If the buffer option is selected, from the **Wallet Type Category** drop down list also select the buffer containing the wallet type.

4. From the **Credit Wallet Transfer Selection** options, select the location of the credit transfer details.

   Note: The following fields require completion depending on the option selected.

5. If **Feature Node** option selected:

   • from the **Credit Wallet Transfer** drop down list, select the Credit Transfer short name to use.

   or

   If **Buffer** option selected:

   • from the **CreditWalletTransfer** drop down list, select the buffer containing the Credit Transfer short name to use.

   or

   If **Profile** option selected:

- from the **Data Type, Location and Field** drop down lists the profile the Credit Transfer short name is located in.

Note: The short name in a buffer or profile field must match a name configured in the **Transfer Management** screen.

6. Click **Save**.

Result: The purchaser and recipient may receive SMS notifications, depending on the setting of the notification opt out flag and the result of the transfer. See *CCS User's Guide*, Adding Subscribers for configuration instructions and SMS notifications for messages and their content.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

SMS notification – Credit Wallet Transfer

This table describes the SMS notifications and the conditions enabling them to be sent.

Message to	MSISDN	Transfer status	Message content
Purchaser	Differs from recipient	Success	Cost of the transfer plus the recipient MSISDN
Purchaser	Differs from recipient	Failure	Alternative failure message.
Purchaser	Same as recipient	Success	Cost of the transfer plus credits received.
Purchaser	Same as recipient	Failure	Alternative failure message.
Recipient	Differs from purchaser	Success	Credits received plus the purchaser MSISDN.

Declined Billing Cause

The Declined Billing Cause node sends the cause of a billing failure to the subscriber.

This feature node provides additional functionality for the UATB feature node when placed after the "declined (no funds)" branch of the UATB feature node.

Node exits – Declined Billing Cause

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

Exit	Cause	Description
1	Not Declined	The billing was not declined.

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

Configuring the node – Declined Billing Cause

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

Direct Unit Charge Request

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

Node exits – Direct Unit Charge Request

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

Exit	Cause	Description
1	Success	The request has been successfully applied to the BE.
2	Not Enough Info	No call information was found.
3	Billing Fault	Any BE error (such as insufficient credit or timeout).
4	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Direct Unit Charge Request

This table describes the function of each field.

Field	Description
Use Actual Duration	Uses the actual call duration for billing.
Override Duration	Uses the specified duration time for billing. You must enter a value in the Duration Time field.

Field	Description
Duration Time	Time, in seconds, to use for billing. A value of 0 or greater is accepted.
Debit	Allow the request to perform a debit instead of a credit.
Credit	Allow the request to perform a credit instead of a debit.
Ignore Wallet Balance	Allows the wallet balance to go negative instead of being rejected (used only when the account reference is configured to do so.)

Configuring the node – Direct Unit Charge Request

Follow these steps to configure the node.

1. Select the duration to use for billing:

   • **Actual Duration** – To bill for the actual call duration.

   • **Override Duration** – To bill for the specified duration (in seconds). You must enter a duration of 0 seconds or greater.

2. Select either the **Debit** or **Credit** options.

3. Select the **Ignore Wallet Balance** check box to allow the wallet balance to go negative.

4. Click **Save**.

Get CUG Details

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

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

Node exits – Get CUG Details

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

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Not In CUG	Either the Calling Party or the Called Party are not in a Closed User Group (CUG), or they are not in the same one.

Exit	Cause	Description
3	In CUG	Both the Calling Party and the Called Party are in the same CUG, and the current tariff plan has been successfully overridden.

Configuring the node – Get CUG Details

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

Named Event

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

The action is one of:

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

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

Node exits – Named Event

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

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

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

Configuring the node – Named Event

Follow these steps to configure the node.

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

1. From the **Event Definition** section, select the option to define how the event class and name will be specified.

   Select one of:

   • **Node dialog** to read the event class and named event from the values specified in the dialog

   • **Profile** to read the event class and named event from the **Event Class** and **Event Type** tags in temporary storage

2. If **Node dialog:**

   From the **Event Class** drop down list, select the class of this named event.

   From the **Named Event** drop down list, select the event to bill.

3. If required, select the **Persistent Reservation** check box to write the reservation ID to the **Reservation ID** tag in temporary storage in reserve mode. In commit mode, the

reservation ID will be read from the **Reservation ID** tag in temporary storage. This can be used to pass the reservation ID in an OSD SOAP request, for example.

Note: If you elect to use this feature, set the **CCS.namedEventHandler.reservationPeriod** parameter in the configuration file on the VWS to a suitable value, such as setting the **CCS.namedEventHandler.reservationPeriod** parameter to the maximum time that persistent reservations are allowed open before being confirmed or revoked, as reservations will expire at the end of this period.

4. In the **Number of Events** section, select the option to use to obtain the number of events to bill.

   Select one of:

   - **Node dialog** to obtain the value from this node
   - **Profile** to obtain the value from a profile location

5. If **Node dialog:** In the **Number of Events** field, type the number of events to bill.

   If **Profile**: Select the **Number of Events Data Type**, **Location** and **Field** from the drop down lists.

   Note: The number of events value in the **Node Dialog** is a decimal number, but the value from the **Profile** field depends on the type of the profile:

   - **INTEGER**: the value is a decimal number
   - **STRING or NSTRING**: if the string has a "0x" prefix then the value is a hexadecimal number; if the string does not have a "0x" prefix then the value is a decimal number

6. In the **Discount Percentage** field, type the discount percentage to apply to the billed event cost.

7. To permit a negative wallet balance when reserving or billing, select the **Allow** check box.

8. Select the mode of operation for this instance of the node:

   - **Direct Event** - to bill the caller for the event cost.
   - **Reserve Event** - to reserve the event cost against the caller wallet balance.
   - **Confirm Event** - to confirm the reserved event cost.
   - **Revoke Event** - to cancel a previously made reserve request.
   - **Cost of Event** - to retrieve the cost of the event.

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

9. If the mode of operation is:

   - Direct Event
   - Confirm Event
   - Cost of Event

   and the cost is to be saved, select the **Store Cost** check box.

10. If the **Store Cost** check box has been selected, select the **ChargeCost Data Type**, **Location** and **Field** from the drop down lists.

11. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Play Tariff Plan Announcement

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

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

Node exits – Play Tariff Plan Announcement

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

Exit	Cause	Description
1	Success	The node successfully found the selected tariff plan and played the associated announcement.
2	Error	An error/failure occurred finding the selected tariff plan or when loading and playing the announcement.

Configuring the node – Play Tariff Plan Announcement

Follow these steps to configure the node.

1. In the Tariff Plan Source area select:

   - **From Profile**
   - **Manual Definition**, or
   - **Active Tariff Plan**.

2. If **From Profile**: Select the **Data Type**, **Location** and **Field** drop down lists containing the required tariff plan.

   If **Manual Definition**: Select the **Tariff Plan** from the drop down list.

   If **Active Tariff Plan**: Then the currently active tariff plan will be used.

3. Click **Save**.

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

   Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Set Active Domain

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

- Wallet

- Voucher

- Subscriber

- Service

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

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

Node exits – Set Active Domain

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

Exit	Cause	Description
1	Success	The billing domain to use was set successfully.
2	Error	A system error of some kind occurred. The billing domain to use has not set.

Configuration fields – Set Active Domain

This table describes the function of each field.

Field	Description
Domain options	The domain to set can be either the name of a domain or a type of domain. The drop down list available will depend on the option selected here.
Name	A drop down list of all the valid domain names. The domain names are maintained in the **Service Management > Domain** tab screens.
Type	A drop down list of all the valid domain types. The domain types are maintained in the **Service Management > Domain** tab screens.
Management check boxes	These are the chassis actions to apply to the selected domain. The availability of check boxes for selection is maintained with the domain in the **Service Management > Domain** tab screens.

Field	Description
Service	Sets service chassis action.
Subscriber	Sets the subscriber chassis action.
Voucher	Sets the voucher chassis action.
Wallet	Sets the wallet chassis action.

Configuring the node – Set Active Domain

Follow these steps to configure the node.

1. Select the option to use to identify the domain:

   - Domain Name

   - Domain Type

2. From the **Name** or **Type** drop down lists, select the domain name or type.

   Notes:

   - When **Domain Name** is selected, the **Type** is automatically filled.

   - When **Domain Type** is selected, the **Name** field is blank and disabled.

   - The domain names and types are maintained in the **Service Management > Domain** tab screens.

3. Optionally select the **Management** check boxes allowed to set the required chassis action for the domain:

   - Service

   - Subscriber

   - Tracker

   - Wallet

   - Voucher

   Notes:

   - The defaults are: Service - unselected, the others except the Tracker option - selected. The Tracker option will only be available if the domain type is set to `UBE`.

   - The **Service** check box should only be selected with due caution and a thorough understanding of the potential consequences. See *CCS User's Guide*.

4. Click **Save**.

   Note: The optional check boxes are available for use once they have been selected in the **Service Management > Domain** tab screens.

Example use of node – Set Active Domain

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

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

Set BE EDR

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

Node exits – Set BE EDR

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

Exit	Cause	Description
1	Success	Existing BE EDR tag details successfully over-ridden, new tag appended.
2	Unsupported	Either error / failure or the Domain being used does not support this feature node.

Configuration fields – Set BE EDR

This table describes the function of each field.

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

Field	Description
EDR Tag	The tag to set the value to. One of: • A new tag to add to the EDR • The EDR tag to replace the value of This field must be between 1 and 50 characters long. This field is required. **Warning:** The only characters which can be used in this field are 0-9, a-z, A-Z, -_ and spaces.
Data Type, Location, Field	The type, location and field of the profile block that contains the required field.
Field	The profile field that contains the value to use for the EDR Tag.

Field	Description
Context Field	The call context field to use for the EDR Tag. For more information about call context fields, see *ACS User's Guide*. **Note:** The entries in this field are a sub-set of the fully available set of call context fields.
Fixed Value	Select the **Data Type** of **Fixed Value** to see this field. Value to use for the EDR Tag This field must be between 1 and 50 characters long. **Warning:** The only characters which can be used in this field are 0-9, a-z, A-Z, -_ and spaces.
Context Number	When selected, normalization occurs on fields selected from the Context Field based upon capability and rules.

Configuring the node – Set BE EDR

Follow these steps to configure the node.

1. In the **EDR Tag** field, enter the string you want to use as the EDR field label.

2. To set the EDR Tag value or source:

   • From a **profile field**, select **Get value from profile variable** radio button.

   • Enter a f**ixed value**, select **Get value from profile variable** radio button.

   • From a **CCS context** field, select **Get value from CCS context field** radio button.

3. **From a profile field:**

   a. Select the field from the **Data Type**, **Location** and **Field** drop down lists.

   b. Click **Save**.

4. **From a fixed value:**

   a. Select the **Data Type** field.

   Result: The screen changes, the **Fixed Value** field replaces the **Location** and **Field** list boxes.

   b. Type the value in the **Fixed Value** field.

   Note: To revert to a profile field selection, select an entry from the Data Type drop down list.

   c. Click **Save**.

5. **From a CCS context field:**

   a. Select the field from the drop down list.

   b. Select the **Context Number** check box to have the CCS context field value normalised.

   Un-select to use the CCS context field value as stored.

    c. Click **Save**.

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

Set Discount

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

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

Node exits – Set Discount

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

Exit	Cause	Description
1	Success	Discount information retrieved successfully.
2	Unsupported	Either: • General error or failure • The Domain being used does not support this feature node

Configuration fields – Set Discount

This table describes the function of each field.

Field	Description
Discount Override Source	Takes the discount from either: • The configured profile (From Profile option) • This node (Manual Definition option)
Select Discount Override From	The profile **Data Type**, **Location** and **Field** (in decimal) for the discount information. Available when From Profile option is selected.
Maximum Charge	The maximum charge allowed for the call.
Discount Period *n*	Allows up to ten discounts. Each discount is configured as a percentage. This will be applied to the corresponding period for the rate in the tariff plan used for the charge. Negative percentages may be specified, allowing the cost to be increased instead of decreased. The number of Discount Periods is maintained through **Add Next** (to add a new entry) or **Remove Last** (remove the most recently added entry).

Configuring the node – Set Discount

Follow these steps to configure the node

1. Select the source for the discount from the **Discount Override Source** options.

   Either:

   • **From Profile** (retrieves the discount from the specified profile block and tag)

   • **Manual Definition** (retrieves the discount from this node configuration).

2. If **From Profile** option used:

   a. From the drop down lists in the Select Discount Override From area, select the profile data type, location and field where the discount is stored.

   b. Click **Save** to complete this procedure.

3. If **Manual Definition** used:

   a. Type the maximum charge allowed for the call in the **Maximum Charge** field.

   b. Click **Add Next** to display the **Discount Period 1** field, and type in the discount percentage for this period.

      Note: When editing, all the discount percentages currently configured in the node will be shown.

   c. To add a discount percentage for the next period, repeat step 5 (you may specify discount percentages for up to ten periods).

   d. To remove the discount percentage for the most recent discount period, click **Remove Last**.

   e. Click **Save** to complete this procedure.

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

Further reference:

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

• The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Set Tariff Plan Rule

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

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

Node exits – Set Tariff Plan Rule

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

Exit	Cause	Description
1	Unsupported	Either error / failure, or the domain being used does not support this feature node.
2	Success	The product type tariff plan has been successfully overridden by the one specified in the node.

Configuration fields – Set Tariff Plan Rule

This table describes the function of each field.

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

For more information about the notifications and geography sets configured in ACS, see *ACS User's Guide*.

Configuring the node – Set Tariff Plan Rule

Follow these steps to configure the node.

1. From the **Access Network** drop down list, select the access network for the rule you are adding.

2. From the **Bearer Type** drop down list, select the bearer type for the rule.

3. From the **Tariff Plan** drop down list, select the tariff plan to use for this combination of access network type and bearer type.

4. From the **Notification App** drop down list, select the application for which the notification message you want to use has been configured in ACS.

5. From the **Notification Message** drop down list, select the message to output for this rule.

6. Click **Add**.

   Result: The rule is added to the grid.

7. Repeat step 1 to 6 for all the combinations of access network type and bearer type you require.

   Modify any existing rules as required. To

   • update a rule, highlight it in the grid. Use the selection boxes to change its values, and click **Update**.

   • delete a rule, highlight it in the grid and click **Delete**.

8. Click **Save**.

Set Wallet Type

The Set Wallet Type node specifies the wallet type to use in the call context. Currently, one of:

• Primary

• Secondary

Node exits – Set Wallet Type

This node has one entry point and two exits that are set by the system. The number of exits is not changeable by the user.

Exit	Cause	Description
1	Success	The caller has successfully exited the node and the desired wallet type has been set.
2	Unsupported	One of the following: • An error or failure occurred. • The domain being used does not support this feature node. • The caller does not have a business wallet but the BusinessWallet configuration option has been ticked.

Configuration fields – Set Wallet Type

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Field	Description
UseSecondaryWallet	Select this check box to use the secondary wallet for billing.

Configuring the node – Set Wallet Type

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

    Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Select the **UseSecondaryWallet** check box to use the secondary wallet.

3. Click **Save**.

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

Tariff Plan Override

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

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

Node exits – Tariff Plan Override

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

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

Configuring the node – Tariff Plan Override

Follow these steps to configure the node.

1. In the **Tariff Plan Override Source** area select one of the following:

    • **From Profile**

    • **Manual Definition**

2. Select the tariff plan to use instead of the one configured for the product type, for the next IRR or CRR action. If you selected:

    • **From Profile:** Select from the **Data Type**, **Location** and **Field** drop down lists the profile field containing the tariff plan you want to use.

- • **Manual Definition:** Select from the **Tariff Plan** drop down list.

3. Click **Save**.

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

Further reference:

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

- • The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Universal ATB

The Universal Attempt Termination with Billing (UATB) node is used to bill subscribers for calls that they make or receive.

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

- • CS1 switch (the VSSP is required to translate from CS1 to CAMEL for UATB to operate)

- • Nokia switch

- • CAMEL Phase 2 switch

- • CAMEL Phase 3 switch

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

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

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

The duration of a call can be limited by determining a value for the Maximum Permitted Call Duration profile tag. If a value is included in the Max Permitted Call Duration profile tag, that value will determine the maximum duration of a call, and will be used to overwrite the corresponding value in the InitialTimeReservationResponse.

Note: If a Max Permitted Call Duration value is not set in the profile tag, no limit on call duration will occur.

Note: The Max Permitted Call Duration profile can be set using the Set feature node prior to the UATB feature node in your control plan.

A grace period can be used to configure whether a call is allowed to continue for the specified number of seconds on communication or system errors for subsequent reservations. If a value is included in the GracePeriodLength profile tag, that value will determine the grace period of a call. If the GracePeriodLength profile tag is set, its value will be used to overwrite the value set the BFTGracePeriodLength parameter in the ccsMacroNodes section in **eserv.config**. It can also be set using the Set feature node prior to the UATB node.

Node exits – Universal ATB

This node has one entry and 14 exits. The number of exits cannot be changed.

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

Exit	Cause	Description
1	Declined (No Funds)	Exit taken for one of the following: • Insufficient balance found to satisfy even the initial reservation request • Max-concurrent reached for the subscriber's wallet • Restricted rating • Blocked destination • Invalid wallet state (that is: frozen, suspended or terminated).
2	BFT	Exit taken for one of the following: • Could not talk to the Voucher and Wallet Server due to one of the following: – Could not contact billing engine client – Voucher and Wallet Server is busy – Various internal "no dialog" type errors • Could not charge for call, • Unknown account/wallet
3	BFT (Released)	Exit taken for one of the following: • Calling number has run out of funds during the call (subsequent reservation has failed due to a system error or through failing to contact the Voucher and Wallet Server) • 'BFT grace period length' is set (that is, BFT grace period length is greater than '0') Call will be released and call processing will no longer be permitted.

Exit	Cause	Description
4	BFT (Disconnected)	Exit taken for one of the following: • Calling number has run out of funds during the call (subsequent reservation has failed due to a system error or through failing to contact the Voucher and Wallet Server) • 'BFT grace period length' is set (that is, BFT grace period length is greater than '0') Called number (leg 2) will be disconnected and call processing will still be possible. **Warning:** Not supported for the Nokia switch.
5	NSF (Released)	Exit taken when calling number has run out of funds during the call. Call will be released and call processing will no longer be permitted.
6	NSF (Disconnected)	Exit taken when calling number has run out of funds during the call. Called number (leg 2) will be disconnected and call processing will still be possible. **Warning:** Not supported for the Nokia switch.
7	Free Call (Released)	Exit taken when: • 'free call' indicator flag is set in the Apply Charging Report • 'free call disposition' set in the initial reservation response is 'free call release' Call will immediately be released when the Apply Charging Report is received. **Warning:** Not supported for the Nokia switch.

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

Exit	Cause	Description
15	NSF	When Subscriber's wallet does not have enough credit to support a subsequent reservation and the VWS rejects the reservation request with NSF (Not Sufficient Funds). Call can be routed to another node e.g. SET Node where a redirection address can be set before returning to UATB node to continue call processing.
16	Continue	Successful reservation, but allows additional call processing by another node whilst call is running. Call is then returned to UATB node to continue call processing

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

Call end reasons – Universal ATB

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

callEndReasons	Value	Description
reasonNotSet	0	Not set (default)
precallAnnouncementFailure	1	Issued when a precall announcement cannot be played, whether due to abandonment, or other error conditions.
firstEventACRAbort	2	Issued when an abort occurs when ACR is received before event report.
firstEventATAbort	3	Issued when an abort occurs due to an AT (Attempt Terminate) which is caused by sending either a `connect` or a `continue` to the switch. **Note:** This value is currently not set, and is reserved for future use.
secondEventACRAbort	4	Issued when an abort occurs following receipt of an event report (waiting for the apply charging report).

callEndReasons	Value	Description
secondEventATAbort	5	Is set (for CS1 / Nokia switches) when ACS is attempting termination and waiting for a `BCSM Event` Report. For CAMEL, it is set where an abort is received in the `ERBCSM`.
abortWaitingForBEResponse	6	Issued when an abort occurs on the main dialog while waiting for a response to the extend time reservation action.
releasedOnTCPExpiry	7	Issued when the switch releases the call on timer expiry (noted in the apply charging report).
releasedNoFunds	8	Issued where the UATB issues a release on failure to secure further funds for the call.
disconnectedLegBNoFunds	9	Issued where the UATB issues a B leg disconnect on failure to secure further funds for the call.
calledPartyBusy	10	Issued on busy.
routeSelectFailure	11	Issued on route select failure.
callingPartyAbandon	12	Issued on abandon.
noAnswer	13	Issued on no answer.
callingPartyDisconnected	14	Issued on calling party disconnected.
calledPartyDisconnected	15	Issued on called party disconnected.

Configuration fields – Universal ATB

This table describes the function of each field.

Field	Description
UseNoAnswer	Select this check box to use the No Answer Timer value.
NoAnswerTimer	This option provides a value for the No Answer Timer that is sent with a Connect message. This option is supported for all switch types.
PlayToneTimer	This option is only available for the CAMEL charging flow. When selected, a tone will be played before the caller runs out of funds.

Configuring the node – Universal ATB

Follow these steps to configure the node.

1. If required select the **UseNoAnswer** check box and then enter a value, in seconds, in the **NoAnswerTimer(sec)** field.

2. If required select the **PlayToneTimer** check box.

3. Click **Save**.

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

Variable Amount Recharge

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

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

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

Node exits – Variable Amount Recharge

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

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

Configuring the node – Variable Amount Recharge

Follow these steps to configure the node.

1. In the Recharge List area, select a profile location from the **RechargeData Type**, **Recharge Location** and **Recharge Field** drop down lists.

   The Recharge List profile field stores a list of recharge entries, each containing the following sub profile fields and tags:

   - Balance Type Name

   - Recharge Amount

   - Balance Expiry Extension Period (optional)

   - Balance Expiry Extension Policy (optional)

   - Bucket Creation Policy (optional)

2. Optionally, select the balance type override from the **Override Type** drop down list to overwrite the balance specified in the Recharge List.

3. Select the Wallet Expiry Extension Policy profile from the **Expiry Policy Data Type**, **Expiry Policy Location** and **Expiry Policy Field** drop down lists.

   This profile indicates the policy used in determining the expiry date for the wallet.

4. Select the Wallet Expiry Period profile from the **Expiry Period Data Type**, **Expiry Period Location** and **Expiry Period Field** drop down lists.

   This profile indicates the period used to determine the new expiry date for the wallet.

5. In the Select Voucher Type area, choose the source of voucher information as either:

   - **From Node**

   - **From Profile**

6. Depending on the above selection, appropriate fields are enabled in the Voucher Type area.

   - Select a voucher profile location from **Data Type**, **Location** and **Field** drop down lists, or

   - Select a voucher node from **Data Type**, **Type from node** drop down lists.

7. Select the Wallet Type profile from the **Wallet Type Name Data Type**, **Wallet Type Name Location** and **Wallet Type Name Field** drop down lists.

   This profile contains the wallet that will be recharged at the end of the transaction.

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

Voice Call Cost

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

Node exits – Voice Call Cost

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

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

Configuration fields – Voice Call Cost

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Configuring the node – Voice Call Cost

Follow these steps to configure the node

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

21
CCS Subscriber Feature Nodes

This hapter describes the Oracle Communications Convergent Charging Controller CCS Subscriber feature nodes.

This chapter contains the following topics.

Change PIN

Credit Card Details Change

Credit Card Recharge Menu

Credit Card Secret Code Change

Credit Card Starter Menu

Do Credit Card Recharge

Friends and Destination Configuration

Friends and Destination Discount

Friends and Destination Menu

Friends and Family Configuration

Get Destination Prefix

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Main Menu

Personal Options Menu

Play Destination

Product Type Branching

Product Type Swap

Read Secret Code

Refresh Subscriber Information

Remote Access Service

Select Language

Set Product Type

Subscriber Creation/ Deletion

What's New

Change PIN

Prompts the user to enter digits to change their PIN.

Node exits – Change PIN

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

Exit	Cause	Description
1	Success	The subscriber's PIN was successfully changed.
2	Unsupported	Any condition, error, failure that occurred, not covered by the other three exits.
3	Abandon	The subscriber hung up before the PIN was changed,
4	Escape	The subscriber pressed the Escape key.

Configuration fields – Change PIN

This table describes the function of each field.

Field	Description
First PIN Prompt	This is the announcement to play that requests the subscribers to enter their new PIN.
Timeout	This is the announcement to play when the subscriber has not responded in the configured amount of time. **Note:** The timeout time is different between the first digit and the rest of the digits, defined by the **acs.conf** parameters `FirstDigitTimeout` and `InterDigitTimeout`. See *ACS Technical Guide*.
PIN Too Long	This is the announcement to play when the entered PIN contained too many digits. **Note:** This is un-configurable and set at ten digits.
PIN Too Short	This is the announcement to play when the entered PIN contained too few digits. **Note:** This is un-configurable and set at four digits.

Field	Description
Max Retries Exceeded	This is the announcement to play when the subscriber has had more than the configured number of attempts to change their PIN. **Note:** The number of retries is defined by the **eserv.config** parameter `MaximumMenuRetries`. See *CCS Technical Guide*.
Second PIN Prompt	This is the announcement to play that requests the subscribers to enter their new PIN again for confirmation.
PIN Mismatch	This is the announcement to play when the second PIN entry is not the same as the first PIN entry.

Configuring the node – Change PIN

Follow these steps to configure the node.

1. From the **First PIN Prompt** drop down lists, select the announcement requesting the new PIN.

2. From the **Timeout** drop down lists, select the announcement to use when the subscriber has failed to respond.

3. From the **PIN Too Long** drop down lists, select the announcement to use when the entered PIN has too many digits.

4. From the **PIN Too Short** drop down lists, select the announcement to use when the entered PIN has too few digits.

5. From the **Max Retries Exceeded** drop down lists, select the announcement to use when the subscriber has run out of attempts to change their PIN.

6. From the **Second PIN Prompt** drop down lists, select the announcement requesting the new PIN again for confirmation.

7. From the **PIN Mismatch** drop down lists, select the announcement to use when the entered PIN values are not the same.

8. Click **Save**.

Credit Card Details Change

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

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

1. The user is prompted to enter the Credit Card Number.

2. If the number is valid, the user is prompted for a new Expiry date.

3. If the date is valid, the user is prompted to confirm the expiry date and the account record is updated.

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

Node exits – Credit Card Details Change

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

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

Configuration fields – Credit Card Details Change

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Credit Card Details Change

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Credit Card Recharge Menu

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

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

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

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

Node exits – Credit Card Recharge Menu

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

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

Configuration fields – Credit Card Recharge Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Configuring the node – Credit Card Recharge Menu

Follow these steps to configure the node.

1. For **each** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Credit Card Secret Code Change

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

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

Node exits – Credit Card Secret Code Change

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

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

Configuration fields – Credit Card Secret Code Change

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncement	Allows the selected announcements to be played.

Configuring the node – Credit Card Secret Code Change

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Select the **Enable Announcement** check box as required to enable the Play Re-enter Code Announcement.

3. Click **Save**.

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

Credit Card Starter Menu

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

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

Node exits – Credit Card Starter Menu

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

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

Configuring the node – Credit Card Starter Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Do Credit Card Recharge

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

The Do Credit Card Recharge feature node allows the user to recharge an account using a credit card. There are nine possible recharge options, which may be configured in any combination and played as a single menu. The caller may then recharge the account using the selected option.

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

Node exits – Do Credit Card Recharge

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

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

Configuration fields – Do Credit Card Recharge

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncement	Allows the selected announcements to be played.

Configuring the node – Do Credit Card Recharge

Follow these steps to edit the node configuration.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Select the **Enable Announcement** check boxes as required to enable the Play Title Announcement and Play Confirm Change Announcement.

3. Click **Save**.

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

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

Further reference:

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

Friends and Destination Configuration

Friends, Family and Destination Discount module

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

The discount percentage is the cumulative amount which is to be discounted in total for Friends and Family numbers.

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

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

- If Multi-Destinations is selected, then the percentage discount is applied to calls where the call prefix belongs to the same group as the discount prefix defined in this node (prefixes belong to the same group if they share the same announcement).

- If Multi-Destinations is not selected, then the discount applies only to calls with the specified discount prefix.

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

Node description - Friends and Destination Configuration

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

Key	Function	Description
1	Add/Change Prefix	If no prefix has been previously defined for this subscriber, or enter a new prefix for discount calls.

Key	Function	Description
2	Delete Prefix	Remove any existing prefix.
9	Activate Service	Enables the Friends and Destination discount service.

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

Node exits – Friends and Destination Configuration

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

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

Configuration fields – Friends and Destination Configuration

This table describes the function of each field.

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

Configuring the node – Friends and Destination Configuration

Follow these steps to configure the node.

1. For *each relevant* announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Enter the maximum number of retries allowed for entering digits in the **MaxInvalidDigit** field.

3. Type the timeout period in seconds for all prompt and collect messages in the **AnnouncementTimeout** field.

4. Select the **SendChargeSMS** check box if the amount charged is to be sent to the caller.

5. Select the **Event Class** to use from the drop down list.

6. Select the **Named Event** to use from the drop down list.

7. Click **Save**.

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

Friends and Destination Discount

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

Node exits – Friends and Destination Discount

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

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

Configuration fields – Friends and Destination Discount

This table describes the function of each field.

Field	Description
Multi-Destinations	Determines whether the discount is applied to a single number prefix or to a group of prefixes. When selected, the discount is applied to all calls where the call prefix belongs to the same group as the discount prefix defined for the caller.

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

Configuring the node – Friends and Destination Discount

Follow these steps to configure the node.

1. If required, tick the **Multi_Destinations** check box.

2. Click **Save**.

Friends and Destination Menu

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

Node exits – Friends and Destination Menu

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

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

Configuration fields – Friends and Destination Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
MaxInvalidDigits	The maximum number of invalid entries allowed.
AnnTimeout	The timeout used for standard prompt announcements.

Configuring the node – Friends and Destination Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Type the maximum number of times a caller can enter a disallowed number in the **MaxInvalidDigits** field.

3. Type the length of time in seconds after the main announcement is played before the call is disconnected in the **AnnTimeout** field.

4. Click **Save**.

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

Friends and Family Configuration

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

- Inform the caller of how many friends and family numbers they currently have stored in their list

- Enable them to perform predefined functions using phone key pad buttons

Node exits – Friends and Family Configuration

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

Exit	Cause	Description
1	Main Menu	The caller has selected the Main Menu option.
2	User Hang-up	The caller has abandoned the call.

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

Configuration fields – Friends and Family Configuration

This table describes the function of each field.

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

If the caller initiates a change or addition to the stored Friends and Family numbers list this node will bill the subscriber's account for the amount set in the Named Event panel of the Tariff screen for Friends and Family configuration changes.

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

Configuring the node – Friends and Family Configuration

Follow these steps to configure the node.

1. For *each relevant* announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Type the maximum number of times a caller can enter a disallowed number in the **MaxInvalidDigits** field.

3. Type the length of time in seconds after the main announcement is played before the call is disconnected in the **AnnTimeout** field.

4. Type the length of time in seconds a list announcement is played before the call is disconnected in the **ListCyclingTimeout** field.

5. Type the length of time a list announcement is played before the call is disconnected in the **ListStartTimeout** field.

6. Select the **SendChargeSMS** check box if the amount charged is to be sent to the caller.

7. Select the **Event Class** to use from the drop down list.

8. Select the **Named Event** to use from the drop down list.

9. Click **Save**.

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

Get Destination Prefix

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

The feature node:

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

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

- Limited Number String
- Number String

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

- Number String.

Node exits – Get Destination Prefix

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

Exit	Cause	Description
1	Success	The destination prefix was found, and the announcement was played.
2	Not Found	No mappings were found for the provided number.
3	Error	One of: • Source number profile field missing • General error

Configuration fields – Get Destination Prefix

This table describes the function of each field.

Field	Description
Source Digits section	The profile **Data Type**, **Location** and **Field** for the source digits information.
Destination Prefix section	The profile **Data Type**, **Location** and **Field** for the destination prefix information.

Configuring the node – Get Destination Prefix

Follow these steps to configure the node.

1. Select the **Source Digits Data Type**, **Location** and **Field** from the drop down lists.

2. Select the **Destination Prefix Data Type**, **Location** and **Field** from the drop down lists.

3. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Help Information

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

Node exits – Help Information

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

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not made a menu selection.
2	Abandon	The caller has abandoned the call.
3	Success	The caller has exited the node successfully.

Configuration fields – Help Information

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Help Information

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Main Menu

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

Node exits – Main Menu

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

Exit	Cause	Description
1	Unsupported	Any of: • Error / failure • Domain being used does not support this feature node • Number of menu retries has exceeded the limit.
2	Abandon	The caller has abandoned the call.
3	What's New	The caller has selected the What's New option by entering key 1.
4	Account	The caller has selected the Account Status option by entering key 2.
5	Personal	The caller has selected the Personal Options option by entering key 3.
6	Recharge	The caller has selected the Recharge option by entering key 4.

Exit	Cause	Description
7	Information	The caller has selected the Information option by entering key 5.
8	Out-call	The caller has selected the Make Call option by entering key 6.

Configuration fields – Main Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Main Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

2. Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

3. Click **Save**.

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

Personal Options Menu

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

Node exits – Personal Options Menu

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

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or number of menu retries has exceeded the limit.
2	Abandon	The caller has terminated the call.
3	Escape	The caller has selected the Escape option by entering *.

Exit	Cause	Description
4	Change Language	The caller has selected the Change Language option by entering 1.
5	Maintain Fixed	The caller has selected the Maintain Fixed option by entering 2.
6	Swap Products	The caller has selected the Product Swap option by entering 3.

Configuration fields – Personal Options Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Personal Options Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Play Destination

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

The feature node:

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

Node exits – Play Destination

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

Exit	Cause	Description
1	Success	The destination prefix was found, and the announcement was played.
2	Not Found	The destination prefix has no matching entry in the friends and destination prefix map list.
3	Error	General errors.
4	Abandon	The user hung up during the announcement.

Configuration fields – Play Destination

This table describes the function of the field.

Field	Description
Destination Prefix section	The profile **Data Type**, **Location** and **Field** for the destination prefix information.

Configuring the node – Play Destination

Follow these steps to configure the node.

1. Select the **Destination Prefix Data Type**, **Location** and **Field** from the drop down lists.

2. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Product Type Branching

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

- A specified product type

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

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

This functionality allows for:

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

Node exits – Product Type Branching

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

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

Configuration fields – Product Type Branching

This table describes the function of each field.

Field	Description
All Product Types	This is the list of all the product types defined in the **Subscriber Management > Product Type** screens for the current service provider.
Branch Product Types	The branch number being configured and the product types associated with the branch.
Use Same	If selected, branch two will be taken if the calling subscriber and destination subscriber have the same product types regardless of any matching branch configuration.

Field	Description
Destination CLI	Use this buffer as the source for the CLI of the destination subscriber. The product type for this subscriber will be the one matched against. **Note:** If found, these details are written to Application Specific Profile 4 (App 4).
Destination Wallet Type Category Selection	Which wallet type to use to determine the destination subscriber's product type to be used. Primary wallet is the default and most common wallet.
Default Branch	Provides the branch to take if the destination subscriber's product type was not found in any of the branch product type rules.

Configuring the node – Product Type Branching

Follow these steps to configure the node.

1. Determine and establish the number of Product Type exits to configure (maximum of seven). See Editing node exits.

2. In the Branch Product Types area, use the Number scroll bar to select the match branch to configure.

   Result: The selected branch with any current rules appears in the panel below.

3. To remove a Product Type from the selected branch, click the Product Type and then click **<< Replace in set**.

   Result: The Product Type is removed from the branch and becomes available for adding to another branch.

4. In the All Product Types area, select a Product Type to associate with the selected branch.

   Result: If the Product Type has not been assigned to a branch, the **Move to branch >>** button becomes available.

5. Click **Move to branch >>**

   Result: The Product Type is added to the selected branch.

6. Repeat steps 3 and 4 for all the Product Types to associate with the selected branch.

7. Repeat steps 2 to 6 for all match branches.

   Note: The node can work without matching branches. The default exit will be used for all destination subscribers which have a Product Type.

8. Select which wallet type to use to determine the destination subscriber's Product Type.

9. Use the **Default Branch** scroll bar to select what branch to take if the destination subscriber's Product Type is not in the match branches.

10. Click **Save**.

Product Type Swap

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

Node exits – Product Type Swap

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

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

Configuration fields – Product Type Swap

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
Event Class	List of event types that can be billed.
Named Event	List of events for the event class selected.

Configuring the node – Product Type Swap

Follow these steps to configure the node.

1. For *each* announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Select the **Event Class** from the drop down list.

3. Select the **Named Event** from the drop down list.

4. Click **Save**.

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

Read Secret Code

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

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

Node exits – Read Secret Code

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

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

Configuration fields – Read Secret Code

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Read Secret Code

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Refresh Subscriber Information

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

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

Node exits – Refresh Subscriber Information

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

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

Exit	Cause	Description
1	Success	Subscriber information is successfully retrieved.
2	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuring the node – Refresh Subscriber Information

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

Remote Access Service

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

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

Node exits – Remote Access Service

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

Exit	Cause	Description
1	Abandon	The caller has terminated the call.
2	Success	The caller has successfully exited the node.

Exit	Cause	Description
3	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
4	Escape	The caller has selected the Escape option.

Configuration fields – Remote Access Service

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Remote Access Service

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Select Language

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

Node exits – Select Language

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

Exit	Cause	Description
1	Success	A language has been chosen and set.
2	Abandon	The caller has terminated the call.
3	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.

Exit	Cause	Description
4	Escape	The caller has selected the Escape option by entering *.

Configuration fields – Select Language

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Configuring the node – Select Language

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Set Product Type

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

Node exits – Set Product Type

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

Exit	Cause	Description
1	Success	The product type was successfully set.
2	Type Not Found	The selected product type was not found.
3	Failure	Either, error / failure, the domain being used does not support this feature node, or the product type selection was unsuccessful.

Configuring the node – Set Product Type

Follow these steps to configure the node.

1. Select the **Product Type** from the drop down list.

2. Click **Save**.

Subscriber Creation/ Deletion

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

To create a subscriber, the following information is used:

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

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

Node exits – Subscriber Creation/ Deletion

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

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

Configuring the node – Subscriber Creation/ Deletion

Follow these steps to edit the node configuration.

1. In the **Subsciber Creation/Deletion** frame, select the operation to be performed.

   One of:

   - **SubscriberCreation** - creates subscribers and wallets from the SLC.
   - **SubscriberDeletion** - deletes subscribers and wallets from the SLC.

2. From the **ACS Customer** drop down list, select the ACS customer to whom the control plan belongs. The subscriber will be associated with this ACS customer or telco.

3. From the **ACS Language** drop down list, select the applicable language for the new subscriber.

4. From the **Product Type** drop down list, select the name of the product type applicable to the subscriber.

5. From the **SubDigitBuffer** drop down list, select the buffer type where the collected subscriber's digits should be stored in, before being passed to the chassis action.

   For subscriber creation, this field will be used to store the subscriber CLI, the account number and the account PIN.

   For subscriber deletion, this field will be used to store the subscriber CLI.

6. Click **Save**.

What's New

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

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

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

Node exits – What's New

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

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

Configuring the node – What's New

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements to play as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

Note: The **Save** button is enabled only after you have selected all the announcements.

22

CCS Voucher Feature Nodes

This chapter describes the Oracle Communications Convergent Charging Controller CCS Voucher feature nodes.

This chapter contains the following topics.

Play Voucher Redeemed Info

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

Node exits – Play Voucher Redeemed Info

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

Exit	Cause	Description
1	Success	The caller received the voucher information.
2	Abandon	The caller abandoned the call.
3	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Play Voucher Redeemed Info

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

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

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

Configuring the node – Play Voucher Redeemed Info

Follow these steps to configure the node.

1. Use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

    Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Recharge Menu

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

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

Node exits – Recharge Menu

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

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.
2	Abandon	The caller has terminated the call.
3	Escape	The caller has selected the Escape option by entering *.

Exit	Cause	Description
4	Voucher	The caller has selected the Voucher Menu option by entering key 1.
5	Credit Card	The caller has selected the Credit Card Menu option by entering key 2 when they have a PIN set. This exit is only available when the caller has previously made a credit card recharge.
6	First Credit Card	The caller has selected the Credit Card Menu option by entering key 2, and has no PIN set. This exit is only available when the caller has never before made a credit card recharge.

Configuration fields – Recharge Menu

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

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Recharge Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Scratch Card Recharge

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

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

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

Node exits – Scratch Card Recharge

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

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

Configuration fields – Scratch Card Recharge

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

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Scratch Card Recharge

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Scratch Card Recharge Alternate Subscriber

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

The caller is prompted to enter the MSISDN of the account, and re-enter for confirmation, that they wish to recharge. They are then prompted to enter the scratch card number. The caller has three attempts to enter a valid scratch card number.

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

Node exits – Scratch Card Recharge Alternate Subscriber

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

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

Configuration fields – Scratch Card Recharge Alternate Subscriber

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

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Scratch Card Recharge Alternate Subscriber

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

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

Select Voucher Scenario

The Select Voucher Scenario node enables a subscriber to select from amongst the different ways the voucher can be redeemed, by choosing a particular scenario.

Note: It is possible for a scenario to increment a balance or extend the expiry date for the balance, or both. In addition, a scenario may also possibly change the overall account expiry date.

Node exits – Select Voucher Scenario

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

Exit	Cause	Description
1	Success	A scenario has been selected by the subscriber.
2	Failure	Any of a number of failures, for example: • Profile that should have contained the scenario list is missing or empty • Subscriber pressed escape
3	Unsupported	An unknown response was received from Voucher Management.

Exit	Cause	Description
4	Abandon	The caller has hung up before completing the scenario selection.
5	Timeout	The subscriber failed to respond within the configured timeout period

Configuring the node – Select Voucher Scenario

The configuration fields are used to establish the variable part message/announcement that the subscriber receives.

Review the examples before proceeding with the node configuration.

Follow these steps to configure the node configuration.

1. Select the **Scenario Data** from the Data Type, Location and Field drop down lists.

   Note: This where the valid scenarios are located.

2. Select the **Interaction Method** to use with the subscriber.

   Either of:

   • **Voice**

   • **USSD**, or

   • **SMS**

   Result: The lists and fields for the selected option are made available.

3. Follow the relevant instructions for the method selected.

Voice or USSD method

1. Select the announcement from each of the announcement **Set** and **Entry** drop down lists:

   • **Initial Prompt:** Select the first message.

   • **Selection Choice:** Select the scenario selection choices message.

   • **Balance Expiry Ext:** Select the balance expiry will be extended message.

   • **No Bal Expiry Ext:** Select the balance expiry will not be extended message.

   • **Account Expiry Ext:** Select the account expiry will be extended message.

   • **No Account Exp Ext:** Select the account expiry will not be extended message.

   • **Account Type Change:** Select the account type will be changed message.

   • **Final Prompt:** Select the last message to the subscriber.

2. Select the **Selected Scenario** profile from the **Data Type**, **Location** and **Field** drop down lists.

   Note: This is where the scenario number to use for the voucher redemption will be saved.

3. Click **Save**.

SMS method

1. In the **Text Notifications** panel, enter the text fields which will be used to construct a short message to the subscriber.

   Type the text for the initial prompt to the subscriber in the **Initial Prompt** field.

2. Type the text for the response choices available to the subscriber in the **Selection Choice** field.

3. Type the text for any extension on account expiry available to the subscriber in the **Acc Expiry Ext** field.

4. Type the text for no extension on account expiry available to the subscriber in the **No Acc Expiry Ext** field.

5. Type the text for any account type change available to the subscriber in the **Acc Type Change** field.

6. Select the **Resultant Message** profile from the **Data Type**, **Location** and **Field** drop down lists.

   Note: This is where the subscriber returned SMS containing the scenario number to use will be saved.

7. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Example configuration values – Select Voucher Scenario

This table shows a textual example of the variable parts to be used when configuring the **Voice** and **USSD** announcement fields.

Announcement	Example
Initial Prompt	"Your voucher has several options, please select from the following"
Selection Choice	"Press <choice> for"
Balance Expiry Ext	"with an expiry extension of <days> days"
No Bal Expiry Ext	"with no expiry"
Account Expiry Ext	"with an extension to the account expiry of <days> days"
No Account Exp Ext	"with no extension to the account expiry"
Account Type Change	"with a change of Product Type to "

Note: The available balance types are configured on the Balance Type tab in CCS. The cost strings used to report balance values are configured on the Balance Type

Translations tab in CCS. Refer to the Wallet Management chapter in the *CCS User's Guide* for details.

The above example allows the following announcement to be created:

"Your voucher has several options, please select from the following:

- Press 1 for 10 sms with an expiry extension of 10 days.

- Press 2 for 5 dollars and 5 sms with a change of Product Type to Platinum.

- Press 3 for 20 sms with an expiry extension of 5 days."

Example SMS values – Select Voucher Scenario

This table shows a textual example of the variable parts to be used when configuring the SMS Text Notifications fields.

SMS/Announcement	Example
Initial Prompt	"Your voucher has several options, please select from the following"
Selection Choice	"Text <choice> for"
Acc Expiry Ext	"with an extension to the account expiry of <days> days"
No Acc Expiry Ext	"with no extension to the account expiry"
Acc Type Change	"with a change of Product Type to "

Note: The available balance types are configured on the Balance Type tab in CCS. The cost strings used to report balance values are configured on the Balance Type Translations tab in CCS. Refer to the Wallet Management chapter in the *CCS User's Guide* for details.

The above example allows the following SMS to be created as a single message:

"Your voucher has several options, please select from the following:

- Text 1 for 10 sms with an extension to the account expiry of 10 days.

- Text 2 for 5 dollars and 5 sms with a change of Product Type to Platinum.

- Text 3 for 20 sms with an extension to the account expiry of 5 days."

Warning: This may require careful use of the node in a Control Plan to split the options over several SMS messages to avoid the SMS length limitation.

Example use of node – Select Voucher Scenario

Voucher redeem options can be varied, for example:

- Voucher redeems for 120 minutes of international calling (180 minutes during our "Talk-Fest July" promo special)

- Voucher redeems for 200 short messages made within a 30 day period (300 SMS during our "Text-Fest August" promo special), or

- Gold customers receive an additional 10% on top of their chosen option.

The potential scenarios are complex enough that CCS cannot be expected to know beforehand what scenarios apply, nor what the final values to the subscriber might be. There may be only one scenario that applies, or two, or three.

CCS requires some guidance from Voucher Management, as shown in the following example interaction for redeeming a voucher:

1. Subscriber requests CCS to redeem a voucher for them.

2. CCS passes request to Voucher Management, indicates no particular scenario.

3. Voucher Management determines that this voucher has multiple scenarios, informing CCS that this is the case, along with some information to help prompt the subscriber.

4. For Voice/USSD interactions:

    • CCS prompts the subscriber to choose the scenario they prefer.

    For SMS interactions:

    • CCS constructs a short message containing all the scenario options and sends this back to the subscriber.

5. The subscriber re-requests CCS to redeem the same voucher and includes their preferred scenario option.

6. CCS passes request to Voucher Management, this time with scenario selection information.

7. Voucher Management performs redeem and updates balance values.

8. CCS notifies subscriber of success, and announces updated balance values by using the Send Short Message Notification node.

    Note: If you recharge successfully on a UBE domain which has real-time wallet notifications configured for balance changes, CCS will send a notification for the balance change as well as the notification sent from the Send Short Message Notification node.

Note: If there is only one scenario, then steps three to five can be skipped.

Voucher Commit Revoke

The voucher redemption process can be handled at a fine-grained level by using the Voucher Reserve and the Voucher Commit Revoke nodes. The Voucher Commit Revoke node takes the voucher identification information and commits or revokes a pre-existing voucher reservation that has been created via traversal of the Voucher Reserve node. When voucher commit is performed following a voucher reservation, then the voucher state is moved to used, and no wallet updates are done.

Node exits – Voucher Commit Revoke

This node has one entry and four exits.

Exit	Cause	Description
1	Success	The reservation that was opened on the voucher is removed. Where the node is set to be a revoke action, the state of the voucher is unchanged and the voucher can be reserved again. Otherwise, the node has performed a Commit action and the voucher state is set to Redeemed and the voucher finalized.
2	Unsupported	The Voucher Commit or Revoke action has not been successful for any of the following reasons: • Insufficient capabilities • Failed to validate configuration
3	Abandon	The Voucher Commit or Revoke action has not been successful for any of the following reasons: • Call processing not allowed • Possible interface timeout
4	Failure	The Voucher Commit or Revoke action has not been successful and a specific failure is identified. If the state of the voucher was able to be retrieved, then it is returned. Otherwise, the state is set to Unknown. A failure code and failure text are set. 2001 - Voucher batch state not active 2002 - Invalid voucher value 2003 - Invalid serial number 2004 - Voucher not found 2005 - Reservation not found 3000 - System error 4000 - Service provider not found 4001 - Invalid voucher number length 4006 - Missing subscriber identifier 4007 - Missing voucher number

Configuring the node – Voucher Commit Revoke

Follow these steps to configure the node.

1. Select the source data for the recharged subscriber.

2. Select the source data for the human readable voucher number (HRN)

3. If you need to overide the service provider, check the **Override provider** checkbox. The result is that the next section becomes available to select the source data for the alternative service provider.

4. If this is a revoke action (rather than a commit) then check the Revoke checkbox.

5. Select the profile where the Voucher State shall get stored to.

6. Select the profile where the Voucher Result Code shall get stored to.

7. Select the profile where the Voucher Result Text shall get stored to.

8. Click **Save**.

Result Codes– Voucher Commit Revoke

Success branch is always ResultCode of 0 and ResultText of Success.

The following tables describes the failure codes:

FOX (internal only)	Enumerator (internal only)	Code	Description
NACK_VoucherBatch Unavailable	failureUnavailable	2001	Voucher not found in batch
NACK_InvalidVoucher Digits	failureInvalidVoucher	2002	Invalid voucher number
NACK_VoucherAuthF ailed	failureInvalidSerial	2003	Invalid serial number
NACK_UnknownVouc her	failureUnknown	2004	Voucher not found
NACK_VoucherNoRe servation	failureNoReservation	2005	Reservation not found
NACK_SystemFailure (or other)	systemError	3000	System error
N/A	N/A	4000	Service provider not found
N/A	N/A	4001	Invalid voucher number length
N/A	N/A	4006	Missing subscriber identifier
N/A	N/A	4007	Missing voucher number

The following tables lists the deprecated codes:

Enumerator (internal only)	Code	Description
failed	2000	General error
communicationError	3001	Communication error
failureCreated	2011	Batch not active

Macro failures: - Do not continue processing control plan.

• (ERROR) Unexpected message type received (x2)

• (ERROR) Failed to retrieve nodePtr

- (ERROR) Invalid action status

Unsupported Branch - Not able to start processing, or unable to store profile

- Insufficient capabilities
- Failed to validate config (various)
- Failed to set voucher balances in profile (x num fields)
- Failed to store in profile (x5)

Abandon Branch

- Call processing not allowed (x2)
- Possible interface timeout (x6)

SOAP Failure result codes:

- 0 "",
- 1 "No such subscriber",
- 2 "No such service",
- 3 "Missing parameter",
- 4 "Mis-typed parameter",
- 5 "System Error",
- 6 "Operation does not exist",
- 7 "Operation not available",
- 8 "Invalid transaction type",
- 9 "Transaction not found",
- 10 "No response from ACS",
- 11 "Too many transactions",
- 12 "Duplicate tranaction",
- 13 "Invalid SOAP or service key not found",
- 14 "Operation disabled",
- 15 "Service loader balance type mapping error",
- 16 "Service loader profile data error",
- 17 "Service loader balance conversion error",
- 18 "Service loader balance type not present",

Voucher Recharge

The Voucher Recharge node allows the caller to recharge their account using a voucher number, and to change their product type if required.

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

- True for successful attempts
- False for unsuccessful attempts

This allows you to check if a voucher has been redeemed, or if a failed redeem attempt has been made.

Node exits – Voucher Recharge

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

Exit	Cause	Description
1	Success	The voucher recharge has been successful and the caller's account has been credited.
2	Success Product Swap	The caller has successfully exited the node and requested a product type swap.
3	Unsupported	The recharge has not been successful for any of the following reasons: • The Domain being used does not support this feature node • The number of menu retries has exceeded the limit • Information routing error • Timeout • Recharge Interface Not Found • Interface can not be used to recharge this voucher • Any other failure or error condition not listed for the other exits.
4	Restricted Product	The caller was unable to recharge the voucher because the caller's product type does not belong to the list of available product types for the voucher.

Exit	Cause	Description
5	Abandon	This exit is used for many error conditions, including the following: • Customer/Retailer (to be recharged/credited) was not found • Customer/Retailer (to be recharged/credited) is not initialized • Customer/Retailer (to be recharged/credited) is deactivated • Customer/Retailer (to be recharged/credited) is suspended on IN • Customer/Retailer (to be recharged/credited) is suspended on Voucher Management • Limit of number of recharge is reached • Bad customer state • Product is not rechargeable • Invalid error code for a recharge subscriber update • No recharge part for this subscriber • One of balances involved in recharge is deactivated • One of balances involved in recharge is missing • Subscriber is locked from Voucher Management • Customer/Retailer credit is too large • The value minimum of the transaction is not reached • The value maximum of the transaction value reached • Recharge value is out of range • Credit out of range • Voucher not found
6	Escape	The caller has selected the Escape option.
7	Frozen	The caller's account status is Frozen, and they are therefore forbidden to use a voucher recharge.

Exit	Cause	Description
8	Need Scenario Info	This voucher has several potential ways to be recharged. This exit is used to find out which one to use. Must always exit to a Select Voucher Scenario node.
9	Voucher Invalid	The voucher number is invalid, for any of the following reasons: • Not enough digits in the source buffer • Unexisting recharge properties • Voucher Bad Found • Tariff Plan Not Exist For This Pack • Bad Voucher Type • Voucher is in pending state • Voucher is in frozen state • Voucher is blocked • Voucher has expired • Voucher is disabled • Voucher type is not applicable • Voucher has a bad brand Id
10	Already Redeemed	The voucher number has already been redeemed.

Configuring the node – Voucher Recharge

Follow these steps to configure the node.

1. Select the Source for the voucher recharge. Either of:

   • **Interactive**, or

   • **Stored**.

   Result: The related source fields for the selected option become available.

2. Select the **Get voucher number** options:

   • If **Interactive:** Select from the announcement drop down lists the announcement to play to prompt the subscriber for the voucher number.

   • If **Stored:** Select from the profile **Data Type**, **Location** and **Field** drop down lists containing the voucher number.

3. If **Interactive:** Select the from the Announcement drop down lists the various announcements to play to the subscriber:

   • **Thankyou** announcement to play when the redeem process is concluded.

   • **Account Locked** announcement to play when the subscriber either is currently frozen, or has become frozen as a result of the voucher redeem.

- **Invalid Attempt - Created** announcement to play when the voucher being redeemed has been created, but is not yet available for redemption.

- **Invalid Attempt - Used** announcement to play when the voucher being redeemed has already been redeemed.

- **Invalid Attempt - Unavailable** announcement to play when the voucher being redeemed is no longer available (i.e. has been stopped by the telco, or expired).

- **Invalid Attempt - Invalid Number** announcement to play when the subscriber has provided an incorrect voucher number.

- **Maximum Iterations Reached** announcement to play when the number of retries a subscriber is allowed has been reached.

- **Redeem System Error : Please try later** announcement to play when the voucher redeem system is unavailable.

- **Limited Product Type Failure** announcement to play when the subscriber product type is invalid for, or would become invalid due to, the voucher recharge.

Note: If **Stored** selected, these options are all grayed out.

4. If the voucher redeem scenario is known, tick the **Have scenario selection** check box.

   Result: The Selected Scenario profile fields become available.

5. If available, from the **Selected ScenarioData Type**, **Location** and **Field** drop down lists, select the profile containing the scenario number to use for the voucher redemption.

6. From the **Scenario DataData Type**, **Location** and **Field** drop down lists, select the profile containing the currently available scenarios for voucher redemption.

7. Click **Save**.

   Note: This will be greyed out until all the required fields have been completed.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Voucher Redeemed

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

The Voucher Redeemed feature node retrieves a voucher number from the specified location.

The number of redeem attempts is only used to determine how the feature node should branch.

The number of attempts will be recorded each time the control plan passes through the feature node. Each time the control plan executes the feature node, the feature node will attempt only one redemption.

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

- True for successful attempts
- False for unsuccessful attempts

This allows you to check if a voucher has been redeemed, or if a failed redeem attempt has been made.

Node exits – Voucher Redeemed

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

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

Exit	Cause	Description
1	Success	Voucher redeemed and subscriber account updated successfully.
2	Success Product Swap	Voucher redeemed and subscriber product type swapped.
3	Restricted Product	Voucher has a restricted product redemption list.
4	Unknown Wallet	Wallet has been deleted, not replicated correctly or some other wallet error.
5	Invalid wallet State	Subscriber account has been frozen.
6	Invalid Serial	Voucher number is invalid.
7	Already Redeemed	The voucher number has already been redeemed.
8	Voucher Invalid	The voucher number is invalid (includes not enough digits in the source buffer).
9	Retry Exceeded	The number of redeem attempts has been exceeded (as defined by the Redeem Attempts node parameter).
10	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Voucher Redeemed

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

Field	Description
Number Source	The ACS number buffer containing the voucher number.
Redeem Attempts	Maximum number of voucher number attempts before taking the retry exceed branch.
Number of Digits	The number of digits to remove from the front of the voucher number prior to redemption.

Configuring the node – Voucher Redeemed

Follow these steps to configure the node.

1. Select the ACS buffer that contains the voucher number digits from the **Number Source** drop down list.

2. Type the maximum number of voucher number entry retries in the **Redeem Attempts** field.

3. Type the number of digits to remove from the front of the voucher digits before attempting to redeem in the **Number of Digits** field.

4. Click **Save**.

Voucher Reservation

The voucher reservation process can be handled at a fine-grained level by using the Voucher Reserve node. The Voucher Reserve node takes the voucher identification information, retrieves the set of information that is required to make wallet updates, and sets aside a voucher reservation to wait for a commit or revoke action to occur. This prevents the voucher from being used again until either the commit or revoke action is received or a timeout occurs and the voucher is either indefinitely held, or committed or revoked automatically based on the configuration. A revoked voucher enables a voucher redemption to be attempted again.

Node exits – Voucher Reservation

This node has one entry and four exits.

Exit	Cause	Description
1	Success	A voucher reservation has been created and the information needed to be able to credit a caller's account has been retrieved.
2	Unsupported	The voucher reserve action has not been successful for any of the following reasons: • Insufficient capabilities • Failed to validate configuration • Failed to set voucher balances in profile • Failed to store in profile

Exit	Cause	Description
3	Abandon	The voucher reserve action has not been successful for any of the following reasons: • Call processing not allowed • Possible interface timeout
4	Failure	The voucher reserve action has not been successful and a specific failure is identified. If the state of the voucher was able to be retrieved, then it is returned. Otherwise, the state is set to Unknown. A failure code and failure text are set. 2001 - Voucher batch state not active 2002 - Invalid voucher value 2003 - Invalid serial number 2004 - Voucher not found 2007 - Limited voucher product match 2008 - Scenario required 2009 - Voucher already redeemed 2010 - Voucher already reserved 2012 - Voucher in frozen state 2013 - Voucher in deleted state 3000 - System error 4000 - Service provider not found 4001 - Invalid voucher number length 4002 - Incorrect voucher balances tag count 4003 - Incorrect voucher balances tag type 4004 - No voucher balances 4005 - Invalid scenario number 4006 - Missing subscriber identifier 4007 - Missing voucher number

Configuring the node – Voucher Reservation

Follow these steps to configure the node.

1. Select the source for the recharged subscriber.

2. Select the source data for the human readable voucher number (HRN).

3. If you need to override the service provider, select the **Override provider** checkbox.

Result: The next section becomes available to select the source data for the alternative service provider.

4. If you need to provide a scenario number, select the **Have scenario** checkbox.

   Result: The next section becomes available to select the source data for a scenario number.

5. Select the profile where the per balance Voucher Info shall get stored to.

6. Select the profile where the Voucher State shall get stored to.

7. Select the profile where the Voucher Serial Number shall get stored to.

8. Select the profile where the Voucher Result Code shall get stored to.

9. Select the profile where the Voucher Result Text shall get stored to.

10. Select the profile where the Voucher Recharge Classification shall get stored to.

11. Click **Save**.

Result Codes – Voucher Reservation

Success branch is always ResultCode of 0 and ResultText of Success.

The following tables describes the failure codes:

FOX (internal only)	Enumerator (internal only)	Code	Description
NACK_AlreadyReserved	failureReserved	2010	Voucher already reserved
NACK_AlreadyRedeemed	failureUsed	2009	Voucher already redeemed
NACK_VoucherBatchUnavailable	failureUnavailable	2001	Voucher batch state not active
NACK_BadVoucherValue,NACK_InvalidVoucherDigits	failureInvalidVoucherValue	2006	Invalid voucher value
NACK_VoucherCreated	failureVoucherCreated	2011	Voucher in created state
NACK_VoucherFrozen	failureVoucherFrozen	2012	Voucher in frozen state
NACK_VoucherDeleted	failureVoucherDeleted	2013	Voucher in deleted state
NACK_VoucherAuthFailed	failureInvalidSerial	2003	Invalid serial number
NACK_LimitedVoucher	failureLimitedVoucher	2007	Limited voucher product match
NACK_BadScenario	failureScenarioRequired	2008	Scenario required
NACK_UnknownVoucher,NACK_AmbiguousVoucher	failureUnknown	2004	Voucher not found
NACK_SystemFailure (or other)	systemError	3000	System error
N/A	N/A	4000	Service provider not found
N/A	N/A	4001	Invalid voucher number length

FOX (internal only)	Enumerator (internal only)	Code	Description
N/A	N/A	4002	Incorrect voucher balances tag count
N/A	N/A	4003	Incorrect voucher balances tag type
N/A	N/A	4004	No voucher balances
N/A	N/A	4005	Invalid scenario number
N/A	N/A	4006	Missing subscriber identifier (ERROR)
N/A	N/A	4007	Missing voucher number (ERROR)

The following tables lists the deprecated codes:

Enumerator (internal only)	Code	Description
failed	2000	General error
communicationError	3001	Communication error
failureCreated	2011	Batch not active

Macro failures: - Do not continue processing control plan.

- (ERROR) Unexpected message type received (x2)
- (ERROR) Failed to retrieve nodePtr
- (ERROR) Invalid action status

Unsupported Branch - Not able to start processing, or unable to store profile

- Insufficient capabilities
- Failed to validate config (various)
- Failed to set voucher balances in profile (x num fields)
- Failed to store in profile (x5)

Abandon Branch

- Call processing not allowed (x2)
- Possible interface timeout (x6)

SOAP Failure result codes:

- 0 "",
- 1 "No such subscriber",
- 2 "No such service",
- 3 "Missing parameter",
- 4 "Mis-typed parameter",
- 5 "System Error",
- 6 "Operation does not exist",
- 7 "Operation not available",

- 8 "Invalid transaction type",

- 9 "Transaction not found",

- 10 "No response from ACS",

- 11 "Too many transactions",

- 12 "Duplicate tranaction",

- 13 "Invalid SOAP or service key not found",

- 14 "Operation disabled",

- 15 "Service loader balance type mapping error",

- 16 "Service loader profile data error",

- 17 "Service loader balance conversion error",

- 18 "Service loader balance type not present",

Voucher Type Balance Information

The Voucher Type Balance Information node retrieves the balances associated with a Voucher Type and stores them in a selected profile.

Node exits – Voucher Type Balance Information

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

Exit	Cause	Description
1	Success	The voucher type balance information has been successfully stored in a profile.
2	Error	The voucher type could not be found or the balance information could not be extracted.

Configuration fields – Voucher Type Balance Information

This table describes the function of each field in the Configure Voucher Type Balance Information node screen.

Field	Description
Voucher Type Source options	Controls what the voucher source will be:
Select Voucher Type From area	Either: • Specifies the profile to use when **From Profile** is selected, or • The voucher type that balance information will be retrieved for when **Manual Definition** is selected.
Voucher Scenario Source options	Controls what the voucher scenario source will be:

Field	Description
Select Voucher Scenario From area	Either: • The default voucher scenario will be used when **None** is selected, or • Specifies the profile to use when **From Profile** is selected.
Store Balance In area	Specifies the profile to use to store the balance information.

Configuring the node – Voucher Type Balance Information

Follow these steps to configure the node.

Note: For more information on the Voucher Type Balance Information node configuration fields see Configuration fields – Voucher Type Balance Information.

1. In the Voucher Type Source area select either:

   • **From Profile**, or

   • **Manual Definition**.

2. Select the Voucher Type for which balance information will be retrieved. If you selected:

   • **From Profile**, select from the profile **Data Type**, **Location** and **Field** drop down lists that contains the Voucher Type you want, or

   • **Manual Definition**, select the voucher type from the **Voucher Type** drop down list.

3. In the Voucher Scenario Source area select either:

   • **None**, or

   • **From Profile**.

4. If you selected **From Profile**, in the Select Voucher Scenario From area, select the profile **Data Type**, **Location** and **Field** drop down lists that contains the Voucher Scenario you want.

5. In the **Store Balances In** area select the profile **Data Type**, **Location** and **Field** drop down lists where the balance information will be stored.

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

Further reference:

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

• The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Voucher Type Branching

The Voucher Type Branching feature node branches based on the voucher type of the voucher retrieved from one of:

- The context within the control plan. For example, this would be the redeemed voucher if the Voucher Type Branching feature node is placed immediately after a Voucher Recharge feature node

- A profile field containing the voucher number

This feature node has three default branches. You can add up to twenty additional branches that you use to specify the voucher type branching rules.

The fast key for the Voucher Type Branching feature node is VTYB. You can use this value to search for the Voucher Type Branching feature node in your control plans.

Node exits – Voucher Type Branching

The Voucher Type Branching feature node has 3 to 23 exits. You can configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.

Exit	Cause	Description
1	Not found	The voucher does not exist.
2	Unsupported/Error	Indicates an internal or general system error.
3	Default	The voucher type does not correspond to a configured branch.
4 to 23	Matched	The voucher type matches one of the branches.

Configuration fields – Voucher Type Branching

This table describes the function of each field.

Field	Description
Context	Select to branch based on the voucher type of the voucher retrieved from the control plan context.
Profile	Select to branch based on the voucher type of the voucher retrieved from the specified profile location.
Voucher Number Data Type	Specifies the data type of the voucher number profile block.
Voucher Number Location	Specifies the profile block that contains the voucher number profile field.
Voucher Number Field	Specifies the profile field where the voucher number is stored. Must be a STRING, NSTRING, or LNSTRING profile field type.
All Voucher Types	Lists all the voucher types defined in the **Voucher Management > Voucher Type** screens for the current service provider.
Branch Voucher Types	Displays the branch number being configured and the associated voucher types.
Not Found	Provides the branch to take when the voucher number from the profile location does not exist.

Field	Description
Unsupported/Error	Provides the branch to take when an internal error occurs.
Default Branch	Provides the branch to take when the voucher type of the retrieved voucher is not included in any of the branch voucher type rules.

Configuring the node – Voucher Type Branching

Follow these steps to configure the Voucher Type Branching feature node.

1. Configure the required number of additional exits. The maximum number of additional exits is 20. See Editing node exits.

2. In the Configure Voucher Type Branching window, select the source for the voucher number on which to base branching. Select:

   • **Context** to branch based on the voucher type of the voucher number in the control plan context.

   • **Profile** to branch based on the voucher type of the voucher number in the specified profile field.

3. If you selected **Profile** in step 2, select the profile field location where the voucher number is stored from the **Voucher Number Data Type**, **Voucher Number Location**, and **Voucher Number Field** lists.

4. In the Branch Voucher Types area, use the **Number** up and down arrows to select the exit branch to configure.

   The voucher types configured for the selected branch appear in the panel below.

5. Add the required voucher types to the selected branch by selecting the voucher types in the All Voucher Types area, and clicking **Move to branch >>**.

6. To remove a voucher type from the selected branch; for example if you want to make the voucher type available to another branch, select the voucher type and then click **<< Replace in set**.

7. Repeat steps 4 to 6 for each branch.

8. Click **Save**.

Voucher Type Recharge

The Voucher Type Recharge node invokes the voucher type recharge billing engine action using the configured name of the voucher type. See *CCS User's Guide* for details on configuring voucher type recharges.

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

• True for successful attempts

• False for unsuccessful attempts

This allows you to check if a voucher has been redeemed, or if a failed redeem attempt has been made.

Node exits – Voucher Type Recharge

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

Exit	Cause	Description
1	Success	The billing engine returned a successful voucher type recharge indication.
2	Error	The billing engine returned a failed voucher type recharge indication.
3	Unsupported	The voucher type recharge capability is not supported.

Configuring the node – Voucher Type Recharge

Follow these steps to configure the Voucher Type Recharge feature node.

1. In the Voucher Type Source area select one of:

   - **From Profile**

   - **Manual Definition**

2. Select the voucher type to be recharged. If you selected:

   - **From Profile**, select the profile field that holds the voucher type from the **Data Type**, **Location** and **Field** lists.

   - **Manual Definition**, select the name of the voucher type to recharge from the **Voucher Type** list.

   Note: The feature node always recharges vouchers against the default scenario for the voucher type.

3. Click **Save**.

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

For more information about profile field configuration, see the discussion on profile tag configuration in *Convergent Charging Controller Advanced Control Services User's Guide*.

23
CCS Wallet Management Feature Nodes

This chapter describes the Oracle Communications Convergent Charging Controller CCS Wallet Management feature nodes.

This chapter contains the following topics.

Account Activate

Account State Branch

Account Status

Account Status SMS

Apply Rewards

Balance State Branch

Balance Status

Balance Type Branching

Balance Type Cascade Branching

Copy Balance Details

Cumulative Balances

Final Subscriber Spending Limit Report – FN

Periodic Charge State Branch

Periodic Charge Subscription

Periodic Charge Transfer

Play Next Promotion

Select Credit Transfer

SMS Low Balance

Subscriber Spending Limit Report – FN

Subscriber Spending Notification Report – FN

Time Remaining

Tracker Account State Branch

Wallet Life Cycle Period Branching

Wallet State Update

Account Activate

The Account Activate feature node updates any account in pre-use state to the active state.

Node exits – Account Activate

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

Exit	Cause	Description
1	Success	The caller has successfully exited the node.
2	Unsupported	Either, error / failure, or the domain being used does not support this feature node.

Configuring the node – Account Activate

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

Account State Branch

The Account State Branch feature node routes the call based on the state of the caller's account.

Node exits – Account State Branch

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

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

Exit	Cause	Description
1	Active	The account is active.
2	Frozen	The account has been Frozen due to dishonesty.
3	Preuse	The account has not yet been used.
4	Suspended	The account is Suspended.
5	Dormant	The account is Dormant.
6	Terminated	The account has been Expired.
7	Unsupported	Either, error / failure, or the Domain being used does not support this feature node.
8	Abandon	The caller has abandoned the call.

Configuration fields – Account Status

This table describes the function of each field in the Configure Account Status node screen.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncements	Allows the selected announcement to be played.
SkipAnnouncement	Prohibit playing of the balance announcement.
IgnoreThreshold	Ignore the account expiry warning threshold for playing announcement.

Configuring the node – Account State Branch

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

Account Status

The Account Status feature node plays information regarding the caller's account and balances. Specifically, it will play a no-credit announcement, if appropriate, and inform the caller of their:

- Account expiry date
- Default balance expiry
- Balance amounts

Node exits – Account Status

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

Exit	Cause	Description
1	Success	All information has been played successfully.
2	Abandon	The caller has abandoned the call.
3	Unsupported	Either, error / failure, or the domain being used does not support this feature node.

Configuring the node – Account Status

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. For **each relevant** announcement, select the **Enable Announcement** check box as required.

3. Select the **Skip Announcement** check box as required. When checked, this Skip Balance Announcement option will play account status and **not** include the balance information within the announcement set.

4. Click **Save**.

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

Account Status SMS

The Account Status SMS feature node sends a short message to the caller using templates defined for each language. The balance types played in the messages are stored in **eserv.config**.

The templates available for selection are configured through the **ACS > Configuration > Notification** screens.

The available parameters are:

- Wallet type
- Balances and balance expiries

For more information on the available parameters see Message parameters.

Note: This node requires an existing short message service.

Node exits – Account Status SMS

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

Exit	Cause	Description
1	Unsupported	Either, error / failure, or the domain being used does not support this feature node. A text message has not been sent.
2	Success	A text message has been successfully sent to the short message service.

Configuring the node – Account Status SMS

Follow these steps to configure the node.

1. Using the drop down lists in the Notification panel, select the **Application** where the notification type for the SMS is defined.

   Note: ACS will be used by default.

2. Select the **Notification Type** from the drop down list.

3. Click **Save**.

Message parameters – Account Status SMS

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

Here is the list of available parameters.

Parameter	Description
$1	The wallet description. **Note:** This is configured on the **Wallet Name Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.
$2	The balance details for each balance type reported. Details include: • Balance description • Balance amount • Balance expiry (either the number of days to expiry or the no balance expiry text) **Note:** The balance details string is configured on the **Balance Type Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.

Message example – Account Status SMS

Here is an example template and the corresponding message generated by the Account Status SMS node.

A template of:

A/c type $2 - balance: $1

will send the message:

"A/c type: Primary wallet - balance: Eng Gen Bal GBP 1873.56-no expiry"

Apply Rewards

The Apply Rewards feature node applies the real time rewards that the current subscriber has qualified for.

The node will determine whether or not the subscriber qualifies for a configured reward based on their product type and the current value of their balance. As a result of applying a reward, the subscriber's product type many change.

Note: A reward will not be applied if the current date falls outside the reward period.

Node exits – Apply Rewards

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

Exit	Cause	Description
1	Success	The rewards have been successfully applied.
2	No Rewards Applied	The subscriber does not qualify for any rewards.
3	Error	An error/failure occurred when attempting to apply rewards.
4	Unsupported	The Domain being used does not support this type of reward.

Configuring the node – Apply Rewards

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

Balance State Branch

The Balance State Branch feature node routes the call based on the state of the caller's account balance. To calculate the caller's account balance a configurable set of balance types will be checked. The set of balance types to be checked is configured in the SLC **eserv.config** file, see *CCS Technical Guide* for details.

This node reads the caller's Product Type node options configured for the Balance State Branch and determines that if the Use Threshold field is:

- Selected, then the Product Type Threshold is ignored and the Node Balance Threshold is used instead

- Not selected, then the Product Type Value is used

Note: The node will filter out all Expenditure Balance Types and not include them in the balance calculation. See *CCS User's Guide - Balance Types* topic.

Node exits – Balance State Branch

This node has one entry point and seven exits that are set by the system. The number of exit points is fixed and may not be edited by the user.

Exit	Cause	Description
1	Credit OK	The available funds (which may or may not include credit limit and/ or committed reservations) is >= the threshold.
2	Unsupported	Either, error / failure, or the domain being used does not support this feature node.
3	No Credit	The value being compared (which may or may not include credit limit and/ or committed reservations) is <= zero.

Exit	Cause	Description
4	Credit < Threshold	The available credit (which may or may not include credit limit and/ or committed reservations) is less than the threshold used (which is either the product type **Balance status warning threshold** value or the node value). See Threshold example.
5	Balance Expired	The account balance has expired.
6	Account Expired	The account has expired.
7	Abandon	The caller has abandoned the call.

Configuring the node – Balance State Branch

Follow these steps to configure the node.

1. Select the threshold source value to use:

   • Select the **UseThreshold** check box to use the **node** threshold value.

   • Deselect the **UseThreshold** check box to use the **Product Type** threshold value (this is the **Balance status warning threshold** value configured at **Subscriber management > Product Type > Node Options**).

2. Type the comparison balance threshold to use in the **Threshold** field.

   Note: A value must be entered - even if zero - before the **Save** button becomes available.

3. Select the additional threshold considerations:

   • Select the **Above Credit Limit** check box to include the subscriber's credit limit.

   • Select the **Excl. Reserved Funds** check box to ignore any committed reservations.

   Tip: See Threshold example for how these check boxes work together.

4. Click **Save**.

Threshold example – Balance State Branch

This example uses the following values:

• Threshold is $115

• Actual balance is $20

• Credit limit is $100

• Outstanding reservation is $5

This table shows how the comparison value is computed for these values:

Exclude Reservations	Credit Limit Not Included	Credit Limit Included
No	Actual balance = $20 Exit 4 taken (comparison < threshold)	Actual balance + Credit Limit $20 + $100 = $120 Exit 1 taken (comparison > threshold)
Yes	Actual balance - Reservations $20 - $5 = $15 Exit 4 taken (comparison < threshold)	Actual balance - Reservations + Credit Limit $20 - $5 + $100 = $115 Exit 1 taken (comparison = threshold)

Balance Status

The Balance Status feature node plays announcements to provide the user with information about their account. The node plays:

- Individual balances

- A no-credit announcement, if necessary

- Expiry dates for both the user's account and balance(s)

Node exits – Balance Status

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

Exit	Cause	Description
1	Success	All announcements have completed successfully.
2	Abandon	The caller has terminated the call.
3	Unsupported	Either, error / failure or the Domain being used does not support this feature node.

Configuration fields – Balance Status

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncements	If check box selected, allows the selected announcement to be played.
Committed Funds	When selected, exclude committed reservations in the available funds played in the announcement.

Field	Description
Unreserved Funds	When selected, exclude uncommitted reservations in the available funds played in announcements (the uncommitted reservation amount is subtracted from the available funds).

This node only deals with information for the balance types specified in the `BSAnnBalanceTypes` array of the `ccsMacroNodes` section of the **eserv.config** file on the SLC.

This node will only play expiry information if the expiry is within the ranges specified in the caller's:

- Product type account expiry warning threshold
- Product type balance expiry warning threshold

Configuring the node – Balance Status

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. For **each relevant** announcement, tick the **Enable Announcement** check box as required.

3. Select the **Funds to Report** option:

   - Select **Unreserved Funds** to exclude uncommitted reservations in the available funds played in announcements, or

   - Select **Committed Funds** to exclude committed reservations in the available funds played in the announcement.

4. Click **Save**.

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

Balance Type Branching

Allows for threshold branching on the values in the subscriber's wallet of chargeable balance types (for example, 'General Cash'), expenditure balance types or cross-balance types.

For example, this node could be used to apply a discount to the current call, based on the existing value of a particular balance. The call in progress in the current control plan will not have been billed yet, so will not be considered for such a discount.

Node exits – Balance Type Branching

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

Exit	Cause	Description
1	>	The available funds are greater than the configured threshold.
2	<	The available funds are less than the configured threshold.
3	=	The available funds are the same as the configured threshold.
4	No Balance Found	The specified balance type was not found in the subscriber's wallet.
5	Unsupported	Any error/failure encountered.

Notes:

- A zero wallet balance could potentially use exits 1, 2 or 3 depending on the threshold, credit limit, reservation combination value.

- Telephony actions are allowed after exits 1 to 4.

- See Threshold example for understanding how the available balance is calculated.

Configuring the node – Balance Type Branching

Follow these steps to edit the node configuration.

1. Select the **Balance Category** to limit the balance type list to select from for the branch comparison.

   One of:

   - **All** - all balance types for the current ACS customer will be listed.

   - **Chargeable** - only those balance types for the current ACS customer that can be used for charging will be listed. For example this will exclude all 'Expenditure' and 'Cross Balance Type Discount' balance types.

   - **Expenditure** - only those balance types for the current ACS customer defined as 'Expenditure' balance types (daily, weekly, monthly, yearly, wallet) will be listed.

   - **CrossDiscount** - only those balance types for the current ACS customer defined as 'Cross Balance Type Discount' balance types will be listed.

   - **Internal** - only those balance types for the current ACS customer defined as 'Internal' balance types will be listed.

2. From the **Balance Type** drop down list, select the balance type to use in the branch comparison.

3. Type the comparison threshold to use in the **Threshold** field.

4. Select the additional threshold considerations:

   - Select the **Above Credit Limit** check box to include the subscriber's credit limit.

   - Select the **Excl. Reserved Funds** check box to exclude any committed reservations.

Tip: See Threshold example for how these check boxes work together.

5. Click **Save**.

Threshold example – Balance Type Branching

If the:

- threshold is $115
- actual balance is $20
- credit limit is $100, and
- an outstanding reservation for $5

This table shows how the comparison value is computed for these values:

Exclude Reservations	Credit Limit Not Included	Credit Limit Included
No	Actual balance = $20 Exit 2 taken (comparison < threshold)	Actual balance + Credit Limit $20 + $100 = $120 Exit 1 taken (comparison > threshold)
Yes	Actual balance - Reservations $20 - $5 = $15 Exit 2 taken (comparison < threshold)	Actual balance - Reservations + Credit Limit $20 - $5 + $100 = $115 Exit 3 taken (comparison = threshold)

Balance Type Cascade Branching

Allows for threshold branching on the values of the balances held in the selected balance type cascade.

The summed value of the balances for the unit type configured in the node will be used when determining the appropriate branch to follow.

Node exits – Balance Type Cascade Branching

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

Exit	Cause	Description
1	>	The sum of the balances in the balance type cascade of the specified unit is greater than the configured threshold. Telephony actions are allowed after this branch.
2	<	The sum of the balances in the balance type cascade of the specified unit is less than the configured threshold. Telephony actions are allowed after this branch.

Exit	Cause	Description
3	=	The sum of the balances in the balance type cascade of the specified unit is the same as the configured threshold. Telephony actions are allowed after this branch.
4	No Bal Casc Found	The specified balance type cascade was not found. Telephony actions are allowed after this branch.
5	No Balance Found	There were no balances for the specified unit type in the selected balance cascade. Telephony actions are allowed after this branch.
6	Unsupported	An error/failure was encountered.

Configuring the node – Balance Type Cascade Branching

Follow these steps to configure the node.

1. From the **Balance Type Cascade** drop down list, select the cascade to use in the branch comparison.

2. Select the **Balance Units** to use. Only balances types with the selected unit type will be summed and compared against the threshold value.

   Note: If you selected **Units** then all balances, except cash or time, will be summed.

3. In the **Threshold** area type the comparison balance threshold value for the selected balance units.

   Note: Only the fields relevant to the selected balance units will be enabled.

4. Click **Save**.

Copy Balance Details

The Copy Balance Details feature node allows you to copy values from a balance to profile fields. You can use the extracted balance information later in the control flow for comparison with other data.

You can copy the following values to a specified profile field:

- Total user balance (copy to any numeric or string profile fields)

- Total system balance (copy to any numeric or string profile fields)

- Unreserved user balance (copy to any numeric or string profile fields)

- Unreserved system balance (copy to any numeric or string profile fields)

- Balance expiry date (copy to any date profile field)

- Maximum credit for limited credit balances (copy to any numeric or string profile fields)

- Balance valid from date (copy to any date profile field)

- Wallet expiry date (copy to any date profile field)

In addition, you can copy balance buckets to a profile field. The values you can select to copy are based on the balance bucket's expiration date. **Earliest expiring bucket** selects the balance bucket that has the earliest future expiration date. **Latest expiring bucket** selects the balance bucket that has the latest (furthest in the future) expiration date. There may be buckets with no expiry date set (meaning they will never expire). The latest expiring bucket is the bucket with the latest set expiry date, even if there are buckets that will never expire. **First future bucket** selects the balance bucket that has the earliest future start date. The feature node copies values only from active buckets.

You can copy the following balance bucket values to a specified profile field:

- Earliest expiring bucket user value (copy to any numeric profile field)

- Earliest expiring bucket system value (copy to any numeric profile field)

- Earliest expiring bucket expiry date (copy to any date profile field)

- Latest expiring bucket user value (copy to any numeric profile field)

- Latest expiring bucket system value (copy to any numeric profile field)

- Latest expiring bucket expiry value (copy to any numeric profile field)

- First future bucket user value (copy to any numeric profile field)

- First future bucket system value (copy to any numeric profile field)

- First future bucket start date (copy to any date profile field)

- First future bucket expiry date (copy to any date profile field)

Note:

Buckets that never expire and buckets that are currently inactive are excluded when determining earliest and latest expiring buckets.

When determining the first future bucket, if buckets have the same start date but different expiry dates, the bucket with the earliest expiry date is copied.

If multiple buckets have the same start date and the same expiry date, then the values of those buckets are summed and the total is copied.

Node exits – Copy Balance Details

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

Exit	Name	Cause
1	Success	All balance data values have been stored in the target profile fields.
2	Not Found	The balance does not exist.
3	Error	An internal error has occurred.
4	Unsupported	Billing engine does not meet the requirements of the balance copy feature node.

Configuring the node – Copy Balance Details

Follow these steps to configure the node.

1. Filter the list of available balance types using the **All**, **Chargeable**, **Expenditure**, **CrossDiscount**, or **Internal** options. Each option will present different balance types available to copy. For example, **All** provides no filtering and presents all balance types available to copy. **Chargeable** presents only those balance types available for charging operations.

2. Select the balance type whose value you want to copy from the **Balance Type** list.

3. For each balance item that you want to copy, perform the following steps:

   • Select the type of balance value to copy from the **Source Field** list.

   • Select the profile field to which the balance data will be copied from the **Target Data Type**, **Target Location** and **Target Field** lists.

   • Click **Save**.

4. To add another set of source and target fields, click **Add** and repeat step 2.

5. Click **Save**.

Note: To delete a configuration, select the field values corresponding with the existing configuration you want to delete. Then select the check box next to the source and target fields and click **Delete Selected**.

Cumulative Balances

The Cumulative Balances feature node provides the caller with details of their cumulative balances.

For each cumulative balance category configured for one of:

• Product type

• The selected cumulative balance plan (only available if the cumulative balance plan feature has been activated on your system), the node:

  – Sums the balances of the balance types assigned to the balance category

  – Plays the configured announcements

If there are no balance types assigned to a particular category, then the category is ignored. If the cumulative balance for a category is zero, then the announcement is only played if the Play Zero flag is set for the category.

Notes:

• For details on configuring balance category announcements, see the *CCS User's Guide*.

• To have unreserved balances reported for subscriber's cumulative balances, the option must be configured in the **Wallet Management > Cumulative Balance Plans** tab > **New/Edit > Add Balance Category** button > **Use Unreserved Balances** check box.

Node exits – Cumulative Balances

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

Exit	Cause	Description
1	Success	All announcements have completed successfully.
2	Abandon	The caller has terminated the call.
3	Unsupported	Either, error / failure, or the domain being used does not support this feature node.
4	Not Found	No announcements can be played because balance categories have not been set up for the product type.

Configuration fields – Cumulative Balances

This table describes the function of each field in the Configure Cumulative Balances node screen.

Field	Description
Balance Plan	List of all the available cumulative balance plans for the current service provider. **Notes:** • Cumulative balance plans are configured in the Wallet Management screen in CCS. • The special value "Use Product Type" may be used to select the default cumulative balance plan configured for the product type. • This field will not be visible in the screen if the cumulative balance plans feature has not been activated on your system.
EnableAnnouncement	Select to enable the selected title announcement to be played. Defaults to disabled.
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
Category Title Announcement	Select **EnableAnnouncement** to enable playing the category title announcement. Defaults to disabled.

Field	Description
Play No Credit for Balances	Select **EnableAnnouncements** to enable playing no credit balance announcements for balances that are negative. The announcement that is played will not include any variable parts; for example, the announcement played might be: **Your balance is negative, please recharge.** Defaults to disabled. **Note:** Zero balances are treated as negative.
Play Positive Only Expiries for Balances	Select **EnableAnnouncements** to enable playing announcements for balances with positive expiries only. Defaults to disabled.
Play Single Day Expiries for Balances and Account	Select **EnableAnnouncements** to enable playing announcements for account and balances with single day expiries. Defaults to disabled.

Configuring the node – Cumulative Balances

Follow these steps to configure the node.

1. From the **Balance Plan** drop down list select the cumulative balance plan to use. If you select the special value "Use Product Type" then the default balance plan configured for the Product Type will be used.

   Note: This field will only be visible in the screen if the cumulative balance plan feature has been activated on your system. For more information on activating features in CCS, see the *CCS Installation Guide*.

2. If you want a title announcement to be played to the caller, in the Title Announcement area tick the **Enable Announcement** check box. Then use the drop down lists to select the **Announcement Set** and **Announcement Entry** to play. Only valid announcements are available from the lists.

   Note: You must select an announcement set and entry even if you do not enable the announcement.

3. For each announcement you want to play, in the relevant announcement area tick the **Enable Announcement(s)** check box.

   Note: The cumulative balance category announcements played are configured in CCS either:

   • using the cumulative balances option on the Product Type screen, or

   • if the Cumulative Balance Plan feature has been activated, then they are configured on the Cumulative Balance Plan tab in the Wallet Management screen.

   For more information see the *CCS User's Guide*.

4. Click **Save**.

   Note: This will be greyed out until the title announcement and entry has been selected.

Final Subscriber Spending Limit Report – FN

This node implements the Session-Termination-Request. The result of the node is a Session-Termination-Answer.

Node exits – Final Subscriber Spending Limit Report

This node has one entry and 3 exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	Sent the Apply Charging message. SYIF returned success.
2	Unknown Session	FSY request sent to VWS, but there is no ongoing session. Respond with Result-Code DIAMETER_UNKNOWN_SESSION_ID.
3	Unsupported	Generic/system failure.

Periodic Charge State Branch

The Periodic Charge State Branching feature node branches on the state of a subscriber's subscription to a periodic charge. The subscriber which is checked is the one associated with the MSISDN which is currently populated in the CLI call context field. The periodic charge to check is specified in the node's configuration.

Amongst other uses, the Periodic Charge State Branch node can be used for:

- Checking a subscriber's subscription status before providing a service
- Error checking in BPL tasks used for handling periodic charge subscriptions
- Routing in a periodic charge IVR control plan

For more information about subscribers and periodic charges, see *CCS User's Guide*.

For more information about call context fields, see *CPE User's Guide*.

Node exits – Periodic Charge State Branch

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

Exit	Cause	Description
1	Unsubscribed	Corresponds to the periodic charge "unsubscribed" state and all states not covered by other exit branches.
2	Active	Corresponds to the periodic charge "active" state and active sub-states.

Exit	Cause	Description
3	Grace	Corresponds to the periodic charge "grace" state and grace sub-states.
4	Terminated	Corresponds to the periodic charge "terminated" state.
5	Unavailable	The wallet does not have a bucket of the required type.
6	Unsupported	Exit branch for error conditions.

Configuring the node – Periodic Charge State Branch

Follow these steps to configure the node.

1. In the **Periodic Charge Name** section select either the location of the charge name or charge name you want to branch on the state of. Select one of:

    • **From Profile** (for the location)

    • **From Node** (for the name)

    Result: The relevant fields become available.

2. If **From Profile**: select the location from the **Data Type**, **Location** and **Field** drop down lists.

    • If **From Node**: select the name from the **Name** drop down list

    Notes:

    • The profile **Field** is populated by the records configured on the Periodic Charge tab on the Wallet Management screen.

    • The name list are all the Periodic Charge names for this subscriber.

3. From the **Change State** drop down list, select the state the subscriber's periodic charge should be changed to.

    Examples:

    • To subscribe a subscriber to a periodic charge, select **Subscribe**.

    • To unsubscribe a subscriber from a periodic charge, select **Unsubscribe**.

    • To trigger a loss of service, select **Terminate**.

    • To enable the first grace state on the VWS, select **Grace**.

4. Click **Save**.

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

Further reference:

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

• The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Periodic Charge Subscription

The Periodic Charge Subscription feature node changes the state of a subscriber's periodic charge to a new specified state. The affected subscriber is the subscriber who is associated with the MSISDN which is currently populated in the CLI call context field.

Note: If you are using periodic charge groups, you should ensure a subscriber cannot have two concurrent subscriptions to periodic charges within the same periodic charge group. You can use the Periodic Charge State Branch node to check the state of a specified periodic charge.

For more information about:

- Subscribers and periodic charge configuration, see *CCS User's Guide*
- Call context fields, see *Feature Nodes Reference Guide*

Node exits – Periodic Charge Subscription

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

Exit	Cause	Description
1	Unsupported	Any error except billing engine errors.
2	Not Subscribed	Subscriber has no bucket of the correct type for this charge, and the request was for an unsubscribe or a terminate.
3	Success	State changed successfully. **Note:** This includes successful unsubscribe actions.
4	Failure	Subscription not allowed (for example, the periodic charge is not associated with the subscriber's product type).
5	Error	Billing engine error.

Periodic Charge Subscription Fields

This table describes the configuration fields for the Periodic Charge Subscription feature node.

Field	Description
Name	The name of the subscriber's periodic charge. You configure periodic charges in the Wallet Management screens in the Prepaid Charging UI. For more information, see *Convergent Charging Controller Charging Control Services User's Guide*.

Field	Description
State Change	(Optional) Lists the states that the subscriber's periodic charge can be changed to. Defaults to `Subscribe`. The `Charge Alignment` state is available only if the selected periodic charge is based on service activation or reference date.
Apply Charge check box	You can select to apply charging if **State Change** is set to: • `Subscribe` and the charge type of the specified periodic charge is one of: `Debit`, `Credit`, `Debit and Credit`, `Credit Plan`, or `Debit and Credit Plan` • `Unsubscribe` and pro-rating has been defined for the specified periodic charge • `Charge Alignment` and pro-rating has been defined for the specified periodic charge
Pro-Rate Charge check box	You can select to apply pro-rating if all the following conditions are true: • **Apply Charge** is selected • Pro-rating is defined for the specified periodic charge • **State Change** is set to either `Subscribe` or `Charge Alignment`, and the charge type configured for the periodic charge is not `Control Plan` or `Notification Only` The **Pro-Rate Charge** check box is disabled and pre-selected when all the following conditions are true: • **State Change** is set to `Charge Alignment` or `Unsubscribe` • **Apply Charging** is selected • Pro-rating is defined for the specified periodic charge
Set Charge Day check box	You can select to set the periodic charge day if **State Change** is set to `Subscribe` and the specified periodic charge is based on service activation. The **Set Charge Day** check box is disabled and pre-selected if **State Change** is set to `Charge Alignment`.
Reference Date profile fields	The profile field location for the date on which to base the schedule for the periodic charge.
Charge Date	If **State Change** is set to `Subscribe` or `Charge Alignment`, and the specified periodic charge is based on service activation or reference date, then you can specify a charge date in the **Month of Year**, **Day of Month**, or **Day of Week** profile fields.

Field	Description
Month of Year (Charge Date) profile fields	The profile field location for the month when the periodic charge will be applied. The period configured for the periodic charge must be one of: quarterly, half yearly or annually.
Day of Month (Charge Date) profile fields	The profile field location for the day of the month when the periodic charge will be applied. The period configured for the specified period charge must be one of: monthly, quarterly, half yearly, annually, or custom months.
Day of Week (Charge Date) profile fields	The profile field location for the day of the week when the periodic charge will be applied. The period configured for the specified periodic charge must be weekly.

Configuring the node – Periodic Charge Subscription

Follow these steps to configure the Periodic Charge Subscription feature node.

1. From the **Name** list select the name of the periodic charge that you want to update.

2. From the **Change State** list, select the state that the subscriber's periodic charge should be changed to.

    Examples:

    • To subscribe a subscriber to a periodic charge, select `Subscribe`

    • To unsubscribe a subscriber from a periodic charge, select `Unsubscribe`

    • To trigger a loss of service, select `Terminate`

    • To align charges based on service activation or reference date, select `Charge Alignment`

    • To enable the first grace state on the VWS, select `Grace`

3. Complete the feature node configuration by selecting the required options from the enabled fields. The fields that are enabled depend on the configuration specified for the periodic charge and selected **State Change**.

    To:

    • Apply the charge, select **Apply Charge**

    • Apply pro-rating to the charge, select **Pro-Rate Charge**

    • Set the charge day, select **Set Charge Day** and select the profile field that contains the date you want to use from the **Charge Date** profile field lists

    • Specify the reference date for the periodic charge schedule, select the profile field that contains the date you want to use from the **Reference Date** profile field lists

    For more information about the Periodic Charge Subscription fields, see Periodic Charge Subscription Fields

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Periodic Charge Transfer

The Periodic Charge Transfer node transfers one periodic charge subscription to another periodic charge from the same group. The state and charge date remain the same, only the periodic charge subscription is changed.

The change is made for the subscriber with the CLI which matches the current calling logical number buffer in the Call Context profile. The subscription which is terminated, is the subscription which is in the periodic charge group specified in the Periodic Charge Group field.

Warning: If a subscriber is concurrently subscribed to more than one subscription in a group, the transfer will fail. Subscription services should be designed to ensure a subscriber does not have concurrently subscriptions to more than one periodic charge in a periodic charge group.

Node exits – Periodic Charge Transfer

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

Exit	Cause	Description
1	Unsupported	The target periodic charge is not supported by the VWS.
2	Not Subscribed	The subscriber was not subscribed to a periodic charge in the configured group. One of: - The subscriber's account did not have a subscription balance for any periodic charge in the group specified in the Periodic Charge Group field - The current subscription had a state of Unsubscribed or Terminated
3	Not In Product	The target periodic charge is not associated with the same product type as the subscriber's current periodic charge.
4	Success	The wallet and subscription have been successfully changed, or the subscriber was already subscribed to the target periodic charge.

Exit	Cause	Description
5	Failure	The wallet or subscription balance update has failed on the VWS.
6	Config Error	The configured group or target periodic charge is not found in the service provider's configuration. The group or periodic charge may have been changed since the control plan was last saved. This exit is also taken if the subscriber has more than one subscription within the periodic charge group. The service may need checking to see if it allows subscribers to subscribe to more than one periodic charge in a periodic charge group.
7	Error	An error not covered by the other exits has occurred.

Configuring the node – Periodic Charge Transfer

Follow these steps to configure the node.

1. From the **Periodic Charge Group** drop down list, select a group the target periodic charge belongs to.

2. From the **Transfer Charge** drop down list, select the periodic charge the subscriber's subscription will be changed to.

3. Click **Save**.

Play Next Promotion

The Play Next Promotion feature node calculates the subscriber's next promotion based on their current balances and if required, plays the announcement associated with the promotion.

Only one promotion will be selected, based on the:

- Available promotions defined for the service provider and associated with the subscriber's product type

- Balance cascade used to identify the qualifying balances

- Promotion period

If more than one promotion qualifies, then the promotion with the smallest difference between the promotion threshold and the current balance value will be selected. Optionally, the name of the selected promotion can be stored in a profile tag field.

Promotion rules

Here are the rules that apply to promotions played by the node.

1. The promotion must have one of these event categories:

    •   balance recharge

    •   balance credit

    •   balance expiry

    •   tracker threshold

    •   tracker expiry

2. The subscriber must be eligible for the promotion based on the promotion white or black list.

3. The current value for the event balance type must meet the defined conditions.

    Note: The promotion details are configured in the Promotion Manager screens.

Node exits – Play Next Promotion

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

Exit	Cause	Description
1	Success	A promotion was successfully selected and either played or stored to a profile tag field.
2	Not Supported	The Domain being used does not support promotions.
3	Error	A promotion could not be selected or an error/failure occurred while attempting to play/store the promotion.

Configuring the node – Play Next Promotion

Follow these steps to configure the node.

1. If you want to play the title announcement configured in the node, in the Title Announcement area select the **Play Announcement** check box, then select the announcement set and entry to play from the drop down lists.

2. If you want to play the announcement configured for the promotion in the Promotion Manager screens, select the **Play Announcement** check box in the Promotion Announcement area.

    Note: The announcements configured for rewards in the Wallet Management screens will be used for licensed versions of Prepaid Charging which are earlier than version 4.3.0.0.

3. If you want to store the promotion name in a profile tag field then in the Destination Profile area, select the **Store Promotion** check box. Then using the **Data Type**, **Location** and **Field** drop down lists select the profile where the information will be stored.

4. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Select Credit Transfer

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans.

Plays an announcement for each credit transfer associated with the subscriber's product type. The user can interrupt the announcements to select a service.

The announcements will be played in credit transfer name order. If a credit transfer does not have an announcement associated with it, then it will be skipped.

Node exits – Select Credit Transfer

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

Exit	Cause	Description
1	Success	Either all possible announcements were played or there were no credit transfers available for the subscriber's product type.
2	Selected	The user successfully selected a credit transfer service.
3	Abandon	The user disconnected the call.
4	Error	An error/failure occurred playing the announcements or when selecting a credit transfer service.
5	Unsupported	The Domain does not support credit transfer services.

Configuring the node – Select Credit Transfer

Follow these steps to configure the node.

1. In the **Transfer Type** area select the type of credit transfer for which announcements will be played. Select:

   - **Any** to play both Peer to Peer and Service Bundle announcements

   - **Peer to Peer** to only play Peer to Peer announcements, or

   - **Service Bundle** to only play service bundle announcements.

2. Select the **Save User Selection** from the **Data Type**, **Location** and **Field** drop down lists.

3. In the **Title Announcement** area select the announcement set and entry that will be played first.

4. In the **Press 1** to **Press 10** areas select the announcement sets and entries to associate with the available credit transfers. Announcements for a maximum of ten credit transfer options may be played to the user.

5. Click **Save**.

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

Further reference:

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

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

SMS Low Balance

The SMS Low Balance feature node sends an SMS to a subscriber when their balance falls below a specified threshold.

The message delivered by the SMS uses the ACS LowBalanceWarning Notification Type template. This node does not support the inclusion of any parameters in the notification template and therefore will send a low balance text message only.

For more information about configuring Notification Types see the Configuration chapter in the *ACS User's Guide*.

Note: You must configure a Notification Template for all languages that may be used to deliver the low balance warning message.

Node exits – SMS Low Balance

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

Exit	Cause	Description
1	Unsupported	Either, error / failure, or the Domain being used does not support this feature node. The balance has not been checked.
2	Success	The Balance was equal to or higher than the threshold.

Exit	Cause	Description
3	Low Balance	The Balance was lower than the threshold. An SMS will be sent from the Notification Interface using the ACS LowBalanceWarning notification type template. For more information on notification type templates, see *ACS User's Guide*.

Configuration fields – SMS Low Balance

This table describes the function of the field in the Configure SMS Low Balance node screen.

Field	Description
Threshold	The credit value used to determine when the subscriber gets sent a low credit message.

Configuring the node – SMS Low Balance

Follow these steps to configure the node.

1. Type the credit **Threshold** value for triggering the low credit TXT message.

2. Click **Save**.

Subscriber Spending Limit Report – FN

This node will create the session and associate the policy counters.

The result of the node will be a Spending-Limit-Answer containing a Policy-Counter-Status-Report.

The same node can be used for both initial and intermediate SLR messages.

Node exits – Subscriber Spending Limit Report

This node has one entry and 5 exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	Sent the Apply Charging message. SYIF returned success.

Exit	Name	Cause
2	Invalid Request Type	A second SLR can only be accepted if the Request Type is INTERMEDIATE_REQUEST. If a second Initial Request is received, a DIAMETER_INVALID_AVP_VALUE Result-Code should be sent back to the PCRF.
3	Unknown Session	If the Request Type in the SLR is INTERMEDIATE_REQUEST, but there is no ongoing session, respond with Result-Code DIAMETER_UNKNOWN_SESSION_ID.
4	Unknown Policy Counter	When the Request Type is INITIAL_REQUEST if any of the SLR Subscribed Policy Counter List entries are entries that do not exist on the OCS, respond to the PCRF with Result-Code DIAMETER_ERROR_UNKNOWN_POLICY_COUNTERS. When the Request Type is INTERMEDIATE_REQUEST if any of the SLR Subscribed Policy Counter List entries are entries that do not exist on the OCS, respond to the PCRF with Result-Code DIAMETER_ERROR_UNKNOWN_POLICY_COUNTERS. The existing session should not be affected.
5	Unsupported	Generic/system failure.

Subscriber Spending Notification Report – FN

This node implements the Status Notification Request. It will take a notification from the beServiceTrigger though the OSD service interface following a balance impact action. The DSY interface can then send a Spending-Status-Notification-Request.

Node exits – Subscriber Spending Notification Report

This node has one entry and 3 exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	Sent the SNR, SYIF returned success.
2	Unsupported	Sent the SNR, SYIF returned failure.
3	Failed	Generic/system failure.

Time Remaining

The Time Remaining feature node determines the remaining time available, at call start, based on a subscriber's current cash balance.

This information is stored in configurable profile fields to be used by subsequent nodes in the control plan.

For Example: The Play Variable Part Announcement node will play the total available reservation duration subsequently in the control plan.

Node exits – Time Remaining

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

Exit	Cause	Description
1	Success	Rate details retrieved successfully and profile tags are populated.
2	Rating Failure	Rate details could not be retrieved from the VWS due to invalid wallet state or incorrect rating configuration.
3	Error	An error occurred when attempting to read the feature node configuration or update a profile tag.
4	Unsupported	Either, error / failure, since the required chassis action is not supported by the VWS.
5	Insufficient Funds	A reservation failed on the VWS either because the subscriber's wallet didn't contain a sufficient balance to meet one of: • The minimum call duration • The billing resolution of the associated rating rule

Configuration fields – Time Remaining

This table describes the function of each field in the Configure Time Remaining node screen.

Field	Description
(Total Seconds) Data Type	Indicates the type of profile where the total duration value is stored.
(Total Seconds) Location	Indicates the buffer location of the total duration value, in seconds.
(Total Seconds) Field	Indicates the profile tag where the total duration value is stored. The value is stored in seconds.

Field	Description
(Hours) Data Type	Indicates the type of profile where the total hour duration value is stored.
(Hours) Location	Indicates the buffer location of the total hour duration value.
(Hours) Field	Indicates the duration in total hours for the hour portion of the time remaining.
(Minutes) Data Type	Indicates the type of profile where the total minute duration value is stored.
(Minutes) Location	Indicates the buffer location of the total minute duration value.
(Minutes) Field	Indicates the duration in total minutes for the minute portion of the time remaining.
(Seconds) Data Type	Indicates the type of profile where the total second duration value is stored.
(Seconds) Location	Indicates the buffer location of the total second duration value.
(Seconds) Field	Indicates the duration in total seconds for the second portion of the time remaining.

Configuring the node – Time Remaining

Follow these steps to edit the node configuration.

1. For each relevant duration, use the drop down lists to select the profile tags and fields that store the duration value.

   Select the following for each duration type:

   - (Total Seconds) Data Type
   - (Total Seconds) Location
   - (Total Seconds) Field
   - (Hours) Data Type
   - (Hours) Location
   - (Hours) Field
   - (Minutes) Data Type
   - (Minutes) Location
   - (Minutes) Field
   - (Seconds) Data Type
   - (Seconds) Location
   - (Seconds) Field

   For more information about the fields on this screen, see Configuring the node – Time Remaining.

2. Click **Save**.

Tracker Account State Branch

The Tracker Account State Branch feature node routes the call based on the state of the caller's account. The wallet information will be retrieved from the subscriber's tracking domain if the wallet is distributed across separate tracking and charging domains.

Note: If the VWS is used for both the tracking and charging domain and an Account State Branch node is placed in front of the TASB node in the control plan, then the TASB node is ignored. The call will be routed based on the wallet state returned by the ASB node.

Node exits – Tracker Account State Branch

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

Note: These exit descriptions are specific to the responses received from a VWS. You must specify a VWS domain type when configuring the tracking domain.

Exit	Cause	Description
1	Active	The subscriber account is active.
2	Frozen	The subscriber account has been Frozen due to dishonesty.
3	Preuse	The subscriber account has not yet been used.
4	Suspended	The subscriber account is Suspended.
5	Dormant	The subscriber account is Dormant.
6	Terminated	The subscriber account has been Expired.
7	Unsupported	Either, error / failure, or the Domain being used does not support this feature node.
8	Abandon	The caller has abandoned the call.

Configuring the node – Tracker Account State Branch

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

Wallet Life Cycle Period Branching

The Wallet Life Cycle Period Branching feature node allows you to check if the subscriber is assigned to the WLC period of a WLC plan.

Node exits – Wallet Life Cycle Period Branching

This node has one entry and four exits. You may add exits, to match the periods of the specified Wallet Life Cycle Plan. The maximum number of exits is limited to 20.

Exit	Cause	Description
1	Wrong Plan	Subscriber product type is not associated with the configured Wallet Life Cycle Plan.
2	Not in Period	Subscriber account is not currently residing in any of the Wallet Life Cycle periods configured to exit branches.
3	Unsupported	Not all capabilities are met.
4	Error	General error.

Configuring the node – Wallet Life Cycle Period Branching

Follow these steps to configure the node.

1. Select the node you wish to configure.

2. Right-mouse click and **Edit Node Exits** to create the number of branches you require.

3. **Save** and return to the node.

4. Open the node.

   Result: You see the Configure Life Cycle Period Branching screen.

5. Select a **Wallet Life Cycle** plan from the drop down list of available WLC plans.

6. Select the Branch **Number**.

7. Select the WLC period and click **Move to branch>>**.

   Note: You may associate multiple periods with the same branch, but cannot assign a period to more than one branch.

   It is not necessary to assign all periods.

8. When you have assigned all the required periods to the branches, click **Save**.

Wallet State Update

The Wallet State Update feature node sets the current wallet to the configured state.

Node exits – Wallet State Update

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

Exit	Cause	Description
1	Success	The wallet state was updated.
2	Failure	The wallet state update failed.
3	Unsupported	This exit is taken if the wallet state update capability is not supported.

Configuring the node – Wallet State Update

Follow these steps to configure the node.

1. From the **Wallet State** drop down list, select the state to change the wallet to.

2. To exclude the terminated date from the subscriber's SMS notification, select the **No terminated date** check box.

3. Click **Save**.

    Result: The subscriber associated with the wallet may receive a SMS notification, depending on the setting of the notification opt out flag. See *CCS User's Guide*, Adding Subscribers for configuration instructions.