PORTA ONE

Porta Billing®

34

Maintenance Release

Web Reference

www.portaone.com

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Maintenance Release 34
V1.34.6

Please address your comments and suggestions to: Sales Department, PortaOne, Inc. Suite #408, 2963 Glen Drive, Coquitlam BC V3B 2P7 Canada.

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Preface

This document provides a general overview of the PortaBilling® administrator web interface.

Where to get the latest version of this guide

The hard copy of this guide is updated upon major releases only, and does not always contain the latest material on enhancements that occur in-between minor releases. The online copy of this guide is always up to date, and integrates the latest changes to the product. You can access the latest copy of this guide at: **www.portaone.com/support/documentation/**

Conventions

This publication uses the following conventions:

- Commands and keywords are given in **boldface**
- Terminal sessions, console screens, or system file names are displayed in `fixed width font`

Exclamation mark draws your attention to important information or actions.

NOTE: Notes contain helpful suggestions about or references to materials not contained in this manual.

Timesaver means that you can save time by taking the action described here.

Tips provide information that might help you solve a problem.

Trademarks and Copyrights

PortaBilling®, PortaSIP® and PortaSwitch® are registered trademarks of PortaOne, Inc.

Document Objectives

The target audience of this document is system administrators, VoIP engineers, and system or helpdesk operators who will be managing your services via the PortaBilling® web interface.

How to Get Technical Assistance

The dealer from whom you purchased this product is the *first place* you should go for technical assistance. The dealer is usually the most qualified source of help, and is the person most familiar with your system and how this product should be installed. Many dealers have customer service and technical support programs that offer varying levels of support, depending on your needs and computer knowledge.

If your dealer cannot assist you

If you cannot get assistance from your dealer, the vendor provides varying levels of technical assistance.

PortaOne's Customer Support Service (e-mail: support@portaone.com) can supply quick answers to specific inquiries regarding product features and technical questions. You can visit our website (**http://www.portaone.com**) for more information.

Hardware and Software Requirements

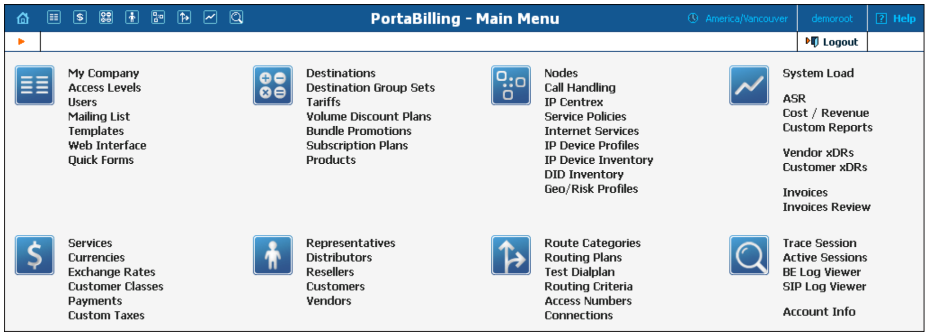
Client System Recommendations

- OS: Windows XP, Vista or 7, UNIX or Mac OS X
- Web browser: Internet Explorer 8.0 (or higher), Mozilla Firefox 3.6 (or higher)
- JavaScript and cookies enabled in web browser
- Spreadsheet processor (MS Excel or OpenOffice Calc)
- Display settings:
  - Minimum screen resolution: 1024 x 768

NOTE: To view downloaded CSV (Comma-Separated Values) files in Windows, please do the following to match PortaBilling's default list separator: My Computer -> Control Panel -> Regional Settings -> Number -> List Separator type ",".

1. Introduction

PortaBilling's front-end design and functionality are simple and intuitive. The web interface of the PortaBilling® home page is the main point of entry to all system objects and tools. Divided into eight functional blocks, the icons below link to pages containing tools for system management, VoIP networking, billing, customer help and generating statistics. Each second-level page contains a link back to the home page.



These are the eight functional blocks:

Management	Global system maintenance tasks, such as adding administrative users, defining access levels and creating mailing lists, templates and quick forms.
Billing	Tasks related to billing, such as managing the list of services provided and the rate plan definition; maintenance of currencies and exchange rates.
Rating	Tasks related to charging customers for services, such as managing destinations, destination group sets, tariffs, products and discount plans.
Participants	Task related to different entities in the system, such as representatives, distributors, resellers, customers, vendors and account management.
Networking	Configuration of network components: registering new nodes (network endpoints) in the system; configuration of IP device profiles; tools for configuring and testing call routing.
Routing	Configuration of various parameters which affect call routing, and a tool to check how routing will be done for a particular destination number.
Statistics	A variety of statistics and reports are available, reflecting the status of the system or providing information on call records, costing and revenue.

Help Desk

Tasks available to help desk staff for assistance in troubleshooting problems that clients may inquire about.

PortaBilling Security

PortaBilling® is compliant with Visa Security Standards.

User interface

- Inactivity logout
- Unconditional logout

User passwords:

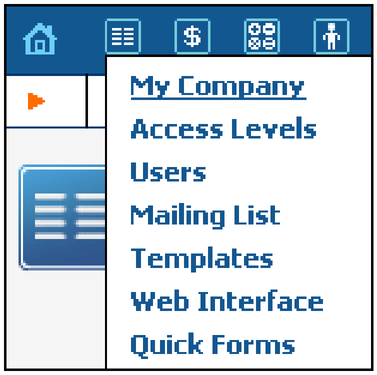
- The minimum password length is six (6) characters and the maximum password length is sixteen (16) characters.
- Passwords include both alphabetical and numerical components.
- Passwords are stored under irreversible encryption.
- It is required that the current password be used before allowing a new password to become effective.
- The user's last four (4) passwords cannot be re-used.
- It is prohibited to change a password within one (1) day of the previous change.
- The initial password must be changed on the first login.
- Passwords must be changed at least once every 30 days.
- Use dictionary checking to restrict password selection.

Credit card information

- Credit card information is displayed as 1234xxxxxxx567
- Credit card information is stored using the same encryption as for the Payment System password.

Common Features

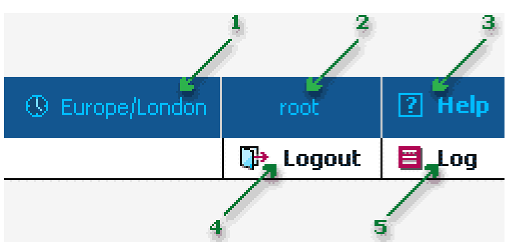
All of the functions available from the home page (main menu) are also available using the drop-down menus:



The **Home** icon on the left also contains a menu with shortcuts to all the other PortaBilling® interfaces:

Admin – Shortcut to this interface; same result as clicking the **Home** icon
Customer Self-Care Portal – Customer self-care interface
CC-Staff – Customer Care Staff interface
Account Self-Care Portal – Interface for account owners (end-users)
Vendors – Interface for your termination partners
Representatives – Interface for your sales agents or distributors

The top right-hand side of the interface provides users with the following information:



1. The time zone where the current user operates. Click on this link to select a time zone for your current session.
2. Login name of the user currently logged in.
3. Context help for the current screen. Click this link and the Help window will pop up.
4. Logout button. Used to end the current session or, when necessary, to re-login as another user.

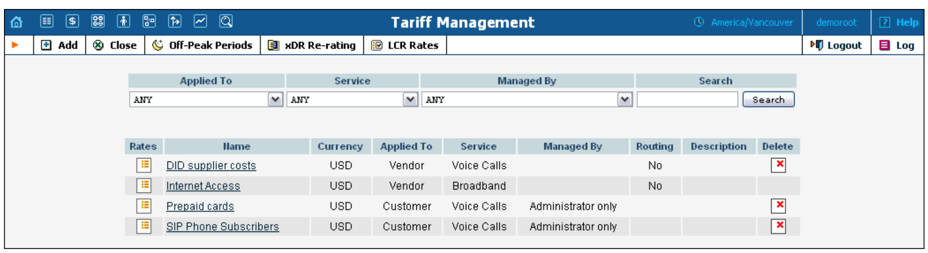
5. Log button. This link is only available to users with corresponding access rights and where applicable. Clicking it will open a window showing all logged activities performed on the current screen.

The toolbar often also shows a list of available actions relative to the current page:

This toolbar acts as the equivalent of the "File" menu for the application, i.e. the usual location for the "Save," "Close" and "Add" operations.

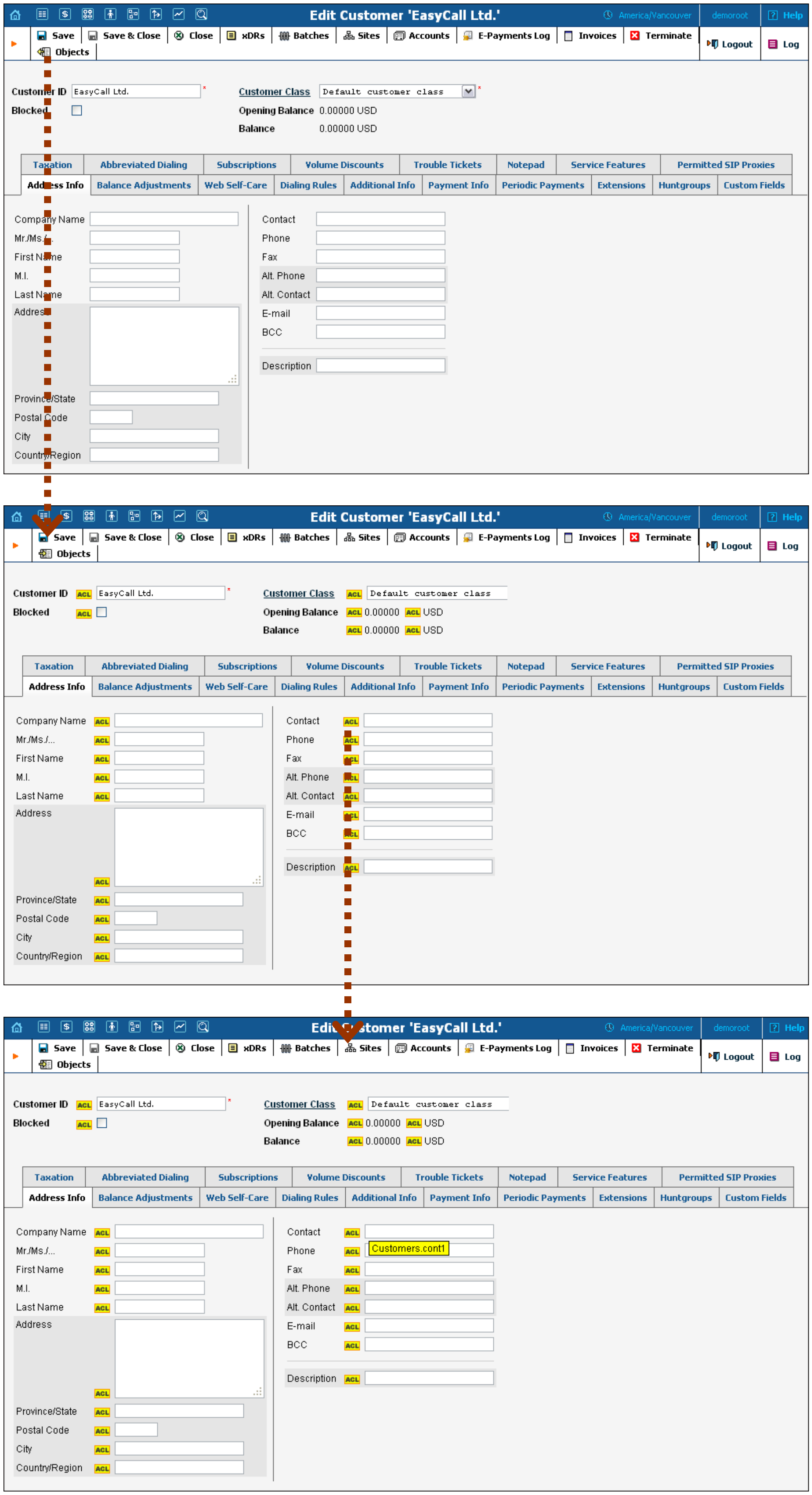
Delete an object in the database

If you see the icon next to an object name in the list of objects, this means it can be deleted from the system. Note that only objects which are not used elsewhere in the system may be deleted. For instance, in the screenshot below, the **DID supplier costs, Prepaid cards** and **SIP Phone Subscribers** tariffs can be deleted, whereas the rest of tariffs are being used by some product or connection.

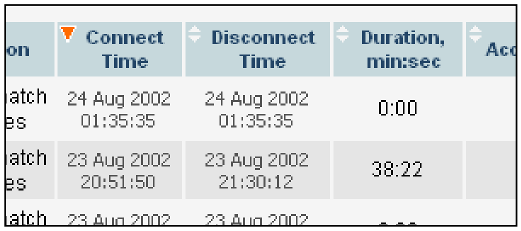


Show objects

The **Objects** icon is only available to the Root user; when selected next to any web element (such as a data field or select menu) it displays an **ACL** control. Move your mouse over the ACL control for the given element to see the object properties, as illustrated below. These object properties can be used by the administrator when configuring access levels for certain users in the system. See the **Access Levels** section for more information.


Edit Customer 'EasyCall Ltd.'
America/Vancouver
demoroot
Help
Save
Save & Close
Close
xDRs
Batches
Sites
Accounts
E-Payments Log
Invoices
Terminate
Logout
Log
Objects
Customer ID
EasyCall Ltd.
Customer Class
Default customer class
Blocked
Opening Balance
0.00000 USD
Balance
0.00000 USD
Taxation
Abbreviated Dialing
Subscriptions
Volume Discounts
Trouble Tickets
Notepad
Service Features
Permitted SIP Proxies
Address Info
Balance Adjustments
Web Self-Care
Dialing Rules
Additional Info
Payment Info
Periodic Payments
Extensions
Huntgroups
Custom Fields
Company Name
Mr./Ms./...
First Name
M.I.
Last Name
Address
Province/State
Postal Code
City
Country/Region
Contact
Phone
Fax
Alt. Phone
Alt. Contact
E-mail
BCC
Description
ACL
Customers.cont1

Sorting tables



on	Connect Time	Disconnect Time	Duration, min:sec	Acc
atch es	24 Aug 2002 01:35:35	24 Aug 2002 01:35:35	0:00	
atch es	23 Aug 2002 20:51:50	23 Aug 2002 21:30:12	38:22	
atch	23 Aug 2002	23 Aug 2002		

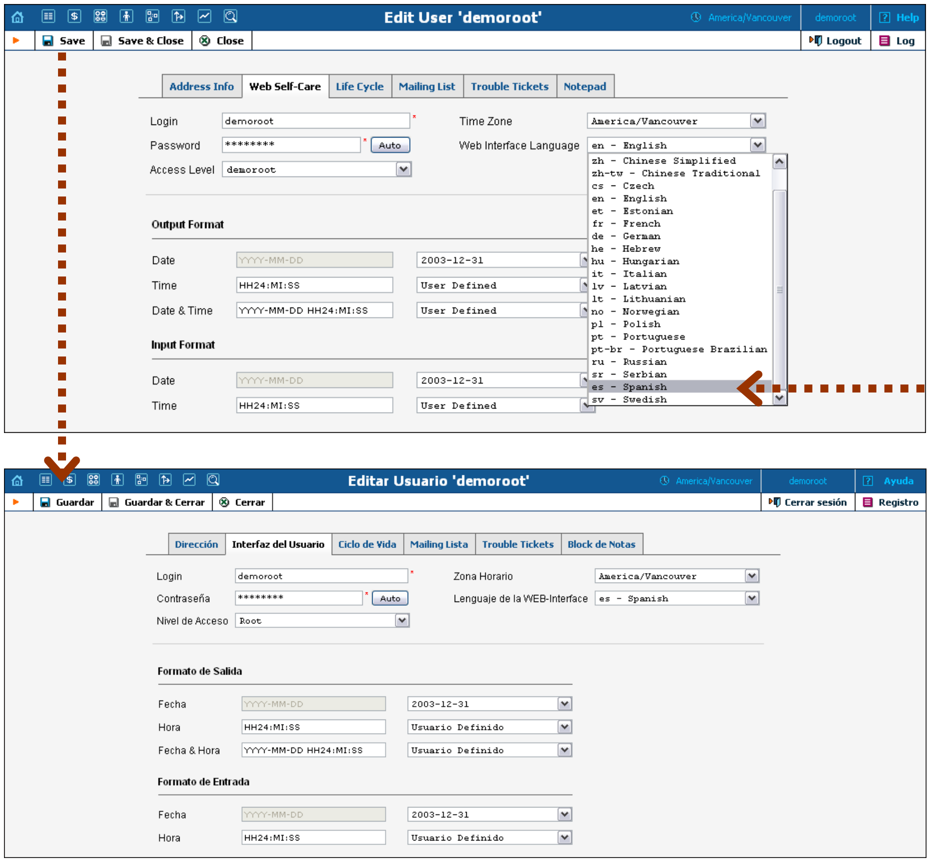
This feature is available for all xDR browsers in order to sort the displayed information according to different criteria, where necessary. The table header cell with the orange triangle shows the sorted row. A triangle pointing downward indicates descending order, while a triangle pointing upward means ascending order.

Sorting is available for all columns with a bi-directional white arrow in the top left-hand corner of the header cell. To sort a column, simply click on the header; click the same column again for the opposite sorting order.

Another handy feature for sorting tables is that the table header is always visible, even if you scroll to the bottom of a large table which does not fit completely on the screen.

Multiple languages

PortaBilling® uses a flexible and extensible localization system. Every user of the system (admin user, account, customer, vendor, customer care admin) can choose the language of the web interface for his session. This does not, of course, affect other users; thus user John can work with the system using English as his interface language, while user Peter can make use of Chinese simplified as his language. Currently, PortaBilling® supports such commonly-used languages as Arabic, Chinese, French, German, Portuguese, Russian and Spanish, in addition to English. New languages may easily be added on request; please contact PortaOne to obtain the XML template files if you would like to perform the translation yourself.



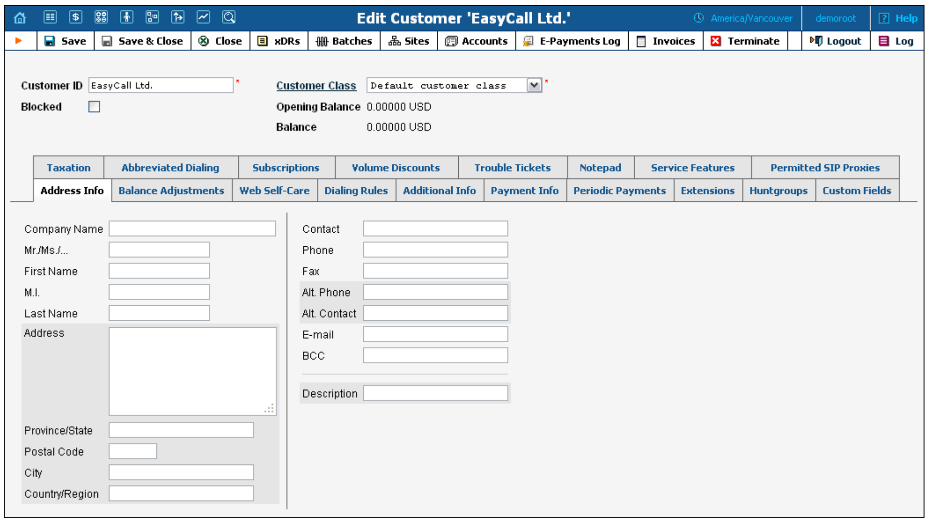
Currently the following languages are supported:

- Arabic
- Chinese (traditional and simplified)
- Czech
- English
- Estonian
- French
- German
- Hebrew
- Hungarian
- Italian
- Latvian
- Lithuanian
- Norwegian
- Polish
- Portuguese (and Brazilian Portuguese)
- Russian
- Serbian
- Slovenian
- Spanish

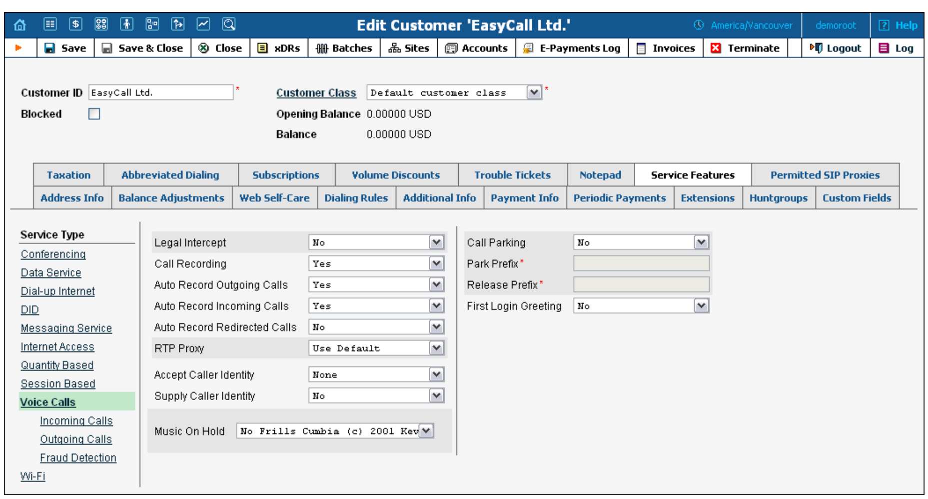
- Swedish

Tab controls

Some forms (e.g. customer or account information) contain so much information that it is not feasible to display it all on a single screen. The standard practice in this case is to divide the information between multiple tabs, each of which contains only a portion of the information and can be individually selected for display. To provide a better user experience with a high number of tabs, PortaBilling® provides two rows of tab controls.

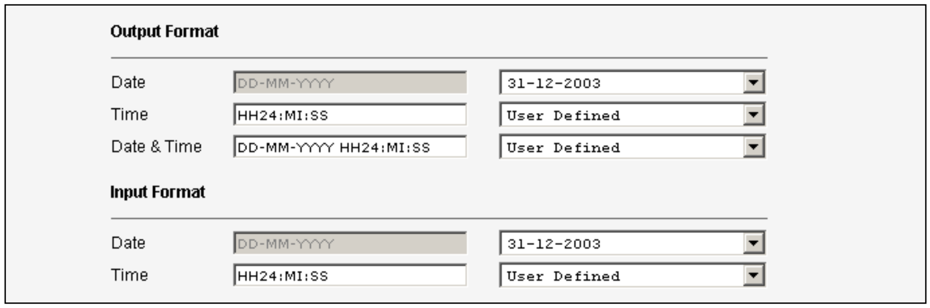


When you click on a tab's name, it is selected (black font on a white background) and you can see the associated information. Note that even if a tab from the upper row is selected, the row order does **not** change, and all the tabs stay in their original location. Thus you can always remember where a particular tab control is located on the form; see below for an example where a tab from the upper row has been selected.



Date & Time format

PortaBilling® allows users to define both the input and output formats for date and time.



Making changes to the date and / or time format on this page enables users to enter dates and times in the desired format throughout the entire PortaBilling® web interface. Correspondingly, all pages generated at a user's request will contain the date and time in the previously set-up format.

Date / Time format strings are composed using specifiers that represent the values to be inserted into the formatted string.

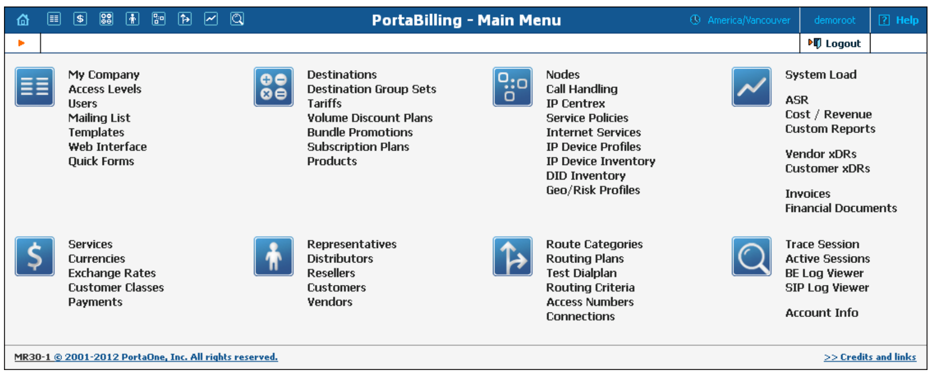
In the following table, the specifiers are given in upper case. Formats are case-insensitive.

Specifier	Value	Description
Date		
DD	01-31	Day of the month
D	1-31	Day of the month without a leading 0
MM	01-12	Number of the month
MON	Jan-Dec	Name of the month
MONTH	January-December	Full name of the month
YYYY	2003 +	Year
YY	00-99	Last two digits of the year
Time		
HH, HH24	0-24	Hours
HH12	0-12	12-hour time format; requires AM/PM specifier
MI	0-60	Minutes
SS	0-60	Seconds
AM, PM, AM/PM	AM, PM	
Separators		
A separator can be any symbol except for letters and digits, or may be left blank		

Example	Value
DD/MM/YYYY	12/03/2003
MON-DD-YY	MAR-12-03
HH:MI:SS	12:30:00
HH12 MI:SS	WRONG! AM/PM specifier is missing
HH12mi pM	1230 AM

Current release and build information

In the bottom left corner of the main menu screen, you can see information about the maintenance release and build of the software currently installed, e.g. `MR30-1` means "Maintenance Release 30" and "Build 1."

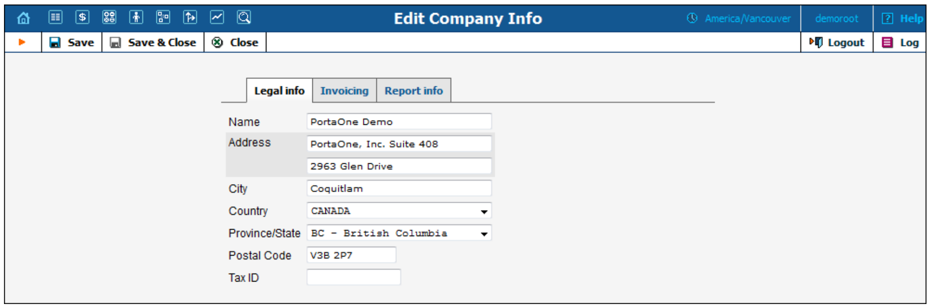


2. System Management

My Company

The **My Company** info screen allows the administrator to maintain corporate information relating to your business. This data will be included on reports such as invoices.

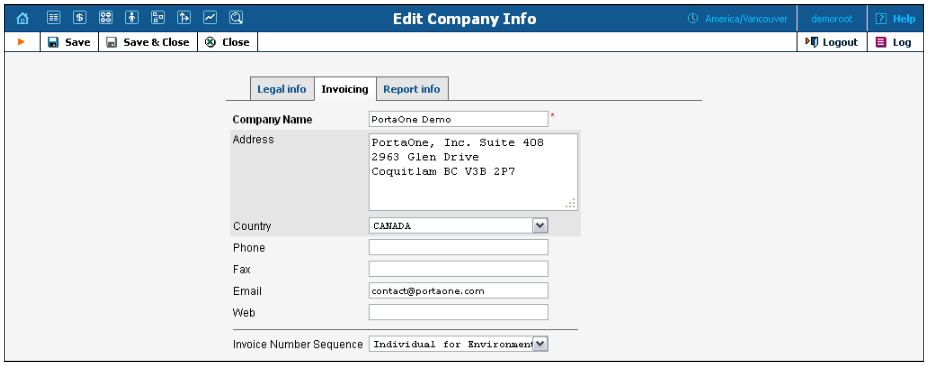
Legal Info



The Legal Info tab allows you to enter information about your company that could be used for any legal transactions, e.g. for taxation purposes.

Field	Description
Name	Proper, legally-recognized form of the company's name.
Address	Address where this company name is legally registered. Two lines are provided.
City	City in which the company is legally registered.
Country	The country in which the company is legally registered.
Province/State	The province or state where the company is registered may be selected from a drop-down list, depending on the Country option selected.
Postal Code	Postal code for the company's registered location.
Tax ID	Locally-designated tax number.

Invoicing

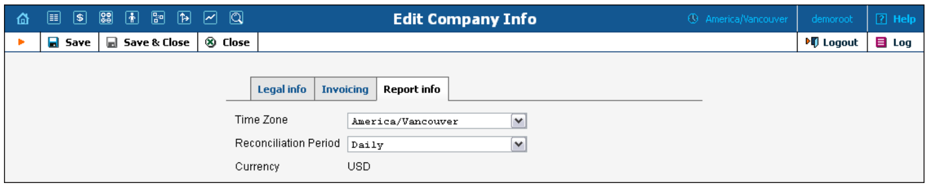


The information provided in the **Invoicing** tab is typically used on reports as the primary point of contact for your vendors and customers. This information is the same as that which appears on your letterhead and business cards, for example.

Field	Description
Company Name	The conventional form of your company's name. (For example, "EasyCall, Inc.")
Address	Street address of the company.
Country	The country may be selected from a drop-down list.
Phone	Primary telephone number for the company.
Fax	Primary fax number.
E-mail	Primary e-mail contact for the company. If defined, this email address will appear in the From: field of all outgoing emails, e.g. statistics / invoices or low credit warnings sent to your customers.
Web	Web address of the company.
Invoice Number Sequence	PortaBilling® can generate invoices for all customers with sequential invoice numbering distributed throughout the environment. In some cases, you may want to have more than one sequence of numbers. For example, your legislation may demand strict sequential invoice numbering for every customer or reseller. Select an invoice number sequence that will be used by default for the whole environment: • Individual for Environment – sequential invoice numbering throughout the environment • Individual for Reseller – sequential invoice numbering throughout the environment for direct customers, distributors and resellers, though the reseller will have his own

	sequential numbering for all of his subcustomers • Individual for Customer – every customer (direct customer, distributor, subcustomer and reseller) will have his own sequential numbering

Report Info



The data contained in the Report Info tab may be used for any financial reports, e.g. for invoicing or taxation purposes.

Field	Description
Time Zone	Time zone in which global reports for the environment (e.g. Cost / Revenue Report) will be generated.
Reconciliation Period	Defines how frequently the global reports (e.g. Cost / Revenue Reports) will be generated. This will also set up the periodicity of the **Unresolved xDRs**. (See the *Statistics* section below.)
Currency	The company's internal currency. You can use different currencies for your customers or vendors, but Cost / Revenue Reports will be generated in this currency. The value for this parameter is set permanently for the new environment, and cannot be changed later.

Access Levels

Introduction to the ACL System

Different types of users have different responsibilities within the billing system. Some users may not be allowed to use or see certain portions of the system. To this end, PortaBilling® supports the concept of **Access Control Lists** (ACL). ACLs allow the PortaBilling® administrator to decide, for example, that a particular sales representative can look at customers' data, but cannot create new customers.

ACLs allow you to control what users of your site can and cannot do. Without such restrictions, it is almost impossible to guarantee that users will see or change only the information that they are allowed to.
There are default ACLs defined in the PortaBilling® system. You can use default ACLs or create new ones to fit your needs.

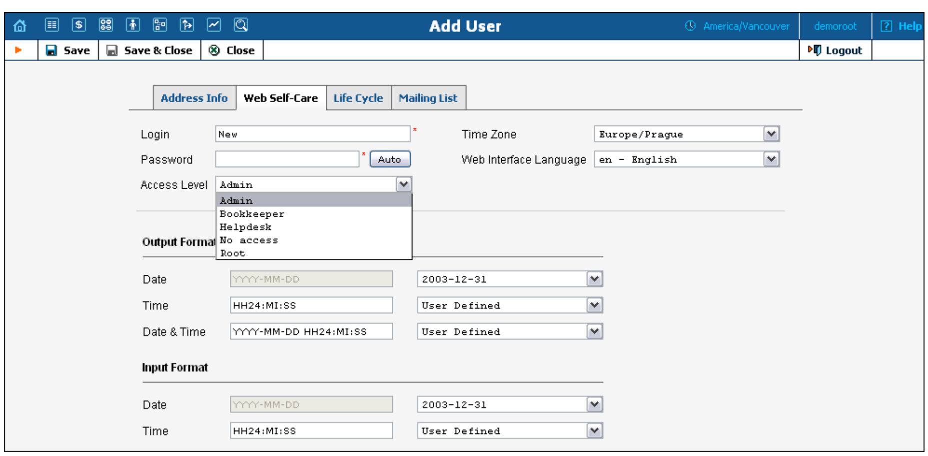
ACL Types

An access level can be of the following types:

- Account (to be applied to your account)
- CC Staff (to be applied to your customer care support)
- Component (cannot be assigned to users; used only as a building block to construct other access levels)
- Customer (to be applied to retail customers or sub-customers)
- Distributor (to be applied to your distributor)
- Representative (to be applied to your representative)
- Reseller (to be applied to your resellers)
- User (access level for users of the admin interface)
- Vendor (to be applied to your vendors)

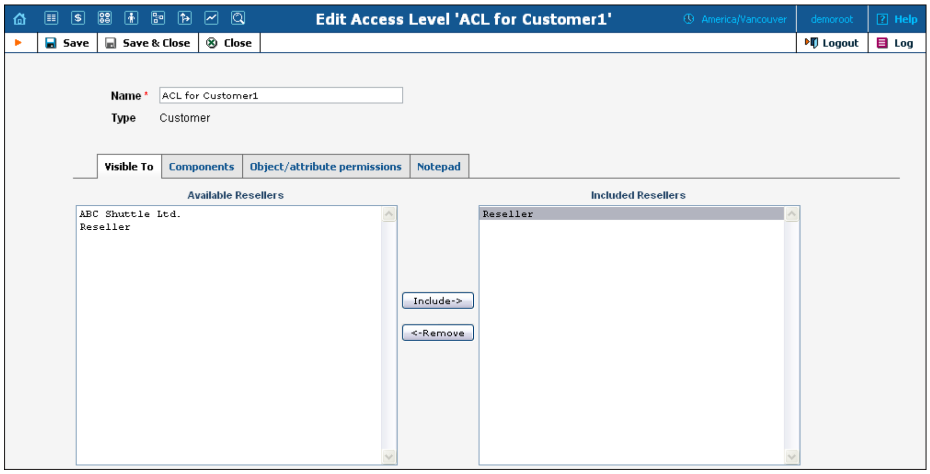
These access levels are composed of **permissions** and, optionally, other **components (as dependencies)**. Permission is a basic unit in the ACL system.

Newly created ACLs will be available in the **Access Level** select menu of the corresponding form when creating a new object or modifying an existing object's details. For instance, a User ACL will appear in the **Access Level** select menu of the **Add User** form (see below), a Customer ACL will be available when creating or editing a customer, and so on.



ACLs' Visibility under Reseller

Normally you would not want reseller A to be able to use ACLs, which were designed for reseller B. To ensure that this never happens, ACLs are not visible to resellers by default. To allow a certain reseller to use the ACL, include this reseller in the ACL's **Visible To** tab:



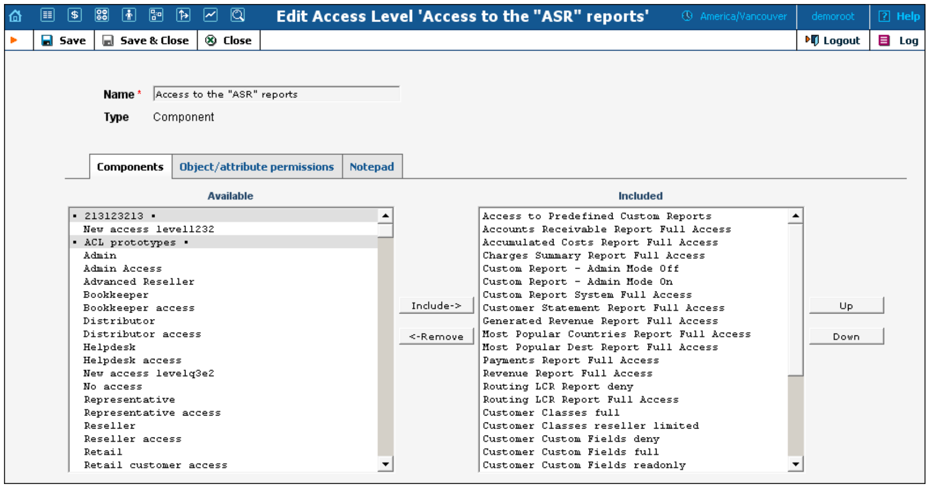
Visibility can be applied for Customers, Accounts, Representatives and CC Staff ACLs.

Components

As was mentioned before the system includes a set of default ACLs that consists of components. These are used as a building block for constructing other access levels. Components will be made up of zero or more permissions, and can include other components (as dependencies). If access level ACLX includes access levels ACL1, ACL2 and ACL3 (or, in other words, is *derived* from ACL1, ACL2 and ACL3), then ACLX will contain all the permissions defined in ACL1, ACL2 and ACL3 (along with all of the access levels they in turn are derived from).

What happens if there is a contradiction; for example, if ACL1 denies read access to Accounts.password and ACL2 grants it? In such a case, the first available definition will be used. Thus, in the example above, access will be denied according to ACL1, which is first in the list of included access levels. Keep in mind that the sequence of ACLs matching is held top-down. In addition to these, a component has several other aspects.

When editing a component, you will first see a screen as on the following screenshot:



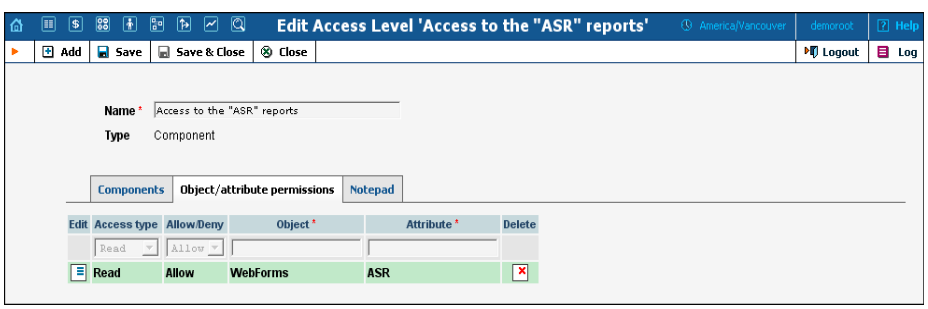
Including components as dependencies within other components gives the system its power. Here we see that the "Admin access" level is defined by over a dozen dependent components. Note that this component does not actually define permission itself, but rather relies on the implementation of its dependents.

By deriving new components from the existing ones in the system, you can implement fine-grain access control and define User ACLs specific to your operational environment.

Permissions

Permission is the fundamental unit of exchange in the PortaBilling® security model. Permissions are composed of an **access type**, **Allow / Deny permission** (whether or not this is an allowed action), **the relevant object**, and **the relative attribute of the object**.

Let's take the example. An access level called "Access to 'ASR' reports" is provided within the PortaBilling® installation. It defines only one permission, which appears as in the following screenshot:



The "Access type" is set to "Read," and the permission to "Allow." This permission applies only to "WebForms" objects which have the attribute "ASR."

There are four possible access types:

- **read** – view the specified resource
- **update** – modify the resource
- **insert** – create new instances of the resource type
- **delete** – remove instances of the resource from the system

The field "Allow / Deny" defines whether this permission has been granted or withheld.

You should never have to provide fine-grain permission information yourself, as all possible permissions are already encapsulated in the components of your PortaBilling® installation. For this reason, we will not discuss the "Object" and "Attribute" fields further in this section. However, it may be useful to know that wildcards can be used in these fields. For example, to allow Read access to all web pages, an ACL could be defined with the following permissions:

Access type:	"Read"
Allow/Deny:	"Allow"
Object:	"WebForms"
Attribute:	"*"

As may be guessed, the "*" in the attribute field means "all attributes."

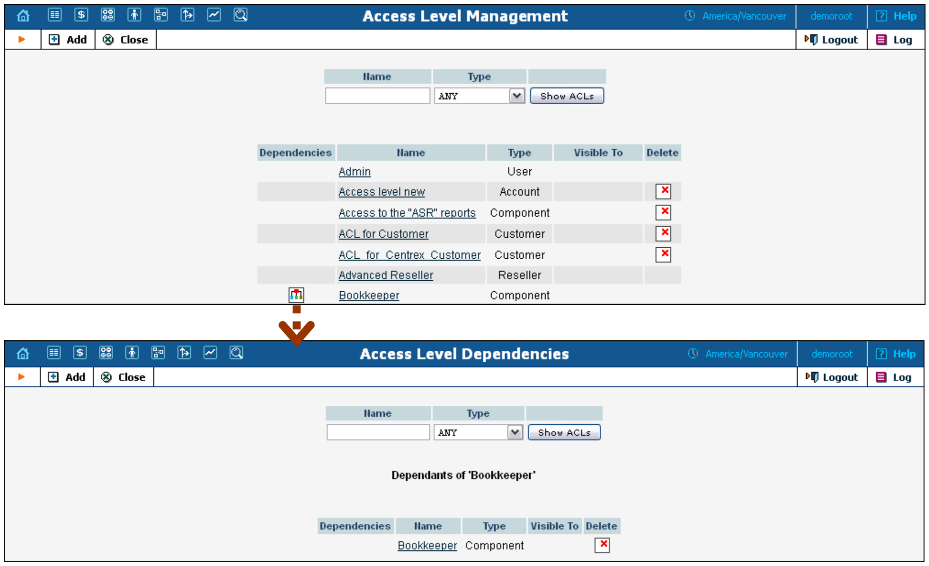
NOTE: Should you find it necessary to modify these basic components or create new ones, please contact PortaOne Support. We can provide you with a list of Object and Attribute resources, or otherwise assist you in maintaining ACLs.

Access Level Management Interface

In this discussion of the ACL system, we have proceeded by starting with the fundamentals and building up your skills from there. Now we will discuss the entry point for ACL management. On the PortaBilling® administrative interface you will find a link to "Access Levels." This link takes you to the Access Level Management main screen pictured below.

This screen is similar to many others in the PortaBilling® system, including a search interface at the top and a results listing at the bottom. (By default, all ACLs are shown in a paged format on this screen.) You may search for ACLs using any combination of Name and Type.

In the results listing, you may also see the **Dependencies** icon and **Delete** icon . ACLs can only be deleted when they are not in use. If a component contains any included components, you will be able to click on the dependencies and see search results for all dependents. The following screenshot shows all dependents for "Accounts full access." Note that some of the dependents have their own dependencies.



Add / Edit a New User ACL

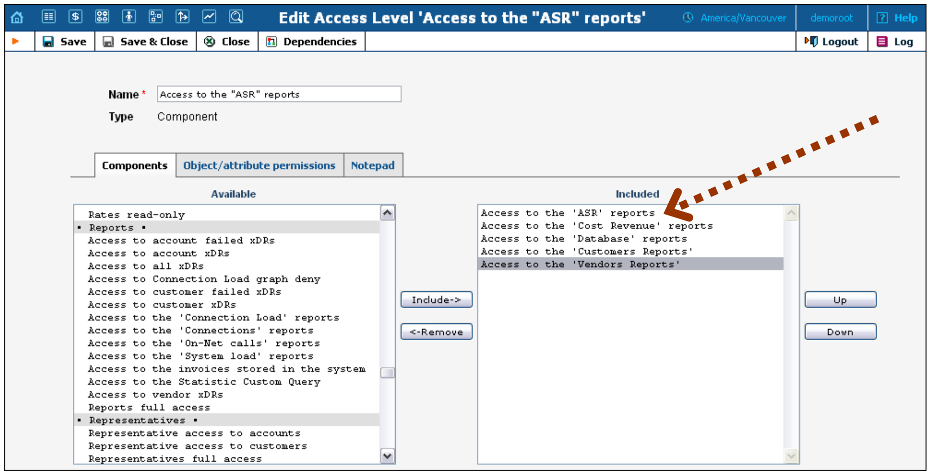
From time to time you will find that the predefined user ACLs (Admin, Helpdesk, and so on) offer too few, or too many, restrictions for a particular class of user. In such a case, it is time to create a new user ACL.

The easiest method is to take an existing access level and create a new one modeled on it, and then modify it to fit your needs. You should examine the permissions granted to the model access level, and verify that you want to grant access to those resources. Next, you can include other components to suit your needs. As a style recommendation, we suggest that you first create a component containing the dependent components you wish to utilize. Finally, create a new user ACL which includes only this new component. Now you can assign this ACL to new users.

The PortaBilling® ACL management system contains style conventions which you would be well-advised to follow:

- The name of a component should be descriptive, based on the actions which it allows. Examples are "Delete a node," "Currencies read-only," and "Access to Vendor Reports."
- By convention, when defining a new user ACL (for example, "DemoUser"), we append "access" to the name of a component ("DemoUser access") that includes dependent components.

We have already talked about the necessary parameters for creating or editing components, but we have not yet discussed component inclusion in detail. Each access level may have zero or more dependent components. These components are ordered, and likewise are applied in order until the first matching permission is reached. Keep in mind that the sequence of components matching is held top-down as shown on the screenshot:



In order to understand this better, we will use the previous example. Suppose a user is trying to view ASR reports. His access level must allow reading of "WebForms.ASR" (object "WebForms," attribute "ASR"). For the sake of simplicity, we will say that his access level includes "A," "B," and "C," where "B" allows this permission, but "C" explicitly denies it. In this case, the user's ability to view these reports is based on the ordering of these components. If "B" appears before "C," then it will work. In the opposite case, he will not have access.

This may sound complex, but in practice the user interface is quite simple. Two columns are shown on the "Components" tab of the edit screen for each access level. On the left, you have a list of the available components, while on the right are the included components. Between these two columns you have the "Include->" and "<-Remove" buttons, which move selected items between the two lists. As for ordering, the "Up" and "Down" buttons on the far right-hand side of the screen allow you to rearrange selected elements of the "Included" column.

You should now have the skills necessary to implement the PortaBilling® security model and customize it to suit your business environment.

Default ACLs

Default user ACLs

PortaBilling® is supplied with the following predefined ACLs:

Name	Description
Root	Super User, read and write access to all PortaBilling®

	objects.
Admin	Like Root user, but with some limitations: - cannot create new users - cannot modify company info - read-only access to Destinations, Currencies, Nodes
Bookkeeper	Read-only access to billing information (Tariffs, Products); can change balances for Accounts / Customers, block / unblock; no access to xDRs; access to reports.
Helpdesk	Read-only access to billing information (Tariffs, Products); can modify Customer and Account parameters; access to Trace Call.

Default customer ACLs

PortaBilling® is supplied with the following predefined ACLs for customers (or sub-customers):

Name	Description
Retail	Access to xDRs, reports and invoices, ability to change customer information (such as password, address info etc), make online payments, access information about all accounts under this customer and view their xDR history.

Default reseller ACLs

PortaBilling® is supplied with the following predefined ACLs for resellers:

Name	Description
Reseller	Ability to set up online payment processors, change rates in the subscriber's tariff, modify parameters of the subscriber's product, create sub-customers and accounts under them, make online payments, and create CC staff accounts.
Advanced Reseller	Same as above, plus read-only access to customer's own tariff (the tariff used by the PortaBilling® owner to charge the reseller).

Default customer care ACLs

PortaBilling® is supplied with the following predefined ACLs for customer care administrators:

Name	Description
Customer Care	Maintenance tasks, such as changing password and personal info, ability to see subcustomer, distributor

	and account information and change service parameters, give refunds (daily and transaction limits applied), make payments towards accounts and in favour of subcustomers and distributors, and trace a call and see the call details.

Default vendor ACLs

PortaBilling® is supplied with the following predefined ACLs for vendors:

Name	Description
Vendor	Access to CDR data and the vendor's information.

Default representative ACLs

PortaBilling® is supplied with the following predefined ACLs for representatives:

Name	Description
Representative	Read-only access to customer information, customer's xDR records, and account information.

Default account ACLs

PortaBilling® is supplied with the following predefined ACLs for accounts:

Name	Description
Account	Access to xDR history, ability to change password and account info, make online payments and recharging using voucher.

Default distributor ACLs

PortaBilling® is supplied with the following predefined ACLs for distributors:

Name	Description
Distributor	Access to xDR history, reports and invoices, access to information about all accounts and customers, ability to change password and customer info, make payments towards accounts and customers, activate inactive accounts.

ACL for the New Self-care Portal

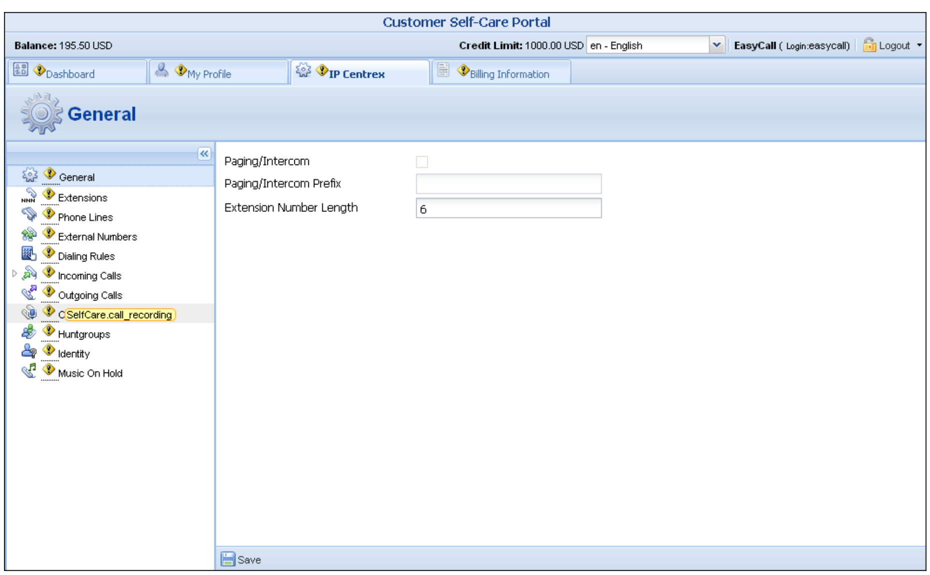
In order to create an ACL for the new self-care portal, follow these steps:

- Open the **Access Levels** page
- Click the **Add** button
- Select *Account* or *Customer* from the **Type** field
- On the **Components** tab include the following components, depending on the ACL type:
    - *Account Self-Care Permissions* and *Account Self-Care* or
    - *Customer Self-Care Permissions* and *Retail Customer Access*
- To restrict user access to certain pages (hide or make read-only) specify the name(s) of these pages on the **Object / Attributes Permissions** tab
- After saving the newly created ACL you will be able to assign it to a Customer or an Account, respectively

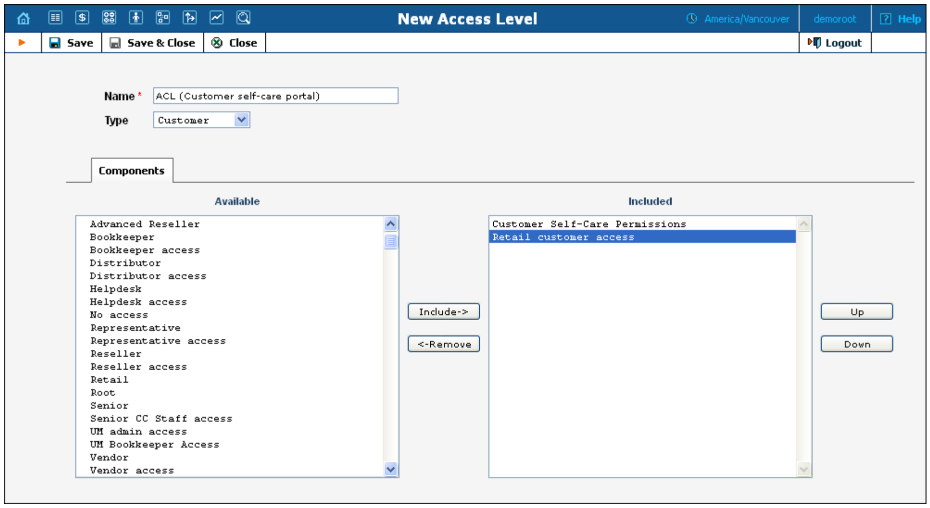
NOTE: You can use test customer / account in order to view the Objects / Attributes of the pages of the new self-care portal. In order to allow this customer / account to do this add the ID of the customer / account into the *ACLTipsForAccounts* or *ACLTipsForCustomers* field respectively on the configuration server web interface.

Let's take an example in order to see how to limit user access to certain pages of self-care portal. For example, if you would like to hide the **Call Recording** tab on the customer self-care portal, follow the steps below:

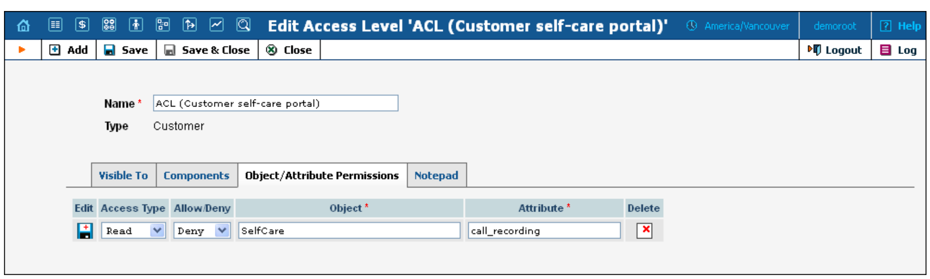
1. Using a test customer, go to the self-care portal and point the cursor at the exclamation mark near the **Call Recording** tab in order to see the Object / Attribute of this page (in our example, the Object is *SelfCare* and the Attribute is *call_recording*).



2. Go to the PortaBilling® web interface and create an ACL for the Customer self-care portal with the following parameters:
    - **Type** – Customer;
    - On the **Components** tab include *Customer Self-Care Permissions* and *Retail Customer Access* components.

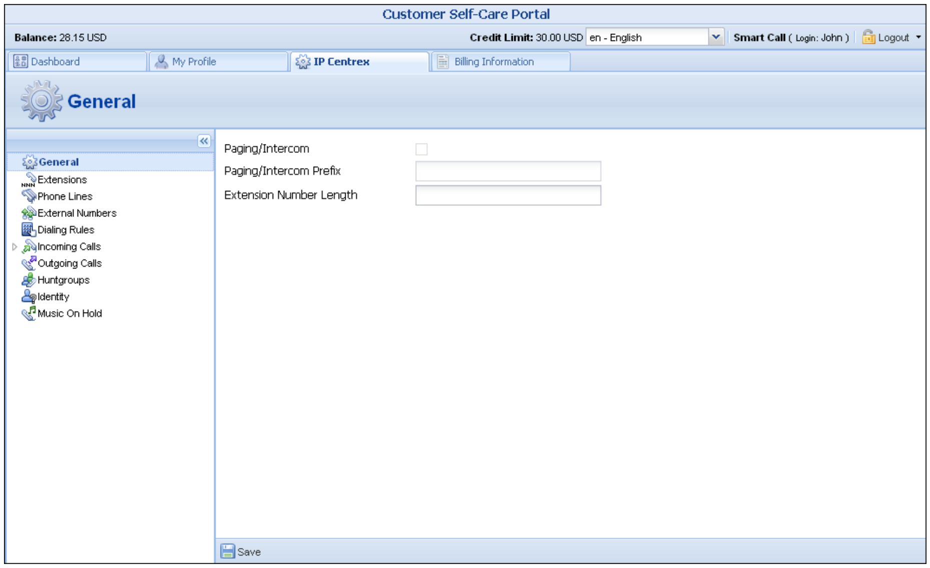


3. Click the **Save** button.
4. Open the **Object / Attribute Permissions** tab.
5. Click the **Add** button and specify the following settings:
    - **Access Type** – Read
    - **Allow / Deny** – Deny
    - **Object** – *SelfCare*
    - **Attribute** – *call_recording*



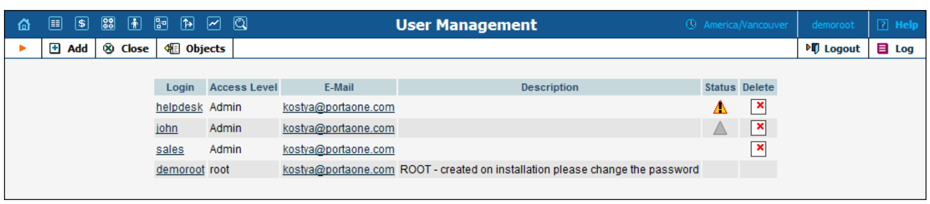
6. Click the **Save** button to save the changes.
7. Assign a newly created ACL to a Customer.

Now the **Call Recording** tab will be hidden within the customer self-care portal.



User Management

The User Management screen shows existing users registered in the system, and also allows you to edit current user information or add and delete users. To add a new user, select the **Add** button from the User Management screen. The user list table contains the following information and operations:

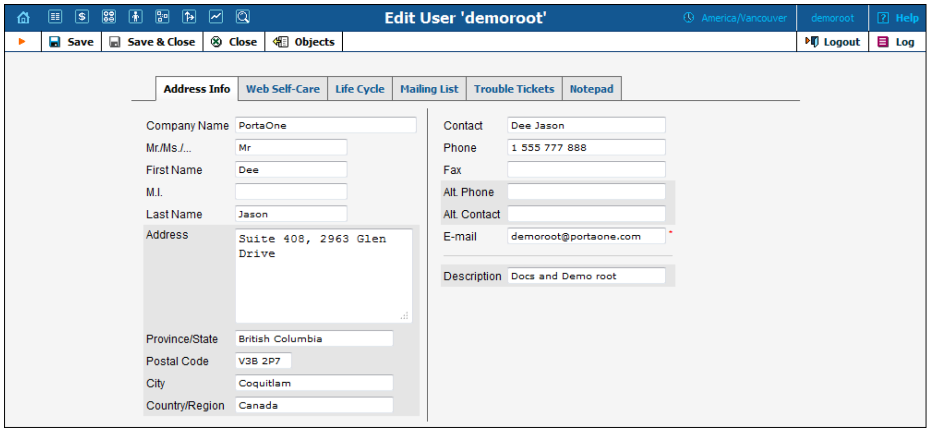


Column	Description
Login	The username for login and user identification. The username provides a link to the edit screen for that particular user.
Access Level	The privilege level or role assigned to the user. See the **Access Levels** section for more information.
E-mail	An e-mail contact for the user. For convenience, this is provided as a link, so you can send an e-mail to the user directly from this screen.
Description	A short description associated with the user.
Status	The status of the user’s account.
Delete	A delete button appears next to all users except for the superusers and the last root user in the environment. This permanently deletes the user from the system.

Add / Edit User

The Add User screen allows you to enter details to create a new user account. The Edit User screen allows you to change details for a particular user account.

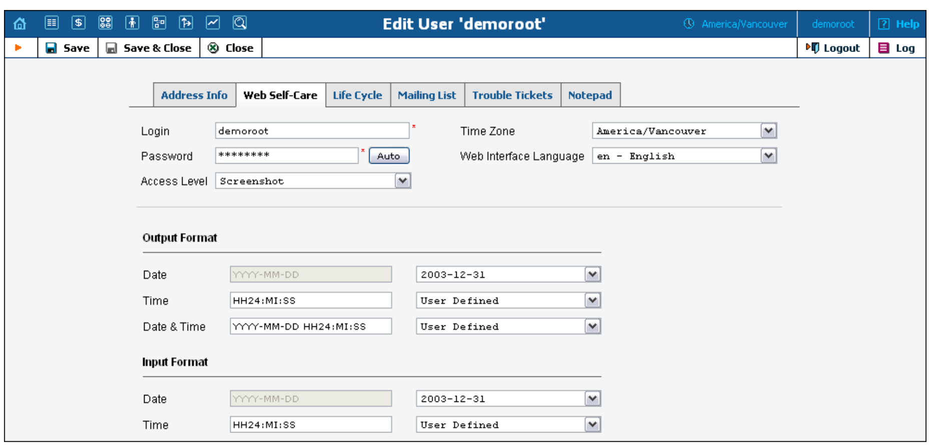
Address Info



Mandatory field for user contact information:

Field	Description
E-Mail	An e-mail contact for this user.

Web Self-Care



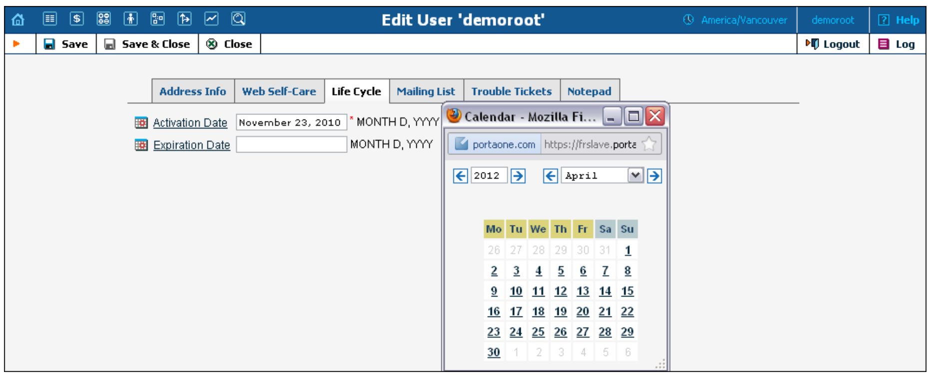
Field	Description
Login	The new user ID to be used at login and elsewhere throughout the system.
Password	The password for this login. A secure and easy-to-remember password may be automatically generated by pressing the "Auto" button.
Access Level	The privileges or role associated with this user. See the

	Access Levels section for more information.
Time Zone	The time zone in which this user will be operating.
Web Interface Language	The language to be used on the admin web interface for this user.

For a description of the input and output formats, please refer to the Common Features section.

Life Cycle

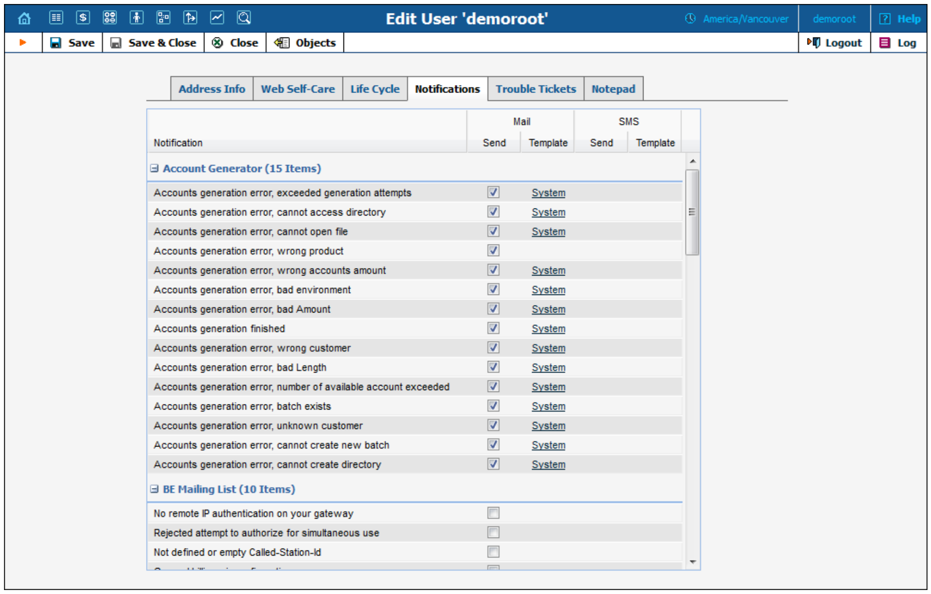
This allows the administrator to set up the user account's activation and expiration dates.



The account will not expire if the Expiration Date field is left blank.

Notifications

Notifications are the text messages (email or SMS) that are sent from PortaBilling® to the users: about accounts generation, custom reports, DID upload, etc. The **Notifications** tab allows you to manage notification templates and define which e-mail and / or SMS notifications to send to the users.



Among the available notification types and their conditions of activation are as follows:

Notification Type	Description
Adaptive routing penalty threshold reached	The adaptive routing module detects that some qualitative parameters of the connection have dropped below the specified acceptable level. The vendor is penalized, and the connection is temporarily moved to the bottom of the routing list.
Adaptive routing warning threshold reached	The adaptive routing module detects that some qualitative parameters of the connection have dropped below the specified level.
Error in translation rule	A translation rule could not be properly applied, due to a programming error.
General billing misconfigurations	A debit account made a call that cost more than its available funds; an unresolved call was detected (unresolved calls may be normal when they are on-net calls, but in most cases they indicate connection misconfiguration); and so on.
Mismatch in the Destinations or Rates table	The cost of a call could not be determined, because no matching rate was found in the specific tariff.
Missing critical billing information (Account / Tariff)	A call could not be billed due to missing information (e.g. unable to identify the account which is to be charged for the call).
No currency exchange rate found	Unable to do cost / revenue reconciliation for some calls, since no exchange rate is defined for the base currency and currency used for

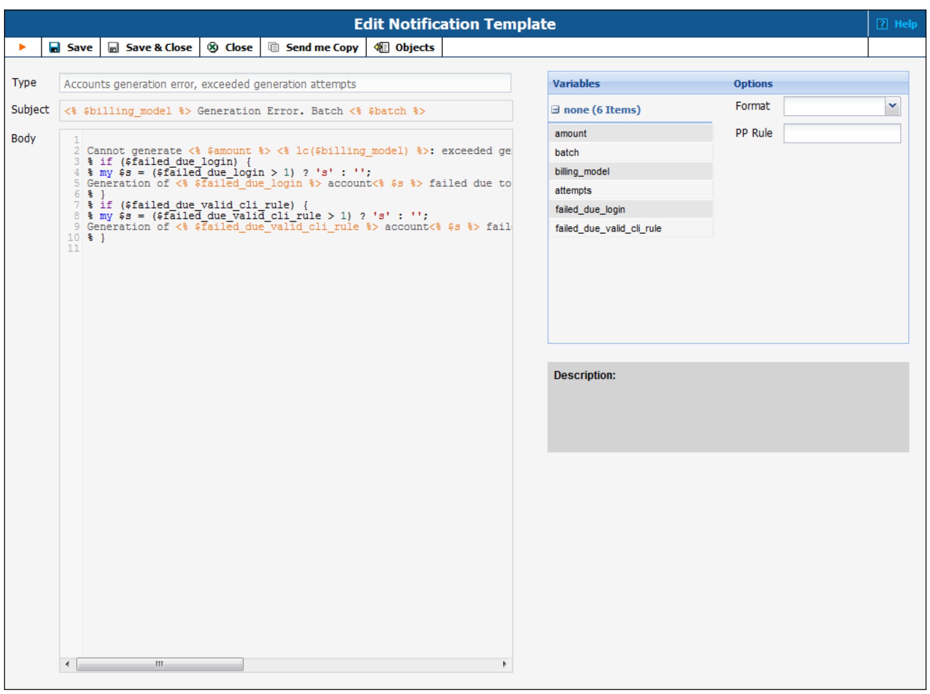
	those calls.
No remote IP authentication on your gateway	It seems that your gateway accepts all incoming VoIP calls. See the *Implement Authentication for Incoming VoIP Calls* section in **PortaSwitch Wholesale and Traffic Exchange Services Handbook** for more details.
No routes to destination	Customer attempted to place a call to a destination, which is covered by his tariff plan – but there are no valid routes for it in the system.
Not defined or empty Called-Station-ID	The Called-Station-ID (DNIS) field is empty in the request, so PortaBilling® is unable to determine which number was dialed. This might happen due to a firmware problem on Quintum.
Periodic Payment error	Unable to perform periodic payment (credit card is blocked or no funds are available).
Profit monitor event detected	Sends an alert if the call cost (amount charged by a vendor) is greater than the revenue (amount charged to the customer).
Rejected attempt to authorize for simultaneous use	Sends a notification if PortaBilling® cannot establish one more simultaneous session due to overdraft protection.
Replication problems	Database replication may be performing poorly or not at all, so that CDRs for the most recent calls are absent from the slave database.
Task rejected	A deferred task (such as account generation) could not be run.
Time problems (NTP / Format / Suspicious)	This alert may be generated if the time in the accounting record is in the wrong format or seems suspicious (such as a point in the future, or one too far in the past).
User error report	Your customer support may discover a problem they are unable to solve themselves (e.g. only the network administrator can do it) and thus may need to escalate this problem to your technical staff. When they send an error report from the web interface, it will be received by the admin users subscribed to this mailing list.

To add different notifications for a specific user, select / clear one or more check boxes next to the Notification type.

Column	Description
Notification	The notification type.

Mail	• Send – If this is checked, the corresponding notification will be sent to user via email. • Template – This shows the template status: **System** (the default template) or **Custom** (the modified one). Upon clicking on the **Custom / System** link you will be redirected to the **Edit Notification Template** page.
SMS	• Send – If this is checked, then the corresponding notification will be sent to your users via SMS. • Template – This shows the template status: **System** (the default template) or **Custom** (the modified one). Upon clicking on the **Custom / System** link you will be redirected to the **Edit Notification Template** page.

The **Edit Notification Template** page allows you to modify the subject, body, format and post processing rule for variables (**PP Rule** on the web interface).

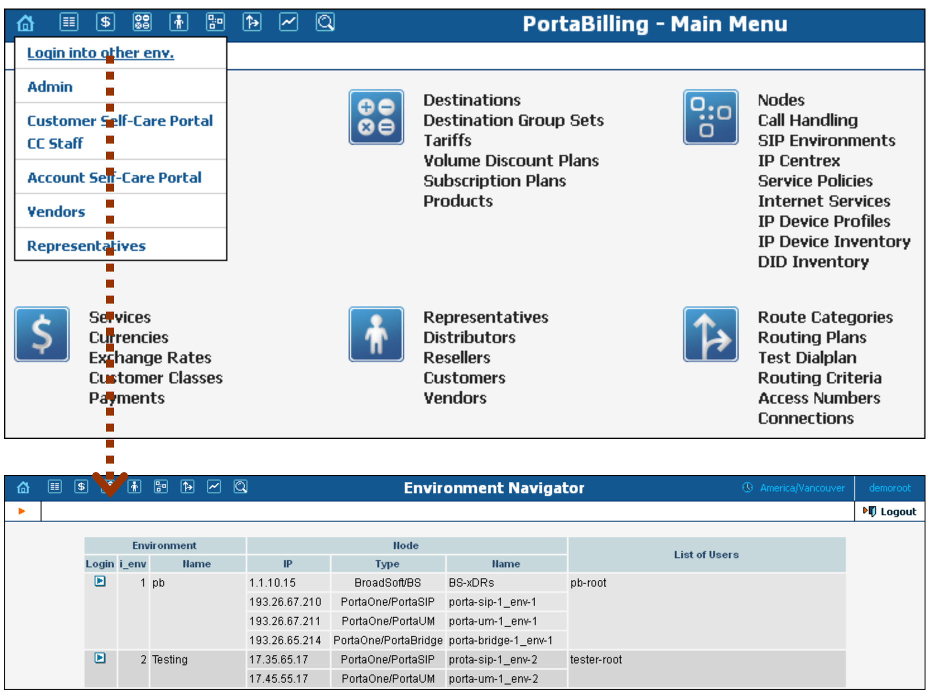


Field	Description
Type	The notification type.
Subject	The subject as it appears in an email to a customer.
Body	The content of the message.
Variables	Shows a list of available variables.

Options	• Format – the format of the variable. • PP Rule – post processing rule for variables that can be specified using regular expressions in Perl.
Description	The description of the selected variable.

Superusers

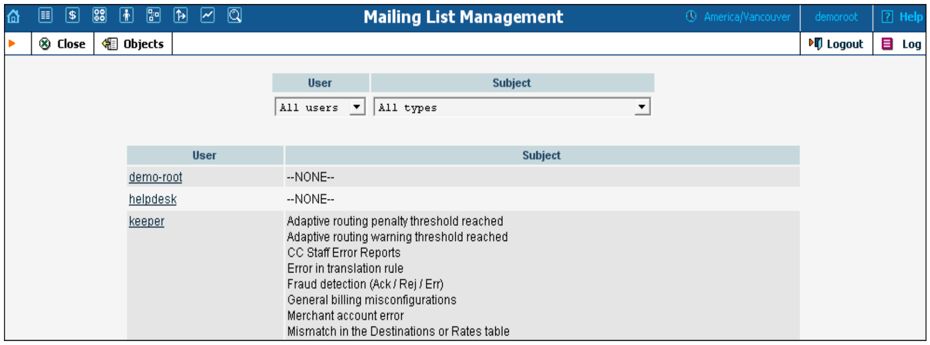
"Ordinary" administrator-level users can be promoted to "superuser" status – this is done by adding their numeric IDs (i_user) to the Superusers variable that is managed from the web interface of the PortaSwitch configuration server. Superuser status permits certain operations that ordinary users do not have access to. One of the most important abilities of a superuser is switching between virtual environments. This is why superuser status cannot be configured via the web interface: by giving a virtual environment to someone, you allow him full control of that environment. However, he should not be able to re-configure his account to "jump" into another environment.



NOTE: Only user, who is on the superusers list, can modify the information about another superuser.

Mailing List

The Mailing List Management page allows you to define which e-mail alerts are to be sent to different users (see **Mailing List**).



Select a user from the **User** drop-down list to view which mailing lists a particular user is subscribed to. Select a mailing list from the **Subject** drop-down list to view all users subscribed to a particular mailing list.

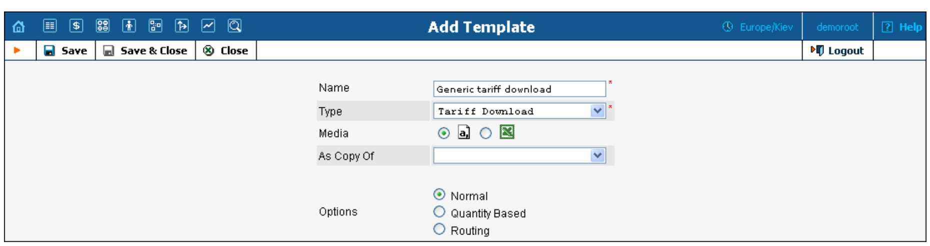
Templates

The purpose of templates is to maintain all data downloaded from the system. Templates automate the processing of user input and create customized output in various data and media formats.

Read more about using the templates functionality in the PortaBilling® Template Guide, available for download from: www.portaone.com/support/documentation/

Add a New Template

To add a new template, select the **Add** button.



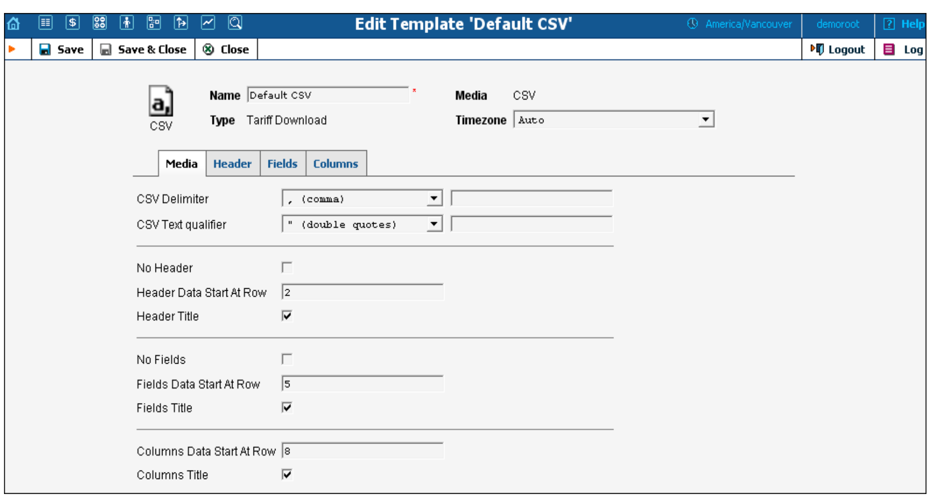
Field	Description
Name	The logical name of the template object.
Type	One of the following: • Custom Invoice File • Invoice • Tariff Download
Media	One of the following media types:

	CSV – Comma Separated Values (only applicable for templates of the **Tariff Download** type) XLS – Excel (only applicable for templates of the **Tariff Download** type) Print format (HTML, PDF; only applicable for templates of the **Invoice** type)
As copy of	PortaBilling® is supplied with a set of default templates for each type of document for information download. Documents in print format, e.g. invoices, can only be "downloaded" from the system. After selecting **Type** and **Media**, the list will be populated with the default template (always at the top of the list); all existing templates with the current Type and Media formats will be listed under the "-----" separator.
Options *(only for Tariff Download type)*	Permits the changing / altering of the default column set for the created template. The following options are available: • **Normal** – This is a traditional-style template with a default column set. • **Quantity Based** – The template has a set of fields that are typical for the Quantity Based tariff (e.g. Minimum Threshold, Rounding, Unit Price Initial, etc.). • **Routing** – When the option Routing is selected, the fields Route Category, Preference and Huntstop are enabled by default.
Pages *(only for Type Invoice)*	• **A single page with totals only** – This is a traditional-style invoice. It consists of a single page with an invoice header (your company name, customer name, etc.), invoice fields (invoice number, invoice date), and invoice footer (subtotal, total). • **First page with totals + usage details attached on additional pages** – This template's first page is identical to the **single page with totals only** invoice template. Additionally, it contains multiple pages with details of calls related to the invoice.
Subtotal per Service *(only for Type Invoice)*	This allows you to calculate (and respectively, show in the invoices) subtotals per service.

Taxation *(only for Type Invoice)*	This allows you to choose the taxation method. The following options are available: • **Via Taxation Plug-in** (The plug-in module will be used to make tax calculations.) • **Tax Already Included in xDRs** (In this case, back calculations from the total amount are made. If this option is selected, a list of taxes with an inline-editor will allow you to create, edit and delete up to 5 types of taxes.)
Managed By *(only for Type Invoice)*	By default – administrator only. The template can be assigned to a reseller so that it is visible in the list of available invoice templates on the Customer Self-Provisioning web interface.
Template File (*only for Custom Invoice File*)	This allows you to upload a previously designed invoice template from a HTML / CSS file. This simplifies the process if the invoice template is created by an external design agency (that does not have access to PortaBilling®) and allows advanced template customizations (e.g. arrangement of data to exactly match "legacy" invoices or insertion of dynamic content such as banners) by third-party developers.
Image (*only for Custom Invoice File*)	You can add an image to (or update an image in) the invoice template. For example, to upload an *image.gif* file and display it in customer invoices, the template should contain code similar to the following `<img src="[% image_path %]image.gif"/>`.

To enter editing mode for this template, save your input using the **Save&Close** button. Next, select the template you would like to edit from the Templates window.

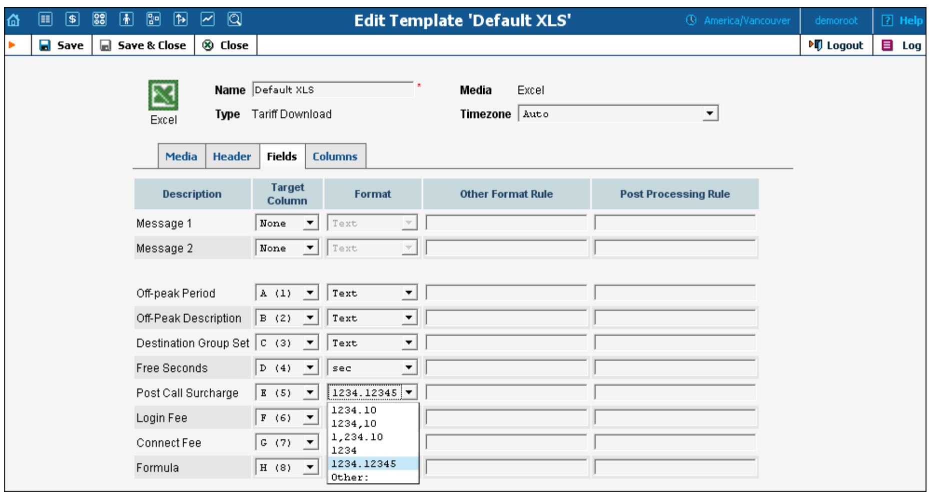
Edit Template



Once a new template is saved, the document's Media, Type and Managed By properties cannot be changed.

Each Template object consists of several logical components. For example, the Invoice Template's components are Media, Header, Fields, and Footer.

The Media tab is present for all types of templates, and shows the media available for download. For Tariff download in CSV format, it is important to know what delimiter was used, whether there is a header, or in what row the tariff information starts. For Invoices, the Media tab contains a link to the PortaBilling® Layout Designer, which allows you to customize the appearance of your invoices and receipts.

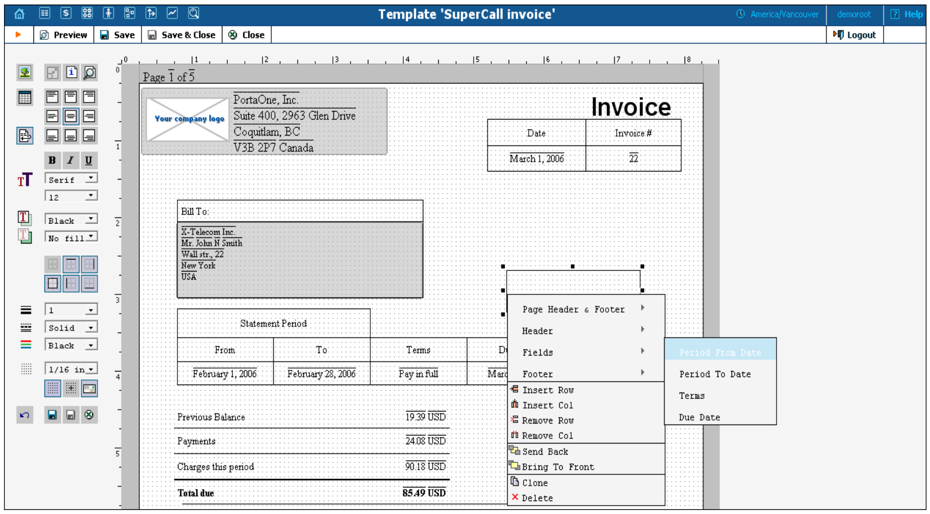


The content of the Header, Fields, Columns, and Footer tabs is arranged in a similar way, and allows flexible mapping of information related to user documents and information in the PortaBilling® database.

Column	Description
Description	Description of template components.
Target Column	Defines the mapping of template information to the original / destination document.
Format	Data format. Choose a format from the list, or choose Other if the desired format is not available. Provide a format definition in the following field.
Other Format Rule	Perl code. Active only if Format = "Other:"
Post Processing Rule	Perl code.

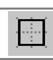
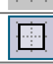
Layout Designer

The Layout Designer allows you to customize the appearance of all types of printed output in PortaBilling®.



Layout Designer (LD) Quick Start

To launch, click the **Layout Designer** button on the Media tab in the Template Management window. The sliding toolbar on the left side provides most of the controls for manipulating content in the editor window. There are three different states for most of the toolbar icons: normal, active, and not available.

Icon state	Description
	**Normal** – Click to activate
	**Active** – Click to deactivate
	**Not available**

Icon	Description
	**Add Picture:** Click to select a picture (e.g. your company logo) from a file select window. Click the **Open** button to place the picture on the worksheet. To remove the picture, right-click on it and choose **Remove.** Another way of deleting a picture is to press **Delete** on your keyboard.
	**Lock Aspect:** Fixes image proportions during scale operations.
	**Preview:** Click to preview your work in a browser window.
	**Add Table:** Click to place a table on the worksheet. A table can be removed by using the context (right-click) menu or by pressing **Delete** on your keyboard. Click the table cell to make it

	active. To add another table, click on the worksheet to deactivate the currently active object. Read more about tables below.
	Text Align: A section of nine buttons used to align text in an active table cell.
	Word Wrap
	Text controls: The tools and selects from this section control font attributes such as font style (bold, italic, underline), font family (serif, sans-serif, cursive, fantasy, monospace), and font size.
	Foreground Color: Change the text color by selecting from this list.
	Background Color: Change the color of the active table cell by selecting from this list.
	Border: A section of six buttons for showing or hiding the border of the active table cell.
	Stroke: A section of three controls for changing the active cell's border weight, style and color.
	Grid: On by default; click to turn off the grid.
	Snap to Grid: On by default; click to allow arbitrary positioning of elements on the worksheet.
	Envelope Window: Two half-transparent gray boxes displaying the positions of envelope windows; click to turn off.
	Undo: Click to cancel the last action.
	Save and Close: For convenience in editing the bottom of the worksheet, these controls duplicate the main toolbar controls.

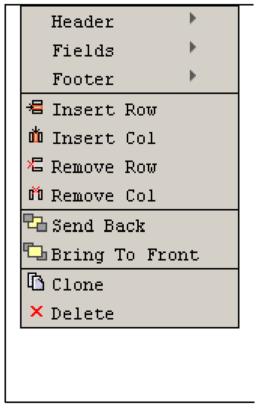
A straight line in the Layout Designer can be simulated by using a table with only one visible border.

Table

The main Layout Designer object is the table, which is a placeholder for all inserted information. A table or a table cell within a table can be moved and scaled by dragging the cell handlers. Double-click a table or a cell within a table to enter cell editing mode, where you can type in or edit a cell's text. To change the attributes of a cell's text, make sure the cell is selected (8 black square handlers are visible) and set the text attributes in the toolbar on the left.

Changing the text attributes of a cell in the toolbar will affect all text in the current cell. To change the attributes of part of the text, enter cell editing mode (double-click), select that part of the text, and use the keyboard shortcuts listed below.

Context Menu

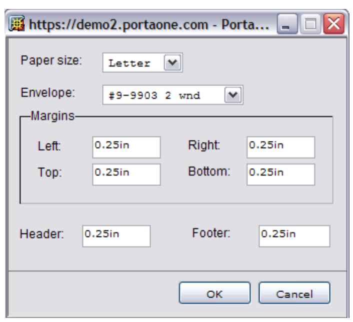


The context (right-click) menu provides you with greater control over tables and other objects, and allows certain data located in the PortaBilling® database to be displayed in the table cell. To show the menu, right-click on a table or cell. The three top elements of the context menu correspond to the template components (tabs); in the case of an invoice, for example, these would be Header, Fields and Footer. Users can also set the order of all objects in the window and clone or delete selected objects.

Select one of the menu elements to activate a submenu containing a list of all the fields specified in the template editing window. The selected item will appear in the selected cell as the item's value. Double-click the cell to enter editing mode; the cell now displays the corresponding variable.

Page / Print setup

The page context menu (right-click on the worksheet) provides access to the Web-Page Dialog for page, envelope and print setup.



Open your browser prior to printing. In your browser's **File** menu, select **Page Setup.** In the dialog window, set up the paper size (A4 or Letter), delete all Header and Footer symbols, and set all margins to zero or a value close to zero.

Envelope Formats: America

Envelope	Envelope Measurements	Window size	Window From Left	Window From Bottom
#6-3/4	3-5/8" x 6-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#7	3-3/4" x 6-3/4"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#7-3/4	3-7/8" x 7-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#8-5/8	3-5/8" x 8-5/8"	1" X 4"	1"	3 / 4"
#9	3-7/8" x 8-7/8"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#10	4-1/8" x 9-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"

#11	4-1/2" x 10-3/8"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#12	4-3/4" x 11"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#14	5" x 11-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"

Double-window envelopes

Envelope	Window Size	Location	Placement
#9-9903	TOP WINDOW		
	3 7/8" x 8 7/8"	From Left	3/8"
		From Top	1/2"
3 5/8" x 8 5/8"	BOTTOM WINDOW		
	1" x 4"	From Left	7/8"
		From Bottom	5/8"
# 8-5/8	TOP WINDOW		
	7/8" x 3-1/2"	From Left	5/8"
		From Bottom	2 1/4"
3 5/8" x 8 5/8"	BOTTOM WINDOW		
	1" x 4"	From Left	5/8"
		From Bottom	5/8"
#9-13036	TOP WINDOW		
	7/8" x 3-1/4"	From Left	3/8"
		From Bottom	2-1/2"
3 7/8 x 8 7/8"	BOTTOM WINDOW		
	1-1/8" x 4-1/2"	From Left	1/2"
		From Bottom	7/16"
#9-13037	TOP WINDOW		
	7/8" x 3-1/4"	From Left	3/8"
		From Bottom	2-1/2"
3 7/8 x 8 7/8"	BOTTOM WINDOW		
	1" x 4"	From Left	1/2"
		From Bottom	3/4"
#9-13038	TOP WINDOW		
	7/8" x 3-1/2"	From Left	3/8"
		From Bottom	2-3/8"
3 7/8 x 8 7/8"	BOTTOM WINDOW		
	1-1/8" x 4"	From Left	3/8"
		From Bottom	5/8"

NOTE: Envelope #9-9903 (3 7/8" x 8 7/8") is QuickBooks compatible.

Envelope Formats: Europe

Format	Size [mm]	Content Format
C6	114 × 162	A4 folded twice = A6
DL	110 × 220	A4 folded twice = 1/3 A4
C6/C5	114 × 229	A4 folded twice = 1/3 A4
C5	162 × 229	A4 folded once = A5
C4	229 × 324	A4

DIN 680 specifies that a transparent address window should be 90 × 45 mm in size, and the window's left edge should be located 20 mm from the left edge of the envelope. For C6, DL, and C6/C5 envelopes, the bottom edge of the window should be 15 mm from the bottom edge of the envelope. For C4 envelopes, the top edge of the window should be either 27 or 45 mm from the top edge of the envelope.

Keyboard shortcuts

Shortcut	Action
Arrow keys	Move objects with grid size increments.
Ctrl – arrow key	Use to scale table cells or images with current grid size increments.
Cell editing mode	
Ctrl-A	Selects all objects in the Template window if nothing is selected, or selects all text in an active table cell.
Ctrl-C	Copy selected text.
Ctrl-V	Paste clipboard text starting from the current cursor position.
Ctrl-X	Cut highlighted text.
Ctrl-I	Change selected text style to *Italic*.
Ctrl-B	Change selected text style to **Bold**.
Ctrl-U	Change selected text style to Underline.
Ctrl-K	Hyperlink selected text (opens hyperlink editing dialog).

Netscape or Mozilla users may experience the lack of a movable cursor allowing them to select text from the keyboard in cell editing mode. Press the **F7** button to turn the edit cursor (caret browsing) on and off.

Users with a small screen resolution may enjoy the benefits of their browser's full-screen mode. Simply press the **F11** button to switch your Mozilla, Netscape or IE into full-screen mode.

Web Interface

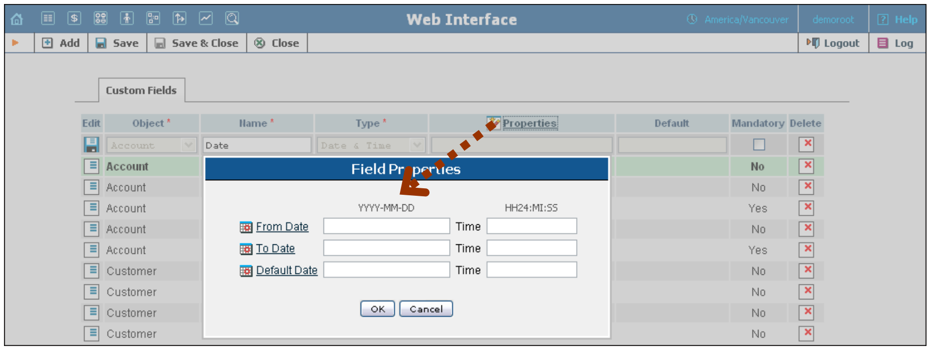
The Web Interface page is for managing various parameters that affect the look and feel of the information presented on the PortaBilling® web interface.

Custom Fields

It is possible to store a set of extra attributes (e.g. driver's license ID or tax code) to supplement the standard PortaBilling® information. This tab allows you to create your own custom fields and give them whatever name you like, set a field type, and so on. Custom fields are treated like any other field; they can be set on the Customer / Account Info page and used for search queries. Custom fields are also added to Invoice Templates under the **Header** section and it is possible to add Custom Fields in Layout Designer (right-click→Header).

Administrators can manage extra user information with the help of the **Custom Fields** tab on the Web Interface page. For each new custom field, the following attributes must be set:

Field	Description
Object	Defines whether the custom field applies to the Customer or the Account.
Name	The descriptive name of the field. This is the name that will be displayed next to the custom field on the Customer / Account Info page.
Type	Choose the type of field: • Text – basic single-line input field; • Number – input field used to store and validate numerical values; • Date – field type used to store dates; • Date & Time – custom field that stores dates with a time component; • List – single select list with a configurable set of options. **NOTE: Once a custom field is created, the Type field cannot be changed.**
Properties	Enables you to customize properties of the field that define its form, appearance, or value. These properties are specific to the field type. Click **Properties** or the **Wizard** icon to invoke the wizard. This will enable you to define a new field format or change an existing one and to specify the default value a custom field should have.
Default	Read-only attribute which must be specified in the **Properties** attribute.
Mandatory	Defines the mandatory status of the field.

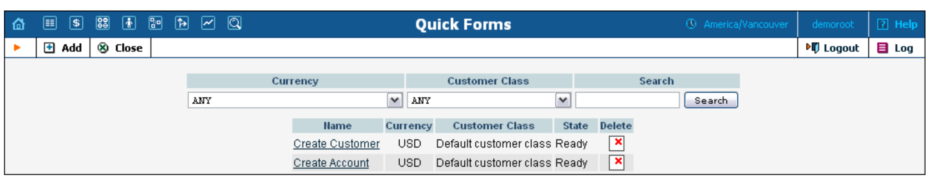


You can delete a custom field at any time. All records of its values will also be deleted then.

Quick Forms

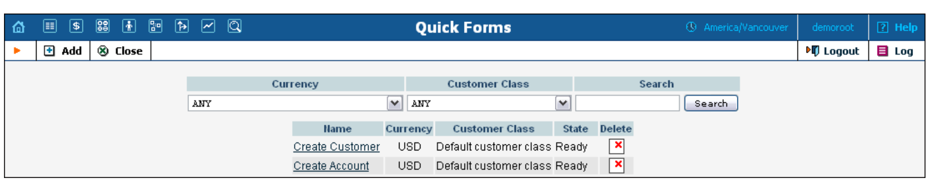
The **quick form** is used to simplify and make faster the process of creating new customers and accounts and avoid mistakes when filling in parameters. The administrator fills in most of the important parameters (e.g. customer class, currency or product for an account), so that later the person entering data only has to input a few remaining ones (e.g. customer name) to create a customer and an account (or multiple accounts) under it.

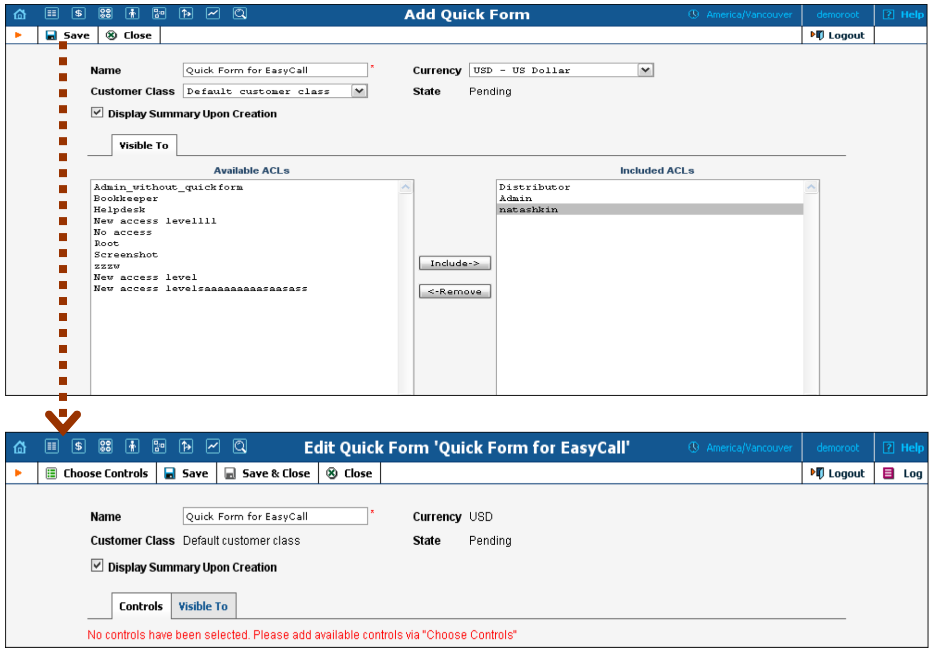
The Quick Forms screen shows the quick forms currently in the system.



Add a New Quick Form

To add a new quick form, select the **Add** button.

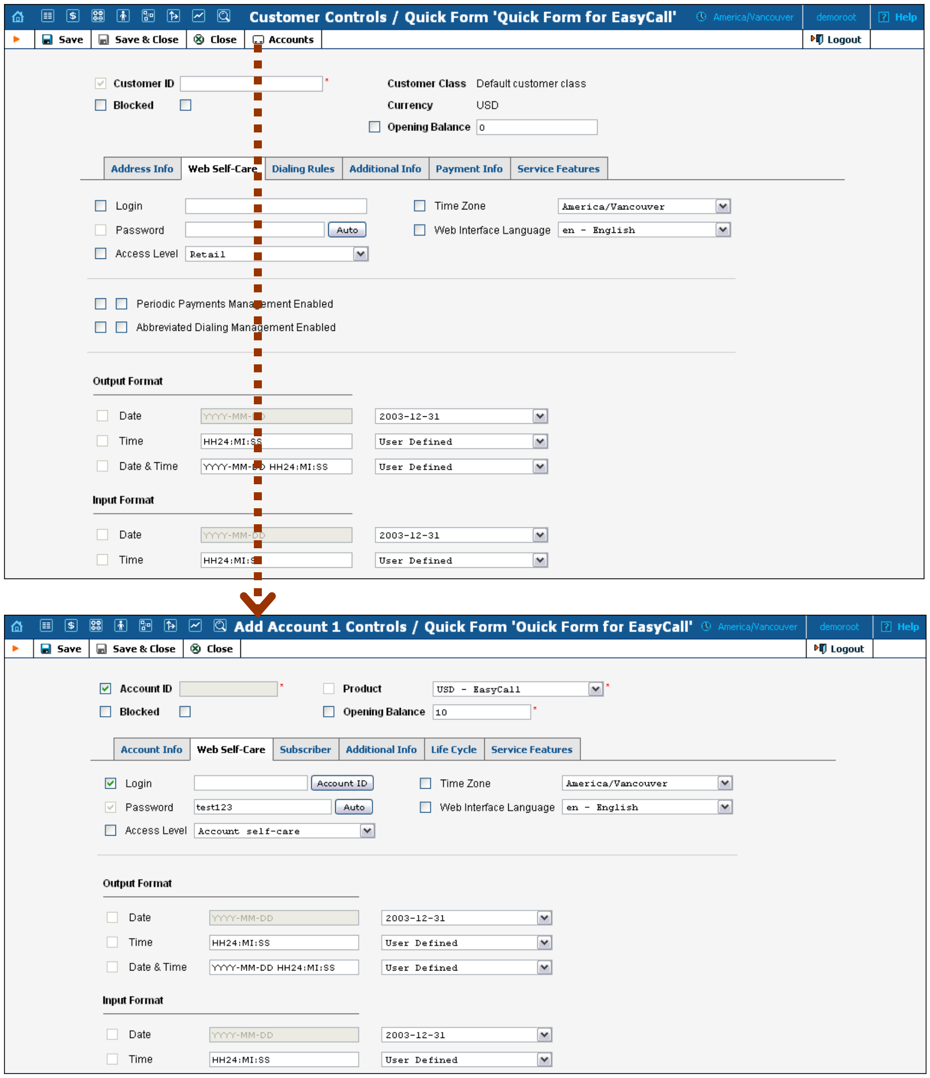




After creating the initial quick form definition, you need to specify which fields in the customer and account information will be pre-populated, and which are to be filled in later by a data entry person. To do this:

1. Click on Choose Controls in the toolbar.
2. Fill in the information about the customer object.
3. Click **Save** in the toolbar to save the quick form information related to the customer.
4. Now click on **Accounts** in the toolbar to enter information about the account to be created by this quick form.
5. Fill in the parameters relating to the account, then click **Save** in the toolbar.

If you want to use this quick form to create several accounts, click **Next** in the toolbar to access the information screen for the following account, then press **Save**.
Repeat step 6 until all the information for all accounts has been entered.
Finally, click **Close** in the toolbar to return to the Quick Form management screen.



The checkbox next to the field defines its status with regard to data entry. If the box is checked, this means that the data entry person will be prompted to enter a value for this field (you can still specify a default value for this field). If the box is unchecked, you must provide a value for this field when defining the quick form, which will then be inserted into the database.

NOTE: Values for some fields must be entered by the data entry person, since they must be unique (e.g. Customer Name).

Please refer to the *Customer Management* and *Account Management* sections of this manual for a detailed explanation of individual fields in the forms.

3. Adjusting Billing Parameters

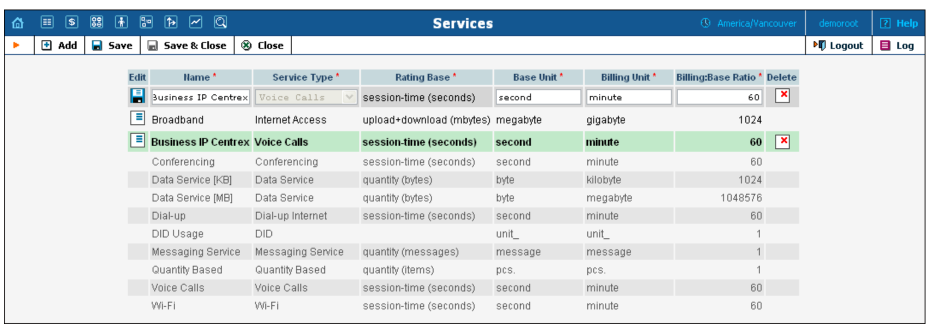
Services

Services in PortaBilling® define the naming and billing parameters of the physical services you offer to customers. Each service is associated with a particular service type (which defines what the customer is actually doing – making a phone call, sending a message, using WiFi, etc.). Services allow you to specify which parameters are used to calculate charges and, finally, what the rates for each service are.

For your convenience, PortaBilling® now provides a set of pre-defined services with all the required parameters. You can easily change an existing service name to make it more descriptive for your administrators and customers; or you can define new services.

Add / Edit Services Online

Click the **Add** button to add a new service. Services you create can be edited later by clicking the **Edit** icon. Standard PortaBilling® services cannot be changed, and are shown in gray. Press the **Save** button to save your work when done.



Edit	Name *	Service Type *	Rating Base *	Base Unit *	Billing Unit *	Billing:Base Ratio *	Delete
	Business IP Centrex	Voice Calls	session-time (seconds)	second	minute	60	
	Broadband	Internet Access	upload+download (mbytes)	megabyte	gigabyte	1024	
	Business IP Centrex	Voice Calls	session-time (seconds)	second	minute	60	
	Conferencing	Conferencing	session-time (seconds)	second	minute	60	
	Data Service [KB]	Data Service	quantity (bytes)	byte	kilobyte	1024	
	Data Service [MB]	Data Service	quantity (bytes)	byte	megabyte	1048576	
	Dial-up	Dial-up Internet	session-time (seconds)	second	minute	60	
	DID Usage	DID		unit_	unit_	1	
	Messaging Service	Messaging Service	quantity (messages)	message	message	1	
	Quantity Based	Quantity Based	quantity (items)	pcs.	pcs.	1	
	Voice Calls	Voice Calls	session-time (seconds)	second	minute	60	
	Wi-Fi	Wi-Fi	session-time (seconds)	second	minute	60	

Column	Description
Name	Service name.
Service Type	Choose the service type (physical service) supplied to the customer. See below for a description of the available service types.
Rating Base	Specification of which particular parameter is used to calculate charges, e.g. "session time", "amount of data transferred" and the like. Where applicable, the rating base selection also defines what is to be used as the base unit; e.g. for the Internet Access service you could use bytes, kilobytes or megabytes as the base unit.

Base Unit	A customer-visible name for the units in which service use is measured; this also would be the smallest possible unit you can use in the rating configuration.
Billing Unit	A customer-visible name for the units used to calculate service charges. You will use these units to specify your rating prices, and the usage details in xDRs will be shown in these units.
Billing:Base Ratio	If billing units are different from base units, this parameter defines how many base units make up one billing unit (for instance, 1024 bytes makes 1 kilobyte). This parameter is extremely important, as it affects calculations in all xDRs for this service. If you decide to deploy a new service with a different ratio between units (e.g. 1 kilobyte equaling 1000 bytes), a new service type must be created before you attempt to do any further configuration.

Supported Service Types

Once installed, PortaBilling® supports the service types shown in the table below. The Rating Base column refers to the applicable rating base options. S ("session-based") means that the service type is charged based on the duration of its use, while Q ("quantity-based") means that some other numerical parameter supplied by the network node is used, e.g. the amount of data transferred.

Name	Rating Base	Description
Conferencing	S	Rating conference calls via PortaSIP® Media Server (or some conferencing server).
Data Service	Q	Data transfers rated using the amount transferred as the billing parameter.
Dialup Internet	S	Dialup Internet access sessions, rated based on session duration.
Internet Access	S, Q	Internet access sessions (DSL, PPPoE, etc.), rated based on session duration or the amount of transferred data.
Messaging Service	Q	Rating messages (text, SMS, MMS, other) based on the number of messages sent.
Quantity-Based	Q	Generic quantity-based service type; can be used to apply charges for any service use expressible in numerical form (e.g. the number of pizzas ordered).
Session-Based	S	Generic time-based service type; it can be used to apply charges for any service use based on the length of time the service was accessed.

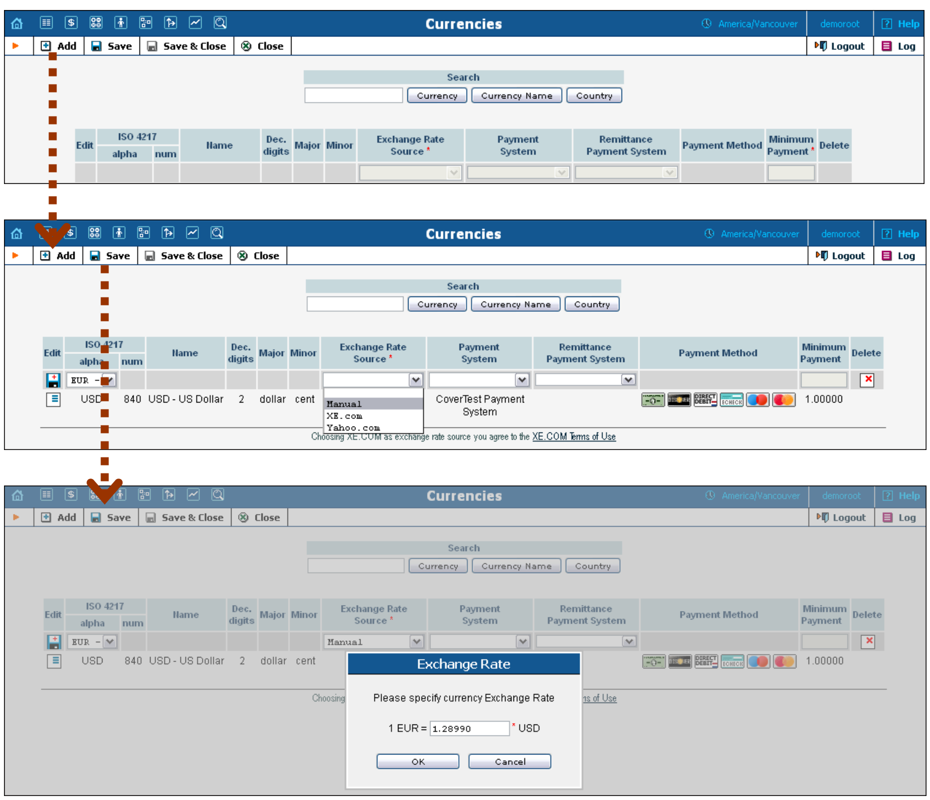
Voice Calls	S	Rating telephony calls (incoming or outgoing) made via PortaSIP®, VoIP gateways or other equipment.
Wi-Fi	S	Wireless Internet access sessions, rated based on session duration.

Currencies

The **Currencies** page allows you to define a method for determining exchange rates between currencies. Supported methods include explicitly defined exchange rates or the use of external services such as yahoo.com or xe.com.

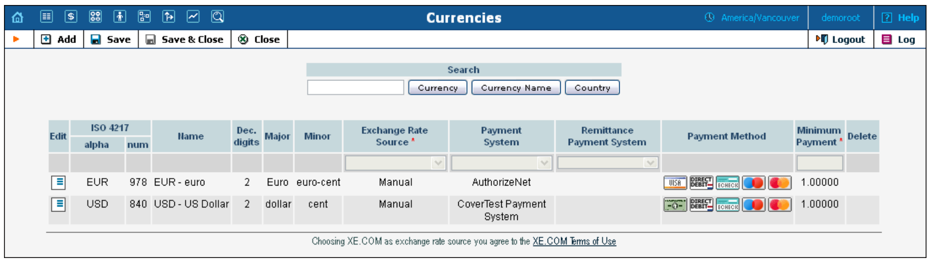
NOTE: Before relying on an external exchange rate service, read its terms of use thoroughly, as the rates it provides are usually given at a delay of at least fifteen minutes from the actual values.

To define an exchange rate source for a currency, first click **Add** in the toolbar.



From the Exchange Rate Source drop-down list, choose “Manual,” “yahoo.com,” or “xe.com.” (The specific exchange rate is defined in the popup window when adding a new currency or changing the exchange rate source for an existing one.)

The next drop-down list shows all payment systems registered by the system's administrator. Choose one which will be responsible for all payments in this currency using the payment methods chosen for it. If this is not required, select an empty value. It is possible to add multiple combinations of the same currency with different payment systems; in this case, all of them will use the same exchange rate source.



Please note that it is not allowed to have multiple payment systems assigned to the same currency using the same payment method. Because of charges for the use of online payment systems, it is recommended that a non-zero value be entered in the **Minimum Payment** field.

Column	Description
ISO 4217	
alpha	Official three-letter currency code (e.g. USD).
Num	Numeric currency code according to ISO standard.
Name	Commonly used name of the currency.
Dec. digits	Maximum number of decimal places allowed by the currency, e.g. for US dollars or euros it will be 2, since the smallest unit is one cent (0.01), while for yen it will be 0, because an amount in yens can only be a whole integer.
Major	The main currency unit, e.g. dollar.
Minor	The lesser currency unit (if applicable), e.g. cent.
Exchange Rate Source	Defines the method of entering the exchange rate for this currency: updated either manually by an administrator, or by PortaBilling® from exchange rate sites such as xe.com or yahoo.com. For an existing row in the table, click on the underlined xe.com or yahoo.com line in a column to immediately fetch the current exchange rate.
Payment System	Selects an online payment processor to process payments in this currency.
Remittance	Defines a payment remittance system. Select the

Payment System	corresponding payment remittance system to allow your customers who maintain their balances in this currency to transfer funds from their accounts in PortaSwitch to a mobile phone's balance in another country. Note that one currency entry can be assigned to a payment or remittance system or to neither of those options.
Payment Method	Read-only column; lists all available payment methods (e.g. VISA) for the selected payment system.
Minimum Payment	The smallest allowed amount for an online payment (in the corresponding currency), in order to prevent service abuse.

Select **Save** or click the **Save** icon in the Edit field to make your changes take effect.

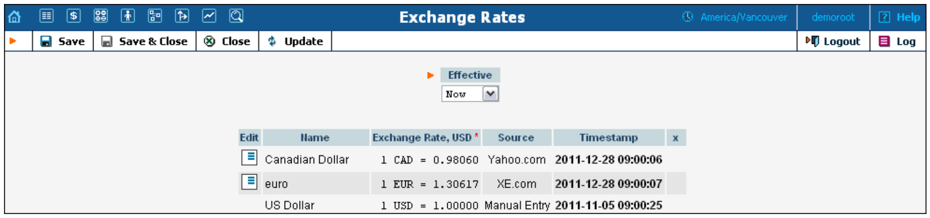
The ISO 4217 currency code is normally composed of a country's two-character ISO 3166 country code plus an extra character denoting the currency unit. For example, the code for Canadian Dollars is simply Canada's two-character ISO 3166 code ("CA") plus a one-character currency designator ("D"). Currency unit names (major and minor) are not defined in ISO 4217, and are listed in the table only for user convenience. Visit **BSI Currency Code Service (ISO 4217 Maintenance Agency) website http://www.bsi-global.com/** for more information.

Obsolete currencies

In the course of time, some currencies become obsolete (e.g. coupons). The obsolete currency cannot be added to the system or selected as a base currency. But if it was added and used in the system before becoming obsolete the system will continue working with this currency as before. Note that when updating the list of exchange rates for existing currencies, if there are any exchange rates for obsolete currencies they will not be updated.

Exchange Rates

All exchange rates used within the system are listed. The **Effective** drop-down list allows you to define whether only current exchange rates ("Now") or all exchange rates ever used ("->Now") will be shown. The following information is provided in the exchange rate listing:



Field	Description
Edit	Click the **Edit** icon to modify the given exchange rate. Select **Save** or click the **Save** icon in the Edit field to make your changes take effect.
Name	The currency unit name (for example, "Canadian Dollar").
Exchange Rate	Currency exchange rate. Defines the number of units of the base currency equal to one unit of the foreign currency. (For example, with British Pounds as the foreign currency and U.S. Dollars as the base currency , the base currency units would be "1.5326" and the value of this column would be "1 GBP = 1.5326")
Source	Shows the exchange rate source for the given currency as defined on the **Currency** page.
Timestamp	The effective date for the given currency. Newer exchange rates supersede older ones.

Click the **Edit** icon to modify an existing exchange rate. This will copy the content of the current row into the table header. The source will be changed to Manual. Enter the new exchange rate, then select either **Save Edit**, **Save** or **Save&Close** to save changes.

Customer Classes

A customer class is a definition of various properties (e.g. invoice terms) which can be easily applied to a large number of customers.

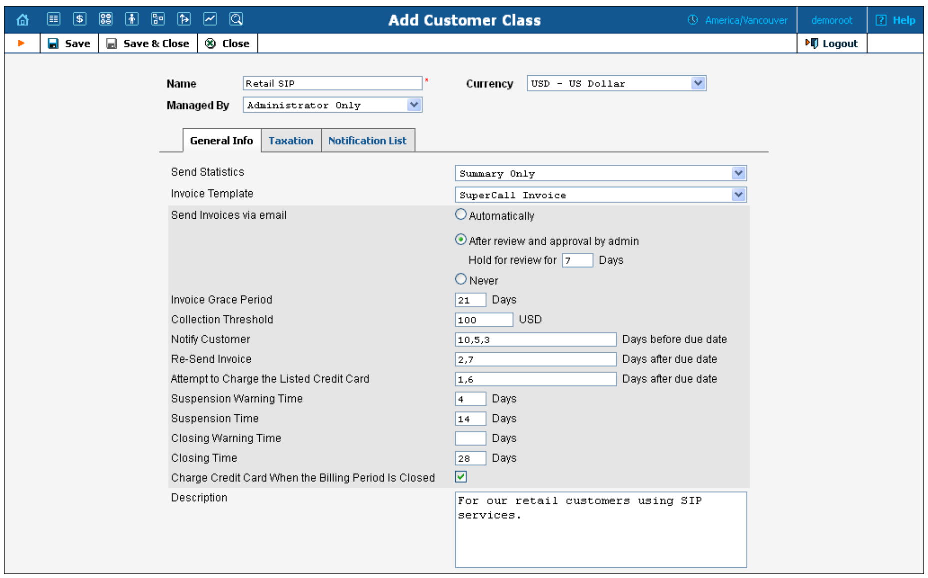
On the Customer Class Management screen, you can view a list of all currently defined classes. This list provides the following information:

Column	Description
Name	Name of a specific customer class.

Currency	Currency that is used for a particular Customer Class.
Managed by	**Administrator only** (default) means that this class will be used for your direct customers, and is accessible only to your administrators. Select a PortaBilling® reseller to assign this class for use by a particular reseller.
Description	A logical description of this customer class.

Add / Edit Customer Class

The Add Customer Class page allows you to define a new customer class within PortaBilling®.



The following parameters are available:

Field	Description
Name	Name of a specific customer class.
Currency	This is the main parameter that is used for a particular Customer Class. Customer Class currency must be defined to set the Collection Threshold. Once saved, the currency cannot be changed.
Managed by	**Administrator only** (default) means that this class will be used for your direct customers, and is accessible only to your administrators. Select a PortaBilling® reseller to assign this class for use by a particular reseller.
The following specifies various parameters to be assigned by default to customers within this customer class:	
Send Statistics	Defines what kind of xDR statistics should be delivered to the customer by email: • Full Statistics – Send a CSV file with a

	complete list of xDRs. • Summary Only – Do not send a full list of xDRs, only a brief summary. • Do Not Send – This option prevents the delivery of event statistics to the customer via email. For more details, see *Additional Info* in the *Add / Edit Customer* section.
Invoice Template	Choose either “Do not create invoice” (in this case no invoices will be created, only CSV xDR statistics) or a particular invoice template.
Send Invoices via email	Defines the way of delivering the invoice to the customer via email. Select one of the available options: • Automatically – A PDF copy of the invoice is automatically sent to the customer when a new invoice is created. • After review and approval by admin (Hold for review) – A PDF copy of the invoice is sent to the customer only after review and approval by admin. • Never – A PDF copy of the invoice is not sent to the customer.
Invoice Grace Period	Invoice terms, i.e. how many days after invoice generation payment is expected.
Collection Threshold	If the amount due on an invoice is lower than the specified threshold, no payment is required immediately and notifications concerning the invoice will not be sent yet. If no payment is made, the balance is applied to the next invoice(s) until the amount due on the new invoice crosses the threshold. The status of such an invoice on the web will be reflected as *No payment required*. **Note** that this field is only available when the currency for the customer class has been defined. For example, if the collection threshold is $300: • For invoice #1 with charges for the first billing period equal to $100 and an invoice total of $100, the invoice status is *No payment required*, no suspension warnings. • For invoice #2 with charges for the second billing period equal to $100 and an invoice total of $200, the invoice status is *No payment required*, no suspension warnings.

	• For invoice #3 with charges for the third billing period equal to $100 and an invoice total of $300, the threshold is reached and notification concerning invoice #3 includes the amount to pay equal to $300. • If the customer pays $100, then invoice #1 is paid. The next notification about invoice #3 includes the amount to pay (equal to $200). If the customer makes a $50 payment, then invoice #2 is partially paid. • For Invoice #4 including charges for the fourth billing period (equal to $100), with $150 paid and an invoice total of $250, the status of the invoice is *No payment required*, no suspension warnings. But invoice #3 must still be paid, with an amount due equal to $150 and suspension warnings are sent to the customer.
Notify Customer	Comma-separated list of numbers; each number represents a number of days prior to the invoice due date when a notification regarding an unpaid invoice should be sent. For instance, `14,7,3` means that the customer should receive a notification 14, 7 and 3 days before the due date. (Obviously, if the customer pays after the first notification, no further notifications will be sent). Leave this field empty to disable notifications completely.
Re-send Invoice	Comma-separated list of numbers; each number represents a number of days after the invoice due date when a notification regarding the overdue invoice should be sent. For instance, `0,7,14` means that the customer will receive a notification on the due date and then 1 and 2 weeks later. (Obviously, if the customer pays after the first notification, no further notifications will be sent). Leave this field empty to disable notifications completely.

Attempt to Charge the Listed Credit Card	Comma-separated list of numbers; each number represents a number of days after the invoice due date when an attempt should be made to charge a customer's credit card for the invoice amount due. For instance, `0,3,10` means that PortaBilling® will attempt to charge the customer's credit card on file on the due date and then 3 and 10 days later. (Obviously, if one of the charge attempts succeeds, no further attempts will be made). Leave this field empty to disable re-collect attempts completely.
Suspension Warning Time	Defines how many days before the suspension date (or before the customer is automatically suspended for the second time if the suspension was delayed by the administrator) notification will be sent to the customer. Leave this field empty to disable such notification.
Suspension Time	Defines how many days after the due date the suspension of customer's services will take place if the invoice is still unpaid. Leave this field empty to disable service suspension.
Closing Warning Time	Defines how many days before the closing date notification will be sent to the customer. Leave this field empty to disable this notification.
Closing Time	Defines how many days after the due date passes until the customer's account will be closed if the invoice is still unpaid. Leave this field empty to disable automatic account closing. Note that, if defined, the **Suspension Warning Time** must be less than the **Suspension Time**, and the **Suspension Time** must be less than the **Closing Time**.
Charge Credit Card When Billing Period Is Closed	Automatically charge the customer's credit card on file for the full amount due when his billing period is closed; as a result, an invoice will be created with a zero amount due.
Description	A logical description of this Customer Class.

Taxation tab

In this tab you can configure the taxes that are to be applied to the customers of this class.

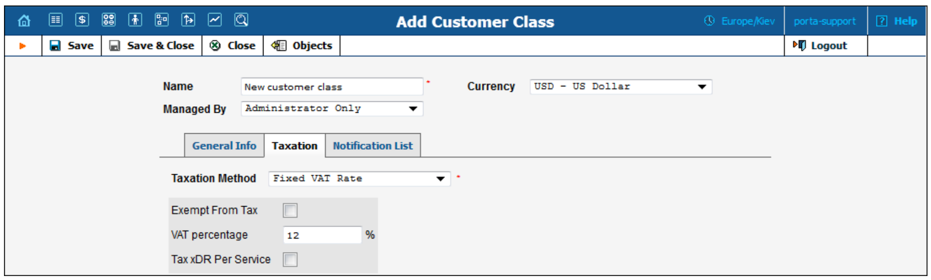
The following options are available:

- **Tax Already Included in xDRs** – This option is automatically set when an invoice that includes taxes is selected. The rates must be entered with the tax already included. The charged amount in xDRs includes the tax and the template provides the calculation of the pre-tax and tax amounts; therefore no external taxation plug-ins are available.

- Via one of the taxation plug-ins such as **Fixed VAT Rate**, **Custom Taxation** or the external module from the **Billsoft** company (US, Canada).

Fixed VAT Rate

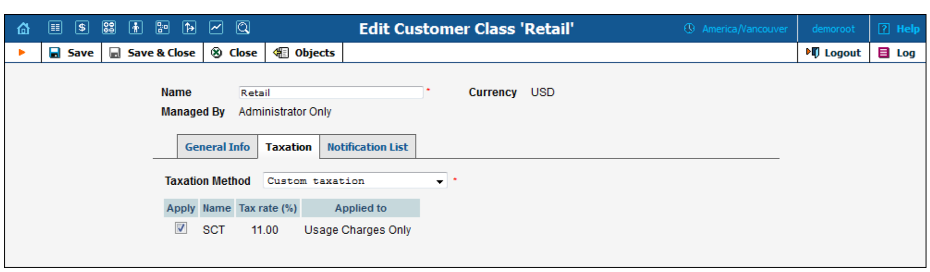
The **Fixed VAT Rate** allows you to add a certain percentage of value-added tax.



Field	Description
Exempt from Tax	The customers from this customer class are exempt from tax charges. This field deactivates all other fields.
VAT percentage	This shows the value-added tax in percent. The numerical value ranges from 1 to 100.
Tax xDR per Service	This allows you to calculate taxes per service (and respectively show them in the invoices).

Custom Taxation

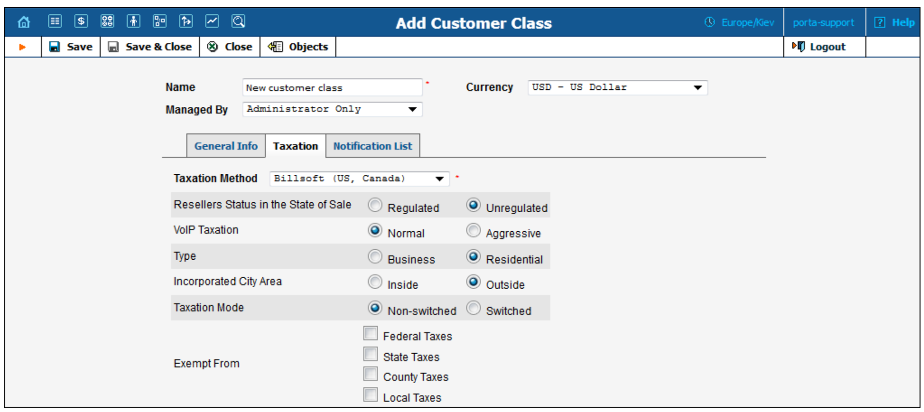
This taxation plug-in is similar to VAT and is specifically designed for those who need to charge INT and UFS fees. When a checkbox is selected, the customer in this assigned customer class is charged a corresponding tax.



Billsoft

When selected, the following will be done for all customers in this assigned customer class:

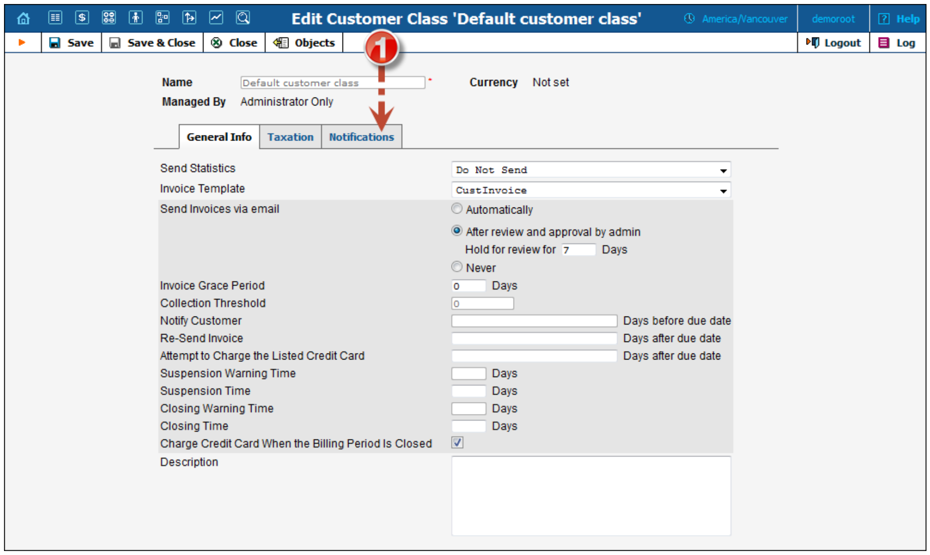
1. All accumulated transactions (xDRs, refunds, etc.) will be sent to EZTax along with the customer's information (used to determine tax jurisdiction).
2. EZTax will calculate all applicable taxes and send the information to PortaBilling® so that it can be inserted as extra xDRs for the specific customer (each type of tax will produce a separate record; thus if both state and city taxes are applicable, there will be two separate transactions).
3. PortaBilling® will then proceed to generate the invoice as usual.

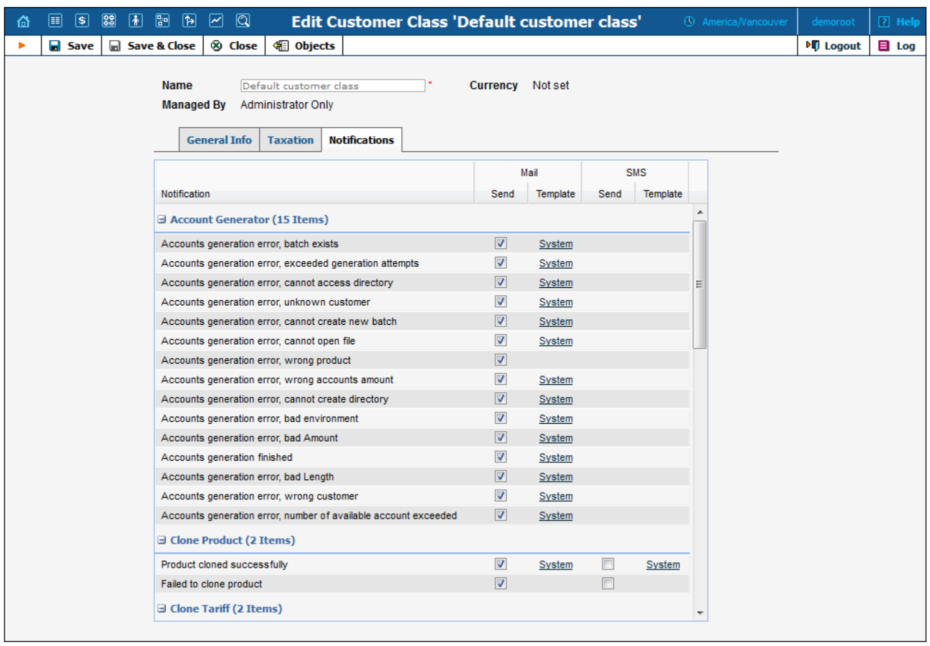


Please consult the **PortaBilling Administrator Guide** for more information about **Billsoft**.

Notifications tab

The **Notifications** tab allows you to manage notification templates and define which e-mail and / or SMS notifications to send to your customers.



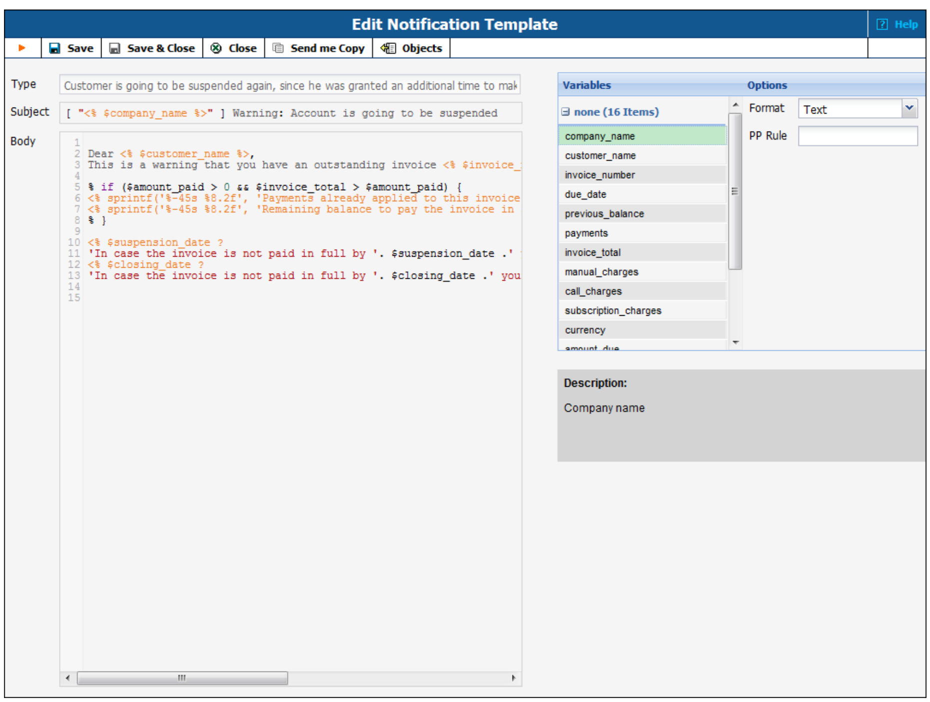


To send different notifications for customers, check / uncheck boxes on the right for the corresponding Notification.

Column	Description
Notification	The notification type.

Mail	• Send – If this is checked, the corresponding notification will be sent to customer via email. • Template – This shows the template status: **System** (the default template) or **Custom** (the modified one). Upon clicking on the **Custom / System** link you will be redirected to the **Edit Notification Template** page.
SMS	• Send – If this is checked, then the corresponding notification will be sent to your customers via SMS. • Template – This shows the template status: **System** (the default template) or **Custom** (the modified one). Upon clicking on the **Custom / System** link you will be redirected to the **Edit Notification Template** page.

The **Edit Notification Template** page allows you to modify the subject, body, format and post processing rule for variables (**PP Rule** on the web interface).



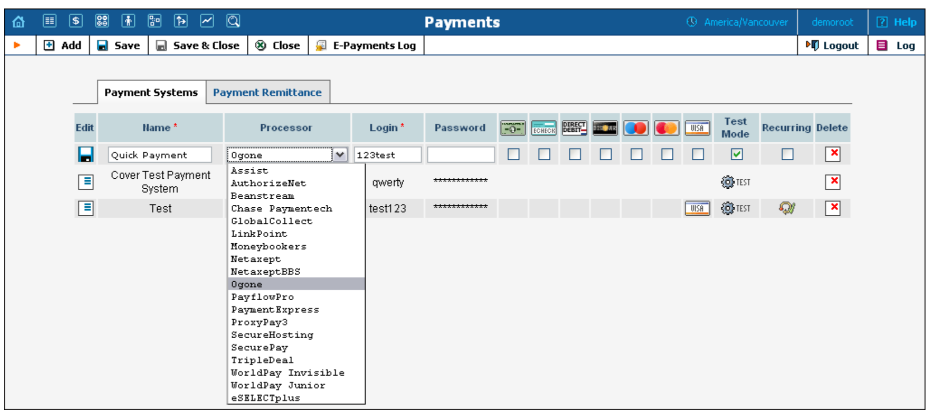
Field	Description
Type	The notification type.
Subject	The subject as it appears in an email to a customer.
Body	The content of the message.

Variables	Shows a list of available variables.
Options	• Format – the format of the variable. • PP Rule – post processing rule for variables that can be specified using regular expressions in Perl.
Description	The description of the selected variable.

Payments

Payment Systems

The **Payment Systems** tab lists all existing payment systems, and allows you to enter information related to payment gateways used to receive payments from customers.



One or more payment systems may be utilized for electronic payments. In order to make use of these services, you must first register with one of the currently-supported* merchants, as shown below:

Name	Web Page
Assist	www.assist.ru
AuthorizeNet	www.authorize.net
Beanstream	www.beanstream.com
Chase Paymentech	www.chasepaymentech.com
eSELECTplus	www.moneris.com

* Supported means that a corresponding Business: OnlinePayment plugin module is available at www.cpan.org. This does not guarantee that the module will support all the required features, and some extra work may be required to integrate it into the solution and perform testing. Please contact support@portaone.com for a current list of payment modules which have been thoroughly tested and work "out of the box", such as AuthorizeNet.

GlobalCollect	**www.globalcollect.nl**
LinkPoint	**www.linkpoint.com**
Moneybookers	**www.moneybookers.com**
Netaxept	**www.paynet.no**
NetaxeptBBS	**www.betalingsterminal.no/Netthandel-forside/**
Ogone	**www.ogone.com**
PayflowPro	**www.verisign.com/products-services/payment-processing/online-payment/payflow-pro/**
PaymentExpress	**www.paymentexpress.com**
ProxyPay3	**www.eurobank.gr**
SecureHosting	**www.securehosting.com**
SecurePay	**www.securepay.com.au**
TripleDeal	**www.docdatapayments.com**
WorldPay Invisible	**www.worldpay.com**
WorldPay Junior	**www.worldpay.com**

To add a new payment system, click **Add** and enter the Account Name, Login, Password and Merchant in the edit row at the top of the listing. Choose one or several payment methods which will be used for payments made by these payment systems. To edit an existing account, click **Edit** and copy the information from the current row into the form above. Save changes using the **Save** button. A recurring payment allows customers to set up periodic payments on this payment system. Payment systems with recurring payment enabled are indicated by the icon.

After adding the payment system, it is necessary to assign it to one or several currencies in which payments will be processed using the chosen payment methods (see the *Currencies* section). Only after doing so can this payment system be used for payments by customers and accounts defined in these currencies. Please note that several (more than one) systems may not be assigned to the same currency using the same allowed payment method, i.e. you cannot have two systems with VISA as the allowed payment method assigned to the currency USD. However, you can assign both a system with VISA as the allowed method and another with MasterCard as the allowed method to the currency USD. Similarly, you can assign one system with VISA to the currency USD and another with the same method to the currency EUR.

Test Mode is a special mode of interaction with the system. It is useful during the initial setup phase, when a merchant may want to test its setup without processing live card data.

What is a payment processor?

A payment processor is a real-time transaction processing system that functions as a payment service using a secure transaction server on the Internet. Merchants with a valid merchant account at an acquiring bank ("payment system") can use this system to submit, authorize, capture and settle credit card or eCheck transactions without the need for a separate transaction terminal.

Payment system basics

This section is provided for information purposes only. The terms and conditions of your payment system are subject to agreement between you and your bank or merchant service provider, and should be consulted for specific information relating to your payment system.

A payment system is required to accept credit cards using the system. A payment system is a special account with a bank that is a member of the Visa and MasterCard associations (American Express may also be part of your payment system). Such a bank has been certified by the Visa and MasterCard associations and can provide you, as the merchant, with all the services related to your payment system.

You *must* have a credit card payment system in order to use a payment processor for credit card transaction processing. The payment processor system is separate from your payment system, but it may be purchased at the same time from the bank or merchant service provider which is creating your payment system.

The merchant service provider normally does the following:

- Assigns you a payment system number.
- Sets up your payment processor account.
- Assigns you a login ID and password for use with your payment processor account.
- Acts as your main point of contact for basic issues regarding your merchant and payment processor accounts.
- Enables you to add certain types of credit cards to your payment system.
- If the merchant service provider is also your payment processor reseller, it also activates the processing capability for these cards on your payment processor account.
- Deposits credit card funds to your account.

Your merchant service provider may also provide you with MID and TID numbers. The payment processor does not need these numbers, but some third-party solutions (such as certain Shopping Cart providers) may require them.

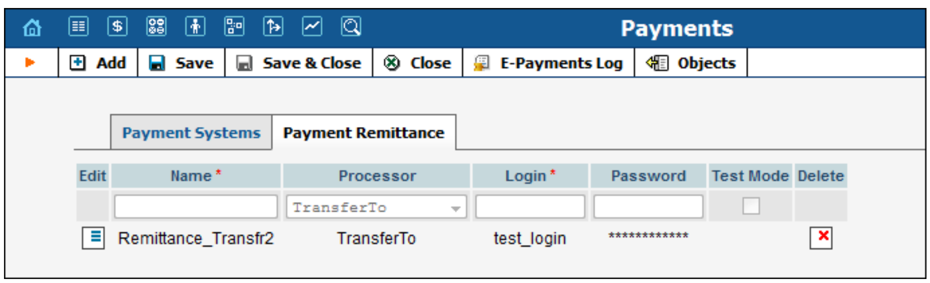
Once your payment system is set up and "live" on the credit card system, you can begin accepting credit cards from customers. It is your responsibility to configure the payment processor to meet your own needs, and to provide a hosting environment which is appropriate for the choices you have made within the payment processor.

The **E-Payments Log** button in the toolbar allows you to access information about credit card or direct debit charge attempts for the whole environment. Please see the *E-payments Log* section for further details.

Payment Remittance

On the **Payment Remittance** tab, you can enter information related to payment remittance systems that allows your customers to transfer funds to users of mobile operator services in different countries.

One or more payment remittance systems may be utilized to transfer funds. In order to make use of these services, you must first register with the currently-supported payment remittance processor TransferTo.



To add a new payment remittance system, click **Add** and enter the Account Name, Login, Password and Processor in the edit row at the top of the listing.

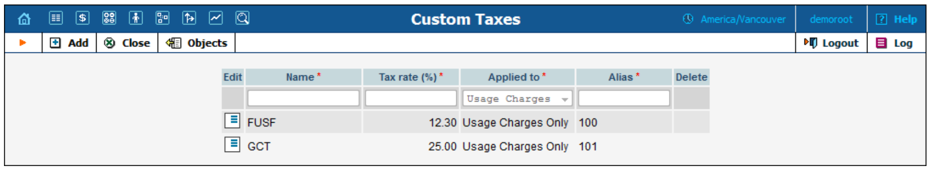
Test Mode is a special mode of interaction with the system. It is useful during the initial setup phase, when a merchant may want to test its setup without processing live card data.

What is a remittance processor?

A remittance processor (such as TransferTo) is a transaction processing system that delivers international top-up services. You create an account with an online remittance processor, provide it with your company information and establish the method of transferring funds from you to it on a periodic basis. In return, you receive credentials (username, password, etc.) for initiating transactions via the remittance API. Now your application can connect to the API server and, upon providing valid authentication information, request that funds be transferred to a customer of a mobile carrier.

Custom Taxes

On this page you can add new custom taxes or modify existent ones.



Field	Description
Name	The name of the taxation plugin in the system (will be present in xDRs and in taxation configuration for individual customer or customer class).
Tax rate (%)	A percentage rate value for this tax.
Applied To	This field shows which services this tax is applied to. Here select one of the available options: • Usage Charges Only – All charges except for subscriptions and credits / adjustments. • All Charges – Applied to all services. • All Recurring Charges – Applied only to subscriptions.
Alias	The unique identifier for the tax (it is unique for a specific environment).
Delete	Click this button to remove this custom tax from the system.

NOTE: Custom taxes are not applied to other taxes specified for this customer.

4. Rating

Destinations

Destinations are a list of all possible phone number prefixes to be used in your system, which will later be used in creating price lists (Tariffs). For convenience, destinations are grouped in alphabetical order by country.

In the case of a non-telephony service (e.g. video-on-demand), destinations define various service categories (e.g. VIDEO-NEWRELEASE and VIDEO-FOREIGN), and so a different rating may be defined. For some services (e.g. WiFi access) you would only need one destination for the whole service, since there is no further differentiation.

Destinations may be edited and, if a destination is not being used in any tariff, it will also have a Delete button. Of course, it is not necessary to include every destination in a given price list; only enter the prefixes (destinations) used by this particular vendor or customer.

PortaBilling® can support different numbering plans, but it is highly recommended to keep all of your destinations in the E.164 numbering space. The Destinations table contains the valid E.164 prefixes. Different standardization and governmental bodies control the E.164 numbering space, and some private numbering spaces also exist.

Click here to view the Official ITU Dialing Procedures document (PDF)

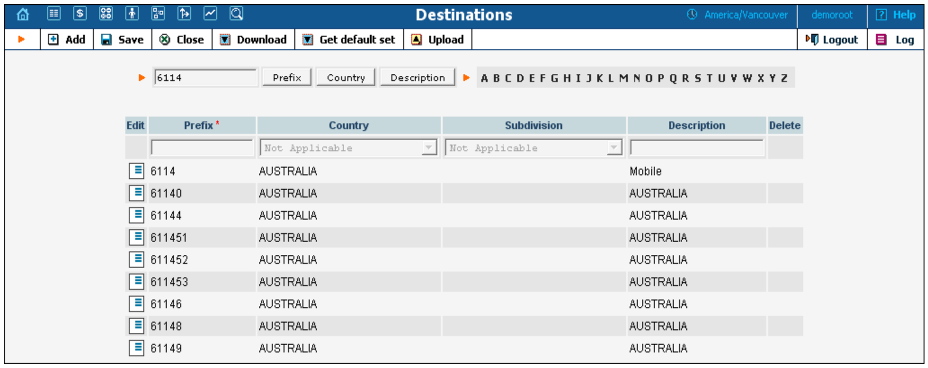
PortaBilling® is supplied with a file containing a basic set of destinations. It covers all countries of the world and some of the major destinations in each country, linking prefix information to:

- country (if applicable)
- subdivision (if applicable)
- description

Of course, you can edit the supplied destinations list according to your needs. Also, you can always add more destinations later, if needed.

Add / Edit Destinations Online

To add new destinations, click the **Add** button. The **Save New** icon will appear on the Destinations form. Enter the prefix and choose a country from the drop-down list. After selecting the country, the subdivision field will be refreshed. Choose a subdivision if necessary. Click the **Save New** icon to save the new destination.



To edit an existing destination, enter a prefix, country or description (i.e. proper, mobile, etc.) in the search field and click the corresponding button. You can also select a country alphabetically from the top right-hand part of the interface. Choose the destination you wish to edit from the list by clicking the **Edit** icon. The content of the row will be copied into the Destinations form above, and the **Save Edit** icon will appear in the first column. Choose Subdivision from the refreshed drop-down list and type in the Description, if any. Save your work by clicking the **Save Edit** icon.

Destination access levels

User Type	Access Description
Root, or if ACL includes **Use country code during upload**	Full access.
ACL which allows read / write operations on Destinations, e.g. **Admin**	Can perform all types of operations with destinations *except* for manually specifying a country during upload. If Admin uploads a new destination, the system chooses the appropriate country automatically, using the longest match from the available destinations.
all other types	Read-only.

Destination Upload / Download Procedures

Upload

The CSV file header contains the following fields: Action, Prefix, iso_3166_1_a2, Description.

Field	Description
Action	Add or delete; encoded as ”+” and “–” or ”add” and “remove.” **Note:** Only unused destinations that do not appear in the Rates table can be deleted. If the action is ”+” and the prefix is already in Destinations, then the update action will be performed.
Prefix	Value to be stored in Destinations.
Two-letter ISO Country Code	Value to be stored in Destinations.iso_3166_1_a2. **Note:** *Ignored* if the uploader is not Root or does not have “Use country code during upload” in his ACL; in this case, the system chooses the appropriate country automatically, using the longest match from the available destinations. If you would like to set the Country property as “Not Applicable,” then the value must be encoded as “–”. If the field is empty and the uploader's access level is Root, then the system chooses the appropriate country automatically, using the longest match from the available destinations.
Description	Value to be stored in Destinations.

Download

The CSV file header contains the following fields: Action, Prefix, Country Code (iso_3166_1_a2), Description.

Field	Description
Action	Add or delete, encoded as “+”.
Prefix	Missing prefix
All other fields	Empty

NOTE: For tariff uploads, new destinations will be e-mailed as a CVS attachment in an error report using the Destinations Upload format: Action, Prefix, Country Code (iso_3166_1_a2), Description.

Uploading destinations

The system is supplied with a predefined set of countries and the most common destinations for those countries. If required, new countries may be inserted into the database manually. When uploading new destinations, a super user can specify the country using its ISO country code. If empty, the system tries to find a country via existing destinations.

For example, if “16045” is uploaded, the system finds that “1604” is already in the database as “Canada.” If it is not possible to find the country in this way, or if the country is “N/A,” the destination will not be imported. An uploaded file with such a destination will be sent back for correction in a format suitable for upload.

ISO 3166-1 Country Codes

For more information on this standard, visit the **ISO 3166 Maintenance Agency website**.

The complete title of ISO 3166-1 is "Codes for the representation of names of countries and their subdivisions."

Country Codes

- ISO 3166-1 gives coded representations of more than 230 names of countries or areas dependent on a country.
- ISO 3166-1 contains a two-letter code (Alpha-2-code), a three-letter code (Alpha-3-code) and a three-digit numeric code, (Numeric-3-code) for every entry in its list of country names.

ISO 3166-1 does not **code:**

- Names of languages (e.g. Gaelic)
- Names of nations or peoples (e.g. Dutch)
- Names of groups of countries (e.g. Scandinavia)
- Names of continents (e.g. Asia)
- Names of organizations (e.g. OAS, NAFTA, WHO)
- Top-level Internet domains

Applications

ISO 3166-1 codes are used in many applications in all branches of industry, trade and statistics worldwide. One example of their use are the "code elements from ISO 4217" codes for currencies and funds, which are based on the ISO 3166-1 Alpha-2-Code (e.g. USD for US Dollars, where US comes from ISO 3166-1).

ISO 3166-2 Country Subdivision Codes

ISO 3166-2 "Country Subdivision Codes" establishes a code for the names of principal administrative subdivisions within countries coded in ISO 3166-1. ISO 3166-2 was published on December 15, 1998.
The code elements used consist of the Alpha-2 code element from ISO 3166-1 followed by a separator and a further string of up to three alphanumeric characters.

The names of the subdivisions are given in more than one language if the country has more than one official language (and if the alternative language versions were available to ISO). In Uzbekistan, for example, there are two official languages, Uzbek (uz) and Russian (ru), so the subdivision names are also listed in these two languages. The

Romanization systems used to convert the country subdivision list from non-Roman to Roman script (e.g. from Cyrillic, in the case of Uzbekistan) are also given. The abbreviations and language codes (ISO 639) used in the header preceding the subdivision list for each country are explained in annexes to the standard.

Destination Group Sets

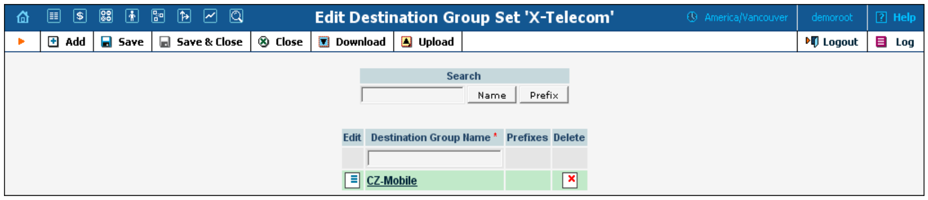
Very often a logical destination (e.g. Czech Republic – Mobile) will consist of multiple prefixes (420601, 420602, 420604, 420732 and so on). It would be quite inconvenient to repeat the same "create a new rate" operation for every individual prefix, since all of the price parameters are the same. Thus you could create a destination group "CZ-Mobile" and then perform "create a new rate" only once, with the rates for all of the prefixes being created automatically. However, since different carriers might include different prefixes in the "Czech Republic – Mobile" category, we need to be able to maintain different sets of destination groups.

Creating a new destination group set

To add a new destination group set, click the **Add** button. The **Save New** icon will appear next to the name.

After the destination group set has been saved, click on the hyperlinked name to manage the destination groups included in this set.

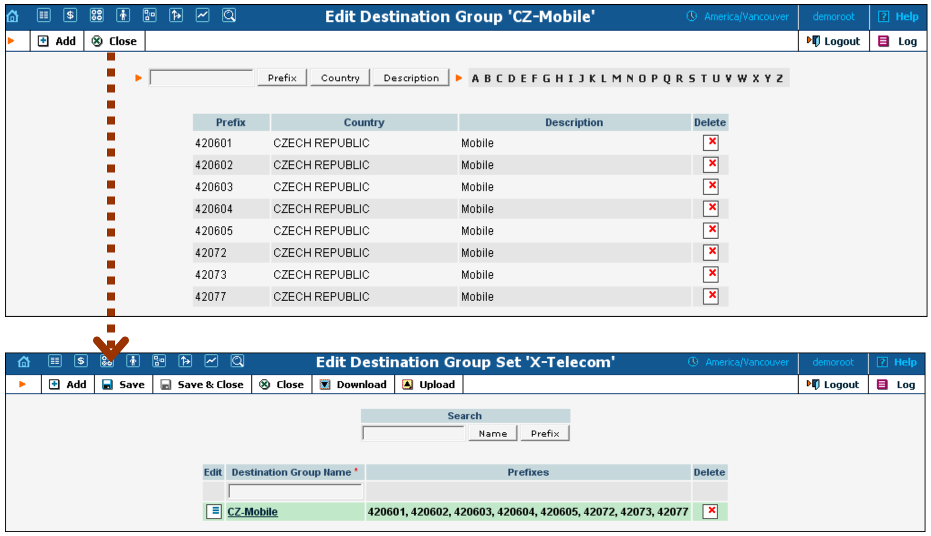
Creating a destination group



Column	Description
Destination Group Name	Convenient short name for the destination group, e.g. **UK-Mobile**. This will be used to enter new rates for this group of destinations.
Prefixes	List of prefixes included in this group. For a destination group with many prefixes, only the first few will be displayed. Click on **Destination Group Name** to see a complete list of destinations belonging to this group.

Managing destinations (prefixes) within a group

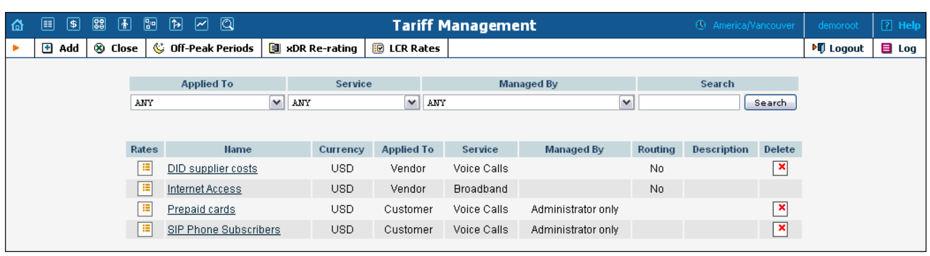
Click on the hyperlinked destination group name to edit its contents. Click on **Add** to add more prefixes to the destination group.



Tariffs

A tariff is a collection of individual rates, a rate being a per-destination price. Each tariff has its own set of rates. Call billing is based on billing units. You can define two billing units for each destination: the first billing unit (interval) and the next billing unit (interval). Billing unit precision is one second, and the minimum length of each unit is likewise one second.

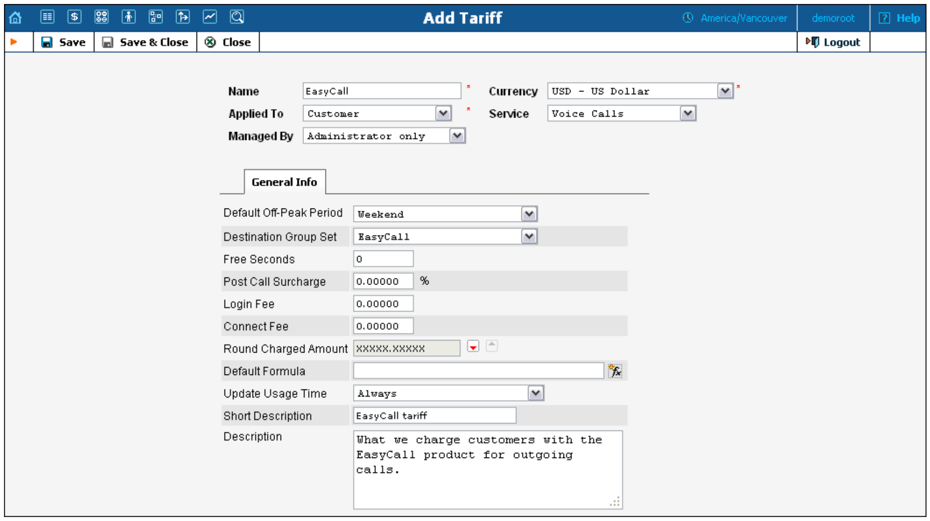
Typical billing unit configurations include 60/6 (the first unit, i.e. the minimum charged call duration, is one minute, and subsequent intervals are one-tenth of a minute, i.e. six seconds) and 1/1 (per-second billing).



The main Tariff Management screen shows a list of all existing tariffs. Tariffs can be located using the Search form, by selecting a reseller from the drop-down list, or choosing the tariff's name. To edit a tariff, click on its name in the list. Click the **Edit Rate** icon to edit individual rates for the given tariff. The **Delete** icon will be visible only when the tariff is not in use (not assigned to any customer or vendor and not being used in any product's rating entry), and enables permanent deletion of the given tariff.

Add / Edit Tariff

To add a new tariff to the system, select **Add** to go to the Add Tariff screen. Existing tariffs can be edited by clicking on the tariff's name in the list.



Field	Description
Name	The logical name for the tariff object.
Currency	Indicates the currency in which pricing information is defined. All pricing information for a single tariff must be defined in the same currency.
Applied To	Designates whether this tariff will be used to charge your customers or resellers or to calculate costs associated with your vendors. You must select a value here to get access to certain fields that are available only for a specific type of tariff.
Service	Select the service for which this tariff will be used (by default the **Voice Calls** service will be selected).
Managed By	(Only available for tariffs of the **Customer** type). Allows you to designate this tariff as managed by the administrator only (so this tariff will be applied to your direct customers), or by a specific reseller (so this tariff will be used to charge the reseller's sub-customers).
Routing	(Only available for tariffs of the **Vendor** type). The tariff contains information about the carrier's routing preferences, in addition to the usual cost data.
Default Off-Peak Period	Allows to select one of the previously defined off-peak periods. If you do not differentiate between peak and off-peak rates, just choose **Not defined**.
Destination Group Set	A set of destination groups (UK-Mobile, CZ-Mobile, etc.) you would like to use for more convenient rate entry.

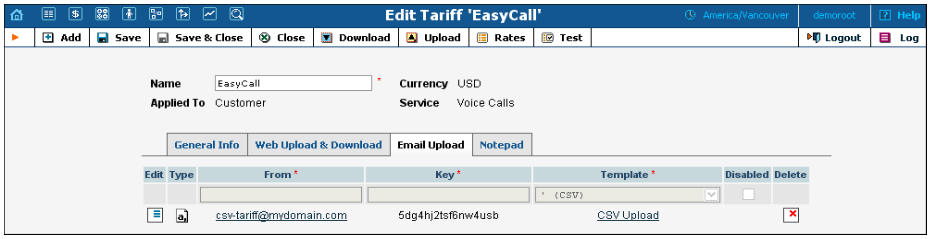
Free Seconds	Number of free seconds granted for each call. In order to claim free seconds, the length of the call must be at least one billing unit (i.e. the first interval; see the 'Enter Rates' section above).
Post Call Surcharge	Increases the total call cost by the given value.
Login Fee	Amount to be charged immediately after the first user authentication.
Connect Fee	Amount to be charged for each successful call, in addition to other charges.
Round Charged Amount	Pattern that defines the rounding of a charged amount in an individual xDR. This pattern takes the form XXX000. An X (to the left) means that the digit in this position will be left unchanged, while a zero (to the right) means that this position will be rounded. For example, XXXXX.XX000 means that the amount will be rounded up to two decimal places, so that 1.2345 becomes 1.24. Note that rounding is **always** done upwards.
Default Formula	Default call rating formula applied to new rates. Note that the value of this parameter is only used when a new rate is inserted. Modification of this parameter has no effect on existing rates.
Update Usage Time	This determines when the **First Usage** and the **Last Usage** fields get updated. – If you select **Only by billable records** the fields will be updated by generating a successful toll call / event. – If you select **Always** – the fields will be updated by the successful usage of any toll-free services.
Short Description	While the name of a tariff is for your internal use, and is usually created according to your internal rules, you can also add a name meaningful to your reseller. For example, for the tariff name **aABC-SmartCall-USD-1800**, the short description will be **Smart call using a toll-free number**.
Description	Tariff description.

Free Seconds, Connect Fee and Post-Call Surcharge are only applied when the default rating method is used. For more about different call rating methods, see the **PortaBilling Administrator Guide**.

Web Upload & Download

Choose appropriate templates for web upload / download of tariffs. Read more about this in the **Templates** and **Managing rates offline** sections.

Email Upload



Tariffs can be uploaded to the system from an e-mail received with an attached document in either CSV or XLS format.

Field	Description
Edit	Click the **Edit** icon to copy the current row in the form above for editing.
Type	Uploaded document type, either CSV or XLS file.
From	Sender's e-mail; to prevent unauthorized access, only trusted e-mail will be allowed.
Key	Security key; tariff will be accepted only if the correct key is specified in the message's subject line or body.
Template	Select a template to map information in the uploaded file using PortaBilling®. Read more in the **Templates** section.
Disabled	Disable receipt of tariffs from this source.
Delete	Click the **Delete** icon to remove this source.

NOTE: You need to add an email alias (to which you will send tariffs for upload) to the **EmailUploadAlias** field on the Configuration Server web interface. For example, if the PortaBilling Web Server name is web.yourcompany.com and you added the "tariffupload" alias, you will send emails with tariffs to tariffupload@web.yourcompany.com for upload. Also make sure that your mail server redirects emails sent to the above address to the PortaBilling Web Server and that port 25 is not blocked by a firewall.

Off-peak periods

Peak and off-peak prices

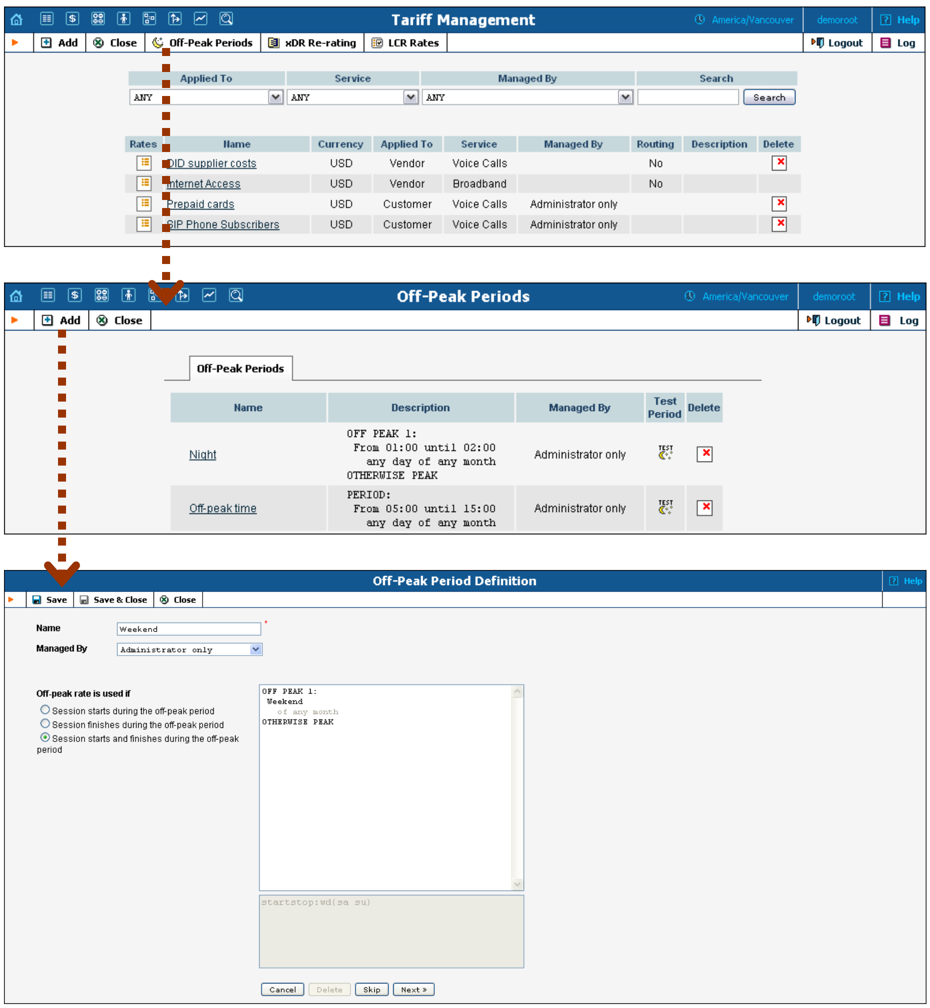
It is possible to have two different sets of prices, one for peak and one for off-peak time. In fact, you can have two separate off-peak periods (e.g. nighttime and weekends), meaning there are three separate sets of prices. A call is always billed using one particular rate; this also applies to calls starting in the off-peak period and ending in the peak period, or vice versa, i.e. there is no proration.

Off-peak periods are defined using the powerful yet flexible `Time::Period` module. The Off-Peak Period Wizard is also available to help you create a period definition easily.

You can create a master list of various off-peak periods (e.g. one from 9pm to 7am including weekends and another from 8pm to 8am daily) and then use these definitions for specific tariffs or rates inside the tariff.

Off-peak period definition wizard

To manage the available off-peak periods, select **Off-Peak Periods** on the **Tariff Management** screen.



The Off-Peak Period wizard provides users with a flexible tool for defining a new off-peak period. On a sequence of screens, the user may select a time interval, day of the week, day of the month, and month; multiple select is allowed. The following example illustrates the process of creating an off-peak period that starts at 6pm every day and lasts until

6am the next morning. Another off-peak interval is on weekends. We will also include some holidays, i.e. January 1st and December 24-26.

In the first screen, select 6pm in the **From** column, and 6am in the **Until** column. Now click the **Next** button. The two text areas on the right of the screen give the user a display of the current period definition. The top text area displays a verbal definition of the period – `From 6:00pm until 6:00am`, and the bottom one contains this same information in a format that can be parsed by PortaBilling -- `hr{6pm-5am}`. This sets up the first period; in order to continue, skip the following screens by pressing the **Skip** or **Next** button until the "Period definition completed" message is displayed, then press the **Add** button to add another definition to this period. The wizard now returns to the first screen.

NOTE: Time::Period module treats all formula elements as "inclusive." Thus, in the example above, 6pm to 6am will be represented as hr {6pm-5am}. This is perfectly correct, since 5am actually means "all of the 5th hour – 05:00:00 … 05:59:59."

Now for the weekends: pressing the **Skip** or **Next** button, go to the second screen and select *Weekend*, or, holding down the <Ctrl> key, select *Saturday* and *Sunday* from the list. Select the **Next** button and skip until the "Period definition completed" message is displayed. Press the **Add** button to add another definition to this period.

To include January 1st in the off-peak period definition, skip to the Day of Month screen, and select *1*. Click the **Next** button. Now select *January*, click **Next**, skipping forward to the next screen. Follow the same steps to select the December 24-26 interval. Hold the <Ctrl> key down to select multiple entries.

On the next screen, you can choose how the system will charge calls which overlap with your off-peak period, i.e. cover both peak and off-peak time. There are three options you can choose from:

- If the call starts in the off-peak period, it will be charged using off-peak rates (even if part of the call was made during peak time). This method is the easiest and most transparent for end-user authorization of outgoing calls.
- If the call finishes during the off-peak period, it will be charged using off-peak rates; it does not matter whether it starts within the off-peak period or not.
- Or, the off-peak rate will only be used if the call both started and finished during the off-peak period. In this case, any call which partly extends into the peak period will be charged at the peak rate.

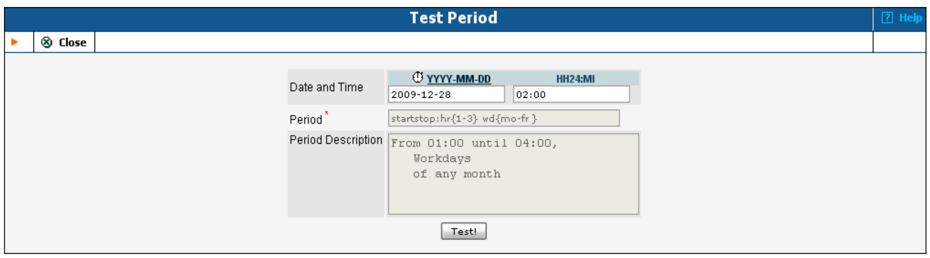
To evaluate your work, look at the top text area. The following text should be displayed:

```
From 6:00pm until 6:00am
   any day of any month
OR Sunday and Saturday
   of any month
OR 1
   of January
OR 24-26
   of December
```

If the definition is correct, click the **Finish** button.

Test the off-peak period

If you are unsure whether you have created a correct off-peak period definition, you may use the test utility to check if a specific moment in time fits into the period or not. In order to run the off-peak period test, either click the icon on the off-peak periods page, or use the **Test Period** button on the last page of the off-peak period wizard.

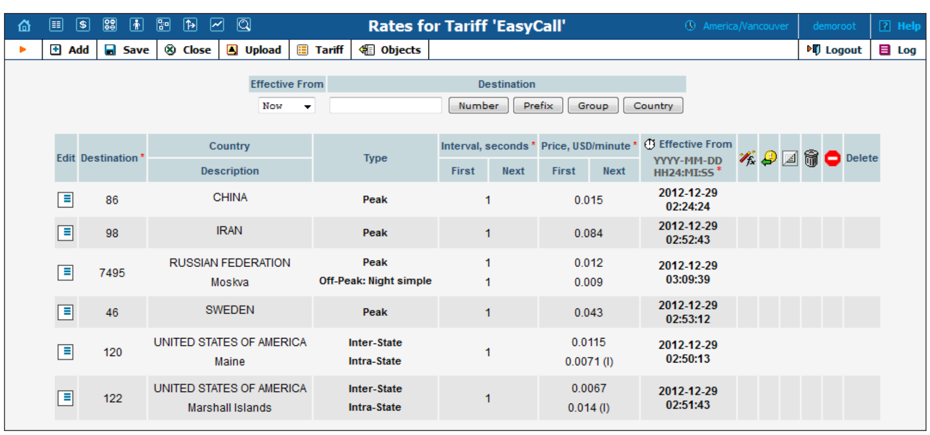


Now simply enter any time / date and click the Test button to check whether this moment fits into the off-peak period definition.

Rates

Managing rates online

Managing rates online is very convenient for maintaining existing rate tables and for reference purposes. In the case of new price lists or major updates, the offline method is better.



On the **Tariff Management** page, click the **Rates** icon for a tariff.

The filter at the top of the screen allows you to view rates depending on their Effective From date or Destination. The **Effective From** list allows you to define which rates to show:

- "All" shows all rates (used until now including current rates and scheduled for the future).
- "->Now" shows rates used until now including current rates.
- "Now" shows only currently effective rates.
- "Now->" shows current rates and those that will become effective in the future.

To edit an existing rate, click the **Edit** icon next to it to copy rate details into the form. Note that if a tariff contains peak and off-peak rates there will be two rows of fields: the top one is for peak rates, and the bottom one is for off-peak rates.

Usually you will enter rate data for each destination separately. However, if the tariff has a **Destination Group Set** defined, by clicking on **G** in the Destination column header you can switch into Destination Group mode. Now you can enter a destination group name (e.g. UK-Mobile) instead of a prefix, and the system will automatically create rates for all of the destinations in that group.

Field	Description
Destination	Destination prefix. May be entered directly, e.g. "47" for Norway; or you can access the destinations directory by clicking the Destination link. In the destinations directory pop-up window, you can search for the desired prefix by country name.
Set Inter / Intra State *(only for US destinations)* / **Set Normal Rating**	Switches between normal and inter / intra state rates for US destinations. Click **Set Inter / Intra State** if price per minute depends not only on the actual destination (area code and exchange), but also on whether the caller resides in the same state as the called party.
Country	Country corresponding to the current destination.
Description	A short description of the specified destination.
Type	Specifies the off-peak period for this particular rate.
First interval	First billing unit in seconds.
Next interval	Next billing unit in seconds.
Price first	Per minute price for first interval.
Price next	Per minute price for next interval.
Off-peak First interval	First billing unit in seconds for off-peak time.
Off-peak Next interval	Next billing unit in seconds for off-peak time.

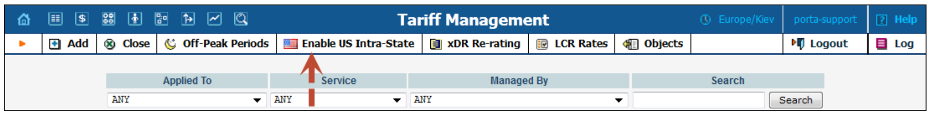
Off-peak Price first	Per minute price for first interval in off-peak time.
Off-peak Price next	Per minute price for next interval in off-peak time.
Second Off-peak Price first	Per minute price for the first interval during the second off-peak time.
Second Off-peak Price next	Per minute price for the next interval during the second off-peak time.
Effective Time	Exact time when the rate becomes effective. Click the icon to make the rate effective immediately. Click the **DD-MM-YYYY** link to set up the desired date using the pop-up calendar.
	Indicates if this rate uses a call rating formula. The icon indicates that there is no formula, thus old-style rating is used. The icon indicates that the rate already has a formula defined. Click on the icon to invoke the call rating formula wizard.
Rate Properties	**Payback Rate.** This means that the customer is credited for using certain services, rather than paying for them (e.g. the service provider receives the termination fee for his own subscribers and wants to encourage his users to receive more calls by passing on a certain portion of these savings). **Hidden**. This means that the rate is excessive (e.g. there are usually more than 500 rates for Argentina mobile because of different prefixes). This flag does not affect usage of the rate by the billing engine. It simply indicates that this rate may be omitted when making a list of rates for the end user. **Discontinued**. This means that the rate will stop being active immediately or from the specified time-stamped date. To deactivate the rate in the future, specify a certain date and time in the **Effective From** field. **Forbidden**. This means that no calls are authorized for this particular destination.
Delete	Click the **Delete** icon to delete this rate. Only rates which are not yet active can be deleted.

US Inter / Intra state rates

PortaBilling® offers a simple solution for identifying and billing US Inter / Intra State VoIP traffic. In order to apply LCR properly and calculate call costs in accordance to rates applied by vendors, PortaBilling®

determines whether a call is intra- or inter- state and applies the correct rate.

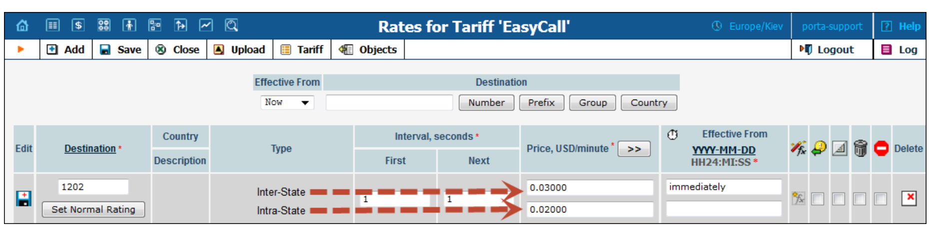
Within a new environment, the setup option for US Inter / Intra State rates is off by default. To activate it (permanently for the environment), click **Enable US Intra-State** on the tariff management web page.



In order for PortaBilling® to recognize whether the call is intra / inter state, you must specify whether the destination belongs to one of those categories by clicking the **Set Inter / Intra State** button.

NOTE: The activation of Inter / Intra State is possible only when the destination number starts with "1."

Once the Inter / Intra option is set, you may specify the individual rates for these calls in the corresponding fields.



Call Rating Formula Wizard

Because of the extreme flexibility of the call rating formula, it has a quite complex syntax. To avoid possible errors, the call rating formula wizard allows you to design a call rating formula easily.

The top table allows you to edit rate parameters (such as interval or price per minute) directly; below it, the current formula is displayed (read-only); and, finally, there are two tabs for managing different formula parameters:

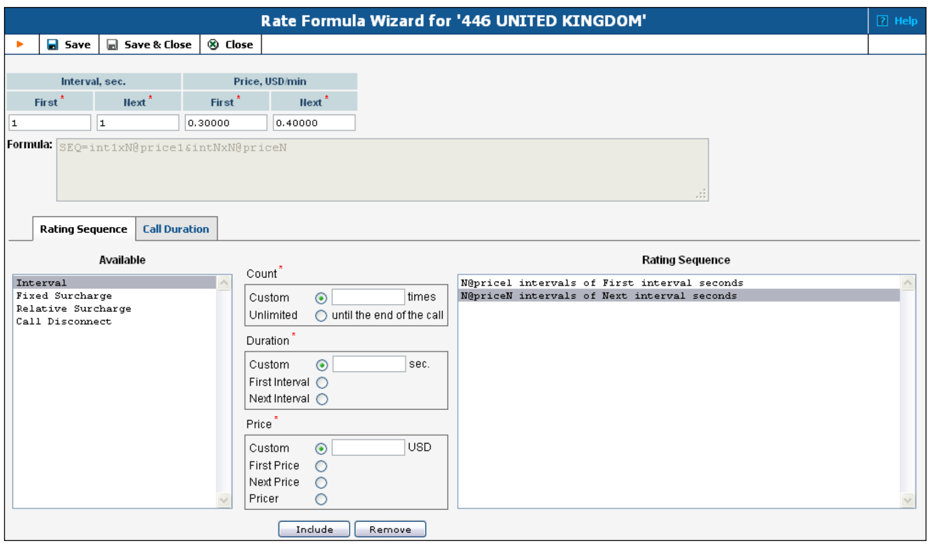
Rating Sequence:

Here you can construct the actual call charge plan by defining a sequence of charge elements such as time intervals, surcharges and call disconnect.

Please consult the ***Charging Calls – Rating Formula Method*** section of the **Unified PortaSwitch Handbook Collection** for more details.

The following categories are available in the (**Available**) list on the left.

- **Interval** – sets rounding and prices for certain call intervals.
- **Fixed Surcharge** – adds a fixed amount to the total call cost.
- **Relative Surcharge** – increases the total call cost (for all charge elements from the beginning of the call to the moment of the surcharge application) by the specified percentage.
- **Call Disconnect** – forcibly disconnects calls.



1. Choose the element type from the list on the left (**Available**).
2. Fill in the element parameters (such as interval duration, price, etc.).
3. Click the **Include** button to add this element to the formula.

Interval

Field	Description
Count	Number of rounding periods in the interval.
Duration	Rounding period (in seconds).
Price	Price per minute automatically prorated according to the rounding period duration.

Fixed Surcharge

Field	Description
Custom	Defines the amount to be added to the total call cost at a specified moment.
Tariff Connect Fee	If enabled, the amount specified in the tariff **Connect Fee** field will be applied.
Tricky	If enabled, a fixed surcharge will be left out when the call duration is announced to the end-user.
Apply randomly	Randomly applies a fixed surcharge using a percentage chance (defined below).
Probability	Defines a percentage chance for applying a fixed surcharge (only available if the **Apply randomly** field is enabled).

Relative Surcharge

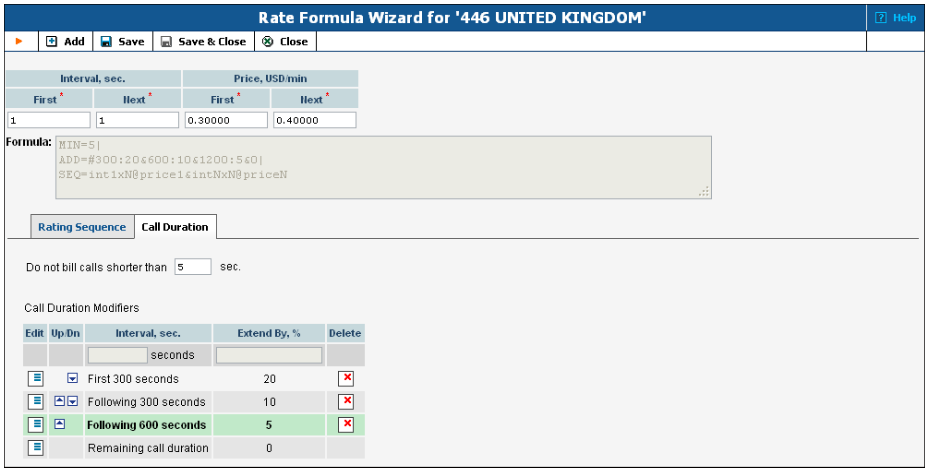
Field	Description
Custom	If specified, the total call cost (for all charge elements from the beginning of the call to the moment of the surcharge application) will be increased by a specified percentage.
Tariff Post call surcharge	If enabled, the total call cost (for all charge elements from the beginning of the call to the moment of the surcharge application) will be increased by the percentage specified in the tariff's **Post Call Surcharge** field.
Tricky	If enabled, a fixed surcharge will be left out when the call duration is announced to the end-user.
Apply randomly	Randomly applies a relative surcharge using a percentage chance (defined below).
Probability	Defines a percentage chance for applying a relative surcharge (only available if the **Apply randomly** field is enabled).

Disconnect Call

Field	Description
Probability	Defines the percentage chance for disconnecting the call.
Dispersion	The interval in seconds during which the call disconnection will occur.

Call Duration:

NOTE: This option must be enabled on the configuration server web interface; by doing so, you accept the responsibility for any legal issues related to use of this billing feature.



Do not bill calls shorter than – For a detailed description of this feature, see the *Too short calls* section of the **PortaBilling Administrator Guide**.

Field	Description
Interval, sec.	The duration of a specific call interval to which "add duration" should be applied. Initially there will be only one row in the Add Duration table, defining the rule to be applied to the whole call. Click the **Add** button to add a rule for another interval. Intervals are interpreted according to the order in which they appear in the table, e.g. the first row covers the *first* 300 seconds, the second row covers the following 300 seconds, and so on.
Extend By, %	Defines how the call duration for this interval should be changed (increase in percentage; a 0 value means that the call duration should not change).

Managing rates offline

The rates table may be prepared using a spreadsheet processor (e.g. MS Excel) and can then be easily imported into PortaBilling®.

This is very convenient if your termination partner sends you a file with rate updates that must be entered into PortaBilling® in order to calculate costs and route your customers' calls properly. This can be done with the help of the Rate Upload functionality. To upload your rates file, perform the following steps:

1. On the **Tariff Management** page, click on the tariff name.
2. In the **Edit Tariff** window, click the **Upload** icon.
3. In the **Upload Rates** window, click **Browse** …
4. Locate the Tariff-sample.csv file, then click **Open**.

5. On the **File Upload** page select all required options:

    - **Add rates from the file to existing rates** or
    - **Replace all of the existing rates with the rates from the file** – The default option is to **add** new rates. If there is at least one parameter that differentiates a new rate from the existent one then the new rate will override it. If a rate for a certain prefix exists in the tariff but is not present in the file you received from the carrier, it will remain unchanged. The **replace** mode uploads all the new rates from the file and marks all the existent rates as discontinued.
    - **Rates with 'effective from' date in the past should be uploaded as 'effective immediately'** – Sometimes you might receive a file with rates later than expected, when the moment at which the rates were supposed to become effective has already passed. By default this check box is disabled and a rate that has an 'effective from' date that has passed will be rejected and not included in the tariff. Alternatively, you may choose to insert these rates into the tariff and make them effective from the current moment; to do so enable this check box.
    - **Skip rates with the same data** – Sometimes carriers will include all prefixes in a rate update file, even if no change in pricing has occurred for some of them. In order to prevent the creation of duplicated rate rows, simply enable this check box.
    - **Template** – Here you select an existent template or choose the **Create New Template** option to create a new template. For the latter case, the settings for this file format are stored in a template, so the next time you get a rate update from the carrier you simply upload this file into PortaBilling® using this template.
    - **Timezone** – Here you choose a time zone for which the rates from the uploaded file will become effective.

6. On the **Review File Parsing** page, verify whether the file was parsed properly and, if necessary, change file parsing parameters such as delimiters.
7. On the **Review Data Fields Definition** page, specify where the individual data elements, such as destination prefix, price, payback rate, etc. are located in the file.
   On the **Review Rate Information** page, review the data for accuracy and view the results, comparing the new rates with the existent ones. Adjust the prices and mark the desired rates as Payback if necessary.

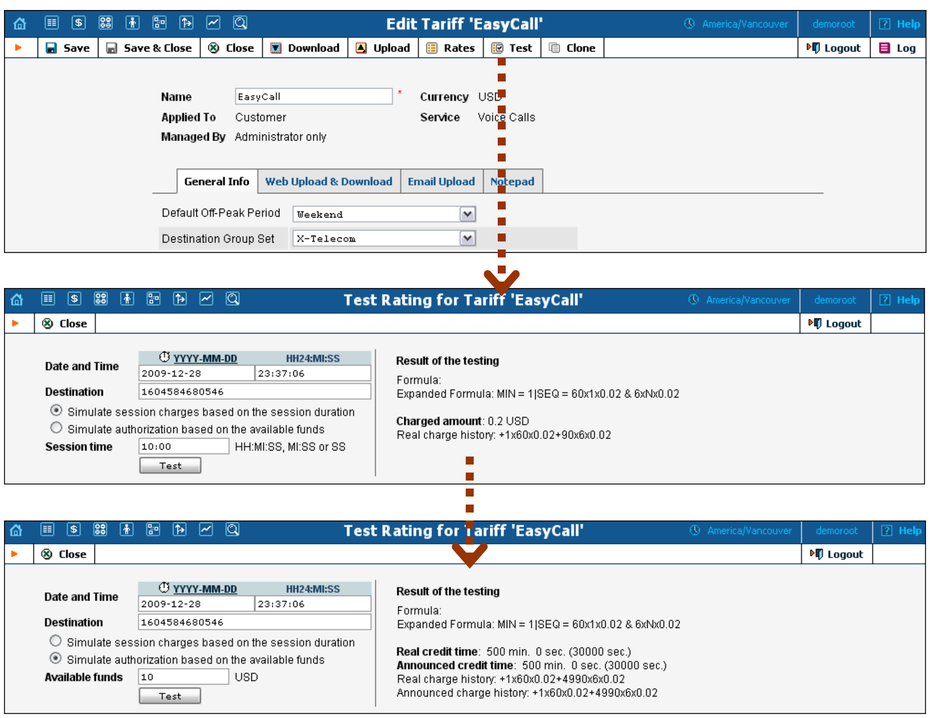
In case there are new destinations in the uploaded file, approve the automatic creation of them and assign a country and destination group for these destinations on the next **Create New Destinations** page.

8. On the **Summary** page, view information about the number of rate records to be processed.
   Save as template – Here you specify a name for the template (if you previously selected the **Create New Template** option).
   Send notification to – Here you specify an email to which a notification about the result of the rate upload procedure will be delivered.
9. On the **Summary** page, click **Start Import**.
10. In the **Edit Tariff** window, click **Close**.

You can verify your work on the **Rates** page. For more details regarding rate upload, see the **PortaBilling Templates Guide**.

Test Rating

This screen allows testing of the rating formula and shows the resulting cost and duration of the call. The formula can be used both ways: either to calculate the call's cost given its duration, or to see how long a call ought to last given its cost.



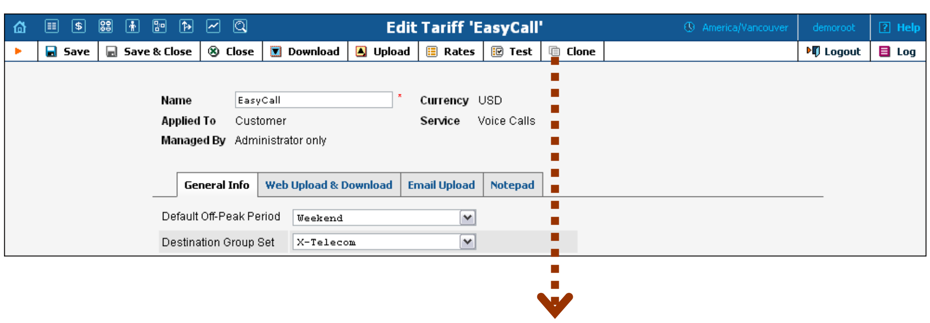
Field	Description
Date and Time	The date and time when the call is initiated. Click on ⏱ icon to set the current time. The

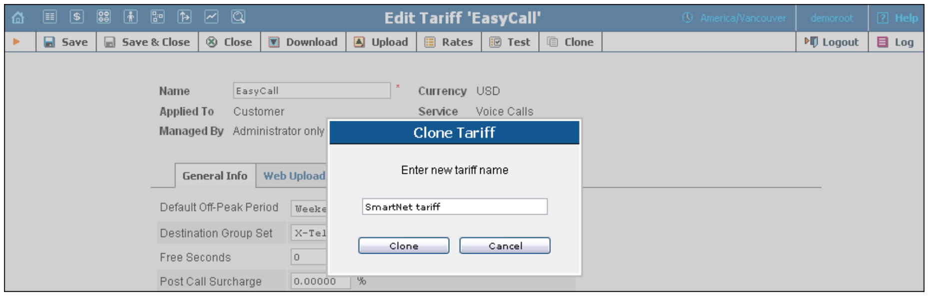
	"YYYY-MM-DD" opens a calendar that can be used to select a date.
Destination	The phone number to call.
Session time	Simulate rate for the specified call duration.
Available funds	Simulate authorization for the situation, when user has the entered amount of available funds.
Results of the testing	
Formula	The rate formula used for the given destination.
Expanded Formula	The rate formula with the real interval and price values.
If the formula calculates the call cost based on its duration	
Charged amount	Charged amount for test call
Real charge history	A short description of how the **Charged amount** was calculated
If the formula calculates the call duration based on available funds	
Real credit time	The true maximum call duration.
Announced credit time	The announced maximum call duration.
Real charge history	A short description of how the **Real credit time** was calculated.
Announced charge history	A short description of how the **Announced credit time** was calculated.

Clone Tariff

To minimize the amount of work required to create new tariffs, PortaBilling® allows you to create them as clones from existing ones. The new tariff will have exactly the same parameters as the old tariff.

To clone a specific tariff, click the **Clone** button in the toolbar on the **Edit Tariff** page. Give the new tariff a name, then click the **Clone** button.



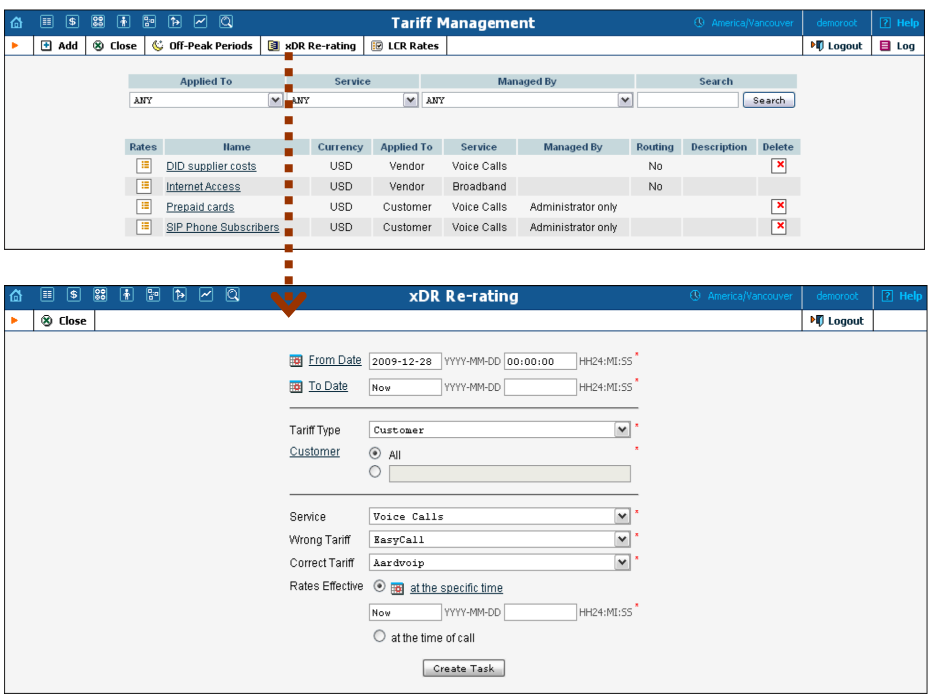


xDR Re-rating

The xDR re-rating page allows you to fix the most common problem: incorrect pricing information entered into a tariff. This may happen, if, for example, someone sends you the wrong pricelist, or your administrator simply clicks the wrong button, resulting in incorrect charges in the database.

The PortaBilling® xDR re-rating feature can perform re-rating in two different modes. Please consult the *xDR Re-rating* section of the **PortaBilling Administrator Guide** for more details.

To run the re-rating task, click the **xDR Re-rating** button on the **Tariffs** page.



Field	Description
From Date	Specify the start of the time interval for xDRs to be re-rated. Click the icon to set up the

	desired date using the pop-up calendar.
To Date	Specify the end of the time interval for xDRs to be re-rated. Click the icon to set up the desired date using the pop-up calendar.
Tariff Type	Select a specific type of tariff. Can be of the following type: **Customer**, **Reseller** or **Vendor**.
Customer / Reseller / Vendor	Select the specific customer, reseller or vendor due to the **Tariff Type** specified to narrow the set of xDRs to be processed.
Service	Choose the service for which xDRs should be re-rated.
Wrong Tariff	Select the "original" tariff with incorrect pricing information entered.
Correct Tariff	Select the tariff with correct pricing information entered. This tariff should be of the same type as the **Wrong Tariff** one.
Rates Effective	Choose the time when the rates associated with **Correct Tariff** become effective.

Click the **Create Task** button to launch the re-rating task.

Re-rating and volume discount counters

If volume discounts are used when calculating call charges, it is no longer possible to treat such calls separately from others, since the way one call is charged affects all other calls made subsequently. For instance, if a call is charged $5, this is the amount added to the volume discount counter. If the charged amount is then changed to $1 during re-rating, this will affect all other calls in the same destination group, since they can now be charged at a different discount rate.

To overcome possible confusion when volume discount counters are involved in re-rating, this process should always be run from a specific moment in the past (when the error occurred) to the present moment. In this case, all discount counters will be rolled back before recalculation actually starts, and then updated with each re-rated call.

NOTE: Re-rating with volume discount counters only works with XDRs generated following an upgrade to the MR16 version, since older versions of XDR data do not have the full information required to roll back volume counters.

LCR Rates

You may click the **LCR Rates** button on the toolbar to quickly create a new "Routing info – LCR blending" report.

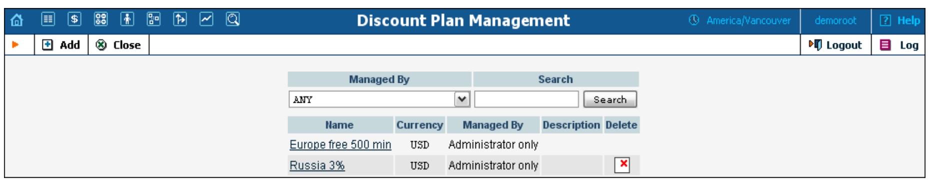
NOTE: This type of report is available for root and admin users only.

Please consult the ***Routing Info – LCR Blending*** section of the **Unified PortaSwitch Handbook Collection** for more details.

Volume Discount Plans

Volume discount plans allows you to dynamically modify your rates depending on how much traffic a customer has already sent you. For instance, after he makes calls for 200 minutes (charged at the normal rate) he will get a 10% discount for every minute he calls over this limit.

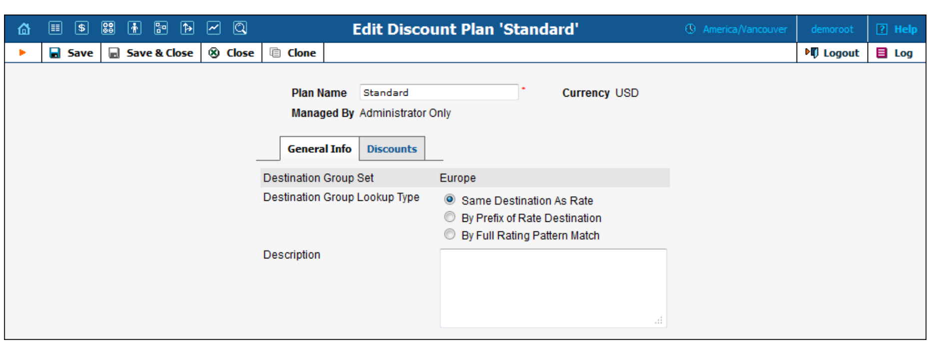
A discount plan includes one or more discount schemes applicable to a certain destination group. "First 200 minutes for free, then normal rate with 10% discount over 500 minutes" is one such discount scheme, and it may be applied to the destination group "Asia," which includes China, Hong Kong, Singapore, Thailand and other countries.



Use the main Discount Plan Management screen to list all existing plans. Plans can be located using the search form, by selecting a reseller from the drop-down list, or entering the plan's name. To edit a discount plan, click on its name in the list. The **Delete** icon will be visible only when a discount plan is not in use (not assigned to any customer, account or product), and enables permanent deletion of the discount plan.

Add / Edit a Discount Plan

To add a new discount plan to the system, select Add to go to the discount plan creation screen. An existing discount plan can be edited by clicking on its name in the list.



Field	Description
Plan Name	The logical name of the discount plan object.
Currency	Indicates which currency is used for billing calculations. All discounts in a plan are to be defined in this currency. A discount plan can only be assigned to customers, accounts and products using the same currency.
Managed By	By default – administrator only. The plan can be assigned to a reseller (Managed by NNN) so that it is manageable from the Customer Self-Provisioning web interface.
Destination Group Set	Discounts can be defined for individual groups (e.g. US&Canada, Asia, Western Europe) within this set. Once chosen for discount plan creation, the destination group set cannot be changed later on.
Destination Group Lookup Type	• **Same Destination As Rate** – This requires exactly the same prefix as the one in the tariff in order to be used in the destination group for the volume discount definition. For example, if the tariff has a rate for destination 4202, and this rate is used to charge the call, while the volume discount only contains a destination 420, this discount will not be applied. • **By Prefix Of Rate Destination** – This provides more flexible matching: the destination used in the tariff must be equal to or more specific than the destination used in the volume discount definition; so in the example above, the discount would be applied. This puts more load on the billing engine, since an extra pattern match must be performed. • **By Full Rating Pattern Match** – Match the originally dialed phone number against all available destinations in the volume discount plan. Needless to say, this is the most resource-intensive option. See the details below regarding the different matching models.
Description	Short description of discount plan.

Phone number matching in discount plans

When volume discounts are involved alongside "normal" rating as per the tariff plan, the billing engine must obviously match the ID of the service used (e.g. the phone number dialed) with one of the destination groups used in the volume discount definition.
The fastest and the most efficient way is to check whether the destination in the customer's tariff applicable to this call is included in any destination

groups in the volume discount plan, and then keep using this volume discount. For instance, if a customer makes a phone call to 4206025551234 and a matching rate is defined in his tariff for 420602 (Czech Republic, Mobile), the billing engine will search whether any discounts in the volume discount plan are assigned to a destination group containing 420602.

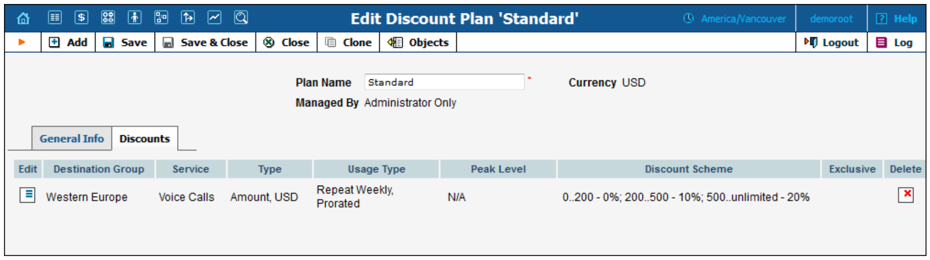
But what if you would like to include the whole Czech Republic in your volume discount? One option would be to simply list all applicable prefixes (420, 4202, 420602, etc.) in a destination group, then use this group in the volume discount definition. Alternatively, you could use the other discount plan lookup option – "by prefix." In this case, the billing engine will look not for the exact same prefix, but rather for a destination group which contains a **matching** prefix. So if a call is made to 4206025551234 and there is a 420602 rate applied in the tariff, the billing engine will search for a destination group in the volume discount plan that includes a prefix matching 420602; such matching prefixes could be 420602, 420, or even 4. In this case you could just enter 420 in your volume discount definition, and it will then be used for calls rated by different tariff rates (e.g. 4202 and 420602).

Such extensive lookups put a higher load on the billing engine, so they should be used with caution, and only in volume discount plans where they are truly needed.

Another possibility is a full rating pattern match. This method disregards the destination used in the tariff entirely, and simply performs a lookup of applicable destinations in the volume discount plan using the phone number dialed by the customer. This is done in the same way as a rate lookup is done in a tariff; thus if the customer dialed 4206021345678, the billing engine will choose a discount with a destination group that includes 420, 420602, or any other destination matching the dialed number. Since several matches can potentially be found (e.g. a first discount is defined for destination group A, which includes 420, and a second discount for destination group B, which includes 420602), the longest match is used (in our example, this would be the second discount). As noted above, this is obviously the most resource-intensive option.

Defining Discounts for Individual Destination Groups

After a volume discount plan has been saved, the Discounts tab will become available. To add a new discount to the plan, click the **Add** button. An existing discount can be edited by clicking the **Edit** icon on the row containing its details.



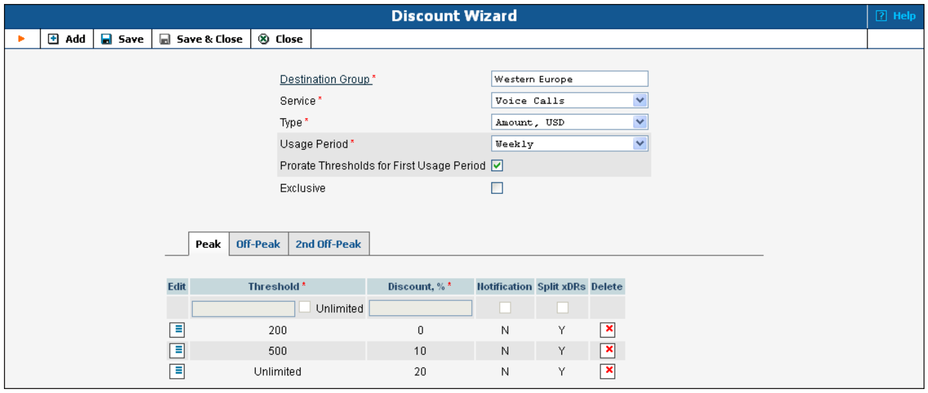
It is possible to define a volume discount plan which will have a different structure of thresholds / discounts for the service used in a peak, off-peak, or second off-peak period. You can also "synchronize" the definition of the thresholds, so that the discount will be applied irrespective of whether the service was used in a peak or off-peak period (this is the default behavior, providing backward compatibility with earlier releases). It is also possible to create a volume discount plan which would offer discounts on service use during one time period (e.g. off-peak), but not in another (peak) period. In this case, you are basically defining an empty list of discounts for one of these periods.

Field	Description
Destination Group	Enter the name of a destination group manually, or click the column header link (**Destination Group**) to choose a group from a searchable list inside the pop-up window.
Service	Choose a specific service (voice calls, messaging, data transfer, etc.) that this volume discount will apply to. You can bundle discounts for multiple services into the same volume discount plan.
Type	Select the threshold type: will you use thresholds based on the charged amount, or on the total call time? • **Amount** means the threshold is measured in currency units (e.g. USD), and the counters will go up by the amount which the customer should have been charged for the call before the volume discount was applied. • **Volume** means the unit is minutes, and the counters will go up by the same value as the charged call duration. Note the difference between *call duration* and *charged call duration*. For instance, if a rate specifies 5 minutes rounding and a customer has spoken for 3 minutes 42 seconds, he will be charged for 5 minutes and the counter will go up by 5 minutes as well.
Usage Period	This defines how often the volume discount is reset. For example, if you have defined a "500 minutes for free" offer for your customer then the volume discount

	counter will be reset when the customer's next usage period begins. In our example, the customer will receive 500 free minutes during every usage period (day, week, month, etc.) The following types of usage periods are available: • One time – A volume discount is applied one time only; • Daily – A volume discount is applied every day; • Weekly – A volume discount is applied every week; • Bi-weekly – A volume discount is applied every two weeks; • Monthly – A volume discount is applied every month.
Prorate Thresholds for First Usage Period	This prorates volume discount thresholds according to the number of days remaining in the first usage period after the volume discount assignment. For example, if a volume discount plan is created with a 100% discount for up to 1000 minutes, a regular rate is applied after that. If a customer has a *monthly* usage period and the volume discount plan is assigned on October 20th, then the threshold becomes 367 minutes since there are 11 days remaining in October. For the following month the threshold becomes 1000 minutes.
Peak Level	**N/A** indicates that the discount is provided regardless of whether the service is used in a peak or off-peak period. Otherwise, this column contains the period names, and the next column (**Discount Scheme**) contains a definition of the discount structure for each period in a separate row.
Discount Scheme	Since the discount formula is complex, you cannot edit it directly. Click on the column header or the icon in order to launch the discount definition wizard (see the section below).
Exclusive	Defines whether an account should be granted exclusive free calls, i.e. calls to which a 100% discount is applied (these calls do not affect the customer's counters). See the **PortaBilling Administrator Guide** for more details.

Discount Definition Wizard

The discount wizard provides users with a flexible tool for defining threshold values and corresponding discount values. A threshold defines the maximum counter value (call duration or charged amount) within which the current discount may still be applied. If the last available discount is to be applied regardless of the counter value (e.g. first 200 minutes – normal rate, up to 500 minutes – 10% discount, and 20% discount after that) then this last discount will be created with a special unlimited threshold.



Field	Description
Threshold	The threshold value is measured either in currency units or time units (minutes), according to the type of discount. The value entered must be numeric (with a period allowed) and greater than zero. To provide a special unlimited value for the threshold, select the **Unlimited** check box. You cannot have two discount rows with the same threshold values.
Discount	The percentage discount value must be numeric (with a period allowed) in the 0 – 100 range. A 0% discount means “standard rate applied,” while a 100% discount means “free call.”
Notification	Send an email notification to the customer when the threshold is crossed and the discount no longer applies.
Split xDRs	When a session spans several rating periods (e.g. covers both peak and off-peak periods) it is divided into portions. Check the **Split xDRs** box and then multiple xDR records will be produced for sessions like this one. Each xDR record will be linked to the applicable discount level / rate.
Service Restriction	This column is only available for services based on the Internet Access service type. In this case, when the discount period is active and the threshold has been crossed, the level of service provided can also be adjusted. The possible values are: • No restriction. • Limit usage (customer can still use the service, but with limits, e.g. the upload / download

	speed is significantly decreased). • Block service – Refuse to provide any further service. Typically, this is done to reduce the amount of available bandwidth when the data transfer quota has been reached.

The billing engine decides which discount is to be applied, depending on whether the counter for the given destination has reached one of the defined thresholds. Note that the "charged amount" counters record charges as they are defined in the tariff, i.e. before a volume discount is applied. If there is no "Unlimited" threshold discount, and the counter exceeds the last (i.e. biggest) threshold, any further calls will be billed according to the standard tariff rate.

For example:
Discount type – Volume, minutes

A. The discount is defined as 0..100 – 50%; 100..200 – 20%; 200..unlimited – 10%

The first 100 minutes are billed at a 50% discount (half the price specified in the tariff), the next 100 minutes are billed at a 20% discount, and thereafter all calls receive a 10% discount.

B. The discount is defined as 0..100 – 100%

The first 100 minutes are free; all minutes above that are billed at the tariff rate.

Discount type – Amount, USD

C. The discount is defined as 0..10 – 0%; 10..20 – 10%; 20..unlimited – 20%

When the customer begins making calls, each call is charged according to the normal rate until the total charged amount exceeds $10. After that, the customer is given a 10% discount on calls. When the total charged amount exceeds $20, all calls receive a 20% discount.

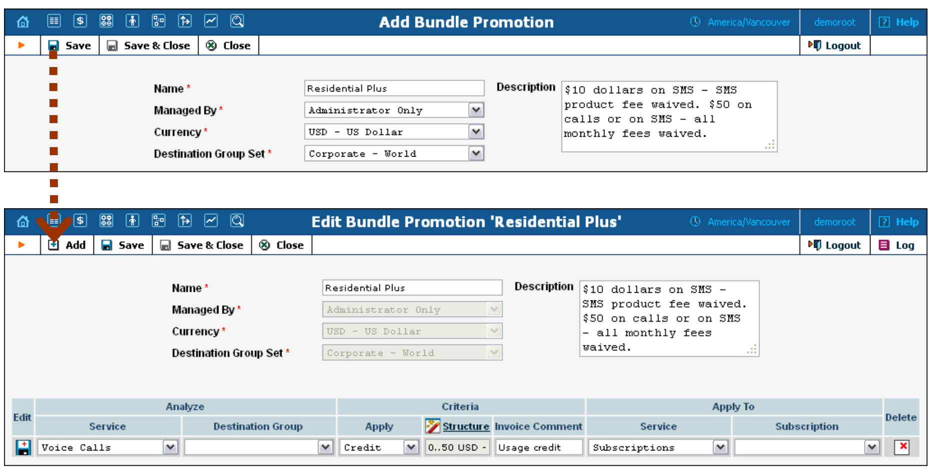
NOTE: Let's look at a situation in which a customer's balance is $10.00 (and the volume discount counter is also $10.00). The customer makes a 30-minute call, and the tariff rate is $0.20/min. The call is charged as 30 * 0.20 – 10% = $5.40, and this value is stored in the CDR for the call. Thus the customer's balance will be modified by $5.40, to become 15.40. At the same time, the volume discount counter will go up by the amount without the discount. Thus the counter will go up by $6, to become $16.00.

Bundle Promotions

The Bundle (Inter-service) promotions feature allows you to offer promotional discounts based on monthly amounts spent and apply charges based on usage minimum.

Add / Edit a Bundle Promotion

To add a new bundle promotion, select **Add** to go to the **Add Bundle Promotion** page. An existing bundle promotion can be edited by clicking on the **Edit** button next to its name.

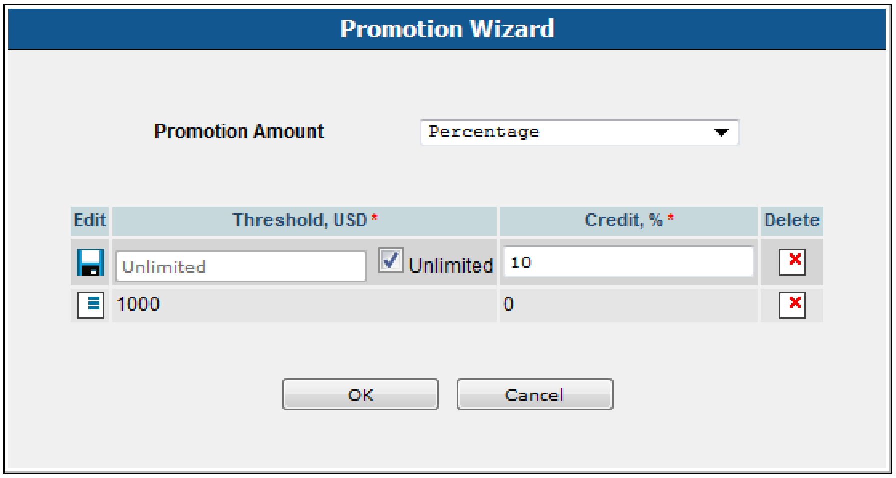


Field	Description
Name	The name of a bundle promotion to be used in the system.
Managed By	By default – administrator only. A bundle promotion can be assigned to a reseller (Managed by NNN) so that it is manageable from the Customer Self-provisioning web interface.
Currency	Indicates which currency is used for billing calculations. All charges and credits in the bundle promotion are to be defined in this currency. A bundle promotion can only be assigned to customers and accounts using the same currency.
Destination Group Set	A set of destination groups (UK-Mobile, CZ-Mobile, etc.) you would like to use for more convenient

	promotion application.
Description	An extended description of this bundle promotion.
Analyze	These columns indicate which service and destination group will be used to analyze how much money the customer has spent on services during the billing period to credit or charge customer accordingly.
Service	Specifies for which service xDRs will be analyzed.
Destination Group	Specifies which destination group xDRs will be analyzed.
Criteria	These columns indicate a promotion scheme, credit or charge amounts and a comment shown on the customer's invoice.
Apply	Indicates whether a customer should be charged or credited for the promotion.
Structure	To configure a flexible promotion scheme click on the column header or the icon in order to launch the promotion wizard (see the section below).
Invoice Comment	Specifies what comment customer will see on his invoice for this promotion transaction.
Apply To	These columns indicate where to apply the promotion.
Service	Indicates whether to apply the promotion to a service, a whole bill, payments, taxes, credits / adjustments or subscriptions (all or one in particular).
Subscription	If the *Subscriptions* option was selected from the **Service** list you may either select a specific subscription here (to apply the promotion to) or leave this list empty to apply the promotion to customer's own subscriptions and *all* of his credit accounts' subscriptions.

Promotion Wizard

The promotion wizard provides the administrator with a flexible tool for defining promotional discounts based on amounts spent during the billing period.

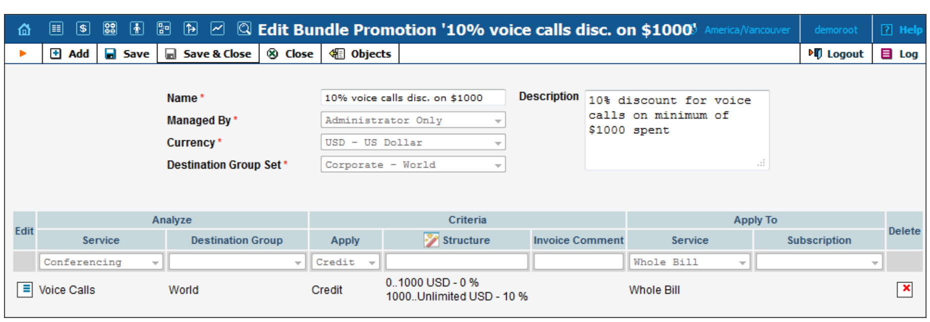


Field	Description
Promotion Amount	Defines whether the promotion is based on a percentage or a fixed sum of money: • **Fixed** – Increases or decreases service payment by a fixed amount of money. • **Percentage** – Increases or decreases service payment by a defined percentage.
Threshold	This field defines the maximum amount of money to be spent for a service to apply a corresponding credit or charge. Value entered must be numeric and greater than zero. To provide a special unlimited value for the threshold, select the **Unlimited** check box.
Credit / Charge	This field defines a credit or charge amount (either fixed or percentage based) that is applied when customer spends a corresponding amount of money for a service.

Examples:

Bundle promotion based on the amount of money spent

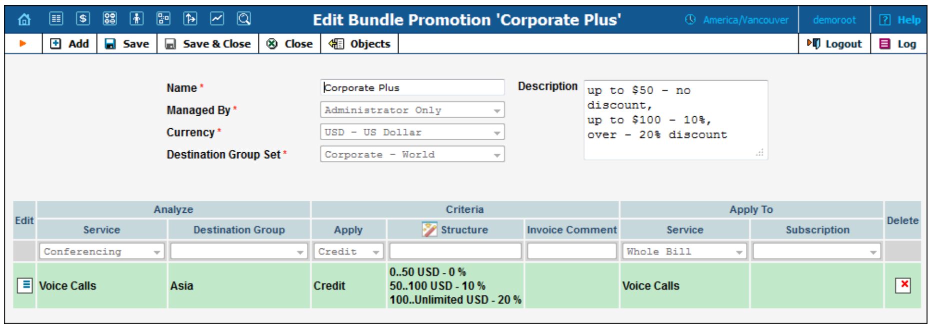
The promotion discount is defined as **0..1000 USD – 0%, 1000..Unlimited USD – 10%**.



For *Voice Calls* service usage up to $1000 no discount will be provided, a 10% discount will be applied to the entire bill if the *Voice Calls* service usage exceeds the $1000 threshold.

Bundle promotion with multiple discount thresholds

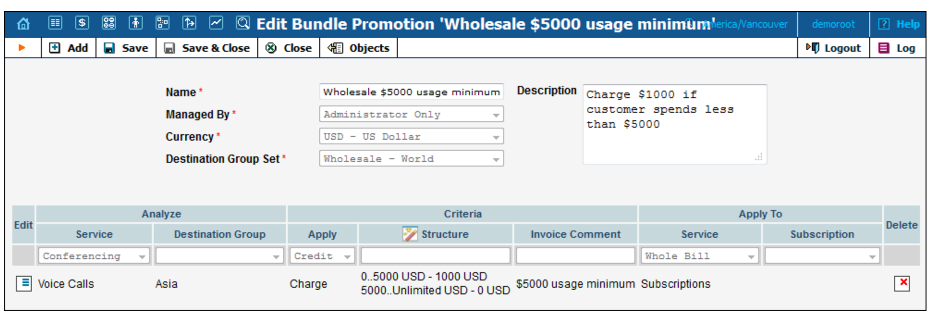
The promotion is defined as **0..50 USD – 0%, 50..100 USD – 10%, 100..Unlimited USD – 20%**.



For *Voice Calls* service usage up to $50 no discount will be provided; from $50 up to $100 a 10% discount will be applied; for service usage above $100 a 20% discount for the *Voice Calls* service will be applied.

Charges based on usage minimum

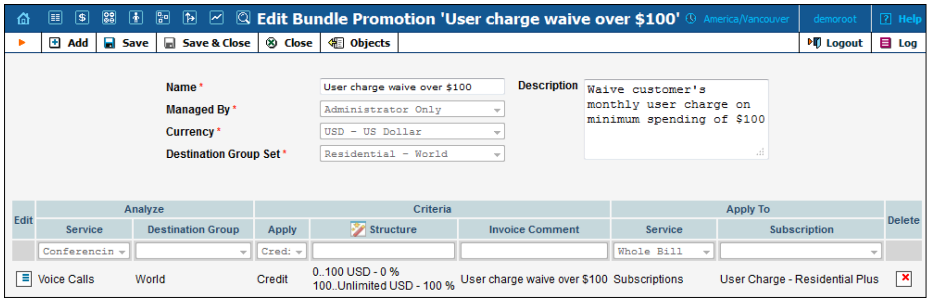
The charge structure is defined as: **0..5000 USD – 1000 USD, 5000..Unlimited USD – 0 USD**.



For *Voice Calls* service usage of below $5000 a $1000 fine will be applied; for service usage above $5000 no fine will be applied.

Bundle promotion based on a defined percentage

The promotion is defined as: **0..100 USD – 0%, 100..Unlimited USD – 100%**.



For *Voice Calls* service usage below $100 no discount will be applied to *Subscriptions*; for service usage above $100 a 100% discount will be applied to a specific subscription. In other words, the user will receive a subscription for free after spending more than $100 on *Voice Calls*.

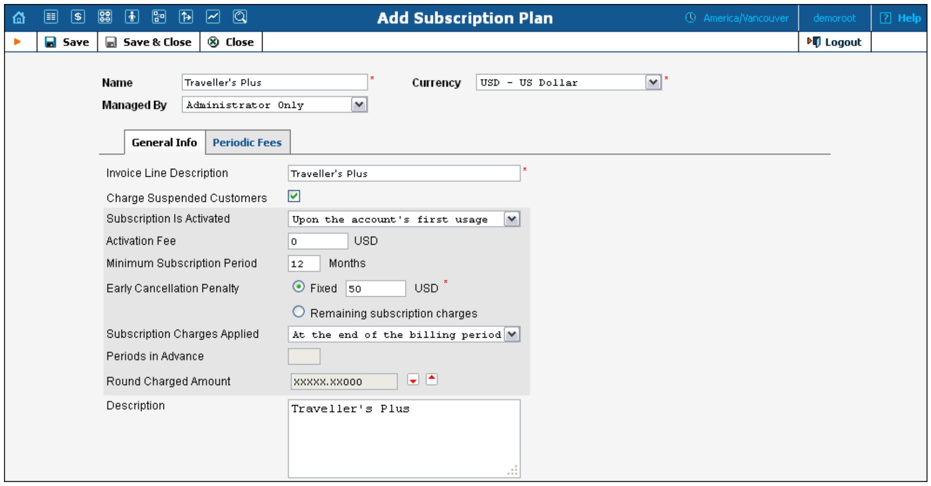
Subscription Plans

Subscription plans enable automation of recurring non-call related charges applied to your customers: for instance, basic monthly fees or fees for additional services such as voicemail or hardware rental.

Use the main Subscription Plan Management screen to list all existing plans.

Add / Edit a Subscription Plan

To add a new subscription plan to the system, select **Add** to go to the subscription plan creation screen. An existing subscription plan can be edited by clicking on its name in the list.



Field	Description
Name	The logical name of the subscription plan object.
Managed By	By default – administrator only. The plan can be assigned to a reseller (Managed by NNN) so that it is manageable from the Customer Self-Provisioning web interface.
Currency	Indicates which currency is used for billing calculations. All fee amounts in the plan are to be defined in this currency. A subscription plan can only be assigned to customers, accounts and products using the same currency.

General Info tab

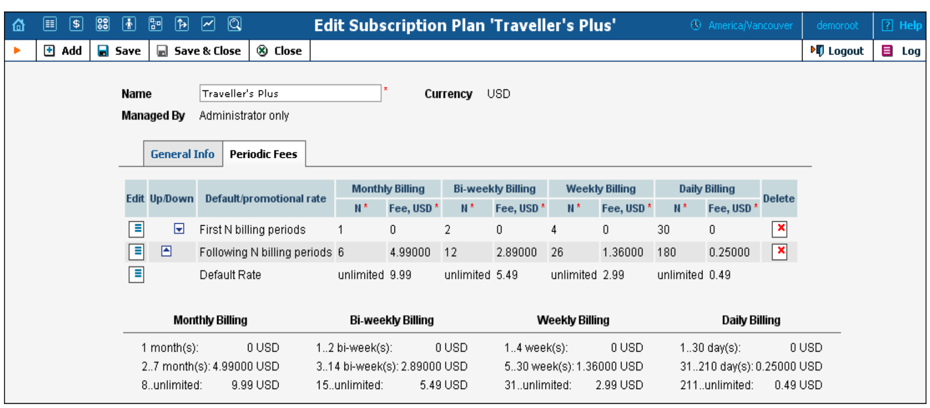
Field	Description
Invoice Line Description	The subscription plan name as the end-user will see it on the invoice.
Charge Suspended Customers	Select this check box to enable subscription charges for suspended customers (in this case, subscription fees are always fully applied disregarding user status). Clear this check box only when applying subscription charges for those days when the customer wasn't suspended. (Note that customer's invoice will contain a transaction for the entire billing period subscription fee and a transaction showing the compensation for those days when the customer was suspended.) For new subscriptions, the **Charge Suspended Customers** option is off by default (so that subscription charges will *not* be applied for those days when services were suspended).
Subscription Is Activated	Specifies from which date subscription charges will apply:

	• At the given start date – the first billed day is the subscription start date. • Upon the account's first usage – charges are applied only from the later of the subscription start date or the account first usage date.
Activation Fee	A one-time fee applied when the subscription is activated.
Minimum Subscription Period	Time interval (in months) during which the subscription must remain uninterrupted so as to avoid penalties.
Early Cancellation Penalty	If the subscription is cancelled earlier than the minimum subscription period a one-time fee is applied. The following options are available: • **Fixed** – A fixed charge is applied without taking account of when the subscription was cancelled. • **Remaining subscription charges** – The charge will depend on the time when the subscription was cancelled. For example: a subscription plan has a $30 monthly subscription fee and a 12-month minimum subscription period. A customer signs up on September 10th and cancels the subscription on October 1st (he has only used the service for 20 days.) In this case, the subscription will be charged for 11 months and 10 days, that is $30*11 + $30/30*10 = $330 + $10 = $340.
Subscription Charges Applied	Defines the way subscription charges are applied to a customer's account: • At the end of the billing period – The customer is charged the full subscription fee at the end of the billing period. • Progressively – A prorated service charge is applied on a day-by-day basis, depending on the time the service was used during this period. For example, if the monthly subscription fee is $9.99, a progressive charge of $0.33 will be made daily, so that on the 10th day the subscription charges will total $3.33. • In advance – Subscription charges are applied in a such way that when a billing period is closed, the customer is charged for N consecutive billing periods following the current one. For instance, if N is set to 2, and the customer has a monthly billing period, subscription charges for May and June will be made when the April billing period is closed.

Periods In Advance	Only available for subscription plans charged in advance; specifies for how many periods advance charges should be made.
Round Charged Amount	A pattern that defines the rounding of the amount charged for a billing period (e.g. when the monthly subscription amount is $10.00, but the service was only used for 10 days, it is desirable to round the applicable charge of $3.33333). This pattern takes the form XXX000. An X (to the left) means that the digit(s) in this position will be left unchanged, while a zero (to the right) means that this position will be rounded. For example, XXXXX.XX000 means that the amount will be rounded up to two decimal places, so that 1.2345 becomes 1.24. Note that rounding is **always** done upwards.
Description	An extended description of this subscription plan.

Periodic Fees tab

In this tab you may define recurring fees which are applied to your customers while a subscription is active, as well as special promotion periods. The rate structure is organized as a table, where columns define the rates for different billing periods, and table rows specify the rates for different phases of the customer's lifetime. The table of periodic fees must include at least one row (marked **Default Rate**) which specifies the normal rates applied by default. If you wish to define a special promotion (e.g. a reduced rate for the first three months), you may insert an extra row into the table to cover this period.



Field	Description
Default/Promotional rate	Specifies whether this is a rate which applies for a certain initial period, which rate which follows it (additional promotion), or if it is a default rate.
N	Promotion span – the number of billing periods covered by this fee.
Fee	Amount of the fee.

After you have edited a specific row, click **Save** to confirm that you have finished editing this row. (You still need to save the whole form – use **Save** in the toolbar for this.)

For your convenience, the periodic fee table in Edit mode provides auto-population of the fields:

- If you type a value in one of the span (**N**) columns, a re-calculated value will be entered automatically in all other empty columns. For instance, say you plan to define a special promotion for the first month. If you type 1 in the **N** column under the **Monthly** billing period, the **N** columns for Bi-Weekly, Weekly and Daily billing periods will be automatically filled with 2, 4 and 30 respectively.
- If you type a value in one of the **Fee** columns, a re-calculated value will be entered automatically in all other empty columns. For instance, when defining a special promotion for the first month as mentioned above, if you type 9.99 in the **Fee** column under the **Monthly** billing period, the **Fee** columns for Bi-Weekly, Weekly and Daily billing periods will be automatically filled with 4.995, 2.331 and 0.333 respectively.

Also, below the table in which you enter periodic fees you may see another table providing an extended explanation of the fee structure.

Taxation Info tab

Field	Description
Taxation Method	Select here **Billsoft (US, Canada)** method of taxation – external module from the Billsoft® company (US, Canada).
	Billsoft Taxation Method (US, Canada)
Transaction	Type of transaction (e.g. Intrastate, Interstate).
Service	Type of service (e.g. Toll, Toll Free).
Activation	The service type that is associated with activation procedure (e.g. activation of voicemail, cellular or PCS service).
Cancellation	The service type that is associated with cancellation procedure.
Usual	The service type that is associated with usual transactions and service.

Products

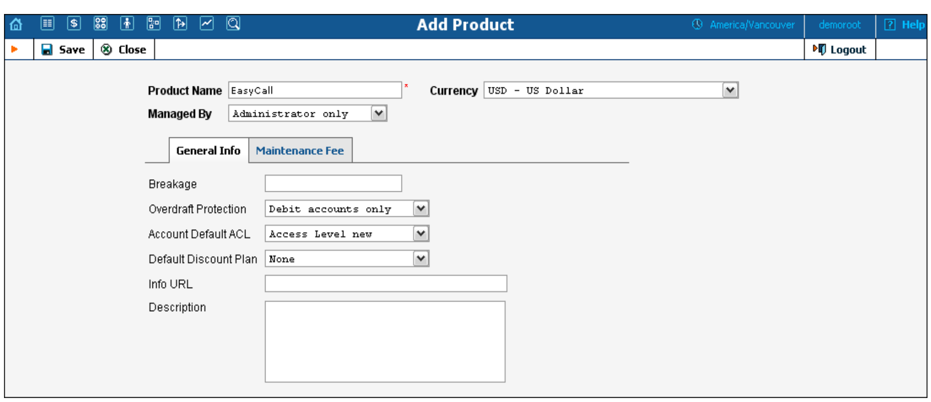
A product is a combination of services that you provide to a customer for a price. For example, you decide to sell calling cards with 10 cents/minute calls to the Czech Republic for calls to a local access number in New York, and 15 cents/minute + 50-cent connection fee for calls to a toll-free line. In this case, your product will include two types of service:

- access via the local New York number, and
- access via the toll-free line,

with price parameters associated with each service.

Rating entry is the main component of a product definition. It specifies where your customers are allowed to use a service and how they should be charged for it. Rating entry allows you to specify the following parameters which define an access point:

1. The type of service provided.
2. The node on which the service is used. What exactly does "node" mean in this context? If, for example, a customer calls to gateway A, enters his PIN, and makes an outgoing call which is terminated on gateway B, is he using a service on node A, node B, or both? The correct answer is that the service is regarded as having been provided at the point where authorization was performed. In this example, since PIN authorization is performed on node A, it is node A which must be listed in the rating entry.
3. Identification of the access code (method) on that node. This parameter allows you to use different rate plans for the same service. For example, you may choose a rate plan according to the PSTN access number (local or toll-free) that the customer has dialed. Or you may use different rate plans for outgoing, incoming and forwarded calls in your IP calls service. (While for services such as prepaid cards the access code is a number, for other services any string may be used, so long as it is one provided by the application handling the call).
4. Originating line information (this is applicable only to the voice call service, where the call originates on the PSTN network). You can separate rating entries based on originating line information (e.g. whether the call was made from a home phone or a pay phone). Make sure your telecom provider supplies you with this information in the call setup.



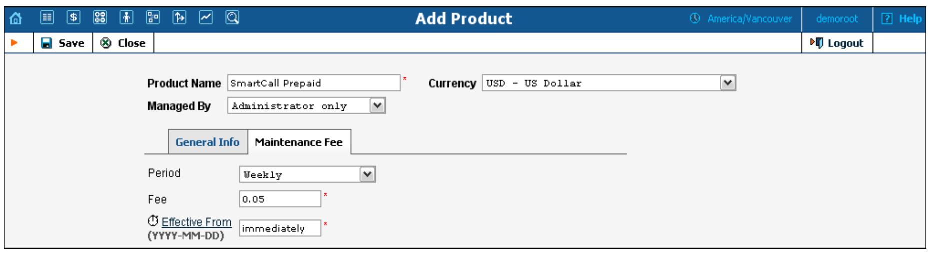
The basic information for defining a product is as follows:

Field	Description
Product Name	The logical designation of the product.
Managed By	**Administrator only** (default) means that this product will be used for your direct customers and is accessible only to your administrators. Select a PortaBilling® reseller to assign this product for use by a particular reseller.
Currency	The currency in which the product will be maintained. To edit a currency, delete all rating entries for this product.
General Info	
Breakage	This value should be set by the administrator based on the currency and minimum price per minute. It is used in Account Management to obtain a summary of "depleted" (practically unusable) accounts. How it works: An account user could have a very small balance, e.g. 0.015. This is not enough to make calls to most destinations, except perhaps calls to technical support and certain local calls. Thus, even though the account's balance is not yet zero, the account is basically unusable (and the customer will probably never use it). The administrator is interested in how many accounts are in this state, i.e. how many accounts are depleted.
Overdraft Protection	• **No protection** – When the locking of funds is requested, this will be done separately for each session, and will not affect other sessions; so, effectively, there will be no "locked" funds. This method provides backward compatibility with "Fraud Protection Off" mode in previous releases. For obvious reasons, it is not recommended for general use. • **Debit accounts only** – Fund locking is done only for debit accounts. This is identical to PortaBilling's default behavior in Maintenance Release 18 and older. • **All accounts** – Fund locking is done for all account types.
Account Default ACL	Which ACL should be assigned to new accounts created with this product.
Default Discount Plan	Which Discount Plan will be used with all the product's accounts by default.
Info URL	URL to an external website describing product features. Customers can access it by clicking on the **Product**

	Info link in the main menu of their self-care interface.
Description	Product description.

Maintenance Fee Tab

Maintenance Fee is an obsolete feature and can be removed in further releases. Please use subscription plans to apply periodic charges to your customers. If you still use maintenance fee functionality, then it will be charged on the first day after an account is used for the first time, or on the date specified in the Effective From field, and thereafter according to a specified period, e.g. every week.



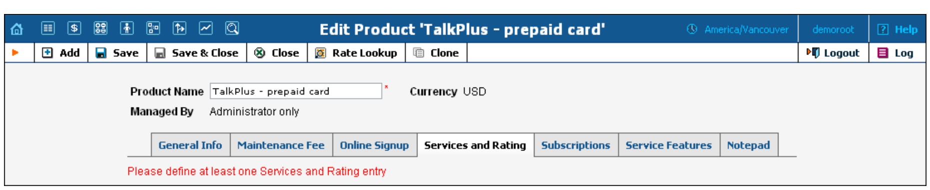
Field	Description
Period	Defines how often to apply the maintenance fee.
Fee	Only defined when a maintenance period is set; the amount of each maintenance fee, when charged.
Effective From	Defines when the maintenance fee starts to be applied.

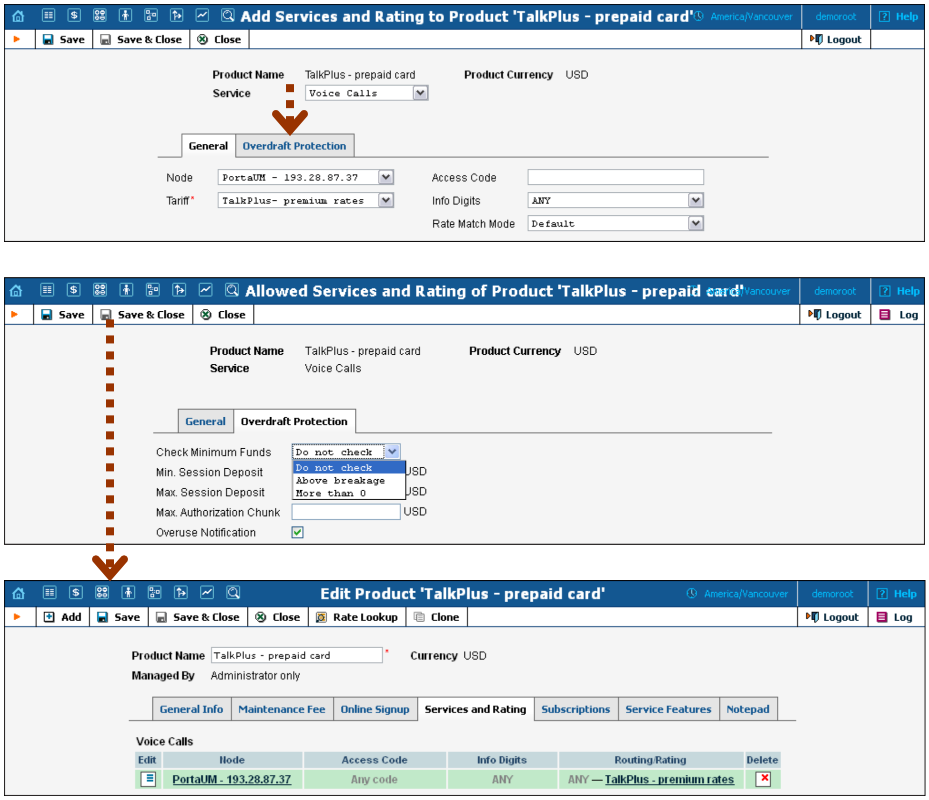
Product Services and Rating Tab

Rating list on **Services and Rating** tab defines where users of this product can use the service, and how they will be charged for it.

Tariff per access point

By default, you define different ways of charging for your service based on the way the service is accessed (a combination of parameters such as node, access code, etc.). For example, when a user calls your gateway via a toll-free access number, a different (more expensive) tariff will be applied than if he were calling via a local access number.



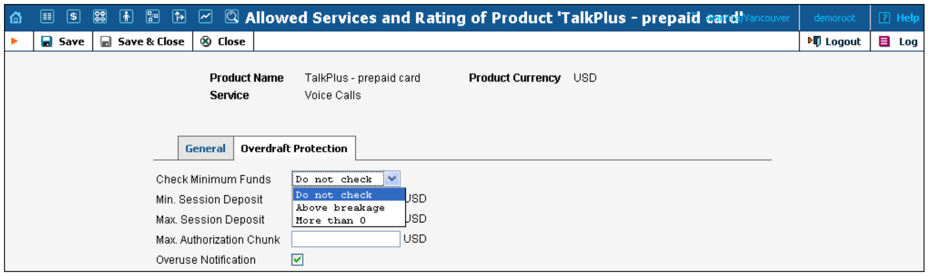


NOTE: The Services and Rating tab is invisible in Add New mode and will appear only when editing an existing product. If other fields of the product were changed but not saved, a notification message will be shown before the add / edit Services and Rating operation appears.

To add rating entry:

1. Click the **Add** button to access the **Add Services and Rating** screen.
2. Choose a **Service.**
3. Choose a **Node** where the service will be provided.
4. Type in the **Access Code** value (if required) and select the appropriate value from the **Info Digits** menu.
5. In the **Tariff** drop-down list, you can choose a specific tariff that should be applied to the customer. For the **Voice Calls** service type, you can also choose the special entry **Assign Tariff per Routing Plan**, in order to define additional tariff – routing plan combinations. A specific tariff will be applied based on which routing plan was used for a particular call.
6. Configure overdraft protection for this product on the **Overdraft Protection** tab.
7. Click the **Save** button.

Overdraft Protection tab



Before MR23, authentication and authorization of new sessions for accounts with low available funds was controlled via the global options (i.e. CheckAvailableFundsOnAuthorization, CheckAvailableFundsDebit and CheckAvailableFundsCredit). These options didn't provide enough flexibility since they could not accommodate different service scenarios at the same time, e.g.:

- debit accounts are rechargeable via IVR, thus should always be granted access to the top-up IVR application (usually accessible via a call to *12)
- debit accounts should stop working entirely for making calls (even free ones) when balance reaches 0
- debit accounts should stop working completely before the balance reaches 0, e.g. when the balance is less than $0.1

Overdraft Protection can be configured separately for every service scenario using the following parameters:

- **Check Minimum Funds** – When set to **More than 0**, account should have some available funds to use the service, regardless of the service itself being provided for free (e.g. free call). Switching this option to **Above breakage** allows you to set the minimum available funds required for using the service to the product's breakage value. The option **Do not check** allows a session to start without first checking the account's available funds.

NOTE: This option will not have an effect on simple authentication requests, such as SIP-UA registration, when no session is open.

- **Min. Session Deposit** – Sets the deposit amount for each individual session to be locked to a specified value (effective only if the specified value is higher than the computed deposit amount required for the session authorization).

  If an account's available funds fall below a certain value, you can use this option together with the **Check Minimum Funds** option to restrict usage to only one session at a time (even for free sessions), thus providing additional overdraft protection.

Or you can use this option together with **Max. Authorization Chunk** to provide additional protection for simultaneous session use. (E.g. set **Min. Session Deposit** > **Max. Authorization Chunk** and more funds will be locked without changing the sessions' duration).

- **Max. Session Deposit** – Reduces the deposit amount to be locked for each individual session but does not restrict the session itself (effective only if the specified value is lower than the computed deposit amount required for session authorization). This option weakens the strictness of overdraft protection, so the user can use funds above the limit to initiate several simultaneous sessions. (E.g. set **Max. Session Deposit** < **Max. Authorization Chunk** and fewer funds will be locked without changing the sessions' duration).

  You can use this option to fine tune the strictness of overdraft protection for postpaid services where a certain overdraft can be allowed. In this case, the funds above the limit can be used for several simultaneous sessions.

NOTE: If NAS declares support for dynamic reauthorization for the session, this option is ignored.

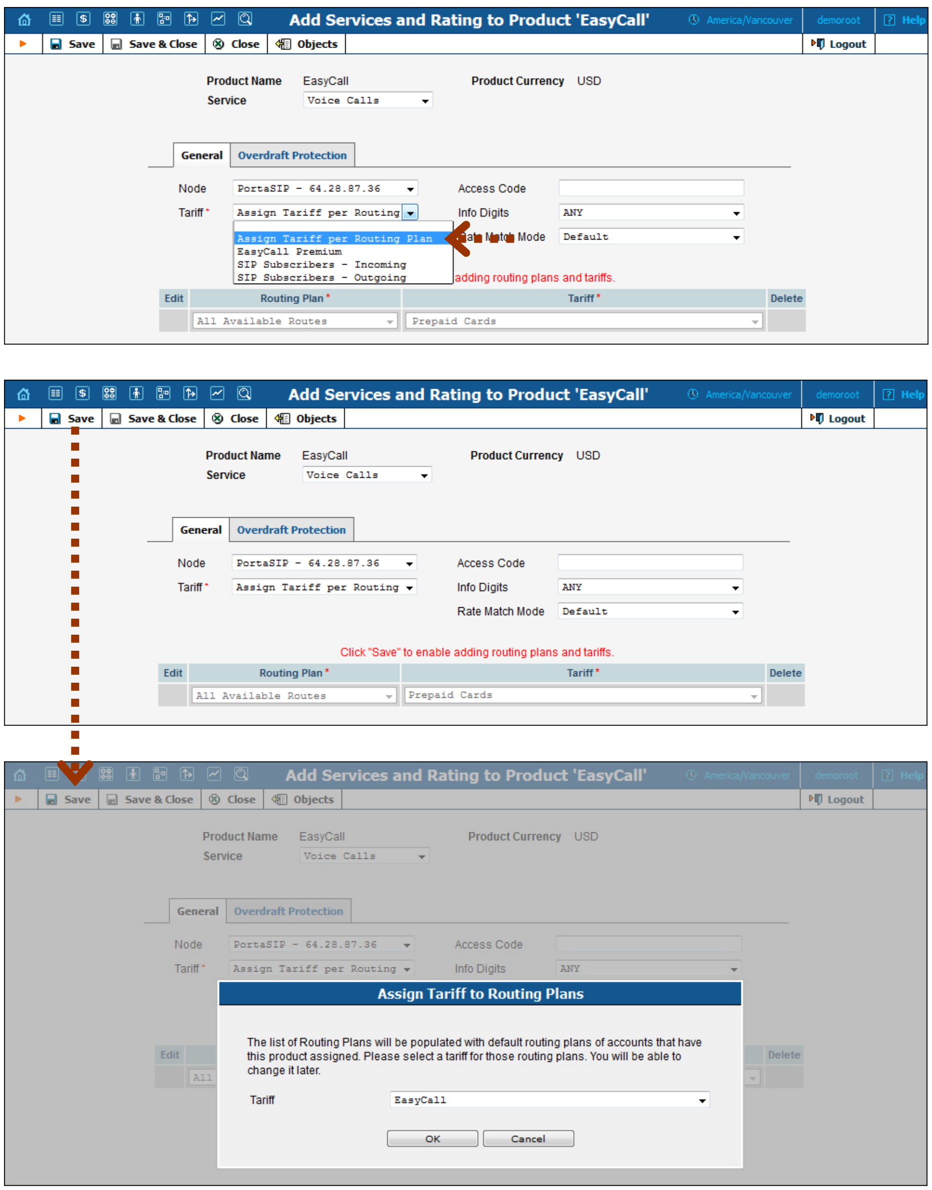
- **Max. Authorization Chunk** – In the case of a single session, this determines the maximum amount of account funds to be used for the session, and in the case of dynamic reauthorization, this determines the extension (chunk) of already consumed funds. This option limits the maximum amount of funds requested by the NAS, thus allowing more strict protection. It may be used for static authorization in order to leave some account funds unlocked and accommodate simultaneous usage of other services.

  If dynamic reauthorization is unavailable and there is a big price difference in the tariff, the **Max. Authorization Chunk** option can't be applied effectively (e.g. if **Max. Authorization Chunk** has low value, expensive calls would be limited to very short durations; if it has high value, cheap calls would be authorized with overly long durations, unnecessarily blocking the account from simultaneous usage). In this case, you can use the **Max. Session Deposit** option to fine tune the strictness of overdraft protection.

- **Overuse Notification** – Attempts to use the services simultaneously while all funds are locked by a session can signal a fraud attempt (for services such as calling with prepaid cards). This can be the result of inaccurate overdraft protection constraints. Turn this option on in order to receive real-time email alerts about these attempts.

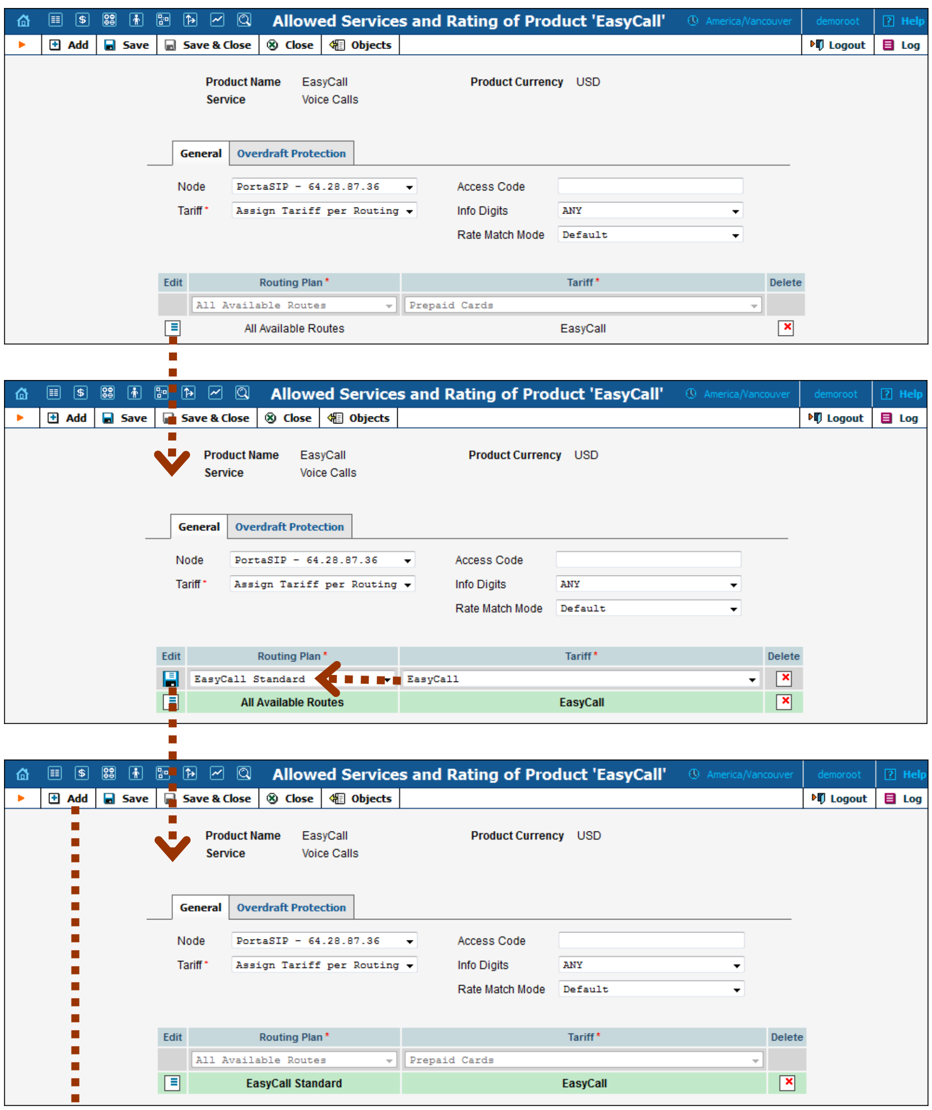
Assign tariffs per routing plan

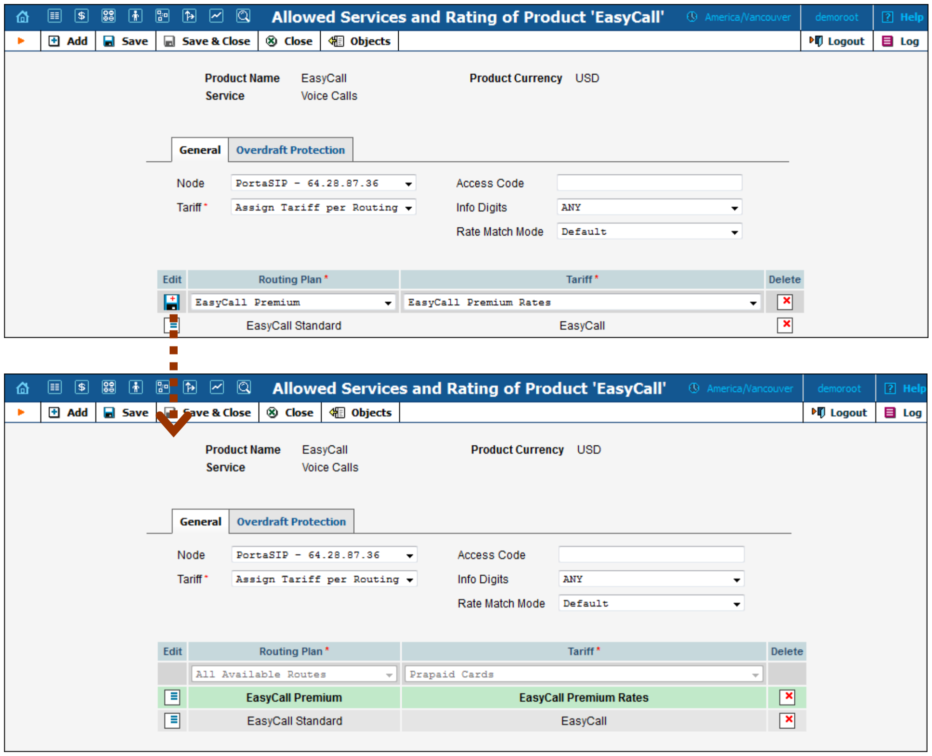
For a voice call service, you can also choose to apply a different tariff based on which routing plan (i.e. which set of vendors – cheaper or more expensive ones) was used to terminate the call to the PSTN network. Thus if a customer chooses to use premium routes, he will be charged more, while if he uses a routing plan that includes low-cost carriers, he will be charged less.



Switching from the "simple" use of one tariff for outgoing calls, regardless of the routing plan, is a step that requires attention to detail.

You are already able to assign any routing plan to any customer; and in MR19 all accounts will automatically be assigned the same routing plan that was previously assigned to their customer. If the administrator now reconfigures the product to use “tariff per routing plan”, but does not take into consideration that some customers had a particular routing plan assigned to them, and thus omits that routing plan from the rating list, an unpleasant situation may arise. Now when a customer with an account whose routing plan has been omitted tries to make a phone call without specifying a selection code, the call will be rejected, since the product’s rating list effectively says: “We don’t want customers of this product to use this routing plan!” In order to prevent this happening through an operator error, PortaBilling® pre-populates the table for routing plan / tariff mapping with **all** the routing plans currently assigned to accounts of this product. You then have a clear overview of all the routing plans that are being used, and can decide which tariff should be applied to each of them.



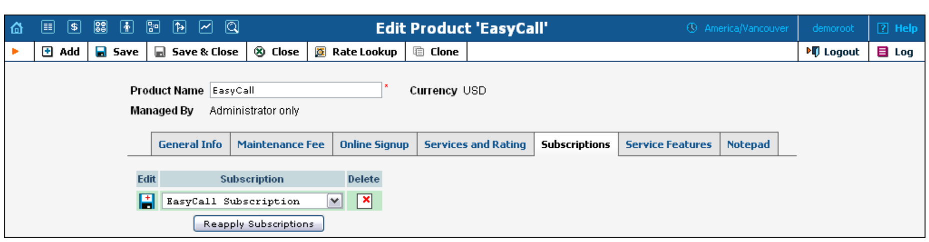


To edit the rating list:

1. Click the (**Edit**) button.
2. Choose the service, node, info-digits and tariff from the drop-down lists.
3. Type in the Access Code value, if any.
4. Change the overdraft protection parameters, if necessary.
5. Click the **Save** button.

Subscriptions Tab

This tab allows you to define a list of subscription plans which are mandatory for this product, so that these subscriptions will be automatically applied to every account to which this product will be assigned.



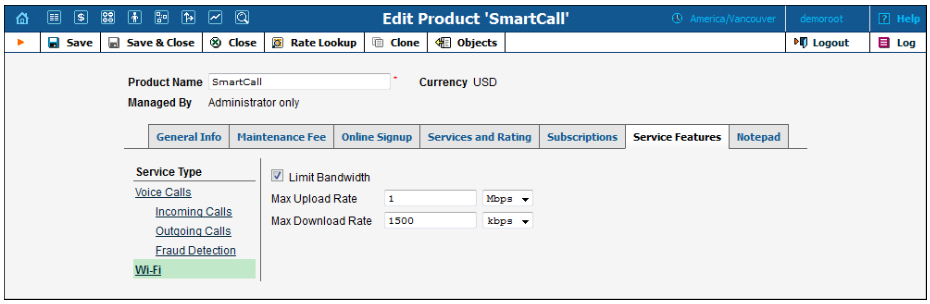
NOTE: The Subscriptions tab is invisible in Add New mode, and will appear only when editing an existing product.

To add a new Subscription entry:

1. Click the **Add** button.
2. Choose a subscription plan from the drop-down lists.
3. Click the **Save** button.

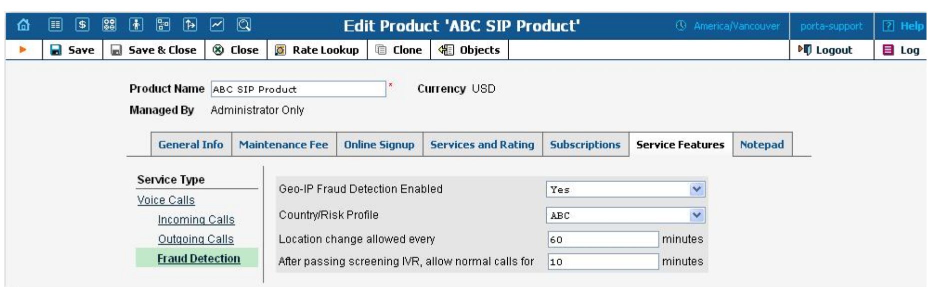
Service Features Tab

You can define the default values of service attributes for all accounts which this product will be assigned to (naturally, you can override them at the account level later on).



Fraud Detection section

Geo-IP Fraud Detection can be enabled for individual products, thereby allowing IP verification to be performed on all accounts using this product. This allows you to apply Geo-IP verification to specific business and residential VoIP products, and skip it for other products (for backward compatibility or simply because it does not fit the business model, for instance, for a service similar to Skype, where users can register and use the service anywhere in the world.)



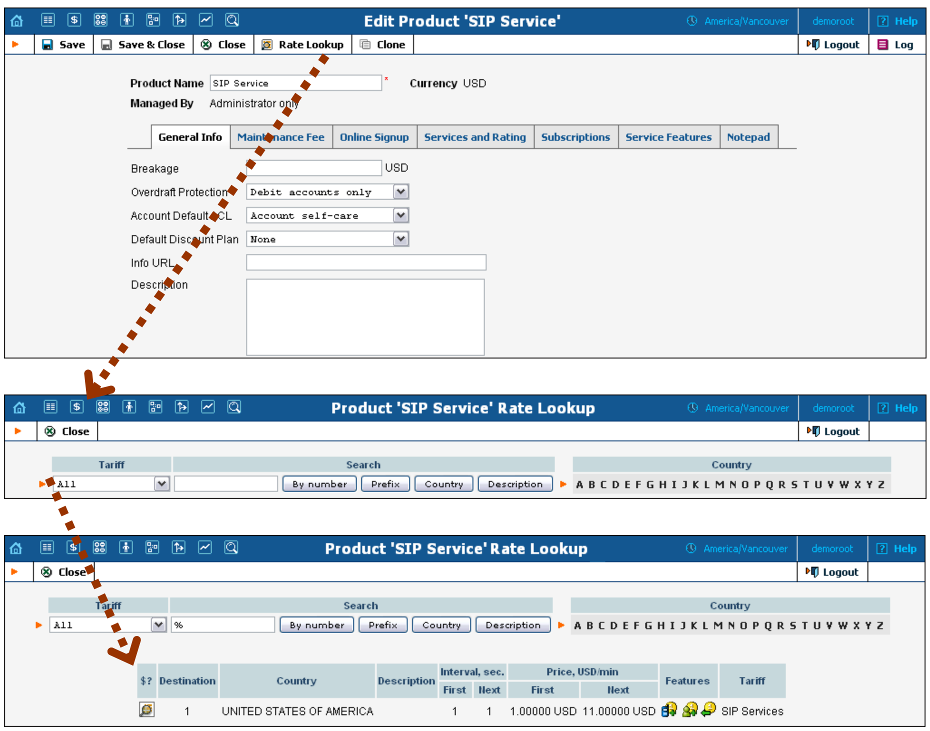
Field	Description
Geo-IP Fraud Detection Enabled	Select **Yes** if you want to apply IP verification to be performed for all accounts using this product.
Country / Risk Profile	Assign a Geo / Risk Profile depending on the area where you sell the service and what type of service it is.
Location	Allows the end-user to change location once per

change allowed every ____	specified time interval without inputting the PIN again.
After passing screening IVR, allow normal calls for _____	Allows the end-user to make calls for a specified period of time after passing the screening IVR without inputting the PIN again.

Rate Lookup

PortaBilling enables you to use the Rate Lookup feature, with which you can easily view rate information for a tariff(s) of a particular product. To use this feature, click the **Rate Lookup** button on the Edit Product page.

Alternatively, you can click on the icon next to the product name on the Product Management screen. Then on the Product Rate Lookup page use search filters to display (a) specific rate(s):

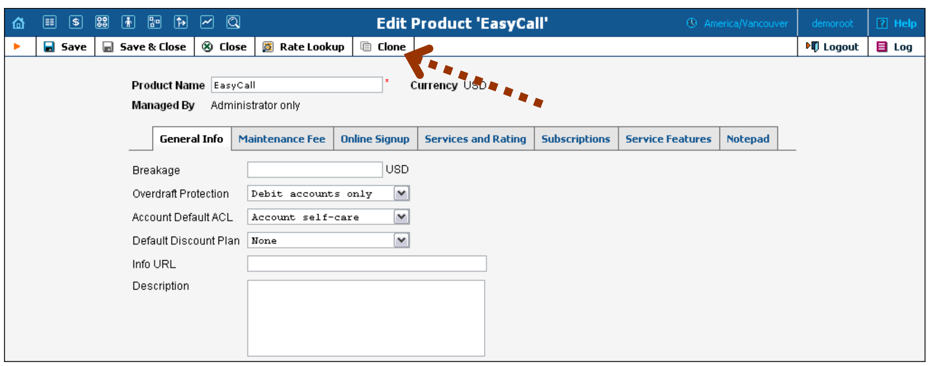


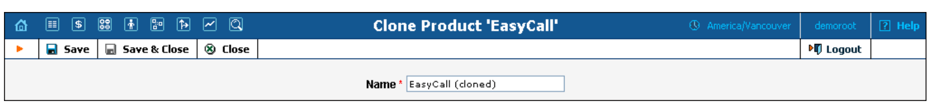
In addition to the mandatory rate information (e.g. Destination, Country, Interval and Price) there may also be icons that indicate features which have been applied to the rate, such as Maintenance Fee, Surcharges, Payback Rate and Call Rate Formula (this indicates if the rate uses a call rating formula). To get more information click the icon.

Clone product

Product configuration is an important step, since you need to specify all the rating entries properly in order to ensure the correct functionality. To minimize the amount of work required to create new products, PortaBilling® allows you to create them as clones of existing ones. In this case, PortaBilling® will copy all the tariffs used in an old product and generate a replica of it. The new product will have exactly the same rating entries, except that they will now refer to the newly created tariffs. Administrators can clone all existing products within the environment, while resellers are limited to cloning only those products they have access to. Any modifications in the newly created product will not affect tariff or rate data configuration within the old product.

To clone a specific product, click the **Clone** button in the toolbar on the Edit Product page. Give the new product a name, then click the **Save** button.





NOTE: Cloning may take a significant amount of time, depending on the amount of data involved. The new product will appear in the product list only after the cloning is complete.

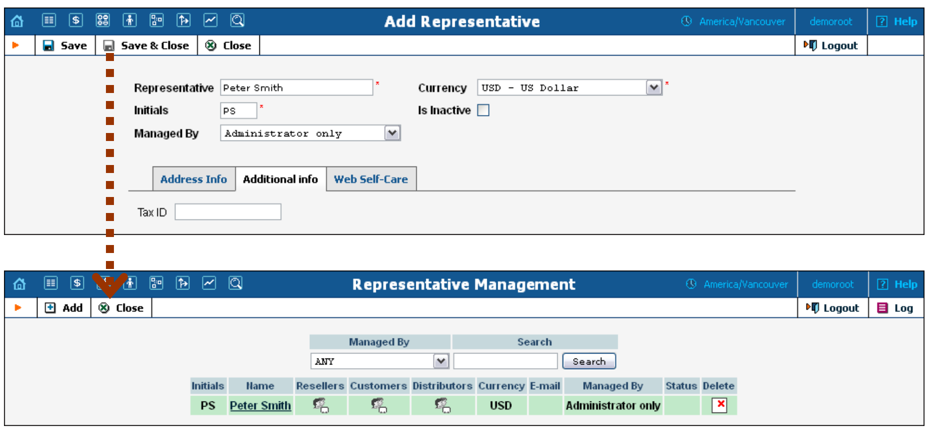
5. Participants

Representatives

You may need to track income associated with people with whom you have a business relationship. These people may sometimes be employees, while in other cases they are dealers, partners at a law firm, or independent contractors.

NOTE: Representatives do not participate in billing or revenue sharing. They are listed for information purposes only, as required when PortaBilling® is integrated into back-office CRM for calculating commissions and the like.

Each sales representative is assigned initials. Their names and initials appear on sales forms, allowing you to associate specific sales reps with specific sales in order to track their income.

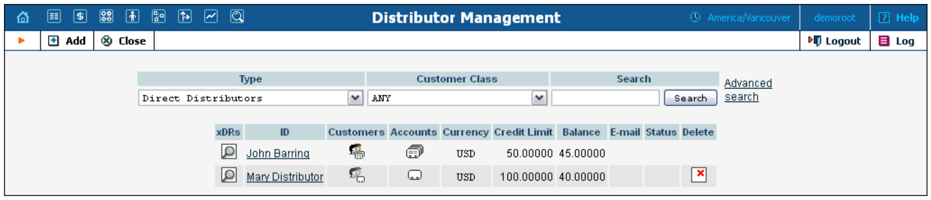


NOTE: Once a new representative is created, the **Currency** and **Managed By** properties cannot be changed.

Distributors

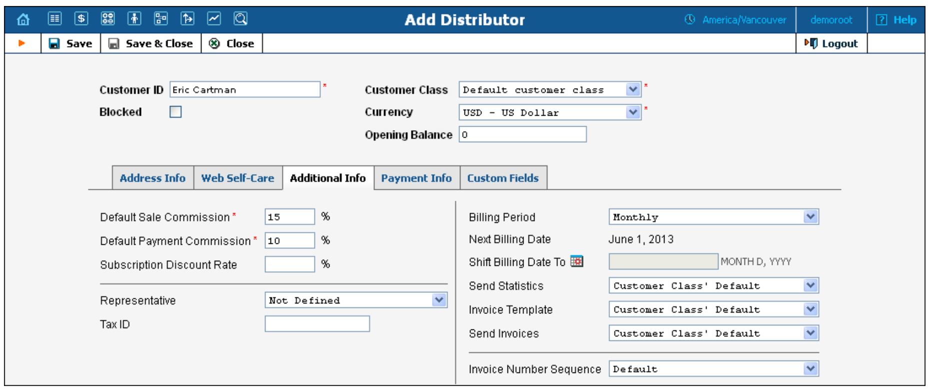
The Distributor model is designed to expand sales activities by involving extra agents and enlarging the point-of-sale network without significant costs and risks.

The Distributor Management screen shows the distributors currently in the system.



Add a New Distributor

To add a new distributor to the system, click **Add** to go to the Add Distributor screen.



The following are associated with a distributor:

- **Default Sales Commission** (this is applied when an account is created or a distributor is assigned);
- **Default Payment Commission** (this is applied when payment is entered).

To save the new distributor, click **Save**.

When a customer or account is created or activated under the distributor, the distributor's balance increases by the account's balance, minus his commission. For example, if the distributor's commission percentage is 15% (default sales commission), and a new account with a $10 balance has been created, then the distributor is charged $8.5 and has a $1.5 profit. When the distributor applies payment of $10 towards an account, and his payment commission is 10% (default payment commission), then the distributor is charged $9 and has a $1 profit.

When the distributor makes a payment in favor of his customer, the batch commission rate is used by default, except in the following cases:

- The batch has not been assigned a commission rate;
- The debit account does not belong to any batch.

In these cases, the distributor's commission rate is used.

The distributor will be charged:

- When he applies payment toward a customer or an account;

- When he is assigned to an active account;
- When an account to which he has been assigned is activated (or when a new account is created in the active state).

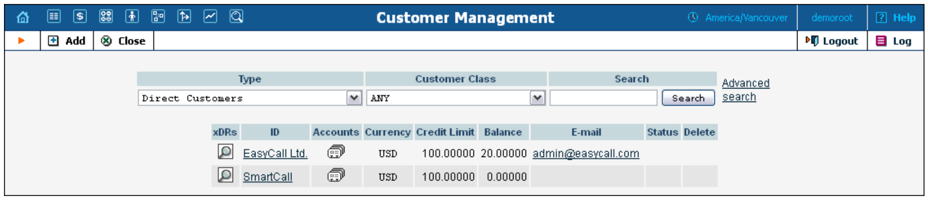
To generate a batch of accounts, you can use the account generator and assign the distributor to these accounts. The account generator only permits the creation of an inactive debit when a distributor has been selected.

Customer Management

On the Customer Management screen, you can view a list of all registered customers, or use search filters to display a specific set of customers only.

Filter value	Description
Direct Customers	Customers directly owned by your company (who have a business relationship with you, receive bills from you, and pay to your accounts).
All Customers	All customers; this includes your own customers and those of your resellers.
Sub-customers of Reseller NNN	All sub-customers of a specific reseller.
Customers of Distributor NNN	All customers of a specific distributor.
Search	Filter by name and contact details. When you enter a value in the search field, all customers who have the search string in their customer name, company name, first / last name or contact info (e.g. state, city, country, zip code, phone, email, login) will be displayed.
Advanced Search	Allows you to specify complex search conditions (see more info below)
The following search filter is only available for Resellers:	
All Resellers	Only customers of the reseller type.
The following search filter is only available for Distributors:	
All Distributors	Only customers of the distributor type.
Distributors of Reseller NNN	All distributors of a specific reseller.

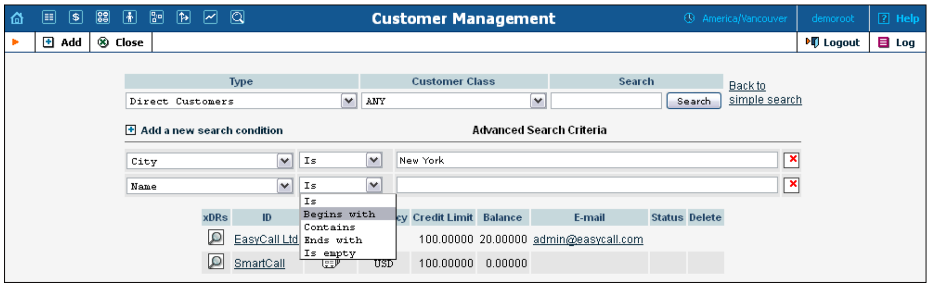
The screen provides the following information and activities:



Column	Description
xDRs	Click the **View** icon to go to the xDR view page.
ID	The customer's name.
Owned By	The name of the reseller owning the customer (none are displayed if the **Direct Customers** filter is applied).
Accounts	Click the **Accounts** icon to go to the Account Management screen (for retail customers). If there are no accounts under the customer, the icon changes accordingly to , so that you can easily see this.
Currency	The currency in which the customer's account is maintained and billed.
Credit Limit	The credit limit applicable to the customer's account (if any).
Balance	The customer's current balance.
E-mail	E-mail contact for this customer.
Status	The status of the customer's account. The icon will appear if the customer's credit has been exceeded. The customer blocked icon means that all accounts of this customer have been administratively blocked. The icon means all services to this customer have been suspended because of an overdue invoice, and the icon means that this customer was closed. The frozen icon means that periodic payments for this customer have been suspended due to repeated errors (for instance, the customer canceled his credit card and did not enter the information for his new card in PortaBilling®).
Delete	Click the **Delete** icon to remove the customer. The delete icon will only appear if there are no xDRs, accounts or sub-customers owned by the customer, or other entities (products, tariffs, etc.) managed by the customer.

Advanced Search

In advanced search mode, you can specify an unlimited number of search conditions. Every condition applies to a particular field (e.g. customer's ZIP code). Click on **Add a new search condition** to add another condition.



Operation	Description
Is	The value of the field in the customer information must match the search criteria exactly.
Begins with	The value of the field in the customer information must start with the specified value (e.g. if you enter the filter value "John", customers with the names "John" and "Johnny" will be selected).
Contains	The value of the field in the customer information must contain the specified value somewhere (e.g. if you enter the filter value "Eric," customers with the names "Eric," "Erica," "Maverick" and "American" will be selected).
Ends with	The value of this customer information field must end with the specified value (e.g. if you enter the filter value "smith," customers with the last names "Smith" and "Hammersmith" will be selected).
Is empty	The corresponding field in the customer information must be empty.

All search operations are case-insensitive, so you can enter "Eric" as a search criteria and even if the customer's name was originally entered as "eric" or "ERIC," you will still see him in the list.

All conditions work in conjunction, so in the case of multiple search criteria the customer's record must satisfy all of them in order to appear in the result list.

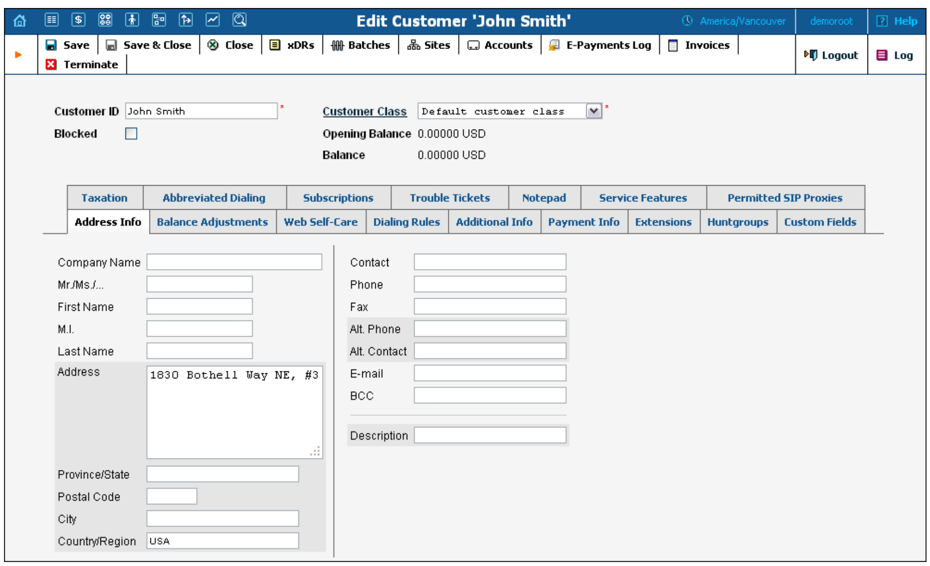
During a search operation using auxiliary fields (e.g. fax) or the "contains" comparison, the database cannot use indexes. This will result in a full table scan, meaning an increased load on the server and a longer time to produce the final result. Please avoid using such search operations if not necessary.

By clicking on **Back to simple search** you can switch the form to its original mode.

Add / Edit Customer

To add a new customer manually, select **Add** in the toolbar and then (if a quick form selection dialog – select **Manually** at the bottom of the list).

The Add Customer page allows you to define a new client entity within PortaBilling®. The information required is divided into four tabbed sections: Address Info, Additional Info, Payment Info, and self-care Info. The information on the top of the form is required. Information on all the other tabs is optional, and need not be provided when creating the customer. Once created, the customer cannot be changed from a retailer to a reseller, or moved under another reseller.



Field	Description
Customer ID	Defines the customer name as it will appear in the PortaBilling® system. This is distinct from the **Company Name** field in the **Address Info** tab.
Blocked	Blocks *all* accounts of this Customer.
Currency	The currency must be specified by selecting it from the drop-down list of available currencies. Once saved, the currency cannot be changed.
Opening Balance	The starting balance for this customer.
Customer Class	The Customer Class assigned to this customer. In order to change any parameters of the particular Customer Class, click on the link "Customer Class." When **adding** a Customer, be aware that if you select a class with a defined currency, the field Currency will

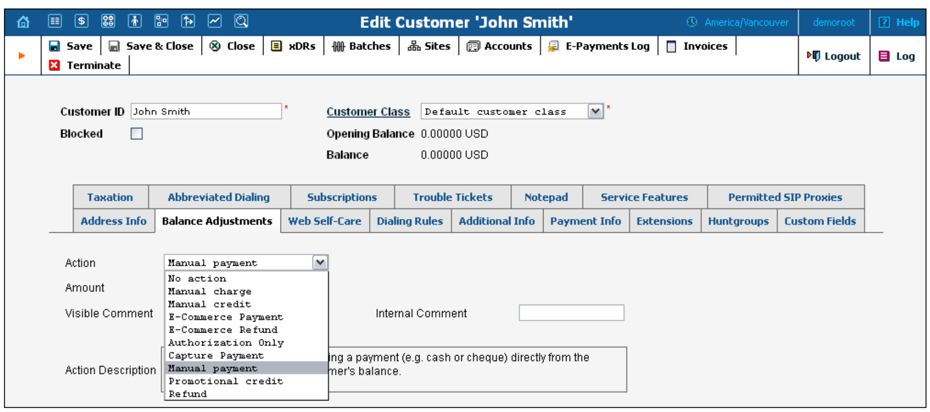
	show the corresponding value and this cannot be modified; if the class without a predefined currency is selected, then a list of currencies will be available. When **editing** the Customer, the field Customer Class will only contain classes with the *same* currency, or classes with no defined currency.

Address Info

The Address Info tab provides most of the commonly required contact information. Also note that you may enable your account manager to receive a copy of every e-mail sent to the customer by entering his e-mail address in the **BCC** field.

Balance Adjustments

The **Balance Adjustments** tab allows the administrator to correct a customer's balance (this tab is only available in **Edit Customer** mode).

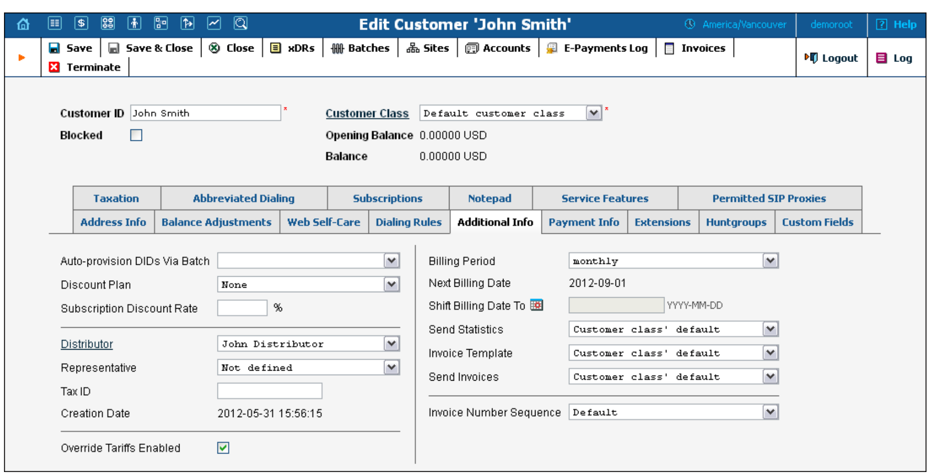


Field	Description
Action	**Manual charge:** Use this transaction to manually charge a customer for a specific service they used; for instance, if you are selling SIP phones to a customer. This means the balance will be changed so that the customer is able to make fewer calls. **Manual credit:** Use this transaction to manually give compensation related to a specific service; for instance, if the customer files a complaint and you agree to give him credit toward future service use. This means the balance will be changed so that the customer is able to make more calls. **E-Commerce Payment:** Use this transaction to charge the customer's credit card and apply the amount to the customer's balance as payment. **E-Commerce Refund:** Use this transaction to reverse a previous E-commerce payment. It

	withdraws funds from your company's merchant account and applies them as credit to the user's credit card. The amount is added to the user's account balance. **Authorization Only:** Verifies that the customer's credit card is valid and reserves a given amount. Returns a transaction ID to be used in a Capture Payment transaction. This does not affect the user's account balance in PortaBilling® or his credit card balance. Note: the transaction ID will be written to the customer's Notepad entry. **Capture Payment:** Charges the customer's credit card and applies the amount to his balance as a payment (decreases the customer's balance). Requires a transaction ID from the Authorization Only transaction. The amount must be less than or equal to the amount of the corresponding Authorization Only transaction. **Manual payment:** Use this transaction when receiving a payment (e.g. cash or check) directly from the customer. This means the balance will be changed so that the customer is able to make more calls. **Promotional credit:** Use this transaction to give the customer credit, for example, as a sales promotion. The difference between this and "Manual Credit" is that this transaction applies to a special "Credits / Promotions" service, and not to any actual service. Basically, it provides some "virtual" funds to the customer for future use. **Refund:** Use this transaction to refund an earlier payment received from the customer (e.g. a check returned by the bank). This means the balance will be changed so that the customer is able to make fewer calls.
Service *(only for Manual charge and Manual credit)*	A service for which the manual charge / credit is made. The charged / credited amount will be included in the selected service section on the next invoice.
Amount	Amount to charge / refund.
BillSoft Transaction *(only for Manual charge and Manual credit)*	This is available for balance adjustments that are performed for customers with an assigned Billsoft taxation plugin. Here you can select a specific tax type to assign to this transaction, ensuring correct total tax calculations.
Date *(only for Manual charge and*	A date associated with the manual charge / credit. For example, you can specify a date for manual

Manual credit)	credit action for when an item is credited. Note that if the selected date falls within a previous (closed) billing period the transaction will be included in the next invoice.
Include into Out-Of-Turn Invoice *(only for Manual charge and Manual credit transactions)*	This allows you to include transactions on an out-of-turn invoice to be issued on demand. You should then generate the invoice with the requisite transactions on the **Out-Of-Turn Invoice** page. For example, if the end user visits your office to buy a new IP phone, your clerk will locate the account, issue an invoice covering the cost of the phone, take the money for the phone and give the phone and the invoice to the end user. Transactions included in an out-of-turn invoice that was *generated* on the **Out-Of-Turn Invoice** page won't be reflected on the regular invoice issued at the end of the billing period.
Transaction ID *(only for E-Commerce Refund and Capture Payment)*	The transaction ID obtained via the *Authorization Only* transaction. This is required to use the reserved earlier amount for a current transaction.
Visible Comment	A comment on this transaction visible to the administrator as well as the customer, in the xDR browser or on the invoice.
Internal Comment	An internal comment on this transaction; not visible in the xDR browser, and accessible only from the database directly.

Additional Info



Field	Description
Auto-provision	This enables the customer to choose DID or toll-free

DIDs Via Batch	numbers from the DID batch. You will charge the customer for the allocated numbers according to the prices specified in the assigned batch.
Discount Plan	Volume discount plan to be applied to this customer.
Subscription Discount Rate	Amount of discount applied by default to all subscriptions of this customer (assigned either directly to a customer or to one of his accounts).
Distributor	Assigns a distributor to this customer. See the **Distributors** section for more information.
Representative	Assigns a representative to this customer. See the **Representatives** section for more information.
Tax ID	Customer's tax ID.
Creation Date	The date and time the customer was created (read-only).
Billing Period	Defines the frequency of invoicing for this customer.
Next Billing Date	Read-only field; displays the date when the customer's current billing will be closed (and invoice and statistics generated).
Shift Billing Date To	Applicable only for "monthly anniversary" and 30-day billing periods; allows you to set the billing date to a different day of the month in the future (see below for more details).
Send Statistics	Defines what kind of xDR statistics should be delivered to the customer by email: • Customer class default – Use the settings for the customer class. • Full Statistics – Send a CSV file with a complete list of xDRs. • Summary Only – Do not send a full list of xDRs, only a brief summary • Do Not Send – This option prevents the delivery of event statistics to the customer via email.
Invoice Template	Defines the invoice template for this customer. Choose **Customer class default** in order to apply the invoice template defined for this class, and so avoid defining an invoice template for each customer specifically. See the **Templates** section for more information.
Send Invoices	Defines whether new invoices should be delivered to the customer by email. Customer class default – Use the settings for the customer class.
Override Tariffs Enabled	This defines whether the override tariff feature is enabled. Check the box next to this field and the **Override Tariffs** tab will appear.
Invoice	Select an invoice number sequence that will be used

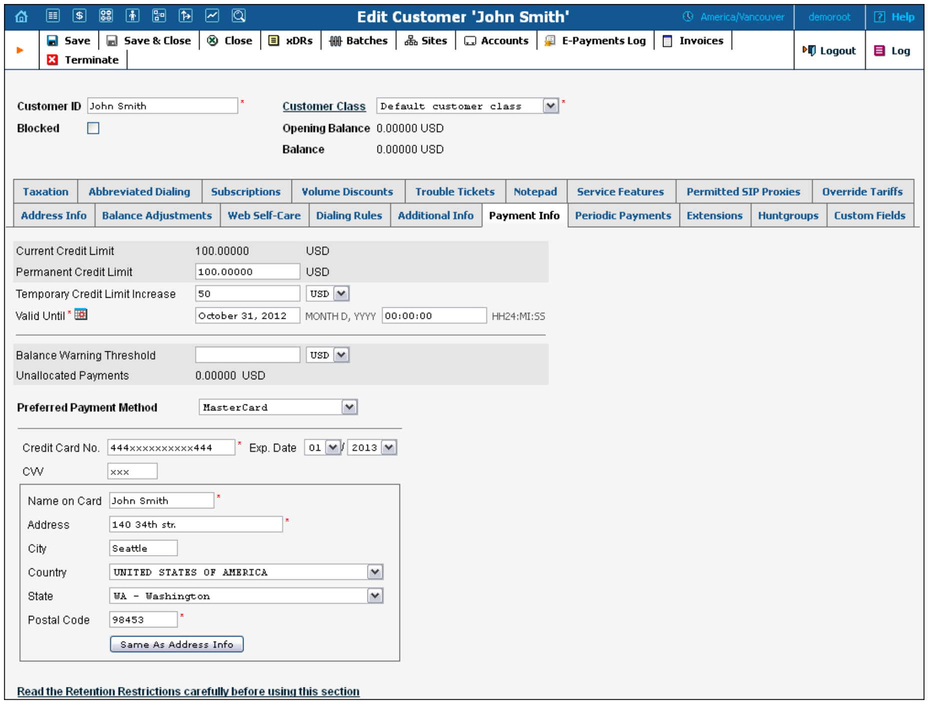
Number Sequence	for this customer: • Default – the default numbering sequence will be selected for this customer's invoices • Individual for Environment – this customer's invoices will have *globally sequenced* invoice numbering (throughout the environment) • Individual for Customer – this customer's invoices will have their own sequential numbering

Regarding statistics, the default choice is **Full Statistics**, whereby the customer receives an e-mail after the billing period has closed, including an attached CSV file containing all the calls made by his accounts. If invoices are generated for this customer and invoice delivery is enabled, an invoice will also be attached to the e-mail. The CSV file containing all the calls may be rather large, so it is possible to use the **Summary Only** option. In this case, the customer receives only a brief summary of calls by e-mail. Finally, it is possible to disable e-mail statistics by choosing the **Do Not Send** option. Note that these options only affect the delivery of xDR files by email. The actual statistics files will always be generated and accessible for download from the administrator interface or customer self-care.

Shifting the billing date may be required if, for instance, your customer has a monthly anniversary billing cycle in which his billing period closes on the 3rd day of each month. Since this may be inconvenient either for customers or your administrators (who are busy with corporate reports during the first week of the month), it may be desirable to change the billing date to some other day of the month. In this case, you can specify a new date between today's date and the date when the current billing period will close. Upon reaching this date, an "intermediate" invoice will be created (covering the period from the end of the previous billing period to that date), and subsequent billing will start from that date in the normal way.

Payment Info

The **Payment Info** screen defines customer payment characteristics. For example, customary payment information (e.g. preferred payment method, credit card number, etc.).



Field	Description
Current Credit Limit	Customer's current credit limit may differ from their **Permanent Credit Limit** if the **Temporary Credit Limit Increase** is set.
Permanent Credit Limit	If this field is left empty, there is no credit limit defined for this customer; we strongly recommend entering a value here. In the latter case, if **Radius authentication** is enabled, calls that exceed the limit will be denied.
Temporary Credit Limit Increase	Here you can temporarily increase a customer's credit limit (the value should be defined either as an amount or as a percentage of a positive **Credit Limit** value).
Valid Until	Specify the date and time for when an increased credit limit value will automatically be reverted to a permanent state.
Balance Warning Threshold	If a **Balance Warning Threshold** is defined and the customer balance reaches this value (defined either as an amount or as a percentage of a positive **Credit Limit** value), an alarm will be sent to the customer.
Delay Suspension Until *(only for suspended customers)*	Sometimes it is necessary to delay a customer's suspension for several days (e.g. allow the customer to use the service over the weekend *although* the overdue invoice must be paid in full early Monday morning, without exception) so that the customer's needs are attended to. To delay the customer's suspension select the next date slated for automatic suspension if the invoice remains unpaid.

Unallocated Payments	Unallocated payments show that the customer "overpaid" you sometime in the past, and are used to correct the paid/unpaid status of future invoices. **NOTE:** Unallocated payments do not represent a "cash reserve." When a payment is made, the amount is immediately applied to the customer's balance.

The **Preferred Payment Method** drop-down contains a list of available payment methods. Some of these, e.g. Cash and Cheque, are "virtual" methods that do not allow manual e-commerce transactions from the administrator interface, payments from customer self-care, or running periodic payments. Any other online methods will be available only if a payment system with such methods has been defined, and is assigned to the same currency as the customer's currency. Other Payment Info fields depend on the currently selected **Preferred Payment Method**, and may vary accordingly.

NOTE: There are a few payment systems which use external authorization. If such a system has been chosen as a preferred method, no other payment information details may be entered. This is because the payment processor does not allow the system to store and reuse customer payment credentials. For example, if you add a payment system with the Moneybookers payment processor and VISA payment method, and then assign it to the currency USD, customers defined in the USD currency and using VISA as their preferred payment method will not be able to enter their payment credentials. Therefore, it will not be possible to run periodic payments for them or make manual e-commerce transactions with them.

NOTE: Only resellers, direct retail customers, and their accounts are allowed to use a company's payment systems and payment methods for e-commerce payments, both manual and periodic. A reseller should define his own payment systems and assign these to the appropriate currencies in his self-care, so that those payment systems will be used by his sub-customers and their accounts.

Retention Restrictions

IMPORTANT! A merchant may not use account and transaction information for any purpose other than assisting completion of a payment card transaction, or as specifically required by law. Merchants may collect a payment card number and expiration date independently of a payment card transaction only with the express consent of the cardholder. A merchant may only retain this information for the sole purpose of facilitating future payment transactions. A merchant must not provide this information to any other person, except for the sole purpose of assisting completion of a payment card transaction.

You may click the **Invoices** button in the toolbar to quickly access the list of all customer's invoices.

Web Self-Care

The login and password information for Customer self-care refer to the credentials required on the self-care web page. An easy-to-remember yet secure password may be generated automatically by clicking the **Auto** button.

Check the "**Use the New Self-Care Interface**" option to enable the customer to use a new type of self-care interface. In order to return to the default customer self-care interface, simply uncheck this option.

NOTE: Some features such as Call Processing are not yet available on the new self-care interface.

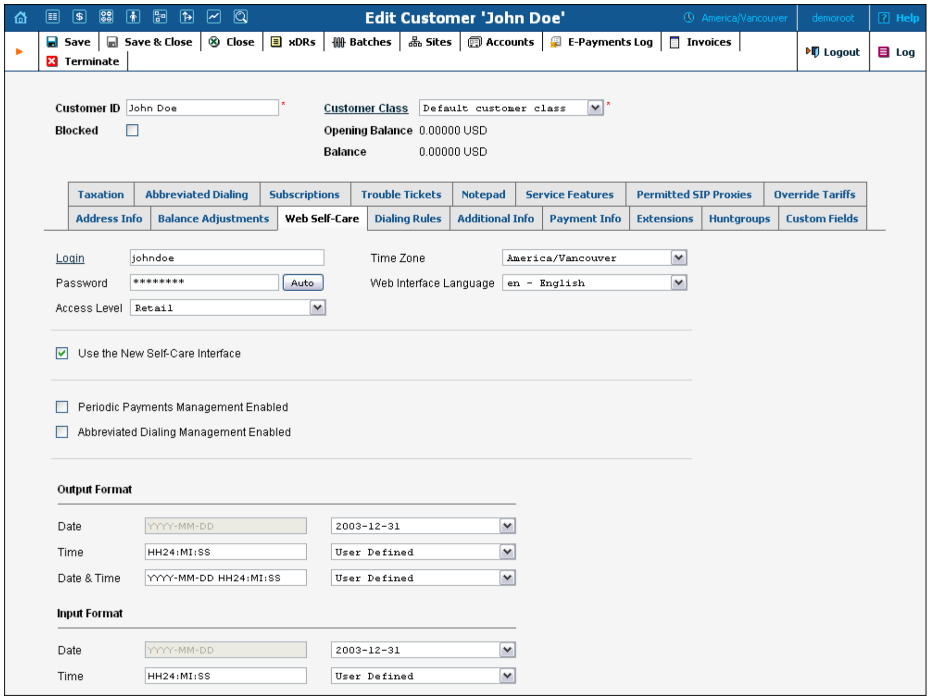
Check the "**Periodic Payment Management Enabled**" option to enable the customer himself to manage periodic payments on the Customer self-care interface (this does not prevent the administrator from editing this information!). The **Periodic Payment** tab will appear only if the customer's currency can be processed by at least one of the existing payment systems (with **Recurring** enabled), and if the customer's preferred payment method has been set to any available online method which allows storage of his payment credentials.

Check the "**Abbreviated Dialing Management Enabled**" option to enable the customer himself to manage abbreviated dialing on the Customer self-care interface. This option is not available for resellers and distributors.

Date & Time Format
PortaBilling® allows the administrator to define both input and output date and time formats for each customer registered in the system.

By making changes to the date and / or time format on this page, customers will be able to enter dates and times in the desired format throughout the entire PortaBilling® Customer Self-Provisioning Interface, on invoices, and so on (see the screenshot below).

See the **User Management** section for examples of date and time format usage.

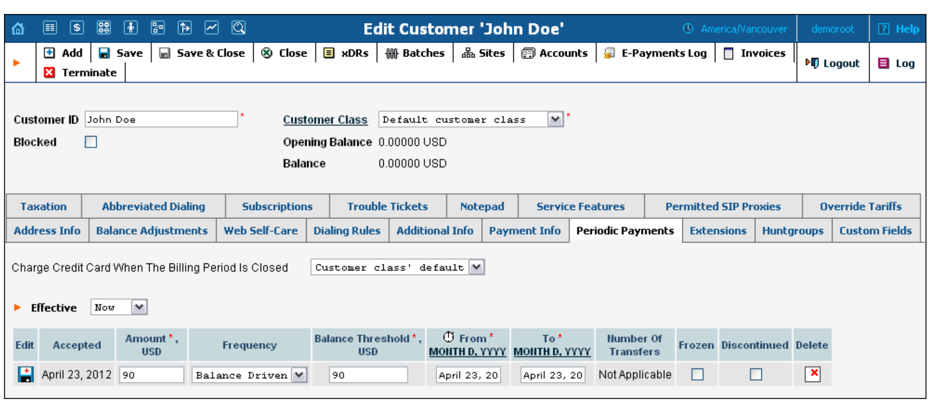


Periodic Payments

NOTE: The Periodic Payment tab will appear only if a suitable payment system has been set up (with **Recurring** enabled), and the appropriate online payment method has been selected as the customer's preferred payment method.

Periodic payment management allows the administrator and customers to set up the following parameters for automated periodic payments.
All registered payments for a customer are listed. The **Effective** drop-down list allows you to define whether only current payments ("Now") or all payments ever processed ("->Now") will be shown.

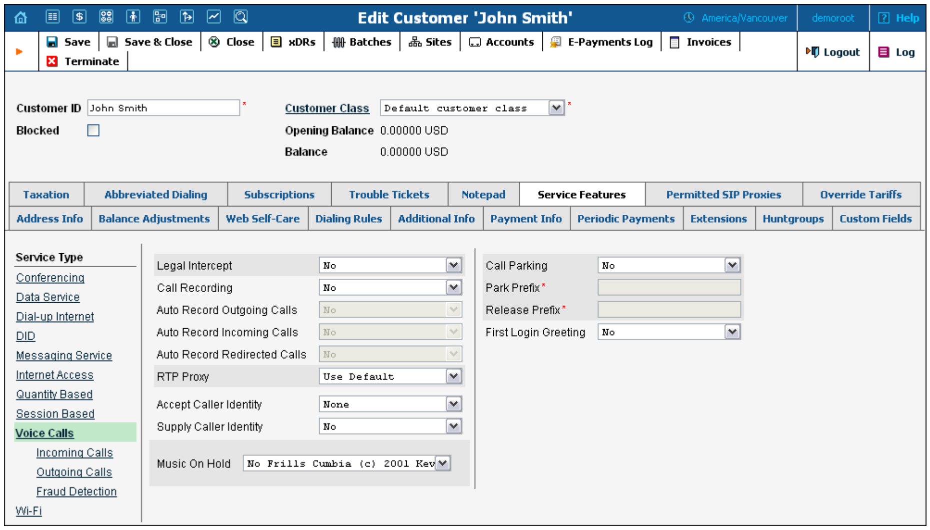
Choose ("Now->") to see "future" payments, or "All" to list all payments. ("Now") is the default value for this filter. The information in the chart below is provided in the payments listing. To add a new payment, click the **Add** button.



Field	Description
Amount	Specify a fixed amount to be paid or click the **Pay Balance** icon (not available when the frequency is balance-driven) to pay the current balance at specified recurring intervals.
Frequency	Select balance-driven, weekly or monthly.
Balance Threshold	Only available when the frequency is balance-driven. Payment will be initiated when the balance is higher than the specified threshold.
From, To Date	Define a period when the periodic payment will be initiated. Click the stopwatch icon to **immediately** initiate the periodic payment.
Number Of Transfers	Number of payments during the period specified in the **From** and **To Date** fields. Not applicable when the balance-driven frequency is enabled.
Frozen	Tick this check-box to temporarily deactivate a specific periodic payment.
Discontinued	Indicates that a specific periodic payment is no longer being used. Tick this check-box to permanently deactivate a periodic payment.
Delete	Click the **Delete** icon to cancel the changes made in edit mode.

Service Features

Using this tab, the administrator can activate / deactivate various features of the services provided to customers. Note that features are defined per *service type* (the physical service provided to the user) rather than per *service* (the name used in the billing configuration and "visible" to the end-user). Thus if you decide tomorrow to bundle your VoIP services under a different name, and create a new service called "Internet Telephony" rather than the old name, "Voice Call," you do not actually have to change the configuration settings for any of your customers.



The **Service Type** links on the left allow you to specify for which service type you would like to define parameters.

Field	Description
	The *Voice Calls* service type
Legal Intercept	Intercepts all incoming and outgoing calls of this customer for law enforcement purposes.
Call Recording	Enables the recording of calls made or received by this customer's accounts. The user can start and stop recording a specific phone conversation after it has already started by using various phone controls.
Auto Record Outgoing Calls	Automatically records outgoing calls made by this customer's accounts.
Auto Record Incoming Calls	Automatically records calls received by this customer's accounts.
Auto Record Redirected Calls	Automatically records calls redirected by this customer's accounts. Note: redirected (transferred or forwarded) calls are only recorded if the XDR for this call is created for the redirecting party.
RTP Proxy	Specifies the RTP proxying policy for this particular customer. For a description of possible values, see the VoIP to/from Vendor connections with Voice Calls service *type* section.

Accept Caller Identity	This option indicates acceptance. • **Favor forwarder** – use the redirector-provided ID for caller identification. • **Caller only** – use the caller-provided ID for caller identification. • **None** – do not accept caller-provided ID for caller identification.
Supply Caller Identity	This option indicates acceptance. • **Yes** – accept the remote network and maintain caller ID on outgoing headers (even for private calls). • **No** – do not accept the remote network and strip any private caller's ID.
Music On Hold	Defines the music on hold to be used with the IP Centrex environment. Choose **None** to disable this feature, or select the default setting for the customer. To upload your own music, select a file on your local file system using the Browse button. To rename the music, enter the desired name in the Music Name field; otherwise the local file name will be used. The uploaded music will replace the previous entry in the list, and is usually enabled within 10 minutes. For a list of supported audio file formats, see the *Audio File Formats Supported by Music on Hold Feature* chapter.
Call Parking	Enables call parking for this customer's IP Centrex.
Park Prefix	Only appears if **Call Parking** is activated; allows you to specify a key combination to park a call. Keep in mind that the "Park Prefix" value should only contain digits.
Release Prefix	Only appears if **Call Parking** is activated; allows you to specify a key combination to dial from the original phone which parked a call in order to remove the call from parked status and continue the conversation. Keep in mind that the "Release Prefix" value should only contain digits.
First Login Greeting	When a new account (phone number) in this IP Centrex environment is provisioned and registers for the first time, call this phone back and play a pre-recorded voice message confirming service activation, giving information about various available options, and so on.
The *Incoming Calls* section	
Ext-to-Ext Call Distinctive Ring	For incoming calls from phones within the IP Centrex environment, use a ring pattern different from the default one.

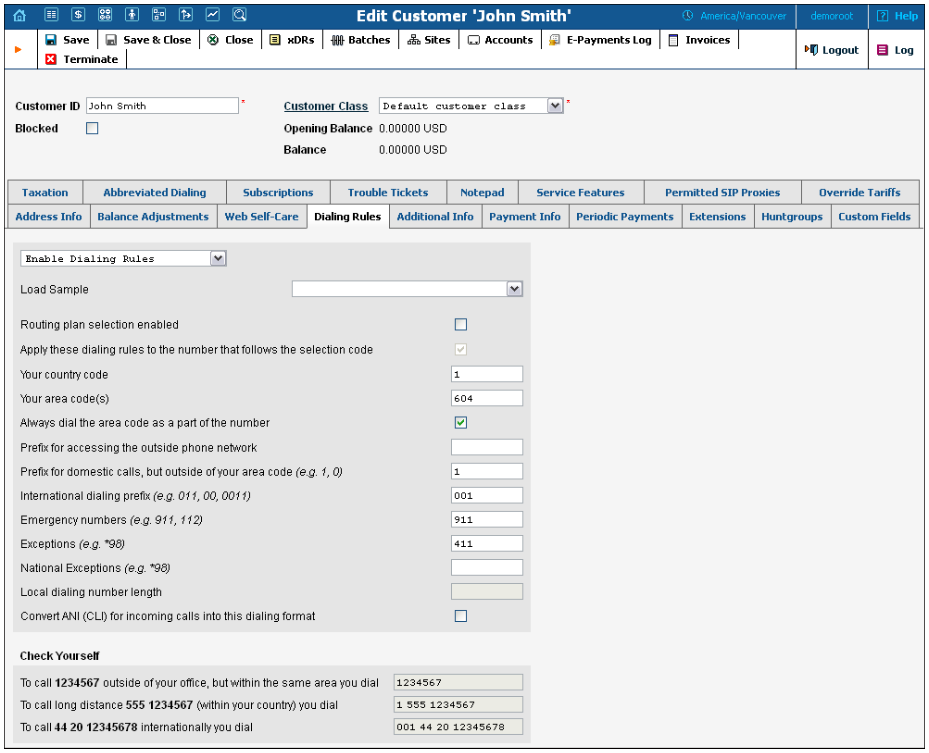
Group Pickup	Activates the **Group Pickup** feature, which allows phones in the same IP Centrex environment (all accounts under the same customer) to answer each other's calls by dialing a **Group Pickup Prefix** on their phones.
Group Pickup Prefix	Only appears if **Group Pickup** is activated. Specify the special code for picking up calls here.
Endpoint Redirection	This allows the end-user to configure call redirection on their SIP phones (if this feature is supported by the SIP phone).
The *Outgoing Calls* section	
Override Identity	Here you can set the following options for overriding identity information: • **Never** – The caller's identity information supplied by the remote party will neither be screened nor overridden. This implies that the remote party is trusted and takes full responsibility for the supplied display number and display name • **If Different From Account ID And Aliases** – The identity will be overridden if it differs from the ID of the account that is authorized for the call and any of the aliases assigned to this account • **If Different From All Customer Accounts** – The identity will be overridden if it doesn't match an account ID (or account alias) of any account belonging to this customer • **If Different From All Accounts In The Specified Batch** – This is a more restrictive option than the one above; it overrides the identity if the account placing the call and the account matching the supplied identity do not belong under the same batch. This allows you to create "groups" under the same customer (within the same IP Centrex environment) • **Always** – The identity value supplied by the remote party will always be overridden. This allows you to manually specify the display number and / or the display name for an account
Batch	This allows you to specify the batch (this field is only available when **If Different From All Accounts In The Specified Batch** has been selected).

Identity	Specify a default value that will replace the account identity (or display number) when the identity used for the call in the RPID / PAI headers (or From header) is invalid. If not specified, the account ID will be used instead.
Override Display Number	This allows you to control the "Caller number" value that will be placed in the `From:` header and typically displayed on the called party's phone display. The possible values are: • **Never** – The display number supplied by the remote party is not restricted and therefore will not be modified. This allows the remote IP phone or IP PBX to supply any CLI / ANI number. • **If Ruled Out By The Identity Constraint** – The validity of a display number supplied by a remote party is verified according to a rule set for identity. For example, when the *If Different From Account ID And Aliases* option is selected in the **Override Identity** list, and the display number supplied by the remote party doesn't match the ID of the account that is authorized for the call or any of the aliases assigned to this account, the display number will be overridden. • **If Different From The Used Identity** – The display number supplied by the remote party (in the `From:` header) will be overridden if it is different from the used (already checked and / or overridden according to the **Override Identity** constraint) caller identity. • **Always** – The display number supplied by the remote party will always be overridden. This allows you to manually specify the display number for an account.
Override Display Name	This allows you to override the caller name used by the calling account. The possible values are: • **Never** – The display name supplied by the remote party is not restricted therefore it will not be modified. This allows the remote IP phone or IP PBX to supply any display name • **Always** – The display name supplied by the remote party will always be overridden

Hide CLI	This allows you to remove CLI (ANI) information for outgoing calls. The following options are available: • **Never** – Always show CLI. Privacy service is not even permitted for an account • **Always** – Always hide CLI. Privacy service is permitted and in effect (all calls private) • **Automatic** – Allows flexible configuration for CLI hiding. It depends on the prefix number dialed and the privacy headers provided by the UA
Hide CLI Prefix	Prefix to be dialed before an outgoing number in order to prevent the called party from seeing your phone number. (Only available when **Hide CLI** option is set to "Automatic").
Show CLI Prefix	Prefix to be dialed before an outgoing number in order to allow the called party to see your phone number. (Only available when **Hide CLI** option is set to "Automatic.")
Paging / Intercom	This allows you to enable the intercom feature for accounts under this customer.
Paging / Intercom Prefix	Only appears if **Paging / Intercom** has been activated; allows you to specify a key combination to answer a call on someone else's extension.

Dialing Rules

Using this tab, the administrator can define how phone numbers are dialed by users in this customer's IP Centrex environment.



By default, a new customer will have dialing rules disabled. This means that the system regards calls arriving from him as being in the E.164 format.

If you wish to define the way in which your customer dials phone numbers, you can use the **Enable Dialing Rules** option. This will allow you to enter various dial plan parameters such as an international dialing prefix or area code. Several sample settings are provided for your convenience. For instance, in order to load sample settings for "traditional" North American dialing, select "North America, WA, 7 digit number dialing" in the **Load Sample** drop-down list.

In the bottom part of the screen you can check whether you have described the numbering format correctly. Make sure for all three examples provided (local, domestic and international call) that this is the way you want to dial the numbers.

You may type your own number translation rules instead (as Perl regular expressions) if you select the **Use Custom Translation Rules** option.

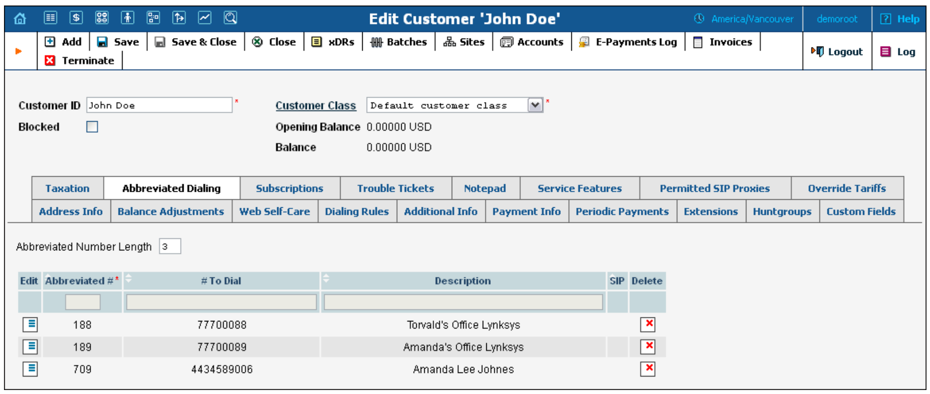
Abbreviated Dialing

Here the customer may define a list of phone extensions for his IP Centrex environment, plus create abbreviated dialing for external phone numbers. The **Abbreviated Dialing** feature works with both SIP and

H.323, with adequate support from either the SIP Server or Cisco TCL IVR.

A PortaBilling® customer can set up dialing rules as an international prefix, outside prefix, direct number (e.g. 911), or abbreviated dialing for his accounts.

NOTE: To be able to add extensions / abbreviated numbers, you should enter the maximum length of anticipated digits (e.g. 3 in the case of 123-like numbers) in the **Abbreviated Number Length** field.

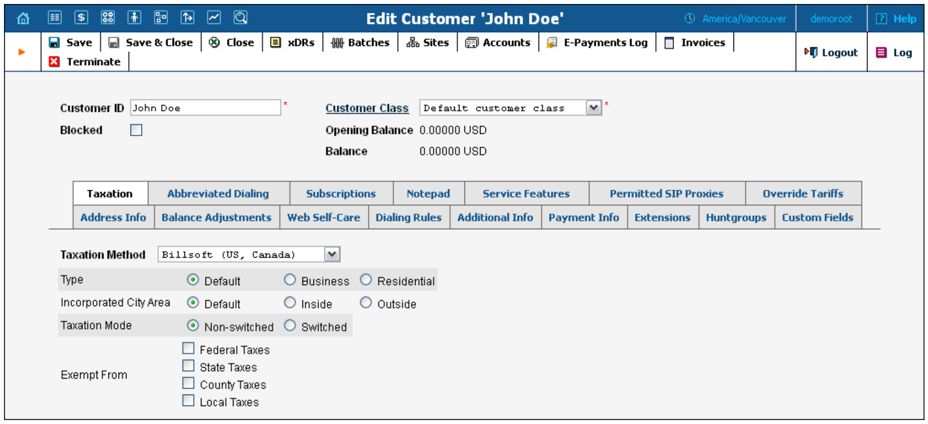


To add a new abbreviated dialing number, click the **Add** button and enter the following information:

Field	Description
Abbreviated #	The number the end-user will dial on his phone (extension number).
# to Dial	The number that the call will be forwarded to. You may enter the ID of one of the customer's accounts or any phone number. If you leave this field blank, then the abbreviated number is considered to be a direct number, or "dial as is." This is useful for making sure that special numbers (e.g. 112) are never converted by other translation rules. Note: Phone numbers must be entered in the E.164 format.
Description	Description of this abbreviated number, e.g. "Andrew's IP phone."
SIP	If # to Dial represents the ID of one of the customer's accounts, you will see the SIP "lamp" icon here. It will light up if the account is currently being used by a SIP UA to register with the SIP server; otherwise it will be gray.

Taxation

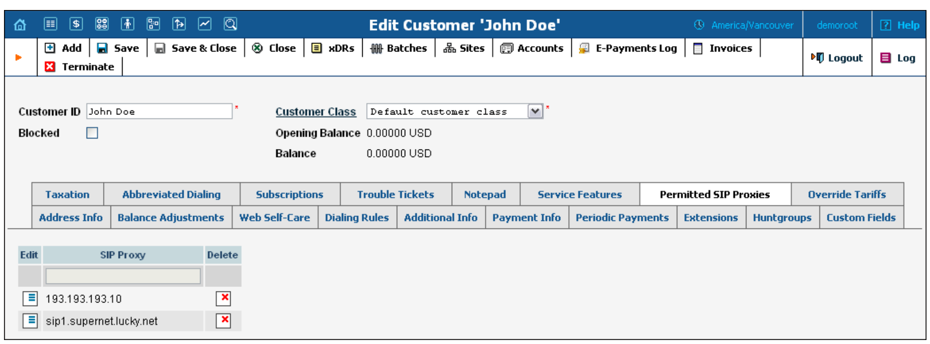
On this tab you can choose which plugin module will be used to make tax calculations and set up parameters that affect taxation.



Since these parameters depend on the specific taxation module and your local tax laws, please consult your tax attorney for details regarding their use.

Permitted SIP Proxies

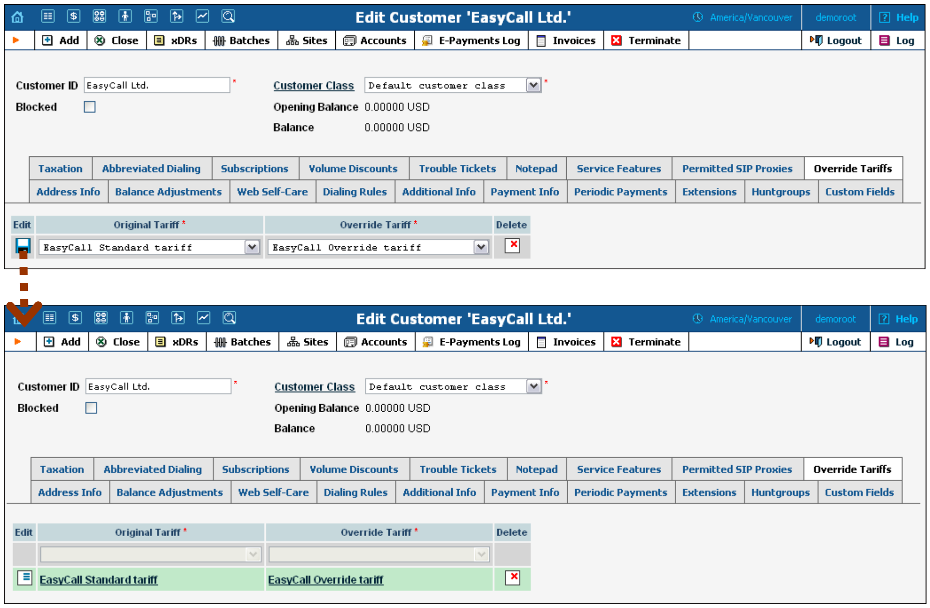
On this tab you can choose to which external SIP proxies customer can forward calls using "SIP URI forward" feature.



Override Tariffs tab

When you have the same tariff for several customers you may need to adjust the specific rates for a particular customer. To avoid creating another tariff with a complete set of rates for this customer (using a large portion of the same data) you can use the **Override Tariffs** feature. Create a new tariff using only the rates that are specific to a current customer and associate it with an original tariff on the **Override Tariffs** tab.

Note: The **Override Tariffs** tab will only appear if the **Override Tariffs Enabled** check-box is enabled on the Additional Info tab.



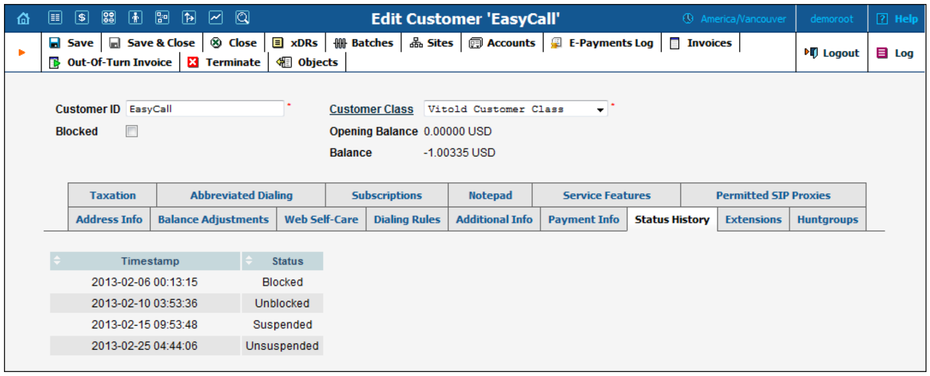
Field	Description
Original Tariff	This specifies the original tariff that contains the majority of the rates. Choose the tariff from the drop-down list.
Override Tariff	Choose the tariff that contains a handful of rates that are specific to the current customer. Rate lookup is done in both original and override tariffs and the rate for the closest destination is chosen (and its corresponding tariff is used). If there are different rates for the same destinations in both tariffs the one from the override tariff will be chosen.

Let's take an example in order to see how this works. You assign a standard tariff to several customers that contains a rate for destination number 12 at $0.02/minute and a rate for destination number 420 at $0.2/minute. Then you deicide to adjust the 1204 destination rate to $0.01/minute for a specific customer So you create a new tariff using this rate and assign it as the override tariff for that customer. In this case, a call to 12033768900 will be charged according to the rates in the original tariff (0.02/minute), a call to 120456777844 will be charged according to the rate in the override tariff ($0.01/minute), and a call to 420998764456 will be charged according to the original tariff.

Status History

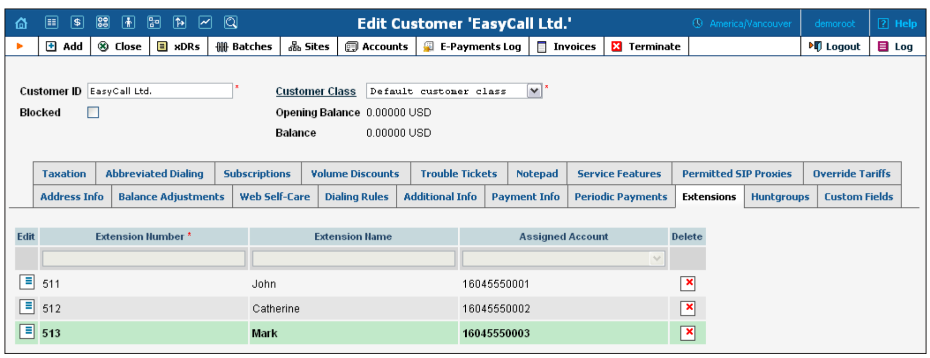
In this tab, PortaBilling® administrators can track the history of important events in a customer's lifecycle such as when a customer was blocked / unblocked, suspended / unsuspended or terminated.

Your resellers and customers can also see this information on their Self-care interfaces.



Extensions

Using this tab, the customer can define a list of extensions for phone lines within his IP Centrex environment. The customer can add new extensions or change existing ones without any actual phone configuration.



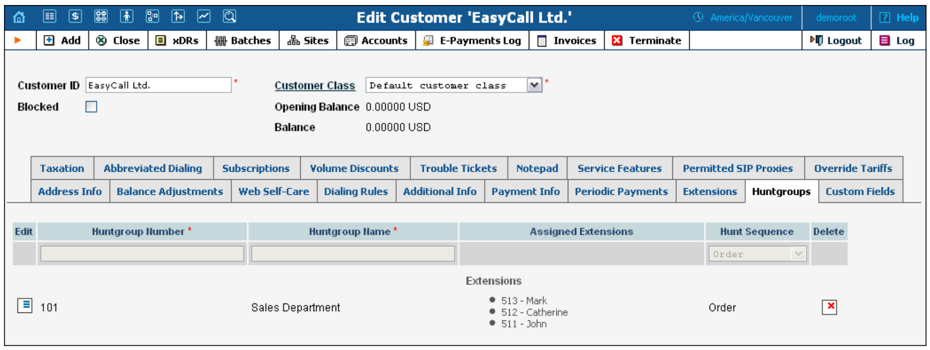
To add a new extension number, click the **Add** button and enter the following information:

Field	Description
Extension Number	The number the end-user will dial on his phone (an extension number should contain only digits).
Extension Name	Logical name for this extension (e.g. name of the person using this line: "John").
Assigned Account	The number that calls will be forwarded to. Here you should specify the ID of one of the customer's accounts (this can be selected from the drop-down list). **NOTE**: Each account should have only one extension; thus it is possible to add an extension only if an unassigned account exists.
Delete	Click the **Delete** icon to remove the extension from the list.

NOTE: The account assigned to the extension should have the VOICEONNET or VOICEONNETRX rate in its tariff, otherwise calls cannot be made.

Huntgroups

On this tab, the customer can configure a scheme for call distribution in such a way that incoming calls are delivered to one or more assigned extensions.



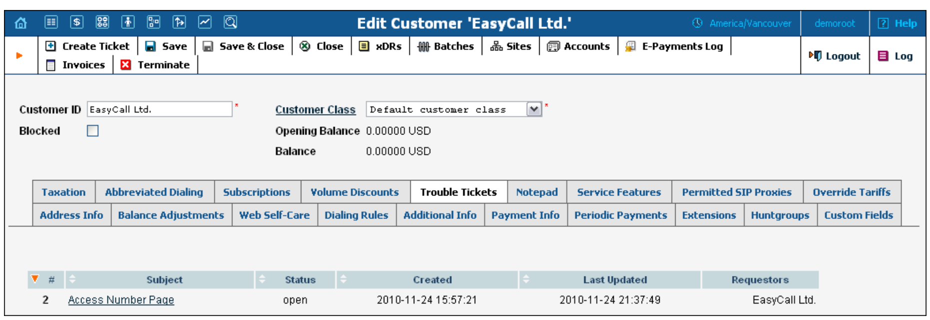
To add a new huntgroup, click the **Add** button and enter the following information:

Field	Description
Huntgroup Number	The number that the end-user dials on his phone to reach one or more assigned extensions. Note that a huntgroup number should contain no more than five digits.
Huntgroup Name	Logical name for this group of extensions, e.g. "Sales department."
Assigned Extension	Specify one or several extensions that calls will be delivered to. Click the **Assigned Extensions** link to invoke the window for extensions selection, and check the boxes on the left of the desired extensions; tick the **Huntstop** check box to disable forwarding (voicemail, follow-me etc.) for calls made to this huntgroup configured on the specific extension within this huntgroup. **Ringing Delay** (for assigned extensions only) – Delay (in seconds) before the extension starts to ring. **Ringing Time** (for assigned extensions only) – Duration (in seconds) of ring.
Keep Original CLI	• **Yes** – The call is redirected with the phone number and name of the original caller. • **No** – The call is redirected with the phone number and name of the huntgroup. • **Id Only** – The call is redirected with the

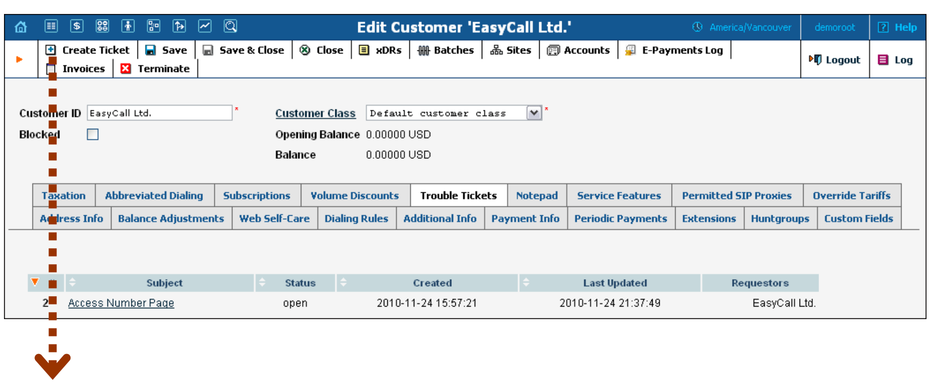
	phone number of the original caller and name of the huntgroup.
Hunt Sequence	Specifies the order for delivering a call to one or more extensions. **Order**: Call every extension one by one from the first (topmost) number to the last until the call is answered. **Random**: Use a random order. **Simultaneous**: The call goes to every extension from the list simultaneously until the call is answered. **Least Used**: Sort the accounts in descending order of their last usage, and deliver the call to their extensions accordingly. For example, account 777111 with extension 111 was last used on 2010-12-11, and account 777222 with extension 222 was last used on 2010-12-12; in this case the call goes to extension 111 and then, if not answered, to extension 222.
Delete	Click the **Delete** icon to remove the huntgroup from the list.

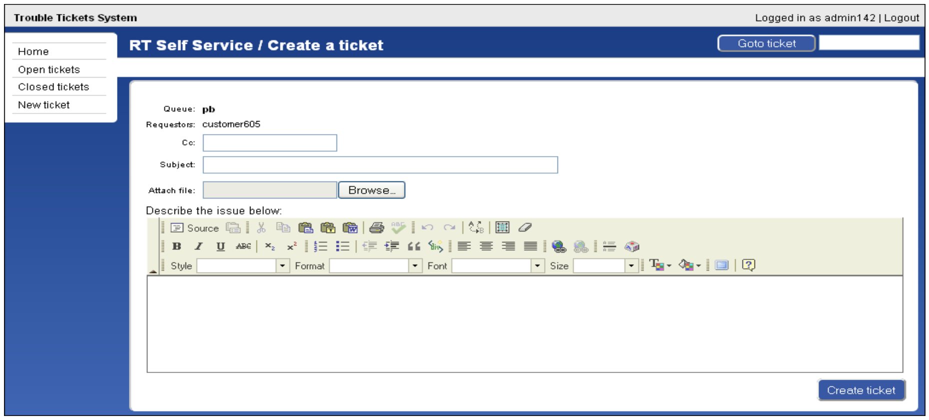
Trouble Tickets

Using this tab you can view the list of recent tickets and automatically open a specific ticket in RT interface by just clicking on it.



To create a new ticket, click **Create Ticket** in the toolbar.





Resellers

A reseller is a partner who provides “white label” services using your PortaSwitch® platform, i.e. he sells his own products, manages his own price lists, and works with his own customers.

Add / Edit Reseller

The Add Reseller page allows you to create a new reseller. The form is very similar to that for Add Customer, as described above. See below for a description of additional fields not available in the Add Customer form.

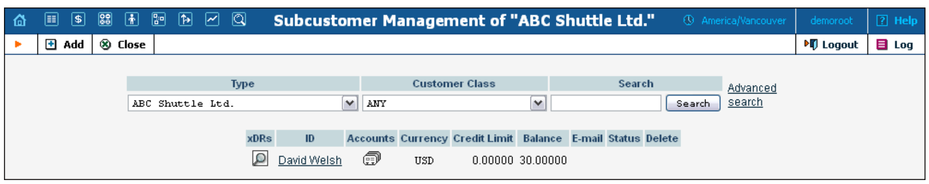
Additional Info

Field	Description
Default Tariff for Voice Calls	When you are subsequently creating products managed by this reseller, this tariff will be assigned by default for calculating charges to him for calls made by his sub-customers using this product.
Invoice Number Sequence	Select an invoice number sequence which will be used for this reseller: • Default – the default numbering sequence will be selected for this reseller’s invoices • Individual for Environment – this reseller’s invoices will have globally sequenced numbering (throughout the environment) • Individual for Customer – this reseller’s invoices will have their own sequential numbering
Invoice Number Sequence for	Select an invoice number sequence that will be used for this reseller’s subcustomers: • Individual for Environment – the invoices for

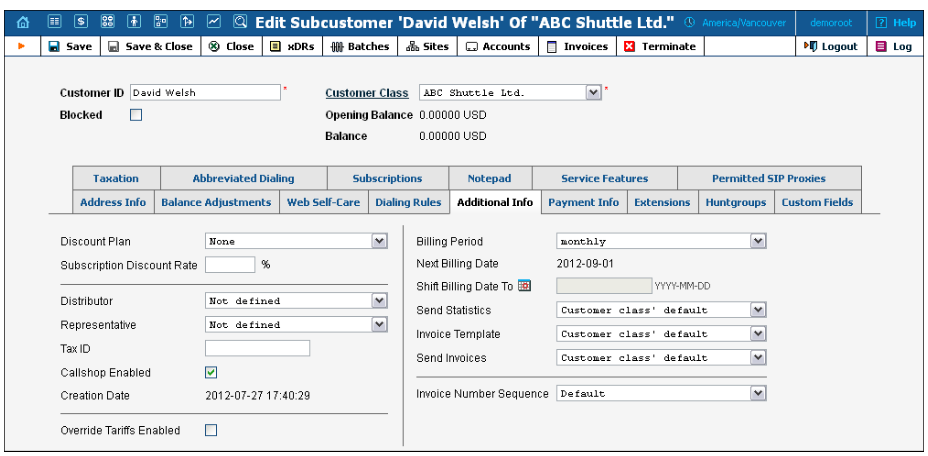
Subcustomers	this reseller's subcustomers will have globally sequenced numbering (throughout the environment) • Individual for Reseller – this reseller's invoices will be sequentially numbered through the reseller • Individual for Customer – the invoices for each of this reseller's subcustomers will be sequentially numbered

Add / Edit Customer under a Reseller

This is essentially the same as management of customers as described above, the difference being that you can only create sub-customers of the Retail type. See below for a description of additional fields not available for direct retail customers.



Additional Info



Field	Description
Callshop Enabled	Defines whether callshop features (timer, receipt, etc.) are available. To use the callshop functionality with accounts of a particular sub-customer, you should first enable this option for the reseller, and then enable it for the sub-customer as well.

Account Management

An account is a user of a product such as prepaid cards, voucher-based cards, or credit calling plans. Each account in PortaBilling® is associated with a customer. The Account Management screen, accessible from the Customer interface by clicking the **Accounts** button, shows you a query screen for listing existing accounts.

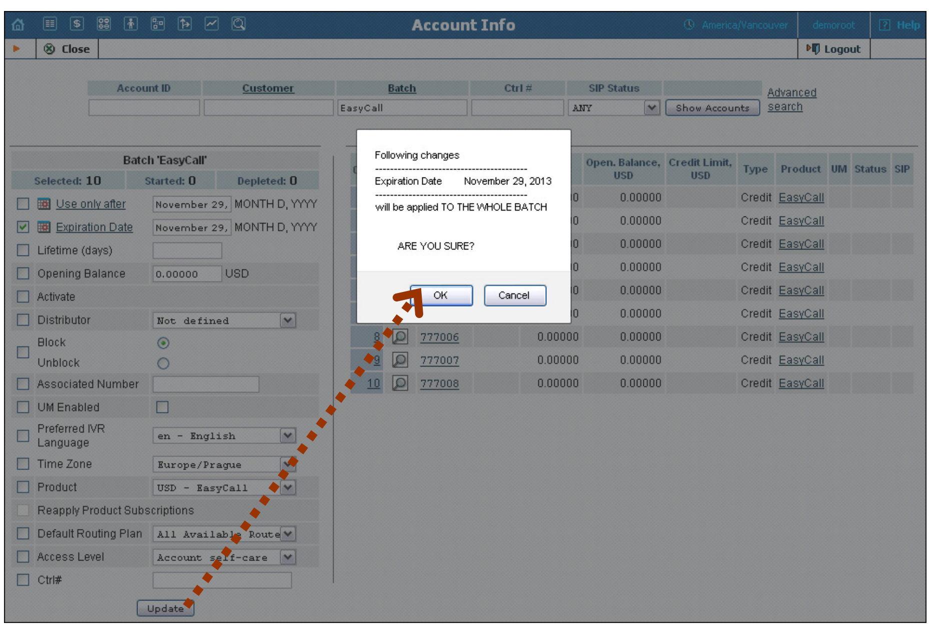
Account Listing

Search filter

There may be a very large number of accounts in the system, so it is advisable to limit your search using the filter functionality.

Field	Description
Account ID	The primary identification for this account; an alphanumeric string. Note: the % wildcard symbol may be used.
Batch	Logical name for a group of accounts. Select from a list of all the customer's batches to enable the batch update pane.
Ctrl#	Enter control numbers and / or number ranges separated by commas (for example: 1,3,8-12).
SIP Status	Default – ANY; this function allows you to display either logged-in or logged-out accounts only.

Batch update pane



Field	Description
Account ID	The primary identification of this account; an alphanumeric string.
Ctrl#	Enter control numbers and / or number ranges separated by commas (for example: 1,3,8-12).
ACCOUNTS	
Status	Zero balance Inactive Credit exceeded Not yet active Expired Blocked Customer blocked (see **Edit Customer**)
Ctrl#	Click using Ctrl#, or enter control numbers and / or number ranges separated by commas (for example: 1,3,8-12).

The batch update pane can be activated by selecting a batch in the filter at the top of the interface or by selecting a batch name from the list of customers' accounts. The basic functionality of this update pane allows you to specify which attributes of all accounts in the results set should be modified. For example, in order to set the opening balance of all unused accounts to 10 USD, you should:

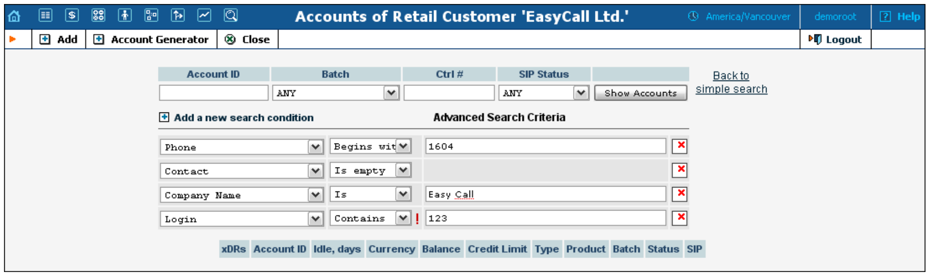
- Check the box next to **Opening Balance** to indicate that this is one of the updates that should occur,
- Enter "10" next to **it**,
- Click the **Update** button at the bottom, and
- Approve the changes when the confirmation dialog appears.

When the page refreshes, the changes will be reflected in the result listing.

NOTE: You can only change an opening balance *before* an account is used. This change will not be reflected in the CDRs. For example, if you create a prepaid account worth $10 and then realize that you actually sold it to a customer for $20 and then you add an extra $10 to the card, it will appear to the customer as if the card originally had $20 on it.

Advanced Search

In advanced search mode you can specify an unlimited number of search conditions and the system will fetch the relevant accounts. Click on **Add a new search condition** to add another condition.



Operation	Description
Is	The value of the field in the customer information must match the search criteria exactly.
Begins with	The value of the field in the customer information must start with the specified value (e.g. if you enter the filter value "John," customers with the names "John" and "Johnny" will be selected).
Contains	The value of the field in the customer information must contain the specified value somewhere (e.g. if you enter the filter value "Eric," customers with the names "Eric," "Erica," "Maverick" and "American" will be selected).
Ends with	The value of this customer information field must end with the specified value (e.g. if you enter the filter value "smith," customers with the last names "Smith" and "Hammersmith" will be selected).
Is empty	The corresponding field in the customer information must be empty.

All search operations are case-insensitive, so you can enter "Eric" as a search criteria and, even if the customer's name was originally entered as "eric" or "ERIC," you will still see him in the list.

All conditions work in conjunction, so in the case of multiple search criteria the customer's record must satisfy all of them in order to appear in the result list.

During a search operation using auxiliary fields (e.g. fax) or the "contains" comparison, the database cannot use indexes. This will result in a full table scan, meaning an increased load on the server and a longer time to produce the final result. Please avoid using such search operations if not necessary.

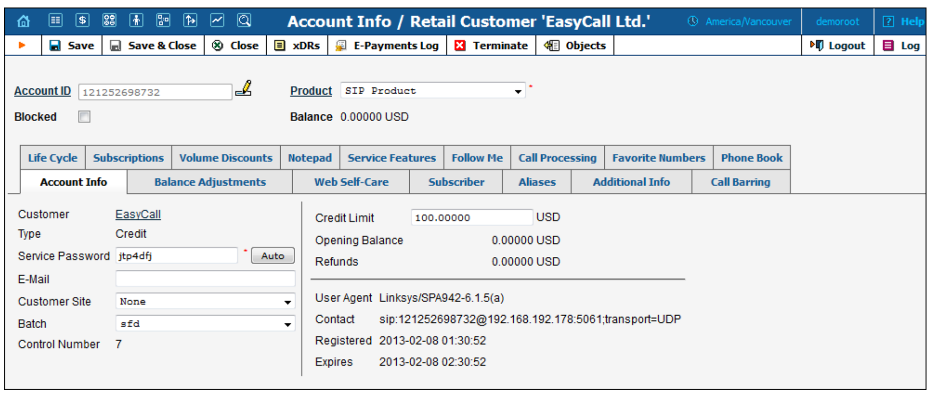
By clicking on **Back to simple search** you can switch the form to its original mode.

Account Info / Add Account

To add a new account manually (this allows you to access all available properties of an account), select **Add** in the toolbar and then (if a quick form selection dialog – select **Manually** at the bottom of the list).
For bulk account generation, select **Account Generator**.

The Account Info page provided for the administrator is similar to the Add Account interface; however, some account details are read-only. The administrator is unable to modify Type, Batch, Control Number and Opening Balance. When making changes, the administrator can use the Notepad tab to provide a comment detailing the reason for these changes (for example, "product changed, credited $50").

Changes can be confirmed by selecting **Save** or **Save&Close**.



Field	Description
Account ID	The primary identification of this account. The ID is read-only by default; you can modify it by clicking the Edit ID icon. The maximum allowed ID length is 32 characters.
Blocked	Specifies whether the account is blocked or unblocked. If this is checked, the account will be unusable; it is usually unblocked automatically when the account is used for the first time.
Product	The product providing pricing plans for this account.
Balance	The balance for this account.

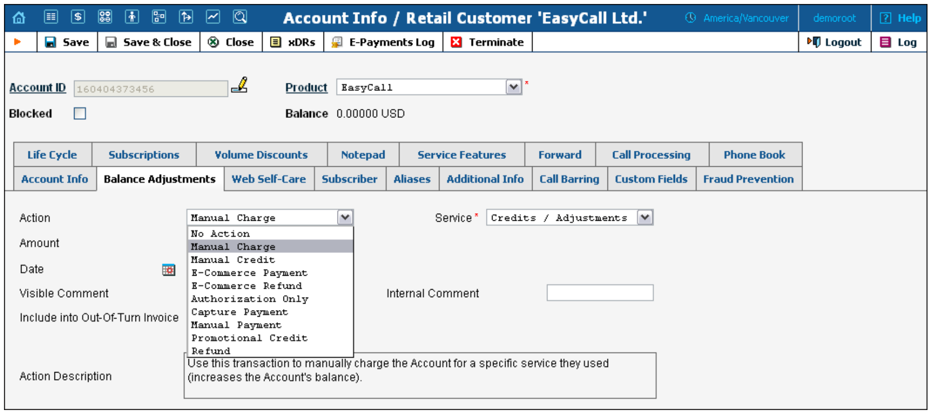
Account Info tab

Type	The account type may be "Debit," "Credit," or "Voucher." Debit is usually associated with prepaid cards. Credit is an account that will be invoiced for incurred costs. Voucher accounts are "refill coupons" for other types of accounts.

Credit Limit	Only available when the account type is set to "Credit." Defines the credit allowance in the account's currency.
Service Password	The password used to authenticate any calls made using this account.
E-mail	If an account has e-mail info associated with it, the owner of the account can reset the password for self-care access, and the new password will be sent to this e-mail address.
Customer Site	Places this account (phone line) with a specific site so that the site parameters (e.g. number of simultaneous calls) will apply.
Batch	If a new batch name is provided in the text field, a new batch will be created when you add the account. Alternatively, an existing batch could be selected from the drop-down list. If you leave this field empty, the created account will not be tied to any specific batch.
Control Number	Read-only. The sequential number of the account in the current batch. Batch name and control number uniquely identify an account, and are often used for prepaid calling cards.
Zero Balance Date	Applicable only for debit accounts; specifies when the account has used up all of its available funds.
Opening Balance	The opening balance for this account.
Refunds	The amount refunded to the account owner.
User Agent	If this account is currently used by a SIP UA to register with the SIP server, the user agent identification info is displayed.
Contact	The URI of the user agent used by the SIP Proxy to contact the IP phone.
Registered	The timestamp when a SIP UA has been registered.
Expires	The timestamp when a SIP UA registration expires.

Balance Adjustments

The **Balance Adjustments** tab allows the administrator to correct an account's balance (this tab is only available in **Edit Account** mode).

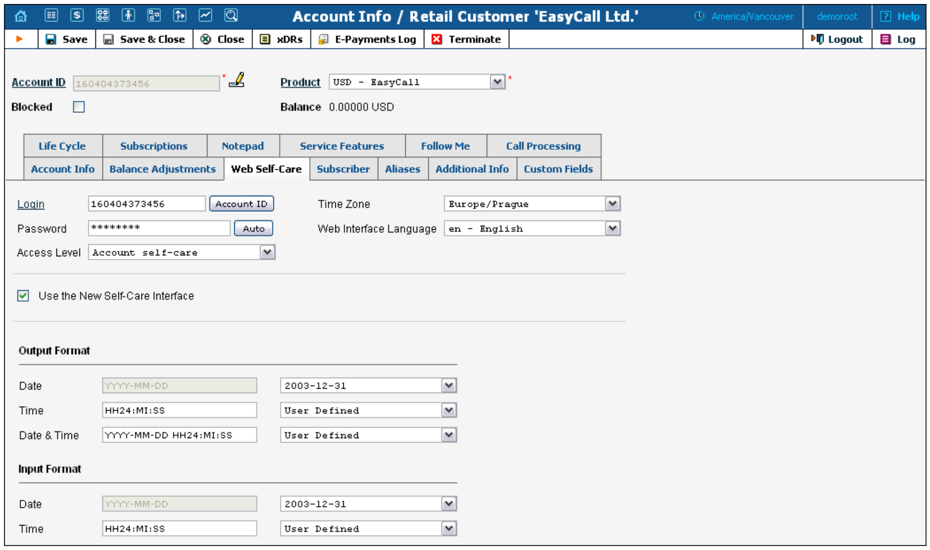


Field	Description
Action	**Manual charge:** Use this transaction to manually charge an account for a specific service they used; for instance, if you are selling a SIP phone to a user. This means the balance will be changed so that the user is able to make fewer calls. **Manual credit:** Use this transaction to manually give compensation related to a specific service; for instance, if the user files a complaint and you agree to give him credit toward future service use. This means the balance will be changed so that the user is able to make more calls. **E-Commerce payment:** Use this transaction to charge the user's credit card and apply the amount to the user's account balance as payment. **E-Commerce refund:** Use this transaction to reverse a previous E-commerce payment. It withdraws funds from your company's merchant account and applies them as credit to the user's credit card. The amount is added to the user's account balance. **Authorization only:** Verifies that the user's credit card is valid and reserves a given amount. Returns a transaction ID to be used in a Capture Payment transaction. Does not affect the user's account balance in PortaBilling® or his credit card balance. Note: the transaction ID will be written to the user's account Notepad entry. **Capture payment:** Charges the user's credit card and applies the amount to his balance as a payment (decreases the user's account balance). Requires a transaction ID from the Authorization Only transaction. The amount must be less than or equal to the amount of the corresponding Authorization Only transaction. **Manual payment:** Use this transaction when receiving a payment (e.g. cash or check) directly from the user.

	This means the balance will be changed so that the user is able to make more calls. **Promotional credit:** Use this transaction to give the user a credit, for example, as a sales promotion. The difference between this and "Manual Credit" is that this transaction applies to a special "Credits / Promotions" service, and not to any actual service. Basically, it provides some "virtual" funds to the user for future use. **Refund:** Use this transaction to refund an earlier payment received from the customer (e.g. a check returned by the bank). This means the balance will be changed so that the customer is able to make fewer calls.
Service *(only for Manual charge and Manual credit)*	A service for which the manual charge / credit is made. The charged / credited amount will be included in the selected service section on the next invoice.
Amount	Amount to charge / refund.
Date *(only for Manual charge and Manual credit)*	A date associated with the manual charge / credit. For example, you can specify a date for manual credit action for when an item is credited. Note that if the selected date falls within a previous (closed) billing period the transaction will be included in the next invoice.
Transaction ID *(only for E-Commerce Refund and Capture Payment)*	The transaction ID obtained via the *Authorization Only* transaction. This is required to use the reserved earlier amount for a current transaction.
Visible Comment	A comment on this transaction visible to the customer in the xDR browser.
Include into Out-Of-Turn Invoice *(only for Manual charge and Manual credit for credit accounts)*	This allows you to include transactions on an out-of-turn invoice to be issued on demand. You should then generate the invoice with the requisite transactions on the **Out-Of-Turn Invoice** page. For example, if the end user visits your office to buy a new IP phone, your clerk will locate the account, issue an invoice covering the cost of the phone, take the money for the phone and give the phone and the invoice to the end user. Transactions included in an out-of-turn invoice that was *generated* on the **Out-Of-Turn Invoice** page won't be reflected on the regular invoice issued at the end of the billing period.
Internal Comment	An internal comment on this transaction; not visible in the xDR browser, and accessible only from the database

	directly.

Web Self-care tab

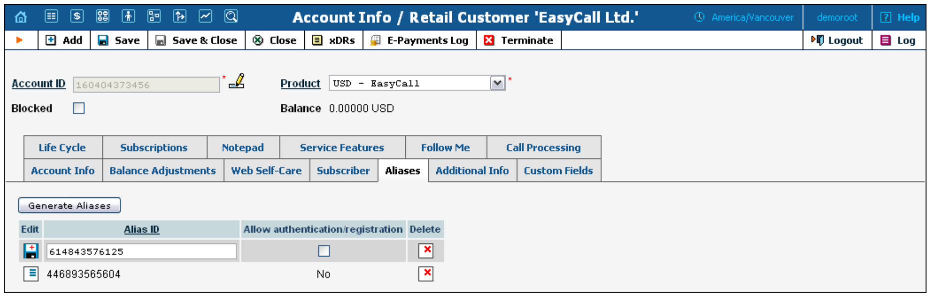


Login	Account login for the account user interface. Click the Account ID button to make the login identical to the Account ID.
Password	User interface password for the account.
Access Level	Access level assigned to the account.
Time Zone	Time zone for the account.
Web Interface Language	Displays the account user interface in a particular language.
Use the New Self-Care Interface	Switches the default account self-care interface to the new one. In order to return to the default account self-care interface, simply uncheck this option.

Subscriber

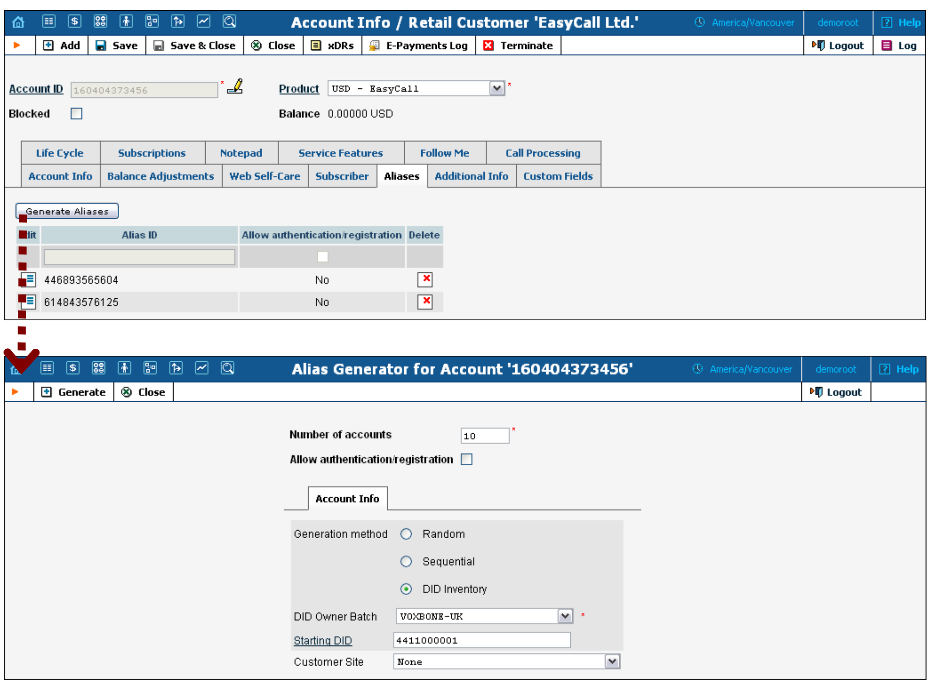
The Subscriber tab provides most of the commonly required contact information for the account's owner.

Aliases

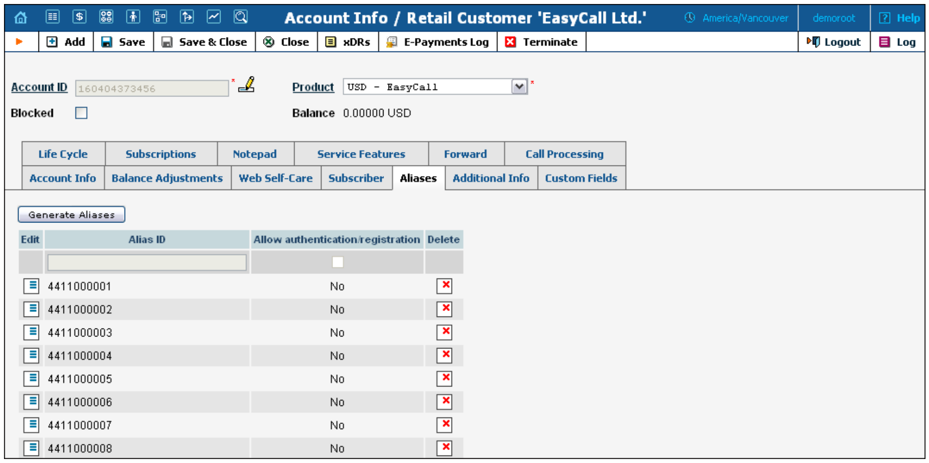


Alias ID	Contains alternative IDs for this account.
Allow authentication / registration	Defines whether this ID can be used independently for authentication and registration (e.g. having two IP phones concurrently registered to PortaSwitch®, one using the main account ID and the other using an alias) or, alternatively, it can only be used to forward calls to the main account (since only it can register).

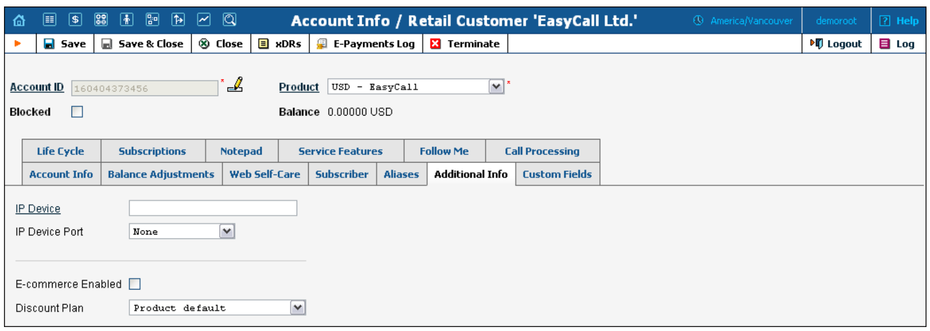
If you need to create multiple aliases (e.g. a customer with his own IP PBX who buys a range of DIDs to be forwarded there) you can use the Alias Generator to produce aliases in a similar way as with the Account Generator.



NOTE: Aliases are generated as a background task, so it may take a few minutes before they appear in Account Info.

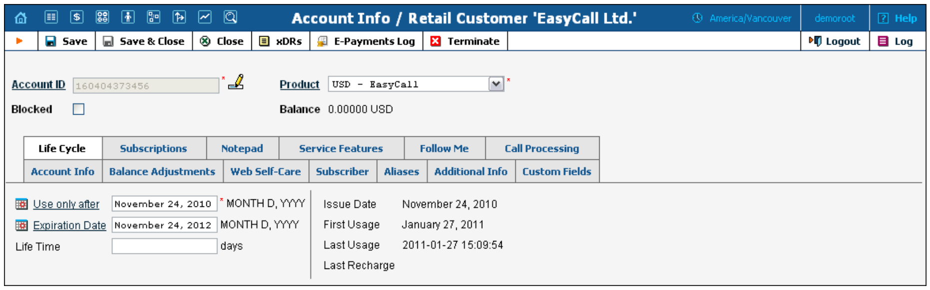


Additional Info



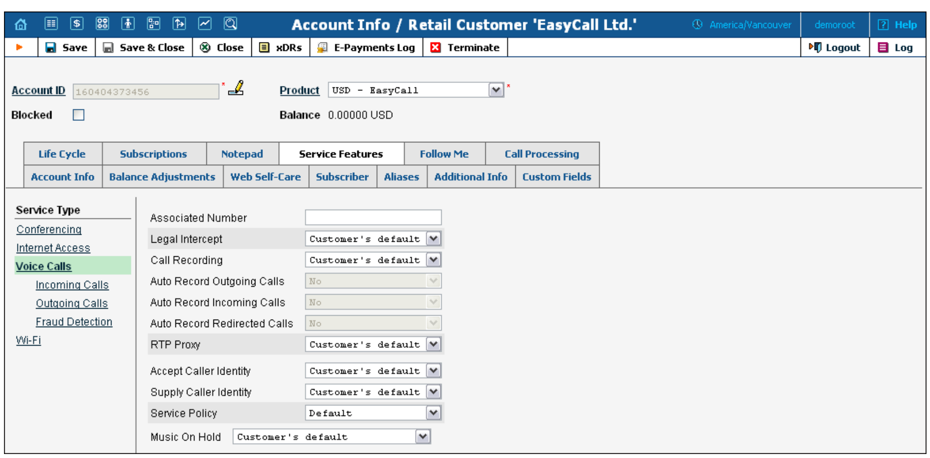
IP Device, IP Device Port	Indicates the IP phone and associated port assigned to the account. Default – not set.
Download PortaPhone Profile	The link to download the profile for PortaOne Softphone (only available when this account is assigned to an entry from the IP Device inventory, provisioned with PortaPhone profile type).
E-commerce Enabled	Allows the account's owner to make online payments or set up periodic payments on the account self-care page. Note: Configuring the account to enable online payments (both manual and periodic) is done in exactly the same way as for customers. First you should set up a suitable payment system.
Discount Plan	Assign a discount plan to this account. When a new account is created, it will be assigned by default a discount plan associated with the account's product.

Life Cycle



Use only after	The date from which the account is usable.
Expiration Date	The date from which the account will be unusable. If you do not want the account to expire, leave this field blank. Note: This date is assumed to be in the billing server's time zone, not the account's one.
Lifetime	Defines the number of days the account remains active after the date of its first use. The account will expire on the first usage date + lifetime days. If you do not want to use this feature, leave the field blank.
Issue Date	The date when the account was created.
First Usage, Last Usage	The time stamp when the account was in use for the first / last time.
Last Recharge	Specifies the last time the account was recharged using a voucher (either via the self-care page or IVR).

Service Features



You have the option of expressly specifying the value of a given parameter or using the "Customer default" option. In the latter case, this parameter is assumed to be the value defined in the customer's configuration (the global value for this IP Centrex).

Field	Description
	The *Voice Calls* service type
Associated Number	Specifies the number to be sent back to the IVR in an authorization confirmation. For example, this might be a redirect to a technical support number in an IVR application. Another example might be a quick-dial number for prepaid accounts. (In this case, the redirect number may be maintained via web self-provisioning.)
Legal Intercept	Intercept all incoming and outgoing calls of this specific account for law enforcement purposes.
Call Recording	Enables the recording of calls made or received by this specific account. The user can start and stop recording a specific phone conversation after it has already started by using various phone controls.
Auto Record Outgoing Calls	Automatically record outgoing calls made by this specific account.
Auto Record Incoming Calls	Automatically record calls received by this specific account.
Auto Record Redirected Calls	Automatically record calls redirected by this specific account. Note: redirected (transferred or forwarded) calls are only recorded if the XDR for this call is created for the redirecting party.
RTP Proxy	Specifies the RTP proxying policy for this specific account. For a description of possible values, see the VoIP to/from Vendor connections with Voice Calls *service type* section.
Accept Caller Identity	This option indicates acceptance. • **Favor forwarder** – use the redirector provided ID for caller identification. • **Caller only** – use the caller provided ID for caller identification. • **None** – do not accept caller provided ID for caller identification.
Supply Caller Identity	This option indicates acceptance. • **Yes** – accept the remote network and maintain caller ID on outgoing headers (even for private calls). • **No** – do not accept the remote network and strip any private caller's ID.
Service Policy	This specifies a predefined set of options for this account.

Music On Hold	Defines the music on hold to be used with the account. Choose None to disable this feature, or select the default setting for the account's customer. To upload your own music, select a file on your local file system using the Browse button. To rename the music, enter the desired name in the Music Name field; otherwise the local file name will be used. The uploaded music will replace the previous entry in the list, and is usually enabled within 10 minutes. For a list of supported audio file formats, see the *Audio File Formats Supported by Music on Hold Feature* chapter.
The *Incoming Calls* section	
UM Enabled	Allows the account user to access the unified messaging system. See the **PortaSIP® Media Server Administrator Guide** for more details. Please note that if an account has **UM Enabled** activated, there will be an additional link next to it on the administrator interface: Manage UM Account. By clicking on this you will go automatically to the account's UM administration pages. This is extremely useful for helpdesk people, since they can quickly check the configuration of an account's auto-attendant, call queues, and the like. Also note that it may take a few minutes before an account is fully provisioned in the PortaSIP® Media Server. Thus if you click on the link immediately after activating **UM Enabled**, it most likely will not work yet.
Forward Mode	Assigns a call forwarding mode to this account: • No Forwarding: Disables call forwarding entirely. • Follow-me: Enables standard follow-me forwarding. • Advanced Forwarding: Activates advanced call forwarding mode. • Forward to SIP URI: Replaces the **Follow-me** tab with a simplified **Forward** tab, where you can enter a forwarding destination as a CLD@IP. • Simple Forwarding: A simplified type of forwarding where you specify a single phone number to which calls will be sent.

Maximum Forwards	When you select follow-me or advanced call forwarding, you must also provide a value for the **Maximum Forwards** parameter, so as to limit the number of concurrently active forwarding destinations allowed. Please note that you do not have to limit the total number of phone numbers entered, but rather the number of phone numbers active at any given moment of time. For instance, a user may have a list of 20 numbers, each active in its own time period, some temporarily turned off, and so on. When call forwarding is done, PortaBilling® will compute a list of numbers which may be used at that moment, and choose only the first N in the list, where N is the number specified in **Maximum Forwards**.
Timeout, sec	How long the IP phone will ring before a call goes to follow-me numbers (if any) or voicemail.
Call Processing Enabled	Enables selective call processing / conditional call forwarding features.
Endpoint Redirection	This allows the end user to configure call redirection on their SIP phones (if this feature is supported by the SIP phone).
Default Answering Mode	Specifies the method of processing incoming calls to this account if selective call processing has been disabled, or if none of the selective call processing rules apply.
Ext-to-Ext Call Distinctive Ring	For incoming calls from phones within the IP Centrex environment, use a ring pattern different from the default one.
Present Caller Info	Display caller info on incoming calls.
Disable Call Waiting	Forcibly disables call waiting (even if it has been enabled on the phone).
Caller ID Lookup	This option shows the actual name of the caller retrieved from the database of the CNAM provider for incoming calls.
The *Outgoing Calls* section	

Override Identity	This allows you to set the following options for overriding identity information: • **Customer's default** – This assumes the values defined in the customer's configuration. • **Never** – The caller's identity information supplied by the remote party will neither be screened nor overridden. This implies that the remote party is trusted and takes full responsibility for the supplied display number and display name. • **If Different from Account ID and Aliases** – The identity will be overridden if it differs from the ID of the account that is authorized for the call and any of the aliases assigned to this account. • **If Different from All Customer Accounts** – The identity will be overridden if it doesn't match an account ID (or account alias) of any account belonging to this customer. • **If Different from All Accounts in the Specified Batch** – This is a more restrictive option than the one above; it overrides the identity if the account placing the call and the account matching the supplied identity do not belong under the same batch. This allows you to create "groups" under the same customer (within the same IP Centrex environment). • **Always** – The identity value supplied by the remote party will always be overridden. This allows you to manually specify the display number and / or the display name for an account.
Batch	This allows you to specify the batch (this field is only available when **If Different From All Accounts In The Specified Batch** has been selected).
Identity	Specify a default value that will replace the account identity (or display number) when the identity used for the call in the RPID / PAI headers (or From header) is invalid. If not specified, the account ID will be used instead.

Override Display Number	This allows you to control the "Caller number" value that will be placed in the `From:` header and typically displayed on the called party's phone display. The possible values are: • **Never** – The display number supplied by the remote party is not restricted and therefore will not be modified. This allows the remote IP phone or IP PBX to supply any CLI / ANI number. • **If Ruled Out by the Identity Constraint** – The validity of a display number supplied by a remote party is verified according to a rule set for identity. For example, when the *If Different From Account ID And Aliases* option is selected in the **Override Identity** list, and the display number supplied by the remote party doesn't match the ID of the account that is authorized for the call or any of the aliases assigned to this account, the display number will be overridden. • **If Different from the Used Identity** – The display number supplied by the remote party (in the `From:` header) will be overridden if it is different from the used (already checked and / or overridden according to the **Override Identity** constraint) caller identity. • **Always** – The display number supplied by the remote party will always be overridden. This allows you to manually specify the display number for an account.
Display Number	Specify a value that will override and replace the account's original display number. If no value is specified, it defaults to the account's **Identity.**
Override Display Name	Replace the original account number with the desired name.
Display Name	This allows you to specify the desired name for the account.
Preferred IVR Language	The language the user prefers when interacting with an IVR application.
Favorite Numbers Enabled	Allows you to define a list of phone numbers for this account, so that calls made to these numbers by the owner of the account will be charged according to a special `FAV` rate.
E911	Activate emergency services for this account.

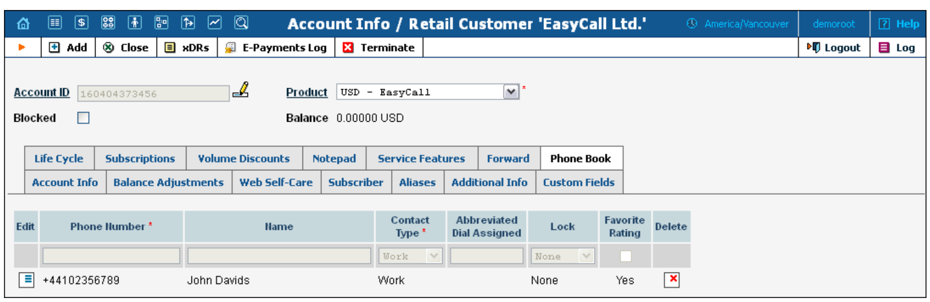
Hide CLI	Remove CLI (ANI) information for outgoing calls. The following options are available: • **Customer's Default** – Assumes the value defined in the customer's configuration • **Never** – Always show CLI. Privacy service is not even permitted for an account • **Always** – Always hide CLI. Privacy service is permitted and in effect (all calls private) • **Automatic** – Allows flexible configuration for CLI hiding. It depends on the prefix number dialed and the privacy headers provided by the UA
Hide CLI Prefix	Prefix to be dialed before an outgoing number in order to prevent the called party from seeing your phone number. (Only available when **Hide CLI** option is set to "Automatic.")
Show CLI Prefix	Prefix to be dialed before an outgoing number in order to allow the called party to see your phone number. (Only available when **Hide CLI** option is set to "Automatic.")
Call Barring Enabled	Activates the Call Barring feature (a new **Call Barring** tab will appear, where you can configure destinations which this user is not allowed to call).
Default Routing Plan	The routing plan to be used for outgoing calls when the end-user dials a number without using a specific selection code.
Phone Book Enabled	Activates the Phone Book feature. This allows an account user to maintain its own set of frequently dialed numbers, assign speed dial codes to them and define a list of favorite numbers.
Maximum Abbreviated Dial Length	The maximum allowed length (0-10) of speed dial codes. Zero means that although the account will still have the capability for adding frequently dialed numbers, the customer will not be able to assign speed dial codes to them.
Maximum Favorite Numbers	You may allow an account user to define a list of favorite numbers. This field specifies the maximum amount of numbers that the account can mark as favorites.
Favorite Numbers Locking Interval	This defines the period in days during which the favorite numbers cannot be changed. Thus when a new favorite number is added (or an existent one is changed) by an account user, the number will be locked for a specified period of days. When this period ends, the favorite number can be either changed or deleted.

Favorite Numbers Allowed Patterns	This is a comma-separated list of patterns for numbers which an account user can mark as favorites. For example, to allow an account user to mark Moscow, Russia destinations as favorites, input "`7495, 7499`" here. This field can contain the following special symbols: • '*' – wildcard for any number of symbols, and • '_' – equivalent wildcards for one symbol. If this field is empty, then any number can be marked as a favorite.
Call via IVR Enabled	This feature enables calls to be processed in an assigned IVR-capable voice application. For example, the Pass-through IVR application plays a "time left" warning when a specified number of seconds is left – before the call is disconnected – or it can announce the maximum allowed call duration to the destination and then connect the call.
Voice Application	If a call via the IVR feature is enabled, select a voice application for processing the calls. Typically this is a special pass-through IVR application for voiceover announcements during the call, but any standard IVR application can be selected to intercept the outgoing call.
The *Fraud Detection* section	
Location Information	This defines the user location for geo-IP fraud prevention. The most common option is **Product's default**. In rare cases, you may need to disable fraud prevention for a specific account (in this case select **Disabled**) or define a different location for this specific account (select **Account has its own**).
Current Location	Type in a user's permanent location. It should contain a country code top-level domain (in *iso_3166_1_a2* format, e.g. *fr* for France, *de* for Germany etc.)

Allowed Mobility	Only available when **Geo-IP Fraud Detection Enabled** is set to **Yes** and a profile is selected in the **Country / Risk Profile** option of the account's product. Select **Stationary user (constant location)** if this account is not authorized to make calls from various countries (e.g. as a residential customer would make calls from his SIP phone). Calls made from any other countries will be screened. The **Roaming user (frequent location)** option can be used for customers who travel frequently. In this case, a location change would be considered acceptable.
Service Unblock Code	The account's unique code that is usually provided upon sign-up and can be used later to confirm that a legitimate customer is attempting to make a call, if the call was made from a "suspicious" location.
The *Internet Access* service type	
Internet Access Policy	The most common option is **Product default**. In rare cases, you may need to set a special policy for an account that will override the product's parameters. In such cases, select the appropriate internet access policy from the drop-down list, or select 'empty' if you do not want to limit the bandwidth for this account.
Static IP Enabled	Select **Yes** if you want to assign a static IP to this account (the default setting is **No**).
Static IP	If you have selected **Yes** for the previous field, type in an IP.
Static IP Netmask	Type in a netmask, or leave the default value: **255.255.255.255**
Session Limit Enabled	Allows you to define a specific number of concurrent sessions initiated by the account.
Max Simultaneous Sessions	Specify the maximum allowed number of concurrent sessions from one account (Only available when the **Session Limit Enabled** is checked).
Hotlining Support	Select **Yes** if your NAS supports hotline (default setting is **Product default**).
Hotline to Portal on Connect	By default this value is set to **Yes**. This means that the account is hotlined.
The *Conferencing* service type	

Conferencing Enabled	Allows the account user to use voice-conferencing services. Note that if an account has **Conferencing Enabled** activated, an additional link will appear next to it on the administrator interface: Manage Conferences. By clicking on it you will automatically go to the account's PortaSIP® self-care interface where multiple conferences can be managed.
Number of Simultaneous Participants	Specify the maximum number of concurrent connections allowed for the conference. Note that you may also limit the Number of Simultaneous Participants for a particular account (in the Service Features tab).
The *Wi-Fi* service type	
Limit Bandwidth	The most common option is **Product default**. In rare cases, you may need to define special bandwidth values for an account that would override the product's parameters. In such cases, select **Yes** to define these values, or **No** if you do not want to limit the bandwidth for this account.
Max Upload Rate	Specify the maximum upload rate for this account.
Max Download Rate	Specify the maximum download rate for this account.

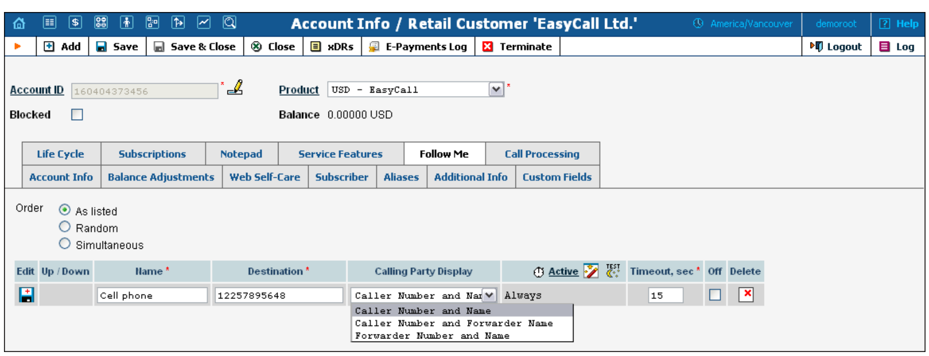
Phone Book



Field	Description
Phone number	Phone number in E.164 format. Note: Phone numbers must be entered in either the E.164 format (e.g. +12065551234) or the customer's local format. The latter will be translated into an E.164 format according to the customer dialing rules, upon saving.
Name	Contact name
Contact type	Contact type can be one of the following: • Work • Home

	• Mobile • Other
Abbreviated Dial Assigned	This is the speed dial number that the end-user can dial on his phone to place a call to an external phone number. Note that the length of this number is limited by the **Maximum Abbreviated Dial Length** option on the **Service Features** tab.
Lock	This allows you to lock a phone book contact: • **None** – Contacts are not locked in the phonebook, allowing the end-user to add, edit or remove contacts. **NOTE: The end-user is also able to select contacts to which a special "favorite" rate applies.** • **Full** – Fully lock the contact in the phonebook (makes it impossible for the end-user to edit or remove the locked contact) • **Number** – Partially locks the contact in the phonebook (allowing the end-user to change only the name).
Favorite Rating	Select this checkbox to provide a "call friends & family cheaper" service to the end-user. The end-user's call to this specific number is rated according to a special rate for the FAV destination, defined in the end-user's tariff.
Delete	Click the **Delete** icon to remove a contact from the user's phone book.

Follow Me



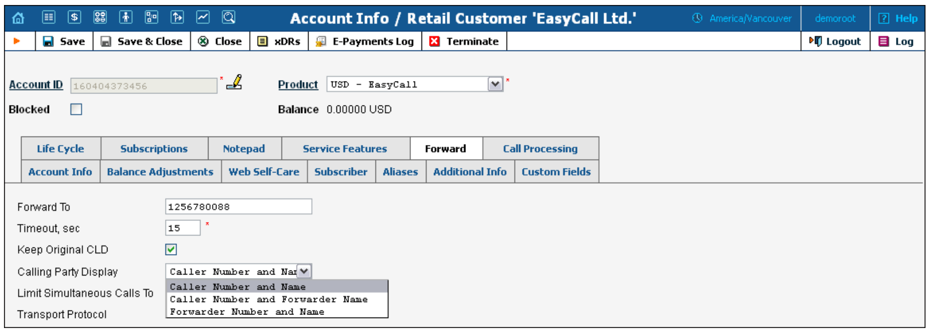
This tab is only available when **Forward Mode** on **Service Features** tab is set to **Follow-me** or **Advanced Forwarding**.

Order	Specifies the order for redirecting a call. **As listed**: call every active follow-me number from the first (topmost) number to the last, until the call is

	answered. **Simultaneous**: call every active follow-me number from the list at the same time until the call is answered. **Random:** use a random order.
Edit	Click the **Edit** icon to edit the follow-me number details. To add a new number to the list, click the **Add** button.
Up / Down	Click these buttons to move a row before the previous one or after the next one in the list.
Name	The name of the follow-me number (e.g. "Mobile Phone").
Destination	Specify a number for redirecting calls, formatted according to the customer dialing rules.
Calling Party Display	Allows you to choose how to display the caller's info during forwarding. The following options are available: • **Caller Number and Name** – The call is forwarded with the phone number and the name of the original caller (e.g. if A calls B, but the call is forwarded to C, C will see that it is A who is calling). • **Caller Number and Forwarder Name** – The phone number of the caller and the forwarder name are put in the CLI of the forwarded call (e.g. if A calls B, but the call is forwarded to C, C will see A's phone number and B's name). • **Forwarder Number and Name** – The call is forwarded with the phone number and the name of the forwarder (if A calls B, but the call is forwarded to C, C will see that it is B who is calling).
SIP Proxy	(This field is only available in **Advanced Forwarding** mode.) Enables you to choose one of the SIP proxies defined in the **Permitted SIP Proxies** properties for the customer.
Transport Protocol	(This field is only available in **Advanced Forwarding** mode.) Enables you to choose the UDP or TCP transport protocol. You can use the TCP protocol instead of UDP for SIP communications for PBXes which do not support UDP.
Active	Defines the period when the number is active, i.e. is allowed to receive a forwarded call. Click the **Active** link or wizard icon to create the first period definition or add the next one using the Period Wizard (this is virtually the same as the Off-peak Period Wizard in Edit Tariff). Click the **Always** button in the wizard to make the follow-me number active permanently. Click the

	Test Period icon to run a period test.
Timeout	Specify the amount of seconds to wait until a call is answered. Following timeout, the call will be redirected to the next follow-me number or disconnected.
Off	Check this option to temporarily disable forwarding to a follow-me number.

Forward

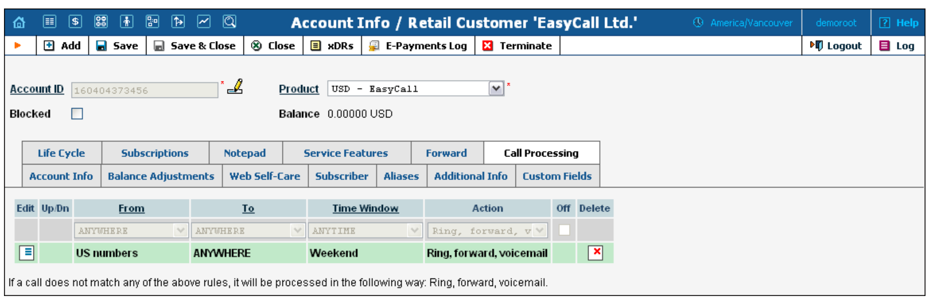


This tab is only available when **Forward Mode** on **Service Features** tab is set to **Forward to SIP URI** or **Simple Forwarding**.

Forward To / SIP URI	Here you will enter CLD or two parts of the SIP URI: • The CLD part may contain only digits, the letters a-d and A-D, the signs # and * and may end with the ! sign. • The SIP Proxy part should contain a valid IP address (four numbers separated by dots, e.g. 12.34.56.78) Calls will be forwarded to a local account if the SIP Proxy has not been specified.
Timeout	Specify the amount of seconds to wait until a call is answered. Following timeout, the call will be redirected to the next follow-me number or disconnected.
Keep Original CLD	Allows you to preserve the originally dialed number during forwarding. This is useful when forwarding a call to a remote IP PBX. For more details, see the **PortaSIP Administrator Guide**.
Calling Party Display	Allows you to choose how to display the caller's info during forwarding. The following options are available: • **Caller Number and Name** – The call is forwarded with the phone number and the name of the original caller (e.g. if A calls B, but the call is forwarded to C, C will see that it is A who is calling). • **Caller Number and Forwarder Name** – The

	phone number of the caller and the forwarder name are put in the CLI of the forwarded call (e.g. if A calls B, but the call is forwarded to C, C will see A's phone number and B's name). **Forwarder Number and Name** – The call is forwarded with the phone number and the name of the forwarder (if A calls B, but the call is forwarded to C, C will see that it is B who is calling).
Limit Simultaneous Calls to	When the specified number of concurrent calls has already been established (calls are in a "connected" state) and the account tries to place another call, that call will be rejected.
Transport Protocol	Choose the UDP or TCP transport protocol. You can use the TCP protocol instead of UDP for SIP communications for PBXes which do not support UDP.

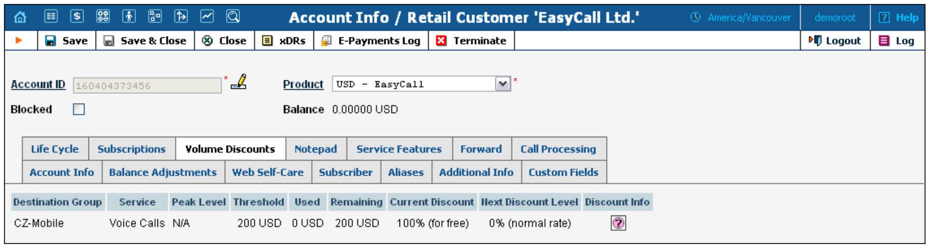
Call Processing



This tab allows you to define a list of rules for handling incoming calls to this account. It is only available when **Call Processing Enabled** box is checked on **Service Features** tab.

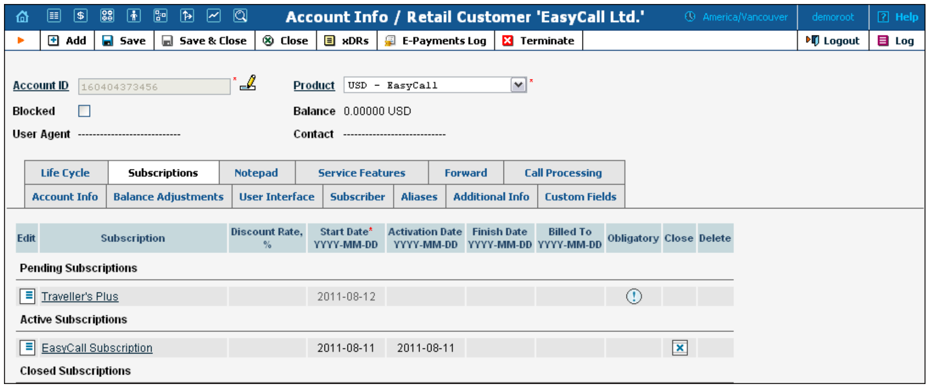
From	Allows you to select a condition applicable to an incoming phone number (phone number of a person trying to contact you). Click on the column header with the corresponding rule to invoke the wizard, which will enable you to define a new rule or change an existing one.
To	Allows you to select a condition applicable to a dialed phone number (one of your phone numbers that a person trying to contact you has dialed).
Time Window	Allows you to select a condition applicable to the time when a call is made.
Action	Specifies which actions should be taken if a particular phone call satisfies the conditions for this rule.
Off	Allows you to temporarily disable a rule without actually deleting it (so it can be used later on).

Volume Discounts



Destination Group	Information about discounts used and remaining is shown, grouped by Destination Group names. Each name represents one group included in the volume discount plan assigned to the account.
Threshold	The threshold value for the currently used discount level. When an account's internal counter reaches this value, the next level discount will start to be applied according to the discount scheme. When the counter reaches the last numeric threshold value, it will be shown here. N/A means that there is no numeric threshold defined in the scheme, or no scheme has been defined at all.
Peak Level	**N/A** indicates that the discount is provided regardless of whether the service is used in a peak or off-peak period. Otherwise, this column contains the period names.
Used	The current value of the account's counter associated with this destination group.
Remaining	The amount remaining before the threshold value.
Current Discount	The value of the discount currently applied to the account.
Next Discount Level	The value of the next level discount.
Discount Info	Click the information icon for a textual representation of the discount scheme.

Subscriptions

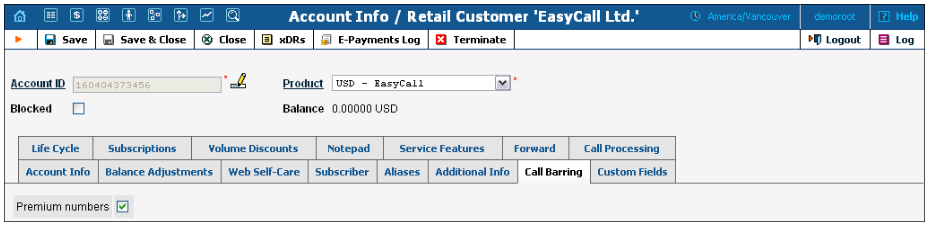


This tab displays the subscription plans currently applied to this account. Subscriptions are divided into three groups

- **Pending Subscriptions** displays subscriptions which are not active yet (i.e. they will be activated sometime in the future).
- **Active Subscriptions** displays currently activated (and billed) subscription plans.
- **Closed Subscriptions** displays subscriptions which have already been closed.

Subscription	Choose one of the available subscription plans from the list.
Discount Rate, %	Enter a discount rate for this subscription. If you leave this field empty, it means that the discount rate defined in the customer information should be applied. If you enter any value, it will override the customer discount rate. 0 means no discount (i.e. the rate defined in the subscription plan is applied).
Start Date	Enter the desired subscription activation date: immediately, or sometime in the future.
Activation Date	(Read-only) Displays the date when the subscription was activated.
Finish Date	Enter the date when this subscription should be automatically canceled.
Billed To	(Read-only) The date to which subscription charges have already been applied.
Mandatory	A flag indicating that this subscription comes from the account's product, and so cannot be closed until the account has this product assigned to it.
Close	Allows you to close one of the optional subscriptions.

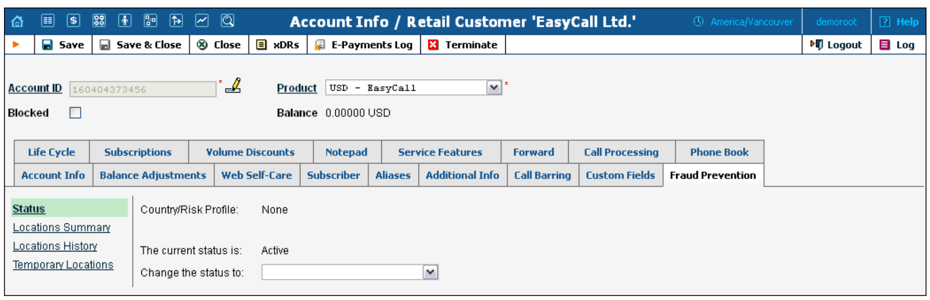
Call Barring



This tab is only available when the **Call Barring** feature for **Voice Calls/Outgoing** has been activated on the **Service Features** tab. Here you can enable call barring for specific classes of phone numbers.

Fraud Prevention

The **Fraud Prevention** tab will only appear if **Geo-IP Fraud Detection Enabled** is set to **Yes** in the account's product.



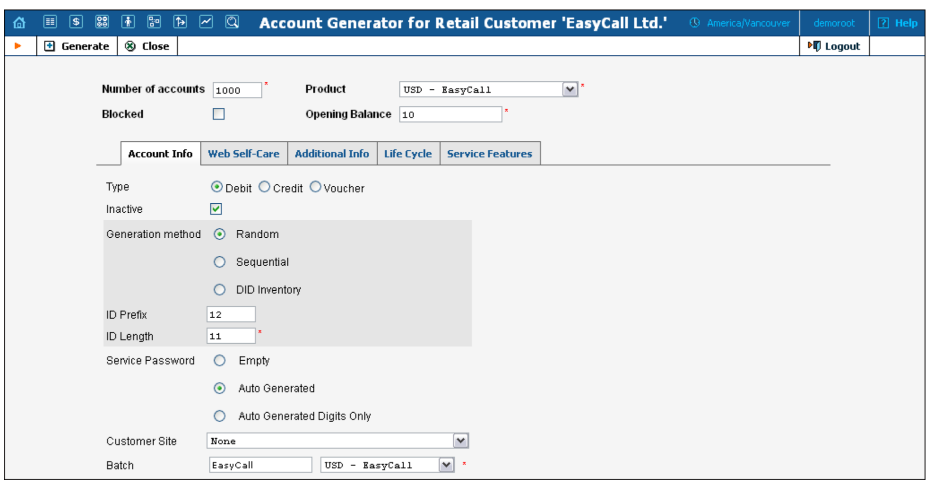
Field	Description
	The *Status* section
Country / Risk Profile	This shows the account's assigned Country / Risk Profile as defined in its product.
The current status	This shows the account's current condition: • **Active** – This means that the account is able to use the service as usual. • **Screened** – This means that some unusual activity has been detected for this user, thus he will be prompted to enter his "service unblock" code upon attempting to make a new call. • **Quarantined** – This means that after being screened, this account was unable to supply valid credentials while continuing to attempt to make a large number of calls. All such call attempts are automatically blocked to reduce the load on the network.
Change the status to	Here you can manually change the account's status: • **Active (allow normal calling)** – If the

	account had been screened or quarantined for some reason and the situation was regulated, you can change the account's status back to active here. • **Screened (authenticate before calling)** – If some unusual activity has been detected for this account you can screen its calls to prevent a potential security breach. • **Quarantined (reject all calls)** – If you want to temporarily block all call attempts from the account, change its status to quarantined here. Note that neither a **Screened** nor a **Quarantined** status influences on-net calls.
The *Locations Summary* section	
IP	Shows the IP address used for account registration.
Usage Counter	Shows the number of call attempts made from this specific location.
Last Used	This column shows the timestamp of the last call attempt.
Verified Until	If an account's product is configured to allow normal calls (without repeated screenings) for a certain period after passing the initial screening IVR, the time of expiration will be reflected in this column.
The *Locations History* section	
IP	Shows the IP address used for account registration.
Country	Shows the country where the account was registered.
Usage Counter	Shows the number of call attempts made from this specific location.
Restriction Level	Shows the restriction levels as configured in the **Country / Risk Profile.**
Last Used	This column shows the timestamp of the last call attempt.
Verified Until	If an account's product is configured to allow normal calls (without repeated screenings) for a certain period after passing the initial screening IVR, the time of expiration will be reflected in this column.
The *Temporary Locations* section	
IP	This allows service usage without restriction in unusual locations. Enter the IP address from which the user intends to use the service here.
Country	If the user intends to use services outside of the default country for some time, you can specify the

	receiving country, therefore temporarily allowing calls without restriction from that location.
Verified Until	Enter the date when verification for a temporary location should be automatically canceled.
Delete	Click the **Delete** icon to remove the temporary location.

Account Generator

The Account Generator should be used when large numbers of accounts are to be generated (for example, when issuing prepaid cards) so that individual accounts need not be entered manually. The account IDs will be generated either sequentially or randomly, as will the web password, so as to prevent possible defrauding. The generation process will run offline, so that the accounts are not visible from the Account Management page until the process is complete. The customer will then receive an e-mail notification regarding completion of the task, as well as another e-mail listing all the accounts in CSV format, including the values “Batch”, “Control Number” (a sequential index), “PIN” (account ID), “Web login” (by default identical to the account ID) and “Password” (web password).



The **Account Generator** interface is very similar to **Add Account**, with the following exceptions:

Field	Description
Number of Accounts (replacing Account ID)	The number of accounts to be generated.
Account Info tab	
Generation method	**Random** will produce unique unpredictable account IDs with a specified length and prefix. **Sequential** will create accounts with incremental IDs, e.g. if the starting ID is

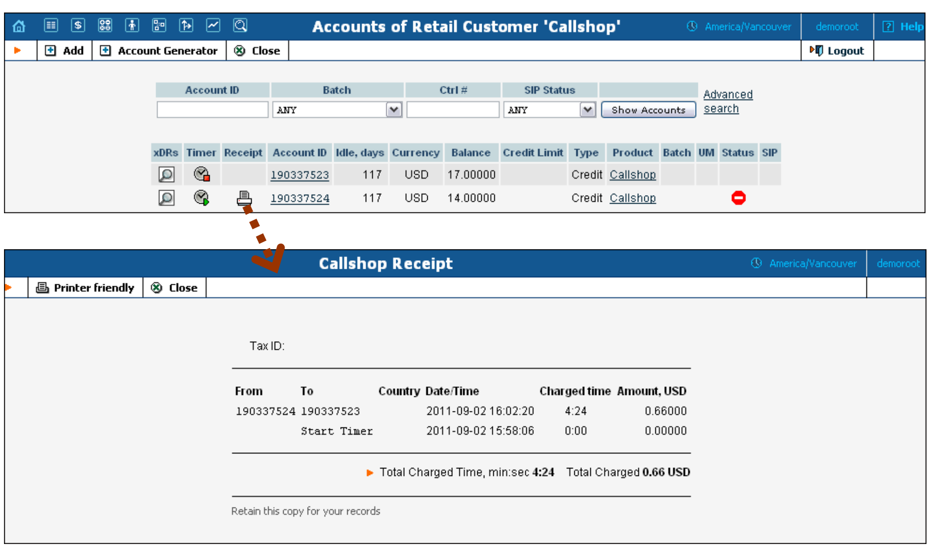
	specified as 55540000, it will create accounts 55540000, 55540001, 55540002 and so on; see below for more details. **DID Inventory** will generate accounts by assigning account IDs from the available DIDs in a specific DID batch; the user has the option of choosing the starting DID.
Inactive	Only available when the account type is set to "Debit" or "Voucher." Check this box if you'd like to create an inactive account.
ID prefix	Preset leading digits in the account ID; leave empty to make the account ID totally random.
ID length	Total ID length, including ID prefix.
Starting ID	The initial digit set you would like the generated accounts to start with. Thus, if you enter 5553000, the account IDs (PINs) will look like this: 5553000, 5553001, 5553002 and 555300N, where N = subsequent digit. (This is only available in Sequential generation method, and is always numeric.)
Service Password	Can be generated automatically, or left empty to allow end-users to login using account ID only (typically used for prepaid cards). The "Auto-generated digits only" option allows you to create sufficiently secure passwords (with a specified password length) consisting of digits only, so that they can be entered from a phone's touchpad.
Customer Site	Places this account (phone line) with a specific site so that the site parameters (e.g. number of simultaneous calls) will apply.
Batch	Accounts are grouped into batches. If a new batch name is provided in the text field, a new batch will be created when you add the account. Otherwise, an existing batch should be selected from the drop-down list.
Web Self-Care tab	
Login	Can be set as identical to the account ID, or left empty to disable access to the account self-provisioning interface.
Password	Can be generated automatically, or left empty to allow end-users to login using account ID only.
Use the New Self-Care Interface	This enables an account user to use the new self-care interface.

Assigning an account ID

Choose Random if you want a relatively small amount of unpredictable IDs within a large enough range of possible numbers. Please note that "random" means not only "generated randomly" but also "difficult to guess"; therefore, the ratio between the number of generated PINs and the number of total possible PINs should be sufficiently low. For instance, PortaBilling® will refuse to generate 5,000 PINs with ID prefix 33333 and ID length 9, because in this case there are 10,000 possible PINs; if we generate 5,000 actual pins, there is a 50% chance of using someone else's PIN just by entering one wrong digit. Thus, in the example above, the PIN length should be set at 10 or even 11 digits (with a 5% or 0.5% chance of guessing the PIN, respectively). Note that random account PINs are never generated with leading zeroes, as these zeroes could be truncated when working with PIN data in programs like Microsoft Excel.

Choose Sequential if you want to generate a large number of accounts at once. You can choose the starting ID for the first account to be generated, and the system will generate IDs sequentially by an increment of one. If a given account ID is already used, it will be skipped and the system will continue until it generates the specified number of accounts. For example, if you requested 100 accounts with the starting ID prefix "1000000", and there are already three accounts within the defined range (1000010, 1000011, 1000012), the first generated ID will be 1000000, the second 1000001, and the last 1000103. Account ID length is always the same for all generated accounts. So if there is not enough room to generate the specified number of accounts (e.g. you request 1,000 accounts with starting ID 999900), generation will not begin and a warning e-mail will be sent immediately.

Callshop Features



The account list screen can be used by a callshop operator to track calls made in callshop cabins, to block an account after a call has been placed, and to print receipts for services provided. When a user wants to place a call, the operator clicks the Start Timer icon, which automatically unblocks the account. After the call, when the user is ready to pay, the operator clicks the Stop Timer icon, and the **Print Receipt** icon appears. Clicking this icon will initialize the receipt pop-up.

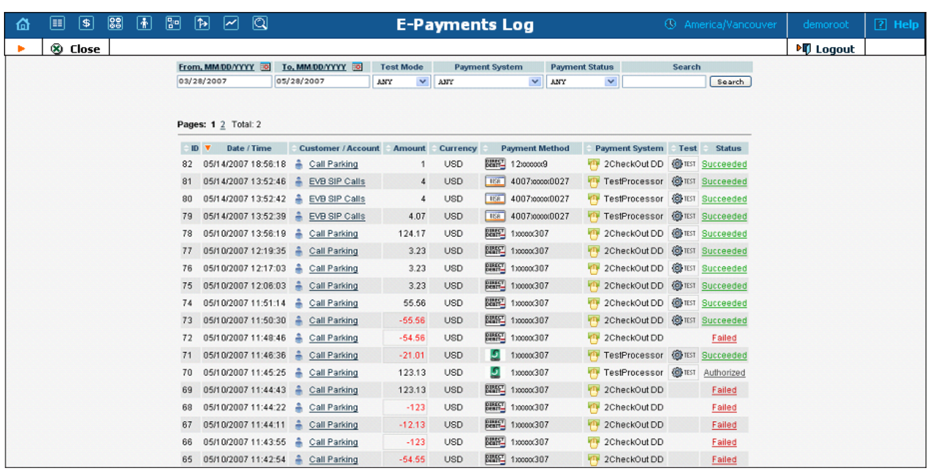
NOTE: Callshop features are not available for accounts of direct retail customers. In order to enable these features for accounts of a reseller's sub-customer, both the reseller and the sub-customer must have "Callshop enabled" on.

E-payments Log

This form is not directly accessible from the main menu, since it should be accessed in the specific context of:

- the whole environment (accessible from **Payments**) – this allows you to see charge attempts for any direct customer;
- a specific customer (accessible from **Customer Info**) – this allows you to monitor charge attempts related to a particular customer;
- a specific account (accessible from **Account Info**) – this allows you to monitor charge attempts related to a particular account.

Adjust the search parameters to see a list of all transaction attempts (by default, only transactions for the current day will be displayed, so the values in the From / To fields may need to be changed) and then press the **Search** button.



Column	Description
Date / Time	Specifies when the charge attempt occurred.
Customer / Account	Specifies to which customer or account the charge was applied.

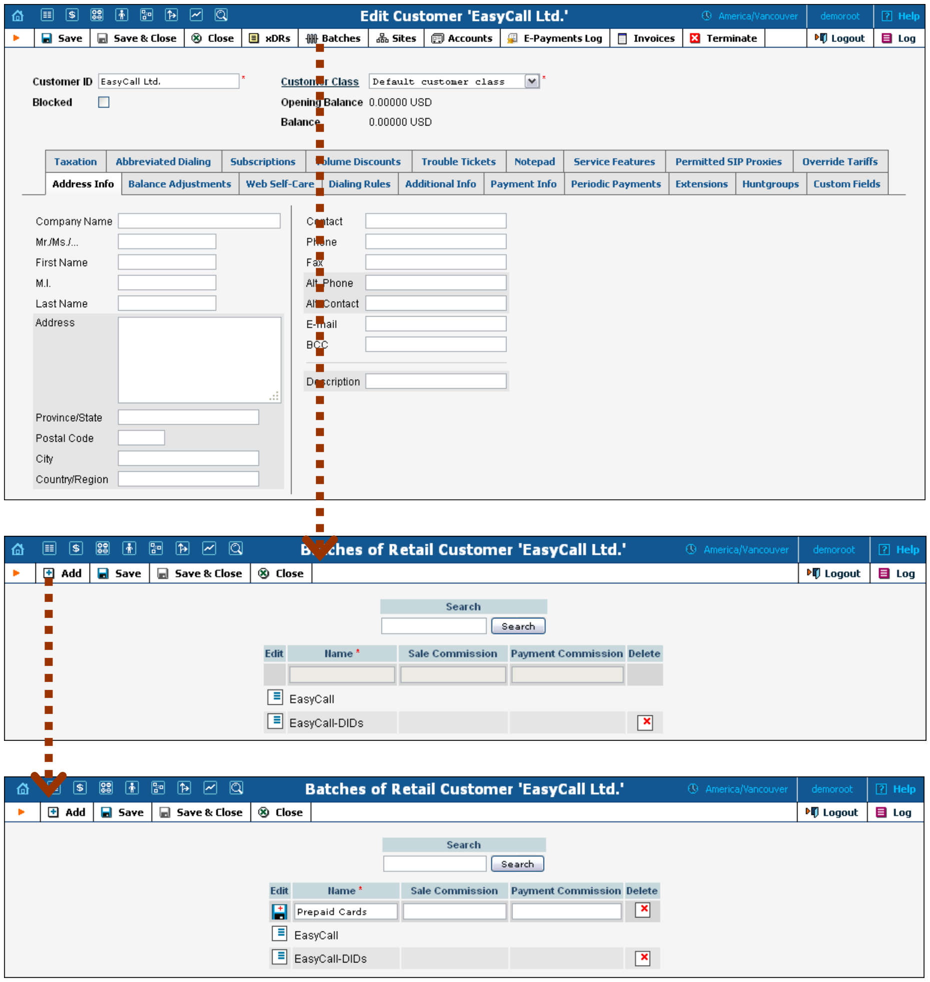
Amount	Gives the total amount of the transaction.
Currency	Specifies the currency used in the transaction.
Payment Method	The icon on the left specifies which type of payment method was used (e.g. VISA or MasterCard); the actual card / account number is displayed in the "safe" form (some of the digits are masked by an x).
Payment System	Specifies the payment system used to carry out this transaction.
Test	Indicates whether this transaction was done in "test" mode.
Status	Indicates the result of the transaction: • Succeeded – the transaction was successful, funds were transferred. • Failed – the transaction has failed (click on Failed to get further information, such as the error code or a response from the remote payment processor). • Authorized – a "check funds" transaction was successful (but no actual charges were applied to the credit card and no balance modification in the billing was done). • Incomplete – when using payment systems with "external authorization" it is possible that a transaction was interrupted (e.g. user has pressed the "cancel" button when entering credit card info on the remote processor website).

Batch Management

Batch is a logical name for a group of accounts, which simplifies account management procedures. Accounts can be grouped into batches, but also can exist without being tied to a specific batch. The Batch Management screen, accessible from the Edit Customer page by clicking the **Batches** button, shows you a screen for listing existing batches for a specific customer.

Adding a New Batch

To add a new batch, select **Add**.



When you add the account and provide a new batch name in the text field, the new batch will be also created.
On the Batches page, you can create a new batch, edit the existed batches (e.g. change batch's name) and set two parameters: Sale Commission and Payment Commission. These parameters are associated with Distributor (see **Distributor** section for more information).

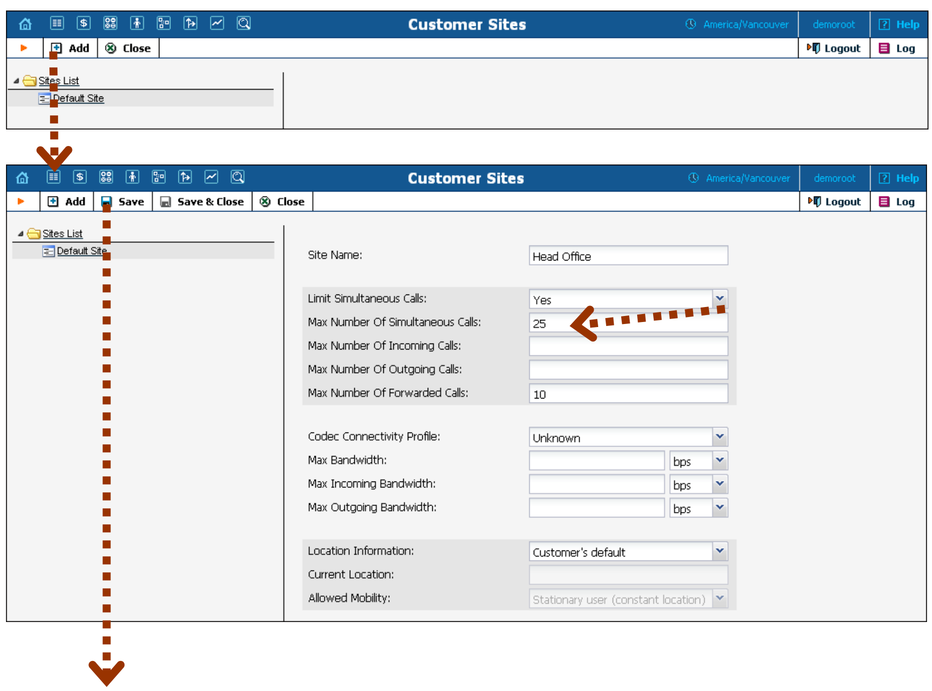
Site Management

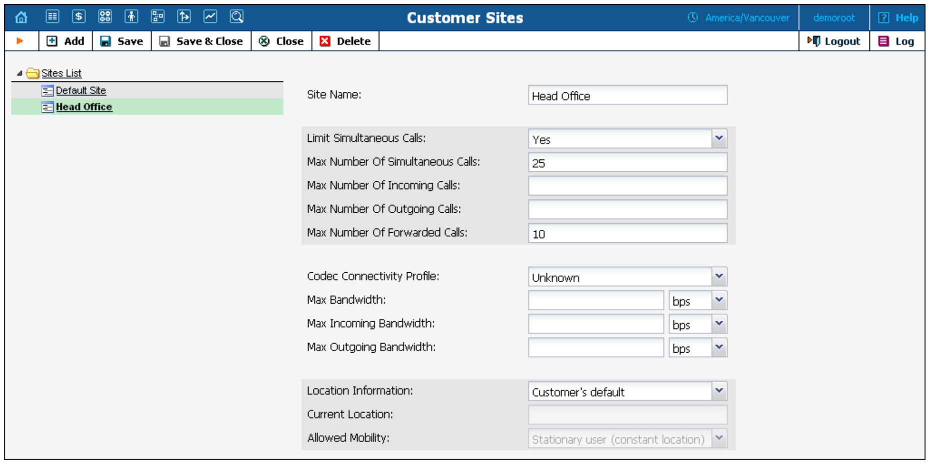
A site is a group of customer's accounts that can be conveniently managed as a single entity. For instance, all of the phone lines used in a sales department or in 'office building A' can be joined into a single group. This allows you to apply certain configuration parameters or service restrictions to the accounts in that group. You can limit the combined number of simultaneous calls for all accounts of a particular site. This is useful if, for instance, 'office building A' has limited bandwidth and can only support 30 calls – no more calls will be allowed in order to avoid severe degradation of the sound quality on all calls in progress.

Adding a New Site

There is always one entry in the customer site list called Default. Initially, all accounts are added into this site, therefore this site cannot be deleted. If you need to apply the exact same limitations on all of the accounts of a particular customer – just specify them in the Default site.

If a customer has more than one location you can set the limitations for each location separately. To do this, create an independent site entry with specific options for each of the customer's locations. Then assign these sites to the corresponding accounts in the Customer Site drop-down list. Any account that is not assigned to a specific site will share the limitations of the Default site.



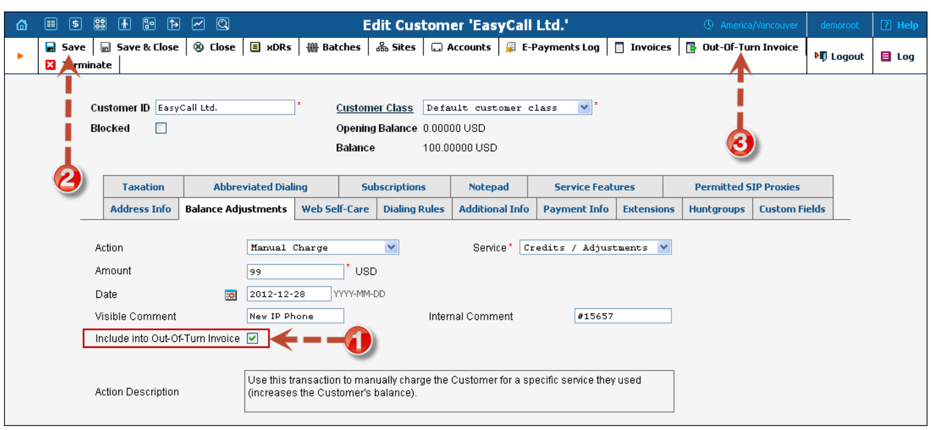


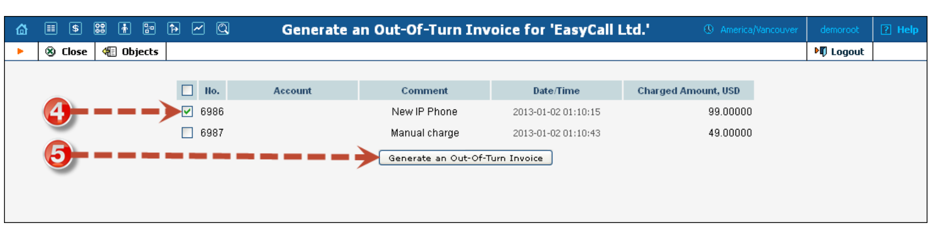
Site Name	Name for a group of accounts
Limit Simultaneous Calls	Engage real-time checks of the number of concurrent calls made by accounts that belong to this site. When the specified number of concurrent calls has already been established (calls are in a "connected" state) and the account tries to place another call, that call will be rejected. Choose **Customer's default** option to use the values defined in the **Default** site.
Max Number of Simultaneous Calls	Allow only a specific number of concurrent calls (regardless of their type, such as incoming or outgoing) for accounts at this site.
Max Number of Incoming Calls	Allow only a specific number of concurrent incoming calls for accounts at this site.
Max Number of Outgoing Calls	Allow only a specific number of concurrent outgoing calls for accounts at this site.
Max Number of Forwarded Calls	Allow only a specific number of concurrent forwarded calls for accounts at this site.
Codec Connectivity Profile	Select a suitable codec connectivity profile that will be used for bandwidth allocation calculation. Every new call's allocated bandwidth is calculated by considering a negotiated codec and its parameters to enable full use of the available bandwidth and block new calls if no more bandwidth is available.
Max Bandwidth	This allows you to configure the bandwidth utilization limitation to ensure that only an acceptable number of calls are allowed, in order to avoid severe degradation of the sound quality on calls in progress.
Max Incoming Bandwidth	This allows you to configure the bandwidth utilization limitation for incoming calls.

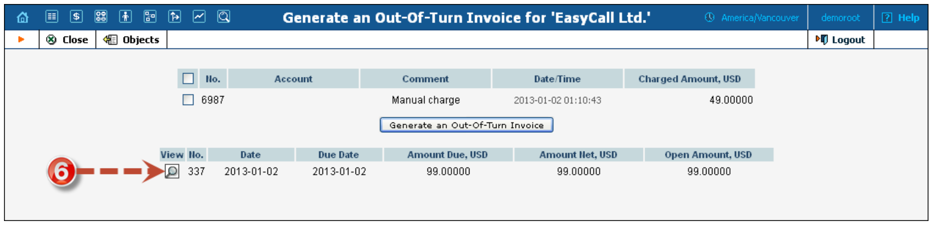
Max Outgoing Bandwidth	This allows you to configure the bandwidth utilization limitation for outgoing calls.
Location Information	This allows you to define customer's permanent location for geo-IP fraud prevention.
Current Location	Type in a customer's permanent location. It should contain a country code top-level domain (in *iso_3166_1_a2* format, e.g. *fr* for France, *de* for Germany etc.)
Allowed Mobility	Select **Stationary user (constant location)** if this customer is not authorized to make calls from various countries (e.g. as a residential customer would make calls from his SIP phone). Calls made from any other country will be screened. The **Roaming user (frequent location)** option can be used for customers who travel frequently. In this case, a change in location would be considered acceptable.

Out-Of-Turn Invoice

Sometimes invoices for extra services such as a technician visit or an equipment purchase need to be provided at the time when such service is rendered so the customer can immediately proceed with payment. The administrator can generate an out-of-turn invoice (to cover only a few specific items) on demand. The **Out-Of-Turn Invoice** screen is accessible from the **Edit Customer** page by clicking the **Out-Of-Turn Invoice** button. It shows you the xDRs that are available for the out-of-turn invoice.







All you need to generate an invoice is to apply one or more "Manual Charge" transactions that contain a description(s) that will be visible for a customer and then mark it / them as **Include in Out-Of-Turn Invoice.** You can then generate an out-of-turn invoice with these transactions on the **Out-Of-Turn Invoice** page.

Transactions included in an out-of-turn invoice that was *generated* on the **Out-Of-Turn Invoice** page won't be reflected in the regular invoice issued at the end of the customer's billing period. Thereafter, if one or more transactions aren't included in a *generated* out-of-turn invoice during the corresponding billing period, they will be reflected in the regular invoice issued at the end of the customer's billing period.

NOTE: To generate an out-of-turn invoice define the Invoice Template for the customer beforehand. If the customer has **Customer Class Default** selected in the **Invoice Template** field then the *Default customer class* should have a defined invoice template.

Vendor Management

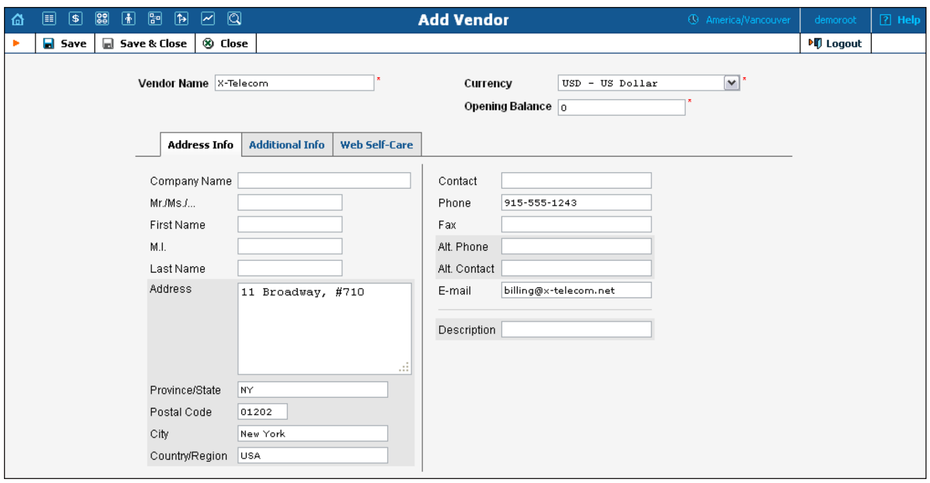
Vendors are your service providers, e.g. termination partners or incoming toll-free line providers. Every time a call travels from your network to a vendor (via telephony or VoIP) there is a cost associated with it, and at this point PortaBilling® will charge the account and customer for the call, as well as calculate your termination costs.

On the Vendor Management screen, you can view a list of all registered vendors. This list provides the following information and activities:

Column	Description
xDRs	Click the **View** icon to go to the xDR view page for

	this vendor.
Name	The vendor's name.
Connections	Click the connections icon to be taken to the connections management page for this vendor. The number next to the icon shows the number of connections defined for this vendor. Read more in the Connections section below.
Currency	The currency in which the vendor's account is maintained and paid.
Balance	The vendor's current balance.
E-mail	E-mail contact for the given vendor.
Delete	Click the **Delete** icon to remove the vendor. The delete button will only appear if there are no xDRs or connections defined for the vendor.

Add / Edit Vendor



The **Add Vendor** page allows definition of a new client entity within PortaBilling®. The information required is split into two tabbed sections: Address Info and Additional Info. The Edit Vendor page also contains the Notepad tab for making notes. The following information is required at the top of the form:

Field	Description
Vendor Name	Defines the vendor name as it will appear within the PortaBilling® system. This is distinct from the **Company Name** field in the **Address Info** tab.
Currency	A currency must be specified by selecting it from the drop-down list of available currencies.
Opening Balance	The starting balance for the vendor.

The information in all the other tabs is optional, and need not be specified when creating a vendor.

Balance Adjustments

The **Balance Adjustments** tab allows the administrator to correct a vendor's balance.

Field	Description
Action	**Manual charge:** Use this transaction to adjust the vendor's balance in case of non-call related charges from the vendor. The amount is added to the vendor's balance. **Manual credit:** Use this transaction if you have received credit to your account. For instance, if you complained about the vendor's service quality and have an agreement for certain funds to be credited toward future services. **Manual payment:** Use this transaction to manually enter the information about a payment you have made. Credits (or decreases) the vendor's balance. **Refund:** Use this transaction to revert an earlier payment to the Vendor (e.g., a check returned by the bank). Debits (or increases) the vendor's balance.
Service *(only for Manual charge and Manual credit)*	A service for which the manual charge / credit is made.
Amount	Amount to charge / refund.
Date *(only for Manual charge and Manual credit)*	A date associated with the manual charge / credit. For example, you can specify a date for manual credit action for when an item is credited.
Visible comment	A comment on this transaction visible to the vendor in the xDR browser.
Internal comment	An internal comment on this transaction; not visible in the xDR browser, and only accessible directly from the database.

Additional Info

Field	Description
Billing Period	Defines the frequency of generating xDR reports for this vendor.
Offset Balance with Customer	Defines the customer for automatically offsetting the vendor's balance (if this company also sends you

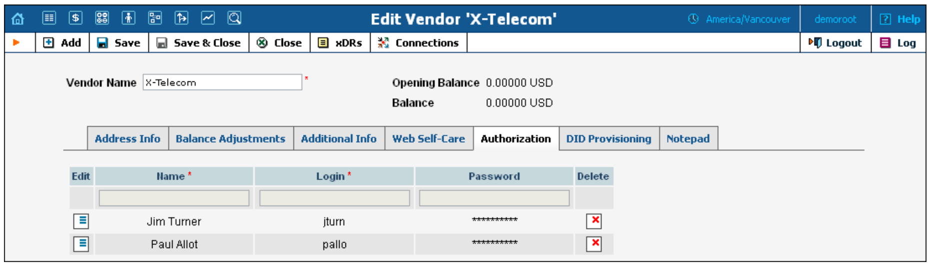
	traffic, i.e. it is also your customer). You may only choose a reseller or retail customer defined with the same currency. This indicates that this vendor and the referenced customer represent two sides of the same company. When the billing engine processes a call from this customer and calculates the routing, it automatically excludes this vendor from the routing list to prevent a possible routing loop (sending calls back to the originator).
Minimum Amount to Offset	When the balances of both the vendor and the associated customer reach the threshold value, PortaBilling® chooses the lesser of two balances and decreases both customer's and vendor's balances by this amount. Let's consider the example for when the **Minimum Amount to Offset** is set to $100 and you start sending traffic to this company (to vendor) and it starts sending traffic to you (as customer). • While the vendor's balance is $80 and the customer's balance is $40 — nothing happens. • Even when the vendor's balance crosses the threshold and becomes $120 and the customer's balance is $80 — nothing happens. • Only when the vendor's balance is $140 and the customer's balance is $105 (both balances over the threshold) — does PortaBilling® make a $105 offset. • The vendor's balance becomes $35 and the customer's balance becomes $0. The xDR records for both the vendor and the customer are created for this transaction.

Web Self-Care

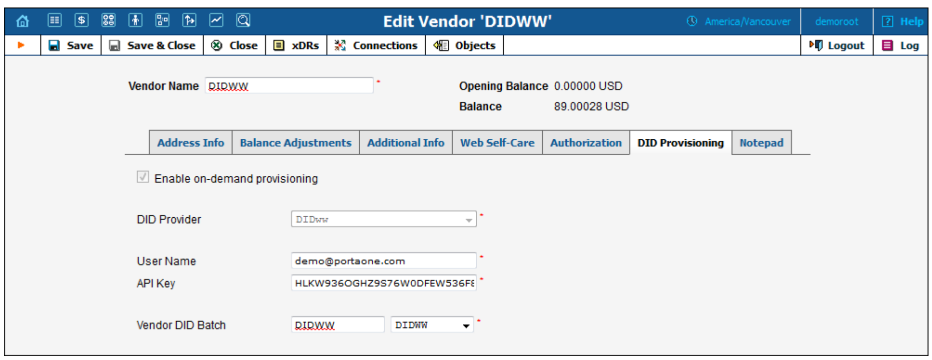
The **Web Self-Care** tab content is identical to that described in the *Web Self-Care* subsection of the *User management* section of this guide.

Authorization

When you send traffic to the vendor's network, both parties are interested in securing the connection so that no one else can send traffic to the vendor, as this would then be billed to your account. When using SIP, it is possible to do this in a very convenient and secure way: by using digest authentication. In this case, the vendor will provide you with a username / password, which will be used to authorize every outgoing call from your network to this vendor. Here you can enter information about such accounts, so that they can be provided automatically by billing to the SIP server.



DID Provisioning



Field	Description
Enable on-demand provisioning	Enables the interconnection with DID vendors such as DIDWW or DIDx, offering extra DID numbers as a value-added-service. On-demand DID provisioning enables the end-user to browse, sign-up and release DIDs or toll-free numbers available on the DID vendor side, online.
DID Provider	Select the DID provider for interconnection.
User Name / User ID	Specify a user name provided by the DID provider. This user name will be used for the authentication of API sessions.
API Key / Password	Specify an API key provided by the DID provider. This key will be used for the authentication of API sessions.
Vendor DID Batch	Allocate a batch for this vendor's DIDs. When end users sign up for new DIDs or toll-free numbers from this vendor, the numbers will be registered in the specified vendor batch. This allows you to keep track of which phone numbers were purchased from this vendor.

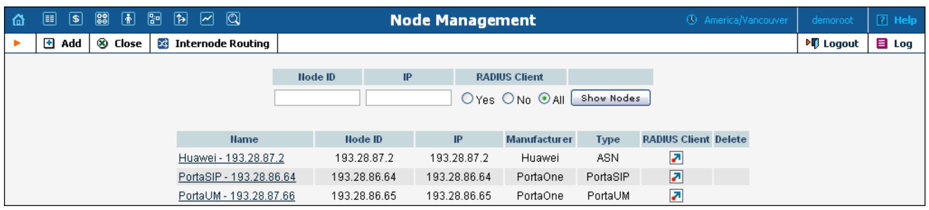
Incoming Costs Tariff	Select a tariff to calculate costs associated with the incoming calls from this vendor.
Accept Calls on SIP Server	Select a PortaSIP® node (virtual SIP instance) on which the calls from this vendor will be accepted.

6. Networking

Nodes

The Node Management screen enables registration, removal and maintenance of the gateway list. Nodes are gateways which provide accounting records to PortaBilling® or exchange authentication / authorization requests with it. On this screen the user is provided with a list of all nodes currently registered.

The search form at the top of the screen allows filtration by any combination of H.323 ID, IP address and / or whether or not the node is a Radius client. Providing any of this information and selecting **Show Nodes** will refresh the Node listing according to the new filtration criteria.



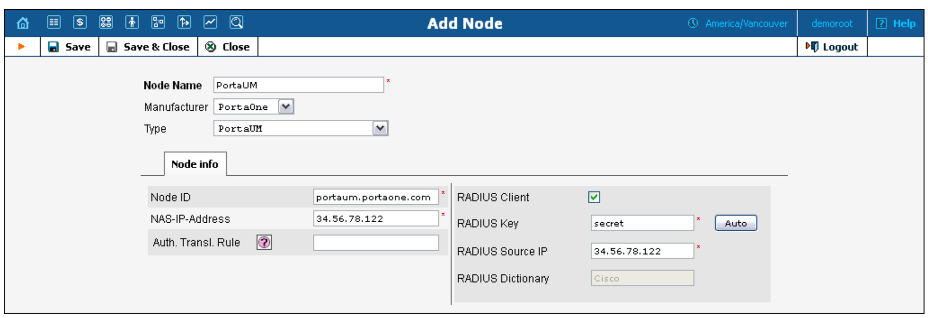
The following information is provided within the listing:

Column	Description
Name	Logical name of the node. This is also a link to the edit screen for the given node.
Node ID	For a VoIP node, this is equivalent to a hostname for an internet server (e.g. `mail1.cyberdyne.com`), i.e. a descriptive, human-readable name used for identification purposes.
IP	IP address of the node.
Manufacturer	Manufacturer of the node.
Type	Node type. The options are as follows: ***Cisco*** • VOIP-GW: the node functions as a gateway • NAS: Cisco Network Access Server • ASR Series: Cisco ASR Series Aggregation Services Routers • PDSN: Cisco Packet Data Serving Node ***Quintum*** • VOIP-GW: the node functions as a gateway ***PortaOne*** • PortaSIP: the PortaSIP® Switching Server • PortaUM: the PortaSIP® Media Server

	• Generic: PortaOne generic node ***ALOE Systems** (formerly MERA Systems)* • MVTS Pro: Mera Networks VoIP Softswitch ***BroadSoft*** • BS: BroadWorks VoIP communications application server ***Mikrotik*** • Router: Mikrotik Router OS • Genband *(formerly Nextone)* • MSX: Nextone MSX ***Huawei*** • ASN: Huawei ASN gateway for WiMAX ***Dialogic*** • IMG: Dialogic Integrated Media Gateway ***ECI*** • BRAS: ECI Broadband Remote Access Server

Add / Edit Node

To add a new node to the system, click **Add** in the toolbar.



In order to register a new node in PortaBilling® or edit an existing one, the following information must be provided:

Field	Description
Node Name	The logical name of the node for use within PortaBilling®
Node ID	For a VoIP node, this is equivalent to a hostname for an internet server (e.g. `mail1.cyberdyne.com`), i.e. a descriptive, human-readable name used for identification purposes. Make sure the value you enter here matches the "hostname" parameter configured on the gateway, since that value is returned from this node in the `h323-gw-id` attribute, and the ability to match these values with data in billing significantly simplifies

	troubleshooting.
NAS-IP-Address	The IP address of the node.
Auth. Transl. Rule	The authentication translation rule used to transform a dialed phone number into the E.164 format used in PortaBilling®. Node translation rules have become obsolete with the introduction of customer-based translation rules.
Manufacturer	Choose “Cisco,” “Quintum,” “PortaOne” or another from the drop-down list, depending on the manufacturer of the equipment.
Type	Node type. The options are as follows: ***Cisco*** • VOIP-GW: the node functions as a gateway • NAS: Cisco Network Access Server • ASR Series: Cisco ASR Series Aggregation Services Routers • PDSN: Cisco Packet Data Serving Node ***Quintum*** • VOIP-GW: the node functions as a gateway ***PortaOne*** • PortaSIP: the PortaSIP® Switching Server • PortaUM: the PortaSIP® Media Server • Generic: PortaOne generic node ***ALOE Systems*** *(formerly MERA Systems)* • MVTS Pro: Mera Networks VoIP Softswitch ***BroadSoft*** • BS: BroadWorks VoIP communications application server ***Mikrotik*** • Router: Mikrotik Router OS • Genband *(formerly Nextone)* • MSX: Nextone MSX ***Huawei*** • ASN: Huawei ASN gateway for WiMAX ***Dialogic*** • IMG: Dialogic Integrated Media Gateway ***ECI*** • BRAS: ECI Broadband Remote Access Server
RTP Proxying	Describes the NAT traversal capabilities of this node: • Direct – RTP stream should be send directly to this node; RTP proxy should not be used. • Optimal – this node is capable of NAT traversal; no RTP proxying is required unless specifically requested.

	• OnNat – this node is not capable of NAT traversal; engage RTP proxy if the other party is behind the NAT. • Always – when sending a call to this node, always engage RTP proxy, so that no direct media stream goes to it.
VoIP User-Name	Defines which parameters (e.g. ANI, IP, DNIS, etc.) should be used to identify which account the call should be billed to. This applies to calls that arrived to this node from the IP network (values taken from the answer / VoIP call leg). Note that this parameter is only applicable to Quintum gateways.
Telephony User-Name	Defines which parameters (e.g. ANI, port ID, DNIS, etc.) should be used to identify which account the call should be billed to. This applies to calls that arrived to this node from PSTN (values taken from the answer / Telephony call leg). Note that this parameter is only applicable to Quintum gateways.
Radius Client	Check this box if the node will provide accounting records to the Radius server.
Radius Key	This input will be available only if the node has been designated as a Radius client. This is the authentication key for all Radius interactions. An easy-to-remember password may be generated automatically by selecting the **Auto** button.
Radius Source IP	More than one interface can be present on the node; specify the IP address of the one that communicates with the Radius server.
The following fields are only available for Cisco, Mikrotik, Huawei and ECI nodes	
POD Server	This enables the event-triggered interaction with the RFC 3576-based service controlling the network sessions on the NAS. The system will send a special PoD, DM or CoA message to this server, for example, when an internet-connected account runs out of balance, exceeds its data transfer limit, switches access policy or expires. The POD server will then terminate or alter the properties of the session(s) opened by this account.
Shared Key	A shared secret that is used for authenticating requests.
Radius IP	An IP address for a RADIUS RFC 3576 server to which requests are sent.
Port	The internet UDP port to which requests are sent. If not specified, the default port typical for the NAS

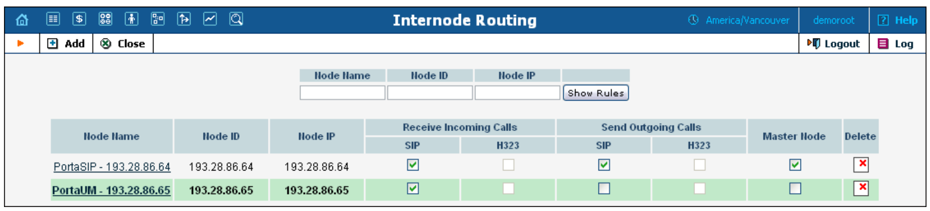
	device is used (e.g. 3799).

Internode Routing

The Internode Routing screen enables the creation of rules for routing calls between nodes. This screen shows a list of all the rules currently in the system.

NOTE: The Internode Routing page appears only if there is a MVTS node in the environment, and is accessible only to administrators and root users

The search form at the top of the screen allows filtering by any combination of node name, node ID, or node IP address. Provide any of this information and press **Show Rules** to display the specific list of node routing rules only.

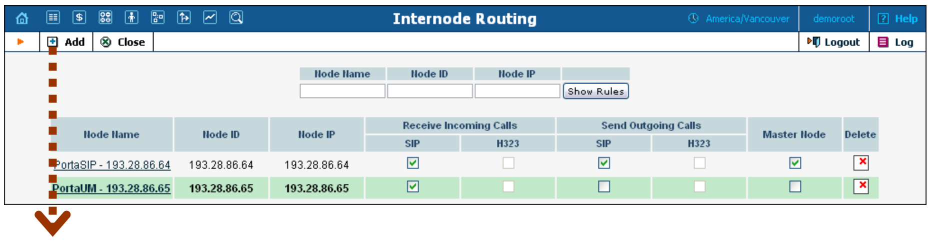


The Internode Routing screen provides the following information:

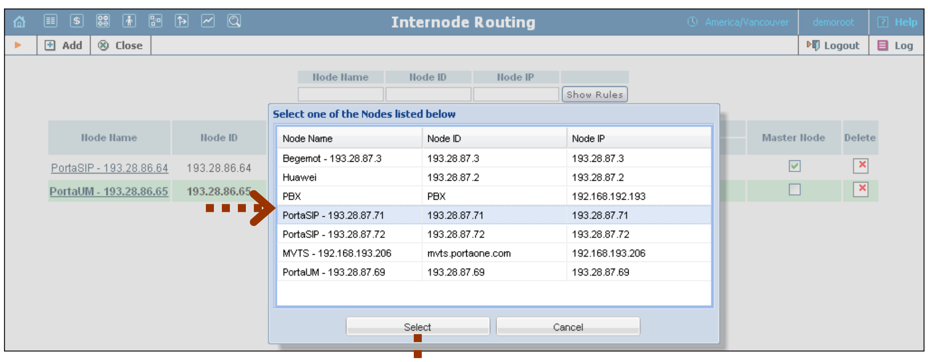
Field	Description
Node Name	The logical name of the node for use within PortaBilling®.
Node ID	For a VoIP node, this is equivalent to a hostname for an internet server (e.g. `mail1.cyberdyne.com`), i.e. a descriptive, human-readable name used for identification purposes.
Node IP	IP address of the node.
Master Node	If any node in the environment is marked as a master, any other non-master nodes will pass calls to one of the master nodes that supports the compatible protocol (e.g. PortaSIP® will look for any Master Node with SIP protocol enabled).
Receive Incoming Calls	Indicates whether a node is able to receive SIP / H323 calls. **NOTE:** If the node does not support SIP or H323 calls, the corresponding checkbox will be unavailable.
Send Outgoing Calls	Indicates whether a node is able to send SIP / H323 calls. **NOTE:** If the node does not support SIP or H323 calls, the corresponding checkbox will be unavailable.

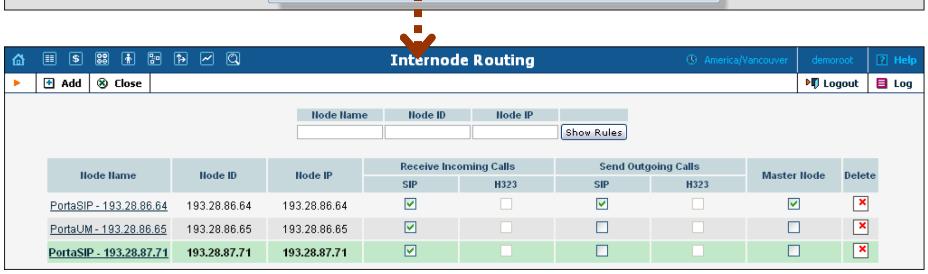
Delete	Click the **Delete** icon to remove the rule from the list. **NOTE:** If a node is removed from the system, the rule for this node is also automatically removed.

To add a new rule to the system, click **Add** in the toolbar, and follow the steps shown in the following sequence of screenshots:



When the node selection window appears, choose the node you wish to create a rule for from the list. Note that only one rule can be defined for each node.





Call Handling

Often calls arrive to the network from gateways which do not support digest authentication. In this case, it is necessary to engage different modes of billing (by tech-prefix, by IP address, etc.) on the PortaSwitch® side. The Call Handling screen provides administrators with an easy way of defining a list of rules allowing PortaSIP® servers to handle incoming calls in the desired manner. It gives them a flexible choice of several authorization methods and the ability to configure rules directly from the interface, instead of time-consuming manual configuration. Rules are listed in order of priority, with the topmost rule having top priority. If no rule works for a given call request, digest authentication will be used.

An authentication rule combines an authorization method and call parameters. The different methods of user authentication are described in the *Advanced Features* section of the **PortaSIP Administrator Guide**. When adding a rule, you can choose one of the following twelve methods:

- **CLD** – The User-Name attribute is the phone number called (CLD).
- **CLD Tech-Prefix** – The User-Name attribute consists of the first part of the CLD parameter ending with (and including) # (e.g. a call with the `To` header (CLD) equal to 77788#12125551234 will be authorized as 77788#).
- **CLD Tech-Prefix and IP** – The User-Name attribute consists of the first part of the CLD parameter ending with (and including) # and the IP address prefixed with @ (e.g. a call from IP address 122.255.109.2 with the `To` header (CLD) equal to 080099#12125551234 will be authorized as 080099#@122.255.109.2).
- **CLI** – The User-Name attribute is the phone number of the party calling (CLI).
- **CLI (PAI if no CLI)** – The User-Name attribute is the phone number of the party calling (CLI). If the CLI is not specified, the User-Name attribute contains the value from the PAI header.
- **CLI (RPID if no CLI)** – This method is similar to the previous one, except that the User-Name attribute is taken from the RPID header if the CLI is not specified.
- **CLI Tech-Prefix** – The User-Name attribute consists of the first part of the CLI parameter ending with (and including) # (e.g. a call with the `From` header (CLI) equal to 977#16045551234 will be authorized as 977#).
- **CLI Tech-Prefix and IP** – The User-Name attribute consists of a first part of the CLI parameter ending with (and including) # and the IP address prefixed with @ (e.g. a call from IP address 122.255.109.2 with the `From` header (CLI) equal to 977#16045551234 will be authorized as **977#@122.255.109.2**).
- **PAI** – The User-Name attribute contains the value from the PAI header.
- **RPID** – The User-Name attribute contains the value from the RPID header.
- **Digest** – Digest authentication is applied to obtain the User-Name attribute.
- **IP** – The User-Name attribute is the IP address from which PortaSIP receives the INVITE.

NOTE: To discuss creating other possible authorization methods, contact the **PortaOne Support Department**.

Let's take an example: A PortaSIP® server receives a call initiation (INVITE) request from IP address 11.22.33.45. This INVITE request contains call information, including the caller's phone number (often referred to as CLI or ANI) 977#197800065 and the called phone number (referred to as CLD or DNIS) 12065551234. The administrator has defined the list of authentication rules shown in the first screenshot below. The rules are checked in sequence and, when the first match is found, the corresponding rule is used to handle the call. In this case, the first rule will be skipped (since although there is a match by IP address, CLD does not match), and the second rule will be used. As a result, PortaSIP® will perform authentication based on CLI, using 977#197800065 as the identification string.

Due to this "first match" principle, it is important to rank more specific rules before less specific ones. If, in our example (in the first screenshot below), we were to swap the third and second rules, then the **IP** 11.22.33.45 **CLI** 977#% rule would never be used, since the processing of every such call would stop at the second rule.

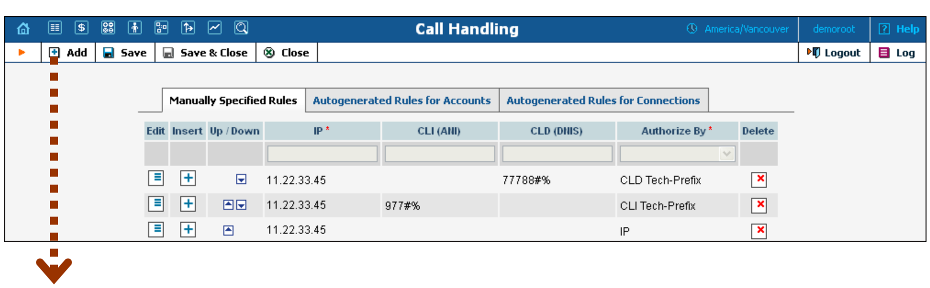
Please consult the *Call Handling Rules* section of the **PortaSIP® Switching Server Administrator Guide** for more details on how PortaSIP® processes the call if multiple call handling rules satisfy the call request.

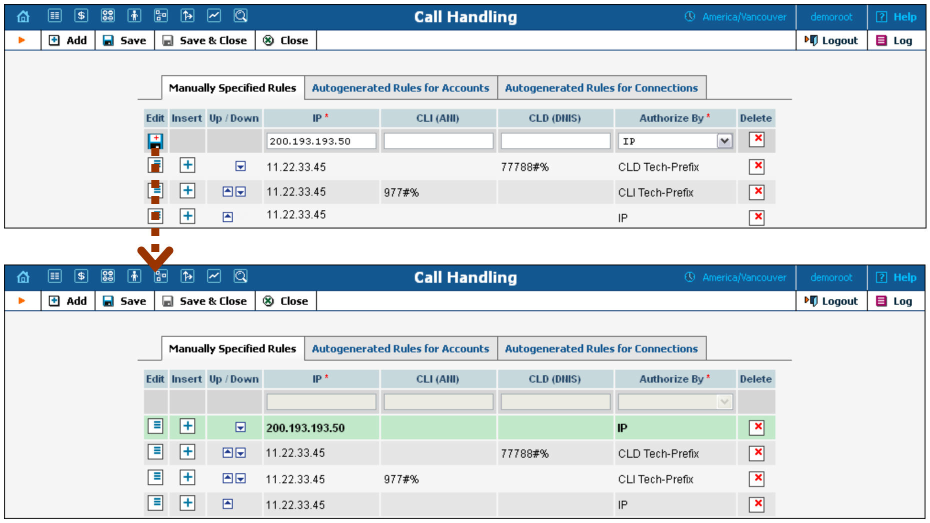
NOTE: IP authentication is applied by default for all nodes in the given environment. Think of it as if these rules were being added to the bottom of the list automatically in order to save you time. You can still override this by creating your own rule; for instance, if you need to do authorization based on CLI / DNIS for calls coming from your PSTN gateway. Since this rule is ranked higher, it will take precedence.

Manually Specified Rules

This tab allows you to view the list of all manually specified rules and to create new ones.

To add a new authorization rule on the **Call Handling** screen, follow the steps shown in the following sequence of screenshots:





Click **Add**, then fill in the required information and click **Save**. The newly added rule will appear at the top of the list.

Field	Description
IP	Remote IP from which a call request is received. This field can contain an IP address or an IPv4 network prefix in CIDR notation (e.g. 192.168.99.0/24).
CLI (ANI)	CLI (ANI) pattern. This field can contain: • Digits • the '*' and '#' symbols, and • '%' – wildcard for any number of symbols, and • '_' or 'x' – equivalent wildcards for one symbol. If this field is empty in the rule, no filtering by CLI (ANI) is done.
CLD (DNIS)	CLD (DNIS) pattern that can contain the same symbols as in the field above. If this field is empty in the rule, no filtering by CLD (DNIS) is done.
Authorize By	Select one of the authorization methods.

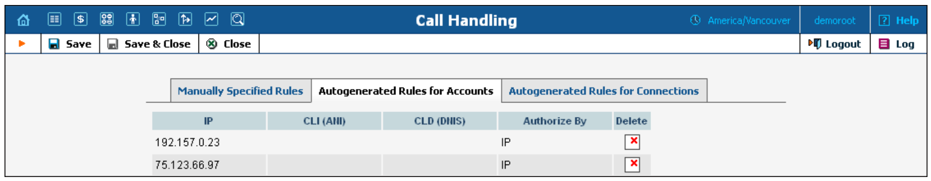
You can manage rules using the following controls:

Control	Description
	Edit this rule.
	Insert a new rule above this one.
	Move this rule one level up.
	Move this rule one level down.

All changes made to this list (e.g. rule added or changed, changed order of priority) are automatically provisioned by the system. This means that updated authentication information is sent to all PortaSIP® nodes in this environment (those which have PortaOne in the **Manufacturer** field and PortaSIP® in the **Type** field). Note that the call handling rules update may take several minutes.

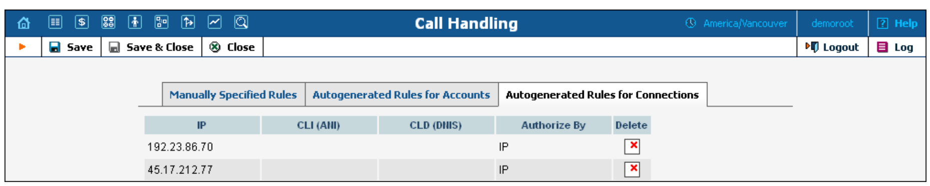
NOTE: Manually added rules have a higher priority than autogenerated rules, in case the IP field for these rules is the same.

Autogenerated Rules for Accounts



On this tab you can view the list of rules that were generated automatically while creating an account with an IP address in the ID field. When the new account is created, the list of rules is updated accordingly (a new rule is created at the top of the list). You can also delete selected rules using this tab.

Autogenerated Rules for Connections



Using this tab, you can view the list of rules that were generated automatically while creating a connection (VoIP from Vendor type) with the specified remote IP.

NOTE: If a Vendor Authorization has been defined for the connection, a rule will not be generated.

IP Centrex

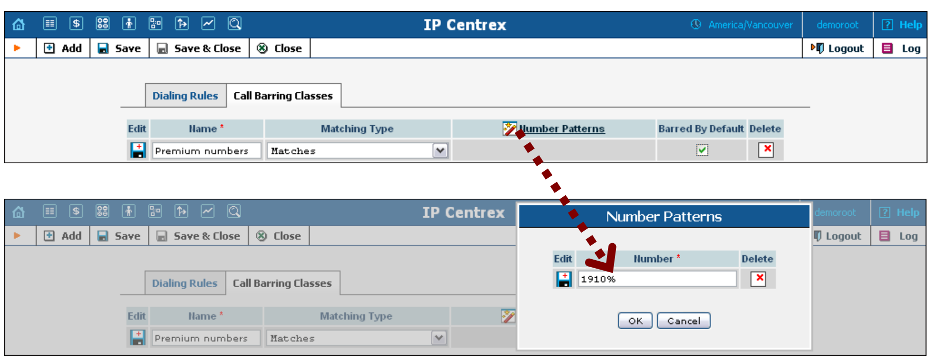
This section describes the parameters of IP Centrex (hosted IP PBX) services which may be used later to configure this service for a particular customer.

Call Barring

Here you can define call barring classes, each of which describe a set of phone numbers (e.g. "Premium numbers," "Toll-free," "Mobile," etc.).

These enable you to easily grant or deny permission to call these numbers, as part of an account's service configuration.

Field	Description
Name	A descriptive name for this class of phone numbers.
Matching Type	Checks whether a dialed number corresponds to the list of number patterns (see below) and then processes the call accordingly. The following options are available: • **Matches** – Denies calls to numbers that are specified in the **Number Patterns** column. • **Does Not Match** – Allows calls to numbers that are specified in the **Number Patterns** column and denies calls to other destinations.
Number Patterns	A list of patterns that define the phone numbers for this class (see below).
Barred By Default	Whether calls to this class should be prohibited by default for any account with the **Call Barring** feature enabled.
Delete	Click the **Delete** icon to remove the call barring class.

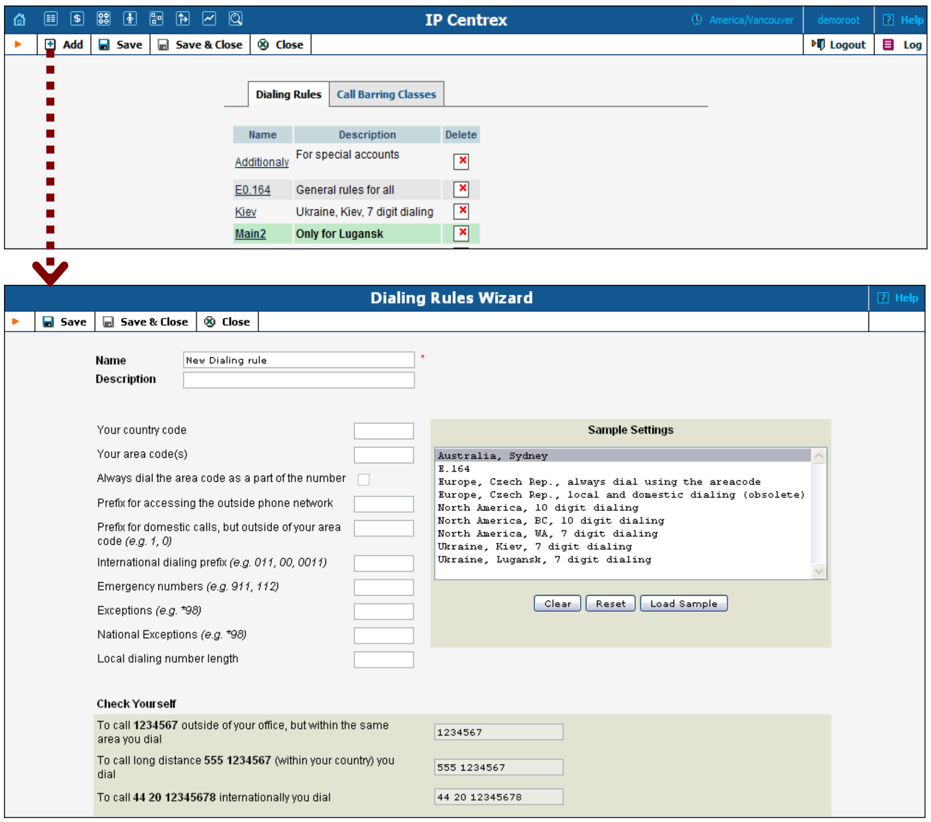


A number pattern is a set of pattern strings which phone numbers are matched against. A pattern string can be an exact pattern (a sequence of digits to be compared with the phone number dialed), where the number is regarded as matching if it is exactly identical to the pattern, or it can include wildcards (see below). If the dialed phone number matches one of the patterns, it will then be regarded as belonging to this barring class. You can use the following wildcards as part of a pattern string:

- **x** or _ (underscore) matches any digit in this position, e.g. if the pattern is 420609x23456, both 420609123456 and 420609723456 would match it;
- % matches a sequence of digits (any number of digits, including no digits at all); thus 420609% would match 4206091, 420609123456 and 420609.

Dialing Rules

Dialing rules tab is used to edit samples of dialing rules.

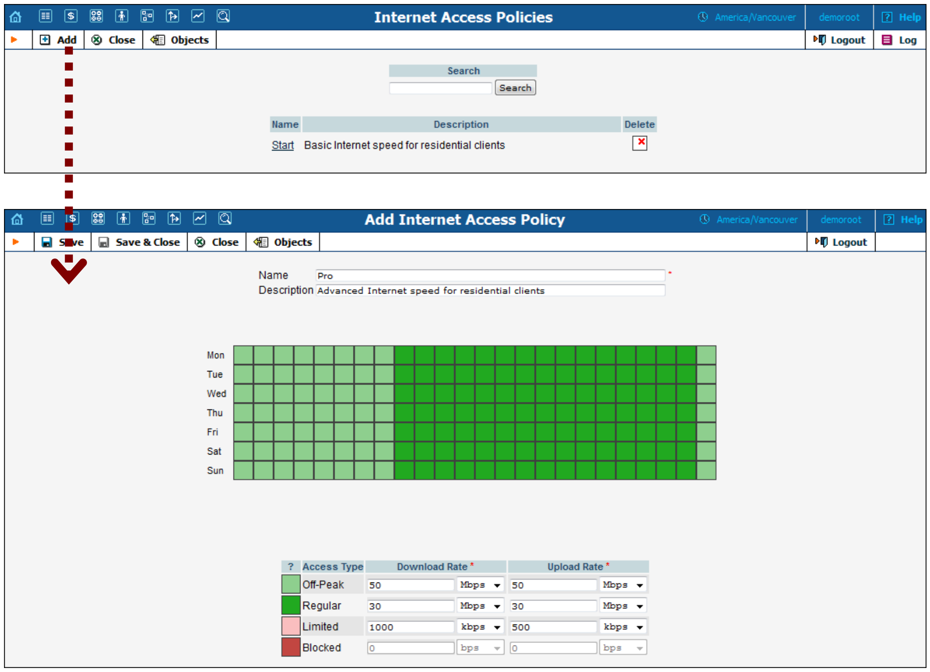


The upper part of the wizard screen allows you to enter important dialing parameters, such as your international dialing prefix. Several sample settings are provided for your convenience. For instance, in order to load sample settings for "traditional" North American dialing, select "North America, WA, 7 digit number dialing" and click **Load Sample**. Click **Clear** to reset all parameters. Click **Reset** to revert to the last saved settings.

In the bottom part of the wizard screen you can check whether you have described the numbering format correctly. Make sure for all three examples provided (local, domestic and international call) that this is the way you want to dial the numbers.

Internet Services

A policy is a collection of rules and parameters which define how an end-user is allowed to access the Internet.



There are four available types of Internet access:

- Regular access (default);
- Access during off-peak hours (often referred to as "turbo" access);
- Blocked service (the customer is not able to access the Internet at all);
- Limited access. Typically this is used as an alternative to "blocked" in situations where a customer does not have sufficient funds or failed to pay his last invoice on time. While the customer will not be able to surf the web or download normally, he can still send or receive emails and use the customer self-care portal to submit payment.

Each policy includes:

- a scheduling table, which designates what type of access is used during each time period;
- specific values for the allowed upload / download speed for each type.

Service Policies

The telecommunication industry is growing rapidly, with new technologies and devices being introduced into the market every year. Networks have become more flexible and customers have become more demanding about the services that they subscribe to. Under these conditions, it is essential not only to continually offer new services and products and therefore keep up with market demand, but also to do this in the most qualitative and flexible manner. This is what PortaBilling enables you to do!

The **Service Policies** feature allows you to fine-tune your services based on your network peculiarities, vendors' opportunities and customers' demands. It facilitates the configuration of static options for multiple accounts (so it is not necessary to configure values for each account separately), thus establishing common policies for groups of accounts. It also allows you to separate the technical configuration of specific options (usually made by technical staff) from account management.

When a new policy is created it does not have any attributes defined (all available attributes are shown in grey). To define an attribute you should specify its value.

Service policies can be statically assigned at various levels: account, connection and authentication (call handling rule). In addition, it is possible to apply service policies depending upon the UA type (dynamically matched policy).

Policies are applied separately to both parties (caller and called) participating in the call.

Dynamically matched policies

The service policy has the ability to match dynamically when the **Match Pattern** is specified. For the calling party, PortaSIP extracts the *User-Agent* header from the incoming INVITE request (e.g. "Linksys/SPA941-5.1.8") and matches it against all of the dynamic policies. If more than one policy matches, the one with the highest **Match Priority** is used.

For the called party, the procedure is quite similar. The only difference is that the *User-Agent* header of a called UA is taken from its registration information.

Policy precedence for VoIP services

More than one service policy can be considered while the call is being established so it is important to know how different service policies correlate with each other and how that affects the call.

The final set of attributes applied to each party is *derived* from service policies assigned at different levels (a dynamically matched policy is also considered.)

What happens if there is a contradiction in service policies? For example, if a dynamically matched service policy has the *keep_alive_interval* attribute set to 60 seconds, another service policy assigned to a called party has its attribute value set to 120 seconds and the third service policy assigned to a connection has its attribute set to 90 seconds?

Several simultaneously applied service policies will function according to the precedence of defined attributes that are exact matches:

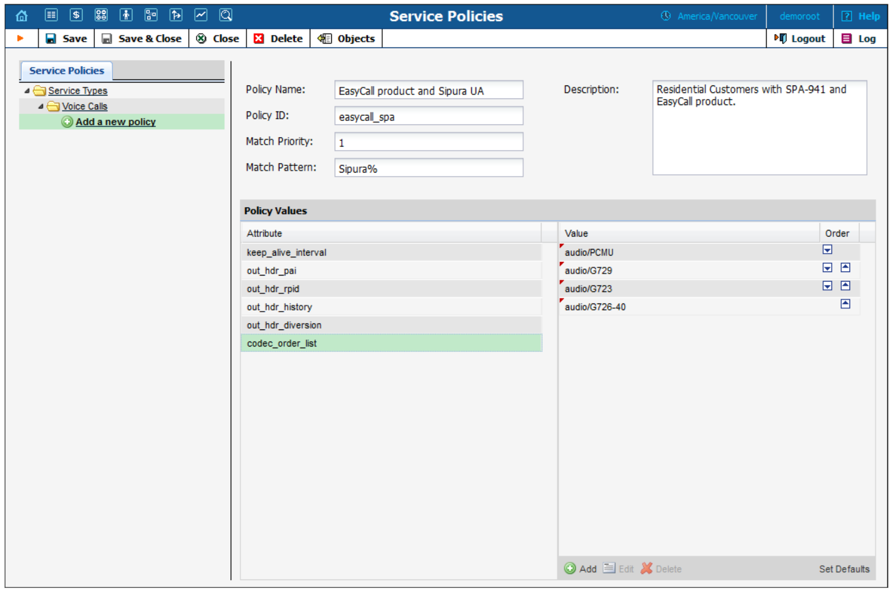
- If there is a dynamically matched policy that corresponds with the called UA name, then its attributes are considered.
- In that case, the attributes from the service policy statically assigned to the called party will take precedence over a dynamically matched one.
- A service policy that is statically assigned to an account will also override the policy assigned to the connection.

Built-in policy attributes

There is also an attribute-specific prevalence among the service features assigned to both caller and called accounts:

- The *codec_order_list* attribute is taken from the caller's account (called account's attribute is ignored).
- The "header" attributes (*out_hdr_pai, out_hdr_rpid, out_hdr_history, out_hdr_diversion*) defined for a called account will take precedence over the ones defined for a caller account.
- The *keep_alive_interval* attributes are individually defined for the caller and called parties, so there is no predominance between them. Therefore the value for the caller party is taken either from the dynamically matched service policy or the one assigned to his account. The value for a called party is taken either from the dynamically matched service policy in case the called party is one of your accounts or the service policy assigned to the connection.

Note that service policy attributes that have been statically assigned to an account receive the highest priority.



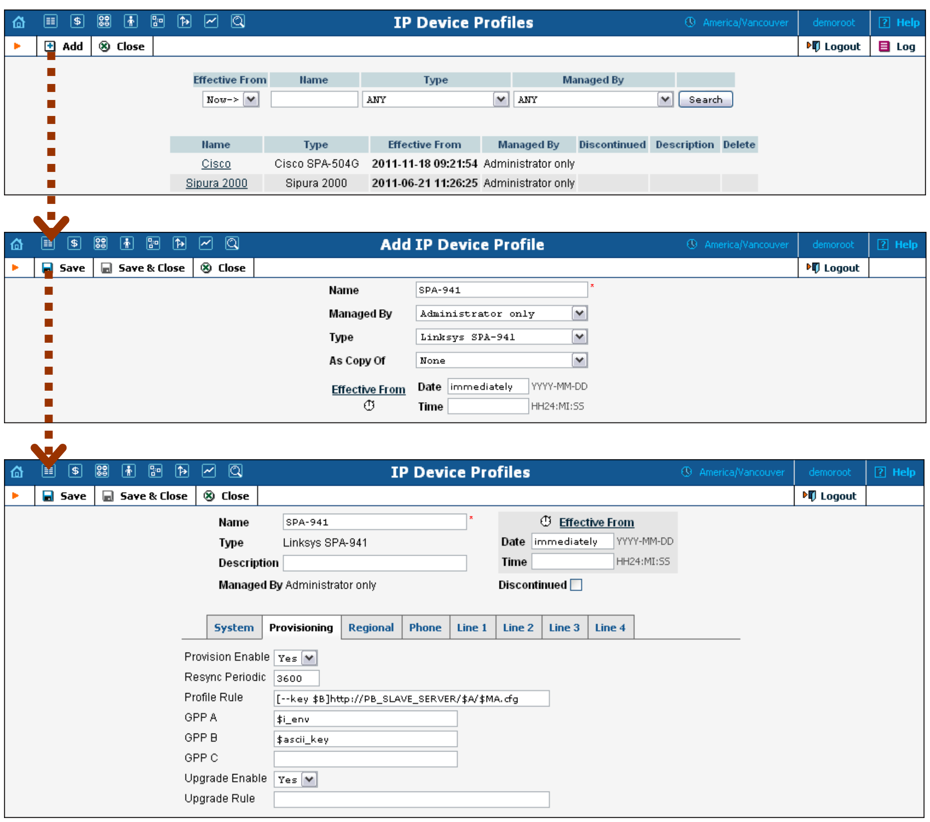
Field	Description
Policy Name	This is the logical name of the service policy object.
Policy ID	This is the internal policy ID.
Match Priority	This is only used for policies that match dynamically. If more than one service policy corresponds with the caller’s user agent name then the one with the highest priority will be used.
Match Pattern	If this field is not empty the service policy is considered to be dynamically matched and will be attempted for every new call initiated by internal accounts. This field can contain a full user agent name (e.g. “Linksys/SPA941-5.1.8”) or a comma separated list of patterns (e.g. “Cisco%, Sipura%, Grandstream%”). NOTE: If the policy is statically assigned to an account, it will always be applied (in spite of the match pattern).
Description	Short text description of the service policy.

NOTE: You can define custom attributes to satisfy your specific requirements but a description of this lies beyond the scope of this document due to its specific characteristics.

IP Device Profiles

IP device profiles and the IP device inventory allow service providers to reconfigure a large number of end-user devices before sending them to customers, as well as those already on a customer's premises. Instead of entering the same values for codec, server address and the like into each of a thousand user agents, you can simply create a profile which will describe all of these parameters. After that, PortaBilling® automatically creates a configuration file for each user agent using account-specific parameters such as ID or password, which it will then fetch (for instance, from a TFTP server) and update.

If you decide later to change the address of the SIP server, you need only update it once in the profile in order for new configuration files to be built for each user agent. The user agents will then fetch them next time they go online. The config file is specific to each user agent since it contains information such as username and password, and so the user agent must fetch his own designated config file.



Profile list mode:

Column	Description
Name	Logical name of the profile.
Type	Telephone adaptor or SIP phone.

Effective From	Date and time when the profile becomes effective.
Managed By	**Administrator only** (default) means that this profile will be used for your direct customers and is accessible only to your administrators. Select a PortaBilling® reseller to assign this profile for use by a particular reseller.
Discontinued	Indicates that the current profile is no longer in use.
Description	Short text description of the profile.
Delete	The **Delete** icon is only visible when the current profile's effective date has not arrived yet.

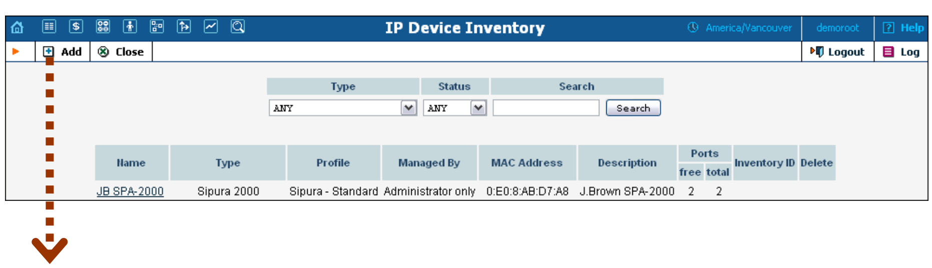
Add Profile mode:

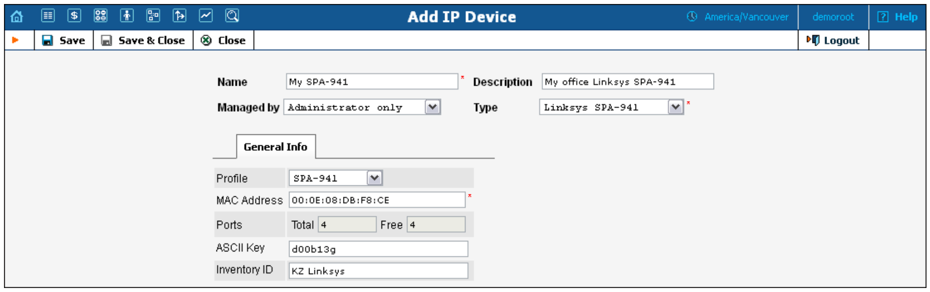
Column	Description
As copy of	Similar to templates; a user can create new profiles using previously created ones, so there is no need to re-enter a large amount of information.
Effective From	Set the time when the profile is to become effective. Click the **Stopwatch** icon for the profile to become effective immediately.

In Edit mode, the Profile Management screen will differ depending on the UA.

IP Device Inventory

The IP device inventory allows you to keep track of IP devices (SIP phones, SIP ATAs, etc.) which are distributed to your customers. You will assign a profile that defines general configuration settings for each device (preferred codecs, address of the SIP server, etc). You can then assign a specific account (basically representing a phone number) to a specific port (phone line) on the IP phone. PortaBilling® will create a config file for auto-provisioning all of these devices, thus allowing you to easily manage thousands of user IP phones remotely.





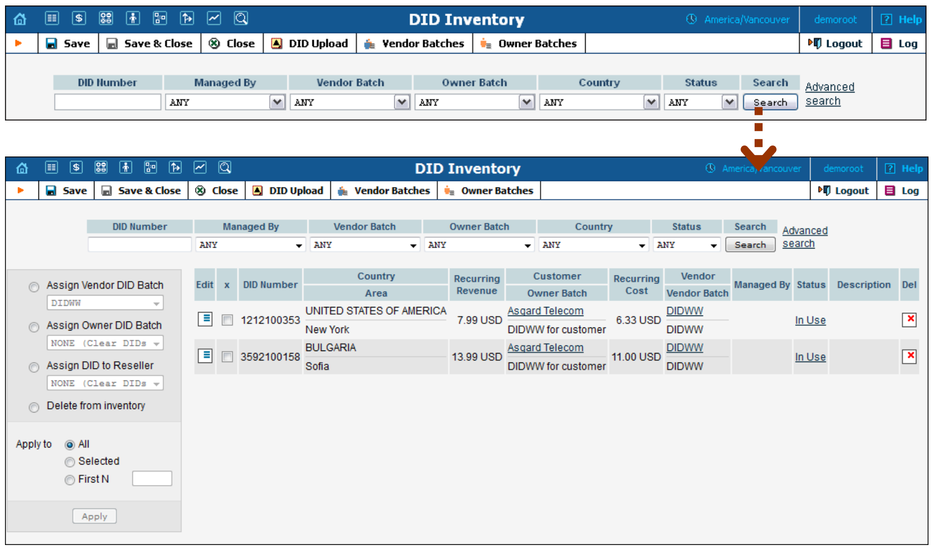
Field	Description
Name	IP device name.
Description	Short description.
Managed by	**Administrator only** (default) means that this IP device will be used for your direct customers and is accessible only to your administrators. Select a PortaBilling® reseller to assign this IP device for use by a particular reseller.
Type	One of the available device types (e.g. Cisco ATA, Sipura, etc.).
Profile	Select one of the defined IP device profiles.
MAC Address	MAC Address of the IP device.
Ports	Number of the IP phone ports (phone lines).
ASCII Key	The key which is used to encrypt the configuration information.
Inventory ID	An ID which allows you to identify this device in the external system (e.g. your warehouse management application).

DID Inventory

DID inventory allows you to keep track of phone numbers (DIDs) that you purchase from various telco partners for distribution to your customers or resellers. In order to see the DID numbers currently available in the database, choose **DID Inventory** in the Management section of the admin interface, specify the search filters, and click **Search**. You can search for DIDs which:

- match a specific phone number pattern, e.g. enter `1800%` to find all 1-800 numbers;
- belong to a particular owner batch (to search for unallocated DIDs, choose **NONE (Unassigned DIDs**);
- belong to a specific vendor batch;
- are in use (there is an account using this DID) or are free (not used by any account).

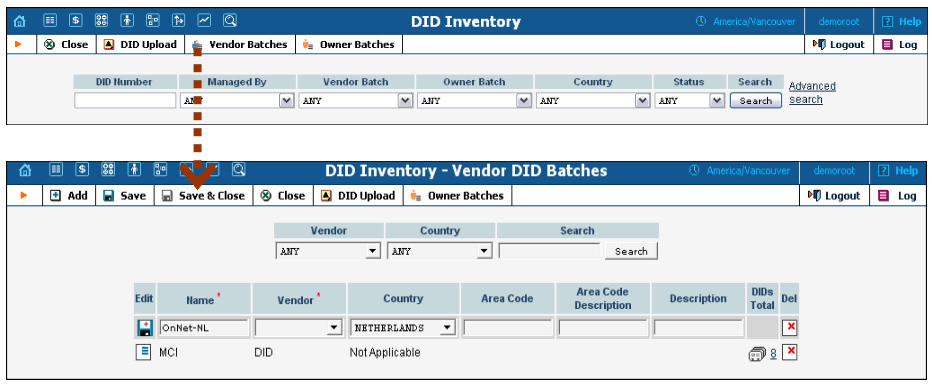
Hint: Often a business will request a phone number that can be "spelled out" so customers can remember it easily (for instance 1-866-SIP-VOIP). You can search for such easy-to-remember phone numbers by entering the letter string in the **DID Number** field. For example, in order to search for all 1-800 numbers containing VOIP in them, enter `1800%VOIP`.



Column	Description
DID Number	Phone number.
Country / Area	A country and area that this number belongs to.
Recurring Revenue	A monthly amount charged to a customer for using this DID.
Customer	The name of the customer currently using this DID.
Owner Batch	Name of owner batch this DID is assigned to (if empty, the DID is unallocated).
Recurring Cost	A monthly amount charged by a vendor for the provisioned DID number.
Vendor	The name of the vendor providing this DID.
Vendor Batch	Name of vendor batch this DID belongs to.
Managed By	This shows who manages the DID number. If the DID number is used by your administrators for direct customers, this field will be empty. If the DID number is available to a reseller, you will see the reseller's name here.
Status	In this column you can see whether the DID is used by an account or if it is available. For DIDs used in the past but now available, the date when they became available is displayed.
Description	Comments about a particular DID number.

Vendor Batches

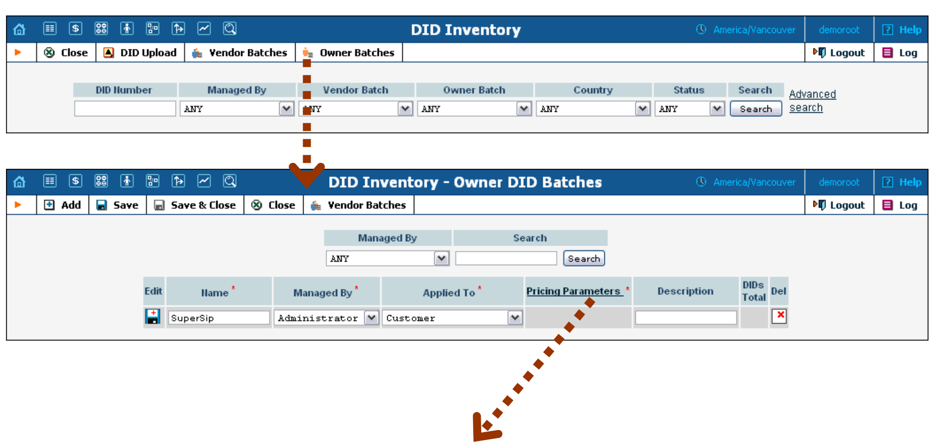
When you receive a set of phone numbers from a vendor, they will be registered in PortaBilling® as a vendor DID batch. Vendor batches allow you to keep track of which phone numbers were purchased from which vendors. (Every number entered into the DID inventory must reside in a certain vendor batch). The vendor batch also contains various administration parameters, e.g. a description of which country and city these numbers are from.

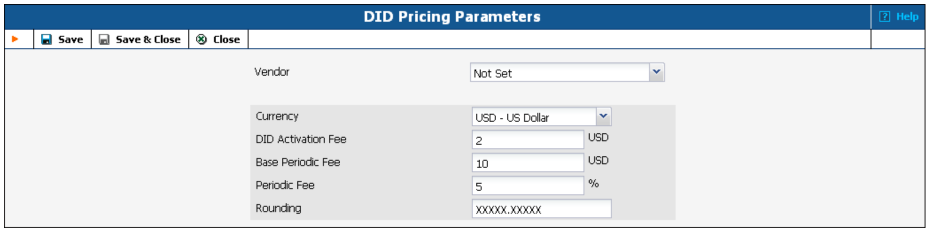


To add a new vendor batch, first select **Vendor Batches** in the toolbar, then click **Add** in the toolbar. The **Country**, **Area Code**, **Area Code Description**, and **Description** columns are optional, and serve only to simplify management of multiple batches. When you are done entering data, click the **Save** icon to save this row.

Owner Batches

After the DIDs have been entered into the system, you can create owner batches and allocate some of the numbers to them. An owner batch contains numbers to be provided to an end-user by a particular reseller or your administrators. The purpose of owner batches is to keep track of how numbers are used internally.





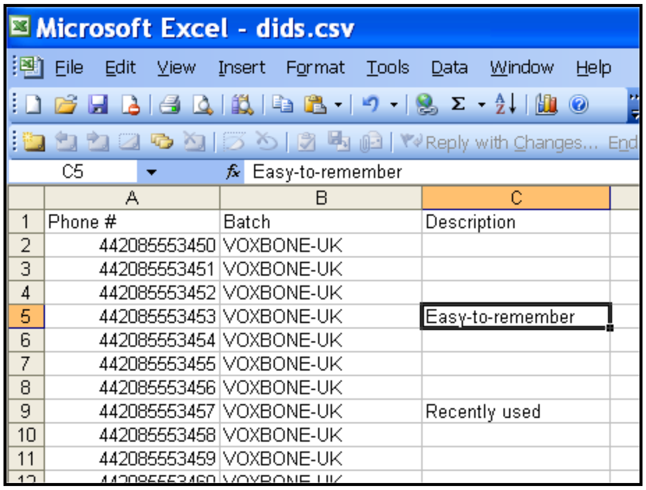
To add a new owner batch, first select **Owner Batches** in the toolbar, then click **Add** in the toolbar.

Column	Description
Name	Unique name of the batch.
Managed By	Designates who will be using the DID numbers in this batch. If you plan for the numbers to be used by your administrators for direct customers, choose **Administrator only**. If you plan to make these numbers available to a reseller, select the reseller's name here.
Applied To	Designates whether this batch will be used to charge your customers or resellers.
Pricing Parameters	Define the DID price using the following parameters: • **Vendor** – Select the vendor providing DID numbers for this batch. • **Currency** – Select the currency that will be used to charge for DID usage. • **Additional Activation Fee** – Specify a configurable fixed amount that is charged at allocation of a new number in addition to the DID provider's activation fee. • **Additional Recurring Fee** – Specify a configurable fixed amount that is always included in the recurring (monthly) charge. • **Recurring Fee Markup** – Specify a markup that will be included in the recurring amount charged to the customer in addition to the actual DID cost (charged by a DID vendor). • **Round the Final Charge Amount** – Specify the rounding pattern in order to obtain "marketable" figures. This will specify the last "pre-set" digits in the figure.
Description	Optional comments about this batch.

When you are done entering the data, click the **Save** icon to save this row.

Importing Numbers into the DID Inventory

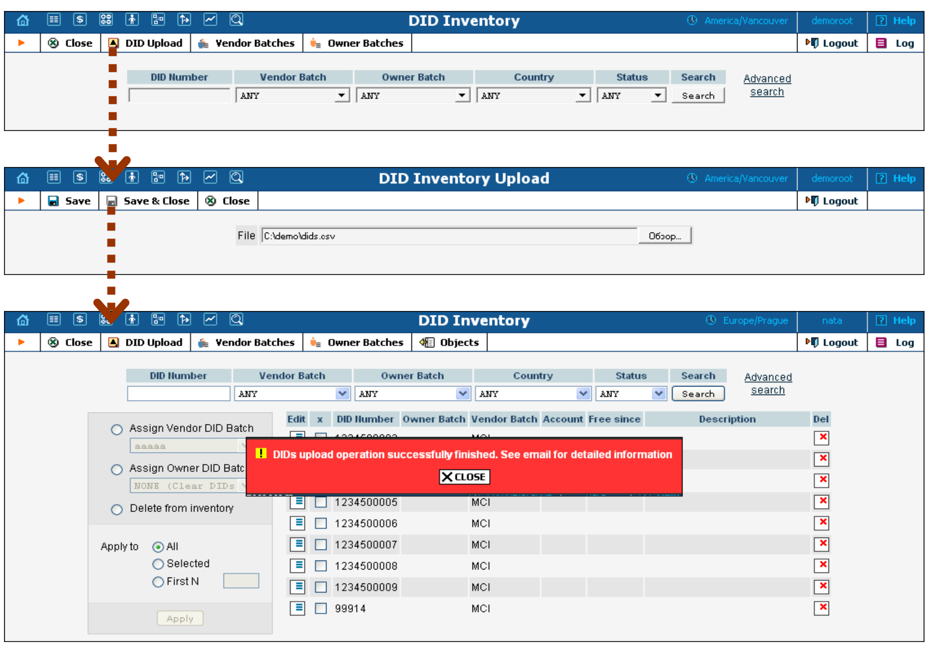
You can upload DID numbers from a CSV file. The structure of the CSV file should be as shown in the picture below: the first column contains the phone number, the second contains the vendor batch name, and the third contains an optional description.



	A	B	C
1	Phone #	Batch	Description
2	442085553450	VOXBONE-UK	
3	442085553451	VOXBONE-UK	
4	442085553452	VOXBONE-UK	
5	442085553453	VOXBONE-UK	Easy-to-remember
6	442085553454	VOXBONE-UK	
7	442085553455	VOXBONE-UK	
8	442085553456	VOXBONE-UK	
9	442085553457	VOXBONE-UK	Recently used
10	442085553458	VOXBONE-UK	
11	442085553459	VOXBONE-UK	

NOTE: The first row in the file is skipped, since it usually contains column titles and not actual data.

To upload a DID file, first select **DID Upload** in the toolbar, then specify the file location (you can use the Browse button to select a file in the explorer window), and then click **Save & Close** in the toolbar.



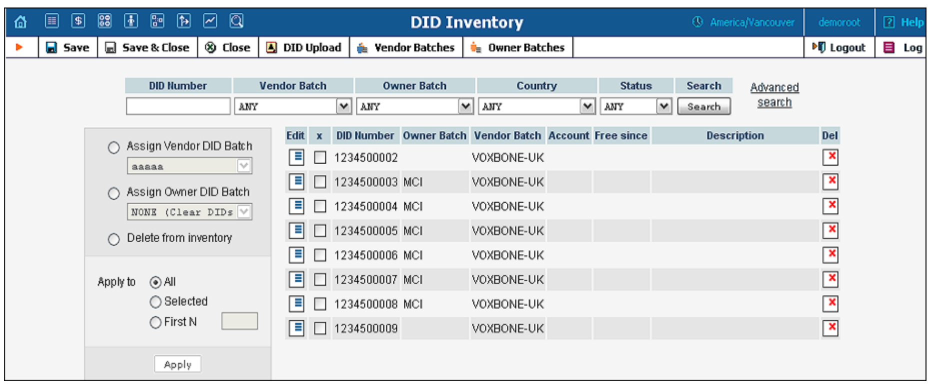
A popup window will inform you of the import results.

Managing DID Number Allocation

On the main screen of the DID inventory you can view DID numbers that match certain criteria (e.g. all numbers in a specific vendor batch). You can then perform number allocation for some of these numbers. This includes:

- re-assigning a vendor batch for some numbers (this may be required if you decide to change the way you organize your vendor batches, or if some DID numbers are now provided by a different vendor);
- allocating numbers to an owner batch, or returning them to the unallocated pool;
- deleting DIDs from the DID inventory.

These operations may be applied to all numbers matching the original search, only to the first N DIDs among them, or only to those you manually select.



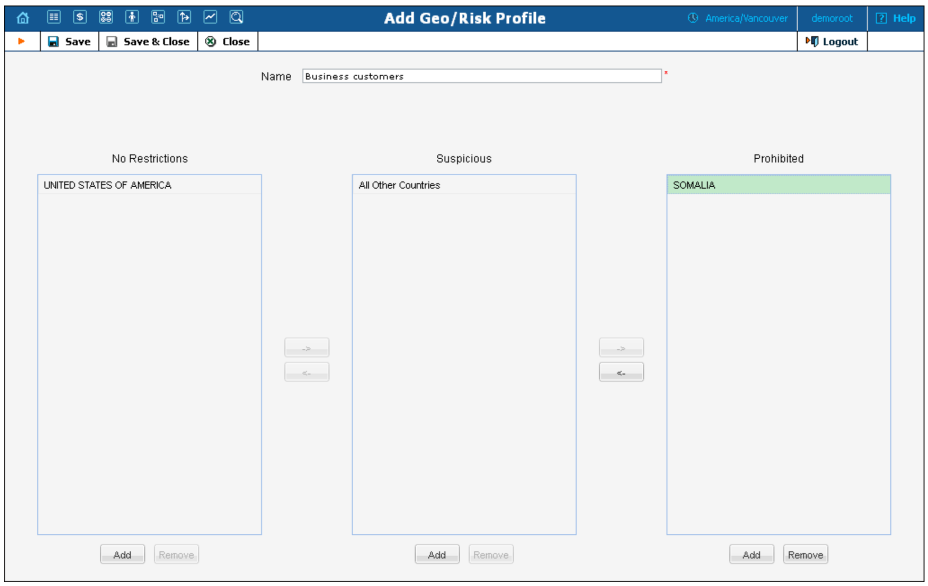
Hint: If you would like to assign the first N unused numbers from some vendor batch to an owner batch, specify the vendor batch and `NONE (Unassigned DIDs)` as the **Owner Batch** select menu, then apply an assign operation to the **First N** numbers. If you just select DIDs from a vendor batch and then assign the first N to an owner batch, you might also re-assign to it some numbers which are already in another owner batch.

Press **Apply** to submit the changes. After the update is completed, a pop-up window will inform you of the results.

Geo / Risk Profiles

Here you can create **GEO / Risk Profiles** for your services. The profile divides the list of all the countries in the world into three zones: **No Restrictions** (normal locations), **Suspicious** (unusual locations) and

Restricted (high-risk locations). For example, ITSP, selling residential VoIP calling via a communication client on a smart phone will list the United Kingdom, France and Spain in the **No Restriction** column (since they actively advertise their product in these countries and most of their customers are there). In this case, the majority of countries in the world will be listed in the **Suspicious** column. Finally, those countries from which the service provider sees an increased amount of hacking attempts will be listed in the **Restricted** column.



To add a new profile, click **Add** in the toolbar.

Column	Description
Name	Specify a unique name for the profile.
No Restrictions	Specify a country (or countries) where users intend to use the service. Service usage is allowed without restrictions.
Suspicious	Specify countries where it would be unusual (but still possible) for a customer to use the service. Any attempt to make an outgoing call from a country listed here will connect the user to a screening IVR, where he or she must provide additional credentials to prove that this is indeed a legitimate user.
Prohibited	Specify prohibited countries here. Any usage attempt from these countries will be treated as a potential security breach and no calls will be allowed.

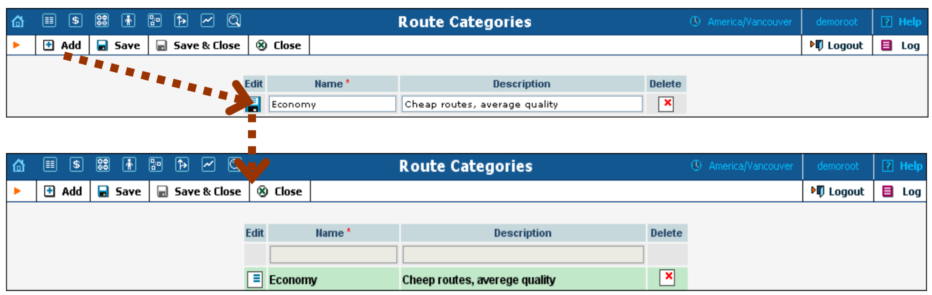
Note: In one of the three columns, the *All Other Countries* entry must be selected. This takes the place of any other country not listed in the other two columns. In the other two columns explicitly list the countries that require special handling.

The *Not Applicable* entry is used for private or indefinite IP addresses.

7. Routing

Route Categories

This screen allows you to define new categories into which you can divide your available routes. To create a new category, select **Add** from the toolbar.



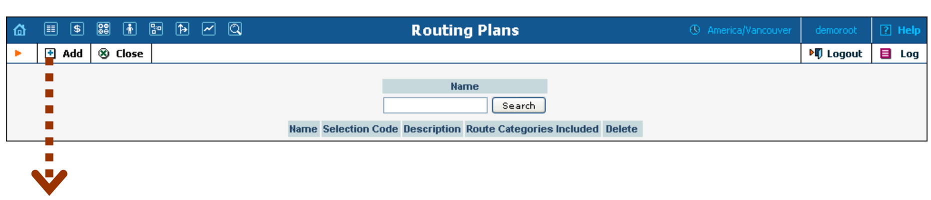
Column	Description
Name	Name of the route category. This is the name you will see in the select menu when assigning a route category for the rate.
Description	A description of this route category.
Delete	Click the **Delete** icon to remove this route category.

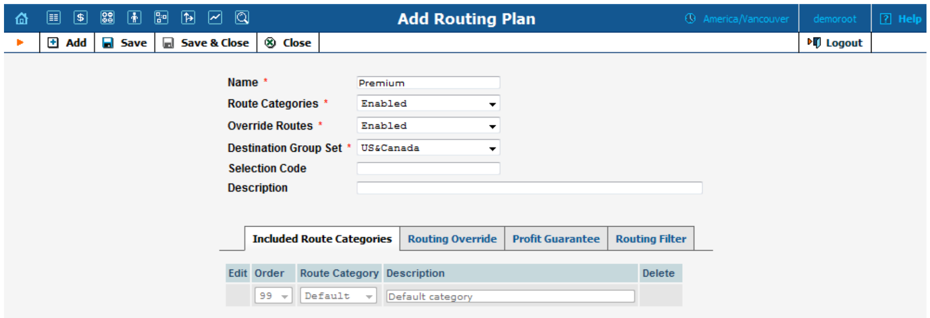
If you do not wish to define any custom route categories, the **Default** route category is always available.

Routing Plans

A routing plan is a combination of route categories in a specific order. It defines which categories of vendors will be available for termination and in what sequence.

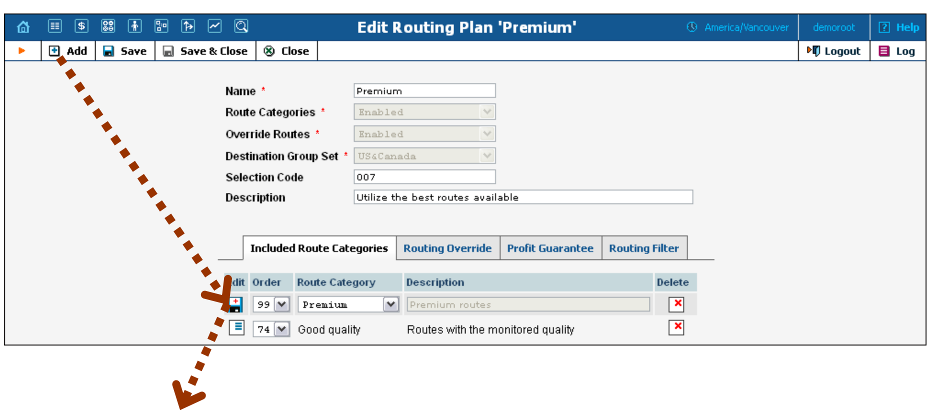
NOTE: In order to use the selection codes you must enable the Dialing Rules on the Edit Customer page and check "Routing plan selection enabled."

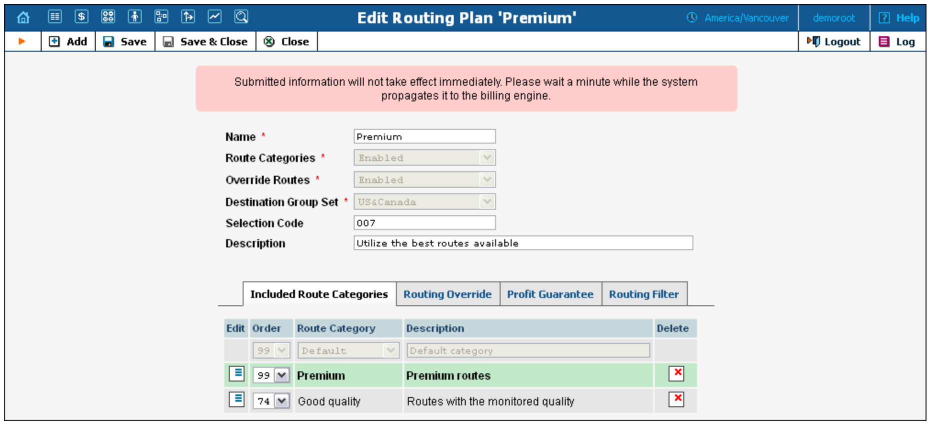




Column	Description
Name	Name of the routing plan.
Route Categories	Enable this option to define which categories of vendors will be available for termination and in what sequence.
Override Routes	This option enables the LCR override functionality. You can define a list of connections for a destination group in the desired routing order, and calls will be routed according to this sequence before (or instead of) applying "normal" LCR routing.
Destination Group Set	Routing can be overridden for individual groups (e.g. US&Canada, Asia, Western Europe) within this set. Once chosen during routing plan creation, the destination group set cannot be changed later on.
Selection Code	The code your customers will dial before the destination number to select this routing plan. **NOTE:** The number not including the selection code must be at least six digits.
Description	Your designation of the intended purpose for this routing plan.

After a routing plan has been created, you can specify which route categories will be included in it. To add a new route category, select **Add** from the toolbar, then click the **Save** icon to save this row.





You can change the route category order by choosing an **Order** number. Remember that if a route category is not included in the routing plan, a customer with this routing plan will not have access to such routes. Click the **Save** icon to make your changes take effect.

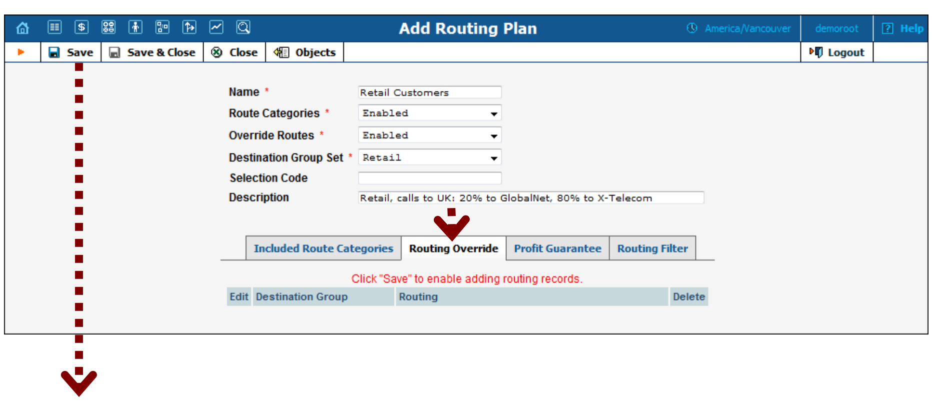
Please note that a larger value in the **Order** column pushes the given route category towards the top of the routing list (i.e. 99 is the first route category which will be tried).

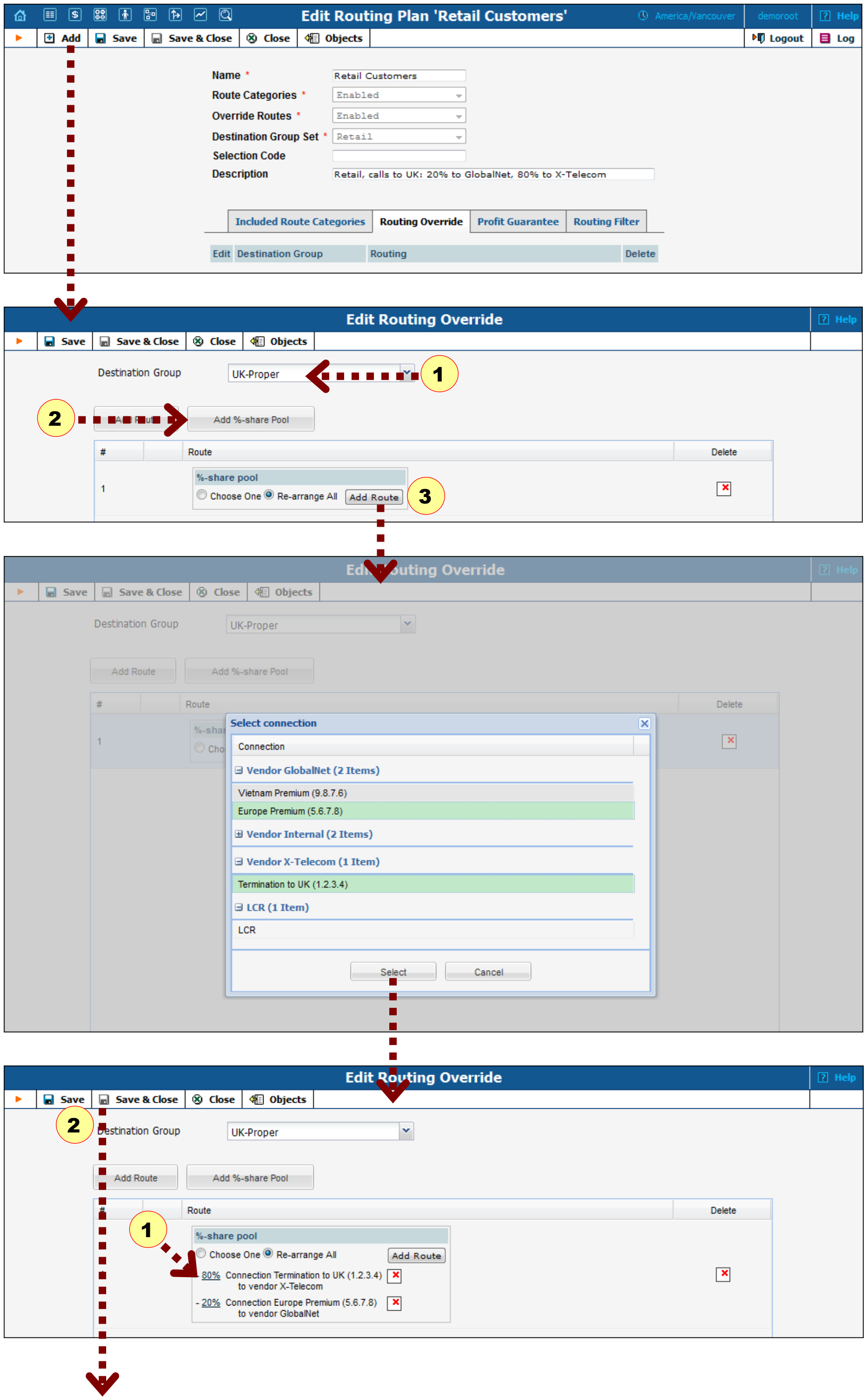
Routing Override tab

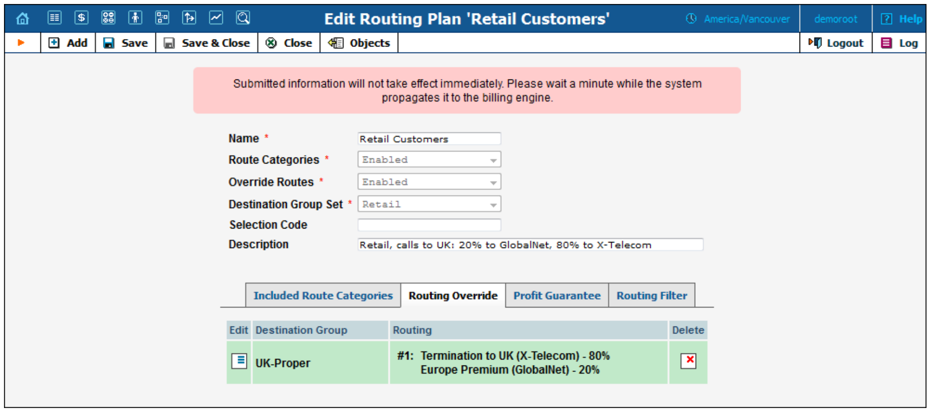
On this tab you can define custom routing per destination group.

Field	Description
Destination Group	A destination group with custom defined routing.
Routing	Shows how the routing is configured for this particular destination group.
Delete	Click the **Delete** icon to remove the custom defined routing for a particular destination group.

A common example is percentage-based routing: for instance, when sending out calls to UK-Proper 20% of the traffic should go to carrier A, and 80% to carrier B.



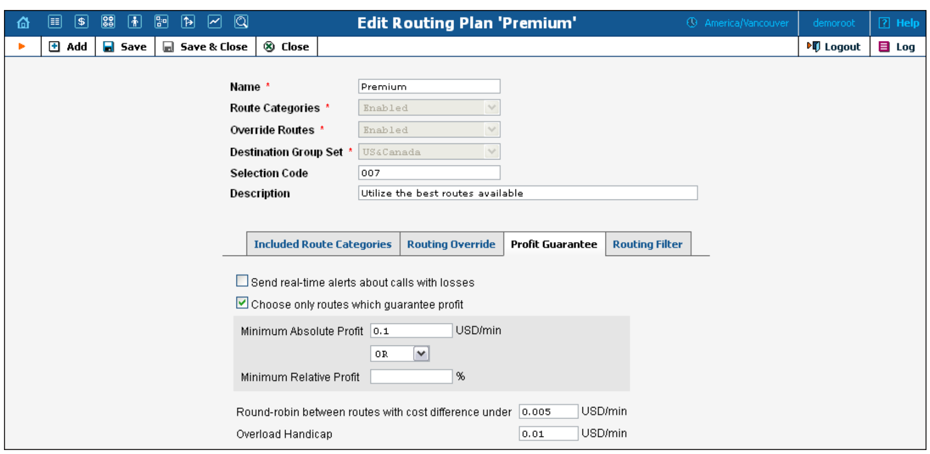

Edit Routing Plan 'Retail Customers'
America/Vancouver
demoroot
Help
Add
Save
Save & Close
Close
Objects
Logout
Log
Name *
Retail Customers
Route Categories *
Enabled
Override Routes *
Enabled
Destination Group Set *
Retail
Selection Code
Description
Retail, calls to UK: 20% to GlobalNet, 80% to X-Telecom
Included Route Categories
Routing Override
Profit Guarantee
Routing Filter
Edit
Destination Group
Routing
Delete
Edit Routing Override
Help
Save
Save & Close
Close
Objects
Destination Group
UK-Proper
1
2
Add %-share Pool
#
Route
Delete
1
%-share pool
Choose One
Re-arrange All
Add Route
3
Edit Routing Override
Destination Group
UK-Proper
Add Route
Add %-share Pool
Select connection
Connection
Vendor GlobalNet (2 Items)
Vietnam Premium (9.8.7.6)
Europe Premium (5.6.7.8)
Vendor Internal (2 Items)
Vendor X-Telecom (1 Item)
Termination to UK (1.2.3.4)
LCR (1 Item)
LCR
Select
Cancel
Edit Routing Override
Help
Save
Save & Close
Close
Objects
2
Destination Group
UK-Proper
Add Route
Add %-share Pool
Route
Delete
1
%-share pool
Choose One
Re-arrange All
Add Route
80% Connection Termination to UK (1.2.3.4)
to vendor X-Telecom
- 20% Connection Europe Premium (5.6.7.8)
to vendor GlobalNet



The administrator can create a list of connections for a destination group in the desired routing order, and the call will be routed according to this sequence before (or instead of) applying "normal" LCR routing. An entry in the override list can be a percentage-share connection pool, where each connection has a chance to be the first route proportionate to the assigned percentage value.

Profit Guarantee tab

On this tab you can specify how the system chooses routes for call termination, in order to maximize your profits.



If you switch off the "profit guarantee" in PortaBilling®, it is possible that your carrier will charge you more than you have charged your customer. (Sometimes these situations can arise even with "profit guarantee" switched on, e.g. when a random surcharge was not triggered, or if you charged your customer for just a few seconds, but were charged by a vendor for a full minute, due to different time rounding increments).

Please note that the **Profit Guarantee** functionality only calculates the approximate profit you could earn, by comparing the price per minute used to charge the customer with the termination cost of each vendor.

A **PPM** (Profit Per Minute) control parameter is included in the **Adaptive Routing** feature. PPM is based on statistics for already completed calls. It calculates the amounts actually charged by considering all special rating elements which are applied to calls, such as fixed and relative surcharges, rounding intervals, and so on. As a result, it provides accurate profit figures that will help you to maximize profits in the future. For information about how to set up the PPM control parameter, see the "Routing Criteria" section.

When the **Profit Guarantee** functionality is activated, "unsuccessful" vendors will be removed by the billing engine from the routing list during real-time route calculation. This differs from when you specify the **PPM** control parameter on the **Routing Criteria** page. The latter only moves problematic vendors to the "penalty box", i.e. the very bottom of the routing list. This ensures that the system will first try to terminate the call via other carriers (with good call quality). However, if they all fail or become unavailable, the "penalized" carrier will have a chance to terminate the call.

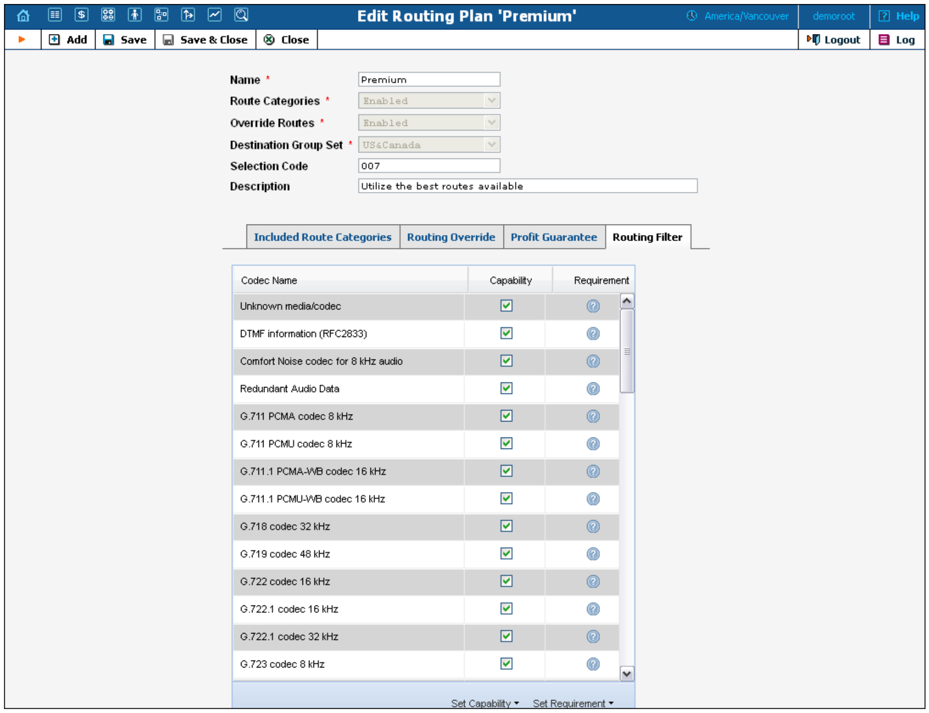
Field	Description
Send Real-time Alerts about Calls with Losses	Turn this option on in order to receive real-time email alerts whenever a customer (with this routing plan assigned) makes a call on which you lose money.
Choose Only Routes Which Guarantee Profit	When calculating a routing list for a customer with this routing plan, compare the price used to charge the customer with the termination cost of each vendor. If the vendor's costs are higher than the customer's rate, exclude the vendor from the list (see note below).
Minimum Absolute Profit	Allows you to create a more aggressive profit guarantee route selection: the vendor's cost per minute must be lower than the customer's rate by at least the amount specified. (Amounts are specified in your base currency).
Minimum Relative Profit	In some cases, specifying the amount of profit per minute does not yield the desired results, e.g. for risky destinations such as Somalia you would like to get at least $0.10 per minute, yet $0.10 on calls to the US is simply not feasible, since you charge your customers only $0.05/minute. In this case, you can use a relative threshold, so that for expensive destinations the profit must be high, while for low-cost destinations a small profit is acceptable.

Combination of Absolute and Relative Profit Parameters	You can specify that a route must satisfy both conditions, i.e. both absolute and relative profit, or at least one.
Round-robin between Routes with Cost Difference under	Defines the maximum acceptable price difference between two vendors when their order in the routing list (determined by cost) randomly changes to provide load-balancing. There is a higher probability of such a "swap" when the difference in price between them is minimal, and this quickly decreases as the cost difference approaches the threshold value.
Overload Handicap	When the number of concurrent calls on a connection to a vendor surpasses the desired limit, this connection's cost may be increased during the route sorting to push this connection further down the routing list and therefore re-distribute the call load to other vendors via the load-balancing feature. Overload handicap specifies the maximum value that the adjusted connection cost may be increased. In other words, it defines the largest tolerable decrease in revenue (since more expensive vendors would be used) in exchange for better connection utilization and improved call quality.

PortaBilling® allows at least two different price per minute values for rating (potentially, you can have an unlimited set of different prices applied within the same call when you use a rating formula). For comparison purposes, however, only one specific value should be used. PortaBilling® uses the value of the **Price_Next** parameter for profit guarantee calculations. In order for the profit guarantee to work properly when you use rate formulas to charge your customers, make sure that you populate **Price_Next** in the customer's rates with a meaningful value.

Routing Filter tab

On this tab you can apply filters to call media features (such as a specific codec, T.38 fax, or the ability to guarantee delivery of the correct CLI to the recipient of the call), as requested by the calling party.

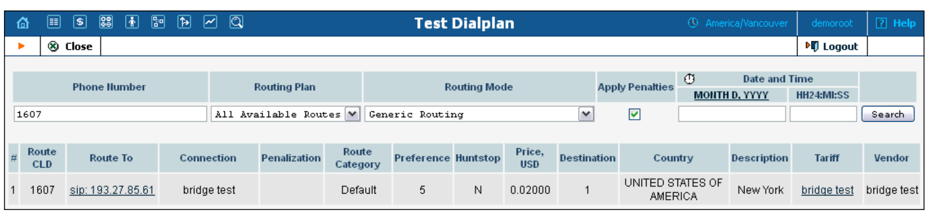


Column	Description
Codec Name	Name of the call media feature (such as a specific codec or T.38 fax capability).
Capability	This parameter allows you to specify an end-user device's capabilities or prohibit the use of call media features for incoming calls. The following options are available: • **Supported** – This means that you are sure this IP device supports this feature and are therefore allowing it. • **Not supported** – This means that this IP device is unable to support this particular feature (e.g. G.711 codec). Your administrator may decide to prohibit it. For example, if you want to ensure good sound quality for customers with limited bandwidth, prohibit the G.711 codec by marking it "not supported." In this case, even if this codec is available according to the request received from the carrier, it will be removed from the codec list that is sent to the end-user device in the SIP call initiation request, and thus will not be used.
Requirement	This parameter describes the filters applied to call media features requested by the calling party. The following options are available: • **Required** – This means that the other party

	must have this feature supported in order for the call to be completed. For instance, if the "G.729 codec" feature is marked "required" for an account making a phone call, only those vendors specifically marked "guaranteed to support G.729" will be placed in the routing list. • **Suppressed** – This means that PortaSwitch will prevent the use of this particular feature (e.g. G.722 codec) and will therefore not show the information about this codec in the SIP request when sending an outgoing call to a remote party. • **Not required** – This means that PortaSwitch does not do any special processing for this feature. It will be included in the outgoing SIP request and may be used if the remote party supports it. This is the default value for all features.

Test Dialplan

This screen allows users to test a dialplan for a specific telephone number or certain destinations at any moment in time.



Field	Description
Phone Number	Type either a full number or a prefix into this field to see how the resulting list of routes will look for it.
Routing Plan	Select a routing plan to be used for a dialplan test. The system will offer a different set of routes depending on the routing plan. Select **All Available Routes** to test a dialplan using all available routes, regardless of their route category.
Routing Mode	You may select either **Generic Routing** (to see all the routes outside of the network) or a specific node (to see the routes available when a call is handled by this node).
Apply Penalties	Clear this checkbox to see the resulting list of routes regardless of the currently applied adaptive routing

	penalties.
Date and Time	The search can be performed in real time: select the **Stopwatch** ⏱ icon or click the date input format link to set a date using the pop-up calendar.

As a result you will see the following columns:

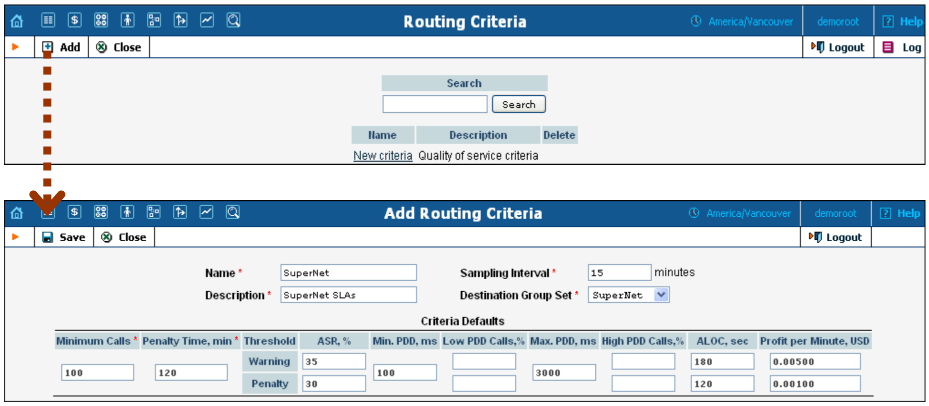
Column	Description
Ctrl#	Sequential number of this route.
Route CLD	Translated called station ID (DNIS), as it will be sent to the vendor using this specific route.
Route To	The node (or remote gateway IP) where the call will be routed. Click the link to open the connection screen.
Connection	Description of the vendor connection.
Penalization	Shows whether the connection is penalized or not.
Route Category	Route category for this route. See the Route Categories section for more info.
Preference	Routing preference for this destination. See the Call Routing section of the PortaBilling® Administrator Guide for more info.
Huntstop	If one of the routes has huntstop enabled, then all routes with a lower route category or preference will be ignored.
Price	Next interval price for the given destination (per minute).
Destination	Matching destination from the corresponding tariff.
Country	Country where the tested destination is located.
Description	Destination description.
Tariff	The tariff used to bill this call. Click the link to open the tariff screen.
Vendor	Call terminating vendor.

Routing Criteria

This screen allows you to predefine the quality requirements to be applied to your vendors. PortaBilling® will continually measure the quality parameters and adjust the routing if these fall below the specified thresholds. Any vendor who fails to satisfy your quality requirements will go to the "penalty box" – the very bottom of the routing list. This means that the system will first try to terminate calls using other carriers (with a good quality rating). However, if all of them fail or are unavailable, the "penalized" carrier will have a chance to terminate the call. For more information about adaptive routing, see the **PortaBilling Administrator Guide**.

Add / Edit Routing Criteria

To add new routing criterion, click **Add** in the toolbar. An existing routing criterion can be edited by clicking on its name in the list.



Field	Description
Name	The logical name of the routing criterion for use within PortaBilling®.
Description	A description of the routing criteria.
Sampling Interval	Quality measurements will be computed for all calls within this interval. Smaller intervals will make the system “quicker” to notice any change in a vendor’s quality, but there is also a higher chance that a short-term problem on the vendor’s side (which can be fixed in a matter of minutes) will penalize his route for a relatively long period of time.
Destination Group Set	A destination group set; you can define routing criteria for individual groups in this set.

Using the **Criteria Defaults** table, specify the initial default values to be applied to routing criteria for specific destinations which you will create later on.

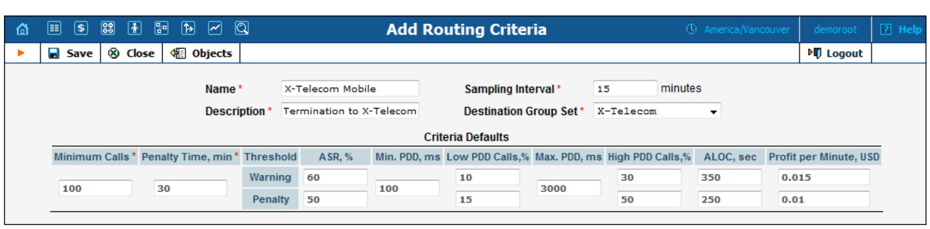
Field	Description
Minimum Calls	The minimum required amount of calls via a given connection within the sampling interval in order for the statistics to be considered representative. If the number of calls is below the specified value, the quality parameters will not be matched against the threshold, and no routing adjustments will be made.
Penalty Time	The time interval for which a connection will be “penalized” (put at the very bottom of the routing list) if a given vendor does not meet the quality criteria.

The following threshold parameters require two values that define the warning and penalty thresholds, respectively. The warning threshold specifies when an alert will be sent to the administrator (but no changes in the routing will be done). The penalty threshold defines when the route should be penalized if the quality statistics are outside the threshold value.	
ASR	Average Success Rate: the number of successfully connected calls divided by the total number of call attempts.
Min PDD, ms	Defines the minimum acceptable PDD (Post-Dial Delay), i.e. the time interval between the moment a connection request is sent to the vendor and the moment ring-back is received. Too low a PDD is suspicious, and in this case the vendor is probably doing "false ringing" to hide the long time it actually takes him to route the call.
Low PDD calls, %	Maximum acceptable percentage of calls with a PDD below the specified value.
Max PDD, ms	Defines the maximum acceptable PDD. Too high a PDD has a strong negative impact on your business, since during the delay time the end-user hears only silence, and generally assumes that there is a problem with the service.
High PDD calls, %	Maximum acceptable percentage of calls with a PDD above the specified value.
ALOC, sec	Average Length of Call.
Profit per Minute	Profit per Minute (expressed in the monetary units of your base currency): the aggregated profit, i.e. the difference between the actual charged amounts in your customers' and vendors' CDRs.

Click the **Save** button to save your progress when done.

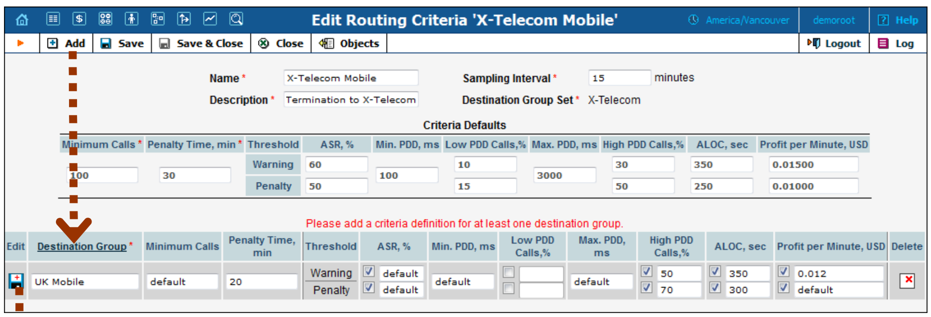
Defining Routing Criteria for Individual Destination Groups

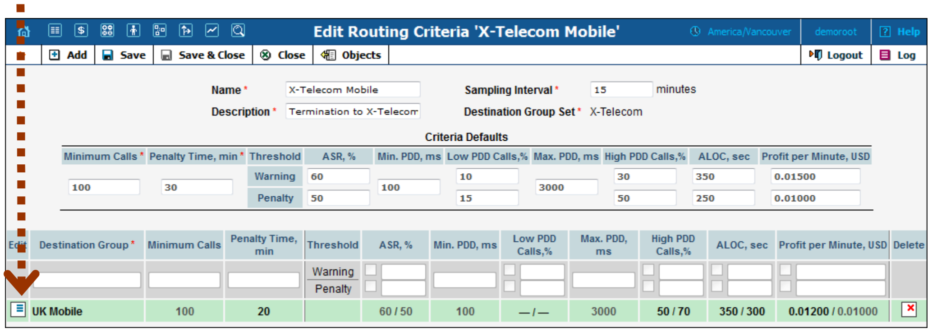
After the **Criteria Defaults** settings have been saved, click **Add** in the toolbar to define routing criteria for the specific destination group. An existing routing criterion can be edited by clicking the **Edit** icon on the row containing the details.



Click the **Destination Groups** column header link to choose one of the groups defined in the **Destination Group Set** from a searchable list inside the pop-up window.

When adding new criteria – all the fields are initially "default" – the values you have defined as **Criteria Defaults** will be used. This allows you to quickly define criteria for multiple destination groups with minimum effort. If you wish to override the default value, simply enter a new value in the field. If you wish to exclude a certain quality metric from the criteria (e.g. **Low PDD Calls**, in the example below), de-select the checkbox next to it.





When the criteria have been saved, the quality parameters are presented as follows:

- Parameter values, which override the default ones, are shown in black;
- Default values applying to these criteria are shown in grey
- For quality metrics that are switched off, dashes (--) are displayed instead of values.

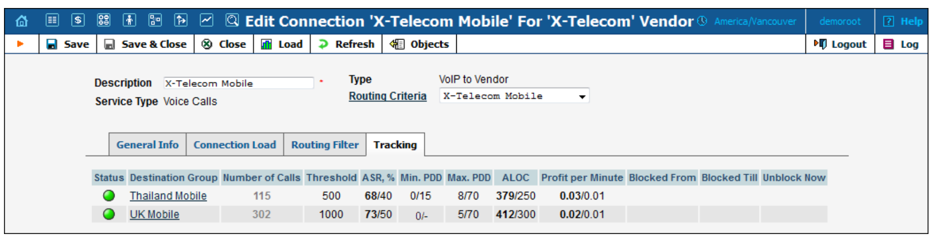
Tracking Connection Status

When the value of a parameter reaches the predetermined threshold, the administrator receives an e-mail alert about the latest connection threats. Moreover, the administrator can track the current connection status on the **Tracking** page. This status is represented by different colors, as follows:

- GREY – the number of calls is not enough to apply filtering differentiation;
- GREEN – the route meets the quality requirements;
- YELLOW – the route is active, but some of its quality parameters are outside the warning thresholds;
- BLOCKED – this route is currently being penalized.

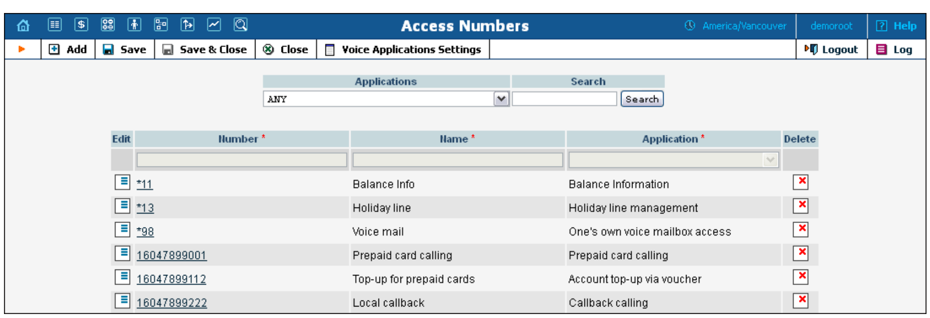
NOTE: The penalized route will be on the "penalty row" for a certain period of time, specified in the **Penalty Time** box and then will be unblocked automatically. Alternately, you can click the **Unblock Now** button to unblock the penalized route manually.

- RED – the route was manually unblocked; this status will remain unchanged till the next time interval for which the statistics will be computed.



Access Numbers

This screen allows users to quickly and conveniently define how PortaSwitch® should process calls to special "application access numbers."



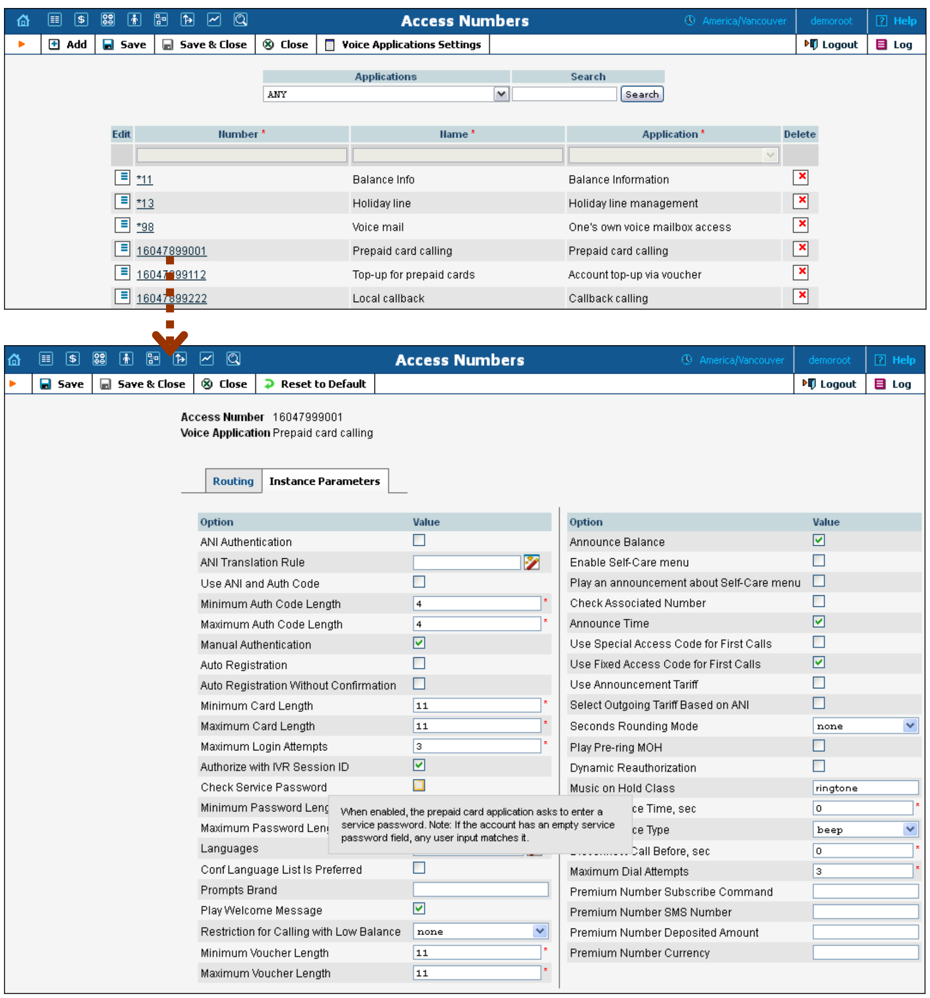
These are the numbers that your customers would dial from the PSTN network or their IP phone to access a specific IVR application; for instance, *98 for voicemail, 12125551234 to access a prepaid calling card IVR, or 18005559876 to access the audio conferencing facility.

Column	Description
Number	This column shows the actual phone number to be dialed by the user.
Name	This column shows the access number name.
Application	This column shows which application is to be used to process the call.

To register a new access number in PortaBilling®, click Add in the toolbar. To edit an existing access number, click the **Edit** icon next to it.

Access Numbers options

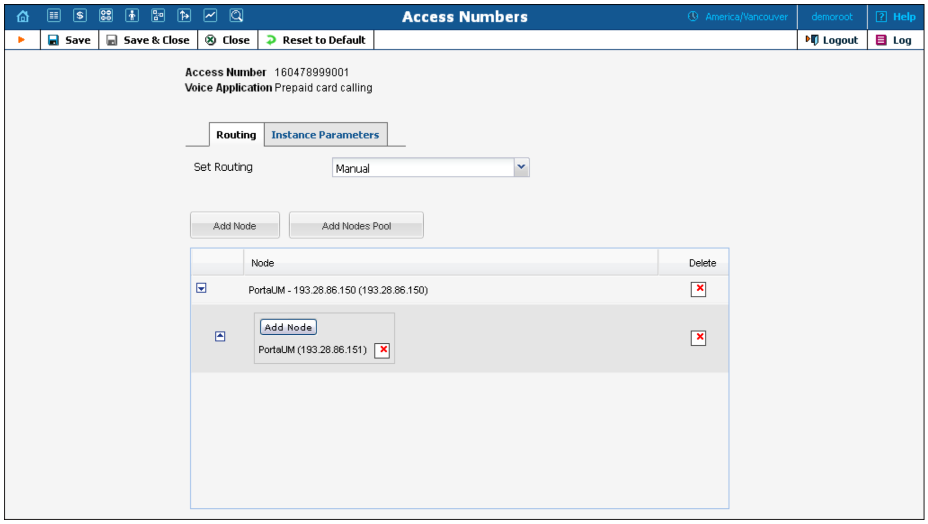
Click on an access number to get the Access Numbers options page. On the **Instance Parameters** tab you can view a list of all options for the selected access number and modify them.



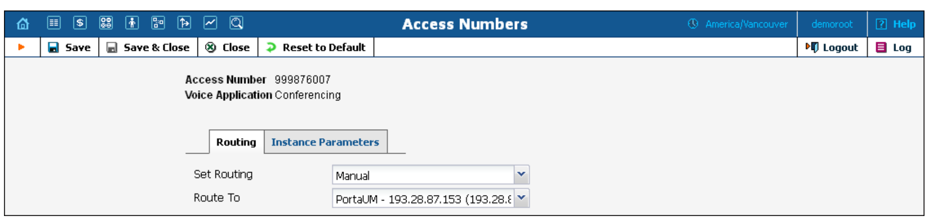
There is a helpful tool-tip for each option. Just point your mouse to the desired option to invoke it.

Routing tab

Here you can assign incoming calls on a particular access number to a chosen subset of available PortaSIP® Media Servers. The list of available servers – or groups of servers – can be prioritized so calls will first be handled by the server at the top of the list and then in descending order based on availability.



Some IVR applications (e.g. Conferencing) do not support multi-node routing. Instead, you can route incoming calls made to these access numbers to a single PortaSIP® Media Server.

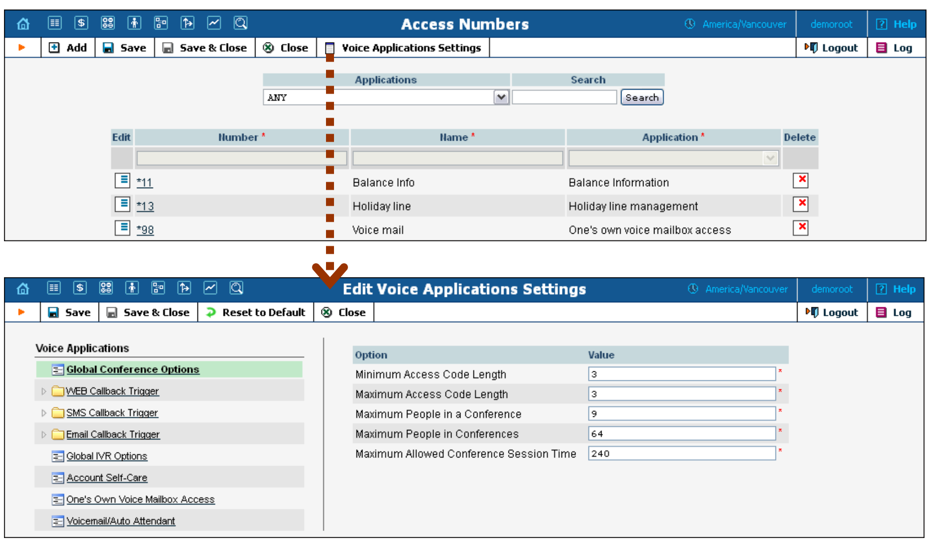


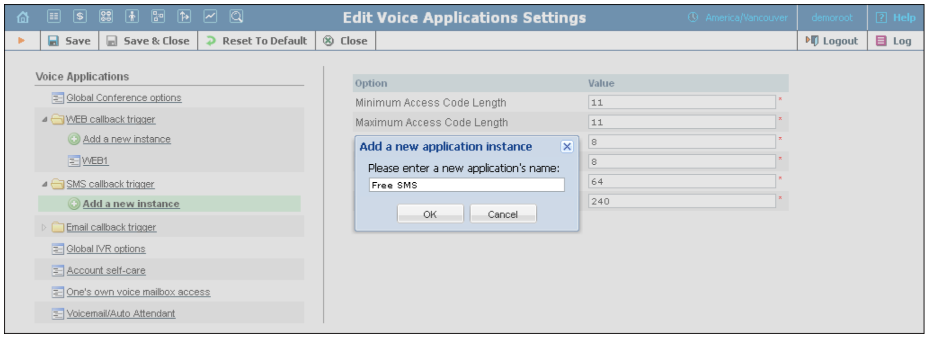
Column	Description
Set Routing	Here you can select which PortaUM® nodes (PortaSIP® Media Servers) incoming calls on this access number will be routed to: • Automatic – Calls will automatically be routed to randomly sorted PortaUM® nodes • Manual – Set custom routing configuration

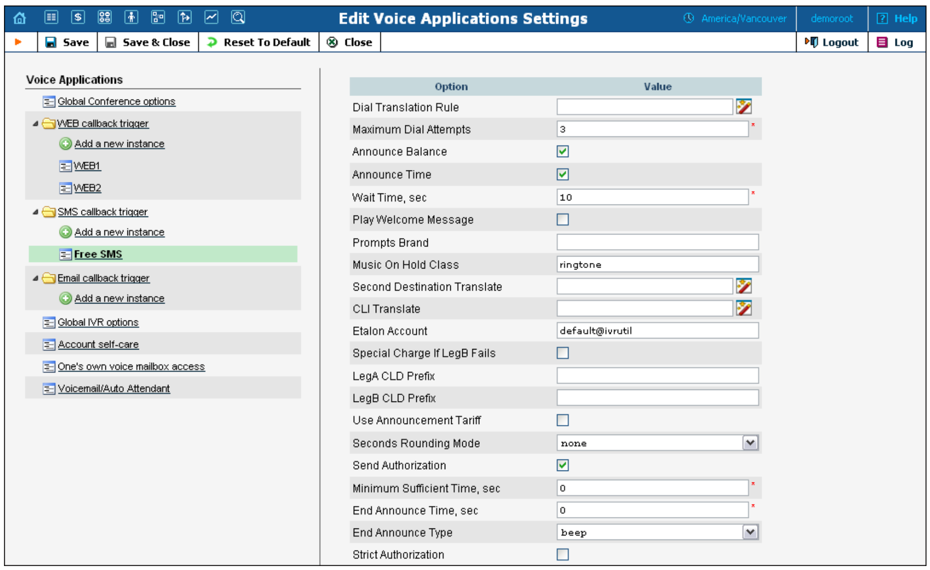
Add Node *(Only for multi-node routing)*	Add PortaUM® nodes (PortaSIP® Media Servers) to the list and sort them to route calls sequentially. For example, if your Media Servers are installed in multiple geographic locations, then it would be desirable to first route calls that arrive from local telcos to the Media Servers located in the same region. This configuration will improve call quality by reducing network delay between the telco's originating gateway and the PortaUM® server.
Add Nodes Pool *(Only for multi-node routing)*	Add a pool of PortaUM® nodes (PortaSIP® Media Servers) so that they can receive calls interchangeably. For example, if you add a pool with two Media Servers to the routing list, then each server has a 50% chance of receiving a call.
Route To *(Only for single-node routing)*	Select a single PortaUM® node (PortaSIP® Media Server) for where calls made to access numbers that do not support multi-node routing can be routed.

Voice Applications Settings

This page shows the list of voice applications and allows you to modify the options for the voice application you select. There is also the option of adding new instances (voice applications) for Web callback, SMS callback and Email callback.

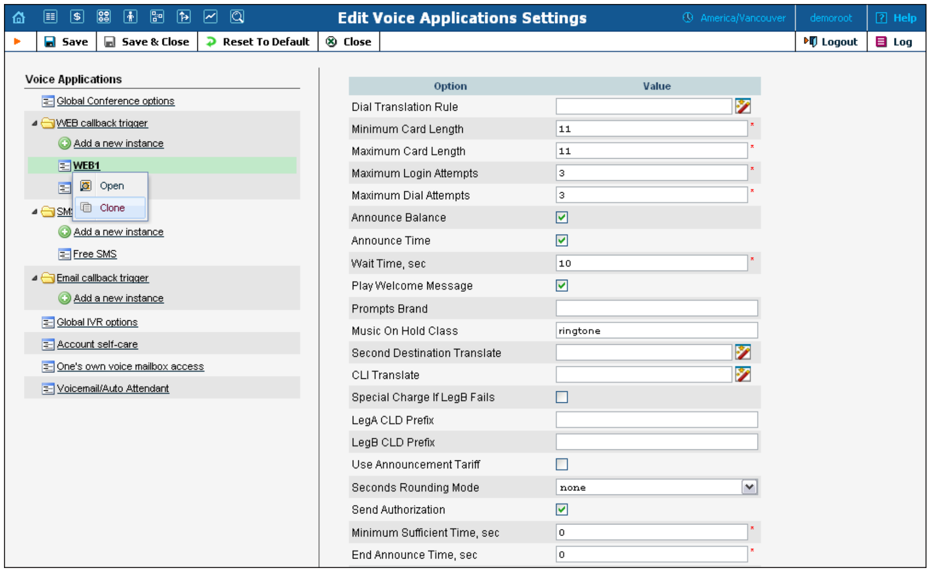






To add a new instance for the desired callback application, click on it and then press the **Add a new instance** button. Enter a name for the new application in the pop-up window and then press **OK**. If you want to add an instance using the same options as those in the existing one, use the **Clone** button. Right-mouse click on the instance you would like to clone and then press **Clone**.

NOTE: While cloning a callback instance, the unique voice application fields are not cloned and are set to their default values. The unique field for Web callback is Callback WEB Page Address, for Email Callback it is Callback Email Address and for SMS callback it is Callback Access Number.



Connections

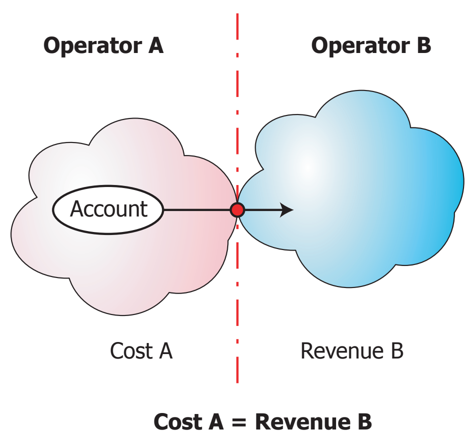
Definitions

Network

VoIP network – one or more VoIP entities that belong to a single operator.

Connection

Point of change of network ownership. Defined as a set of physical and logical parameters i.e. IP, Port, Timeslot, Call Type, Call Direction, etc.

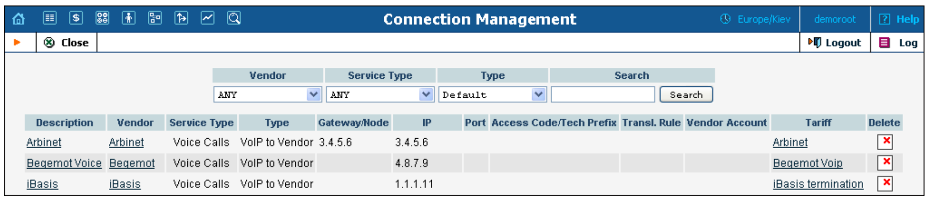


Operator

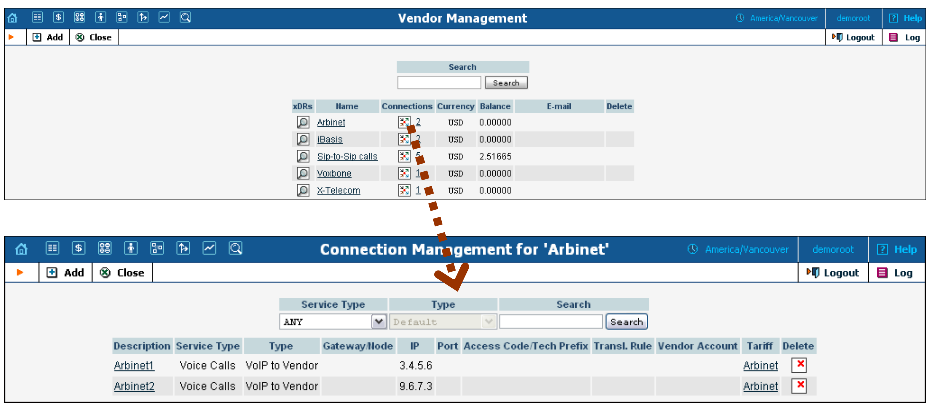
Network owner. Responsible for internetworking and wholesale in its network.

A connection defines the point where a call travels between the networks of two operators, one of whom is a PortaBilling® owner. At this point, we will create an xDR for the vendor (the other operator) describing our costs. Also, if this was an outgoing call, we will create xDRs for both the account and the customer.

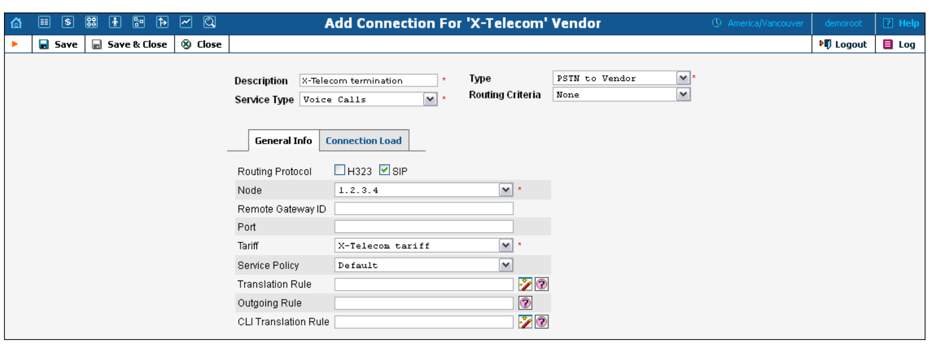
You can access connection information directly from the main menu. In this case, all connections defined in the system will be displayed.



Alternatively, you can access a list of connections for a particular vendor. To do so, click the icon next to the vendor name in the vendor list, or click **Connections** in the toolbar on the vendor info screen.



To edit a connection, simply click on the connection description in the table. To add a new connection, first go to the list of connections for a specific vendor, then select **Add**.



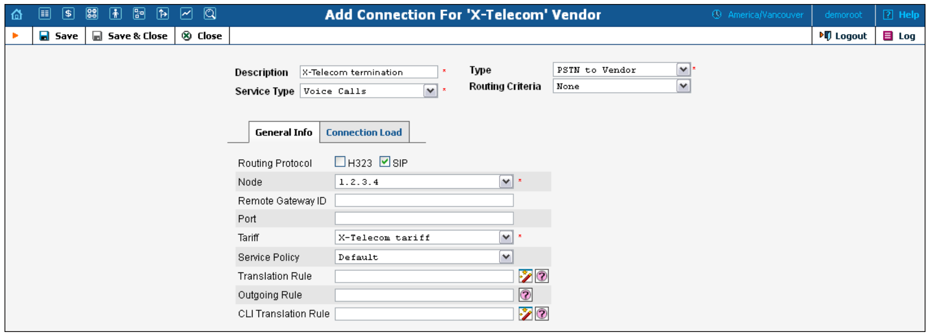
Field	Description
Description	A logical description of the connection.

Service Type	The type of service this connection is used to transport (voice calls, Internet connectivity, etc.). **NOTE:** While services are used to represent and bill your customers' activities to them, you use service types to define a connection, since in this case it is important to know what actual (physical) service was provided.
Type	The type of this connection. The available types depend on the service type chosen above. For the **Voice Calls** service, the applicable types are: • PSTN from Vendor – Vendor-related expenses for delivering calls from your customers to your network (e.g. toll-free lines) via a PSTN trunk to your gateway. • VoIP from Vendor – Vendor-related expenses for delivering calls from your customers to your network (e.g. foreign DIDs) via VoIP to your SIP server. • PSTN to Vendor – Your expenses for terminating calls on a vendor's network via a PSTN trunk on your gateway. • VoIP to Vendor – Your expenses for terminating calls on a vendor's network by sending them over an IP network to his gateway or proxy.
The following field is only available for "VoIP to Vendor" and "PSTN to Vendor" connections:	
Routing Criteria	Defines what routing criteria will be applied to this connection.

Other available fields on the **Add Connection** form vary depending on the service type and type of connection chosen.

General Info tab

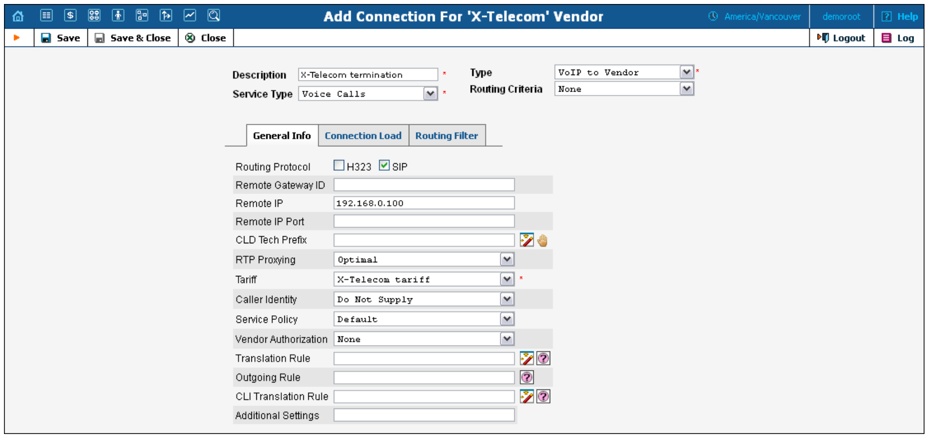
PSTN to/from Vendor connections with Voice Calls service type



Field	Description
Node	Name of the node used for this connection.
Port	Only on PSTN-related connections. The specified port for PSTN origination or termination. The port can be set using wildcards: **"_'** – match any symbol **'%'** – match any sequence of symbols The wildcard symbols **'*'** and **'?'** should not be used.
Tariff	The tariff used to calculate the cost of terminating calls via this connection.
Translation Rule	Rule applied to convert a number from a vendor-specific format into the unified format used in billing. Click the **Wizard** icon to launch the Dialing Rules wizard; click the test icon to pop up the Test Rule window.
The following fields are only available for "PSTN from Vendor" connections:	
CLD (DNIS)	Specifies the access number the customer dialed in order to reach your network.
Info Digits	Info Digits is ISDN Originating Line Information sent by the gateway, which allows accounts to be billed depending on where the call is originated from. Simply associate the corresponding tariff with any OLI in Services and Rating. Please note that the gateway should be configured to support OLI.
The following fields are only available for "PSTN to Vendor" connections:	
Routing Protocol	• **H323** - Check if this connection is capable of handling H323 calls. • **SIP** - Check if this connection is capable of handling SIP calls.

Remote Gateway ID	A distinctive name for the remote gateway. This is used when it is not possible to determine the identity of the remote party (and thus the connection / vendor that the call goes to) by its IP address alone. This ID will then be used to identify the connection, based on additional information available in the accounting record. The value in this field should take one of the following forms: • A domain name (translated into the actual IP address using a DNS query at the time the call is routed). This must be a fully qualified domain name, i.e. it should contain at least two names separated by a dot, for instance `mytelecom.net`. All other restrictions related to the domain name (e.g. permitted characters) apply as well. • The special matching keywords `SIP-URI`, `INTERNAL` or `SIP-UA` used internally in routing. • Another custom name that helps to identify the connection. Given in uppercase without any dots. One possible use is termination to multiple remote ports on the same IP; then the Remote Gateway ID can help to distinguish the routes, e.g. PORT5020, PORT5021.
Service Policy	Specifies a predefined set of options which are applied to calls going through this connection. Note that the options may be overridden by those defined for the caller or called account (depending on the connection type).
Outgoing Rule	If necessary, a received number can be modified before sending it to the vendor. This is only applicable if the node which routes the call retrieves routing information from PortaBilling® (e.g. PortaSIP® or MVTS). This will be filled in automatically if you use the Dialing Rules wizard.
CLI Translation Rule	Translates the CLI (ANI) to a vendor-specific format when routing a call to the vendor's network.

VoIP to/from Vendor connections with Voice Calls service type



Field	Description
Remote IP	The IP of the remote gateway, e.g. `23.45.67.89`. If a connection has an empty Remote IP attribute, calls going to any IP address (not explicitly defined in some other connection) will be regarded as going via this connection. If there are multiple connections with an unknown IP address, then the **Remote Gateway ID** and **CLD Tech Prefix** can be used to help identify a specific connection.
RTP Proxying	Describes the NAT traversal capabilities of the remote gateway (the default value is set to **Optimal**): • Direct – RTP stream should be sent directly to this node; RTP proxy should not be used. • Optimal – This node is capable of NAT traversal; no RTP proxying is required unless specifically requested. • OnNat – This node is not capable of NAT traversal; engage RTP proxy if the other party is behind NAT. • Always – When sending a call to this node, always engage RTP proxy, so that no media stream goes to it directly.
Tariff	The tariff used to calculate the cost of terminating calls via this connection.
Vendor Authorization	Defines which username / password should be used for authorization of calls via this connection.
Translation Rule	Rule applied to convert a number from a vendor-specific format into the unified format used in billing. Click the **Wizard** icon to launch the Dialing Rules wizard; click the **Test** icon to pop up the Test Rule window.

CLI Translation Rule	Translates the CLI (ANI) to a vendor-specific format when routing a call to the vendor's network.
The following fields are only available for "VoIP to Vendor" connections:	
Remote IP Port	The port to connect to on the remote end. The default port for the chosen protocol (5060 for SIP, 1720 for H323) is used where no value is provided.
Routing Protocol	• **H323** - Check if this connection is capable of handling H323 calls. • **SIP** - Check if this connection is capable of handling SIP calls.
Remote Gateway ID	A distinctive name for the remote gateway. This is used when it is not possible to determine the identity of the remote party (and thus the connection / vendor that the call goes to) by its IP address alone. This ID will then be used to identify the connection, based on additional information available in the accounting record. The value in this field should take one of the following forms: • A domain name (translated into the actual IP address using a DNS query at the time the call is routed). This must be a fully qualified domain name, i.e. it should contain at least two names separated by a dot, for instance `mytelecom.net`. All other restrictions related to the domain name (e.g. permitted characters) apply as well. • The special matching keywords `SIP-URI`, `INTERNAL` or `SIP-UA` used internally in routing. • Another custom name that helps to identify the connection. Given in uppercase without any dots. One possible use is termination to multiple remote ports on the same IP; then the **Remote Gateway ID** can help to distinguish the routes, e.g. `PORT5020`, `PORT5021`.
CLD Tech Prefix	If you have several connections with the same IP address (e.g. the same carrier offers you routes of different quality) and these can only be distinguished using the tech-prefix in the destination number, enter that tech-prefix here. This also automatically modifies the translation rules for this connection, such that the tech-prefix is appended to the number when a call is routed there, and removed from it when CDRs are being processed.
Caller Identity	Describes how outgoing calls for which the caller has requested privacy are to be displayed to the vendor.

	• Do not Supply – PortaSwitch® will remove all information about the caller from the call initiation info sent to the vendor. • Supply – The outgoing call initiation request will contain special privacy headers which will contain the information about real CLI number.
Outgoing Rule	If necessary, a received number can be modified before sending it to the vendor. This only applies if the node which routes the call retrieves routing information from PortaBilling® (e.g. PortaSIP® or MVTS). This will be filled in automatically if you use the Dialing Rules wizard.
Additional Settings	Additional settings for some call scenarios, for example routing based on Point of Presence.
The following fields are only available for "VoIP from Vendor" connections:	
Node	Name of the node used for this connection.
Caller Identity	Describes how the system processes the calls for which the caller has requested privacy. • **Do not Accept** – Special privacy headers will not be processed. • **Accept** – The information about real CLI number will be retrieved from the special privacy headers.
Assign Access Code	This parameter allows you to use different rate plans for the same service, based on where the call originates from. Define **Assign Access Code** for the authorization of the call in order to allow the appropriate entry specified in the product's **Services and Rating** tab to be selected. This field is mandatory and by default, is set to 'INCOMING.'
Rate Match Mode	This parameter allows you to rate calls either based on their destination or the caller's number. • **Default** – Rate based on the destination number. • **Calling number** – Use the caller's number to calculate the billing charges (e.g. for charging the owner of a toll-free number for incoming calls).

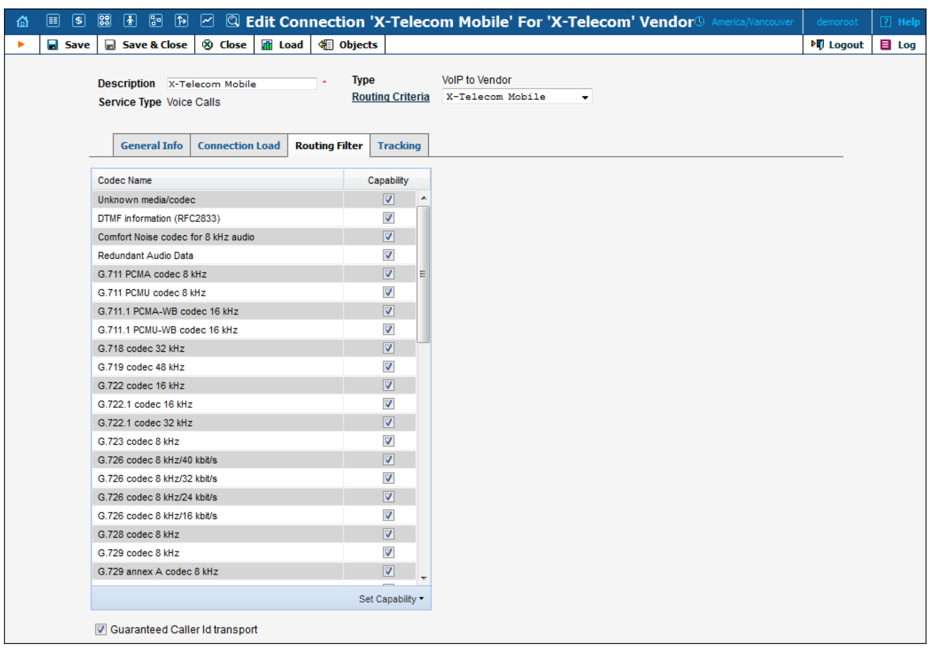
Connection Load tab

Field	Description
Capacity	Specifies the maximum number of simultaneous calls the connection can support. If **Limit Utilization by Capacity** is active, when the number of simultaneous

	calls established via the connection reaches its specified limit, this connection will become excluded from all further routing attempts. Otherwise, this parameter is only used to correctly scale the load graph for the connection.
The following fields are only available for "VoIP/PSTN to Vendor" connections:	
Limit Utilization By Capacity	Check this box to enable load-balancing based on utilization of this connection and to limit the number of simultaneous calls routed through it.
Start Utilization Balancing After	Start performing load-balancing using other connections (that would normally assume a lower position in the routing list) when the number of simultaneous calls reaches this threshold.

Routing Filter tab

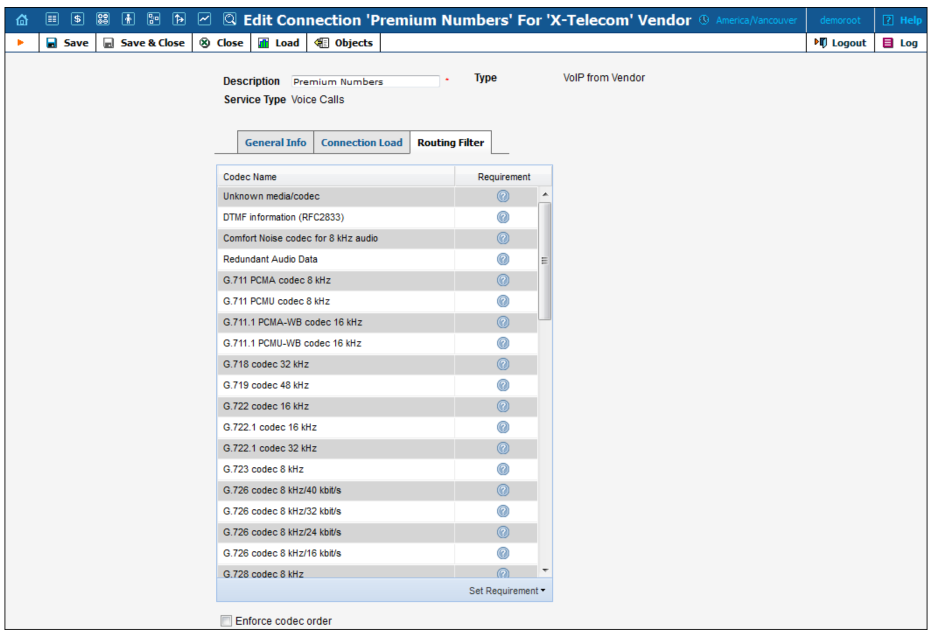
For *"VoIP to Vendor"* connections, the routing filter allows you to define the capabilities of the remote party (such as the gateway of a carrier) and your preferences for using them.



Column	Description
Codec Name	Name of the call media feature (such as a specific codec or T.38 fax capability).
Capability	This parameter allows you to specify remote party capabilities or prohibit the use of a call media feature for the connection. The following options are available: • **Supported** – This means that you are sure that this equipment supports this feature and are therefore allowing it.

	• **Not supported** – This means that this equipment is unable to support this particular feature (e.g. G.723 codec). Your administrator may decide to prohibit it. For example, although you do not know whether a vendor's gateway supports the G.722 codec, by marking it "not supported" you will ensure that even if the originating codec end-point appears available, it will be removed from the codec list that is sent to the carrier in the SIP call initiation request, and thus will not be used.

For *"VoIP from Vendor"* connections, the routing filter allows you to filter call media features on incoming calls.



Column	Description
Codec Name	Name of the call media feature (such as a specific codec or T.38 fax capability).
Requirement	This parameter describes the filters applied to call media features. The following options are available: • **Suppressed** – This means that PortaSwitch will prevent the use of this particular feature (e.g. G.722 codec) and will remove the information about this codec from SIP requests received from a remote party. • **Not required** – This means that PortaSwitch does not do any special processing for this feature. It will be preserved in the incoming SIP

	request and may be used if the other party supports it. This is the default value for all features.

Connection Load

PortaBilling® automatically updates load graphs based on the number of calls going through a connection. To access the load graph for a specific connection, open the connection details page and click the **Load** icon in the toolbar.

8. Statistics

Graphs

The default timeframe for all graphs is 30 hours. The dates above the graph are the boundary timeframe for the current graph. If the graph is shown in more than one color, a legend for color use will be displayed below the graph. If there are two graphs, captions will be provided on the left. The use of navigation is explained in the table below.

Icon	Description
	**Zoom Out**. Click the icon or the top part of the graph to see a 50% longer time interval.
	**Zoom In**. Click the icon or the bottom part of the graph to see a 50% shorter time interval and a more detailed graph.
	**Back in time.** Click the icon or the left part of the graph to move back in time by 50% of the current timeframe.
	**Forward in time**. Click the icon or the right part of the graph to move forward in time by 50% of the current timeframe.

Reports

The middle portion of the report screen is a one-year calendar.

PortaBilling® keeps reports for one year, after which they are removed from the system. The current month is displayed in the bottom right-hand corner of the calendar.

Look at the following diagram of a calendar:

4. If present, this arrow notifies the user that a report for this month is available for download by clicking the month link.
5. Three-letter abbreviation for the month, followed by the year.
6. If present, this arrow notifies the user that two semi-monthly reports are available for download by clicking the links on the right.

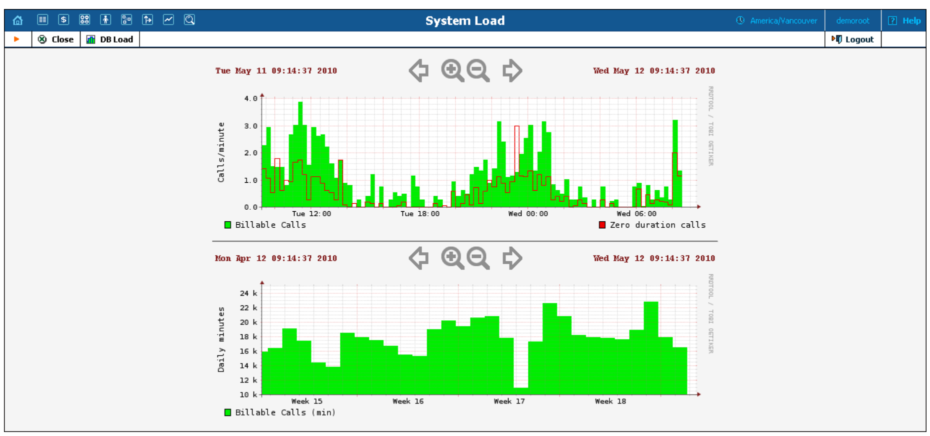
7. Click this icon to download statistics for the first half of the month.
8. Click this icon to download statistics for the second half of the month.
9. The number of the week in the current year. No report was generated for this week, so there is no link.
10. Same as 6, but here a report has been generated and may be downloaded by clicking the link.
11. The day of the month. No report has been generated, so the link is inactive.
12. Days with linked reports are bolded and underscored. Click to download the report.

If a report is available, the corresponding link is bolded and underscored.

NOTE: Links are not displayed if reports have not been configured.

System Load

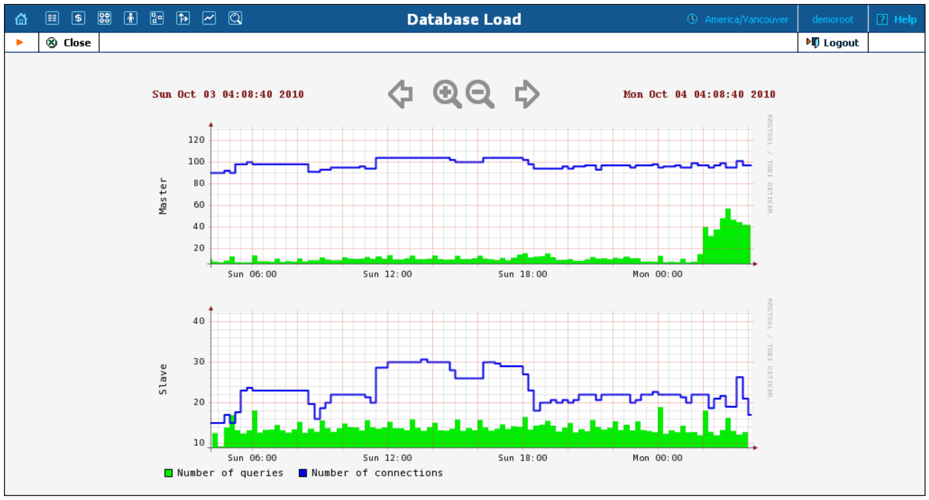
The **System Load** graph provides a general overview of the billing system status in terms of the number of call attempts per minute and the total volume of calls per day.



The **Calls/minute** graph at the top shows the number of calls, and is broken down into “Billable” and “Zero Duration” calls.
The **Daily minutes** graph shows the total call volume (in minutes) that passes through your system per day.

Database

The Database Load graph shows the load (in number of queries) and the number of active threads on the master and slave databases. This information may be useful in the event that database interactions seem slow, or for other debugging scenarios.

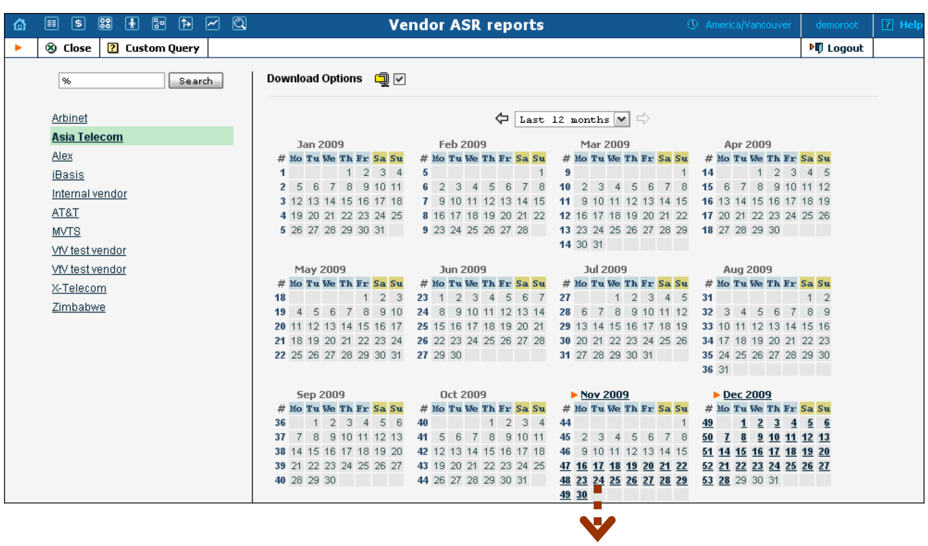


ASR

The Vendor ASR reports screen gives the user easy access to downloads of all ASR reports that have been defined for a vendor. Reports for the desired vendor may be found by selecting the vendor from a list on the left side of the screen, or by entering the vendor’s name in the search field and clicking the **Search** button. The wildcard symbol ‘%’ may also be used for the search.

Download Options

The default report download format is CSV. Check the box next to the **ZIP** icon to download zipped CSV files.



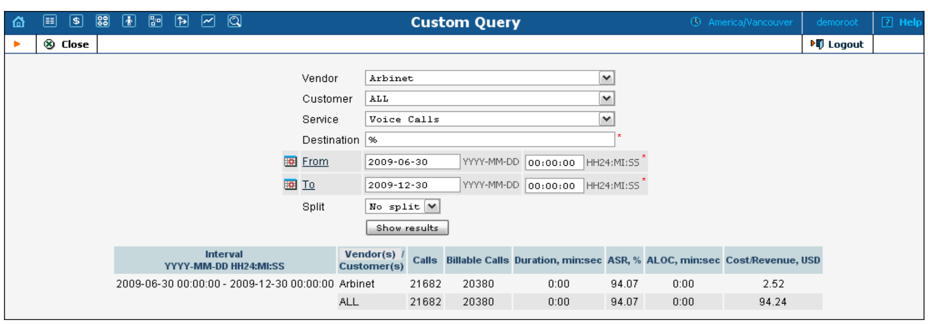
	A	B	C	D	E	F	G	
1	Destination	Country	Description	Calls	Billable Calls	ASR; %	Duration; min:sec	ALOC
2	247		Ascension Island	2	0	0	0:00	
3	Not Matched		Unable to match in tar	255	1	0.392156862745098	11:37	
4	SUBTOTAL			257	1	0.389105058365759	11:37	
5	355	ALBANIA	Proper	1	0	0	0:00	
6	SUBTOTAL			1	0	0	0:00	
7	54	ARGENTINA	Proper	2	0	0	0:00	
8	541	ARGENTINA		1	0	0	0:00	
9	5411	ARGENTINA	Buenos Aires	4	3	75	23:13	
10	SUBTOTAL			7	3	42.8571428571429	23:13	
11	374	ARMENIA	Proper	29	3	10.3448275862069	1:11	
12	SUBTOTAL			29	3	10.3448275862069	1:11	
13	61	AUSTRALIA	Proper	7	2	28.5714285714286	8:26	
14	611	AUSTRALIA	Mobile	1	1	100	0:35	
15	6129	AUSTRALIA	Sydney	1	0	0	0:00	
16	SUBTOTAL			9	3	33.3333333333333	9:01	
17	43	AUSTRIA	Proper	17	6	35.2941176470588	72:05:00	
18	431	AUSTRIA	Vienna	8	1	12.05.2005	14:25	
19	43650	AUSTRIA	Mobile	1	1	100	0:04	
20	SUBTOTAL			26	8	30.7692307692308	86:34:00	

Sample

Custom Query

The Custom Query utility, which can be accessed by clicking the **Custom Query** button, enables you to view ASR and cost / revenue information for all calls going from selected customer(s) to selected vendor(s). This query can also be filtered by destination and a precise time interval. The Split selector allows the report to be divided into hourly and daily intervals.

Select a customer or vendor, or a destination (which may be specified exactly), or use a wildcard. (For example, all calls to England may be specified as "44%" in the destination field.) A date and time range for the search must be specified. To initiate the query, click the **Show results** button.



The results table contains two rows, one each for the customer and the vendor.

- Calls
- Billable Calls
- Duration, min:sec
- ASR (Average Success Rate)
- ALOC (Average Length of Call), min:sec
- Cost / Revenue, in the PortaBilling® owner's currency

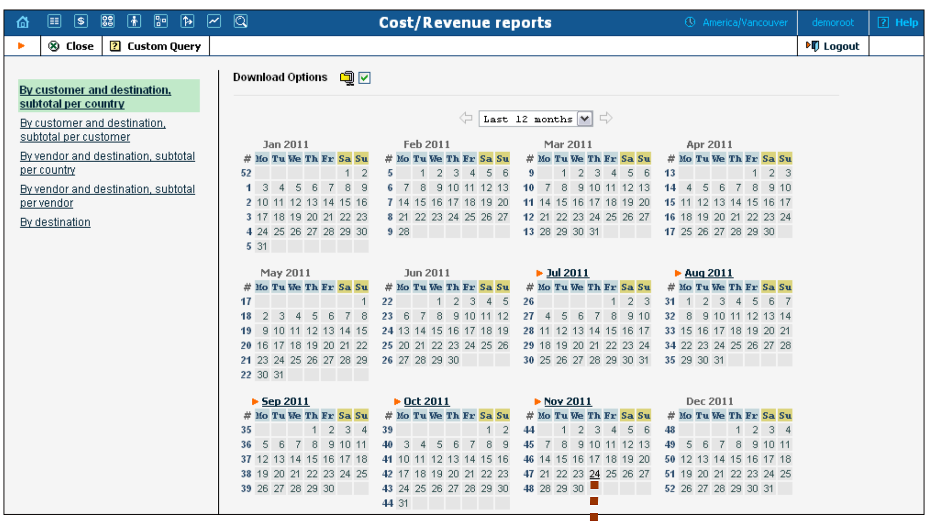
The Custom Query utility is a tool for monitoring various parameters of your current call flow. It should **not** be used to obtain billing statistics for a particular vendor (use the xDR statistics for the corresponding vendor), and should **never** be used to obtain information such as “total minutes for a particular customer.” Since this report operates with the vendor’s xDR, it will provide figures according to the vendor’s time rounding, not the customer’s. This can make a significant difference (e.g. your vendor uses 1 second rounding, while customers are billed on a per-minute basis).

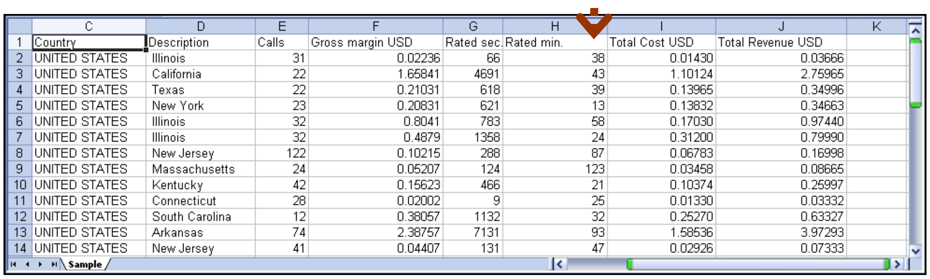
Cost / Revenue

The Cost / Revenue reports screen allows users to easily download all Cost / Revenue reports that have been generated in the system. Reports are grouped by the following call types:

- By customer and destination, subtotal per country (default)
- By customer and destination, subtotal per customer
- By vendor and destination, subtotal per country
- By vendor and destination, subtotal per vendor
- By destination

The active selection is highlighted in green.



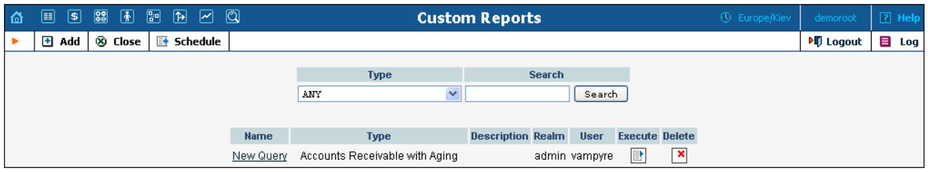


	C	D	E	F	G	H	I	J	K
1	Country	Description	Calls	Gross margin USD	Rated sec.	Rated min.	Total Cost USD	Total Revenue USD	
2	UNITED STATES	Illinois	31	0.02236	66	38	0.01430	0.03666	
3	UNITED STATES	California	22	1.65841	4691	43	1.10124	2.75965	
4	UNITED STATES	Texas	22	0.21031	618	39	0.13965	0.34996	
5	UNITED STATES	New York	23	0.20831	621	13	0.13832	0.34663	
6	UNITED STATES	Illinois	32	0.8041	783	58	0.17030	0.97440	
7	UNITED STATES	Illinois	32	0.4879	1358	24	0.31200	0.79990	
8	UNITED STATES	New Jersey	122	0.10215	288	87	0.06783	0.16998	
9	UNITED STATES	Massachusetts	24	0.05207	124	123	0.03458	0.08665	
10	UNITED STATES	Kentucky	42	0.15623	466	21	0.10374	0.25997	
11	UNITED STATES	Connecticut	28	0.02002	9	25	0.01330	0.03332	
12	UNITED STATES	South Carolina	12	0.38057	1132	32	0.25270	0.63327	
13	UNITED STATES	Arkansas	74	2.38757	7131	93	1.58536	3.97293	
14	UNITED STATES	New Jersey	41	0.04407	131	47	0.02926	0.07333	

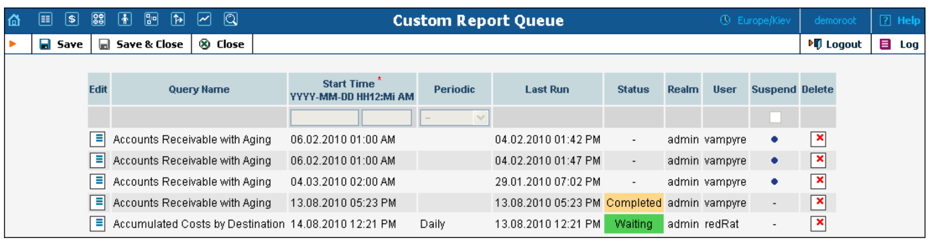
Sample

Custom Reports

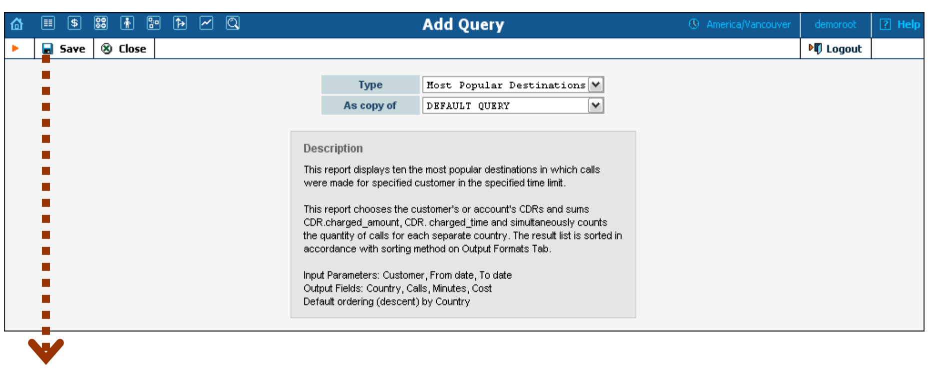
The Custom Reports section allows you to manage and execute custom report queries.

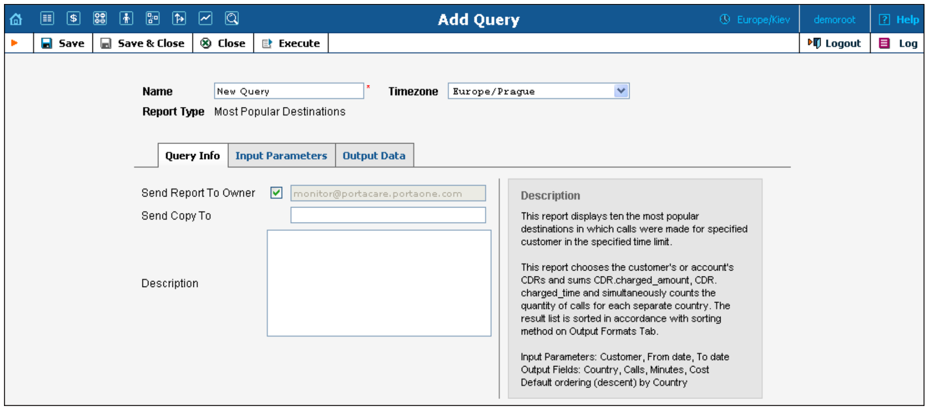


On the initial Custom Reports screen, you can view already existing reports. To execute one of them and see the result immediately, click the **Execute** icon for a particular report. Click the **Schedule** button in the toolbar to see information about scheduled report execution.



Click **Add** to create a new report by choosing the type of report (one of the pre-defined types) and whether this report should be created as a clone of some existing report (inheriting all parameters defined in that report), or just as a blank copy. Press **Save** to proceed in defining the report.





Type in a descriptive name for the new query. This is the name that will be displayed on the Custom Reports screen. Define the Custom Reports time zone that will be applied to the date ranges of the query execution. This TZ will be applied to the date(s) in the query results and will also appear in the filename with the result report. Keep in mind that the *User's* time zone will be applied to all the *execution* dates (Start Time, Last Run and Completion Time).

If the TM for the query execution coincides with the User's TZ, you can simply set the time zone to **'Auto'**. In that case, the query will be executed in the User's TZ.

On the Edit query page, you can alter various parameters of this query. Click the **Execute** button in the toolbar to run the query and immediately see the result in your web browser.

Query Info tab

Field	Description
Send Report To Owner	If this check box is ticked, after every query execution the user who executes the report will receive a copy of the report result by email. (Make sure you have defined your email address in the user settings.)
Send Copy To	Send a copy of the report result to another email address.
Description	General description of this report.

Input Parameters tab

The contents of this tab are based on a particular report, and allow you to manage report parameters, e.g. for "Most popular destinations" you are able to specify the date range and customers.
For input parameters which contain date / time values, there are two methods of entering values:

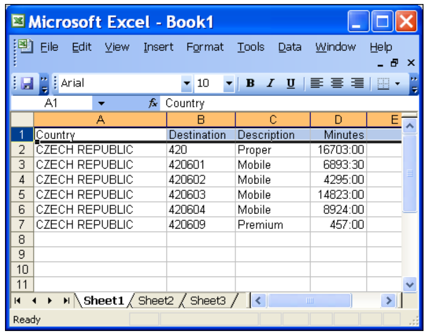
- You can type in a specific value, e.g. "01-Jan-2007"; this value will always stay the same for any report execution.
- You can specify a moment in time as an offset from the scheduled report execution date. For instance, you can set up the "Customer's most popular destinations" report to run every night at 5 am, and specify that it should cover an interval from 21 hours to 10 hours **prior** to the report time. As a result, you will always receive a report that includes calls made by the customer during business hours on the previous day. Parameters may also be populated automatically with a date **after** the actual report time: for instance, every Monday you can run a report to obtain a list of invoices that will become overdue during the next seven days.

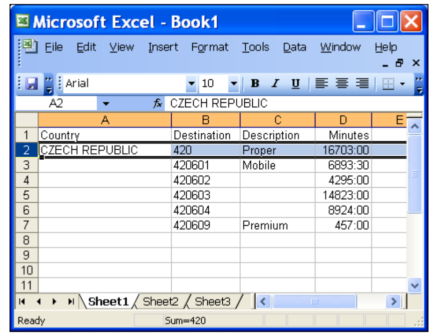
Output Formats tab

This tab includes two separate areas: Output Format, where you can define how the values of columns should be presented in the report, and Data Sorting, where you define how the report data should be sorted.

Column	Description
Column	Name of the report column.
Visible	Whether this column should be included in the report. If you uncheck this option, the given column will simply be skipped in the report result.
Format	Formatting of the column data (e.g. whether the total number of minutes should be displayed as 380 or 380:00).
Post Processing Rule	This field functions like the post-processing rules in templates (for more details, see the **PortaBilling Templates Guide**). It allows you to modify the actual value extracted from the database before it is shown in the report. For instance, if the value in the database gives the total number of seconds, you can divide it by 60 to display the value in minutes to the user.
Suppress Dup	If activated, duplicate column values in adjacent rows will not be displayed – see the example below.

The Suppress Duplicates option allows you to make your reports more readable by removing excess information. Compare the two datasheets below, in which the same data is shown, but where the right one has Suppress Duplicates enabled for certain columns.

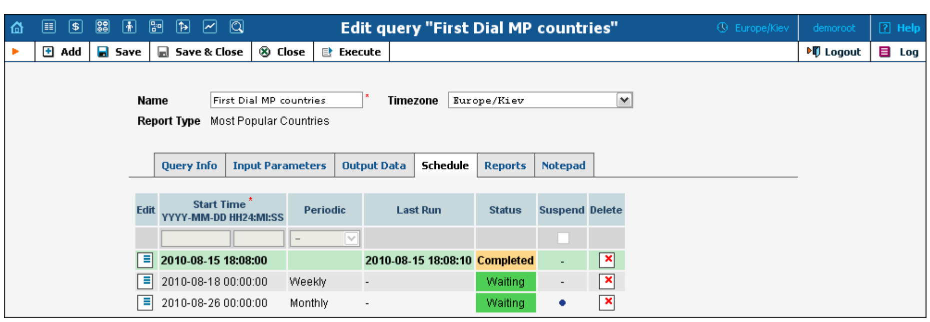




Column	Description
Column	Name of the report column.
Sort	Specifies the sorting mode for this column: • - Data is sorted in ascending order (i.e. **Andrew** will be at the top of the list, and **Zack** at the bottom). • - Data is sorted in descending order (i.e. **Zack** will be at the top of the list, and **Andrew** at the bottom). • — - This column is not used for data sorting at all.
Up / Down	If there are multiple columns used in sorting, their order is very important. Here you can arrange the sequence of the sort columns. For instance, if you want to sort data first by country name and then by the number of minutes, use the and arrows to move the **Country** column above the **Minutes** column.

Schedule tab

This tab allows you to schedule automatic report execution (single time or periodic) in the future, and to see when a report was last generated. Click the **Add** button in the toolbar to add a new entry.

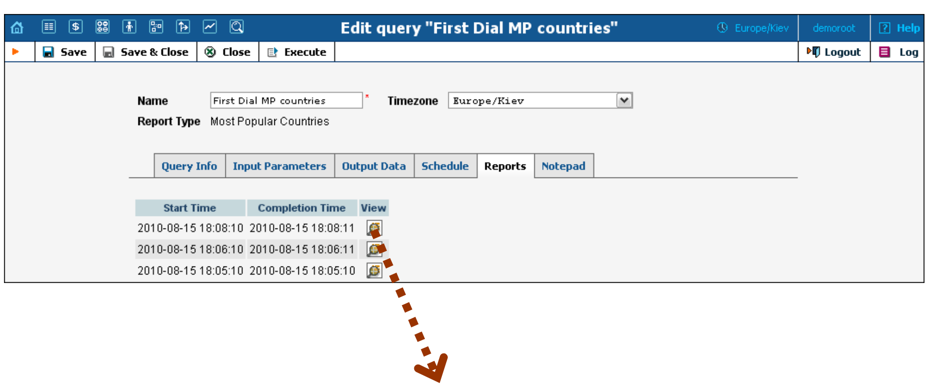


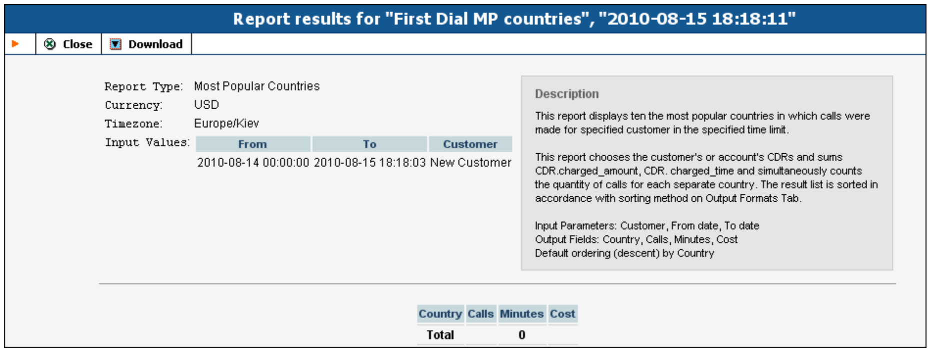
Column	Description
Start Time	Date and time when the report should be produced.
Periodic	Specifies whether the report should only be produced once, or generated every day, week or month.
Last Run	The date when the report was last executed (if applicable).
Status	Current status of the report: • Waiting – Report execution has not started yet, and is scheduled for the future. • Completed – The report was to be executed only once, and this has already been done. • Running – The report is being currently produced.
Suspend	Allows you to temporarily disable report execution (but not delete the entry from the report schedule). This may be convenient if you are leaving for vacation and would like to avoid having reports piling up in your inbox during your absence.

NOTE: Start Time specifies only the "preferred" start time for the report. Report execution will not start earlier than the specified time, but it may start later if there are some other conflicting tasks at the specified time. For instance, if two reports are scheduled to be executed at 06:00, only one of them will start at that time, while the other will start only after the first one has finished.

Reports tab

This tab allows you to browse results for the ten previous report executions. Thus, if you did not save the original result, you do not have to run the reports over again. Click the icon to see the corresponding file.





Traffic Usage Trending Report

The Traffic Usage Trending report allows you to view selected customers' daily voice minutes per destination group set. This report evaluates historic data to indicate whether a customer's voice traffic has gone up, down or remained constant. When the report is configured and generated you will find the following indicators:

- Green indicator color demonstrates an increase of *Total Minutes* over *Average Minutes*
- Red indicator color indicates a decrease of *Total Minutes* over *Average Minutes*
- Blue indicator color indicates that there was no significant change between the *Average Minutes* and the *Total Minutes*

List of input fields:

Name	Mandatory	Range of Values	Description
Reseller	Y	Existing Resellers	Whether to generate report for direct customer / subcustomer or specific reseller.
Customer / Subcustomer	N	Existing customers and subcustomers. "All" by default	Shows a report for one or more customers depending on what is selected.
From	Y	Date	The date of comparison used.
To	Y	Date	A specific date used for comparison.
Number of Weeks	Y	Numeric, "4" by default	Number of weeks that should be used to calculate Average Minutes.
Destination Group	N	The names of	The choice of one or

Sets		the existing destination group sets	more destination group sets. If no destination group set is required, select "blank."
Variance	Y	Percentage ratio, values from "1" to "100"	Defines which variance is significant for demonstrating trending changes. (For example, if the Variance is 10%, the difference in minutes between two compared days that is greater than 10% signifies a change in traffic, negative or positive. If the values stay within 10% then it is considered to be unchanged.

List of output fields:

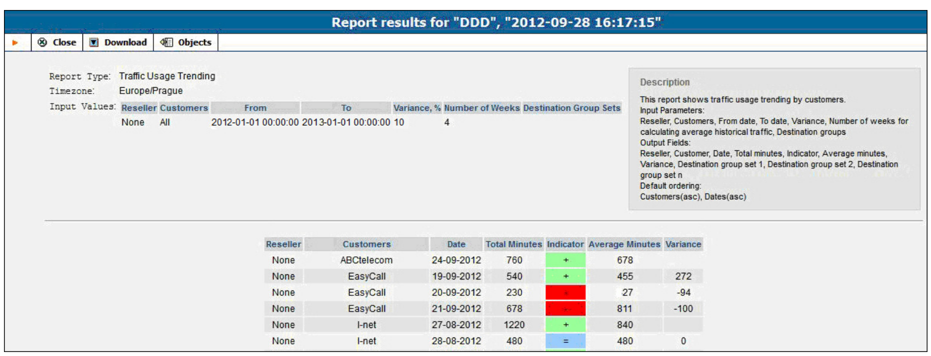
Column	Description
Reseller	Reseller's name.
Customers	The name of the corresponding customer.
Date	Date in the specified format.
Total Minutes	Total daily minutes per customer.
Indicator	Green if *Total Minutes* value is greater than *Average Minutes*, Red if less, Blue if *Total Minutes* and *Average Minutes* values are within the predefined **Variance**.
Average Minutes	Average minutes per customer based on dividing the minutes by the number of weeks (4 by default). For example: to determine the billing for October 30th, PortaBilling® looks up the total minutes for October 30th, the 23rd, the 16th and the 9th (based the **Number of Weeks** option). Then the system estimates the average mean for this data, which becomes the value for **Average Minutes**.
Variance	Difference between the two days compared.

How it works

For example, you need to know the statistics for December 2012 and compare them with those from December 2011. In the **Input Parameters** tab, specify the reseller and the customer / subcustomer, put January 1st 2012 into the **From** field and January 1st 2013 into the **To** field. Let's use a **Variance** of 10% and for the **Number of Weeks** use 4 (the default). This way the minutes for each day of week will be calculated over the previous 4 week's corresponding days. Then select one or several destination group sets. If several are selected, then the report will show how much traffic went through each of the destinations in each destination group set. In the **Output data** tab tick all the checkboxes in the **Visible** column, so that all available information will be included in the report. Click **Save** and then press **Execute**.

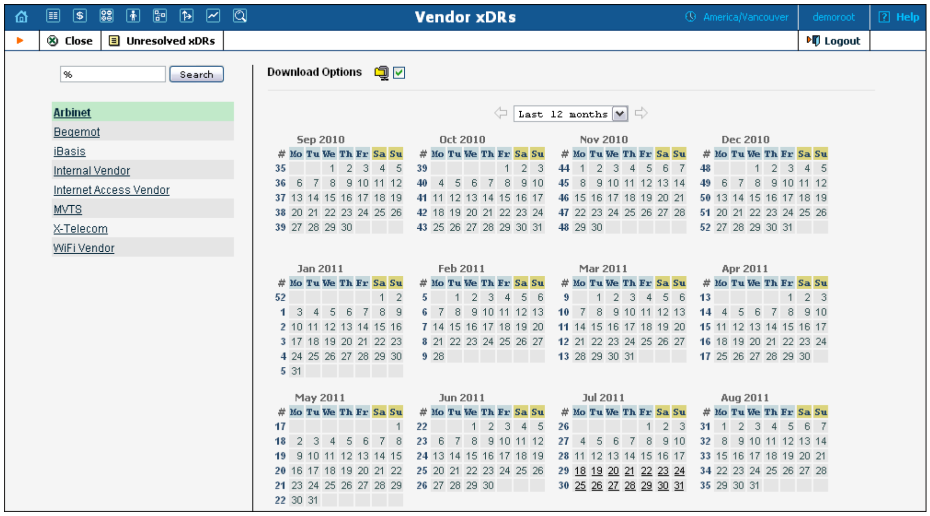
To evaluate the **Average Minutes** and generate a report, the system will look up the avarage value of minutes for January 1st 2013, December 25th 2012, December 18th 2012 and December 4th 2012. The same action will be applied to January 1st 2012: the system will look up and calculate the **Average Minutes** for January 1st 2012, December 25th 2011, December 18th 2011 and December 4th 2011.

The two values will be compared and depending on the **Variance**, the appropriate indicator will be applied.



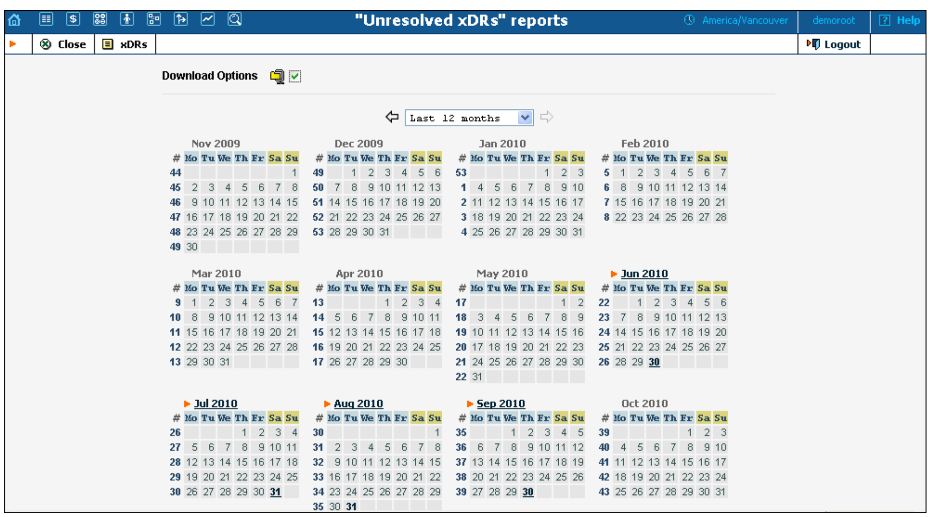
Vendor xDRs

The Vendor xDRs screen allows users to easily download xDRs that have been defined for a vendor. xDRs for the desired vendor may be found by selecting the vendor from the list on the left side of the screen, or by entering the vendor's name in the search field and clicking the **Search** button. The wildcard symbol '%' may also be used.



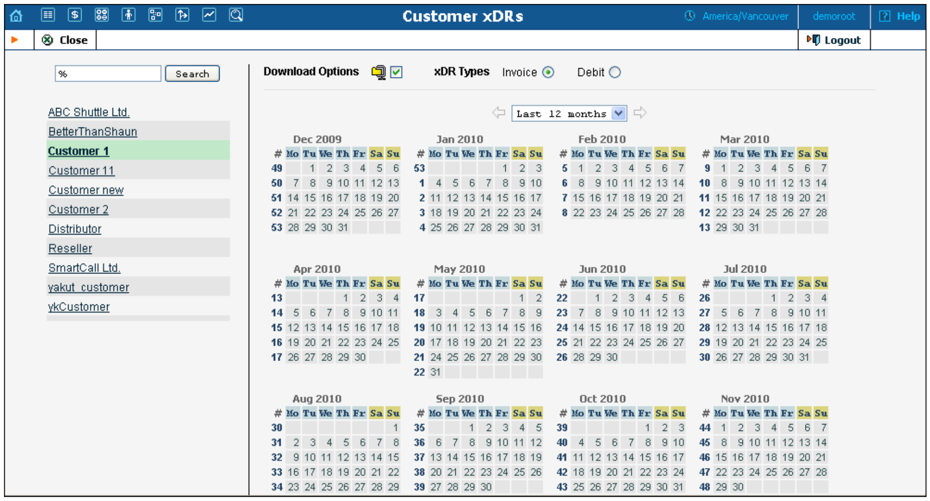
Unresolved xDRs

The “Unresolved xDRs” screen is accessible from the Vendor xDRs. It allows users to easily download all available xDRs for calls which were not identified as crossing any connection to a vendor. The xDR report periodicity can be set up on the **My Company** screen -> **Report Info** Tab -> **Reconciliation Period**.



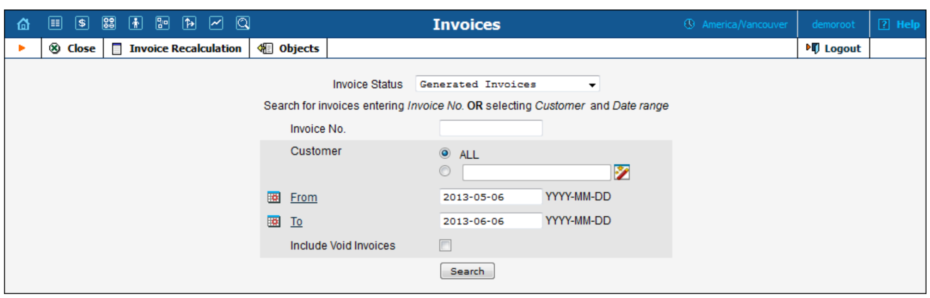
Customer xDRs

The Customer xDRs screen allows users to easily download xDRs that have been defined for a customer. xDRs for the desired customer may be found by selecting from the list of existing customers on the left side of the screen, or by entering the customer’s name in the search field and clicking the **Search** button. The wildcard symbol ‘%’ may also be used.



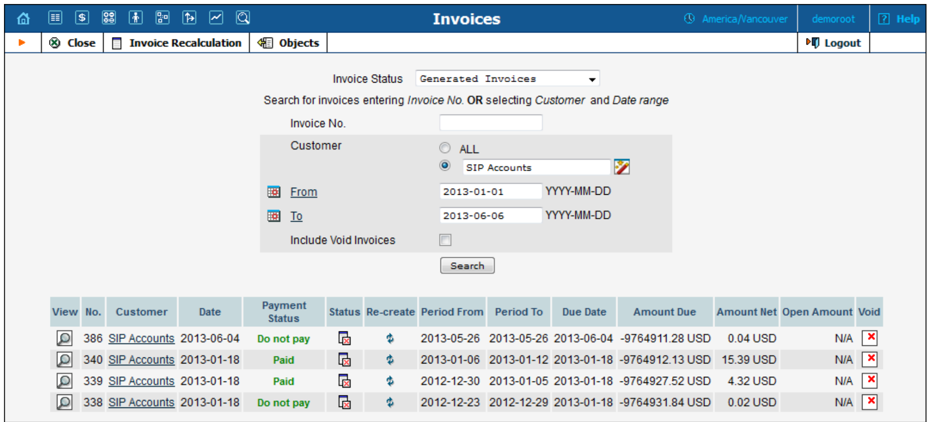
Invoices

The Invoices screen lets the administrator view all invoices generated by the system or all invoices under review in the current environment. To view specific type of invoices select one of the options in the **Invoice Status** list.



Generated Invoices

To view all invoices generated by the system in the current environment select **Generated Invoices** in the **Invoice Status** list. The desired invoice can be found by its number. Groups of invoices can be searched by selecting a customer and a date range.

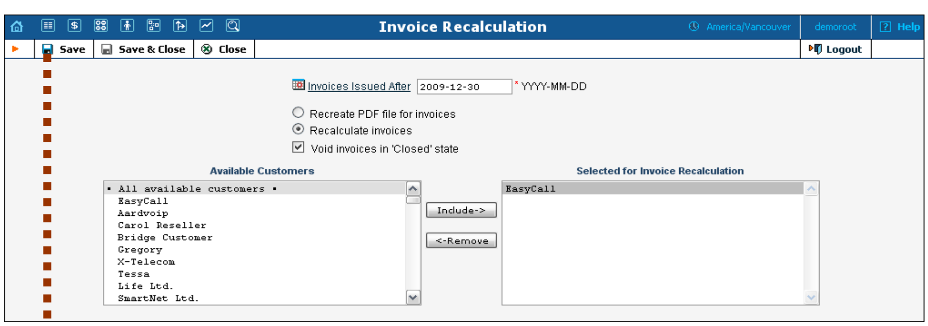


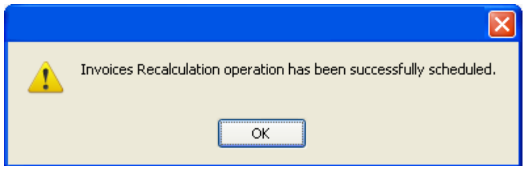
Select the **View** icon in the result list to view or print the selected invoice. The **Closed** icon appears when an invoice has been delivered to the customer and cannot be changed. An invoice is considered delivered when the customer receives an e-mail with the invoice attached, or clicks the **View** icon in the Invoice section of the Customer Self-care interface. If the invoice is not locked, it will be automatically updated if the balance changes (re-costing of calls, for example); otherwise, a new invoice with a re-costing adjustment will be generated.
You can change the status of an invoice manually by clicking the **Status** icon.

The **Re-create** icon allows you to recreate an invoice. By clicking this icon you can schedule invoice recreation. This will not affect any changes except layout attributes, customer and / or company info, and PDF file renewal. Invoice recreation is useful when you have made some changes to a particular invoice template, or if certain customer or company attributes have been changed.

Invoice Recalculation

Administrators can use the **Invoice Recalculation** page to recalculate invoices generated in the system since a certain date and for a specific customer (or customers). This may need to be done if calculations for a certain period were based on incorrect data (wrong rates, errors in tariffs, and so on).





Fill in the required information or perform one of the following operations:

Field	Description
Invoices Issued After	Click on this link to open a calendar in a new browser window, from which you can select the desired date. Alternatively, you can type the date in the box next to the link, using the required date format.
Recreate PDF file for invoices	Select this option to only recreate PDF files, representing invoices. This is used when there was a mistake in the invoice template (e.g. an incorrect text, a wrong company logo or another graphic design issue). This will generate new PDF files according to the current template settings, so the new PDF files may look different - but no figures (e.g. total or sub-totals) in the original invoice will be affected.
Recalculate invoices	Select this option to fully recalculate invoices - recalculate the amount of charges, payments, refunds, etc. for the given period, calculate a new invoice total and produce a new set of PDF files.
Void invoices in 'Closed' state	This box appears only if your choice is to recalculate invoices. Check it to void closed invoices and create them anew.
Available Customers and **Selected for Invoice Recalculation**	In the **Available Customers** box, select a customer (or customers) for whom you wish to recalculate invoices. To choose all customers at once, select the line *All available customers* on top. Then click the **Include->** button. The customers selected will appear in the **Selected for Invoice Recalculation** box.

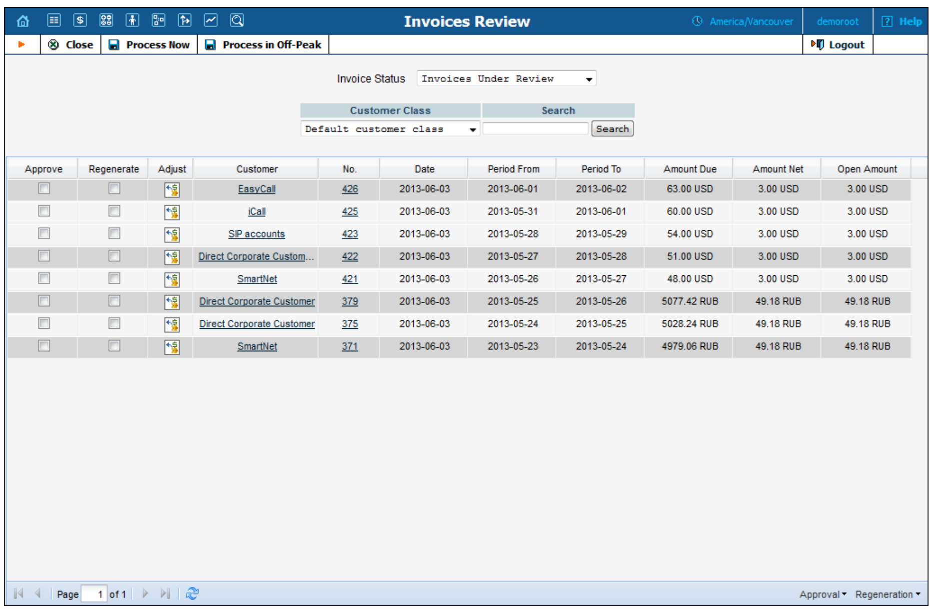
After you have made your choice, click **Save**. You will receive confirmation that the recalculation has been successfully scheduled. The system will perform it during the next statistics calculation period and send you a confirmation e-mail upon completion.

To check if an invoice has been recalculated, go to the **Invoices** screen and click on the **View** icon before the invoice number.

NOTE: During recalculation, xDR statistics for the relevant customers are also updated.

Invoices Review

To view all under review invoices select **Invoices Under Review** in the **Invoice Status** list. On this page you can review invoices before sending them to customers so if any errors are detected they can be fixed before the customer receives the invoice. You can search for all invoices for a certain customer class by selecting it from the **Customer Class** list. To see all the invoices that are under review select **ANY** in the **Customer Class** list. You can review the invoices of a particular customer by typing their name in the **Search** field.



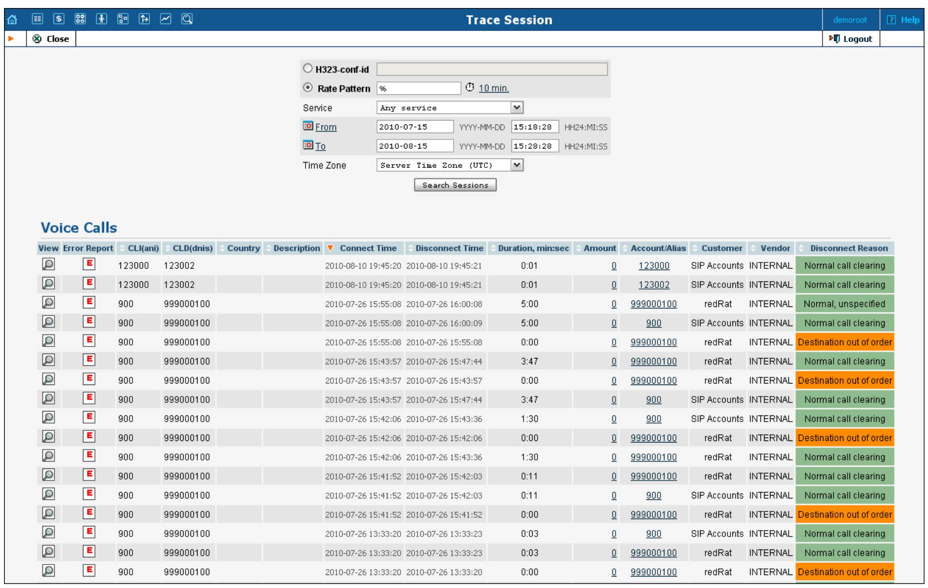
To approve an invoice select the **Approve** check box or click the **Approval** button at the bottom of the page and tick the **Select all** check box to approve all the invoices. To regenerate an invoice select the **Regenerate** check box or you can regenerate all the invoices by clicking the **Regeneration** button and selecting **Select all** check box. If you need to make a balance adjustment for a certain invoice, then click the **Adjust** button. Upon clicking the **Adjust** button you will be redirected to the **Balance Adjustments** tab for the customer. There you insert the amount of the balance adjustment and update the date for the transaction if necessary. The **Process Now** button allows you to send approved invoices to customers / regenerate invoices immediately. The **Process in Off-Peak** button allows you to schedule delivery of approved invoices to customers / regenerate selected invoices for off-peak.

9. Help Desk

Trace Session

The trace session utility allows you to determine the characteristics of a specific call when you know the **h323-conf-id** or the **rate pattern (destination)**, which may be specified exactly, or by using a wildcard. (For example, all calls to England may be specified as "44%" in the destination field). A date range for the search must be specified; however, it is highly recommended to set it to the smallest range necessary, in order to reduce waiting time and server load. Ideally, the search window should contain one day only.

To initiate a query, click the **Search Sessions** button. If no results appear, try broadening the query. When the results appear, locate the desired call within the result set. If there are too many results, they will be divided across pages, although in this case it is advisable to narrow the query.



The result listing shows the origination number, the number dialed, the destination location, connect and disconnect times, duration, account and customer (in the case of product usage), vendor (in the case of normal vendor termination), and the call status while disconnecting, which is color-coded according to the table below. Select the **View** icon to go to a detailed page describing the call.

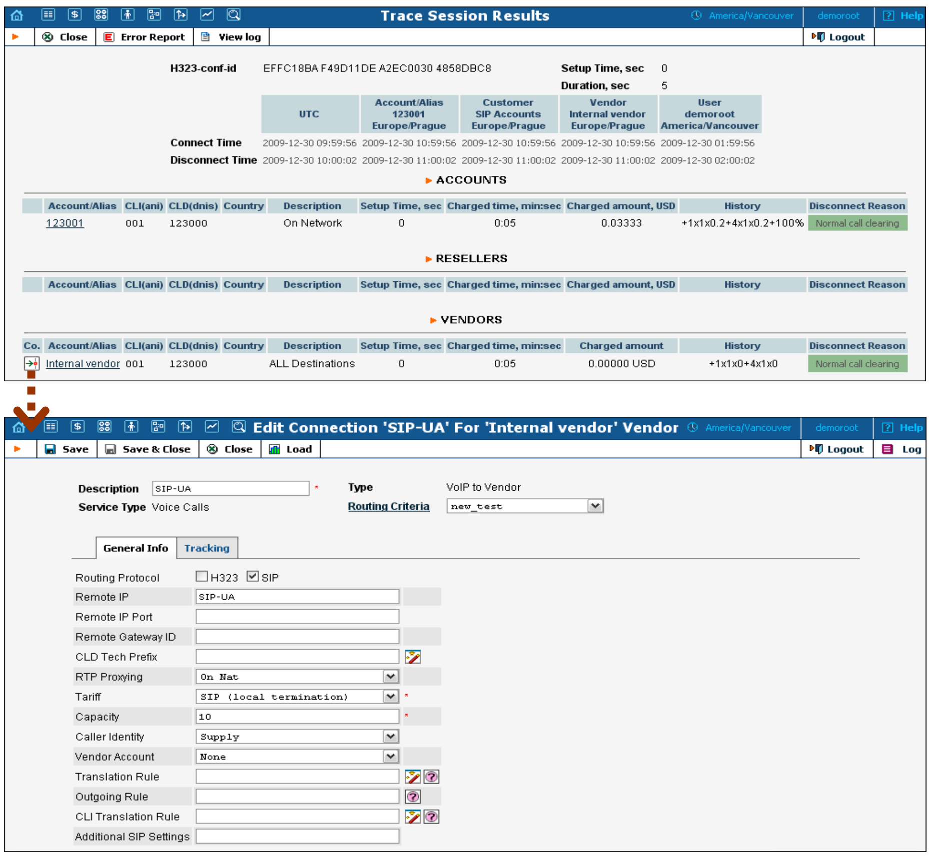
Possible reasons for disconnect:

Reason	Color		Reason	Color
Normal completed call			Calling side error	
Normal uncompleted call			Called side error	

Call progress code			Network error	

Trace Session Detail

The detailed Trace Session Results page shows additional call details, such as the h323-conf-id for the call and the setup time, as well as a detailed breakdown of the charges applied to each entity (accounts, resellers, and vendors). You may view the connection details for a particular vendor by selecting the **Connection** icon. On the subsequent Connection detail page, you may view all connections for a particular vendor by clicking the **Connections** icon.

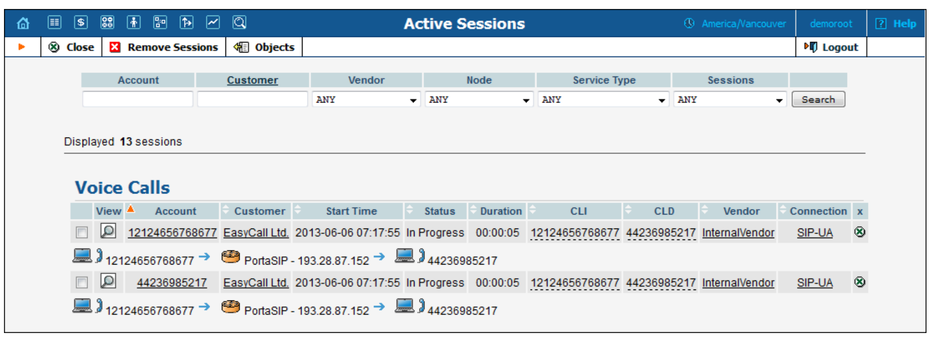


Active Sessions

The Active Sessions page shows calls that are currently in progress or have been completed recently. It indicates the time the call started, the elapsed call duration, and who is making the call, and describes which gateways the call is going through.

Since the total number of simultaneous calls in your system can be quite large, you can display only a certain subset of all calls, by setting a filter for:

- **Account** – the account ID (or phone number) of the caller / called party;
- **Customer** – name of the customer who is making a call;
- **Vendor** – carrier to whom the call has been terminated;
- **Node** – element of your network (PortaSIP® server, gateway, etc.) the call is going through (e.g. you would like to see all calls originating on your Cisco AS5300 gateway in New York);
- **Service Type** – the physical service provided to the user.
- **Sessions** – the type of session. If the **ANY** option is selected then sessions of all types are displayed (e.g. for an on-net call both outgoing and incoming calls are displayed). If the **Initial Only** option is selected then only the original sessions are displayed (e.g. for an on-net call only outgoing is displayed).



Field	Description
Checkbox	By ticking this checkbox for a particular call, you can group several active calls into a single group for further operations (e.g. remove them from the active call registry)
View	Click this button to see BE log of the certain active session.
Account	Account ID of the call originator.
Customer	Customer who originated the call.
Start Time	The time when the call was connected.
Status	The current status of the session.
Duration	The total call duration.
CLI	Calling station ID (ANI) for the originator.
CLD	Called station ID (DNIS) – the destination number.

Vendor	Carrier used for call termination.
Connection	Specific connection for this vendor.
Disconnect the session	Click this button to disconnect the current call.

The line below these fields shows a schematic call flow diagram.

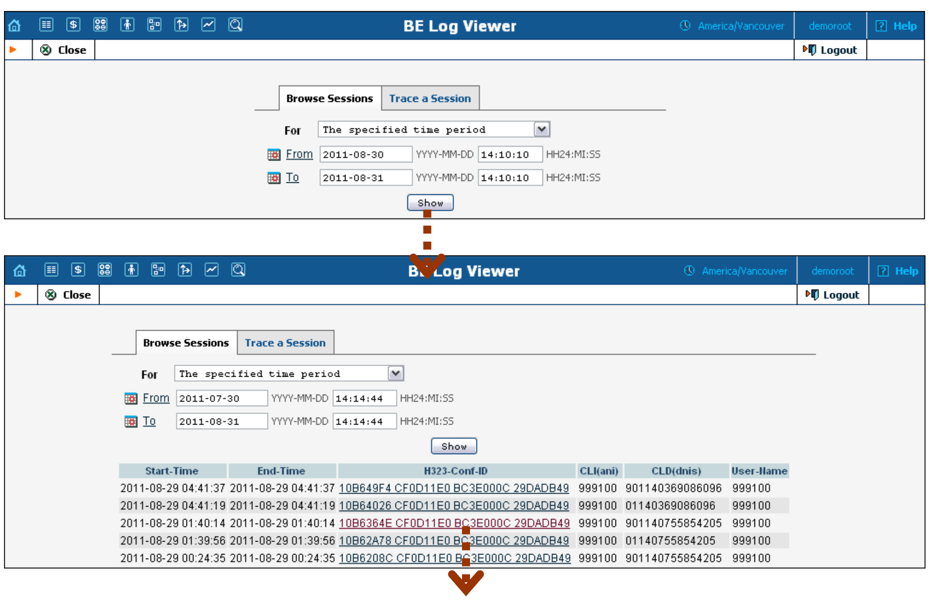
Sometimes a call displayed in the active calls registry may have already been disconnected (the most common reason for this being that one of your gateways was rebooted and calls were cut off, although billing never received accounting records about this). In this case, you are able to clean up such "stalled" calls from the web.

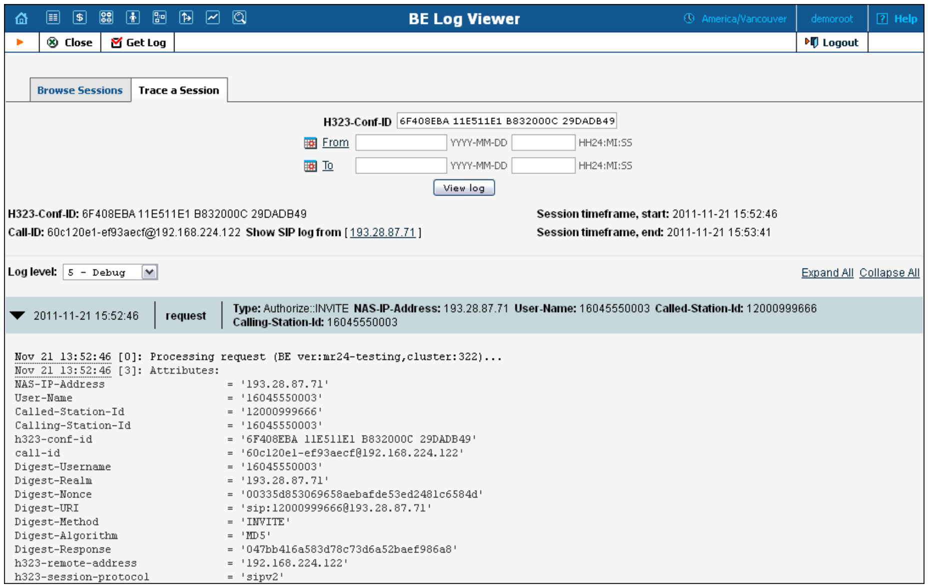
NOTE: A cleanup operation only affects billing's internal registry of active calls, and will not disconnect a call that is still in progress.

If you want to delete such calls, just mark all of them (using the checkbox in the column on the far right) and press the "Remove sessions" button.

BE Log Viewer

The **Log Viewer** page allows you to see a list of all sessions (voice calls, Internet access, etc.) processed by the billing engine, and to examine a detailed processing log for each of them, if required.





Browse Sessions tab

Field	Description
Type of Events	Select whether to show only billable sessions or all events: • Sessions – Show only billable sessions. • All Events – Show all events including the following requests: SUBSCRIBE / PUBLISH / MESSAGE / REGISTER / DIALPLAN.
For	Display all sessions in a recent time period.
From, To	Choose a specific time period.

Trace a Session tab

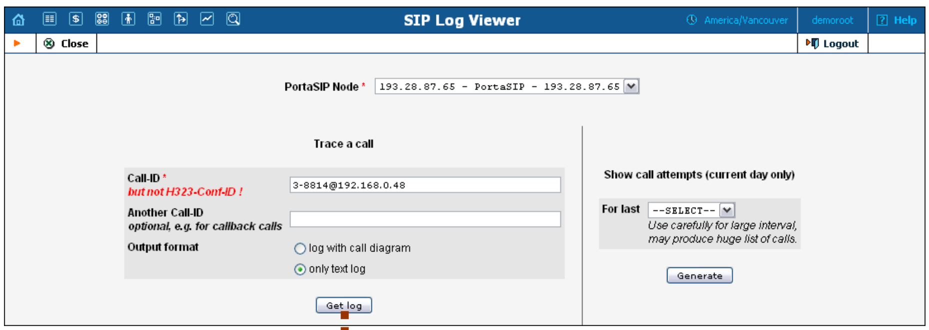
Field	Description
H323-Conf-ID	The H323-Conf-ID of a call.
Including Subsessions	Tick this check box to see subsessions related to a specific call or an internet session in one billing engine log.
From, To	Choose a specific time period.

If you do not know the H323-Conf-ID for a call you have just made, you can use the right side of the form to display all call attempts made within a certain interval (this will also include failed call attempts, which makes it extremely useful for troubleshooting problems when you are unable to make outgoing calls, e.g. due to an authorization failure).

You will see a list of call attempts, with the call initiation time, H323-Conf-ID and CLI / CLD for each; click on the underlined H323-Conf-ID to see the billing engine log for it.

SIP Log Viewer

The SIP Log Viewer page allows you to view billing logs of PortaSIP® calls. You need to know the Call-ID of the specific call in order to trace it. If you do not know the call-id (e.g. you just made a phone call from a SIP phone and it failed), you can display all call attempts for a recent period and locate the call-id of "your" call according to CLD or other parameters.



Text-only log:

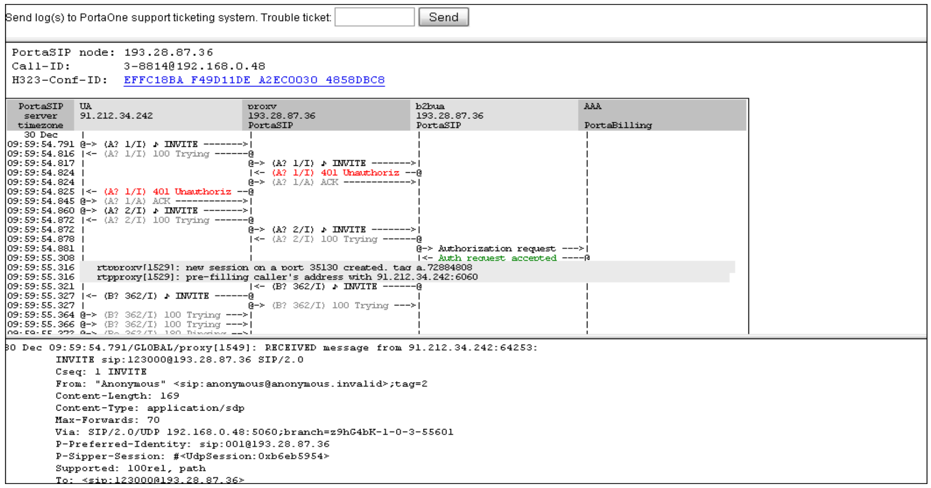
```
0 Dec 09:59:54.791/GLOBAL/proxy[1549]: RECEIVED message from 91.212.34.242:64253:
        INVITE sip:123000@193.28.87.36 SIP/2.0
        Cseq: 1 INVITE
        From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=2
        Content-Length: 169
        Content-Type: application/sdp
        Max-Forwards: 70
        Via: SIP/2.0/UDP 192.168.0.48:5060;branch=z9hG4bK-1-0-3-55601
        P-Preferred-Identity: sip:001@193.28.87.36
        P-Sipper-Session: #<UdpSession:0xb6eb5954>
        Supported: 100rel, path
        To: <sip:123000@193.28.87.36>
        Contact: <sip:123000@192.168.0.48:5060>
        Call-ID: 3-8814@192.168.0.48

        v=0
        o=nkhan 1262167196 1262167196 IN IP4 10.10.10.10
        s=Sipper Session
        c=IN IP4 10.10.10.10
        t=3471155996 0
        m=audio 6060 RTP/AVP 0
        a=sendrecv
        a=rtpmap:0 PCMU/8000

0 Dec 09:59:54.816/GLOBAL/proxy[1549]: SENDING message to 91.212.34.242:64253:
        SIP/2.0 100 Trying
        Via: SIP/2.0/UDP 192.168.0.48:5060;branch=z9hG4bK-1-0-3-55601;received=91.212.34.242;rport=64253
        To: <sip:123000@193.28.87.36>
        From: "Anonymous" <sip:anonymous@anonymous.invalid>;tag=2
        Call-ID: 3-8814@192.168.0.48
        CSeq: 1 INVITE
        Content-Length: 0

0 Dec 09:59:54.817/GLOBAL/proxy[1549]: SENDING message to 193.28.87.36:5061:
        INVITE sip:123000@193.28.87.36 SIP/2.0
        Via: SIP/2.0/UDP 193.28.87.36:5060;branch=z9hG4bK-d8754z-e3eec2339fad8b6f-1---d8754z-;rport
        Via: SIP/2.0/UDP 192.168.0.48:5060;branch=z9hG4bK-1-0-3-55601;received=91.212.34.242;rport=64253
```

Log with call diagram:

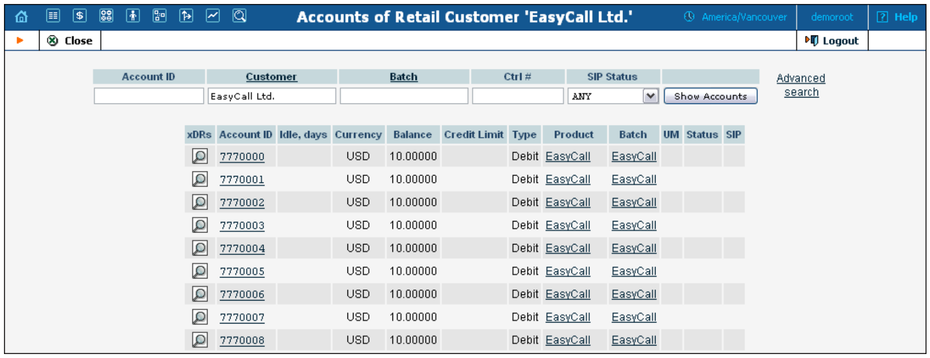


Field	Description
PortaSIP Node	The PortaSIP® node (virtual SIP instance) whose log files will be processed.
Call-ID	The SIP Call-ID (typical format is **XXXXX@some.domain** or XXXX@IP).
Another Call-ID	The Call-ID used to trace callback calls when one logical call consists of several independent SIP calls.
Output format	Raw text log, or with diagram.
Show call attempts for last …	Displays all call attempts on this node, so that you can find the call-id for a call and use it to obtain log information.

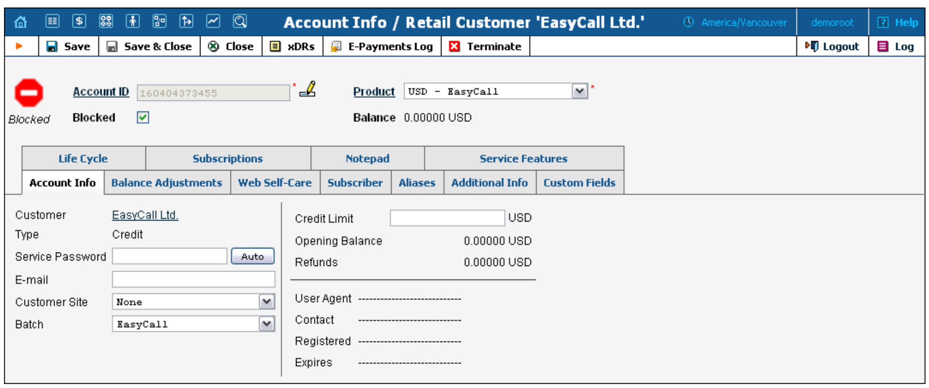
You can automatically submit this call log, with all the relevant details, to PortaOne's support ticketing system from the result page. Simply enter the relevant trouble ticket number in the input field. (First you need to open a ticket and provide a general description of the problem you are experiencing).

Account Info for Help Desk Staff

The **Account Info** page is provided for Help Desk staff responsible for answering questions from account holders. The interface requires the account holder to give the Help Desk an account ID or a batch and control number. The Help Desk operator can also browse xDRs for this account by selecting the **Browse xDRs** icon.



Once specified, clicking on **Account ID** will take the user to the Account Info for that account.



Some account details on the Account Info page are read-only. This interface is similar to the one accessible via the customer's **Accounts**. Help Desk staff have the ability to modify preferences like Web Password, Service Password, Account Balance, Time Zone, Redirect Number, Blocked Status and Preferred Language. When making changes, Help Desk staff should also provide a comment detailing the reason for these changes (for example, "user unable to call due to network outage, credited $5"). Changes may be confirmed by clicking **Save** or **Save&Close**.

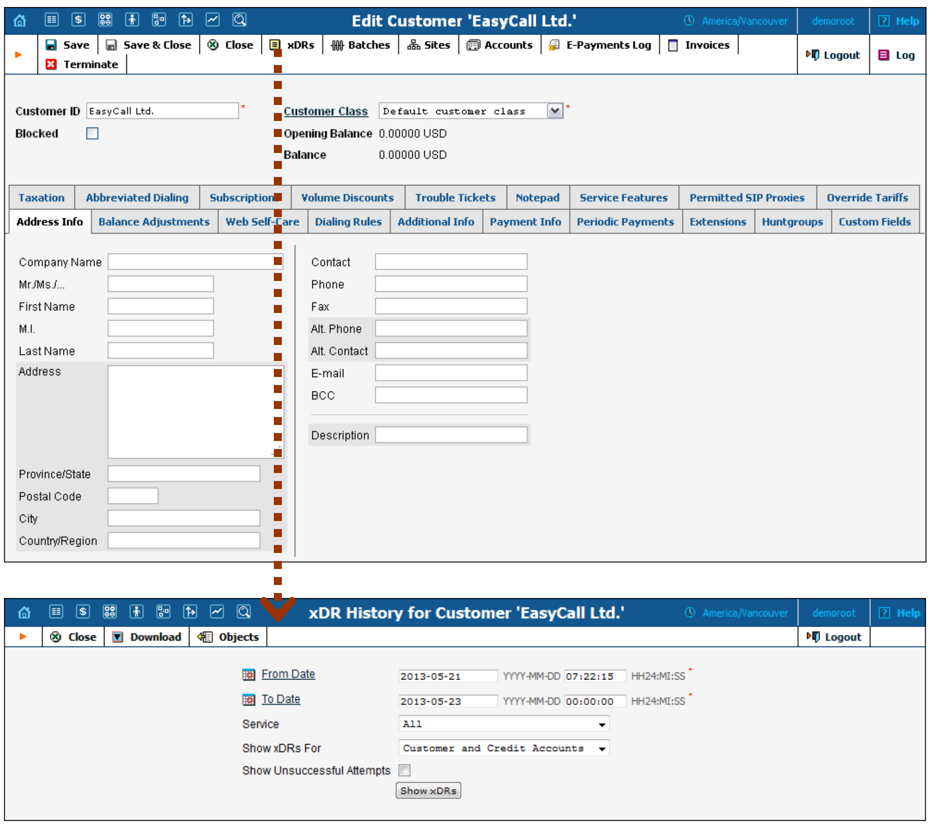
10. Appendices

APPENDIX A. xDR Browser

To easily view the xDR history for a particular entity you can use the xDR browser. It is not directly accessible from the main menu, since it needs to be accessed in the context of a specific customer / account etc.

Let's assume that you want to view the xDR history for a particular customer. To go to the xDR view page click the **View** icon on the Customer Management screen.

The browser is also accessible from the Edit Customer screen by clicking the **xDRs** button.

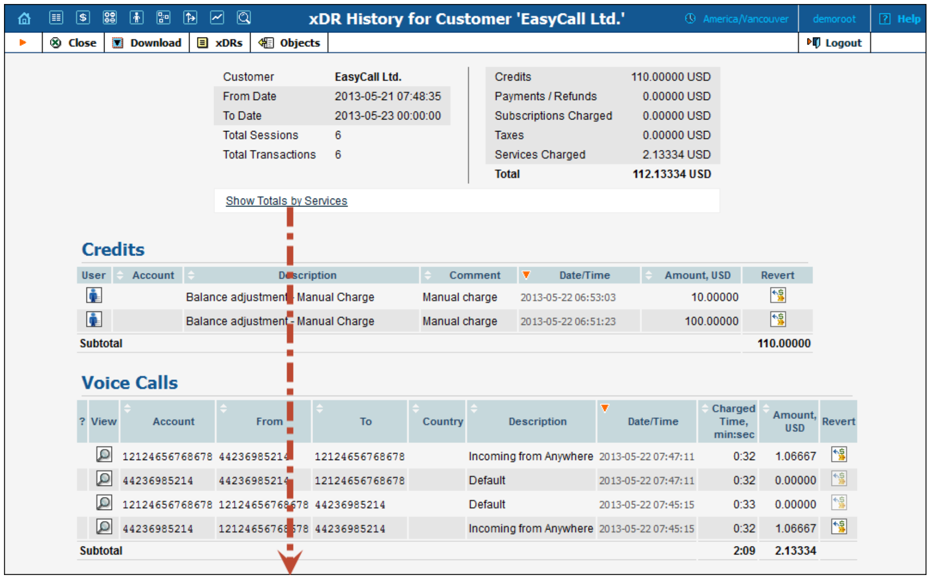


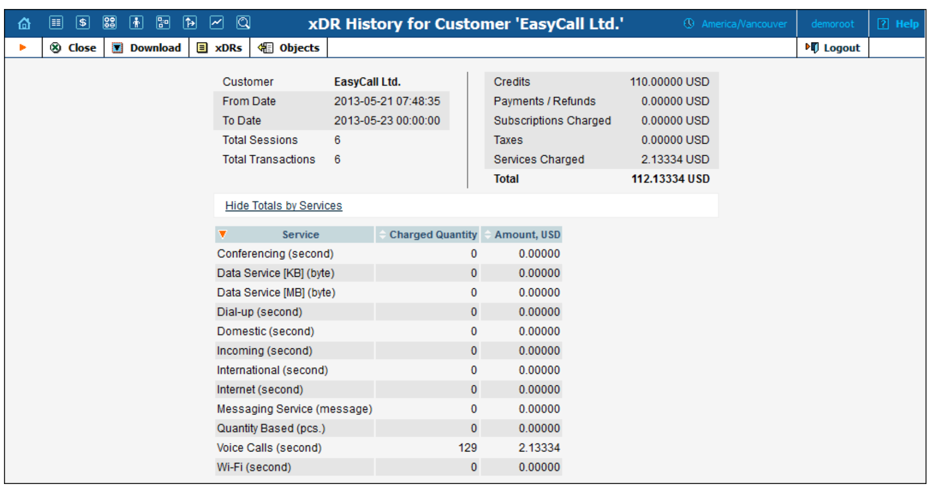
On the xDR view page you can make an extensible search via:

- a date and time range by clicking the icon
- a certain service type
- required accounts type (for customers only)

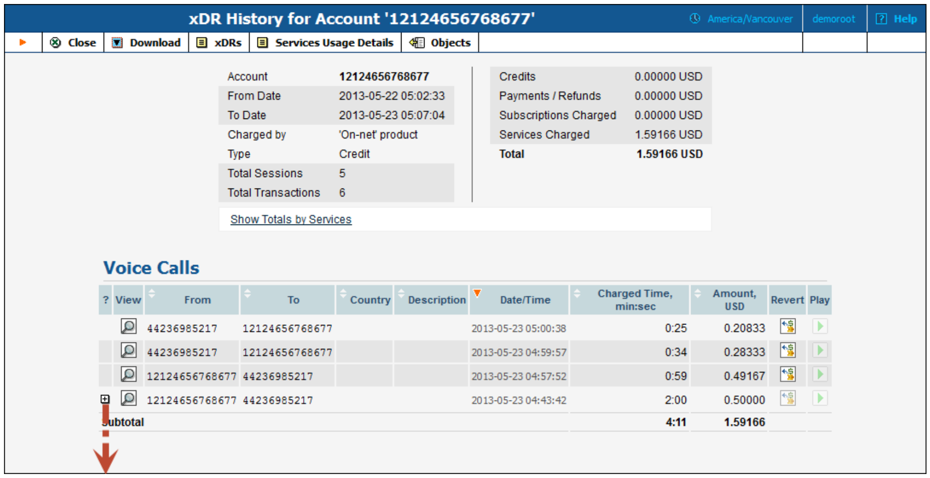
If you want the information about the CDR_Failed to be included in the results list, check the **Show Unsuccessful Attempts** box.

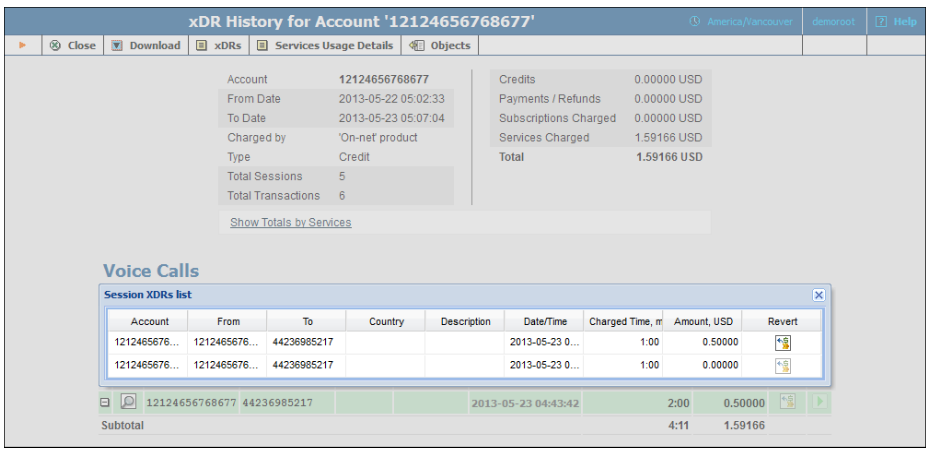
To initiate a query, click the **Show xDRs** button. The result page will contain a summary displayed on the top of the screen and a table listing all of the calls and charges from a specified time period. If you want to view information (charged quantity and amounts due) for all of the services, click the **Show Totals by Services** button.





A call session with several rating periods produces multiple xDR records, each linked to the applicable discount level / rate. This makes it very easy for both administrators and end-users to check the accuracy of all transactions billed. To view xDRs records for the same session, click on the ⊞ icon:





APPENDIX B. Audio File Formats Supported by Music on Hold Feature

The Music on Hold feature supports the following file formats:
8svx, aif, aifc, aiff, aiffc, al, amb, au, avr, caf, cdda, cdr, cvs, cvsd, cvu, dat, dvms, f32, f4, f64, f8, fap, flac, fssd, gsm, hcom, htk, ima, ircam, la, lpc, lpc10, lu, mat, mat4, mat5, maud, mp2, mp3, nist, ogg, paf, prc, pvf, raw, s1, s16, s2, s24, s3, s32, s4, s8, sb, sd2, sds, sf, sl, smp, snd, sndfile, sndr, sndt, sou, sox, sph, sw, txw, u1, u16, u2, u24, u3, u32, u4, u8, ub, ul, uw, vms, voc, vorbis, vox, w6, wav, wavpcm, wve, xa, xi.

Please note that the uploaded media file should have an appropriate filename extension.