Porta Billing100™

PortaBilling100 for NexTone

Maintenance Release 13

www.portaone.com

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PortaBilling100 for NexTone, October 2006
Maintenance Release 13
V1.13.4

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Preface

This document provides information on setting up "PortaBillling100 for Nextone" in conjunction with NexTone MSX, so as to provide various services such as VoIP traffic exchange.

Where to get the latest version of this guide

The hard copy of this guide is updated at major releases only, and does not always contain the latest material on enhancements occurring 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/resources/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`

Caution indicates that the described action might result in program malfunction or data loss.

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

Timesaver means that you can save time by performing the action described in the paragraph.

Tips provide information that might help you solve a problem.

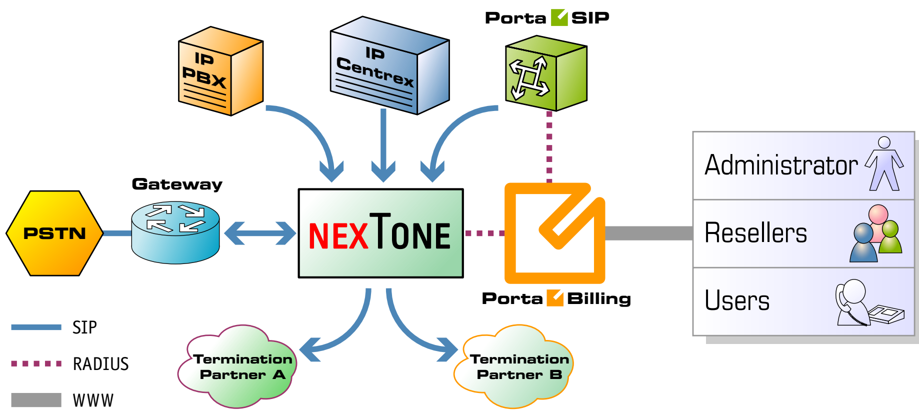
1. Solution Architecture

Concepts

PortaBilling for Nextone

PortaBilling100 for Nextone is a separate product based on PortaBilling100 and providing all the standard billing features. It also includes all functionalities specific to Nextone, e.g. special processing of RADIUS attributes or a command-line utility for CDR import.

Architecture



VoIP nodes

A node is an element of your VoIP network, such as a gateway, proxy, gatekeeper, and so on. A node:

- participates in the call flow (passes a call through itself),
- communicates with the billing in order to determine whether a particular call should be allowed or not,
- provides accounting information to the billing after the call is completed, so the call can be charged.

NexTone MSX is a typical VoIP node: it accepts incoming calls, performs authorization in the billing, sends calls to the remote gateway for termination and, finally, delivers accounting records to the billing.

RADIUS server

In order to communicate with external entities such as VoIP gateways, the RADIUS protocol is used. VoIP nodes serve as radius clients, and

PortaBilling100 serves as a radius server. The client sends a request (set of attributes) to the server, and the server replies. There are three types of requests:

1. **Authentication** – the VoIP node has to determine whether a certain account (the account ID passed in the User-Name attribute) is valid and is allowed to use the service. Billing replies with either a rejection or an acknowledgement (including optional attributes such as h323-credit-amount – available funds).
2. **Authorization** – the VoIP node has to determine whether an account is allowed to make a call to a specific destination. Billing replies with either a rejection or an acknowledgement (including optional attributes such as h323-credit-time – maximum allowed call duration).
3. **Accounting** – the VoIP node sends information about the completed call, and the billing replies with a confirmation that it has been processed successfully.

NexTone MSX

NexTone MSX is an advanced VoIP session border controller and switch incorporating H323 and SIP proxy, as well as an H323-SIP protocol converter.

NexTone-PortaBilling100 dialogue

NexTone sends requests to the billing so as to obtain information for the following actions:

- Registration. A new SIP UA tries to register to the proxy. NexTone sends an authentication request, and the endpoint is registered upon successful authentication.
- Call authorization. One of the endpoints tries to make an outgoing call. NexTone sends an authorization request to the billing in order to check whether this account is allowed to make a call to that destination and what is the maximum allowed credit time.

NOTE: Currently, call authorization is only available for incoming SIP calls.

- Accounting. When the call is completed (successfully or not), NexTone sends an accounting request to the billing, so that the account can be charged for this call.

NexTone MSX uses several PortaBilling-specific RADIUS attributes in addition to the standard Cisco VSA set, including:

- `h323-ivr-out = PortaBilling_UserName:NNN` – specifies the account ID (NNN) to be used for authorization or call charging,
- `h323-ivr-out = PortaBilling_Ignore_Password:YES` – switches off password validation for IP-based or ANI-based services.

Required Nextone version

PortaBilling100 for Nextone requires the following versions of NexTone for successful operations:

- MSX Version 4.0c3-9 or later
- iView version 4.0c5 or later

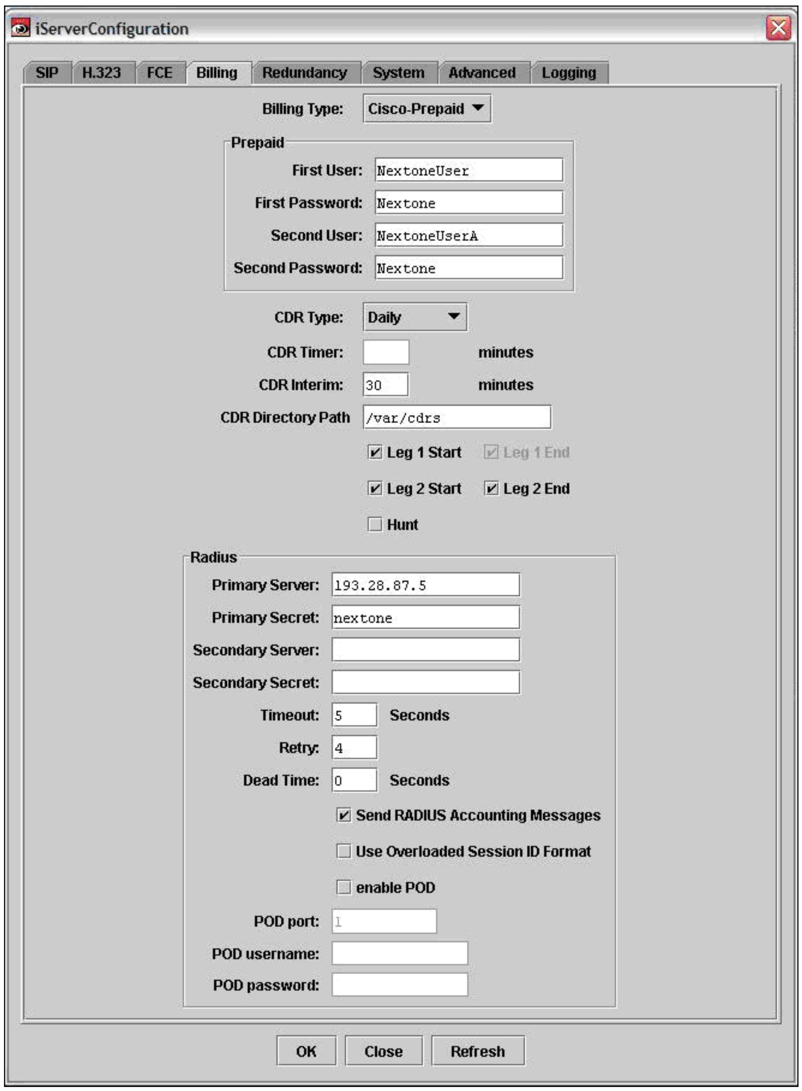
Earlier versions of NexTone MSX do not support special RADIUS attributes, and therefore cannot be used for real-time billing (although you can still import CDRs in off-line mode).

2. NexTone Configuration

Configuring NexTone

iServer configuration

1. Fill in the **Billing** form in the iServer configuration:
   - **Billing Type** – Choose **Cisco-Prepaid**.
   - **Primary Server** – IP address of the PortaBilling100 master server.
   - **Primary Secret** – RADIUS secret key for this Nextone node (assign a value, then make sure this same value is entered in the Nextone node's configuration in PortaBilling).



server.cfg

To identify the PortaOne billing server, there is a new configuration parameter called “use_ip_ani_auth” under billing in the server.cfg file. It has not yet been merged into the latest release of iView.

```
billing ciscoprepaid {
                firstauth "NextoneUser" "Nextone"
                secondauth "NextoneUserA" "Nextone"
                use_ip_ani_auth on
```

The last parameter activates use of the PortaBilling_Username attribute, so it will be populated with either an ANI phone number or the IP address of the remote endpoint.

Configuration of authentication modes

NexTone supports three main authentication modes:

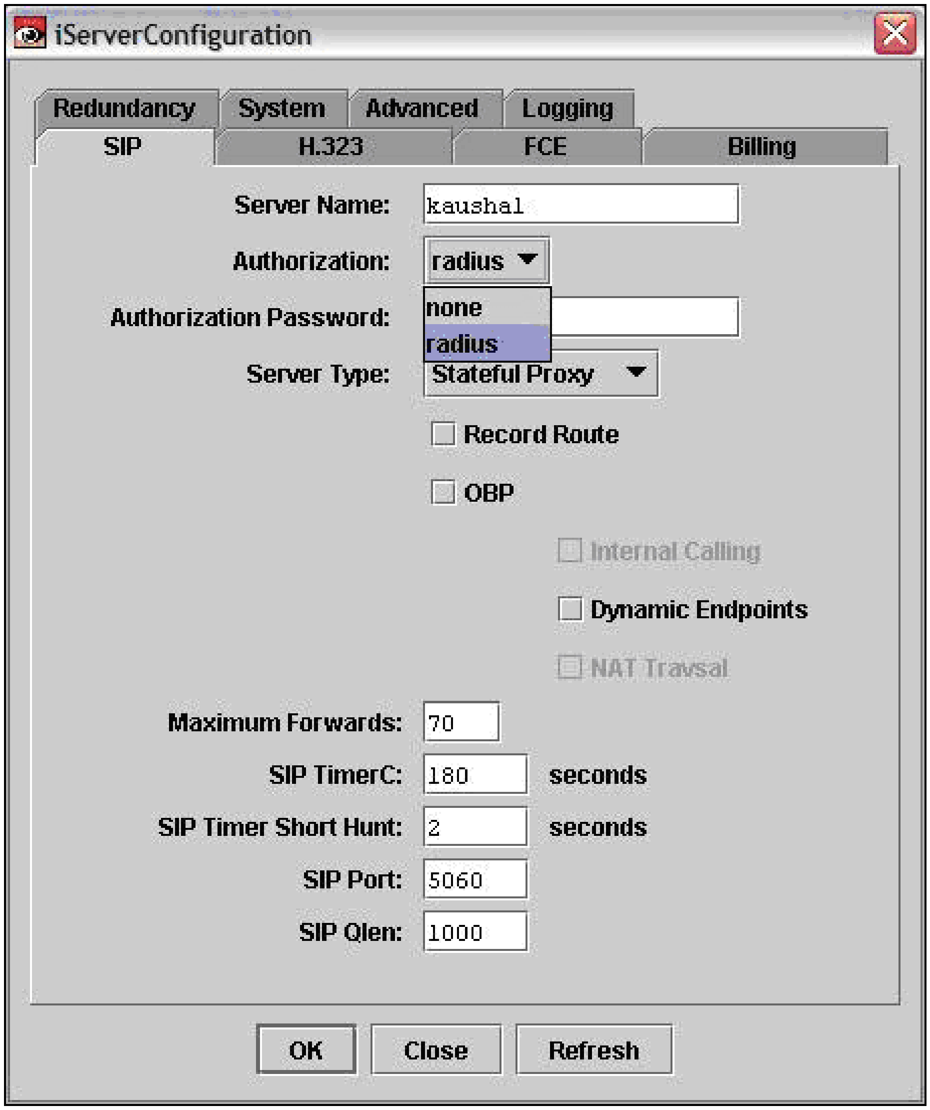
- SIP digest authentication – This is a global mode; if activated, it applies to all endpoints.
- Authentication by remote IP address – In this case, for every incoming call NexTone passes signaling of the remote endpoint to the billing as an account ID. This mode can be applied to specific endpoints.
- Authentication by ANI number – In this case, for every incoming call NexTone extracts ANI (CLI) data from the call information and passes it to the billing as an account ID. This mode can be applied to specific endpoints.

NOTE: Currently, NexTone MSX supports real-time call authentication / authorization for incoming SIP calls only. For H323 calls, only postpaid billing is available.

If you wish to use IP-based authentication for some calls and ANI-based authentication for others from the **same** endpoint, you can configure the authentication mode to be dynamically chosen based on the destination number. For instance, customers who are authenticated by a remote IP address must append 1234# to the destination number when sending a call to your NexTone. Similarly, customers authenticated by an ANI number will use a different prefix (e.g. 4567#). NexTone will analyze the DNIS (CLD) data in the incoming call and apply the corresponding authentication method.

Activating SIP digest authentication mode

In the iView configuration, activate RADIUS authentication:



Configuring an authentication mode for an endpoint

In order to activate ANI-based authentication/billing, execute the following command on your NexTone server:

```
cli iedge edit <endpoint-name> 0 anibasedauth yes
```

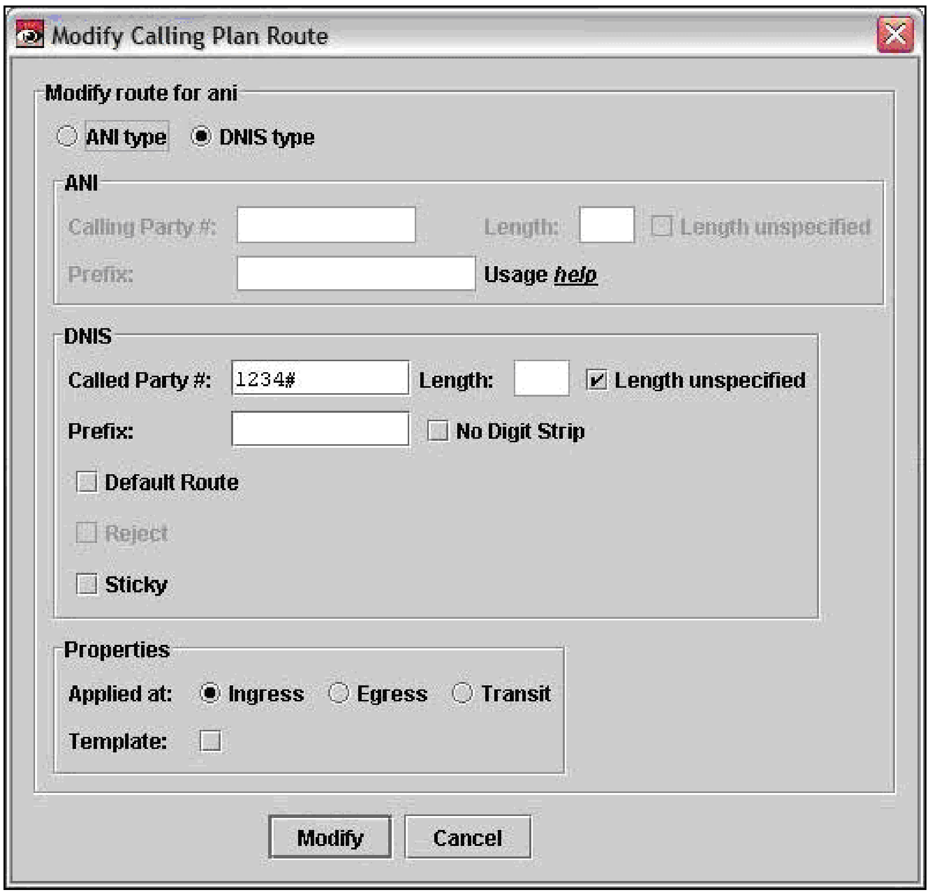
In order to activate IP-based authentication/billing, execute the following command on your NexTone server:

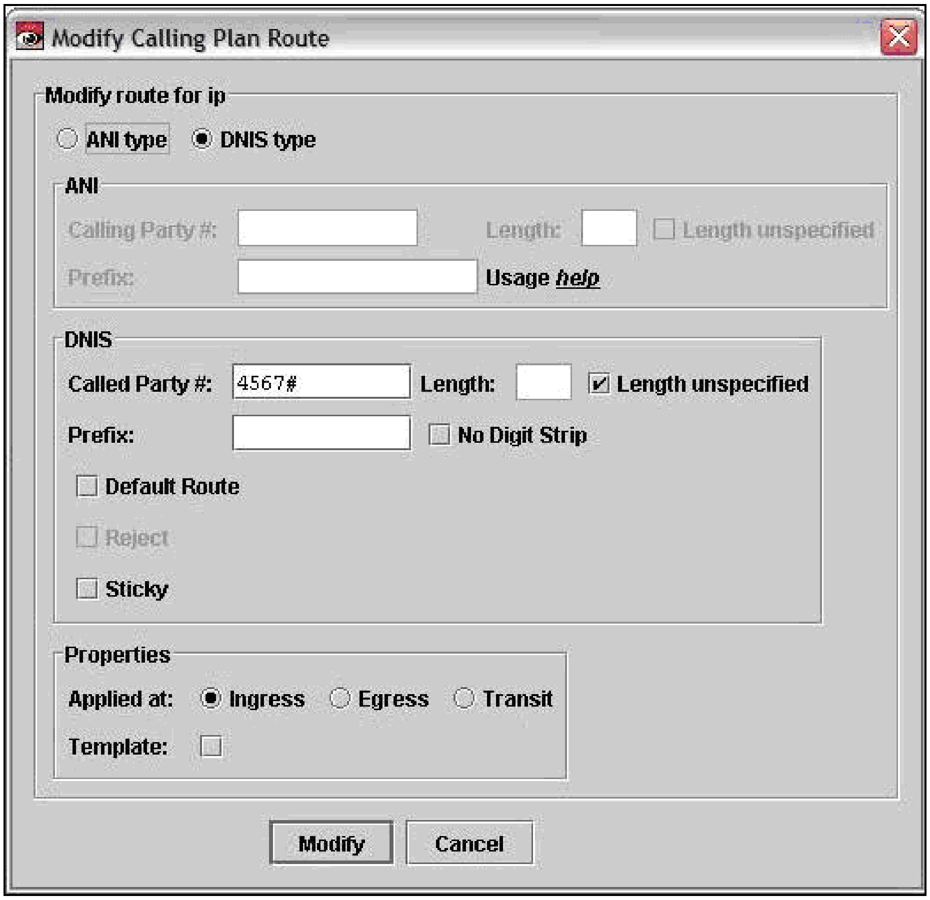
```
cli iedge edit <endpoint-name> 0 anibasedauth no
```

By default IP-based authentication is applied.

Configuring dynamic authentication mode for an endpoint

You should create two uports for the same endpoint, and a separate calling plan for each uport. In the example below, we assume that you will use 1234# for IP-based authentication and 4567# for ANI-based authentication.





Next, assign the authentication mode for each endpoint:

```
cli iedge edit <endpoint-1-name> 0 anibasedauth no
cli iedge edit <endpoint-1-name> 0 anibasedauth yes
```

3. PortaBilling Configuration

PortaBilling100 Configuration

Please see the **PortaBilling Administrator Interface** for detailed instructions on how to navigate in and utilize the web interface, as well as detailed explanations of particular fields.

Checklist

Print the following page and use it to check off the operations you have completed when performing system setup according to the instructions in this chapter. Please be sure to perform all of the operations (i.e. all of the boxes should be checked), otherwise the service will not work.

Operation	Done
General configuration	
Fill in company data in Company Info	[ ]
Specify base currency	[ ]
For any other currency you plan to use, specify the exchange rate source and define exchange rates	[ ]
Create all the required destinations for off-net calls	[ ]
Network configuration	
Create a node for NexTone	[ ]
Rating configuration	
Create a tariff A, which will apply to your customers (people who send traffic to you)	[ ]
Enter rates in tariff A for the destinations your customers want to call	[ ]
Create a tariff B, which describes your termination costs and routing for off-net calls (make sure it has a **Routing** type!)	[ ]
Enter rates in tariff B for the destinations you plan to call	[ ]
Create a "Traffic exchange" product	[ ]
Create one accessibility entry for this product, using the NexTone node and tariff A	[ ]
Create an off-net calls vendor	[ ]
Create a connection for this vendor using tariff B	[ ]
Account provisioning	
Create a retail customer who will use the "Traffic exchange" service	[ ]
Create several accounts for this customer, with an account ID identical to the remote gateway IP address	[ ]
Testing	

Make a test call	[ ]

Initial PortaBilling configuration

The following steps are normally performed only once, after the system has been installed:

- Visit **Company Info** from the main menu. Enter information about your company and set up a base currency. Of course, this does not limit your operations to this currency only. However, different currencies will be converted to the one you specify here on reports such as cost/revenue.
- From the main menu, choose **Users** and create login entries for users who will be working with the system. It is not recommended that the default PortaBilling root user (**pb-root**) be used for any operations other than initial setup.
- Make sure you are able to login as the newly-created user, and change the password for the **pb-root** user.
- If you plan to do billing in more than one currency, define these in **Currencies** and specify the exchange rates in **Exchange Rates**.

Create destinations

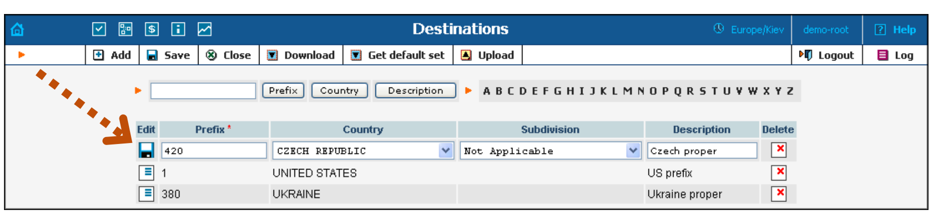
This step is only required if you have not previously defined the necessary destinations. There are two ways of entering new destinations into the system:

- One-by-one, using the **Add** functionality on the web interface
- By bulk update, uploading the destinations from a file

NOTE: A file with the default destination set is supplied with PortaBilling. You can download it and then upload it to the server. However, it is possible that your business will require different types of prefixes, so please examine the data in the file before uploading.

Creating destinations one-by-one

1. In the Management section of Admin-Index, choose **Destinations**.



2. Click the **Add** button.
3. Fill in the required information. This includes the phone prefix and country. The country subdivision is optional. You can use the **Description** column to store additional information about the destination (for example, if it is a mobile or fixed number).
4. Click **Save**.
5. Repeat steps 2-4 for each additional destination.

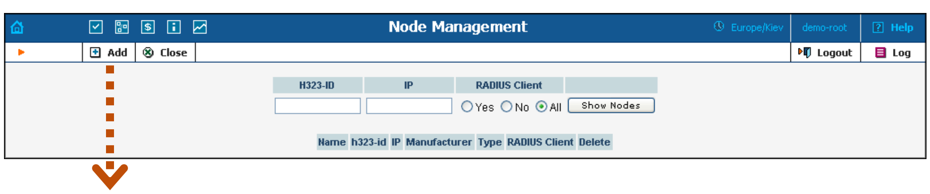
Uploading a set of destinations from a file

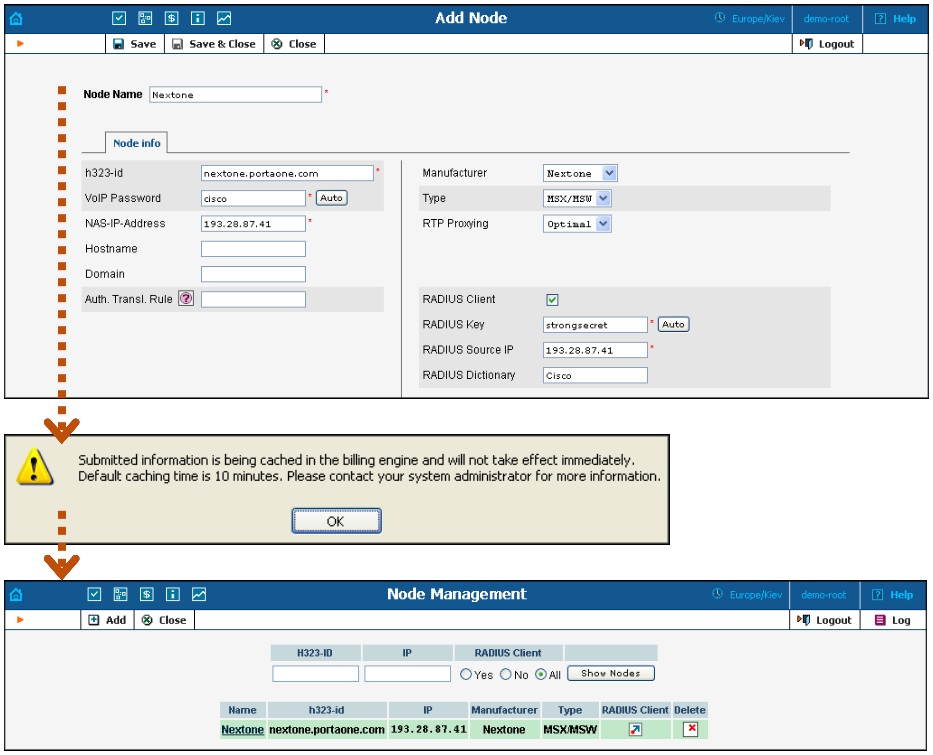
1. In the Management section of Admin-Index, choose **Destinations**.
2. Click on **Get default set** to download a set of destinations as a CSV (Comma-Separated Values) file.
3. Open this file in Microsoft Excel or any other suitable program. Edit the data if required.
4. Save the file and close it.
5. Switch back to the PortaBilling web interface, and click **Upload** on the Destinations screen.
6. Type in the filename for the file you have edited, or click on the **Browse…** button and select the file.
7. Click **Save & Close**.

Create nodes

You must create at least one node to represent your NexTone MSX server. If other gateways are part of your network (Cisco, Quintum), you must enter these as well.

NOTE: Only your own gateways need to be entered as nodes. Remote gateways belonging to a partner/carrier, or those legally belonging to you but used solely by your customer(s), are not considered nodes.





1. In the Management section of Admin-Index, choose **Nodes.**
2. In the Node Management window, click the **Add** icon.
3. Fill in the New Node form:
   - **Node name** – A short descriptive name for this node (this will be used in the select menus).
   - **H323-ID** – h323-id (recommended: `hostname.domainname`)
   - **H323 Password** – If you plan to send calls from NexTone to your Cisco gateways, where the default Cisco remote IP authentication script is used, enter **`cisco`** here.
   - **NAS-IP-Address** – IP address of the NexTone.
   - **Auth. Translation rule** – Used to convert a dialed number to the desired format.
   - **Manufacturer** – Select **NexTone**.
   - **Type** – VoIP node type; select **MSX**.
   - **Radius Client** – Make sure this box is checked.
   - **Radius Key** – Make sure it is the same value you previously entered in the iServer configuration.
   - **Radius Source IP** – IP address of the NexTone.
4. Click **Save&Close.**
5. Repeat steps 2-4 until all of your nodes have been entered.

NOTE: There is some propagation delay between the database and the Radius server configuration file, but no more than 15 minutes.

Create a tariff

A tariff is a single price list for call services. A tariff combines:

- conditions applicable to every call regardless of the called destination
- per destination rates.

Normally, you will need a separate tariff for each of your customers.

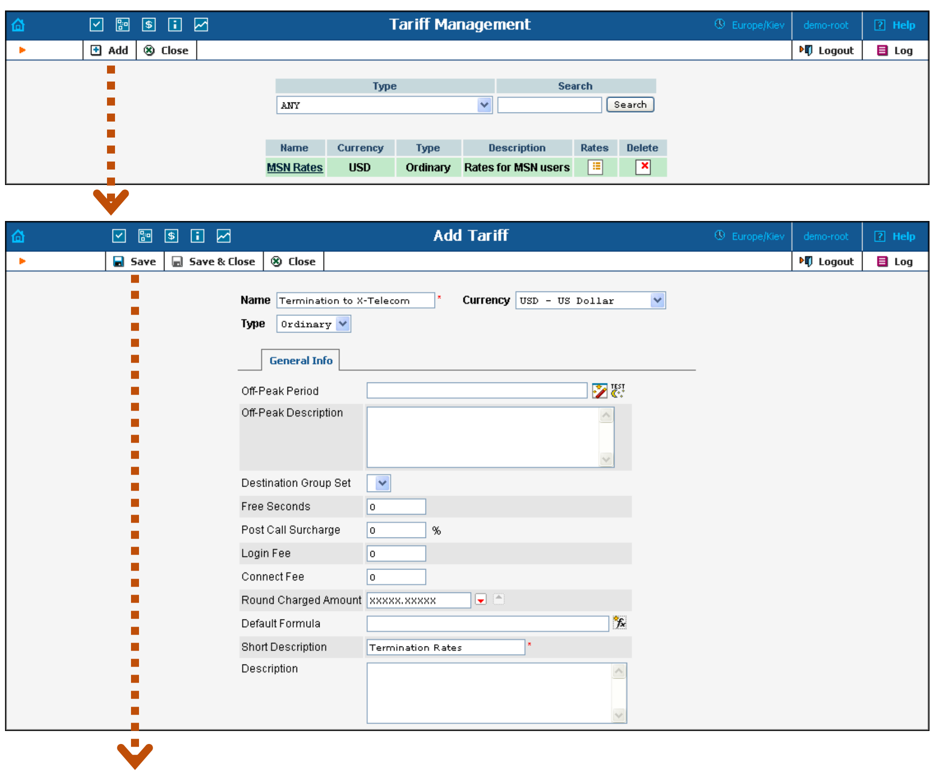
1. In the Management section of Admin-Index, choose **Tariffs**.
2. On the Tariff Management page, choose **Add**.
3. Fill in the **New Tariff** form:
   - **Name** – A short name for the tariff object. This is the name you will see later in the select menus.
   - **Currency** – Indicates the currency in which pricing information is defined. All pricing information for a single tariff must be defined in the same currency.

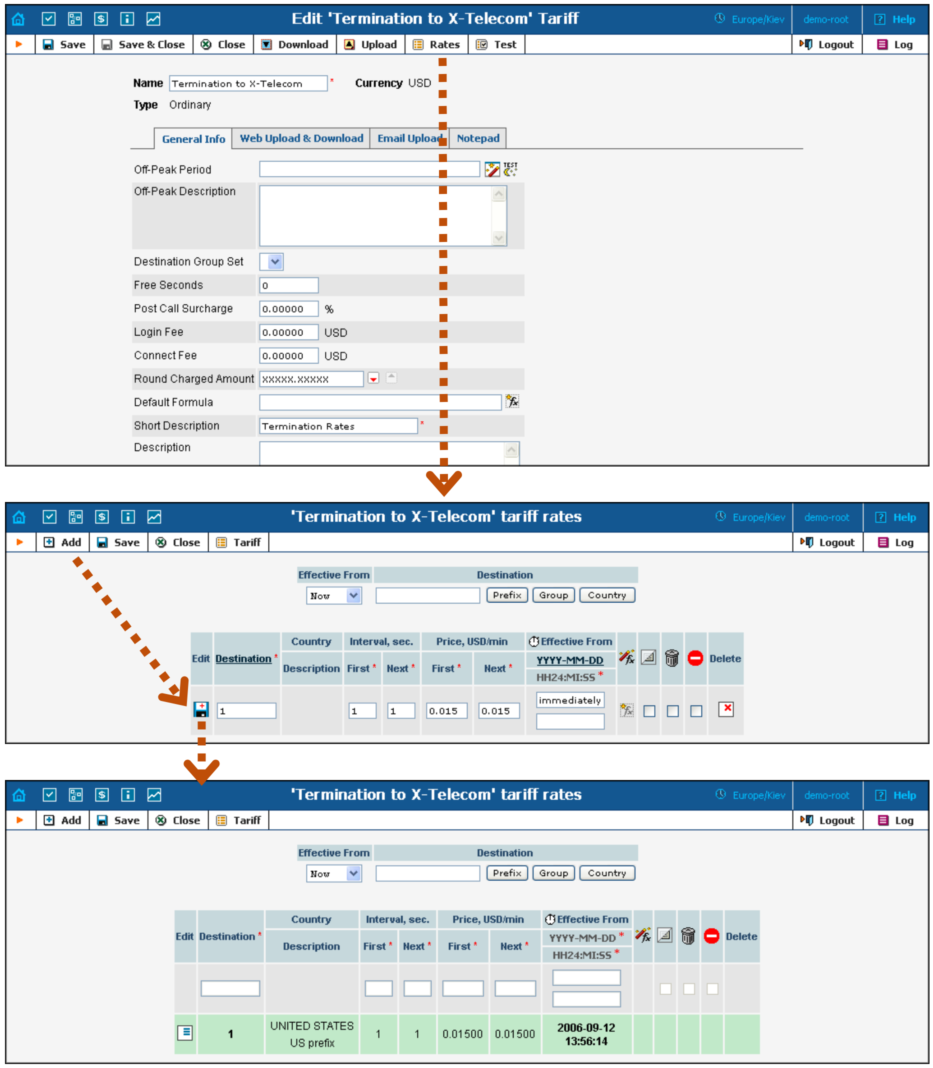
NOTE: The currency for a tariff is chosen only once, and cannot be changed later.

   - **Type** – Choose "Ordinary" for a tariff for your customers, and "Routing" for your vendors.
   - **Off-peak Period** – Defines the off-peak period. Click on the off-peak period wizard icon () to summon the wizard, which will help you construct a correct period definition. Click **Help** to get more information on period format definition. If you do not differentiate between peak and off-peak rates, just leave this field blank.
   - **Off-Peak Description** – A description of the off-peak period, automatically filled in by the off-peak period wizard. You do not need to fill in this field.
   - **Destination group set** – If you wish to enter rates in the tariff for a whole group of prefixes at once, rather than for each individual prefix, you should create a destination group set and destination groups beforehand. Leave this select menu empty for now.
   - **Free seconds** – The number of free seconds allowed for each call. In order to use free seconds, the call length must be at least one billing unit (i.e. the first interval; see the 'Enter Rates' section above).
   - **Post Call Surcharge** – A percentage of the charged call amount.

- o **Login Fee** – The amount to be charged immediately after initial user authentication (i.e. after the user enters his PIN).
- o **Connect Fee** – The amount to be charged for each connected call (of a non-zero duration).
- o **Round charged amount** – Instead of calculating CDRs with 5-decimal-place precision, round up CDR amount values (e.g. to cents, so that 1.16730 becomes 1.17).
- o **Formula** – The default rating formula which will be applied to each rate created in the tariff. If you leave this empty, “old-style” rating will be used.
- o **Short Description** – A short tariff description. This will be shown in the rate lookup on the admin interface and the self-care pages for your accounts and customers. For example, the short description for the cust-ABC-Easy Call-1800 tariff will provide better information for your reseller ABC, who will be using this tariff, e.g. “EasyCall – via a toll-free number”. This field is mandatory; if you are unsure what to enter here, enter the same name as for the tariff.
- o **Description** – An extended tariff description.

4. Click **Save**.





Enter rates

Rates are per-destination prices. Please refer to the **System Concepts** chapter for more details on billing parameters.

Managing rates online

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

1. On the Tariff Management page, you will see a list of available tariffs. Click the **Rates** icon next to the name of the tariff. When you are

in Tariff Management for a particular tariff, click on **Rates** in the toolbar.

2. In the **Edit Rates** screen, click **Add**.
3. Fill in the required information:
    - **Destination** – A 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 column header). Here you can find the desired prefix by country name.

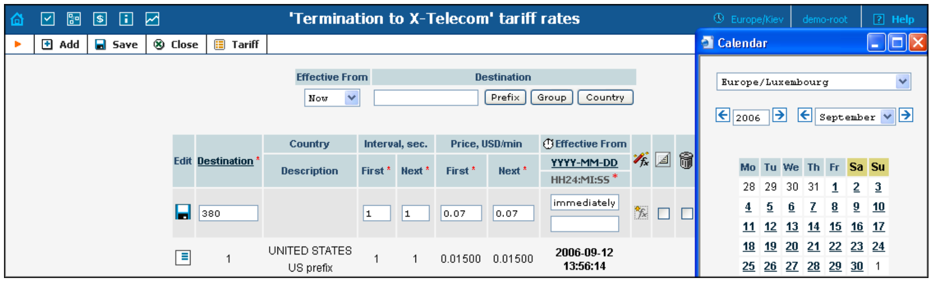
NOTE: The phone prefix you are trying to create a rate for must already exist in Destinations.

- **Interval First** – first billing unit in seconds
- **Interval Next** – next billing unit in seconds
- **Price First** – per-minute price for first interval
- **Price Next** – per-minute price for next interval
- **Off-peak Interval First**– first billing unit in seconds for off-peak time
- **Off-peak Interval Next** – next billing unit in seconds for off-peak time
- **Off-peak Price First** – first interval per-minute price for off-peak time
- **Off-peak Price Next** – next interval per-minute price for off-peak time

NOTE: Off-peak fields appear only if an **off-peak period** has been defined for the tariff.

- **Formula** – Launches the wizard for creating a custom rating formula.
- **Effective from** – If you want this rate to take effect sometime in the future, you can either enter a date manually, or use the calendar (click on the DD-MM-YYYY link). Click on the Stop Watch icon to make the rate effective **immediately.**

NOTE: When using the calendar, you may specify a different time zone than the current one for the date you are entering. PortaBilling will then automatically adjust the time.



- The **Hidden**, **Forbidden** and **Discontinued** flags are optional.

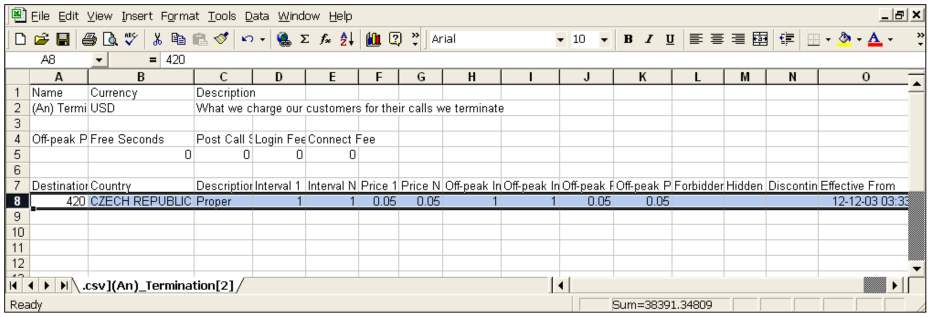
4. Click the **Save** button in the toolbar, or the icon at the left end of the row.
5. Repeat the preceding steps if you need to enter more rates.

Managing rates offline

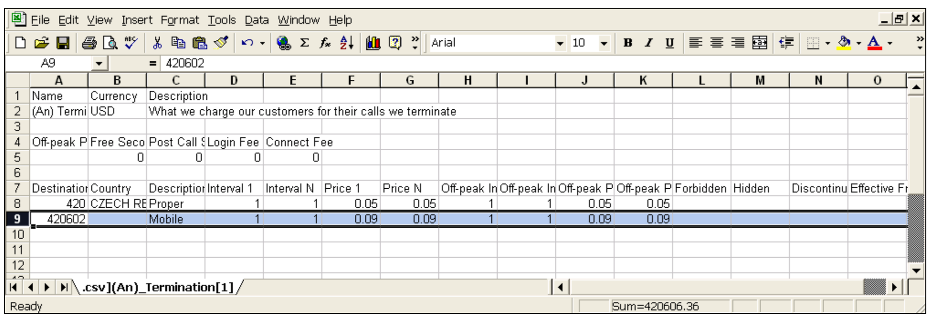
NOTE: Templates are available in PortaBilling, a powerful tool for uploading rates from custom format data files. However, in this particular example we assume that you are preparing data in the default PortaBilling format.

The rates table may be prepared using a spreadsheet processor (i.e. Microsoft Excel) and then easily imported into PortaBilling. This is very convenient should you wish to make many changes. For example, you could increase all prices by 10%.

1. If you are not in Tariff Management for your tariff, go to the main menu, click on **Tariffs**, and then click on the tariff name.
2. In the Edit Tariff window, move the mouse pointer over the **Download** button and hold it there until a popup menu appears. Choose the **Now** menu item and click on it. This will download the current set of rates (empty), and will also provide you with an overview of the file structure.
3. You will see the **File Download** dialogue, and will be prompted to save the file or open it from its current location. We recommend that you first save the file to the folder you will be using to store tariff data files in the future, and then open it in Excel.
4. You should see something similar to the screenshot below:



5. Edit the file by adding more rows with rate data, so that it looks similar to the screenshot below.
6. Note that the **Country** and **Description** columns are only for reference purposes, and are ignored during import. Also, when using the default template you must fill in the Off-peak columns even if your tariff does not have an off-peak period (use the clipboard to easily copy values to the four peak columns).
7. Also note that you may only use those phone prefixes which you have already defined as destinations (see **Create destinations** above).

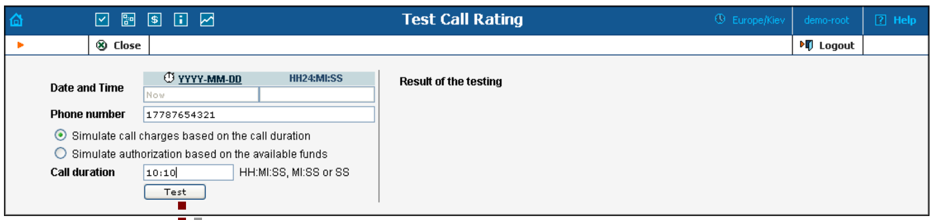


8. Save the file in Excel. You will probably get a warning from Excel that your file "*may contain features that are not compatible with CSV (Comma delimited)*". Ignore this, and choose **Yes** to retain CSV format.
9. Close the file in Excel. If you performed step 6, then disregard the message "*Do you want to save the changes you made*", as this only results from the fact that your format is not the native Excel XLS format.
10. Go back to the PortaBilling web interface and the **Edit Tariff** screen.
11. Click on the **Upload** button.
12. Either enter the name of your file manually, or click **Browse…** and choose the file.
13. Click **Save & Close**. You should return to the **Edit Tariff** screen, where a message will inform you of the status of the import. Also, you will receive email confirmation of the tariff upload. If any operation has failed, you will receive the portion of the data which was not uploaded as an attachment, so that you can try to import it later.

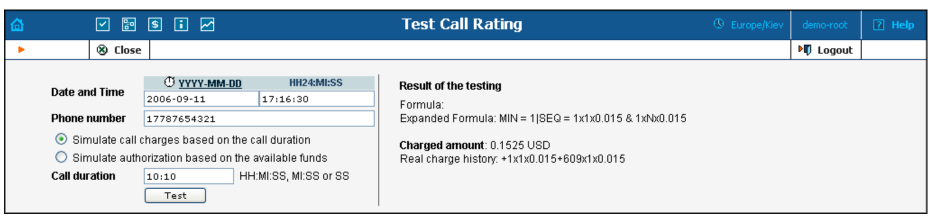
You can verify your work using the **Edit Rates** feature. After you have done this, go to the **Main** menu (by clicking on the **Home** icon).

Test the rate configuration (optional)

1. While in the **Edit Tariff** window, click on the **Test** button to go to the Test Call Rating screen.



2. Type in the phone number for which you would like to test the rating, as well as the estimated call duration, then click on the **Test** button.



3. You will now see the estimated amount charged for this call, as well as a detailed explanation of the rating process.
4. Press the **Close** button to return to the **Edit Tariff** window.

Create all the required tariffs

Repeat the **Create Tariff** and **Enter Rates** steps until you have created the following:

- A tariff for each type of service you provide to your customers. For instance, if you plan to provide a wholesale termination service as well as end-user VoIP calls, you will need two separate tariffs.
- A tariff with termination costs for each termination partner you have.
- If you have resellers, also create the tariffs you will use for charging each of them. Do not create tariffs which will apply to

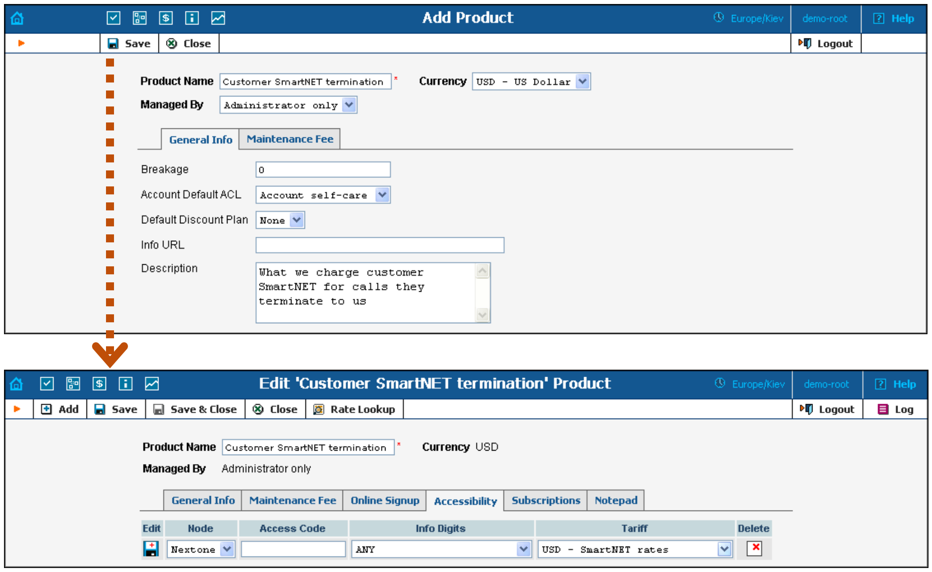
your resellers' subscribers yet. First create your customers, and then return to this step.

Create a product

Each of the remote customer gateways will be represented as an account, and billed accordingly. Hence we need to create a product for the account in order to have a defined way of billing it. If you have specific per-customer rates/tariffs, then you will need a product for each customer.

1. In the Management section of the Admin-Index page, choose **Products**.
2. On the Product Management page, click the **Add** icon.
3. Fill in "Add product" under the General Info tab:
   - o **Product name** – Product object name.
   - o **Currency** – Product currency. Only tariffs which have the same currency are permitted in the accessibility list.
   - o **Managed by** – The default is "Administrator".
   - o **Breakage** – A leftover balance which is considered "useless" (for statistical purposes). Accounts with a balance below breakage are counted as *depleted*. This does not affect account authentication or authorization, so the account can still make calls if there is enough money left to cover at least the first interval.
   - o **Account default ACL** – The access level assigned by default to new accounts created with this product. The ACL determines which operations may be performed by accounts on the self-care pages. The default is "Account self-care" (pre-defined ACL), which allows all possible operations.
   - o **Default discount plan** – The default value is "None".
   - o **Info URL** – A URL where current product info is displayed.
   - o **Description** – A description of the intended use of this product.
4. Click **Save**.

Click on the **Accessibility** tab to edit this product's accessibility.



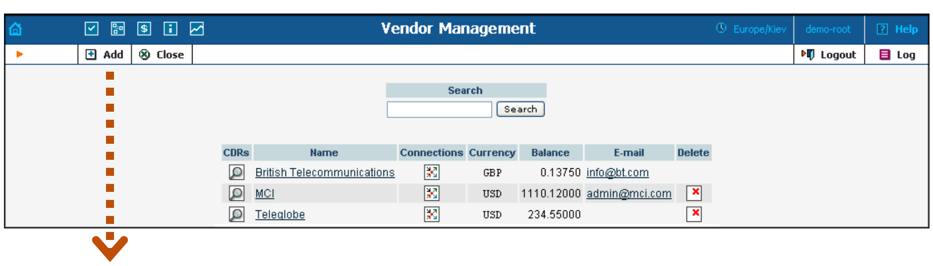
Enter the node and tariff into the product's accessibility list

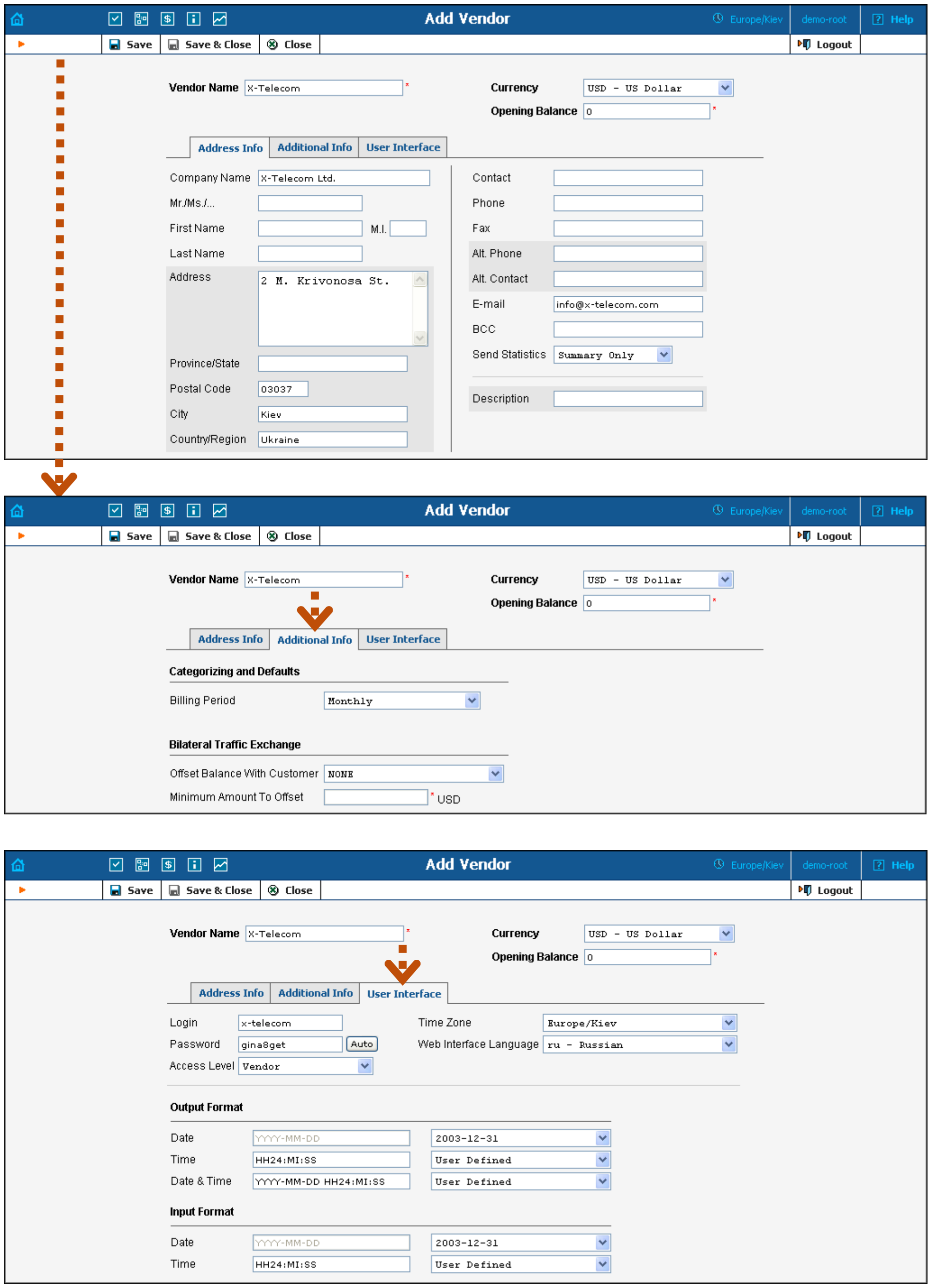
1. After selecting the Accessibility tab, click on the **Add** icon.
2. Choose **NexTone** as the node, select the tariff with which you want to bill your customer, and leave the CLD field empty.
3. Click **Save** to save this accessibility entry.

Create vendors

This step is only required if you have not entered information about your vendors into the system before. Vendors are your termination partners or the providers of incoming toll-free lines.

1. In the Management section of the Admin interface, choose **Vendors**.
2. On the Vendor Management page, choose **Add**.





3. Fill in the **New Vendor** form. Please note that there are two tabs available on the screen. The most important fields are:

Main form (top)

- **Vendor name** – Short name for the vendor object; this will be used on the web interface.

- **Currency** – The currency in which this vendor charges you.
- **Opening balance** – Starting balance for the vendor; the default is zero.

Additional info

- **Billing period** – Split period for vendor statistics.

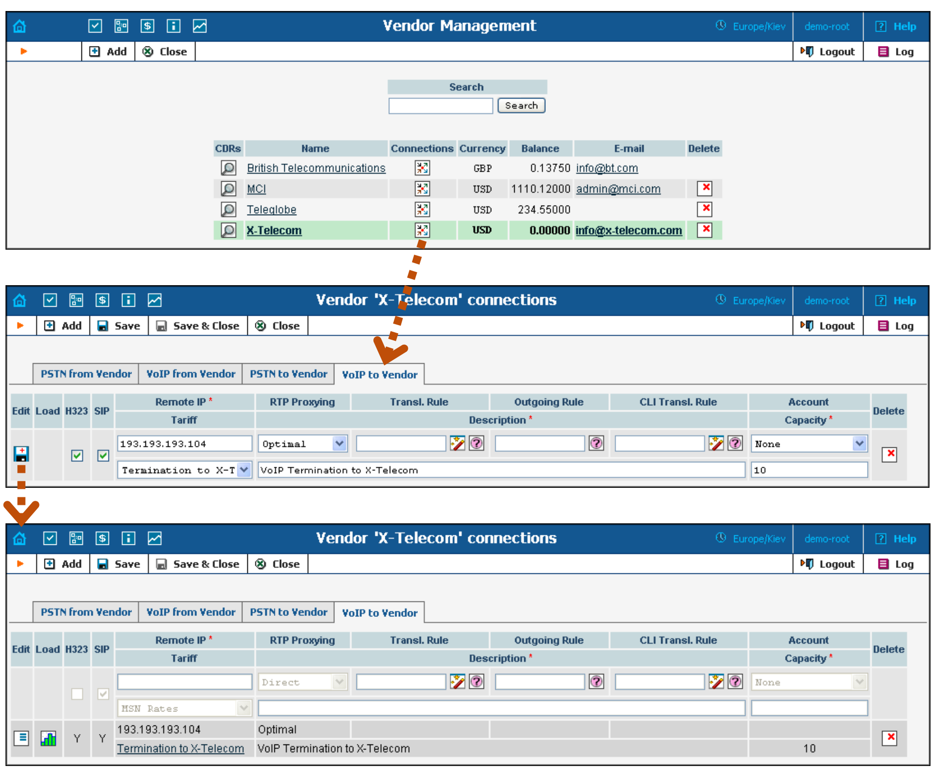
User-Interface

- **Time zone** – The time zone which the vendor uses for his billing period. Statistics will be divided into periods according to this time zone.

4. Click **Save & Close**.
5. Repeat steps 2-4 to add all of your vendors.

Define connections

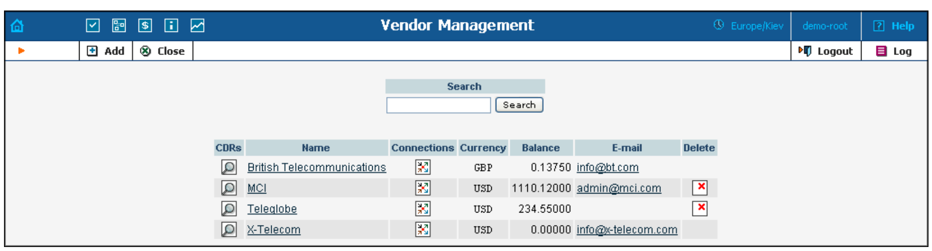
1. In the Management section of the Admin interface, choose **Vendors**.
2. Click on the **Connections** icon next to the vendor name.



3. Choose the connection type (e.g. **VoIP to Vendor**) by clicking on the corresponding tab.
4. Press **Add** to add a new connection.
5. Fill in the connection information. Enter the remote gateway's IP address. Choose the tariff which defines your termination costs for this connection/vendor. **Description** and **Capacity** are mandatory for all connection types.
6. If the vendor requires a phone number format different from the one you use (e.g. the E.164 number 4202111222 is sent to the vendor as 34562#4202111222) you should set up translation rules to properly handle this situation. Use **Translation Rule** to convert the phone number from the vendor's format to the one you use (i.e. 34562#4202111222 to 4202111222).
7. Click **Save**.
8. Repeat steps 3-5 to add more connections to the same vendor, then click **Close** to exit to the **Vendor Management** screen.
9. Repeat steps 2-7 to add connections for other vendors.

Create all vendors

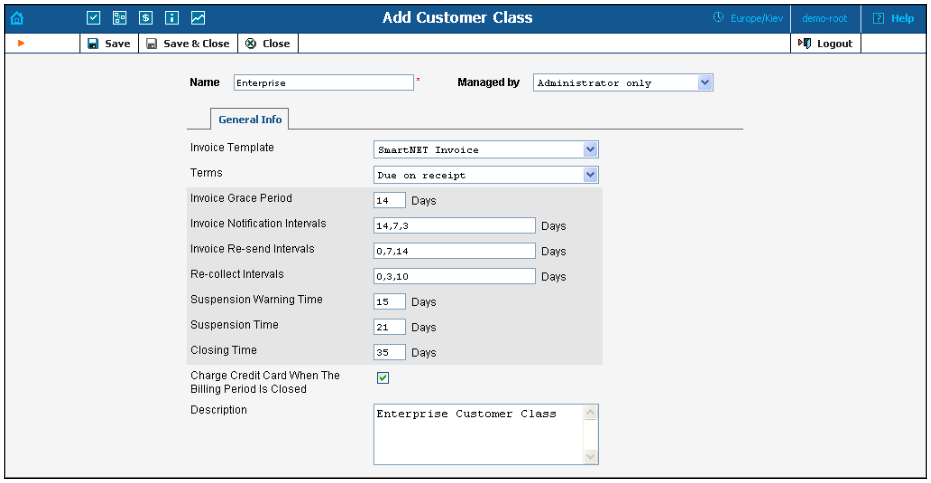
Since you are setting up a wholesale traffic exchange platform, you will probably have more than one vendor. Create all of your vendors according to the instructions given above. Every vendor will have his own termination tariff and set of connections.



Create a Customer Class

Customer class provides the ability to define a group of parameters in a centralized way, then apply those parameters to many customers at once. (If you have already created a customer class that you can use for prepaid card distributors, skip this step and go to the next one.)

1. In the Management section of the Admin interface, choose **Customer Classes**.
2. On the Customer Class Management page, choose **Add**.

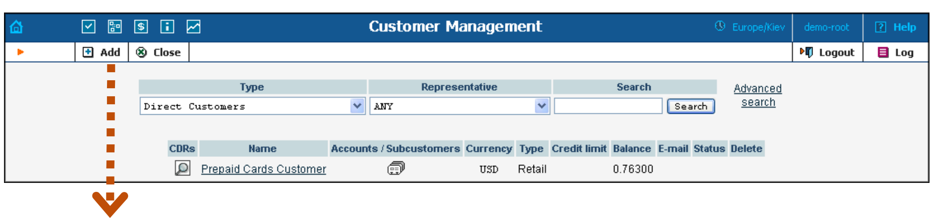


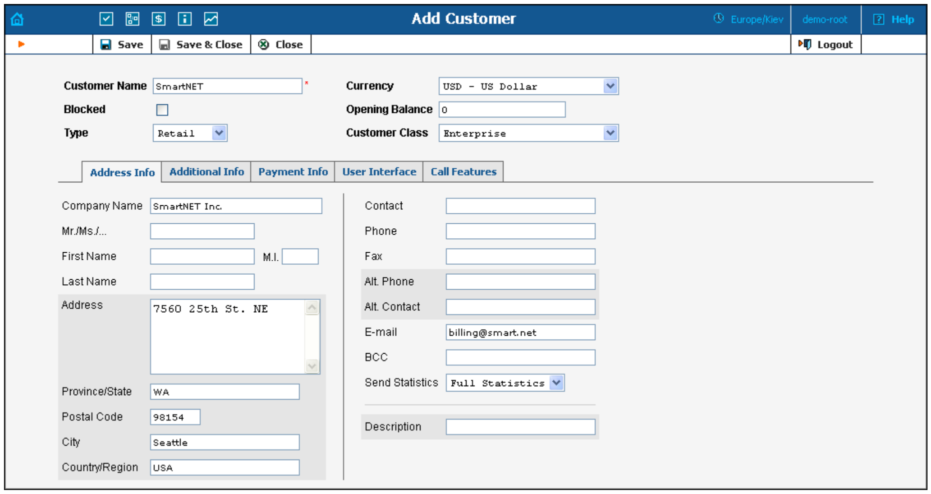
3. Fill in the **Name** parameter; the other fields can be left empty for now.
4. Click **Save&Close**.

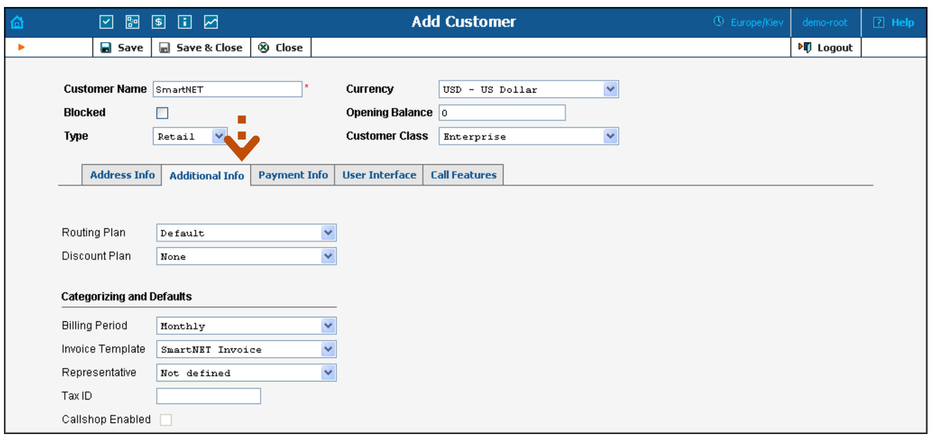
Create a customer

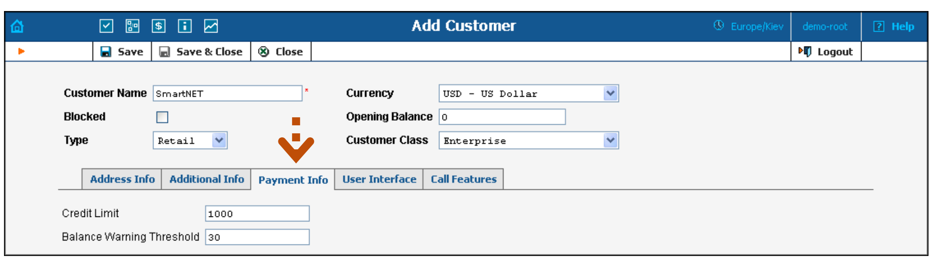
A customer is an owner of accounts. The customer's contact information is used to distribute generated account data and account usage information.

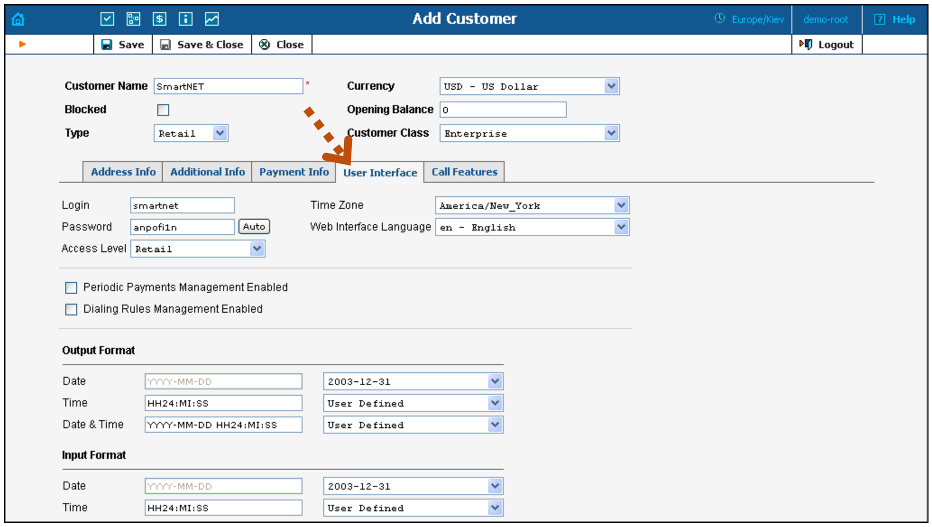
1. In the Management section of Admin-Index, choose **Customers**.
2. On the Customer Management page, choose **Add**.
3. Fill in the **New Customer** form. Please note that there are several tabs with extra information available on the screen. The most important fields are:




Add Customer
Europe/Kiev
demo-root
Help
Save
Save & Close
Close
Logout
Customer Name SmartNET
Blocked
Type Retail
Currency USD - US Dollar
Opening Balance 0
Customer Class Enterprise
Address Info
Additional Info
Payment Info
User Interface
Call Features
Company Name SmartNET Inc.
Mr./Ms./...
First Name
M.I.
Last Name
Address 7560 25th St. NE
Province/State WA
Postal Code 98154
City Seattle
Country/Region USA
Contact
Phone
Fax
Alt. Phone
Alt. Contact
E-mail billing@smart.net
BCC
Send Statistics Full Statistics
Description


Add Customer
Europe/Kiev
demo-root
Help
Save
Save & Close
Close
Logout
Customer Name SmartNET
Blocked
Type Retail
Currency USD - US Dollar
Opening Balance 0
Customer Class Enterprise
Address Info
Additional Info
Payment Info
User Interface
Call Features
Routing Plan Default
Discount Plan None
Categorizing and Defaults
Billing Period Monthly
Invoice Template SmartNET Invoice
Representative Not defined
Tax ID
Callshop Enabled


Add Customer
Europe/Kiev
demo-root
Help
Save
Save & Close
Close
Logout
Customer Name SmartNET
Blocked
Type Retail
Currency USD - US Dollar
Opening Balance 0
Customer Class Enterprise
Address Info
Additional Info
Payment Info
User Interface
Call Features
Credit Limit 1000
Balance Warning Threshold 30



Main form (top)

- **Name** – Short name for the customer object; this will be used on the web interface.
- **Currency** – The currency in which this customer is to be billed.
- **Opening balance** – Starting balance for the customer; the default is zero.
- **Type** – Define whether this is a reseller or a retail (direct) customer. (Normally, most of your customers will be retail customers. Only if a customer resells your services, while you provide services and billing to his subscribers, will he be created as a reseller.)
- **Customer Class** – Choose the customer class you created in the previous step.

Address info tab

- **Email** – Email address for distribution of accounting information. When the billing period is over, a list of CDRs, invoice and other statistics will be sent to this address.
- **Bcc** – Delivery to the specified email address of your account representative a copy of every outgoing email sent to the customer; this may be used for debug and archiving purposes.
- **Send Statistics – Summary only** – Distribute a call summary only, and do not attach a details file; this might be useful in the case of a large amount of calls. Other options are **full statistics** (attach a complete list of CDRs) or **do not send** (no not deliver call statistics to this customer via email at all).

Additional info tab

- **Billing period** – Frequency of distribution of accounting information. For more details about different available billing periods, see the **PortaBilling Administrator Guide**.

Payment info tab

- **Credit limit** – If left empty, there is no credit limit for this customer.
- **Balance warning threshold** – The customer can be notified by email when his balance is dangerously close to the credit limit and his service will soon be blocked. Here you can enter the value for the warning threshold, as follows:
  - As a percentage (e.g. 90%). A warning will be sent when the customer's balance exceeds this percentage of his credit limit. Thus, if his credit limit is $1000.00 and the threshold is 90%, a warning will be sent as soon as the balance is over $900.00. This is only applicable when the customer has a positive credit limit.
  - As an absolute value. A warning will be sent as soon as the balance exceeds the specified value.

User Interface

- **Time zone** – This parameter serves two purposes. First of all, it defines in which time zone the customer will see his CDRs. It also defines which time zone will be used to divide the customer's billing periods. For example, if you choose America/New York with a monthly billing period here, the customer's invoice will cover the period starting at 00:00 EST on the 1st of every month.
- **Web interface language** – The language to be used on the customer's self-care web interface.

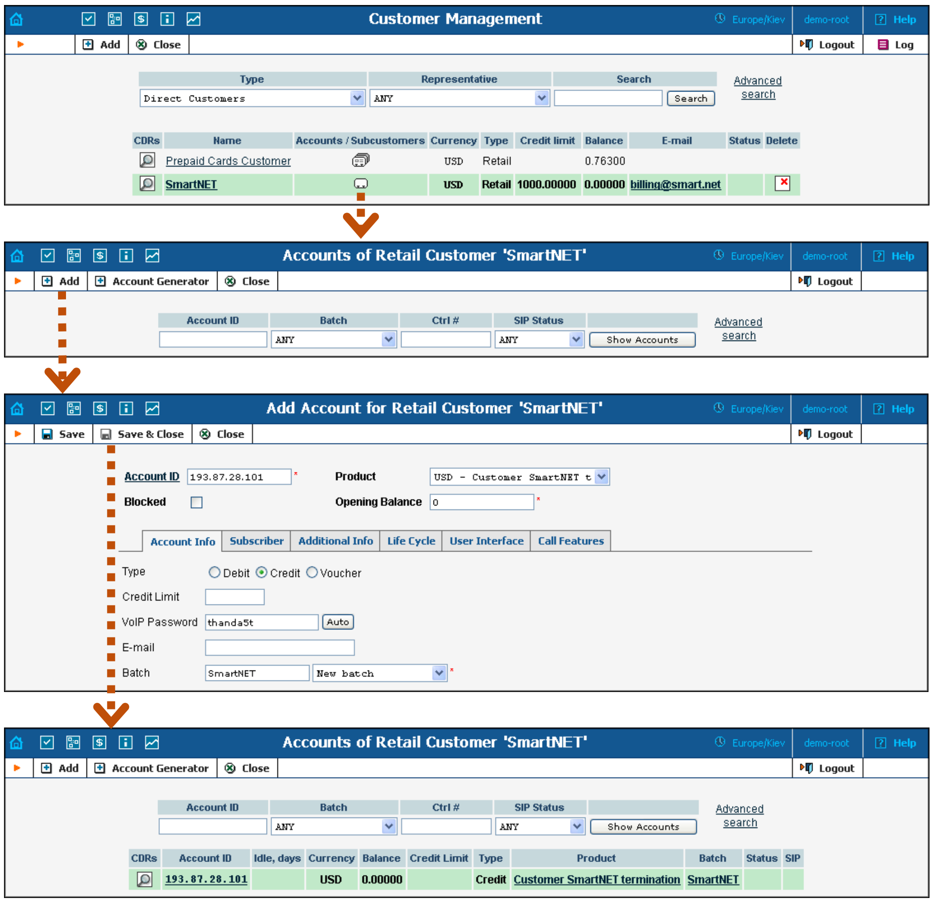
Click **Save & Close** to save your work. See the **PortaBilling Web Reference** for more information.

Create Accounts

NOTE: Before generating accounts for a production system, read the section on "Provisioning prepaid accounts".

1. Go to the **Customers** screen (the screen which contains a list of customers). It should look like the screenshot below.

2. Next to the customer name, click on the icon (in the **Accounts** column), which will take you to the account management for that customer.



3. Now click on **Add**.
4. Fill in the "Add account" form:
   - **Account ID** – Identification of the account (value to be sent in the **User-Name** attribute). For an account representing a remote gateway, this is normally an IP address.
   - **Product** – Choose the product which you would like your accounts to use.
   - **Blocked** – Check this if you want to create the account as initially blocked.
   - **Opening balance** – The initial balance on the card. For credit accounts, the opening balance is normally zero.

Account info tab

- **Account type** – Account type; select "credit".
- **Credit limit** – Maximum allowed credit.
- **VoIP password** – Password for authentication/authorization. This password is used only for SIP Digest authentication; for NexTone IP-based and ANI-based authentication/billing, the password is ignored.
- **Batch** – A batch is a management unit for accounts. A batch name is alphanumeric. You can type a new name here, or use the existing name in order to generate more accounts for the same batch.

Life Cycle tab

- **Activation date** – Account activation date.
- **Expiration date** – Account expiration date.
- **Lifetime** – Relative expiration date; the account will expire on "first usage date" + "lifetime" days. If you do not want to use this feature, leave the field blank.

User Interface tab

- **Login** – The login name this account will use to access the self-care pages. This can be the same as the account ID, or a different name may be chosen for increased security. This field is mandatory.
- **Password** – The password for the self-care pages.
- **Time zone** – When an account owner accesses the web self-care pages to see a list of his calls, the time will be shown in the time zone most appropriate for him.
- **Web interface language** – The language to be used on the customer's self-care web interface.

5. Click **Save & Close**; a confirmation screen will indicate that the account has been created.
6. Repeat steps 3-5 if the customer has more than one remote gateway.

Call Routing

Currently, Nextone can only obtain routing information from the iView, so please configure routing according to the iView documentation.

4. How to…

How to manage the routing?

At this moment NexTone does not fetch results of the routing calculations from PortaBilling, so the routing has to be configured directly on NexTone (using tools such as iView).

5. Troubleshooting

In case of any difficulties, you can find comprehensive information in the NexTone and PortaBilling log files.

NexTone RADIUS logs

In order to monitor the RADIUS dialogue on the NexTone side, you should turn on monitoring on the NexTone side – please consult the appropriate NexTone manual.

PortaBilling log information for a call

PortaBilling log files are located in the /var/log/porta-billing.log file. You may browse this file with utilities such as `less`, or use the log browser on the PortaBilling web interface.

Authentication request

```
Sep 04 00:01:50: Processing request (BE ver1.245.2.10,pid51553):
NAS-IP-Address       = '164.4.89.20'
```

NexTone IP address

```
NAS-Port-Type        = 'Async'
User-Name            = 'NextoneUser'
```

NexTone populates this attribute with a pre-defined value, so it will not used for billing

```
Calling-Station-Id   = '193.100.201.1'
h323-conf-id         = '4985ee3f-3ed46e60@192.168.0.31'
Password             = 'nextone'
h323-ivr-out         = 'PortaBilling_UserName:193.100.201.1'
```

Account ID is passed in this VSA attribute

```
h323-ivr-out         = 'PortaBilling_Ignore_Password:YES'
Sep 04 00:01:50: fixup: 'PortaBilling_UserName' attribute present. Replace User-
Name 'NextoneUser' with '193.100.201.1'
Sep 04 00:01:50: h323-conf-id=34393835 65653366 2D336564 34366536/2, call-id=
Sep 04 00:01:50: PrepareNexecute 'AccountAuth'
Sep 04 00:01:50: Found Account: 193.100.201.1[9,debit,balance=1.02000] of customer
testgatewayprepaid[4,balance=50.00000,limit=500.00000]
Sep 04 00:01:50: Account 193.100.201.1 is not logged in yet
Sep 04 00:01:50: Account has an empty password, skip the password check
Sep 04 00:01:50: Attempt to charge account with a login fee
Sep 04 00:01:50: Logging in account '193.100.201.1'(9) to '34393835 65653366
2D336564 34366536'
Sep 04 00:01:50: Account '193.100.201.1' logged in, setting call lifetime to 1800
sec
Sep 04 00:01:50: Authentication acknowledge response
```

Authentication accepted

```
h323-credit-amount              = 1.02
h323-billing-model              = 1
h323-ivr-in                     = Tariff:WHOLESALE
h323-ivr-in                     = PortaBilling_AccountBalance:1.02000
h323-ivr-in                     = PortaBilling_ProductBreakage:0.00000
h323-ivr-in                     = available-funds:1.02
h323-return-code                = 0
h323-currency                   = USD
h323-preferred-lang             = en
```

Authorization Request

```
Sep 04 00:01:50: Processing request (BE ver1.245.2.10,pid51553):
NAS-IP-Address      = '164.4.89.20'
NAS-Port-Type       = 'Async'
User-Name           = 'NextoneUserA'
Called-Station-Id   = '441259322891834'
Calling-Station-Id  = '193.100.201.1'
h323-conf-id        = '4985ee3f-3ed46e60@192.168.0.31'
Password            = 'Nextone'
h323-ivr-out        = 'PortaBilling_UserName:193.100.201.1'
h323-ivr-out        = 'PortaBilling_Ignore_Password:YES'
Sep 04 00:01:50: fixup: 'PortaBilling_UserName' attribute present. Replace User-
Name 'NextoneUserA' with '193.100.201.1'
Sep 04 00:01:50: h323-conf-id=34393835 65653366 2D336564 34366536/2, call-id=
Sep 04 00:01:50: Found a call in cache with such id
Sep 04 00:01:50: Copied account: 193.100.201.1[9,debit,balance=1.02000] of
customer testgatewayprepaid[4,balance=50.00000,limit=500.00000] from '164.4.89.20'
into the current request
Sep 04 00:01:50: Checking if this call comes through a VoIP from vendor connection
Sep 04 00:01:50: No VoIP from vendor connections were found
Sep 04 00:01:50: Account 193.100.201.1 is already logged in, same session
Sep 04 00:01:50: Account has an empty password, skip the password check
Sep 04 00:01:50: Applying node translation rule on CLD ...
Sep 04 00:01:50: Translation 's/^4412//' applied: '441259322891834' ->
'59322891834'
Sep 04 00:01:50: Setting up a new charge with tariff 'WHOLESALE'
Sep 04 00:01:50: Using peak rate, since no off-peak is defined
Sep 04 00:01:50: PrepareNexecute 'GetPricePerDestination*'
Sep 04 00:01:50: SQL query 'GetPricePerDestination*' executed in 0.001594 seconds
Sep 04 00:01:50: Compute maximum call duration for leg Account 193.100.201.1 to
destination  with funds 1.02000 (account funds 1.02000)
Sep 04 00:01:50: Maximum call duration: 180 announced as 180
(+1x60x0.29+2x60x0.29) by rate 32683 using 103114 as seed
Sep 04 00:01:50: Limited call duration for Debit account - enhance call lifetime
with 240s to Mon Sep  4 00:31:50 2006
Sep 04 00:01:50: Enhance lifetime with 1800s to Mon Sep  4 00:31:50 2006
Sep 04 00:01:50: Authentication acknowledge response
h323-billing-model    = 1
h323-ivr-in           = Tariff:E_GIROTEL9 073006
h323-ivr-in           = PortaBilling_CLI:193.100.201.1
h323-ivr-in           = PortaBilling_CompleteNumber:59322891834
h323-ivr-in           = PortaBilling_Auth_CLD:59322891834
h323-ivr-in           = PortaBilling_Auth_Reseller_CLD:59322891834
h323-ivr-in           = DURATION:180
h323-return-code      = 0
h323-currency         = USD
h323-credit-time      = 180
h323-preferred-lang   = en

Sep 04 00:05:05: Processing request (BE ver1.245.2.10,pid51553):
NAS-IP-Address        = '164.4.89.20'
```

```
NAS-Port-Type         = 'Async'
Called-Station-Id     = '59322891834'
Calling-Station-Id    = '193.100.201.1'
Acct-Status-Type      = 'Stop'
Service-Type          = 'Login-User'
h323-gw-id            = 'BTS'
h323-call-origin      = 'originate'
h323-call-type        = 'VoIP'
h323-setup-time       = '00:01:50.596 EDT Mon Sep 04 2006'
h323-connect-time     = '00:02:05.111 EDT Mon Sep 04 2006'
h323-disconnect-time  = '00:05:05.152 EDT Mon Sep 04 2006'
```

The three attributes above define call initiation, call connect and call disconnect time, respectively.

```
h323-disconnect-cause = '10'
h323-conf-id          = '1043-3366331310-596453@ss1.supertelecom.net'
Acct-Session-Id       = '56eb'
Acct-Session-Time     = '180'
Acct-Delay-Time       = '0'
Acct-Authentic        = 'Local'
NAS-Port              = '0'
NAS-Identifier        = 'ss1'
Connect-Info          = ''
h323-incoming-conf-id = '4985ee3f-3ed46e60@192.168.0.31'
subscriber            = 'Subscriber'
session-protocol      = 'SIP'
remote-media-address  = '65.218.170.184'
in-trunkgroup-label   = ''
in-carrier-id         = ''
gw-rxd-cdn            = '59322891834'
gk-xlated-cdn         = '59322891834'
gw-final-xlated-cdn   = '59322891834'
gk-xlated-cgn         = ''
outgoing-area         = 'BTS'
release-source        = '6'
h323-remote-address   = '65.218.170.184'
h323-ivr-out          = 'PortaBilling_UserName:193.100.201.1'
Exec-Program-Log      = 'porta-billing.pl'
Sep 04 00:05:05: fixup: Canonize h323-incoming-conf-id '4985ee3f-
3ed46e60@192.168.0.31' as '34393835 65653366 2D336564 34366536'
Sep 04 00:05:05: fixup: 'PortaBilling_UserName' attribute present. Replace User-
Name '' with '193.100.201.1'
Sep 04 00:05:05: h323-conf-id=31303433 2D333336 36333331 3331302D/2, call-id=
Sep 04 00:05:05: Use alert-timepoint for PDD (post dial delay) calculation. PDD
is: 15
Sep 04 00:05:05: PrepareNexecute 'GetActiveLegIdByAcct'
Sep 04 00:05:05: PrepareNexecute 'DeleteActiveLeg'
Sep 04 00:05:05: PrepareNexecute 'AccountAccounting'
Sep 04 00:05:05: Found Account: 193.100.201.1[9,debit,balance=1.02000] of customer
testgatewayprepaid[4,balance=50.00000,limit=500.00000]
Sep 04 00:05:05: End of the outgoing call for account, which appears as never
logged-in
Sep 04 00:05:05: Set lifetime with 15s to Mon Sep  4 00:05:20 2006
Sep 04 00:05:05: Looking up vendor/connection
Sep 04 00:05:05: Trying to match connection for call
Sep 04 00:05:05: Looking for a connection VoIP/originate
Sep 04 00:05:05: Outgoing VoIP, matching by the remote IP address '65.218.170.184'
(env 2)
Sep 04 00:05:05: Found connection 6 'BTS 1' to vendor 'BTS'
```

Connection found, so the call should be billed.

```
Sep 04 00:05:05: Found vendor/connection
Sep 04 00:05:05: Applying connection translation rule on CLD ...
Sep 04 00:05:05: Translation 's/^4412//' applied: '59322891834' unchanged
Sep 04 00:05:05: Charging call ...
Sep 04 00:05:05: Setting up a new charge with tariff 'WHOLESALE' ...
```

```
Sep 04 00:05:05: Using peak rate, since no off-peak is defined
Sep 04 00:05:05: PrepareNexecute 'GetPricePerDestination*'
Sep 04 00:05:05: Calculating account's charge by tariff 'WHOLESALE'
```

The account charge is calculated

```
Sep 04 00:05:05: Call to '59322891834' with duration 180 seconds will be charged
 for 180 seconds and cost is 0.57 (1x60x0.19+2x60x0.19) by rate 32714 using 92178
 as seed
Sep 04 00:05:05: Setting up a new charge with tariff 'V BTS' ...
Sep 04 00:05:05: Using peak rate, since no off-peak is defined
Sep 04 00:05:05: PrepareNexecute 'GetPricePerDestination*'
Sep 04 00:05:05: Calculating vendor's charge by tariff 'V BTS'
```

Now your termination costs to the vendor are calculated.

```
Sep 04 00:05:05: Call to '59322891834' with duration 180 seconds will be charged
 for 180 seconds and cost is 0.27 (1x30x0.09+25x6x0.09) by rate 13293 using 92178
 as seed
Sep 04 00:05:05: Charging account for the call
Sep 04 00:05:05: Inserting CDR
Sep 04 00:05:05: PrepareNexecute 'InsertAccountCDR'
```

The CDR is inserted and the account's balance is modified.

```
Sep 04 00:05:05: Charging debit account 193.100.201.1 0.57
Sep 04 00:05:05: PrepareNexecute 'UpdateDebitAccountBalance'
Sep 04 00:05:05: Debit account of retail customer, bill only the account
Sep 04 00:05:05: This is one of the multiple outgoing calls of incoming session(s)
Sep 04 00:05:05: Found the incoming call object for session '34393835 65653366
 2D336564 34366536', marking account info there as outdated
Sep 04 00:05:05: Charging vendor for the call
Sep 04 00:05:05: Charging vendor 5 'BTS' 0.27
Sep 04 00:05:05: Inserting CDR
Sep 04 00:05:05: PrepareNexecute 'InsertVendorCDR'
Sep 04 00:05:05: PrepareNexecute 'UpdateVendorBalance'
Sep 04 00:05:05: Accounting response

Sep 04 00:05:05: Processing request (BE ver1.245.2.10,pid51553):
NAS-IP-Address        = '164.4.89.20'
NAS-Port-Type         = 'Async'
Called-Station-Id     = '59322891834'
Calling-Station-Id    = '193.100.201.1'
Acct-Status-Type      = 'Stop'
Service-Type          = 'Login-User'
h323-gw-id            = '193.100.201.1'
h323-call-origin      = 'answer'
h323-call-type        = 'VoIP'
h323-setup-time       = '00:01:50.577 EDT Mon Sep 04 2006'
h323-connect-time     = '00:02:05.112 EDT Mon Sep 04 2006'
h323-disconnect-time  = '00:05:05.156 EDT Mon Sep 04 2006'
h323-disconnect-cause = '10'
h323-conf-id          = '4985ee3f-3ed46e60@192.168.0.31'
Acct-Session-Id       = '56ea'
Acct-Session-Time     = '180'
Acct-Delay-Time       = '0'
Acct-Authentic        = 'Local'
NAS-Port              = '0'
NAS-Identifier        = 'ss1'
Connect-Info          = ''
h323-incoming-conf-id = '4985ee3f-3ed46e60@192.168.0.31'
subscriber            = 'Subscriber'
session-protocol      = 'SIP'
remote-media-address  = '192.168.0.31'
in-trunkgroup-label   = ''
in-carrier-id         = ''
gw-rxd-cdn            = '59322891834'
gk-xlated-cdn         = '59322891834'
gw-final-xlated-cdn   = '441259322891834'
```

```
gk-xlated-cgn          = ''
outgoing-area          = ''
release-source         = '6'
h323-remote-address    = '192.168.0.31'
h323-ivr-out           = 'PortaBilling_UserName:193.100.201.1'
Exec-Program-Log       = 'porta-billing.pl'
Sep 04 00:05:05: fixup: Canonize h323-incoming-conf-id '4985ee3f-
3ed46e60@192.168.0.31' as '34393835 65653366 2D336564 34366536'
Sep 04 00:05:05: fixup: 'PortaBilling_UserName' attribute present. Replace User-
Name '' with '193.100.201.1'
Sep 04 00:05:05: h323-conf-id=34393835 65653366 2D336564 34366536/2, call-id=
Sep 04 00:05:05: Found a call in cache with such id
Sep 04 00:05:05: Copied account: 193.100.201.1[9,debit,balance=1.02000] of
customer testgatewayprepaid[4,balance=50.00000,limit=500.00000] from '164.4.89.20'
into the current request
Sep 04 00:05:05: PrepareNexecute 'GetUpToDateAccountInfo'
Sep 04 00:05:05: Use alert-timepoint for PDD (post dial delay) calculation. PDD
is: 15
Sep 04 00:05:05: PrepareNexecute 'GetActiveLegIdByAcct'
Sep 04 00:05:05: PrepareNexecute 'DeleteActiveLeg'
Sep 04 00:05:05: End of call on incoming call leg from access NAS
Sep 04 00:05:05: Scheduling 193.100.201.1 for logout, call lifetime reduced to 15
Sep 04 00:05:05: Logging out account '193.100.201.1'(9) from '34393835 65653366
2D336564 34366536'
Sep 04 00:05:05: Set lifetime with 15s to Mon Sep  4 00:05:20 2006
Sep 04 00:05:05: Looking up vendor/connection
Sep 04 00:05:05: Trying to match connection for call
Sep 04 00:05:05: Looking for a connection VoIP/answer
Sep 04 00:05:05: VoIP, matching by the node IP '164.4.89.20' and User-Name
'193.100.201.1'
Sep 04 00:05:05: No VoIP from vendor connections were found
Sep 04 00:05:05: Connection to vendor not found
Sep 04 00:05:05: No connection from vendor
Sep 04 00:05:05: Accounting response
```