



## Copyright notice & disclaimers

**Copyright © 2000-2007 PortaOne, Inc. All rights reserved**

**PortaSwitch: New Features Guide, May 2007**  
**Maintenance Release 15**  
**V1.15.2**

Please address your comments and suggestions to: Sales Department,  
PortaOne, Inc. Suite #400, 2963 Glen Drive, Coquitlam BC V3B 2P7  
Canada.

Changes may be made periodically to the information in this publication. Such changes will be incorporated in new editions of the guide. The software described in this document is furnished under a license agreement, and may be used or copied only in accordance with the terms thereof. It is against the law to copy the software on any other medium, except as specifically provided in the license agreement. The licensee may make one copy of the software for backup purposes. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopied, recorded or otherwise, without the prior written permission of PortaOne Inc.

The software license and limited warranty for the accompanying products are set forth in the information packet supplied with the product, and are incorporated herein by this reference. If you cannot locate the software license, contact your PortaOne representative for a copy.

All product names mentioned in this manual are for identification purposes only, and are either trademarks or registered trademarks of their respective owners.

## Table of Contents

Preface .....	3
<b>1. New Features in PortaBilling100.....</b>	<b>4</b>
Converged Billing – Support for Multiple Services .....	5
Event-based Billing .....	6
Billing for WiFi Services.....	6
Tariff Types .....	7
Routing Plans with Profit Guarantee .....	8
Shared and Exclusive Volume Discounts .....	9
New Add Duration Behavior .....	9
Improved Custom Reports.....	10
E-Payments Log .....	11
<b>2. New Features in PortaSIP .....</b>	<b>12</b>
Advanced Call Forwarding.....	13
Call Forwarding to SIP URI .....	14
Direct Incoming Calls to B2BUA.....	14
<b>3. New Features in PortaUM.....</b>	<b>15</b>
Prepaid Card IVR for IP Call Leg.....	16
ANI/DNIS Call Back IP Calls .....	16
Dial-by-name Directory .....	17
Call Queues.....	18

## Preface

This document provides information for PortaOne users regarding new features that will appear in PortaSwitch Maintenance Release 15.

### 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/support/documentation/](http://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



**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.

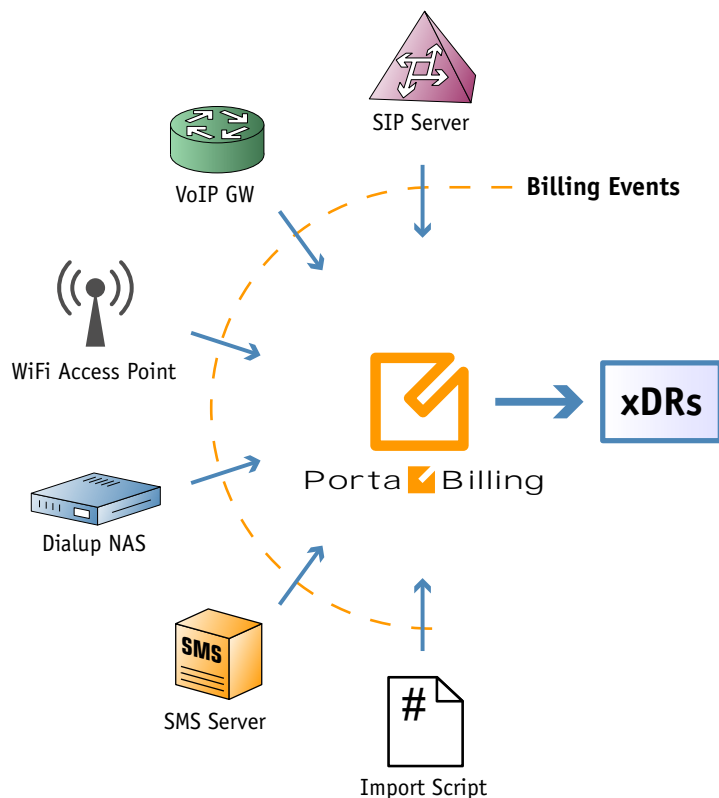


**Tips** provide information that might help you solve a problem.

# 1. New Features in PortaBilling100

## Converged Billing – Support for Multiple Services

Maintenance Release 15 marks a huge leap forward for PortaBilling100, as it is now officially “not just for VoIP billing”. PortaBilling100 can now process charges for any type of service: voice or video calls, Internet connectivity, data transfers, or one-time events such as sending an SMS message or renting a pay-per-view movie.



In order to correctly distinguish among these different types of services, PortaBilling100 introduces the concept of **service types**. A service type describes what kind of service you provide to your customers and how you charge them for it. Naturally, each service type has a name (so that a subscriber can clearly see the relevant charges grouped together on his invoice) as well as other parameters which affect billing.

PortaBilling100 is supplied with a pre-defined, ready-to-use set of service types. Your current billing configuration will be effortlessly migrated to the “Voice Calls” service, while for new products (or new services for an existing product) the amount of configuration is minimal:

- When you create a new tariff, choose which service type this tariff applies to;

- Then specify in the product's accessibility which particular tariff should be used to bill any instance of that service type.

## Event-based Billing

Previously, all telephony calls were charged based on duration. While the time-based billing model is good for many services (e.g. WiFi connections), it is not applicable to certain other service types (e.g. SMS or data transfer), since there is no “duration” involved in using these services. For this reason, PortaBilling100 now supports two types of services:

- Time-based, where a billing event is charged based on the session duration;
- Quantity-based, where a billing event is charged based on the amount of the service used (e.g. one SMS sent, or two pizzas ordered).

Another related change is that the term **CDR** (Call Detail Record) has been replaced by **xDR** (eXtensible Detail Record) in most parts of the web interface, since not all charges will actually be related to calls now.

## Billing for WiFi Services

PortaBilling100 now supports a new type of node – Mikrotik Access Point (<http://www.mikrotik.com/>), which allows to provide prepaid and postpaid wireless access services. Mikrotik router should be configured to use PortaBilling100 as a RADIUS for authentication and accounting. After that, when a user connects to WiFi network and attempts to surf the net, he will be redirected to Mikrotik login web page, where he should enter his username and password, which then is passed over for validation to PortaBilling100. If the account exists in PortaBilling100, the password is authorized and if all other constraints are met (e.g. accessibility list for the account must include WiFi service and this specific access point), the user is connected to the Internet.

- For credit accounts the maximum allowed session time is derived based on available funds and the rate you specify for WiFi service. When a user disconnects, he will be charged for the actual duration of the session as reported by the access point. Thus, you can provide postpaid “pay-as-you-go” services.
- For debit accounts WiFi access is a single “purchase” transaction – so at the moment of the authorization all available funds are withdrawn from the account and converted into the WiFi access time. This allows you to provide prepaid access, when users may purchase “access codes” from you.

## Tariff Types

This feature does not directly change the way in which billing works; rather, it simplifies the management of various rate plans on large PortaBilling100 installations. In early releases, all tariffs were “created equal”, and could be applied to any part of the configuration (customers, resellers, or vendors). While this allowed a certain degree of flexibility, it also made it more difficult for a PortaBilling100 operator to choose the correct tariff from the long list of those available.

Beginning with Maintenance Release 15, each tariff will be explicitly assigned an appropriate object type upon creation:

- **Customer** – this tariff applies to retail customers, and is available in the product’s accessibility.
- **Vendor** – this tariff applies to vendors, and is available in the connection configuration.
- **Reseller** – this tariff applies to resellers, and is available in the customer information when creating a new reseller.

Also, to reduce the number of tariffs in the select menus to the minimum required, the following rules will apply in regard to the “customer” tariffs managed by some resellers:

- In the accessibility of a product whose management is “Administrator only”, only such “Administrator only” tariffs will be shown.
- In the accessibility of a product managed by a reseller, only tariffs managed by the given reseller will be shown.

## Routing Plans with Profit Guarantee

A profit guarantee has been available even in earlier releases of PortaBilling100. If this mode is activated in a routing plan, all routes where the price per minute which your vendors apply to you is higher than that which you apply to your customers will be removed from the route list by the billing engine during real-time route calculation. Or, to put it in simpler terms, a route will not be selected if it is more expensive than what you charge your customers.

Maintenance Release 15 extends this functionality, now enabling you not only to ensure that you do not lose money, but also to specify how much profit you should earn. You may include both absolute (e.g. \$0.01) and relative (e.g. 5%) profit margins in a routing plan definition, using them in conjunction (i.e. a route must satisfy both conditions) or on an either/or basis (i.e. a route must satisfy at least one of them).

The screenshot displays the 'Add Routing Plan' configuration window. The 'Name' field is 'Retail SIP' and the 'Description' is 'SIP services for residential users'. Under the 'Profit Guarantee' tab, the following options are visible:

- Send real-time alerts about calls with losses
- Choose only routes which guarantee profit
- Minimum Absolute Profit: 0.025 EUR
- OR
- Minimum Relative Profit: 3%
- Round-robin between routes with cost difference under: 0.01 EUR

Another improvement in the area of advanced routing is the ability to apply a round-robin algorithm (alternate routes) where the price difference between several vendors is insignificant. For instance, if you vendor A offers you India at \$0.123, and vendor B at \$0.1235, from a purely LCR perspective A always will be the first route. From a business point of view, however, if you charge \$0.18 for calls made by retail customers then this does not make any difference, and in fact it is preferable to load both vendors equally. Now in PortaBilling100 Maintenance Release 15 you can activate this feature for a particular routing plan, so that routes with a price difference smaller than a specified threshold will be regarded as equal when arranging routes.

## Shared and Exclusive Volume Discounts

You now have two options for defining how two different volume discounts for the same destination group, which apply to an account and a customer at the same time, are to be combined:

- You can use **shared** mode (default). In this case, when a user makes a call to a destination within a destination group, both sets of counters (on the customer and the account level) will be updated. This allows you to use both discounts in conjunction, e.g. each account gets 200 free minutes per month, and then when all accounts of this customer altogether call for more than 1,000 minutes, they will get a 10% discount on their rate.
- A new mode, available as of Maintenance Release 15, is the **exclusive** discount plan. If a discount in the plan applicable to an account is defined as exclusive and provides 100% discount for the call, then only the counters for the account will be updated, until the discount has been used up. This allows you to provide stackable discounts, e.g. every account has 200 free minutes, while there are also 500 free minutes available at the customer level for use by accounts who have used up their own free minutes.

## New Add Duration Behavior

Features like this truly are the “dark side of the force”, but this is also where PortaBilling excels. Previously, the ratio for increasing charged call duration was specified as a set of thresholds and associated rates. For instance, if a call was less than 5 minutes, there would be a 5% increase; if less than 15 minutes, a 10% increase; and if longer than 15 minutes, a 15% increase. The ratio was chosen based on the total call duration, i.e. a percentage increase was applied to the whole duration of the call; for instance, a call of 20 minutes would yield  $20 + 20 * 15\% = 23$  minutes. This could potentially create problems with longer calls, where an increase becomes easier to notice.

Maintenance Release 15 changes the way add duration calculations are performed. Now every **portion** of a call is increased according to the specified rate, and then all of them are added up. One very important benefit of this method is that the percentage rates no longer need to be in ascending order. For instance, you can define a formula like the one below:

Edit	Up/Dn	Interval, sec.	Extend By, %	Delete
		First 300 seconds	20	
		Following 300 seconds	10	
		Following 600 seconds	5	
		Remaining call duration	0	

This will produce the following results:

- A call 4 minutes in duration will be charged as  $4:00 + 4:00 * 20\% = 4:48$
- A call 6 minutes in duration will be charged as  $6:00 + 5:00 * 20\% + 1:00 * 10\% = 6:00 + 1:00 + 0:06 = 7:06$
- A call 12 minutes in duration will be charged as  $12:00 + 5:00 * 20\% + 5:00 * 10\% + 2:00 * 5\% = 12:00 + 1:00 + 0:30 + 0:06 = 13:36$
- A call 30 minutes in duration will be charged as  $30:00 + 5:00 * 20\% + 5:00 * 10\% + 10:00 * 5\% = 30:00 + 1:00 + 0:30 + 0:30 = 32:00$
- A call 45 minutes in duration will be charged as  $45:00 + 5:00 * 20\% + 5:00 * 10\% + 10:00 * 5\% = 45:00 + 1:00 + 0:30 + 0:30 = 47:00$

As you can see, the increase mainly affects short calls (or the initial portion of long calls), but does not increase drastically with the total call duration.

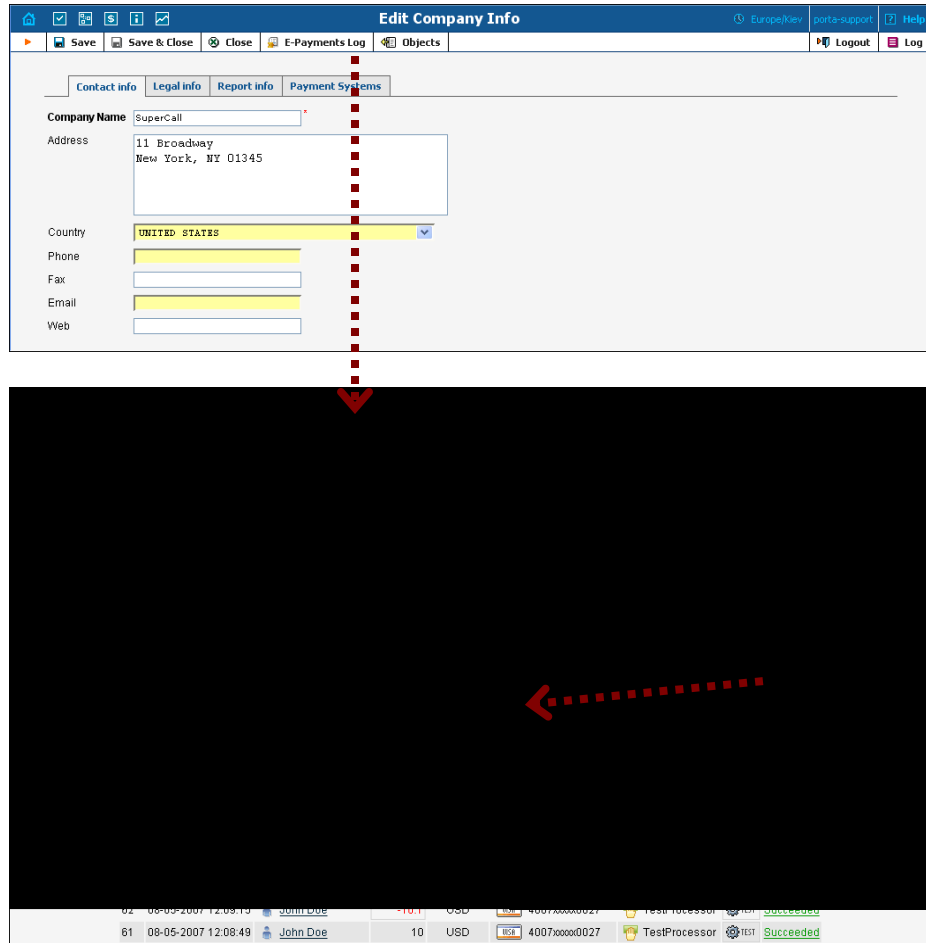
## Improved Custom Reports

When specifying a date parameter for a report scheduled to run periodically, you can now relate this parameter to the actual report execution time. For instance, you can set up a “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 run a report to obtain a list of invoices that will become overdue during the next seven days.

Since actual report execution time may vary, PortaBilling100 always uses the **scheduled** report execution time to calculate values for the parameters. Thus, in our example above, even if the requested report is physically executed at 6:45 am due to a processing delay, you will still receive data for the interval from 8 am to 7 pm on the previous day.

## E-Payments Log

You can now monitor all credit card charge attempts (successful or failed) per individual customer or payment processor from the PortaBilling100 web interface. This provides a convenient tool for helpdesk personnel to analyze and solve problems with customer payments, without having to look in the log files on the PortaBilling100 server.



# 2. New Features in PortaSIP



## Call Forwarding to SIP URI

In addition to traditional follow-me forwarding, where a call is forwarded to another SIP account or any PSTN number, you now have a convenient way to forward calls to an external SIP proxy.

The screenshot shows the 'Account Info / Retail Customer 'John Doe'' interface. The top navigation bar includes 'Save', 'Save & Close', 'Close', 'xDRs', 'Rate Lookup', 'E-Payments Log', 'Objects', 'Logout', and 'Log'. The main content area displays account details: Account ID (12061234567), Product (USD - EVB SIP Product), Blocked (checkbox), Balance (0.00000 USD), User Agent, and Contact. Below this is a tabbed interface with 'Forward' selected. The 'Forward' section has three radio buttons: 'Never', 'Always' (selected), and 'When Unavailable'. The 'SIP URI' field contains '12061234567@12.34.65.78'. Other fields include 'Timeout, sec' (15) and 'Keep Original CLD' (checkbox).

This is ideal for situations where you are running a “DID Exchange” or similar service, with each incoming call to your pool of phone numbers to be forwarded to the SIP proxies of a customer who purchased a particular number. Now you can simply specify the forwarding destination as `phonenumber@IP` or `phonenumber@domain`, e.g. `18667478647@sip.portaone.com`.

## Direct Incoming Calls to B2BUA

As you know, the two major components of PortaSIP are proxy/registrar and B2BUA. While B2BUA controls the actual call flow and exchange of SIP messages related to a particular call – all messages still pass via the proxy. It is the proxy that deals with NAT traversal and other network-layer issues and ensures seamless communication.

If a call arrives from a remote gateway or IP PBX running on a public IP address – NAT traversal is not required and there is no need to engage the SIP proxy in the SIP messages exchange.

PortaSIP Maintenance Release 15 allows B2BUA to accept direct incoming connection from a remote SIP UA on a public IP address. This is ideal for SIP trunking and similar services. This improvement accounts for over 20% increase in the call processing time.

No special configuration on the PortaSIP side is required but you should specify port **5061** of your PortaSIP server on your gateway/IP PBX outgoing SIP proxy with the IP address.

# 3. New Features in PortaUM

## Prepaid Card IVR for IP Call Leg

PortaUM now includes a full-fledged IVR for prepaid card services with the functionality identical to PortaOne debit card application for Cisco gateways. The main advantage of this application is that it can efficiently provide services for calls coming to your network via SIP, with no need for IP-PSTN conversion. The voice prompts can be pre-converted into a required codec, so there are no additional license fees or limitations on the number of concurrent calls.

Available features include:

- ANI authentication (for PINless dialing)
- Variable PIN length
- Number translation supplied by PortaBilling100
- Various surcharges and random disconnects supplied by PortaBilling100

PortaUM prepaid card application supports multi-lingual IVRs, however, at this time only the English and Cantonese languages are supported, since Cisco TTS modules, developed by PortaOne, have to be ported to PortaUM platform independently. We will add support for other languages in future releases, if you would like PortaOne to develop a particular language IVR within a specific timeframe – please contact [sales@portaone.com](mailto:sales@portaone.com) for more details.

Please refer to **PortaUM Administrator Guide** for more details on configuring the prepaid card IVR on PortaUM server.

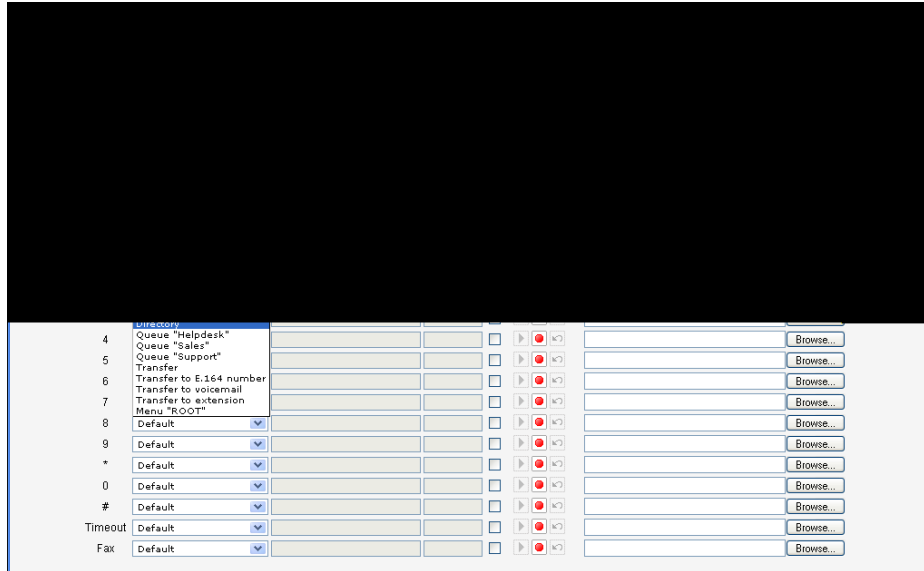
## ANI/DNIS Call Back IP Calls

Previously, ANI/DNIs callback was only available for the Cisco platform. Now PortaUM offers to run “IVR-based” callback services. Calls to your callback DIDs will be delivered to PortaUM, PortaUM will disconnect the incoming call (so the user is not charged), then call the customer back and collect the destination number. Configuration of the billing part is identical to the configuration of Cisco-based callback, described in **PortaCallBack User Guide**.

## Dial-by-name Directory

A new feature is now available in auto-attendant – if a user does not know the extension number, he or she can get connected by dialing the first three letters of the person's surname! On a separate configuration page of UM web interface you may define announcements for each extension in your IP Centrex. You may block some extensions from access via the dial-by-name dir

After that you may assign the directory to any option in the “Action” column of the auto-attendant menu.



## Call Queues

In conjunction with the group hunting feature on PortaSIP side call queues allow you to offer “call center” functionality to your IP Centrex customers. In PortaUM configuration for a specific DID number you may define as many queues as you want and forward them to your IP phones or virtual accounts with group hunting. Each queue may have its own distinctive “on hold” melody. You may also assign the average “call processing time” for each queue and PortaUM will correctly calculate and inform the customer about the estimated wait time.

