

Porta  Switch™



New Features Guide

Maintenance Release 23

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Maintenance Release 23

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Preface

This document describes new features found in PortaSwitch® Maintenance Release 23.

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 introduced between major 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



The **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 in the paragraph.



Tips provide information that might help you solve a problem.

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1. New Features in PortaSwitch

This section contains a description of features which involve more than one product and thus apply to PortaSwitch® as a whole.

Redesigned Self-care Web Interface

Maintenance Release 23 will include a prototype of the new interface for end-users to access their profile data, check billing information, download invoices and, most importantly, manage their IP Centrex settings. The main focus of this new interface redesign is simplicity and intuitive navigation for the end-user. This includes an easy-to-use structure of menus and controls, graphical icons and improved presentation of information, and a different approach for managing several important components (e.g. hunt-groups).

The screenshot displays the 'PortaOne - IP Centrex Management' web interface. At the top, it shows the user 'John Doe (login: jkoe)' with a 'Logout' link. Below this is a 'My Info' section with fields for Contact (John R. Dow), Phone (206-555-1234), Type (Retail), Balance (0.00000 USD), and Opening Balance (0.00000 USD). The main content area is titled 'Extensions' and features a table with the following data:

| | Edit | Extension Number | Extension Name | Assigned Account | Contact Name | External Phone Number | Member Of Hunt Groups | Online | IP Phone Model | Del |
|---|------|------------------|----------------|------------------|--------------|-----------------------|-----------------------|--------|----------------|-----|
| 1 | | 101 | John | 12065557701 | | | | | | X |
| 2 | | 102 | Mary | 12065557702 | | | | | | X |
| 3 | | 103 | Receptionist | 12065557704 | | | | | | X |
| 4 | | 110 | Support #1 | 12065558001 | | | | | | X |
| 5 | | 111 | Support #2 | 12065558002 | | | | | | X |

The interface also includes a left-hand navigation menu with options like 'General', 'Extensions', 'External Numbers', 'Dialing Rules', 'Incoming Calls', 'Outgoing Calls', 'Call Recording', 'Hunt Groups', 'Identity', and 'Music On Hold'. The bottom of the page shows a copyright notice: '© 2000-2011 PortaOne, Inc. All rights reserved.'

We expect the new interface to allow service providers to significantly reduce their helpdesk workload, since customers will be able to perform virtually all configuration tasks for their hosted IP Centrex environment themselves.

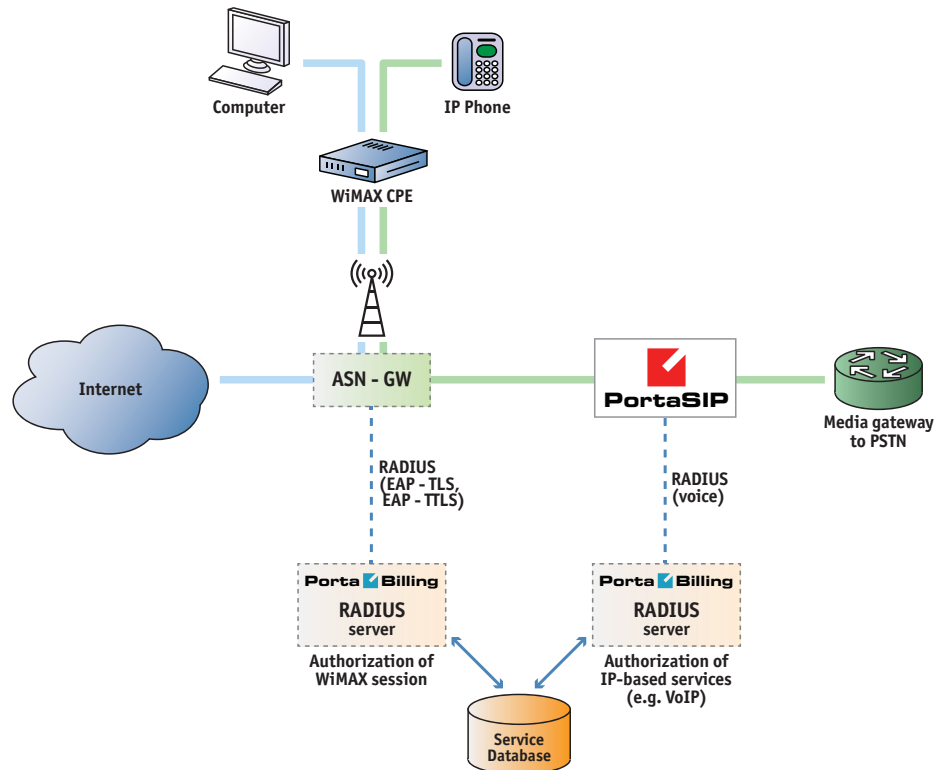
We are currently seeking suggestions, comments and any other type of feedback from PortaSwitch users regarding the new interface. This will enable us to produce the best possible final version of it.

NOTE: Currently the new interface is only in the prototype phase, and does not contain the complete set of functionalities. The old interface is still being provided for full backward compatibility. You may choose to activate access to the new interface for specific customers or accounts.

2. New Features in PortaBilling

Provisioning and Billing for WiMAX Services

PortaBilling already supports provisioning for Internet access services such as broadband access (e.g. DSL) or WiFi – and now support for WiMAX services has been included. In the case of WiMAX, PortaBilling does not directly communicate with any of the base stations; instead it communicates via the RADIUS protocol with WiMAX ASN-GW.



User authentication

PortaBilling supports WiMAX user authentication via EAP-TLS (this method relies on the certificate provided in the CPE) or EAP-TTLS (this method requires the CPE to have a valid username / password combination). Authentication also includes generation of the WiMAX session key and other required processing.

Flow provisioning

PortaBilling may return optional attributes to provision service flows for the user's WiMAX session.

Bandwidth provisioning

The administrator may define the allowed download / upload bandwidth as part of the product configuration in PortaBilling. Then during the service flow provisioning mentioned above the required information will be returned to the ASN gateway, and so will be applied to the session.

Hotlining

If a user is not allowed to use the WiMAX service (insufficient balance, customer blocked, account's product does not include the WiMAX service, or some other problem), instead of returning an authentication reject PortaBilling may allow the session to be established, but will assign a specific hotline profile to it. When the end-user tries to browse the Internet, he will automatically be redirected to a separate web page informing him about the status of his account.

Session monitoring

When a WiMAX session becomes active, ASN-GW sends a start accounting request to PortaBilling, informing it that the customer is now online. This information is stored in PortaBilling, so that the administrator can see information about currently active sessions on the PortaBilling web interface.

Real-time processing of service usage

When a customer is connected to a WiMAX network, ASN-GW periodically sends interim (also called *keep-alive*) accounting requests with information about the currently consumed amount of service – for instance, the total number of bytes downloaded. Upon receiving an interim accounting request, PortaBilling updates the internal tables for service usage (so the administrator and the end-user can see up-to-date statistics) and re-calculates the applicable charges for this session. Thus the charges are immediately deducted from the available balance or (in case of quota enforcement) the session is disconnected almost immediately after the quota is reached.

Postpaid service

The postpaid model allows you to authenticate only those customers who are entitled to use the service and have their account in good standing. When a customer is blocked by the administrator, suspended because of non-payment, or exceeds his credit limit, a CoA (change of authorization) message will be sent to ASN-GW to terminate the current session or switch it to the hotlined state.

Prepaid service

Each new session is authorized based on whether the account has funds available for using the service. After receiving each interim accounting request, the charged amount for this session is recalculated and applied to the account's balance. If there are no remaining funds, PortaBilling sends a CoA request to ASN-GW to terminate the current session or switch it to the hotlined state.

Data transfer quota enforcement

The PortaBilling administrator defines data transfer policies using a flexible tool – volume discount plans. This allows you to define the amount of data provided free of charge (at a 100% discount) and what happens after that: the service can be blocked, switched to a “limited” mode (low bandwidth), or the customer can be charged for data above the threshold.

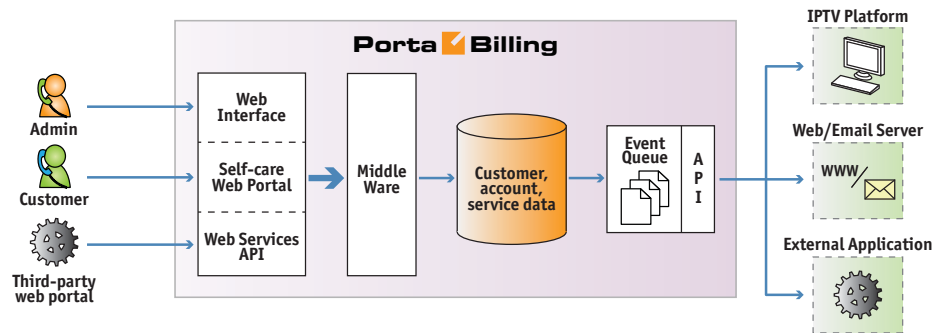
Supported equipment

PortaBilling supports the generic set of WiMAX RADIUS attributes and may potentially be used for basic authentication and accounting of WiMAX sessions with all major WiMAX equipment vendors. Provisioning of the flow attributes (or other proprietary attributes) requires vendor-specific interop. Please contact PortaOne to obtain more information about the currently supported vendors and equipment models.

Provisioning of External Systems

To simplify integration with external systems (e.g. IPTV platform or website hosting server) which receive their service configuration from PortaBilling, a dedicated interface is created so that all provisioning tasks can be controlled and managed from a single location.

Every modification of an object such as an account or customer in PortaBilling is recorded as an event. These events are queued in the system and then an updated service configuration for each account is pushed out to one or several provisioning plug-ins. Each of these plug-ins provides an interface for supplying data to a specific external system. This could be a text configuration file for a legacy application, or an XML API provisioning interface for a state-of-the-art service platform.



The extensible framework allows service provisioning for new platforms to be done quickly and with minimal effort.

Split Billing Records for Same Session

PortaBilling offers an extremely flexible system of dynamically adjusted rates, so that by using volume discount plans the administrator can program the dynamic adjustment of rates based on the amount of service already consumed. It may happen that a session (e.g. voice call or broadband Internet connection) spans several rating periods, e.g. one with a 100% discount and the other with the normal rate. Until now, such a session would generate a single xDR record (reflecting the fact that the customer actually used the service just once), and the total charged amount would be calculated based on the rates / discounts applicable for each individual portion of the session and the duration of each portion. Starting with PortaBilling Maintenance Release 23, such a session will produce multiple xDR records, each linked to the applicable discount level / rate.

xDR History For Account '16045550050'

Account: 16045550050
 From: 2010-02-10 17:51:53
 To: 2011-02-11 17:52:12
 Charged by: 'IP Centrex' product
 Type: Credit
 Total Sessions: 6
 Total Transactions: 7

Credits/Refunds: 0.00000 CAD
 Payments: 0.00000 CAD
 Subscriptions Charged: 24.85000 CAD
 Services Charged: 0.19833 CAD
Total: 25.04833 CAD

Show Totals By Services

IP Centrex

| View | From | To | Country | Description | Date/Time | Charged Time, min:sec | Amount CAD | Refund | |
|-----------------|-------------|-------------|---------|-------------|---------------------|-----------------------|-------------|----------------|--|
| | 16045550050 | 18667478647 | | | 2011-02-11 17:28:42 | 1:18 | 0.03000 | | |
| | 16045550050 | 18667478647 | | | 2011-02-11 17:19:00 | 0:05 | 0.00833 | | |
| | 16045550050 | 18667478647 | | | 2011-02-11 17:02:20 | 1:36 | 0.16000 | | |
| Subtotal | | | | | | | 2:59 | 0.19833 | |

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 Subscriptions Charged: 24.85000 CAD
 Services Charged: 0.19833 CAD
Total: 25.04833 CAD

Show Totals By Services

Session xDRs list

| Account | From | To | Country | Description | Date/Time | Charged Time | Amount CAD | Refund |
|-------------|-------------|-------------|---------|-------------|------------------|--------------|------------|--------|
| 16045550050 | 16045550050 | 18667478647 | | | 2011-02-11 17:17 | 1:00 | 0.00000 | |
| 16045550050 | 16045550050 | 18667478647 | | | 2011-02-11 17:17 | 0:18 | 0.03000 | |

| View | From | To | Country | Description | Date/Time | Charged Time, min:sec | Amount CAD | Refund | |
|-----------------|-------------|-------------|---------|-------------|---------------------|-----------------------|-------------|----------------|--|
| | 16045550050 | 18667478647 | | | 2011-02-11 17:28:42 | 1:18 | 0.03000 | | |
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| | 16045550050 | 18667478647 | | | 2011-02-11 17:02:20 | 1:36 | 0.16000 | | |
| Subtotal | | | | | | | 2:59 | 0.19833 | |

This makes it very easy for both administrators and end-users to check the accuracy of all transactions billed.

Invoice Payment Minimum

A new feature in the invoicing module allows the collection process for invoices whose total is below a certain threshold to be deferred. For instance, instead of diligently demanding payment for \$0.37 and even blocking the account if no payment is made, the system will simply transfer this balance to the next invoice, then to the next one, and so on, until the amount due on a new invoice is greater than the specified threshold (e.g. \$5), and the whole amount becomes due at that time.

3. New Features in PortaSIP

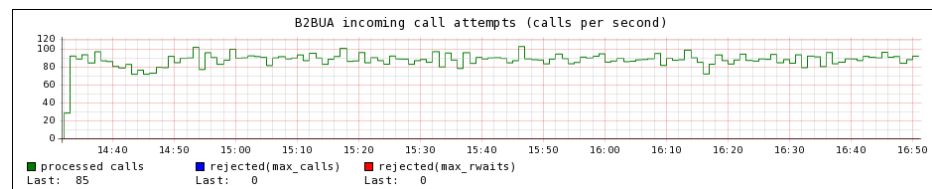
TLS Support

In many countries VoIP is still prohibited and standard SIP communications blocked by ISPs, so the only way to use this service is via an encrypted tunnel, connecting a user's local PC with a remote SIP server. PortaSIP now supports the TLS (Transport Level Security) interface, whereby a remote SIP phone can securely connect to the PortaSIP server directly, without the need for any additional tunnel software or equipment on the service provider side.

TLS technology may also benefit users in countries where VoIP is allowed, since they can use it to enforce privacy when using the service on public networks.

Improved Performance

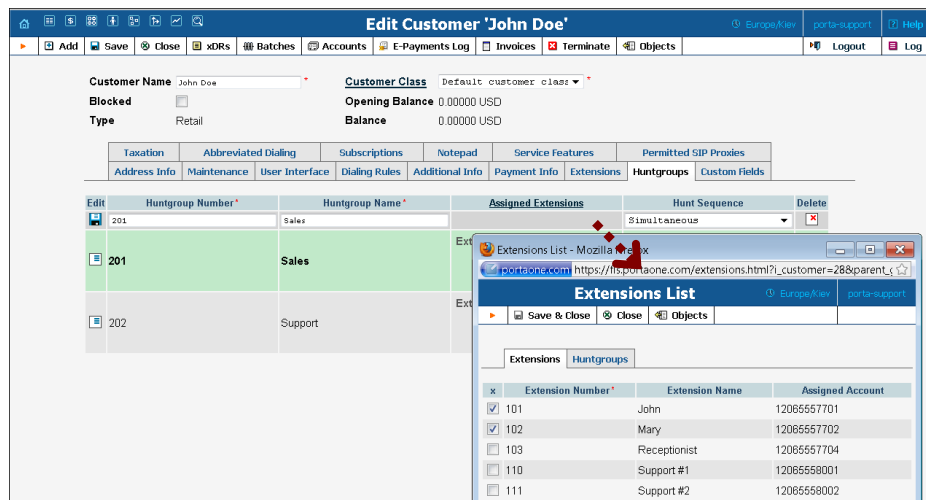
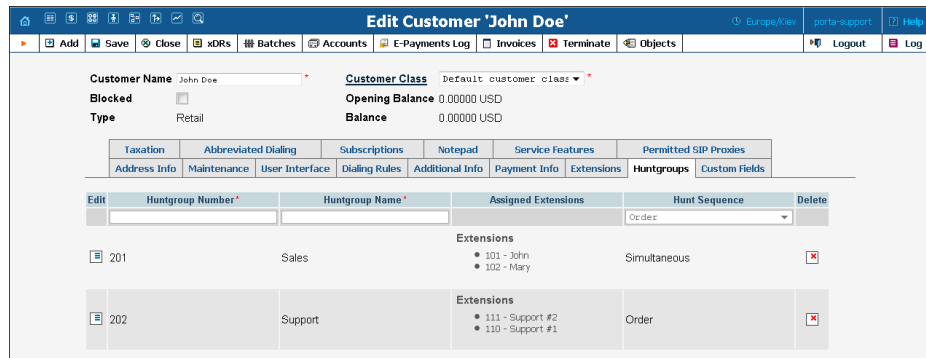
A single PortaSIP instance can spawn multiple B2BUA, each of which can process requests independently of the others (this is very similar to the symmetric multi-processing technology used in PortaBilling Advanced). This allows efficient utilization of multiple CPU or cores, thus increasing by 150-200% the amount of call requests per second which a single PortaSIP server can handle. Therefore, starting with the new release, a single PortaSIP server can handle up to 7,500 concurrent calls.



Huntgroup Management

Previously, a huntgroup was configured as a separate account with call forwarding (simultaneous, sequential or random) to accounts, representing individual phone lines. This was confusing for inexperienced PortaSwitch users.

Now a huntgroup is managed as a separate entity, with its own short dialing code and the ability to easily include extensions in the group.



Also, a new ringing strategy has been introduced: the **least-used** strategy allows sending calls to an extension which recently received the lowest number of calls.

4 . New Features in PortaUM

T.38 Incoming Fax Support in PortaUM

In addition to the support for T.38 faxes already available in PortaSIP (in case a call is originated or received by a fax machine connected to a SIP adapter), it is now possible to receive an incoming fax to a user's PortaUM mailbox via the T.38 protocol. This enhances the overall quality of the service provided to customers, since the T.38 protocol is more resilient to network problems than the default G.711 pass-through protocol, and also allows the number of interconnect carriers to be extended.

No changes are required on the user side, as PortaUM will automatically use the T.38 protocol if it is supported by the remote party.

New Language Support

Support for two new languages, Swedish and Arabic, is being introduced in Maintenance Release 23.