PORTA ONE

Porta Switch™

New Features Guide

Maintenance Release 22

www.portaone.com

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PortaSwitch: New Features Guide, August 2010
Maintenance Release 22
V1.22.1

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Preface

This document describes new features found in PortaSwitch Maintenance Release 22.

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 performing 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 the description of features, which involve more than one product and thus apply to PortaSwitch® as a whole.

Integration with Mobile Communication Client

As more and more people own smartphones, the demand for a single communication device increases. PortaOne has completed an interop with WLCom mobile communication client, which can be used to make calls from iPhone, Android, Blackberry, Symbian and Windows Mobile platforms. Calls are transmitted from the mobile phone using 3G or WiFi connectivity, then further processed by PortaSwitch® and routed to the destination. This allows end users to utilize a single phone and a unified list of contacts, while still saving on long-distance and international calls.

WLCom offers a CMS (Client Management System), which allows the service provider to fully control and automate the process of registration, configuration and updates mobile clients on thousands of mobile devices. This is a required step for building a service platform for any sizeable number of customers.
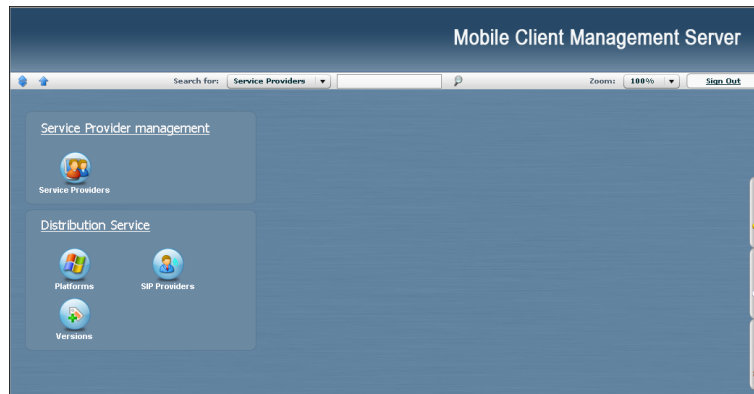
2. New Features in PortaBilling

Payback (or Reverse) Charges

This is a popular business model for attracting customers these days, in which customers can receive credits for using the service. This is typically done for incoming calls from other PSTN networks, in which the service provider receives revenue from other telco operators for delivering the call to its network and thus can share that revenue with the end-user.
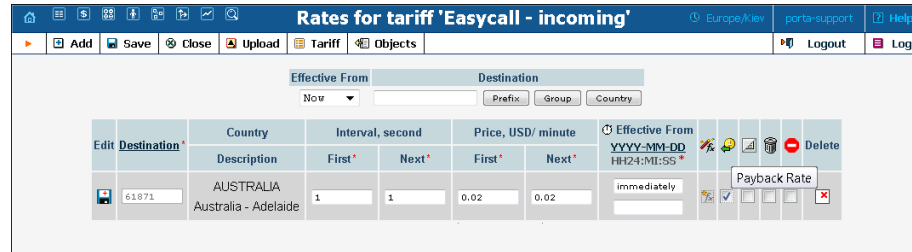
PortaBilling now supports payback rates, enabling the service provider to use the same flexible rating formula as that used for other types of rates – though the total amount will be credited to the customer's account.

Subtotals in Custom Reports

Previously, custom report result was presented as a table, with data rows and report totals at the bottom. In some cases, however, it is useful to see subtotals for individual groups of data. For instance, if a report presents a cost/revenue summary for the whole system, it may be useful to see the subtotals for each customer. Starting in Maintenance Release 22, you can choose the desired subtotals from a custom report management interface, and the corresponding calculations will be done automatically next time the report is generated.

3. New Features in PortaSIP

Caching Authentication during IP Phone Registration

A new feature for caching authentication results allows you to double PortaSwitch's capacity in terms of registration attempts processed per second, and to protect the system from a "registration storm" (whether unintended or part of a denial-of-service attack).

Under normal circumstances, when an IP phone goes online it provides PortaSIP with information about its current location on the Internet (in SIP terms, this is called registration). It then periodically repeats this so as to keep the contact information updated (this is called re-registration, although technically the information exchanged between the IP phone and PortaSwitch is not any different from that exchanged during initial registration). Subsequent registrations occur at the interval programmed into the IP phone, which is usually somewhere between 10 minutes and one hour. Since the IP phone is the initiator of the registration, there is really nothing PortaSIP can do to control the process and make re-registrations more or less frequent. (It can, however, advise the IP phone of a time to re-register again, but nothing prevents the IP phone from ignoring this and sending another registration request sooner).

When dealing with a network which contains a large number of IP phones whose re-registration interval is not automatically provisioned from PortaSwitch along with other configuration settings, the average rate of registration is a significant concern. For example, 30,000 properly configured IP phones (which re-register every 30 minutes) would generate about 17 requests per second for processing by both PortaSIP (parsing SIP messages and generating responses) and PortaBilling (performing account authentication). Yet just 500 IP phones registering too often (e.g. once every 30 seconds) due to a mis-configuration or a firmware bug would result in the same load on the system – and what happens when the number of such "impatient" phones starts growing is easy to imagine.

In order to prevent a situation where a few "rogue" IP phones create a significant load on PortaSwitch, the SIP proxy in PortaSIP performs caching of successful registration information. During the initial registration, the credentials provided by an IP phone are validated in PortaBilling as usual, and this information is stored in the database following successful registration. Later, when a new registration request arrives from an IP phone, PortaSIP first checks its location database to see whether there is already a registration for that phone number, with the matching contact data (IP address and port on which it is accessible). If a previous registration exists and occurred recently, then PortaSIP simply replies back to the IP phone confirming successful registration. This saves

resources on the PortaSIP side (since this process is much shorter than the normal dialog for handling a SIP REGISTER request) and creates zero load on the billing engine (since no authentication request is sent). This process is repeated upon subsequent re-registrations, until eventually the registration information becomes "too old" or the IP address and/or port provided in the request do not match the ones stored in the database (i.e. the IP phone is attempting to register from a new location). At that time the normal registration process will take place: the IP phone receives a challenge request, it sends back a reply calculated using its username and password, and an authentication request is then sent to the billing engine for verification.

In spite of how this may sound, simply confirming registration without verification by billing carries absolutely no security risks in this scenario. If an "evil hacker" sends a REGISTER request spoofing the real customer's IP address and port, he will only accomplish a reconfirmation of the original customer's location. If he uses a different IP address or port in an attempt to intercept the customer's incoming call, the cached information will not be used, and thus he would have to provide valid password information.

The "caching interval" is set to one half of the "recommended registration" interval, so this does not really create more "stale" sessions (where a phone is considered to be online when it has actually already disconnected from the Internet) than the normal scenario. The performance increase is tremendous: on a system with a 5-minute caching time, the amount of registrations per second that a single PortaSIP instance can handle increases 100% (from 400 per second to 800).

Visible Call Forward Info

Ordinarily, when your phone rings, the only information available is the original caller's phone number and, optionally, a caller name. While this works for simple residential calling, where it is always person A calling person B, in an IP PBX scenario there is usually more happening before your IP phone starts to ring. For instance, a secretary answers calls for several companies (Smart Software Design at 18005551234 and Synadyn Corporation at 12065559876), so she needs to greet callers differently depending on which company's number they originally dialed. Similarly, when John is substituting for his colleague, he needs to answer calls to his phone from the sales queue differently from calls forwarded there from the technical support queue. So in a case where calls are being delivered to a phone via an entity such as a huntgroup, external DID or the like, it is obviously important to see not only the original caller's identity (which in many cases is not even very useful) but also information about the entity which forwarded the call.
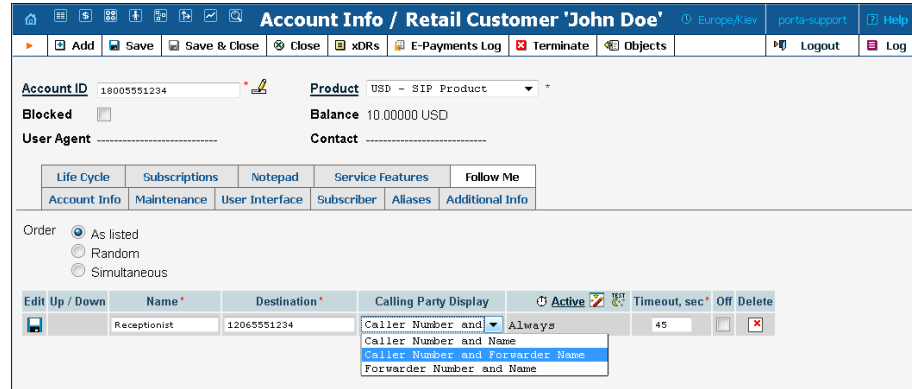
The visible call forward info feature in PortaSwitch allows users to easily determine the origin of an incoming call and react accordingly. So when account A (representing an external phone number, huntgroup, etc.) in PortaSwitch is configured to forward calls to account B (representing the actual IP phone line), the forwarding is configured to replace "Display Name" information (the description displayed along with the caller's phone number on the phone as it is ringing) with information identifying account A.

4. New Features in PortaUM

MP3 Support for Voicemail Recordings

Starting with PortaSwitch Maintenance Release 22, the voicemail recording attached to an outgoing email can be provided in MP3 format, in addition to the default WAV format. This allows playback of the recording on platforms that lack WAV support (e.g. iPhones).

One important consideration is that producing MP3 files requires an MP3 codec license from the Fraunhofer Institute; such licenses are provided based on the maximum number of simultaneous conversions done on a given server. A license for 3 "ports" will be provided by PortaOne free of charge to all customers upgrading to MR22; therefore, up to 3 voicemails may be converted to MP3 format simultaneously. If a service provider expects a large number of customers to use this feature, it may be advisable to obtain licenses for additional ports; please contact the PortaOne sales team. MP3 conversion is a fairly resource-intensive task, so please take this into consideration during your server capacity planning for PortaUM.

Password-protected Dialing Application

PIN-less dialing applications have been used for some time and are quite popular, since they provide customers with greater convenience compared to traditional prepaid calling. In this case, the customer's phone number (cell or home phone) is pre-registered in the system, so that when he dials an access number, the system collects the caller number (ANI or CLI number), validates it in the billing and, if successful, announces the available balance and allows the customer to enter a destination number. This application has taken on a "second life" with the popularity of residential VoIP services, where it is used as a value-added service. If a customer has no Internet connectivity and cannot make a call from an IP phone, or is simply away from his IP phone, he can still call using his pre-registered home or cell phone number.

Unfortunately, with the growing popularity of VoIP and many VoIP providers not using strict identity control tools such as those offered by PortaSwitch (for more details, see the SIP Identity section), it is fairly easy for someone to spoof an ANI/CLI number in an outgoing call and impersonate someone to the PIN-less dialing application.

Therefore, the customer's access to outgoing calling must be protected by a password. This need not be as long as a prepaid card PIN (10-12 digits), but should be sufficiently secure to prevent unauthorized use of his account. A new feature in the PortaUM prepaid calling application allows you to prompt customers for their password upon collecting their ANI number, and to use it for account validation in the billing (the password provided must match the account's Service Password). This allows service providers to gain a competitive advantage when rolling out dialing services and offer these services to a larger customer group.