PORTA ONE

PortaSwitch

New Features Guide

60
MAINTENANCE
RELEASE

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Preface

PortaSwitch® Maintenance Release 60 is the next long-life release which is mainly focused on improved system stability. It is supported with bug fixes, contains minor improvements and offers other software support for an extended period of time, thereby enabling customers to better plan the evolution of their PortaSwitch® systems.

Where to get the latest version of this guide

The hard copy of this guide is updated upon major releases only and does not always contain the latest material on enhancements 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 actions that must be taken for proper configuration.

NOTE: Notes contain additional information to supplement or accentuate important points in the text.

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

Archivist explains how the feature worked in previous releases.

Gear points out that this feature must be enabled on the Configuration server.

Tips provide information that might help you solve a problem.

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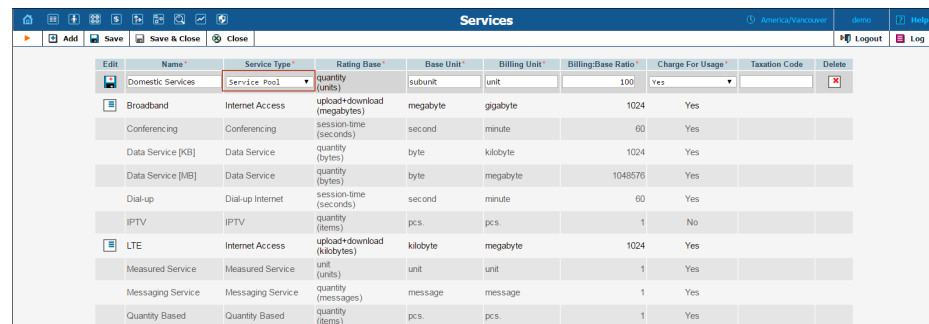
Quota / Balance Allocation for Multiple Services

Allocating separate balances for service usage in service wallets enables you to manage customer funds effectively. At the same time, your revenue increases, since customers top-up several service wallets at a time to access the service.

With this release, you can allocate a common balance that can be used for a subset of services. For example, you can allocate a $50 service wallet for domestic calls, SMSs and Internet access and reserve the main balance to be used for international calling. Thereby you introduce quad-play services while monetizing their consumption efficiently.

To narrow down the services available within a common balance, consolidate them into **service pools.**

Every service within a pool can be measured differently (e.g. voice calls are measured in minutes, Internet access – in megabytes, etc.). Therefore, service pools are measured in unified *virtual units*.

Virtual units are used to express the cost for using a particular service that is included in the pool (e.g. one minute of calls costs 5 units while an SMS message costs 1 unit). If your pricing changes, you can conveniently re-configure it within the service pool.
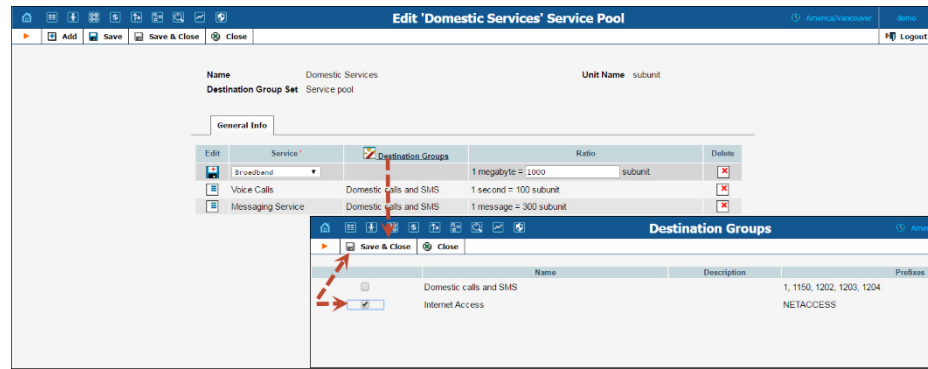
Let's consider multi-service wallets and quotas, separately.

Multi-Service Wallets

Using multi-service wallets, you can allocate a common balance for your prepaid customers and allow them to use it for different services.

Similar to regular service wallets, in the multi-service wallets you can identify the service usage as being either monetary or in units. Encourage customers to use these wallets by introducing flexible top-up schemes (e.g. pay $10 and use domestic services worth $12 or pay $20 and use domestic services worth $25). Then when a customer tops-up their multi-service wallet, they can use it for any of the services included in the wallet while their main balance remains intact.

To illustrate how multi-service wallets function, consider the following:

You want to distinguish voice calls and domestic SMS delivery from international calls. To do this, create a "Home Plan" service wallet that includes Voice calls and Messaging services.
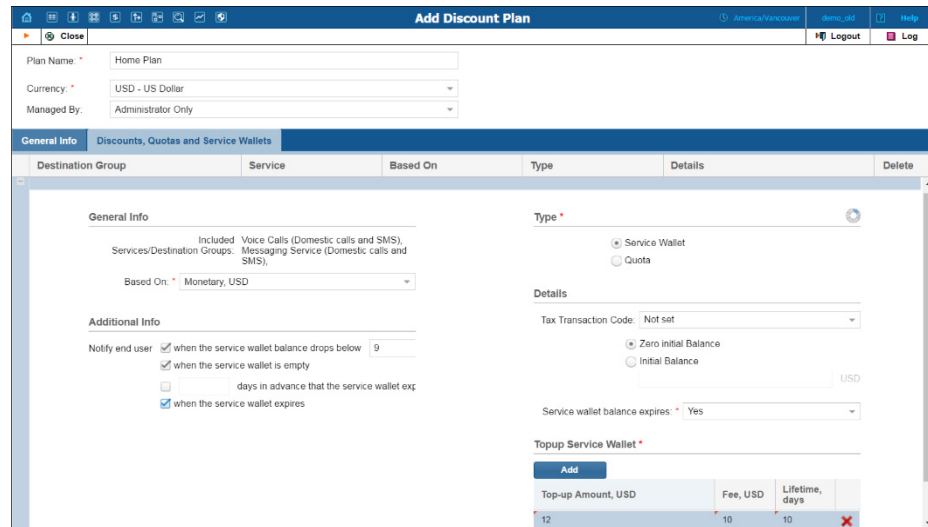
Prepaid customer John Doe lives in Canada and has $5 worth of available funds. He signs up for the "Domestic Services" product and tops-up his service wallet with $10. Each time John makes a call or sends SMSs to Canadian numbers, his $10 decreases.

When John calls his mother in Australia, his $5 worth of available funds decreases.

Quota Consumption for Multiple Services

In some cases, you may not wish to reveal your pricing strategy to customers and / or competitors (e.g., prices are temporarily reduced to promote your triple-play service bundles and attract customers). Multi-service quotas work well for those cases. You offer customers quota consumption in virtual units and at the same time, flexibly define the pricing for each included service and re-configure it when needed.

Consider the following example:
Your "Paradise-100" quota provides 100 monthly units and includes services that are rated as follows:
- Voice calls to USA & Canada destinations – 3 units / minute;
- Voice calls to Europe – 10 units / minute;
- SMSs worldwide – 1 unit / message.

Customer Jane Doe signs up for this quota and starts using it. She calls her mother in New York for 10 minutes – so her quota decreases by 30 units, leaving 70 units available. After she makes a 5-minute call to a friend in the UK and sends 2 SMSs, she still has 18 units available for the month.

To fine-tune the service configuration further for your customers, combine the multi-service quota with regular quotas or service wallets.

For example, you provide domestic calls and SMSs within a multi-service quota while Internet access is provided from a separate service wallet. Thus, whenever a user makes a domestic call or sends an SMS, the quota counters adjust; and when they access the Internet, their service wallet balance decreases.

Implementation specifics

In conclusion, providing multi-service wallets and quotas has the following implementation specifics:
1. Service pools apply for a complete destination group set.
2. Each service within a pool is defined for a destination group.
3. Service pools are measured in virtual units. Virtual units are used to express the cost for using a particular service and are mapped

to this service's units (e.g. a minute's worth of calls costs 5 units while an SMS message costs 1 unit). Note that the number of virtual units in the mapping must be higher than the number of service units.

4. To fine-tune the pricing, you can add the same service multiple times for different destination groups and define a different unit mapping. Note that the service-destination group pairs within the service pool must be unique.

5. You can create a single multi-service wallet or quota within the same volume discount plan.

With this solution, service providers gain additional flexibility with their pricing and service management, and become more competitive in the telecommunications market.

Customers, in turn, can form their own service usage patterns regarding on-demand consumption of units. In addition, topping-up a single service wallet saves time and increases customer loyalty to the service provider.

Unified Codes for Tax Calculation

Different taxation plug-ins have individual sets of taxation codes that do not always coincide. Therefore, when a service provider switches from one taxation system to another, service management could become cumbersome and lead to misconfigurations (e.g. when an existing customer with one kind of taxation signs up for a product that uses another type of taxation).

To simplify this task, the tax processing logic has been unified.

With this release, taxation for all transactions is defined in PortaBilling® using *internal* tax transaction codes. An internal tax transaction code corresponds to the taxation code of the selected tax plug-in(s). Each set of internal tax transaction codes is unique for the administrator and their resellers.

To illustrate the tax process for customers, consider the following example:

Service provider TATA-Telecom provides voice calls, SMS and Internet access services to residential customers. They offer different promotions as part of their marketing campaign and provide users with additional products. They also have a range of IP Centrex customers and charge them for their number of active calls.

They have been calculating taxes via the taxation company A. However, they have received a better offer from taxation company B and will soon begin to use them to calculate taxes.

To simplify service management and ensure proper taxation for every customer, the administrator creates internal tax transaction codes for every taxation transaction and maps them to the taxation codes of companies A and B.
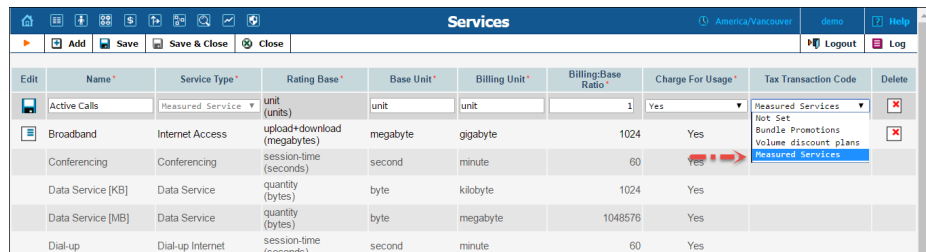

Then the administrator defines the internal tax transaction codes for each service provided:

- Subscriptions,
- Service wallets,
- Bundle promotions.
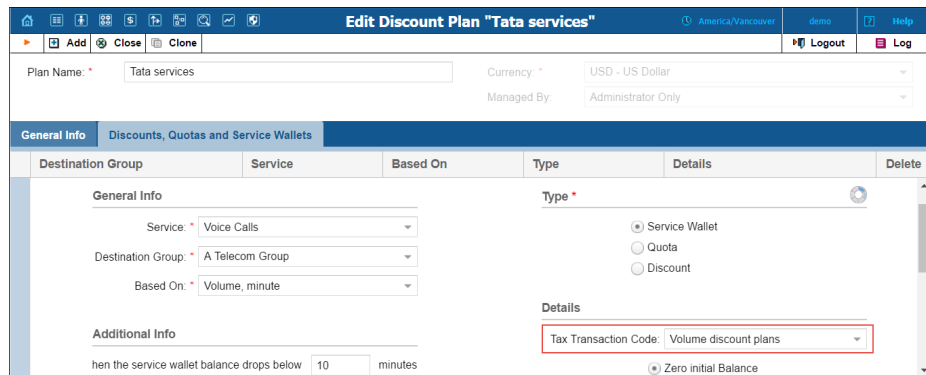
To apply taxes to measured services, the administrator creates a service and defines the tax transaction codes within it.

When customers' billing periods close, PortaBilling® selects company A's taxation codes for customers that still have that configured as their taxation method and sends them to that company. Likewise, PortaBilling® selects and sends company B's taxation codes to newly added customers.

Thereby the administrator configures taxation for service wallets, subscriptions, bundle promotions and measured services in a unified manner with just a few mouse clicks.

Internal tax transaction codes are automatically created and mapped to the configured taxation plug-in's tax codes during the software upgrade. However, if more than one taxation plug-in is defined in the billing environment, the taxation codes of only one plug-in will be mapped automatically. Therefore, the administrator must manually recheck the internal tax transaction code configuration and add the taxation codes for the remaining plug-ins.

In summary, the key assets of tax calculation using internal tax transaction codes are as follows:

1. Internal tax transaction codes must be specified for each transaction and custom service.
2. Internal tax transaction codes must be mapped to each of the taxation plug-in(s') taxation codes configured in the system.
3. Internal tax transaction codes are ignored for customers that have VAT or custom taxation.
4. Internal tax transaction codes are unique for administrators and resellers.

Voice over WiFi Solution for Roaming Users

To stay competitive, wireless operators need to permit their customers to use their services even when they are traveling outside of their home

networks. Introducing roaming service support, however, is costly and cumbersome, both for you and for your users. With PortaSwitch® you can deploy roaming services using WiFi and a mobile application at no cost and with no extra charges to your users.

The voice over WiFi solution, introduced with this release, includes PortaSwitch® and the PROTEI WiFi Roaming platform, which updates the users' mobile carrier about their current location. Thus, when a user is in roaming, all incoming calls to them arrive to PortaSwitch®, which then delivers them to the user's mobile application.

This is how it works in more detail:
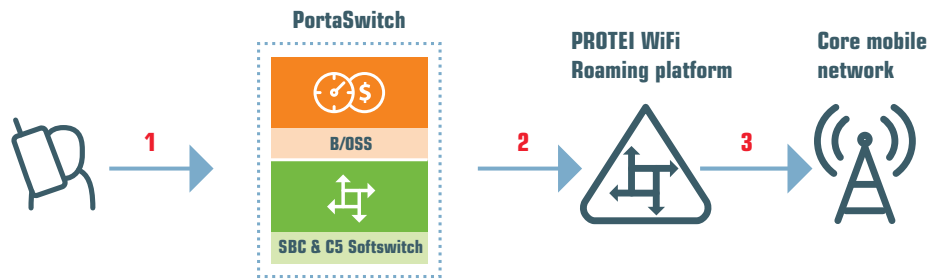
When a user connects to WiFi and the mobile application registers with PortaSwitch® (**1**), PortaSwitch® forwards the user's registration to the PROTEI WiFi Roaming platform (**2**). The PROTEI WiFi Roaming platform passes the user's current location to the user's mobile carrier within the LU (Location Update) message (**3**).
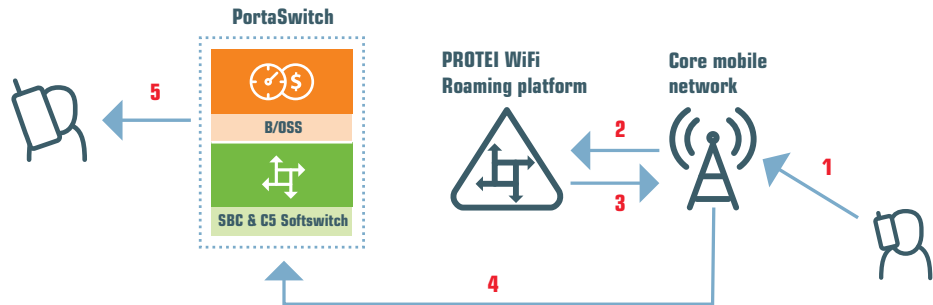
When someone dials the user's phone number (**1**), the mobile carrier addresses the PROTEI WiFi Roaming platform with a PRN (Provide Roaming Number) message (**2**). The PROTEI WiFi Roaming platform responds with the user's local roaming number and prefix (**3**) based upon which their mobile carrier routes the call to PortaSwitch® via SIP (**4**). PortaSwitch® then processes the call and delivers it to the user's mobile application (**5**).

To instruct PortaSwitch® to forward user registrations to the PROTEI WiFi Roaming platform, define its IP address for the **third_party_registrars** option on the Configuration server web interface.

With this solution, you introduce roaming service support at no cost, allow your customers to receive incoming calls free of charge and make outgoing calls at reduced rates. This increases your competitiveness in the market and improves customer experience.

Roaming Identification in xDRs

The key advantage that mobile users have is the ability to roam and continue using the service while being outside of their home networks. Naturally, charges for service usage in roaming mode differ from those within the home network.

With PortaBilling®, you can now provide extensible information to your customers about the services they use while roaming and the charges they incur for this service usage. This information includes which country the user is in when using the service and the name of the carrier that provides this service.

For customer and administrator convenience, PortaBilling® distinguishes between xDRs produced for roaming services and those produced for home network service usage. Therefore, when a customer receives an invoice or browses their billing statistics on their self-care web interface, they see the roaming services (Voice calls, Messaging and Internet services) and the charges associated with them as a separate group.

Of course, the same information is available in the xDR browser for the administrators and helpdesk operators.

Having the ability to examine and pinpoint roaming service usage helps with troubleshooting issues and solving disputes.

Integration with the BroadForward BFX Interface Gateway

Among the variety of wireless networks in the telecommunications market, networks such as 2.5G, 3G and CDMA are still popular. For 3G networks CAMEL is the main protocol, that enables communication for Intelligent Network (IN) architectures. For North American CDMA networks, this role is fulfilled by the WIN (Wireless Intelligent Network) protocol.

You can penetrate this segment of wireless networks or preserve service provisioning in a CDMA network by using PortaBilling®, and all the while deploying new generation network services (e.g. LTE).

The CDMA network solution includes PortaBilling® operating as an OCS (Online Charging System) for real-time call authorization and rating and the BFX Interface Gateway as the entry point to your network.

In this deployment, the BFX Interface Gateway operates as the mediation component performing the conversion of WIN messages into Diameter (Ro) messages. Thus, the BFX Interface Gateway communicates with the MSC using WIN, while communication with PortaBilling® is done using Diameter (Ro).

When a user places a call, the following occurs:

The MSC (Mobile Switching Center) performs the call authorization in PortaBilling® that verifies that the customer's balance is sufficient to call the desired destination. The MSC uses the WIN protocol, therefore its call authorization request is sent via the BFX Interface Gateway where it is converted to Diameter (Ro) and then delivered to PortaBilling®. PortaBilling® locks in the funds to cover the initial period of the call and sends a confirmation message to the MSC. This message also passes via the BFX Interface Gateway where it is converted to WIN and then delivered to the MSC.

When the user's initial call period finishes and their overdraft protection is configured in PortaBilling®, the BFX Interface Gateway sends a request to lock in the funds for subsequent periods.

Once the user hangs up or runs out of sufficient funds to continue the call, the BFX Interface Gateway sends instructions to the MSC to disconnect the call and sends a Credit Control Request – Terminate (CCR-Terminate) message to PortaBilling® to report the end of the call. PortaBilling® then produces a CDR record for this call.

The integration of PortaBilling® with the BFX Interface Gateway may be of special interest for service providers who aim to penetrate the mobile communications market as MVNOs or MVNEs, since it expands the range of equipment they can use for organizing their network infrastructure.

Enhanced Internet Service Provisioning for ADSL Users via Cisco 7000 / 7200 Series Routers

With this release, Internet service provisioning for ADSL users via Cisco 7000 / 7200 series routers has been enhanced. Now ISPs can change Internet speed without interrupting users' active sessions, depending on the time-period, and redirect users to a hotline portal for ADSL users.

Seamless Internet speed change

When a user establishes an Internet session, the NAS sends an authentication request to PortaBilling®. Upon session authentication, PortaBilling® generates a response defining the time-period for the session start.

When PortaBilling® detects that the time period has changed, it sends a CoA (change of authorization) request to the NAS. The NAS then adjusts

the Internet speed for the current session, according to the Internet access policy parameters, without terminating the session.

Configuration

To configure this functionality, follow the next steps:
1. On the Configuration server add *[Cisco]CoaEnabled=1* value for the **IniOptions** option.
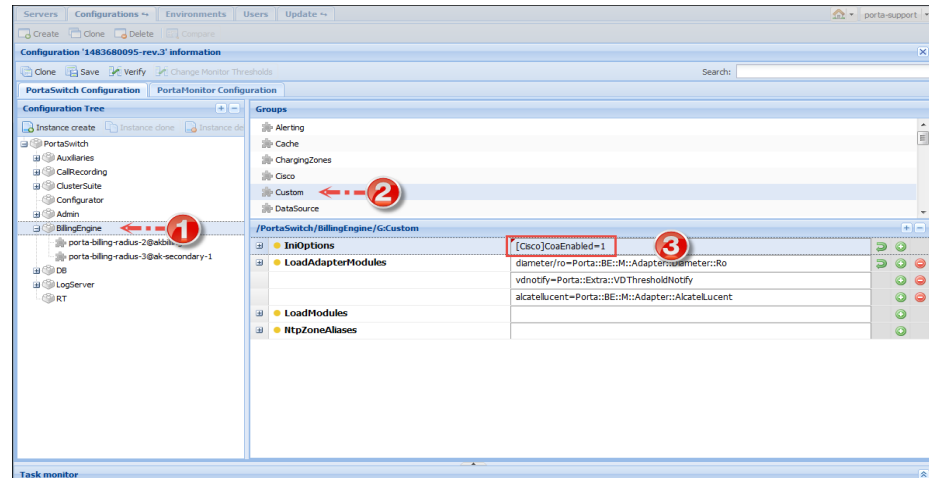
2. On the administrator web interface, define time-periods and download / upload speed on the **General Info** tab for the Internet access policy.
3. Specify ACL in the **Description** field for an Internet access policy ("**(acl=199)**" is a recommended value for the ACL).
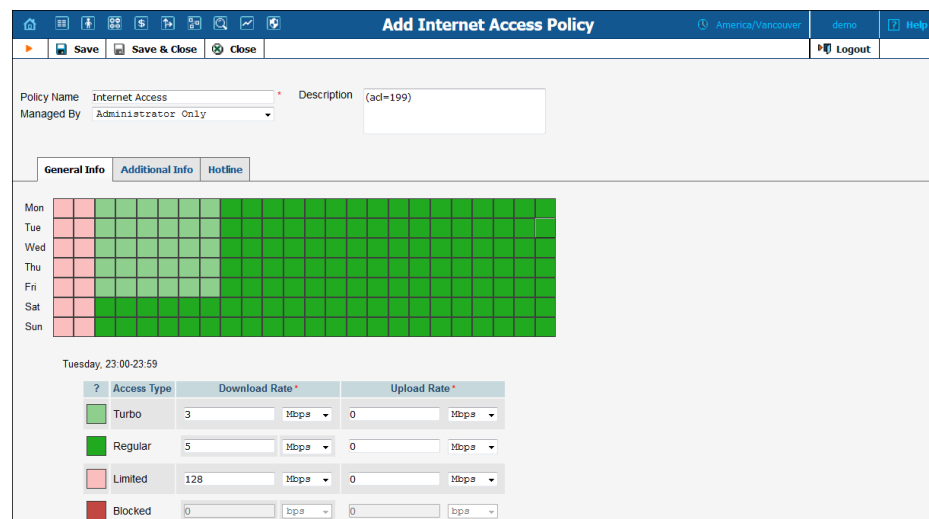
4. Assign the Internet access policy to the account.

This functionality provides ISPs with more flexible Internet provisioning and allows the Internet speed to be changed without session interruption.

Hotlining

Cisco 7000 / 7200 Series routers allow ADSL users to be redirected to a defined web site when:

- their Internet access is blocked according to the time-period set in the Internet access policy, or
- their resources have all been consumed.

During the active Internet session, PortaBilling® detects that the time period has been changed to "blocked." It sends a PoD (Packet of Disconnect) request to NAS. The NAS then disconnects the current session and sends a re-authentication request to PortaBilling®. PortaBilling® detects that the service is blocked according to the Internet access policy and generates a response. The NAS then redirects the end user to a defined website.

Sometimes user's funds become depleted or their quota is reached while still using the service. In these cases, once the lack of resources has been detected, PortaBilling® sends the NAS a PoD (Packet of Disconnect) request. The NAS then disconnects the session and attempts to re-authorize the user. Having received a re-authorization request, PortaBilling® detects the lack of funds for the service and instructs the NAS to redirect the user to the hotline portal. The NAS then redirects the end user to a defined website.

Configuration

An administrator enables the feature on the **Hotline** page of the Internet access policy and assigns it to the account.

With these enhancements, ISPs introduce advanced service provisioning to their ADSL users.

Other Features and Enhancements

- **Simplified voicemail number definition in Dialing Rules wizard** – As a rule, access to voicemail is defined with a special

dial code (e.g. *98), which is not translated. Therefore, the administrator must instruct PortaBilling® how to process it by configuring the customers' dialing rules.

Beginning with this release, this task has been simplified for administrators. Now the voicemail dial code is part of the Dialing Rules wizard and can be conveniently configured on the dedicated tab. When an end user dials this code, PortaBilling® recognizes it as is and instructs PortaSIP® to launch the IVR application.

This enhancement optimizes the number translation flow and prevents misconfiguration issues.

- **Improved Balance Adjustment wizard** – Some transactions (such as **Capture Payment**, **Void** and **E-commerce Refund**) require the transaction ID from an original, already successfully authorized or settled transaction.

  For example, a successful **Authorization Only** transaction is completed before a **Capture Payment** transaction and reserves a specific amount of money on a customer's credit card. The **Capture Payment** transaction charges the customer's credit card for an authorized amount. To complete the **Capture Payment** transaction, an administrator must only submit the valid transaction ID of the original **Authorization Only** transaction.

  For greater convenience to administrators in completing such transaction types, the wizard now displays a list of recently completed transactions and their transaction IDs, amounts and transaction dates. An administrator chooses an appropriate completed transaction and follows the wizard's instructions.

This makes the balance adjustment procedure more expedient and user friendly.

- **Extended information in subscription refunds** – When charging customers for subscriptions, PortaBilling® applies charges for an entire billing period if a customer has sufficient funds. In case you do not charge suspended customers for subscriptions, such customers receive a refund for the period during which services are not provided. Thus, two xDRs are generated for this customer: one for the entire subscription charge and another for the refunded amount.

  With this release, xDRs for subscription refunds contain a reference to xDRs produced for subscription charges.

  This enhancement facilitates accounting and reporting. Presenting extended billing statistics to customers helps solve disputes when troubleshooting issues.

- **Display of system statistics data graphs in a user's time zone** – By default, system statistics are collected and stored in the UTC time zone. With this release, PortaBilling® displays the **System Load** and **Connection Load** graphs as well as **CC Staff Reports** according to the time zone where the administrator operates. If another administrator operating in a different time zone browses the system statistics data graphs, they see the data in their own time zone.

  This enhancement enables your staff members to see relevant information and therefore optimizes system management.

- **Porter enhancements** – This release introduces the following enhancements to Porter, the data transfer tool:
  - The ability to transfer billing data between different releases. Now, you can effectively transfer some of your customers from your current PortaBilling version to a

newer release and introduce new functionalities for them with minimum configuration effort. Note that the release for the new system must be within the backward compatibility range (e.g. transfer customers from MR55 to MR60);

- o Transfer of representatives' data separately or as assigned to resellers, customers, distributors;
- o More flexible distributor data transfer:
  - ▪ Transfer distributors and all customers that have this distributor assigned.
  - ▪ Transfer distributors without their customers.
- o Transfer of statistics graphs for measured resources as part of a customer and customer class configuration;
- o Transfer of vendor billing records and xDRs.

This optimizes the data transfer flow and permits you to run new services for your existing customers in a new system with minimum configuration effort required.

- **Improved Replace mode in the Rate Upload wizard** – Service providers use the **Replace** mode to upload new rates and discontinue rates for all prefixes not present in the uploaded files.

  Beginning with this release, administrators have the ability to define whether rates not present in the uploaded files are to be discontinued immediately or on some specific later date.

This allows administrators to perform the rate import in advance and keep the "old" rates valid until a new tariff plan takes effect. Thereby the rate upload procedure becomes more adaptable to the service providers' needs.

- **Effective From field is added to the Rate Upload wizard** – Since the rate upload process is interactive, an administrator can review new data or recent changes being uploaded to check their integrity and accuracy. As rates can be uploaded as both effective

immediately and scheduled for the future, with this release, the **Effective From** field is shown on the **Review Rate Information** page. This makes it possible to verify that the file was recognized correctly and therefore, makes the whole rate upload procedure more transparent.

This enhancement also helps an administrator to check the exact date that rates come into effect before import.

- **Notification about large size of rate files** – The rate upload wizard allows you to import .xls or .csv files up to 64 MB. If a rate file is bigger, a notification appears on your computer screen informing that the file exceeds the size limit.

  This enhancement identifies the reason the file cannot be uploaded and therefore facilitates troubleshooting.

- **Configure IPTV service management based on customer balance** – With this release, the administrator can configure control over their customers' IPTV service availability based upon their balance. By default, PortaBilling® does not provision a customer's balance to an IPTV platform. Thus, your customers are able to watch IPTV even when they are out of funds.

  However, if you wish to restrict access to the IPTV services when the user has no funds, and then resume it once they have topped-up, set *Yes* for the **DeactivateOnZeroAvailableFunds** option on the Configuration server web interface.

  Then if your prepaid customer runs out of funds, PortaBilling® will provision this information to an IPTV platform and deactivate the services for them. Likewise, as soon as the customer

tops-up their balance, PortaBilling® will instruct the IPTV platform to resume their services.

This enhancement optimizes the service provisioning flow.

- **Auto removal of IPTV subscriber for account with no IPTV service assigned** – Now, when a PortaBilling® account switches to another product that contains no IPTV services, instead of the subscriber being suspended, they will be removed from the IPTV platform database automatically.

  This enhancement simplifies IPTV platform database maintenance so that voided subscribers are not stored.

- **Call transfer recall** – Call transfer functionality has been enhanced so that PortaSIP® restores a call between a transferor and the party to be transferred in case of an unsuccessful transfer. This enhancement is especially beneficial during blind transfers, in which the transferor is not aware of the call state after the transfer is initiated.

  This is how it works:
  John calls Mary. After a while, he decides to transfer Mary to his colleague Pete. He presses the "Transfer" key on his phone and hangs up. If Pete is offline or does not answer, John's phone rings again. Thus, he is returned to the call with Mary and can try to transfer her to another number.

  The time during which John's phone rings again is defined in his account configuration.

  This enhancement improves customer experience with services provided.

- **Unified voice prompts for the account self-care IVR application** – Now when an end user dials the account self-care IVR application and reaches the "Check service password" menu, they hear: "Please enter your password and press pound." If the specified password is wrong, they hear: "This password is incorrect."

  This provides a more unified and consistent end-user experience with IVR applications.

- **Sharing notes within a distributor network** – Distributors may build branched networks, and if they do so, they can take notes and record important remarks to be shared with their

representatives. To enable distributors to make notes on their **Subdistributor** pages, an administrator grants permission via the Access Control Lists (ACL) configuration. Subsequently, the **Notepad** field can be used for making and sharing notes and representatives can monitor the information left by the distributor.

The administrator can find the **Notepad** tab on the Distributor Management page, by default.
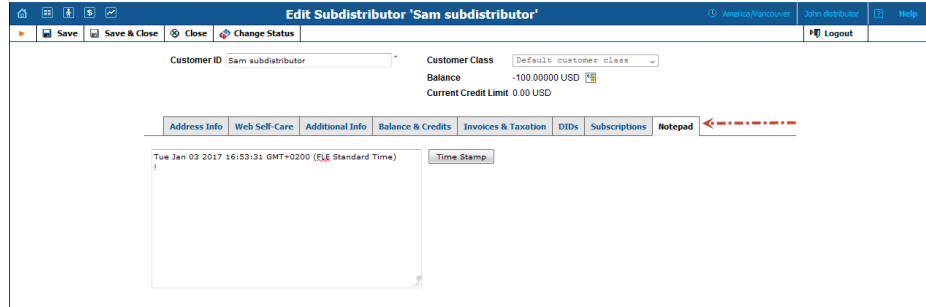
This enhancement simplifies collaboration among distributors and their network entities.

- **Simplified change of invoice template type** – Now, an administrator can easily change the types of invoice templates used for regular and out-of-turn invoices for a particular customer or customer class.

  By design, invoice templates for regular and out-of-turn invoices must be of the same type (standard or custom). Therefore, when an administrator changes a template type for regular invoices, they should select the same template type for out-of-turn invoices, too.

  With this release, a notification appears if an administrator selects different template types for invoice generation.
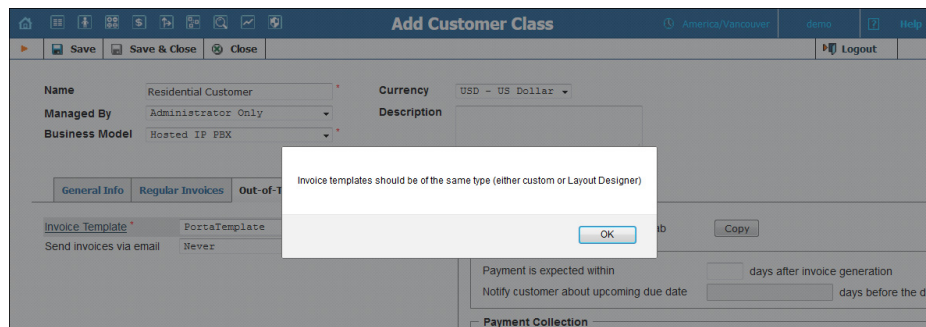
This enhancement prevents an administrator from producing misconfigurations when creating a customer class.

- **Notification about server reassignment to sites** – Now, if an administrator needs to reconfigure the system and move a server from one site to another, a notification appears that contains the prompts about further instances recreation for the server.

    With this enhancement, administrators are informed about the steps to be taken to prevent a server misconfiguration when they are moved from one site to another. This helps the administrators easily and properly reconfigure PortaSwitch®.

- **Simplified CPE profiles deletion** – To provision a SIP phone, an administrator creates a CPE profile for it. From time to time, an administrator may change some of the parameters for a particular CPE profile. Therefore, with each change that is applied, a new version of the profile is created on the **CPE Profiles** page. This is done to preserve backward compatibility.

    If an administrator has a list of CPE profiles for a single device type, he can now easily delete one or more of its versions at once.
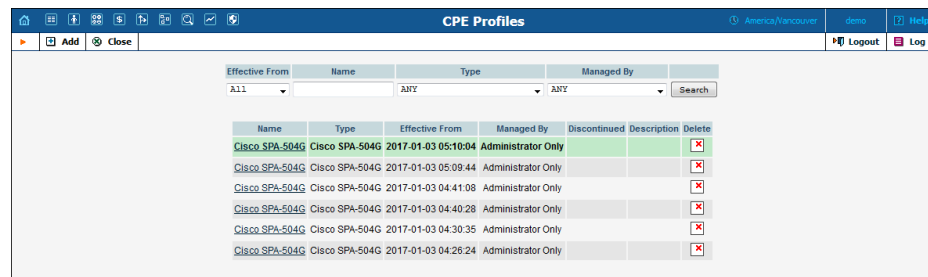
PortaBilling® notifies the administrator about their number and suggests the correct way to delete them:
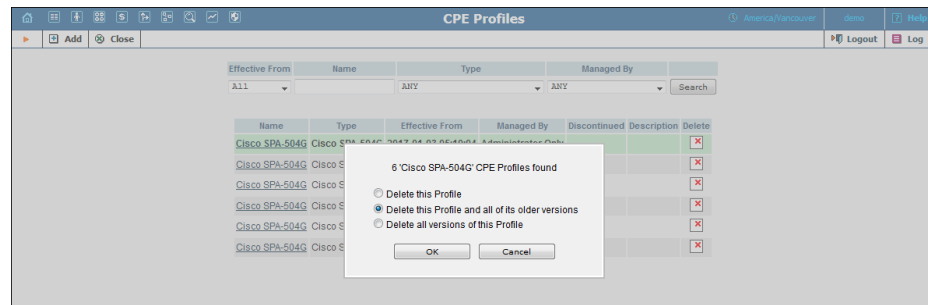
- o **Delete this Profile** – allows an administrator to delete the selected profile.
- o **Delete this Profile and all of its older versions** – allows an administrator to delete the selected and previously created profiles.

o **Delete all versions of this Profile** – allows the administrator to delete all existing versions of the selected profile.

This enhancement saves an administrator's time and simplifies CPE profiles management.

- **Provide promotional discounts based on charges for measured resource consumption** – With this release, you can configure PortaBilling® to provide bundle promotions based on charges for measured resources.

  For example:
  You have an IP Centrex customer, Telecom Plus. You allow them to create up to 50 extensions for free and then charge $10 for each additional extension.

  To encourage Telecom Plus to spend more money on extensions you offer a 15% promotional discount for international calls if their charges for extensions for that month exceed $100.

  To do that, configure a destination group and specify the particular rate code (PBXEXTENSIONS in this case). Then, configure a bundle promotion for the specific measured parameter and apply it to customers.

This enhancement enlarges the range of promotional discounts you can offer to your customers.

- **Increase tax calculation performance for SureTax** – You can reduce the time it takes to calculate taxes with SureTax.

  At the end of a billing period, PortaBilling® sends customer xDRs to SureTax to calculate taxes. Once the calculated taxes from SureTax are received, PortaBilling® generates tax xDRs and produces invoices. In the case of a large number of customers, the process can become quite time-consuming.

In order to speed up the xDR process in PortaBilling® you can configure the number of parallel requests to be sent to SureTax per customer. To do that, specify in the **Web Custom** group on the Configuration server the number of parallel requests as *[SureTax]ParallelRequests=N* (where N is the number of concurrent requests to SureTax servers). The default value for this option is 2, which means that two simultaneous requests per customer are sent to the SureTax servers.

For example:
Your customer "Easy Call" has 9000 xDRs it must send to SureTax for tax calculation. Since PortaBilling® sends xDRs in batches, with no more than 3000 xDRs to a batch, they will be divided into three batches of 3000 xDRs each. PortaBilling® will send three requests to the SureTax servers, one at a time. If you specify the number of parallel requests as 3 (*[SureTax]ParallelRequests=3*) PortaBilling® will send these requests simultaneously.

You can increase the number of parallel requests sent by PortaBilling® up to 25 for a single customer, depending on your needs, hardware resources and agreements with SureTax.
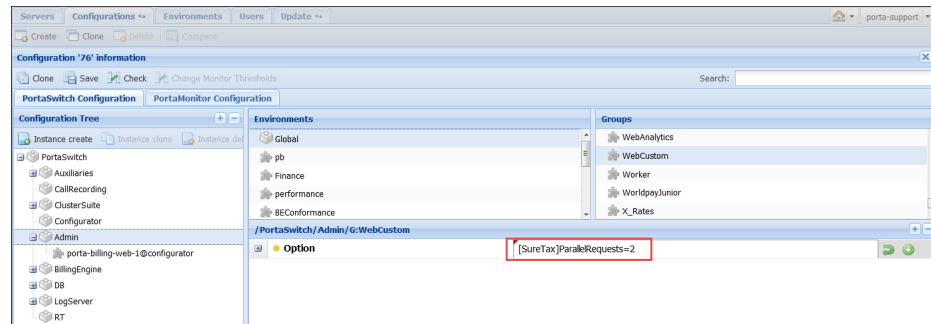
In addition, you can configure PortaBilling® to process taxes for two or more customers simultaneously. To do that, first enable the *Enable_Tax_Parallel_Calculations* option and then set the number of customers to be simultaneously processed in the *Parallel_Calculations_Queue_Size=X* option (where X is a number of concurrent customers) for the **Stats** group on the Configuration server.

For example, you configure PortaBilling® to have the following setting:

> [SureTax]ParallelRequests=10
> Enable_Tax_Parallel_Calculations select "Yes"
> Parallel_Calculations_Queue_Size=3

With these defined settings, PortaBilling® simultaneously processes taxes for 3 customers, and at the same time, sends 10 parallel requests to the SureTax servers for each customer. Therefore, it sends 30 (3*10=30) simultaneous requests.

This enhancement optimizes the invoicing process.

• **Enhanced charging for prepay plans to customers with monthly (anniversary) or 30-day billing periods** – Now the charges for prepay plans that are assigned to these customers are calculated according to their billing periods.

Consider the following example:

Customer John Doe is created on April 15th with a monthly (anniversary) billing period. On January 15th, 2017 he signs up for the IPTV service that has a $9.99 activation fee and a $19.99 / monthly fee charged in advance. He has two options for how he is charged for the service:

- o He can receive a 10% discount for 6 months ($9.99 + ($19.99*6 - 10%) = $9.99 + ($119.94 - $11.99) = $117.94); or
- o He can receive a 20% discount for 12 months ($9.99 + ($19.99*12 - 20%) = $9.99 + ($239.88 – $47.98) = $201.89).

John Doe chooses the 12-month prepay plan and is therefore charged $201.89. These charges are reflected on his January

invoice, which is produced on February 15th. His next subscription charge will occur in 12 months' time, namely, on January 14th, 2018.

When a subscription is activated in the middle of a customer's billing period, they are charged as follows:

- o Pro-rated subscription fees for the current billing period;
- o Subscription fees for the defined number of billing periods in advance.

Thus, if John Doe activates the 12-month prepay plan on January 20th, his January invoice will include:

- o a $9.99 activation fee;
- o the $13.27 pro-rated subscription charges for the period from January 20th till February 15th, and
- o a charge of $175.91 for the next 11 billing periods (March 15th – January 14th).

This enhancement ensures correct charging and helps keep the accounting transparent.

- **Notify customers about manual balance adjustments** – Now you can configure PortaBilling® to send your customers e-mails or text messages when you manually adjust their or their account(s') balance.

To do that, enable the **Balance adjustment** notifications on the **Notifications** tab for a particular **Customer class**.
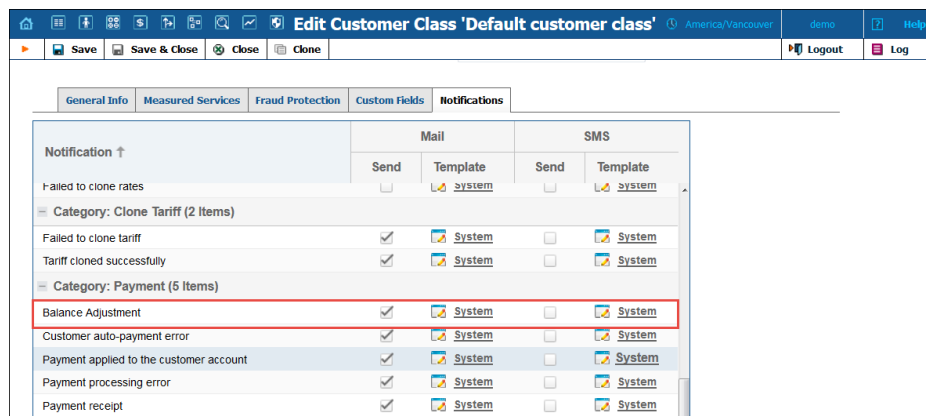
Make sure you specify the customer's e-mail on the **Address Info** tab for the required billing entity (customer, reseller, distributor, etc.).

When you want to notify customers that you manually adjusted their account(s') balance, specify the account's e-mail on the **Account Info** tab of **Account Info** page.

This enhancement allows your customers to be aware of their balance changes and simplifies the monitoring of their balance adjustments.

- **Extended length password**– Security is very important to each service provider. PortaBilling® introduces the extended length password to achieve maximum protection. With this release, PortaBilling® allows users to set their web self-care passwords for up to 32 characters. That is a great advantage for those who use a password manager for highly-secured password auto-generation. This enhancement increases the security level of users' passwords by means of eliminating vulnerabilities via using extended length passwords.

- **Automatic re-generation of SSL certificates** – SSL certificates are used for encrypting communications between a user's web browser and the web server to make it safe and secure. As a rule, SSL certificates are issued by Certificate Authorities (CA). In some cases, however, (e.g. when the web server is trusted or for internal purposes), self-signed SSL certificates are used.

  PortaOne provides a set of self-signed SSL certificates in PortaSwitch® for non-production usage. With this release, these certificates are automatically re-generated seven days before their expiration. Note that SSL certificates issued by Certificate Authorities (CA) must be manually updated.

  This enhancement reduces administrative load.

- **Increased number of xDRs to be processed by Avalara** – With this release, PortaBilling® can send up to 10,000 xDRs to Avalara within a single API request. This enhances PortaBilling®'s tax calculation performance and speeds up the invoice generation process as well.

- **Scripts for customer data import maintain service wallet balance** – With this release, you can effectively import customers and accounts that had service wallets assigned to them in the source system. As soon as these accounts are created in PortaBilling®, their service wallets are automatically topped up, thereby maintaining their availability.

  NOTE: You must pre-configure service wallets for accounts in PortaBilling® prior to their import.

  This allows you to smoothly migrate your active customers from the legacy billing system to PortaBilling®.

Web Interface Changes

- **Overdraft status for debit accounts** – Typically, debit account balances are either positive or zero. It is possible for a debit account balance to become negative. This may occur in rare cases, such as when concurrent sessions are permitted and therefore overdraft protection has been disabled.

  For this reason, it is necessary to identify accounts that are overdrawn. With this release, debit accounts having a negative balance show an ⚠ **Overdraft** status icon. This indicates that the account's owner is not able to use any services unless a payment is made. Once a payment that covers the overdraft plus regular services is made, all services are available as before.

 Note that the **Overdraft** status is only assigned to debit accounts.

This enhancement helps an administrator easily locate overdrawn debit accounts among all the others in the system.

- The **Volume Discounts** and **Quota and Service Wallets** pages on the customer and account self-care interfaces have been redesigned to match the look and feel of the administrator interface.
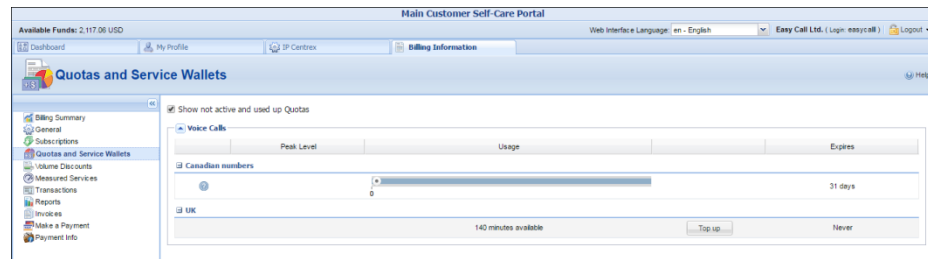
These redesigned pages are more intuitive and user-friendly, and provide a more unified and consistent experience with PortaBilling®.
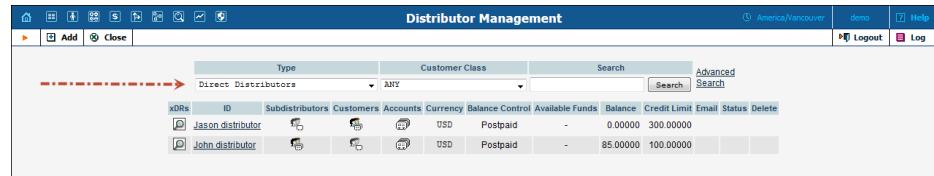
- **More intuitive taxation plugin configuration** – Now an administrator is reminded about compulsory information that must be filled in when adding a taxation plugin. This makes the taxation configuration more user friendly.
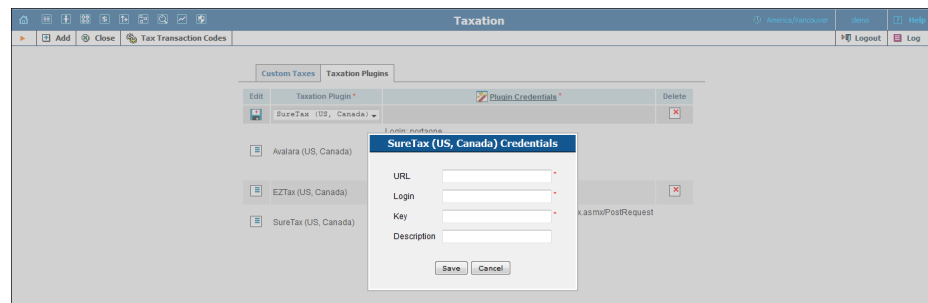
- **Change of default search filter for the Distributor Management page** – Now you can view your exclusive

distributors (direct distributors) on the initial **Distributor Management** page.

To view all the distributors or a particular PortaBilling® user's distributors, change the search filter.

This enhancement simplifies navigation on the initial distributor page by means of concealing the multi-level distributor network.

- **More intuitive conferencing configuration** – The maximum number of participants in conferences for an entire billing environment is defined in the **Global Conference Option**. With this release, the number of simultaneous participants in a conference for an account must be fewer than what this global setting is. Therefore, when an administrator tries to define a larger number, he is prompted about the limitation. This helps the administrator configure the conferencing service feature properly.
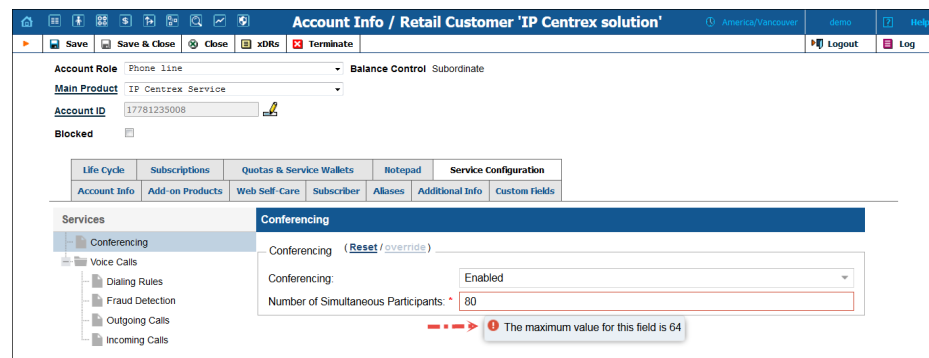
- **Convenient credit limit history overview** – With this release, a **Credit limit history navigation menu** has been added to the **Balance & Credits** tab of the **Edit Customer** page. This allows you to trace changes made to a customer's credit limit. The credit limit history navigation menu reduces the time it takes to download a tab and makes the page layout more intuitive.

Important Upgrade Notes

- **New service policy attributes for fax delivery via T38** – Starting with this release you can use service policies to fine-tune fax sessions for your customers. Namely:
  - the **t38_fax_max_datagram** attribute value defines the maximum size of data to be received in UDPTL packets by PortaSIP®.
  - the **t38_fax_udp_ec** attribute defines how PortaSIP® detects and corrects errors during fax receipt, subject to the sender's IP device configuration.

  Service policies with these attributes configured are matched dynamically, based on the callers' IP device types.

  If you are using the previous-generation media server, PortaSIP® will use the default values for fax session parameters after the

software upgrade. To modify them, either create new service policies or adjust existing service policies to include the fax session configuration parameters.

Thus, administrators gain advanced flexibility in managing their fax services and ensuring correct fax delivery for customers.

- **Network routing management via the Configuration server** – As a rule, network communication is done using dynamic routes that are learned by the router automatically. In some cases, however, static routes are used along with dynamic ones (e.g. to define a default gateway to reach a remote network or interconnect private networks). Since static routes are added manually, the administrator must remember to update them with each network configuration change.

  With this release, the following enhancements in network routing management have been introduced:
  - Static route management is performed via the Configuration server web interface. The administrator can now conveniently define the static routes for a specific server on the **Network** tab. It is important to define the routes in the correct format (as in the `ip route add` command) to avoid misconfiguration.
  - Static routes are preserved during network configuration changes. The system saves the existing static routes and adds newly defined ones to the configuration files to use them after a network configuration changes.

  This reduces the administrative load and prevents network misconfiguration.

- **Enhanced CPE inventory management for resellers** – A reseller is considered as a separate business entity and operates independently from an administrator. Therefore, resellers can now add CPE devices only if these devices' CPE profiles are managed by this reseller.

  If an administrator adds a CPE device for a reseller, they must now define that the device is managed by this reseller.

  This ensures integrity in service provisioning by resellers.

- **Configure gateway adapters via the Internet access policy** – With this release, the list of attributes for configuring Internet access to the following gateways: Alcatel Lucent, Cisco ASR, Cisco NAS, Cisco PDSN, Huawei and Mikrotik has been

transferred from the Configuration server to the Internet access policy.

This enhancement facilitates the configuration of Internet access within PortaBilling® and allows the administrators to define the required parameters for different gateway adapters in a single place.

- **Configure Hotlining via Internet access policy only** – With this release, the hotlining service feature configured for products and accounts has been eliminated. To redirect Internet users to the hotline portal, configure the hotlining within the Internet access policy and assign it to a product. If the hotlining service feature was previously enabled for any user as part of their product configuration, reconfigure the existing products and accounts to use the appropriate Internet access policy.