PORTA ONE

PortaSwitch

New Features Guide

63
MAINTENANCE
RELEASE

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Preface

PortaSwitch® Maintenance Release 63 is the next leap-forward release, consistent with our "fast releases, precisely on time" ideology.

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`.

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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Call Processing for Dual-Version PortaSwitch®

Dual-version PortaSwitch® enables service providers to balance between having access to new features and securing the overall stability of their existing platform. It comprises two systems of current release (e.g. MR60) and new release (e.g. MR63) which operate simultaneously. By moving some of the existing customers to a new system using the Porter data transfer tool, service providers can evaluate the service flow under the new conditions and control the migration process according to their business requirements.

For the successful operation of dual-version PortaSwitch®, it is essential that customers do not notice being moved to a new system. That is, if John Doe is already in the new system, he must be able to make and receive calls as if nothing has changed.

For this purpose, PortaOne introduces a new PortaSwitch® component – the dispatching SBC. This is a dedicated PortaSIP® node that operates as the inter-system proxy and dispatches call initiation requests across systems. It operates in high-availability mode and presents a single point of entry to both your termination partners and your wholesale, SIP trunking, residential and other customers.

Usage scenario

Let's have a closer look at how PortaSwitch® processes calls for John who the administrator transferred from main system A to new system B. For both making and receiving calls, John's phone is registered with the dispatching SBC's IP address.

When John calls his friend Harry in the UK, the following occurs:
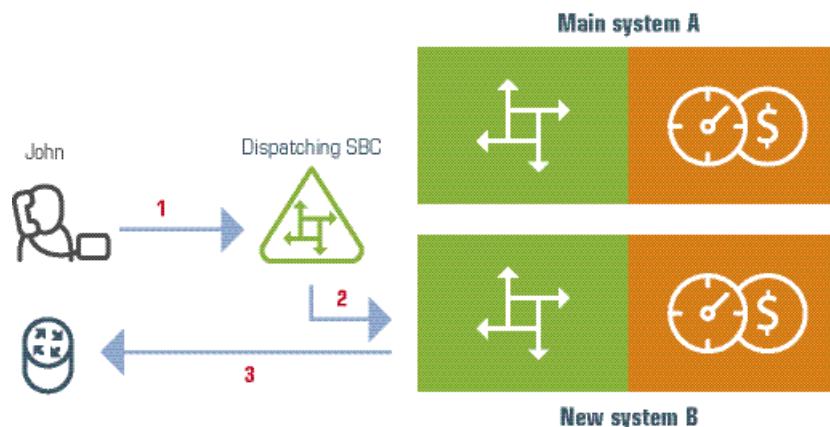
1. The call request from John's phone arrives to the dispatching SBC (**1**).
2. The dispatching SBC looks up John's account in the database and detects that it is provisioned in system B.
3. The dispatching SBC routes the call to system B's PortaSIP® (**2**).
4. PortaSIP® sends the authorization request to the respective PortaBilling®.
5. PortaBilling® authorizes the call and provides PortaSIP® with the routing results.
6. PortaSIP® sends the call to the vendor to establish the call with Harry (**3**).
7. When the call finishes, PortaSIP® sends accounting information to PortaBilling® to calculate the charges and produce xDRs.

If someone calls John, the call processing procedure is quite similar. When Peter dials John's number:
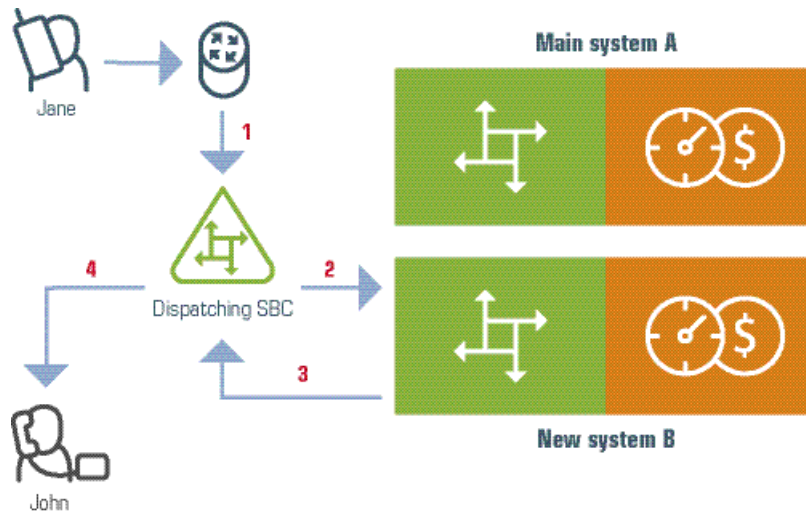
1. The vendor receives the call from the PSTN network and sends it to the dispatching SBC (**1**).
2. The dispatching SBC looks for the DID number that matches the destination number in the database.
3. The dispatching SBC finds that the destination number corresponds to John's account and is provisioned in system B.
4. The dispatching SBC routes the call request to system B's PortaSIP® (**2**).
5. PortaSIP® detects that the call is intended for the local account and sends the call to the dispatching SBC (**3**).
6. The dispatching SBC delivers the call to John's phone and John and Peter start their conversation (**4**).
7. Once the call finishes, PortaSIP® in system B sends accounting information to PortaBilling® to calculate the charges and create an xDR for John.

Inter-system routing

In the dual-version PortaSwitch®, customers in both systems must be reachable both from inside and outside your network. Inter-system routing is the most optimal way to deliver calls among customers from different systems as it provides a direct path for calls throughout the whole network. Since inter-system calls, in fact, do not leave your network, you bear no costs and therefore apply no charges to your customers.

Implementation specifics:

When deploying dual-version PortaSwitch®, consider the following implementation specifics:

- The dispatching SBC is configured on the new system and is assigned a virtual IP address. Since it is a point of entry to your network, the virtual IP address must be public.
- For normal operation, we recommend that you deploy the dispatching SBC to handle the majority of call requests on a separate physical server.
- For high-availability, deploy several dispatching SBC instances, one for each SIP server. They all share the same virtual IP address, though only one instance is active.
- The dispatching SBC only accepts first SIP dialog initiation requests; therefore, carriers must set up their gateway network to receive requests that come from all PortaSIP® IP addresses.
- The DIDs used in your network must be unique for both systems to ensure proper call delivery.
- Accounts that exist in both systems (moved from one to the other) must only be active in one of them.

This solution facilitates the proper operation of the dual-version PortaSwitch® system and provides ITSPs with advanced tools for overall system management.

Proxying Diameter Requests for Dual-Version PortaBilling®

In mobile networks, PortaBilling® operates as the OCS (Online Charging System) and communicates with the EPC via the Diameter protocol. In this deployment, the Diameter cluster serves as the point of entry to the OCS, accepting and processing Diameter requests from the SAE-GW.

To ensure uninterrupted service provisioning during gradual customer migration, the Diameter cluster on the new system serves as the inter-

system proxy. It accepts all Diameter requests from the main system to the new one in dual-version PortaBilling® and detects where in the system the account is currently located. If the account belongs to the new system, it processes the Diameter request itself. If the account belongs to the main system, the Diameter cluster proxies the request to the main system's Diameter cluster and mediates further communication with that Diameter cluster and the SAE-GW.

This solution facilitates customer transfer from the main system to the new one and ensures proper functioning of the dual-version PortaSwitch®.

Other Features and Enhancements

- **Partial CPE profile configuration** – Some IP phones can be customized by end users. Thus, end users may wish to configure particular options (e.g. soft keys) according to their preferences.

  Beginning with this release, administrators can perform more specific configurations of IP phone auto-provisioning. In the CPE profiles, administrators can specify options to be auto-provisioned by PortaSwitch® (e.g. the addresses of SIP servers, codecs, passwords, etc.) and exclude options that end users can configure themselves.

  For example, when creating a CPE profile for Audio Codes 405HD, administrators remove such personal settings as programmable keys from the list of options to be auto-provisioned. Then, if end-users configure the programmable keys for their IP phones, those changes remain after the IP phone configuration update.

  To use this functionality, administrators must enable the **AllowPartialProfileConfiguration** option on the **Admin** node of the Configuration server.

NOTE: Administrators can either configure this functionality for the whole system or only for a particular environment, depending on their needs.
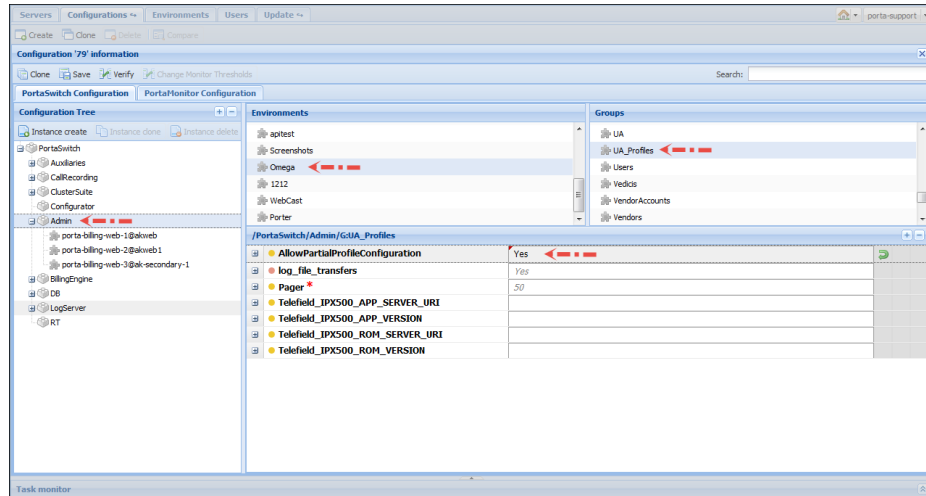
Then when enabled, additional controls appear on the **CPE Profiles** page near each configuration option.
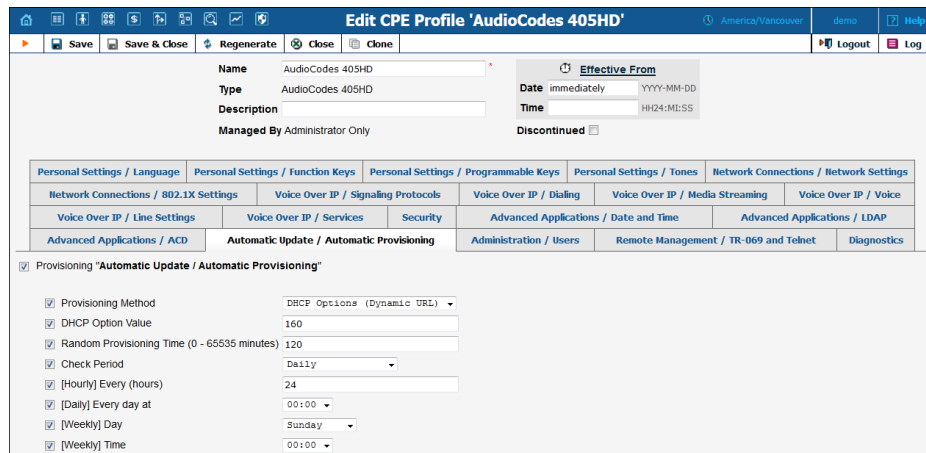
When adding a new profile, all controls are enabled by default. So, to disable the provisioning of particular options, administrators need only uncheck the unnecessary ones.

It is also possible to apply changes to previously generated CPE profiles and remove unwanted options. To do that, administrators manually regenerate the profile on the **Edit CPE profile** page of the web interface or via the API.

NOTE: This functionality is unavailable for Cisco ATA 186 devices (02.xx and 03.xx versions).

NOTE: Since only some IP phones allow partial auto-provisioning, check the IP phone configuration requirements before using this functionality.

This functionality allows more flexible configuration of CPE profiles and expands the range of possible configuration scenarios.

- **Enhanced configuration for favorite numbers** –
Administrators and resellers can now allow their users to change their favorite numbers the day after those numbers are added. Thus, end users cannot continue changing newly added favorite numbers and using them for outgoing calls. This prevents billing deception involving favorite numbers.

When set to **Yes,** end users can change their favorite numbers only after a defined period in days.
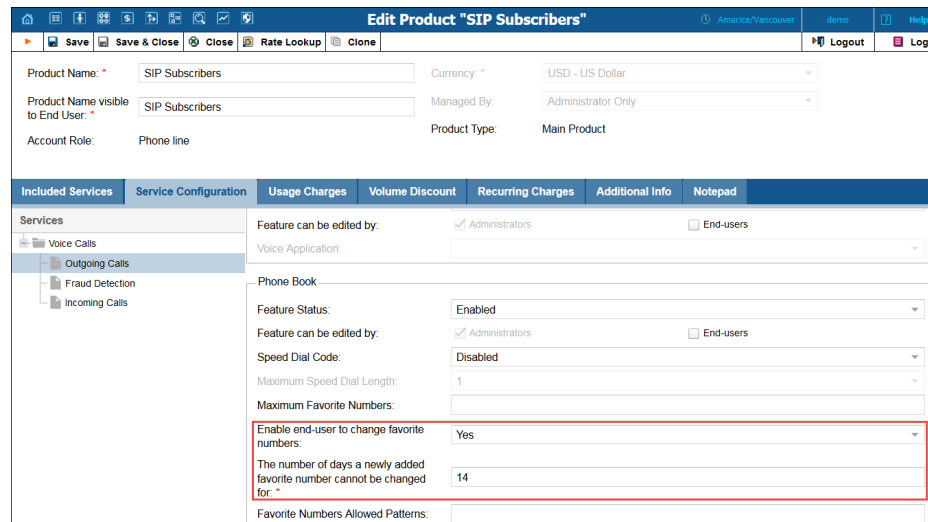
NOTE: With this enhancement, the **Enable end users to change favorite numbers** option replaces the **Favorite Numbers Locking Interval** option on the web interface.

Thus, if the defined period is 14 days, end users can edit and / or delete phone numbers within 14 days after they are added or marked as favorites.
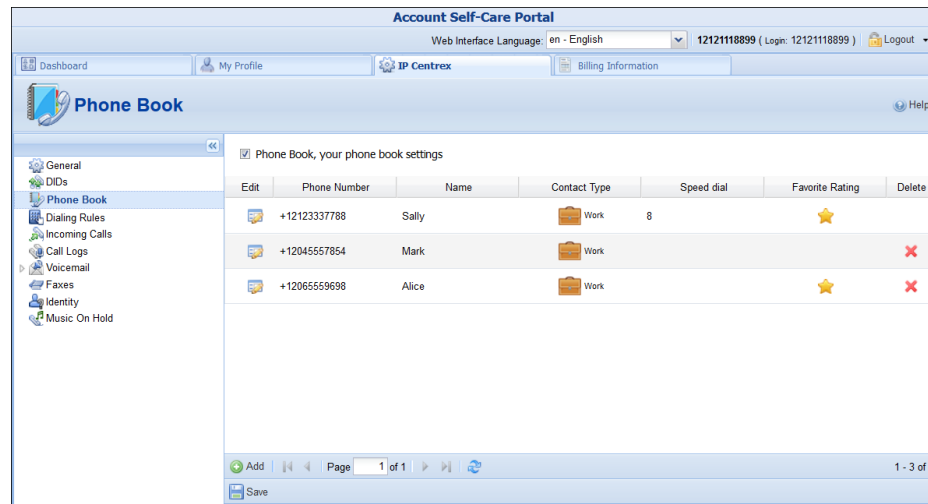

By default, **Enable end users to change favorite numbers** is disabled.

This enhancement prevents PortaSwitch® owners from service abuse and makes the web interface more intuitive and easier to navigate.

- **Default destination set in the E.212 format** – The majority of mobile carriers have their destinations in the E.212 format. This format defines destinations as a combination of the mobile

country code (MCC) and the mobile network code (MNC). For convenience in working with these destinations, PortaBilling® supplies a file that contains a default set of destinations in the E.212 format.

Thus, the administrator can now download a set of destinations as a .csv file, make necessary changes and then upload it to the system. To do this, select the **E.212** format on the **Destinations** page and click **Loading** on the toolbar. In the **Destinations Loading** dialog box, select **Get Default Set**.
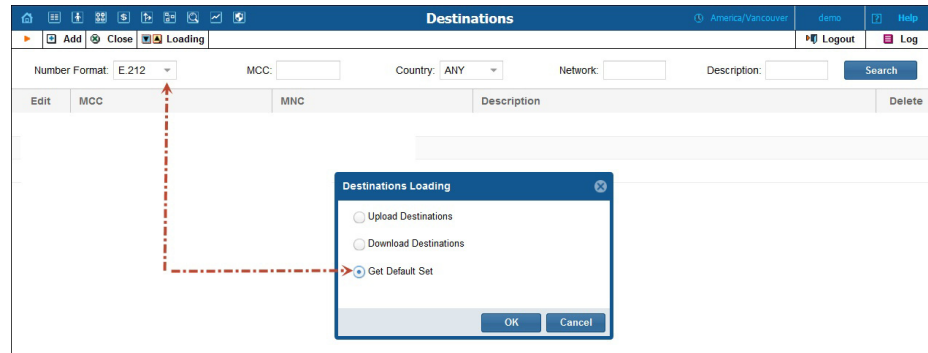
This enhancement saves the administrator's time and simplifies the management of destinations.

- **Expiration date notification for token-based credit cards** – It is considered, that payment processors are responsible for sending credit card expiration notifications. If this option is not supported by your payment processor, PortaBilling® notifies customers about their credit card expiration dates.

  To allow customers to receive this notification, enable the **EnableTokenOnlyNotification** option on the Configuration server. For backward compatibility, the option is disabled by default.
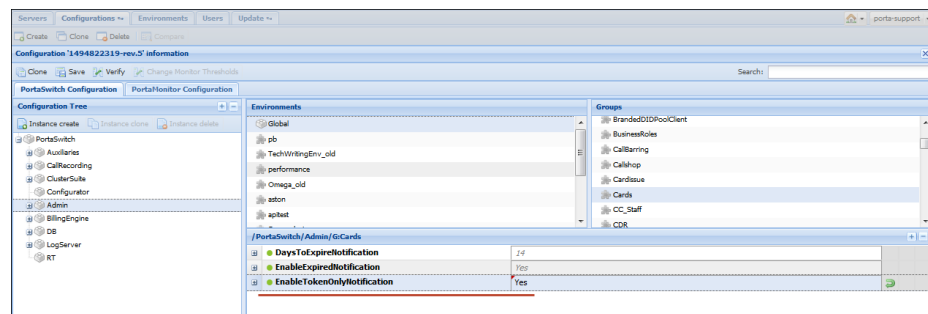
NOTE: The credit card expiration date is specified as a month and a year (no exact day). For PortaBilling®, the exact expiration date is the first day of the

specified month. Remember this when you adjust the **DaysToExpireNotification** field.

This enhancement is mutually beneficial, since customers can update their credit card information on time and you receive revenue from them without delay.

- **Subreseller data transfer using Porter** – With this release, you can transfer the whole subreseller chain from the main system to the new one using Porter. This reduces the pre-configuration actions on the new system required for customer data transfer.

Web Interface Changes

- **Search option for extensions and phone lines** – With this release, IP Centrex users can easily filter existing extensions and phone lines on the customer self-care interface and quickly find what they need.

  Customers and administrators can search for extensions by their **Number** or **Name** on the **Extensions** page.
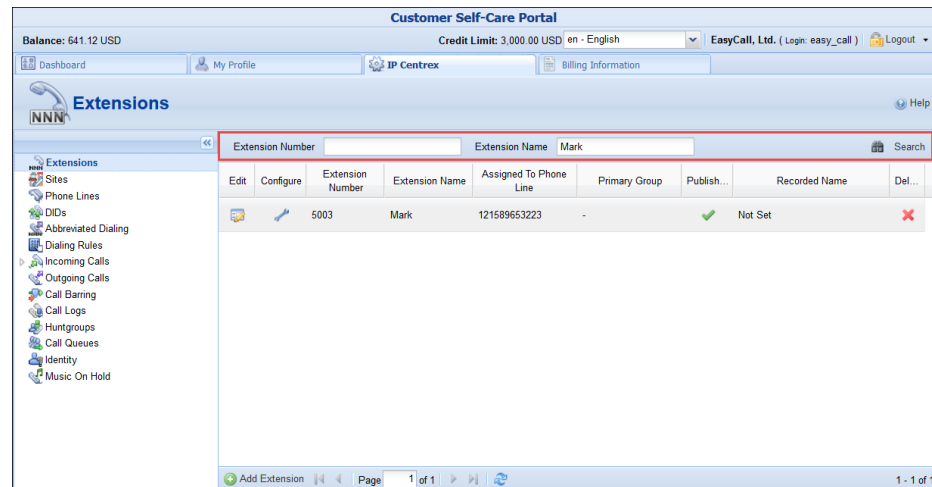

They can search for phone lines by **ID, Batch** or **Site** on the **Phone Lines** page.
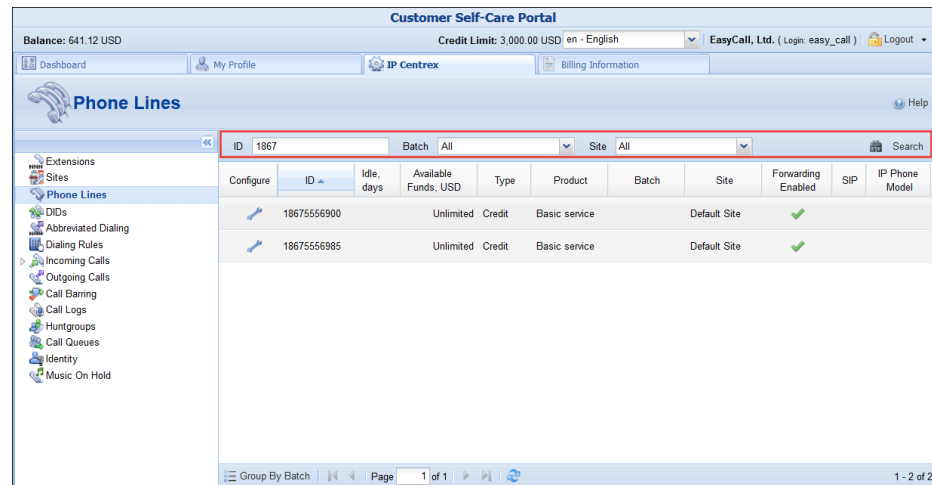
This enhancement allows customers and administrators to perform easy and quick searches and consequently minimize the time it takes to find the data they want.

- **Top up your service wallet menu item** – With this release, an easy-to-find menu item for service wallet top ups has been added to the customer and account self-care interfaces. End users perform the whole service wallet top-up procedure (from start to finish) on a single dedicated page.
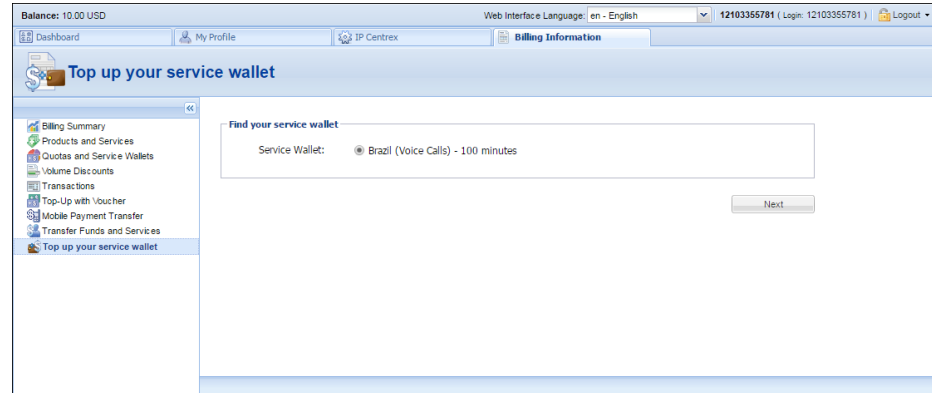

The easy-to-find menu location and capability to complete the whole procedure in one place makes it more convenient and time-efficient.

- **Removal of the Routing tab on the Edit IVR Application page** – In PortaSIP® cluster, all cluster nodes work in high-availability mode and are interchangeable with each other (i.e. if one node fails, others function in its place). Therefore, the manual routing of incoming calls among nodes is no longer needed.

Important Upgrade Notes

- **Changed API datatype** – To operate with a larger number range, datatype for the fields with "int unsigned" in the database must be changed to the "unsignedLong" type in the API as of this release. API users must verify that their applications are capable of handling the unsignedLong type and adjust their applications accordingly before the software upgrade.

- **Dispatching SBC relocation under the PortaSIP® cluster node** – The dispatching SBC is a dedicated PortaSIP® node, therefore, it is now configured under the PortaSIP® cluster node on the Configuration server.
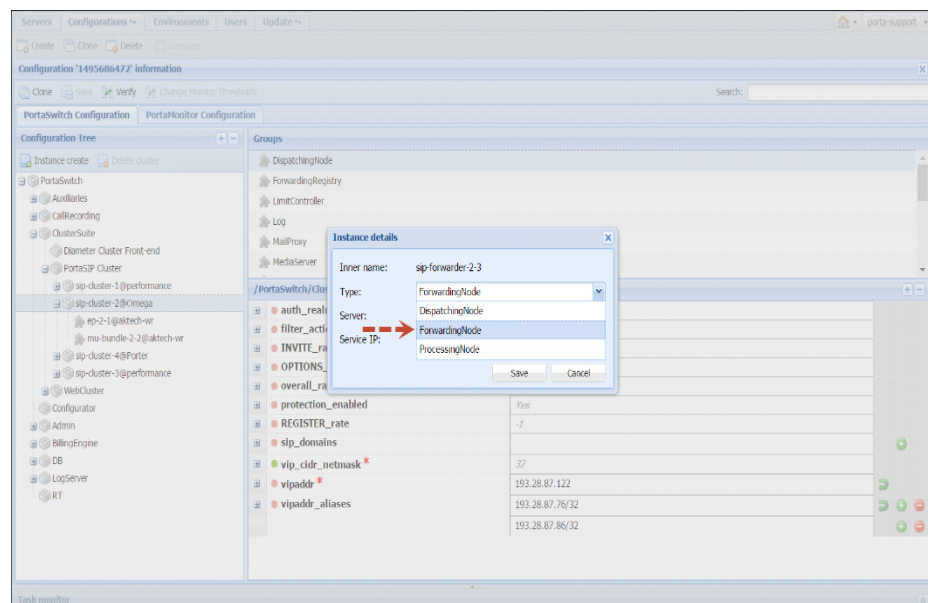
  If you previously configured the dispatching SBC instance (e.g. to provision DIDs across billing environments), remove it from the ForwardingCluster node before the software upgrade. You can then configure it for a particular PortaSIP® cluster after the upgrade.

- **New API method for call recordings download** – With this release, a new API method, get_call_recording, has been introduced for downloading call recordings. Adjust your application accordingly.