PortaSwitch New Features Guide

MAINTENANCE RELEASE 83

www.portaone.com

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Preface

PortaSwitch® Maintenance Release 83 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`.

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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PortaOne iPaaS

PortaOne iPaaS (Integration Platform as a Service) is a new provisioning solution available in MR80-3 and starting with MR83-0. It enables you to deploy new functionalities (e.g. provision new CPE profiles) through containers that run in the cloud. This eliminates the need to update all of PortaSwitch® to the newest release. Thus, you reduce the time to market for new services.

A container is a portable software unit where all the components of new functionality (code, runtime, system tools, system libraries and settings) are stored as one package. Containers are deployed in the cloud-based PortaOne iPaaS independently from the PortaSwitch® installation. As a result they are easily modified and extended.
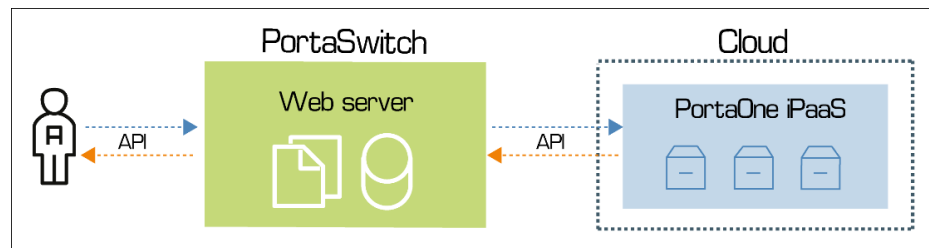
To start using new features via the PortaOne iPaaS, subscribe to it. To find out about our subscription terms, contact our **Sales department**.

## CPE provisioning via PortaOne iPaaS

The first functionality that's available via PortaOne iPaaS is CPE provisioning for Yealink W80B – an IP multi-cell base station.

Refer to the **Auto-provisioning for Yealink W80B DECT IP multi-cell base station** section to read about auto-provisioning for Yealink W80B.
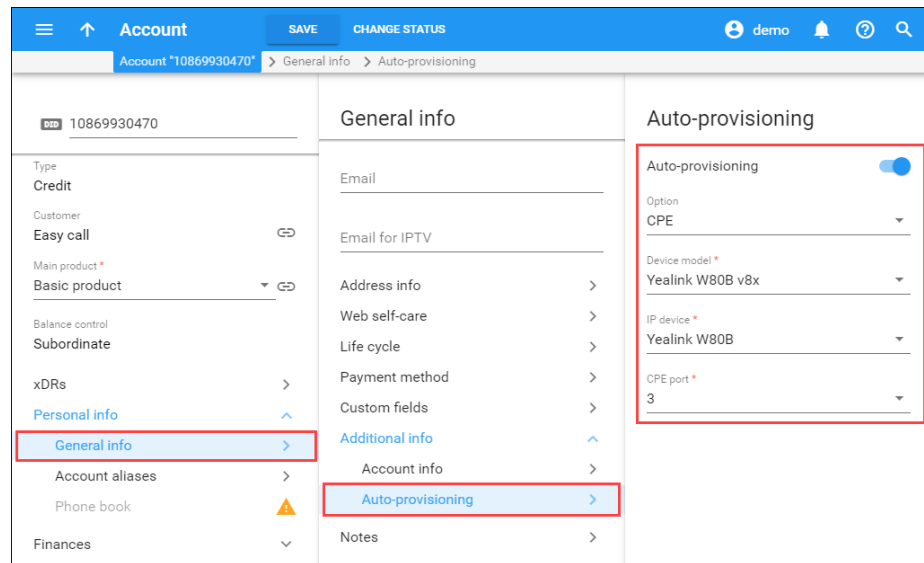
This is how CPE provisioning via PortaOne iPaaS works:

Let's say the service provider, Easy Call, wants to provision Yealink W80B to their customers. Since this device model is available via PortaOne iPaaS, Easy Call subscribes to the CPE provisioning service and enables it on their installation. So an administrator can configure the provisioning of Yealink W80B in PortaBilling® in just a matter of minutes now.

When an administrator creates a CPE profile for Yealink W80B, PortaBilling® queries the CPE provisioning container via the API to generate a CPE profile. The CPE provisioning container returns the generated CPE profile and it is stored in the PortaBilling® database along with the internal CPE profiles.
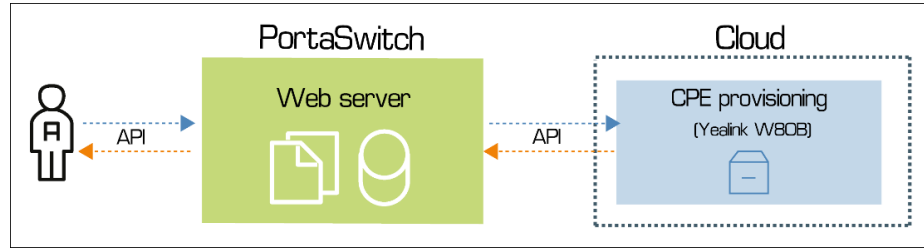
Then the administrator creates the Yealink W80B CPE device and assigns it to an account. PortaBilling® generates a configuration file with the CPE device parameters (username, password, device's MAC address, etc.) and sends it to the CPE provisioning container. This configuration file is used in the CPE provisioning container to adjust Yealink W80B's internal configuration.

Now Yealink W80B is ready to use by end users.

Benefits

Service provisioning via PortaOne iPaaS:

- Significantly saves your time and resources since you do not need to update your installation to receive a new functionality.
- Reduces time to market for new functionalities, thus makes you more competitive.
- Improves the customer experience. You can provide your customers with the newest devices and functionalities in the short term.

Configuration

Once you subscribe to PortaOne iPaaS, PortaOne support provides you with credentials to enable CPE provisioning on the Configuration server.

- Go to the
  Web_Cluster.Global.ExternalCpeProvisioningService group
  and specify the **CustomerName** and **InstallationName** options
  as defined in RT.
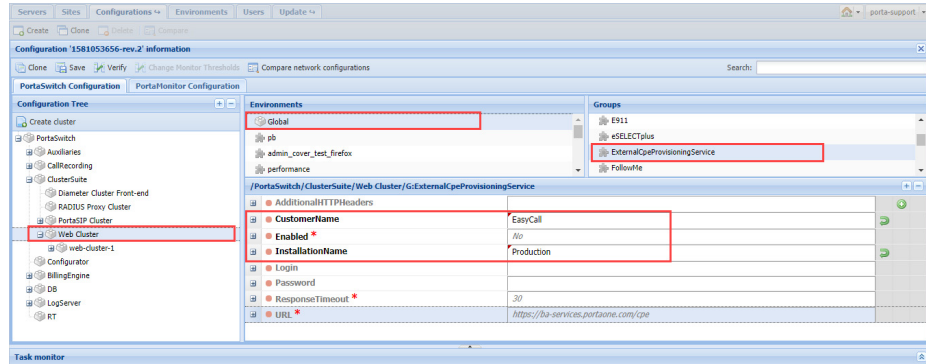
- Go to a specific environment and set the
  ExternalCpeProvisioningService.Enabled option to **Yes**.
- Specify the credentials provided by our support team under the
  Login and **Password** options.
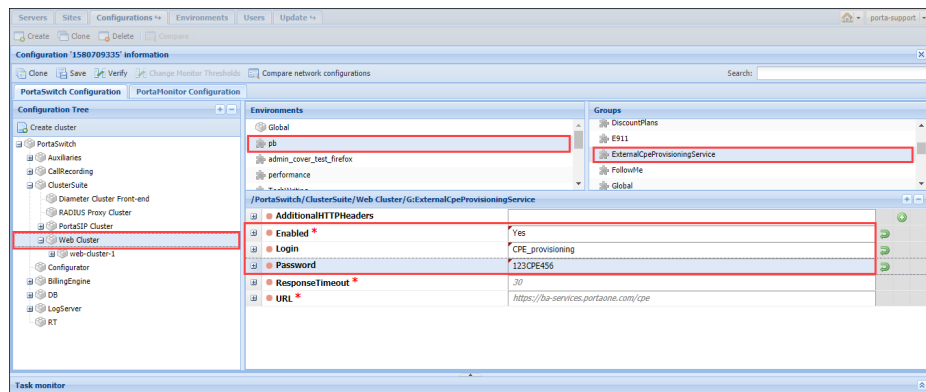
Dispatching SBC as an entry / exit point

The dispatching SBC serves as a single entry point to your dual-version
PortaSwitch® for vendors and customers. You can also use the
dispatching SBC in site-redundant PortaSwitch® for zero-downtime
updates and load balancing.

When you deploy the dispatching SBC in dual-version PortaSwitch®,
assign the IP address of PortaSIP® from the main site to it. The
dispatching SBC in site-redundant PortaSwitch® inherits the virtual IP
address of PortaSIP® from the main site. Vendors' and customers'
endpoints continue to send requests to this IP, as if nothing changed.

By default, incoming calls to customers arrive at the dispatching SBC, which routes them to PortaSIP® for processing. If this is a call to a customer's endpoint registered in your network, it is sent from the dispatching SBC. If it's a call to an external SIP URI or to the static IP of an IP PBX, it's sent directly from PortaSIP®. Calls to vendors are also sent directly from PortaSIP®.

Now you can send calls to SIP URI, static IP addresses and vendors via the dispatching SBC, too. Your wholesale / SIP trunking customers and vendors must not adjust their configurations (e.g. firewall rules) to accept requests from a different IP as this ensures that calls go through.

Activate the **force_route_through_dsbc** attribute in the service policy and assign this service policy to:
- outgoing connections for required vendors,
- the SIP-UA connection to send calls to static IPs of IP PBXs,
- the SIP-URI connection to forward calls to external SIP URIs.
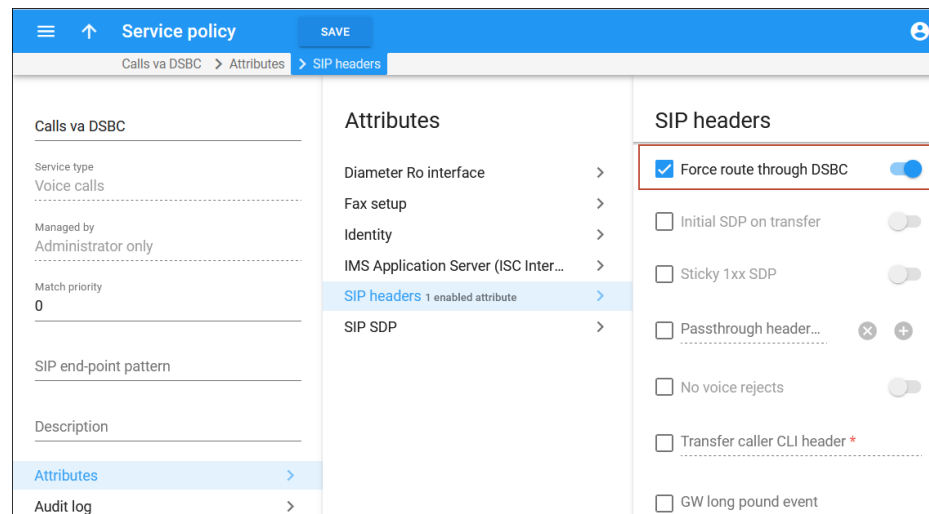
When PortaSIP® tries this route, it sends the outgoing INVITE request to the dispatching SBC. The dispatching SBC then sends the request to the destination.

Sending outgoing calls via the dispatching SBC imposes additional load to it. Therefore, assign a service policy to connections only when required.

Call flow

Your dual-version PortaSwitch® has the following configuration:
* The IP address of the dispatching SBC is 1.1.1.1.
* The IP address of PortaSIP® on the source system is 2.2.2.2.
* The IP address of PortaSIP® on the target system is 3.3.3.3.

MegaTrunk is your SIP trunking customer and is already moved to the target system.

MegaTrunk's IP PBX does not support digest authentication but it has the static IP address 4.4.4.4. To route calls to the IP PBX address directly, your administrator configures the SIP contact as 4.4.4.4:5060 for MegaTrunk's account in PortaBilling®.

SOURCE SYSTEM

2.2.2.2
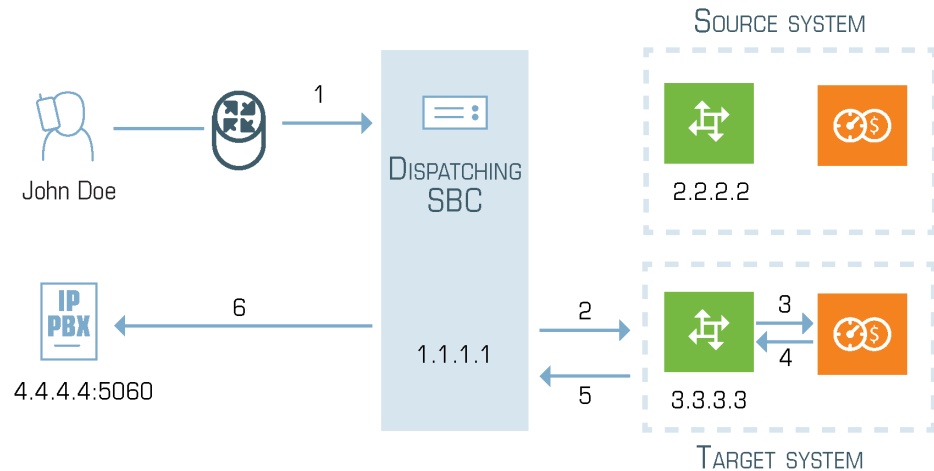
TARGET SYSTEM

1. There is a call to MegaTrunk's main phone number 120655578960 from external caller John Doe.
2. The call arrives to the dispatching SBC (**1**).
3. The dispatching SBC detects that MegaTrunk is in the target system.
4. The dispatching SBC sends the call to PortaSIP® on the target system (IP: 3.3.3.3) (**2**).
5. PortaSIP® authorizes the call with PortaBilling® and receives the routing list. It includes the SIP-UA connection and the service policy associated with it (**3**, **4**).
6. PortaSIP® checks the service policy configuration and detects that the call must go via the dispatching SBC.
7. PortaSIP® adds the IP address of the dispatching SBC to the outgoing INVITE request and sends it to the dispatching SBC (**5**).
8. The dispatching SBC receives this INVITE request and sends it to the SIP contact of the IP PBX (**6**).

The call flow is the same when a call is forwarded to an external SIP URI or sent to a vendor.

Note that calls between source and target systems are routed directly, bypassing the dispatching SBC.

In site-redundant PortaSwitch®, the dispatching SBC dispatches calls across sites according to its load-balancing configuration. Then the calls are processed as described above.

With this enhancement, configurations of both your customers' gateways and IP PBXs and vendor equipment remain unchanged. Thus, you can easily switch traffic to the dispatching SBC.

Real-time billing for roaming calls

Now you can bill users for roaming calls in real-time based on the network visited. A user registers on this network when they are in another country. You give users a clear idea of their expenses while roaming so they can better control them and avoid bill shock.

To provide roaming services, you make roaming agreements with mobile operators. Networks are grouped into roaming zones and each roaming zone has its own rates for outgoing and incoming calls defined in the tariffs.

Each network has an application server that processes calls. The application server has the E.164 number used to identify the network, determine the roaming zone and apply the corresponding tariff for charging.

When a user makes / receives calls in their home network, PortaBilling® uses "home" tariffs with domestic rates to charge the user. For roaming calls, PortaBilling®:

1. identifies the roaming zone based on the application server's E.164 number;
2. selects the corresponding roaming tariff based on the roaming zone, and
3. charges the user for outgoing calls based on the destination number. Incoming calls are charged the same price, also determined by roaming zone.

The whole configuration: mapping of roaming zones, product rating list definition, etc. is done on the PortaBilling® web interface in a user friendly way.

Configuration

To map networks to roaming zones in PortaBilling®, create the "Roaming Zones" destination group set. Create a destination group for each roaming zone and include the corresponding prefixes to each group. The home network is excluded from the destination group set.

Configure tariffs with rates for outgoing and incoming calls for every roaming zone. Create "home" tariffs with domestic rates.

Configure the product rating list:
- Assign all roaming tariffs with the OUTGOING.<destination_group_name> and INCOMING.<destination_group_name> access codes. The

<destination_group_name> is the name of the destination group in the "Roaming Zones" destination group set.

- Assign "home" tariffs with default OUTGOING and INCOMING access codes.

Enable the RoamingAccessCode module in PortaBilling®. Enter the `roamingzone=Porta::Extra::RoamingAccessCode` string in the **Custom.LoadModules** option on the Configuration server.

Workflow

When a user makes a call, PortaBilling® receives the Diameter Ro request from the mobile core. This request contains the `Application-Provided-Called-Party-Address` AVP (attribute-value pair) with the application server's E.164 number. PortaBilling® uses this number to look up the longest prefix match in the "Roaming Zones" destination group set.

The destination group name where the match is found serves to formulate the access code as either OUTGOING.<destination_group_name> or INCOMING.<destination_group_name> and match the tariff in the product rating list.

If no match is found, then this call is within the home network. Such calls are charged using the default OUTGOING and INCOMING access codes.

Supported solutions

Billing for calls based on networks visited is tested with the Protei CAMEL gateway and available out of the box. Submit your request to **support@portaone.com** to perform interoperability tests with your own equipment.

PortaBilling® also supports real-time billing for roaming SMSs with Protei SMSC. The configuration and flow for both voice calls and SMS services is similar, which simplifies service management for the administrator. Please refer to the **PortaSwitch® Handbook collection** for step-by-step configuration instructions.

Usage scenario

Let's say you are the MVNO in the UK. Your host MNO has roaming agreements with T-Mobile Polska in Poland and Sprint in the USA. T-Mobile Polska belongs to roaming zone 1, Sprint – to roaming zone 2.

Your administrator creates the Roaming Zones destination group set. It includes:

- A destination group Zone1 with a 48602 prefix in it;
- A destination group Zone2 with a 1913 prefix in it.

Your pricing is:

From	Home country, GBP	Zone1, GBP	Zone2, GBP
To			
Home country, GBP	0.10	0.30	0.70
Zone1, GBP	0.60	0.80	1.25
Zone2, GBP	1.0	1.20	0.90
Incoming calls while roaming, GBP	0	0.45	0.75

John Doe is your subscriber. He travels to Poland and makes a 5-minute call to the USA while there.

PortaBilling® receives the Diameter Ro request with 486025552237 stored in the `Application-Provided-Called-Party-Address` AVP. PortaBilling® looks up this number among the prefixes in the Roaming Zones destination group set and finds a match in destination group "Zone1." PortaBilling® uses this name to match the usage charges record with the OUTGOING.Zone1 access code in John's product. John is therefore charged GBP6.20 (GBP1.20 * 5).

While still in Poland, John receives an incoming call. PortaBilling® performs the same destination lookup and finds the Zone1 destination group. PortaBilling® matches the usage charges record using the INCOMING.Zone1 access code and charges John GBP 0.45 / min.

Benefits

With real-time billing for roaming calls, you can:

- Provide services to mobile users, both in the home and roaming networks.
- Avoid the risk of revenue leakage.
- Configure roaming charges in a single place and in a user-friendly fashion.

CyberSource payment processor

As of this release, PortaBilling® is integrated with **CyberSource** – one of the leading payment systems worldwide. CyberSource supports token-based payments. A token is an identifier for a credit card that's used to process payments. Since a token does not contain any credit card data, you don't need to pass PCI DSS certification. Thus, you can launch online payments almost immediately. Plus, your customers can configure recurring auto-payments (e.g. automatically pay for invoices).

Token-based payment processing works as follows:

A customer makes an initial payment via their self-care page and stores the credit card data for future use. The credit card data is forwarded to CyberSource. If payment is successful, the payment processor generates a token. The token is stored in PortaBilling® where it's used to process all subsequent payments.

With this integration, CSPs introduce online payments that therefore improve their cash flow.

Configuration

To enable online payments with the CyberSource payment processor, do the following:

CyberSource:

- Contact the CyberSource sales department to open a merchant account.
- Log in to **https://ubc.cybersource.com/ebc2/** using the credentials provided by CyberSource (**Organization ID, User Name** and **Password**).

    o The **Organization ID** is your payment processor login in PortaBilling® (e.g. JohnDoe_payments).

- Generate an **API Cert / Secret key** with a **Shared Secret:**

    o **API key** number – this is your payment processor password in PortaBilling®;
    o **Shared Secret** – this is the parameter you specify in the **Secret** field on the Configuration server.

Note that you must copy a **Shared Secret** right away because it disappears a minute after it's been generated.

- To enable token-based payments, contact CyberSource support to obtain a **Profile ID**:

    o **Profile ID** – this is a parameter you specify in the **ProfileId** field on the Configuration server.

Configuration server:

To configure the CyberSource payment processor, specify these parameters under the **Web_Cluster.CyberSource** group:

- **MerchantAccount** – this is the name of your environment and the name of the payment system you create in PortaBilling® (e.g. CyberSource payments) in the format `<Environment name>.<Merchant account name>`.
- **Secret** – specify your **Shared Secret** here.
- **ProfileId** – if you want to enable token-based payments, specify the Profile ID you received from CyberSource support.
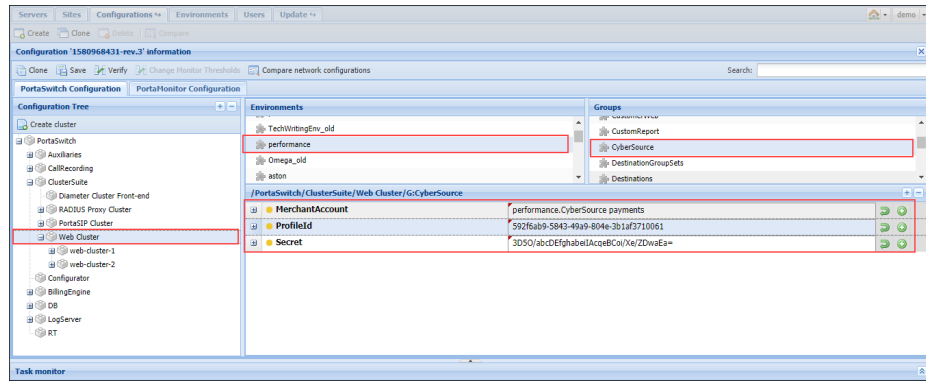
PortaBilling® admin web interface:

Create the CyberSource payment system in PortaBilling® with these parameters:

- **Name** – specify the `<Merchant account name>` you've entered on the Configuration server (e.g. CyberSource payments).
- **Payment processor** – select the CyberSource payment processor from the list.
- **Login** – specify the **Organization ID** provided by CyberSource here.
- **Password** – specify the **API key** name associated with a Shared Secret on the Configuration server.
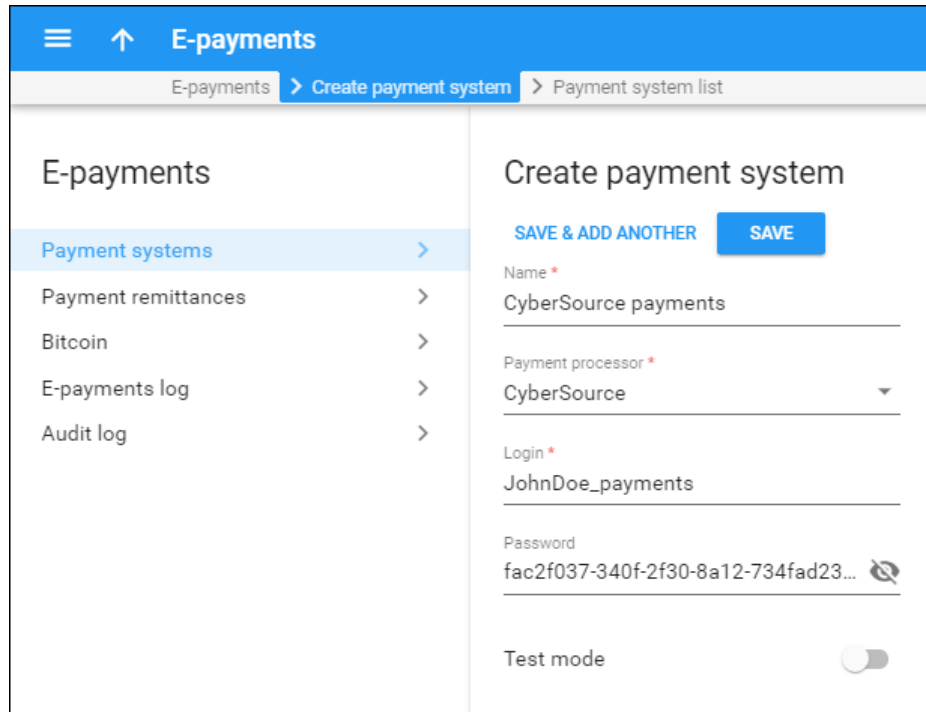
Auto-provisioning for Yealink W80B IP multi-cell base station

The list of IP devices that are auto-provisioned by PortaSwitch® has now been extended to include Yealink W80B (103.83.0.65 firmware version), a DECT IP multi-cell base station.

Yealink W80B supports up to 30 base stations, 100 handsets and can handle 100 simultaneous calls. The compatible wireless handsets include Yealink W56H / W53H. This allows businesses such as hotels, warehouses and offices, etc. to have wireless coverage throughout the entire building and to expand that coverage by adding base stations. Business users can talk on their handsets while moving around within the building. And now they can seamlessly switch among base stations without dropping a call. For more information, please refer to the Yealink official **documentation**.

To start provisioning for Yealink W80B, subscribe to PortaOne iPaaS (Integration Platform as a Service). For more information, **contact** our Sales department.

Auto-provisioning of Yealink W80B extends the number of offers you can make to your customers and businesses can benefit from it, especially, for its long-range wireless coverage.

Web interface changes

- **Time-saving option for account management** – update multiple accounts within a batch at a time.

  The **Batch account update** panel is available on the new UI. Now you can apply new settings to a group of accounts at a time. For example, you can assign another product to all of the accounts within a batch at once.

  To update multiple accounts, filter the specific batch of accounts you want to modify on the **Account search** panel. The **Batch account update** panel pops up automatically.
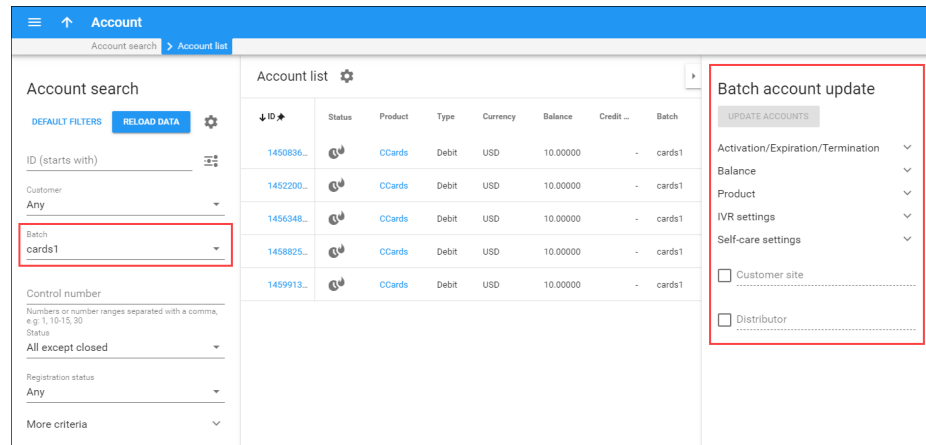
You can also open it by clicking the button on the top right on the **Account list** page. The actions remain read-only until you filter the accounts by batch.
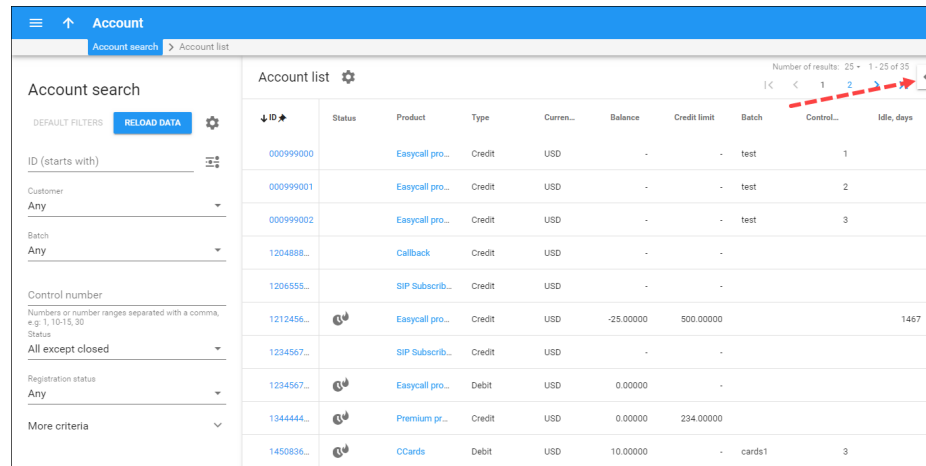
From the drop-down checkbox menu select settings to produce updates. You can activate or block accounts, change their balance, assign products or change other settings for either the whole batch or for specific accounts.

To update specific accounts in a batch, apply additional filtering options such as control number, registration status, etc. Note that filtering by custom fields is not supported for batch account update.

You can see the list of applied filtering criteria and settings to be changed in the confirmation dialog window once you click the **Update accounts** button.