PORTA ONE

M2M / IOT FOR CSP

PortaSwitch

New Features Guide

78
MAINTENANCE
RELEASE

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PortaSwitch® New Features Guide, June 2019
Maintenance Release 78
V1.78.03

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Preface

PortaSwitch® Maintenance Release 78 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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Real-time content-based charging with Protei P-GW

PortaBilling® is integrated with Protei Packet Data Network Gateway (P-GW) for real-time content-based charging on mobile networks: GPRS, 3G and LTE.

PortaBilling® provides a single place for subscriber management and service configuration and functions as the OCS (Online Charging System). It communicates with Protei P-GW via the Diameter Gy interface for user authorization and rating.

Protei P-GW performs policy control and reports traffic usage to the OCS. It supports content-based charging via rating groups with configurable speed limits. This enables you to differentiate among the types of Internet traffic, control the bandwidth and charge differently for each traffic type. For example, access to email and the self-care portal are free of charge – while online gaming, YouTube, etc. are available for a price as additional quota bundles to the default one. This gives you flexibility in service configuration and thereby increases your competitiveness in the market.

To control user access to the Internet and perform content-based charging, Protei P-GW communicates with the PCRF (Policy and Charging Rules Function). When a user connects to the Internet, Protei P-GW obtains the user's service policy in the PCRF and then sends the Credit Control Request (CCR-Initial) message to authorize the user in PortaBilling®. Upon authorization, PortaBilling® allocates a service unit quota for the requested rating group and responds with the Credit Control Answer (CCA-Initial) message. The user can now use the Internet according to their service policy. Periodically, the P-GW reports about the volume of consumed traffic to PortaBilling® so that when a user's quota is depleted or runs out of funds, their session is either hotlined or disconnected.

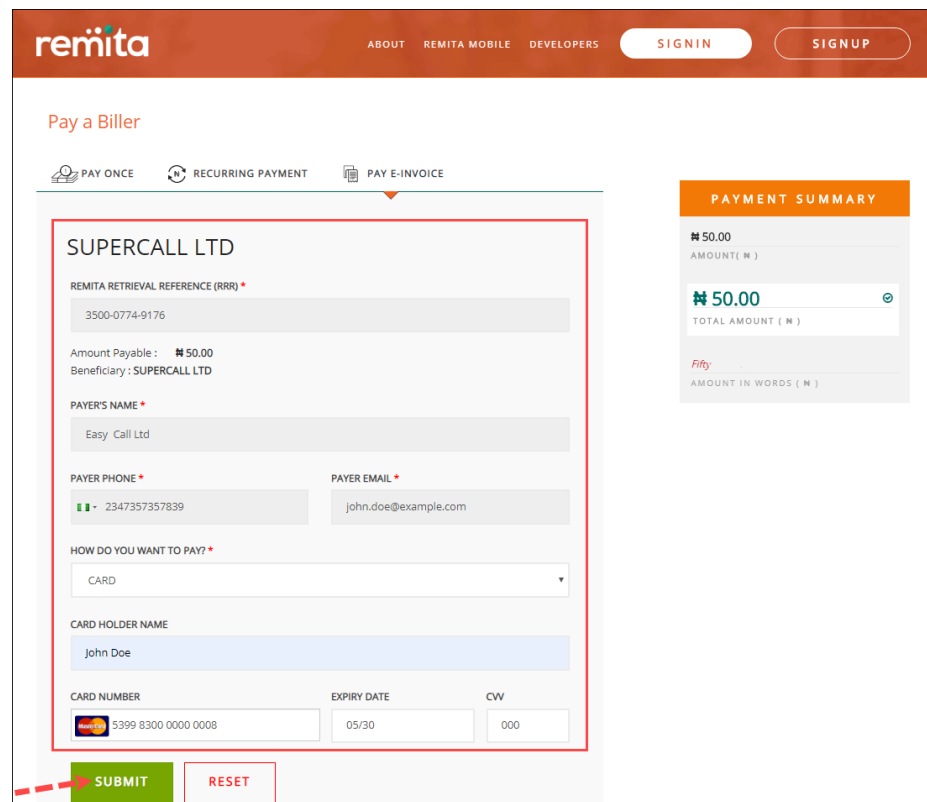Thus, to configure content-based charging for Internet access services, do the following:
- o Configure the service policies, rating groups and hotline portal URL in the PCRF.
- o In PortaBilling®, configure quotas and create Internet access policies where you specify Protei-related attributes and hotlining URL. Bundle them in the Internet access products for accounts.
- o Configure the ESPF to provision user data to the PCRF.

This integration with Protei P-GW expands the variety of available equipment for CSPs to build their network infrastructure. PortaBilling® is already integrated with Protei core components such as PCRF, HSS and SCP (Diameter-CAMEL gateway). Together, these integrations provide a ready-to-use ecosystem that minimizes the time necessary to launch mobile services on the market.

Remita payment processor

With this release, PortaBilling® is integrated with **Remita** – another popular payment system in Nigeria. This integration helps service providers who migrate from their legacy platforms to PortaBilling® preserve their business flow. It also expands the list of payment processors available for managing e-commerce payments in PortaBilling®.

Remita is the payment system with external payment processing. This means that when a customer initiates a payment on their self-care portal, PortaBilling® redirects them to the Remita portal where they can fill in their credit card details and submit payment.

Once payment is processed, the customer is redirected back to their self-care portal in PortaBilling® where they can check their payment status and their updated balance.

All sensitive information such as credit card details, CVV code, etc. are handled by Remita. Thus, service providers avoid system scrutiny for passing PCI compliance. This enables them to launch their e-payment processing almost immediately. Automatic payments, however, are not supported.

Implementation specifics:

- Remita processes payments starting from 50 NGN. Thus, an administrator must define 50 NGN as the minimum payment for the Remita payment system on the **Currencies** panel.
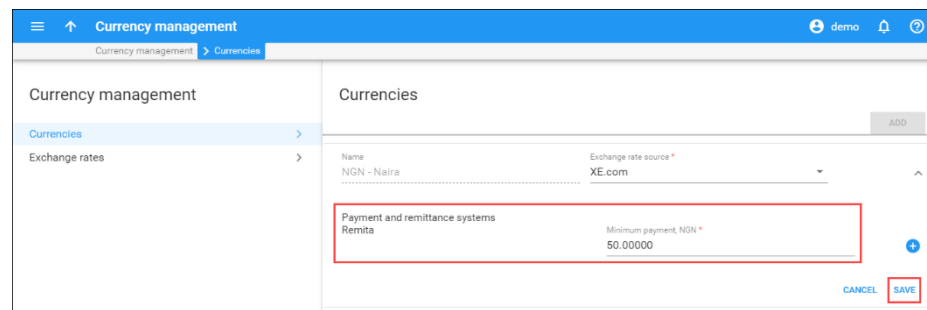

- To process a payment, a customer e-invoice is generated on the Remita portal. The payer's phone number and email address are obligatory for the e-invoice. These fields are prepopulated with the data pulled from the end user's account in PortaBilling®. Therefore, the phone number and email address fields on customer / account records must be filled in.
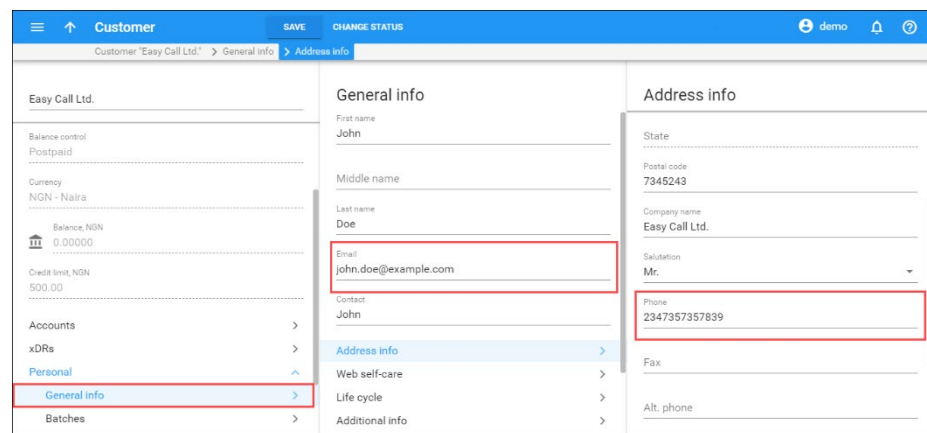
Location-based control of Internet access via ECConnect EAP

Roaming users can connect to networks where mobile data usage is extremely expensive, e.g. on board a cruise ship or in an airplane. To prevent users from high overdraft and bill shock, Australian MVNOs can now block Internet access to roaming users when their location changes to Aerospace or Maritime .

The interoperation between PortaBilling® and ECConnect EAP does just that. ECConnect EAP is the provisioning solution for MVNOs that operate on the Optus network in Australia. When a user's location changes to Aerospace or Maritime, PortaBilling® sends the provisioning request to the mobile core to block their Internet access via ECConnect EAP. Similarly, a user's Internet access is resumed when their location changes to a regular roaming zone.
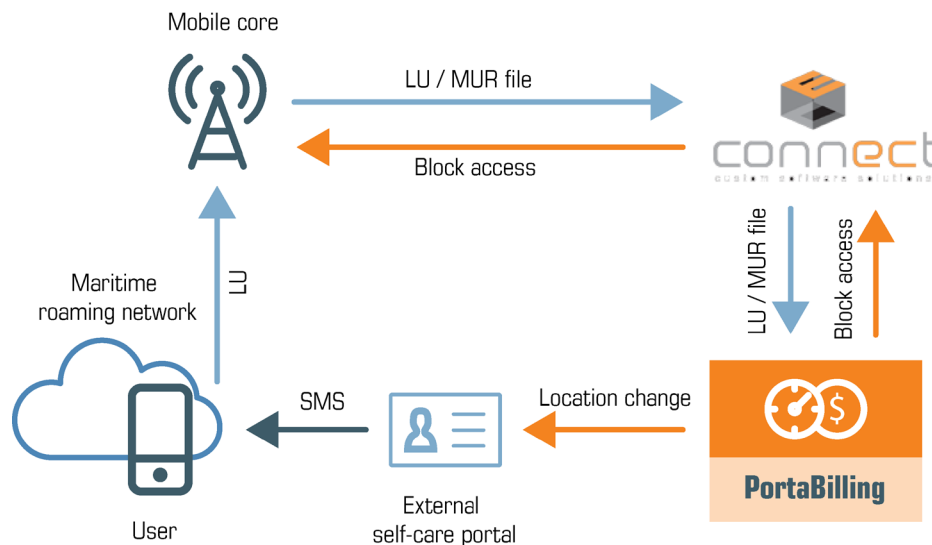
This is how it works in detail:
User location information can be obtained from the LU (Location Update) and MUR (Mediated Usage Records) files. LU files are created when a user's phone registers on a roaming network. The mobile core receives the LU file and sends it to PortaBilling® via the ECConnect EAP. However, LU files can become delayed or even get lost. Therefore, MUR files are also used to identify a user's location. The mobile core generates MUR files when a user starts the Internet session and it sends them to PortaBilling® via the ECConnect EAP. MUR files are sent every 15 minutes, which speeds up user location identification.

PortaBilling® processes the LU / MUR files and updates a user's location using the xDR mediation utility. A location and the date and time of its change are stored in custom fields for the user's account in PortaBilling®. If a user is located in the expensive zone identified as Aerospace or Maritime, PortaBilling® sends the provisioning request to the mobile core via the ECConnect EAP to block Internet access to them. However, SMS and voice call services remain available.

To notify a user about their location change and applicable rates for service usage, PortaBilling® communicates with the external self-care portal. PortaBilling® provisions the user's location to the external self-care portal, which sends an SMS notification to the user.

A user can manually unblock Internet service via the external self-care portal. In this case, the self-care portal updates the user's location in PortaBilling® via the API. PortaBilling® then provisions the mobile core via the ECConnect EAP to unblock Internet access for the user.

Configuration

To control Internet access based on user location, first configure subscriber data provisioning to the ECConnect EAP. Then, do the following:
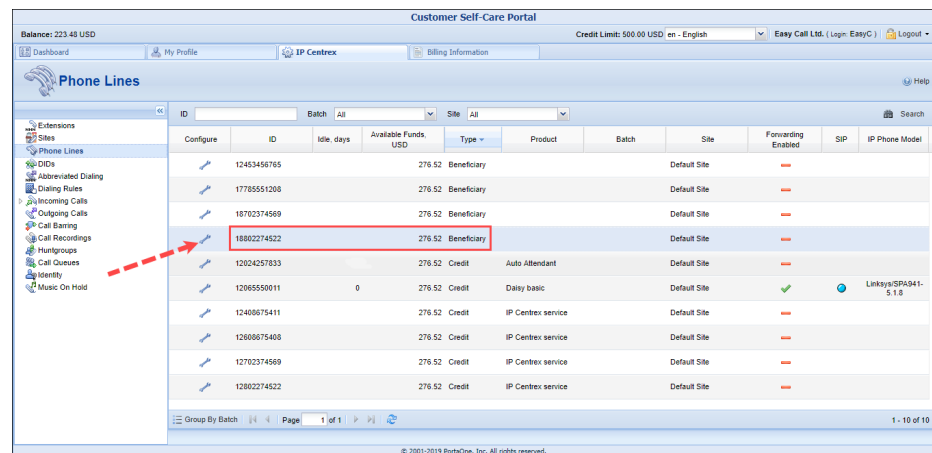
- o Create the custom fields for the account record (e.g. "location" and "timestamp") to store the user's location and the date and time of the last location change in PortaBilling®.
- o In the ESPF handler config file, specify which locations to block Internet service for by default (e.g., `AEROSPACE OR MARITIME`) in the `[RestrictedLocations]` section.
- o Configure the xDR mediator to read the LU / MUR files and update the user's location. Please contact PortaOne support if you want assistance.
- o Build or adjust your external self-care portal to communicate with PortaBilling®.

With this solution, Australian MVNOs can respond to users' location changes and thereby control their overdraft. In so doing, they vastly improve customer experience by avoiding bill shock.

On request, the location analysis utility in PortaBilling® can be extended to operate with the network core components of other MVNOs, interested in location-based service control.

Other features and enhancements

- **Self-care access for beneficiary accounts** – With this release, a customer can access the self-care portal for their beneficiary accounts to configure the individual service features. For example, to configure the auto-attendant on a beneficiary account's self-care portal.

Beneficiary account owners can also access their self-care portal where they can edit their personal info, IVR language or change their call forwarding settings at any time.

With this enhancement, customers manage their own service configurations and that significantly reduces the administrative load.