

Cloud CPE Selfcare Application for MX Series Routers, Release 1.1 Release Notes

Release 1.1
9 November 2015

Cloud CPE (cCPE) Selfcare Application for MX Series Routers enables service providers to provision cloud CPE services on MX Series 3D Universal Edge Routers.

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Introduction

These release notes describe new and changed features, limitations, and known and resolved problems related to:

- MX Series routers running Junos[®] OS Release 13.2 providing cCPE services
- cCPE Selfcare Application Release 1.1 running on Junos Space Network Management Platform, Release 12.3

All testing of cCPE services was performed on MX Series routers running Junos OS Release 13.2.



NOTE: This release of cCPE Selfcare Application runs only on Junos Space Network Management Platform, Release 12.3P2.8. cCPE Selfcare Application is not currently supported on Junos Space Network Management Platform 13.x releases. To run cCPE Selfcare Application on Junos Space Network Management Platform, you first need to download and install the Junos Space Network Management Platform Release 12.3R1.x software image. You then need to upgrade Junos Space Network Management Platform by downloading and installing the Junos Space Network Management Platform Release 12.3P2.8 patch image.

For general information on Junos OS and Junos Space Network Management Platform, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

Overview

Cloud CPE (cCPE) Application enables service providers to offer their business enterprise customers virtual customer premises equipment (CPE) services. When you transition your customers to cCPE services, you can replace their complex and expensive Layer 3 CPE devices with simple, low-cost Layer 2 CPE devices. Layer 3 CPE functions are provided by the MX Series 3D Universal Edge Router in the service provider cloud.

You can run cCPE services on MX Series routers running Junos OS Release 13.2 or later. For information about cCPE services, see [Cloud CPE Services Feature Guide for MX Series Routers](#).

You can manage cCPE services in the following ways:

- CLI — Service providers can use the Junos OS CLI to provision, manage, and monitor cCPE services.
- cCPE Selfcare Application — Service providers can use cCPE Selfcare Application, running on Junos Space Network Management Platform, to provision, manage, and monitor cCPE services. APIs are also available for integrating your operations support systems (OSS) and using it to provision and manage cCPE services.
- Selfcare Portal — Enterprise business customers can use the Selfcare Portal, provided by cCPE Selfcare Application, to monitor their cCPE services and perform certain configuration changes.

Optionally, you can use Junos Space Services Activation Director to provision the network, create sites, and associate Layer 3 VPN services with cCPE customers. If you use Junos Space Services Activation Director, you can import customers and their associated network inventory (interfaces on the router connecting to cCPE customer sites) to the Selfcare Portal. Otherwise, cCPE Selfcare Application provides its own API and Web GUI to enable importing this information from your OSS.

In addition to inventory management functions, cCPE Selfcare Application implements monitoring and service change APIs that enable service providers to integrate their OSS.

cCPE Selfcare Application provides a Web portal, called the Selfcare Portal, that enables enterprise customers to manage and monitor their cCPE services. Authorized administrators can change certain configuration parameters and view states and statistics for their cCPE resources. For security purposes, the Selfcare Portal exposes only configuration capabilities that are safely changed by cCPE customer network administrators; changing the configuration does not affect other cCPE customers.

Downloading and Installing cCPE Selfcare Application

You install cCPE Selfcare Application like any other Junos Space application. For an overview on managing Junos Space applications, see [Application Management Overview](#). For information about installing Junos Space applications, see [Adding a Junos Space Application](#).

You can download cCPE Selfcare Application from the Juniper Networks software download page, see [Junos Space Cloud CPE Selfcare Application - Download Software](#). The name of the file is **ccpe-1.1R1.2.img**.



NOTE: This release of cCPE Selfcare Application runs only on Junos Space Network Management Platform Release 12.3P2.8. cCPE Selfcare Application is not currently supported on Junos Space Network Management Platform 13.x or later releases. To run cCPE Selfcare Application on Junos Space Network Management Platform, you first need to download and install Junos Space Network Management Platform 12.3R1.x software image. You then need to upgrade Junos Space Network Management Platform by downloading and installing the Junos Space 12.3P2.8 patch image.

Migrating From cCPE Selfcare Application Release 1.0 to Release 1.1

You cannot upgrade from cCPE Selfcare Application Release 1.0 to Release 1.1. To migrate from cCPE Selfcare Application Release 1.0 to Release 1.1, you must uninstall cCPE Selfcare Application Release 1.0 and install Release 1.1.



NOTE: When you uninstall and reinstall cCPE Selfcare Application, keep the following in mind:

- After you uninstall cCPE Selfcare Application Release 1.0, all customer information previously defined in cCPE Selfcare Application is gone and the database is destroyed. As a result, you must reconfigure all customers, sites, access links, and cCPE services in the Selfcare Portal.
- Junos Space Network Management Platform maintains the `admin@customer` user account. As a result, after you reinstall the cCPE Selfcare Application Release 1.1 and recreate your customers, cCPE Selfcare Application reapplies the roles to the customer account automatically.
- For service provider accounts, defined with the `spadmin` format, you must manually reapply the roles to the account.

New and Changed Features

This section describes the new features and enhancements to existing features in cCPE Selfcare Application Release 1.1.

- [Application Settings for Selfcare Portal on page 5](#)
- [Basic NAT on page 6](#)
- [Contrail Integration on page 6](#)
- [Customer Statistics Monitoring on page 6](#)
- [Dashboard Monitoring on page 7](#)
- [DHCP Server Advanced Mode and Basic Mode on page 9](#)
- [Public IP Address Assignment on page 9](#)
- [Services PIC Resource Allocation on page 9](#)
- [Stateless Firewall Filters on page 9](#)

Application Settings for Selfcare Portal

- **Support for defining the application settings for Selfcare Portal**—Starting with cCPE Selfcare Application Release 1.1, you can define application setting for the Selfcare Portal. Application settings enable service providers to control what their cCPE customers can view and manage in the Selfcare Portal. This new capability enables service providers to:

- Specify the default password and default username prefix for all Selfcare Portal user accounts.
- Specify which features cCPE customers can configure through the Selfcare Portal including DHCP Server and DHCP Relay, Contrail (SDN) integration, private address management, and SNMP.
- Subscribe to notifications, which are used to synchronize the Selfcare Portal user interface with changes taking place in the network.
- Specify controls for SNMP access including: community, authorization level, and view.

[See [Understanding cCPE Selfcare Application Settings](#)]

Basic NAT

- **Support for configuration and management of basic Network Address Translation (NAT)**—Starting with cCPE Selfcare Application Release 1.1, you can configure and manage basic NAT. Basic NAT requires service providers to configure certain steps after which cCPE customer network administrators can configure the remaining steps for their specific NAT service.

The new “[Public IP Address Assignment](#)” on page 9 feature and the “[Services PIC Resource Allocation](#)” on page 9 feature must also be configured along with the Basic NAT feature.

[See [Configuring the Basic NAT Service Using the Selfcare Portal](#)]

Contrail Integration

- **Support for software-defined networking (SDN)**—Starting with cCPE Selfcare Application Release 1.1, service providers can offer network services to their customers that are hosted in the service provider cloud computing environment. The Selfcare Portal acts as a software-defined networking (SDN) orchestrator that enables the MX Series routers, providing the cloud CPE services, to route selected traffic to cloud-based services managed by Juniper Networks Contrail Controller. You define these services as parameterized templates and virtual machine images to be instantiated by Contrail Controller. Your cCPE customers select the services on a self-serve basis and provide the parameters required to direct the traffic they select to their cloud-based services configured with the parameters they specify.

[See [Contrail](#)]

Customer Statistics Monitoring

- **Support for customer statistics monitoring**—Starting with cCPE Selfcare Application Release 1.1, the Selfcare Portal provides a summary of the routers and cCPE services you have configured for each cCPE customer. Available statistics include:
 - **PE Router Statistics** — Displays a list of edge routers running cCPE services. The number of customers, number of sites, and number of access links are shown for

each router in the list. From this group box, you can select the router for which you want to view statistics.

- **Detailed Router Data** — Displays a list of cCPE customers being serviced by the router selected in the **PE Router Statistics** group box. The customer name, site name, access link name, and operational status of the access link are displayed for each cCPE customer. From the **Detailed Router Data** group box, you can select the customer for which you want to view services statistics.
- **Services by Customer** — Displays a list of services running on each access link configured for the cCPE customer selected in the **Detailed Router Data** group box. The router name, site name, access link name, services (indicated by a check mark), and operational status (Up or Down) of the access link are displayed for the selected customer.

The selections in these group boxes work in a hierarchical fashion; each group box displays more detailed information based on the selection in the previous group box:

1. Select a particular router from the **PE Router Statistics** group box.

The **Detailed Router Data** group box is updated with a list of customers running cCPE services on the selected router.

2. From the **Detailed Router Data** group box, select the customer for which you want to view statistics.

The **Services by Customer** group box is updated with a list of services for the selected customer.

3. After you select the customer, the **Services by Customer** group box is updated with a list of services for each access link belonging to the selected customer. The information available for each access link includes:

- Name of the router the access link resides on.
- Name of the site.
- Name of the access link.
- A check mark for each service running on the access link.
- Operational status (Up or Down) of the access link.

[See [Understanding How to View Router and cCPE Services Statistics](#)]

Dashboard Monitoring

- **Support for service provider and business customer dashboards**—cCPE Selfcare Application Release 1.1 supports two dashboards for monitoring customers, sites, and access links in the Selfcare Portal:
 - The service provider customer dashboard enables you to view statistics for all cCPE customer sites, access links, and subscribed cCPE services on a single page. You can select a particular customer, site, and access link and view statistics for the associated cCPE services like DHCP server, DHCP relay, and NAT. You can view cCPE services

statistics globally, which includes all sites and all access links for a specific customer, or you can view services statistics on an individual access link basis.

- The customer dashboard enables business customer network administrators to view statistics for all of their cCPE sites and services on a single page. The customer dashboard allows you to view services statistics globally, which includes all of your sites and access links, or you can view services statistics for a specific site and access link.

[See [Understanding How to Monitor cCPE Customers Using the Service Provider Customer Dashboard](#) and [Understanding How to Monitor cCPE Sites and Services Using the Customer Dashboard](#)]

DHCP Server Advanced Mode and Basic Mode

- **Support for DHCP Advanced and Basic modes**—Starting with cCPE Selfcare Application Release 1.1, business customers can configure DHCP server in either **Basic** or **Advanced** mode. You can use **Basic** mode to configure your IP address pool information, for example the pool name, pool range, and primary and secondary DNS servers. **Advanced** mode includes all **Basic** mode options as well as more advanced DHCP server options like defining a boot server, name server, WINS server, and static host mapping.

[See [Configuring DHCP Server Options in Advanced Mode Using the Selfcare Portal](#)]

Public IP Address Assignment

- **Support for configuration and management of public IP address pools**—Starting with cCPE Selfcare Application Release 1.1, you can configure and manage public IP address pools in the Selfcare Portal. Public IP addresses are used in conjunction with cCPE services such as NAT and firewall. cCPE service providers configure and manage public IP address pools and authorized cCPE business customer network administrators can then allocate addresses from those pools for services like NAT and firewall.

This new feature needs to be configured along with the “[Services PIC Resource Allocation](#)” on [page 9](#) feature to implement the “[Basic NAT](#)” on [page 6](#) feature.

[See [Understanding How to Manage Public IP Address Pools Using the Selfcare Portal](#)]

Services PIC Resource Allocation

- **Support for allocating services physical interface cards (PIC) resources**—To provide advanced cCPE services like NAT, service providers must install and use services line cards in your MX Series routers to provide adaptive services interfaces, which allow you to coordinate multiple services on a single PIC by configuring a set of services and applications. Starting with cCPE Selfcare Application Release 1.1, you can use the Selfcare Portal to define blocks of service interface units or logical unit numbers on the PICs in your MX Series router. The block of logical unit numbers define the range of units reserved for Selfcare Portal use.

This new feature needs to be configured along with the “[Public IP Address Assignment](#)” on [page 9](#) feature to implement the “[Basic NAT](#)” on [page 6](#) feature.

[See [Configuring Services Interfaces for Advanced cCPE Services Using the Selfcare Portal](#)]

Stateless Firewall Filters

- **Support for configuring and managing stateless firewall filters to control traffic on access links**—Starting with cCPE Selfcare Application Release 1.1, you can use the Selfcare Portal to define stateless firewall filters to enhance security through the use of packet filtering. Packet filtering enables you to inspect incoming or outgoing packets and then perform the actions you specify on packets that match the criteria you specify.

Stateless firewall filters support a rich set of packet-matching criteria that you can use to match to specific traffic and perform specific actions, such as forwarding or dropping packets that match the criteria you specify. You can configure firewall filters to protect devices in your local network or to allow access to the Internet.

[See [Understanding How Stateless Firewall Filters Control Traffic on cCPE Site Access Links](#)]

Changes in Behavior and Syntax

This section lists any changes in behavior for cCPE Selfcare Application Release 1.1 features.

- [DHCP Server and DHCP Relay](#)

DHCP Server and DHCP Relay

- **Change in behavior for DHCP Server and DHCP Relay group names**—In cCPE Selfcare Application Release 1.0, when you configure DHCP server or DHCP relay, the Selfcare Portal automatically creates the *group-name* based on the routing instance. This behavior is modified in cCPE Selfcare Application Release 1.1 to automatically create the *group-name* based on the name of the customer VPN. Because of this change in behavior, the DHCP server and DHCP relay configurations are not compatible between cCPE Selfcare Application Release 1.0 and Release 1.1.

To work around this backward compatibility issue, before upgrading cCPE Selfcare Application to Release 1.1, delete any DHCP server or DHCP relay configuration using cCPE Selfcare Application Release 1.0. Then re-create the DHCP server or DHCP relay services using cCPE Selfcare Application Release 1.1.

Known Issues with Junos OS Release 13.2 When Running cCPE Services

This section lists the known issues in hardware and software in Junos OS Release 13.2 for MX Series routers running cCPE services.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

See [Release Notes: Junos® OS Release 13.2 for the EX Series, M Series, MX Series, PTX Series, and T Series](#) for the complete list of known issues in Junos OS Release 13.2.

- [Ethernet OAM Connectivity Fault Management \(CFM\)](#)
- [General Routing](#)
- [Upgrades](#)

Ethernet OAM Connectivity Fault Management (CFM)

- **Limitation on number of connectivity fault management (CFM) sessions**—When cCPE services are running, no more than 1000 CFM sessions are supported. [PR910312](#)

General Routing

- **Interface control process may fail to restart properly**—When cCPE services are running with more than 1000 integrated routing and bridging interfaces (IRBs) configured, the interface control process may fail to properly restart. [PR911006](#)
- **Routing Engine switchovers**—When cCPE services are running with more than 1800 IRBs configured, service flows and traffic may stop processing during a Routing Engine switchover. [PR909833](#)

Upgrades

- **Unified ISSU Upgrades**—When cCPE services are running with more than 1800 IRBs configured, the unified ISSU process can fail to complete. [PR909852](#)

Known Issues with cCPE Selfcare Application Release 1.1

This section describes the known issues in cCPE Selfcare Application Release 1.1 running Junos Space Release 12.3P2.8 on Junos Space Network Management Platform.

For the most complete and latest information about known Junos OS defects, use the Juniper Networks online [Junos Problem Report Search](#) application.

- [Contrail](#)
- [DHCP Server and DHCP Relay](#)
- [Junos Space Network Management Platform Jobs](#)
- [Site Configuration](#)

Contrail

- **Disabling a Contrail service does not always clean up all Contrail objects**—In certain situations, disabling a service instance does not clean up all the objects in Contrail. [PR1004281](#)

To avoid this problem, preconfigure your Public Internet network with at least one network policy attached.

If you do experience this problem, make sure that all objects related to the disabled services have been deleted and if not, delete them manually by completing the following steps.

Using the Contrail self-service graphical user interface, delete the objects manually:

1. Select **Configure > Networking > Networks**.
 - a. Select the service .

- b. Select **Delete**
 - c. Select **Confirm**
2. Select **Configure > Networking > Policies**.
 - a. Select the service .
 - b. Select **Delete**
 - c. Select **Confirm**
3. Select **Configure > Networking > IP Address**.
 - a. Select the service .
 - b. Select **Delete**
 - c. Select **Confirm**
4. Verify that the disabled service instance has been deleted by selecting **Services > Service Instances**.

DHCP Server and DHCP Relay

- **DHCP Server Advanced mode**—After you modify the DHCP Server Advanced mode configuration in the Selfcare Portal and then select **Update** to commit your changes, some fields are not properly updated in the Selfcare Portal. [PR998903](#)

To work around this issue:

- a. In the Selfcare Portal, reselect **Administration > Site Configuration**.
- b. Reselect the site from the **Site selection** list.
- c. Select the **DHCP Server** tab.
- d. Select the **Advanced** mode.

The DHCP Server Advanced mode configuration should be displayed properly.

- **DHCP Relay configuration fails to update properly if DHCP Server was previously configured at another site**—In multisite configurations, when you are configuring DHCP Relay at one site after another site already has DHCP Server configured, the Selfcare Portal may inaccurately display status of the DHCP server IP address. [PR1002751](#)

To work around this issue:

- a. Refresh your browser window.
- b. Reselect **Administration > Site Configuration**.
- c. Reselect the site from the **Site selection** list.
- d. Respecify the **DHCP Relay** configuration.
- e. Select **Update** to commit your changes.

Junos Space Network Management Platform Jobs

- **Jobs status message may not be displayed properly**—After submitting a job to Junos Space Network Management Platform jobs queue, if you navigate away from the current page, either by selecting a different tab or field on the page, the job status message may not be displayed properly and you may not be able to determine when the job completes and whether the system has fully synchronized. We recommend you wait until the system has completed any tasks and displayed the jobs message before making any new selections on the current page or navigating away from the current page. [PR912651](#)

Site Configuration

- **Site Configuration: wrong warning message about unsaved changes**—In multisite configurations, if you navigate to a different site in the Selfcare Portal immediately after you successfully modify another site, an erroneous warning message is displayed regarding the potential of unsaved changes. Selecting the **Cancel** button then selecting the site configuration task again clears the issue so you can proceed with the configuration of the newly selected site. [PR993403](#)

Resolved Issues: Junos OS, Release 13.2

- [DHCP](#)
- [Interfaces and Chassis](#)
- [General Routing](#)
- [VRRP](#)

DHCP

- **DHCP process can crash**—When running cCPE services with more than 1000 IRBs configured, the DHCP process crashes after a restart. This issue has been resolved. [PR9898816](#)

Interfaces and Chassis

- **FPC fails to restart properly**—When running cCPE services with more than 1800 IRBs configured, the FPC may go into a ready state and fail to restart properly. This issue has been resolved. [PR901354](#)

General Routing

- **Interface control process may fail**—When running cCPE services with more than 1000 integrated routing and bridging interfaces (IRBs) configured, the interface control process may fail to restart properly. This issue has been resolved. [PR911006](#)

VRRP

- **VRRP process crashes after interface flaps**—When running cCPE services with more than 1800 IRBs configured, the VRRP process may crash after the interface flaps on the access side. This issue has been resolved. [PR911039](#)

Resolved Issues: Cloud CPE Selfcare Application Release 1.1

- [cCPE Selfcare Application](#)

cCPE Selfcare Application

- **DHCP server pool fields in Selfcare Portal**—When DHCP server pools are configured, you are incorrectly allowed to enter data in the DHCP server configuration fields. Any data you enter is discarded. This issue has been resolved. [PR916706](#)

Junos Space Documentation and Release Notes

For a list of related Junos Space documentation, see <http://www.juniper.net/techpubs/>.

If the information in the latest release notes differs from the information in the documentation, follow the *Junos Space Release Notes*.

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

Juniper Networks supports a technical book program to publish books by Juniper Networks engineers and subject matter experts with book publishers around the world. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration using the Junos operating system (Junos

OS) and Juniper Networks devices. In addition, the Juniper Networks Technical Library, published in conjunction with O'Reilly Media, explores improving network security, reliability, and availability using Junos OS configuration techniques. All the books are for sale at technical bookstores and book outlets around the world. The current list can be viewed at <http://www.juniper.net/books>.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback rating system—On any page at the Juniper Networks Technical Documentation site at <http://www.juniper.net/techpubs/index.html>, simply click the stars to rate the content, and use the pop-up form to provide us with information about your experience. Alternately, you can use the online feedback form at <http://www.juniper.net/techpubs/feedback/>.
- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or Partner Support Service support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>

- Download the latest versions of software and review release notes:
<http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications:
<http://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum:
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html>.

Revision History

November 2015—Revision 4, cCPE Selfcare Application for MX Series Routers, Release 1.1

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