

# Junos<sup>®</sup> Space Edge Services Director

## Release 1.0 Release Notes

Release 1.0  
28 September 2015

The Junos Space Edge Services Director application enables unified lifecycle management of services, such as stateful firewalls, carrier-grade NAT, adaptive delivery controller, and traffic load balancer, and packet filter policies on Juniper Networks MX Series routers that function as service delivery gateways in your network.

### Contents

Edge Services Director Release 1.0 Release Notes . . . . .	2
Overview . . . . .	2
New Features in Junos Space Edge Services Director . . . . .	3
Junos Space Network Management Platform Requirements . . . . .	4
Supported Platforms for Junos Space Edge Services Director Release	
1.0 . . . . .	4
Installation Instructions for Junos Space Edge Services Director Release	
1.0 . . . . .	5
Junos Space SDG DMI Schema Requirements for Junos Space Edge Services	
Director . . . . .	6
Operational Notes . . . . .	8
Known Limitations . . . . .	9
Known Issues in Junos Space Edge Services Director Release 1.0 . . . . .	9
Junos Space Documentation and Release Notes . . . . .	10
Documentation Feedback . . . . .	10
Requesting Technical Support . . . . .	10
Self-Help Online Tools and Resources . . . . .	11
Opening a Case with JTAC . . . . .	11
Revision History . . . . .	11

## Edge Services Director Release 1.0 Release Notes

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- [Overview](#)
- [New Features in Junos Space Edge Services Director](#)
- [Junos Space Network Management Platform Requirements](#)
- [Supported Platforms for Junos Space Edge Services Director Release 1.0](#)
- [Installation Instructions for Junos Space Edge Services Director Release 1.0](#)
- [Junos Space SDG DMI Schema Requirements for Junos Space Edge Services Director](#)
- [Operational Notes](#)
- [Known Limitations](#)
- [Known Issues in Junos Space Edge Services Director Release 1.0](#)

### Overview

Junos Space Edge Services Director enables unified management of services on Juniper Networks MX240, MX480, and MX960 3D Universal Edge routers. Service providers are increasingly using IP Layer 3 through Layer 7 services to differentiate themselves from third-party, external providers and provide a better user experience. These IP services manage traffic flow per application type, enhance security, improve video quality and offer other enhanced IP applications. The service delivery gateway (SDG) (running on the MX Series router) consolidates a variety of network services onto a single platform to reduce cost and increase network resiliency.

Services interfaces, such as adaptive services interfaces and multiservices interfaces, provide specific capabilities for manipulating traffic before it is delivered to its destination. Edge Services Director is a cohesive and robust GUI application that you can use on a server that is running the Junos Space Network Management Platform software.

You can use the Edge Services Director application to add SDGs, which are MX Series routers, discover SDGs into the Edge Services Director database, and manage the SDG settings. Currently, for the Edge Services Director Release 1.0, which is the first implementation of this application, stateful firewall, carrier-grade Network Address Translation (CGNAT), and load balancing services are supported. You can configure and deploy these services to a large number of SDGs for easy and effective administration. Using the Edge Services Director application, you can also configure policies and filters for these services to classify and forward traffic traversing the SDGs.

The software images for Edge Services Director, Junos Space Management Platform, additional scripts, Edge Services Director API reference documentation, and the release notes for Edge Services Director Release 1.0 are available at: [Junos Space and Junos Space Edge Services Director Download](#).

## New Features in Junos Space Edge Services Director

- **Dashboard view**—This is a view that can be customized and provides information about your network. It is the default view that opens when you log in. You can select and add monitoring widgets to the Dashboard view based on your requirements. The dashboard enables you to allow the operators to quickly monitor the health and status of the managed SDGs. It provides a proactive account of the SDG health status and working efficiency of SDG devices in comprehensive and intuitive format at the network, SDG instance, and service levels. A single pane of glass (SPOG) view helps the operator to view various alarms and quickly identify and isolate issues.
- **Build mode**—In Build mode, you can create services, policies, and filters for devices that are managed by Edge Services Director. You can define service templates and attributes of different services. You can also specify policies and filters to classify and control the manner in which packets must be handled by the various services. Configuring a policy has a major impact on the flow of routing information or packets within and through the router.

In Gateway view of Build mode, you create the network managed by Junos Space Edge Services Director by bringing devices under the administration of the network management application and retrieving the device settings to save in the Edge Services Director database. It provides you with the ability to use device discovery to bring devices under Edge Services Director management, to customize your view of the devices, to configure devices, and to perform some common device management tasks. In Device view of Build mode, you can perform software upgrades to devices and perform several device management and configuration file management tasks. You can also back up the Edge Services Director database that contains all the configuration parameters of devices, settings that enable monitoring and management of devices and services, and reports that contain statistics and graphs of the tracked system states. You can restore the data backed up to a different server that runs the Edge Services Director application.

- **Deploy mode**—Deploy mode enables you to deploy configuration changes to devices. You can create a deployment plan for each of the service planning templates, such as the ones defined for ADC or stateful firewall (SFW) services, and the policy or filter templates, such as the packet filter or SFW policy, that you have created. A deployment plan contains details about the settings and configuration parameters that must be propagated and provisioned on the SDGs managed by Edge Services Director. You can also create, update, display, publish, and commission packet filters, stateful firewall policies, and CGNAT policies present on discovered and managed SDGs.
- **Monitor mode**—Monitor mode in Edge Services Director provides visibility into the behavior and performance of your network. Edge Services Director monitors its managed devices and maintains the information it collects from the devices in a database. Monitor mode displays this information in easy-to-understand graphs and in tables that you can sort and filter, allowing you to quickly visualize the state of your network, spot trends developing over time, and find important details.
- **Fault mode**—Fault mode shows you information about the health of your network and changing conditions of your equipment. Use Fault mode to identify problems with equipment, pinpoint security attacks, or analyze trends and categories of errors. Edge

Services Director correlates traps, which describe a condition, into an alarm. Alarms are ranked by their impact on the network.

- **Report mode**—Use Report mode to generate reports from the data that Edge Services Director stores about network performance, status, and activity. In Report mode, you can create standardized reports from the monitoring and fault data collected by Edge Services Director. An essential part of the network management lifecycle, reporting provides administrators and management insight into the network for maintenance, troubleshooting, and trend and capacity analysis, and generates records that can be archived for compliance requirements.
- **View pane**—On the View pane, Edge Services Director provides you with a unified, hierarchical view of your wired, wireless, and virtual networks in the form of a expand tree that is expandable and collapsible. You can choose from five views, or perspectives, of your network—Dashboard view, Location view, Device view, Gateway view, and Service view. By selecting both a view and a node from the tree, you indicate the scope over which you want an operation or task to occur. The Dashboard view provides a summary, encompassing a pictorial representation of the health and performance of devices and services in your network, which enables you to analyze and troubleshoot the parameters that are causing traffic-handling errors.
- **Edge Services Director API**—Edge Services Director now provides users with a range of software orchestration services that exposes a set of Representational State Transfer (REST) APIs. The REST APIs enable network management functions. The APIs enable support for configuring, deploying, and monitoring services and policy filter rules on SDGs or SDG groups.

## Junos Space Network Management Platform Requirements

The Edge Services Director Release 1.0 GUI is supported on Junos Space Network Management Platform Release 15.1R1.

Edge Services Director is supported on a JA2500 Junos Space Appliance or a Junos Space Virtual Appliance that meets the hardware requirements specified in the Junos Space documentation. The number of devices you plan to manage by using Edge Services Director determines which Junos Space Appliance to use. Contact Juniper Networks Technical Assistance Center to know more about the Junos Space Appliance model that is suitable for your network. Edge Services Director is not supported on a Junos Space instance running on a Juniper Networks NSM3000 appliance.

## Supported Platforms for Junos Space Edge Services Director Release 1.0

Table 1 on page 4 lists the supported platforms for Edge Services Director Release 1.0 and the corresponding qualified Junos OS releases.

*Table 1: Supported Platforms and the Software Versions for Edge Services Director*

Supported Platforms	Qualified Junos OS Releases
MX Series 3D Universal Edge Routers	Junos OS Release 14.1X55-D25 for MX240, MX480, and MX80 routers

## Installation Instructions for Junos Space Edge Services Director Release 1.0

Before you install Edge Services Director Release 1.0, ensure that the Network Management Platform is of the required release number with the latest patch installed. See [Junos Space Network Management Platform Requirements on page 4](#) for requirements information.



**NOTE:** If you have installed Edge Services Director Release 1.0 on the same Junos Space appliance, then you must uninstall it before you install a new image. You do not need to restart JBoss before you install Edge Services Director Release 1.0.

The software image for Edge Services Director Release 1.0 enables you to install the Edge Services Director GUI application. The Representational State Transfer (REST) APIs for Edge Services Director are installed along with the GUI application.

### Prerequisites for Installation

- Junos Space Platform Release 15.1R1 must be running before you begin to install Edge Services Director Release 1.0.
- Edge Services Director is supported on a JA2500 Junos Space Appliance or a Junos Space Virtual Appliance that meets the hardware requirements specified in the Junos Space documentation. The Junos Space Appliance that suits your requirement depends on the number of devices you plan to manage by using the network management application.
- You cannot install Network Director or Connectivity Services Director on the same system as Edge Services Director. Uninstall Network Director or Connectivity Services Director before you install Edge Services Director on your system.

A prescribed order is always required for the installation or upgrade of Edge Services Director. Use the following table to determine the prescribed order of tasks for your installation or upgrade.

Type of Upgrade or Installation	Required Order of Installation
New installation—Edge Services Director	<ol style="list-style-type: none"> <li>1. Install or upgrade to a supported release of Network Management Platform. See <a href="#">Junos Space Network Management Platform Requirements on page 4</a> for requirements information.</li> <li>2. Install Edge Services Director Release 1.0.</li> </ol> <p>After the installation is complete, the system includes Edge Services Director in the list of installed applications.</p>

## Junos Space SDG DMI Schema Requirements for Junos Space Edge Services Director

In most installations, Junos Space automatically matches DMI schemas to device families. But there might be certain situations where your network uses a device for which Junos Space does not have the latest or supported schema available. In such situations, you must obtain and upload the requisite schema and set it as the default DMI schema for each device family. For the service delivery gateways (SDGs), which are running on MX Series routers, you can set a default SDG DMI schema for each device family to enable Junos Space to apply an appropriate schema to a device family.



**NOTE:** See [Setting a Default DMI Schema](#) for detailed steps to set a default schema.

Table 2 on page 6 lists the latest SDG DMI schema that you must obtain and upload in Junos Space before you start working on Edge Services Director Release 1.0.

**Table 2: SDG DMI Schemas**

Device	Name of the SDG DMI Schema	Device Family
MX240 MX480 MX960	JUNOS 14.1X55-D25	junos-mx

After you obtain the DMI schema, to install the schema update on Junos Space Platform if you already have the compressed TAR file (extension **.tgz**) available:

1. On the Junos Space Network Management Platform user interface, select **Administration > DMI Schemas**  
The DMI Schemas page appears.
2. Click the **Update Schema** icon on the toolbar.  
The **Update Schema** page appears.



**NOTE:** On the Update Schema page, Junos Space Platform displays the schemas that you already have installed and, based on the discovered devices, suggests new schemas. However, you can pick other available schemas and download them.

3. Select the **Archive (.tgz)** option button.
4. Click **Browse**.  
The **File Upload** dialog box appears.

5. Select the compressed TAR file (extension **.tgz**) and click **Open**.

The **Update Schema** page reappears, displaying the compressed TAR file (extension **.tgz**) in the **Archived Schemas File** field.

6. Click **Upload**.



**NOTE:** Do not move away from the **Update Schema** page while the compressed TAR file (extension **.tgz**) is being uploaded to Junos Space Platform. The time taken for the upload process depends on the number of schemas in the file. A progress bar indicates the percentage of the upload that has completed.

To update the DMI schema directly from the Juniper Networks DMI schema repository:

1. Select the **SVN Repository** option button.

If the access to the Juniper Networks Subversion repository is already configured, the URL of the repository is displayed in the **URL** field. If the access is not configured, a note indicating that the access must be configured is displayed.

To configure access to the Juniper Networks Subversion repository:

- a. Click **Configure**.

The **SVN Access Configuration** dialog box appears.

- b. In the **Svn URL** field, enter the URL of the Juniper Networks Subversion repository (<https://xml.juniper.net/dmi/repository/trunk/>).
- c. In the **User Name** field, enter the user name to access the Juniper Networks Subversion repository.
- d. In the **Password** field, enter the password to access the Juniper Networks Subversion repository.
- e. In the **Confirm** field, reenter the password to access the Juniper Networks Subversion repository.
- f. (Optional) The **Proxy Server** field displays whether a proxy server is configured or not. If your organization requires that you use a proxy server to connect to the Internet, you must configure and enable the proxy server (under **Administration > Proxy Server**) before connecting to the Juniper Networks Subversion repository. For more information, see *Configuring Proxy Server Settings*.  
(Optional) Click **Test Connection**.

A message dialog box appears (after a few seconds or a few minutes depending on the connection) to indicate whether the connection is established successfully or not. Click **OK** to close the dialog box and return to the **Svn Access Configuration** dialog box.

- g. Click **Save** to save the settings that you configured.

You are taken to the Update Schema page and the URL that you configured is displayed in the **URL** field.

2. (Optional) From the **Device Family** drop-down list, select the device families that you want to download from the repository.



**NOTE:** If you do not specify a device family, then available schemas from all families are listed.

3. Click **Connect**.

Junos Space Platform displays a message asking you to wait while the list of schemas is retrieved. (This process might take anywhere from a few seconds to a few minutes depending on the connection.)

For detailed steps for acquiring and uploading the schema files, see [Managing DMI Schemas Overview](#).

## Operational Notes

The following are the operational notes for Edge Services Director:

- The minimum supported screen resolution is 1280 x 1024. If your screen resolution is less than the supported resolution, the Edge Services Director UI might not be displayed properly. For example, icons might not be displayed on the Edge Services Director banner, pages might appear truncated, or scroll bars might not work correctly.
- The supported Web browsers are Google Chrome 17 and later, Mozilla Firefox 14.0 and later, and Microsoft Internet Explorer 9.0 and 10.0. Microsoft Internet Explorer 11.0 is not supported for Edge services Director.
- If you have been logged in to Edge Services Director for a long period of time, the connection to the server might time out. Monitoring pages might go blank or you might not be able to access tasks. To resolve this, log out of Edge Services Director and then log in again.
- If you receive a Java exception error message when you perform an operation, retry the operation. The error condition is usually temporary and harmless.
- Only user accounts with administrator (admin) privileges can use the Edge Services Director API.



- For Edge Services Director to be able to discover and manage devices, the following protocol ports must be open between the Junos Space Network Management Platform server and the devices:
  - Port 22 for SSH connections. If you have changed the SSH port to a port other than port 22 on your Network Management Platform, you must change the SSH ports on your managed devices to the port that the Network Management Platform is using.
  - Port 162 for service-level SNMP traps. Edge Services Director uses OpenNMS for SNMP trap collection and correlation.
  - Port 21 (TCP) and port 69 (UDP) for uploading the software image and configuration file to the FTP server.

You can verify that the ports are open to the devices by logging in to the Network Management Platform CLI and executing the **nmap** command.

- The Edge Services Director API is not supported on a Junos Space cluster-based deployment.

## Known Limitations

This section lists the known limitations in Edge Services Director:

- Edge Services Director supports role-based access control (RBAC) only at the task category level. There is no support for object level or task level access control.
- In Fault mode, the pie charts that display the alarms by severity do not show the informational severity-level alarms. Instead, alarms are displayed with the warning severity level, which indicates informational severity alarms.
- For CGNAT and SFW services, in Monitor mode of Service view, the CPU and Memory Usage widget on the monitoring page for these services does not display the correct line chart and it is grayed out. This problem might be because of the MX Series router sending an incorrect SNMP response.

## Known Issues in Junos Space Edge Services Director Release 1.0

The following are known issues in Edge Services Director Release 1.0. For each entry, the identifier in the PR Number column of [Table 3 on page 9](#) is the tracking number in the Juniper Networks problem report (PR) tracking system.

*Table 3: Known Issues in Edge Services Director Release 1.0*

PR Number	Problem Description
<b>Manage SDGs Issues</b>	
1116545	<p>When you attempt to delete SDGs in a bulk operation in Location view of from Edge services Director, although the devices are successfully deleted, the job that is created for the bulk deletion displays a Java exception in the View Job Details page of Job Management workspace of the Junos Space Platform GUI.</p> <p>Workaround: Use Device view if you want to delete SDGs, instead of performing a bulk deletion.</p>

- Related Documentation**
- [Edge Services Director](#)
  - [Junos Space](#)

## Junos Space Documentation and Release Notes

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

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 <https://www.juniper.net/documentation/>.

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 <https://www.juniper.net/books>.

## Documentation Feedback

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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 of the Juniper Networks TechLibrary site at <https://www.juniper.net/documentation/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 <https://www.juniper.net/documentation/feedback/>.
- E-mail—Send your comments to [techpubs-comments@juniper.net](mailto:techpubs-comments@juniper.net). Include the document or topic name, URL or page number, and software version (if applicable).

## Requesting Technical Support

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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 <https://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: <https://www.juniper.net/customers/support/>
- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <https://www.juniper.net/documentation/>
- Find solutions and answer questions using our Knowledge Base: <https://kb.juniper.net/>
- Download the latest versions of software and review release notes: <https://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum: <https://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <https://www.juniper.net/cm/>

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

## 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 <https://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 <https://www.juniper.net/support/requesting-support.html>.

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## Revision History

28 September 2015—Revision 1, Junos Space Edge Services Director, Release 1.0

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