# Junos OS Release 18.2R1 for cSRX Release Notes

**Release 18.2R1**
**28 June 2018**
**Revision 1**

**Contents**

## Introduction

This release note accompanies Junos OS Release 18.2R1 for the cSRX Container Firewall, a containerized version of the SRX Series Services Gateway. It describes the new features, known behavior, and known and resolved problems in the software.

## New and Changed Features

This section describes new features as well as enhancements to existing features starting in Junos OS Release 18.2R1 for cSRX support.

### New Features in Junos OS Release 18.2R1 for cSRX

#### Security Policies

- **Support for unified policies (SRX Series, cSRX)**—Starting in Junos OS Release 18.2R1, unified policies are now supported on all SRX Series devices, allowing granular control and enforcement of dynamic Layer 7 applications within the traditional security policy.

  Unified policies are the security policies, where you can use dynamic applications as match conditions along with existing 5-tuple or 6-tuple matching conditions (with user firewall) to detect application changes over time, and allow you to enforce a set of rules for the transit traffic.

  Unified policies allow you to use dynamic application as one of the policy match criteria rule in each application. Application identification (AppID) is applied on the traffic, and the application is identified after several packets are checked.

  Before identifying the final application, the policy cannot be matched precisely. A potential policy list is made available, and the traffic is permitted using the potential policy from the list.

  After the application is identified, the final policy is applied to the session. Policy actions such as permit, deny, reject, or redirect is applied on the traffic as per the policy rules.

The following features support unified policies:

- **Application Identification (AppID)**—Unified policy leverages the application identity information from the Application Identification (AppID). AppID provides the information such as dynamic application classification, default protocol and port of an application. For any application included in the dependent list of another application, AppID provides this information.

  [See Application Identification Support for Unified Policies.]

- **Application firewall (AppFW)**—Unified policy configuration handles AppFW functionality and simplifies the task of configuring firewall policy to permit or block application traffic from the network.

  If you configure a unified policy with a dynamic application as one of the matching conditions, then the configuration eliminates the additional steps involved in AppFW configuration—that is, configuring a security policy to invoke the application firewall service.

  Starting in Junos OS Release 18.2R1, the Application Firewall (AppFW) functionality is deprecated—rather than immediately removed—to provide backward compatibility and a chance to bring your configuration into compliance with the new configuration.

  The **[edit security application-firewall]** hierarchy and all configuration options under this hierarchy are deprecated.

- **ICAP service redirect**—Internet Content Adaptation Protocol (ICAP) service redirect functionality is supported when the device is configured with unified policies.

- **IDP**—Starting with Junos OS Release 18.2R1, with unified policies support, when a security rule has IDP enabled, the name of the actual IDP policy is replaced. This is to simplify IDP policy usage and to provide flexibility to have multiple policies active at the same time.

  All IDP matches will now be handled within the unified policies. As a part of session interest check IDP will enabled if IDP policy is present in any of the matched rules.

  IDP policy is activated in security policies, by permitting the IDP policy within the application services using the **set security policies from-zone zone-name to-zone zone-name policy policy-name then permit application-services idp-policy idp-policy-name** command.

  Since IDP policy name is directly use in the security policy rule, the **[edit security idp active-policy policy-name]** statement is deprecated.

- **UTM**—A new dynamic-application policy match condition is added to SRX Series devices, allowing an administrator to more effectively control the behavior of Layer 7 applications. To accommodate Layer 7 application-based policies in UTM, the **[edit security utm default-configuration]** command is introduced. If any parameter in a specific UTM feature profile configuration is not configured, then the corresponding parameter from the UTM default configuration is applied.

  Additionally, during the initial policy lookup phase which occurs prior to a dynamic application being identified, if there are multiple policies present in the potential

policy list which contains different UTM profiles, the SRX Series device applies the default UTM profile until a more explicit match has occurred.

[See Unified threat management (UTM) support within Unified Policy.]

## cSRX Architecture Illustration

### cSRX Architecture

Figure 1 on page 4 is a high-level illustration of the cSRX architecture and Figure 2 on page 5 is a high-level illustration of a cSRX compute node in a Contrail Networking cloud environment.

For details about the cSRX architecture, see the *Overview* topic in cSRX Deployment Guide for Bare-Metal Linux Server and cSRX Deployment Guide for Contrail.
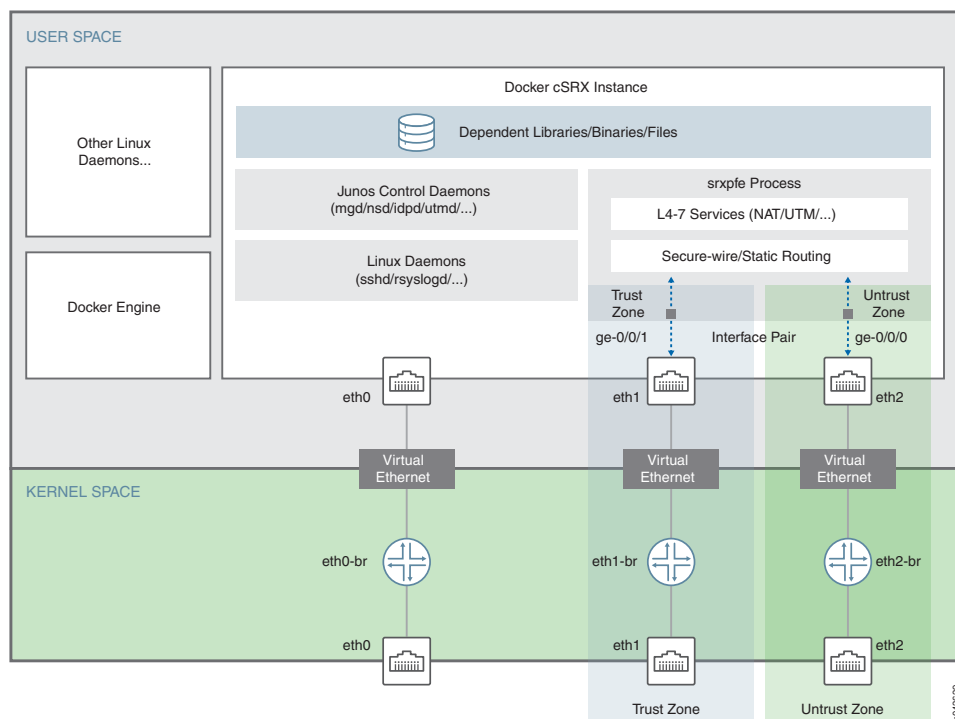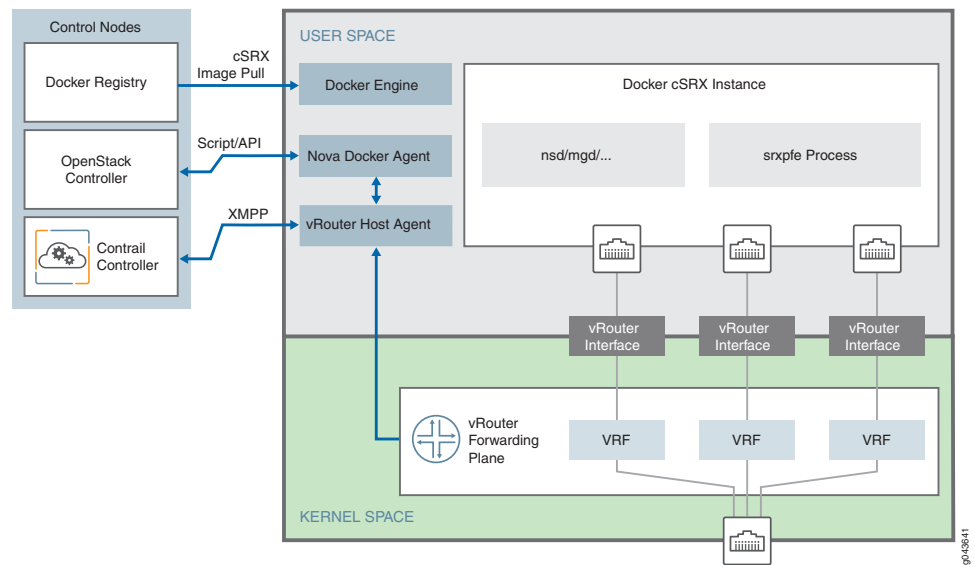
*Figure 1: cSRX Architecture*

*Figure 2: cSRX Architecture in Contrail*



## Supported Features

The cSRX Container Firewall inherits many of the branch SRX Series Junos OS features. This topic outlines the SRX series features supported by cSRX along with the features that are not applicable in a containerized environment.

### SRX Series Features Supported on cSRX

Table 1 on page 5 provides a high-level summary of the feature categories supported on cSRX and any feature considerations.

To determine the Junos OS features supported on cSRX, use the Juniper Networks Feature Explorer, a Web-based application that helps you to explore and compare Junos OS feature information to find the right software release and hardware platform for your network. See Feature Explorer.

*Table 1: SRX Series Features Supported on cSRX*

| Feature | Considerations |
| --- | --- |
| Application Firewall (AppFW) | Application Firewall Overview |
| Application Identification (AppID) | Understanding Application Identification Techniques |
| Application Tracking (AppTrack) | Understanding AppTrack |
| Basic firewall policy | Understanding Security Basics |
| Brute force attack mitigation | |

*Table 1: SRX Series Features Supported on cSRX (continued)*

| Feature | Considerations |
|---|---|
| Central management | CLI only. No J-Web support. |
| DDoS protection | DoS Attack Overview |
| DoS protection | DoS Attack Overview |
| Interfaces | Two revenue network interfaces (eth1, and eth2). |
| | Network Interfaces |
| Intrusion Detection and Prevention (IDP) | For SRX Series IPS configuration details, see: |
| | Understanding Intrusion Detection and Prevention for SRX Series |
| IPv4 and IPv6 | Understanding IPv4 Addressing |
| | Understanding IPv6 Address Space |
| Jumbo frames | Understanding Jumbo Frames Support for Ethernet Interfaces |
| Malformed packet protection | |
| Network Address Translation (NAT) | For SRX Series NAT configuration details, see: |
| | Introduction to NAT |
| Routing | Basic Layer 3 forwarding with VLANs. |
| | Layer 2 through 3 forwarding functions: secure-wire forwarding or static routing forwarding |
| SYN cookie protection | Understanding SYN Cookie Protection |
| User Firewall | For SRX Series user firewall configuration details, see: |
| | Overview of Integrated User Firewall |
| Unified Threat Management (UTM) | For SRX Series UTM configuration details, see: |
| | Unified Threat Management Overview |
| | For SRX Series UTM antispam configuration details, see: |
| | Antispam Filtering Overview |
| Zones and zone-based IP spoofing | Understanding IP Spoofing |

## SRX Series Features Not Supported on cSRX

lists SRX Series features that are not applicable in a containerized environment, that are not currently supported, or that have qualified support on cSRX.

*Table 2: SRX Series Features Not Supported on cSRX*

|  | SRX Series Feature |
|---|---|
| **Application Layer Gateways** |  |
|  | Avaya H.323 |
| **Authentication with IC Series Devices** |  |
|  | Layer 2 enforcement in UAC deployments |
|  | NOTE: UAC-IDP and UAC-UTM also are not supported. |
| **Class of Service** |  |
|  | High-priority queue on SPC |
|  | Tunnels |
| **Data Plane Security Log Messages (Stream Mode)** |  |
|  | TLS protocol |
| **Diagnostics Tools** |  |
|  | Flow monitoring cflowd version 9 |
|  | Ping Ethernet (CFM) |
|  | Traceroute Ethernet (CFM) |
| **DNS Proxy** |  |
|  | Dynamic DNS |
| **Ethernet Link Aggregation** |  |
|  | LACP in standalone or chassis cluster mode |
|  | Layer 3 LAG on routed ports |
|  | Static LAG in standalone or chassis cluster mode |
| **Ethernet Link Fault Management** |  |
|  | **Physical interface (encapsulations)** |
|  | **ethernet-ccc**<br>**ethernet-tcc** |

*Table 2: SRX Series Features Not Supported on cSRX (continued)*

| | SRX Series Feature |
|---|---|
| | **extended-vlan-ccc** **extended-vlan-tcc** |
| | **Interface family** |
| | **ccc, tcc** |
| | **ethernet-switching** |
| **Flow-Based and Packet-Based Processing** | |
| | End-to-end packet debugging |
| | Network processor bundling |
| | Services offloading |
| **Interfaces** | |
| | Aggregated Ethernet interface |
| | IEEE 802.1X dynamic VLAN assignment |
| | IEEE 802.1X MAC bypass |
| | IEEE 802.1X port-based authentication control with multisupplicant support |
| | Interleaving using MLFR |
| | PoE |
| | PPP interface |
| | PPPoE-based radio-to-router protocol |
| | PPPoE interface |
| | Promiscuous mode on interfaces |
| **IP Security and VPNs** | |
| | Acadia - Clientless VPN |
| | DVPN |
| | Hardware IPsec (bulk crypto) Cavium/RMI |
| | IPsec tunnel termination in routing instances |

*Table 2: SRX Series Features Not Supported on cSRX (continued)*

| | SRX Series Feature |
|---|---|
| | Multicast for AutoVPN |
| | Suite B implementation for IPsec VPN |
| **IPv6 Support** | |
| | DS-Lite concentrator (also known as AFTR) |
| | DS-Lite initiator (also known as B4) |
| **Log File Formats for System (Control Plane) Logs** | |
| | Binary format (binary) |
| | WELF |
| **Miscellaneous** | |
| | AppQoS |
| | Chassis cluster |
| | GPRS |
| | Hardware acceleration |
| | High availability |
| | J-Web |
| | Logical systems |
| | MPLS |
| | Outbound SSH |
| | Remote instance access |
| | RESTCONF |
| | Sky ATP |
| | SNMP |
| | Spotlight Secure integration |
| | USB modem |
| | Wireless LAN |

*Table 2: SRX Series Features Not Supported on cSRX (continued)*

|  | SRX Series Feature |
| --- | --- |
| **MPLS** | |
| | CCC and TCC |
| | Layer 2 VPNs for Ethernet connections |
| **Network Address Translation** | |
| | Maximize persistent NAT bindings |
| **Packet Capture** | |
| | Packet capture |
| | NOTE: Only supported on physical interfaces and tunnel interfaces, such as *gr*, *ip*, and *st0*. Packet capture is not supported on a redundant Ethernet interface (*reth*). |
| **Routing** | |
| | BGP extensions for IPv6 |
| | BGP Flowspec |
| | BGP route reflector |
| | Bidirectional Forwarding Detection (BFD) for BGP |
| | CRTP |
| **Switching** | |
| | Layer 3 Q-in-Q VLAN tagging |
| **Transparent Mode** | |
| | UTM |
| **Unified Threat Management** | |
| | Express AV |
| | Kaspersky AV |
| **Upgrading and Rebooting** | |
| | Autorecovery |
| | Boot instance configuration |
| | Boot instance recovery |

*Table 2: SRX Series Features Not Supported on cSRX (continued)*

| | SRX Series Feature |
|---|---|
| | Dual-root partitioning |
| | OS rollback |
| User Interfaces | |
| | NSM |
| | SRC application |
| | Junos Space Virtual Director |

## Changes in Behavior and Syntax

This section lists the changes in behavior of Junos OS features and changes from Junos OS Release 18.2R1 for the cSRX. For the most complete and latest information about changes in command behavior and syntax applicable to all SRX Series platforms in Junos OS Release 18.2R1, see Changes in Behavior and Syntax for SRX.

Application System Cache for Application Services (SRX Series, cSRX Instances)

Starting with Junos OS 18.2R1, the default behavior of the ASC has changed as follows:

- Security services such as security policies, application firewall (AppFW), Juniper Sky ATP, IDP, and UTM do not use the ASC by default.

- Miscellaneous services such as APBR and AppTrack use the ASC for application identification by default.

NOTE: The change in the default behavior of the ASC affects the legacy Application Firewall (AppFW) functionality. With the ASC disabled by default for the security services starting in Junos OS Release 18.2 onwards, the AppFW will not use the entries present in the ASC.

You can revert to the ASC behavior as in Junos OS releases prior to 18.2 by using the **set services application-identification application-system-cache security-services** command.

CAUTION: The SRX Series device may become susceptible to application evasion techniques if the ASC is enabled for security services. We recommend that you enable the ASC only when the performance of the device in its default configuration (disabled for security services) is not sufficient for your specific use case.

Use the following commands to enable or disable the ASC:

- Enable the ASC for security services:

    user@host# set services application-identification application-system-cache security-services

- Disable the ASC for miscellaneous services:

    user@host# set services application-identification application-system-cache no-miscellaneous-services

- Disable the enabled ASC for security services:

    user@host# delete services application-identification application-system-cache security-services

- Enable the disabled ASC for miscellaneous services:

    user@host# delete services application-identification application-system-cache no-miscellaneous-services

You can use the **show services application-identification application-system-cache** command to verify the status of the ASC.

The following sample output provides the status of the ASC:

```
user@host>show services application-identification application-system-cache
Application System Cache Configurations:
  application-cache: on
```

```
        Cache lookup for security-services: off
        Cache lookup for miscellaneous-services: on
      cache-entry-timeout: 3600 seconds
```

For Junos OS Release prior to 18.2R1, application caching is turned on by default. You can manually turn this caching off using the CLI.

user@host# set services application-identification no-application-system-cache

## Known Behavior

This section contains the known behaviors and limitations in Junos OS Release 18.2R1 for cSRX.

### cSRX in Contrail

- Web console does not support a cSRX container in the OpenStack Dashboard. This is an expected limitation since cSRX is a container deployed in the OpenStack environment and is not a Virtual Machine (VM) deployed in a hypervisor. PR1308835

- The Docker node may run out of space due to a terminated container's cache not being properly cleaned, which will result in a failure to deploy the cSRX container. If you perform a cleanup of the Docker cache the Docker node returns to normal operation. PR1315154

## Known Issues

This section lists the known issues in Junos OS Release 18.2R1 for cSRX.

> NOTE: For the most complete and latest information about known Junos OS defects, use the Juniper Networks online Junos Problem Report Search application.

### cSRX in Contrail

- When configuring cSRX in Contrail, there is a limitation with the use of an Openstack user date file and XML tag names. For, example, if you use an Openstack user date file that includes **<size><small | middle | large></size>** in the file, the cSRX flavor will remain at the small default setting. You must pass configuration settings by using Openstack metadata and the available cSRX environment variables. You can, however, use an Openstack user date file to pass a Junos configuration in <conf></conf/> and <boot_script></script> for cSRX boot-time configuration, but excluding the cSRX-specific XML tags. PR1310158

  Workaround: To change a configuration setting for the cSRX container, pass the configuration setting by including the **–meta** option in the **nova boot** command. See the cSRX Deployment Guide for Contrail for details.

- When configuring cSRX in a Contrail service chain, the service chain does not support traffic forwarding in secure-wire mode. PR1323762

Workaround: The cSRX uses routing as the default environment variable for traffic forwarding mode. Do not change the traffic forwarding mode of the cSRX container to secure-wire mode. See the cSRX Deployment Guide for Contrail for details.

## Resolved Issues

This section lists the issues that have been fixed in the Junos OS Release 18.2R1.

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

### cSRX in Contrail

- In certain cases, you might find that you are unable to properly configure the cSRX container when operating under the following conditions: PR1326218

  - Poll mode—After running the cSRX container for a long duration (hours or days), and operating under a stress of over 1 to 3 GB of UDP traffic and around 520K UDP sessions, the cSRX cannot be properly configured (for example, attempting to configure a new IPv6 address on ge-0/0/0 or ge-0/0/1).

    Workaround: Launch a new cSRX container if you encounter this behavior.

  - Interrupt mode—After running the cSRX container for a long duration (hours or days), and operating under a stress of 200 packets per second (pps) TCP traffic and 300 to 500 TCP sessions, the cSRX does not allow new configurations or may stop forwarding traffic.

    Workaround: Reduce the load on the cSRX container while sending stress traffic for long durations. If this does not resolve the issue, launch a new cSRX container.

- You cannot configure pre-defined IDP policies from policy templates for a cSRX instance. The issue occurs because the **set system scripts commit file templates.xsl** command to load the pre-defined policy templates in cSRX is not available.PR1338101

## System Requirements by Environment

The topics below provide detailed system requirement specifications for each supported environment for a cSRX deployment.

- For a bare-metal Linux server deployment, see the Host Requirements topic in the cSRX Deployment Guide for Bare-Metal Linux Server.

- For a Contrail deployment, see the Platform and Server Requirements topic in the cSRX Deployment Guide for Contrail.

## Accessing the cSRX Image

The cSRX image is available as a cSRX Docker file from the Juniper Internal Docker registry. You login to the Juniper Internal Docker registry using the login name and password that you received as part of the sales fulfillment process when ordering cSRX.

For the procedure on loading the cSRX image, including how to browse the existing images from the Juniper Internal Docker registry for a cSRX image, see the following cSRX documentation:

- For a cSRX on bare-metal Linux server deployment, see the Loading the cSRX Image topic in the cSRX Deployment Guide for Bare-Metal Linux Server.

- For a cSRX on Contrail deployment, see the Importing the cSRX Image topic in the cSRX Deployment Guide for Contrail.

## Finding More Information

For the latest, most complete information about known and resolved issues with the Junos OS, see Juniper Networks Problem Report Search application at:

https://prsearch.juniper.net

Juniper Networks Feature Explorer is a Web-based application that helps you to explore and compare Junos OS feature information to find the correct software release and hardware platform for your network. Find Feature Explorer at:

https://pathfinder.juniper.net/feature-explorer/

Juniper Networks Content Explorer is a Web-based application that helps you explore Juniper Networks technical documentation by product, task, and software release, and download documentation in PDF format. Find Content Explorer at:

https://www.juniper.net/documentation/content-applications/content-explorer/

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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. 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 https://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf.

- Product warranties—For product warranty information, visit https://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.

## Revision History

28 June 2018 —Revision 1— Junos OS 18.2R1 – cSRX.