

Juniper Extension Toolkit Release Notes, Release 19.4R1 and 19.4R2

Release 19.4
April 2020
Revision 2

These release notes accompany the Juniper Extension Toolkit (JET). They describe the new and changed features, limitations, and known and resolved problems.

Applications developed using the Juniper Extension Toolkit (JET) are supported on the following platforms: ACX Series, EX4300, EX4600, EX9200, PTX Series, QFX Series, MX80, MX104, MX240, MX480, MX960, MX2010, MX2020, vMX, vSRX, and SRX Series.

JET provides a common API framework that exposes API functionality made available by the internal Junos OS daemons or processes. Each internal daemon exposes its own APIs. All of the APIs are accessible using the gRPC framework for remote procedure calls (RPCs).

JET supports the following:

- Multiple languages for applications that run off-box
- Python for applications that run on a device running Junos OS
- Applications written in C to run on devices that do not use the JET APIs
- An event notification method that enables the applications to respond to selected system events

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New and Changed Features

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This section lists the new features and enhancements to existing features in the Junos OS and Junos OS Evolved Releases 19.4R1 and 19.4R2 for Juniper Extension Toolkit (JET).

API

- **Support for gRIBi (MX Series, PTX1000, PTX5000, and the PTX10000 line of routers)**—Starting in Junos OS Release 19.4R1, Juniper Networks supports gRIBi—a standard API for programming routing information base (RIB) defined by Google—as a JET API that can be programmed using languages supported by Juniper Extension Toolkit (JET) from external devices or by running applications on the router. In releases before Release 19.4R1, Junos OS supports RIB API, BGP API, and other services to program routes and other entities. Programming using gRIBi is an additional way in which RIB updates can be supported in Junos OS. Routing instances are not supported in this release.

[See [JET Download](#).]

- **Juniper Extension Toolkit support (EX4300, EX4300-MP, EX4600, and EX9200)**—Starting in Junos OS Release 19.4R1, Juniper Extension Toolkit (JET) provides a modern programmatic interface for developers of third-party applications for these platforms. JET allows you to build and run applications either directly on Junos OS devices or off-box. These applications can interact with Junos OS features. The Python language provides a framework that allows your Python JET applications to run directly on devices that run Junos OS. JET is based on gRPC; thus, it also supports multiple languages running off-box to interact with the same JET APIs. This gives you true flexibility to adapt devices running Junos OS to business processes.

[See [Juniper Extension Toolkit Developer Guide](#).]

- **Support for ECMP path trace tool using APIs (PTX10003)**—Starting in Junos OS Evolved Release 19.4R2, you can use ECMP tracer JET APIs to monitor traffic flow, trace the ECMP path used by packets entering and exiting a CLOS network, and get flow counters without changing the configuration on your device. You provide match criteria to the ECMP path trace tool, `ecmptacerd`, through JET API requests. The `ecmptacerd` process then installs firewall filters for the inputs on all the interfaces on the device except the private interfaces. The counters associated with these filters increment as packets matching the

firewall filter criteria arrive and leave. These APIs provide similar functionality to the `ecmp-tracer` on-box shell utility. Do not use the JET client and the `ecmp-tracer` on-box shell utility simultaneously.

[See [ecmp](#), [Juniper Extension Toolkit Developer Guide](#), and [Juniper Engineering Network website](#).]

Changes in Behavior and Syntax

This section lists the changes in behavior of Junos Extension Toolkit features and changes in the syntax of Junos OS statements and commands from Junos OS Releases 19.4R1 and 19.4R2.

Known Issues

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This section contains the known behavior, system maximums, and limitations in software in the Juniper Extension Toolkit.

Known Issues in 19.4R1 and 19.4R2

None.

Known Issues in 16.2R1

Certificates for JET

Junos OS does not support ECDSA or DSA SSL certificates for JET. For secure communications with the JET service process (`jsd`), use RSA certificates. PR 1120453

Finding More Information

For the latest, most complete information about known and resolved issues with Junos OS, see the Juniper Networks Problem Report Search application at <https://prsearch.juniper.net>.

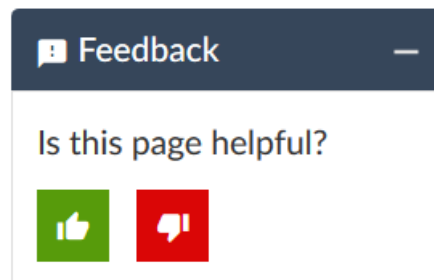
Juniper Networks Feature Explorer is a Web-based application that helps you to explore and compare Junos OS feature information to find the correct software release and hardware platform for your network. Find Feature Explorer at <https://pathfinder.juniper.net/feature-explorer/>.

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/>.

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 system—Click TechLibrary Feedback, on the lower right of any page on the [Juniper Networks TechLibrary](#) site, and do one of the following:



- Click the thumbs-up icon if the information on the page was helpful to you.
- Click the thumbs-down icon if the information on the page was not helpful to you or if you have suggestions for improvement, and use the pop-up form to provide 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 <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/>
- Create a service request online: <https://myjuniper.juniper.net>

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

Creating a Service Request with JTAC

You can create a service request with JTAC on the Web or by telephone.

- Visit <https://myjuniper.juniper.net>.
- 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://support.juniper.net/support/requesting-support/>.

Revision History

January 2020—Release 19.4R1 of the JET Release Notes.

April 2020—Release 19.4R2 of the JET Release Notes.

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