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Juniper Licensing User Guide

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Flex Software License Model Overview

SUMMARY

In this topic, you'll learn in detail about the Flex software license model.

Flex Software License Model Overview

The Flex Software License Model is a framework, set of policies, and tools that help unify and thereby simplify Juniper product-driven licensing and packaging.

Flex Software License Model

The major components of the framework are:

- A focus on customer segments (enterprise, service provider, and cloud) and use cases for Juniper Networks hardware and software products.

- The introduction of subscription licenses and subscription portability for all Juniper Networks products including Junos OS, Contrail, and Juniper cloud-based services.

- The introduction of a common, three-tiered model (standard, advanced, and premium) for all Juniper Networks software products.

Three-Tier Flex License Model

As a customer ordering a Juniper Networks product under the Flex Software License Model that includes hardware, you order:

- The hardware platform that includes the standard license.

- The customer support package that fits your needs.

- The advanced or premium subscription licenses, according to your use case. These subscription licenses include embedded customer support.

As a customer ordering a Juniper Networks software product, you order:

- The standard, advanced, or premium subscription license, according to your use case. These subscription licenses include embedded customer support.

Three-Tier Model

As new hardware platforms become available under the Flex Software License Model, you can customize your purchase using one of the following three models:

- **Standard License**

  The standard license includes the hardware platform and a license to use the software with the standard feature set. Standard Return Material Authorization (RMA) policies apply with no changes in case of hardware failure. Customer support is ordered separately as you select your preferred hardware support policy and support for the standard software features. For more information about support policy, see Contact Support. The hardware platform does not require a separate license, and the software right-to-use (RTU) license is perpetual for the licensed features.
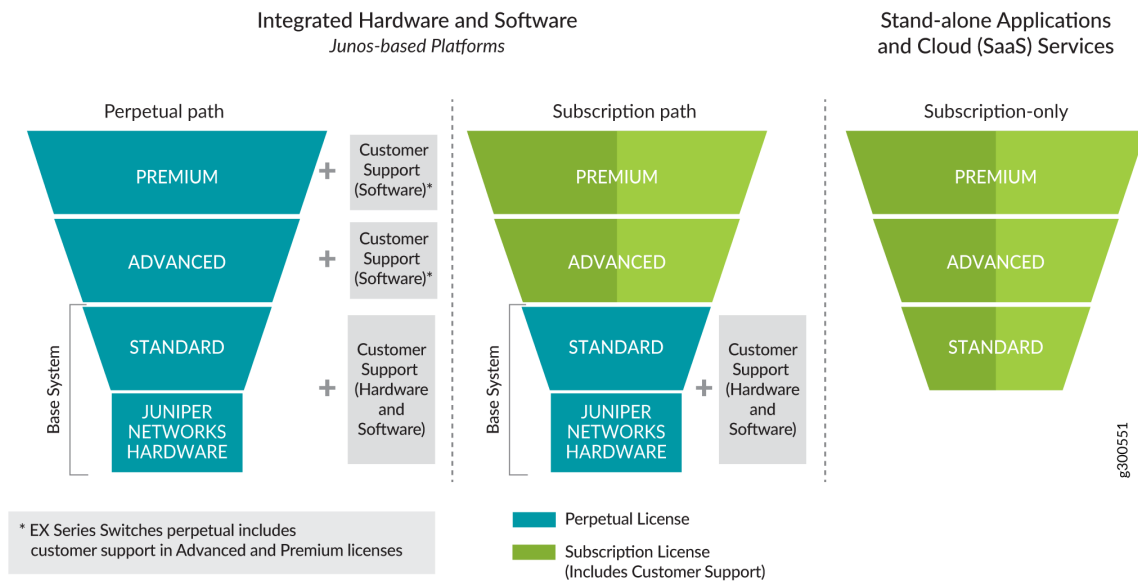
- **Advanced License**

  The advanced license includes the subscription-based license to use the advanced software features. The license term is 1 year, 3 years, or 5 years. Customer support for the software features is included. These features differ by use case and platform. For example, to view the list of features for the QFX devices, see QFX device class and SKUs.

- **Premium License**

  The premium license includes the subscription-based license to use the Junos OS software features. The license term is 1 year, 3 years, or 5 years. Customer support for the software features is included. These features differ by use case and platform. The premium license is a superset and includes all the features from the advanced license and additional features. For example, to view the list of features for the QFX devices, see QFX device class and SKUs.

Figure 1: Three-Tier Model for the Flex Software License Model

Understanding Perpetual Licenses

All advanced and premium licenses are offered as perpetual licenses under the Flex Software License Model.

Flex Software Perpetual licenses include the following attributes:

- The perpetual licenses are locked to the chassis on which it is activated.

- Perpetual licenses are not portable.

- You must purchase support separately.

- Premium licenses include all the features in the premium and advanced licenses.

- Perpetual licenses are available in full bandwidth and pay as you grow model (PAYG).

- In case of RMA, you can exchange the perpetual license keys to the RMA device. You must contact Juniper Customer Care for exchanging the license keys for RMA devices.

Understanding Subscription Licenses

All advanced and premium licenses are offered as subscriptions under the Flex Software License Model. Subscription licenses are available in 1-year, 3-year, or 5-year terms. After the order fulfilment, the subscription period begins after the completion of a 30-day grace period.

Table 1 describes the subscription terms for purchase and number of months to use the license.

Table 1: Subscription Terms Details

Subscription Terms	Number of Months for the License
1-year	13 months
3-year	37 months
5-year	61 months

Flex Software Subscription licenses include the following attributes:

- Specific products might offer a subset of these licenses. At the end of the term, you have three options:

  - You can renew the subscription, to continue to use the features and scale granted under the license.

  - You can order a replacement subscription.

    Upgrading and downgrading the subscription models is supported. In both cases, subscription models are processed as a new order, and you might use the features and scale granted under the new license. For example, you have a 5-year subscription and you want to downgrade to a 3-year subscription or the other way around.

  - You might decline to renew or purchase a replacement subscription. In this case, you may no longer use the features and scale granted under the expired subscription. You can continue to use the hardware and any software features which are granted under the perpetual license.

  - Alternatively, when an advanced subscription term expires, your needs may require an upgrade to the premium subscription term.

- Subscription licenses include Juniper customer support for software features as part of the subscription license, unless customer support is provided by a Juniper partner directly. There is no need to order a separate customer support policy for the advanced and premium licenses.

- Premium licenses include all the features in the premium and advanced licenses.

- Subscriptions may be ordered at any time.

- New software features may be available over time with new software versions.

- Subscription licenses are portable for similar devices.

- Subscriptions are cancelable at the end of the term.

- Renewals are not automatic.

License Portability

Subscription licenses are portable. This means that if you buy a new similar hardware platform, then you can port the subscription license. You can stop using the license on one hardware platform and move it to another hardware platform. This portability allows you to balance features across hardware platforms in the network without having to buy extra feature licenses.

Flex Licenses for Juniper Hardware and Software

SUMMARY

In this topic, you can view the Flex licensing infomration for Juniper products.

Flex licensing information for Juniper products is as follows:

- ACX Series

- Contrail Service Orchestration (CSO)

- cRPD

- cSRX

- EX Series

- JATP

- Juniper Apstra

- MX Series

- NFX Series

- Northstar Controller

- Northstar Planner

- Paragon Insights

- PTX Series

- QFX Series

- SRX Series

- vBNG

- vMX

- vSRX

Non-Flex Licenses for Juniper Hardware and Software

SUMMARY

In this topic, you can view the Non-Flex licensing infomration for Juniper products.

Non-Flex licensing information for Juniper products is as follows:

- ACX Series

- ATP Cloud

- Contrail Service Orchestration (CSO)

- EX Series

- Juniper Secure Connect

- Junos Space Network Management Platform

- NSM

- PTX, MX, M and T Series

- QFX Series

- SRX Series

- vMX

- vSRX

Juniper Agile Licensing Overview

SUMMARY

Learn about Juniper Agile Licensing, an improved license management system to activate, install, manage, and monitor licenses on Juniper Networks devices.

Juniper Agile Licensing Overview

Benefits of Juniper Agile Licensing

- Provides an intuitive user experience and simplified operational processes.

- Provides seamless lifecycle management of licenses.

- Offers flexible license administration and deployment.

- Enables monitoring of software usage through centralized administrator and reporting.

- Allows users to proactively adjust usage based on real-time reporting.

- Provides consistent license management workflow for all Juniper products.

Understand Juniper Agile Licensing

Juniper Networks introduced the Juniper Agile Licensing solution to provide an efficient way for customers and partners to manage licenses for hardware and software features. To use a licensed feature, you need to purchase and activate a license that corresponds to that feature and deploy that license so that it can be utilized by the software during normal operation. You can administer and manage the licenses through the Juniper Agile Licensing Portal. The portal provides an intuitive task-based user interface that provides full lifecycle management of licenses.

Juniper Agile Licensing ensures that features are used in compliance with Juniper's End User License Agreement.

- Standalone mode allows you to activate a license on a single hardware device or software instance. Such a license can only be used by the instance on which it is activated. Sharing a license with multiple instances is not permissible.
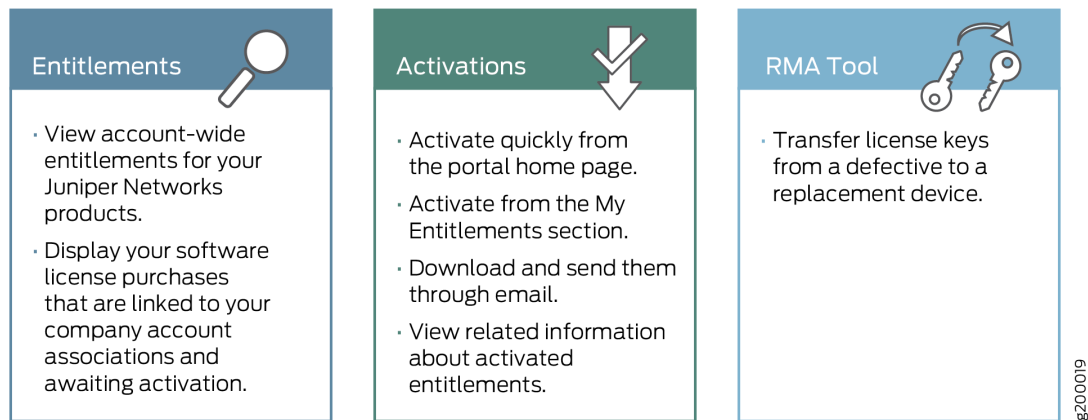
Support for each deployment mode varies by product. Both deployment modes enable efficient management of both subscription and perpetual licenses and may enable combinations of features and capacity depending on the specific license purchased.

Components of Juniper Agile Licensing

1. **Juniper Agile Licensing Portal**

   The Juniper Agile Licensing Portal provides the features shown in .

Figure 2: Juniper Agile Licensing Portal Features

Entitlements	Activations	RMA Tool
· View account-wide entitlements for your Juniper Networks products. · Display your software license purchases that are linked to your company account associations and awaiting activation.	· Activate quickly from the portal home page. · Activate from the My Entitlements section. · Download and send them through email. · View related information about activated entitlements.	· Transfer license keys from a defective to a replacement device.

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You use the Juniper Agile Licensing Portal to activate and deliver the required license keys for products you have purchased.

Depending on the type of license, the fulfillment e-mail you receive from Juniper after purchase of a license indicates whether your device can be used without installing license keys. If you need to install license keys, you can view and activate the purchased entitlements in the Agile Licensing Portal.

> **NOTE**: In some cases, the fulfillment e-mail might include a license key, in which case it is not necessary to manage the entitlement through the Agile Licensing Portal.

2. **Juniper Entitlement Management System**

   The Juniper Agile Entitlement Management System is a repository of all your entitlements. It simplifies the licensing life cycle by providing a centralized license management interface that you can access using the Agile Licensing Portal.

Juniper Agile Licensing Workflow for Procuring and Managing Licenses
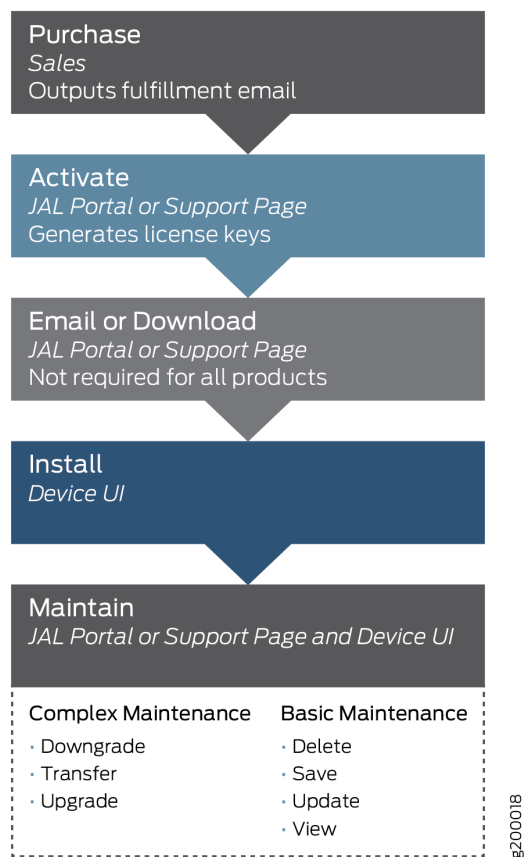
IN THIS SECTION

Procuring and Managing Licenses

For procuring and managing licenses, Juniper Agile Licensing comprises the following phases:

The phases of the licensing life cycle are shown in Figure 3 on page 10.

Figure 3: Licensing Phases

Purchase
Sales
Outputs fulfillment email

Activate
JAL Portal or Support Page
Generates license keys

Email or Download
JAL Portal or Support Page
Not required for all products

Install
Device UI

Maintain
JAL Portal or Support Page and Device UI

Complex Maintenance	Basic Maintenance
· Downgrade	· Delete
· Transfer	· Save
· Upgrade	· Update
	· View

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Purchase Licenses from Juniper Networks

Licenses to use Juniper software are purchased through Juniper's standard sales order process. After meeting with your Sales Representative or Juniper Partner, submit a sales order to Juniper. License sales order lines will send you an e-mail that includes your activation code and Software Support Reference Number (SSRN) relating to your entitlements. The system creates entitlements associated with your user account (e-mail ID) that you can subsequently manage through the Juniper Agile Licensing Portal.

Depending on the type of license, access the Agile Licensing Portal to activate license keys or send the keys by e-mail to yourself.

> **NOTE**: Keep a record of your SSRN, which is used as a proof of purchase and for support entitlement purposes.

Manage Entitlements using the Agile Licensing Portal

You use the information from the fulfillment e-mail to activate your entitlements. This process generates software license activation keys (license keys) that you can install on devices directly, or automatically synchronize to previously installed licenses.

> **NOTE**: Some software licenses can be only activated, and do not generate or require a license activation key to be installed on the device. Refer to the fulfillment e-mail that you receive after purchase for this information.

Juniper Agile Licensing Videos

See the following videos to learn about the JAL portal, single license activation, bulk licenses activation, revoking license key, and so on.

- See JAL Overview video to learn about the JAL portal features.

- See Revoking a License Key video to learn about how to revoke the license key.

- See RTU Licenses video to learn about how to activate RTU licenses.

- See Bulk License Key Activation video to learn how to activate bulk licenses.

- See Hardware and Software License Activation video to learn about hardware and software license activation.

- See RMA Overview video to learn about Return Materials Authorization.

- See Multiple Entitlement Quantities in a Single Activation video to learn how to activate multiple licenses.

Activate Your Licenses

SUMMARY

In this topic, we describe how to activate license on different Juniper Networks products.

IN THIS SECTION

You're now set to activate the purchased license.

Activate Licenses

To activate license, perform the following steps:

1. Log in to the Juniper Agile Licensing Portal.

2. Navigate to the **My Entitlements** section on the landing page.

3. Click the **Activate**.

4. In the Product Activation screen, select the Software Version and the quantity to activate. You can add any useful information in the Notes field.

5. Click **Activate**. Once complete, the screen will display as shown below:

To activate license, perform the following steps:

1. Issue the `set system license keys key` *name* statement.

2. The *name* parameter includes the license ID and the license key. For example:

```
[edit]
user@device# set system license keys key "JUNOS_TEST_LIC_FEAT xxxxxx xxxxxx xxxxxx xxxxxx
xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx"
```

To add multiple license keys in the Junos OS CLI, issue the `set system license keys key` *name* statement for each license key to add. For example:

```
[edit]
user@device# set system license keys key "key_1"
set system license keys key "key_2"
set system license keys key "key_2"
set system license keys key "key_4"
```

3. Issue the `commit` command.

```
[edit]
user@device# commit
commit complete
```

4. Verify that the added license key.

For example:

```
user@device# run show system license
```

```
License usage:
                            Licenses    Licenses    Licenses    Expiry
  Feature name                   used    installed     needed
  sdk-test-feat1                    0           1          0    permanent

Licenses installed:
  License identifier: JUNOS_TEST_LIC_FEAT
  License version: 2
  Features:
    sdk-test-feat1    - JUNOS SDK Test Feature 1
      permanent
```

Alternatively, you can issue the `show system license` command from operational mode.

Reboot the device after adding license on the SRX300, SRX320, SRX320-POE, SRX340, SRX345, SRX380, SRX550, and SRX550-M devices. Rebooting the device sets system resources to support session capacity of the license.

Activate Junos OS Licenses

In case of Junos OS upgrade, you might need the new license keys. See the to generate license keys. If you have any problem in generating license keys, contact Juniper Customer Care.

1. Gather your activation codes.

   Activation Code: The 17-digit alphanumeric activation code is sent through email in response to your order and is used to generate license capacity / feature activation key(s) for your Juniper Networks software. The activation code is used to generate your license activation key—it is not the license activation key itself.

2. Generate license keys and activation key(s).

   Upon initial setup, a base activation key might be required to activate the software. If further capacity or feature(s) were purchased and are being added to the software, each capacity increment and feature needs to be added via another activation key.Generate license activation keys using the

Juniper Agile Licensing Portal. At the top of the portal, enter your activation code, and click Activate. Then follow the instructions on screen. Juniper provides license activation keys in one of two ways:

- Download: You can download activation keys from the Juniper Agile Licensing Portal.

- Email: You receive an email that contains the license activation key(s).

3. Add license

   To add and manage licenses, see Managing Licenses.

Activate Contrail Insights Licenses

This topic describes how to obtain the appropriate product keys and software required for your Juniper® Contrail® Insights product.

1. Create a user account.

   To download your software, you need an approved user account with Juniper Networks. If you do not already have one, you can create an account through the User Registration Portal.

2. Forward your fulfillment e-mail to the Juniper account activation team.

   Locate the fulfillment e-mail(s) that you received and forward it to mailto:appformix-key-request@juniper.net. (These e-mails verify that you purchased the product.) Identify the subject as "AppFormix Product Keys Needed." Add the following information to the e-mail:

   - Company name

   - Primary contact name

   - Full company address

   - Contact e-mail address

   - Contact phone number

   You will receive an e-mail confirmation acknowledging your activation request. The Juniper product activation team will complete the activation request within two business days.

3. Retrieve your software serial number.

   The software serial number is a unique 14-digit number that Juniper uses to identify your Juniper Networks software installation (or purchased capacity). You can find this number in the Software Serial Number Certificate attached to the e-mail sent when you ordered your Juniper Networks

Service. Store the Software Serial Number in a safe place, as it will be necessary to identify your installation when engaging Juniper for support.

4. Download your Software.

   Find your product software on the Juniper Software Downloads page. You will need to sign in with your Juniper user account and provide your Software Serial Number.

5. Install your Software.

   Install your software according to the instructions in the software documentation at Contrail Insights. Make sure to enter the license key as instructed during installation.

Need Help?

For additional assistance, you may contact Juniper Networks by opening a case online through the Juniper Customer Support Center (CSC) Service Request Manager.

Activate CSO and Juniper Sky Enterprise Licenses

This topic describes how to activate Juniper Contrail Service Orchestration and Juniper Sky Enterprise.

Note: These instructions are written for the customer who will be using the product. If you are a partner, reseller, or distributor who is setting up Contrail Service Orchestration and Juniper Sky Enterprise for an end customer, please fill in the details about the customer.

1. Create a user account.

   If you don't already have a Juniper user account, go to the User Registration Portal to create one. (For detailed instructions, see KB 9946: Create a New User Login Account with Juniper Networks.)

   Important: When creating your account, do not select *Guest User Access* or *Use your Cloud Marketplace or Cloud Service Provider credentials*. If you choose either of these options, you will not be able to use the resulting user account to activate your licenses in the next step.

2. Locate your license certificate.

   When you purchased your Juniper product, you should have received an e-mail containing information about your software license. Locate that e-mail and the attached certificate, which contains details you need to activate your product.

3. Enter your activation code.

   Sign into the Juniper Agile Licensing Portal. At the top of the screen, enter the activation code (also sometimes called an authorization code) located in your license certificate, and click **Activate**.

4. Activate your licenses.

Choose one of the following options in the Product Activation screen:

- **Add devices to an existing account instance:** Select this option if you are simply adding additional licenses to an existing Contrail Service Orchestration or Juniper Sky Enterprise account. Then, select your preexisting account.

- **Register a new account instance:** Select this option if you are activating Contrail Service Orchestration or Juniper Sky Enterprise for the first time. Then, provide relevant account details.

Note: When creating an account, you will be asked to select an account type (Enterprise or Service Provider). If you are a partner, distributor, or reseller filling in this form for a customer, specify your customer's business type, not your own.

5. Complete your request.

Juniper will complete the request and e-mail you the details you need to activate your new product within two (2) business days.

Need Help?

For additional assistance, you may contact Juniper Networks by opening a case online through the Juniper Customer Support Center (CSC) Service Request Manager.

Activate Juniper ATP Appliance Licenses

This topic describes how to obtain the appropriate license keys and software required for your Juniper Networks Advanced Threat Prevention Appliance.

1. Create a user account.

To download your software, you need an approved user account with Juniper Networks. If you do not already have one, you can create an account through the User Registration Portal.

Note: Compliance approval typically takes two hours following the creation of a new Juniper User Account.

2. Retrieve your software serial number.

The software serial number is a unique 14-digit number that Juniper uses to identify your Juniper Networks software installation (or purchased capacity). You can find this number in the Software Serial Number Certificate attached to the e-mail sent when you ordered your Juniper Networks Service. Store the Software Serial Number in a safe place, as it will be needed to identify your

installation when engaging Juniper for support. Note that this number is different than the license key described in Step 3.

3. Request your license key.

   Open an admin service request (case) using our Service Request Manager on the Juniper Customer Support Center (CSC) and enter the following information to facilitate your request. You may also call Customer Care via telephone if you prefer:

   - Subject Line: Juniper ATPA Software License Request

   - Description:

     - Sales order number

     - Software product SKU

     - UUID (for assistance finding your UUID, see kb.juniper.net\kb32301)

     - Serial Number/SSRN (enter the software serial number provided in your license fulfillment e-mail). If available, please attach the software serial number certificate (PDF) to the admin service request.

       Once your service request is processed, your license key will be sent to you.

4. Download your software.

   If you need to download your software, you can find it on the Juniper Software Downloads page. You will need to sign in with your Juniper user account and provide your Software Serial Number.

   Note: If you receive an account privileges error, please contact Customer Care to have your account upgraded. Be prepared to provide your Software Serial Number as proof of purchase.

5. Install your software.

   Install your software according to the instructions in the software documentation at JATP400 Advanced Threat Prevention Appliance and JATP700 Advanced Threat Prevention Appliance. Make sure to enter the license key as instructed during installation.

Need Help?

For additional assistance, you may contact Juniper Networks by opening a case online through the Juniper Customer Support Center (CSC) Service Request Manager.

Activate Juniper Cloud Workload Protection Licenses

This topic describes how to obtain the appropriate license keys and software required for your Juniper Networks Cloud Workload Protection software.

1. Create a user account.

   To access your software, you need an approved user account with Juniper Networks. If you do not already have one, you can create an account through the User Registration Portal.

   Note: Compliance approval typically takes two hours following the creation of a new Juniper User Account.

2. Retrieve your software serial number.

   The software serial number is a unique 14-digit number that Juniper uses to identify your Juniper Networks software installation (or purchased capacity). You can find this number in the Software Serial Number Certificate attached to the e-mail sent when you ordered your Juniper Networks Service. Store the Software Serial Number in a safe place, as you'll need it later to identify your installation when engaging Juniper for support.

3. Request your licensed software.

   Open an admin case by going to support on https://www.juniper.net/ and then selecting Juniper Support Portal. Under cases, you can now open a case and enter the following information to facilitate your request. You may also call Customer Care via telephone if you prefer:

   - Subject Line: Juniper Cloud Workload Protection Software Request

   - Description:

     - Sales order number

     - Software product SKU

     - Serial Number/SSRN (enter the software serial number provided in your license fulfillment e-mail). If available, please attach the software serial number certificate (PDF) to the admin service request.

     - Email address for the master admin account – this can be the same as the Juniper user account or a different email address if preferred. Ensure that the incoming email from outside your organization is allowed.
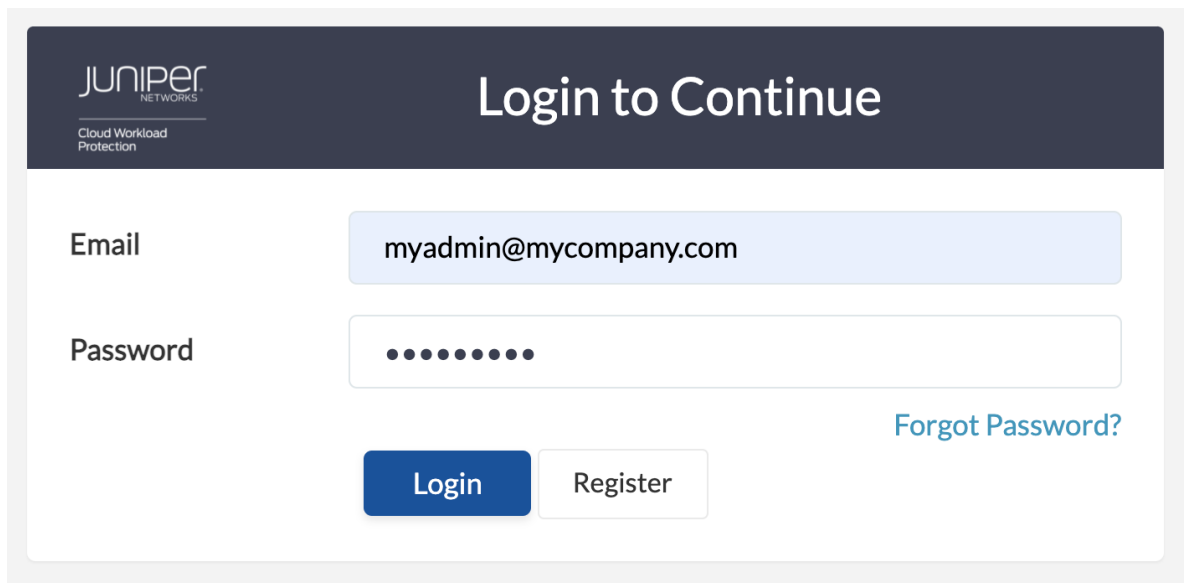
   Temporary log in details are emailed automatically once your account is set up. Once your service request is processed, you'll receive an email with your account information. Your product is automatically licensed.

4. Access Juniper Cloud Workload Protection portal.

   1. Go to Juniper Cloud Workload Protection.

> **NOTE**: If you have purchased the on-prem version of the software, you'll still need to login initially to the SaaS portal in order to download the full software.
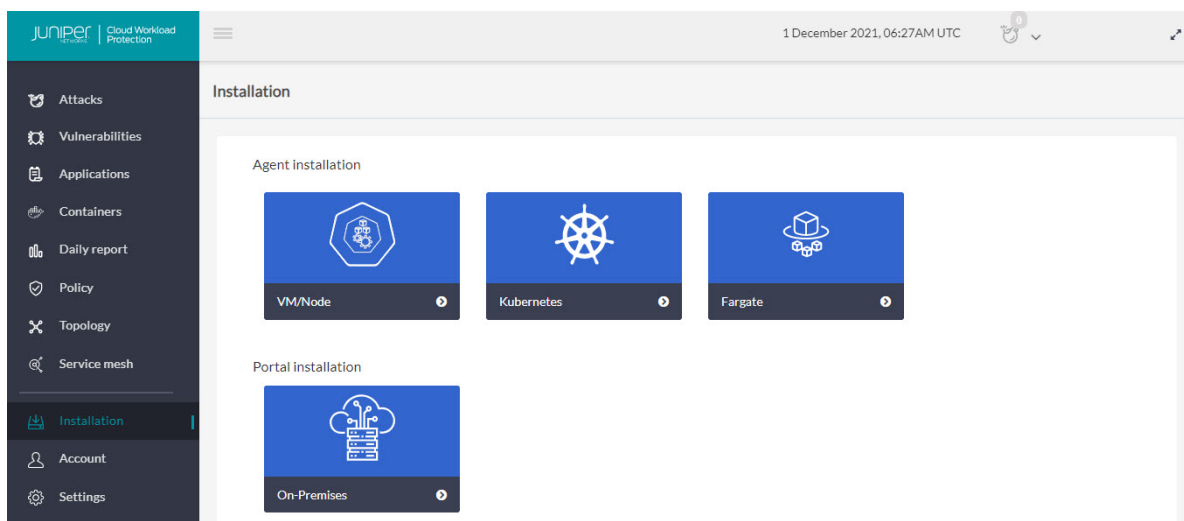
   2. Enter your log in details. Use the log in information you received in the email to sign into your account for the first time.

   Click **Login** to continue. Upon successful authentication, you'll be directed to the Juniper Cloud Workload Protection dashboard.

5. Navigate to the Installation tab.

6. Use Agent installation option for both the SaaS and on-prem options. The Portal installation option is only accessible if you purchase on-prem option. Follow the instructions on the screen to download and install agents.

Monitor Your Licenses

SUMMARY

This topic helps you to manage your licenses.

IN THIS SECTION

Overview

After you activate and add the license, you can view, save and delete the licenses.

View License

IN THIS SECTION

To verify Junos OS license management, perform the following tasks:

View Installed Licenses

Purpose

Verify that the expected licenses are installed and active on the device.

Action

From the CLI, enter the `show system license` command.

Sample Output

command-name

```
user@host> show system license
License usage:
                 Licenses     Licenses     Licenses     Expiry
   Feature name      used    installed      needed
   subscriber-acct      0            1           0     permanent
   subscriber-auth      0            1           0     permanent
   subscriber-addr      0            1           0     permanent
   subscriber-vlan      0            1           0     permanent
   subscriber-ip        0            1           0     permanent
   scale-subscriber     0         1000           0     permanent
   scale-l2tp           0         1000           0     permanent
   scale-mobile-ip      0         1000           0     permanent

Licenses installed:
  License identifier: E000185416
  License version: 2
  Features:
    subscriber-acct  - Per Subscriber Radius Accounting
```

```
    permanent
  subscriber-auth  - Per Subscriber Radius Authentication
    permanent
  subscriber-addr  - Address Pool Assignment
    permanent
  subscriber-vlan  - Dynamic Auto-sensed Vlan
    permanent
  subscriber-ip    - Dynamic and Static IP
    permanent
```

Meaning

The output shows a list of the license usage and a list of the licenses installed on the device. Verify the following information:

- Each license is present. Licenses are listed in ascending alphanumeric order by license ID.

- The state of each license is `permanent`.

  A state of `invalid` indicates that the license key is not a valid license key. Either it was entered incorrectly or it is not valid for the specific device.

- The feature for each license is the expected feature. The features enabled are listed by license. An all-inclusive license has all features listed.

- All configured features have the required licenses installed. The Licenses needed column must show that no licenses are required.

View License Usage

IN THIS SECTION

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- Meaning | **24**

Purpose

Verify that the licenses fully cover the feature configuration on the device.

Action

From the CLI, enter the `show system license usage` command.

Sample Output

command-name

```
user@host> show system license usage
          Licenses    Licenses    Licenses    Expiry
  Feature name        used     installed      needed
  subscriber-addr       1            0           1     29 days
  scale-subscriber      0         1000           0     permanent
  scale-l2tp            0         1000           0     permanent
  scale-mobile-ip       0         1000           0     permanent
```

Meaning

The output shows any licenses installed on the device and how they are used. Verify the following information:

- Any configured licenses appear in the output. The output lists features in ascending alphabetical order by license name. The number of licenses appears in the third column. Verify that you have installed the appropriate number of licenses.

- The number of licenses used matches the number of configured features. If a licensed feature is configured, the feature is considered used. The sample output shows that the subscriber address pooling feature is configured.

- A license is installed on the device for each configured feature. For every feature configured that does not have a license, one license is needed.

  For example, the sample output shows that the subscriber address feature is configured but that the license for the feature has not yet been installed. The license must be installed within the remaining grace period to be in compliance.

Save License

To save the licenses installed on a device:

From operational mode, do one of the following tasks

- To save the installed license keys to a file or URL, enter the following command:

```
user@host> request system license save filename | url
```

For example, the following command saves the installed license keys to a file named **license.config**:

```
user@host> request system license save license.config
```

- To output installed license keys to the terminal, enter the following command:

```
user@host> request system license save terminal
```

Delete License

IN THIS SECTION

Before deleting a license, ensure that the features enabled by the license will not be needed.

You can use the `request system license delete` operational command, or the `delete` or `deactivate` configuration command to delete a license:

Using the Operational Command to Delete Licenses

To delete licenses using the `request system license delete` command:

1. Display the licenses available to be deleted.

```
user@host> request system license delete license-identifier-list ?
Possible completions:
  E00468XXX4          License key identifier
  JUNOS10XXX1         License key identifier
  JUNOS10XXX2         License key identifier
  JUNOS10XXX3         License key identifier
```

```
    JUNOS10XXX4            License key identifier
    [                      Open a set of values
```

2. To delete a license key or keys from a device using the CLI operational mode, select one of the following methods:

   - Delete a single license by specifying the license ID. Using this option, you can delete only one license at a time.

     ```
       user@host> request system license delete license-identifier
     ```

   - Delete all license keys from the device.

     ```
       user@host> request system license delete all
     ```

   - Delete multiple license keys from the device. Specify the license identifier for each key and enclose the list of identifiers in brackets.

     ```
       user@host> request system license delete license-identifier-list [JUNOS10XXX1 JUNOS10XXX3
       JUNOS10XXX4 ...]
     ```

     ```
       Delete license(s) ?
        [yes,no] (no) yes
     ```

3. Verify the license was deleted by entering the `show system license` command.

Using a Configuration Command to Delete Licenses

Starting in Junos OS Release 16.1, to remove licenses from the configuration, you can use either the `delete` or `deactivate` configuration command. The `delete` command deletes a statement or identifier, and all subordinate statements and identifiers contained within the specified statement path are deleted with it. The `deactivate` command adds the `inactive:` tag to a statement, effectively commenting out the statement or identifier from the configuration. Statements or identifiers marked as inactive do not take effect when you issue the `commit` command. To remove the `inactive:` tag from a statement, issue the `activate` command. Statements or identifiers that have been activated take effect when you next issue the `commit` command.

The following procedure uses the `delete` command, but you could use the `deactivate` command as well.

To delete one or all licenses using the `delete` command:

You can use the `deactivate` command instead of the `delete` command in this procedure.

1. Display the licenses available to be deleted.

   Issue the `run request system license delete license-identifier-list ?` command from the configuration mode of the CLI.

   ```
   [edit]
   user@host# run request system license delete license-identifier-list ?
   ```

   A list of licenses on the device is displayed:

   ```
   Possible completions:
     E00468XXX4           License key identifier
     JUNOS10XXX1          License key identifier
     JUNOS10XXX2          License key identifier
     JUNOS10XXX3          License key identifier
     JUNOS10XXX4          License key identifier
     [                    Open a set of values
   ```

2. Delete the license or licenses you want.

   - To delete a single license, for example:

     ```
     [edit]
     user@host# delete system license keys key "E00468XXX4"
     ```

   - To delete all licenses, for example:

     ```
     [edit]
     user@host# delete system license keys
     ```

3. Commit the configuration by entering the `commit` command.

4. Verify the license was deleted by entering the `show system license` command.

System Log for License

NOTE: After you add or delete a license, system might take up to one minute to synchronize license between master and backup. You must allow one minute interval before performing any actions such as switchover or reboot.

Junos OS generates alarms for capacity (scale) features such as bandwidth to indicate the license requirement if the feature usage on a device exceeds the added license. The alarm detail shows the current feature usage information.

You can see the list of alarms at System Log Explorer.

For example, see the below scenarios where alarms are generated for license requirement:

- Scenario 1

  If a device is configured with a 100G bandwidth license and current usage is 200G bandwidth, the Junos OS generates an alarm as the bandwidth usage exceeded the added license.

  The alarm specifies that the current usage of 200G bandwidth requires a license.

- Scenario 2

  If a device is configured with a 128K RIB license and uses 130K RIB, the Junos OS generates an alarm as the RIB feature scale exceeded the added licenses.

  The alarm specifies 130K RIB requires a license.

Example: UTM License Activation Video

Use this video for a walkthrough of license activation and basic management using the J-Web. License Activation