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Junos<sup>®</sup> OS

## Subscriber Management and Services Overview

Release  
13.2



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*Junos® OS Subscriber Management and Services Overview*

13.2

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# About the Documentation

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## Documentation and Release Notes

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

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

Juniper Networks Books publishes books by Juniper Networks engineers and subject matter experts. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration. The current list can be viewed at <http://www.juniper.net/books>.

## Supported Platforms

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For the features described in this document, the following platforms are supported:

- MX Series

## Using the Examples in This Manual

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If you want to use the examples in this manual, you can use the **load merge** or the **load merge relative** command. These commands cause the software to merge the incoming configuration into the current candidate configuration. The example does not become active until you commit the candidate configuration.

If the example configuration contains the top level of the hierarchy (or multiple hierarchies), the example is a *full example*. In this case, use the **load merge** command.

If the example configuration does not start at the top level of the hierarchy, the example is a *snippet*. In this case, use the **load merge relative** command. These procedures are described in the following sections.

## Merging a Full Example

To merge a full example, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration example into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following configuration to a file and name the file **ex-script.conf**. Copy the **ex-script.conf** file to the **/var/tmp** directory on your routing platform.

```
system {
  scripts {
    commit {
      file ex-script.xml;
    }
  }
}
interfaces {
  fxp0 {
    disable;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
```

2. Merge the contents of the file into your routing platform configuration by issuing the **load merge** configuration mode command:

```
[edit]
user@host# load merge /var/tmp/ex-script.conf
load complete
```

## Merging a Snippet

To merge a snippet, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration snippet into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following snippet to a file and name the file **ex-script-snippet.conf**. Copy the **ex-script-snippet.conf** file to the **/var/tmp** directory on your routing platform.

```
commit {
  file ex-script-snippet.xml; }
```

2. Move to the hierarchy level that is relevant for this snippet by issuing the following configuration mode command:

```
[edit]
user@host# edit system scripts
[edit system scripts]
```

3. Merge the contents of the file into your routing platform configuration by issuing the **load merge relative** configuration mode command:

```
[edit system scripts]
user@host# load merge relative /var/tmp/ex-script-snippet.conf
load complete
```

For more information about the **load** command, see the *CLI User Guide*.

## Documentation Conventions

Table 1 on page xi defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2 on page xi defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
<b>Bold text like this</b>	Represents text that you type.	To enter configuration mode, type the <b>configure</b> command:  user@host> <b>configure</b>
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> <b>show chassis alarms</b>  No alarms currently active

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
<i>Italic text like this</i>	<ul style="list-style-type: none"> <li>Introduces or emphasizes important new terms.</li> <li>Identifies book names.</li> <li>Identifies RFC and Internet draft titles.</li> </ul>	<ul style="list-style-type: none"> <li>A policy <i>term</i> is a named structure that defines match conditions and actions.</li> <li><i>Junos OS System Basics Configuration Guide</i></li> <li>RFC 1997, <i>BGP Communities Attribute</i></li> </ul>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name:  [edit] root@# <b>set system domain-name</b> <i>domain-name</i>
<b>Text like this</b>	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> <li>To configure a stub area, include the <b>stub</b> statement at the [edit protocols ospf area area-id] hierarchy level.</li> <li>The console port is labeled <b>CONSOLE</b>.</li> </ul>
< > (angle brackets)	Enclose optional keywords or variables.	<b>stub</b> <default-metric <i>metric</i> >;
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	<b>broadcast   multicast</b>  ( <i>string1</i>   <i>string2</i>   <i>string3</i> )
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	<b>rsvp { # Required for dynamic MPLS only</b>
[ ] (square brackets)	Enclose a variable for which you can substitute one or more values.	<b>community name members [</b> <i>community-ids</i> <b>]</b>
Indentation and braces ( { } )	Identify a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
<b>GUI Conventions</b>		
<b>Bold text like this</b>	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> <li>In the Logical Interfaces box, select <b>All Interfaces</b>.</li> <li>To cancel the configuration, click <b>Cancel</b>.</li> </ul>
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select <b>Protocols&gt;Ospf</b> .

## Documentation Feedback

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We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to [techpubs-comments@juniper.net](mailto:techpubs-comments@juniper.net), or fill out the documentation feedback form at <https://www.juniper.net/cgi-bin/docbugreport/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release 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 JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

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

## Self-Help Online Tools and Resources

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

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>

- Join and participate in the Juniper Networks Community Forum:  
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

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

## Opening a Case with JTAC

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

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

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

## PART 1

# Overview

- [Network Overview on page 3](#)
- [Support and Licensing on page 9](#)





## CHAPTER 1

# Network Overview

- [Subscriber Access Overview on page 3](#)
- [Subscriber Access Environment on page 4](#)
- [Relationship Between Subscribers and Interfaces in an Access Network on page 5](#)
- [Subscriber Access Operation Flow Using DHCP Relay on page 5](#)
- [Subscriber Activation and Service Management in an Access Network on page 6](#)

## Subscriber Access Overview

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The Juniper Networks Junos OS subscriber access feature provides subscriber access, authentication, and service creation, activation, and deactivation. You can also collect accounting information and statistics for subscriber service sessions.

The subscriber access feature supports both CLI and AAA-based configuration (such as RADIUS) for subscribers. Access and services start when the router receives a message from a client (such as a DHCP discover message). For RADIUS clients, RADIUS Access-Accept messages and Change-of-Authorization-Request (CoA-Request) messages can create, modify, and delete subscriber sessions as well as activate and deactivate service sessions. You can use CLI commands to create a dynamic profile, which acts as a template of user attributes.

A subscriber service is based on the combination of a defined dynamic profile and attributes configured through authentication. Dynamic profiles can include dynamic firewall filters, class-of-service (CoS) settings, and protocol (IGMP) settings that define access limits for subscribers and the scope of a service granted to the subscriber after access is obtained.

The subscriber access feature provides the following convenience and flexibility to service providers and subscribers:

- Service providers can separate services and access technology and eliminate unprofitable flat-rate billing. They gain the ability to efficiently design, manage, and deliver services that subscribers want, and then bill subscribers based on connect time, bandwidth, and the actual service used.
- Subscribers benefit by gaining access to multiple simultaneous services. Depending on the service provider configuration, subscribers can dynamically connect to and disconnect from various services when they want and for however long they want.

Subscribers can be billed based on the service level and usage, rather than being charged a set rate regardless of usage.

## Subscriber Access Terms and Acronyms

[Table 3 on page 4](#) defines terms and acronyms that are used in this discussion of subscriber access.

**Table 3: Subscriber Access Terms and Acronyms**

Term	Definition
AAA method for subscriber authentication	The AAA method that uses authentication (for example, including RADIUS VSAs in the Access-Accept packet) to verify a subscriber and activate a service when the subscriber logs in.
Dynamic profile	A template that defines a set of characteristics that are combined with authorization attributes and are dynamically assigned to static interfaces to provide dynamic subscriber access and services for broadband applications.
RADIUS CoA method	The method that uses RADIUS CoA-Request messages and VSAs to activate a service for a subscriber that is already logged in.
Subscriber access technology	The technology used by a subscriber to access services (for example, DHCP).

### Related Documentation

- [Subscriber Access Environment on page 4](#)
- [Subscriber Access Licensing Overview on page 10](#)
- [Subscriber Access Operation Flow Using DHCP Relay on page 5](#)
- [Configuring Subscriber Access on page 15](#)

## Subscriber Access Environment

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A subscriber access environment can include various components, including subscriber access technologies and authentication protocols.

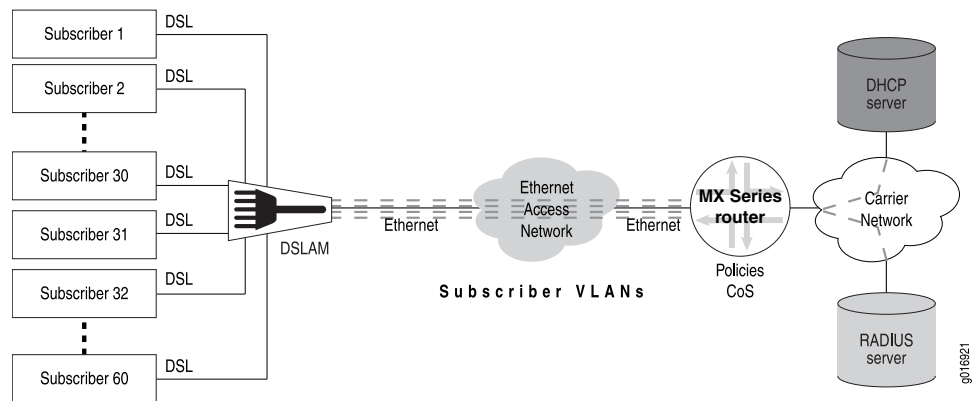
The subscriber access technologies include:

- Dynamic Host Configuration Protocol (DHCP) server
  - Local DHCP server
  - External DHCP server
- Point-to-Point Protocol (PPP)

The subscriber authentication protocols include the RADIUS server.

[Figure 1 on page 5](#) shows an example of a basic subscriber access network.

Figure 1: Subscriber Access Network Example



**Related Documentation**

- [Subscriber Access Overview on page 3](#)

## Relationship Between Subscribers and Interfaces in an Access Network

To the router, a subscriber is an authenticated user. This release supports configurations of only one subscriber per logical interface. However, a subscriber can be either one authenticated client or a group of clients on a single, authenticated VLAN.

**Related Documentation**

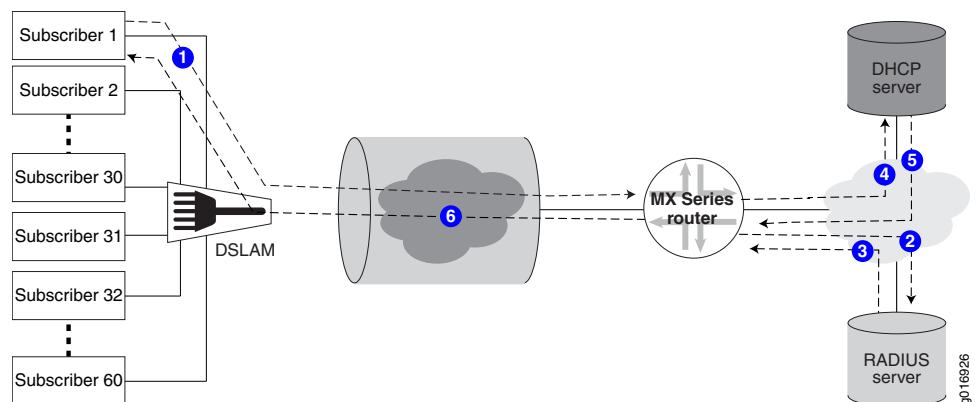
- [Subscriber Interface Overview](#)

## Subscriber Access Operation Flow Using DHCP Relay

The subscriber access feature requires that a subscriber (for example, a DHCP client) send a discover message to the router interface to initialize dynamic configuration of that interface.

[Figure 2 on page 5](#) shows the flow of operations that occurs when the router is using DHCP relay to enable access for a subscriber.

Figure 2: Subscriber Access Operation Flow



The following general sequence occurs during access configuration for a DHCP client:

1. The client issues a DHCP discover message.
2. The router issues an authorization request to the RADIUS server.
3. The RADIUS server issues an authorization response to the router.
4. The router passes the DHCP discover message through to the DHCP server.
5. The DHCP server issues an IP address for the client.
6. The router DHCP component sends an acknowledgement back to the client.

The subscriber now has access to the network and the authorized service.

- Related Documentation**
- [Subscriber Access Overview on page 3](#)
  - [Configuring Subscriber Access on page 15](#)

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## Subscriber Activation and Service Management in an Access Network

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The subscriber access feature uses dynamic profiles to activate subscribers and manage services.

A dynamic profile is a set of characteristics, defined in a template, that the router uses to provide dynamic subscriber access and services.

By using dynamic profiles you can:

- Define access for your network
- Define different service levels for subscribers
- Preprovision services that you can activate later

Using AAA-based login (RADIUS-based login or RADIUS CoA) you can:

- Provide subscribers with dynamic activation and deactivation based on service selection
- Provide greater flexibility and efficient management for a large number of subscribers and services

### Components of a Dynamic Profile

You can use dynamic profiles to define various router components for subscriber access.

These components include the following:

- Dynamic firewall filters—Includes input and output filters to enforce rules that define whether to permit or deny packets that are transmitting an interface on the router. To apply dynamic firewall filters to the subscriber interface, you configure static input and output firewall filters and reference those filters in dynamic profiles.

- Dynamic Class of Service (CoS)—Includes CoS values that define a service for a subscriber. For example, you can configure the shaping rate for traffic in a video service by referencing CoS statements in a dynamic profile.
- Dynamic signaling protocol—Includes dynamic IGMP configuration for host to router signaling for IPv4 to support IP multicasting.

### Router Predefined Variables Used by Dynamic Profiles

The router contains many predefined variables. These variables enable dynamic association of certain interface-specific values to incoming subscriber requests. You must specify these predefined variables in certain statements within a dynamic profile. When a client accesses the router, the dynamic profile configuration replaces the predefined variable with the actual data from an incoming client data packet and configuration (local and RADIUS).

#### **Related Documentation**

- *Dynamic Profiles Overview*
- *Subscriber Interface Overview*
- *Junos OS Predefined Variables*



## CHAPTER 2

# Support and Licensing

- [Subscriber Access Support Considerations on page 9](#)
- [Subscriber Access Licensing Overview on page 10](#)
- [Subscriber Management Unified ISSU Support on page 10](#)

## Subscriber Access Support Considerations

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The subscriber access feature is limited to MX Series 3D Universal Edge Routers and the interfaces you can use when configuring dynamic profiles.

### Platform Support

Even though many statements appear in the CLI for various other platforms, Juniper Networks supports subscriber access DHCP configuration on MX Series routers only. In addition, PPPoE configuration is currently supported on MX Series routers, M120 routers, and M320 routers.

### Interface Support

You can use dynamic profiles to configure statically created interfaces and also to create and configure interfaces dynamically. Subscriber interfaces support IPv4 and IPv6 addressing.

To identify subscribers statically, you can reference a static VLAN interface in a dynamic profile. To identify subscribers dynamically, you create variables for demux interfaces that are dynamically created when subscribers log in.

The subscriber access feature supports the following device types:

- GE -- Gigabit Ethernet
- XE -- 10-Gigabit Ethernet
- AE -- Aggregated Ethernet

### DPC Support

Certain subscriber management features require the use of specific dense port concentrators (DPCs) on the MX series router. For a list of the MX series DPCs and the features they support, see the [MX Series Interface Module Reference](#).

## Routing Engine Support

Subscriber management features require the use of either the RE-S-2000 or RE-S-1800 routing engine. The RE-S-1300 routing engine is not supported for use with subscriber management configurations.

## Logical System Support

Subscriber management is supported in the default logical system only.

- Related Documentation**
- [Relationship Between Subscribers and Interfaces in an Access Network on page 5](#)
  - [Configuring Subscriber Access on page 15](#)

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## Subscriber Access Licensing Overview

To enable some Juniper Networks Junos OS features or router scaling levels, you might have to purchase, install, and manage separate software license packs. The presence on the router of the appropriate software license keys (passwords) determines whether you can configure and use certain features or configure a feature to a predetermined scale.

- Related Documentation**
- [Configuring the Router to Strictly Enforce the Subscriber Scaling License](#)
  - For information about installing and managing Junos OS licenses, see the *Installation and Upgrade Guide*

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## Subscriber Management Unified ISSU Support

The unified in-service software upgrade (unified ISSU) feature supports both the DHCP access model and the PPPoE access model used by subscriber management. This support ensures that the router preserves active DHCP and PPPoE subscriber sessions and session services after a unified ISSU has completed.

The *Junos OS High Availability Library for Routing Devices* describes the supported platforms and modules, CLI statements, and procedures you use to configure and initiate unified ISSU. You can use the `issu` flag with the `traceoptions` statement to trace subscriber management unified ISSU events. You can also use the [show system subscriber-management summary](#) command to display information about the unified ISSU state.

This overview describes specific considerations for unified ISSU support of the DHCP and PPPoE access models for subscriber management, and covers the following topics:

- [Unified ISSU Support for DHCP Access Model on page 11](#)
- [Unified ISSU Support for PPPoE Access Model on page 11](#)



## Unified ISSU Support for DHCP Access Model

Unified ISSU supports the subscriber management DHCP access model, which includes DHCP local server, DHCPv6 local server, DHCP relay, and DHCP relay proxy.

Accounting, filter, and class of service (CoS) statistics for DHCP subscribers are preserved after a unified ISSU on MPC/MIC interfaces on MX Series routers.

## Unified ISSU Support for PPPoE Access Model

Unified ISSU supports the subscriber management PPPoE access model for static and dynamic PPPoE access, and includes the following features:

- Terminated, non-tunneled PPPoE connections configured with static or dynamic PPP logical interfaces and static or dynamic underlying interfaces
- Subscriber services on single-link PPP interfaces
- Preservation of statistics for accounting, filter, and CoS on MPC/MIC interfaces

Accounting statistics for PPPoE subscribers are *not* preserved after a unified ISSU on Enhanced Intelligent Queuing 2 (IQ2E) PICs on M120 and M320 routers.

Unified ISSU for the subscriber management PPPoE access model *does not support* Multilink Point-to-Point Protocol (MLPPP) bundle interfaces. MLPPP bundle interfaces require the use of an Adaptive Services PIC or Multiservices PIC to provide PPP subscriber services. These PICs do not support unified ISSU.

### Related Documentation

- [Verifying and Monitoring Subscriber Management Unified ISSU State on page 21](#)
- *Unified ISSU Support on MX Series 3D Universal Edge Routers in Unified ISSU System Requirements*
- For information about unified ISSU, see the *Junos OS High Availability Library for Routing Devices*



## PART 2

# Configuration

- [Configuration Overview for Subscriber Access on page 15](#)



## CHAPTER 3

# Configuration Overview for Subscriber Access

- [Configuring Subscriber Access on page 15](#)

## Configuring Subscriber Access

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To configure subscriber access:

1. Configure the client access protocol.
  - Configure DHCP local server.  
*See Extended DHCP Local Server Overview.*
  - Configure DHCP relay.  
*See Extended DHCP Relay Agent Overview.*
  - Configure PPP.  
*See the “Configuring Logical Interface Properties” and “Configuring Point-to-Point Protocol over Ethernet” chapters of the Junos OS Network Interfaces Library for Routing Devices.*
2. Configure subscriber authentication, accounting, and addressing.
  - a. Configure RADIUS:
    1. Specify the RADIUS servers.  
*See Specifying RADIUS Authentication and Accounting Servers for Subscriber Access.*
    2. Specify any optional server attributes.  
*See Configuring RADIUS Server Options for Subscriber Access.*
    3. (Optional) Configure the CoA feature for the RADIUS dynamic-request server to change or deactivate the service after login.  
*See Configuring RADIUS-Initiated Dynamic Request Support.*
    4. Configure subscriber accounting (RADIUS accounting).  
*See Configuring Per-Subscriber Session Accounting.*

- b. Configure addressing:
  - See *Configuring Address-Assignment Pools*.
3. Create and manage dynamic profiles for access and service.
  - a. Configure a basic dynamic profile.

See *Configuring a Basic Dynamic Profile*.

See *Example: Minimum PPPoE Dynamic Profile*
  - b. Configure a dynamic profile for access.

See *Configuring a Dynamic Profile for Client Access*.
  - c. Configure a dynamic profile for services.

See *Configuring a Dynamic Profile for Various Levels of Services*.
  - d. Configure a default subscriber service.

See *Configuring a Default Subscriber Service*.
  - e. Configure the static subscriber interfaces to be referenced in the dynamic profile.

See *Configuring a Subscriber Interface with a Static VLAN Interface*.
  - f. Specify the interface-name and unit variables that the router uses to dynamically associate to a subscriber's incoming interface.

See *Associating Dynamic Profiles with Statically Created Interfaces*.
  - g. Add, modify, or delete dynamic profile values to manage subscriber access and services.

See *Modifying Dynamic Profiles with Versioning Disabled*.

The router dynamically activates or modifies the subscriber service using the RADIUS configuration.

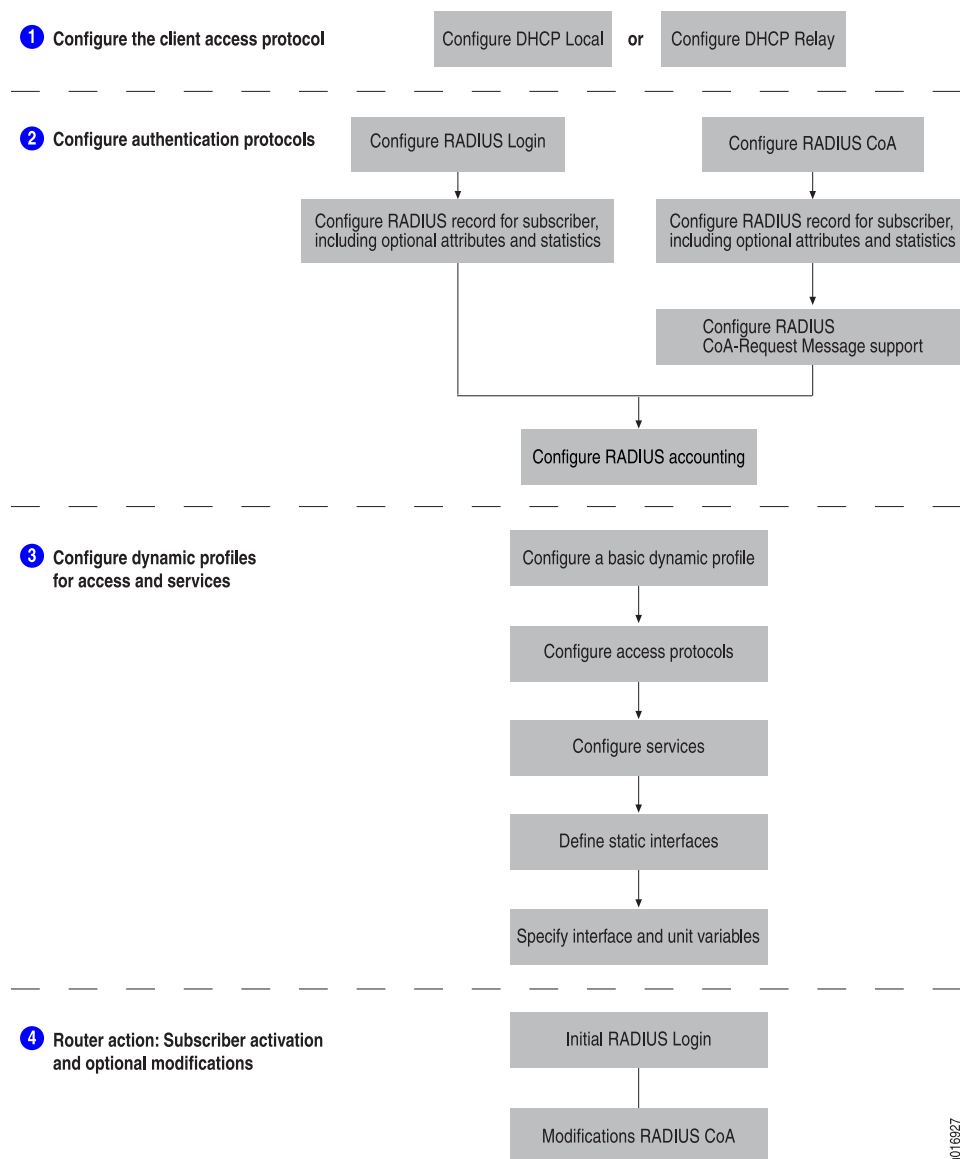
- When the subscriber logs in, the router dynamically activates the service.

See *Dynamic Service Activation During Login Overview*.
- If RADIUS CoA has been configured, the router can dynamically modify the service for a subscriber.

See *RADIUS-Initiated Change of Authorization (CoA) Overview*.

[Figure 3 on page 17](#) shows the configuration sequence you perform for DHCP-based subscriber access. It also shows the dynamic configuration performed by the router.

Figure 3: Subscriber Access Configuration Workflow



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**Related Documentation**

- [Subscriber Access Overview on page 3](#)
- [Subscriber Access Support Considerations on page 9](#)
- *Default Subscriber Service Overview*
- *CLI-Activated Subscriber Services*





## PART 3

# Administration

- [Verifying and Managing Configurations on page 21](#)
- [Monitoring Commands on page 23](#)



## CHAPTER 4

# Verifying and Managing Configurations

- [Verifying and Monitoring Subscriber Management Unified ISSU State on page 21](#)

## Verifying and Monitoring Subscriber Management Unified ISSU State

---

**Purpose** Display the state of unified ISSU for subscriber management features.

**Action** The first example indicates that control plane quiescing as part of unified ISSU is not in progress (for example, unified ISSU has not been started, has already completed, or control plane quiescing has not started). The second example shows that unified ISSU is in progress and that a participating subscriber management daemon requires 198 seconds to quiesce the control plane.

```
user@host> show system subscriber-management summary
```

General:

Graceful Restart	Enabled
Mastership	Master
Database	Available
Chassisd ISSU State	IDLE
ISSU State	IDLE
ISSU Wait	0

```
user@host> show system subscriber-management summary
```

General:

Graceful Restart	Enabled
Mastership	Master
Database	Available
Chassisd ISSU State	DAEMON_ISSU_PREPARE
ISSU State	PREPARE
ISSU Wait	198

- Related Documentation**
- [Subscriber Management Unified ISSU Support on page 10](#)
  - See the “Unified ISSU” chapter in the *Junos OS High Availability Library for Routing Devices*



## CHAPTER 5

# Monitoring Commands

## show system subscriber-management summary

<b>Syntax</b>	show system subscriber-management summary
<b>Release Information</b>	Command introduced in Junos OS Release 11.1.
<b>Description</b>	Display complete subscriber management database summary information.
<b>Options</b>	none—This command has no options.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <i>show database-replication statistics</i></li> <li>• <i>show database-replication summary</i></li> </ul>
<b>List of Sample Output</b>	<a href="#">show system subscriber-management summary on page 25</a>
<b>Output Fields</b>	<a href="#">Table 4 on page 24</a> lists the output fields for the <b>show system subscriber-management summary</b> command. Output fields are listed in the approximate order in which they appear.

**Table 4: show system subscriber-management summary Output Fields**

Field Name	Field Description
Graceful Restart	State of graceful Routing Engine switchover (GRES): <ul style="list-style-type: none"> <li>• Enabled</li> <li>• Disabled</li> </ul>
Mastership	State of the Routing Engine: <ul style="list-style-type: none"> <li>• Master</li> <li>• Standby</li> </ul>
Database	State of the subscriber management database: <ul style="list-style-type: none"> <li>• Available</li> <li>• Init</li> <li>• Not-available</li> </ul>

**Table 4: show system subscriber-management summary Output Fields (*continued*)**

Field Name	Field Description
Chassisd ISSU State	State of unified ISSU chassis daemon: <ul style="list-style-type: none"> <li>• ABORT</li> <li>• DAEMON_ISSU_PREPARE</li> <li>• DAEMON_ISSU_PREPARE_DONE</li> <li>• DAEMON_SWITCHOVER_PREPARE</li> <li>• DAEMON_SWITCHOVER_PREPARE_DONE</li> <li>• FRU_ISSU</li> <li>• FRU_ISSU_DONE</li> <li>• IDLE</li> <li>• UNKNOWN</li> </ul>
ISSU State	State of unified ISSU aggregate daemon: <ul style="list-style-type: none"> <li>• ABORT</li> <li>• IDLE</li> <li>• PREPARE</li> <li>• READY</li> <li>• SWITCHOVER_PREPARE</li> <li>• SWITCHOVER_READY</li> <li>• UNKNOWN</li> </ul>
ISSU Wait	Amount of time, in seconds, requested by a daemon to perform cleanup. If multiple daemons request time, the displayed value is the highest wait time requested by a daemon.

## Sample Output

### show system subscriber-management summary

```

user@host> show system subscriber-management summary
General:
  Graceful Restart    Enabled
  Mastership          Master
  Database             Available
  Chassisd ISSU State DAEMON_ISSU_PREPARE
  ISSU State          PREPARE
  ISSU Wait            198

```





## PART 4

# Troubleshooting

- [Acquiring Troubleshooting Information on page 29](#)



## CHAPTER 6

# Acquiring Troubleshooting Information

- [Collecting Subscriber Access Logs Before Contacting Juniper Technical Support on page 29](#)

### Collecting Subscriber Access Logs Before Contacting Juniper Technical Support

**Problem** When you experience a subscriber access problem in your network, we recommend that you collect certain logs before you contact Juniper Technical Support. This topic shows you the most useful logs for a variety of network implementations. In addition to the relevant log information, you must also collect standard troubleshooting information and send it to Juniper Technical Support in your request for assistance.

**Solution** To collect standard troubleshooting information:

- Redirect the command output to a file.

```
user@host> request support information | save rsi-1
```

To configure logging to assist Juniper Technical Support:

1. Review the following blocks of statements to determine which apply to your configuration.

[edit]

```
set system syslog archive size 100m files 25
set system auto-configuration traceoptions file filename
set system auto-configuration traceoptions file filename size 100m files 25
set protocols ppp-service traceoptions file filename size 100m files 25
set protocols ppp-service traceoptions level all
set protocols ppp-service traceoptions flag all
set protocols ppp traceoptions file filename size 100m files 25
set protocols ppp traceoptions level all
set protocols ppp traceoptions flag all
set protocols ppp monitor-session all
set interfaces pp0 traceoptions flag all
set demux traceoptions file filename size 100m files 25
set demux traceoptions level all
set demux traceoptions flag all
set system processes dhcp-service traceoptions file filename
set system processes dhcp-service traceoptions file size 100m
set system processes dhcp-service traceoptions file files 25
set system processes dhcp-service traceoptions flag all
set class-of-service traceoptions file filename
set class-of-service traceoptions file size 100m
set class-of-service traceoptions flag all
set class-of-service traceoptions file files 25
set routing-options traceoptions file filename
set routing-options traceoptions file size 100m
set routing-options traceoptions flag all
set routing-options traceoptions file files 25
set interfaces traceoptions file filename
set interfaces traceoptions file size 100m
set interfaces traceoptions flag all
set interfaces traceoptions file files 25
set system processes general-authentication-service traceoptions file filename
set system processes general-authentication-service traceoptions file size 100m
set system processes general-authentication-service traceoptions flag all
set system processes general-authentication-service traceoptions file files 25
```

2. Copy the relevant statements into a text file and modify the log filenames as you want.
3. Copy the statements from the text file and paste them into the CLI on your router to configure logging.
4. Commit the logging configuration to begin collecting information.



.....

**NOTE:** The maximum file size for DHCP local server and DHCP relay log files is 1 GB. The maximum number of log files for DHCP local server and DHCP relay is 1000.

.....



**BEST PRACTICE:** Enable these logs only to collect information when troubleshooting specific problems. Enabling these logs during normal operations can result in reduced system performance.

**Related  
Documentation**

- *Compressing Troubleshooting Logs from /var/logs to Send to Juniper Technical Support*



## PART 5

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- [Index on page 35](#)





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