



Junos[®] OS

MLPPP Feature Guide for Subscriber Management

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Junos® OS MLPPP Feature Guide for Subscriber Management

13.2

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About the Documentation

- Documentation and Release Notes on page vii
- Supported Platforms on page vii
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Documentation and Release Notes

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at <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

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

- MX Series

Using the Examples in This Manual

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 ix 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 ix defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: user@host> configure
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> show chassis alarms 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"> Introduces or emphasizes important new terms. Identifies book names. Identifies RFC and Internet draft titles. 	<ul style="list-style-type: none"> A policy <i>term</i> is a named structure that defines match conditions and actions. <i>Junos OS System Basics Configuration Guide</i> RFC 1997, <i>BGP Communities Attribute</i>
<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@# set system domain-name <i>domain-name</i>
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level. The console port is labeled CONSOLE.
< > (angle brackets)	Enclose optional keywords or variables.	stub <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.	broadcast multicast (<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.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [<i>community-ids</i>]
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.	
GUI Conventions		
Bold text like this	Represents graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> In the Logical Interfaces box, select All Interfaces. To cancel the configuration, click Cancel.
> (bold right angle bracket)	Separates levels in a hierarchy of menu selections.	In the configuration editor hierarchy, select Protocols>Ospf .

Documentation Feedback

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, 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

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

- [MLPPP in Subscriber Access Networks on page 3](#)

CHAPTER 1

MLPPP in Subscriber Access Networks

- [Dynamic PPP Subscriber Services for Static MLPPP Interfaces on page 3](#)
- [Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4](#)

Dynamic PPP Subscriber Services for Static MLPPP Interfaces

Dynamic subscriber services are supported for MLPPP bundle interfaces, with certain interface and hardware restrictions. See [“Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces” on page 4](#). Multiclass MLPPP (MCML) enables the relative prioritization of up to eight classes of traffic over an MLPPP bundle, but only on link services intelligent queuing (IQ) (LSQ) interfaces.

RADIUS previously supported only authentication for MLPPP. Address management, service deactivation, and dynamic selection of subscriber properties based on RADIUS user ID are now also supported.

RADIUS can dynamically allocate IPv4 addresses for MLPPP connections. When the first subscriber logs in, an address is allocated. The same address is allocated to all links in a bundle. Any other address provided for any of the links is ignored. The IP address is released for re-allocation when the last member link in a bundle logs out. Similar to the address allocation, the services configured for the first subscriber to log in are configured for all subsequent subscribers in the bundle.

The Acct-Multi-Session-Id [50] attribute enables RADIUS to link multiple related sessions into a single log file. RADIUS uses the session database (SDB) bundle session ID for the value of Acct-Multi-Session-Id. This bundle ID enables RADIUS to initiate a disconnect for an entire bundle. By tracking the member link sessions, RADIUS is also able to disconnect the individual member links in a bundle.

The Acct-Link-Count [51] attribute records the number of links present in a multilink session at the time the accounting record is generated.

Related Documentation

- [Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4](#)
- [Configuring PPP Subscriber Services for MLPPP Bundles on page 7](#)

Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces

PPP subscriber services are supported for MLPPP bundle interfaces. These services require the following hardware:

- M120 router or M320 router
- Channelized DS3/E3 Enhanced IP PIC (PB-4CHDS3-E3-IQE-BNC) to support MLPPP subscriber access
- An Adaptive Services PIC or Multiservices PIC to support subscriber services on LSQ MLPPP bundle interfaces

Subscriber services are not supported for single-link PPP interfaces with this hardware.

Related Documentation

- [Dynamic PPP Subscriber Services for Static MLPPP Interfaces on page 3](#)

PART 2

Configuration

- [Configuration Overview on page 7](#)
- [Configuration Tasks for Subscriber Services on MLPPP Interfaces on page 9](#)
- [Examples on page 11](#)
- [Configuration Statements on page 15](#)

CHAPTER 2

Configuration Overview

- [Configuring PPP Subscriber Services for MLPPP Bundles on page 7](#)

Configuring PPP Subscriber Services for MLPPP Bundles

You can configure PPP subscriber services for static LSQ MLPPP bundle interfaces.

To configure PPP subscriber services for static LSQ MLPPP bundle interfaces:

1. Enable PPP subscriber services for the interfaces.
[See “Enabling PPP Subscriber Services for Static Non-Ethernet Interfaces” on page 9.](#)
2. Attach a dynamic profile to the MLPPP bundle interface.
[See “Attaching Dynamic Profiles to MLPPP Bundles” on page 9.](#)

Related Documentation

- [Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4](#)
- [Example: Minimum MLPPP Dynamic Profile on page 11](#)
- [Example: Configuring CoS on Static LSQ MLPPP Bundle Interfaces on page 11](#)

CHAPTER 3

Configuration Tasks for Subscriber Services on MLPPP Interfaces

- [Enabling PPP Subscriber Services for Static Non-Ethernet Interfaces on page 9](#)
- [Attaching Dynamic Profiles to MLPPP Bundles on page 9](#)

Enabling PPP Subscriber Services for Static Non-Ethernet Interfaces

You can enable PPP subscriber services for certain non-Ethernet interface types on particular associated PICs. Supported interfaces are listed in [“Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces” on page 4](#).

To enable PPP subscriber services on supported non-Ethernet interfaces:

- Configure PPP subscriber services.

```
[edit chassis]
user@host# set ppp-subscriber-services enable
```

To disable PPP subscriber services on supported non-Ethernet interfaces:

- Disable PPP subscriber services.

```
[edit chassis]
user@host# set ppp-subscriber-services disable
```

Related Documentation

- For hardware requirements, see [Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4](#)
- [Configuring PPP Subscriber Services for MLPPP Bundles on page 7](#)

Attaching Dynamic Profiles to MLPPP Bundles

You can attach a dynamic profile to a static MLPPP bundle interface. When a PPP subscriber logs in on a member link, the specified dynamic profile is instantiated and the services defined in the profile are applied to the LSQ bundle interface.

To attach a dynamic profile to a static LSQ MLPPP bundle interface:

1. Specify that you want to configure PPP options.

```
[edit interfaces lsq-3/3/0 unit 0]
user@host# edit ppp-options
```

2. Specify the dynamic profile you want to associate with the interface.

```
[edit interfaces lsq-3/3/0 unit 0 ppp-options]
user@host# set dynamic-profile vod-profile-50
```

**Related
Documentation**

- [Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4](#)
- [Configuring PPP Subscriber Services for MLPPP Bundles on page 7](#)
- *Dynamic Profiles for PPP Subscriber Interfaces Overview*
- *Dynamic Profiles Overview*
- *Configuring a Basic Dynamic Profile*
- [Configuring PPP Subscriber Services for MLPPP Bundles on page 7](#)
- [Example: Minimum MLPPP Dynamic Profile on page 11](#)
- [Example: Configuring CoS on Static LSQ MLPPP Bundle Interfaces on page 11](#)

CHAPTER 4

Examples

- [Example: Minimum MLPPP Dynamic Profile on page 11](#)
- [Example: Configuring CoS on Static LSQ MLPPP Bundle Interfaces on page 11](#)

Example: Minimum MLPPP Dynamic Profile

This example shows the minimum configuration for a dynamic profile that is used for static LSQ MLPPP bundle interfaces.

```
dynamic-profiles {
  mlppp-profile-1 {
    interfaces {
      "$junos-interface-ifd-name" {
        unit "$junos-underlying-interface-unit";
      }
    }
  }
}
```

Related Documentation

- [Dynamic Profiles for PPP Subscriber Interfaces Overview](#)
- [Attaching Dynamic Profiles to MLPPP Bundles on page 9](#)

Example: Configuring CoS on Static LSQ MLPPP Bundle Interfaces

This example shows how to configure dynamic subscriber services on MLPPP bundle interfaces. The MLPPP bundles must be configured on link services intelligent queuing (IQ) (LSQ) interfaces. The MLPPP interfaces must be statically configured.

To configure dynamic subscriber services on static LSQ MLPPP bundle interfaces:

1. Configure class of service features for the LSQ interfaces.

```
[edit]
class-of-service
  classifiers {
    inet-precedence inet_classifier {
      forwarding-class best-effort {
        loss-priority low code-points 000;
      }
      forwarding-class expedited-forwarding {
```

```
        loss-priority low code-points 011;
    }
    forwarding-class assured-forwarding {
        loss-priority low code-points 100;
    }
}
fragmentation-maps {
    sample-fragmap {
        forwarding-class {
            best-effort {
                fragment-threshold 1000;
                multilink-class 1;
            }
            assured-forwarding {
                fragment-threshold 1000;
                multilink-class 2;
            }
            expedited-forwarding {
                multilink-class 3;
            }
        }
    }
}
forwarding-classes {
    queue 0 best-effort;
    queue 1 expedited-forwarding;
    queue 2 assured-forwarding;
}
# traffic classifiers are statically defined
network traffic interface{
    classifiers {
        inet-precedence inet_classifier;
    }
}
scheduler-maps {
    allthree {
        forwarding-class best-effort scheduler be-scheduler;
        forwarding-class expedited-forwarding scheduler hiprior-sched;
        forwarding-class assured-forwarding scheduler vpn-sched;
    }
}
schedulers {
    be-scheduler {
        transmit-rate percent 30;
        priority low;
    }
    hiprior-scheduler {
        transmit-rate percent 40;
        priority strict-high;
    }
    vpn-sched {
        transmit-rate percent 30;
        medium-high;
    }
}
```

```
}

```

2. Configure the MLPPP bundle interfaces and the LSQ interfaces.

```
[edit interfaces]
t1-3/1/0:1:1 {
  keepalives interval 600;
  encapsulation ppp;
  unit 0 {
    ppp-options {
      lcp-restart-timer 5000;
    }
    family mlppp {
      bundle lsq-3/3/0.0;
    }
  }
}
t1-3/1/0:1:2 {
  keepalives interval 600;
  encapsulation ppp;
  unit 0 {
    ppp-options {
      lcp-restart-timer 5000;
    }
    family mlppp {
      bundle lsq-3/3/0.0;
    }
  }
}
lsq-3/3/0 {
  unit 0 {
    encapsulation multilink-ppp;
    multilink-max-classes 4;
    ppp-options {
      ncp-restart-timer 10000;
      dynamic-profile mlppp-profile;
    }
    family inet {
      address 192.168.1.1/32 {
        destination 192.168.25.45;
      }
    }
  }
}

```

3. Configure the dynamic profile that is applied to the MLPPP bundle interfaces.

```
[edit]
dynamic-profiles {
  mlppp-profile {
    interfaces {
      "$junos-interface-ifd-name" {
        unit junos-underlying-interface-unit {
          family inet {
            filter {
              input "$junos-input-filter";
              output "$junos-output-filter";
            }
          }
        }
      }
    }
  }
}

```

```
    }
  }
}
}
class-of-service {
  interfaces {
    "$junos-interface-ifd-name" {
      unit junos-underlying-interface-unit {
        output-traffic-control-profile tcp1;
        fragmentation-map sample-fragmap;
      }
    }
  }
}
traffic-control-profiles {
  tcp1 {
    scheduler-map "junos-cos-scheduler-map";
    shaping-rate "$junos-cos-shaping-rate";
    guaranteed-rate "$junos-cos-guaranteed-rate";
    delay-buffer-rate "$junos-cos-delay-buffer-rate";
  }
}
scheduler-maps {
  data_smap {
    forwarding-class be scheduler data_sch;
  }
}
schedulers {
  be_sch {
    ...
  }
}
}
}
```

- Related Documentation**
- For hardware requirements, see [Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4](#)
 - For information about MLPPP and LSQ interfaces, see *Link Services IQ Interfaces Configuration* in the *Junos OS Services Interfaces Library for Routing Devices*.


CHAPTER 5

Configuration Statements

dynamic-profile (PPP)

Syntax	dynamic-profile <i>profile-name</i> ;
Hierarchy Level	[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i> ppp-options]
Release Information	Statement introduced in Junos OS Release 9.5. Support for MLPPP on LSQ interfaces introduced in Junos OS Release 10.2.
Description	Specify the dynamic profile that is attached to the interface. On the MX Series routers, this statement is currently supported on PPPoE interfaces only. On the M120 and M320 routers, this statement is supported for MLPPP bundles only on LSQ interfaces on Adaptive Services PICs and Multiservices PICs.
Required Privilege Level	interface—To view this statement in the configuration. interface-control—To add this statement to the configuration.
Related Documentation	<ul style="list-style-type: none">• <i>Dynamic Profiles Overview</i>• <i>Configuring a Basic Dynamic Profile</i>• <i>Attaching Dynamic Profiles to Static PPP Subscriber Interfaces</i>• Attaching Dynamic Profiles to MLPPP Bundles on page 9• For hardware requirements, see Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4

ppp-subscriber-services

Syntax	ppp-subscriber-services (disable enable);
Hierarchy Level	[edit chassis]
Release Information	Statement introduced in Junos OS Release 10.2.
Description	Enable dynamic PPP subscriber services on non-PPPoE interfaces on certain PICs.
	<div><p>NOTE: When you include this statement, the relevant PICs restart. This action disrupts subscribers already logged in through those PICs. You can confirm completion of the restart by issuing the <code>show chassis pic fpc-slot slot-number pic-slot slot-number</code> command.</p></div>
Options	<p>disable—Disable subscriber services.</p> <p>enable—Enable subscriber services.</p>
Required Privilege Level	<p>interface—To view this statement in the configuration.</p> <p>interface-control—To add this statement to the configuration.</p>
Related Documentation	<ul style="list-style-type: none">• <i>show chassis pic</i>• Attaching Dynamic Profiles to MLPPP Bundles on page 9• For hardware requirements, see Hardware Requirements for PPP Subscriber Services on Non-Ethernet Interfaces on page 4

PART 3

Administration

- [Monitoring Commands on page 19](#)

CHAPTER 6

Monitoring Commands

show subscribers

Syntax `show subscribers`
 `<detail | extensive | terse>`
 `<aci-interface-set-name aci-interface-set-name>`
 `<address address>`
 `<agent-circuit-identifier agent-circuit-identifier-substring>`
 `<client-type client-type>`
 `<count>`
 `<interface interface>`
 `<logical-system logical-system>`
 `<mac-address mac-address>`
 `<physical-interface physical-interface-name>`
 `<profile-name profile-name>`
 `<routing-instance routing-instance>`
 `<stacked-vlan-id stacked-vlan-id>`
 `<subscriber-state subscriber-state>`
 `<user-name user-name>`
 `<vci vci-identifier>`
 `<vpi vpi-identifier>`
 `<vlan-id vlan-id>`

Release Information Command introduced in Junos OS Release 9.3.
 Command introduced in Junos OS Release 9.3 for EX Series switches.
 client-type, **mac-address**, **subscriber-state**, and **extensive** options introduced in Junos OS Release 10.2.
 count option usage with other options introduced in Junos OS Release 10.2.
 Command introduced in Junos OS Release 11.1 for the QFX Series.
 Options **aci-interface-set-name** and **agent-circuit-identifier** introduced in Junos OS Release 12.2.
 The **physical-interface** and **user-name** options introduced in Junos OS Release 12.3.
 Options **vci** and **vpi** introduced in Junos OS Release 12.3R3 and supported in later 12.3Rx releases.
 Options **vci** and **vpi** supported in Junos OS Release 13.2 and later releases. (Not supported in Junos OS Release 13.1.)

Description Display information for active subscribers.

Options **detail | extensive | terse**—(Optional) Display the specified level of output.

aci-interface-set-name—(Optional) Display all dynamic subscriber sessions that use the specified agent circuit identifier (ACI) interface set. Use the ACI interface set name generated by the router, such as `aci-1003-ge-1/0/0.4001`, and not the actual ACI value found in the DHCP or PPPoE control packets.

address—(Optional) Display subscribers whose IP address matches the specified address. You must specify the IPv4 or IPv6 address prefix without a netmask (for example, `192.168.17.1`). If you specify the IP address as a prefix with a netmask (for example, `192.168.17.1/32`), the router displays a message that the IP address is invalid, and rejects the command.

agent-circuit-identifier-substring—(Optional) Display all dynamic subscriber sessions whose ACI value matches the specified substring.

client-type—(Optional) Display subscribers whose client type matches the specified client type (DHCP, L2TP, PPP, PPPOE, VLAN, or static).

count—(Optional) Display the count of total subscribers and active subscribers for any specified option. You can use the ***count*** option alone or with the ***address***, ***client-type***, ***interface***, ***logical-system***, ***mac-address***, ***profile-name***, ***routing-instance***, ***stacked-vlan-id***, ***subscriber-state***, or ***vlan-id*** options.

id—(Optional) Display a specific subscriber session whose session id matches the specified subscriber ID. You can display subscriber IDs by using the ***show subscribers extensive*** or the ***show subscribers interface extensive*** commands.

interface—(Optional) Display subscribers whose interface matches the specified interface.

logical-system—(Optional) Display subscribers whose logical system matches the specified logical system.

mac-address—(Optional) Display subscribers whose MAC address matches the specified MAC address.

physical-interface-name—(M120, M320, and MX Series routers only) (Optional) Display subscribers whose physical interface matches the specified physical interface.

profile-name—(Optional) Display subscribers whose dynamic profile matches the specified profile name.

routing-instance—(Optional) Display subscribers whose routing instance matches the specified routing instance.

subscriber-state—(Optional) Display subscribers whose subscriber state matches the specified subscriber state (ACTIVE, CONFIGURED, INIT, TERMINATED, or TERMINATING).

user-name—(M120, M320, and MX Series routers only) (Optional) Display subscribers whose username matches the specified subscriber name.

vci-identifier—(MX Series routers with MPCs and ATM MICs with SFP only) (Optional) Display active ATM subscribers whose ATM virtual circuit identifier (VCI) matches the specified VCI identifier. The range of values is 0 through 255.

vpi-identifier—(MX Series routers with MPCs and ATM MICs with SFP only) (Optional) Display active ATM subscribers whose ATM virtual path identifier (VPI) matches the specified VPI identifier. The range of values is 0 through 65535.

vlan-id—(Optional) Display subscribers whose VLAN ID matches the specified VLAN ID.

stacked-vlan-id—(Optional) Display subscribers whose stacked VLAN ID matches the specified stacked VLAN ID.



NOTE: Due to display limitations, logical system and routing instance output values are truncated when necessary.

Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• show subscribers summary on page 38• <i>Verifying and Managing Agent Circuit Identifier-Based Dynamic VLAN Configuration</i>
List of Sample Output	<ul style="list-style-type: none">• show subscribers (IPv4) on page 26• show subscribers (IPv6) on page 26• show subscribers (IPv4 and IPv6 Dual Stack) on page 26• show subscribers (LNS on MX Series Routers) on page 27• show subscribers (L2TP Switched Tunnels) on page 27• show subscribers client-type dhcp detail on page 27• show subscribers count on page 27• show subscribers address detail (IPv6) on page 27• show subscribers detail (IPv4) on page 28• show subscribers detail (IPv6) on page 28• show subscribers detail (IPv6 Static Demux Interface) on page 29• show subscribers detail (L2TP LNS Subscribers on MX Series Routers) on page 29• show subscribers detail (L2TP Switched Tunnels) on page 29• show subscribers detail (Tunneled Subscriber) on page 30• show subscribers detail (IPv4 and IPv6 Dual Stack) on page 30• show subscribers detail (ACI Interface Set Session) on page 31• show subscribers detail (PPPoE Subscriber Session with ACI Interface Set) on page 31• show subscribers extensive on page 31• show subscribers extensive (RPF Check Fail Filter) on page 32• show subscribers extensive (L2TP LNS Subscribers on MX Series Routers) on page 32• show subscribers extensive (IPv4 and IPv6 Dual Stack) on page 32• show subscribers extensive (Effective Shaping-Rate) on page 33• show subscribers aci-interface-set-name detail (Subscriber Sessions Using Specified ACI Interface Set) on page 34• show subscribers agent-circuit-identifier detail (Subscriber Sessions Using Specified ACI Substring) on page 34• show subscribers interface extensive on page 35• show subscribers logical-system terse on page 35• show subscribers physical-interface count on page 36• show subscribers routing-instance inst1 count on page 36• show subscribers stacked-vlan-id detail on page 36• show subscribers stacked-vlan-id vlan-id detail (Combined Output) on page 36• show subscribers stacked-vlan-id vlan-id interface detail (Combined Output for a Specific Interface) on page 36• show subscribers user-name detail on page 36• show subscribers vlan-id on page 37

[show subscribers vlan-id detail on page 37](#)

[show subscribers vpi vci extensive \(PPPoE-over-ATM Subscriber Session\) on page 37](#)

Output Fields Table 3 on page 23 lists the output fields for the **show subscribers** command. Output fields are listed in the approximate order in which they appear.

Table 3: show subscribers Output Fields

Field Name	Field Description
Interface	Interface associated with the subscriber. The router or switch displays subscribers whose interface matches or begins with the specified interface. The * character indicates a continuation of addresses for the same session.
IP Address/VLAN ID	Subscriber IP address or VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i> No IP address or VLAN ID is assigned to an L2TP tunnel-switched session. For these subscriber sessions the value is Tunnel-switched .
User Name	Name of subscriber.
LS:RI	Logical system and routing instance associated with the subscriber.
Type	Subscriber client type (DHCP, L2TP, PPP, PPPoE, STATIC-INTERFACE, VLAN).
IP Address	Subscriber IPv4 address.
IP Netmask	Subscriber IP netmask.
Primary DNS Address	IP address of primary DNS server.
Secondary DNS Address	IP address of secondary DNS server.
Primary WINS Address	IP address of primary WINS server.
Secondary WINS Address	IP address of secondary WINS server.
IPv6 Address	Subscriber IPv6 address, or multiple addresses.
IPv6 Prefix	Subscriber IPv6 prefix. If you are using DHCPv6 prefix delegation, this is the delegated prefix.
IPv6 User Prefix	IPv6 prefix obtained through ND/RA.
IPv6 Address Pool	Subscriber IPv6 address pool. The IPv6 address pool is used to allocate IPv6 prefixes to the DHCPv6 clients.
IPv6 Network Prefix Length	Length of the network portion of the IPv6 address.
IPv6 Prefix Length	Length of the subscriber IPv6 prefix.

Table 3: show subscribers Output Fields (*continued*)

Field Name	Field Description
Logical System	Logical system associated with the subscriber.
Routing Instance	Routing instance associated with the subscriber.
Interface Type	Whether the subscriber interface is Static or Dynamic .
Interface Set	Internally generated name of the dynamic ACI interface set used by the subscriber session.
Interface Set Type	Interface type of the ACI interface set: Dynamic . This is the only ACI interface set type currently supported.
Interface Set Session ID	Identifier of the dynamic ACI interface set entry in the session database.
Underlying Interface	Name of the underlying interface for the subscriber session.
Dynamic Profile Name	Dynamic profile used for the subscriber.
Dynamic Profile Version	Version number of the dynamic profile used for the subscriber.
MAC Address	MAC address associated with the subscriber.
State	Current state of the subscriber session (Init , Configured , Active , Terminating , Tunneled).
L2TP State	Current state of the L2TP session, Tunneled or Tunnel-switched . When the value is Tunnel-switched , two entries are displayed for the subscriber; the first entry is at the LNS interface on the LTS and the second entry is at the LAC interface on the LTS.
Tunnel switch Profile Name	Name of the L2TP tunnel switch profile that initiates tunnel switching.
Local IP Address	IP address of the local gateway (LAC).
Remote IP Address	IP address of the remote peer (LNS).
VLAN Id	VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i> .
Stacked VLAN Id	Stacked VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i> .
RADIUS Accounting ID	RADIUS accounting ID associated with the subscriber.
Agent Circuit ID	Option 82 agent circuit ID associated with the subscriber. The ID is displayed as an ASCII string unless the value has nonprintable characters, in which case it is displayed in hexadecimal format.
Agent Remote ID	Option 82 agent remote ID associated with the subscriber. The ID is displayed as an ASCII string unless the value has nonprintable characters, in which case it is displayed in hexadecimal format.
DHCP Relay IP Address	IP address used by the DHCP relay agent.

Table 3: show subscribers Output Fields (*continued*)

Field Name	Field Description
ATM VPI	(MX Series routers with MPCs and ATM MICs with SFP only) ATM virtual path identifier (VPI) on the subscriber's physical interface.
ATM VCI	(MX Series routers with MPCs and ATM MICs with SFP only) ATM virtual circuit identifier (VCI) for each VPI configured on the subscriber interface.
Login Time	Date and time at which the subscriber logged in.
Effective shaping-rate	Actual downstream traffic shaping rate for the subscriber, in kilobits per second.
IPv4 rpf-check Fail Filter Name	Name of the filter applied by the dynamic profile to IPv4 packets that fail the RPF check.
IPv6 rpf-check Fail Filter Name	Name of the filter applied by the dynamic profile to IPv6 packets that fail the RPF check.
DHCP Options	len = number of hex values in the message. The hex values specify the type, length, value (TLV) for DHCP options, as defined in RFC 2132.
Session ID	ID number for a subscriber service session.
Underlying Session ID	For DHCPv6 subscribers on a PPPoE network, displays the session ID of the underlying PPPoE interface.
Service Sessions	Number of service sessions (that is, a service activated using RADIUS CoA) associated with the subscribers.
Service Session Name	Service session profile name.
Session Timeout (seconds)	Number of seconds of access provided to the subscriber before the session is automatically terminated.
Idle Timeout (seconds)	Number of seconds subscriber can be idle before the session is automatically terminated.
IPv6 Delegated Address Pool	Name of the pool used for DHCPv6 prefix delegation.
IPv6 Delegated Network Prefix Length	Length of the prefix configured for the IPv6 delegated address pool.
IPv6 Interface Address	Address assigned by the Framed-Ipv6-Prefix AAA attribute.
IPv6 Framed Interface Id	Interface ID assigned by the Framed-Interface-Id AAA attribute.
ADF IPv4 Input Filter Name	Name assigned to the Ascend-Data-Filter (ADF) interface IPv4 input filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.

Table 3: show subscribers Output Fields (*continued*)

Field Name	Field Description
ADF IPv4 Output Filter Name	Name assigned to the Ascend-Data-Filter (ADF) interface IPv4 output filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.
ADF IPv6 Input Filter Name	Name assigned to the Ascend-Data-Filter (ADF) interface IPv6 input filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.
ADF IPv6 Output Filter Name	Name assigned to the Ascend-Data-Filter (ADF) interface IPv6 output filter (client or service session). The filter name is followed by the rules (in hexadecimal format) associated with the ADF filter and the decoded rule in Junos OS filter style.
IPv4 Input Filter Name	Name assigned to the IPv4 input filter (client or service session).
IPv4 Output Filter Name	Name assigned to the IPv4 output filter (client or service session).
IPv6 Input Filter Name	Name assigned to the IPv6 input filter (client or service session).
IPv6 Output Filter Name	Name assigned to the IPv6 output filter (client or service session).
IFL Input Filter Name	Name assigned to the logical interface input filter (client or service session).
IFL Output Filter Name	Name assigned to the logical interface output filter (client or service session).

Sample Output

show subscribers (IPv4)

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name          LS:RI
ge-1/3/0.1073741824 100                 WHOLESALE-CLIENT  default:default
demux0.1073741824   100.0.0.10         RETAILER1-CLIENT  test1:retailer1
demux0.1073741825   101.0.0.3          RETAILER2-CLIENT  test1:retailer2
demux0.1073741826   102.0.0.3

```

show subscribers (IPv6)

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name          LS:RI
ge-1/0/0.0         2001::c0:0:0:0/74  WHOLESALE-CLIENT  default:default
*                  2002::1/128        subscriber-25      default:default

```

show subscribers (IPv4 and IPv6 Dual Stack)

```

user@host> show subscribers
Interface          IP Address/VLAN ID  User Name
LS:RI
demux0.1073741834   0x8100.1002 0x8100.1
default:default
demux0.1073741835   0x8100.1001 0x8100.1
default:default
pp0.1073741836      61.1.1.1          dualstackuser1@ISP1.com

```

```

default:ASP-1
*                2041:1:1::/48
*                2061:1:1:1::/64
pp0.1073741837   23.1.1.3                dualstackuser2@ISP1.com
default:ASP-1
*                2001:1:2:5::/64

```

show subscribers (LNS on MX Series Routers)

```

user@host> show subscribers
Interface      IP Address/VLAN ID  User Name      LS:RI
si-4/0/0.1     192.168.4.1         xyz@example.com default:default

```

show subscribers (L2TP Switched Tunnels)

```

user@host> show subscribers
Interface      IP Address/VLAN ID  User Name      LS:RI
si-2/1/0.1073741842 Tunnel-switched    ap@lts.com     default:default

si-2/1/0.1073741843 Tunnel-switched    ap@lts.com     default:default

```

show subscribers client-type dhcp detail

```

user@host> show subscribers client-type dhcp detail
Type: DHCP
IP Address: 100.20.9.7
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: demux0.1073744127
Interface type: Dynamic
Dynamic Profile Name: dhcp-demux-prof
MAC Address: 00:10:95:00:00:98
State: Active
Radius Accounting ID: jnpr :2304
Login Time: 2009-08-25 14:43:52 PDT

Type: DHCP
IP Address: 100.20.10.7
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: demux0.1073744383
Interface type: Dynamic
Dynamic Profile Name: dhcp-demux-prof
MAC Address: 00:10:94:00:01:f3
State: Active
Radius Accounting ID: jnpr :2560
Login Time: 2009-08-25 14:43:56 PDT

```

show subscribers count

```

user@host> show subscribers count
Total Subscribers: 188, Active Subscribers: 188

```

show subscribers address detail (IPv6)

```

user@host> show subscribers address 100.16.12.137 detail

```

```
Type: PPPoE
User Name: pppoeTerV6User1Svc
IP Address: 100.16.12.137
IP Netmask: 255.0.0.0
IPv6 User Prefix: 1016:0:0:c88::/64
Logical System: default
Routing Instance: default
Interface: pp0.1073745151
Interface type: Dynamic
Underlying Interface: demux0.8201
Dynamic Profile Name: pppoe-client-profile
MAC Address: 00:0d:02:01:00:01
Session Timeout (seconds): 31622400
Idle Timeout (seconds): 86400
State: Active
Radius Accounting ID: jnpr demux0.8201:6544
Session ID: 6544
Agent Circuit ID: if13720
Agent Remote ID: if13720
Login Time: 2012-05-21 13:37:27 PDT
Service Sessions: 1
```

show subscribers detail (IPv4)

```
user@host> show subscribers detail
Type: DHCP
IP Address: 100.20.9.7
IP Netmask: 255.255.0.0
Primary DNS Address: 192.168.17.1
Secondary DNS Address: 192.168.17.2
Primary WINS Address: 192.168.22.1
Secondary WINS Address: 192.168.22.2
Logical System: default
Routing Instance: default
Interface: demux0.1073744127
Interface type: Dynamic
Dynamic Profile Name: dhcp-demux-prof
MAC Address: 00:10:95:00:00:98
State: Active
Radius Accounting ID: jnpr :2304
Session Timeout (seconds): 3600
Idle Timeout (seconds): 600
Login Time: 2009-08-25 14:43:52 PDT
DHCP Options: len 52
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 08 33 04 00 00
00 3c 0c 15 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 36 2f
33 2d 37 2d 30 37 05 01 06 0f 21 2c
Service Sessions: 2
```

show subscribers detail (IPv6)

```
user@host> show subscribers detail
Type: DHCP
User Name: pd-user1
IPv6 Prefix: 2002:db2:ffff:1::/64
Logical System: default
Routing Instance: default
Interface: ge-3/1/3.2
Interface type: Static
MAC Address: 00:51:ff:ff:00:03
State: Active
```

```

Radius Accounting ID: 1
Session ID: 1
Login Time: 2011-08-25 12:12:26 PDT
DHCP Options: len 42
00 08 00 02 00 00 00 01 00 0a 00 03 00 01 00 51 ff ff 00 03
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00 00
00 00

```

show subscribers detail (IPv6 Static Demux Interface)

```

user@host> show subscribers detail
Type: STATIC-INTERFACE
User Name: demux0.1@jnpr.net
IPv6 Prefix: 1:2:3:4:5:6:7:aa/128
Logical System: default
Routing Instance: default
Interface: demux0.1
Interface type: Static
Dynamic Profile Name: junos-default-profile
State: Active
Radius Accounting ID: 185
Login Time: 2010-05-18 14:33:56 EDT

```

show subscribers detail (L2TP LNS Subscribers on MX Series Routers)

```

user@host> show subscribers detail
Type: L2TP
User Name: user1@jnpr.net
IP Address: 10.1.32.58
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: si-5/2/0.1073749824
Interface type: Dynamic
Dynamic Profile Name: dyn-lns-profile2
Dynamic Profile Version: 1
State: Active
Radius Accounting ID: 8001
Session ID: 8001
Login Time: 2011-04-25 20:27:50 IST

```

show subscribers detail (L2TP Switched Tunnels)

```

user@host> show subscribers detail
Type: L2TP
User Name: ap@example.com
Logical System: default
Routing Instance: default
Interface: si-2/1/0.1073741842
Interface type: Dynamic
Dynamic Profile Name: dyn-lts-profile
State: Active
L2TP State: Tunnel-switched
Tunnel switch Profile Name: ce-lts-profile
Local IP Address: 10.50.1.1
Remote IP Address: 192.168.20.3
Radius Accounting ID: 21
Session ID: 21
Login Time: 2013-01-18 03:01:11 PST

Type: L2TP
User Name: ap@example.com

```

```
Logical System: default
Routing Instance: default
Interface: si-2/1/0.1073741843
Interface type: Dynamic
Dynamic Profile Name: dyn-lts-profile
State: Active
L2TP State: Tunnel-switched
Tunnel switch Profile Name: ce-lts-profile
Local IP Address: 10.30.1.1
Remote IP Address: 172.20.1.10
Session ID: 22
Login Time: 2013-01-18 03:01:14 PST
```

show subscribers detail (Tunneled Subscriber)

```
user@host> show subscribers detail
Type: PPPoE
User Name: user1@example.com
Logical System: default
Routing Instance: default
Interface: pp0.1
State: Active, Tunneled
Radius Accounting ID: 512
```

show subscribers detail (IPv4 and IPv6 Dual Stack)

```
user@host> show subscribers detail
Type: VLAN
Logical System: default
Routing Instance: default
Interface: demux0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlanProfile
State: Active
Session ID: 1
Stacked VLAN Id: 0x8100.1001
VLAN Id: 0x8100.1
Login Time: 2011-11-30 00:18:04 PST
```

```
Type: PPPoE
User Name: dualstackuser1@ISP1.com
IP Address: 61.1.1.1
IPv6 Prefix: 2041:1:1::/48
IPv6 User Prefix: 2061:1:1:1::/64
Logical System: default
Routing Instance: ASP-1
Interface: pp0.1073741825
Interface type: Dynamic
Dynamic Profile Name: dualStack-Profile1
MAC Address: 00:00:64:03:01:02
State: Active
Radius Accounting ID: 2
Session ID: 2
Login Time: 2011-11-30 00:18:05 PST
```

```
Type: DHCP
IPv6 Prefix: 2041:1:1::/48
Logical System: default
Routing Instance: ASP-1
Interface: pp0.1073741825
Interface type: Static
```

```

MAC Address: 00:00:64:03:01:02
State: Active
Radius Accounting ID: jnpr :3
Session ID: 3
Underlying Session ID: 2
Login Time: 2011-11-30 00:18:35 PST
DHCP Options: len 42
00 08 00 02 0b b8 00 01 00 0a 00 03 00 01 00 00 64 03 01 02
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00 00 00
00 00

```

show subscribers detail (ACI Interface Set Session)

```

user@host> show subscribers detail
Type: VLAN
Logical System: default
Routing Instance: default
Interface: ge-1/0/0
Interface Set: aci-1001-ge-1/0/0.2800
Interface Set Session ID: 0
Underlying Interface: ge-1/0/0.2800
Dynamic Profile Name: aci-vlan-set-profile-2
Dynamic Profile Version: 1
State: Active
Session ID: 1
Agent Circuit ID: aci-ppp-dhcp-20
Login Time: 2012-05-26 01:54:08 PDT

```

show subscribers detail (PPPoE Subscriber Session with ACI Interface Set)

```

user@host> show subscribers detail
Type: PPPoE
User Name: ppphint2
IP Address: 10.10.1.5
Logical System: default
Routing Instance: default
Interface: pp0.1073741825
Interface type: Dynamic
Interface Set: aci-1001-demux0.1073741824
Interface Set Type: Dynamic
Interface Set Session ID: 2
Underlying Interface: demux0.1073741824
Dynamic Profile Name: aci-vlan-pppoe-profile
Dynamic Profile Version: 1
MAC Address: 00:00:64:39:01:02
State: Active
Radius Accounting ID: 3
Session ID: 3
Agent Circuit ID: aci-ppp-dhcp-dvlan-50
Login Time: 2012-03-07 13:46:53 PST

```

show subscribers extensive

```

user@host> show subscribers extensive
Type: DHCP
User Name: pd-user1
IPv6 Prefix: 2002:db2:ffff:1::/64
Logical System: default
Routing Instance: default
Interface: ge-3/1/3.2
Interface type: Static

```

```
MAC Address: 00:51:ff:ff:00:03
State: Active
Radius Accounting ID: 1
Session ID: 1
Login Time: 2011-08-25 12:12:26 PDT
DHCP Options: len 42
00 08 00 02 00 00 00 01 00 0a 00 03 00 01 00 51 ff ff 00 03
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00 00
00 00
IPv6 Address Pool: pd_pool
IPv6 Network Prefix Length: 48
```

show subscribers extensive (RPF Check Fail Filter)

```
user@host> show subscribers extensive
...
Type: VLAN
Logical System: default
Routing Instance: default
Interface: ae0.1073741824
Interface type: Dynamic
Dynamic Profile Name: vlan-prof
State: Active
Session ID: 9
VLAN Id: 100
Login Time: 2011-08-26 08:17:00 PDT
IPv4 rpf-check Fail Filter Name: rpf-allow-dhcp
IPv6 rpf-check Fail Filter Name: rpf-allow-dhcpv6
...
```

show subscribers extensive (L2TP LNS Subscribers on MX Series Routers)

```
user@host> show subscribers extensive
Type: L2TP
User Name: user1@jnpr.net
IP Address: 10.1.32.58
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: si-5/2/0.1073749824
Interface type: Dynamic
Dynamic Profile Name: dyn-lns-profile2
Dynamic Profile Version: 1
State: Active
Radius Accounting ID: 8001
Session ID: 8001
Login Time: 2011-04-25 20:27:50 IST
IPv4 Input Filter Name: classify-si-5/2/0.1073749824-in
IPv4 Output Filter Name: classify-si-5/2/0.1073749824-out
```

show subscribers extensive (IPv4 and IPv6 Dual Stack)

```
user@host> show subscribers extensive
Type: VLAN
Logical System: default
Routing Instance: default
Interface: demux0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlanProfile
State: Active
Session ID: 1
Stacked VLAN Id: 0x8100.1001
```

```

VLAN Id: 0x8100.1
Login Time: 2011-11-30 00:18:04 PST

Type: PPPoE
User Name: dualstackuser1@ISP1.com
IP Address: 61.1.1.1
IPv6 Prefix: 2041:1:1::/48
IPv6 User Prefix: 2061:1:1:1::/64
Logical System: default
Routing Instance: ASP-1
Interface: pp0.1073741825
Interface type: Dynamic
Dynamic Profile Name: dualStack-Profile1
MAC Address: 00:00:64:03:01:02
State: Active
Radius Accounting ID: 2
Session ID: 2
Login Time: 2011-11-30 00:18:05 PST
IPv6 Delegated Network Prefix Length: 48
IPv6 Interface Address: 2061:1:1:1::1/64
IPv6 Framed Interface Id: 1:1:2:2
IPv4 Input Filter Name: FILTER-IN-pp0.1073741825-in
IPv4 Output Filter Name: FILTER-OUT-pp0.1073741825-out
IPv6 Input Filter Name: FILTER-IN6-pp0.1073741825-in
IPv6 Output Filter Name: FILTER-OUT6-pp0.1073741825-out

Type: DHCP
IPv6 Prefix: 2041:1:1::/48
Logical System: default
Routing Instance: ASP-1
Interface: pp0.1073741825
Interface type: Static
MAC Address: 00:00:64:03:01:02
State: Active
Radius Accounting ID: jnpr :3
Session ID: 3
Underlying Session ID: 2
Login Time: 2011-11-30 00:18:35 PST
DHCP Options: len 42
00 08 00 02 0b b8 00 01 00 0a 00 03 00 01 00 00 64 03 01 02
00 06 00 02 00 19 00 19 00 0c 00 00 00 00 00 00 00 00 00 00
00 00
IPv6 Delegated Network Prefix Length: 48

```

show subscribers extensive (Effective Shaping-Rate)

```

user@host> show subscribers extensive
Type: VLAN
Logical System: default
Routing Instance: default
Interface: demux0.1073741837
Interface type: Dynamic
Interface Set: ifset-1
Underlying Interface: ae1
Dynamic Profile Name: svlan-dhcp-test
State: Active
Session ID: 1
Stacked VLAN Id: 0x8100.201
VLAN Id: 0x8100.201
Login Time: 2011-11-30 00:18:04 PST

```

Effective shaping-rate: 31000000k

...

show subscribers aci-interface-set-name detail (Subscriber Sessions Using Specified ACI Interface Set)

```
user@host> show subscribers aci-interface-set-name aci-1003-ge-1/0/0.4001 detail
```

Type: VLAN
Logical System: default
Routing Instance: default
Interface: ge-1/0/0.
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-set-profile
Dynamic Profile Version: 1
State: Active
Session ID: 13
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:56 PDT

Type: PPPoE
User Name: ppphint2
IP Address: 10.10.1.7
Logical System: default
Routing Instance: default
Interface: pp0.1073741834
Interface type: Dynamic
Interface Set: aci-1003-ge-1/0/0.4001
Interface Set Type: Dynamic
Interface Set Session ID: 13
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-pppoe-profile
Dynamic Profile Version: 1
MAC Address: 00:00:65:26:01:02
State: Active
Radius Accounting ID: 14
Session ID: 14
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:57 PDT

show subscribers agent-circuit-identifier detail (Subscriber Sessions Using Specified ACI Substring)

```
user@host> show subscribers agent-circuit-identifier aci-ppp-vlan detail
```

Type: VLAN
Logical System: default
Routing Instance: default
Interface: ge-1/0/0.
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-set-profile
Dynamic Profile Version: 1
State: Active
Session ID: 13
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:56 PDT

Type: PPPoE
User Name: ppphint2
IP Address: 10.10.1.7
Logical System: default
Routing Instance: default
Interface: pp0.1073741834
Interface type: Dynamic
Interface Set: aci-1003-ge-1/0/0.4001

```

Interface Set Type: Dynamic
Interface Set Session ID: 13
Underlying Interface: ge-1/0/0.4001
Dynamic Profile Name: aci-vlan-pppoe-profile
Dynamic Profile Version: 1
MAC Address: 00:00:65:26:01:02
State: Active
Radius Accounting ID: 14
Session ID: 14
Agent Circuit ID: aci-ppp-vlan-10
Login Time: 2012-03-12 10:41:57 PDT

```

show subscribers interface extensive

```

user@host> show subscribers interface demux0.1073741826 extensive
Type: VLAN
User Name: test1@test.com
Logical System: default
Routing Instance: testnet
Interface: demux0.1073741826
Interface type: Dynamic
Dynamic Profile Name: profile-vdemux-relay-23qos
MAC Address: 00:00:6e:56:01:04
State: Active
Radius Accounting ID: 12
Session ID: 12
Stacked VLAN Id: 0x8100.1500
VLAN Id: 0x8100.2902
Login Time: 2011-10-20 16:21:59 EST

Type: DHCP
User Name: test1@test.com
IP Address: 172.16.200.6
IP Netmask: 255.255.255.0
Logical System: default
Routing Instance: testnet
Interface: demux0.1073741826
Interface type: Static
MAC Address: 00:00:6e:56:01:04
State: Active
Radius Accounting ID: 21
Session ID: 21
Login Time: 2011-10-20 16:24:33 EST
Service Sessions: 2

Service Session ID: 25
Service Session Name: SUB-QOS
State: Active

Service Session ID: 26
Service Session Name: service-cb-content
State: Active
IPv4 Input Filter Name: content-cb-in-demux0.1073741826-in
IPv4 Output Filter Name: content-cb-out-demux0.1073741826-out

```

show subscribers logical-system terse

```

user@host> show subscribers logical-system test1 terse

```

Interface	IP Address/VLAN ID	User Name	LS:RI
demux0.1073741825	101.0.0.3	RETAILER1-CLIENT	test1:retailer1
demux0.1073741826	102.0.0.3	RETAILER2-CLIENT	test1:retailer2

show subscribers physical-interface count

```
user@host> show subscribers physical-interface ge-1/0/0 count
Total subscribers: 3998, Active Subscribers: 3998
```

show subscribers routing-instance inst1 count

```
user@host> show subscribers routing-instance inst1 count
Total Subscribers: 188, Active Subscribers: 183
```

show subscribers stacked-vlan-id detail

```
user@host> show subscribers stacked-vlan-id 101 detail
Type: VLAN
Interface: ge-1/2/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlan-prof
State: Active
Stacked VLAN Id: 0x8100.101
VLAN Id: 0x8100.100
Login Time: 2009-03-27 11:57:19 PDT
```

show subscribers stacked-vlan-id vlan-id detail (Combined Output)

```
user@host> show subscribers stacked-vlan-id 101 vlan-id 100 detail
Type: VLAN
Interface: ge-1/2/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlan-prof
State: Active
Stacked VLAN Id: 0x8100.101
VLAN Id: 0x8100.100
Login Time: 2009-03-27 11:57:19 PDT
```

show subscribers stacked-vlan-id vlan-id interface detail (Combined Output for a Specific Interface)

```
user@host> show subscribers stacked-vlan-id 101 vlan-id 100 interface ge-1/2/0.* detail
Type: VLAN
Interface: ge-1/2/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: svlan-prof
State: Active
Stacked VLAN Id: 0x8100.101
VLAN Id: 0x8100.100
Login Time: 2009-03-27 11:57:19 PDT
```

show subscribers user-name detail

```
user@host> show subscribers user-name larry1 detail
Type: DHCP
User Name: larry1
IP Address: 100.0.0.37
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: ge-1/0/0.1
Interface type: Static
Dynamic Profile Name: foo
```

```

MAC Address: 00:10:94:00:00:01
State: Active
Radius Accounting ID: 1
Session ID: 1
Login Time: 2011-11-07 08:25:59 PST
DHCP Options: len 52
35 01 01 39 02 02 40 3d 07 01 00 10 94 00 00 01 33 04 00 00
00 3c 0c 15 63 6c 69 65 6e 74 5f 50 6f 72 74 20 2f 2f 32 2f
37 2d 30 2d 30 37 05 01 06 0f 21 2c

```

show subscribers vlan-id

```

user@host> show subscribers vlan-id 100
Interface          IP Address          User Name
ge-1/0/0.1073741824
ge-1/2/0.1073741825

```

show subscribers vlan-id detail

```

user@host> show subscribers vlan-id 100 detail
Type: VLAN
Interface: ge-1/0/0.1073741824
Interface type: Dynamic
Dynamic Profile Name: vlan-prof-tpid
State: Active
VLAN Id: 100
Login Time: 2009-03-11 06:48:54 PDT

Type: VLAN
Interface: ge-1/2/0.1073741825
Interface type: Dynamic
Dynamic Profile Name: vlan-prof-tpid
State: Active
VLAN Id: 100
Login Time: 2009-03-11 06:48:54 PDT

```

show subscribers vpi vci extensive (PPPoE-over-ATM Subscriber Session)

```

user@host> show subscribers vpi 40 vci 50 extensive
Type: PPPoE
User Name: testuser
IP Address: 100.0.0.2
IP Netmask: 255.255.0.0
Logical System: default
Routing Instance: default
Interface: pp0.0
Interface type: Static
MAC Address: 00:00:65:23:01:02
State: Active
Radius Accounting ID: 2
Session ID: 2
ATM VPI: 40
ATM VCI: 50
Login Time: 2012-12-03 07:49:26 PST
IP Address Pool: pool_1
IPv6 Framed Interface Id: 200:65ff:fe23:102

```

show subscribers summary

Syntax `show subscribers summary`
 `< detail | extensive | terse >`
 `< count >`
 `physical-interface` *physical-interface-name*
 `< all | logical-system` *logical-system* `pic | port | routing-instance` *routing-instance* `| slot >`

Release Information Command introduced in Junos OS Release 10.2.

Description Display summary information for subscribers.

Options **detail | extensive | terse**—(Optional) Display the specified level of output.

count—(Optional) Display the count of total subscribers and active subscribers for any specified option.

logical-system—(Optional) Display subscribers whose logical system matches the specified logical system.

physical-interface-name—(M120, M320, and MX Series routers only) (Optional) Display a count of subscribers whose physical interface matches the specified physical interface, by subscriber state, client type and LS:RI.

pic—(M120, M320, and MX Series routers only) (Optional) Display a count of subscribers by PIC number and the total number of subscribers.

port—(M120, M320, and MX Series routers only) (Optional) Display a count of subscribers by port number and the total number of subscribers.

routing-instance—(Optional) Display subscribers whose routing instance matches the specified routing instance.

slot—(M120, M320, and MX Series routers only) (Optional) Display a count of subscribers by FPC slot number and the total number of subscribers.



.....

NOTE: Due to display limitations, logical system and routing instance output values are truncated when necessary.

.....

Required Privilege Level view

Related Documentation • [show subscribers on page 20](#)

List of Sample Output [show subscribers summary on page 40](#)
 [show subscribers summary all on page 40](#)
 [show subscribers summary physical-interface on page 40](#)
 [show subscribers summary physical-interface pic on page 41](#)

[show subscribers summary physical-interface port on page 41](#)
[show subscribers summary physical-interface slot on page 41](#)
[show subscribers summary pic on page 41](#)
[show subscribers summary pic \(Aggregated Ethernet Interfaces\) on page 42](#)
[show subscribers summary port on page 42](#)
[show subscribers summary slot on page 42](#)
[show subscribers summary terse on page 42](#)

Output Fields Table 4 on page 39 lists the output fields for the **show subscribers** command. Output fields are listed in the approximate order in which they appear.

Table 4: show subscribers Output Fields

Field Name	Field Description
Subscribers by State	<p>Number of subscribers summarized by state. The summary information includes the following:</p> <ul style="list-style-type: none"> • Init—Number of subscriber currently in the initialization state. • Configured—Number of configured subscribers. • Active—Number of active subscribers. • Terminating—Number of subscribers currently terminating. • Terminated—Number of terminated subscribers. • Total—Total number of subscribers for all states.
Subscribers by Client Type	<p>Number of subscribers summarized by client type. Client types can include DHCP, L2TP, PPP, PPPOE, STATIC-INTERFACE, and VLAN. Also displays the total number of subscribers for all client types (Total).</p>
Subscribers by LS:RI	<p>Number of subscribers summarized by logical system:routing instance (LS:RI) combination. Also displays the total number of subscribers for all LS:RI combinations (Total).</p>
Interface	<p>Interface associated with the subscriber. The router or switch displays subscribers whose interface matches or begins with the specified interface.</p> <p>The * character indicates a continuation of addresses for the same session.</p> <p>For aggregated Ethernet interfaces, the output of the summary (pic port slot) options prefixes the interface name with ae0:.</p>
Count	<p>Count of subscribers displayed for each PIC, port, or slot when those options are specified with the summary option. For an aggregated Ethernet configuration, the total subscriber count does not equal the sum of the individual PIC, port, or slot counts, because each subscriber can be in more than one aggregated Ethernet link.</p>
Total Subscribers	<p>Total number of subscribers for all physical interfaces, all PICS, all ports, or all LS:RI slots.</p>
IP Address/VLAN ID	<p>Subscriber IP address or VLAN ID associated with the subscriber in the form <i>tpid.vlan-id</i></p>
User Name	<p>Name of subscriber.</p>
LS:RI	<p>Logical system and routing instance associated with the subscriber.</p>

Sample Output

show subscribers summary

```
user@host> show subscribers summary
```

Subscribers by State

Init	3
Configured	2
Active	183
Terminating	2
Terminated	1

TOTAL	191
-------	-----

Subscribers by Client Type

DHCP	107
PPP	76
VLAN	8

TOTAL	191
-------	-----

show subscribers summary all

```
user@host> show subscribers summary all
```

Subscribers by State

Init	3
Configured	2
Active	183
Terminating	2
Terminated	1

TOTAL	191
-------	-----

Subscribers by Client Type

DHCP	107
PPP	76
VLAN	8

TOTAL	191
-------	-----

Subscribers by LS:RI

default:default	1
default:ri1	28
default:ri2	16
ls1:default	22
ls1:riA	38
ls1:riB	44
logsysX:routinstY	42

TOTAL	191
-------	-----

show subscribers summary physical-interface

```
user@host> show subscribers summary physical-interface ge-1/0/0
```

Subscribers by State

Active:	3998
Total:	3998

Subscribers by Client Type

DHCP:	3998
-------	------

Total: 3998

Subscribers by LS:RI
 default:default: 3998
 Total: 3998

show subscribers summary physical-interface pic

```
user@host> show subscribers summary physical-interface ge-0/2/0 pic
Subscribers by State
  Active: 4825
  Total: 4825
```

Subscribers by Client Type
 DHCP: 4825
 Total: 4825

Subscribers by LS:RI
 default:default: 4825
 Total: 4825

show subscribers summary physical-interface port

```
user@host> show subscribers summary physical-interface ge-0/3/0 port
Subscribers by State
  Active: 4825
  Total: 4825
```

Subscribers by Client Type
 DHCP: 4825
 Total: 4825

Subscribers by LS:RI
 default:default: 4825
 Total: 4825

show subscribers summary physical-interface slot

```
user@host> show subscribers summary physical-interface ge-2/0/0 slot
Subscribers by State
  Active: 4825
  Total: 4825
```

Subscribers by Client Type
 DHCP: 4825
 Total: 4825

Subscribers by LS:RI
 default:default: 4825
 Total: 4825

show subscribers summary pic

```
user@host> show subscribers summary pic
Interface      Count
ge-1/0         1000
ge-1/3         1000

Total Subscribers: 2000
```

show subscribers summary pic (Aggregated Ethernet Interfaces)

```
user@host> show subscribers summary pic
Interface          Count
ae0: ge-1/0        801
ae0: ge-1/3        801

Total Subscribers: 801
```

show subscribers summary port

```
user@host> show subscribers summary port
Interface          Count
ge-1               2000

Total Subscribers: 2000
```

show subscribers summary slot

```
user@host> show subscribers summary slot
Interface          Count
ge-1               2000

Total Subscribers: 2000
```

show subscribers summary terse

```
user@host> show subscribers summary terse
Interface          IP Address/VLAN ID  User Name          LS:RI
ge-1/3/0.1073741824 100                WHOLESALE-CLIENT  default:default
demux0.1073741824   100.0.0.10         RETAILER1-CLIENT  test1:retailer1
demux0.1073741825   101.0.0.3          RETAILER2-CLIENT  test1:retailer2
demux0.1073741826   102.0.0.3          RETAILER2-CLIENT  test1:retailer2
```

PART 4

Troubleshooting

- [Acquiring Troubleshooting Information on page 45](#)

CHAPTER 7

Acquiring Troubleshooting Information

- [Collecting Subscriber Access Logs Before Contacting Juniper Technical Support on page 45](#)

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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