JUNIPER NETWORKS

Flow Collection

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Supported Platforms

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

- M Series
- T 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.xsl;
       }
     }
   }
   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.xsl; }
   ```

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
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`
Italic text like this	• Introduces or emphasizes important new terms. • Identifies guide names. • Identifies RFC and Internet draft titles.	• A policy *term* is a named structure that defines match conditions and actions. • *Junos OS CLI User Guide* • RFC 1997, *BGP Communities Attribute*

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

Convention	Description	Examples
Italic text like this	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** *domain-name*
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	• 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** ***metric*****>;**
| (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** **(*string1* | *string2* | *string3*)**
# (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 [** ***community-ids*** **]**

Indention and braces ({ })	Identify a level in the configuration hierarchy.	[edit]
		routing-options {
		  static {
		  route default {
		  nexthop *address*;
		  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.	• 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**.

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

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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

CHAPTER 1

Flow Collection

Flow Collection Overview

You can process and export multiple cflowd records with a flow collector interface. You create a flow collector interface on a Monitoring Services II or Multiservices 400 PIC. The flow collector interface combines multiple cflowd records into a compressed ASCII data file and exports the file to an FTP server. To convert a services PIC into a flow collector interface, include the **flow-collector** statement at the **[edit chassis fpc *fpc-slot* pic *pic-slot* monitoring-services application]** hierarchy level.

You can use the services PIC for either flow collection or monitoring, but not for both types of service simultaneously. When converting the PIC between service types, you must configure the **flow-collector** statement, take the PIC offline, and then bring the PIC back online. Restarting the router does not enable the new service type.

A flow collector interface, designated by the **cp-*fpc/pic/port*** interface name, requires three logical interfaces for correct operation. Units 0 and 1 are used to send the compressed ASCII data files to an FTP server, while Unit 2 is used to receive cflowd records from a monitoring services interface.

NOTE: Unlike conventional interfaces, the **address** statement at the **[edit interfaces cp-*fpc/pic/port* unit *unit-number* family inet]** hierarchy level corresponds to the IP address of the Routing Engine. Likewise, the **destination** statement at the **[edit interfaces cp-*fpc/pic/port* unit *unit-number* family inet address *ip-address*]** hierarchy level corresponds to the IP address of the flow collector interface. As a result, you must configure the **destination** statement for Unit 0 and 1 with *local* addresses that can reach the FTP server. Similarly, configure the **destination** statement for Unit 2 with a *local* IP address so it can reach the monitoring services interface that sends cflowd records.

To activate flow collector services after the services PIC is converted into a flow collector, include the **flow-collector** statement at the **[edit services]** hierarchy level.

After you activate the flow collector, you need to configure the following components:

- Destination of the FTP server
- File specifications
- Input interface-to-flow collector interface mappings
- Transfer log settings

Related Documentation

- Configuring Flow Collection on page 71
- Sending cflowd Records to Flow Collector Interfaces on page 10
- Configuring Flow Collection Mode and Interfaces on Services PICs on page 11

PART 2

Configuration

CHAPTER 2

Configuration Tasks

Configuring Flow Collection

This section describes the following tasks for configuring flow collection:

Configuring Destination FTP Servers for Flow Records

Flow collection destinations are where the compressed ASCII data files are sent after the cflowd records are collected and processed. To specify the destination FTP server, include the **destinations** statement at the **[edit services flow-collector]** hierarchy level. You can specify up to two FTP server destinations and include the password for each configured server. If two FTP servers are configured, the first server in the configuration is the primary server and the second is a backup server.

To configure a destination for flow collection files, include the **destinations** statement at the **[edit services flow-collector]** hierarchy level:

```
[edit services flow-collector]
destinations {
   ftp:url {
      password "password";
   }
}
```

To specify the destination FTP server, include the **ftp:*url*** statement. The value ***url*** is the FTP server address for the primary flow collection destination and can include macros.

When you include macros in the **ftp:*url*** statement, a directory can be created only for a single level. For example, the path **ftp://10.2.2.2/%m/%Y** expands to **ftp://10.2.2.2/01/2005**, and the software attempts to create the directory **01/2005** on the destination FTP server. If the **01/** directory already exists on the destination FTP server, the software creates the **/2005/ directory** one level down. If the **01/** directory does not exist on the destination FTP server, the software cannot create the **/2005/ directory**, and the FTP server destination will fail. For more information about macros, see ftp.

To specify the FTP server password, include the **password "*password*"** statement. The password must be enclosed in quotation marks. You can specify up to two destination FTP servers. The first destination specified is considered the primary destination.

Configuring a Packet Analyzer

You can specify values for the IP address and identifier of a packet analyzer to which the flow collector interface sends traffic for analysis. The values you specify here override any default values configured elsewhere.

To configure an IP address and identifier for the packet analyzer, include the **analyzer-address** and **analyzer-id** statements at the **[edit services flow-collector]** hierarchy level:

```
[edit services flow-collector]
analyzer-address address;
analyzer-id name;
```

Configuring File Formats

You configure data file formats, name formats, and transfer characteristics for the flow collection files. File records are sent to the destination FTP server when the timer expires or when a preset number of records are received, whichever comes first.

To configure the flow collection file format, include the **file-specification** statement at the **[edit services flow-collector]** hierarchy level:

```
[edit services flow-collector]
file-specification {
  variant variant-number {
    data-format format;
    name-format format;
    transfer {
      record-level number;
      timeout seconds;
    }
  }
}
```

To set the data file format, include the **data-format** statement. To set the file name format, include the **name-format** statement. To set the export timer and file size thresholds, include the **transfer** statement and specify values for the **timeout** and **record-level** options.

For example, you can specify the name format as follows:

```
[edit services flow-collector file-specification variant variant-number]
name-format "cFlowd-py69Ni69-0-%D_%T-%I_%N.bcp.bi.gz";
```

In this example, **cFlowd-py69Ni69-0** is the static portion used verbatim, **%D** is the date in YYYYMMDD format, **%T** is the time in HHMMSS format, **%I** is the value of **ifAlias**, **%N** is the generation number, and **bcp.bi.gz** is a user-configured string. A number of macros are supported for expressing the date and time information in different ways; for a complete list, see the summary section for name-format.

Configuring Interface Mappings

You can match an input interface with a flow collector interface and apply the preset file specifications to the input interface.

To configure an interface mapping, include the **interface-map** statement at the **[edit services flow-collector]** hierarchy level:

```
[edit services flow-collector]
interface-map {
    collector interface-name;
    file-specification variant-number;
    interface-name {
        collector interface-name;
        file-specification variant-number;
    }
}
```

To configure the default flow collector and file specifications for all input interfaces, include the **file-specification** and **collector** statements at the **[edit services flow-collector interface-map]** hierarchy level. To override the default settings and apply flow collector and file specifications to a specific input interface, include the **file-specification** and **collector** statements at the **[edit services flow-collector interface-map *interface-name*]** hierarchy level.

Configuring Transfer Logs

You can configure the filename, export interval, maximum size, and destination FTP server for log files containing the transfer activity history for a flow collector interface.

To configure a transfer log, include the **transfer-log-archive** statement at the **[edit services flow-collector]** hierarchy level:

```
[edit services flow-collector]
transfer-log-archive {
    archive-sites {
        ftp:url {
            password "password";
            username username;
        }
    }
    filename-prefix prefix;
    maximum-age minutes;
}
```

To configure the destination for archiving files, include the **archive-sites** statement. Specify the filename as follows:

```
[edit services flow-collector transfer-log]
filename "cFlowd-py69Ni69-0-%D_%T";
```

where **cFlowd-py69Ni69-0** is the static portion used verbatim, **%D** is the date in YYYYMMDD format, and **%T** is the time in HHMMSS format.

You can optionally include the following statements:

- **filename-prefix**—Sets a standard prefix for all the logged files.
- **maximum-age**—Specifies the duration a file remains on the server. The range is 1 through 360 minutes.

Configuring Retry Attempts

You can specify values for situations in which the flow collector interface needs more than one attempt to transfer log files to the FTP server:

- Maximum number of retry attempts
- Amount of time the flow collector interface waits between successive retries

To configure retry settings, include the **retry** and **retry-delay** statements at the **[edit services flow-collector]** hierarchy level:

```
retry number;
retry-delay seconds;
```

The **retry** value can be from 0 through 10. The **retry-delay** value can be from 0 through 60 seconds.

Related Documentation

- Flow Collection Overview on page 3
- Sending cflowd Records to Flow Collector Interfaces on page 10
- Configuring Flow Collection Mode and Interfaces on Services PICs on page 11
- Example: Configuring Flow Collection on page 13

Sending cflowd Records to Flow Collector Interfaces

To specify a flow collector interface as the destination for cflowd records coming from a services PIC, include the **collector-pic** statement at the **[edit forwarding-options monitoring *group-name* family inet output flow-export-destination]** hierarchy level:

```
[edit forwarding-options monitoring group-name family inet output flow-export-destination]
collector-pic;
```

You can select either the flow collector interface or a cflowd server as the destination for cflowd records, but not both at the same time.

Related Documentation

- Flow Collection Overview on page 3
- Configuring Flow Collection on page 7
- Configuring Flow Collection Mode and Interfaces on Services PICs on page 11
- Example: Configuring Flow Collection on page 13

Configuring Flow Collection Mode and Interfaces on Services PICs

You can select the services PIC to run in either flow collection mode or monitoring mode, but not both.

To set the services PIC to run in flow collection mode, include the **flow-collector** statement at the **[edit chassis fpc *slot-number* pic *pic-number* monitoring-services application]** hierarchy level:

```
[edit chassis fpc slot-number pic pic-number monitoring-services application]
flow-collector;
```

For further information on configuring chassis properties, see the *Junos OS Administration Library for Routing Devices*.

To specify flow collection interfaces, you configure the **cp** interface at the **[edit interfaces]** hierarchy level:

```
[edit interfaces]
cp-fpc/pic/port {
   ...
}
```

Related Documentation

- Flow Collection Overview on page 3
- Configuring Flow Collection on page 7
- Sending cflowd Records to Flow Collector Interfaces on page 10
- Example: Configuring Flow Collection on page 13

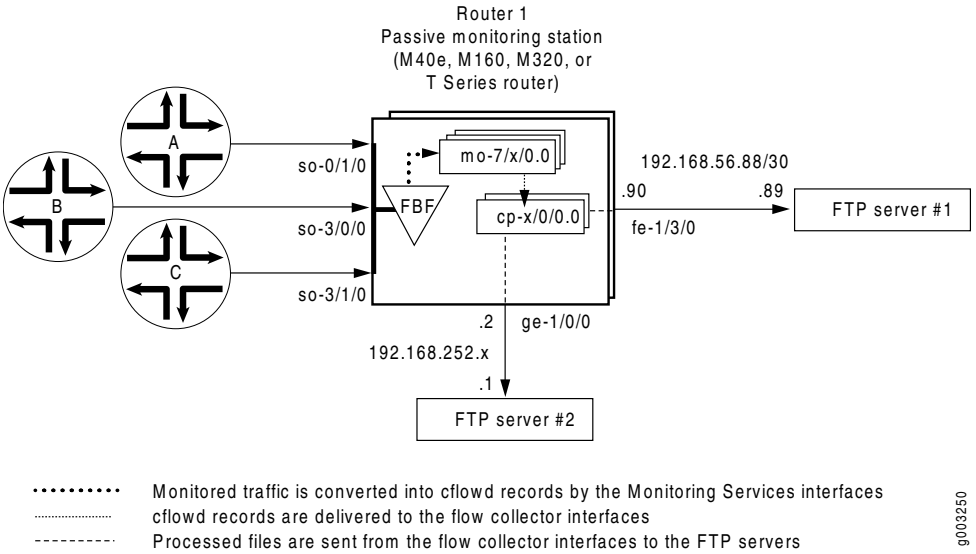
CHAPTER 3

Example

Example: Configuring Flow Collection

Figure 1 on page 13 shows the path traveled by monitored traffic as it passes through the router. Packets arrive at input interfaces **so-0/1/0**, **so-3/0/0**, and **so-3/1/0**. The raw packets are directed into a filter-based forwarding routing instance and processed into cflowd records by the monitoring services interfaces **mo-7/1/0**, **mo-7/2/0**, and **mo-7/3/0**. The cflowd records are compressed into files at the flow collector interfaces **cp-6/0/0** and **cp-7/0/0** and sent to the FTP server for analysis. Finally, a mandatory class-of-service (CoS) configuration is applied to export channels 0 and 1 on the flow collector interfaces to manage the outgoing processed files.

Figure 1: Flow Collector Interface Topology Diagram




```
[edit]
chassis {
  fpc 6 {
    pic 0 {
      monitoring-services {
        application flow-collector; # This converts a Monitoring Services II or
```

```
                    # Multiservices 400 PIC into a flow collector interface.
        }
      }
    }
    fpc 7 {
      pic 0 {
        monitoring-services {
          application flow-collector; # This converts a Monitoring Services II or
                    # Multiservices 400 PIC into a flow collector interface.
        }
      }
    }
}
interfaces {
    cp-6/0/0 {
      unit 0 { # Logical interface .0 on a flow collector interface is export
        family inet { # channel 0 and sends records to the FTP server.
          filter {
            output cp-ftp; # Apply the CoS filter here.
          }
          address 10.0.0.1/32 {
            destination 10.0.0.2;
          }
        }
      }
      unit 1 { # Logical interface .1 on a flow collector interface is export
        family inet {# channel 1 and sends records to the FTP server.
          filter {
            output cp-ftp; # Apply the CoS filter here.
          }
          address 10.1.1.1/32 {
            destination 10.1.1.2;
          }
        }
      }
      unit 2 { # Logical interface .2 on a flow collector interface is the flow
        family inet { # receive channel that communicates with the Routing Engine.
          address 10.2.2.1/32 { # Do not apply a CoS filter on logical interface .2.
            destination 10.2.2.2;
          }
        }
      }
    }
    cp-7/0/0 {
      unit 0 {# Logical interface .0 on a flow collector interface is export
        family inet {# channel 0 and sends records to the FTP server.
          filter {
            output cp-ftp;# Apply the CoS filter here.
          }
          address 10.3.3.1/32 {
            destination 10.3.3.2;
          }
        }
      }
      unit 1 {# Logical interface .1 on a flow collector interface is export
        family inet {# channel 1 and sends records to the FTP server.
```

```
        filter {
          output cp-ftp;# Apply the CoS filter here.
        }
        address 10.4.4.1/32 {
          destination 10.4.4.2;
        }
      }
    }
    unit 2 {# Logical interface .2 on a flow collector interface is the flow
      family inet {# receive channel that communicates with the Routing Engine.
        address 10.5.5.1/32 {# Do not apply a CoS filter on logical interface .2.
          destination 10.5.5.2;
        }
      }
    }
}
fe-1/3/0 { # This is the exit interface leading to the first FTP server.
    unit 0 {
      family inet {
        address 192.168.56.90/30;
      }
    }
}
ge-1/0/0 { # This is the exit interface leading to the second FTP server.
    unit 0 {
      family inet {
        address 192.168.252.2/24;
      }
    }
}
mo-7/1/0 { # This is the first interface that creates cflowd records.
    unit 0 {
      family inet;
    }
}
mo-7/2/0 { # This is the second interface that creates cflowd records.
    unit 0 {
      family inet;
    }
}
mo-7/3/0 { # This is the third interface that creates cflowd records.
    unit 0 {
      family inet;
    }
}
so-0/1/0 { # This is the first input interface that receives traffic to be monitored.
    encapsulation ppp;
    unit 0 {
      passive-monitor-mode; # This allows the interface to be passively monitored.
      family inet {
          filter {
            input catch; # The filter-based forwarding filter is applied here.
          }
      }
    }
}
```

```
    so-3/0/0 { # This is the second interface that receives traffic to be monitored.
      encapsulation ppp;
      unit 0 {
        passive-monitor-mode; # This allows the interface to be passively monitored.
        family inet {
            filter {
              input catch; # The filter-based forwarding filter is applied here.
            }
        }
      }
    }
  so-3/1/0 { # This is the third interface that receives traffic to be monitored.
    encapsulation ppp;
    unit 0 {
      passive-monitor-mode; # This allows the interface to be passively monitored.
      family inet {
        filter {
          input catch; # The filter-based forwarding filter is applied here.
        }
      }
    }
  }
  forwarding-options {
    monitoring group1 {# Always define your monitoring group here.
      family inet {
        output {
          export-format cflowd-version-5;
          flow-active-timeout 60;
          flow-inactive-timeout 15;
          flow-export-destination collector-pic;  # Sends records to the flow collector.
          interface mo-7/1/0.0 {
            source-address 192.168.252.2;
          }
          interface mo-7/2/0.0 {
            source-address 192.168.252.2;
          }
          interface mo-7/3/0.0 {
            source-address 192.168.252.2;
          }
        }
      }
  }
  firewall {
    family inet {
      filter cp-ftp { # This filter provides CoS for flow collector interface traffic.
        term t1 {
          then forwarding-class expedited-forwarding;
        }
      }
    }
    filter catch { # This firewall filter sends incoming traffic into the
      interface-specific;# filter-based forwarding routing instance.
        term def {
          then {
            count counter;
            routing-instance fbf_instance;
```

```
            }
          }
        }
      }
routing-options {
    interface-routes {
        rib-group inet common;
    }
    rib-groups {
        common {
            import-rib [inet.0 fbf_instance.inet.0];
        }
    }
    forwarding-table {
        export pplb;
    }
}
policy-options {
    policy-statement pplb {
        then {
            load-balance per-packet;
        }
    }
}
routing-instances {
    fbf_instance { # This instance sends traffic to the monitoring services interface.
        instance-type forwarding;
        routing-options {
            static {
                route 0.0.0.0/0 next-hop mo-7/1/0.0;
            }
        }
    }
}
class-of-service { # A class-of-service configuration for the flow collector interface
    interfaces { # is required for flow collector services.
        cp-6/0/0 {
            scheduler-map cp-map;
        }
        cp-7/0/0 {
            scheduler-map cp-map;
        }
    }
}
scheduler-maps {
    cp-map {
        forwarding-class best-effort scheduler Q0;
        forwarding-class expedited-forwarding scheduler Q1;
        forwarding-class network-control scheduler Q3;
    }
}
schedulers {
    Q0 {
        transmit-rate remainder;
        buffer-size percent 90;
    }
```

```
    Q1 {
      transmit-rate percent 5;
      buffer-size percent 5;
      priority strict-high;
    }
    Q3 {
      transmit-rate percent 5;
      buffer-size percent 5;
    }
  }
  services {
    flow-collector { # Define properties for flow collector interfaces here.
      analyzer-address 10.10.10.1; # This is the IP address of the analyzer.
      analyzer-id server1; # This helps to identify the analyzer.
      retry 3; # Maximum number of attempts by the PIC to send a file transfer log.
      retry-delay 30; # The time interval between attempts to send a file transfer log.
      destinations { # This defines the FTP servers that receive flow collector output.
        "ftp://user@192.168.56.89//tmp/collect1/" { # The primary FTP server.
          password "$9$lXJK8xN-w2oZdbZDHmF30O1"; # SECRET-DATA
        }
        "ftp://user@192.168.252.1//tmp/collect2/" { # The secondary FTP server.
          password "$9$elbvL7-dsgaGVwGjkP3nOBI"; # SECRET-DATA
        }
      }
      file-specification { # Define sets of flow collector characteristics here.
        def-spec {
          name-format "default-allInt-0-%D_%T-%I_%N.bcp.bi.gz";
          data-format flow-compressed; # The default compressed output format.
        } # When no overrides are specified, a collector uses default transfer values.
        f1 {
          name-format "cFlowd-py69Ni69-0-%D_%T-%I_%N.bcp.bi.gz";
          data-format flow-compressed; # The default compressed output format.
          transfer timeout 1800 record-level 1000000; # Here are configured values.
        }
      }
      interface-map { # Allows you to map interfaces to flow collector interfaces.
        file-specification def-spec; # Flows generated for default traffic are sent to the
        collector cp-7/0/0; # default flow collector interface "cp-7/0/0".
        so-0/1/0.0 { # Flows generated for the so-0/1/0 interface are sent
          collector cp-6/0/0; # to cp-6/0/0, and the file-specification used is
        } # "default."
        so-3/0/0.0 { # Flows generated for the so-3/0/0 interface are sent
          file-specification f1; # to cp-6/0/0, and the file-specification used is "f1."
          collector cp-6/0/0;
        }
        so-3/1/0.0; # Because no settings are defined, flows generated for this
      } # interface use interface cp-7/0/0 and the default file specification.
      transfer-log-archive { # Sends flow collector interface log files to an FTP server.
        filename-prefix so_3_0_0_log;
        maximum-age 15;
        archive-sites {
          "ftp://user@192.168.56.89//tmp/transfers/" {
            password "$9$IFaEyevMXNVsWLsgaU.m6/C";
          }
        }
      ]
```

```
    }
}
```

Related Documentation

- Flow Collection Overview on page 3
- Configuring Flow Collection on page 7
- Sending cflowd Records to Flow Collector Interfaces on page 10
- Configuring Flow Collection Mode and Interfaces on Services PICs on page 11

CHAPTER 4

Configuration Statements

[edit services flow-collector] Hierarchy Level

To configure flow collection, include the **flow-collector** statement at the **[edit services]** hierarchy level:

```
flow-collector {
    analyzer-address address;
    analyzer-id name;
    destinations {
        ftp:url {
            password "password";
        }
        file-specification {
            variant variant-number {
                data-format format;
                name-format format;
                transfer {
                    record-level number;
                    timeout seconds;
                }
            }
        }
        interface-map {
            collector interface-name;
            file-specification variant-number;
            interface-name {
                collector interface-name;
                file-specification variant-number;
            }
        }
        retry number;
        retry-delay seconds;
        transfer-log-archive {
            archive-sites {
                ftp:url {
                    password "password";
                    username username;
                }
            }
```

```
            filename-prefix prefix;
            maximum-age minutes;
        }
    }
}
```

Related Documentation

- Configuring Flow Collection on page 7
- Sending cflowd Records to Flow Collector Interfaces on page 10
- Configuring Flow Collection Mode and Interfaces on Services PICs on page 11

analyzer-address

Syntax analyzer-address *address*;

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure an IP address for the packet analyzer that overrides the default value.

Options ***address***—IP address for packet analyzer.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation

- Configuring a Packet Analyzer on page 8

analyzer-id

Syntax analyzer-id *name*;

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure an identifier for the packet analyzer that overrides the default value.

Options ***name***—Identifier for packet analyzer.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation

- Configuring a Packet Analyzer on page 8

archive-sites

Syntax

```
archive-sites {
  ftp:url {
    password "password";
    username username;
  }
}
```

Hierarchy Level [edit services flow-collector transfer-log-archive]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the destination for transfer logs.

Options The statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.

Related Documentation

- Configuring Transfer Logs on page 9

collector

Syntax collector *interface-name*;

Hierarchy Level [edit services flow-collector interface-map]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the default flow collector interface for interface mapping.

Options ***interface-name***—Default flow collector interface.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation

- Configuring Interface Mappings on page 9

data-format

Syntax data-format *format*;

Hierarchy Level [edit services flow-collector file-specification variant *variant-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the data format for a specific file format variant.

Options ***format***—Data format. Specify **flow-compressed** as the data format.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring File Formats on page 8

destinations

Syntax
```
destinations {
  ftp:url {
    password "password";
  }
}
```

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the primary and secondary destination FTP servers.

Options The statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Destination FTP Servers for Flow Records on page 7

filename-prefix

Syntax filename-prefix *prefix*;

Hierarchy Level [edit services flow-collector transfer-log-archive]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the filename prefix for log files.

Options ***prefix***—Filename identifier.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Transfer Logs on page 9

file-specification (File Format)

Syntax

```
file-specification {
  variant variant-number {
    data-format format;
    name-format format;
    transfer {
      record-level number;
      timeout seconds;
    }
  }
}
```

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the file format for the flow collection files.

Options The statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring File Formats on page 8

file-specification (Interface Mapping)

Syntax

```
file-specification {
  variant variant-number;
}
```

Hierarchy Level [edit services flow-collector interface-map]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the default file specification for interface mapping.

Options ***variant-number***—Default file format variant.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

flow-collector

Syntax

```
flow-collector {
  analyzer-address address;
  analyzer-id name;
  destinations {
    ftp:url {
      password "password";
    }
  }
  file-specification {
    variant variant-number {
      data-format format;
      name-format format;
      transfer {
        record-level number;
        timeout seconds;
      }
    }
  }
  interface-map {
    collector interface-name;
    file-specification variant-number;
    interface-name {
      collector interface-name;
      file-specification variant-number;
    }
  }
  retry number;
  retry-delay seconds;
  transfer-log-archive {
    archive-sites {
      ftp:url {
        password "password";
        username username;
      }
    }
    filename-prefix prefix;
    maximum-age minutes;
  }
}
```

Hierarchy Level [edit services]

Release Information Statement introduced before Junos OS Release 7.4.

Description Define the flow collection.

Options The statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation

- *Flow Collection*

ftp (Flow Collector Files)

Syntax ftp:*url*;

Hierarchy Level [edit services flow-collector destination]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the primary and secondary destination FTP server addresses.

Options *url*—FTP server address. The URL can include the following macros, typed in braces:

- **{%D}**—Date
- **{%T)**—Time when the file is created
- **{%I}—**Description string for the logical interface configured using the **collector** ***interface-name*** statement at the **[edit services flow-collector interface-map]** hierarchy
- **{%N}**—Unique, sequential number for each new file created
- **{am_pm}**—**AM** or **PM**
- **{date}**—Current date using the **{year} {month} {day}** macros
- **{day}**—From **01** through **31**
- **{day_abbr}**—**Sun** through **Sat**
- **{day_full}**—**Sunday** through **Saturday**
- **{generation number}**—Unique, sequential number for each new file created
- **{hour_12}**—From **01** through **12**
- **{hour_24}**—From **00** through **23**
- **{ifalias}**—Description string for the logical interface configured using the **collector** statement at the **[edit services flow-collector interface-map]** hierarchy
- **{minute}**—From **00** through **59**
- **{month}**—From **01** through **12**
- **{month_abbr}**—**Jan** through **Dec**
- **{month_full}**—**January** through **December**
- **{num_zone}**—From **-2359** to **+2359**; this macro is not supported
- **{second**}—From **00** through **60**
- **{time}**—Time the file is created, using the **{hour_24} {minute} {second}** macros
- **{time_zone}**—Time zone code name of the locale; for example, **gmt** (this macro is not supported).
- **{year}**—In the format YYYY; for example, **1970**

- **{year_abbr}**—From **00** through **99**

Required Privilege Level
interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Destination FTP Servers for Flow Records on page 7

ftp (Transfer Log Files)

Syntax
ftp:*url*;

Hierarchy Level
[edit services flow-collector transfer-log-archive archive-sites]

Release Information
Statement introduced before Junos OS Release 7.4.

Description
Specify the primary and secondary destination FTP server addresses.

Options
url—FTP server address.

Required Privilege Level
interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Transfer Logs on page 9

interface-map

Syntax
```
interface-map {
  collector interface-name;
  file-specification variant-number;
  interface-name {
    collector interface-name;
    file-specification variant-number;
  }
}
```

Hierarchy Level
[edit services flow-collector]

Release Information
Statement introduced before Junos OS Release 7.4.

Description
Match an input interface with a flow collector interface and apply the preset file specifications to the input interface.

Options
The statements are explained separately.

Required Privilege Level
interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Interface Mappings on page 9

maximum-age

Syntax maximum-age *minutes*;

Hierarchy Level [edit services flow-collector transfer-log-archive]

Release Information Statement introduced before Junos OS Release 7.4.

Description Maximum age of transfer log file.

Options **maximum-age *minutes***—Transfer log file age.
Range: 1 through 360

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Transfer Logs on page 9

name-format

Syntax name-format "*format*";

Hierarchy Level [edit services flow-collector file-specification variant *variant-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the name format for a specific file format. The files may include supported macros. Use macros to organize files on the external machine to which they are exported from the collector PIC.

Options *format*—Specify the filename format, within quotation marks. The name format can include the following macros, typed in braces:

- **{%D}**—Date
- **{%T)**—Time when the file is created
- **{%I}**—Description string for the logical interface configured using the **collector** statement at the **[edit services flow-collector interface-map]** hierarchy level
- **{%N}**—Unique, sequential number for each new file created
- **{am_pm}**—**AM** or **PM**
- **{date}**—Current date using the**{year} {month} {day}** macros
- **{day}**—From**01** through **31**
- **{day_abbr}**—**Sun** through **Sat**
- **{day_full}**—**Sunday** through **Saturday**
- **{generation number}**—Unique, sequential number for each new file created
- **{hour_12}**—From **01** through **12**
- **{hour_24}**—From **00** through **23**
- **{ifalias}**—Description string for the logical interface configured using the **collector** statement at the **[edit services flow-collector interface-map]** hierarchy level
- **{minute}**—From **00** through **59**
- **{month}**—From **01**through **12**
- **{month_abbr}**—**Jan** through **Dec**
- **{month_full}**—**January** through **December**
- **{num_zone}**—From **-2359** through **+2359**; this macro is not supported
- **{second}**—From **00** through **60**
- **{time}**—Time the file is created, using the **{hour_24} {minute} {second}** macros
- **{time_zone}**—Time zone code name of the locale; for example,**gmt** (this macro is not supported).

- **{year}**—In the format YYYY; for example, **1970**
- **{year_abbr}**—From **00** through **99**

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring File Formats on page 8

password (Flow Collector File Servers)

Syntax password "*password*";

Hierarchy Level [edit services flow-collector destination ftp:*url*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the primary and secondary destination FTP server password.

Options ***password***—FTP server password.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Destination FTP Servers for Flow Records on page 7

password (Transfer Log File Servers)

Syntax password "*password*";

Hierarchy Level [edit services flow-collector transfer-log-archive archive-sites]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the primary and secondary destination FTP server password.

Options ***password***—FTP server password.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Transfer Logs on page 9

retry (Services Flow Collector)

Syntax retry *number*;

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the maximum number of attempts the flow collector interface will make to transfer log files to the FTP server.

Options *number*—Maximum number of transfer retry attempts.
Range: 0 through 10

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Retry Attempts on page 10

retry-delay

Syntax retry-delay *seconds*;

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the amount of time the flow collector interface waits between retry attempts.

Options *seconds*—Amount of time between transfer retry attempts.
Range: 0 through 60

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Retry Attempts on page 10

transfer

Syntax

```
transfer {
  record-level number;
  timeout seconds;
}
```

Hierarchy Level [edit services flow-collector file-specification variant *variant-number*]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify when to send the flow collection file. The file is sent when either of the two conditions is met.

Options **record-level *number***—Number of flow collection files collected.

timeout *seconds*—Timeout duration.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation

- Configuring File Formats on page 8

transfer-log-archive

Syntax

```
transfer-log-archive {
  archive-sites {
    ftp:url {
      password "password";
      username username;
    }
  }
  filename-prefix prefix;
  maximum-age minutes;
}
```

Hierarchy Level [edit services flow-collector]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure the filename prefix, maximum age, and destination FTP server for log files containing the transfer activity history for a flow collector interface.

Options The statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation

- Configuring Transfer Logs on page 9

username (Services)

Syntax username *user-name*;

Hierarchy Level [edit services flow-collector transfer-log-archive archive-sites]

Release Information Statement introduced before Junos OS Release 7.4.

Description Specify the username for the transfer log server.

Options ***username***—FTP server username.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring Transfer Logs on page 9

variant

Syntax

```
variant variant-number {
  data-format format;
  name-format format;
  transfer {
    record-level number;
    timeout seconds;
  }
}
```

Hierarchy Level [edit services flow-collector file-specification]

Release Information Statement introduced before Junos OS Release 7.4.

Description Configure a variant of the file format.

Options The statements are explained separately.

Required Privilege Level interface—To view this statement in the configuration.
interface-control—To add this statement to the configuration.

Related Documentation
- Configuring File Formats on page 8

PART 3

Administration

CHAPTER 5

Flow Collection Operational Mode Commands

clear services flow-collector statistics

Syntax clear services flow-collector statistics (all | interface *interface-name*)

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers and T Series routers only) Clear statistics for one flow collector interface or for all flow collector interfaces.

Options **all**—Clear statistics for all configured flow collector interfaces.

interface ***interface-name***—Clear statistics for the specified flow collector interface (**cp-***fpc/pic/port*).

Required Privilege Level network

List of Sample Output clear services flow-collector statistics on page 40

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

clear services flow-collector statistics

```
user@host> clear services flow-collector statistics interface cp-5/0/0
Flow collector interface: cp-5/0/0
Interface state: Collecting flows
Statistics cleared successfully
```

request services flow-collector change-destination primary interface

Syntax request services flow-collector change-destination primary interface cp-*fpc/pic/port*
<clear-files>
<clear-logs>
<immediately | gracefully>

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers and T Series routers only) Switch to the primary File Transfer Protocol (FTP) server that is configured as a flow collector.

Options

none—Switch to the primary FTP server.

cp-*fpc/pic/port*—Specify the flow collector interface name for the primary destination.

clear-files—(Optional) Request clearing of existing data files in the FTP wait queue when the switch takes place.

clear-logs—(Optional) Request clearing of existing logs when the switch takes place.

immediately | gracefully—(Optional) Specify whether you want the switch to take place immediately, or to affect only newly created files.

Required Privilege Level maintenance

List of Sample Output request services flow-collector change-destination primary interface on page 41

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request services flow-collector change-destination primary interface

```
user@host> request services flow-collector change-destination primary interface cp-6/0/0
Flow collector interface: cp-6/0/0
Interface state: Collecting flows
Destination change successful
```

request services flow-collector change-destination secondary interface

Syntax request services flow-collector change-destination secondary interface cp-*fpc/pic/port*
<clear-files>
<clear-logs>
<immediately | gracefully>

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers and T Series routers only) Switch to the secondary File Transfer Protocol (FTP) server that is configured as a flow collector.

Options **none**—Switch to the secondary FTP server.

cp-*fpc/pic/port*—Specify the flow collector interface name (**cp-*fpc/pic/port***) for the secondary destination.

clear-files—(Optional) Request clearing of existing data files in the FTP wait queue when the switch takes place.

clear-logs—(Optional) Request clearing of existing logs when the switch takes place.

immediately | gracefully—(Optional) Specify whether you want the switch to take place immediately, or to affect only newly created files.

Required Privilege Level maintenance

List of Sample Output request services flow-collector change-destination secondary interface on page 42

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request services flow-collector change-destination secondary interface

```
user@host> request services flow-collector change-destination secondary interface cp-6/0/0
Flow collector interface: cp-6/0/0
Interface state: Collecting flows
Destination change successful
```


request services flow-collector test-file-transfer

Syntax request services flow-collector test-file-transfer *filename* interface (all | cp-*fpc/pic/port*) (channel-zero | channel-one) (primary | secondary)

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers, PTX Series, and T Series routers only) Transfer a test file to the primary or secondary File Transfer Protocol (FTP) server that is configured as a flow collector. This command verifies that the output side of the flow collector interface is operating properly.

Options ***filename***—Name of the test file to transfer.

interface all | cp-*fpc/pic/port*)—Transfer a test file of flows from all configured flow collector interfaces or from only the specified interface.

channel-zero | channel-one—Transfer a file from export channel 0 (unit 0) or channel 1 (unit 1) of the PIC.

primary | secondary—Transfer a file to the primary or secondary server configured as a flow collector.

Required Privilege Level network

List of Sample Output request services flow-collector test-file-transfer on page 43

Output Fields When you enter this command, you are provided feedback on the status of your request.

Sample Output

request services flow-collector test-file-transfer

```
user@router> request services flow-collector test-file-transfer test_file interface cp-7/1/0
channel-one primary


Flow collector interface: cp-7/1/0
Interface state: Collecting flows
Response: Test file transfer successfully scheduled
```

show services flow-collector file interface

Syntax show services flow-collector file interface (all | cp-*fpc/pic/port*)
<detail | extensive | terse>

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers and T Series routers only) Display information about flow collector files.

Options **all | cp-*fpc/pic/port***—Display file information for all configured flow collector interfaces or for the specified interface.

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

Additional Information No entries are displayed for files that have been successfully transferred.

Required Privilege Level view

List of Sample Output show services flow-collector file interface extensive on page 45

Output Fields Table 3 on page 44 lists the output fields for the **show services flow-collector file interface** command. Output fields are listed in the approximate order in which they appear.

Table 3: show services flow-collector file interface Output Fields

Output Field	Output Field Description	Level of Output
Filename	Name of the file created on the flow collector interface.	All levels
Flows	Total number of collector flows for which records are present in the file.	none specified

Throughput	Throughput statistics:
	• **Flow records**—Number of flow records in the file.
	  • **per second**—Average number of flow records per second.
	  • **peak per second**—Peak number of flow records per second.
	• **Uncompressed bytes**—Total file size before compression.
	  • **per second**—Average number of uncompressed bytes per second.
	  • **peak per second**—Peak number of uncompressed bytes per second.
	• **Compressed bytes**—Total file size after compression.
	  • **per second**—Average number of compressed bytes per second.
	  • **peak per second**—Peak number of compressed bytes per second.
		extensive

Table 3: show services flow-collector file interface Output Fields *(continued)*

Output Field	Output Field Description	Level of Output

Status	File statistics:
	• **Compressed blocks**—(**extensive** output only) Data blocks in the file that have been compressed. The file is exported only when the compressed block count and block count become the same.
	• **Block count**—(**extensive** output only) Total number of data blocks in the file.
	• **State**—Processing state of the file.
	  • **Active**—The flow collector interface is writing to the file.
	  • **Export 1**—File export is in progress to the primary server.
	  • **Export 2**—File export is in progress to the secondary server.
	  • **Wait**—File is pending export.
	  • **Transfer attempts 0**.—Number of attempts made to transfer the file. If the file is successfully transferred in the first attempt, this field is 0.
		All levels

Sample Output

show services flow-collector file interface extensive

```
user@host> show services flow-collector file interface cp-3/2/0 extensive
Filename: cFlowd-py69Ni69-0-20031112_014301-so_3_0_0_0.bcp.bi.gz
  Throughput:
    Flow records: 188365, per second: 238, peak per second: 287
    Uncompressed bytes: 21267756, per second: 27007, peak per second: 32526
    Compressed bytes: 2965643, per second: 0, peak per second: 22999
  Status:
    Compressed blocks: 156, Block count: 156
    State: Active, Transfer attempts: 0
```

show services flow-collector input interface

Syntax show services flow-collector input interface (all | cp-*fpc/pic/port*)
<detail | extensive | terse>

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers and T Series routers only) Display the number of packets received by collector interfaces from monitoring interfaces.

Options **all | cp-*fpc/pic/port***—Display packets received by all configured flow collector interfaces or by the specified interface.

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

Required Privilege Level view

List of Sample Output
show services flow-collector input interface on page 46
show services flow-collector input interface all on page 46

Output Fields Table 4 on page 46 lists the output fields for the **show services flow-collector input interface** command. Output fields are listed in the approximate order in which they appear.

Table 4: show services flow-collector input interface Output Fields

Output Field	Output Field Description
Interface	Name of the monitoring interface.
Packets	Number of packets traveling from the monitoring interface to the flow collector interface.
Bytes	Number of bytes traveling from the monitoring interface to the flow collector interface.

Sample Output

show services flow-collector input interface

```
user@host> show services flow-collector input interface cp-3/2/0
Interface                      Packets        Bytes
mo-3/0/0.0                       21706     32328568
mo-3/1/0.0                       21706     32329096
```

show services flow-collector input interface all

```
user@host> show services flow-collector input interface all
Flow collector interface: cp-6/1/0
Interface state: Collecting flows
Interface                      Packets        Bytes
mo-3/0/0.0                         274       416232
mo-3/3/0.0                         274       416184
```

```
mo-1/0/0.0                          274       416232
mo-1/1/0.0                          274       416232
mo-1/2/0.0                          274       416232
mo-1/3/0.0                          274       416232
mo-3/1/0.0                          274       416232
mo-4/0/0.0                          274       416232
mo-4/1/0.0                          274       416232
mo-4/2/0.0                          274       416184
mo-4/3/0.0                          274       416232
mo-5/0/0.0                          274       416232
mo-5/1/0.0                          274       416232
mo-5/2/0.0                          274       416232
mo-5/3/0.0                          274       416232
mo-6/0/0.0                          274       416232

Flow collector interface: cp-6/3/0
Interface state: Collecting flows
```

show services flow-collector interface

Syntax show services flow-collector interface (all | cp-*fpc/pic/port*)
<detail | extensive | terse>

Release Information Command introduced before Junos OS Release 7.4.

Description (M40e, M160, and M320 routers and T Series routers only) Display overall statistics for the flow collector application.

Options **all | cp-*fpc/pic/port***—Display statistics for flow collector applications on all interfaces or for the specified interface.

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

Required Privilege Level view

List of Sample Output
show services flow-collector interface all detail on page 50
show services flow-collector interface all extensive on page 51
show services flow-collector interface all terse on page 53
show services flow-collector interface extensive on page 53

Output Fields Table 5 on page 48 lists the output fields for the **show services flow-collector interface** command. Output fields are listed in the approximate order in which they appear.

Table 5: show services flow-collector interface Output Fields

Output Field	Output Field Description	Level of Output
Flow collector interface	Name of the flow collector interface.	All levels
Interface state	Collecting flow state for the interface.	All levels
Packets	Total number of packets received.	none specified
Flows Uncompressed Bytes	Total uncompressed data size for all files created on this PIC.	none specified
Compressed Bytes	Total compressed data size for all files created on this PIC.	none specified
FTP bytes	Total number of bytes transferred to the FTP server, including those dropped during transfer.	none specified
FTP files	Total number of FTP transfers attempted by the server.	none specified
Memory	Bytes used on the PIC and bytes free.	**detail extensive**

Table 5: show services flow-collector interface Output Fields *(continued)*

Output Field	Output Field Description	Level of Output

Input	Incoming flow collector packet statistics:
	• **Packets**—Number of packets received on the unit.
	  • **per second**—Average number of packets per second.
	  • **peak per second**—Peak number of packets per second.
	• **Bytes**—Number of bytes received on the unit.
	  • **per second**—Average number of bytes per second.
	  • **peak per second**—Peak number of bytes per second.
	• **Flow records processed**—Number of records in the flow collector packets that were processed by the flow-collector interface.
	  • **per second**—Average number of flow records processed per second.
	  • **peak per second**—Peak number of flow records per second.
		detail extensive

Allocation	Data block statistics:
	• **Blocks allocated**—Total number of data blocks (containing flow records) allocated to the files created on this PIC.
	  • **per second**—Average number of blocks allocated per second.
	  • **peak per second**—Peak number of blocks allocated per second.
	• **Blocks freed**—Total number of data blocks freed.
	  • per second—Average number of blocks freed per second.
	  • peak per second—Peak number of blocks freed per second.
	• **Blocks unavailable**—Total number of data block requests denied, typically because of a memory shortage.
	  • per second—Average number of blocks unavailable per second.
	  • peak per second—Peak number of blocks unavailable per second.
		extensive

Files	File statistics, incremented since the PIC last booted: • **Files created**—Total number of files created on this PIC. • **Files exported**— Number of files successfully created and exported. • **Files destroyed**—(**extensive** output only) Number of files successfully exported and files dropped by the flow collection interface.	**detail extensive**

Throughput	Throughput statistics:
	• **Uncompressed bytes**—Total uncompressed data size for all files created on this PIC.
	  • **per second**—Average number of uncompressed bytes per second.
	  • **peak per second**—Peak number of uncompressed bytes per second.
	• **Compressed bytes**—Total compressed data size for all files created on this PIC.
	  • **per second**—Average number of compressed bytes per second.
	  • **peak per second**—Peak number of compressed bytes per second.
		detail extensive

Table 5: show services flow-collector interface Output Fields *(continued)*

Output Field	Output Field Description	Level of Output
Packet drops	Number of packets dropped for the following causes: • **No memory**—Packets dropped because of insufficient memory. • **Not IP**—Packets dropped because they are not IP packets. • **Not IPv4**—Packets dropped because they are not IP version 4 packets. • **Too small**—Packets dropped because each packet was smaller than the size reported in its header. • **Fragments**—Packets dropped because of fragmentation. Fragments are not reassembled. • **ICMP**—Packets dropped because they are not ICMP packets. • **TCP**—Packets dropped because they are not TCP packets. • **Unknown**—Packets dropped because of undetermined causes. • **Not Junos flow**—Packets dropped because they are not interpreted by the Junos OS. The Junos OS interprets only IPv4, UDP cflowd version 5 packets.	**extensive**
File transfer	File transfer statistics: • **FTP bytes**—Total number of bytes transferred to the FTP server, including those dropped during transfer. • **FTP files**—Total number of FTP transfers attempted by the server. • **FTP failure**—Total number of FTP failures encountered by the server.	**detail extensive**
Flow collector interface	Physical interface acting as a flow collector.	**detail**

Export channel	Export channel **0** is unit 0. Export channel **1** is unit 1. Flow receive channel is unit 2. Server status statistics are the following:
	• **Current server Primary** or **Secondary**—Current FTP server being used. Value is
	• **Primary server state**—State of the server:
	  ◦ **OK**—Server is operating without problems.
	  ◦ **FTP error**—Server encountered an FTP protocol error while sending files.
	  ◦ **Network error**—Flow-collector interface has errors when contacting the primary FTP server.
	  ◦ **Unknown**—First file transfer has not been sent to the primary server.
	• **Secondary server state**—State of the server:
	  ◦ **OK**—Server is operating without errors.
	  ◦ **FTP error**—Server encountered an FTP protocol error while sending files.
	  ◦ **Network error**—Flow-collector interface has errors when contacting the secondary FTP server.
	  ◦ **Unknown**—First file transfer has not been sent to the secondary server.
	• **Not configured**—Secondary server is not configured.
		detail extensive

Sample Output

show services flow-collector interface all detail

```
user@host> show services flow-collector interface all detail
```

```
Flow collector interface: cp-6/1/0
Interface state: Collecting flows
Memory:
    Used: 51452732, Free: 440329088
Input:
    Packets: 4384, per second: 0, peak per second: 156
    Bytes: 6659616, per second: 0, peak per second: 249695
    Flow records processed: 131070, per second: 0, peak per second: 4914
Files:
    Files created: 1, per second: 0, peak per second: 0
    Files exported: 1, per second: 0, peak per second: 0
Throughput:
    Uncompressed bytes: 13742307, per second: 0, peak per second: 593564
    Compressed bytes: 3786177, per second: 0, peak per second: 162826
File Transfer:
    FTP bytes: 3786247, per second: 0, peak per second: 378620
    FTP files: 1, per second: 0, peak per second: 0
    FTP failure: 0
Export channel: 0
    Current server: Primary
    Primary server state: OK, Secondary server state: OK
Export channel: 1
    Current server: Primary
    Primary server state: Unknown, Secondary server state: OK

Flow collector interface: cp-6/3/0
Interface state: Collecting flows
Memory:
    Used: 51452732, Free: 440329088
Input:
    Packets: 0, per second: 0, peak per second: 0
    Bytes: 0, per second: 0, peak per second: 0
    Flow records processed: 0, per second: 0, peak per second: 0
Files:
    Files created: 0, per second: 0, peak per second: 0
    Files exported: 0, per second: 0, peak per second: 0
Throughput:
    Uncompressed bytes: 0, per second: 0, peak per second: 0
    Compressed bytes: 0, per second: 0, peak per second: 0
File Transfer:
    FTP bytes: 70, per second: 0, peak per second: 6
    FTP files: 0, per second: 0, peak per second: 0
    FTP failure: 0
Export channel: 0
    Current server: Primary
    Primary server state: Unknown, Secondary server state: OK
Export channel: 1
    Current server: Primary
    Primary server state: Unknown, Secondary server state: OK
```

show services flow-collector interface all extensive

```
user@host> show services flow-collector interface all extensive
Flow collector interface: cp-6/1/0
Interface state: Collecting flows
Memory:
    Used: 51452732, Free: 440329088
Input:
    Packets: 4384, per second: 0, peak per second: 156
    Bytes: 6659616, per second: 0, peak per second: 249695
    Flow records processed: 131070, per second: 0, peak per second: 4914
```

```
Allocation:
    Blocks allocated: 108, per second: 0, peak per second: 0
    Blocks freed: 108, per second: 0, peak per second: 10
    Blocks unavailable: 0, per second: 0, peak per second: 0
Files:
    Files created: 1, per second: 0, peak per second: 0
    Files exported: 1, per second: 0, peak per second: 0
    Files destroyed: 1, per second: 0, peak per second: 0
Throughput:
    Uncompressed bytes: 13742307, per second: 0, peak per second: 593564
    Compressed bytes: 3786177, per second: 0, peak per second: 162826
Packet drops:
    No memory: 0, Not IP: 0
    Not IPv4: 0, Too small: 0
    Fragments: 0, ICMP: 0
    TCP: 0, Unknown: 0
    Not JUNOS flow: 0
File Transfer:
    FTP bytes: 3786247, per second: 0, peak per second: 378620
    FTP files: 1, per second: 0, peak per second: 0
    FTP failure: 0
Export channel: 0
    Current server: Primary
    Primary server state: OK, Secondary server state: OK
Export channel: 1
    Current server: Primary
    Primary server state: Unknown, Secondary server state: OK

Flow collector interface: cp-6/3/0
Interface state: Collecting flows
Memory:
    Used: 51452732, Free: 440329088
Input:
    Packets: 0, per second: 0, peak per second: 0
    Bytes: 0, per second: 0, peak per second: 0
    Flow records processed: 0, per second: 0, peak per second: 0
Allocation:
    Blocks allocated: 0, per second: 0, peak per second: 0
    Blocks freed: 0, per second: 0, peak per second: 0
    Blocks unavailable: 0, per second: 0, peak per second: 0
Files:
    Files created: 0, per second: 0, peak per second: 0
    Files exported: 0, per second: 0, peak per second: 0
    Files destroyed: 0, per second: 0, peak per second: 0
Throughput:
    Uncompressed bytes: 0, per second: 0, peak per second: 0
    Compressed bytes: 0, per second: 0, peak per second: 0
Packet drops:
    No memory: 0, Not IP: 0
    Not IPv4: 0, Too small: 0
    Fragments: 0, ICMP: 0
    TCP: 0, Unknown: 0
    Not JUNOS flow: 0
File Transfer:
    FTP bytes: 70, per second: 0, peak per second: 6
    FTP files: 0, per second: 0, peak per second: 0
    FTP failure: 0
Export channel: 0
    Current server: Primary
    Primary server state: Unknown, Secondary server state: OK
Export channel: 1
```

```
    Current server: Primary
    Primary server state: Unknown, Secondary server state: OK
```

show services flow-collector interface all terse

```
user@host> show services flow-collector interface all terse
Flow collector interface: cp-6/1/0
Interface state: Collecting flows
  Packets     Bytes     Flows Uncompressed  Compressed     FTP bytes FTP files
                                    Bytes       Bytes
     4384   6659616    131070     13742307     3786177       3786247         1

Flow collector interface: cp-6/3/0
Interface state: Collecting flows
  Packets     Bytes     Flows Uncompressed  Compressed     FTP bytes FTP files
                                    Bytes       Bytes
        0         0         0           0           0            70         0
```

show services flow-collector interface extensive

```
user@host> show services flow-collector interface cp-5/2/0 extensive
Flow collector interface: cp-5/2/0
Interface state: Collecting flows
Memory:
     Used: 458311860, Free: 40810008
Input:
     Packets: 922629, per second: 2069, peak per second: 3266
     Bytes: 1376559252, per second: 3096940, peak per second: 4880051
     Flow records processed: 25764957, per second: 42564, peak per second: 98124
Allocation:
     Blocks allocated: 20862, per second: 31, peak per second: 72
     Blocks freed: 17161, per second: 40, peak per second: 202
     Blocks unavailable: 58786, per second: 652, peak per second: 1120
Files:
     Files created: 52, per second: 0, peak per second: 0
     Files exported: 42, per second: 0, peak per second: 0
     Files destroyed: 42, per second: 0, peak per second: 0
Throughput:
     Uncompressed bytes: 2592070401, per second: 7297307,
     peak per second: 8630023
     Compressed bytes: 659600068, per second: 1858458, peak per second: 2198471
Packet drops:
     No memory: 58786, Not IP: 0
     Not IPv4: 0, Too small: 0
     Fragments: 0, ICMP: 0
     TCP: 0, Unknown: 0
     Not JUNOS flow: 0
File Transfer:
     FTP bytes: 585981447, per second: 1313320, peak per second: 4857798
     FTP files: 48, per second: 0, peak per second: 0
     FTP failure: 8
Export channel: 0
     Current server: Primary
     Primary server state: FTP error, Secondary server state: Not configured
Export channel: 1
     Current server: Primary
     Primary server state: OK, Secondary server state: Not configured
```

CHAPTER 6

Flow Collector Interface Operational Mode Commands

show interfaces (Flow Collector)

Syntax show interfaces cp-*fpc/pic/port*:*channel*
<brief | detail | extensive | terse>
<descriptions>
<media>
<snmp-index *snmp-index*>
<statistics>

Release Information Command introduced before Junos OS Release 7.4.

Description (M Series and T Series routers only) Display status information about the specified flow collector interface.

Options

cp-*fpc/pic/port*:*channel*—Display standard status information about the specified flow collector interface.

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

descriptions—(Optional) Display interface description strings.

media—(Optional) Display media-specific information about network interfaces.

snmp-index *snmp-index*—(Optional) Display information for the specified SNMP index of the interface.

statistics—(Optional) Display static interface statistics.

Required Privilege Level view

List of Sample Output show interfaces extensive (Flow Collector) on page 60

Output Fields Table 6 on page 56 lists the output fields for the **show interfaces** (Flow Collector) command. Output fields are listed in the approximate order in which they appear.

Table 6: Flow Collector Show interfaces Output Fields

Field Name	Field Description	Level of Output
Physical Interface		
Physical Interface	Name of the physical interface type.	All levels
Link	Status of the link: **up** or **down**.	All levels
Enabled	State of the interface type. Possible values are described in the "Enabled Devices" section under *Common Output Fields Description*.	All levels
Interface index	Physical interface index number, which reflects its initialization sequence.	**detail extensive** none
SNMP ifIndex	SNMP index number for the physical interface.	**detail extensive** none

Table 6: Flow Collector Show interfaces Output Fields *(continued)*

Field Name	Field Description	Level of Output
Generation	Unique number for use by Juniper Networks technical support only.	**detail extensive**
Type	Type of interface.	All levels
Link-level type	Encapsulation type used on the physical interface.	All levels
MTU	Maximum Transmit Unit (MTU). Size of the largest packet to be transmitted.	All levels
Clocking	Reference clock source of the interface.	All levels
Speed	Network speed on the interface.	All levels
Device flags	Information about the physical device. Possible values are described in the "Device Flags" section under *Common Output Fields Description*.	All levels
Interface flags	Information about the interface. Possible values are described in the "Interface Flags" section under *Common Output Fields Description*.	All levels
Link type	Data transmission type.	All levels
Link flags	Information about the link. Possible values are described in the "Link Flags" section under *Common Output Fields Description*.	All levels
Physical info	Information about the physical interface.	All levels
Hold-times	Current interface hold-time up and hold-time down. Value is in milliseconds.	**detail extensive** none
Current address	Configured MAC address.	**detail extensive** none
Hardware address	Media access control (MAC) address of the interface.	**detail extensive** none
Alternate link address	Backup link address.	**detail extensive** none
Last flapped	Date, time, and how long ago the interface went from down to up. The format is **Last flapped:** ***year-month-day hour:minute:second timezone*** **(*hour:minute:second* ago)**. For example, **Last flapped: 2002-04-26 10:52:40 PDT (04:33:20 ago)**.	**detail extensive**
Statistics last cleared	Time when the statistics for the interface were last set to zero.	**detail extensive**
Traffic statistics	Number and rate of bytes and packets received and transmitted on the physical interface. • **Input bytes**, **Output bytes**—Number of bytes received and transmitted on the interface. • **Input packets**, **Output packets**—Number of packets received and transmitted on the interface.	**detail extensive**

Table 6: Flow Collector Show interfaces Output Fields *(continued)*

Field Name	Field Description	Level of Output
Input errors	• **Errors**—Input errors on the interface. • **Drops**—Number of packets dropped by the output queue of the I/O Manager ASIC. • **Framing errors**—Number of packets received with an invalid frame checksum (FCS). • **Runts**—Frames received smaller than the runt threshold. • **Giants**—Frames received larger than the giant threshold. • **Policed Discards**—Frames that the incoming packet match code discarded because the frames did not recognize them or were not of interest. Usually, this field reports protocols that Junos does not support. • **Resource errors**—Sum of transmit drops.	**extensive**
Output errors	• **Carrier transitions** —Number of times the interface has gone from **down** to **up**. This number does not normally increment quickly, increasing only when the cable is unplugged, the far-end system is powered down and then up, or another problem occurs. If the number of carrier transitions increments quickly, possibly once every 10 seconds, the cable, the remote system, or the interface is malfunctioning. • **Errors**—Sum of outgoing frame aborts and FCS errors. • **Drops**—Number of packets dropped by the output queue of the I/O Manager ASIC. If the interface is saturated, this number increments once for every packet dropped by the ASIC RED mechanism. • **Resource errors**—Sum of transmit drops.	**extensive**
Logical Interface		
Logical interface	Name of the logical interface	All levels
Index	Logical interface index number, which reflects its initialization sequence.	**detail extensive** none
SNMP ifIndex	Logical interface SNMP interface index number.	**detail extensive** none
Generation	Unique number for use by Juniper Networks technical support only.	**detail extensive**
Flags	Information about the logical interface; values are described in the "Logical Interface Flags" section under *Common Output Fields Description*.	All levels
Encapsulation	Encapsulation on the logical interface.	All levels
Traffic statistics	Total number of bytes and packets received and transmitted on the logical interface. These statistics are the sum of the local and transit statistics. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes awhile (generally, less than 1 second) for this counter to stabilize. • **Input bytes, Output bytes**—Number of bytes received and transmitted on the interface. • **Input packets, Output packets**—Number of packets received and transmitted on the interface.	**detail extensive**

Table 6: Flow Collector Show interfaces Output Fields *(continued)*

Field Name	Field Description	Level of Output
Local statistics	Statistics for traffic received from and transmitted to the Routing Engine. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes awhile (generally, less than 1 second) for this counter to stabilize.	**detail extensive**
Transit statistics	Statistics for traffic transiting the router. When a burst of traffic is received, the value in the output packet rate field might briefly exceed the peak cell rate. It takes awhile (generally, less than 1 second) for this counter to stabilize.	**detail extensive**
Protocol	Protocol family configured on the logical interface (such as **iso** or **inet6**).	**detail extensive** none
MTU	MTU size on the logical interface.	**detail extensive** none
Generation	Unique number for use by Juniper Networks technical support only.	**detail extensive**
Route table	Route table in which this address exists; for example, **Route table:0** refers to inet.0.	**detail extensive**
Flags	Information about the protocol family flags. Possible values are described in the “Family Flags” section under *Common Output Fields Description*.	**detail extensive** none
Addresses, Flags	Information about the address flags. Possible values are described in the “Addresses Flags” section under *Common Output Fields Description*.	**detail extensive** none
Destination	IP address of the remote side of the connection.	**detail extensive** none
Local	IP address of the logical interface.	**detail extensive** none
Broadcast	Broadcast address.	**detail extensive** none
Generation	Unique number for use by Juniper Networks technical support only.	**detail extensive**

Sample Output

show interfaces extensive (Flow Collector)

```
user@host> show interfaces extensive cp-5/0/0
Physical interface: cp-5/0/0, Enabled, Physical link is Up
  Interface index: 145, SNMP ifIndex: 52, Generation: 29
  Type: Flow-collector, Link-level type: Flow-collection, MTU: 9192,
  Clocking: Unspecified, Speed: 800mbps
  Device flags   : Present Running
  Interface flags: Point-To-Point SNMP-Traps 16384
  Link type      : Full-Duplex
  Link flags     : None
  Physical info  : Unspecified
  Hold-times     : Up 0 ms, Down 0 ms
  Current address: Unspecified, Hardware address: Unspecified
  Alternate link address: Unspecified
  Last flapped   : 2005-05-24 16:48:11 PDT (00:12:04 ago)
  Statistics last cleared: Never
  Traffic statistics:
   Input  bytes  :           2041661287                   0 bps
   Output bytes  :           3795049544            43816664 bps
   Input  packets:              1365534                   0 pps
   Output packets:              3865644                3670 pps
  Input errors:
    Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Giants: 0,
    Policed discards: 0, Resource errors: 0
  Output errors:
    Carrier transitions: 2, Errors: 0, Drops: 0, MTU errors: 0,
    Resource errors: 0

  Logical interface cp-5/0/0.0 (Index 74) (SNMP ifIndex 53) (Generation 28)
    Flags: Point-To-Point SNMP-Traps Encapsulation: Flow-collection
    Traffic statistics:
     Input  bytes  :           1064651568
     Output bytes  :             37144290
     Input  packets:                711324
     Output packets:                713672
    Local statistics:
     Input  bytes  :                    0
     Output bytes  :                    0
     Input  packets:                    0
     Output packets:                    0
    Transit statistics:
     Input  bytes  :           1064651568                   0 bps
     Output bytes  :             37144290                   0 bps
     Input  packets:                711324                   0 pps
     Output packets:                713672                   0 pps
    Protocol inet, MTU: 9192, Generation: 39, Route table: 0
      Flags: Receive-options, Receive-TTL-Exceeded
      Addresses, Flags: Is-Preferred Is-Primary
        Destination: 4.0.0.2, Local: 4.0.0.1, Broadcast: Unspecified,
        Generation: 40

  Logical interface cp-5/0/0.1 (Index 75) (SNMP ifIndex 54) (Generation 29)
    Flags: Point-To-Point SNMP-Traps Encapsulation: Flow-collection
    Traffic statistics:
     Input  bytes  :            976793823
     Output bytes  :             34099481
     Input  packets:                652729
     Output packets:                655127
```

```
    Local statistics:
     Input  bytes  :                   0
     Output bytes  :                   0
     Input  packets:                   0
     Output packets:                   0
    Transit statistics:
     Input  bytes  :           976793823                   0 bps
     Output bytes  :            34099481                   0 bps
     Input  packets:              652729                   0 pps
     Output packets:              655127                   0 pps
    Protocol inet, MTU: 9192, Generation: 40, Route table: 0
      Flags: Receive-options, Receive-TTL-Exceeded
      Addresses, Flags: Is-Preferred Is-Primary
        Destination: 4.1.1.2, Local: 4.1.1.1, Broadcast: Unspecified,
        Generation: 42

  Logical interface cp-5/0/0.2 (Index 80) (SNMP ifIndex 55) (Generation 30)
    Flags: Point-To-Point SNMP-Traps Encapsulation: Flow-collection
    Traffic statistics:
     Input  bytes  :                   0
     Output bytes  :          3723079376
     Input  packets:                   0
     Output packets:             2495372
    Local statistics:
     Input  bytes  :                   0
     Output bytes  :                   0
     Input  packets:                   0
     Output packets:                   0
    Transit statistics:
     Input  bytes  :                   0                   0 bps
     Output bytes  :          3723079376            43816664 bps
     Input  packets:                   0                   0 pps
     Output packets:             2495372                3670 pps
    Protocol inet, MTU: 9192, Generation: 41, Route table: 0
      Flags: Receive-options, Receive-TTL-Exceeded
      Addresses, Flags: Is-Preferred Is-Primary
        Destination: 4.2.2.2, Local: 4.2.2.1, Broadcast: Unspecified,
        Generation: 44

  Logical interface cp-5/0/0.16383 (Index 81) (SNMP ifIndex 56) (Generation 31)
...
```

PART 4

Index

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