

Chapter 1

Network Management Overview

Once you have installed the router into your network, you need to manage the router within your network. Router management can be divided into five tasks:

Fault management—Monitor the router; detect and fix faults.

Configuration management—Configure router attributes.

Accounting management—Collect statistics for accounting purposes.

Performance management—Monitor and adjust router performance.

Security management—Control router access and authenticate users.

The JUNOS software network management features work in conjunction with an operations support system (OSS) to manage the router within the network. The JUNOS software can assist you in performing these management tasks, as described in Table 2.

Table 2: JUNOS Router Management Features

Task	JUNOS Software Feature
Fault management	<p>Monitor and see faults using:</p> <p>Operational mode commands—For more information on operational mode commands, see the <i>JUNOS Network and Services Interfaces Command Reference</i> and <i>JUNOS Protocols, Class of Service, and System Basics Reference</i>.</p> <p>SNMP MIBs—For more information about SNMP MIBs, see “Juniper Networks Enterprise-Specific MIBs” on page 101.</p> <p>Standard SNMP traps—For more information about standard SNMP traps, see “Standard SNMP Traps” on page 115.</p> <p>Enterprise-specific SNMP traps—For more information about enterprise-specific traps, see “Juniper Networks Enterprise-Specific SNMP Traps” on page 107.</p> <p>System log messages—For more information about how to configure system log messages, see the <i>JUNOS System Basics Configuration Guide</i>. For more information about how to view system log messages, see the <i>JUNOS System Log Messages Reference</i>.</p>
Configuration management	<p>Configure router attributes using the command-line interface (CLI) and the JUNOScript API. For more information on configuring the router using the CLI, see the <i>JUNOS System Basics Configuration Guide</i>. For more information on configuring the router using the JUNOScript API, see the <i>JUNOScript API References</i> and the <i>JUNOScript API Guide</i>.</p> <p>Configuration Management MIB—For more information about the Configuration Management MIB, see “Juniper Networks Enterprise-Specific MIBs” on page 101.</p>

Task	JUNOS Software Feature
Accounting management	<p>Perform the following accounting-related tasks:</p> <p>Collect statistics for interfaces, firewall filters, destination classes, source classes, and the Routing Engine. For more information on collecting statistics, see “Configuring Accounting Options” on page 361.</p> <p>Use interface-specific traffic statistics and other counters, available in the standard interfaces MIB, Juniper Networks enterprise-specific extensions to the interfaces MIB, and media-specific MIBs, such as the enterprise-specific ATM MIB.</p> <p>Use per-ATM virtual circuit (VC) counters, available in the enterprise-specific ATM MIB.</p> <p>Group source and destination prefixes into source classes and destination classes and count packets for those classes. Collect destination class and source class usage statistics. For more information on classes, see “Juniper Networks Enterprise-Specific MIBs” on page 101, “Configuring Class Usage Profiles” on page 377, the <i>JUNOS Network Interfaces and Class of Service Configuration Guide</i>, and the <i>JUNOS Policy Framework Configuration Guide</i>.</p> <p>Count packets as part of a firewall filter. For more information on firewall filter policies, see “Juniper Networks Enterprise-Specific MIBs” on page 101, and the <i>JUNOS Policy Framework Configuration Guide</i>.</p> <p>Sample traffic, collect the samples, and send the collection to a host running the CAIDA cflowd utility. For more information on CAIDA and cflowd, see the <i>JUNOS Policy Framework Configuration Guide</i>.</p>
Performance management	<p>Monitor performance in the following ways:</p> <p>Use operational mode commands. For more information on monitoring performance using operational mode commands, see the <i>JUNOS Protocols, Class of Service, and System Basics Command Reference</i>.</p> <p>As part of a firewall filter. For more information on performance monitoring using firewall filters, see the <i>JUNOS Configuration Policy Framework Guide</i>.</p> <p>Sample traffic, collect the samples, and send the samples to a host running the CAIDA cflowd utility. For more information on CAIDA and cflowd, see the <i>JUNOS Policy Framework Configuration Guide</i>.</p> <p>Use the enterprise-specific class-of-service MIB. For more information on this MIB, see “Juniper Networks Enterprise-Specific MIBs” on page 101.</p>
Security management	<p>Assure security in your network in the following ways:</p> <p>Control access to the router and authenticate users. For more information on access control and user authentication, see the <i>JUNOS System Basics Configuration Guide</i>.</p> <p>Control access to the router using SNMPv3 and SNMP over IPv6. For more information, see “Configuring the Local Engine ID” on page 41 and “Tracing SNMP Activity” on page 40.</p>

