

## Chapter 1

# System Logging Overview

E-series routers enable you to log system events to discover and isolate problems with your system. This chapter explains how to use the command-line interface (CLI) to monitor your system's log configuration and stay informed about all system events that you want to track.

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## Overview

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System events are classified into event categories. Using the CLI, you can determine which event categories to log. To fully utilize the logging facility, you need to understand *log severity* and *log verbosity*.

## Log Severity

Log severity is a level that is assigned to an event or log message. Log severity levels apply to event categories, such as bulkStats, bgpRoutes, or atm1483.

The minimum severity of a log message for an individual category is described either by a severity number in the range 0–7 or a descriptive priority term, such as *emergency* or *debug*. The lower the severity number is, the higher the priority. See Table 4.



**NOTE:** Not every event category supports every severity level. For a list of event categories and the severity levels that each category supports, see *Chapter 2, Event Categories*.

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**Table 4: Log Severity Descriptions**

Severity Number	Severity Name	System Response
0	Emergency	System unusable; shelf reset
1	Alert	Immediate action needed; card reset
2	Critical	Critical conditions exist; interface is down
3	Error	Error conditions; nonrecoverable software error
4	Warning	Warning conditions; recoverable software error
5	Notice	Normal but significant conditions; nonerror, low-verbosity information
6	Info	Informational messages; nonerror, medium-verbosity information
7	Debug	Debug messages; nonerror, high-verbosity information

## Log Verbosity

The verbosity level determines the amount of information that appears in each message. You can assign the verbosity level for the log category. Verbosity levels can be any of the following:

- Low—Terse
- Medium—Moderate
- High—Verbose



**NOTE:** Many event categories provide only low-verbosity detail regardless of the verbosity setting.

## Persistent Logs

Log messages can survive a system reboot. After a reboot, the system rebuilds the list of log messages. However, if the system detects any problems or has gone through a power cycle, the buffer is reset, and the log messages from the previous session are lost.

Log messages are not synchronized between primary and redundant SRP modules. During a switchover from a primary to a redundant SRP module, existing log messages are not transferred to the redundant SRP module.

## Platform Considerations

System logs are supported on all E-series routers.

For information about the modules supported on E-series routers:

- See the *ERX Module Guide* for modules supported on ERX-7xx models, ERX-14xx models, and the ERX-310 router.
- See the *E120 and E320 Module Guide* for modules supported on the E120 router and the E320 router.

## Configuring Event Logging

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By default, event logging is enabled and has default settings. This section explains how to change settings to customize event logging to fit your needs.

- Set a baseline for when the system begins logging messages.

```
host1#baseline log 11:12:55 April 30 2002
```

- Set the log severity.

```
host1(config)#log severity warning
```

- Remove the limit on the number of buffers available for an event category.

```
host1(config)#log unlimit qos
```

- Set the log verbosity.

```
host1(config)#log verbosity low
```

- Log messages to a specified destination.

```
host1(config)#log destination syslog 10.10.9.5 include ospfGeneral
mplsGeneral os
```

- Select fields to be added to logs.

```
host1(config)#log fields timestamp instance no-calling-task
```

- Enable logs destined for a console to be displayed at the current console device.

```
host1#log here
```

The next sections explain how to configure individual and systemwide logs, how to format timestamps for log messages, and how to configure log filters.

### **baseline log**

- Use to set a baseline for logging events. Only log messages timestamped after the baseline appear when you enter the **show log data delta** command.
- To use the current system time, do not enter any options.
- To set a specific time, use the following syntax:

*Hour:Minute[:Second]*—Current time in 24-hour format. Seconds are optional.

- **utc**—Enter this keyword to indicate that the time entered is in universal coordinated time (UTC), rather than local time.
- To set a specific date, use the following syntax:

*Month Day Year*—You must spell out the name of the month.

- **last-reset**—Causes the system to display log messages generated since the last time the system was reset
- Examples
 

```
host1#baseline log 11:12:55 April 30 2002
host1#baseline log last-reset
```
- There is no **no** version.

### **log destination**

- Use to log messages to the specified destination, including system log, console, and nv-file (nonvolatile storage).



**NOTE:** You can display traffic logs—such as ipTraffic, icmpTraffic, tcpTraffic, and udpTraffic—only through the **show log data** command or from the SRP module console. You cannot redirect traffic logs elsewhere, such as to a system log or nonvolatile storage file, or to a Telnet session.

- Use the **severity** keyword to limit the messages logged based on priority level.
- The following information applies to logging messages to system log servers.
  - You can have multiple system log servers, but must configure logging to each one separately.
  - A particular message within a specified event category is logged to a particular system log server only if the priority of the message is greater than or equal to both the priority of the event category and the priority of that system log server.
  - If you log messages to a system log server, you can also specify:
    - **facility**—Specifies a facility ID on the system log destination host. The range is 0–7, representing the logging facilities local0–local7.
    - **include**—Logs only the listed categories to system log; no other categories are logged unless specifically included by issuing this command again.
    - **exclude**—Logs all categories to system log except the listed categories; all other categories are logged unless specifically excluded by issuing this command again.
  - Issuing an **include** command after an **exclude** command (or vice versa) overrides the earlier command. Therefore, you cannot enter a command including certain categories and then follow it with a command excluding others. Similarly, you cannot enter a command excluding certain categories and then follow it with a command including others.
  - You can issue successive **include** commands or successive **exclude** commands; in this case, the successive commands expand the list of included or excluded categories.

- Example 1—The first command causes *only* the ospfGeneral, mplsGeneral, and os event categories to be logged to system log at 10.10.9.5. The second command reverses this inclusion and restores the logging of *all* event categories.

```
host1(config)#log destination syslog 10.10.9.5 include ospfGeneral
mplsGeneral os
host1(config)#no log destination syslog 10.10.9.5
```

- Example 2—The first command again causes only the ospfGeneral, mplsGeneral, and os event categories to be logged to system log at 10.10.9.5. The second command reverses the inclusion of ospfGeneral and os. The mplsGeneral category is still included and is thus the *only* category logged.

```
host1(config)#log destination syslog 10.10.9.5 include ospfGeneral mplsGeneral
os
host1(config)#no log destination syslog 10.10.9.5 include ospfGeneral os
```

- Example 3—The first command causes the isisGeneral, ipRoutePolicy, and ipTraffic event categories to be excluded from logging to system log at 10.1.2.3. The second command reverses this exclusion and restores the logging of *all* event categories.

```
host1(config)#log destination syslog 10.1.2.3 exclude isisGeneral ipRoutePolicy
ipTraffic
host1(config)#no log destination syslog 10.1.2.3 exclude
```

- Example 4—The first command again causes the isisGeneral, ipRoutePolicy, and ipTraffic event categories to be excluded from logging to system log at 10.1.2.3. The second command reverses the exclusion of ipRoutePolicy and ipTraffic. The isisGeneral category is still excluded; all other events are logged.

```
host1(config)#log destination syslog 10.1.2.3 exclude isisGeneral
ipRoutePolicy ipTraffic
host1(config)#no log destination syslog 10.1.2.3 exclude isisGeneral
```

- Example 5—The first command causes the isisGeneral event category to be excluded from logging to system log at 10.1.2.3. The second command causes ospfGeneral to also be excluded from logging.

```
host1(config)#log destination syslog 10.1.2.3 exclude isisGeneral
host1(config)#log destination syslog 10.1.2.3 exclude ospfGeneral
```

- Example 6—The first command causes the isisGeneral event category to be excluded from logging to system log at 10.1.2.3; all other events are logged. The second command overrides the first and causes the exclusion of all events except ospfGeneral.

```
host1(config)#log destination syslog 10.1.2.3 exclude isisGeneral
host1(config)#log destination syslog 10.1.2.3 include ospfGeneral
```

- Use the **no** version to reverse the effects of previous commands or restore the default, which is to log all event categories.

**log destination syslog source**

- Use to specify a source interface type and location for events logged to system log at the specified IP address.
- Overrides the actual source interface type and location. The IP address associated with the specified source interface is used as the source address for subsequent system log messages.

- Example

```
host1(config)#log destination syslog 10.1.2.3 source atm 0/1
```

- Use the **no** version to restore the actual source interface type and location.

**log engineering**

- Use to enable engineering logs.
- Provides troubleshooting information to assist you when contacting Juniper Networks Technical Assistance Center (JTAC).

- Example

```
host1(config)#log engineering
```

- Use the **no** form of this command to disable engineering logs.

**log fields**

- Use to select fields to be added to all logs. These fields include a timestamp for the message, an instance identifier, and the name of the internal software application that created the message.

- Example

```
host1(config)#log fields timestamp instance no-calling-task
```

- Use the **no** version to restore the default log field settings.

**log here**

- Use to enable logs destined for a console to be displayed at the current console.
- By default, the local console automatically receives all log messages if console is a destination. The exception is the cliCommand log, whose log events do not appear on the console.
- By default, Telnet consoles do not receive log messages.

- Example

```
host1#log here
```

- Use the **no** version to disable logs destined for a console from being displayed on this console.

**log severity**

- Use to set the severity level for systemwide logs (that is, when you do not specify an individual event category) or for a specific event category. For a list of severity values, see Table 4.



**NOTE:** Assigning a log severity to an individual event category changes its state to Assigned. You cannot change the severity of that event category using systemwide level commands until you return the event category to its default, unassigned state with the **no log severity** command.

- If you do not specify a category, the severity value changes for all categories except individual categories for which you previously set a specific severity level. See *Configuring Log Severity for Individual and Systemwide Logs* on page 8 for details.
- Each event category has its own default severity value. For most categories, the default is Error.
- To disable all *default* level log messages, use the **off** keyword without specifying an event category.
- To disable individual level log messages, use the **off** keyword and specify the event category that you want to disable.

- Example

```
host1(config)#log severity warning
```

- Use the **no** version to return the systemwide (when assigned) or default severity values to event categories.
- Use the **no** version with an \* (asterisk) to return all event categories (modified either systemwide or individually) to their default severity setting. For example:

```
host1(config)#no log severity *
```

**log unlimit**

- Use to remove the limit on the number of outstanding buffers for an event category, such as when the system is dropping logs of a particular category.

- Example

```
host1(config)#log unlimit qos
```

- Use the **no** version to return to the default value.

**log verbosity**

- Use to set the verbosity level for a selected category or for all categories.
- If you do not specify a category, then the verbosity level is set for all categories.
- The default verbosity setting for all logs is low.

- Example

```
host1(config)#log verbosity low
```

- Use the **no** version to return to the default verbosity (low) for the selected category.

**Configuring Log Severity for Individual and Systemwide Logs**

You can change the severity setting for *individual* logs and the *systemwide* value.

When working with log severities, keep the following in mind:

- All log event categories have a default. However, the default values can vary for each category. For example, most event categories have a default severity of Error. However, some event categories may have a default severity of Notice, Warning, Info, and so on.
- Log event categories have two states—unassigned (default) and assigned. How a log event category reacts to the **log severity** command depends on its current state.
- You can change log severities for event categories at a systemwide level or an individual level. Systemwide changes are those that modify a large number of unassigned event categories at one time; for example, the command **log severity debug off**. Individual changes are those that indicate an explicit event category that you want to change; for example, the command **log severity notice clicommand**.
- Changes to log event categories at an individual level take precedence over those made at the systemwide level.
- Changes to log event categories at the systemwide level take precedence over the default.
- Assigning a log severity to an individual event category changes its state to Assigned. This means that you cannot change the severity of that event category using systemwide level commands until you return the event category to its default, unassigned state by using the **no log severity eventCategory** command.
- To return all logs, systemwide and individual, to their default, unassigned severity level, use the **no log severity \*** command.
- To see whether individual or systemwide severity and verbosity settings are in effect, use the **show log configuration** command.



**Example** The following example demonstrates the effects of event category state in regard to using systemwide commands:

1. In Configuration mode and having made no changes to the severity settings of any event categories, view the log configuration:

```
host1(config)#run show log config
log destination console severity WARNING
log destination nv-file severity CRITICAL
log destination syslog 10.10.4.240 facility 7 severity DEBUG
no log engineering
log fields timestamp instance no-calling-task
no log here
```

```
Warning: Logging to this terminal is disabled
no log severity
```

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	ERROR	low		
aaaEngineGeneral	ERROR	low		
aaaServerGeneral	ERROR	low		
aaaUserAccess	ERROR	low		
addressServerGeneral	ERROR	low		
ar1AaaServerGeneral	ERROR	low		
atm	ERROR	low		
atm1483	ERROR	low		
atmAa15	ERROR	low		

Notice that the atm event category has a default severity of Error.

2. Change all event categories to Warning, systemwide, and view the log configuration:

```
host1(config)#log severity warning
host1(config)#run show log config
log destination console severity WARNING
log destination nv-file severity CRITICAL
log destination syslog 10.10.4.240 facility 7 severity DEBUG
no log engineering
log fields timestamp instance no-calling-task
no log here
```

```
Warning: Logging to this terminal is disabled
log severity WARNING
```

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	WARNING	low		1
aaaEngineGeneral	WARNING	low		1
aaaServerGeneral	WARNING	low		1
aaaUserAccess	WARNING	low		1
addressServerGeneral	WARNING	low		1
ar1AaaServerGeneral	WARNING	low		1
atm	WARNING	low		1
atm1483	WARNING	low		1
atmAa15	WARNING	low		1

3. Change the atm category to have a log severity of Emergency and view the log configuration:

```

host1(config)#log severity emergency atm
host1(config)#run show log config
log destination console severity WARNING
log destination nv-file severity CRITICAL
log destination syslog 10.10.4.240 facility 7 severity DEBUG
no log engineering
log fields timestamp instance no-calling-task
no log here

```

Warning: Logging to this terminal is disabled  
log severity WARNING

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	WARNING	low		1
aaaEngineGeneral	WARNING	low		1
aaaServerGeneral	WARNING	low		1
aaaUserAccess	WARNING	low		1
addressServerGeneral	WARNING	low		1
ar1AaaServerGeneral	WARNING	low		1
atm	EMERGENCY	low		2
atm1483	WARNING	low		1
atmAa15	WARNING	low		1

4. Change all event categories to Alert, systemwide, and view the log configuration:

```

host1(config)#log severity alert
host1(config)#run show log config
log destination console severity WARNING
log destination nv-file severity CRITICAL
log destination syslog 10.10.4.240 facility 7 severity DEBUG
no log engineering
log fields timestamp instance no-calling-task
no log here

```

Warning: Logging to this terminal is disabled  
log severity ALERT

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	ALERT	low		1
aaaEngineGeneral	ALERT	low		1
aaaServerGeneral	ALERT	low		1
aaaUserAccess	ALERT	low		1
addressServerGeneral	ALERT	low		1
ar1AaaServerGeneral	ALERT	low		1
atm	EMERGENCY	low		2
atm1483	ALERT	low		1
atmAa15	ALERT	low		1

Notice that the atm event category that you individually assigned in Step 3 does not change.

- Turn off log notification, systemwide, and view the log configuration:

```
host1(config)#log severity off
host1(config)#run show log config
log destination console severity WARNING
log destination nv-file severity CRITICAL
log destination syslog 10.10.4.240 facility 7 severity DEBUG
no log engineering
log fields timestamp instance no-calling-task
no log here
```

```
Warning: Logging to this terminal is disabled
log severity OFF
```

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	OFF	low		1
aaaEngineGeneral	OFF	low		1
aaaServerGeneral	OFF	low		1
aaaUserAccess	OFF	low		1
addressServerGeneral	OFF	low		1
ar1AaaServerGeneral	OFF	low		1
atm	EMERGENCY	low		2
atm1483	OFF	low		1
atmAa15	OFF	low		1

Notice that the atm event category does not change.

- Remove the assigned status of the atm event category and view the log configuration:

```
host1(config)#no log severity atm
host1(config)#run show log config
log destination console severity WARNING
log destination nv-file severity CRITICAL
log destination syslog 10.10.4.240 facility 7 severity DEBUG
no log engineering
log fields timestamp instance no-calling-task
no log here
```

```
Warning: Logging to this terminal is disabled
log severity OFF
```

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	OFF	low		1
aaaEngineGeneral	OFF	low		1
aaaServerGeneral	OFF	low		1
aaaUserAccess	OFF	low		1
addressServerGeneral	OFF	low		1
ar1AaaServerGeneral	OFF	low		1
atm	OFF	low		1
atm1483	OFF	low		1
atmAa15	OFF	low		1

Notice that the atm event category follows the systemwide severity level of OFF. The systemwide setting takes precedence over the atm event category default of Error.

- Change all event categories, systemwide, to their default/unassigned levels, and view the log configuration:

```

host1(config)#no log severity *
Please wait...
host1(config)#run show log config
  log destination console severity WARNING
  log destination nv-file severity CRITICAL
  log destination syslog 10.10.4.240 facility 7 severity DEBUG
  no log engineering
  log fields timestamp instance no-calling-task
  no log here

Warning: Logging to this terminal is disabled
no log severity

```

category	severity	verbosity	filters	notes
-----	-----	-----	-----	-----
aaaAtm1483Cfg	ERROR	low		
aaaEngineGeneral	ERROR	low		
aaaServerGeneral	ERROR	low		
aaaUserAccess	ERROR	low		
addressServerGeneral	ERROR	low		
ar1AaaServerGeneral	ERROR	low		
atm	ERROR	low		
atm1483	ERROR	low		
atmAa15	ERROR	low		

### Configuring Log Verbosity for Individual Logs or All Logs

The default verbosity setting for all logs is low. To change the logging verbosity of an individual log, specify a category when you enter the **log verbosity** command. To change the log verbosity of every log, do not specify an event category when you enter the **log verbosity** command. However, after you enter the **log verbosity** command without specifying a particular event category, all logs are set to the new verbosity. No log verbosity overrides are saved.

**Example** The following example sets all log categories to verbosity medium, and then it sets the verbosity level for ds3 events to high.

```

host1(config)#log verbosity medium
host1(config)#log verbosity high ds3

```

### Setting the Timestamp for Log Messages

You can use the **service timestamps** command to format timestamps for log messages. By default, log messages display universal coordinated time (UTC) without the time zone.

The following examples illustrate how you can change the timestamp on log messages.

- Set the time zone to eastern daylight time (EDT), 5 hours behind UTC, and display the local time on the log messages.

```

host1(config)#clock timezone EDT -5

```

- Display UTC, but no time zone, on the log messages.

```
host1(config)#service timestamps log datetime
host1#exit
host1#show log data category cliCommand severity info
*****
NOTICE 05/14/2001 18:24:49 cliCommand: "configure terminal", console
NOTICE 05/14/2001 18:24:45 cliCommand: "service timestamps log datetime",
console
*****
```

- Display UTC and the time zone on the log messages.

```
host1#configure terminal
host1(config)#service timestamps log datetime show-timezone
host1(config)#exit
host1#show log data category cliCommand severity info
*****
NOTICE 05/14/2001 18:28:45 UTC EDT cliCommand: "configure terminal", console
NOTICE 05/14/2001 18:28:42 UTC EDT cliCommand: "service timestamps log
datetime show-timezone", console
*****
```

- Display no timestamp on the log messages.

```
host1#configure terminal
host1(config)#no service timestamps
host1#exit
host1#show log data category cliCommand severity info
*****
NOTICE 134 cliCommand: "configure terminal", console
NOTICE 133 cliCommand: "no service timestamps", console
*****
```

### **service timestamps**

- Use to format timestamps for log messages.
- For information about setting local times and time zones, see *JUNOS System Basics Configuration Guide, Chapter 12, Configuring the System Clock*.
- The **show log data** command displays the log data with the current timestamp format.
- The **show log data nv-file** command displays the log data with the timestamp format in effect at the time the log record was written.
- Use the **no** version to remove timestamps from log messages.

## Configuring Log Filters

Many event categories contain filters so you can further refine the type of information that the system logs. For example, when logging BGP connections, you can limit the information logged to a specific access class, peer, route map, or virtual router.

You define filters when you set the log severity for an event category. The online Help shows the options you can set for each filter.



**NOTE:** You can use the packet flow monitoring feature to create user-defined classification parameters that specify the packet data that is logged. See *Packet Tagging Overview* in *JUNOS Policy Management Configuration Guide, Chapter 4, Creating Classifier Groups and Policy Rules*.

The following example creates a filter that logs BGP connection information at the debug severity level on traffic that matches access list ListOne, and is incoming traffic to virtual router default.

```
host1(config)#log severity debug bgpevents ?
  access-class  Select an access list for the filter
  in            Select import/in direction for the filter
  out          Select export/out direction for the filter
  peer         Select a peer IP address for the filter
  route-map    Select a route map for the filter
  router       Identify an instance of a virtual router
  <cr>

host1(config)#log severity debug bgpevents access-class ?
  WORD  The access list

host1(config)#log severity debug bgpevents access-class ListOne ?
  filtering-router Identify virtual router where access-class/route-map are defined
  in              Select import/in direction for the filter
  out            Select export/out direction for the filter
  route-map      Select a route map for the filter
  <cr>

host1(config)#log severity debug bgpevents access-class ListOne route-map ?
  WORD  The route map

host1(config)#log severity debug bgpevents access-class ListOne route-map default ?
  filtering-router Identify virtual router where access-class/route-map are defined
  in              Select import/in direction for the filter
  out            Select export/out direction for the filter
  <cr>

host1(config)#log severity debug bgpevents access-class ListOne route-map default in
```

The next example limits the logging of PPP debug events to traffic to or from the POS interface in slot 2/0.

```
host1(config)#log severity debug ppp ?
  atm          Specify an ATM PPP interface
  fastEthernet Specify a fastEthernet interface
  gigabitEthernet Specify a gigabitEthernet interface
  mlppp        Specify an MLPPP network interface
  pos          Specify a POS PPP interface
  serial       Specify a serial PPP interface
  <cr>
host1(config)#log severity debug ppp pos 2/0
```

To obtain a list of the filters available in each event category, see *Chapter 2, Event Categories*.

## Turning Off Filters

You can turn off filters in three ways:

- Turn off all filters
- Turn off all filters for an event category
- Turn off a specific filter

To turn off all filters:

```
host1(config)#no log filters
```

To turn off all filters for an event category, use the **no** version of the **log severity** command along with the category name. For example:

```
host1(config)#no log severity bgpEvents filters
```

To turn off a specific filter, use the **no** version of the **log severity** command that you used to add the filter. For example:

```
host1(config)#no log severity bgpEvents peer 10.0.0.2 10.0.0.1
```

### **no log filters**

- Use to turn off log filters.
- To turn off all filters for an event category, specify the category name.
- Example

```
host1(config)#no log filters
```

- To turn off a specific filter, use the **no** version of the **log severity** command that you used to add the filter.

## Monitoring Logging System Events

Use the **show log configuration** command to display your log configuration. Use the **show log data** command to display system events on your screen.

You can use the output filtering feature of the **show** command to include or exclude lines of output based on a text string you specify. See *show Commands* in *JUNOS System Basics Configuration Guide, Chapter 2, Command-Line Interface* for details.

### **show log configuration**

- Use to show the logging configuration on your system.
- Example 1—Factory defaults are set

```
host1#show log configuration
log destination console severity WARNING
log destination nv-file severity CRITICAL
no log engineering
log fields timestamp instance no-calling-task
no log severity
```

category	severity	verbosity	filters
-----	-----	-----	-----
NameResolverLog	ERROR	low	
aaaAtm1483Cfg	ERROR	low	
aaaEngineGeneral	ERROR	low	
aaaServerGeneral	ERROR	low	
addressServerGeneral	ERROR	low	
atm	ERROR	low	
atm1483	ERROR	low	
atmAal5	ERROR	low	
bgpConnections	ERROR	low	
...			
cliCommand	NOTICE	low	
controlNetworkSlave	ERROR	low	
cops	ERROR	low	
...			
udpTraffic	ERROR	low	



- Example 2—Individual log **udpTraffic** is set to warning

```
host1#(config)#log severity warning udpTraffic
host1##show log configuration
log destination console severity WARNING
log destination nv-file severity CRITICAL
no log engineering
log fields timestamp instance no-calling-task
no log severity
```

category	severity	verbosity	filters
-----	-----	-----	-----
NameResolverLog	ERROR	low	
aaaAtm1483Cfg	ERROR	low	
aaaEngineGeneral	ERROR	low	
aaaServerGeneral	ERROR	low	
addressServerGeneral	ERROR	low	
atm	ERROR	low	
atm1483	ERROR	low	
atmAa15	ERROR	low	
bgpConnections	ERROR	low	
...			
cliCommand	NOTICE	low	
controlNetworkSlave	ERROR	low	
cops	ERROR	low	
...			
udpTraffic	WARNING*	low	

\* Default severity setting is overridden by the individual log severity setting.

- Example 3—**Log severity** is set to alert

```
host1#(config)#log severity alert
host1##show log configuration
log destination console severity WARNING
log destination nv-file severity CRITICAL
no log engineering
log fields timestamp instance no-calling-task
log severity ALERT
```

category	severity	verbosity	filters
-----	-----	-----	-----
NameResolverLog	ALERT#	low	
aaaAtm1483Cfg	ALERT#	low	
aaaEngineGeneral	ALERT#	low	
aaaServerGeneral	ALERT#	low	
addressServerGeneral	ALERT#	low	
atm	ALERT#	low	
atm1483	ALERT#	low	
atmAa15	ALERT#	low	
bgpConnections	ALERT#	low	
...			
cliCommand	ALERT#	low	
controlNetworkSlave	ALERT#	low	
cops	ALERT#	low	
...			
udpTraffic	ALERT#	low	

\* Default severity setting is overridden by the system-wide severity setting.

- Example 4—Individual log **atm** is set to severity warning

```

host1#(config)#log severity warning atm
host1#show log configuration
  log destination console severity WARNING
  log destination nv-file severity CRITICAL
  no log engineering
  log fields timestamp instance no-calling-task
  log severity ALERT

```

category	severity	verbosity	filters
-----	-----	-----	-----
NameResolverLog	ALERT#	low	
aaaAtm1483Cfg	ALERT#	low	
aaaEngineGeneral	ALERT#	low	
aaaServerGeneral	ALERT#	low	
addressServerGeneral	ALERT#	low	
atm	WARNING*	low	
atm1483	ALERT#	low	
atmAa15	ALERT#	low	
bgpConnections	ALERT#	low	
...			
cliCommand	ALERT#	low	
controlNetworkSlave	ALERT#	low	
cops	ALERT#	low	
...			
udpTraffic	ALERT#	low	

\* Default severity setting is overridden by the system-wide severity setting.

\* Default severity setting is overridden by the individual log severity setting.

**show log data**

- Use to display system events.
- Use keywords to select which events are displayed:
  - **category**—Limits the display to a single log event category. See the CLI online Help for available categories.

- Example

```
host1#show log data category os
```

- **delta**—Limits the display to events that occurred after the time set with the log baseline command.
- **nv-file**—Displays the information that is currently logged to nonvolatile storage.

- Example

```
host1#show log data nv-file
logFile.temp: The system cannot find the file specified.
ALERT 09/12/2000 21:29:17 os: ASSERTION FAILED: file mplsNvs2.cc, line 789
ALERT 09/20/2000 02:18:06 os: ASSERTION FAILED: file osPool.cc, line 819
ALERT 09/20/2000 02:26:35 os: ASSERTION FAILED: file osPool.cc, line 819
ALERT 09/20/2000 02:44:33 os: ASSERTION FAILED: file osPool.cc, line 819
ALERT 09/20/2000 04:56:35 os: ASSERTION FAILED: file osPool.cc, line 819
ALERT 09/27/2000 03:10:25 os: ASSERTION FAILED: file
/sw0/sc/nvs/include/./nvMapBackend.h, line 235
ALERT 10/02/2000 04:05:42 os: ASSERTION FAILED: file osHeap.cc, line 439
ALERT 10/02/2000 04:08:04 os: ASSERTION FAILED: file osMessageQueue.cc, line
42, rip1
ALERT 10/12/2000 03:43:38 os: PANIC: file osSemaphore.cc, line 54
ALERT 11/01/2000 02:03:49 os: ASSERTION FAILED: file cliCommand.cc, line 195
```

- **severity**—Displays events that have a specific severity level.

- Example

```
host1#show log data severity notice
NOTICE 01/10/2001 00:59:50 os: config -- using running
NOTICE 01/10/2001 00:59:52 os: srp application, build date: 0x3a437424 (FRI DEC 22 2000 15:32:52 UTC)
NOTICE 01/10/2001 00:59:52 os: last reset: user reboot, reason: not specified
NOTICE 01/10/2001 00:59:52 os: OsIsrRegistrar: 0xb
NOTICE 01/10/2001 00:59:52 os: OsIsrRegistrar: 0xa
NOTICE 01/10/2001 00:59:52 os: OsIsrRegistrar: 0x2
```

- By combining keywords, you can further limit the information displayed. See the CLI online Help for information about the keywords available at each level.

```
host1#show log data nv-file severity alert
```

