# How to configure logging in Cisco IOS

Other Network Infrastruct...

TCC_2 06-22-2009 05:35 PM

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## Introduction

Many network administrators overlook the importance of router logs. Logging can use for fault notification, network forensics, and security auditing.

Cisco routers log messages can handle in five different ways:

**Console logging:**By default, the router sends all log messages to its console port. Hence only the users that are physically connected to the router console port can view these messages.

**Terminal logging:**It is similar to console logging, but it displays log messages to the router's VTY lines instead. This is not enabled by default

**Buffered logging:**This type of logging uses router's RAM for storing log messages. buffer has a fixed size to ensure that the log will not deplete valuable system memory. The router accomplishes this by deleting old messages from the buffer as new messages are added.

**Syslog Server logging :**The router can use syslog to forward log messages to external syslog servers for storage. This type of logging is not enabled by default.

**SNMP trap logging:**The router is able to use SNMP traps to send log messages to an external SNMP server.

Sample router log messages:

**Level**

**Level name**

Router messages

| | | |
|---|---|---|
| 0 | Emergencies | System shutting down due to missing fan tray |
| 1 | Alerts | Temperature limit exceeded |

| | | |
|---|---|---|
| 2 | Critical | Memory allocation failures |
| 3 | Errors | Interface Up/Down messages |
| 4 | Warnings | Configuration file written to server, via SNMP request |
| 5 | Notifications | Line protocol Up/Down |
| 6 | Information | Access-list violation logging |
| 7 | Debugging | Debug messages |

## Configuration Overview:

### A)Console logging:

The router does not check if a user is logged into the console port or a device is attached to it; if console logging is enabled, messages are always sent to the console port that can cause CPU load.

To stop the console logging, use the "**no logging console"** global configuration command .you might want to limit the amount of messages sent to the console with the "**logging console level"** configuration command (for example, logging console Informational).

### B) Buffered logging:

You want your router to record log messages, instead of just displaying them on the console.To use logging buffered configuration command to enable the local storage of router log messages:

```
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#logging buffered informational
Router(config)#end
```

You can also Set the Log Size on router.

```
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#logging buffered 64000
Router(config)#end
```

**C) Terminal logging:**You want the router to display log messages to your VTY session in real time.Use the terminal monitor command to enable the displaying of log messages to your VTY:

```
Router#terminal monitor
Router#
```

To disable logging to your VTY session, use the following command:

```
Router#terminal no monitor
Router#
```

**D) Syslog Server logging:**

You want to send log messages to a remote syslog server. By using this we can send messages to an external device for storing this logs and the storage size does depend on the available disk space of the external syslog server. This option is not enabled by default.

If you have any syslog server please find the below simple config.

router#conf t

Router(config#logging host x.x.x.x

Router(config)#logging traps (i.e 0 1 2 3 4 5 .. according to your requirement)

before enabling logging be sure that your router is properly configure to collect proper time from any NTP server or manually configure to get time

Command to set time manually on router is (set clock) or to use ntp server use “ntp server x.x.x.x” to sync clock to router.

Use the logging source-interface configuration command to specify a particular IP address for syslog messages:

Router(config)#logging source-interface Loopback0

E) **Clearing the Router's Log**

Use the clear logging command to clear the router's internal log buffer:

Router#clear logging
Clear logging buffer [confirm]<enter>
Router#

F) To display the state of system logging (syslog) and the contents of the standard system logging message buffer,, use the show logging privileged EXEC command.

Router# show logging

Syslog logging: enabled

Console logging: disabled

Monitor logging: level debugging, 266 messages logged.

Trap logging: level informational, 266 messages logged.

Logging to 10.1.1.1

SNMP logging: disabled, retransmission after 30 seconds

0 messages logged

Router#.

## Related Information:

Troubleshooting, Fault Management, and Logging

Implementing Logging Services on Cisco ASR 9000 Series Routers.

Catalyst 6500 Series Switch and Cisco 7600 Series Router Firewall Services Module Logging Configuration and System Log Messages.
Configuration Change Notification and Logging.

Tags: configuration ios k90552812

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## COMMENTS

**TheDukeofBaghdad** Community Member 06-30-2015 03:4

Thanks a lot .. it's very useful to review the Logging for people that have short memory (like myself)
^_^

best of luck

**Loc Nguyen** Community Member 11-05-2015 07:4

Thanks, it is short and sweet.

**gautham.com** Community Member

08-01-2017 08:0

Thank you, very short and easy to understand.

**Reece Boucher** Community Member

01-07-2018 06:2

The above is very helpful, but...

Is there a way to clear a config for all previous settings for a particular config item?

ie.

To set a new syslog server I would enter logging server 10.x.x.y, but how can I remove previous settings if they are not known (inherited a network that was largely unmanaged).

that is, there may be multiple logging servers already configured.

Basically I want to get back to a single logging server entry (the same applies to other settings such as DNS, NTP and local users).

thanks.

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