System Error Messages Overview

This publication lists and describes Cisco IOS XR system error messages. The system software sends these messages to the console (and, optionally, to a logging server on another system) during operation. Not all system error messages indicate problems with your system. Some are purely informational, and others may help diagnose problems with communications lines, internal hardware, or the system software.

This manual also includes messages that appear when the system crashes.

Obtaining Technical Assistance

When the recommended action of an error message advises that you contact Cisco technical support, submit a Cisco Technical Assistance Center (TAC) service request. Please see the section "Obtaining Documentation and Submitting a Service Request" in the preface of this document.

Before contacting TAC, you should perform the following tasks to assist TAC in troubleshooting your service request:

- Capture system logs for the past two days.
- Execute the **show tech-support** command.
- Obtain crash dumps from the router.

How This Manual Is Organized

The individual chapters provide descriptions of system messages related to Cisco IOS XR software. The messages are organized according to the particular system category that produces the messages. The category sections appear in alphabetical order, and within each category section, messages are listed alphabetically by group code. Each message is followed by an explanation and a recommended action.

For alphabetizing purposes, lowercase and uppercase letters are treated the same.

How to Read System Messages

System messages begin with a percent sign (%) and are structured as follows.

```
%CATEGORY-GROUP-SEVERITY-MNEMONIC: Message-text
```

`CATEGORY` is a code consisting of two or more uppercase letters that indicate the category to which the message refers. Table 1 lists the system category codes for the Cisco CRS-1
Cisco XR 12000 Series Router, and Cisco ASR 9000 Series Router.

`GROUP` is a code consisting of two or more uppercase letters that indicate the group to which the message refers. A group can be a hardware device, a protocol, or a module of the system software.

`SEVERITY` is a single-digit code from 0 to 7 that reflects the severity of the condition. The lower the number, the more serious the situation. Table 2 lists the severity levels.

`MNEMONIC` is a code that uniquely identifies the error message.

`Message-text` is a text string describing the condition. This portion of the message sometimes contains detailed information about the event, including terminal port numbers, network addresses, or addresses that correspond to locations in the system memory address space. Because the information in these variable fields changes from message to message, it is represented here by short strings enclosed in square brackets (`[ ]`). A decimal number, for example, is represented as `[dec]`. Table 3 lists the representations of variable fields and the type of information in them.

The following is a sample system error message:

```
%ACL-IP_ACL_PARSE-2-ALLOC Unable to allocate memory for [chars]
```

Table 1 Category Codes

Code	Description of Category
ACL	All Access Control List (ACL) related messages.
APP_INFRA	All Application infrastructure related messages.
DIAG	All Diagnostic related messages.
FABRIC	All Fabric (HW and SW both) related messages.
FORWARDING	All CEF and FIB related messages.
HA	All High Availability (HA) related messages.
INSTALL	All Installation related messages.
IP	All Internet Protocol (IP) related messages.
L1	All Layer 1 (L1) related messages.
L2	All Layer 2 (L2) related messages, for instance ethernet drivers, PoS, SONET, PLIMS, and so forth.
L3	All Layer 3 (L3) related messages.
LICENSE	All License related messages.
MEDIA	All Media related messages, including disk, nvram, flash, and so forth.
MGBL	All Management Plane and Manageability related messages, for instance, config, cli, sml, pm, and so forth.
OS	All Operating System (OS) and OS infrastructure related messages.

Table 1 Category Codes

Code	Description of Category
PKT_INFRA	All Packet Infrastructure related messages, such as ifmgr, tunnels, bundlemgr, pakman, and so forth.
PLATFORM	All Platform related commands, for instance, shelf mgr, chassis, env ctrl, and so forth.
QOS	All Quality of Service (QoS) related messages.
ROUTING	All routing related messages, such as MPLS, OSPF, BGP, Multicast, MRIB, RIB, and so forth.
SECURITY	All security related messages, such as AAA, IPSec and related protocols, and so forth.
SERVICES	All service related messages, such as RSPP, and SD.
SNMP	All Simple Network Management Protocol (SNMP) related messages, such as BGP MIB, CONFIG MIB, SNMP agent. MIB location does not matter.
SYSDB	All system database related messages.

Table 2 Error Message Severity Levels

Level	Description
0 – emergency	System unusable
1 – alert	Immediate action needed
2 – critical	Critical condition
3 – error	Error condition
4 – warning	Warning condition
5 – notification	Normal but significant condition
6 – informational	Informational message only
7 – debugging	Appears during debugging only

Message severity levels correspond to the keywords assigned by the **logging console** and **logging monitor** global configuration commands that define where and at what level these messages appear. In general, the default is to log messages from level 0 (emergencies) to level 7 (debugging). However, the default level varies by platform.

Level 4 severity messages should be monitored and if the warning affects your router, investigate and take the necessary action. Levels 5 to 7 are only informational and TAC should not be contacted.

For more information, see the system configuration chapter and descriptions of the **logging console** and **logging monitor** commands in the appropriate Cisco IOS configuration guide and command reference publications.

Table 3 Representation of Variable Fields in Messages

Representation	Type of Information
[atalk_address]	AppleTalk address
[atalk_net]	AppleTalk network, either 600 or 600-601

Table 3 Representation of Variable Fields in Messages (continued)

Representation	Type of Information
[char]	Single character
[chars]	Character string
[dec]	Decimal number
[enet]	Ethernet address (for example, 0000.FEED.00C0)
[hex]	Hexadecimal number
[inet]	Internet address (for example, 10.0.2.16)
[int]	Integer
[ipv6_addr]	IP version 6 (IPv6) address
[node]	Address or node name
[p]	Packet
[sci_notation]	Scientific notation
[t-line]	Terminal line number in octal (or decimal if the decimal-TTY service is enabled)
[v-name]	VINES name; or number (hex or decimal)

Message Traceback Reports

Some messages describe internal errors and contain traceback information. This information is very important and should be included when you report a problem to your technical support representative.

The following sample message includes traceback information:

```
-Process= "Exec", level= 0, pid= 17
-Traceback= 1A82 1AB4 6378 A072 1054 1860
```