About This Manual

This publication lists and describes Cisco Internetwork Operating System (Cisco IOS) system error messages. The system software sends these error 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, while others may help diagnose problems with communications lines, internal hardware, or the system software.

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

How This Manual Is Organized

This manual contains three main chapters.

- The "System Error Messages" chapter provides descriptions of error messages related to the Cisco IOS software, except for the CIP facility. The messages are organized according to the particular system facility that produces the messages. The facility sections appear in alphabetical order, and within each facility section, messages are listed alphabetically by mnemonic. Each error message is followed by an explanation and a recommended action. If several error messages share the same explanation and recommended action, the messages are presented as a group followed by the common explanation and recommended action.

- The "CIP System Error Messages" chapter provides descriptions of error messages related to the CIP facility. The messages are organized according to the particular system subfacility that produces the messages. The subfacility sections appear in alphabetical order, and within each system subfacility section, messages are listed alphabetically by mnemonic. Each error message is followed by an explanation and a

recommended action. If several error messages share the same explanation and recommended action, the messages are presented as a group followed by the common explanation and recommended action.

- The last chapter, "System Failure Error Messages," covers error messages that appear when the system image crashes.

The index of error messages is alphabetized as follows:

1 Facility code

2 Subfacility code (if applicable)

3 Mnemonic

4 Severity level

How to Read System Error Messages

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

```
%FACILITY-SUBFACILITY-SEVERITY-MNEMONIC: Message-text
```

FACILITY is a code consisting of two or more uppercase letters that indicate the facility to which the message refers. A facility can be a hardware device, a protocol, or a module of the system software. Table 1 lists the system facilities codes.

SUBFACILITY is a code that is relevant only in Channel Interface Processor (CIP) error messages. Table 2 lists the CIP subfacility codes. For more information on CIP message format, see the "CIP System Error Messages" chapter.

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 3 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 4 lists the representations of variable fields and the type of information in them.

The following is a sample system error message:

```
%LINK-2-BADVCALL: Ints. TDR=[dec]
```

Table 1   Facility Codes

Code	Facility
AAA	TACACS+ Authentication, Authorization, and Accounting security
AIP	ATM Interface Processor
ALIGN	Memory optimization in reduced instruction-set computer (RISC) processor
APPN	Advanced Peer-to-Peer Networking
ARAP	Apple Remote Access Protocol
AT	AppleTalk
ATM	Asynchronous Transfer Mode
BGP	Border Gateway Protocol
BRI	Integrated Services Digital Network (ISDN) Basic Rate Interface
BSC	Binary Synchronous Communications mode
BSTUN	Block serial tunneling
CBUS	ciscoBus controller
CCP	Point-to-Point Compression Control Protocol
CI	75xx platform chassis interface
CIP FACILITY:	Channel Interface Processor (See Table 2 for CIP subfacility codes.)
CLEAR	Clear facility
CLNS	OSI Connectionless Network Services

Table 1   Facility Codes (Continued)

Code	Facility
CLS	Cisco Link Services
CLSDR	Cisco Link Services Driver
COMP	Point-to-point compression
CONTROLLER	Controller
CSC2	CSC2/CSC3 CPU cards
DBUS	Data bus
DIALER	Dial-on-demand routing
DIRRESP	Director responder
DLC	Data-link control
DLSw	Data-link switching
DMA	Direct memory access
DNET	DECnet
DNSIX	Department of Defense Intelligence Information System Network Security for Information Exchange
DSPU	Downstream physical unit
DSX1	Channelized E1 (Europe) and T1(US) telephony standard
DUAL	Enhanced Interior Gateway Routing Protocol
DVMRP	Distance Vector Multicast Routing Protocol
EGP	Exterior Gateway Protocol
ENV	Environmental monitor card
ENVM	Environmental Monitor for Cisco 7000 series
ETHERNET	Ethernet for the C1000 series
FDDI	Fiber Distributed Data Interface
FDDISTAT	FDDI state
FILESYS	Personal Computer Memory Card International Association (PCMCIA) Flash card

Table 1   Facility Codes (Continued)

Code	Facility
FLASH	Flash nonvolatile memory
FR	Frame Relay
GRIP	Xerox Network Systems (XNS) Routing Protocol
HD	HD64570 serial controller
HUB	Cisco Ethernet hub
IBM2692	IBM Token Ring chip set
IGRP	Interior Gateway Routing Protocol
IP	Internet Protocol
IPC	Interprocess Communication
IPFAST	IP fast switching
IPRT	Internet Protocol routing
IPX	Internetwork Packet Exchange Protocol
ISDN	Integrated Services Digital Network
LANCE	Local Area Network Controller Ethernet
LANE	LAN emulation
LANMGR	IBM LAN Network Manager
LAPB	X.25 Link Access Procedure, Balanced
LAT	DEC Local Area Transport
LEX	LAN extension
LINEPROTO	Line Protocol
LINK	Data link
LLC2	Logical Link Control type 2
LNMC	LAN network manager
LPD	Line printer daemon
M32	HDLC controller
MAILBOX	ChipCom mailbox support

Table 1   **Facility Codes (Continued)**

Code	Facility
MCI	Multiport Communications Interface
MK5	MK5025 serial controller
MROUTE	Multicast route
NETMGT	Network Management
NHRP	Next Hop Resolution Protocol
NIM	Network interface module
OIR	Online insertion and removal
OSPF	Open Shortest Path First
PA	Port adapter
PAD	X.25 packet assembler/disassembler
PARSER	Parser
PCBUS	PC Industry-Standard Architecture (ISA) -to-Access Pro router interface
PPP	Point-to-Point Protocol
QA	Queue and accumulator
QLLC	Qualified Logical Link Control
QUICC	MC68360 Quad Integrated Communications Controller
RADIX	Radix facility
RCMD	Remote commands
REGEXP	Regular expression parser
RIP	IP Routing Information Protocol
RSP	Route switch processor
RSRB	Remote source-route bridging
S4T68360	The 4 port synchronous serial adapter based on the 68360 processor
SDLC	Synchronous Data Link Control

Table 1   Facility Codes (Continued)

Code	Facility
SDLLC	SDLC/Logical Link Control type 2 (LLC2) translation
SEC	IP security
SERVICE_MODULE	Service Module
SLIP	Serial Line IP
SMF	Software MAC error
SMRP	Simple Multicast Routing Protocol
SNAPSHOT	Snapshot dial-on-demand routing
SNMP	Simple Network Management Protocol
SSE	Silicon switching engine
STANDBY	Hot Standby Router Protocol
STUN	Serial tunneling
SUBSYS	Software subsystems
SYS	Operating system
SYSMGT	System Management
TAC	Terminal Access Controller Protocol Access Control System
TBRIDGE	Transparent bridging
TCP	Transmission Control Protocol
TMQ	Inbound terminal port queuing
TN	Telnet
TR	Token Ring
TUN	Tunnel
UCODE	Microcode
UTIL	Utility
VINES	Banyan VINES
VIP	Versatile Interface Processor

Table 1   Facility Codes (Continued)

Code	Facility
X25	X.25
XNS	Xerox Network Systems

Table 2   CIP Subfacility Codes

Code	Facility
ADAPTER	Adapter processing
BSQ	Buffer status queue processing
CBUS_ATTN	ciscoBus controller statistics
CBUS_WRITE	ciscoBus controller write support
CCA	Channel card adapter
CLAW	Common Link Access for Workstations
CONFIG	Configuration processing
CTA	Channel transport architecture
DEBUGGER	Messages issued when nonrecoverable errors occur
DIAG	Diagnostic processing
DMA	Direct memory access
GET_DATA	Internal routine for allocating transfer elements
INT	Interrupt handler
IPC	Interprocess Communication
LOADER	Relocating loader
LOVE	CIP-to-router statistics
MBUF	Message buffer
MEMD	Memory device
MSG802	IEEE 802.2cx Logical Link Control (LLC) protocol stack
NEVADA	Internal controller
OFFL	Offload protocol

Table 2   CIP Subfacility Codes (Continued)

Code	Facility
SCB	Storage control block
SCHED	Multitasking scheduler
SLC	Serial link controller
SSI802	Common Service System Service Interface (SSI)
SUBSYS	Software subsystem
SYS	CIP operating system
SYSMGT	Network management processing for system management remote procedure calls
TCPIP	Transmission Control Protocol/Internet Protocol
TN3270	TN3270 server terminal emulation

Table 3   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

Error message severity levels correspond to the keywords assigned by the **logging** global configuration commands that define where and at what level these messages appear. The default is to log messages to the console at the debugging level (7). For more information, see the system configuration chapter and descriptions of the **logging** command in the appropriate Cisco IOS configuration guide and command reference publications.

Table 4   Representation of Variable Fields in Error Messages

Representation	Type of Information
[dec]	Decimal number
[hex]	Hexadecimal number
[char]	Single character
[chars]	Character string
[sci_notation]	Scientific notation
[node]	Address or node name
[atalk_address]	AppleTalk address
[atalk_net]	AppleTalk network, either 600 or 600-601
[enet]	Ethernet address (for example, 0000.FRED.00C0)
[inet]	Internet address (for example, 12.128.2.16)
[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)

Error 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
```