System Messages

About System Messages

Note For detailed reference information about faults, events, errors, and system messages, see the *Cisco ACI System Messages Reference Guide* or the *Cisco APIC Management Information Model Reference*, which is a web-based application.

In addition to creating a log entry, a fault or event in APIC can trigger the sending of a system message. The system message typically contains a subset of information about the fault or event, and the message is sent by syslog, by an SNMP trap, or by a Cisco Call Home message.

Many system messages are specific to the action that a user is performing or the object that a user is configuring or administering. These messages can be the following:

- Informational messages, providing assistance and tips about the action being performed
- Warning messages, providing information about system errors related to an object, such as a user account or service profile, that the user is configuring or administering
- Finite state machine (FSM) status messages, providing information about the status of an FSM stage

A system message can contain one or more variables. The information that the APIC uses to replace these variables depends upon the context in which you see the message. Some messages can be generated by more than one type of condition.

Fault Syslogs

Fault-generated system messages are triggered by these mechanisms:

- A fault rule

- A threshold crossing
- A failure of a task or finite state machine (FSM) sequence

The fault-generated system messages are described in the *Cisco APIC Management Information Model Reference*, which is a web-based application. Under the **System Messages** navigation tab, select **Syslog Faults** or **Syslog FSM Transitions**.

Examples

This example shows a rule-based fault and the resulting system message generated by the fault:

```
Fault (rule-based): class=faultInst

mo (fault:Inst)

ack               no
cause             node-failed
changeSet         delayedHeartbeat (Old: no, New: yes), fabricSt (Old:
active, New: inactive)
childAction
code              F0110
created           2014-05-22T22:45:28.913+00:00
descr             Node 102 not reachable. unknown
dn                topology/pod-1/node-102/fault-F0110
domain            infra
highestSeverity   critical
lastTransition    2014-05-22T22:45:28.913+00:00
lc                soaking
occur             1
origSeverity      critical
prevSeverity      critical
rule              fabric-node-failed
severity          critical
status
subject           fabric-node
type              environmental
```

The following system message is generated by this fault:

```
syslog:
May 22 15:45:28 192.168.10.1 <1026> May 22 22:45:28 apic1
%LOG_LOCAL0-2-SYSTEM_MSG
[F0110][soaking][node-failed][critical][topology/pod-1/node-102/fault-F0110]
Node 102 not reachable. unknown
```

This example shows a threshold crossing fault and the resulting system message generated by the fault:

```
Fault (threshold crossing): class=faultInst

ack               no
cause             threshold-crossed
changeSet         normalizedLast:84
childAction
code              F41650
created           2014-05-22T21:17:33.849+00:00
descr             TCA: eqptTemp5min normalizedLast value 84 raised above threshold 80
dn                sys/ch/scslot-6/sc/sensor-1/fault-F41650
domain            infra
```

```
highestSeverity   critical
lastTransition    2014-05-22T22:50:55.012+00:00
lc                raised
occur             75
origSeverity      major
prevSeverity      cleared
rule              tca-eqpt-temp-normalized-last
severity          major
status
subject           counter
type              operational
```

The following system message is generated by this fault:

```
syslog:
May 22 15:49:54 192.168.10.102 <1027> May 22 22:49:54 spine1
%LOG_LOCAL0-3-SYSTEM_MSG
[F41650][raised][threshold-crossed][major][sys/ch/scslot-6/sc/sensor-1/fault-F41650]
TCA: eqptTemp5min normalizedLast value 84 raised above  threshold 80
```

Event Syslogs

Event-generated system messages are triggered by these mechanisms:

- An event rule
- An event in the NX-OS operating system of a leaf or spine switch

The event rule-generated system messages are described in the *Cisco APIC Management Information Model Reference*, which is a web-based application. Under the **System Messages** navigation tab, select **Syslog Events**.

The NX-OS operating system event messages are listed in the *Cisco ACI System Messages Reference Guide*.

Examples

This example shows a rule-based event record and the resulting system message generated by the event:

```
Event: class=eventRecord

mo:

affected     topology/pod-1/lnkcnt-1/lnk-101-1-1-to-1-1-3
cause        link-state-change
changeSet    linkState:ok, n1:101, n2:1, p1:1, p2:3, s1:1, s2:1
childAction
code         E4208219
created      2014-05-22T22:45:27.757+00:00
descr        Link State of Fabric Link is set to ok
dn           subj-[topology/pod-1/lnkcnt-1/lnk-101-1-1-to-1-1-3]/rec-4294968577
id           4294968577
ind          state-transition
modTs        never
severity     info
status
trig         oper
txId         1729382256910270971
```

```
user         internal
```

The following system message is generated by this event:

```
syslog:
May 22 15:45:27 192.168.10.1 <1030> May 22 22:45:27 apic1
%LOG_LOCAL0-6-SYSTEM_MSG
[E4208219][link-state-change][info][subj-[topology/pod-1/lnkcnt-1/lnk-101-1-1-to-1-1-3]/rec-4294968577]
Link State of Fabric Link is set to ok
```

This example shows an audit log event record and the resulting system message generated by the event:

```
Audit log: class=aaaModLR

mo

affected     uni/userext/user-nancy
cause        transition
changeSet    accountStatus:active, clearPwdHistory:no, email:nj@example.com,
             expiration:never, expires:no, firstName:Nancy, lastName:Johnson,
             name:nancy, pwdLifeTime:no-password-expire, unixUserId:15909
childAction
code         E4205213
created      2014-05-22T23:00:38.011+00:00
descr        User nancy created
dn           subj-[uni/userext/user-nancy]/mod-4294967339
id           4294967339
ind          creation
modTs        never
severity     info
status
trig         config
txId         9799832789158202025
user         admin
```

The following system message is generated by this event:

```
syslog:
May 22 16:00:40 192.168.10.1 <1030> May 22 23:00:40 apic1
%LOG_LOCAL0-6-SYSTEM_MSG
[E4205213][transition][info][subj-[uni/userext/user-nancy]/mod-4294967339]
User nancy created
```

System Message Structure

System messages have the following structure:

```
TIMESTAMP SOURCE %FACILITY-SEVERITY-MNEMONIC: Message-text
```

The fields in the message are as follows:

- TIMESTAMP

  The year, month, date, and time of day when the message was generated.

- SOURCE

The platform that sent the message, such as apic2 (for APIC messages) or nexus (for switch messages).

- FACILITY

  The facility code consists 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.

- SEVERITY

  The syslog severity level 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. The syslog severity terminology differs from APIC severity terminology, which follows the ITU Perceived Severity values described in RFC5674.

  The following table lists the message severity levels along with the equivalent ITU values:

Severity Level	ITU Level	Description
0 – emergency		System is unusable
1 – alert	Critical	Immediate action required
2 – critical	Major	Critical condition
3 – error	Minor	Error condition
4 – warning	Warning	Warning condition
5 – notification	Indeterminate, Cleared	Normal but significant condition
6 – informational		Informational message only
7 – debugging		Message that appears during debugging only

- MNEMONIC

  The MNEMONIC code uniquely identifies the error message.

- Message-text

  Message-text is a text string that describes the condition. The text string 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 variable fields change from message to message, they are represented here by short strings enclosed in square brackets ([ ]). A decimal number, for example, is represented as [dec]. The following table lists the variable fields in messages:

Representation	Type of Information
[chars] or [char]	Character string
[dec]	Decimal
[hex]	Hexadecimal integer
[int]	Integer
[num]	Number

Examples

This example shows a typical system message:

```
2014 Jan 25 21:42:07 Nexus: ETHPORT-5-IF_DOWN_ADMIN_DOWN:
Interface Ethernet3/1 is down (Administratively down)
```

In this system message:

- Nexus indicates that the generating condition occurred in the NX-OS operating system of a switch.
- ETHPORT is the facility code.
- 5 is the severity level, indicating a notification message.
- IF_DOWN_ADMIN_DOWN is the mnemonic code.
- “Interface Ethernet3/1 is down (Administratively down)” is the message text.

This example shows a typical system message:

```
May 22 15:49:54 192.168.10.102 <1027> May 22 22:49:54 spine1
%LOG_LOCAL0-3-SYSTEM_MSG
[F41650][raised][threshold-crossed][major][sys/ch/scslot-6/sc/sensor-1/fault-F41650]
TCA: eqptTemp5min normalizedLast value 84 raised above threshold 80
```

In this system message:

- spine1 indicates that the generating condition occurred in a spine switch.
- LOG_LOCAL0 is the facility code.
- 3 is the severity level, indicating an error condition.
- SYSTEM_MSG is the mnemonic code.
- “[F41650][raised][threshold-crossed][major][sys/ch/scslot-6/sc/sensor-1/fault-F41650] TCA: eqptTemp5min normalizedLast value 84 raised above threshold 80” is the message text.