



UCSM Fault Management



UCSM Fault types

Type	Description	Monitoring
fsm	An FSM task has failed to complete successfully, or Cisco UCS Manager is retrying one of the stages of the FSM.	These faults are not intended for remote Syslog/SNMP notification
equipment	Cisco UCS Manager has detected that a physical component is inoperable or has another functional issue.	Essential for service monitoring.
server	Cisco UCS Manager is unable to complete a server task, such as associating a service profile with a server.	These faults are raised during server provisioning or Service Profile association.
configuration	Cisco UCS Manager is unable to successfully configure a component.	These faults are raised during server provisioning or Service Profile association.
environment	Cisco UCS Manager has detected a power problem, thermal problem, voltage problem, or loss of CMOS settings.	Essential for service monitoring.
management	Cisco UCS Manager has detected a serious management issue, such as one of the following: <ul style="list-style-type: none"> •Critical services could not be started •The primary switch could not be identified •Components in the instance includes incompatible firmware versions 	Essential for service monitoring.
connectivity	Cisco UCS Manager has detected a connectivity problem, such as an unreachable adapter.	Essential for service monitoring.
network	Cisco UCS Manager has detected a network issue, such as a link down.	Essential for service monitoring.
operational	Cisco UCS Manager has detected an operational problem, such as a log capacity issue or a failed server discovery.	Does not have significant remote monitoring value

Recommendations for Syslog monitoring

- The Syslog MSG part contains UCSM [EVENT CODE] and [FAULT CODE]
- Syslog parsing rules should be defined to include only specific codes that customer is intended to monitor
- All other messages that do not have event/fault code or have a different one should be discarded.
- Alternative is to filter all coded events/faults parsing severity field.

Syslog example:

```
Apr 19 17:11:12 UTC: %UCSM-6-LOG_CAPACITY: [F0461][info][log-capacity][sys/chassis-1/blade-7/mgmt/log-SEL-0] Log capacity on Management Controller on server 1/7 is very-low ]
```

UCSM version 1.4 Syslog Format

- Apr 19 17:11:12 UTC: **%UCSM-6-LOG_CAPACITY:**
[F0461][info][log-capacity][sys/chassis-1/blade-7/mgmt/log-SEL-0] Log capacity on Management Controller on server 1/7 is very-low
- **FACILITY**— Refers to the source of the message, such as a hardware device, a protocol, or a module of the system software. Note that this FACILITY is Cisco specific and is only relevant within the message string. It is different from the facility defined in RFC 3164 for the syslog protocol. For UCSM derived messages, it will be UCSM.
- **SEVERITY**— Syslog severity code
- **MNEMONIC**— This is a device-specific code that uniquely identifies the message. This maps to the fault type in UCSM.
- **Message-text**— This is a text string that describes the message and can contain details such as port numbers and network addresses.

UCS Syslog Examples - Faults

- 2011 Apr 19 17:11:12 UTC: %UCSM-6-LOG_CAPACITY: [F0461][info][log-capacity][sys/chassis-1/blade-7/mgmt/log-SEL-0] Log capacity on Management Controller on server 1/7 is very-low
- 2011 Apr 20 14:33:14 UTC: %UCSM-3-CONFIGURATION_FAILURE: [F0327][major][configuration-failure][org-root/ls-test] Service profile test configuration failed due to insufficient-resources,mac-address-assignment,system-uuid-as
- 2011 Apr 20 20:50:25 UTC: %UCSM-3-THERMAL_PROBLEM: [F0382][major][thermal-problem][sys/chassis-1/fan-module-1-1] Fan module 1/1-1 temperature: lower-critical
- 2011 Apr 20 14:33:14 UTC: %UCSM-5-UNASSOCIATED: [F0334][warning][unassociated][org-root/ls-test] Service profile test is not associated

UCS Syslog Examples – Events

- 2011 Apr 22 16:53:18 UTC: %UCSM-6-EVENT:
[E4195931][456249][transition][ucs-ericwill\ericwill][] [FSM:BEGIN]: Hard-reset server sys/chassis-1/blade-7(FSM:sam:dme:ComputePhysicalHardreset)
- 2011 Apr 22 16:53:18 UTC: %UCSM-6-EVENT:
[E4195931][456250][transition][ucs-ericwill\ericwill][] [FSM:STAGE:END]:
(FSM-STAGE:sam:dme:ComputePhysicalHardreset:begin)
- 2011 Apr 22 16:53:18 UTC: %UCSM-6-EVENT:
[E4195932][456251][transition][ucs-ericwill\ericwill][] [FSM:STAGE:ASYNC]:
Preparing to check hardware configuration server sys/chassis-1/blade-7(FSM-STAGE:sam:dme:ComputePhysicalHa
- 2011 Apr 22 16:53:23 UTC: %UCSM-6-EVENT:
[E4195932][456252][transition][internal][] [FSM:STAGE:STALE-SUCCESS]:
Preparing to check hardware configuration server sys/chassis-1/blade-7(FSM-STAGE:sam:dme:ComputePhysicalHardres
- 2011 Apr 22 16:53:23 UTC: %UCSM-6-EVENT:
[E4195932][456253][transition][internal][] [FSM:STAGE:END]: Preparing to
check hardware configuration server sys/chassis-1/blade-7(FSM-STAGE:sam:dme:ComputePhysicalHardreset:PreSani
- 2011 Apr 25 18:27:01 UTC: %UCSM-6-EVENT:
[E4196181][535831][transition][internal][] [FSM:END]: Hard-reset server
sys/chassis-1/blade-7(FSM:sam:dme:ComputePhysicalHardreset)

UCS Syslog Examples – Audit Log

- 2011 May 15 10:19:14 UTC: %UCSM-6-AUDIT: [session][internal][creation][] Web B: remote user ibm logged in from 172.25.206.73
- 2011 Apr 22 16:53:18 UTC: %UCSM-6-AUDIT: [admin][ucs-ericwill\ericwill][modification][] server 1/7 power-cycle/reset action requested: hard-reset-immediate
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] service profile test created
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] service profile Power MO created
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] Ether vnic eth1 created
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] Ethernet interface created
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] Ether vnic eth0 created
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] Ethernet interface created
- 2011 Apr 20 14:33:14 UTC: %UCSM-6-AUDIT: [admin][ericwill][creation][] Fc vnic vhba created

How UCSM severity mapped to syslog level

UCSM Severity	Syslog level (v1.3 and prior)	Syslog level (v1.4 and beyond)
info	Info	Info
warning	warning	notifications
minor	error	warnings
major	error	error
critical	critical	critical

Failure types that is important to monitor

Failure	Fault type	Fault code/Description
DIMM problems	equipment	F0185 - DIMM [id]/[id] on server [chassisId]/[slotId] operability: [operability]
Thermal problems	environmental	<p>F0176/F0177 - Processor [id] on server [chassisId]/[slotId] temperature: [thermal]</p> <p>F0187/F0188 - DIMM [id]/[id] on server [chassisId]/[slotId] temperature: [thermal]</p> <p>F0312/F0313 - Server [chassisId]/[slotId] (service profile: [assignedToDn]) oper state: [operState]</p> <p>F0379 - [side] IOM [chassisId]/[id] ([switchId]) operState: [operState]</p> <p>F0382/F0384 - Fan module [id]/[tray]-[id] temperature: [thermal] Fan module [id]/[tray]-[id] temperature: [thermal]</p> <p>F0383/F0385 - Power supply [id] in chassis [id] temperature: [thermal] Power supply [id] in fabric interconnect [id] temperature: [thermal] Power supply [id] in server [id] temperature: [thermal]</p> <p>F0409/F0411 - Temperature on chassis [id] is [thermal]</p> <p>F0539/F0540 - IO Hub on server [chassisId]/[slotId] temperature: [thermal]</p>
Voltage problems	environmental	<p>F0179/F0180 - Processor [id] on server [chassisId]/[slotId] voltage: [voltage]</p> <p>F0190/F0191 - Memory array [id] on server [chassisId]/[slotId] voltage: [voltage]</p> <p>F0389/F0391 - Power supply [id] in chassis [id] voltage: [voltage] Power supply [id] in fabric interconnect [id] voltage: [voltage] Power supply [id] in fex [id] voltage: [voltage] Power supply [id] in server [id] voltage: [voltage]</p> <p>F0425 - Possible loss of CMOS settings: CMOS battery voltage on server [chassisId]/[slotId] is [cmosVoltage]</p>

Failure types that is important to monitor

Failure	Fault type	Fault code/Description
Power problem	environmental	<p>F0369 - Power supply [id] in chassis [id] power: [power]Power supply [id] in fabric interconnect [id] power: [power]Power supply [id] in fex [id] power: [power]Power supply [id] in server [id] power: [power]</p> <p>F0408 - Power state on chassis [id] is [power]</p> <p>F0310 - Motherboard of server [chassisId]/[slotId] (service profile: [assignedToDn]) power: [operPower]</p> <p>F0311 - Server [chassisId]/[slotId] (service profile: [assignedToDn]) oper state: [operState]</p> <p>F0369 - Power supply [id] in chassis [id] power: [power]Power supply [id] in fabric interconnect [id] power: [power]Power supply [id] in fex [id] power: [power]Power supply [id] in server [id] power: [power]</p>
Equipment failures	equipment	<p>F0373 - Fan [id] in Fan Module [id]/[tray]-[id] operability: [operability]Fan [id] in fabric interconnect [id] operability: [operability]Fan [id] in fex [id] operability: [operability]Fan [id] in server [id] operability: [operability]</p> <p>F0374 - Power supply [id] in chassis [id] operability: [operability]Power supply [id] in fabric interconnect [id] operability: [operability]Power supply [id] in fex [id] operability: [operability]Power supply [id] in server [id] operability: [operability]</p> <p>F0313 - Server [chassisId]/[slotId] (service profile: [assignedToDn]) BIOS failed power-on self test</p> <p>F0317 - Server [chassisId]/[slotId] (service profile: [assignedToDn]) health: [operability]</p> <p>F0481 - [side] IOM [chassisId]/[id] ([switchId]) POST failure</p> <p>F0484 - Fan [id] in Fan Module [id]/[tray]-[id] speed: [perf]Fan [id] in fabric interconnect [id] speed: [perf]Fan [id] in server [id] speed: [perf]</p>

Failure types that is important to monitor

Failure	Fault type	Fault code/Description
Equipment failures	equipment	<p>F0478 - [side] IOM [chassisId]/[id] ([switchId]) is inaccessible</p> <p>F0291 - Fabric Interconnect [id] operability: [operability]</p> <p>F0376 - [side] IOM [chassisId]/[id] ([switchId]) is removed</p> <p>F0404 - Chassis [id] has a mismatch between FRU identity reported by Fabric/IOM vs. FRU identity reported by CMC</p> <p>F0405 - [side] IOM [chassisId]/[id] ([switchId]) has a malformed FRU</p>
HA Cluster Failures	network/ management	<p>F0293 - Fabric Interconnect [id], HA Cluster interconnect link failure</p> <p>F0294 - Fabric Interconnect [id], HA Cluster interconnect total link failure</p> <p>F0429 - Fabric Interconnect [id], HA functionality not ready</p> <p>F0451 - Fabric Interconnect [id], management services have failed</p> <p>F0452 - Fabric Interconnect [id], management services are unresponsive</p> <p>F0428 - Fabric Interconnect [id], election of primary management instance has failed</p> <p>F0430 - Fabric Interconnect [id], management services, incompatible versions</p>
Link failures	network/ connectivity	<p>F0276 - [transport] port [portId] on chassis [id] oper state: [operState], reason: [stateQual][transport] port [portId] on fabric interconnect [id] oper state: [operState], reason: [stateQual]</p> <p>F0277 - [transport] port [portId] on chassis [id] oper state: [operState], reason: [stateQual][transport] port [portId] on fabric interconnect [id] oper state: [operState], reason: [stateQual]</p> <p>F0367 - No link between IOM port [chassisId]/[slotId]/[portId] and fabric interconnect [switchId]:[peerSlotId]/[peerPortId]</p>