

# CUCM Common Problems on UCS Platform: Core, High CPU - I/O, Hung State

TAC

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## Introduction

This document describes how to troubleshoot five common problem scenarios encountered with Cisco Unified Communications Manager (CUCM) on the Unified Computing System (UCS) platform.

- [Scenario 1: High CPU Utilization Due to I/O Wait Issue](#)
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Some of the common causes are:

- Hard Disk failure
- Redundant Array of Independent Disks (RAID) controller failure
- Battery Backup Unit (BBU) failure

## Scenario 1: High CPU Utilization Due to I/O Wait Issue

### Symptoms

Cisco Call Manager (CCM) and Computer Telephony Integration (CTI) services restart due to the CCM CTI core.

### How to Verify

#### CUCM Traces

Use these CLI commands in order to collect CUCM traces:

- **show process using-most cpu**
- **show status**
- **utils core active list**
- **util core analyze output <latest , last two output>**

Examine these Real-Time Monitoring Tool (RTMT) logs:

- Detailed CCM
- Detailed CTI
- Real-time Information Server (RIS) Data collector PerfMonLogs
- Event Viewer Application logs
- Event Viewer System logs

## Sample Output

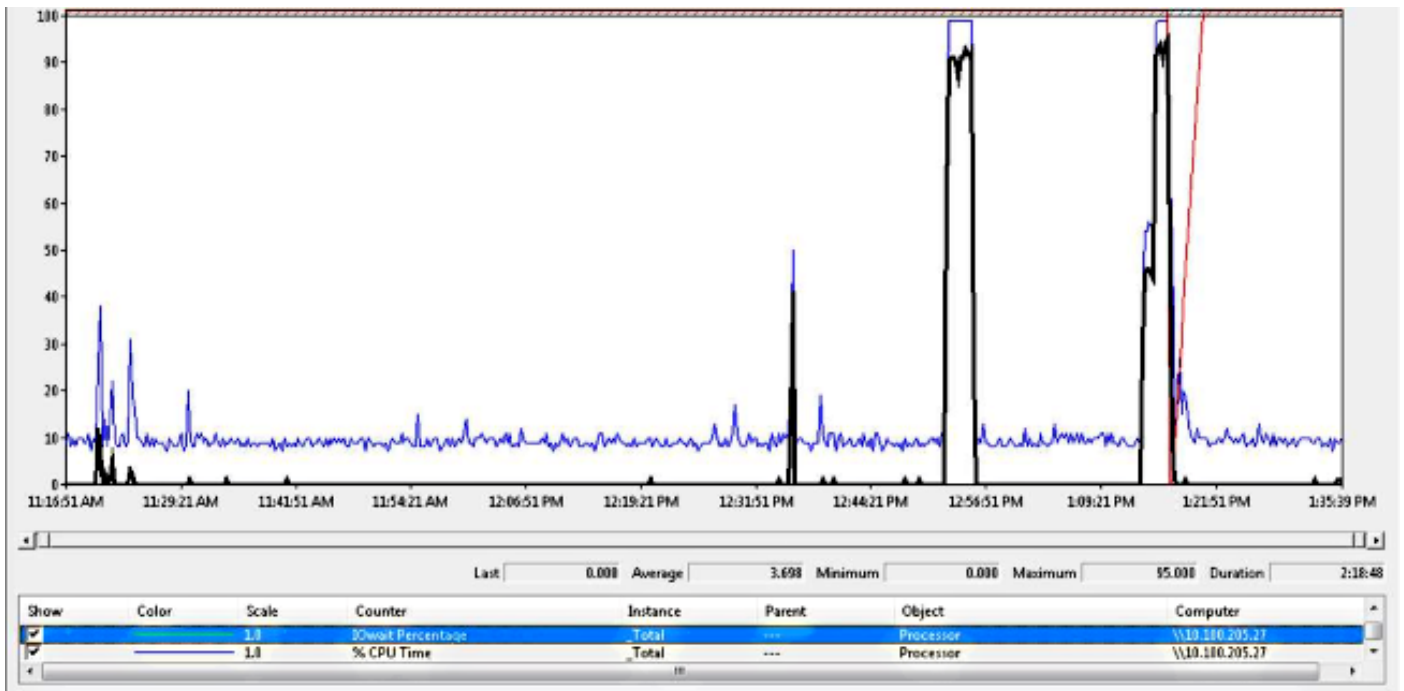
Here is some sample output:

```
admin:utils core active list
Size Date Core File Name
=====
355732 KB 2014-X-X 11:27:29 core.XXX.X.ccm.XXXX
110164 KB 2014-X-X 11:27:25 core.XXX.X.CTIDManager.XXXX admin:util core analyze output

=====
CCM service backtrace
=====
#0 0x00df6206 in raise () from /lib/libc.so.6
#1 0x00df7bd1 in abort () from /lib/libc.so.6
#2 0x084349cb in IntentionalAbort (reason=0xb0222f8 "CallManager unable to process
signals. This may be due to CPU or blocked function. Attempting to restart
CallManager.") at ProcessCMPProcMon.cpp:80
#3 0x08434a8c in CMPProcMon::monitorThread () at ProcessCMPProcMon.cpp:530
#4 0x00a8fca7 in ACE_OS_Thread_Adapter::invoke (this=0xb2b04270) at OS_Thread_
Adapter.cpp:94
#5 0x00a45541 in ace_thread_adapter (args=0xb2b04270) at Base_Thread_Adapter.cpp:137
#6 0x004aa6e1 in start_thread () from /lib/libpthread.so.0
#7 0x00ea2d3e in clone () from /lib/libc.so.6
=====

=====
CTI Manager backtrace
=====
#0 0x00b3e206 in raise () from /lib/libc.so.6
#1 0x00b3fbd1 in abort () from /lib/libc.so.6
#2 0x08497b11 in IntentionalAbort (reason=0x86fe488 "SDL Router Services declared
dead. This may be due to high CPU usage or blocked function. Attempting to restart
CTIDManager.") at ProcessCTIProcMon.cpp:65
#3 0x08497c2c in CMPProcMon::verifySdlTimerServices () at ProcessCTIProcMon.cpp:573
#4 0x084988d8 in CMPProcMon::callManagerMonitorThread (cmProcMon=0x93c9638) at Process
CTIProcMon.cpp:330
#5 0x007bdca7 in ACE_OS_Thread_Adapter::invoke (this=0x992d710) at OS_Thread_
Adapter.cpp:94
#6 0x00773541 in ace_thread_adapter (args=0x992d710) at Base_Thread_Adapter.cpp:137
#7 0x0025d6e1 in start_thread () from /lib/libpthread.so.0
#8 0x00bead3e in clone () from /lib/li
=====
```

From the RIS Data collector PerfMonLogs, you can see high disk I/O during the core time.



The backtrace matches Cisco bug ID [CSCua79544](#) : Frequent CCM Process Cores Due to High Disk I/O. This bug describes a hardware problem and explains how to further isolate the problem.

### Enable File I/O Reporting (FIOR):

Use these commands in order to enable FIOR:

```
utils fiors start
utils fiors enable
```

Then, wait for next occurrence. Here is the CLI command to collect the output: **file get activelog platform/io-stats**. Enter these commands in order to disable FIOR:

```
utils fiors stop
utils fiors disable
```

Here is some sample FIOR log output:

```
kern 4 kernel: fio_syscall_table address set to c0626500 based on user input
kern 4 kernel: fiostats: address of do_execve set to c048129a
kern 6 kernel: File IO statistics module version 0.99.1 loaded.
kern 6 kernel: file reads > 265000 and writes > 51200 will be logged
kern 4 kernel: fiostats: enabled.
kern 4 kernel: fiostats[25487] started.
```

### Solution

I/O WAIT is usually an issue with the UCS platform and its storage.

The UCS log is required to isolate the location of the cause. Refer to the [How to Collect UCS Logs](#) section for instructions to collect the traces.

## Scenario 2: CUCM Reboots Periodically

## Symptoms

CUCM reboots due to an ESXI crash but the underlying issue is that the UCS machine loses power.

## How to Verify

Examine these CUCM Traces:

- Cisco RIS Data collector PerfMonLog
- Event viewer - Application log
- Event Viewer - System log
- Detailed CCM

There is nothing relevant in the CUCM traces. The CUCM stops before the incident and this is followed a normal service restart. This eliminates CUCM and indicates that the cause lies elsewhere.

The UCS Platform where the CUCM runs has the problem. The UCS Platform has many Virtual Machine (VM) instances that run on it. If any VM encounters an error, then it is seen in the UCS logs.

The UCS log is required in order to isolate the location of the cause. Refer to the [How to Collect UCS Logs](#) section for instructions about how to collect the traces.

## Sample Cisco Integrated Management Controller (CIMC) Output

Here is some sample output:

```
5:2014 May 11 13:10:48:BMC:kernel:--<5>[lpc_reset_isr_handler]:79:LPC Reset ISR ->
ResetState: 1
5:2014 May 11 13:10:48:BMC:kernel:--<5>drivers/bmc/usb/usb1.1/se_pilot2_udc_usb1_1.c:
2288:USB FS: VDD Power WAKEUP- Power Good = OFF
5:2014 May 11 13:10:48:BMC:kernel:--<5>[se_pilot2_wakeup_interrupt]:2561:USB HS:
VDD Power = OFF
5:2014 May 11 13:10:48:BMC:BIOSReader:1176: BIOSReader.c:752:File Close :
/var/nuova/BIOS/BiosTech.txt
5:2014 May 11 13:10:48:BMC:kernel:--<5>[block_transfer_fetch_host_request_for_app]:
1720:block_transfer_fetch_host_request_for_app : BT_FILE_CLOSE : HostBTDescr = 27 :
FName = BiosTech.txt
5:2014 May 11 13:10:48:BMC:IPMI:1357: Pilot2SrvPower.c:466:Blade Power Changed To:
[ OFF ]
5:2014 May 11 13:10:49:BMC:lv_dimm:-- lv_dimm.c:126:[lpc_reset_seen]LPC Reset Count
is Different [0x1:0x2] Asserted LPC Reset Seen
```

## Solution

When you encounter this error, **Pilot2SrvPower.c:466:Blade Power Changed To: [ OFF ] - Power issue**, it means that the UCS machine loses power. Hence, you should ensure that the UCS machine gets sufficient power.

## Scenario 3: CUCM Crashes

### Symptoms

The CUCM VM crashes but still responds to pings. The vSphere console screen displays this information:

```
*ERROR* %No Memory Available*ERROR* %No Memory Available
```

### How to Verify

Examine these CUCM Traces:

- Cisco RIS Data collector PerfMonLog
- Event viewer - Application log
- Event Viewer - System log
- Detailed CCM

There is nothing relevant in the CUCM traces. The CUCM stops before the incident and is followed by a normal service restart. This eliminates CUCM and indicates that the cause lies elsewhere.

The UCS Platform where the CUCM runs has the problem. The UCS Platform has many VM instances that run on it. If any VM encounters an error, then it is seen in the UCS logs.

The UCS log is required in order to isolate the location of the cause. Refer to the [How to Collect UCS Logs](#) section for instructions about how to collect the traces.

### Workaround

Power off the VM and reboot it. After the reboot, the system works fine.

## Scenario 4: CUCM Hangs

### Symptoms

The CUCM server goes to a state where it hangs.

### How to verify

Examine these CUCM Traces:

- Cisco RIS Data collector PerfMonLog
- Event viewer - Application log
- Event Viewer - System log

- Detailed CCM

There is nothing relevant in the CUCM traces. The CUCM stops before the incident and is followed by a normal service restart. This eliminates CUCM and indicates that the cause lies elsewhere.

The UCS Platform where the CUCM runs has the problem. The UCS Platform has many VM instances that run on it. If any VM encounters an error, then it is seen in the UCS logs.

The UCS log is required in order to isolate the location of the cause. Refer to the [How to Collect UCS Logs](#) section for instructions about how to collect the traces.

## Workaround

Try a manual restart to see if it helps.

## Scenario 5: CUCM is in Read-Only Mode

### Symptoms

You receive this error:

```
The /common file system is mounted read only.Please use Recovery Disk to check the file system using fsck.
```

### How to Verify

The Publisher (PUB) and one Subscriber (SUB) that are installed on the same UCS machine show the read-only mode error. The recovery disk does not fix the issue.

There is nothing relevant in the CUCM traces. The CUCM stops before the incident and is followed by a normal service restart. This eliminates CUCM and indicates that the cause lies elsewhere.

The UCS Platform where the CUCM runs has the problem. The UCS Platform has many VM instances that run on it. If any VM encounters an error, then it is seen in the UCS logs.

The UCS log is required in order to isolate the location of the cause. Refer to the [How to Collect UCS Logs](#) section for instructions about how to collect the traces.

### Solution

After hardware replacement, rebuild the problematic nodes.

## How to Collect UCS logs

This section describes how to collect the traces needed to identify the problem or provides links to articles that provide that information.

### How to collect CIMC logs: Show tech

Refer to these articles for information about how to collect CIMC logs:

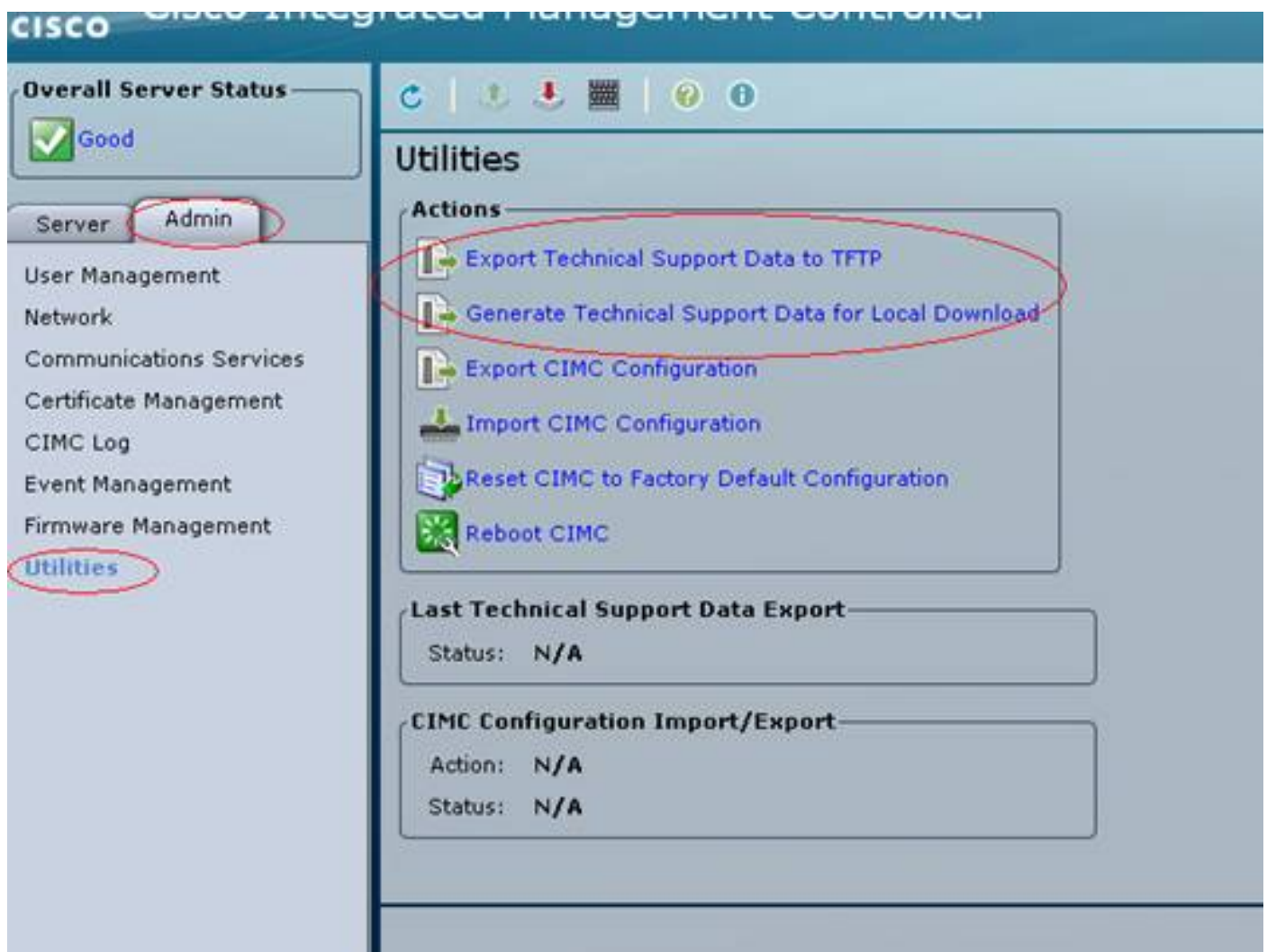
[Using Cisco CIMC GUI to Collect show-tech Details](#)

[Visual Guide to collect Tech Support files \(B and C series\)](#)

### How to collect ESXI logs: System logs

Refer to this article for information about how to collect ESXI logs:

[Obtaining Diagnostic Information for ESXi 5.x hosts using the vSphere Client](#)



### Sample CIMC CLI Output

Here is some sample CIMC CLI output from a Hard Disk Failure:



```
ucs-c220-m3 /chassis # show hdd
```

```
Name Status LocateLEDStatus
```

```
-----  
HDD1_STATUS present TurnOFF  
HDD2_STATUS present TurnOFF  
HDD3_STATUS failed TurnOFF  
HDD4_STATUS present TurnOFF  
HDD5_STATUS absent TurnOFF  
HDD6_STATUS absent TurnOFF  
HDD7_STATUS absent TurnOFF  
HDD8_STATUS absent TurnOFF
```

```
ucs-c220-m3 /chassis # show hdd-pid
```

```
Disk Controller Product ID Vendor Model
```

```
-----  
1 SLOT-2 A03-D500GC3 ATA ST9500620NS  
2 SLOT-2 A03-D500GC3 ATA ST9500620NS  
3 SLOT-2 A03-D500GC3 ATA ST9500620NS  
4 SLOT-2 A03-D500GC3 ATA ST9500620NS
```

```
ucs-c220-m3 /chassis/storageadapter # show physical-drive
```

```
Physical Drive Number Controller Health Status Manufacturer Model Predictive  
Failure Count Drive Firmware Coerced Size Type
```

```
-----  
1 SLOT-2 Good Online ATA ST9500620NS 0 CC03 475883 MB HDD  
2 SLOT-2 Good Online ATA ST9500620NS 0 CC03 475883 MB HDD  
3 SLOT-2 Severe Fault Unconfigured Bad ATA ST9500620NS 0 CC03 0 MB HDD  
4 SLOT-2 Good Online ATA ST9500620NS 0 CC03 475883 MB HDD
```

Here is some sample CIMC CLI output from RAID Controller failure:

```
ucs-c220-m3 /chassis/storageadapter # show virtual-drive
```

```
Virtual Drive Health Status Name Size RAID Level Boot Drive
```

```
-----  
0 Moderate Fault Degraded 951766 MB RAID 10 true
```

## Sample CIMC GUI output

Here is some sample CIMC GUI output from a Hard Disk Failure:

The screenshot shows the Cisco Integrated Management Controller (CIMC) GUI. At the top, it displays 'Cisco Integrated Management Controller' and 'Cisco IMC Hostname: C220-FCH8217ZLG'. The user is logged in as 'admin@10.11.12.19'. On the left, there is a navigation menu with 'Overall Server Status' highlighted, showing a 'Severe Fault' icon. The main content area is titled 'Faults and Logs' and has tabs for 'Fault Summary', 'Fault History', 'System Event Log', 'Cisco IMC Log', and 'Logging Controls'. The 'Fault Summary' tab is active, showing a table of 'Fault Entries' with 3 entries. The table has columns for 'DN', 'Probable Cause', and 'Description'. The entries are:

DN	Probable Cause	Description
/storage-SAS-SLOT-2/vd-0	equipment-degraded	Storage Virtual Drive 0 Degraded: please check the storage controller, or reset the storage drive
/storage-SAS-SLOT-2/pd-4	equipment-inoperable	Storage Local disk 4 is inoperable: reset or replace the storage drive 4
	psu-redundancy-fail	PS_REDUNDNT_MODE: Power Supply redundancy is lost : Reset or replace Power Supply

Here is some sample CIMC GUI output from a Purple Screen Error:

( Raid Controller failure | Defect: CSCuh86924 ESXi PSOD PF exception 14 - LSI RAID controller 9266-8i )

```

10.195.0.2 - KVM Console
File View Macros Tools Power VirtualMedia Help
VMware ESXi 5.1.0 (Release build-1065491 x86_64)
#PF Exception 14 in world 0632:helper31-2 IP 0x4100110f3f6f addr 0xce0
PTEs:0x4a2c67027;0x4a5bb7027;0x0;
cr0=0x8001003d cr2=0xce0 cr3=0x3a000 cr4=0x216c
franc=0x412206e1bda0 lp=0x4180110f3f6f err=0 rflags=0x10206
rax=0x0 rbx=0x410017682260 rcx=0x412206e27000
rdx=0x412206e1bf10 rbp=0x412206e1beb0 rsi=0x4180110f458c
rdi=0x0 r8=0x0 r9=0x0
r10=0x1 r11=0x1 r12=0x410016503470
r13=0x530 r14=0x4100165035e0 r15=0x4100110f450c
#PCPU0:0632/helper31-2
PCPU 0: ISVUVSHVVIS
Code start: 0x418010800000 VMK uptime: 0:02:03:51.401
0x412206e1beb0:[0x4180110f3f6f]megasas_reset_fusion#<None>#<None>+0x1e stack: 0x16501e40
0x412206e1bf60:[0x410010d5aac3]vmk_lmx_workqueue_callback@com.vmware.driverAPI#9.2+0x11a stack: 0x0
0x412206e1bfb0:[0x41001004042f]helpFunc@vkernel1#nover+0x52e stack: 0x0
0x412206e1bfb0:[0x0]<unknown> stack: 0x0
base fs=0x0 gs=0x418041000000 Kgs=0x0
Coredump to disk. Slot 1 of 1.
DiskDump: FAILED: Timeout
Debugger waiting(world 0632) -- no port for remote debugger. "Escape" for local debugger.

```

Here is some sample CIMC GUI output from a BBU Failure:

Cisco Integrated Management Controller

CIMC Hostname: RVT-UCS-C210-2  
Logged in as: admin@10.0.53.13

Overall Server Status: Good

Storage Cards

Storage Adapters

Controller	PCI Slot	Product Name	Serial Number	Firmware Package Build	Product ID	Battery Status	Cache Memory Size
SLOT-5	SLOT-5	LSI MegaRAID SAS 9261-8i	SV14220417	12.12.0-0087	LSI Logic	unknown	394 MB

Storage Card: SLOT-5

Battery Backup Unit

General

- Battery Type: unknown
- Voltage: unknown V
- Voltage Low: unknown
- Current: unknown A
- Temperature: unknown degrees C
- Temperature High: unknown
- Charge: unknown
- Charging State: unknown
- Learn Cycle Requested: unknown
- Learn Cycle Active: unknown
- Learn Cycle Failed: unknown
- Learn Cycle Timeout: unknown
- I<sup>2</sup>C Errors Detected: unknown
- Battery Replacement Required: unknown
- Remaining Capacity Low: unknown

Error: required HW is missing (i.e. Alarm or BBU)

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The [Cisco Support Community](#) is a forum for you to ask and answer questions, share suggestions, and collaborate with your peers.

Refer to [Cisco Technical Tips Conventions](#) for information on conventions used in this document.

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