



## TelePresence

Troubleshooting Video Communications Server (VCS)  
Return Materials Authorization (RMA)

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at <http://www.cisco.com/go/trademarks>. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

Troubleshooting Video Communications Server (VCS) Return Materials Authorization (RMA)  
August 2012 Edition  
© 2012 Cisco Systems, Inc. All rights reserved.

## Table of Contents

<b>1</b>	<b>INTRODUCTION</b> .....	<b>4</b>
1.1	Release Notes .....	4
<b>2</b>	<b>TROUBLESHOOTING HARDWARE PROBLEM</b> .....	<b>4</b>
2.1	VCS will not Power Up or Boot Up or is Constantly Rebooting .....	4
2.2	TANDBERG Application / tsh Won't Start.....	4
2.3	VCS is Reporting Fan Failure .....	5
2.4	Document in Case and Process RMA Suspected Hard Disk Issues .....	5
2.5	High Temperature Warning or Alarm .....	5
2.6	VCS Serial Port Displays an Unexpected Login Prompt .....	5
2.7	Network Adapter Issues.....	6
<b>3</b>	<b>LOGS AND EVIDENCE</b> .....	<b>6</b>
3.1	System Snapshot (from web) .....	6
3.2	System Snapshot (from root Shell) .....	7
3.3	Crash Logs .....	7
3.4	Sensors Logs .....	8
3.5	DMI Code .....	8
3.6	Board Test.....	8
3.7	smartctl.....	9
3.8	ethtool Statistics Dump .....	11
3.9	Alarms and Warnings.....	12
3.10	Physical evidence.....	12
<b>4</b>	<b>RMA APPROVAL PROCEDURE</b> .....	<b>13</b>
<b>5</b>	<b>REFERENCES AND NOTES</b> .....	<b>13</b>

## 1 Introduction

This document provides a hardware problem troubleshooting guide on **Cisco TelePresence Video Communications Server (Cisco VCS) Return Materials Authorization (RMA)**.

### 1.1 Release Notes

Technical Change	Title(s) of Affected Section(s)	Changes Made By	Date
Initial Release		Unknown	????
Revision		Vernon Depee	8/8/2012

## 2 Troubleshooting hardware problem

### 2.1 VCS will not Power Up or Boot Up or is Constantly Rebooting

The customer reports that the system will not power up or boot up or keeps rebooting. Complete the following checklist:

1. Are any LEDs/LCD display on?
  - If **yes**, the device is powering on, but it might not be booting.
2. Are any devices connected to the USB ports of the VCS?
  - o If **yes**:
    1. Remove them and try rebooting the VCS
    2. If the VCS still fails to boot, connect to the serial console, and collect as much of the output for the boot up as possible, then escalate to Level 2
  - o If **no**:
    1. Try changing the power socket the VCS is plugged into and the power cable that is being used.
    2. Make sure the power and soft-switch on the back of the unit are both in the correct position and have been pressed as appropriate.
3. If the box keeps rebooting, but is up for a little while, try and collect a sensors log. See [Logs and Evidence](#) for further information.
4. If the VCS still fails to boot, then escalate to **Research and Development (R&D)** (see [RMA Approval Procedure](#)) with a list of the steps done to check the system.

### 2.2 TANDBERG Application / tsh Won't Start

When trying to log in as admin, a message “unable to connect to tsh” or “/tmp/hwfail exists: TANDBERG application startup inhibited” is seen. Complete the following checklist:

1. Does /tmp/hwfail exist? (cat /tmp/hwfail as root to read the file)
  - a. If **yes**, collect the following information from [Logs and Evidence](#):
    - System snapshot from root shell
    - DMI Code
    - Board Test
    - Physical Evidence
  - b. Only then escalate to **R&D** and follow the [RMA Approval Procedure](#).

2. When typing “tsh” or logging in as admin, is a message saying “cannot connect to tsh” seen?
  - a. Check that the system has a release key: **cat /tandberg/etc/rk (this is no longer an issue as of X7)** and that it is valid for the system’s serial number and the software level they are trying to run.
  - b. If there are still problems with the application not starting, collect the following information:
    - System snapshot from root shell
    - DMI Code
    - Board Test
    - Physical Evidence
  - c. Then escalate to R&D following the details in [RMA Approval Procedure](#).

## 2.3 VCS is Reporting Fan Failure

Customer reports that a fan has failed:

1. Collect the proof of failure from the system as shown in [Logs and Evidence \(Alarms and Warnings / Physical evidence\)](#).

## 2.4 Document in Case and Process RMA Suspected Hard Disk Issues

Customer reports that there is a hard disk failure:

Which harddisk do you think failed? /dev/sda or /dev/sdb?

If the operating system is booting, then /dev/sda likely did not fail. To test and see if /dev/sdb failed, you can run a smartctl or check the current mounts:

Good:

```
~ # mount | grep sdb  
/dev/sdb2 on /mnt/harddisk type ext3 (rw,relatime,errors=continue,barrier=0,data=ordered)
```

You can also create a file on /mnt/harddisk to make sure that you are still capable of writing to the disk :  
touch /mnt/harddisk/test

If you see I/O errors at all when attempting to do anything on /dev/sdb2, the drive has likely failed.  
Attempt a smartctl.

## 2.5 High Temperature Warning or Alarm

Customer reports that the VCS has a high temperature alarm:VCS has a side air intake and rear air exhaust.

1. Check to make sure there is sufficient ventilation, particularly at the sides. Even if the sides look OK another device (e.g., a CODIAN MCU) may be exhausting directly into the air intake on the VCS.
2. Collect the proof of failure from the system as shown in [Logs and Evidence \(Alarms and Warnings / Physical evidence\)](#).
3. Then escalate to R&D following the details in [RMA Approval Procedure](#).

## 2.6 VCS Serial Port Displays an Unexpected Login Prompt

When a VCS boots up, typically we see something like:

```
tandberg login: root  
Password:
```

However during startup a message from the Fusion MPT SAS driver may collide with the login prompt. In this case the following output appears:

```
tandberg login: Fusion MPT misc device (ioctl) driver 3.04.14
mptctl: Registered with Fusion MPT base driver
mptctl: /dev/mptctl @ (major,minor=10,220)
```

This issue is due to a software issue which R&D are aware of and should not result in an RMA. The issue is fixed in X6.0.

## 2.7 Network Adapter Issues

The customer reports that there are problems with the network adapter and/or the LAN link is down:

1. run `ifconfig -a` as root. If they are on a physical vcs, make sure that there are entries for eth0, eth1, eth2, and eth3. If there are not, then one of the NIC's has failed and process the RMA.
2. Make sure that a different LAN cable and port on the switch/router that the VCS is connected to has been tried.
3. Collect evidence that there is a problem (see [Logs and Evidence](#)):
  - o `ethtool` Statistics Dump
  - o Board Test
  - o Physical Evidence
  - o Alarms and Warnings
  - o System Snapshot
4. Then escalate to R&D following the information in RMA Approval Procedure.

## 3 Logs and Evidence

### 3.1 System Snapshot (from web)

The system snapshot process creates a file archive of various VCS files which can be downloaded to the administrator's PC. To initiate a system snapshot:

1. Go to **Maintenance > System snapshot**.
2. Click **Create system snapshot**.
3. Wait for the archive to be created (this can take some time; there are a lot of files).
4. A file download dialogue is displayed so that the file can be downloaded to the local pc (make sure the PC has enough disk space!).

Taking a snapshot does reserve system resources. On a very busy system it may be advisable to initiate the snapshot at a 'low traffic' period (although not too long after the event you want to analyze!).

The VCS only stores a maximum of 1 snapshot archive (.tar.gz) on disk at any one time (the most recent) – in `/mnt/harddisk/snapshot`.

## 3.2 System Snapshot (from root Shell)

The system snapshot process creates a file archive of various VCS files which can be downloaded to the administrator's PC. To initiate a system snapshot:

1. Log in to the VCS as **Root**
2. Type `snapshot.sh`
3. Wait for the archive to be created (this can take some time; there are a lot of files).
4. Once the snapshot has been generated, it is available from here: **/mnt/harddisk/snapshot/** (it's a **tar.gz** archive) (secure copy, file transfer over SSH. We usually use winscp)

Taking a snapshot does reserve system resources. On a very busy system it may be advisable to initiate snapshot at a 'low traffic' period (although not too long after the event you want to analyze!).

The VCS only stores a maximum of 1 snapshot archive (.tar.gz) on disk at any one time (the most recent)

## 3.3 Crash Logs

Every time there is an application failure, an incident report gets written to disk, in the following directory: **/tandberg/crash/**

Incident reports are included in the snapshot archive.

R&D hosts an externally routable server, on to which the VCS can be configured to post the incident reports. If administrators are willing to configure the VCS to post incident reports, it speeds up notification of application failures.

Uploading of crash reports to the R&D VCS ACR server is configured on the **Maintenance > Incident reporting > Configuration** page.

- The incident reports sending mode needs to be set to **On** (it's **Off** by default).
- The incident reports URL needs to be set to <http://vcser.tandberg.com/submitapplicationerror/> (which it should be by default, though this may change to a cisco.com URL in the future). Note IPv6 Only VCS will not currently be able to post to this server as it is IPv4 only.
- Following an 'incident' (crash) an incident report is posted to this URL using HTTP (VCS source port 4000-4999).
  - It might not be the whole application crashing.
  - ACRs can also be generated by subcomponents in the system.

If the customer doesn't want to turn on crash reporting, any ACRs generated can be separately copied off the system and emailed to the escalations team or attached to a case. We can then manually upload the ACRs to the reporting server for investigation.

### 3.4 Sensors Logs

The VCS hardware includes a number of sensors, the values of which can be read by the Linux OS. These can be retrieved by typing “sensors” at the command prompt. The output can then be attached to the TTS ticket.

```

~ # sensors
acpitz-virtual-0
Adapter: Virtual device

it8712.7-isa-0290
Adapter: ISA adapter
VCore:      +1.22 V (min = +0.83 V, max = +1.39 V)
DDR 1.8V:   +1.78 V (min = +1.62 V, max = +1.98 V)
VCC 3.3V:   +3.31 V (min = +3.14 V, max = +3.47 V)
VCC 5V:     +5.00 V (min = +4.76 V, max = +5.24 V)
+12V:      +12.22 V (min = +9.60 V, max = +14.40 V)
VCC 1.5V:   +1.49 V (min = +1.42 V, max = +1.57 V)
VBat:       +3.26 V (min = +2.99 V)
Fan 1:      9375 RPM (min = 7670 RPM, div = 8)
Fan 2:      9375 RPM (min = 7670 RPM, div = 8)
Fan 3:      10546 RPM (min = 7670 RPM, div = 8)
Sys Temp1:  +18.0 C (high = +45.0 C)           sensor = thermistor
Sys Temp2:  +20.0 C (high = +45.0 C)           sensor = thermistor
CPU Temp:   +18.0 C (high = +50.0 C)           sensor = thermal diode

coretemp-isa-0000
Adapter: ISA adapter
Core 0:     +35.0 C (high = +78.0 C, crit = +100.0 C)

coretemp-isa-0001
Adapter: ISA adapter
Core 1:     +32.0 C (high = +78.0 C, crit = +100.0 C)

```

### 3.5 DMI Code

In the event of an issue, the DMI code can provide the escalations team with a useful reference code.

Run the command

```
“cat /sys/class/dmi/id/chassis_version”
```

and let the escalations team know the resulting output or include the dmidecode.txt file from the system snapshot.

### 3.6 Board Test

Run the command

```
“boarddetect”
```

and let the escalations team know the resulting output.



### 3.7 smartctl

The Linux OS includes a hard disk checker which looks at the hard disk SMART data. This can be run by typing

```
"smartctl -all /dev/sdb2"
```

at the command prompt. The output can then be attached to the TTS ticket.

```
~ # smartctl --all /dev/sdb2
smartctl 5.39.1 2010-01-28 r3054 [x86_64-pc-linux-gnu] (local build)
Copyright (C) 2002-10 by Bruce Allen, http://smartmontools.sourceforge.net

=== START OF INFORMATION SECTION ===
Model Family:      Seagate Barracuda 7200.10 family
Device Model:      ST3250410AS
Serial Number:     9RY29MGL
Firmware Version:  3.AAC
User Capacity:     250,059,350,016 bytes
Device is:         In smartctl database [for details use: -P show]
ATA Version is:    7
ATA Standard is:   Exact ATA specification draft version not indicated
Local Time is:     Mon Apr  4 16:10:02 2011 GMT
SMART support is:  Available - device has SMART capability.
SMART support is:  Enabled

=== START OF READ SMART DATA SECTION ===
SMART overall-health self-assessment test result: PASSED

General SMART Values:
Offline data collection status:  (0x82) Offline data collection activity
                                   was completed without error.
                                   Auto Offline Data Collection: Enabled.
Self-test execution status:      (   0) The previous self-test routine completed
                                   without error or no self-test has ever
                                   been run.

Total time to complete Offline
data collection:                  ( 430) seconds.
Offline data collection
capabilities:                      (0x5b) SMART execute Offline immediate.
                                   Auto Offline data collection on/off support.
                                   Suspend Offline collection upon new
                                   command.
                                   Offline surface scan supported.
                                   Self-test supported.
                                   No Conveyance Self-test supported.
                                   Selective Self-test supported.

SMART capabilities:                (0x0003) Saves SMART data before entering
                                   power-saving mode.
                                   Supports SMART auto save timer.
```

Troubleshooting Video Communications Server (VCS) Return Materials Authorization (RMA)

Error logging capability: (0x01) Error logging supported.  
 General Purpose Logging supported.

Short self-test routine  
 recommended polling time: ( 1) minutes.

Extended self-test routine  
 recommended polling time: ( 64) minutes.

SCT capabilities: (0x0001) SCT Status supported.

SMART Attributes Data Structure revision number: 10

Vendor Specific SMART Attributes with Thresholds:

ID#	ATTRIBUTE_NAME RAW_VALUE	FLAG	VALUE	WORST	THRESH	TYPE	UPDATED	WHEN_FAILED
1	Raw_Read_Error_Rate 35118725	0x000f	111	092	006	Pre-fail	Always	-
3	Spin_Up_Time 0	0x0003	097	097	000	Pre-fail	Always	-
4	Start_Stop_Count 1076	0x0032	099	099	020	Old_age	Always	-
5	Reallocated_Sector_Ct 0	0x0033	100	100	036	Pre-fail	Always	-
7	Seek_Error_Rate 313078675	0x000f	084	060	030	Pre-fail	Always	-
9	Power_On_Hours 23803	0x0032	073	073	000	Old_age	Always	-
10	Spin_Retry_Count 0	0x0013	100	100	097	Pre-fail	Always	-
12	Power_Cycle_Count 1078	0x0032	099	099	020	Old_age	Always	-
187	Reported_Uncorrect 0	0x0032	100	100	000	Old_age	Always	-
189	High_Fly_Writes 0	0x003a	100	100	000	Old_age	Always	-
190	Airflow_Temperature_Cel 26 (Lifetime Min/Max 24/32)	0x0022	074	068	045	Old_age	Always	-
194	Temperature_Celsius 26 (0 12 0 0)	0x0022	026	040	000	Old_age	Always	-
195	Hardware_ECC_Recovered 149212051	0x001a	081	051	000	Old_age	Always	-
197	Current_Pending_Sector 0	0x0012	100	100	000	Old_age	Always	-
198	Offline_Uncorrectable 0	0x0010	100	100	000	Old_age	Offline	-
199	UDMA_CRC_Error_Count 0	0x003e	200	200	000	Old_age	Always	-
200	Multi_Zone_Error_Rate 0	0x0000	100	253	000	Old_age	Offline	-
202	Data_Address_Mark_Errs 0	0x0032	100	253	000	Old_age	Always	-

SMART Error Log Version: 1  
 No Errors Logged

SMART Self-test log structure revision number 1

SMART Selective self-test log data structure revision number 1

SPAN	MIN_LBA	MAX_LBA	CURRENT_TEST_STATUS
1	0	0	Not_testing
2	0	0	Not_testing
3	0	0	Not_testing
4	0	0	Not_testing
5	0	0	Not_testing

Selective self-test flags (0x0):

After scanning selected spans, do NOT read-scan remainder of disk.  
 If Selective self-test is pending on power-up, resume after 0 minute delay.

### 3.8 ethtool Statistics Dump

The Linux OS includes a tool for dumping Ethernet adapter statistics. Run “ethtool -S eth0” for the main network adapter used by VCS or “ethtool -S eth1” if the customer has an issue with the VCS LAN 2 port.

```

~ # ethtool -S eth0
NIC statistics:
  rx_packets: 49308441
  tx_packets: 13055377
  rx_bytes: 10446941316
  tx_bytes: 8354830356
  rx_broadcast: 36524340
  tx_broadcast: 129146
  rx_multicast: 5884
  tx_multicast: 79
  rx_errors: 0
  tx_errors: 0
  tx_dropped: 0
  multicast: 5884
  collisions: 0
  rx_length_errors: 0
  rx_over_errors: 0
  rx_crc_errors: 0
  rx_frame_errors: 0
  rx_no_buffer_count: 0
  rx_missed_errors: 0
  tx_aborted_errors: 0
  tx_carrier_errors: 0
  tx_fifo_errors: 0
  tx_heartbeat_errors: 0
  tx_window_errors: 0
  tx_abort_late_coll: 0
  tx_deferred_ok: 0
  tx_single_coll_ok: 0
  tx_multi_coll_ok: 0
  tx_timeout_count: 0
  tx_restart_queue: 0
  rx_long_length_errors: 0
    
```

```

rx_short_length_errors: 0
rx_align_errors: 0
tx_tcp_seg_good: 115846
tx_tcp_seg_failed: 0
rx_flow_control_xon: 465
rx_flow_control_xoff: 465
tx_flow_control_xon: 0
tx_flow_control_xoff: 0
rx_long_byte_count: 10446941316
rx_csum_offload_good: 12205535
rx_csum_offload_errors: 0
rx_header_split: 0
alloc_rx_buff_failed: 0
tx_smbus: 0
rx_smbus: 0
dropped_smbus: 0
rx_dma_failed: 0
tx_dma_failed: 0

```

### 3.9 Alarms and Warnings

**Alarms and Warnings** are shown on the system web pages as well as when logging in to the CLI or running the

“xstatus”

command. They can also be displayed on the LCD panel.

Screen captures from the web interface or the output from “xstatus” must be provided, e.g.,

Alarm	State	Severity	Peer	Action	ID
<input type="checkbox"/> Hardware failure - Fan 2 3013 RPM (min = 7670 RPM, div = 8) ALARM	Raised	Critical			<a href="#">d445eea4-d8fd-11de-8914-001d09a14174</a>

## Hardware

### Fans

Fan 1	9375 RPM (min = 7670 RPM, div = 8)
Fan 2	2909 RPM (min = 7670 RPM, div = 8) ALARM
Fan 3	9375 RPM (min = 7670 RPM, div = 8)

### 3.10 Physical evidence

Any camera phone videos of procedures being carried out or pictures of monitor output, the LEDs, LCD and network link light display, such as the following examples are very useful in helping us confirm an RMA: For example:

### Alarm LED lit



### LCD text



## 4 RMA Approval Procedure

When TAC or any other organisation thinks a system should be RMA'd, the evidence as detailed above should be provided in the \_C3 ticket, and the ticket escalated to R&D (& approved persons?). R&D then reviews the ticket. When we are satisfied that the system does indeed need to be RMA'd, we add a note into the case to that affect. And the RMA may then proceed.

## 5 References and notes

GRWiki has a list of steps and information on how to collect traces and connect to a VCS:  
<http://grwiki.rd.tandberg.com/index.php/VCS/Troubleshooting>

**End of Document**