

PCoIP®

Device and Firmware Compatibility Guide

Revision K 1.10.04.09.2014



CLEARCUBE®

Technical Support

See the support Web site for technical updates, additional warranty information and documentation, and software revisions:

Web <http://www.clearcube.com/support>

Email: support@clearcube.com

Phone: (512) 652-3400 or call toll free
(866) 652-3400 (United States)

ClearCube Technology, Inc. Corporate Headquarters

ClearCube
3700 W Parmer Ln
Austin, Texas 78727

E-mail info@clearcube.com
Main Phone: (512) 652-3500 or call toll free (866) 652-3500 (United States)
Main Fax: (512) 652-3501

Or contact your local ClearCube Reseller or Authorized Service Provider

Copyrights

© 2014 by ClearCube Technology, Inc. All rights reserved. Under copyright laws, this publication may not be reproduced or transmitted in any form, electronic or mechanical, including photocopying, recording, storing in an information retrieval system, or translating, in whole or in part, without the prior written consent of ClearCube Technology, Inc.

This information is subject to change without notice and ClearCube shall not be liable for any direct, indirect, special, incidental or consequential damages in connection with the use of this material.

Trademarks

ClearCube™, Sentral™, Blade Switching BackPack™, PC Blade™, C/Port™, and I/Port™ are trademarks of ClearCube Technology Inc. Teradici and PCoIP are registered trademarks of Teradici Corporation in the United States and/or other countries. Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners.

Patents

The ClearCube Architecture and its components described in this user manual are protected by numerous granted and pending U.S. and international patents. Granted patents include: US05926172, US05966056, US05994952, US06012101, US06020839, US06037884, US06038616, US06119146, US06148182, US06167241, US06385666, US06421393, US06426970, US06633934, US06708247, US06735658, and US06886055.

Patents pending include: US S/N 09/755378, US S/N 10/279475, US S/N 10/198719, US S/N 10/198650, US S/N 10/409219, US S/N 09/728667, US S/N 09/728669, US S/N 10/411804, US S/N 10/411908, US S/N 10/458853, US S/N 10/364584, US S/N 10/301536, US S/N 60/411066, US S/N 10/662933, US S/N 10/662889, US S/N 10/662932, US S/N 10/662968, US S/N 10/301563, US S/N 10/662936, US S/N 10/301518, US S/N 10/662955 and US S/N 10/662954.

Inquiries regarding patented technology should be directed to ClearCube Corporate Headquarters

Contents

1	About This Document	1
2	Product Compatibility	1
2.1	Blades and Host Cards	1
2.2	Zero Clients and Host Cards	2
2.3	Host Cards and Firmware	2
2.4	Zero Clients and Firmware	3
2.5	TERA Firmware and VMware® View	4
2.6	TERA and COMM Firmware	4
2.6.1	TERA Compatibility with Lower TERA Versions	4
2.6.2	COMM Firmware Releases and Bundled TERA Firmware	6
3	File Details	6
3.1	TERA Files and Release Dates	6
3.2	COMM Files and Release Dates	7
4	Firmware Upgrade and Downgrade Paths	8
4.1	For Instructions about Upgrading Devices	8
4.2	Upgrading TERA Firmware	8
4.3	Downgrading TERA Firmware	9
4.4	Upgrading COMM Firmware	9
4.5	Downgrading COMM Firmware	10

1 About This Document

This document details TERA and COMM firmware used in ClearCube® zero clients and host cards using PCoIP® technology. Topics include hardware and software support, interoperability with other versions, and upgrade and downgrade compatibility and requirements.

This document assumes that you are familiar with PCoIP technology and have a basic understanding of firmware and computer hardware.

NOTE: See *PC-over-IP System User's Guide* for detailed instructions about installing firmware at <http://www.clearcube.com/support/>.

2 Product Compatibility

The sections below show the compatibility of devices using PCoIP technology.

2.1 Blades and Host Cards

NOTE: A V5240 quad host card consists of a V5220 card and a V5240 card. A V5240 quad host card does not operate without a V5220 card.

A V5340 quad host card consists of a V5320 card and a V5340 card. A V5340 quad host card does not operate without a V5320 card.

Blade	Supported Host Cards
A6106D	V5320, V5340, V5422, V5442
A6105D	V5220, V5240, V5320, V5340
A1410	V5120, V5140
M1024W	V5422, V5442
M1022W	V5422, V5442
R3082D	V5420, V5430
R3080D	V5220, V5320
R3040S	V5220, V5240, V5320, V5340
R1350	V5120

2.2 Zero Clients and Host Cards

The table below shows zero clients and supported host cards, where

- ✓ indicates that a host card and a zero client are compatible, and
- ✗ indicates that a host card and a zero client are not compatible.

In the models below, *n* is a digit of the model number. For example, CD76*nn* could be CD7622 or CD7624.

Model	V5120	V5140	V5220	V5240	V5320	V5340	V5420	V5422	V5430	V5442
CD76 <i>nn</i>										
CD77 <i>nn</i>										
CD78 <i>nn</i>										
CD95 <i>nn</i>	✓	✗	✓	✗	✓	✗	✓	✓	✓	✓
CD96 <i>nn</i>										
CD97 <i>nn</i>										
CD98 <i>nn</i>										
I942 <i>n</i>	✓	✗	✓	✗	✓	✗	✓	✓	✗	✗
C74 <i>nn</i>										
I9440	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗

2.3 Host Cards and Firmware

See the following notes for information about firmware compatibility and recommended pairings.

Host Card	COMM Firmware	TERA Firmware
V5442	Not applicable	4.0.3 and higher
V5430	Not applicable	4.1.0 and higher
V5422	Not applicable	4.0.3 and higher
V5420	Not applicable	4.1.0 and higher
V5340	0.4.22 and higher	Any compatible with COMM firmware on device up to 3.5.1 (see Notes)
V5320	Not applicable	3.5 and higher (but not with 4.0.3)
V5240	0.4.17 and higher	Any compatible with COMM firmware on device up to 3.5.1 (see Notes)
V5220	Not applicable	2.3 and higher (but not with 4.0.3) (see Notes)
V5140	0.4.11 and higher	Any compatible with COMM firmware on device up to 3.5.1 (see Notes)
V5120	Not applicable	Any (except for 4.0.3) (see Notes)

NOTES:

- ClearCube strongly recommends using the same COMM version on the host and client, and the same TERA version on the host and the client.
- Ensure that you use compatible COMM and TERA firmware. See [“2.6 TERA and COMM Firmware”](#) on [page 4](#) for a list of TERA and COMM pairings that ClearCube recommends. (Continued below)

- A V5240 quad host card consists of a V5220 card and a V5240 card. A V5240 quad host card does not operate without a V5220 card.
- A V5340 quad host card consists of a V5320 card and a V5340 card. A V5340 quad host card does not operate without a V5320 card.
- A V5240 card will not operate with a V5320 card and a V5320 card will not operate with a V5240 card.

2.4 Zero Clients and Firmware

In the models shown below, *n* is a digit of the model number. For example, CD76*nn* could be a CD7622 or a CD7624.

Zero Client	Supported COMM Firmware Version	Supported TERA Firmware Version
C7420 CD7422SFP CD7422SFPDB9 I9420	None	1.0 to 4.0.2, 4.1, 4.1.2
C7422	None	Zero client Revision A01 to A02: 1.0 to 4.0.2, 4.1, 4.1.2 Zero client Revision B01 and higher: 3.1.1 to 4.0.2, 4.1, 4.1.2
C7422G	None	Zero client Revision A01 to A03: 1.0 to 4.0.2, 4.1, 4.1.2 Zero client Revision B01 and higher: 3.1.1 to 4.0.2, 4.1, 4.1.2
C7424 C7424G	None	Zero client Revision A01 to B01: 1.0 to 4.0.2, 4.1, 4.1.2 Zero client Revision C01 and higher: 3.1.1 to 4.0.2, 4.1, 4.1.2
CD76 <i>nn</i>	None	4.0.3 and higher
CD77 <i>nn</i>	None	4.0.3 and higher
CD78 <i>nn</i>	None	4.0.3 and higher
CD95 <i>nn</i>	None	4.0.3 and higher
CD96 <i>nn</i>	None	4.0.3 and higher
CD97 <i>nn</i>	None	4.0.3 and higher
CD98 <i>nn</i>	None	4.0.3 and higher
I9422 I9424	None	Zero client Revision A01 to B01: 1.0 to 4.0.2, 4.1, 4.1.2 Zero client Revision C01 and higher: 3.1.1 to 4.0.2, 4.1, 4.1.2
I9440	All (except for 010 B1)	1.0 to 3.5.1

See 3.1 “TERA Files and Release Dates” on page 6 for a list of all supported TERA firmware.

2.5 TERA Firmware and VMware® View

TERA Firmware	Supports VMware View Version
4.2.0	5.0 and higher
4.1.2	5.0 and higher
4.1	5.0 and higher
4.0.3	5.0 and higher
4.0.2	5.0 and higher
4.0.1	5.0 and higher
4.0	5.0 and higher
3.5.1	5.0
3.5.0	5.0
3.4.1	4.6
3.3.1	4.5 and 4.6
3.2.1	4.0, 4.0.1, 4.0.2, and 4.5
3.2.0	4.0, 4.0.1 and 4.5
3.1.1	4.0 and 4.0.1
2.3	No support
1.11	No support
1.9	No support
1.7	No support
0.23	No support

2.6 TERA and COMM Firmware

The following sections detail:

- Compatibility of TERA firmware with lower-level TERA versions, and
- COMM firmware releases and the supported TERA firmware bundled in each release

NOTE: ClearCube recommends always using the same COMM version on the host and client, and the same TERA version on the host and the client.

2.6.1 TERA Compatibility with Lower TERA Versions

The following table shows all TERA firmware releases and the compatibility of each version with other TERA versions. Quad and dual devices use TERA firmware.

NOTE: ClearCube recommends always using the same TERA version on the host and on the client.

TERA version	Compatible with	Not compatible with	Installation Requirements	Install on Tera 2 Device?
4.2.0	4.1.2, 4.1.1, 4.1.0, 4.0.x, 3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	Yes
4.1.2	4.1.1, 4.1.0, 4.0.x, 3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	Yes
4.1	4.0.3, 4.0.2, 4.0.1, 4.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	Yes
4.0.3	4.0.2, 4.0.1, 4.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1, 3	Yes
4.0.2	4.0.1, 4.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
4.0.1	4.0, 3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
4.0	3.5.x, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
3.5.1	3.5.0, 3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
3.5.0	3.4.x, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
3.4.1	3.4.0, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
3.4.1 Beta	3.4.0, 3.3.x, 3.2.x, 3.1.x	3.0, 2.x, 1.x, 0.x	1	No
3.3.0	3.3.0, 3.3.1, 3.3.2	3.0, 2.x, 1.x, 0.x	1	No
3.2.1	3.1.x, 3.2.x	3.0, 2.x, 1.x, 0.x	1	No
3.2.0	3.1.0 through 3.1.2	3.0, 2.x, 1.x, 0.x	1	No
3.1.2	3.1.0, 3.1.1	3.0, 2.x, 1.x, 0.x	1	No
3.1.1	3.1.0	3.0, 2.x, 1.x, 0.x	1	No
3.1.0	3.1.0	3.0, 2.x, 1.x, 0.x	1	No
3.0	3.0	2.x, 1.x, 0.x	1	No
2.3	2.0 through 2.2	1.x, 0.x	1	No
2.2	2.0, 2.1	1.x, 0.x	1	No
2.1	2.0	1.x, 0.x	1	No
2.0	2.0	1.x, 0.x	1	No
1.12	1.x	0.x	2	No
1.11	1.10	0.x	2	No
1.10	1.0 through 1.9	0.x	2	No
1.9	1.0 through 1.8	0.x	2	No
1.8	1.0 through 1.7	0.x	2	No
1.7	1.0 through 1.6	0.x	2	No
1.6	1.0 through 1.5	0.x	2	No
1.5	1.0 through 1.4	0.x	2	No
1.4	1.0 through 1.3	0.x	2	No
1.3	1.0 through 1.2	0.x	2	No
1.2	1.0, 1.1	0.x	2	No
1.1	1.0	0.x	2	No
1.0	1.0	0.x	2	No
0.23	0.19 through 0.21	0.18	2	No

- 1) To install this firmware on a device, the existing firmware version must be 1.4 or higher.
- 2) To install this firmware on a device, the existing firmware version must be ≥ 0.18 and the bootloader version must be ≥ 2.0 .
- 3) This release is applicable to Tera 2 zero clients and host cards only.

2.6.2 COMM Firmware Releases and Bundled TERA Firmware

Each COMM firmware release is bundled with a specific TERA firmware release. The following table shows each COMM firmware release and the TERA firmware that it supports.

NOTE: Only quad devices use COMM firmware.

COMM Firmware Version	Supported TERA Firmware Version
0.4.23	3.5.1
0.4.22	3.5
0.4.21	3.5
0.4.20	3.3, 3.5
0.4.19	3.4.1
0.4.18	3.4.1 Beta
0.4.17upd3-3-0	3.3.0
0.4.17	3.1.1
0.4.16	1.11
0.4.15	1.11
0.4.14	1.9
0.4.12, 0.4.11	1.7

3 File Details

This section details each TERA and COMM firmware release and provides the date of each release.

3.1 TERA Files and Release Dates

TERA files include all files required to upgrade the TERA processor in dual devices. The table below shows each TERA version that ClearCube devices support, and identifies each version's release date.

TERA Version	File Name	Release Date (YYYY/MM/DD)
4.2.0	tera2_4-2-0_r4_2@15160.all tera1_4-2-0_r4_2@15160.all	2014/01/08
4.1.2	tera2_4-1-2_r4_1_2@14565.all tera1_4-1-2_r4_1_2@14565.all	2013/08/28
4.1.0	tera2_rel4-1-0_r4_1@14079.all tera1_rel4-1-0_r4_1@14079.all	2013/04/26
4.0.3	tera2_rel4-0-3_rc_tera_r4_0_3@13404.all	2012/11/09

TERA Version	File Name	Release Date (YYYY/MM/DD)
4.0.2	tera2_rel4-0-2_rc_tera_r4_0_2@13079.all teral_rel4-0-2_rc_tera_r4_0_2@13079.all	2012/08/23
4.0.1	tera2_rel4-0-1_rc_tera_r4_0@13022.all teral_rel4-0-1_rc_tera_r4_0@13022.all	2012/08/13
4.0	teral_rel4-0-0_rc_teral_r3_5@12092.all	2012/05/17
3.5.1	teral_rel3-5-1_rc_teral_r4_0@12593.all	2012/02/17
3.5.0	teralx00_rel3-5-0_11849.all	2011/12/02
3.4.1	teralx00_rel3-4-1_11491.all	2011/10/03
3.3.0	teralx00_rel3-3-0_v321.all	2011/02/08
3.1.1	teralx00_rel3-1-1_v270.all	2010/04/16
2.3	teralx00_rel2-3_v233.all	2009/10//08
1.11	teralx00_rel1-11_v193.all	2009/02/25
1.9	teralx00_rel1-9_v175.all	2008/11/18
1.7	teralx00_rel1-7_v163.all	2008/09/05
0.23	teralx00_rel0-23_v125.all	2008/04/10

3.2 COMM Files and Release Dates

COMM files include everything required to update a quad device, including firmware for the COMM and TERA processors. The following table details each COMM version, identifying the specific device or devices for the firmware and each version's release date.

COMM Version	Firmware for		Release Date (YYYY/MM/DD)	
	V5140/I9440	V5240		V5340
0.4.23	i9400-0.4.23-fw.zip	cct8377-0.4.23-fw.zip	cct8377-0.4.23-fw.zip	2012/06/29
0.4.22	i9400-0.4.22-fw.zip	cct8377-0.4.22-fw.zip	cct8377-0.4.22-fw.zip	2012/01/13
0.4.21	i9400-0.4.21-fw.zip	cct8377-0.4.21-fw.zip	cct8377-0.4.21-fw.zip	2012/01/12
0.4.20	i9400-0.4.20-fw.zip	cct8377-0.4.20-fw.zip	cct8377-0.4.20-fw.zip	2011/12/20
0.4.19	i9400_0.4.19-fw.zip	cct8377-0.4.19-fw.zip	cct8377-0.4.19-fw.zip	2011/10/20
0.4.18	i9400-0.4.18-fw.zip	cct8377-0.4.18-fw.zip	cct8377-0.4.18-fw.zip	2011/8/31
0.4.17upd	I9400-0.4.17upd3-3-0.zip	cct8377-0.4.17upd3-3-0.zip	None	2011/6/13 *
0.4.17upd	I9400-0.4.17upd-rd-fw.zip	cct8377-0.4.17upd-rd-fw.zip	None	2011/6/13 *
0.4.17	i9400-0.4.17-fw.zip	cct8377-0.4.17-fw.zip	None	2010/07/27
0.4.16	i9400-0.4.16-fw-23.zip and i9400-0.4.16-fw.zip	None	None	2009/05/26

COMM Version	Firmware for V5140/I9440	Firmware for V5240	Firmware for V5340	Release Date (YYYY/MM/DD)
0.4.15	i9400-0.4.15-fw.zip	None	None	2009/05/13
0.4.14	i9400-0.4.14-fw.zip	None	None	2009/02/07
0.4.12	i9400-0.4.12-fw.zip	None	None	2008/12/17
0.4.11	i9400-0.4.11-fw.zip	None	None	2008/10/30

* To use the I9400-0.4.17upd3.3.0.zip and cct8377-0.4.17upd3-3-0.zip files, you must run the I9400-0.4.17upd-rd-fw.zip and cct8377-0.4.17upd-rd-fw.zip files first, in that order.

4 Firmware Upgrade and Downgrade Paths

The following sections detail firmware upgrade and downgrade paths for TERA and COMM firmware on quad and dual zero clients and host cards.

4.1 For Instructions about Upgrading Devices

You can upgrade the firmware of individual ClearCube zero clients and host cards by uploading self-installing firmware files through a Web interface or by using ClearCube Sentral. You can also use Sentral to upgrade groups of devices. See *PC-over-IP System User's Guide* for information about updating device firmware. See *Sentral Administrator's Guide* for information about using Sentral to upgrade device firmware, for information about device groups, and more.

4.2 Upgrading TERA Firmware

The following sections detail the firmware upgrade paths for firmware release ranges. See *PC-over-IP System User's Guide* for instructions about how to perform firmware upgrades.

Installed Firmware Version	Upgrade Process
0.1 through 0.17	<ol style="list-style-type: none"> 1. Install firmware version 0.18. 2. Install a version 1.x (1.4 or greater). 3. Install the version to which you are upgrading
0.18 through 1.3	<ol style="list-style-type: none"> 1. Install a version 1.x release (1.4 or greater). 2. Install the version to which you are upgrading.
1.4 through 4.1.2	Install the version to which you are upgrading.

4.3 Downgrading TERA Firmware

The previous table shows ranges of TERA firmware versions. Some ranges of firmware require installing a specific version of firmware before you can upgrade or downgrade to the next range of firmware. You can use the previous table to determine if your downgrade path requires the installation of an intermediate firmware version. For information about how to downgrade firmware, see *PC-over-IP System User's Guide*, available on the ClearCube Support site.

NOTE: ClearCube recommends always using the same TERA version on the host and client.

4.4 Upgrading COMM Firmware

The following tables outline upgrade requirements for each firmware version and provide bootloader (U-Boot) version information to aid in verifying the success of an upgrade. See *PC-over-IP System User's Guide* for instructions about how to perform firmware upgrades.

NOTE: The following table assumes you are upgrading to the latest firmware version.

Installed Firmware Version	Upgrade Process
0.4.23 through 0.4.17upd	Install the version to which you are upgrading.
0.4.17 through 0.4.13, and 0.4.11	<ol style="list-style-type: none"> 1. Install the I9400-0.4.17upd-rd-fw.zip or cct8377-0.4.17upd-rd-fw.zip to the appropriate device as listed above. 2. View the Version screen to ensure that 0.4.17upd has loaded correctly. The Tera version will not change during this step. 3. Install the firmware to which you are upgrading.
0.4.12	<ol style="list-style-type: none"> 1. Install the 0.4.17 (<i>NOT</i> 0.4.17upd). 2. See the Version screen in the device's Web interface to ensure the U-Boot version is upgraded appropriately (to 2010.03-00033). 3. If the U-Boot version does not increment to the appropriate version number, perform the firmware installation again. After reinstallation, the U-Boot version should display correctly (see the following table for U-Boot version information).

Verifying U-Boot Version When Updating COMM 0.4.12

The following table shows the version of the U-Boot bootloader included with each COMM version. After upgrading COMM firmware from version 0.4.12, ensure that the U-Boot version displayed in the Version screen of the device's Web interface displays the correct version number. See *PC-over-IP System User's Guide* for information about upgrading firmware and about the Web interface.

NOTE: U-Boot is included in each COMM firmware release.

COMM Version	U-Boot Version	
	V5240 and V5340	V5140 and I9440
0.4.23	2010.03-00032-gbcfa20b	2010.03-00033-ga51d681
0.4.22	2010.03-00032-gbcfa20b	2010.03-00033-ga51d681
0.4.21	2010.03-00032-gbcfa20b	2010.03-00033-ga51d681
0.4.20	2010.03-00032-gbcfa20b	2010.03-00033-ga51d681
0.4.19	2010.03-00032-gbcfa20b	2010.03-00033-ga51d681
0.4.18	2010.03-00032-gbcfa20b	2010.03-00033-ga51d681
0.4.17upd	None	2010.03-00033-ga51d681
0.4.17	None	2010.03-00033-ga51d681
0.4.16	None	2008.10-00245-g1f5d2c5
0.4.15	None	2008.10-00245-g1f5d2c5
0.4.14	None	2008.10-00244-ga4b6833-dirty
0.4.12	None	2008.10-00244-ga4b6833-dirty
0.4.11	None	2008.10-00244-ga4b6833-dirty

4.5 Downgrading COMM Firmware

All COMM firmware releases are compatible with lower COMM releases. For instructions about how to downgrade firmware, see *PC-over-IP System User's Guide*, available on the ClearCube Support site.

NOTE: ClearCube recommends always using the same COMM version on the host and client.

Rev K 1.10.04.08.2014

P/N G0400122

clearcube.com