Cisco Expressway CE1100 Appliance

Installation Guide

First Published: November 2015

Last Updated: June 2016

X8.6.1 or later

Preface

Change History

Table 1   Installation Guide Change History

Date	Change	Reason
June 2016	Updated stylesheet, moved history to preface, added TOC.	Updated for X8.8.
November 2015	Initial release.	

Contents

Introduction

About This Document

This document describes how to install a Cisco Expressway CE1100 appliance into your video network. It contains information on:

- Preparing the installation.
- Installing the hardware.
- Performing the initial configuration.
- Troubleshooting the installation.

About the Cisco Expressway Appliance

The Cisco Expressway appliance described in this document is a CE1100, which is based on a UCS C220 M4L. For more detailed information on installing this appliance, see the *Cisco UCS C220 Server Installation and Service Guide*.

The appliance ships with the Cisco Expressway software pre-installed, and you can upgrade the software if necessary.

The appliance supports Cisco Expressway version X8.6.1 or later.

Note: If you choose to use the copper SFPs, the unit cannot support more than 150 traversal calls. This is the case even if the option key for extra traversal calls has been installed.

Table 2   Components for this Appliance

Item	Part	Quantity
Chassis	UCS-C220-M4L	1
Processor	UCS-CPU-E52637D (3.5 GHz/ 4 core - hyper threaded)	2
RAM	UCS-MR-1X162RU-A (16GB)	2
Hard Disk	UCS-HDD1TI2F212	2
Onboard SAS Controller	UCSC-MRAID12G (Cisco 12G SAS Modular Raid Controller)	1
NIC	N2XX-AIPCI01 (Intel X520 Dual Port 10Gb SFP+ Adapter)	1
	EXP-10GSFP-SR (10Gb SR Fiber SFP)	2
	EXP-1GSFP-T (1Gb Copper SFP)	2
PSU	UCSC-PSU1-770W & power cable	2
TPM	UCSX-TPM2-001 (Trusted Platform Module)	1
SD Card	UCS-SD-32G-S (32GB SD Card for UCS servers)	1
Miscellaneous	UCSC-RAILF-M4 (Rail kit)	1
	UCSC-HS-C220M4 (Heat sink)	2
	UCSC-MLOM-BLK (MLOM blank panel)	1
	UCSC-BBLKD-L (3.5-inch HDD blank panel)	2
	Accessory Kit	1

Table 2   Components for this Appliance (continued)

	Bezel	1

The following components are field replaceable:

- Hard disks
- PSUs
- 1 Gb and 10 Gb SFP modules

Caution: To avoid compatibility issues, Cisco recommends that you only use the SFPs supplied with your unit. They must be inserted in LAN 1 and LAN 2, which are the designated SFP ports. When inserting the SFPs into the unit, you cannot mix the type of SFP. Either insert two 10 Gb fiber SFPs or two 1 Gb copper SFPs.

To begin a Return Material Authorization (RMA) go to http://www.cisco.com/web/ordering/cs_info/or3/o32/Return_a_Product/WebReturns/product_Online_web_returns.html.

Related Documents

- The *Cisco Expressway Administrator Guide* on the Maintain and Operate Guides page describes how to maintain and operate the Cisco Expressway software.
- The *Cisco Expressway Cluster Creation and Maintenance Deployment Guide* on the Configuration Guides page describes how to create and maintain a cluster of Cisco Expressways.

Training

Training is available online and at our training locations. For more information on all the training we provide and where our training offices are located, visit www.cisco.com/go/telepresencetraining

Glossary

A glossary of TelePresence terms is available at: https://tp-tools-web01.cisco.com/start/glossary/

Preparing to Install

Environmental and Power Specifications

To view environmental and power specifications for the appliance server, see
http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M4/install/C220M4/spec.html.

Note: If migrating from an older appliance, be aware—while efficient once running—the CE1100 is capable of consuming more power. It has a larger capacity and has greater inrush at power-on. Also, unlike the first-generation appliance or the CE500, it has two power supplies. Refer to the power specifications for more information.

Unpacking the Unit and Preparing the Installation

See http://www.cisco.com/en/US/docs/unified_computing/ucs/c/hw/C220/install/install.html for information on:

- Unpacking and inspecting the server.

  The CE1100 is shipped with 2 x 10 Gb fiber SFPs and 2 x 1 Gb copper SFPs.
- Installation guidelines.
- Rack requirements.
- Equipment requirements.
- Slide rail adjustment range.

Locating Serial Numbers

The Cisco Expressway appliance displays two serial numbers:

- UCS serial number:
  - Has the format FCHxxxxxxxx.
  - Is displayed on the hardware's pull-out tab and in the CIMC web interface.
- Application/Software serial number:
  - Has the format 52DNNNNN, where D indicates the CE1100 series and N are numbers.
  - Is displayed in the Cisco Expressway web interface, on the underside of the pull-out tab, and is available in the SSH session.
  - Must be supplied to obtain release and option keys.

Installation

Install the Unit in a Rack

For information on installing the unit in the rack, see http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M4/install/C220M4/install.html.

How to Insert the SFPs

Caution: To avoid compatibility issues, Cisco recommends that you only use the SFPs supplied. They must be inserted in LAN 1 and LAN 2, which are the designated SFP ports.

The CE1100 unit is shipped with two 10 Gb fiber small form-factor pluggable (SFP) transceivers and two 1 Gb copper SFPs. When inserting the SFPs into the unit, you cannot mix the type of SFP. Either insert two 10 Gb fiber SFPs or two 1 Gb copper SFPs.

Note: If you choose to use the copper SFPs, the unit cannot support more than 150 traversal calls. This is the case even if the option key for extra traversal calls has been installed.

The SFPs do not autonegotiate the speed, therefore ensure that the SFPs are connected to a switch at the correct speed:

- 1 Gb full duplex for copper SFPs.
- 10 Gb full duplex for fiber SFPs.

Note: If you are installing the CE1100 in an environment that only supports 100 Mb, such as an older DMZ implementation, a switch is required to handle the speed negotiation from 1 Gb to 100 Mb.

Connect and Power on the Unit

First connect the power cords to the unit, and then connect them to a grounded AC power outlet.

See http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M4/install/C220M4/spec.html for power specifications.

Note: The Cisco Integrated Management Controller (CIMC) has a power monitoring utility that you can use to track power consumption.

The power button is on the top-left corner of the front panel.

When you plug in the CE1100 appliance for the first time, leave it in standby mode for 5 minutes before pressing the power button. This time allows the onboard CIMC to boot; ready the self-test; perform a hardware check; and prepare the power characterization test. Failure to wait adequate time will postpone the power characterization test until the next boot.

When you power on the unit, the system performs a self-test and the unit automatically restarts. This restart is expected behavior.

The first boot takes approximately 5 minutes due to the initial power characterization test. Any subsequent boot of the system takes approximately 2 minutes.

The power characterization test displays the message `Performing Platform Characterization …` when running.

If the power characterization test runs on subsequent bootups, causing a lag in the boot time, it is important that you disable it. It is especially important to disable the test in a clustered environment to avoid issues. See *Specific Issues* in the Troubleshooting, page 16 section for more information.

To verify the power status look at the Power Status LED (see Figure 3   Front View of the Cisco Expressway Unit, page 16):

- Off — There is no AC power present in the server.
- Amber — The server is in standby power mode. Power is supplied only to the CIMC and some motherboard functions.
- Green — The server is in main power mode. Power is supplied to all server components.

Configure

This section describes the different ways you can connect to the Cisco Expressway and perform the initial configuration.

Connect to the Cisco Expressway

Before you can use the Cisco Expressway, you must configure its IPv4 and/or IPv6 address, subnet mask and default gateway. Consult your network administrator for information on which addresses to use. Note that the Cisco Expressway must use a static IP address.

Note: An additional IP address is required if the Cisco Integrated Management Controller (CIMC) tool is used. It can be a static IP address or assigned using DHCP.

For initial configuration, use any of these methods:

- Connect a PC to the Cisco Expressway using a serial cable (see Connect Using the Serial Port, page 11 followed by Configure the Cisco Expressway, page 13).
- Connect a monitor and keyboard directly into the unit (see Connect Using the KVM Port, page 12 followed by Configure the Cisco Expressway, page 13).
- Connect using the CIMC port (see Connect Using the CIMC Port, page 12 followed by Remotely Connect to Serial Using the CIMC, page 13).
- If your network is set up to allow it, use a web browser to connect to the default IP address of 192.168.0.100 (see Use the Web Interface, page 14).

Figure 1   Rear Panel Showing Ports
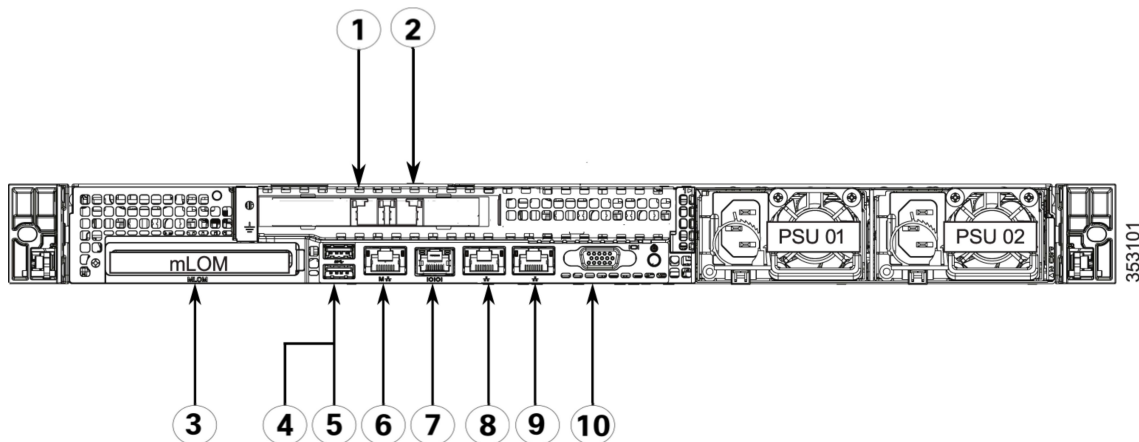

Table 3   Rear Panel Ports

1	LAN 1 (left-hand SFP port)
2	LAN 2 (right-hand SFP port)
3	Modular LAN-on-motherboard (MLOM) card slot
4	USB 3.0 port
5	USB 3.0 port
6	CIMC port

Table 3   Rear Panel Ports (continued)

7	Serial Port (RJ-45 connector)
8	LAN 3
9	LAN 4
10	VGA video port (DB-15)

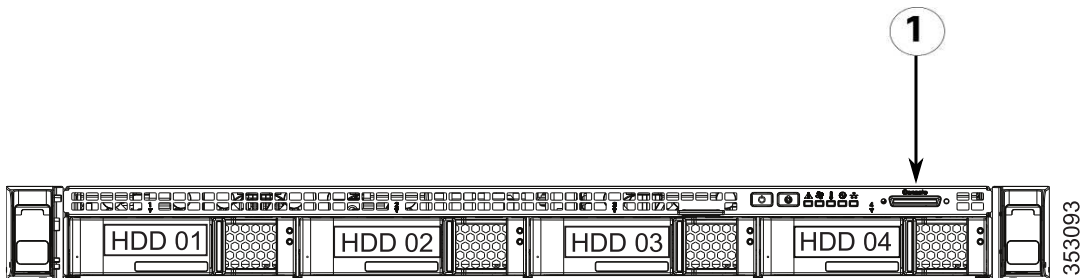**Figure 2   Front Panel Showing KVM Connector**

Table 4   Front Panel Ports

1	KVM connector

Connect Using the Serial Port

1. Connect the Ethernet LAN cable from the LAN 1 port on the rear of the unit to your network.

   The LAN 1 port is the left-hand port of the dual port adapter on the rear panel of the unit (shown in Figure 1 Rear Panel Showing Ports, page 10).

2. Connect a serial cable from the serial port on the rear of the unit to the serial port on a PC (see Figure 1   Rear Panel Showing Ports, page 10).

   The serial cable used must be a cross-over cable. The pin assignment for the serial cable is:

Male RJ45 pin	Female DB9 pin
1	8
2	6
3 TXD	2
4 GND	5
5 GND	5
6 RXD	3
7	4
8	7

   Note: If there is no DB9 port on your PC, a DB9 to USB serial port adapter is required.

Configure

3. Start a terminal emulator program (for example PuTTY) on the PC and configure it to use the PC's serial port as follows:

   – baud rate: 115200 bits per second

   – data bits: 8

   – parity: none

   – stop bits: 1

   – flow control (hardware and software): none

   Note: Do not leave a terminal emulator session open after it is no longer in use. An open session may cause issues during a system restart.

Connect Using the KVM Port

1. Connect the Ethernet LAN cable from the LAN 1 port on the rear of the unit to your network.

   The LAN 1 port is the left-hand port of the dual port adapter (shown in Figure 1   Rear Panel Showing Ports, page 10).

2. Either:

   – Connect a USB keyboard and VGA monitor using a KVM adaptor to the KVM connector on the front panel (see Figure 2   Front Panel Showing KVM Connector, page 11).

   – Connect a USB keyboard to the USB port and a VGA monitor to the VGA port on the rear panel (see Configure, page 10).

Connect Using the CIMC Port

The Cisco Integrated Management Controller (CIMC) is the management interface for the C-Series servers. The CIMC runs within the server, allowing remote administration, configuration, and monitoring of the server using web or Secure Shell (SSH) command line access.

You can launch the CIMC user interface and manage the server from any remote host that meets the following minimum requirements:

- Java Runtime Environment 1.6 or later.
- HTTP and HTTPS enabled.
- Adobe Flash Player 10 or later.

To connect to the Cisco Expressway using the CIMC:

1. Connect a KVM using the console port at the front of the CE1100.

2. Switch on the monitor.

3. Switch on the CE1100 appliance.

4. Watch the boot process on the monitor.

5. Press F8 to enter the CIMC configuration dialog and configure the management interface IP address.

   Note: We recommend that you leave the NIC mode and NIC redundancy settings at their preset values of `Dedicated` and `None`.

6. Press F10 to save your changes and Esc to exit.

7. If using CIMC for console access, browse to the IP address that you configured and enter **admin** and **password** as the default username and password.

For more on the CIMC, see the *Cisco UCS C-Series Integrated Management Controller Configuration Guides* on the CIMC Configuration Guides page.

Remotely Connect to Serial Using the CIMC

Note: For remote access to the serial port, you must enable Serial over LAN (SoL) on the CIMC. You can do so under **Server > Remote Presence > Serial Over LAN** in the CIMC interface.

1. On your chosen emulator, connect using SSH and enter the CIMC IP address to connect.
2. Enter `admin` and `password` as the default username and password and press `Enter`.
3. Type `connect host` and press `Enter`.
4. You are now connected using serial and will see the login prompt `cisco login:`

You can now proceed to configure the Cisco Expressway.

Configure the Cisco Expressway

If the system has just booted up, the terminal emulator program on the PC will display the Cisco Expressway's startup information. After approximately four minutes you will get the login prompt. If the Cisco Expressway was already on when you connected the serial cable, press `Enter` to get the login prompt.

1. Enter the username `admin` and press `Enter`.
2. Enter the default password of `TANDBERG` and press `Enter`.

   You will get the install wizard prompt:

   `Run install wizard [n]:`
3. Type `y` and press `Enter`.
4. Follow the prompts given by the install wizard to specify the following:
   - The password you want to use for your admin account.

     Note: For security reasons you are advised to change the password from the default of `TANDBERG`.
   - Whether you want to use IPv4, IPv6 or Both .
   - The LAN 1 IP address of the Cisco Expressway.
   - The LAN 1 IPv4 subnet mask of the Cisco Expressway (if you have selected IPv4).
   - The IP address of the default gateway of the Cisco Expressway.
   - The Ethernet speed.

     Note: Use the default value of `Auto`.
   - Whether you want to use SSH to administer the Cisco Expressway.
5. After the wizard is finished the following message will appear:

   `Setting other settings...OK.`

   `The system must be restarted for new`
   `settings to take effect..`

   You will get a restart prompt:

   `Restart Now?`

   Type `y` and press `Enter`.
6. After it has rebooted, the Cisco Expressway is ready to use. You can access the Cisco Expressway's web interface using the IP address assigned to the LAN 1 Ethernet port.

Note: For security reasons you are advised to change the password for the default admin account (if you have not already done so) and the root account from the default of TANDBERG.

Use the Web Interface

1. Open a browser window and in the address line type either:
   - The IP address of the Cisco Expressway.
   - The FQDN of the Cisco Expressway.

   The **Login** page will appear.
2. Select **Administrator Login**.
3. Enter a valid administrator username and password and select **Login**.
   You will be presented with the **Overview** page.

See the online help or *Cisco Expressway Administrator Guide* for information on the configuration options available for each page of the Cisco Expressway web interface.

Use the Command Line Interface (CLI)

The command line interface is available over SSH and through the serial port by default.

1. Start an SSH session.
2. Enter the IP address or FQDN of the Cisco Expressway.
3. Log in with a username of `admin` and your system password.
   You will see a welcome message.

For a full list of CLI commands available on the Cisco Expressway, see *Cisco Expressway Administrator Guide*.

Change the Admin Account Password

To change the password for the admin account using the web interface:

1. Go to **Users > Administrator accounts**.
2. Click on **View/Edit** for the admin name.
3. In the **Password** and **Confirm password** fields, enter the new password, and click **Save**.
   The **Password strength** box will indicate how secure your chosen password is.

To change the password for the admin account using the CLI:

Type `xConfiguration SystemUnit Password`

Note: You cannot set a blank password for the admin user, or any other administrator account, or the root account.

Change the Root Account Password

1. Using a serial connection, log in as `root` using the existing password.
2. Type the command `passwd`.
   You will be asked for the new password.
3. Enter the new password and, when prompted, retype the password.
4. Type `exit` to log out of the root account.

Change Other System Settings

You are also required to configure the following:

Configure

- The system name of the Cisco Expressway. This is used by the Cisco TelePresence Management Suite (Cisco TMS) to identify the system. This can be set from the **System administration** page (**System > Administration**) on the web interface.
- Automatic discovery. If you have multiple Cisco Expressways in the same network you may want to disable automatic discovery on some of them. This can be set from the **H.323** page on the web interface (**Configuration > Protocols > H.323**).
- The DNS server address(es), if URI dialing or Fully Qualified Domain Names (FQDNs) are to be used. This can be set from the **DNS** page on the web interface (**System > DNS**).

See the online help or *Cisco Expressway Administrator Guide* for more information on these configuration options.

Check for Updates and Upgrading

To check whether your Cisco Expressway has the latest software installed go to http://software.cisco.com/download/navigator.html and navigate to the Cisco Expressway.

See the *Cisco Expressway Administrator Guide* for information on how to upgrade.

Caution: The CE1100 only supports software version X8.6.1 or later. If you are upgrading your hardware, do not downgrade to an unsupported software version.
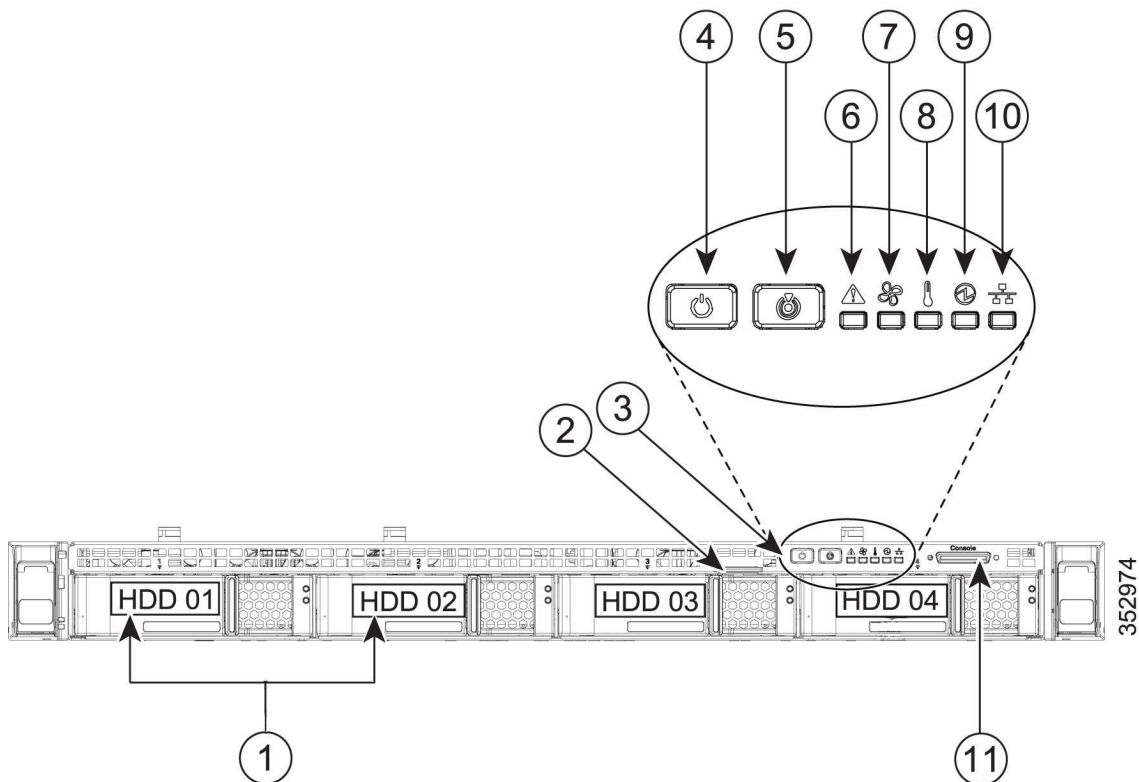
Troubleshooting

Locating LEDs and Components

Front View

Below is an illustration of the unit's front view and a list of the LEDs and components available.

Figure 3   Front View of the Cisco Expressway Unit

1	HD drive activity/fault LED
2	Identification button/LED
3	Operational panel buttons and LEDs
4	Power button/power status LED
5	Identification button/LED
6	System status LED
7	Fan status LED
8	Temperature status LED
9	Power supply status LED
10	Network link activity LED
11	KVM connector (for USB/VGA connection)

Rear View

Below is an illustration of the unit's rear view and a list of the LEDs and components available.
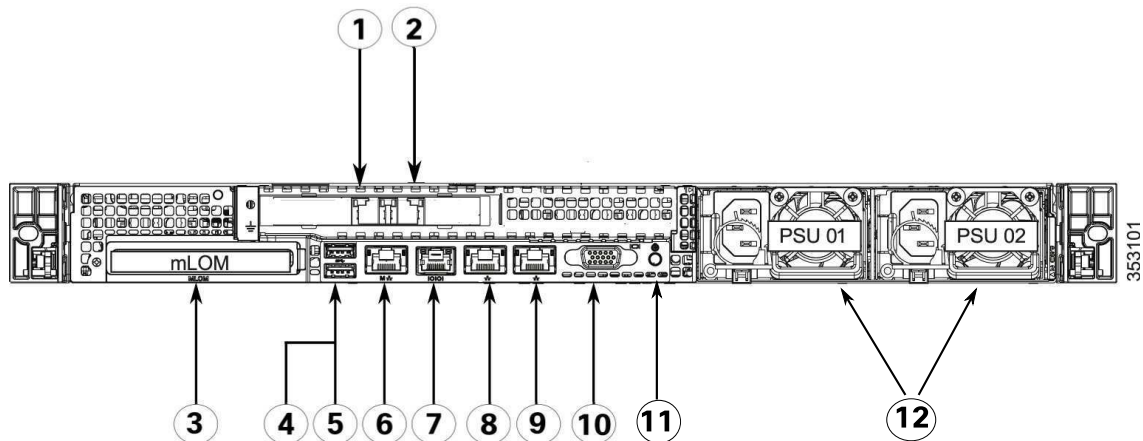
Figure 4   Rear View of the Cisco Expressway Unit

1	LAN 1
2	LAN 2
3	Modular LAN-on-motherboard (mLOM) card slot
4	USB 3.0 port
5	USB 3.0 ports
6	1-Gb Ethernet dedicated management port
7	Serial port (RJ-45 connector)
8	LAN 3
9	LAN 4
10	VGA video connector
11	Rear unit identification button/LED
12	Power supplies (up to two, redundant as 1+1)

Definitions of LED States

For the definitions of the LED states see http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M4/install/C220M4/replace.html.

Reset from the Internal Recovery Partition (IRP)

The Cisco Expressway CE1100 appliance comes pre-installed with an SD card that you can use to complete a factory reset of your configuration. You must reset the SD card and enable the virtual drive before proceeding with the factory reset using the KVM console in the Cisco Integrated Management Controller (CIMC). Once the reset has been complete, ensure that you disable the virtual drive again.

Note: You must set up and access the CIMC to instigate a factory reset. See Connect Using the CIMC Port, page 12.

Reset the SD Card and Enable the Virtual Drive

1. Log in to the CIMC.
2. Navigate to **Storage > Cisco FlexFlash > Controller Info**.
3. Under **Actions**, click on **Reset FlexFlash Controller** and click **yes** in the popup window that appears. The reset ensures your FlexFlash Controller is in the correct state.
4. Click the **Virtual Drive Info** tab.
5. Under **Actions**, click **Enable/Disable Virtual Drive(s)**.
6. In the **Enable/ Disable VDS** popup window, check the **Hypervisor** check box and click **Save**.

Factory Reset Using the KVM Console

1. Launch the **KVM Console** using the icon in the CIMC.
2. Power up the CE1100 and, when prompted, press `F2` to enter `Setup`.
3. Select `Boot Options` and ensure that the `CiscoVD Hypervisor` is visible as one of the options.

Note: If the `CiscoVD Hypervisor` is not visible, you can select the `UEI: Built-in EFI Shell` boot option and change it to `CiscoVD Hypervisor`.

4. When prompted, press `F6` to enter the `Boot Menu`.
5. Select `CiscoVD Hypervisor` as the boot option.
6. When prompted, type `y` and press `Enter` to proceed with the factory reset.
7. When asked whether to **keep any release keys if possible**, type `y` and press `Enter`.
8. Type `b` and press `Enter` to reboot.

Disable the Virtual Drive After the Factory Reset

1. During the reboot, press `F2` to enter `Setup`.
2. Under `Boot Options` select the `CiscoVD Hypervisor` and disable it.
3. Press `F10` to save and exit.
4. While your system is rebooting, return to the **Virtual Drive Info** tab – in the CIMC interface under **Storage** – and uncheck the **Hypervisor** check box to disable it.

Note: The default login and password of the Cisco Expressway will return to its default once the reset is complete.

Remove Alarms Caused by the Factory Reset

Once you complete the factory reset, the Cisco Expressway still has its serial number and release key installed but not its option keys.

Note:

- If the SD card is unable to locate the release key, an alarm in relation to an invalid release key is visible. Contact the Cisco Technical Assistant Center (TAC) for your release key and reapply it.
- If you do not have the option keys you previously installed to hand, contact Cisco TAC. You can then proceed to add them using the web interface or CLI.

Performing a factory reset using the SD card can cause several alarms to appear on the Cisco Expressway in relation to Configuration links. To remove these errors:

1. Log in as admin.
2. Type `xcom defaultlinksadd`.
3. Press `Enter`.

Specific Issues

Active Options Only Indicates '150 traversal calls' for Large Deployments

To utilize the large-scale capabilities (500 traversal calls) of the Cisco Expressway, the CE1100 unit must have an active 10 Gb network connection.

Lag During Boot up Due to Power Characterization Check

The power characterization test is run only once when you plug in and power up the CE1100. If the power characterization test continues to run, causing a lag in the boot time, ensure that it is disabled in the CIMC. To do so:

1. Log in to the CIMC (see Connect Using the CIMC Port, page 12).
2. Go to **Server > Power Policies > Power Cap Configurations**.
3. Ensure that the **Power Characterization at Boot** check box is unchecked.
4. Click **Save Changes**.

Notices

Technical Support

If you cannot find the answer you need in the documentation, check the web site at http://www.cisco.com/cisco/web/support/index.html where you will be able to:

- Make sure that you are running the most up-to-date software.
- Get help from the Cisco Technical Support team.

Make sure you have the following information ready before raising a case:

- Identifying information for your product, such as model number, firmware version, and software version (where applicable).
- Your contact email address or telephone number.
- A full description of the problem.

To view a list of Cisco TelePresence products that are no longer being sold and might not be supported, visit: http://www.cisco.com/en/US/products/prod_end_of_life.html and scroll down to the TelePresence section.

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The Voluntary Product Accessibility Template (VPAT) for Cisco Expressway is available here:

http://www.cisco.com/web/about/responsibility/accessibility/legal_regulatory/vpats.html#telepresence

You can find more information about accessibility here:

www.cisco.com/web/about/responsibility/accessibility/index.html

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determined by turning the equipment off and on, users are encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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