Release Notes for Cisco UCS C-Series Software, Release 2.0(2)

First Published Date: September 26, 2014

This document describes the new features, system requirements, open caveats and known behaviors for C- series software release 2.0(2) including Cisco Integrated Management Controller software and any related BIOS, firmware, or drivers. Use this document in conjunction with the documents listed in the "Related Documentation" section on page 15.

Note We sometimes update the documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 1 shows the online change history for this document.

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Table 1 Online History Change

Revision	Date	Description
A0	September 26, 2014	Created release notes for Release 2.0(2).
B0	December 5, 2014	The following changes were made: • Revised Host Upgrade Utility (HUU) version to 2.0(2d)3 for the C3160 M3 server. • Updated the Resolved Caveats section.
C0	January 19, 2015	The following changes were made: • Revised Host Upgrade Utility (HUU) version to 2.0(2e) for the C3160 M3 server. • Updated the Resolved Caveats section.
D0	July 2, 2015	Added references to the Cisco UCS Manager release notes and the Cisco UCS C Series Server Integration with Cisco UCS Manager documentation.
E0	August 18, 2015	Following changes were made in this revision: • Updated the **Recommended Best Practices** section with workaround for installing VMWare. • Updated the **System Requirements** section with Java compatibility information.

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Introduction

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Overview of the Server Model

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- Overview of Cisco UCS C3160 M3 Rack Servers, page 3

Overview of Cisco UCS C3160 M3 Rack Servers

The Cisco UCS C3160 Rack Server is a modular, high-density server ideal for service providers, enterprises, and industry-specific environments. The Cisco UCS C3160 addresses the need for highly scalable computing with high-capacity local storage. Designed for a new class of cloud-scale applications, it is simple to deploy and excellent for unstructured data repositories, media streaming, and content distribution.

Extending the capability of the Cisco UCS portfolio, the new Cisco UCS C3160 Rack Server is an advanced, modular rack server with extremely high storage density. Based on the Intel Xeon processor E5-2600 v2 series, it offers up to 360 TB of local storage in a compact 4-rack-unit (4RU) form factor.

Because all its hard-disk drives are individually hot-swappable, and with its built-in enterprise-class Redundant Array of Independent Disks (RAID) redundancy, the Cisco UCS C3160 helps you achieve the highest levels of data availability.

Unlike typical high-density rack servers that require extended depth racks, the Cisco UCS C3160 has no such requirement and can comfortably fit in a standard-depth rack, such as the Cisco UCS R42610.

The Cisco UCS C3160 uses a modular server architecture which, taking advantage of our blade technology expertise, allows you to upgrade the compute or network nodes in the system without requiring a data migration from one system to another. It delivers:

- Up to 60 large-form-factor (LFF) drives, plus two solid-state drive (SSD) boot drives
- Up to 256 MB memory
- Support for 12-Gbps serial-attached SCSI (SAS) drives
- A modular LAN-on-motherboard (mLOM) slot on the system I/O controller for installing next-generation Cisco virtual interface card (VIC) or third-party network interface card (NIC)
- High reliability, availability, and serviceability features with tool-less server nodes, system I/O controller, easy-to-use latching lid, and hot-swappable and hot-pluggable components

The Cisco UCS C3160 is deployed as a standalone server in both bare-metal or virtualized environments. Its modular architecture reduces TCO by allowing you to upgrade individual components over time and as use cases evolve, without having to replace the entire system.

Hardware and Software Interoperability

For complete list of hardware and software interdependencies and detailed information about storage switch, operating system, adapter, adapter utility, and storage array interoperability, see the *Hardware and Software Interoperability Matrix* for your release located at:

http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

Transceivers Specifications

The Cisco UCS C-Series servers supports a wide variety of 10 Gigabit Ethernet connectivity options using Cisco 10GBASE SFP+ modules.

Table 2 and Table 3 details the controllers and the supported transceivers.

Table 2 Controllers and SFP+ Twinax Transceivers Support Matrix

Controllers (LOM and PCIe)	10GBASE-CU SFP+ Cable 1 Meter, passive	10GBASE-CU SFP+ Cable 3 Meter, passive	10GBASE-CU SFP+ Cable 5 Meter, passive	10GBASE-CU SFP+ Cable 7 Meter, active	10GBASE-CU SFP+ Cable 10 Meter, active
	SFP-H10GB-CU1M	SFP-H10GB-CU3M	SFP-H10GB-CU5M	SFP-H10GB-ACU7M	SFP-H10GB-ACU10M
Cisco UCS Virtual Interface Cards	x	x	x	x	x

Table 3 Controllers and SFP+Optical Transceivers Support Matrix

Controllers (LOM and PCIe)	Intel SR Optics	JDSU (PLRXPL-SC-S43-22-N) SFP+	Cisco SFP-10G-SR
Cisco UCS Virtual Interface Cards	NA	NA	x

Firmware Files

The C-Series software release 2.0(2) includes the following software files:

Table 4 Files in this release

CCO Software Type	File name(s)	Comment
Unified Computing System (UCS) Server Firmware	ucs-c3160-huu-2.0.2e.iso	Host Upgrade Utility

Table 4 Files in this release

CCO Software Type	File name(s)	Comment
Unified Computing System (UCS) Drivers	ucs-cxxx-drivers.2.0.2.iso	Drivers
Unified Computing System (UCS) Utilities	ucs-cxxx-utils-efi.2.0.2.iso ucs-cxxx-utils-linux.2.0.2.iso ucs-cxxx-utils-vmware.2.0.2.iso ucs-cxxx-utils-windows.2.0.2.iso	Utilities

Note Always upgrade the BIOS, the Cisco IMC and CMC from the HUU ISO. Do not upgrade individual components (only BIOS or only Cisco IMC or CMC), since this could lead to unexpected behavior. If you choose to upgrade BIOS, the Cisco IMC and the CMC individually and not from the HUU ISO, make sure to upgrade both Cisco IMC, BIOS and CMC to the same container release. If the BIOS, CMC and the Cisco IMC versions are from different container releases, it could result in unexpected behavior. Cisco recommends that you use the **Update All** option from the Host Upgrade Utility to update the firmware versions of Cisco IMC, BIOS, CMC and all other server components (VIC, RAID Controllers, PCI devices, and LOM) together.

Host Upgrade Utility

The Cisco Host Upgrade Utility (HUU) is a tool that upgrades the following firmware:

- Cisco Integrated Management Controller (Cisco IMC)
- System BIOS
- Chassis Management Controller (CMC)
- SAS Expander
- LAN on motherboard (LOM)
  - Intel I350 mLOM
- RAID controller for UCS C3X60 Storage Servers
- Cisco Adapter UCS VIC 1227
- HDD
  - ST4000NM0023
  - MG03SCA400

The image file for the firmware is embedded in the ISO. The utility displays a menu that allows you to choose which firmware components to upgrade. For more information on this utility see:

http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html

The ISO image is now named as ucs-<*server_platform*>-huu-<*version_number*>.iso.

The Cisco Host Upgrade Utility contains the following files:

Table 5 Files in ucs-c3160-huu-2.0.2e.iso

Server(s)	Type	Component	Version
C3160		Cisco IMC	2.0(2e)
		BIOS	2.0.2a.0
		Chassis Management Controller (CMC)	2.0(2d)
		SAS-EXPANDER	B031
		UCS VIC 1227	4.0(1b)-uboot-4.0(1b)
	LOM	I350-mLOM	0x80000C25-1.808.2
		RAID controller for UCS C3X60 Storage Servers	24.5.0-0023-1

HDD Firmware

Following table lists the supported HDD models and the firmware versions that can be updated using Host Upgrade Utility (HUU).

Table 6 Supported HDD models and firmware versions

HDD Model	Firmware version
ST9146853SS	0005
ST9300653SS	0005
ST300MM0006	0003
ST600MM0006	0003
ST900MM0006	0003
ST9500620SS	0004
ST91000640SS	0004
MZ6ER200HAGM	DM0L
MZ6ER400HAGL	DM0L
MZ6ER800HAGL	DM0L
ST1000NM0001	0002
ST2000NM0001	0002
ST500NM0011	CC02
AL13SEB300	5705
AL13SEB600	5705
AL13SEB900	5705
ST9300605SS	0004
ST9600205SS	0004

HDD Model	Firmware version
ST9900805SS	0004
MK1001TRKB	5702
MK2001TRKB	5702
ST33000650SS	0003
ST3600057SS	000B
ST9146803SS	0008
ST9300603SS	0008
ST9500530NS	CC04
MTFDDAK100MAR	0157
MTFDDAK400MAR	0157
SSDSA2BZ100G301	0362
SSDSA2SH064G1GC	8862
ST1000NM0023	0004
ST2000NM0023	0004
ST3000NM0023	0004
ST4000NM0023	0004
STEC	00C1

System Requirements

The management client must meet or exceed the following minimum system requirements:

- Sun JRE 1.7.0_45 to 1.8.0_45
- Microsoft Internet Explorer 6.0 or higher, Mozilla Firefox 3.0 or higher
- Microsoft Windows 7, Microsoft Windows XP, Microsoft Windows Vista, Apple Mac OS X v10.6, Red Hat Enterprise Linux 5.0 or higher operating systems

Updating the Firmware

Use the Host Upgrade Utility to upgrade the C-Series firmware. Host Upgrade Utility can upgrade the following software components:

- BIOS
- Cisco IMC
- Chassis Management Controller (CMC)
- SAS Expander
- Cisco VIC Adapters
- LSI Adapters
- mLOM
- HDD firmware

All firmware should be upgraded together to ensure proper operation of your server.

Note Cisco recommends that you use the **Update All** option from the Host Upgrade Utility to update the firmware versions of Cisco IMC, BIOS, CMC and all other server components (VIC, RAID Controllers, and LOM) together.

Recommended Best Practices

Best Practices to Configure Cisco UCS 3X60 RAID Controllers

Choosing Between RAID0 and JBOD

The Cisco C3X60 RAID controller supports JBOD mode on the drives where the physical drives are in pass-thru mode and the physical drive is directly exposed to the OS. We recommended you use JBOD mode instead of individual RAID0 volumes when possible.

RAID5/6 Volume Creation

The Cisco C3X60 allows you to create of large RAID5/RAID6 volume by including all the drives in the system with a spanned array configuration (RAID50/RAID60). Where possible, we recommended you to create multiple, smaller RAID 5/6 volumes with fewer drives per RAID array. This provides redundancy and reduces the operations time for initialization, RAID rebuilds and other operations.

Choosing I/O Policy

The I/O policy applies to reads on a specific virtual drive. It does not affect the read ahead cache. RAID volume can be configured in two types of I/O policies. These are:

- **Cached I/O** - In this mode, all reads are buffered in cache memory. Cached I/O provides faster processing.
- **Direct I/O** - In this mode, reads are not buffered in cache memory. Data is transferred to the cache and the host concurrently. If the same data block is read again, it comes from cache memory. Direct I/O makes sure that the cache and the host contains the same data.

Although Cached I/O provides faster processing, it is only useful when the RAID volume has a small number of slower drives. With the C3X60 4TB SAS drives, Cached I/O has not shown any significant advantage over Direct I/O. Instead, Direct I/O has shown better results over Cached I/O in a majority of I/O patterns. We recommended you to use Direct I/O (Default Policy) in all cases and to use Cached I/O cautiously.

Background Operations (BGOPS)

Cisco C3X60 RAID Controller conduct different background operations like Consistency Check (CC), Background Initialization (BGI), Rebuild (RBLD), Volume Expansion & Reconstruction (RLM) and Patrol Real (PR).

While these BGOPS are expected to limit their impact to I/O operations, there have been cases of higher impact during some of the operations like Format or similar I/O operations. In these cases, both the I/O operation and the BGOPS may take more time to complete. In such cases, we recommend you to limit where possible concurrent BGOPS and other intensive I/O operations.

BGOPS on large volumes can take an extended period of time to complete, presenting a situation where operations complete and begin with limited time between operations. Since BGOPS are intended to have a very low impact in most I/O operations, the system should function without any issues. If there are any issues that arise while running concurrent BGOPS and I/O operations, we recommend you to stop either activity to let the other complete before reusing and/or schedule the BGOPS at a later time when the I/O operations are low.

Upgrading BIOS and Cisco IMC Firmware

Caution When you upgrade the BIOS, Cisco IMC or the CMC firmware, you must also upgrade all the three firmwares from the same HUU ISO, or the server may not boot. Do not power off the server until the BIOS, Cisco IMC and CMC firmware are updated.

Cisco provides the Cisco Host Upgrade Utility to assist you in upgrading the BIOS, Cisco IMC, CMC LOM, LSI storage controller, and Cisco UCS Virtual Interface Cards firmware to compatible levels.

Note When upgrading the Cisco IMC firmware for the UCS C-series M3 and M4 platforms, ensure that you update using the full image (for example upd-pkg-cXXX-m3-Cisco IMC.full.*.bin).

The correct and compatible firmware levels for your server model are embedded in the utility ISO.

To use this utility, use the *Cisco Host Upgrade Utility User Guide* which includes the instructions for downloading and using the utility ISO. Select the guide from this URL:

http://www.cisco.com/en/US/products/ps10493/products_user_guide_list.html

Best Practices to Install VMWare

Workaround for Installing VMWare on First Generation SD Cards in Expert Mode

Once you start the installer application, find the partition where you want to install VMWare. In the following example the partition is **vmhba33:C0:T0:L0.**

Step 1 Press **Alt+F1** to enter the VMWare recovery console.

Step 2 Create a GUID Partition Table (GPT) on the disk:

/dev/disks # partedUtil mklabel mpx.vmhba33:C0:T0:L0 gpt

Step 3 Verify the GPT:

/dev/disks # partedUtil get mpx.vmhba33:C0:T0:L0

3785 255 63 60817408

Return to installing VMWare.

Supported Features

This section includes the following topics:

- Supported Software Features, page 10
- Software Utilities, page 10
- Supported Platforms, page 10
- SNMP, page 10

Supported Software Features

Supported Features in Release 2.0(2)

The following software features are supported in Release 2.0(2):

- Added support for setting the time zone and viewing the local time
- Added support for activating BIOS firmware
- Added support for Chassis Management Controller (CMC)
  - Installing CMC firmware on SIOC controller 1 or 2
  - Activating CMC firmware on SIOC controller 1 or 2
- Added support for SIOC slot to configure the Cisco IMC network mode
- Added support for operating the chassis front locator LED
- Added support for new BIOS parameters

Software Utilities

The following standard utilities are available in Release 2.0(2):

- Host Update Utility (HUU)
- Server Config Utility (SCU) including Interactive Offline Diagnostics (IOD)
- BIOS and Cisco IMC Firmware Update utilities

The utilities features are as follows:

- Availability of HUU, SCU on the USB as bootable images. The USB also contains driver ISO, and can be accessed from the host operating system.

Supported Platforms

The following platforms are supported in Release 2.0(2):

- UCS-C3160 M3

SNMP

The supported MIB definition for Release 2.0(2) and later releases can be found at the following link: ftp://ftp.cisco.com/pub/mibs/supportlists/ucs/ucs-C-supportlist.html

Note The above link is incompatible with IE 9.0.

Supported Storage Controllers

SNMP supports the RAID controller for UCS C3X60 Storage on C3160 servers.

Resolved Caveats

This section lists the resolved caveats for the following releases:

- Release 2.0(2d), page 11
- Release 2.0(2e), page 11

Release 2.0(2e)

Following is the resolved caveat for Release 2.0(2e):

Cisco IMC

Symptom During Host reboot, CPU voltage sensors, PVTT_P1 and PVTT_P2, are returning inaccurate events in SEL due to incorrect thresholds.

Workaround No workaround.(CSCus53966)

Release 2.0(2d)

Following are the resolved caveats for Release 2.0(2d)3:

Cisco IMC

Symptom You cannot create more than 16 virtual drives out of a single drive group using the CLI, WebUI, or XML API interfaces. The first virtual drive creation creates a default drive group consisting of a set of physical drives and of a specific RAID level. Using the CLI, WebUI, or XML API interfaces only 15 more virtual drives can be created before the carve operation fails. The unused space cannot be used to create more virtual drives even though it is available on the drive group.

Workaround If there is unused space available in the drive group, use the StorCLI to create additional virtual drives.(CSCuq93622)

RAID Controller

Symptom The server does not respond when the firmware is updated using StorCLI / MSM on Windows using the online firmware update option.

Workaround Do not use online firmware update option. (CSCuq21303)

Security Fixes

Symptom The Bash shell is affected by vulnerabilities identified by the following Common Vulnerability and Exposures (CVE) IDs:

- CVE-2014-6271
- CVE-2014-6277
- CVE-2014-6278

The vulnerabilities identified above are addressed.(CSCur03816)

Symptom The Cisco IMC is affected by an SSLv3 vulnerability identified by the Common Vulnerability and Exposures (CVE) CVE-2014-3566.

The vulnerabilities identified above are addressed.(CSCur33929)

Symptom There are known vulnerabilities in the older versions of the OpenSSL code.

This issue is resolved with the latest CiscoSSL/OpenSSL versions.(CSCup22566)

Open Caveats

This section lists the open caveats for the following:

- Release 2.0(2c), page 12

Release 2.0(2c)

The following defects are open in Release 2.0(2c):

Cisco IMC

Symptom While trying to switch on the power using the front panel power button, it does not switch on immediately after the AC power on. You have to hold the front panel power button down for a bit longer for it to power on.

Workaround Hold the power button down for 5 seconds and release.(CSCuq78918)

Symptom Unable to access Cisco IMC and unable to obtain the Cisco IMC IP address in the Cisco card mode or with the vlan enabled, when you activate the CMC firmware.

Workaround Perform an AC power cycle of the server.(CSCuq56419)

Symptom Changing the physical drives that are in hot spares or online states to unconfigured good fails with an error message.

Workaround Select physical drives that are in JBOD state, if you want to change to unconfigured good.(CSCuo96421)

Symptom During installation of Red Hat Enterprise Linux 7, SAN LUNs mapped will not be visible. Server experiences kernel panic, when Red Hat Enterprise Linux 7 OS is installed on local storage and a SAN LUN is mapped.

Workaround No workaround. A driver update disk may be available later to address this issue. (CSCuq75761)

Symptom The WebUI stops responding when BIOS/CMC is updated using Internet Explorer 10.0 browser client.

Workaround Launch the WebUI using any other version of Internet Explorer other than 10.0 or use any other browser client.(CSCuq56061)

Symptom Unable to access Cisco IMC and unable to obtain the Cisco IMC IP address in the Cisco card mode, when you swap the VIC cards.

Workaround No workaround.(CSCuq65876)

BIOS

Symptom LEDs at the back of the C3160 server, next to the SSD drive slots, do not work. The SSD drives are connected to the SATA controller and configured in AHCI Mode. When the SSDs are accessed, there is the does not LED blink to indicate the IO activity on the SSD and also the Fault and Locate LED do not work.

Workaround Use the Intel RSTe driver for the supported Operating systems to operate the activity LEDs and use the Intel tools to use the Locate LED. (CSCuq72696)

Symptom F12 PXE boot does not work when the UEFI shell is set as the first boot option in the legacy or UEFI modes or any EFI is set as the first boot option in the UEFI mode.

Workaround Use F12 only in legacy mode. Ensure that EFI boot option is the first boot device. (CSCuq52084)

Symptom In the legacy boot mode, a few boot options do not appear in the menu or boot override page. This is an intermittent issue and happens when there are multiple boot options with SATA/RAID connected and UEFI boot options are disabled in the boot options.

Workaround If you want to boot from a particular option which does not appear on the menu or the override options, run the policy from Cisco IMC.

Or.

Press F2 and set the device as the first boot device. All the devices will be listed correctly on the boot options page. (CSCuq15528)

Symptom You may see intermittent I/O timeout when the virtual drives are configured in Cached-IO mode. This is limited to virtual RAID volumes created in Cached-IO mode to take full advantage of the RAID Cache and to reduce the drive speed overhead and keep using slow drives. When the virtual drives are created in the Cached-IO mode set, and since the virtual drives are inconsistent, background initialization happens to make the virtual drives consistent. At this time, if the host I/Os are issued to load the drives and RAID cache in full load, the I/Os are blocked for short intervals which exceed the host OS expectations of the I/O time and they timeout.

Workaround

Step 1 Perform a full init of the VD when created.

Step 2 Set the host or application I/O timeout to a higher value. (CSCup19648)

Symptom The following error message appears when you execute the StorCLI commands to create volumes with number of drives greater than 32: **invalid parameter**

Workaround Use 32 or lesser number of drives while using StorCLI. (CSCuo84405)

Symptom In Legacy Option ROM with the **Ctrl-R BIOS** menu, the drive list in the **PD Mgmt** is not sorted according to the drive slot numbers.

Workaround Select the drive for which you want to see the drive slot number. Slot number is displayed on the right hand side of the window. (CSCun21928)

Symptom If the host I/Os are at high loads with continuous write access to the drives, the completion time for the background operations exceeds a month.

Workaround Increase the background operation rate to 100%. This reduces the operation time. (CSCun63438)

VIC Firmware

Symptom While loading UEFI OPROM the server may reboot, when the SAN boot is enabled. It occurs mostly when no LUNs are configured on the VHBAs.

Workaround Disable FRB2 timer from Cisco IMC or BIOS. (CSCuq51814)

HUU

Symptom HDDs do not appear in the LSI option ROMs after the HUU Update.

Workaround Perform an AC power cycle of the server.(CSCur01999)

Related Documentation

For configuration information for this release, please refer to the following:

- *Cisco UCS C-Series Servers Integrated Management Controller CLI Configuration Guide*
- *Cisco UCS C-Series Servers Integrated Management Controller GUI Configuration Guide*
- *Cisco UCS C-Series Servers Integrated Management Controller CLI Command Reference*

The following related documentation is available for the Cisco Unified Computing System:

- *Cisco UCS C-Series Servers Documentation Roadmap*
- *Cisco UCS Site Preparation Guide*
- *Regulatory Compliance and Safety Information for Cisco UCS*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

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Release Notes for Cisco UCS C-Series Software
