Release Notes for Cisco Cache Engine Software, Release 2.1.3

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> **Note** The most current Cisco documentation for released products is available on Cisco Connection Online (CCO) at http://www.cisco.com. The online documents may contain updates and modifications made after the hardcopy documents were printed.

Contents

These release notes describe the following topics:

Determining the Operating Software Version

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> **Note** Cisco recommends that you install the most recent software version available for your model of the Cache Engine.

To determine the version of the software currently running on the Cisco Cache Engine, log on to the Cache Engine and enter the **show version** EXEC command.

CISCO SYSTEMS®

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Downloading Cache Engine Software

Cache Engine software can be downloaded from the Cisco Systems Software Center at the following URL:

http://www.cisco.com/cgi-bin/tablebuild.pl/cache-engine

Upgrading to a New Software Release

Presently, two types of Cache Engine software files are available on CCO to download, files with the .pax suffix and files with the .bin suffix. The .pax file contains the full-image software with the GUI and is the file routinely installed. The .bin file software is for recovery situations that require booting from the network, or restoring Flash memory. Refer to the section "Recovering the Cache Engine System Software" in the *Cisco Cache Engine User Guide, Version 2.1.0* for instructions on loading your system image with the .bin file.

Step 1   Use an FTP client to transfer the .pax file to the */local* directory of your Cache Engine.

Step 2   Log on to the Cache Engine, and at the command prompt, enter:

install *filename.pax*

where *filename* is the name of the .pax file

Step 3   Follow the command line interface instructions as prompted.

Enter **y** at the "Copy new image to flash memory?[yes]:" prompt.

Step 4   After the Cache Engine has rebooted, use the **show version command** to display the current software version.

Storage Array Installation Notes

The Storage Array hard disks are shipped without formatting or partitions. You must enter the **disk manufacture** EXEC command for each newly installed hard disk. Use the **disk**, **cfs**, and **dosfs** EXEC commands for subsequent maintenance of the disks.

Hard Disk Preparation Procedure for the Cisco Storage Array

Perform the following procedure when installing a new hard disk for the Cisco Storage Array:

Step 1 Make sure the disk drives are properly inserted into the Storage Array slots, and that the SCSI cable connectors on the Cache Engine and Storage Array are tightened.

Step 2 Power up the Storage Array, and then power up the Cache Engine.

Step 3 Make a note of the target numbers of any new disk drive that did not mount. The target number is the value of the "t" parameter in the disk volume name.

Determine the target numbers of the unmounted disks with one of the following methods:

- Enter the **show cfs volumes** command.
- Count the hard drives in the Storage Array.
- Read the "mount failed" error messages that appear when the Cache Engine boots up with an attached Storage Array.

Method 1: Enter the show cfs volumes Command

The **show cfs volumes** command displays all unmounted disks as unmounted cache filing system (cfs) volumes. In the following example, disk targets 2, 3, 4, 5, 6, and 7 are not mounted.

```
CacheEngine# show cfs volumes
/c0t0d0s3: mounted
/c0t1d0s3: mounted
/c0t2d0s3: not mounted
/c0t3d0s3: not mounted
/c0t4d0s3: not mounted
/c0t5d0s3: not mounted
/c0t6d0s3: not mounted
/c0t7d0s3: not mounted
```

Method 2: Count the Hard Disks in the Storage Array

The leftmost hard disk inserted in a Storage Array bus is always target 2. Counting to the right, the next disk is target 3, the next disk is target 4, and so on. There can be empty slots between targets on the same bus, but this is not recommended.

In a two-host, split-bus configuration, each bus is counted independently. For example, in a split-bus, six-disk, fully populated Storage Array, bus 0 disk drive targets are 2, 3, 4, and bus 1 disk drive targets are 2, 3, 4. If the first disk on bus 1 is removed (slot 5 is empty) and the Cache Engine is rebooted, bus 0 targets are still 2, 3, 4, but bus 1 targets are 2 and 3. The empty disk slot is skipped, and the target count begins with the first detected disk on bus 1.

Method 3: Read the Mount Failed Error Messages

The Cache Engine generates an error message for each disk drive that fails to mount as the Cache Engine boots up. In the following example, disk targets 2, 3, 4, 5, 6, and 7 failed to mount:

```
Thu Dec 31 16:06:50 1987: CFS volume /c0t2d0s3 mount failed S_cfslib_NOT_CFS_PARTITION
Thu Dec 31 16:06:50 1987: CFS volume /c0t3d0s3 mount failed S_cfslib_NOT_CFS_PARTITION
Thu Dec 31 16:06:50 1987: CFS volume /c0t4d0s3 mount failed S_cfslib_NOT_CFS_PARTITION
Thu Dec 31 16:06:50 1987: CFS volume /c0t5d0s3 mount failed S_cfslib_NOT_CFS_PARTITION
Thu Dec 31 16:06:50 1987: CFS volume /c0t6d0s3 mount failed S_cfslib_NOT_CFS_PARTITION
Thu Dec 31 16:06:50 1987: CFS volume /c0t7d0s3 mount failed S_cfslib_NOT_CFS_PARTITION
```

Step 4   Enter the **disk manufacture** command for each new hard disk to be installed.

In the following example, the disks with target numbers 2 and 3 are partitioned, formatted, and mounted with the **disk manufacture** EXEC command.

```
CacheEngine# disk manufacture /c0t2d0
total size of disk = 35843670
CISCO_UVFAT_1 vol /c0t2d0s1 part_off 0 part_siz 0
Skipping creation of DOS partition for SCSI device
CISCO_BFS_1 vol /c0t2d0s2 part_off 10 part_siz 1024
CISCO_CFS_1 vol /c0t2d0s3 part_off 1044 part_siz 35842616
CacheEngine# disk manufacture /c0t3d0
total size of disk = 35843670
CISCO_UVFAT_1 vol /c0t3d0s1 part_off 0 part_siz 0
Skipping creation of DOS partition for SCSI device
CISCO_BFS_1 vol /c0t3d0s2 part_off 10 part_siz 1024
CISCO_CFS_1 vol /c0t3d0s3 part_off 1044 part_siz 35842616
```

Step 5   Enter the **show cfs volumes** command to verify that the disks are mounted.

```
CacheEngine# show cfs volumes
/c0t0d0s3: mounted
/c0t1d0s3: mounted
/c0t2d0s3: mounted
/c0t3d0s3: mounted
```

disk manufacture Command

Use the **disk manufacture** command to partition, format, and mount new disk drives in the Cisco Storage Array.

disk manufacture *device_name*

device_name	Specify the device name of the disk drive with the following syntax: **/c*n1*t*n2*d*n3***

- *n1* is the SCSI controller number. The value of *n1* is always zero for Cache Engines.

- *n2* is the target number of the disk drive (0–13). Targets 0 and 1 are the Cache Engine internal disk drives.

- *n3* is the logical unit number. The value of *n3* is always zero for Cache Engines.

The device name is the same as the volume name, but the device name does not include a partition parameter (the "s" number).

Usage Guidelines

Target numbers are not statically mapped to a SCSI ID or a slot number. Upon bootup, the Cache Engine SCSI driver always scans the SCSI bus in the same direction and assigns logical target numbers to disks in simple numerical sequence according to their order on the SCSI bus. The first disk drive discovered on the SCSI bus is designated target 0; the second target 1; the third target 2; and so on. Targets 0 and 1 are the Cache Engine internal disk drives.

Cisco Storage Array Guidelines

Targets 2 through 13 are assigned to Storage Array disk drives. The leftmost hard disk inserted in a Storage Array bus is always target 2. Counting to the right, the next disk is target 3, the next disk is target 4, and so on. There can be empty slots between targets on the same bus, but this is not recommended. In a two-host, split-bus configuration, each bus is counted independently.

For example, in a split-bus, six-disk, fully populated Storage Array, bus 0 disk drive targets are 2, 3, 4, and bus 1 disk drive targets are 2, 3, 4. If the first disk on bus 1 is removed (slot 5 is empty) and the Cache Engine rebooted, bus 0 targets are still 2, 3, 4, but bus 1 targets are 2 and 3. The empty disk slot is skipped, and the target count begins with the first detected disk on bus 1.

Once a disk drive has been partitioned and formatted, it can be used in any Storage Array slot, but moving a disk drive from one slot to another makes the data it contains unusable to the Cache Engine. Power cycle the Cache Engine if the following actions occur while the Storage Array is in operation:

- A disk is moved from one slot to another.

- A disk is removed, or removed and reinserted.

Examples

In the following example, cache1 and cache2 are Cache Engine 570 machines running software release 2.1.3. Refer to the *Cisco Storage Array Installation and Configuration Guide* for further information on configuring the Storage Array.

> **Note** The larger the storage capacity of the disk drive, the longer the duration of the **disk manufacture** routine.

In this example, six Storage Array disk drives are initialized in a single-host, joined-bus Storage Array configuration.

```
cache1# disk manufacture /c0t2d0
cache1# disk manufacture /c0t3d0
cache1# disk manufacture /c0t4d0
cache1# disk manufacture /c0t5d0
cache1# disk manufacture /c0t6d0
cache1# disk manufacture /c0t7d0
```

In the following example, cache1 is connected to the SCSI 0 connector of the Storage Array and cache2 is connected to the SCSI 1 connector.

The disks of a fully populated six-disk Storage Array are initialized in a two-host, split-bus configuration.

```
cache1# disk manufacture /c0t2d0
cache1# disk manufacture /c0t3d0
cache1# disk manufacture /c0t4d0

cache2# disk manufacture /c0t2d0
cache2# disk manufacture /c0t3d0
cache2# disk manufacture /c0t4d0
```

Related Commands

show disks

show disk-partitions

cfs

disk

dosfs

Limitations and Restrictions

Cisco Cache Engine software version 2.1.3 can operate only with the Cisco Cache Engine 570. The 2.1.3 image improves SCSI bus performance.

To date, the Cisco Storage Array can operate to specification only with the Cisco Cache Engine 570 running software version 2.1.3 or a more recent version.

An attempt to load the 2.1.3 image on other models of the Cache Engine does not crash the Cache Engine. The image does not copy to Flash memory, and the Cache Engine continues to boot and operate from the resident image.

Caveats

Open Caveats - Release 2.1.3

- CSCdr13225

  Cisco Systems has observed that in topologies with 20 or more routers configured to service multiple Cache Engines, some of the Cache Engines do not receive hash allotments, and thus receive no redirected traffic from the routers. The routers can be configured in either unicast or multicast mode.

  Workaround: To correct this condition, reboot each Cache Engine or stop and start the Web Cache Communication Protocol (WCCP) on each Cache Engine using the Cache Engine **wccp** global configuration command.

  For example, to reset WCCP on a Cache Engine in the cache farm configured with basic web caching only, issue the following commands:

  ```
  console(config)# no wccp web-cache
  console(config)# wccp web-cache router-list 1
  ```

  Wait 30 seconds between stopping and starting WCCP. The **wccp** keywords and options shown here apply only to the Cache Engine in this example. Use the keywords and options appropriate to the configuration of each Cache Engine.

  Display the hash allotments for Cache Engines by using the **show ip wccp web-cache detail** router command.

- CSCdr23275

  The **http proxy outgoing exclude list** command is currently case sensitive. If a user on Netscape attempts to connect to HOME.INTERNAL.DOMAIN.COM, or Home.Internal.DOMAIN.Com, or any other combination of domain.com that is not all lowercase, then the **exclude list domain.com** command fails.

- CSCdr28820

  In certain cases, Java or JavaScript programs that run on port 80 are reset. The error bypass mechanism (in Cache Engine) fails to insert the correct IP address into the bypass list. Because the bypass list was not correctly updated, the Java or JavaScript traffic on port 80 was never bypassed.

- CSCdr38222

  Sometimes the BUCKET_IN flag is not cleared even though the corresponding AWAY flag is cleared in the Cache Engine that previously had the bucket.

- CSCdr47024

  When the Cache Engine is in bypass mode, with buckets bypassed, issuing the **no load bypass enable** command does not disable the bypass mechanism, and thus buckets stay bypassed.

- CSCdr51262

  When the origin server sends a large object with the wrong Content Length value, the Cache Engine deletes the object after downloading it. If there are multiple requests for the same object, the remaining clients receive a truncated object after the object is deleted.

Resolved Caveats - Release 2.1.0

- CSCdr24301

  The **show statistics http performance** command might display erroneous statistics.

Related Documentation

Cisco Cache Engine User Guide, Version 2.1.0

Release Notes for Cisco Cache Engine 500 Series, Software Version 2.1.0

Cisco Storage Array Installation and Configuration Guide

Cisco Storage Array Release Notes

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at http://www.cisco.com, http://www-china.cisco.com, or http://www-europe.cisco.com.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

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- WWW: www.cisco.com

- Telnet: cco.cisco.com

- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
    - From North America, call 408 526-8070
    - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using CCO to cco-team@cisco.com.

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