

Consolidated package management

This chapter discusses how consolidated packages are managed and are used to run the Cisco C8400 Secure Series Routers.

- Run a consolidated package, on page 1
- Install the software using install commands, on page 2

Run a consolidated package

The Cisco C8400 Series Secure Routers can be configured to run using a consolidated package.

When the router is configured to run using a consolidated package, the entire consolidated package file is copied onto the router or accessed by the router via TFTP or another network transport method. The router runs using the consolidated package file.

A consolidated package can be booted and utilized using TFTP or another network transport method.Running the router using a consolidated package may be the right method of running the router in certain networking environments.

The consolidated package should be stored on bootflash:, usb[0-1]:, or a remote file system when this method is used to run the router.

Managing and Configuring the Router to Run Using Consolidated Packages

This section discusses the following topics:

Quick start software upgrade

The following instructions provide a quick start version of upgrading the software. These instructions assume you have access to the consolidated package and that the files will be stored in a bootflash: file system and has enough room for the file or files.

For more detailed installation examples, see the other sections of this chapter.

To upgrade the software using a quick start version, perform the following steps:

SUMMARY STEPS

1. Copy the consolidated package into bootflash: using the **copy** *URL-to-image* **bootflash:** command.

2. Enter the **dir bootflash:** command to verify your consolidated package in the directory.
3. Set up the boot parameters for your boot. Set the configuration register to 0x2 by entering the **config-register 0x2102** global configuration command, and enter the **boot system flash bootflash:***image-name*
4. Enter **copy running-config startup-config** to save your configuration.
5. Enter the **reload** command to reload the router and finish the boot. The upgraded software should be running when the reload completes.

DETAILED STEPS

Procedure

Step 1	Copy the consolidated package into bootflash: using the **copy** *URL-to-image* **bootflash:** command.
Step 2	Enter the **dir bootflash:** command to verify your consolidated package in the directory.
Step 3	Set up the boot parameters for your boot. Set the configuration register to 0x2 by entering the **config-register 0x2102** global configuration command, and enter the **boot system flash bootflash:***image-name*
Step 4	Enter **copy running-config startup-config** to save your configuration.
Step 5	Enter the **reload** command to reload the router and finish the boot. The upgraded software should be running when the reload completes.

Install the software using install commands

From Cisco IOS XE 17.15.3a, Cisco 8300 Series Secure Routers are shipped in install mode by default. Users can boot the platform, and upgrade to Cisco IOS XE software versions using a set of **install** commands.

Restrictions

- ISSU is not covered in this feature.
- Install mode requires a reboot of the system.

Information about installing the software using install commands

From Cisco IOS XE 17.15.3a release, for routers shipped in install mode, a set of **install** commands can be used for starting, upgrading and downgrading of platforms in install mode. This update is applicable to the Cisco 8300 Series Secure Routers.

The table describes the differences between Bundle mode and Install mode:

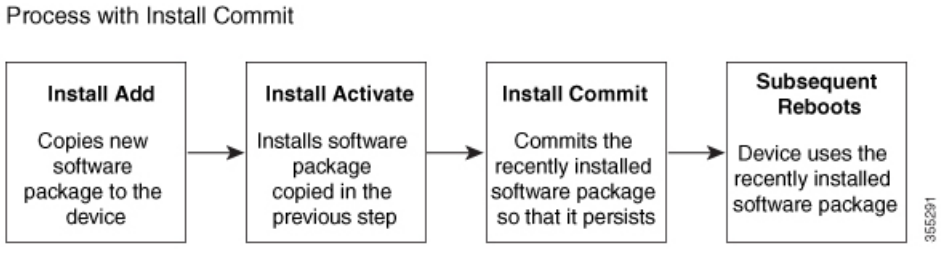
Table 1: Bundle mode vs Install mode

Bundle Mode	Install Mode
This mode provides a consolidated boot process, using local (hard disk, flash) or remote (TFTP) .bin image. **Note** Bundle boot from USB and TFTP Boot is not supported.	This mode uses the local (bootflash) packages.conf file for the boot process.
This mode uses a single .bin file.	.bin file is replaced with expanded .pkg files in this mode.
CLI: `#boot system file <filename>`	CLI: `#install add file bootflash: [activate commit]`
To upgrade in this mode, point the boot system to the new image.	To upgrade in this mode, use the **install** commands.
Image Auto-Upgrade: When a new Field-Replaceable Unit (FRU) is inserted in a modular chassis, manual intervention is required to get the new FRU running with the same version as the active FRUs.	Image Auto-Upgrade: When a new FRU is inserted in a modular chassis, the joining FRU is auto-upgraded to the image version in sync with the active FRUs.
Rollback: Rollback to the previous image with multiple Software Maintenance Updates (SMUs) may require multiple reloads.	Rollback: Enables rollback to an earlier version of Cisco IOS XE software, including multiple patches in single reload.

Install mode process flow

The install mode process flow comprises three commands to perform installation and upgrade of software on platforms–**install add**, **install activate**, and **install commit**.

The flow chart explains the install process with **install** commands:



The **install add** command copies the software package from a local or remote location to the platform. The location can be FTP, HTTP, HTTPs, or TFTP. The command extracts individual components of the .package file into subpackages and packages.conf files. It also validates the file to ensure that the image file is specific to the platform on which it is being installed.

The **install activate** command performs the required validations and provisions the packages previously added using the **install add** command. It also triggers a system reload.

The **install commit** command confirms the packages previously activated using the **install activate** command, and makes the updates persistent over reloads.

Note Installing an update replaces any previously installed software image. At any time, only one image can be installed in a device.

A list install commands available:

Table 2: List of install commands

Command	Syntax	Purpose
install add	**install add file** *location:filename.bin*	Copies the contents of the image, package, and SMUs to the software repository. File location may be local or remote. This command does the following: • Validates the file–checksum, platform compatibility checks, and so on. • Extracts individual components of the package into subpackages and packages.conf • Copies the image into the local inventory and makes it available for the next steps.
install activate	**install activate**	Activates the package added using the **install add** command. • Use the **show install summary** command to see which image is inactive. This image will get activated. • System reloads on executing this command. Confirm if you want to proceed with the activation. Use this command with the **prompt-level none** keyword to automatically ignore any confirmation prompts.

Command	Syntax	Purpose
(install activate) auto abort-timer	**install activate auto-abort timer** *<30-1200>*	The **auto-abort timer** starts automatically, with a default value of 120 minutes. If the **install commit** command is not executed within the time provided, the activation process is terminated, and the system returns to the last-committed state. • You can change the time value while executing the **install activate** command. • The **install commit** command stops the timer, and continues the installation process. • The **install activate auto-abort timer stop** command stops the timer without committing the package. • Use this command with the **prompt-level none** keyword to automatically ignore any confirmation prompts. • This command is valid only in the three-step install variant.
install commit	**install commit**	Commits the package activated using the **install activate** command, and makes it persistent over reloads. • Use the **show install summary** command to see which image is uncommitted. This image will get committed.

Command	Syntax	Purpose
install abort	**install abort**	Terminates the installation and returns the system to the last-committed state. • This command is applicable only when the package is in activated status (uncommitted state). • If you have already committed the image using the **install commit** command, use the **install rollback to** command to return to the preferred version.
install remove	**install remove {file** <*filename*> **| inactive}**	Deletes inactive packages from the platform repository. Use this command to free up space. • **file**: Removes specified files. • **inactive**: Removes all the inactive files.
install rollback to	**install rollback to {base | label | committed | id}**	Rolls back the software set to a saved installation point or to the last-committed installation point. The following are the characteristics of this command: • Requires reload. • Is applicable only when the package is in committed state. • Use this command with the **prompt-level none** keyword to automatically ignore any confirmation prompts. **Note** If you are performing install rollback to a previous image, the previous image must be installed in install mode. Only SMU rollback is possible in bundle mode.

Command	Syntax	Purpose
install deactivate	**install deactivate file** <*filename*>	Removes a package from the platform repository. This command is supported only for SMUs. • Use this command with the **prompt-level none** keyword to automatically ignore any confirmation prompts.

The following show commands are also available:

Table 3: List of show Commands

Command	Syntax	Purpose
show install log	**show install log**	Provides the history and details of all install operations that have been performed since the platform was booted.
show install package	**show install package** <*filename*>	Provides details about the .pkg/.bin file that is specified.
show install summary	**show install summary**	Provides an overview of the image versions and their corresponding install states for all the FRUs. • The table that is displayed will state for which FRUs this information is applicable. • If all the FRUs are in sync in terms of the images present and their state, only one table is displayed. • If, however, there is a difference in the image or state information among the FRUs, each FRU that differs from the rest of the stack is listed in a separate table.
show install active	**show install active**	Provides information about the active packages for all the FRUs. If there is a difference in the information among the FRUs, each FRU that differs from the rest of the stack is listed in a separate table.

Command	Syntax	Purpose
show install inactive	**show install inactive**	Provides information about the inactive packages, if any, for all the FRUs. If there is a difference in the information among the FRUs, each FRU that differs from the rest of the stack is listed in a separate table.
show install committed	**show install committed**	Provides information about the committed packages for all the FRUs. If there is a difference in the information among the FRUs, each FRU that differs from the rest of the stack is listed in a separate table.
show install uncommitted	**show install uncommitted**	Provides information about uncommitted packages, if any, for all the FRUs. If there is a difference in the information among the FRUs, each FRU that differs from the rest of the stack is listed in a separate table.
show install rollback	**show install rollback {point-id | label}**	Displays the package associated with a saved installation point.
show version	**show version [rp-slot] [installed [user-interface] | provisioned | running]**	Displays information about the current package, along with hardware and platform information.

Boot the platform in install mode

You can install, activate, and commit a software package using a single command (one-step install) or multiple separate commands (three-step install).

If the platform is working in bundle mode, the one-step install procedure must be used to initially convert the platform from bundle mode to install mode. Subsequent installs and upgrades on the platform can be done with either one-step or three-step variants.

One-step installation or converting from bundle mode to install mode

Note

- All the CLI actions (for example, add, activate, and so on) are executed on all the available FRUs.
- The configuration save prompt will appear if an unsaved configuration is detected.
- The reload prompt will appear after the second step in this workflow. Use the **prompt-level none** keyword to automatically ignore the confirmation prompts.
- If the prompt-level is set to None, and there is an unsaved configuration, the install fails. You must save the configuration before reissuing the command.

Use the one-step install procedure described below to convert a platform running in bundle boot mode to install mode. After the command is executed, the platform reboots in install boot mode.

Later, the one-step install procedure can also be used to upgrade the platform.

This procedure uses the **install add file activate commit** command in privileged EXEC mode to install a software package, and to upgrade the platform to a new version.

SUMMARY STEPS

1. **enable**
2. **install add file location:** *filename* [**activate commit**]
3. **exit**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device>enable`	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**install add file location:** *filename* [**activate commit**] **Example:** `Device#install add file bootflash:c8kg2be-universalk9.17.15.03prd1.SPA.bin activate commit`	Copies the software install package from a local or remote location (through FTP, HTTP, HTTPs, or TFTP) to the platform and extracts the individual components of the .package file into subpackages and packages.conf files. It also performs a validation and compatibility check for the platform and image versions, activates the package, and commits the package to make it persistent across reloads. The platform reloads after this command is run.
Step 3	**exit** **Example:** `Device#exit`	Exits privileged EXEC mode and returns to user EXEC mode.

Three-step installation

Note

- All the CLI actions (for example, add, activate, and so on) are executed on all the available FRUs.
- The configuration save prompt will appear if an unsaved configuration is detected.
- The reload prompt will appear after the install activate step in this workflow. Use the **prompt-level none** keyword to automatically ignore the confirmation prompts.

The three-step installation procedure can be used only after the platform is in install mode. This option provides more flexibility and control to the customer during installation.

This procedure uses individual **install add**, **install activate**, and **install commit** commands for installing a software package, and to upgrade the platform to a new version.

SUMMARY STEPS

1. **enable**
2. **install add file location:** *filename*
3. **show install summary**
4. **install activate** [**auto-abort-timer** <*time*>]
5. **install abort**
6. **install commit**
7. **install rollback to committed**
8. **install remove** {**file** *filesystem: filename* | **inactive**}
9. **show install summary**
10. **exit**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device>enable`	Enables privileged EXEC mode. Enter your password, if prompted.
Step 2	**install add file location:** *filename* **Example:** `Device#install add file bootflash:c8kg2be-universalk9.17.15.03prd1.SPA.bin`	Copies the software install package from a remote location (through FTP, HTTP, HTTPs, or TFTP) to the platform, and extracts the individual components of the .package file into subpackages and packages.conf files.
Step 3	**show install summary** **Example:** `Device#show install summary`	(Optional) Provides an overview of the image versions and their corresponding install state for all the FRUs.

	Command or Action	Purpose
Step 4	**install activate** [**auto-abort-timer** <*time*>] **Example:** `Device# install activate auto-abort-timer 120`	Activates the previously added package and reloads the platform. • When doing a full software install, do not provide a package filename. • In the three-step variant, **auto-abort-timer** starts automatically with the **install activate** command; the default for the timer is 120 minutes. If the **install commit** command is not run before the timer expires, the install process is automatically terminated. The platform reloads and boots up with the last committed version.
Step 5	**install abort** **Example:** `Device#install abort`	(Optional) Terminates the software install activation and returns the platform to the last committed version. • Use this command only when the image is in activated state, and not when the image is in committed state.
Step 6	**install commit** **Example:** `Device#install commit`	Commits the new package installation and makes the changes persistent over reloads.
Step 7	**install rollback to committed** **Example:** `Device#install rollback to committed`	(Optional) Rolls back the platform to the last committed state.
Step 8	**install remove** {**file** *filesystem: filename* | **inactive**} **Example:** `Device#install remove inactive`	(Optional) Deletes software installation files. • **file**: Deletes a specific file • **inactive**: Deletes all the unused and inactive installation files.
Step 9	**show install summary** **Example:** `Device#show install summary`	(Optional) Displays information about the current state of the system. The output of this command varies according to the **install** commands run prior to this command.
Step 10	**exit** **Example:** `Device#exit`	Exits privileged EXEC mode and returns to user EXEC mode.

Upgrade in install mode

Use either the one-step installation or the three-step installation to upgrade the platform in install mode.

Downgrade in install mode

Use the **install rollback** command to downgrade the platform to a previous version by pointing it to the appropriate image, provided the image you are downgrading to was installed in install mode.

The **install rollback** command reloads the platform and boots it with the previous image.

Note The **install rollback** command succeeds only if you have not removed the previous file using the **install remove inactive** command.

Alternatively, you can downgrade by installing the older image using the **install** commands.

Terminate a software installation

You can terminate the activation of a software package in the following ways:

- When the platform reloads after activating a new image, the auto-abort-timer is triggered (in the three-step install variant). If the timer expires before issuing the **install commit** command, the installation process is terminated, and the platform reloads and boots with the last committed version of the software image.

  Alternatively, use the **install auto-abort-timer stop** command to stop this timer, without using the **install commit** command. The new image remains uncommitted in this process.

- Using the **install abort** command returns the platform to the version that was running before installing the new software. Use this command before issuing the **install commit** command.

Configuration examples for installing the software using install commands

This is an example of the one-step installation or converting from bundle mode to install mode:

```
Router# install add file bootflash:c8kg2be-universalk9.17.15.03.SPA.bin activate commit

May  6 08:35:19.308: %INSTALL-5-INSTALL_START_INFO: R0/0: install_mgr: Started install
add_activate_commit bootflash:c8kg2be-universalk9.17.15.03.SPA.bininstall_add_activate_commit:
 START Tue May 06 08:35:19 UTC 2025
install_add: START Tue May 06 08:35:19 UTC 2025
install_add: Adding IMG
--- Starting initial file syncing ---
Copying bootflash:c8kg2be-universalk9.17.15.03.SPA.bin from  R0 to  R0
Info: Finished copying to the selected
Finished initial file syncing

--- Starting Add ---
Performing Add on all members
Checking status of Add on [R0]
Add: Passed on [R0]
Image added. Version: 17.15.03.0.5635

Finished Add

install_activate: START Tue May 06 08:36:08 UTC 2025
install_activate: Activating IMG
Following packages shall be activated:
/bootflash/c8kg2be-rpboot.17.15.03.SPA.pkg
```

```
/bootflash/c8kg2be-firmware_nim_xdsl.17.15.03.SPA.pkg
/bootflash/c8kg2be-mono-universalk9.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_sm_1t3e3.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_sm_async.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_ngwic_t1e1.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_nim_async.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_sm_nim_adpt.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_nim_shdsl.17.15.03.SPA.pkg
/bootflash/c8kg2be-firmware_prince.17.15.03.SPA.pkg

This operation may require a reload of the system. Do you want to proceed? [y/n]
May  6 08:36:08.538: %INSTALL-5-INSTALL_START_INFO: R0/0: install_mgr: Started install
activate NONEy

--- Starting Activate ---
Performing Activate on all members
[1] Activate package(s) on  R0

May  6 08:37:37.284: %INSTALL-5-INSTALL_AUTO_ABORT_TIMER_PROGRESS: R0/0: rollback_timer:
Install auto abort timer will expire in 7200 seconds [1] Finished Activate on  R0
Checking status of Activate on [R0]
Activate: Passed on [R0]
Finished Activate

--- Starting Commit ---
Performing Commit on all members
[1] Commit package(s) on  R0
[1] Finished Commit on  R0
Checking status of Commit on [R0]
Commit: Passed on [R0]
Finished Commit operation

SUCCESS: install_add_activate_commit Tue May 06 08:37:59 UTC 2025

Router#
May  6 08:37:59.818: %INSTALL-5-INSTALL_COMPLETED_INFO: R0/0: install_mgr: Completed install
 add_activate_commitMay  6 0


System integrity status: 0x32042000
Rom image verified correctly

System Bootstrap, Version v17.15(3.1r).s2.cp, RELEASE SOFTWARE
Copyright (c) 1994-2025 by cisco Systems, Inc.


Current image running: Boot ROM0

Last reset cause: LocalSoft
C8375-E-G2 platform with 33554432 Kbytes of main memory

........
boot: reading file c8kg2be-universalk9.17.15.03.SPA.bin
##################################################################################


Performing Signature Verification of OS image...
Image validated
May  6 08:40:59.347: %SYS-4-ROUTER_RUNNING_BUNDLE_BOOT_MODE: R0/0: Warning: Booting with
bundle mode will be deprecated in the near future. Migration to install mode is required.
May  6 08:41:21.936: %BOOT-5-OPMODE_LOG: R0/0: binos: System booted in AUTONOMOUS mode

              Restricted Rights Legend
```

```
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May  6 08:41:25.397: %FLASH_CHECK-3-DISK_QUOTA: R0/0: flash_check: bootflash quota exceeded
 [free space is 3172248 kB] - [recommended free space is 5929066 kB] - Please clean up files
 on bootflash.
cisco C8375-E-G2 (1RU) processor with 11906887K/6147K bytes of memory.
Processor board ID FDO2833M01A
Router operating mode: Autonomous
1 Virtual Ethernet interface
12 2.5 Gigabit Ethernet interfaces
2 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
33554432K bytes of physical memory.
20257791K bytes of flash memory at bootflash:.

Warning: When Cisco determines that a fault or defect can be traced to
the use of third-party transceivers installed by a customer or reseller,
then, at Cisco's discretion, Cisco may withhold support under warranty or
a Cisco support program. In the course of providing support for a Cisco
```

```
networking product Cisco may require that the end user install Cisco
transceivers if Cisco determines that removing third-party parts will
assist Cisco in diagnosing the cause of a support issue.

WARNING: Command has been added to the configuration using a type 0 password. However,
recommended to migrate to strong type-6 encryption

WARNING: ** NOTICE **  The H.323 protocol is no longer supported from IOS-XE release 17.6.1.
 Please consider using SIP for multimedia applications.



Press RETURN to get started!


*May  6 08:41:23.620: %CRYPTO-5-SELF_TEST_START: Crypto algorithms release (Rel5a), Entropy
 release (3.4.1)
       begin Crypto Module self-tests
*May  6 08:41:23.620: %CRYPTO-5-SELF_TEST_START: Crypto algorithms release (Rel5a), Entropy
 release (3.4.1)
       begin Crypto Module Integrity Test
*May  6 08:41:23.625: %CRYPTO-5-SELF_TEST_END: Crypto Integrity self-test completed
successfully
       All tests passed.
*May  6 08:41:23.808: %CRYPTO-5-SELF_TEST_END: Crypto Algorithm self-test completed
successfully
       All tests passed.
*May  6 08:41:24.426: %ISR_THROUGHPUT-6-LEVEL: Throughput level has been set to 3000000
kbps
*May  6 08:41:24.691: %SMART_LIC-6-AGENT_ENABLED: Smart Agent for Licensing is enabled
ESG-PM-ACL:[subsys-init] Init ESG-ACL subsystem starting

*May  6 08:41:27.684: ESG-PM-ACL:[subsys-init] Init ESG-ACL platform API reg

*May  6 08:41:27.684: ESG-PM-ACL:[subsys-init] Init ESG-ACL subsystem ended

*May  6 08:41:27.684: NGIOLite module C-NIM-8M success read extended attr from conf file

*May  6 08:41:29.186: %TLSCLIENT-5-TLSCLIENT_IOS: TLS Client is IOS based
*May  6 08:41:29.203: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for type vlan
*May  6 08:41:29.252: %CRYPTO_ENGINE-5-CSDL_COMPLIANCE_ENFORCED: Cisco PSB security compliance
 is being enforced
*May  6 08:41:29.267: %CUBE-3-LICENSING:  SIP trunking (CUBE) licensing is now based on
dynamic sessions counting, static license capacity configuration through 'mode border-element
 license capacity' would be ignored.
*May  6 08:41:29.268: %SIP-5-LICENSING: CUBE license reporting period has been set to the
minimum value of 8 hours.
*May  6 08:41:29.286: %VOICE_HA-7-STATUS: CUBE HA-supported platform detected.
*May  6 08:41:30.029: %CRYPTO_SL_TP_LEVELS-6-PLATFORM_BASED_LIC: Platform Based License
Support, throughput is un-throttled
*May  6 08:41:30.061: %LINK-3-UPDOWN: Interface EOBC0, changed state to up
*May  6 08:41:30.069: %LINK-3-UPDOWN: Interface Lsmpi0, changed state to up
*May  6 08:41:30.069: %LINEPROTO-5-UPDOWN: Line protocol on Interface LI-Null0, changed
state to up
*May  6 08:41:30.069: %LINEPROTO-5-UPDOWN: Line protocol on Interface VoIP-Null0, changed
state to up
*May  6 08:41:30.069: %LINK-3-UPDOWN: Interface LIIN0, changed state to up
*May  6 08:41:30.070: %LINK-3-UPDOWN: Interface GigabitEthernet0, changed state to down
*May  6 08:41:30.071: %IOSXE_RP_ALARM-6-INFO: ASSERT CRITICAL GigabitEthernet0 Physical
Port Link Down
*May  6 08:41:30.243: %PNP-6-PNP_DISCOVERY_STARTED: PnP Discovery started
*May  6 08:40:41.171: %IOSXE-3-PLATFORM: R0/0: /usr/sbin/updatepcr8d: MPCCE: Failed to read
 idprom cookie; error code: 100
*May  6 08:40:41.184: %IOSXE-3-PLATFORM: R0/0: /usr/sbin/updatepcr8d: Error logging in to
```

```
tam device, rc=0x64-TAM_LIB_ERR_MANDATORY_BUS_ENCRYPT_ENABLED
*May  6 08:40:41.184: %IOSXE-3-PLATFORM: R0/0: /usr/sbin/updatepcr8d: Error initializing
tam device. PCR8 will not be extended.
*May  6 08:40:46.480: %IOSXE-3-PLATFORM: R0/0: /usr/sbin/updatepcr8d: MPCCE: Failed to read
 idprom cookie; error code: 100
*May  6 08:40:46.493: %IOSXE-3-PLATFORM: R0/0: /usr/sbin/updatepcr8d: Error logging in to
tam device, rc=0x64-TAM_LIB_ERR_MANDATORY_BUS_ENCRYPT_ENABLED
*May  6 08:40:46.493: %IOSXE-3-PLATFORM: R0/0: /usr/sbin/updatepcr8d: Error initializing
tam device. PCR8 will not be extended.
*May  6 08:40:59.263: %SERVICES-2-NORESOLVE_ACTIVE: C0/0: cmcc: Error resolving active FRU:
 BINOS_FRU_RP
*May  6 08:40:59.346: %SYS-4-ROUTER_RUNNING_BUNDLE_BOOT_MODE: R0/0: Warning: Booting with
bundle mode will be deprecated in the near future. Migration to install mode is required.
*May  6 08:41:21.935: %BOOT-5-OPMODE_LOG: R0/0: binos: System booted in AUTONOMOUS mode
*May  6 08:41:25.396: %FLASH_CHECK-3-DISK_QUOTA: R0/0: flash_check: bootflash quota exceeded
 [free space is 3172248 kB] - [recommended free space is 5929066 kB] - Please clean up files
 on bootflash.
*May  6 08:41:25.952: %CMRP_PFU-6-PEM_INSERTED: R0/0: cmand: Power Supply in slot 0 not
operational.
*May  6 08:41:26.077: %CMRP_PFU-6-FANASSY_INSERTED: R0/0: cmand: Fan Assembly is inserted.
*May  6 08:41:30.313: %SYS-5-CONFIG_P: Configured programmatically by process MGMT VRF
Process from console as vty0
*May  6 08:41:30.519: %IOSXE_MGMTVRF-6-CREATE_SUCCESS_INFO: Management vrf Mgmt-intf created
 with ID 1, ipv4 table-id 0x1, ipv6 table-id 0x1E000001
*May  6 08:41:30.519: %SYS-5-CONFIG_P: Configured programmatically by process MGMT VRF
Process from console as vty0
*May  6 08:41:30.688: %IOSXE_RP_ALARM-2-PEM: ASSERT CRITICAL Power Supply Module 0 Power
Supply Failure
*May  6 08:41:30.688: %IOSXE_RP_ALARM-6-INFO: ASSERT CRITICAL POE Module 0 Power Supply
Failure
*May  6 08:41:30.714: %ONEP_BASE-6-SS_ENABLED: ONEP: Service set Base was enabled by Default
*May  6 08:41:31.046: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state
 to down
*May  6 08:41:31.058: %LINEPROTO-5-UPDOWN: Line protocol on Interface EOBC0, changed state
 to up
*May  6 08:41:31.066: %LINEPROTO-5-UPDOWN: Line protocol on Interface Lsmpi0, changed state
 to up
*May  6 08:41:31.066: %LINEPROTO-5-UPDOWN: Line protocol on Interface LIIN0, changed state
 to up
*May  6 08:41:31.066: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0,
changed state to down
*May  6 08:41:31.262: %SMART_LIC-6-USAGE_NO_ACK: A Usage report acknowledgement has not
been received in the last 0 days.
*May  6 08:41:31.263: %SIP-5-LICENSING: smart license report is not acknowledged.
*May  6 08:41:31.773: %SYS-7-NVRAM_INIT_WAIT_TIME: Waited 0 seconds for NVRAM to be available
*May  6 08:41:31.944: %SYS-6-PRIVCFG_DECRYPT_SUCCESS: Successfully apply the private config
 file
*May  6 08:41:32.030: %PKI-6-TRUSTPOINT_CREATE: Trustpoint: TP-self-signed-2220840378 created
 succesfully
*May  6 08:41:32.031: %PKI-6-TRUSTPOINT_CREATE: Trustpoint: SLA-TrustPoint created succesfully
*May  6 08:41:32.034: %PKI-3-KEY_CMP_MISMATCH: Key in the certificate and stored key does
not match for Trustpoint-TP-self-signed-2220840378.
*May  6 08:41:32.041: %AAA-6-USERNAME_CONFIGURATION: user with username: admin configured
*May  6 08:41:32.041: %AAAA-4-CLI_DEPRECATED: WARNING: Command has been added to the
configuration using a type 0 password. However, recommended to migrate to strong type-6
encryption
*May  6 08:41:32.041: %AAA-6-USER_PRIVILEGE_UPDATE: username: admin privilege updated with
 priv-15
*May  6 08:41:32.259: %SYS-5-CONFIG_I: Configured from memory by console
*May  6 08:41:32.268: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 0/0, interfaces disabled
*May  6 08:41:32.268: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 0/1, interfaces disabled
*May  6 08:41:32.275: %SPA_OIR-6-OFFLINECARD: SPA (4M-2xSFP+) offline in subslot 0/0
*May  6 08:41:32.278: %SPA_OIR-6-OFFLINECARD: SPA (C-NIM-8M) offline in subslot 0/1
*May  6 08:41:32.306: %IOSXE_RP_ALARM-2-ESP: ASSERT CRITICAL module R0 No Working ESP
```

```
*May  6 08:41:32.309: %IOSXE_OIR-6-INSCARD: Card (fp) inserted in slot F0
*May  6 08:41:32.309: %IOSXE_OIR-6-INSCARD: Card (cc) inserted in slot 0
*May  6 08:41:32.309: %IOSXE_OIR-6-INSCARD: Card (cc) inserted in slot 1
*May  6 08:41:32.325: %CRYPTO-5-SELF_TEST_START: Crypto algorithms release (Rel5a), Entropy
 release (3.4.1)
       begin Crypto Module self-tests
*May  6 08:41:32.329: %CRYPTO-5-SELF_TEST_END: Crypto Algorithm self-test completed
successfully
       All tests passed.
*May  6 08:41:32.712: %UICFGEXP-6-SERVER_NOTIFIED_START: R0/0: psd: Server iox has been
notified to start
*May  6 08:41:33.077: %SYS-5-RESTART: System restarted --
Cisco IOS Software [IOSXE], c8kg2be Software (ARMV8EL_LINUX_IOSD-UNIVERSALK9-M), Version
17.15.3, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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Compiled Tue 25-Mar-25 23:37 by mcpre
*May  6 08:41:33.084: %SNMP-5-COLDSTART: SNMP agent on host Router is undergoing a cold
start
*May  6 08:41:33.084: %SYS-5-CONFIG_I: Configured from console by console
*May  6 08:41:33.759: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F0
*May  6 08:41:34.091: %SYS-6-BOOTTIME: Time taken to reboot after reload =  215 seconds
*May  6 08:41:35.051: %LINEPROTO-5-UPDOWN: Line protocol on Interface VirtualPortGroup0,
changed state to up
*May  6 08:41:35.063: %LINEPROTO-5-UPDOWN: Line protocol on Interface VirtualPortGroup1,
changed state to up
*May  6 08:41:35.063: %LINEPROTO-5-UPDOWN: Line protocol on Interface VirtualPortGroup10,
changed state to up
*May  6 08:41:38.437: %PNP-6-PNP_BEST_UDI_UPDATE: Best UDI
[PID:C8375-E-G2,VID:V01,SN:FDO2833M01A] identified via (entity-mibs)
*May  6 08:41:38.437: %PNP-6-PNP_CDP_UPDATE: Device UDI
[PID:C8375-E-G2,VID:V01,SN:FDO2833M01A] identified for CDP
*May  6 08:41:38.437: %PNP-6-PNP_DISCOVERY_STOPPED: PnP Discovery stopped (Startup Config
Present)
*May  6 08:41:39.699: %LINK-3-UPDOWN: Interface GigabitEthernet0, changed state to up
*May  6 08:41:40.707: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0,
changed state to up
*May  6 08:41:42.333: %SYS-5-CONFIG_P: Configured programmatically by process EPM CREATE
DEFAULT CWA URL ACL from console as console
*May  6 08:41:46.197: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 0
*May  6 08:41:46.230: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 0/0
*May  6 08:41:46.587: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 1
*May  6 08:41:47.126: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*May  6 08:41:47.126: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*May  6 08:41:48.779: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 0/1
*May  6 08:41:49.452: %CRYPTO-6-ISAKMP_ON_OFF: ISAKMP is OFF
*May  6 08:41:49.452: %CRYPTO-6-GDOI_ON_OFF: GDOI is OFF
*May  6 08:41:49.571: %PKI-6-TRUSTPOINT_CREATE: Trustpoint: CISCO_IDEVID_SUDI created
succesfully
*May  6 08:41:49.573: %CRYPTO_ENGINE-5-KEY_ADDITION: A key named CISCO_IDEVID_SUDI has been
 generated or imported by pki-sudi
*May  6 08:41:49.609: %PKI-6-TRUSTPOINT_CREATE: Trustpoint: CISCO_IDEVID_SUDI0 created
succesfully
*May  6 08:41:49.610: %PKI-2-NON_AUTHORITATIVE_CLOCK: PKI functions can not be initialized
 until an authoritative time source, like NTP, can be obtained.
*May  6 08:41:53.146: %IOX-3-PD_PARTITION_CREATE: R0/0: run_ioxn_caf: IOX may take upto 3
mins to be ready. Wait for iox to be ready before installing the apps
*May  6 08:41:53.429: %IOX-3-PD_PARTITION_CREATE: R0/0: run_ioxn_caf: Successfully allocated
 4.0G in flash for hosting ApplicationsNGIOLite module C-NIM-8M success read extended attr
 from conf file

*May  6 08:42:15.679: %SPA_OIR-6-ONLINECARD: SPA (C-NIM-8M) online in subslot 0/1
*May  6 08:42:16.292: %ENVIRONMENTAL-6-NOTICE: V: PEM Out, Location: P0, State: Minor_Low,
 Reading: 0 mV
```

```
*May  6 08:42:20.701: %ONEP_BASE-3-AUTHEN_ERR: [Element]: Authentication/authorization
failed. Application (utd_snort-utd): Username (*INVALID*)
*May  6 08:42:22.179: %TRANSCEIVER-6-INSERTED: C0/0: iomd: transceiver module inserted in
Te0/0/4
*May  6 08:42:22.255: %TRANSCEIVER-6-INSERTED: C0/0: iomd: transceiver module inserted in
Te0/0/5
*May  6 08:42:22.643: %LINK-3-UPDOWN: Interface TwoGigabitEthernet0/1/6, changed state to
up
*May  6 08:42:23.345: %SPA_OIR-6-ONLINECARD: SPA (4M-2xSFP+) online in subslot 0/0
*May  6 08:42:23.644: %LINEPROTO-5-UPDOWN: Line protocol on Interface TwoGigabitEthernet0/1/6,
 changed state to up
*May  6 08:42:28.999: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/4, changed state to
up
*May  6 08:42:29.011: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/5, changed state to
up
*May  6 08:42:29.975: %LINK-3-UPDOWN: Interface TwoGigabitEthernet0/0/0, changed state to
up
*May  6 08:42:30.004: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/0/4,
 changed state to up
*May  6 08:42:30.010: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/0/5,
 changed state to up
*May  6 08:42:29.901: %IM-6-IOX_INST_INFO: R0/0: ioxman: IOX SERVICE guestshell LOG:
Guestshell is up at 04/06/2025 08:42:29
*May  6 08:42:30.974: %LINK-3-UPDOWN: Interface TwoGigabitEthernet0/0/1, changed state to
up
*May  6 08:42:30.976: %LINEPROTO-5-UPDOWN: Line protocol on Interface TwoGigabitEthernet0/0/0,
 changed state to up
*May  6 08:42:31.975: %LINEPROTO-5-UPDOWN: Line protocol on Interface TwoGigabitEthernet0/0/1,
 changed state to up
*May  6 08:42:31.983: %LINK-3-UPDOWN: Interface TwoGigabitEthernet0/0/3, changed state to
up
*May  6 08:42:32.644: %LINK-3-UPDOWN: Interface TwoGigabitEthernet0/1/7, changed state to
up
*May  6 08:42:32.366: %CMRP-5-CHASSIS_MONITOR_BOOT_TIME_PRINT: R0/0: cmand: Card F0 took
59 secs to boot
*May  6 08:42:32.367: %CMRP-5-CHASSIS_MONITOR_BOOT_TIME_PRINT: R0/0: cmand: Card 0 took 54
 secs to boot
*May  6 08:42:32.367: %CMRP-5-CHASSIS_MONITOR_BOOT_TIME_PRINT: R0/0: cmand: Card 1 took 54
 secs to boot
*May  6 08:42:32.984: %LINEPROTO-5-UPDOWN: Line protocol on Interface TwoGigabitEthernet0/0/3,
 changed state to up
*May  6 08:42:33.642: %LINEPROTO-5-UPDOWN: Line protocol on Interface TwoGigabitEthernet0/1/7,
 changed state to up
*May  6 08:42:34.003: ALL modules are online!
*May  6 08:42:34.765: %IM-6-IOX_ENABLEMENT: R0/0: ioxman: IOX is ready.
*May  6 08:42:34.766: %IM-6-START_MSG: R0/0: ioxman: app-hosting: Start succeeded: utd is
started Current is in RUNNING
May  6 08:42:36.712: %PKI-6-AUTHORITATIVE_CLOCK: The system clock has been set.
May  6 08:42:38.080: %SMART_LIC-6-REPORTING_REQUIRED: A Usage report acknowledgement will
be required in 0 days.
May  6 08:42:38.081: ALL modules are online!
May  6 08:42:41.695: %SMART_LIC-6-REPORTING_REQUIRED: A Usage report acknowledgement will
be required in 0 days.
Router>
May  6 08:42:51.407: %ONEP_BASE-6-CONNECT: [Element]: ONEP session Application:utd_snort
Host:utd ID:3545 User: has connected.
```

This is an example of the three-step installation:

```
Router#install add file bootflash:c8kg2be-universalk9.17.15.03a.SPA.bin
install_add: START Wed May 21 09:03:39 UTC 2025
install_add: Adding IMG
```

```
% UTD: Received appnav notification from LXC for   (src 192.0.2.5, dst 192.0.2.6)
% UTD successfully registered with Appnav (src 192.0.2.5, dst 192.0.2.6)
% UTD redirect interface set to VirtualPortGroup1 internally
--- Starting initial file syncing ---
Copying bootflash:c8kg2be-universalk9.17.15.03a.SPA.bin from  R0 to  R0
Info: Finished copying to the selected
Finished initial file syncing

--- Starting Add ---
Performing Add on all members
Checking status of Add on [R0]
Add: Passed on [R0]
Image added. Version: 17.15.03a.0.176

Finished Add

SUCCESS: install_add /bootflash/c8kg2be-universalk9.17.15.03a.SPA.bin Wed May 21 09:04:43
UTC 2025

Router#show install log
[0|install_op_boot]: START Wed May 21 09:02:03 Universal 2025
[0|install_op_boot(INFO, )]: Mount IMG INI state base image
[0|install_op_boot]: END SUCCESS  Wed May 21 09:02:03 Universal 2025
[0|install_op_boot(INFO, )]: cleanup_trap  remote_invocation 0 operation install_op_boot
.. 0 .. 0
[remote|COMP_CHECK]: START Wed May 21 09:04:42 UTC 2025
[remote|COMP_CHECK]: END FAILED exit(1)  Wed May 21 09:04:43 UTC 2025

Router#
Router#install activate
install_activate: START Wed May 21 09:07:21 UTC 2025
install_activate: Activating IMG
Following packages shall be activated:
/bootflash/c8kg2be-rpboot.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_sm_nim_adpt.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_nim_async.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_sm_async.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_prince.17.15.03a.SPA.pkg
/bootflash/c8kg2be-mono-universalk9.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_nim_shdsl.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_ngwic_t1e1.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_sm_1t3e3.17.15.03a.SPA.pkg
/bootflash/c8kg2be-firmware_nim_xdsl.17.15.03a.SPA.pkg

This operation may require a reload of the system. Do you want to proceed? [y/n]y

--- Starting Activate ---
Performing Activate on all members
 [1] Activate package(s) on  R0

 [1] Finished Activate on  R0
Checking status of Activate on [R0]
Activate: Passed on [R0]
Finished Activate

SUCCESS: install_activate Wed May 21 09:09:31 UTC 2025
Router#May 21 09:

System integrity status: 0x32042000
Rom image verified correctly

System Bootstrap, Version v17.15(3.1r).s2.cp, RELEASE SOFTWARE
Copyright (c) 1994-2025 by cisco Systems, Inc.
```

```
Current image running: Boot ROM0

Last reset cause: LocalSoft
C8375-E-G2 platform with 33554432 Kbytes of main memory


........

boot: reading file packages.conf
#

##################################################################

Performing Signature Verification of OS image...
Image validated

May 21 09:11:47.581: %BOOT-5-OPMODE_LOG: R0/0: binos: System booted in AUTONOMOUS mode

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Cisco IOS Software [IOSXE], c8kg2be Software (ARMV8EL_LINUX_IOSD-UNIVERSALK9-M), Version
17.15.3a, RELEASE SOFTWARE (fc4)
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Compiled Fri 02-May-25 11:27 by mcpre


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May 21 09:11:51.161: %FLASH_CHECK-3-DISK_QUOTA: R0/0: flash_check: bootflash quota exceeded
 [free space is 1111072 kB] - [recommended free space is 5929066 kB] - Please clean up files
 on bootflash.
cisco C8375-E-G2 (1RU) processor with 11906881K/6147K bytes of memory.
Processor board ID FDO2833M01A
Router operating mode: Autonomous
1 Virtual Ethernet interface
12 2.5 Gigabit Ethernet interfaces
2 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
33554432K bytes of physical memory.
20257791K bytes of flash memory at bootflash:.

Warning: When Cisco determines that a fault or defect can be traced to
the use of third-party transceivers installed by a customer or reseller,
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assist Cisco in diagnosing the cause of a support issue.
The process for the command is not responding or is otherwise unavailable

 WARNING: Command has been added to the configuration using a type 0 password. However,
recommended to migrate to strong type-6 encryption

 WARNING: ** NOTICE **  The H.323 protocol is no longer supported from IOS-XE release 17.6.1.
 Please consider using SIP for multimedia applications.



Press RETURN to get started!

% UTD: Received appnav notification from LXC for   (src 192.0.2.5, dst 192.0.2.6)
% UTD successfully registered with Appnav (src 192.0.2.5, dst 192.0.2.6)
% UTD redirect interface set to VirtualPortGroup1 internally

Router>
Router>en
Router#
Router#install commit
install_commit: START Wed May 21 09:22:28 UTC 2025
--- Starting Commit ---
Performing Commit on all members
 [1] Commit packages(s) on  R0
 [1] Finished Commit packages(s) on  R0
Checking status of Commit on [R0]
Commit: Passed on [R0]
Finished Commit operation

SUCCESS: install_commit Wed May 21 09:22:31 UTC 2025
```

These are sample outputs for show commands:

show install log

```
Device# show install log
[0|install_op_boot]: START Thu Oct 28 22:09:29 Universal 2021
```

```
[0|install_op_boot(INFO, )]: Mount IMG INI state base image
[0|install_op_boot]: END SUCCESS  Thu Oct 28 22:09:30 Universal 2021
```

show install summary

```
Device# show install summary
[ R0 ] Installed Package(s) Information:

State (St): I - Inactive, U - Activated & Uncommitted,

C - Activated & Committed, D - Deactivated & Uncommitted

--------------------------------------------------------------------------------

Type  St   Filename/Version

--------------------------------------------------------------------------------

IMG   C    17.15.03a.0.176


--------------------------------------------------------------------------------

Auto abort timer: inactive

--------------------------------------------------------------------------------
```

show install package *filesystem: filename*

```
Device# show install package bootflash:c8kg2be-universalk9.17.15.03a.SPA.bin
  Package: c8kg2be-universalk9.17.15.03a.SPA.bin
    Size: 953231736
    Timestamp:
  Canonical path: /bootflash/c8kg2be-universalk9.17.15.03a.SPA.bin

    Raw disk-file SHA1sum:
      d358592ccd2dd626889ef091401d06fae5458ff1
  Header size:     1084 bytes
  Package type:    30000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: rp_super
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: arm64
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: universalk9
    Build: 17.15.03a
    CardTypes:

  Package is bootable from media and tftp.
  Package contents:

  Package: c8kg2be-firmware_prince.17.15.03a.SPA.pkg
    Size: 10444800
    Timestamp:

    Raw disk-file SHA1sum:
      fa82bed30d349686d1d9700892076a3d66375698
    Header size:     4096 bytes
    Package type:    40000
```

```
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_prince
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_prince
    Build: 17.15.03a
    CardTypes:

  Package is not bootable.
Package: c8kg2be-mono-universalk9.17.15.03a.SPA.pkg
  Size: 891244544
  Timestamp:

  Raw disk-file SHA1sum:
    af7ba58491731d788d9f4528d74b5bfef9dfc7f2
  Header size:     4096 bytes
  Package type:    30000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: mono
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: arm64
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: mono-universalk9
    Build: 17.15.03a
    CardTypes:

  Package is bootable from media and tftp.
  Package contents:

Package: c8kg2be-firmware_nim_xdsl.17.15.03a.SPA.pkg
  Size: 5677056
  Timestamp:

  Raw disk-file SHA1sum:
    4af7a8764651253c73c7fadebeba6f3a8f0a133d
  Header size:     4096 bytes
  Package type:    40000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_nim_xdsl
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_nim_xdsl
    Build: 17.15.03a
    CardTypes:
```

```
  Package is not bootable.
Package: c8kg2be-firmware_sm_1t3e3.17.15.03a.SPA.pkg
  Size: 13889536
  Timestamp:

  Raw disk-file SHA1sum:
    526aa41ccd8398e7691d316ca24289801e0417a8
  Header size:     4096 bytes
  Package type:    40000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_sm_1t3e3
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_sm_1t3e3
    Build: 17.15.03a
    CardTypes:

  Package is not bootable.
Package: c8kg2be-firmware_sm_async.17.15.03a.SPA.pkg
  Size: 14671872
  Timestamp:

  Raw disk-file SHA1sum:
    7c7f4c06da5b3b0e1db879e074998130db22298f
  Header size:     4096 bytes
  Package type:    40000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_sm_async
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_sm_async
    Build: 17.15.03a
    CardTypes:

  Package is not bootable.
Package: c8kg2be-firmware_nim_async.17.15.03a.SPA.pkg
  Size: 13254656
  Timestamp:

  Raw disk-file SHA1sum:
    27132c3a41c79991d1f71488ad325ad05cc7b0bb
  Header size:     4096 bytes
  Package type:    40000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_nim_async
    BuildTime: 2025-05-02_11.57
```

```
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_nim_async
    Build: 17.15.03a
    CardTypes:

  Package is not bootable.
Package: c8kg2be-firmware_nim_shdsl.17.15.03a.SPA.pkg
  Size: 11804672
  Timestamp:

  Raw disk-file SHA1sum:
    51da21dffb39d2ef6b266b7ffab083b3fb339651
  Header size:     4096 bytes
  Package type:    40000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_nim_shdsl
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_nim_shdsl
    Build: 17.15.03a
    CardTypes:

  Package is not bootable.
Package: c8kg2be-firmware_ngwic_t1e1.17.15.03a.SPA.pkg
  Size: 11956224
  Timestamp:

  Raw disk-file SHA1sum:
    19376efa2ed616672c0d488b628a768e262bd8e6
  Header size:     4096 bytes
  Package type:    40000
  Package flags:   0
  Header version:  3

  Internal package information:
    Name: firmware_ngwic_t1e1
    BuildTime: 2025-05-02_11.57
    ReleaseDate: 2025-05-02_16.50
    BootArchitecture: none
    RouteProcessor: mirabile
    Platform: C8KG2BE
    User: mcpre
    PackageName: firmware_ngwic_t1e1
    Build: 17.15.03a
    CardTypes:

  Package is not bootable.
Package: c8kg2be-firmware_sm_nim_adpt.17.15.03a.SPA.pkg
  Size: 204800
  Timestamp:

  Raw disk-file SHA1sum:
    b3a7ddd80df900d6217bb8db36ff8bdbc6241fa3
```

```
Header size:     4096 bytes
Package type:    40000
Package flags:   0
Header version:  3

Internal package information:
  Name: firmware_sm_nim_adpt
  BuildTime: 2025-05-02_11.57
  ReleaseDate: 2025-05-02_16.50
  BootArchitecture: none
  RouteProcessor: mirabile
  Platform: C8KG2BE
  User: mcpre
  PackageName: firmware_sm_nim_adpt
  Build: 17.15.03a
  CardTypes:

Package is not bootable.
```

show install active

```
Device# show install active
[ R0 ] Active Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
C - Activated & Committed, D - Deactivated & Uncommitted
--------------------------------------------------------------------------------
Type  St   Filename/Version
--------------------------------------------------------------------------------
IMG   C  17.15.03a.0.158
--------------------------------------------------------------------------------
Auto abort timer: inactive
--------------------------------------------------------------------------------
```

show install inactive

```
Device# show install inactive
[ R0 ] Inactive Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
C - Activated & Committed, D - Deactivated & Uncommitted
--------------------------------------------------------------------------------
Type  St   Filename/Version
--------------------------------------------------------------------------------
No Inactive Packages
```

show install committed

```
Device# show install committed
[ R0 ] Committed Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
C - Activated & Committed, D - Deactivated & Uncommitted
--------------------------------------------------------------------------------
Type  St   Filename/Version
--------------------------------------------------------------------------------
IMG    C   17.15.03a.0.158
--------------------------------------------------------------------------------



--------------------------------------------------------------------------------

Auto abort timer: inactive

--------------------------------------------------------------------------------
```

show install uncommitted

```
Device# show install uncommitted
[ R0 ] Uncommitted Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
            C - Activated & Committed, D - Deactivated & Uncommitted
--------------------------------------------------------------------------
Type  St   Filename/Version
--------------------------------------------------------------------------
No Uncommitted Packages
```

Troubleshoot software installation using install commands

Problem Troubleshooting the software installation

Solution Use these show commands to view installation summary, logs, and software versions.

- **show install summary**
- **show install log**
- **show version**
- **show version running**

Problem Other installation issues

Solution Use these commands to resolve installation issue:

- **dir** <*install directory*>
- **more location:***packages.conf*
- **show tech-support install**: this command automatically runs the **show** commands that display information specific to installation.
- **request platform software trace archive target bootflash** <*location*>: this command archives all the trace logs relevant to all the processes running on the system since the last reload, and saves this information in the specified location.