Install the software

This chapter includes these sections:

- Install a software, on page 1
- ROMMON images, on page 1
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- Autogenerated file directories and files, on page 2
- Flash storage, on page 3
- Configure the configuration register for autoboot, on page 4
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Install a software

Installing software on the router involves installing a consolidated package (bootable image). This consists of a bundle of subpackages (modular software units), with each subpackage controlling a different set of functions.

Manage and Configure a device to run using a consolidated package, on page 4—This method allows for individual upgrade of subpackages and generally has reduced boot times compared to the method below. Use this method if you want to individually upgrade a module's software.

It is better to upgrade software in a planned period of maintenance when an interruption in service is acceptable. The router needs to be rebooted for a software upgrade to take effect.

ROMMON images

A ROMMON image is a software package used by ROM Monitor (ROMMON) software on a router. The software package is separate from the consolidated package normally used to boot the router. For more information on ROMMON, see Hardware Installation Guide for the Cisco 8200 Series Secure Routers.

An independent ROMMON image (software package) may occasionally be released and the router can be upgraded with the new ROMMON software. For detailed instructions, see the documentation that accompanies the ROMMON image.

Note A new version of the ROMMON image is not necessarily released at the same time as a consolidated package for a router.

File systems

The table provides a list of file systems that can be seen on the Cisco 8200 Series Secure Routers.

Table 1: Device file systems

File System	Description
bootflash:	Boot flash memory file system.
flash:	Alias to the boot flash memory file system above.
harddisk:	Hard disk file system (NVME-M2-600G or USB-M2-16G or USB-M2-32G with the CLI command harddisk).
cns:	Cisco Networking Services file directory.
nvram:	Device NVRAM. You can copy the startup configuration to NVRAM or from NVRAM.
obfl:	File system for Onboard Failure Logging (OBFL) files.
system:	System memory file system, which includes the running configuration.
tar:	Archive file system.
tmpsys:	Temporary system files file system.
USB Type C	The Universal Serial Bus (USB) flash drive file systems. **Note** The USB flash drive file system is visible only if a USB drive is installed in usb0: or usb1: ports.

Use the **?** help option, or use the **copy** command in command reference guides, if you find a file system that is not listed in the table above.

Autogenerated file directories and files

This section discusses the autogenerated files and directories that can be created, and how the files in these directories can be managed.

Table 2: Autogenerated files

File or Directory	Description
crashinfo files	Crashinfo files may appear in the bootflash: file system. These files provide descriptive information of a crash and may be useful for tuning or troubleshooting purposes. However, the files are not part of device operations, and can be erased without impacting the functioning of the device.
core directory	The storage area for .core files. If this directory is erased, it will automatically regenerate itself at bootup. The .core files in this directory can be erased without impacting any device functionality, but the directory itself should not be erased.
lost+found directory	This directory is created on bootup if a system check is performed. Its appearance is completely normal and does not indicate any issues with the device.
tracelogs directory	The storage area for trace files. Trace files are useful for troubleshooting. If the Cisco IOS process fails, for instance, users or troubleshooting personnel can access trace files using diagnostic mode to gather information related to the Cisco IOS failure. Trace files, however, are not a part of device operations, and can be erased without impacting the device's performance.

Important notes about autogenerated directories

Important information about autogenerated directories include:

- Autogenerated files on the bootflash: directory should not be deleted, renamed, moved, or altered in any way unless directed by Cisco customer support.

Note Altering autogenerating files on the bootflash: may have unpredictable consequences for system performance.

- Crashinfo, core, and trace files can be deleted.

Flash storage

Subpackages are installed to local media storage, such as flash. For flash storage, use the **dir bootflash:** command to list the file names.

Note Flash storage is required for successful operation of a device.

Configure the configuration register for autoboot

The configuration register can be used to change behavior. This includes controlling how the device boots. Set the configuration register to 0x0 to boot into ROM, by using one of the following commands:

- In Cisco IOS configuration mode, use the **config-reg** 0x0 command.
- From the ROMMON prompt, use the **confreg** 0x0 command.

For more information about the configuration register, see Use of the Configuration Register on All Cisco Routers.

Note Setting the configuration register to 0x2102 will set the device to autoboot the Cisco IOS XE software.

Note The console baud rate is set to 9600 after changing the **confreg** to 0x2102 or 0x0. If you cannot establish a console session after setting **confreg**, or garbage output appears, change the setting on your terminal emulation software to 9600.

How to install and upgrade the software

To install or upgrade the software, use Manage and Configure a device to run using a consolidated package, on page 4 method.. Also see the Install a software section.

Manage and Configure a device to run using a consolidated package

Manage and configure a device using a consolidated pacakage:

- Manage and configure a consolidated package using copy and boot Commands, on page 4
- Configure a device to boot the consolidated package via TFTP using the boot command: Example, on page 10

Manage and configure a consolidated package using copy and boot Commands

To upgrade a consolidated package, copy the consolidated package to the **bootflash:** directory on the router using the **copy** command. After making this copy of the consolidated package, configure the router to boot using the consolidated package file.

The example shows the consolidated package file being copied to the **bootflash:** file system via TFTP. The config register is then set to boot using **boot system** commands, and the **boot system** commands instruct the router to boot using the consolidated package stored in the **bootflash:** file system. The new configuration is then saved using the **copy running-config startup-config** command, and the system is then reloaded to complete the process.

```
Router# dir bootflash:
Directory of bootflash:/
```

```
23      -rw-               0   Jun 5 2025 09:50:37 +00:00  iox_alt_hdd.dsk

784897  drwx         3358720   Jun 5 2025 09:23:28 +00:00  tracelogs

392449  drwx            4096  May 21 2025 09:22:30 +00:00  .rollback_timer

11      -rw-             422  May 21 2025 09:12:33 +00:00  .iox_dir_list

915713  drwx            4096  May 21 2025 09:12:13 +00:00  SHARED-IOX

21      -rw-              30  May 21 2025 09:12:12 +00:00  throughput_monitor_params

15      -rw-          143041  May 21 2025 09:12:04 +00:00  memleak.tcl

1046531  drwx           73728  May 21 2025 09:12:00 +00:00  license_evlog

1046529  drwx            4096  May 21 2025 09:11:53 +00:00  .prst_sync

12      -rwx          261921  May 21 2025 09:11:47 +00:00  mode_event_log

59      -rw-            7762  May 21 2025 09:09:09 +00:00  packages.conf

48      -rw-            7762  May 21 2025 09:04:42 +00:00
c8kg2be-universalk9.17.15.03a.SPA.conf
1047801  -rw-       59995452  May 21 2025 09:04:39 +00:00  c8kg2be-rpboot.17.15.03a.SPA.pkg

1046537  drwx            4096  May 21 2025 09:04:38 +00:00  .images

130817  drwx            4096  May 21 2025 09:01:56 +00:00  sysboot

47      -rw-            9391  May 21 2025 08:59:39 +00:00
c8kg2be-universalk9.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.conf
1047773  -rw-         59995512  May 21 2025 08:59:38 +00:00
c8kg2be-rpboot.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg
785553  drwx            4096  May 21 2025 06:27:34 +00:00  memaudit_log
13      drwx            4096  May 19 2025 03:58:14 +00:00  core
46      -rw-       1003589796  May 14 2025 11:21:03 +00:00
c8kg2be-universalk9.BLD_V1718_THROTTLE_LATEST_20250423_010128.SSA.bin
45      -rw-             396  May 14 2025 05:39:34 +00:00  ct_persistent.txt
44      -rw-            7711   May 6 2025 08:36:06 +00:00
c8kg2be-universalk9.17.15.03.SPA.conf
1047740  -rw-        59987868   May 6 2025 08:36:03 +00:00  c8kg2be-rpboot.17.15.03.SPA.pkg

24      -rw-        953199576   May 6 2025 07:02:50 +00:00
c8kg2be-universalk9.17.15.03.SPA.bin
43      -rw-            16464   May 6 2025 05:38:49 +00:00  dizeng-crestone-confg

39      -rw-        957518956   May 5 2025 12:04:02 +00:00
c8kg2be-universalk9_npe.17.15.03a.SPA.bin
38      -rw-        953231736   May 4 2025 08:39:53 +00:00
c8kg2be-universalk9.17.15.03a.SPA.bin
1047812  -rw-         891244544   May 2 2025 19:08:25 +00:00
c8kg2be-mono-universalk9.17.15.03a.SPA.pkg
1047807  -rw-           5677056   May 2 2025 19:07:15 +00:00
c8kg2be-firmware_nim_xdsl.17.15.03a.SPA.pkg
1047809  -rw-          13889536   May 2 2025 19:07:15 +00:00
c8kg2be-firmware_sm_1t3e3.17.15.03a.SPA.pkg
1047808  -rw-          10444800   May 2 2025 19:07:15 +00:00
c8kg2be-firmware_prince.17.15.03a.SPA.pkg
1047810  -rw-          14671872   May 2 2025 19:07:15 +00:00
c8kg2be-firmware_sm_async.17.15.03a.SPA.pkg
1047804  -rw-          11956224   May 2 2025 19:07:14 +00:00
c8kg2be-firmware_ngwic_t1e1.17.15.03a.SPA.pkg
1047806  -rw-          11804672   May 2 2025 19:07:14 +00:00
```

```
c8kg2be-firmware_nim_shdsl.17.15.03a.SPA.pkg
1047805  -rw-         13254656   May 2 2025 19:07:14 +00:00
c8kg2be-firmware_nim_async.17.15.03a.SPA.pkg
1047811  -rw-           204800   May 2 2025 19:07:14 +00:00
c8kg2be-firmware_sm_nim_adpt.17.15.03a.SPA.pkg
29       -rw-        953227220  Apr 22 2025 12:40:25 +00:00
c8kg2be-universalk9.BLD_V1715_3_THROTTLE_LATEST_20250421_200058.SSA.bin
28       -rw-          5813308  Apr 22 2025 12:03:54 +00:00
SDK112312-Prod-SoC2-v17.15.3_1r-cp.pkg
26       -rw-           763701  Apr 17 2025 08:58:31 +00:00  wilson-running-cfg.txt

25       -rw-          8630272  Apr 11 2025 11:28:20 +00:00
c8kg2be-hw-programmables.C0x25033132_W0x25033132.pkg
14       -rw-         56012800   Apr 3 2025 08:56:15 +00:00
secapp-utd.17.15.03.1.0.8_SV3.1.81.0_XE17.15.aarch64.tar
75       -rw-       1002810808   Apr 1 2025 07:21:54 +00:00
c8kg2be-universalk9.BLD_POLARIS_DEV_LATEST_20250325_181737.SSA.bin
1047751  -rw-        891219968  Mar 26 2025 06:51:11 +00:00
c8kg2be-mono-universalk9.17.15.03.SPA.pkg
1047747  -rw-         10444800  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_prince.17.15.03.SPA.pkg
1047745  -rw-         11804672  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_nim_shdsl.17.15.03.SPA.pkg
1047750  -rw-           204800  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_sm_nim_adpt.17.15.03.SPA.pkg
1047744  -rw-         13254656  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_nim_async.17.15.03.SPA.pkg
1047743  -rw-         11956224  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_ngwic_t1e1.17.15.03.SPA.pkg
1047748  -rw-         13889536  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_sm_1t3e3.17.15.03.SPA.pkg
1047746  -rw-          5677056  Mar 26 2025 06:50:09 +00:00
c8kg2be-firmware_nim_xdsl.17.15.03.SPA.pkg
1047749  -rw-         14671872  Mar 26 2025 06:50:08 +00:00
c8kg2be-firmware_sm_async.17.15.03.SPA.pkg
74       -rw-          2510307  Mar 19 2025 07:08:14 +00:00  redirect.out

72       -rw-        953199060  Mar 12 2025 07:00:51 +00:00
c8kg2be-universalk9.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.bin

1047784  -rw-        891203584  Mar 10 2025 20:59:47 +00:00
c8kg2be-mono-universalk9.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047781  -rw-         13889536  Mar 10 2025 20:58:37 +00:00
c8kg2be-firmware_sm_1t3e3.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047779  -rw-          5677056  Mar 10 2025 20:58:37 +00:00
c8kg2be-firmware_nim_xdsl.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047780  -rw-         10444800  Mar 10 2025 20:58:37 +00:00
c8kg2be-firmware_prince.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047782  -rw-         14671872  Mar 10 2025 20:58:36 +00:00
c8kg2be-firmware_sm_async.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047778  -rw-         11804672  Mar 10 2025 20:58:36 +00:00
c8kg2be-firmware_nim_shdsl.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047776  -rw-         11956224  Mar 10 2025 20:58:36 +00:00
c8kg2be-firmware_ngwic_t1e1.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

1047783  -rw-           204800  Mar 10 2025 20:58:36 +00:00
c8kg2be-firmware_sm_nim_adpt.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg
1047777  -rw-         13254656  Mar 10 2025 20:58:36 +00:00
```

```
c8kg2be-firmware_nim_async.BLD_V1715_THROTTLE_LATEST_20250310_183113.SSA.pkg

62      -rw-          5823548  Feb 25 2025 12:53:04 +00:00  C8000-NG-S2-17-15-1_17r.pkg

1046534  drwx             4096   Feb 3 2025 10:28:42 +00:00  pnp-tech

392450  drwx             4096  Jan 28 2025 07:20:24 +00:00  .dbpersist

71      -rw-           261214  Jan 28 2025 07:16:04 +00:00  ajay_backup.cfg

70      -rw-          5821500  Jan 24 2025 02:54:43 +00:00
SDK112312-Prod-SoC2-v17.15.1_14r-cp.pkg
68      -rw-          9754990  Jan 20 2025 05:17:19 +00:00  show-tech1717

69      -rw-           846347  Jan 20 2025 05:16:14 +00:00
CRFT_Admintech_C8375EG2_2025-01-20_05-16-14.tar.gz
66      -rw-             6928  Jan 13 2025 07:39:59 +00:00  ciscortr.cfg

65      -rw-             6928  Jan 13 2025 07:39:04 +00:00  C8375-E-G2.cfg

64      -rw-           301992   Jan 9 2025 09:08:37 +00:00  dual-public-ip.cfg

63      -rw-       1015740420   Jan 8 2025 07:33:57 +00:00
c8kg2be-universalk9.BLD_POLARIS_DEV_LATEST_20250106_030447.SSA.bin

60      -rw-          4653056  Dec 25 2024 03:50:16 +00:00
c8k30be-hw-programmables.C0x2408272B.pkg
37      -rw-        969660392  Dec 11 2024 05:40:52 +00:00
c8k30be-universalk9.BLD_POLARIS_DEV_LATEST_20241209_180254_V17_17_0_27.SSA.bin

32      -rw-        958470964   Dec 5 2024 05:25:07 +00:00
mira_rom_17.15_1.8r.s2.RelDebug.bin
50      -rw-           301239  Nov 22 2024 11:01:52 +00:00  rc_22_11_24

49      -rw-        952760408  Nov 21 2024 03:53:44 +00:00
c8k30be-universalk9.17.15.02.SPA.bin
42      -rw-          5733436   Nov 6 2024 06:19:35 +00:00
SDK112312-Prod-SoC2-v17.15.1_7d_RSA4K.pkg
41      -rw-             9044  Oct 30 2024 09:26:50 +00:00  cessna-snake.cfg

34      -rwx         39490752  Oct 23 2024 20:15:10 +00:00  mirabile_diag.14er.v0.1.6.0826

33      -rw-         14934016  Oct 23 2024 14:42:04 +00:00  mirabile_diag.zb.v1.0.0_qr3

36      drwx             4096  Oct 19 2024 11:42:32 +00:00  .geo

35      -rw-         56002560  Oct 10 2024 06:32:32 +00:00
secapp-utd.BLD_POLARIS_DEV_LATEST_20241007_181057.1.15.2_SV3.1.81.0_XEmain.aarch64.tar

1046539  -rw-         56309176  Aug 13 2024 09:04:49 +00:00
c8k30be-rpboot.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

20      drwx             4096  Aug 13 2024 09:01:06 +00:00  guest-share

785011  drwx             4096  Aug 13 2024 09:01:04 +00:00  pnp-info

915715  drwx             4096  Aug 13 2024 09:01:04 +00:00  onep

915714  drwx             4096  Aug 13 2024 09:00:58 +00:00  virtual-instance

19      -rw-             1939  Aug 13 2024 09:00:57 +00:00  trustidrootx3_ca_062035.ca

18      -rw-             1826  Aug 13 2024 09:00:57 +00:00  trustidrootx3_ca_092025.ca
```

```
1046550  -rw-        885977088  Jul 13 2024 06:13:59 +00:00
c8k30be-mono-universalk9.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046548  -rw-         14675968  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_sm_async.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046544  -rw-         11804672  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_nim_shdsl.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046547  -rw-         13889536  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_sm_1t3e3.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046549  -rw-           204800  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_sm_nim_adpt.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046545  -rw-          5677056  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_nim_xdsl.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046543  -rw-         13258752  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_nim_async.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046542  -rw-         11956224  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_ngwic_t1e1.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

1046546  -rw-         10444800  Jul 13 2024 06:12:52 +00:00
c8k30be-firmware_prince.BLD_POLARIS_DEV_LATEST_20240713_033504_V17_16_0_22.SSA.pkg

27       -rw-          5788732  Feb 29 2024 18:42:07 +00:00
SDK112312-Prod-SoC2-v17.15.1_13d-cp.pkg
786101   -rw-         67728148  Feb 27 2024 17:30:28 +00:00
c8kg2be-rpboot.2024-12-12_16.42_sukhoo.SSA.pkg
31       -rw-          5784636  Feb 27 2024 17:30:19 +00:00
SDK112312-Prod-SoC2-v17.15.1_13r-cp.pkg
786100   -rw-        899686400  Feb 27 2024 17:28:58 +00:00
c8kg2be-mono-universalk9.2024-12-12_16.42_sukhoo.SSA.pkg
786095   -rw-         10444800  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_prince.2024-12-12_16.42_sukhoo.SSA.pkg
786096   -rw-            53248  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_pse_si3470a.2024-12-12_16.42_sukhoo.SSA.pkg
786097   -rw-         13889536  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_sm_1t3e3.2024-12-12_16.42_sukhoo.SSA.pkg
786099   -rw-           204800  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_sm_nim_adpt.2024-12-12_16.42_sukhoo.SSA.pkg
786098   -rw-         14675968  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_sm_async.2024-12-12_16.42_sukhoo.SSA.pkg
786091   -rw-         11956224  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_ngwic_t1e1.2024-12-12_16.42_sukhoo.SSA.pkg
786093   -rw-         11804672  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_nim_shdsl.2024-12-12_16.42_sukhoo.SSA.pkg
786094   -rw-          5677056  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_nim_xdsl.2024-12-12_16.42_sukhoo.SSA.pkg
786092   -rw-         13258752  Feb 27 2024 17:28:57 +00:00
c8kg2be-firmware_nim_async.2024-12-12_16.42_sukhoo.SSA.pkg
57       -rw-             9840  Feb 27 2024 17:28:56 +00:00  prev_packages.conf

40       -rw-           301569  Feb 27 2024 17:28:49 +00:00  original-xe-config

53       -rw-           301569  Feb 27 2024 17:28:31 +00:00  241213.cfg

523273   drwx             4096  Feb 27 2024 17:28:03 +00:00  dbgd

58       -rw-              107  Feb 27 2024 17:27:55 +00:00  pki_certificates

56       -rw-              147  Feb 27 2024 17:27:20 +00:00  utm_pf_filtered_luids.json
```

```
523266  drwx             4096  Feb 27 2024 17:26:56 +00:00  vmanage-admin

523265  drwx             4096  Feb 27 2024 17:26:55 +00:00  admin_tech

130830  drwx             4096  Feb 27 2024 17:26:55 +00:00  .sdwaninternal

130831  drwx             4096  Feb 27 2024 17:26:48 +00:00  sdwan

30      drwx             4096  Feb 27 2024 17:26:04 +00:00  lost+found

                                                            20237881344 bytes total
(1147678720 bytes free)

Router# copy tftp: bootflash:Address or name of remote host []? 203.0.113.2
Source filename []? /auto/tftp-ngio/test/c8kg2be-universalk9.17.15.03prd1.SPA.bin
Destination filename [c8kg2be-universalk9.17.15.03prd1.SPA.bin]?
Accessing tftp://203.0.113.2//auto/tftp-ngio/test/c8kg2be-universalk9.17.15.03prd1.SPA.bin...
%Error opening
tftp://203.0.113.2//auto/tftp-ngio/test/c8kg2be-universalk9.17.15.03prd1.SPA.bin (Timed
out)
C8300-Router#
C8300-Router#copy tftp bootflash
Address or name of remote host [203.0.113.2]? 203.0.113.2
Source filename [/auto/tftp-ngio/test/c8kg2be-universalk9.17.15.03prd1.SPA.bin]?
Destination filename [c8kg2be-universalk9.17.15.03prd1.SPA.bin]?
Accessing tftp://203.0.113.2//auto/tftp-ngio/test/c8kg2be-universalk9.17.15.03prd1.SPA.bin...
Loading /auto/tftp-ngio/test/c8kg2be-universalk9.17.15.03prd1.SPA.bin from 203.0.113.2 (via
 GigabitEthernet0/0/0):
!!!
```

```
boot system flash bootflash:c8kg2be-universalk9.17.15.03prd1.SPA.bin
boot-end-marker
diagnostic bootup level minimal
Router# copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router# reload
```

Configure a device to boot the consolidated package via TFTP using the boot command: Example

```
Router#configure t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#boot system tftp://10.124.19.169/c8kg2be-universalk9.17.15.03a.SPA.bin
Router(config)#end
Router#wr
Building configuration...
[OK]
Router#show bootvar
BOOT variable = tftp://10.124.19.169/c8kg2be-universalk9.17.15.03a.SPA.bin,12;
CONFIG_FILE variable does not exist
BOOTLDR variable does not exist
Configuration register is 0x2102

Standby not ready to show bootvar

Router#reload
Proceed with reload? [confirm]

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

........

h/w (environment):
 interface : eth0
 mac       : 48:74:10:4A:EF:1F
n/w (environment):
 ip        : 192.168.22.10
 mask      : 255.255.255.0
 gateway   : 192.168.22.1

h/w:
 interface : eth0 (Ethernet)
 status    : connected
 mac       : 48:74:10:4A:EF:1F
n/w (ip v4):
 ip        : 192.168.22.10
 mask      : 255.255.255.0
 route(s)  : 0.0.0.0 -> 192.168.22.0/255.255.255.0
```

```
           : 192.168.22.1 -> 0.0.0.0/0.0.0.0

tftp v4:
 server    : 10.124.19.169
 file      : c8kg2be-universalk9.17.15.03a.SPA.bin
 blocksize : 1460
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
17.15.3a, RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2025 by Cisco Systems, Inc.
Compiled Fri 02-May-25 11:27 by mcpre


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Jun  6 06:53:16.982: %FLASH_CHECK-3-DISK_QUOTA: R0/0: flash_check: bootflash quota exceeded
 [free space is 166800 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,
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.
No processes could be found for the command

 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!
```

Install the software using install commands

From Cisco IOS XE 17.18.1a, Cisco 8200 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.

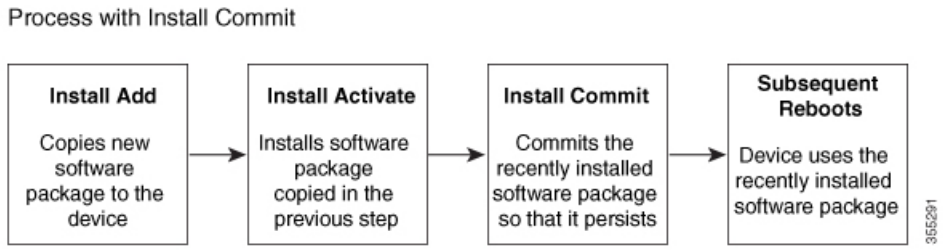
Information about installing the software using install commands

From Cisco IOS XE 17.18.1a 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 8200 Series Secure Routers.

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 3: 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 4: 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.

Procedure

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.

Procedure

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.

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-universalk9.17.18.01eft30.SSA.bin activate commit
install_add_activate_commit: START Wed Jul 30 10:16:48 UTC 2025
install_add: START Wed Jul 30 10:16:48 UTC 2025
install_add: Adding IMG
--- Starting initial file syncing ---
Copying bootflash:c8kg2be-universalk9.17.18.01eft30.SSA.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: 17.18.01.0.133

Finished Add

install_activate: START Wed Jul 30 10:19:56 UTC 2025
install_activate: Activating IMG
Following packages shall be activated:
/bootflash/c8kg2be-firmware_nim_async.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_nim_xdsl.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_ngwic_t1e1.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_sm_1t3e3.17.18.01eft30.SPA.pkg
```

```
/bootflash/c8kg2be-firmware_nim_shdsl.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-rpboot.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_sm_nim_adpt.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_pse_si3470a.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_sm_async.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_prince.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-mono-universalk9.17.18.01eft30.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

--- 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 Wed Jul 30 10:23:36 UTC 2025
Router#

Router#Jul 30 10:06:36.391: %PMAN-5-EXITACTION: R0/0: pvp: Process manager is exiting:
reload action requested



show version | include operating mode
Router operating mode: Autonomous
Router#
A', 'bin']
show version
Cisco IOS XE Software, Version 17.18.01eft30
Cisco IOS Software [IOSXE], c8kg2be Software (ARMV8EL_LINUX_IOSD-UNIVERSALK9-M), Version
17.18.1eft30, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
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software.


ROM: 17.18(1.5r).s1.cp

Router uptime is 1 minute
Uptime for this control processor is 2 minutes
 --More--         System returned to ROM by Image Install
```

```
System image file is "bootflash:packages.conf"
Last reload reason: Image Install



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 --More--
------------------------------------------------------------------
Technology     Type         Technology-package Technology-package
                            Current           Next Reboot
------------------------------------------------------------------
Smart License  Subscription advantage          advantage

The current crypto throughput level is unthrottled


Smart Licensing Status: Smart Licensing Using Policy

cisco C8231-G2 (1RU) processor with 3703156K/6147K bytes of memory.
Processor board ID FGL2913L5LF
Router operating mode: Autonomous
1 Virtual Ethernet interface
4 Gigabit Ethernet interfaces
4 2.5 Gigabit Ethernet interfaces
2 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
18250751K bytes of flash memory at bootflash:.
```

This is an example of the three-step installation:

```
Router#install add file bootflash:c8kg2be-universalk9.17.18.01eft30.SSA.bin
install_add: START Wed Jul 30 13:02:33 UTC 2025
install_add: Adding IMG
--- Starting initial file syncing ---
Copying bootflash:c8kg2be-universalk9.17.18.01eft30.SSA.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: 17.18.01.0.133

Finished Add
```

```
SUCCESS: install_add /bootflash/c8kg2be-universalk9.17.18.01eft30.SSA.bin Wed Jul 30 13:03:59
 UTC 2025
Router#
wr mem
Building configuration...
[OK]
Router#
install_activate: START Wed Jul 30 13:04:13 UTC 2025
install_activate: Activating IMG
Following packages shall be activated:
/bootflash/c8kg2be-firmware_nim_async.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_nim_xdsl.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_ngwic_t1e1.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_sm_1t3e3.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_nim_shdsl.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-rpboot.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_sm_nim_adpt.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_pse_si3470a.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_sm_async.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-firmware_prince.17.18.01eft30.SPA.pkg
/bootflash/c8kg2be-mono-universalk9.17.18.01eft30.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 Jul 30 13:07:35 UTC 2025
Router#Jul 30 13:07:41.749: %PMAN-5-EXITACTION: R0/0: pvp: Process manager is exiting:
reload action requested


.
.
.

System integrity status: 0x0

System Bootstrap, Version 17.18(1.5r).s1.cp, RELEASE SOFTWARE
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Current image running: Boot ROM0

Last reset cause: LocalSoft
C8231-G2 platform with 8388608 Kbytes of main memory


........

boot: reading file packages.conf
#

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

Performing Signature Verification of OS image...
Warning: MFG Key Enabled !!!
```

```
RSA Signed RELEASE Image Signature Verification Successful
Image validated
Jul 30 13:09:45.026: %BOOT-5-OPMODE_LOG: R0/0: binos: System booted in AUTONOMOUS mode

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cisco C8231-G2 (1RU) processor with 3703156K/6147K bytes of memory.
Processor board ID FGL2913L5LF
Router operating mode: Autonomous
1 Virtual Ethernet interface
4 Gigabit Ethernet interfaces
4 2.5 Gigabit Ethernet interfaces
2 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
18250751K bytes of flash memory at bootflash:.
```

```
 WARNING: Configured enable password CLI with weak encryption type 0 will be deprecated in
 future. Hence please migrate to enable secret CLI which accomplishes same functionality
as enable password CLI and which also supports strong irreversible encryption type 9

 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!


Router#
show version | include operating mode
Router operating mode: Autonomous
Router#wr mem
Building configuration...
[OK]
Router#
install commit
install_commit: START Wed Jul 30 13:14:14 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 Jul 30 13:14:20 UTC 2025
#
```

This is an example for terminating a software installation.

```
Performing Abort on all members
 [1] Abort packages(s) on  R0
Checking status of Abort on [R0]
Abort: Passed on [R0]
Finished Abort operation

SUCCESS: install_abort Wed Jul 30 16:32:51 UTC 2025
Router#Jul 30 16:32:57.913: %PMAN-5-EXITACTION: R0/0: pvp: Process manager is exiting:
reload action requested
```

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 2025
[0|install_op_boot(INFO, )]: Mount IMG INI state base image
[0|install_op_boot]: END SUCCESS  Thu Oct 28 22:09:30 Universal 2025
```

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    17.18.01.0.144


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

Auto abort timer: inactive

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

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    17.18.01.0.1410

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

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   17.18.01a.0.1410
--------------------------------------------------------------------------------



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

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.

Configuring No Service Password-Recovery

The Cisco IOS password recovery procedure allows you to to gain access, using the console, to the ROMMON mode by using the Break key during system startup and reload. When the device software is loaded from ROMMON mode, the configuration is updated with the new password. The password recovery procedure makes anyone with console access have the ability to access the device and its network.

The No Service Password-Recovery feature is designed to prevent the service password-recovery procedure from being used to gain access to the device and network.

Configuration registers and system boot configuration

The lowest four bits of the configuration register (bits 3, 2, 1, and 0) form the boot field. The boot field determines if the device boots manually from ROM or automatically from flash or the network. For example, when the configuration register boot field value is set to any value from 0x2 to 0xF, the device uses the register boot field value to form a default boot filename for autobooting from a network server.

Bit 8, when set to 1, ignores the startup configuration. Bit 6, when set to 1, enables break key detection. You must set the configuration register to autoboot to enable this feature. Any other configuration register setting will prevent the feature from being enabled.

Note By default, the no confirm prompt and messages are not displayed after reloads.

How to enable No Service Password-Recovery

You can enable the No Service Password-Recovery in the following two ways:

- Using the **no service password-recovery** command. This option allows password recovery once it is enabled.
- Using the **no service password-recovery strict** command. This option does not allow for device recovery once it is enabled.

Note As a precaution, a valid Cisco IOS image should reside in the bootflash: before this feature is enabled.

If you plan to enter the no service password-recovery command, Cisco recommends that you save a copy of the system configuration file in a location away from the device.

Befor you beging, ensure that this feature is disabled before making any change to the device regardless of the significance of the change—such as a configuration, module, software version, or ROMMON version change.

The configuration register boot bit must be enabled to load the startup configuration by setting bit-8 to 0, to ignore the break key in Cisco IOS XE by setting bit-6 to 0, and to auto boot a Cisco IOS XE image by setting the lowest four bits 3-0, to any value from 0x2 to 0xF. Changes to the configuration register are not saved after the No Service Password-Recovery feature is enabled.

Note If Bit-8 is set to 1, the startup configuration is ignored. If Bit-6 is set to 1, break key detection is enabled in Cisco IOS XE. If both Bit-6 and Bit-8 are set to 0, the No Service Password-Recovery feature is enabled.

This example shows how to enable the No Service Password-Recovery feature:

```
Router> enable
Router# show version
Router# configure terminal
Router(config)# config-register 0x2012
Router(config)# no service password-recovery
Router(config)# exit
```

Recovering a Device with the No Service Password-Recovery Feature Enabled

To recover a device after the no service password-recovery feature is enabled using the **no service password-recovery** command, look out for the following message that appears during the boot: "PASSWORD RECOVERY FUNCTIONALITY IS DISABLED." As soon as ".. " appears, press the Break key. You are then prompted to confirm the Break key action:

- If you confirm the action, the startup configuration is erased and the device boots with the factory default configuration with the No Service Password-Recovery enabled.
- If you do not confirm the Break key action, the device boots normally with the No Service Password-Recovery feature enabled.

Note You cannot recover a device if the No Service Password-Recovery feature was enabled using the **no service password-recovery strict** command.

This example shows a Break key action being entered during boot up, followed by confirmation of the break key action. The startup configuration is erased and the device then boots with the factory default configuration with the No Service Password-Recovery feature enabled.

```
Initializing Hardware ...

Checking for PCIe device presence...done
System integrity status: 0x610
Rom image verified correctly


System Bootstrap, Version 17.3(1r), RELEASE SOFTWARE
Copyright (c) 1994-2020  by cisco Systems, Inc.


Current image running: Boot ROM0

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


PASSWORD RECOVERY FUNCTIONALITY IS DISABLED

..

telnet> send brk

..

PASSWORD RECOVERY IS DISABLED.

Do you want to reset the router to the factory default
configuration and proceed [y/n] ? y

Router clearing configuration. Please wait for ROMMON prompt...

File size is 0x17938a80

Located c8kg2be-universalk9.BLD_V1718_THROTTLE_LATEST_20250423_010128.SSA.bin

...
```

This example shows a Break key action being entered during boot up, followed by the non-confirmation of the break key action. The device then boots normally with the No Service Password-Recovery feature enabled.

```
Checking for PCIe device presence...done
System integrity status: 0x610
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

PASSWORD RECOVERY FUNCTIONALITY IS DISABLED

..

telnet> send brk

...

PASSWORD RECOVERY IS DISABLED.

Do you want to reset the router to the factory default
configuration and proceed [y/n] ? n

Router continuing with existing configuration...

File size is 0x17938a80

Located c8kg2be-universalk9.BLD_V1718_THROTTLE_LATEST_20250423_010128.SSA.bin


...

########################################################################## …
```

Configuration Examples for No Service Password-Recovery

The following example shows how to obtain the configuration register setting (which is set to autoboot), disable password recovery capability, and then verify that the configuration persists through a system reload:

```
Router>en
Router#show version
Cisco IOS XE Software, Version 17.15.03
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
Copyright (c) 1986-2025 by Cisco Systems, Inc.
Compiled Tue 25-Mar-25 23:37 by xxxx

Router(config)#no service password-recovery
WARNING:
Executing this command will disable the password recovery mechanism.
Do not execute this command without another plan for
password recovery.

Are you sure you want to continue? [yes]: yes
Router(config)#end
Router#wr
```

```
Building configuration...
[OK]
Router#reload
Proceed with reload? [confirm]
Jun  9

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

PASSWORD RECOVERY FUNCTIONALITY IS DISABLED

.
telnet> send brk
.....


PASSWORD RECOVERY IS DISABLED.
Do you want to reset the router to the factory default
configuration and proceed  y/n [n]: n

Router continuing with existing configuration...

boot: reading file packages.conf
############################################################

Performing Signature Verification of OS image...
Image validated

Jun  9 05:40:13.287: %BOOT-5-OPMODE_LOG: R0/0: binos: System booted in AUTONOMOUS mode

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           170 West Tasman Drive
           San Jose, California 95134-1706



Cisco IOS Software [IOSXE], c8kg2be Software (ARMV8EL_LINUX_IOSD-UNIVERSALK9-M), Version
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Jun  9 05:40:16.793: %FLASH_CHECK-3-DISK_QUOTA: R0/0: flash_check: bootflash quota exceeded
 [free space is 115484 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:.

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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.
No processes could be found for the command

 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!
```

The following example shows how to disable password recovery capability using the no service password-recovery strict command:

```
Router# configure terminal

Router(config)# no service password-recovery strict

WARNING:
Executing this command will disable the password recovery mechanism.
```

```
Do not execute this command without another plan for
password recovery.

Are you sure you want to continue? [yes]: yes
Router(config)#end
Router#wr
Building configuration...
[OK]
..
```