

Cisco 9300: IOS-XE/Firmware Upgrade (Install Mode)

NOTE:

- This procedure is aimed at Cisco 9300 switch ONLY.
- IOS-XE Bundle Mode is not covered.
- 3850, 9500 (vanilla & high-performance), ISR 1k, ISR 4k and ASR is not covered.
- Router(s) & switch(es) running "classic" IOS is not covered.

A Word from our Sponsors:

There is a very fine line between writing something short-and-sweet and writing something comprehensive while losing the target "market" in the process. I have done all I can to make this document as "digestible" as possible without losing much of the important content but still maintaining some forward momentum.

Introduction:

Switch and/or router firmware had (past tense) a simple procedure, however, for IOS-XE each platform has different commands, process & procedures, and "gotchas". Because of this, I have broken up the process into different sections: 3850, 9500 and routers.

Section 1: General Procedure

Section 2: Install SMU

Section 3: GOTCHA

Section 4: Emergency-Install

Section 1: General Procedure

1. Read the Release Notes very carefully.
2. Usually, IOS-XE firmware & SMU have a filename extension of "bin".
3. Clean the flash: `install remove inactive`
4. Copy the file into the switch/stack.
5. Make sure the boot-variable string is pointing to "packages.conf" file.

```
Switch#sh boot
-----
Switch 1
-----
Current Boot Variables:
BOOT variable does not exist

Boot Variables on next reload:
BOOT variable = flash:packages.conf
Manual Boot = no
Enable Break = no
Boot Mode = DEVICE
iPXE Timeout = 0
```

6. Initiate Install Mode (**Non-Disruptive/Does NOT Reboot**):

```
request platform software package install switch all file
flash:filename.bin on-reboot new auto-copy verbose
```

```
Jun 25 05:01:50.623: %INSTALL-5-OPERATION_START_INFO: Switch 1 R0/0: provision: Started install package flash:cat9k_iosxe.17.03.03.SPA.binExpanding
[1]: Expanding file
Jun 25 05:02:12.665: %INSTALL-5-OPERATION_START_INFO: Switch 1 R0/0: packtool: Started expand package flash:cat9k_iosxe.17.03.03.SPA.bin[1]: Finish
SUCCESS: Finished expanding all-in-one software package.
... expand successful
[1]: Performing install
Jun 25 05:03:58.944: %INSTALL-5-OPERATION_COMPLETED_INFO: Switch 1 R0/0: packtool: Completed expand package flash:cat9k_iosxe.17.03.03.SPA.bin SUC
... Operation install completed. Checking for status
[1]: Install package(s) on switch 1
--- Starting list of software package changes ---
Old files list:
Removed cat9k-cc_srdriver.16.12.05b.SPA.pkg
Removed cat9k-espsbase.16.12.05b.SPA.pkg
Removed cat9k-guestshell.16.12.05b.SPA.pkg
Removed cat9k-rpbase.16.12.05b.SPA.pkg
Removed cat9k-rpboot.16.12.05b.SPA.pkg
Removed cat9k-sipbase.16.12.05b.SPA.pkg
Removed cat9k-sipsa.16.12.05b.SPA.pkg
Removed cat9k-srdriver.16.12.05b.SPA.pkg
Removed cat9k-webui.16.12.05b.SPA.pkg
Removed cat9k-wlc.16.12.05b.SPA.pkg
New files list:
Added cat9k-cc_srdriver.17.03.03.SPA.pkg
Added cat9k-espsbase.17.03.03.SPA.pkg
Added cat9k-guestshell.17.03.03.SPA.pkg
Added cat9k-lni.17.03.03.SPA.pkg
Added cat9k-rpbase.17.03.03.SPA.pkg
Added cat9k-rpboot.17.03.03.SPA.pkg
Added cat9k-sipbase.17.03.03.SPA.pkg
Added cat9k-sipsa.17.03.03.SPA.pkg
Added cat9k-srdriver.17.03.03.SPA.pkg
Added cat9k-webui.17.03.03.SPA.pkg
Added cat9k-wlc.17.03.03.SPA.pkg
Finished list of software package changes
SUCCESS: Software provisioned. New software will load on reboot.
[1]: Finished install successful on switch 1
Checking status of install on [1]
[1]: Finished install in switch 1
SUCCESS: Finished install: Success on [1]
Ensuring that cached content is written to media
Jun 25 05:05:18.543: %INSTALL-5-OPERATION_COMPLETED_INFO: Switch 1 R0/0: provision: Completed install package flash:{cat9k-cc_srdriver.17.03.03.SPA
3.SPA.pkg,cat9k-lni.17.03.03.SPA.pkg,cat9k-rpbase.17.03.03.SPA.pkg,cat9k-sipbase.17.03.03.SPA.pkg,cat9k-sipsa.17.03.03.SPA.pkg,cat9k-srdriver.17.03
SPA.pkg}... cached content flushed to media
```

← Ideal output. No errors.

IMPORTANT:

- If the file extraction is successful (or not), the last two lines will display the result.
- Go to the GOTCHA section if the following (image below) appears:

```

#request plat soft package expand file bootflash:c1100-universalk9.16.12.05.SPA.bin over verb
Jun 22 09:15:23.615 %INSTALL-5-OPERATION_START_INFO: R0/0: packtool: Started expand package bootflash:c1100-universalk9.16.12.05.SPA.bin
Verifying parameters
Expanding superpackage bootflash:c1100-universalk9.16.12.05.SPA.bin
... parameters verified
Validating package type
... package type validated
Copying package files
  c1100-firmware_c1100_gfast.16.12.05.SPA.pkg
  c1100-firmware_c1100_shdsl.16.12.05.SPA.pkg
  c1100-firmware_c1100_vadsl.16.12.05.SPA.pkg
  c1100-firmware_p_1t.16.12.05.SPA.pkg
  c1100-mono-universalk9.16.12.05.SPA.pkg
  c1100-rpboot.16.12.05.SPA.pkg
WARNING: Overwrite option specified, running subpackage mode, skip the overwrite
WARNING: A different version of provisioning file packages.conf already exists in bootflash:
WARNING: The provisioning file from the expanded bundle will be saved as
WARNING: bootflash:c1100-universalk9.16.12.05.SPA.conf
... package files copied
SUCCESS: Finished expanding all-in-one software package.
Jun 22 09:17:44.367 %INSTALL-5-OPERATION_COMPLETED_INFO: R0/0: packtool: Completed expand package bootflash:c1100-universalk9.16.12.05.SPA.bin

```

- Inspect the contents "packages.conf" file. Is this the intended version or not? If NO, go to the GOTCHA section. Command: `more flash:packages.conf | begin for CAT`

IMPORTANT:

- If the switches are in a stack, inspect the "packages.conf" of each switch stack member.

```

more flash-1:packages.conf | begin for CAT
more flash-2:packages.conf | begin for CAT
more flash-3:packages.conf | begin for CAT
...
more flash-8:packages.conf | begin for CAT
...
more flash-16:packages.conf | begin for CAT

```

- For standalone switch, the command is:

```

more flash:packages.conf | begin for CAT

```

```

Switch#more flash:packages.conf | begin for CAT
# This is for CAT9k
boot rp 0 0 rp_boot cat9k-rpboot.16.12.05b.SPA.pkg
iso rp 0 0 rp_base cat9k-rpbase.16.12.05b.SPA.pkg
iso rp 0 0 rp_daemons cat9k-rpbase.16.12.05b.SPA.pkg
iso rp 0 0 rp_iosd cat9k-rpbase.16.12.05b.SPA.pkg
iso rp 0 0 rp_security cat9k-rpbase.16.12.05b.SPA.pkg
iso rp 0 0 rp_wlc cat9k-wlc.16.12.05b.SPA.pkg
iso rp 0 0 rp_webui cat9k-webui.16.12.05b.SPA.pkg
iso rp 0 0 srdriver cat9k-srdriver.16.12.05b.SPA.pkg
iso rp 0 0 guestshell cat9k-guestshell.16.12.05b.SPA.pkg

```

- REBOOT the switch/stack.
- [RECOMMENDED][OPTIONAL] Clean the flash: `install remove inactive`
- DONE.

Section 2: Install SMU

Software Maintenance Update (aka “patch”)

WARNING:

- Only routers and switches running IOS-XE support SMU.
- Router(s) & switch(es) running “classic” IOS do not support SMU.
- **IMPORTANT:** Always treat SMU update as disruptive (reboots the switch/stack).
- **IMPORTANT:** SMU file is platform-specific.
- **IMPORTANT:** SMU file is version-specific.

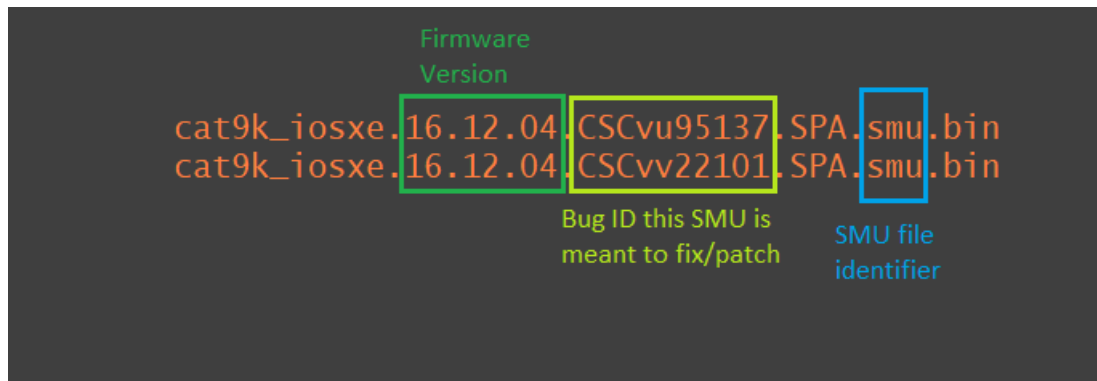


Image (above): Sample SMU filename

```
Switch#
Jun 25 04:55:02.635: %INSTALL-5-INSTALL_START_INFO: Switch 1 R0/0: install_engine: Started install one-shot flash:cat3k-caa-universalk9.16.12.04.CSCv28324.SPA.smu.bin
Jun 25 04:55:03.124: %INSTALL-3-OPERATION_ERROR_MESSAGE: Switch 1 R0/0: install_engine: failed to install_add_activate_commit package flash:cat3k-caa-universalk9.16.12.04.CSCv28324.SPA.smu.bin, Error: File
flash:cat3k-caa-universalk9.16.12.04.CSCv28324.SPA.smu.bin is corrupt or is not a valid package.
Jun 25 04:55:03.156: %INSTALL-5-OPERATION_ERROR_MESSAGE: Switch 1 R0/0: install_engine: failed to install_add_activate_commit package flash:cat3k-caa-universalk9.16.12.04.CSCv28324.SPA.smu.bin, Error: insta
ll_add_activate_commit : flash:cat3k-caa-universalk9.16.12.04.CSCv28324.SPA.smu.bin is not valid file or cannot be handled by install CLI.
```

Image (above): Sample of a failed SMU install due to hardware mismatch.

```
Switch#sh:cat9k_iosxe.16.12.04.CSCvu95137.SPA.smu.bin activate commit
install_add_activate_commit: START Fri Jun 25 04:57:43 UTC 2021
install_add_activate_commit: Adding SMU
install_add_activate_commit: Checking whether new add is allowed ....
--- Starting initial file syncing ---
Info: Finished copying flash:cat9k_iosxe.16.12.04.CSCvu95137.SPA.smu.bin to the selected switch(es)
Finished initial file syncing
--- Starting SMU Add operation ---
Performing SMU_ADD on all members
Jun 25 04:57:44.719: %INSTALL-5-INSTALL_START_INFO: Switch 1 R0/0: install_engine: Started install one-shot flash:cat9k_iosxe.16.12.04.CSCvu95137.SPA.smu.bin [1] SMU ADD package(s) on switch 1
FAILED: install_add /flash/cat9k_iosxe.16.12.04.CSCvu95137.SPA.smu.bin: Invalid installation package.
[1] Version 16.12.4 does not match with 16.12.05b.0.7.
[1] FINISHED SMU_ADD on SWITCH 1
Checking status of SMU_ADD on [1]
SMU_ADD: Passed on [1]. Failed on [1]
Finished SMU Add operation
[ABU@: install_add_activate_commit exit(1) Fri Jun 25 04:57:51 UTC 2021
```

Image (above): Sample of a failed SMU install due to incompatible version

Procedure

1. Read the Release Notes very carefully.
2. Usually, SMU firmware have a filename extension of “bin”.
3. Copy the SMU file into the switch.
4. Install the SMU:

```
install add file flash:SMU_filename.bin activate commit
```

WARNING: Immediately after entering “y” may/will cause the router &/or switch to reboot.

5. Verify the SMU has been successfully installed.
 - Fast Method: `sh version | begin Active SMU`

```
sh version | begin Active SMU
Active SMU Information:
State (St): C - Committed, U - Uncommitted
-----
Type Defect_ID Version St Filename
-----
SMU CSCvu95137 16.12.4.0 C cat9k_iosxe.16.12.04.CSCvu95137.SPA.smu.bin
SMU CSCvv22101 16.12.4.0 C cat9k_iosxe.16.12.04.CSCvv22101.SPA.smu.bin
-----
```

- Slow Method: sh install summary

```
[ Switch 1 2 3 ] Installed Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
C - Activated & Committed, D - Deactivated & Uncommitted
-----
Type St Filename/Version
-----
SMU C flash:cat9k_iosxe.16.12.04.CSCvu95137.SPA.smu.bin
SMU C flash:cat9k_iosxe.16.12.04.CSCvv22101.SPA.smu.bin
IMG C 16.12.4.0.4480
-----
Auto abort timer: inactive
-----
```

6. DONE.

Section 3: GOTCHA

1. If the message (image below) appears at the end of the package extraction process be aware THIS IS NOT A FALSE POSITIVE.

```
#request plat soft package expand file bootflash:c1100-universalk9.16.12.05.SPA.bin over verb
Jun 22 09:15:23.615 %INSTALL-5-OPERATION_START_INFO: R0/0: packtool: Started expand package bootflash:c1100-universalk9.16.12.05.SPA.bin
Verifying parameters
Expanding superpackage bootflash:c1100-universalk9.16.12.05.SPA.bin
... parameters verified
Validating package type
... package type validated
Copying package files
  c1100-firmware_c1100_gfast.16.12.05.SPA.pkg
  c1100-firmware_c1100_shdsl.16.12.05.SPA.pkg
  c1100-firmware_c1100_vadsl.16.12.05.SPA.pkg
  c1100-firmware_p_1t.16.12.05.SPA.pkg
  c1100-mono-universalk9.16.12.05.SPA.pkg
  c1100-rpboot.16.12.05.SPA.pkg
WARNING: Overwrite option specified, running subpackage mode, skip the overwrite
WARNING: A different version of provisioning file packages.conf already exists in bootflash:
WARNING: The provisioning file from the expanded bundle will be saved as
WARNING: bootflash:c1100-universalk9.16.12.05.SPA.conf
... package files copied
SUCCESS: Finished expanding all-in-one software package.
Jun 22 09:17:44.367 %INSTALL-5-OPERATION_COMPLETED_INFO: R0/0: packtool: Completed expand package bootflash:c1100-universalk9.16.12.05.SPA.bin
```

2. Check the contents of the flash/bootflash and compare the date stamp of the extracted packages against the date stamp of the “packages.conf” file (see image below).

```
# dir
Directory of bootflash:/
 11 drwx          16384 May 27 2020 07:30:14 +10:00 lost+found
104417 drwx          4096 Dec 3 2020 16:56:23 +11:00 .prst_sync
 12 -rw-         132108 Jun 21 2021 09:56:07 +10:00 memleak.tcl
 8033 drwx          4096 Apr 27 2021 05:23:31 +10:00 virtual-instance
40161 drwx          4096 Jun 21 2021 09:55:20 +10:00 .installer
96385 drwx          4096 Jun 22 2021 06:20:43 +10:00 core
32129 drwx          4096 Dec 3 2020 16:10:23 +11:00 .rollback_timer
112449 drwx          4096 May 27 2020 07:45:55 +10:00 gs_script
48193 drwx         16384 Jun 22 2021 09:27:04 +10:00 tracelogs
152609 drwx          4096 Dec 3 2020 16:16:25 +11:00 .dbpersist
 13 -rw-           30 Jun 21 2021 09:56:31 +10:00 throughput_monitor_params
128513 drwx          4096 May 27 2020 07:47:15 +10:00 onep
 14 -rw-           34 Dec 3 2020 16:15:36 +11:00 pnp-tech-time
 15 -rw-          62849 Dec 3 2020 16:15:48 +11:00 pnp-tech-discovery-summary
 16 -rw-        542525852 Dec 3 2020 16:03:53 +11:00 c1100-universalk9.16.12.04.SPA.bin
 17 -rw-          1136 Jun 21 2021 09:56:42 +10:00 vlan.dat
160643 -rw-        14763020 Dec 3 2020 16:06:42 +11:00 c1100-firmware_c1100_gfast.16.12.04.SPA.pkg
160644 -rw-        11527180 Dec 3 2020 16:06:42 +11:00 c1100-firmware_c1100_shdsl.16.12.04.SPA.pkg
160645 -rw-        6337548 Dec 3 2020 16:06:42 +11:00 c1100-firmware_c1100_vadsl.16.12.04.SPA.pkg
160646 -rw-        8455172 Dec 3 2020 16:06:42 +11:00 c1100-firmware_p_1t.16.12.04.SPA.pkg
160647 -rw-        497972248 Dec 3 2020 16:06:44 +11:00 c1100-mono-universalk9.16.12.04.SPA.pkg
160648 -rw-        41960840 Dec 3 2020 16:07:37 +11:00 c1100-rpboot.16.12.04.SPA.pkg
160642 -rw-           7141 Dec 3 2020 16:07:38 +11:00 packages.conf
80321 drwx          4096 Apr 27 2021 05:24:05 +10:00 .attrib
120481 drwx          4096 Jun 21 2021 09:56:43 +10:00 license_evlog
 18 -rw-        542410228 Jun 22 2021 09:10:23 +10:00 c1100-universalk9.16.12.05.SPA.bin
144579 -rw-        14763020 Jun 22 2021 09:16:39 +10:00 c1100-firmware_c1100_gfast.16.12.05.SPA.pkg
144580 -rw-        11527180 Jun 22 2021 09:16:39 +10:00 c1100-firmware_c1100_shdsl.16.12.05.SPA.pkg
144581 -rw-        6337548 Jun 22 2021 09:16:39 +10:00 c1100-firmware_c1100_vadsl.16.12.05.SPA.pkg
144582 -rw-        8455172 Jun 22 2021 09:16:39 +10:00 c1100-firmware_p_1t.16.12.05.SPA.pkg
144583 -rw-        497845272 Jun 22 2021 09:16:41 +10:00 c1100-mono-universalk9.16.12.05.SPA.pkg
144584 -rw-        41939424 Jun 22 2021 09:17:43 +10:00 c1100-rpboot.16.12.05.SPA.pkg
144578 -rw-           7141 Jun 22 2021 09:17:43 +10:00 c1100-universalk9.16.12.05.SPA.conf
2991816704 bytes total (582332416 bytes free)
```

3. Look in the flash/bootflash directory for two (2) files with an extension of “conf”. (Image below)

```

154739 -rw-      14763020 Sep 11 2020 15:22:45 +10:00 c1100-firmware_c1100_gfast.16.12.04.SPA.pkg
57014 -rw-      8455172 Jun 23 2021 11:42:36 +10:00 c1100-firmware_p_1t.16.12.05.SPA.pkg
57015 -rw-      497845272 Jun 23 2021 11:42:38 +10:00 c1100-mono-universalk9.16.12.05.SPA.pkg
154740 -rw-      11527180 Sep 11 2020 15:22:45 +10:00 c1100-firmware_c1100_shdsl.16.12.04.SPA.pkg
154741 -rw-      6337548 Sep 11 2020 15:22:45 +10:00 c1100-firmware_c1100_vadsl.16.12.04.SPA.pkg
154742 -rw-      8455172 Sep 11 2020 15:22:45 +10:00 c1100-firmware_p_1t.16.12.04.SPA.pkg
154743 -rw-      497972248 Sep 11 2020 15:22:47 +10:00 c1100-mono-universalk9.16.12.04.SPA.pkg
154744 -rw-      41960840 Sep 11 2020 15:23:53 +10:00 c1100-rpboot.16.12.04.SPA.pkg
57010 -rw-         7141 Jun 23 2021 11:43:40 +10:00 c1100-universalk9.16.12.05.SPA.conf
2885718016 bytes total (807911424 bytes free)

```

4. First, rename “packages.conf” to, say, “packages.conf.bak”.
5. Next, rename the firmware.conf to “packages.conf” (see below).

```

#rename flash:packages.conf flash:packages.conf.bak
Destination filename [packages.conf.bak]?
#rename flash:c1100-universalk9.16.12.05.SPA.conf flash:packages.conf
Destination filename [packages.conf]?
#

```

6. Check the contents of the new “packages.conf” file.

```

l#more flash:packages.conf | begin firmware
iso rp 0 0 firmware_p_1t c1100-firmware_p_1t.16.12.05.SPA.pkg
iso rp 0 1 firmware_p_1t c1100-firmware_p_1t.16.12.05.SPA.pkg
iso rp 0 0 firmware_c1100_vadsl c1100-firmware_c1100_vadsl.16.12.05.SPA.pkg
iso rp 0 1 firmware_c1100_vadsl c1100-firmware_c1100_vadsl.16.12.05.SPA.pkg
iso rp 0 0 firmware_c1100_gfast c1100-firmware_c1100_gfast.16.12.05.SPA.pkg
iso rp 0 1 firmware_c1100_gfast c1100-firmware_c1100_gfast.16.12.05.SPA.pkg
iso rp 0 0 firmware_c1100_shdsl c1100-firmware_c1100_shdsl.16.12.05.SPA.pkg
iso rp 0 1 firmware_c1100_shdsl c1100-firmware_c1100_shdsl.16.12.05.SPA.pkg
iso fp 0 0 fp c1100-mono-universalk9.16.12.05.SPA.pkg
iso fp 0 1 fp c1100-mono-universalk9.16.12.05.SPA.pkg

iso cc 0 0 cc c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 0 1 cc c1100-mono-universalk9.16.12.05.SPA.pkg

iso cc 0 0 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 0 1 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 0 2 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 0 3 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 0 4 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 0 5 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg

iso cc 1 0 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 1 1 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 1 2 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg
iso cc 1 3 cc_spa c1100-mono-universalk9.16.12.05.SPA.pkg

```

7. Inspect the contents of each “packages.conf” file of every member of the stack.
8. Make sure the boot-variable string is pointing to the “packages.conf” file.
9. DONE.

Section 4: Emergency-Install

WARNING: *Emergency-Install command will erase the flash/bootflash of the appliance.*

(Make sure the config is stored somewhere else.)

1. Emergency-Install is to be used when the router or switch boots into ROMMON.
2. The "emergency-install" command can only be used in ROMMON.
3. Command: `emergency-install usbflash0:filename.bin`

WARNING: *Emergency-Install command will erase the flash/bootflash of the appliance.*

```
switch: emergency-install usbflash0:cat9k_iosxe.16.12.05b.SPA.bin
WARNING: The system partition (bootflash:) will be erased during the system recovery install process.
Are you sure you want to proceed? [y] y/n [n]: y
Starting system recovery (usbflash0:cat9k_iosxe.16.12.05b.SPA.bin) ...

boot: attempting to boot from [sda9:cat9k-recovery.SSA.bin]
boot: reading file cat9k-recovery.SSA.bin
#####
#####
#####
#####

PLATFORM_TYPE C9300 speed 9600

Booting Recovery Image 16.6.1

Initiating Emergency Installation of bundle usbflash0:cat9k_iosxe.16.12.05b.SPA.bin

Reading bundle usbflash0:cat9k_iosxe.16.12.05b.SPA.bin...

Validating bundle usbflash0:cat9k_iosxe.16.12.05b.SPA.bin...
Installing bundle usbflash0:cat9k_iosxe.16.12.05b.SPA.bin...
Verifying bundle usbflash0:cat9k_iosxe.16.12.05b.SPA.bin...
Package cat9k-cc_srdriver.16.12.05b.SPA.pkg /temp//stage/cat9k-cc_srdriver.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-espbase.16.12.05b.SPA.pkg /temp//stage/cat9k-espbase.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-guestshell.16.12.05b.SPA.pkg /temp//stage/cat9k-guestshell.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-rpbase.16.12.05b.SPA.pkg /temp//stage/cat9k-rpbase.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-sipbase.16.12.05b.SPA.pkg /temp//stage/cat9k-sipbase.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-sipspace.16.12.05b.SPA.pkg /temp//stage/cat9k-sipspace.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-srdriver.16.12.05b.SPA.pkg /temp//stage/cat9k-srdriver.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-webui.16.12.05b.SPA.pkg /temp//stage/cat9k-webui.16.12.05b.SPA.pkg is Digitally Signed
Package cat9k-wlc.16.12.05b.SPA.pkg /temp//stage/cat9k-wlc.16.12.05b.SPA.pkg is Digitally Signed
Package /cat9k-rpboot.16.12.05b.SPA.pkg /temp//rpboot/cat9k-rpboot.16.12.05b.SPA.pkg is Digitally Signed
Preparing flash...
Flash filesystem unmounted successfully /dev/sdb3
Syncing device...
Emergency Install successful... Rebooting
Will reboot now

Initializing Hardware.....
```

4. DONE.