



Upgrading Field-Programmable Devices

In general terms, field-programmable devices (FPDs) are hardware devices implemented on router cards that support separate software upgrades. A field-programmable gate array (FPGA) is a type of programmable memory device that exists on most hardware components of the router. The term FPD has been introduced to collectively and generically describe any type of programmable hardware device on SIPs and shared port adapters (SPAs), including FPGAs. Cisco IOS XR software provides the Cisco FPD upgrade feature to manage the upgrade of FPD images on SIPs and SPAs.

This chapter describes the information that you must know to verify image versions and to perform an upgrade for SPA or SIP FPD images when incompatibilities arise.

Table 1: Feature History for Upgrading FPD

Release	Modification
Release 6.1.x	This Feature was Introduced.

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Prerequisites for FPD Image Upgrades

Before upgrading the FPD on your router you must install and activate the `fpd.pie fpd.rpm` package.

This is for the manual upgrade using the `upgrade hw-module FPD` command.

Overview of FPD Image Upgrade Support

An FPD image is used to upgrade the software on an FPD.

Whenever an image is released that supports SIPs and SPAs, a companion SIP and SPA FPD image is bundled. However Generally, the FPD image is not automatically upgraded. You must manually upgrade the FPD image running on the SPA or SIP when you upgrade the Cisco IOS XR software image.

FPD versions must be compatible with the Cisco IOS XR software that is running on the router; if an incompatibility exists between an FPD version and the Cisco IOS XR software, the device with the FPGA

may not operate properly until the incompatibility is resolved. An FPGA incompatibility on a SPA does not necessarily affect the running of the SPA interfaces; an FPD incompatibility on a SIP disables all interfaces for all SPAs in the SIP until the incompatibility is addressed.

Use the **show hw-module fpd** command to determine if an FPD upgrade is required. A value of 'Yes' in the Upg/Dng? (upgrade/downgrade) column indicates that an upgrade or downgrade is required.

Automatic FPD Upgrade

By default, the FPD image is not automatically upgraded. You must manually upgrade the FPD image running on the Field Replaceable Unit (FRU)SPA or SIP when you upgrade the Cisco IOS XR software image.

However, if you enable the **fpd auto-upgrade** command in administration configuration mode, FPD images are automatically updated in the following instances.

- Software upgrade is carried out.
- Field Replaceable Unit(FRU) such as Line cards, RSPs, SPAs Fan Trays or alarm cards are added to an existing router or reloaded.

For the automatic FPD upgrade to work on a system upgrade, the following conditions must be met:

- The FPD package installation envelope (PIE) must be installed on the router.
- The FPD PIE must be activated together with the new Cisco IOS XR image.
- The **fpd auto-upgrade** must be configured in the administration configuration mode.

For the automatic FPD upgrade to work on a FRU Insertion or reload , the following conditions must be met:

- The FPD package installation envelope (PIE) must be installed and activated on the router.
- The **fpd auto-upgrade** must be configured in the administration configuration mode.

For the automatic FPD upgrade to work, the following conditions must be met:

- The FPD package installation envelope (PIE) must already be installed on the router.
- The FPD PIE must be activated together with the new Cisco IOS XR image.
- The **fpd auto-upgrade** command must be enabled.



Note

Although the FPD upgrade is performed during the install operation, there is no install commit performed. Therefore, once the FPD has been upgraded, if the image is rolled back to the original version, the FPD version is not downgraded to the previous version.

The automatic FPD upgrade is not performed in the following instances:

- Line cards or other cards such as , SPAs or alarm cards are added to an existing router.
- A line card chassis is added to an existing CRS multi-chassis router.
- A non-reload software maintenance upgrade (SMU) or PIE installation is performed, even where the FPD image version changes. Since a non-reload installation is, by definition, not supposed to reload the router, and an FPD upgrade requires a router reload, the automatic FPD upgrade is repressed.



Note In all cases where the automatic FPD upgrade is not performed, you must perform a manual FPD upgrade using the **upgrade hw-module fpd** command.

FPD auto-upgrade can be enabled and disabled. When auto FPD is enabled, it automatically updates FPDs when a SMU or image changes, including an updated firmware revision. Use the **fpd auto-upgrade** command to disable or enable auto-fpd.

How to Upgrade FPD Images

You must determine if an FPD image upgrade is needed using the **show hw-module fpd** command and perform the upgrade, if you migrate the software to a later Cisco IOS XR software release

In the event that there is an FPD incompatibility with your card, you may receive an error message. If you upgrade to a newer version of the Cisco IOS XR software and there is an FPD incompatibility, you receive the following message:

```
LC/0/1/CPU0:Dec 23 16:33:47.945 : spa_192_jacket_v2[203]: %PLATFORM-UPGRADE_FPD-4-DOWN_REV
: spa fpga2 instance 0 is down-rev (V0.6), upgrade to (V1.0). Use the "upgrade hw-module
fpd" CLI in admin mode.
```

If the FPD image on the card is newer than what is required by the currently running Cisco IOS XR software image on the router, you receive the following error message:

```
LC/0/1/CPU0:Dec 23 16:33:47.955 : spa_192_jacket_v2[203]: %PLATFORM-UPGRADE_FPD-4-UP_REV :
spa fpga instance 1 is severely up-rev (V2.1), downgrade to (V1.6). Use the "upgrade hw-module
fpd" CLI in admin mode.
```

You should perform the FPD upgrade procedure if you receive such messages. Cards may not function properly if FPD incompatibilities are not resolved.



Note An error message is displayed (as shown below) when version-34 of FPGA is upgraded to version-37. This is only for CRS-X linecards. However, when the user upgrades to version-37, from any other lower version (other than version-34), this failure message is not displayed. Even though we see this failure message, FPD upgrade will complete successfully and after a power cycle/reload it will properly reflect the upgraded version. There is no functionality impact.

```
FAILED to upgrade fpga3 for 4-100GbE on location1/1/CPU0 from 34.00 to 37.00
LC/1/1/CPU0:Nov 12 15:28:40.057 : lc_fpd_upgrade[244]: %PLATFORM-UPGRADE_FPD-3-
OPERATION_FAILED : Failed to update FPD :FPD Programming action failed on this card.
```



Note The use of the **force** option when performing a FPD upgrade is not recommended except under explicit direction from Cisco engineering or TAC.

Before you begin

- Before upgrading the FPD, you must install and activate the `-fpd.pie`. For information about performing this task, see the *Upgrading and Managing Cisco IOS XR Software* module.

- The FPD upgrade procedure is performed while the card is online. At the end of the procedure the card must be reloaded before the FPD upgrade is complete. To automatically reload the card, you can use the **reload** keyword in the **upgrade hw-module fpd** command. Alternatively, you can use the **hw-module reload** command during your next maintenance window. The upgrade procedure is not complete until the card is reloaded.



Note Upgrading the FPD image on a SPA or SIP using the **reload** keyword temporarily places the card offline at the end of the upgrade procedure, and may interrupt traffic.

- During the FPD upgrade, you *must not* do the following:
 - Reload, perform an online insertion and removal (OIR) of a line card (LC), or power down the chassis. Doing so may cause the node to enter an unusable state.
 - Press **Ctrl-C** if the console appears to hang without any output. Doing so may abort the upgrade.
- If you are not sure whether a card requires an FPD upgrade, you can install the card and use the **show hw-module fpd** command to determine if the FPD image on the card is compatible with the currently running Cisco IOS XR software release.

SUMMARY STEPS

1. **show hw-module fpd location** {all | node-id}
2. **admin**
3. **showfpdpackage**
4. **upgrade hw-module fpd** {all | fpga-type} [force] location [all | node-id] [reload]
5. **exit**
6. **hw-module** {location node-id | subslot subslot-id} **reload**
7. **show platform**

DETAILED STEPS

	Command or Action	Purpose
Step 1	show hw-module fpd location {all node-id} Example: RP/0/RP0/CPU0:router# show hw-module fpd location all RP/0/RP0/CPU0:router# show hw-module fpd location 0/4/cpu0	Displays the current FPD image versions for the specified card or all cards installed in the router. Use this command to determine if you must upgrade the FPD image on your card.
Step 2	admin Example: RP/0/RP0/CPU0:router# admin	

	Command or Action	Purpose
<p>Step 3</p>	<p>showfpdpackage</p> <p>Example:</p> <pre>RP/0/RP0/CPU0:router#(admin) show fpd package</pre>	<p>Displays which cards are supported with your current Cisco IOS XR software release, which FPD image you need for each card, and what the minimum hardware requirements are for the varioius modules. (A minimum hardware requirement version of 0.0 indicates that all hardware can support this FPD image version.)</p> <p>If there are multiple FPD images for your card, use this command to determine which FPD image to use if you want to upgrade only a specific FPD type.</p>
<p>Step 4</p>	<p>upgrade hw-module fpd {all <i>fpga-type</i>} [force] location [all <i>node-id</i>] [reload]</p> <p>Example:</p> <pre>RP/0/RP0/CPU0:router(admin)# upgrade hw-module fpd all location 0/3/1 . . . Successfully upgraded 1 FPD for SPA-2XOC48POS/RPR on location 0/3/1 RP/0/RP0/CPU0:router(admin)# upgrade hw-module fpd fpga2 location 0/4/cpu0 . . . Starting the upgrade/download of following FPD: ===== Current Upg/Dng Location Type Subtype Upg/Dng Version Version ===== ===== 0/4/CPU0 lc fpga2 upg 0.04 2.12 ----- Successfully upgraded fpga2 for A9K-ISM-100 on location 0/4/CPU0 from 0.04 to 2.12</pre>	<p>Upgrades all the current FPD images that must be upgraded on the specified card with new images.</p> <p>Before continuing to the next step, wait for confirmation that the FPD upgrade has successfully completed. Status messages, similar to these, are displayed to the screen until the FPD upgrade is completed:</p> <pre>FPD upgrade started. FPD upgrade in progress.. FPD upgrade in progress.. FPD upgrade sent to location xxxx FPD upgrade sent to location yyyy FPD upgrade in progress.. FPD upgrade finished for location xxx FPD upgrade in progress.. FPD upgrade finished for location yyyy FPD upgrade completed.</pre> <p>The “FPD upgrade in progress.” message is printed every minute. These logs are information logs, and as such, are displayed if the logging console informational command is configured.</p> <p>Note The reload keyword causes the SPA or SIP to be reloaded after the FPD image has been updated, which interrupts traffic transmission. If you do not use the reload keyword, you must manually reload the SPA or SIP as described in the FPD upgrade.</p> <p>If Ctrl-C is pressed while the FPD upgrade is in progress, the following warning message is displayed:</p> <pre>FPD upgrade in progress on some hardware, aborting now is not recommended as it might cause HW programming failure and result in RMA of the hardware. Do you want to continue? [Confirm(y/n)]</pre> <p>If you confirm that you want to abort the FPD upgrade procedure, this message is displayed:</p>

	Command or Action	Purpose
		<p>FPD upgrade process has been aborted, please check the status of the hardware and reissue the upgrade command if required.</p> <p>Note If your card supports multiple FPD images, you can use the show fpd package admin command to determine what specific image to upgrade in the upgrade hw-module fpd command.</p>
Step 5	<p>exit</p> <p>Example:</p> <pre>RP/0/RP0/CPU0:router(admin)# exit</pre>	Exits administration EXEC mode and returns to EXEC mode.
Step 6	<p>hw-module {location node-id subslot subslot-id} reload</p> <p>Example:</p> <pre>RP/0/RP0/CPU0:router# hw-module subslot 0/3/1 reload</pre> <p>or</p> <pre>RP/0/RP0/CPU0:router# hw-module location 0/3/cpu0 reload</pre>	<p>Use the hw-module subslot reload command to reload a SPA and the hw-module location reload command to reload a SIP or line card.</p> <p>Note Only use this command if you do not use the reload keyword in the upgrade hw-module fpd command.</p>
Step 7	<p>show platform</p> <p>Example:</p> <pre>RP/0/RP0/CPU0:router# show platform</pre>	Verifies that the FPD image on the card has been successfully upgraded by displaying the status of all cards in the system.

Configuration Examples for FPD Image Upgrade

The following examples indicates the use of commands associated with the FPD image upgrade procedure.

show hw-module fpd Command Output: Example

Use the **show hw-module fpd** to display the current version of FPD images on the SPAs, SIPs and other cards installed on your router.

This command can be used to identify information about FPDs on any card. If you enter the location of a line card that is not a SPA, the output displays information about any programmable devices on that line card.

The following example shows how to display FPD compatibility for all modules in the router:

```
RP/0/RP0/CPU0:router# show hw-module fpd

FPD Versions
=====
```

```

Location Card type HWver FPD device ATR Status Running Programd
-----
0/RP0 NCS-5002 3.0 BIOS CURRENT 1.09 1.09
0/RP0 NCS-5002 3.0 IOFPGA CURRENT 0.17 0.17
0/RP0 NCS-5002 3.0 DB-MIFPGA CURRENT 0.16 0.16
0/RP0 NCS-5002 3.0 MB-MIFPGA CURRENT 0.16 0.16
RP/0/RP0/CPU0:Router#

```

If the cards in the system do not meet the minimum requirements, the output contains a “NOTES” section that states how to upgrade the FPD image.

Table 2: show hw-module fpd Field Descriptions

Field	Description
Card Type	Module part number.
HW Version	Hardware model version for the module.
Type	Hardware type. Can be one of the following types: <ul style="list-style-type: none"> • spa—Shared port adapter • lc—Line card
Subtype	FPD type. Can be one of the following types: <ul style="list-style-type: none"> • fabldr—Fabric downloader • fpga1—Field-programmable gate array • fpga2—Field-programmable gate array 2 • fpga3—Field-programmable gate array 3 • fpga4—Field-programmable gate array 4 • fpga5—Field-programmable gate array 5 • rommonA—Read-only memory monitor A • rommon—Read-only memory monitor B
Inst	FPD instance. The FPD instance uniquely identifies an FPD and is used by the FPD process to register an FPD.
Current SW Version	Currently running FPD image version.
Upg/Dng?	Specifies whether an FPD upgrade or downgrade is required. A downgrade is required in rare cases when the version of the FPD image has a higher major revision than the version of the FPD image in the current Cisco IOS XR software package.

show fpd package Command Output: Example

Use the **show fpd package** command in administration EXECsystem admin exec mode to find out which SPAs and SIPs are supported with your current Cisco IOS XR software release, which FPD image package you need for each SPA or SIP, and what the minimum hardware requirements are for each module. If multiple FPD images are available for your card, they are listed as Subtype fpga2, fpga3, and so on.

The following example shows sample output from the **show fpd package** command:

show fpd package Command Output: Example

```

sysadmin_vm:0_RP1 # show fpd package
PROTO-CXP-2XPITA  BAO-MB FPGA          NO      1.00      1.00      0.0
                   Slice-0 GN2411      YES     3.01      3.01      2.0
                   Slice-1 GN2411      YES     3.01      3.01      2.0
                   Slice-0 GN2411      YES     2.07      2.07      0.0
                   Slice-1 GN2411      YES     2.07      2.07      0.0
                   CCC FPGA            YES     1.14      1.14      0.0
                   CCC Power-On        YES     1.30      1.30      0.0
                   Ethernet Switch      YES     1.32      1.32      0.0
                   BIOS FPD            YES     9.10      9.10      0.0
                   SB Certificates      NO      1.00      1.00      0.0
-----
NC6-FANTRAY       Fantray FPGA          NO      2.01      2.01      0.0
-----
PWR-3KW-AC-V2    DT-PrimCU            NO      6.01      6.01      1.0
                  DT-Sec54vMCU         NO      6.01      6.01      1.0
                  DT-Sec5vMCU         NO      6.03      6.03      1.0
                  EM-Sec54vMCU        NO      3.08      3.08      0.21
                  EM-Sec5vMCU         NO      3.06      3.06      0.21
-----
PWR-2KW-DC-V2    DT-PrimCU            NO      6.02      6.02      0.12
                  DT-Sec54vMCU         NO      6.02      6.02      0.12
                  DT-Sec5vMCU         NO      6.02      6.02      0.12
                  EM-PrimCU            NO      3.06      3.06      0.21
                  EM-Sec54vMCU        NO      3.09      3.09      0.21
                  EM-Sec5vMCU         NO      3.07      3.07      0.21
-----
NC6-10X100G-L-K  BAO-MB FPGA          NO      1.00      1.00      0.0
                  BAO-DB FPGA          NO      1.00      1.00      0.0
                  S2 GN2411          YES     3.01      3.01      2.0
                  S3 GN2411          YES     3.01      3.01      2.0
                  S4 GN2411          YES     3.01      3.01      2.0
                  S2 GN2411          YES     2.07      2.07      0.0
                  S3 GN2411          YES     2.07      2.07      0.0
                  S4 GN2411          YES     2.07      2.07      0.0
                  CCC FPGA            YES     1.14      1.14      0.0
                  CCC Power-On        YES     1.30      1.30      0.0
                  Ethernet Switch      YES     1.32      1.32      0.0
                  BIOS FPD            YES     9.10      9.10      0.0
                  SB Certificates      NO      1.00      1.00      0.0
-----
NC6-10X100G-M-K  BAO-MB FPGA          NO      1.00      1.00      0.0
                  BAO-DB FPGA          NO      1.00      1.00      0.0
                  S2 GN2411          YES     3.01      3.01      2.0
                  S3 GN2411          YES     3.01      3.01      2.0
                  S4 GN2411          YES     3.01      3.01      2.0
                  S2 GN2411          YES     2.07      2.07      0.0
                  S3 GN2411          YES     2.07      2.07      0.0
                  S4 GN2411          YES     2.07      2.07      0.0
                  CPAK bay 0 FPD        YES     1.13      1.13      0.0
                  CPAK bay 1 FPD        YES     1.13      1.13      0.0
                  CPAK bay 2 FPD        YES     1.13      1.13      0.0
                  CPAK bay 3 FPD        YES     1.13      1.13      0.0
                  CPAK bay 4 FPD        YES     1.13      1.13      0.0
                  CPAK bay 5 FPD        YES     1.13      1.13      0.0
                  CPAK bay 6 FPD        YES     1.13      1.13      0.0
                  CPAK bay 7 FPD        YES     1.13      1.13      0.0
                  CPAK bay 8 FPD        YES     1.13      1.13      0.0
                  CPAK bay 9 FPD        YES     1.13      1.13      0.0
                  CCC FPGA            YES     1.14      1.14      0.0
                  CCC Power-On        YES     1.30      1.30      0.0
                  Ethernet Switch      YES     1.32      1.32      0.0
                  SB Certificates      NO      1.00      1.00      0.0
-----

```


NC6-10X100G-L-P	BAO-MB FPGA	NO	1.00	1.00	0.0
	BAO-DB FPGA	NO	1.00	1.00	0.0
	Slice-0 GN2411	YES	3.01	3.01	2.0
	Slice-1 GN2411	YES	3.01	3.01	2.0
	Slice-0 GN2411	YES	2.07	2.07	0.0
	Slice-1 GN2411	YES	2.07	2.07	0.0
	Slice-2 GN2411	YES	3.01	3.01	2.0
	Slice-3 GN2411	YES	3.01	3.01	2.0
	Slice-4 GN2411	YES	3.01	3.01	2.0
	Slice-2 GN2411	YES	2.07	2.07	0.0
	Slice-3 GN2411	YES	2.07	2.07	0.0
	Slice-4 GN2411	YES	2.07	2.07	0.0
	S2 GN2411	YES	3.01	3.01	2.0
	S3 GN2411	YES	3.01	3.01	2.0
	S4 GN2411	YES	3.01	3.01	2.0
	S2 GN2411	YES	2.07	2.07	0.0
	S3 GN2411	YES	2.07	2.07	0.0
	S4 GN2411	YES	2.07	2.07	0.0
	CCC FPGA	YES	1.14	1.14	0.0
	CCC Power-On	YES	1.30	1.30	0.0
Ethernet Switch	YES	1.32	1.32	0.0	
BIOS FPD	YES	9.10	9.10	0.0	
SB Certificates	NO	1.00	1.00	0.0	

NC6-6-10X100G-L-K	BAO-MB FPGA	NO	1.00	1.00	0.0
	BAO-DB FPGA	NO	1.00	1.00	0.0
	Slice-0 GN2411	YES	2.07	2.07	0.0
	Slice-1 GN2411	YES	2.07	2.07	0.0
	Slice-2 GN2411	YES	2.07	2.07	0.0
	Slice-3 GN2411	YES	2.07	2.07	0.0
	Slice-4 GN2411	YES	2.07	2.07	0.0
	S2 GN2411	YES	2.07	2.07	0.0
	S3 GN2411	YES	2.07	2.07	0.0
	S4 GN2411	YES	2.07	2.07	0.0
	CCC FPGA	YES	1.14	1.14	0.0
	CCC Power-On	YES	1.30	1.30	0.0

RP/0/RP0/CPU0:Router# admin
 RP/0/RP0/CPU0:Router(admin)# show fpd package

Thu Jun 24 10:58:49.319 UTC

```

=====
                                Field Programmable Device Package
=====

```

Card Type	FPD Description	Type	Subtype	SW Version	Min Req SW Ver	Min Req HW Vers
10C768-ITU/C	OPTICS FIRMWARE 104B4	lc	fpga2	104.04	0.0	0.0
10C768-DWDM-L	OPTICS FIRMWARE 104B4	lc	fpga2	104.04	0.0	0.0
10C768-DPSK/C	OPTICS FIRMWARE 101B3	lc	fpga2	101.03	0.0	0.0

show fpd package Command Output: Example

```

-----
1OC768-DPSK/C-O      OPTICS FIRMWARE 101B3      lc  fpga2      101.03      0.0      0.0
-----
1OC768-DPSK/C-E      OPTICS FIRMWARE 101B3      lc  fpga2      101.03      0.0      0.0
-----
CRS-ADVSVC-PLIM      FPGA mCPU0 0.557          lc  fpga2          0.557      0.0      0.0
                    FPGA sCPU0 0.557          lc  fpga3          0.557      0.0      0.0
                    FPGA mCPU1 0.557          lc  fpga4          0.557      0.0      0.0
                    FPGA sCPU1 0.557          lc  fpga5          0.557      0.0      0.0
                    FPGA PLIM_SVC 0.41013      lc  fpga1          0.41013    0.0      0.0
-----
CRS1-SIP-800         JACKET FPGA swv6.0        lc  fpga1          6.00       5.0      0.0
                    FPGA swv6.0 hvw80        lc  fpga1          6.00       5.0      0.80
-----
8-10GBE              FPGA swvA.0                lc  fpga1          10.00      0.0      0.0
-----
OC48-POS-16-ED       FPGA PLIM_OC48 9.0         lc  fpga1          9.00       0.0      0.0
-----
4-10GE               SQUIRREL FPGA 10.0         lc  fpga1          10.00      0.0      0.0
-----
42-1GE               FPGA swv6.0                lc  fpga1          6.00       0.0      0.0
                    FPGA swv6.0 hvw0.80      lc  fpga1          6.00       0.0      0.80
-----
20-1GE-FLEX          FPGA swv6.0                lc  fpga1          6.00       0.0      0.0
                    FPGA swv6.0 hvw0.80      lc  fpga1          6.00       0.0      0.80
-----
2-10GE-WL-FLEX       FPGA swv6.0                lc  fpga1          6.00       0.0      0.0
                    FPGA swv6.0 hvw0.80      lc  fpga1          6.00       0.0      0.80
-----
Route Processor      ROMMONA swv1.54 asmp      lc  rommonA        1.52       0.0      0.0
                    ROMMONA swv1.54 dsmp      lc  rommonA        1.52       0.0      0.0
                    ROMMONB swv1.54 asmp      lc  rommon         1.54       0.0      0.0
                    ROMMONB swv1.54 dsmp      lc  rommon         1.54       0.0      0.0
-----
SC                   ROMMONA swv1.54 asmp      lc  rommonA        1.52       0.0      0.0
                    ROMMONA swv1.54 dsmp      lc  rommonA        1.52       0.0      0.0
                    ROMMONB swv1.54 asmp      lc  rommon         1.54       0.0      0.0
                    ROMMONB swv1.54 dsmp      lc  rommon         1.54       0.0      0.0

```

```

-----
RP          ROMMONA swv1.54 asmp      lc  rommonA   1.52      0.0      0.0
           ROMMONA swv1.54 dsmp      lc  rommonA   1.52      0.0      0.0
           ROMMONB swv1.54 asmp      lc  rommon     1.54      0.0      0.0
           ROMMONB swv1.54 dsmp      lc  rommon     1.54      0.0      0.0
-----
Shelf Controller GE ROMMONA swv1.54 asmp      lc  rommonA   1.52      0.0      0.0
                ROMMONA swv1.54 dsmp      lc  rommonA   1.52      0.0      0.0
                ROMMONB swv1.54 asmp      lc  rommon     1.54      0.0      0.0
                ROMMONB swv1.54 dsmp      lc  rommon     1.54      0.0      0.0
-----
RP          ROMMONA swv1.54 asmp      lc  rommonA   1.52      0.0      0.0
           ROMMONA swv1.54 dsmp      lc  rommonA   1.52      0.0      0.0
           ROMMONB swv1.54 asmp      lc  rommon     1.54      0.0      0.0
           ROMMONB swv1.54 dsmp      lc  rommon     1.54      0.0      0.0
-----
Shelf Controller GE2 ROMMONA swv1.54 asmp      lc  rommonA   1.52      0.0      0.0
                ROMMONA swv1.54 dsmp      lc  rommonA   1.52      0.0      0.0
                ROMMONB swv1.54 asmp      lc  rommon     1.54      0.0      0.0
                ROMMONB swv1.54 dsmp      lc  rommon     1.54      0.0      0.0
-----
DRP        ROMMONA swv1.54 asmp      lc  rommonA   1.52      0.0      0.0
           ROMMONA swv1.54 dsmp      lc  rommonA   1.52      0.0      0.0
           ROMMONA swv1.54 sp        lc  rommonA   1.52      0.0      0.0
           ROMMONB swv1.54 asmp      lc  rommon     1.54      0.0      0.0
           ROMMONB swv1.54 dsmp      lc  rommon     1.54      0.0      0.0
           ROMMONB swv1.54 sp        lc  rommon     1.54      0.0      0.0
-----
DRP_B     ROMMONA swv1.54 asmp      lc  rommonA   1.52      0.0      0.0
           ROMMONA swv1.54 dsmp      lc  rommonA   1.52      0.0      0.0
           ROMMONA swv1.54 sp        lc  rommonA   1.52      0.0      0.0
           ROMMONB swv1.54 asmp      lc  rommon     1.54      0.0      0.0
           ROMMONB swv1.54 dsmp      lc  rommon     1.54      0.0      0.0
           ROMMONB swv1.54 sp        lc  rommon     1.54      0.0      0.0
-----

```

show fpd package Command Output: Example

S1S2S3	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

S1S3	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

S2	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

Fabric HS123	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

Fabric HS123 Star	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

Fabric HS13 Star	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

Fabric QQS123	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

LED	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

40G-MSB	ROMMONA swv1.54 asmp	lc	rommonA	1.52	0.0	0.0
	ROMMONA swv1.54 dsmp	lc	rommonA	1.52	0.0	0.0
	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 asmp	lc	rommon	1.54	0.0	0.0
	ROMMONB swv1.54 dsmp	lc	rommon	1.54	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

MSC_B	ROMMONA swv1.54 asmp	lc	rommonA	1.52	0.0	0.0
	ROMMONA swv1.54 dsmp	lc	rommonA	1.52	0.0	0.0
	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 asmp	lc	rommon	1.54	0.0	0.0
	ROMMONB swv1.54 dsmp	lc	rommon	1.54	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0

FP40	ROMMONA swv1.54 asmp	lc	rommonA	1.53	0.0	0.0
	ROMMONA swv1.54 dsmp	lc	rommonA	1.53	0.0	0.0
	ROMMONA swv1.54 sp	lc	rommonA	1.53	0.0	0.0
	ROMMONB swv1.54 asmp	lc	rommon	1.54	0.0	0.0
	ROMMONB swv1.54 dsmp	lc	rommon	1.54	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0
PSAL	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0
Unknown	ROMMONA swv1.54 sp	lc	rommonA	1.54	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0
FAN	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0
FC Fan Controller	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0
LED	ROMMONA swv1.54 sp	lc	rommonA	1.52	0.0	0.0
	ROMMONB swv1.54 sp	lc	rommon	1.54	0.0	0.0
SPA-4XT3/E3	SPA E3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA T3 Subrate FPGA	spa	fpga3	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.00	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0
SPA-2XT3/E3	SPA E3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA T3 Subrate FPGA	spa	fpga3	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.00	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0
SPA-OC192POS	SPA FPGA swv1.3	spa	fpga1	1.03	0.0	0.0
SPA-8XOC12-POS	SPA FPGA swv1.0	spa	fpga1	1.00	0.0	0.5

show fpd package Command Output: Example

```

SPA-4XOC3-POS          SPA FPGA swv3.4          spa fpga1          3.04          0.0          0.0
-----
SPA-OC192POS-XFP      SPA FPGA swv1.2          spa fpga1          1.02          0.0          0.0
-----
SPA-8X1GE             SPA FPGA swv1.8          spa fpga1          1.08          0.0          0.0
-----
SPA-2XOC48POS/RPR    SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.0
-----
SPA-4XOC48POS/RPR    SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.0
-----
SPA-10X1GE-V2        SPA FPGA swv1.10         spa fpga1          1.10          0.0          0.0
-----
SPA-8X1GE-V2         SPA FPGA swv1.10         spa fpga1          1.10          0.0          0.0
-----
SPA-5X1GE-V2         SPA FPGA swv1.10         spa fpga1          1.10          0.0          0.0
-----
SPA-1X10GE-L-V2      SPA FPGA swv1.9          spa fpga1          1.09          0.0          0.0
-----
SPA-1X10GE-WL-V2     SPA FPGA swv1.11         spa fpga1          1.11          0.0          0.0
-----
SPA-1XOC3-ATM-V2     SPA FPGA swv1.2          spa fpga1          1.03          0.0          0.0
-----
SPA-2XOC3-ATM-V2     SPA FPGA swv1.2          spa fpga1          1.03          0.0          0.0
-----
SPA-3XOC3-ATM-V2     SPA FPGA swv1.2          spa fpga1          1.03          0.0          0.0
-----
SPA-1XOC12-ATM-V2    SPA FPGA swv1.2          spa fpga1          1.03          0.0          0.0
-----

```

```

RP/0/0/CPU0:Router# admin
Thu Jul 7 04:40:30.631 DST

```

```

=====
                          Field Programmable Device Package
=====
Card Type          FPD Description          Type Subtype          SW          Min Req  Min Req
=====          =====          =====          =====          =====  =====  =====
E3-OC12-ATM-4     CIS1 FPGA                lc fpga2             40971.00          0.0          0.0
                  IOB FPGA                 lc fpga3             41091.00          0.0          0.0
                  SAF 0 FPGA               lc fpga4             45586.00          0.0          0.0
                  CIS2 FPGA                lc fpga1             40977.00          0.0          0.0
-----
E3-OC3-ATM-4      CIS1 FPGA                lc fpga2             40971.00          0.0          0.0

```

	IOB FPGA	1c	fpga3	41091.00	0.0	0.0
	SAF 0 FPGA	1c	fpga4	45586.00	0.0	0.0
	CIS2 FPGA	1c	fpga1	40977.00	0.0	0.0

12000-ServEngCard	TREX FPGA	1c	fpga2	162.45	0.0	0.0
	TREX FPGA	1c	fpga1	0.41257	0.0	0.0

12000-SIP	HABANERO FPGA	1c	fpga2	240.03	0.0	0.0
	JALAPENO FPGA	1c	fpga5	240.13	0.0	0.0
	JALAPENO FPGA	1c	fpga5	240.13	0.0	0.0
	JALAPENO FPGA	1c	fpga1	255.23	0.0	0.0

E3-OC12-CH-1	Shiver FPGA	1c	fpga1	1.02	0.0	0.0

SPA-IPSEC-2G	Sequoia	spa	fpga2	1.01	0.0	1.0
	Lodi	spa	fpga1	1.22	0.0	1.0
	SPA PROM	spa	rommon	1.01	0.0	1.0

SPA-4XT3/E3	SPA E3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA T3 Subrate FPGA	spa	fpga3	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.01	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0

SPA-2XT3/E3	SPA E3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA T3 Subrate FPGA	spa	fpga3	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.01	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0

SPA-4XCT3/DS0	SPA T3 Subrate FPGA	spa	fpga2	0.11	0.0	0.100
	SPA T3 Subrate FPGA	spa	fpga2	1.04	0.0	0.200
	SPA I/O FPGA	spa	fpga1	2.08	0.0	0.100
	SPA ROMMON	spa	rommon	2.12	0.0	0.100

SPA-2XCT3/DS0	SPA T3 Subrate FPGA	spa	fpga2	0.11	0.0	0.100
	SPA T3 Subrate FPGA	spa	fpga2	1.04	0.0	0.200
	SPA I/O FPGA	spa	fpga1	2.08	0.0	0.100

show fpd package Command Output: Example

```

-----
                SPA ROMMON                spa  rommon    2.12      0.0      0.100
-----
SPA-1XCHSTM1/OC3  SPA T3 Subrate FPGA    spa  fpga2    1.04      0.0      0.0
                  SPA I/O FPGA        spa  fpga1    1.08      0.0      0.0
                  SPA ROMMON          spa  rommon    2.12      0.0      0.0
-----
SPA-24CHT1-CE-ATM SPA T3 Subrate FPGA    spa  fpga2    1.10      0.0      1.0
                  SPA I/O FPGA        spa  fpga1    2.32      0.0      1.0
                  SPA ROMMON          spa  rommon    1.03      0.0      1.0
-----
SPA-2CHT3-CE-ATM  SPA T3 Subrate FPGA    spa  fpga2    1.10      0.0      1.0
                  SPA I/O FPGA        spa  fpga1    2.22      0.0      1.0
                  SPA ROMMON          spa  rommon    1.04      0.0      1.0
-----
SPA-1CHOC3-CE-ATM SPA OC3 Subrate FPGA    spa  fpga2    1.00      0.0      2.0
                  SPA I/O FPGA        spa  fpga1    2.23      0.0      2.0
                  SPA ROMMON          spa  rommon    1.04      0.0      2.0
-----
SPA-IPSEC-2G-2    Sequoia                spa  fpga2    1.01      0.0      1.0
                  Lodi                  spa  fpga1    1.22      0.0      1.0
                  SPA PROM            spa  rommon    1.01      0.0      1.0
-----
SPA-1XCHOC48/DS3  SPA I/O FPGA           spa  fpga2    1.00      0.0      0.49
                  SPA I/O FPGA           spa  fpga3    1.00      0.0      0.52
                  SPA I/O FPGA           spa  fpga1    1.36      0.0      0.49
                  SPA ROMMON          spa  rommon    2.02      0.0      0.49
-----
SPA-1XCHOC12/DS0  SPA I/O FPGA           spa  fpga2    1.00      0.0      0.49
                  SPA I/O FPGA           spa  fpga1    1.36      0.0      0.49
                  SPA ROMMON          spa  rommon    2.02      0.0      0.49
-----
SPA-OC192POS      SPA FPGA swv1.2        spa  fpga1    1.02      0.0      0.0
-----
SPA-8XOC12-POS    SPA FPGA swv1.0        spa  fpga1    1.00      0.0      0.5
-----
SPA-8XCHT1/E1     SPA I/O FPGA           spa  fpga1    2.08      0.0      0.0
                  SPA ROMMON          spa  rommon    2.12      0.0      0.140
-----
SPA-OC192POS-XFP  SPA FPGA swv1.2        spa  fpga1    1.02      0.0      0.0

```



```

          SPA FPGA swv1.2 hww2          spa fpga1          1.02          0.0          2.0
-----
SPA-10X1GE          SPA FPGA swv1.10          spa fpga1          1.10          0.0          0.0
-----
SPA-5X1GE          SPA FPGA swv1.10          spa fpga1          1.10          0.0          0.0
-----
SPA-2XOC48POS/RPR          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.0
-----
SPA-4XOC48POS/RPR          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.0
-----
SPA-1XTENGE-XFP          SPA FPGA swv1.9          spa fpga1          1.09          0.0          0.0
-----
SPA-8X1FE          SPA FPGA swv1.1          spa fpga1          1.01          0.0          0.0
-----
SPA-1XOC48POS/RPR          SPA FPGA swv1.2          spa fpga1          1.02          0.0          0.0
-----
SPA-8XOC3-POS          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.5
-----
SPA-2XOC12-POS          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.5
-----
SPA-4XOC12-POS          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.5
-----
SPA-10X1GE-V2          SPA FPGA swv1.10          spa fpga1          1.10          0.0          0.0
-----
SPA-8X1GE-V2          SPA FPGA swv1.10          spa fpga1          1.10          0.0          0.0
-----
SPA-5X1GE-V2          SPA FPGA swv1.10          spa fpga1          1.10          0.0          0.0
-----
SPA-2X1GE-V2          SPA FPGA swv1.1          spa fpga1          1.01          0.0          0.0
-----
SPA-1X10GE-L-V2          SPA FPGA swv1.11          spa fpga1          1.11          0.0          0.0
-----
SPA-8X1FE-V2          SPA FPGA swv1.1          spa fpga1          1.01          0.0          0.0
-----
SPA-4XOC3-POS-V2          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.5
-----
SPA-1X10GE-L-IT          SPA FPGA swv1.0          spa fpga1          1.00          0.0          0.0
-----
SPA-1XOC3-ATM-V2          TATM SPA IOFPGA          spa fpga1          2.02          0.0          0.0
-----
SPA-2XOC3-ATM-V2          SPA TATM IOFPGA          spa fpga1          2.02          0.0          0.0
-----

```

show fpd package Command Output: Example

```
SPA-3XOC3-ATM-V2    SPA TATM IOFPGA          spa  fpga1    2.02    0.0    0.0
-----
SPA-1XOC12-ATM-V2   SPA TATM IOFPGA          spa  fpga1    2.02    0.0    0.0
-----
```

```
RP/0/RP1/CPU0:router(admin)# show fpd package
```

```
Thu Jul  7 04:34:48.351 DST
```

```
=====
                          Field Programmable Device Package
=====
```

Card Type	FPD Description	Type	Subtype	SW Version	Min Req SW Ver	Min Req HW Vers
A9K-40GE-B	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.06	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONA LC2	lc	rommonA	1.05	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1
A9K-4T-B	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	PHY LC2	lc	fpga3	14.44	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
A9K-8T/4-B	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	PHY LC2	lc	fpga3	14.44	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1

	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-2T20GE-B	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.11	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.09	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.16	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-40GE-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.06	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONA LC2	lc	rommonA	1.05	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-4T-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	PHY LC2	lc	fpga3	14.44	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-8T/4-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	PHY LC2	lc	fpga3	14.44	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1

show fpd package Command Output: Example

	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-2T20GE-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cp1d1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cp1d2	0.11	0.0	0.1
	LCclkCtrl LC2	lc	cp1d3	0.09	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.16	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-8T-B	Can Bus Ctrl (CBC) LC3	lc	cbc	6.02	0.0	0.1
	CPUCtrl LC3	lc	cp1d1	1.02	0.0	0.1
	PHYCtrl LC3	lc	cp1d2	0.08	0.0	0.1
	LCclkCtrl LC3	lc	cp1d3	0.03	0.0	0.1
	DB CPUCtrl LC3	lc	cp1d4	1.03	0.0	0.1
	PortCtrl LC3	lc	fpga2	0.11	0.0	0.1
	Raven LC3	lc	fpga1	1.02	0.0	0.1
	ROMMONB LC3	lc	rommon	1.03	0.0	0.1

A9K-16T/8-B	Can Bus Ctrl (CBC) LC3	lc	cbc	6.02	0.0	0.1
	CPUCtrl LC3	lc	cp1d1	1.02	0.0	0.1
	PHYCtrl LC3	lc	cp1d2	0.04	0.0	0.1
	LCclkCtrl LC3	lc	cp1d3	0.01	0.0	0.1
	DB CPUCtrl LC3	lc	cp1d4	1.03	0.0	0.1
	PortCtrl LC3	lc	fpga2	0.01	0.0	0.1
	Raven LC3	lc	fpga1	1.02	0.0	0.1
	ROMMONB LC3	lc	rommon	1.03	0.0	0.1

A9K-16T/8-B	Can Bus Ctrl (CBC) LC3	lc	cbc	6.02	0.0	0.1
	CPUCtrl LC3	lc	cp1d1	1.02	0.0	0.1
	PHYCtrl LC3	lc	cp1d2	0.04	0.0	0.1
	LCclkCtrl LC3	lc	cp1d3	0.01	0.0	0.1
	DB CPUCtrl LC3	lc	cp1d4	1.03	0.0	0.1
	PortCtrl LC3	lc	fpga2	0.01	0.0	0.1

```

Raven LC3                lc  fpga1    1.02    0.0    0.1
ROMMONB LC3              lc  rommon   1.03    0.0    0.1
-----
A9K-8T-E                 Can Bus Ctrl (CBC) LC3  lc  cbc      6.02    0.0    0.1
                          CPUCtrl LC3             lc  cp1d1    1.02    0.0    0.1
                          PHYCtrl LC3             lc  cp1d2    0.08    0.0    0.1
                          LCclkCtrl LC3          lc  cp1d3    0.03    0.0    0.1
                          CPUCtrl LC3             lc  cp1d4    1.03    0.0    0.1
                          PortCtrl LC3            lc  fpga2    0.11    0.0    0.1
                          Raven LC3                lc  fpga1    1.02    0.0    0.1
                          ROMMONB LC3              lc  rommon   1.03    0.0    0.1
-----
A9K-16T/8-E             Can Bus Ctrl (CBC) LC3  lc  cbc      6.02    0.0    0.1
                          CPUCtrl LC3             lc  cp1d1    1.02    0.0    0.1
                          PHYCtrl LC3             lc  cp1d2    0.04    0.0    0.1
                          LCclkCtrl LC3          lc  cp1d3    0.01    0.0    0.1
                          DB CPUCtrl LC3         lc  cp1d4    1.03    0.0    0.1
                          PortCtrl LC3            lc  fpga2    0.01    0.0    0.1
                          Raven LC3                lc  fpga1    1.02    0.0    0.1
                          ROMMONB LC3              lc  rommon   1.03    0.0    0.1
-----
A9K-16T/8-E             Can Bus Ctrl (CBC) LC3  lc  cbc      6.02    0.0    0.1
                          CPUCtrl LC3             lc  cp1d1    1.02    0.0    0.1
                          PHYCtrl LC3             lc  cp1d2    0.04    0.0    0.1
                          LCclkCtrl LC3          lc  cp1d3    0.01    0.0    0.1
                          DB CPUCtrl LC3         lc  cp1d4    1.03    0.0    0.1
                          PortCtrl LC3            lc  fpga2    0.01    0.0    0.1
                          Raven LC3                lc  fpga1    1.02    0.0    0.1
                          ROMMONB LC3              lc  rommon   1.03    0.0    0.1
-----
A9K-40GE-L              Can Bus Ctrl (CBC) LC2  lc  cbc      2.02    0.0    0.1
                          CPUCtrl LC2             lc  cp1d1    1.00    0.0    0.1
                          PHYCtrl LC2             lc  cp1d2    0.06    0.0    0.1
                          PortCtrl LC2            lc  fpga2    0.10    0.0    0.1

```

show fpd package Command Output: Example

	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-4T-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	Serdes Upgrade LC2	lc	fpga3	14.44	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-8T/4-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.0	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.0	0.1
	Serdes Upgrade LC2	lc	fpga3	14.44	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-2T20GE-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.02	0.0	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.0	0.1
	PHYCtrl LC2	lc	cpld2	0.11	0.0	0.1
	LCclkCtrl LC2	lc	cpld3	0.09	0.0	0.1
	Tomcat LC2	lc	fpga2	0.16	0.0	0.1
	Bridge LC2	lc	fpga1	0.43	0.0	0.1
	ROMMONB LC2	lc	rommon	1.05	0.0	0.1

A9K-8T-L	Can Bus Ctrl (CBC) LC3	lc	cbc	6.02	0.0	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.0	0.1
	PHYCtrl LC3	lc	cpld2	0.08	0.0	0.1
	LCclkCtrl LC3	lc	cpld3	0.03	0.0	0.1
	CPUCtrl LC3	lc	cpld4	1.03	0.0	0.1

	PortCtrl LC3	lc	fpga2	0.11	0.0	0.1
	Raven LC3	lc	fpga1	1.02	0.0	0.1
	ROMMONB LC3	lc	rommon	1.03	0.0	0.1

A9K-16T/8-L	Can Bus Ctrl (CBC) LC3	lc	cbc	6.02	0.0	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.0	0.1
	PHYCtrl LC3	lc	cpld2	0.04	0.0	0.1
	LCClkCtrl LC3	lc	cpld3	0.01	0.0	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.0	0.1
	PortCtrl LC3	lc	fpga2	0.01	0.0	0.1
	Raven LC3	lc	fpga1	1.02	0.0	0.1
	ROMMONB LC3	lc	rommon	1.03	0.0	0.1

A9K-SIP-700	Can Bus Ctrl (CBC) LC5	lc	cbc	3.05	0.0	0.1
	CPUCtrl LC5	lc	cpld1	0.15	0.0	0.1
	QFPCPUBridge LC5	lc	fpga2	5.14	0.0	0.1
	NPUXBarBridge LC5	lc	fpga1	0.22	0.0	0.1
	ROMMONA LC5	lc	rommonA	1.03	0.0	0.1
	ROMMONB LC5	lc	rommon	1.03	0.0	0.1

A9K-SIP-500	Can Bus Ctrl (CBC) LC5	lc	cbc	3.05	0.0	0.1
	CPUCtrl LC5	lc	cpld1	0.15	0.0	0.1
	QFPCPUBridge LC5	lc	fpga2	5.14	0.0	0.1
	NPUXBarBridge LC5	lc	fpga1	0.22	0.0	0.1
	ROMMONA LC5	lc	rommonA	1.03	0.0	0.1
	ROMMONB LC5	lc	rommon	1.03	0.0	0.1

A9K-RSP-2G	Can Bus Ctrl (CBC) RSP2	lc	cbc	1.02	0.0	0.1
	CPUCtrl RSP2	lc	cpld2	1.17	0.0	0.1
	IntCtrl RSP2	lc	fpga2	1.15	0.0	0.1
	ClkCtrl RSP2	lc	fpga3	1.23	0.0	0.1
	UTI RSP2	lc	fpga4	3.08	0.0	0.1
	PUNT RSP2	lc	fpga1	1.05	0.0	0.1
	HSBI RSP2	lc	hsbi	4.00	0.0	0.1

show fpd package Command Output: Example

```

ROMMONA RSP2          lc  rommonA    1.05    0.0    0.1
ROMMONB RSP2          lc  rommon     1.05    0.0    0.1
-----
A9K-RSP-4G            Can Bus Ctrl (CBC) RSP2  lc  cbc        1.02    0.0    0.1
CPUCtrl RSP2          lc  cpld2      1.17    0.0    0.1
IntCtrl RSP2          lc  fpga2      1.15    0.0    0.1
ClkCtrl RSP2          lc  fpga3      1.23    0.0    0.1
UTI RSP2              lc  fpga4      3.08    0.0    0.1
PUNT RSP2             lc  fpga1      1.05    0.0    0.1
HSBI RSP2             lc  hsbi       4.00    0.0    0.1
ROMMONA RSP2          lc  rommonA    1.05    0.0    0.1
ROMMONB RSP2          lc  rommon     1.05    0.0    0.1
-----
A9K-RSP-8G            Can Bus Ctrl (CBC) RSP2  lc  cbc        1.02    0.0    0.1
CPUCtrl RSP2          lc  cpld2      1.17    0.0    0.1
IntCtrl RSP2          lc  fpga2      1.15    0.0    0.1
ClkCtrl RSP2          lc  fpga3      1.23    0.0    0.1
UTI RSP2              lc  fpga4      3.08    0.0    0.1
PUNT RSP2             lc  fpga1      1.05    0.0    0.1
HSBI RSP2             lc  hsbi       4.00    0.0    0.1
ROMMONA RSP2          lc  rommonA    1.05    0.0    0.1
ROMMONB RSP2          lc  rommon     1.05    0.0    0.1
-----
ASR-9010-FAN          Can Bus Ctrl (CBC) FAN   lc  cbc        4.00    0.0    0.1
-----
ASR-9006-FAN          Can Bus Ctrl (CBC) FAN   lc  cbc        5.00    0.0    0.1
-----
A9K-BPID2-10-SLOT     Can Bus Ctrl (CBC) BP2   lc  cbc        7.103   0.0    0.1
-----
A9K-BPID2-6-SLOT      Can Bus Ctrl (CBC) BP2   lc  cbc        7.103   0.0    0.1
-----
A9K-ISM-100           Can Bus Ctrl (CBC) LC6   lc  cbc        18.05   0.0    0.1
CPUCtrl LC6           lc  cpld1      0.01    0.0    0.1
Maintenance LC6      lc  fpga2      1.00    0.0    0.1
Amistad LC6           lc  fpga1      0.25    0.0    0.20

```


	ROMMONA LC6	lc	rommonA	1.02	0.0	0.1
	ROMMONB LC6	lc	rommon	1.02	0.0	0.1

A9K-8T-B	CPUCtrl LC3	lc	cpld1	1.02	0.0	0.1
	PHYCtrl LC3	lc	cpld2	0.08	0.0	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.0	0.1
	PortCtrl LC3	lc	fpga2	0.11	0.0	0.1
	Raven LC3	lc	fpga1	1.02	0.0	0.1

A9K-8T-E	CPUCtrl LC3	lc	cpld1	1.02	0.0	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.0	0.1
	PortCtrl LC3	lc	fpga2	0.11	0.0	0.1
	Raven LC3	lc	fpga1	1.02	0.0	0.1

SPA-4XT3/E3	SPA E3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA T3 Subrate FPGA	spa	fpga3	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.01	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0

SPA-2XT3/E3	SPA E3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA T3 Subrate FPGA	spa	fpga3	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.01	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0

SPA-4XCT3/DS0	SPA T3 Subrate FPGA	spa	fpga2	0.11	0.0	0.100
	SPA T3 Subrate FPGA	spa	fpga2	1.04	0.0	0.200
	SPA I/O FPGA	spa	fpga1	2.08	0.0	0.100
	SPA ROMMON	spa	rommon	2.12	0.0	0.100

SPA-2XCT3/DS0	SPA T3 Subrate FPGA	spa	fpga2	0.11	0.0	0.100
	SPA T3 Subrate FPGA	spa	fpga2	1.04	0.0	0.200
	SPA I/O FPGA	spa	fpga1	2.08	0.0	0.100
	SPA ROMMON	spa	rommon	2.12	0.0	0.100

SPA-1XCHSTM1/OC3	SPA T3 Subrate FPGA	spa	fpga2	1.04	0.0	0.0
	SPA I/O FPGA	spa	fpga1	1.08	0.0	0.0
	SPA ROMMON	spa	rommon	2.12	0.0	0.0

show fpd package Command Output: Example

```

-----
SPA-1XCHOC48/DS3   SPA I/O FPGA           spa  fpga2   1.00   0.0   0.49
                  SPA I/O FPGA           spa  fpga3   1.00   0.0   0.52
                  SPA I/O FPGA           spa  fpga1   1.36   0.0   0.49
                  SPA ROMMON             spa  rommon  2.02   0.0   0.49
-----
SPA-2XCHOC12/DS0   SPA FPGA2 swv1.00      spa  fpga2   1.00   0.0   0.0
                  SPA FPGA swv1.36      spa  fpga1   1.36   0.0   0.49
                  SPA ROMMON swv2.2     spa  rommon  2.02   0.0   0.49
-----
SPA-8XOC12-POS     SPA FPGA swv1.0       spa  fpga1   1.00   0.0   0.5
-----
SPA-8XCHT1/E1      SPA I/O FPGA           spa  fpga1   2.08   0.0   0.0
                  SPA ROMMON             spa  rommon  2.12   0.0   0.140
-----
SPA-OC192POS-XFP   SPA FPGA swv1.2 hwv2   spa  fpga1   1.02   0.0   2.0
-----
SPA-2XOC48POS/RPR  SPA FPGA swv1.0       spa  fpga1   1.00   0.0   0.0
-----
SPA-8XOC3-POS      SPA FPGA swv1.0       spa  fpga1   1.00   0.0   0.5
-----
SPA-10X1GE-V2      SPA FPGA swv1.10      spa  fpga1   1.10   0.0   0.0
-----
SPA-5X1GE-V2       SPA FPGA swv1.10      spa  fpga1   1.10   0.0   0.0
-----
SPA-1X10GE-L-V2    SPA FPGA swv1.9       spa  fpga1   1.09   0.0   0.0
-----
SPA-4XOC3-POS-V2   SPA FPGA swv1.0       spa  fpga1   1.00   0.0   0.5
-----
SPA-1X10GE-WL-V2   SPA FPGA swv1.9       spa  fpga1   1.09   0.0   0.0
-----

```

This table describes the significant fields shown in the display:

Table 3: show fpd package Field Descriptions

Field	Description
Card Type	Module part number.
FPD Description	Description of all FPD images available for the SPA.

Field	Description
Type	Hardware type. Possible types can be: <ul style="list-style-type: none"> • spa—Shared port adapter • lc—Line card
Subtype	FPD subtype. These values are used in the upgrade hw-module fpd command to indicate a specific FPD image type to upgrade.
SW Version	FPD software version recommended for the associated module running the current Cisco IOS XR software.
Min Req SW Vers	Minimum required FPD image software version to operate the card. Version 0.0 indicates that a minimum required image was not programmed into the card.
Min Req HW Vers	Minimum required hardware version for the associated FPD image. A minimum hardware requirement of version 0.0 indicates that all hardware can support this FPD image version.

This example shows the output display for ASR9912 and ASR9922:

```
RP/0/RP0/CPU0:router # show fpd package
```

```
=====
                          Field Programmable Device Package
                          =====
Card Type          FPD Description          Type Subtype    SW    Min Req  Min Req
=====          =====          =====
ASR-9912-BPID2     Can Bus Ctrl (CBC) BP2   bp   cbc       7.104  0.00    0.1
                  Can Bus Ctrl (CBC) BP2   lc   cbc       7.104  0.00    0.1
-----
ASR-9922-BPID2     Can Bus Ctrl (CBC) BP2   bp   cbc       7.104  0.00    0.1
                  Can Bus Ctrl (CBC) BP2   lc   cbc       7.104  0.00    0.1
-----
A9K-BPID2-10-SLOT  Can Bus Ctrl (CBC) BP2   bp   cbc       7.104  0.00    0.1
                  Can Bus Ctrl (CBC) BP2   lc   cbc       7.104  0.00    0.1
-----
A9K-BPID2-6-SLOT   Can Bus Ctrl (CBC) BP2   bp   cbc       7.104  0.00    0.1
                  Can Bus Ctrl (CBC) BP2   lc   cbc       7.104  0.00    0.1
-----
ASR-9922-SFC110   Can Bus Ctrl (CBC) MTFC   fc   cbc       28.03  0.00    0.1
                  Fabric Ctrl0 MTFC        fc   fpga7    1.01   0.00    0.1
                  Can Bus Ctrl (CBC) MTFC   lc   cbc       28.03  0.00    0.1
-----
ASR-9912-SFC110   Can Bus Ctrl (CBC) SSFC   fc   cbc       32.02  0.00    0.1
=====
```

show fpd package Command Output: Example

```

Fabric Ctrl10 MTFC          fc  fpga7          1.01      0.00      0.1
-----
ASR-9010-FAN               Can Bus Ctrl (CBC) FAN  ft  cbc          4.02      0.00      0.1
                           Can Bus Ctrl (CBC) FAN  lc  cbc          4.02      0.00      0.1
-----
ASR-9006-FAN               Can Bus Ctrl (CBC) FAN  ft  cbc          5.02      0.00      0.1
                           Can Bus Ctrl (CBC) FAN  lc  cbc          5.02      0.00      0.1
-----
ASR-9922-FAN               Can Bus Ctrl (CBC) MFAN ft  cbc          29.10     0.00      0.1
                           Can Bus Ctrl (CBC) MFAN lc  cbc          29.10     0.00      0.1
-----
ASR-9912-FAN               Can Bus Ctrl (CBC) SFAN ft  cbc          31.03     0.00      0.1
-----
ASR-9010-FAN-V2           Can Bus Ctrl (CBC) FAN  ft  cbc          29.10     0.00      0.1
                           Can Bus Ctrl (CBC) FAN  lc  cbc          29.10     0.00      0.1
-----
ASR-9001-FAN               Can Bus Ctrl (CBC) FAN  ft  cbc          24.114    0.00      0.1
                           Can Bus Ctrl (CBC) FAN  lc  cbc          24.114    0.00      0.1
-----
A9K-40GE-B                 Can Bus Ctrl (CBC) LC2  lc  cbc           2.03      0.00      0.1
                           CPUCtrl LC2             lc  cpld1         1.00      0.00      0.1
                           PHYCtrl LC2             lc  cpld2         0.06      0.00      0.1
                           PortCtrl LC2            lc  fpga2         0.10      0.00      0.1
                           Bridge LC2              lc  fpga1         0.44      0.00      0.1
                           ROMMONB LC2             lc  rommon        1.05      0.00      0.1
-----
A9K-4T-B                   Can Bus Ctrl (CBC) LC2  lc  cbc           2.03      0.00      0.1
                           CPUCtrl LC2             lc  cpld1         1.00      0.00      0.1
                           PHYCtrl LC2             lc  cpld2         0.08      0.00      0.1
                           LCclkCtrl LC2          lc  cpld3         0.03      0.00      0.1
                           PortCtrl LC2            lc  fpga2         0.10      0.00      0.1
                           PHY LC2                lc  fpga3        14.44     0.00      0.1
                           Bridge LC2              lc  fpga1         0.44      0.00      0.1
                           ROMMONB LC2             lc  rommon        1.05      0.00      0.1
-----
A9K-8T/4-B                 Can Bus Ctrl (CBC) LC2  lc  cbc           2.03      0.00      0.1
                           CPUCtrl LC2             lc  cpld1         1.00      0.00      0.1

```

	PHYCtrl LC2	lc	cpld2	0.08	0.00	0.1
	LCClkCtrl LC2	lc	cpld3	0.03	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	PHY LC2	lc	fpga3	14.44	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-2T20GE-B	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.11	0.00	0.1
	LCClkCtrl LC2	lc	cpld3	0.10	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.16	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-40GE-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.06	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-4T-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.00	0.1
	LCClkCtrl LC2	lc	cpld3	0.03	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	PHY LC2	lc	fpga3	14.44	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-8T/4-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.00	0.1

show fpd package Command Output: Example

	LCclkCtrl LC2	lc	cpld3	0.03	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	PHY LC2	lc	fpga3	14.44	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-2T20GE-E	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.11	0.00	0.1
	LCclkCtrl LC2	lc	cpld3	0.10	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.16	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-8T-B	Can Bus Ctrl (CBC) LC3	lc	cbc	6.07	0.00	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.00	0.1
	PHYCtrl LC3	lc	cpld2	0.08	0.00	0.1
	LCclkCtrl LC3	lc	cpld3	0.03	0.00	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.00	0.1
	PortCtrl LC3	lc	fpga2	0.11	0.00	0.1
	Raven LC3	lc	fpga1	1.03	0.00	0.1
	ROMMONB LC3	lc	rommon	1.03	0.00	0.1

A9K-16T/8-B	Can Bus Ctrl (CBC) LC3	lc	cbc	6.08	0.00	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.00	0.1
	PHYCtrl LC3	lc	cpld2	0.04	0.00	0.1
	LCclkCtrl LC3	lc	cpld3	0.01	0.00	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.00	0.1
	PortCtrl LC3	lc	fpga2	0.01	0.00	0.1
	Raven LC3	lc	fpga1	1.03	0.00	0.1
	ROMMONB LC3	lc	rommon	1.03	0.00	0.1

A9K-8T-E	Can Bus Ctrl (CBC) LC3	lc	cbc	6.07	0.00	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.00	0.1

	PHYCtrl LC3	lc	cpld2	0.08	0.00	0.1
	LCclkCtrl LC3	lc	cpld3	0.03	0.00	0.1
	CPUCtrl LC3	lc	cpld4	1.03	0.00	0.1
	PortCtrl LC3	lc	fpga2	0.11	0.00	0.1
	Raven LC3	lc	fpga1	1.03	0.00	0.1
	ROMMONB LC3	lc	rommon	1.03	0.00	0.1

A9K-16T/8-E	Can Bus Ctrl (CBC) LC3	lc	cbc	6.08	0.00	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.00	0.1
	PHYCtrl LC3	lc	cpld2	0.04	0.00	0.1
	LCclkCtrl LC3	lc	cpld3	0.01	0.00	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.00	0.1
	PortCtrl LC3	lc	fpga2	0.01	0.00	0.1
	Raven LC3	lc	fpga1	1.03	0.00	0.1
	ROMMONB LC3	lc	rommon	1.03	0.00	0.1

A9K-40GE-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.06	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-4T-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.08	0.00	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	Serdes Upgrade LC2	lc	fpga3	14.44	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-8T/4-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1

show fpd package Command Output: Example

	PHYCtrl LC2	lc	cpld2	0.08	0.00	0.1
	LCclkCtrl LC2	lc	cpld3	0.03	0.00	0.1
	PortCtrl LC2	lc	fpga2	0.10	0.00	0.1
	Serdes Upgrade LC2	lc	fpga3	14.44	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-2T20GE-L	Can Bus Ctrl (CBC) LC2	lc	cbc	2.03	0.00	0.1
	CPUCtrl LC2	lc	cpld1	1.00	0.00	0.1
	PHYCtrl LC2	lc	cpld2	0.11	0.00	0.1
	LCclkCtrl LC2	lc	cpld3	0.10	0.00	0.1
	Tomcat LC2	lc	fpga2	0.16	0.00	0.1
	Bridge LC2	lc	fpga1	0.44	0.00	0.1
	ROMMONB LC2	lc	rommon	1.05	0.00	0.1

A9K-8T-L	Can Bus Ctrl (CBC) LC3	lc	cbc	6.07	0.00	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.00	0.1
	PHYCtrl LC3	lc	cpld2	0.08	0.00	0.1
	LCclkCtrl LC3	lc	cpld3	0.03	0.00	0.1
	CPUCtrl LC3	lc	cpld4	1.03	0.00	0.1
	PortCtrl LC3	lc	fpga2	0.11	0.00	0.1
	Raven LC3	lc	fpga1	1.03	0.00	0.1
	ROMMONB LC3	lc	rommon	1.03	0.00	0.1

A9K-16T/8-L	Can Bus Ctrl (CBC) LC3	lc	cbc	6.08	0.00	0.1
	CPUCtrl LC3	lc	cpld1	1.02	0.00	0.1
	PHYCtrl LC3	lc	cpld2	0.04	0.00	0.1
	LCclkCtrl LC3	lc	cpld3	0.01	0.00	0.1
	DB CPUCtrl LC3	lc	cpld4	1.03	0.00	0.1
	PortCtrl LC3	lc	fpga2	0.01	0.00	0.1
	Raven LC3	lc	fpga1	1.03	0.00	0.1
	ROMMONB LC3	lc	rommon	1.03	0.00	0.1

A9K-SIP-700	Can Bus Ctrl (CBC) LC5	lc	cbc	3.06	0.00	0.1

	CPUCtrl LC5	lc	cpld1	0.15	0.00	0.1
	QFPCPUBridge LC5	lc	fpga2	5.14	0.00	0.1
	NPUXBarBridge LC5	lc	fpga1	0.23	0.00	0.1
	ROMMONB LC5	lc	rommon	1.04	0.00	0.1

A9K-SIP-500	Can Bus Ctrl (CBC) LC5	lc	cbc	3.06	0.00	0.1
	CPUCtrl LC5	lc	cpld1	0.15	0.00	0.1
	QFPCPUBridge LC5	lc	fpga2	5.14	0.00	0.1
	NPUXBarBridge LC5	lc	fpga1	0.23	0.00	0.1
	ROMMONB LC5	lc	rommon	1.04	0.00	0.1

A9K-SIP-700-8G	Can Bus Ctrl (CBC) LC5	lc	cbc	3.06	0.00	0.1
	CPUCtrl LC5	lc	cpld1	0.15	0.00	0.1
	QFPCPUBridge LC5	lc	fpga2	5.14	0.00	0.1
	NPUXBarBridge LC5	lc	fpga1	0.23	0.00	0.1
	ROMMONB LC5	lc	rommon	1.35	0.00	0.1

A9K-RSP-2G	Can Bus Ctrl (CBC) RSP2	lc	cbc	1.03	0.00	0.1
	CPUCtrl RSP2	lc	cpld2	1.18	0.00	0.1
	IntCtrl RSP2	lc	fpga2	1.15	0.00	0.1
	ClkCtrl RSP2	lc	fpga3	1.23	0.00	0.1
	UTI RSP2	lc	fpga4	3.08	0.00	0.1
	PUNT RSP2	lc	fpga1	1.05	0.00	0.1
	ROMMONB RSP2	lc	rommon	1.06	0.00	0.1

A9K-RSP-4G	Can Bus Ctrl (CBC) RSP2	lc	cbc	1.03	0.00	0.1
	CPUCtrl RSP2	lc	cpld2	1.18	0.00	0.1
	IntCtrl RSP2	lc	fpga2	1.15	0.00	0.1
	ClkCtrl RSP2	lc	fpga3	1.23	0.00	0.1
	UTI RSP2	lc	fpga4	3.08	0.00	0.1
	PUNT RSP2	lc	fpga1	1.05	0.00	0.1
	ROMMONB RSP2	lc	rommon	1.06	0.00	0.1

A9K-RSP-8G	Can Bus Ctrl (CBC) RSP2	lc	cbc	1.03	0.00	0.1

show fpd package Command Output: Example

	CPUCtrl RSP2	lc	cpld2	1.18	0.00	0.1
	IntCtrl RSP2	lc	fpga2	1.15	0.00	0.1
	ClkCtrl RSP2	lc	fpga3	1.23	0.00	0.1
	UTI RSP2	lc	fpga4	3.08	0.00	0.1
	PUNT RSP2	lc	fpga1	1.05	0.00	0.1
	ROMMONB RSP2	lc	rommon	1.06	0.00	0.1

A9K-RSP440-TR	Can Bus Ctrl (CBC) RSP3	lc	cbc	16.115	0.00	0.1
	ClockCtrl0 RSP3	lc	fpga2	1.06	0.00	0.1
	UTI RSP3	lc	fpga3	4.09	0.00	0.1
	CPUCtrl RSP3	lc	fpga1	0.09	0.00	0.1
	ROMMONB RSP3	lc	rommon	0.70	0.00	0.1

A9K-RSP440-SE	Can Bus Ctrl (CBC) RSP3	lc	cbc	16.115	0.00	0.1
	ClockCtrl0 RSP3	lc	fpga2	1.06	0.00	0.1
	UTI RSP3	lc	fpga3	4.09	0.00	0.1
	CPUCtrl RSP3	lc	fpga1	0.09	0.00	0.1
	ROMMONB RSP3	lc	rommon	0.70	0.00	0.1

ASR-9922-RP-TR	Can Bus Ctrl (CBC) MTRP	lc	cbc	25.02	0.00	0.1
	Fabric Ctrl3 MTFC	lc	fpga10	1.01	0.00	0.1
	Fabric Ctrl4 MTFC	lc	fpga11	1.01	0.00	0.1
	Fabric Ctrl5 MTFC	lc	fpga12	1.01	0.00	0.1
	Fabric Ctrl6 MTFC	lc	fpga13	1.01	0.00	0.1
	CPUCtrl1	lc	fpga2	1.03	0.00	0.1
	ClkCtrl	lc	fpga3	1.03	0.00	0.1
	IntCtrl	lc	fpga4	1.03	0.00	0.1
	UTI	lc	fpga5	4.09	0.00	0.1
	Timex	lc	fpga6	0.02	0.00	0.1
	Fabric Ctrl0 MTFC	lc	fpga7	1.01	0.00	0.1
	Fabric Ctrl1 MTFC	lc	fpga8	1.01	0.00	0.1
	Fabric Ctrl2 MTFC	lc	fpga9	1.01	0.00	0.1
	CPUCtrl0	lc	fpga1	1.04	0.00	0.1
	ROMMONB MTRP	lc	rommon	5.10	0.00	0.1

```

-----
ASR-9922-RP-SE      Can Bus Ctrl (CBC) MTRP      1c  cbc      25.02      0.00      0.1
                    Fabric Ctrl3 MTFC            1c  fpga10    1.01      0.00      0.1
                    Fabric Ctrl4 MTFC            1c  fpga11    1.01      0.00      0.1
                    Fabric Ctrl5 MTFC            1c  fpga12    1.01      0.00      0.1
                    Fabric Ctrl6 MTFC            1c  fpga13    1.01      0.00      0.1
                    CPUCtrl1                      1c  fpga2     1.03      0.00      0.1
                    ClkCtrl                      1c  fpga3     1.03      0.00      0.1
                    IntCtrl                     1c  fpga4     1.03      0.00      0.1
                    UTI                       1c  fpga5     4.09      0.00      0.1
                    Timex                      1c  fpga6     0.02      0.00      0.1
                    Fabric Ctrl10 MTFC          1c  fpga7     1.01      0.00      0.1
                    Fabric Ctrl11 MTFC          1c  fpga8     1.01      0.00      0.1
                    Fabric Ctrl12 MTFC          1c  fpga9     1.01      0.00      0.1
                    CPUCtrl0                      1c  fpga1     1.04      0.00      0.1
                    ROMMONB MTRP              1c  rommon    5.10      0.00      0.1
-----
ASR-9900-RP-TR      Can Bus Ctrl (CBC) MTRP      1c  cbc      25.02      0.00      0.1
                    Fabric Ctrl3 MTFC            1c  fpga10    1.01      0.00      0.1
                    Fabric Ctrl4 MTFC            1c  fpga11    1.01      0.00      0.1
                    Fabric Ctrl5 MTFC            1c  fpga12    1.01      0.00      0.1
                    Fabric Ctrl6 MTFC            1c  fpga13    1.01      0.00      0.1
                    CPUCtrl1                      1c  fpga2     1.03      0.00      0.1
                    ClkCtrl                      1c  fpga3     1.03      0.00      0.1
                    IntCtrl                     1c  fpga4     1.03      0.00      0.1
                    UTI                       1c  fpga5     4.09      0.00      0.1
                    Timex                      1c  fpga6     0.02      0.00      0.1
                    Fabric Ctrl10 MTFC          1c  fpga7     1.01      0.00      0.1
                    Fabric Ctrl11 MTFC          1c  fpga8     1.01      0.00      0.1
                    Fabric Ctrl12 MTFC          1c  fpga9     1.01      0.00      0.1
                    CPUCtrl0                      1c  fpga1     1.04      0.00      0.1
                    ROMMONB MTRP              1c  rommon    5.10      0.00      0.1
-----

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show fpd package Command Output: Example

ASR-9900-RP-SE	Can Bus Ctrl (CBC) MTRP	lc	cbc	25.02	0.00	0.1
	Fabric Ctrl3 MTFC	lc	fpga10	1.01	0.00	0.1
	Fabric Ctrl4 MTFC	lc	fpga11	1.01	0.00	0.1
	Fabric Ctrl5 MTFC	lc	fpga12	1.01	0.00	0.1
	Fabric Ctrl6 MTFC	lc	fpga13	1.01	0.00	0.1
	CPUCtrl1	lc	fpga2	1.03	0.00	0.1
	ClkCtrl	lc	fpga3	1.03	0.00	0.1
	IntCtrl	lc	fpga4	1.03	0.00	0.1
	UTI	lc	fpga5	4.09	0.00	0.1
	Timex	lc	fpga6	0.02	0.00	0.1
	Fabric Ctrl10 MTFC	lc	fpga7	1.01	0.00	0.1
	Fabric Ctrl11 MTFC	lc	fpga8	1.01	0.00	0.1
	Fabric Ctrl12 MTFC	lc	fpga9	1.01	0.00	0.1
	CPUCtrl0	lc	fpga1	1.04	0.00	0.1
	ROMMONB MTRP	lc	rommon	5.10	0.00	0.1

ASR9001-RP	Can Bus Ctrl (CBC) IMRP	lc	cbc	22.114	0.00	0.1
	MB CPUCtrl	lc	fpga2	1.14	0.00	0.0
	ROMMONB IM RP	lc	rommon	1.36	0.00	0.1

A9K-24x10GE-SE	Can Bus Ctrl (CBC) LC6	lc	cbc	19.109	0.00	0.0
	DBCtrl LC6	lc	fpga2	1.03	0.00	0.0
	LinkCtrl LC6	lc	fpga3	1.01	0.00	0.0
	LCCPUCtrl LC6	lc	fpga4	1.07	0.00	0.0
	ROMMONB LC6	lc	rommon	1.29	0.00	0.0

A9K-2x100GE-SE	Can Bus Ctrl (CBC) LC4	lc	cbc	21.108	0.00	0.1
	DB IO FPGA1	lc	cpld1	1.03	0.00	0.0
	MB CPUCtrl	lc	fpga2	1.08	0.00	0.0
	PortCtrl	lc	fpga3	1.05	0.00	0.0
	Imux	lc	fpga4	1.01	0.00	0.0
	Emux	lc	fpga5	1.03	0.00	0.0
	100GIGMAC	lc	fpga6	38.00	0.00	0.0
	ROMMONB LC4	lc	rommon	1.29	0.00	0.0

```

-----
A9K-MOD80-SE      Can Bus Ctrl (CBC) LC4      lc  cbc      20.115      0.00      0.1
                  DB Ctrl                    lc  fpga2      1.04        0.00      0.0
                  MB CPUCtrl                lc  fpga4      1.05        0.00      0.0
                  ROMMONB LC4               lc  rommon     1.29        0.00      0.1
-----
A9K-MOD160-SE    Can Bus Ctrl (CBC) LC4      lc  cbc      20.115      0.00      0.1
                  DB Ctrl                    lc  fpga2      1.04        0.00      0.0
                  MB CPUCtrl                lc  fpga4      1.05        0.00      0.0
                  ROMMONB LC4               lc  rommon     1.29        0.00      0.1
-----
A9K-24x10GE-TR   Can Bus Ctrl (CBC) LC6      lc  cbc      19.109      0.00      0.0
                  DBCtrl LC6                 lc  fpga2      1.03        0.00      0.0
                  LinkCtrl LC6               lc  fpga3      1.01        0.00      0.0
                  LCCPUCtrl LC6             lc  fpga4      1.07        0.00      0.0
                  ROMMONB LC6               lc  rommon     1.29        0.00      0.0
-----
A9K-2x100GE-TR   Can Bus Ctrl (CBC) LC4      lc  cbc      21.108      0.00      0.1
                  DB IO FPGA1                lc  cpld1      1.03        0.00      0.0
                  MB CPUCtrl                lc  fpga2      1.08        0.00      0.0
                  PortCtrl                   lc  fpga3      1.05        0.00      0.0
                  Imux                       lc  fpga4      1.01        0.00      0.0
                  Emux                       lc  fpga5      1.03        0.00      0.0
                  100GIGMAC                 lc  fpga6      38.00       0.00      0.0
                  ROMMONB LC4               lc  rommon     1.29        0.00      0.0
-----
A9K-MOD80-TR     Can Bus Ctrl (CBC) LC4      lc  cbc      20.115      0.00      0.1
                  DB Ctrl                    lc  fpga2      1.04        0.00      0.0
                  MB CPUCtrl                lc  fpga4      1.05        0.00      0.0
                  ROMMONB LC4               lc  rommon     1.29        0.00      0.1
-----
A9K-MOD160-TR    Can Bus Ctrl (CBC) LC4      lc  cbc      20.115      0.00      0.1
                  DB Ctrl                    lc  fpga2      1.04        0.00      0.0
                  MB CPUCtrl                lc  fpga4      1.05        0.00      0.0
                  ROMMONB LC4               lc  rommon     1.29        0.00      0.1

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show fpd package Command Output: Example

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-----
A9K-8T-TEST      Can Bus Ctrl (CBC) LC17  lc  cbc      17.214    0.00    0.0
                  LCCPUCtrl LC6           lc  fpga4     0.03     0.00    0.0
                  ROMMONB LC6            lc  rommon    1.04     0.00    0.0
-----
A9K-36x10GE-SE  Can Bus Ctrl (CBC) LC6   lc  cbc      15.101    0.00    0.0
                  DBCtrl LC6             lc  fpga2     1.01     0.00    0.0
                  LinkCtrl LC6           lc  fpga3     1.00     0.00    0.0
                  LCCPUCtrl LC6         lc  fpga4     1.03     0.00    0.0
                  ROMMONB LC6           lc  rommon    1.29     0.00    0.0
-----
A9K-36x10GE-TR  Can Bus Ctrl (CBC) LC6   lc  cbc      15.101    0.00    0.0
                  DBCtrl LC6             lc  fpga2     1.01     0.00    0.0
                  LinkCtrl LC6           lc  fpga3     1.00     0.00    0.0
                  LCCPUCtrl LC6         lc  fpga4     1.03     0.00    0.0
                  ROMMONB LC6           lc  rommon    1.29     0.00    0.0
-----
A9K-1x100GE-SE  Can Bus Ctrl (CBC) LC4   lc  cbc      21.108    0.00    0.1
                  DB IO FPGA1           lc  cpld1     1.03     0.00    0.0
                  MB CPUCtrl            lc  fpga2     1.08     0.00    0.0
                  PortCtrl              lc  fpga3     1.05     0.00    0.0
                  Imux                  lc  fpga4     1.01     0.00    0.0
                  Emux                  lc  fpga5     1.03     0.00    0.0
                  100GIGMAC            lc  fpga6     38.00    0.00    0.0
                  ROMMONB LC4          lc  rommon    1.29     0.00    0.0
-----
A9K-1x100GE-TR  Can Bus Ctrl (CBC) LC4   lc  cbc      21.108    0.00    0.1
                  DB IO FPGA1           lc  cpld1     1.03     0.00    0.0
                  MB CPUCtrl            lc  fpga2     1.08     0.00    0.0
                  PortCtrl              lc  fpga3     1.05     0.00    0.0
                  Imux                  lc  fpga4     1.01     0.00    0.0
                  Emux                  lc  fpga5     1.03     0.00    0.0
                  100GIGMAC            lc  fpga6     38.00    0.00    0.0
                  ROMMONB LC4          lc  rommon    1.29     0.00    0.0

```

```

-----
ASR9001-LC          Can Bus Ctrl (CBC) IMLC    1c  cbc      23.114    0.00    0.1
                   DB CPUCtrl                1c  fpga2     1.17      0.00    0.0
                   EP Gambit                 1c  fpga3     0.08      0.00    0.0
                   MB CPUCtrl                1c  fpga4     2.07      0.00    0.0
                   EP Rogue                  1c  fpga6     1.06      0.00    0.0
                   EP Sage                   1c  fpga7     1.02      0.00    0.0
                   ROMMONB IM LC         1c  rommon    1.36      0.00    0.1
-----
ASR9001-LC-S       Can Bus Ctrl (CBC) IMLC    1c  cbc      23.114    0.00    0.1
                   DB CPUCtrl                1c  fpga2     1.17      0.00    0.0
                   EP Gambit                 1c  fpga3     0.08      0.00    0.0
                   MB CPUCtrl                1c  fpga4     2.07      0.00    0.0
                   EP Rogue                  1c  fpga6     1.06      0.00    0.0
                   EP Sage                   1c  fpga7     1.02      0.00    0.0
                   ROMMONB IM LC         1c  rommon    1.36      0.00    0.1
-----
A9K-ISM-100        Can Bus Ctrl (CBC) LC6     1c  cbc      18.06     0.00    0.1
                   CPUCtrl LC6                1c  cpld1     0.01      0.00    0.1
                   Maintenance LC6         1c  fpga2     2.13      0.00    0.1
                   Amistad LC6                1c  fpga1     0.33      0.00    0.20
                   ROMMONB LC6           1c  rommon    1.02      0.00    0.1
-----
A9K-RSP-3G         ClockCtrl0 RSP3           1c  fpga2     1.06      0.00    0.1
                   UTI RSP3                   1c  fpga3     4.09      0.00    0.1
                   CPUCtrl RSP3              1c  fpga1     0.09      0.00    0.1
                   ROMMONB RSP3            1c  rommon    0.70      0.00    0.1
-----
A9K-RSP-24G        ClockCtrl0 RSP3           1c  fpga2     1.06      0.00    0.1
                   UTI RSP3                   1c  fpga3     4.09      0.00    0.1
                   CPUCtrl RSP3              1c  fpga1     0.09      0.00    0.1
                   ROMMONB RSP3            1c  rommon    0.70      0.00    0.1
-----
SPA-4XT3/E3        SPA E3 Subrate FPGA       spa  fpga2     1.04      0.00    0.0
                   SPA T3 Subrate FPGA        spa  fpga3     1.04      0.00    0.0

```

show fpd package Command Output: Example

	SPA I/O FPGA	spa fpga1	1.01	0.00	0.0
	SPA ROMMON	spa rommon	2.12	0.00	0.0

SPA-4XCT3/DS0	SPA T3 Subrate FPGA	spa fpga2	0.11	0.00	0.100
	SPA T3 Subrate FPGA	spa fpga2	1.04	0.00	0.200
	SPA I/O FPGA	spa fpga1	2.08	0.00	0.100
	SPA ROMMON	spa rommon	2.12	0.00	0.100

SPA-1XCHSTM1/OC3	SPA T3 Subrate FPGA	spa fpga2	1.04	0.00	0.0
	SPA I/O FPGA	spa fpga1	1.08	0.00	0.0
	SPA ROMMON	spa rommon	2.12	0.00	0.0

SPA-24CHT1-CE-ATM	SPA T3 Subrate FPGA	spa fpga2	1.10	0.00	1.0
	SPA I/O FPGA	spa fpga1	2.32	0.00	1.0
	SPA ROMMON	spa rommon	1.03	0.00	1.0

SPA-2CHT3-CE-ATM	SPA T3 Subrate FPGA	spa fpga2	1.11	0.00	1.0
	SPA I/O FPGA	spa fpga1	2.22	0.00	1.0
	SPA ROMMON	spa rommon	1.04	0.00	1.0

SPA-1CHOC3-CE-ATM	SPA OC3 Subrate FPGA	spa fpga2	2.23	0.00	0.0
	SPA I/O FPGA	spa fpga1	2.23	0.00	2.0
	SPA ROMMON	spa rommon	1.04	0.00	0.0

SPA-1XCHOC48/DS3	SPA I/O FPGA	spa fpga2	1.00	0.00	0.49
	SPA I/O FPGA	spa fpga3	1.00	0.00	0.52
	SPA I/O FPGA	spa fpga1	1.36	0.00	0.49
	SPA ROMMON	spa rommon	2.02	0.00	0.49

SPA-2XCHOC12/DS0	SPA FPGA2 swv1.00	spa fpga2	1.00	0.00	0.0
	SPA FPGA swv1.36	spa fpga1	1.36	0.00	0.49
	SPA ROMMON swv2.2	spa rommon	2.02	0.00	0.49

A9K-MPA-20X1GE	EP I/O FPGA	spa fpga3	0.08	0.00	0.0

A9K-MPA-2X10GE	EP I/O FPGA	spa fpga6	1.06	0.00	0.0

A9K-MPA-4X10GE	EP I/O FPGA	spa fpga6	1.06	0.00	0.0


```

-----
A9K-MPA-2X40GE      EP Sage              spa  fpga7            1.03      0.00      0.0
-----
A9K-MPA-1X40GE      EP Sage              spa  fpga7            1.03      0.00      0.0
-----
A9K-MPA-8X10GE      EP I/O FPGA          spa  fpga8            0.07      0.00      0.0
-----
SPA-8XOC12-POS      SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.5
-----
SPA-8XCHT1/E1       SPA I/O FPGA          spa  fpga1            2.08      0.00      0.0
                        SPA ROMMON            spa  rommon           2.12      0.00      0.140
-----
SPA-OC192POS-XFP    SPA FPGA swv1.2 hww2 spa  fpga1            1.02      0.00      2.0
-----
SPA-2XOC48POS/RPR   SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.0
-----
SPA-4XOC48POS/RPR   SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.0
-----
SPA-8XOC3-POS       SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.5
-----
SPA-2XOC12-POS      SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.5
-----
SPA-4XOC12-POS      SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.5
-----
SPA-10X1GE-V2       SPA FPGA swv1.10     spa  fpga1            1.10      0.00      0.0
-----
SPA-5X1GE-V2        SPA FPGA swv1.10     spa  fpga1            1.10      0.00      0.0
-----
SPA-1X10GE-L-V2     SPA FPGA swv1.9      spa  fpga1            1.09      0.00      0.0
-----
SPA-4XOC3-POS-V2    SPA FPGA swv1.0      spa  fpga1            1.00      0.00      0.5
-----
SPA-1X10GE-WL-V2    SPA FPGA swv1.9      spa  fpga1            1.09      0.00      0.0
-----
SPA-1XOC3-ATM-V2    SPA FPGA swv1.2      spa  fpga1            2.02      0.00      0.0
-----
SPA-2XOC3-ATM-V2    SPA FPGA swv1.2      spa  fpga1            2.02      0.00      0.0
-----
SPA-3XOC3-ATM-V2    SPA FPGA swv1.2      spa  fpga1            2.02      0.00      0.0
-----
SPA-1XOC12-ATM-V2   SPA FPGA swv1.2      spa  fpga1            2.02      0.00      0.0
-----

```

This example shows the fpd details of the A9K-MOD400-SE:

```
RP/0/RP0/CPU0:router # show hw-module fpd location 0/2/CPU0
=====
Existing Field Programmable Devices
=====
Location      Card Type          HW          Current SW Upg/
=====      =
Version Type Subtype Inst  Version  Dng?
=====
0/2/CPU0     A9K-MOD400-SE     1.0        lc      cbc      0        39.05   No
                                           lc      rommon  0        8.32    No
                                           lc      fpga2   0        1.30    Yes
                                           lc      fsbl    0        1.19    Yes
                                           lc      lnxfw   0        1.20    Yes
                                           lc      fpga10  0        1.17    No
=====
```



Note In the **show fpd package** command output, the “subtype” column shows the FPDs that correspond with each SPA image. To upgrade a specific FPD with the **upgrade hw-module fpd** command, replace the *fpga-type* argument with the appropriate FPD from the “subtype” column, as shown in the following example:

```
RP/0/RP0/CPU0:router(admin)# upgrade hw-module fpd fpga2 location 0/3/1 reload
```

upgrade hw-module fpd Command Output: Example

Use the **upgrade hw-module fpd** command to upgrade the FPD image on a SPA, SIP or line card.

show platform Command Output: Example

Use the **show platform** command to verify that the SPA is up and running.