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Juniper Networks CTP2000 Circuit to Packet Platform

Upgrade to CTPOS 9.1R1

Juniper Networks, In.
1133 Innovation Way
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

 CTP2000 Hardware Documentation

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CTPOS 7.0R1 and Later Upgrade Kits

Because of the new features and hardware supported in CTPOS 7.0R1 and later, a direct code upgrade by means of an upgrade archive from earlier versions of CTPOS is not supported. This topic includes the procedures for performing an upgrade using an upgrade kit and for registering the upgrade. There are three upgrade kits, the use of which depends on whether you are using a PP310, PP332, or PP833 processor in your CTP2000 series device. Figure 1 on page 7 shows the front of the CPU that contains the PP310 processor and Figure 2 on page 7 shows the front of the CPU that contains the PP332 processor.

Figure 1: PP310 CPU
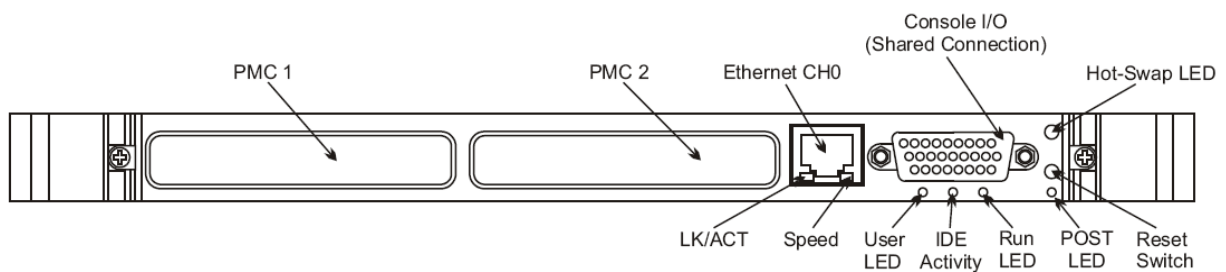
Figure 2: PP332 CPU

NOTE: You must register your upgrade and validate it with Juniper Networks. If your upgrade kit includes a new RTM, you must also register the RTM. After you register the upgrade and, if included, the RTM, allow up to 45 days for restocking of the new hardware configuration to support any Next Day or Same Day contracts. Juniper Networks will provide Best Effort support until restocking of the converted product is complete. After the registration process is completed and the new configuration is updated in the depot, you will have access to the software and tools that support your device.

NOTE: The use of the upgrade kit is supported only on CTP2000 Series products.

⚠️ **CAUTION:** You cannot use CTPView to perform a system save of a node running a version of CTPOS before 7.0R1 and restore the system to a node running 7.0R1 and later. CTPView cannot be used to migrate from pre-7.0R1 to 7.0R1 and later. *System save/restore between different CTPOS versions is not supported.*

PP310 Upgrade Kit - CTP2000-RAM-RTM-UPG

The PP310 upgrade kit contains:

- 4-GB CTPOS 7.0R1 or later upgrade CompactFlash card
- USB to CompactFlash adapter
- 1-GB non-ECC RAM module
- Rear transition module (RTM)
- Jumper (for BIOS reset)

PP332 Upgrade Kit - CTP2000-RAM-UPG

The PP332 upgrade kit contains:

- 4-GB CTPOS 7.0R1 upgrade CompactFlash card
- USB to CompactFlash adapter
- 1-GB ECC RAM module

NOTE: The 4-GB upgrade CompactFlash card and USB to CompactFlash adapters are the same in both kits. Whereas the PP310 and PP332 use the same model RTM after you complete the upgrade, the RTMs are jumpered differently for the two processors. Switching RTMs from a PP310 to a PP332 or vice versa without changing the jumper settings can damage the CPU.

2
CHAPTER

Upgrading the CTP2000 Series Device to CTPOS 7.x or Later

Upgrading with the PP310 Upgrade Kit

1. Power down the system through either the menu or CTPView.

2. Remove the power cord.

3. Remove the RTM from the chassis and remove the old CompactFlash card from the RTM. See "Installing or Removing a CTP2000 Series CompactFlash Card" on page 33.

4. Confirm that the jumper settings on the new RTM provided in the upgrade kit conform to PP310 jumper settings, as shown in Figure 3 on page 11.

Figure 3: RTM Default Jumper Settings
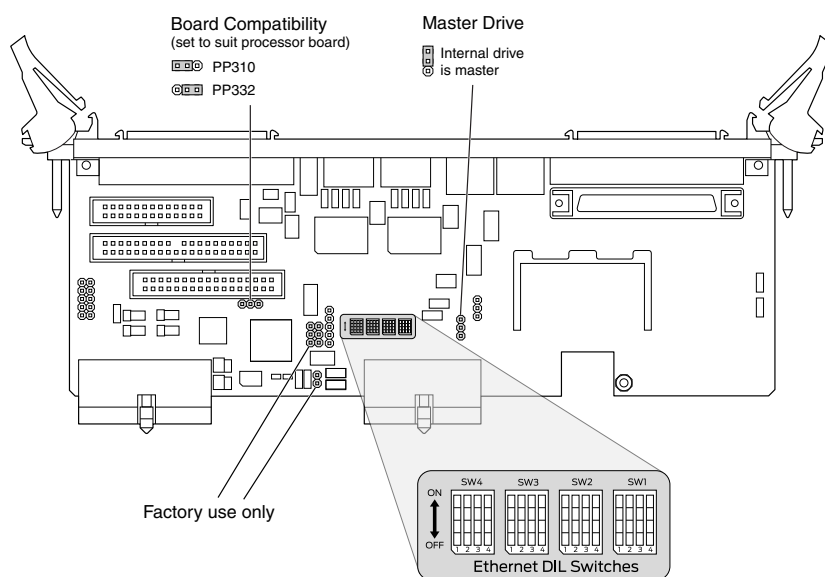
5. Confirm that Ethernet dip switches SW1 and SW2 are set to ON, and that SW3 and SW 4 are set to OFF (see Figure 3 on page 11).

6. Install the 4-GB CompactFlash card from the upgrade kit in the new RTM and install the new RTM in the chassis. See "Installing or Removing a CTP2000 Series CompactFlash Card" on page 33.

7. Attach a terminal server or similar device to the serial console port, COM2, on the RTM. This device will be used to interact with the script that runs when the upgrade CompactFlash card is booted.

8. Remove the CPU card from the chassis, and replace the memory module on the CPU card with that from the upgrade kit. Install the memory module shipped with the kit only after you have finished these tasks. See "Installing or Replacing CTP2000 DRAM Memory Modules in the PP310 or PP332 CPU" on page 29 and *Upgrading CTP2000 Series Components for Memory Upgrades*.

9. Reset the BIOS to factory defaults. See "Restoring BIOS Defaults for the CTPOS 7.0R1 and Later Upgrade (PP310)" on page 31.

10. Reconnect all Ethernet cables.

11. Replace the power cord.

12. Power on the system and follow the procedure "Using the Upgrade CompactFlash Card" on page 13 to respond to the instructions that appear on the serial console. You have the option of conserving information from a prior release of the operating system or setting the device for firstboot with CTPOS 7.0R1 and later.

> **NOTE:** The system may go through multiple reboots during this process. The BIOS, FPGAs, and the firmware on the cards may be updated. If the power is removed during these upgrades, the cards may become unusable. Please ensure that the process continues until completion. Failure to do so may render the system unusable.

Upgrading with the PP332 Upgrade Kit

1. Power down the system through either the menu or CTPView.

2. Remove the power cord.

3. Remove the RTM from the chassis and remove the old CompactFlash card from the RTM. See "Installing or Removing a CTP2000 Series CompactFlash Card" on page 33.

4. Install the 4-GB compact flash from the upgrade kit in the RTM and reinstall the RTM in the chassis. See "Installing or Removing a CTP2000 Series CompactFlash Card" on page 33.

5. Attach a terminal server or similar device to the serial console port, COM2, on the RTM. This device will be used to interact with the script that runs when the upgrade CompactFlash card is booted.

6. Remove the CPU card from the chassis, and replace the memory module on the CPU card with that from the upgrade kit. Install the memory module shipped with the kit only after you have finished these tasks. Reinstall the CPU module in the chassis when finished. See "Installing or Replacing CTP2000 DRAM Memory Modules in the PP310 or PP332 CPU" on page 29 and *Upgrading CTP2000 Series Components for Memory Upgrades*.

7. Reconnect all Ethernet cables.

8. Replace the power cord.

9. Power on the system and follow the procedure "Using the Upgrade CompactFlash Card" on page 13 to respond to the instructions that appear on the serial console.

> **NOTE:** The system may go through multiple reboots during this process. The BIOS, FPGAs, and the firmware on the cards may be updated. If the power is removed during these upgrades, the cards may become unusable. Please ensure that the process continues until completion. Failure to do so may render the system unusable.

Using the Upgrade CompactFlash Card

IN THIS SECTION

The 4-GB CompactFlash script shipped in the upgrade kit can be used to either (1) migrate a system running a previous operating system to CTPOS 7.0R1 and later, or (2) prepare a system for firstboot in CTPOS 7.0R1 or later.

The CompactFlash script runs an application that checks for the proper BIOS and upgrades the BIOS if necessary. The application checks for proper FPGAs on the cards and daughter cards installed and upgrades them as necessary.

When used to prepare a system for firstboot into CTPOS 7.0R1 or later, all cards and daughter cards intended to be run on the system should be installed before booting the flash for the first time.

If the system is migrating from an old CompactFlash card running CTPOS 4.6R7 or 5.4R3 through 5.4R6, the application transfers all necessary information from the old CompactFlash card to the new CompactFlash card and leaves the system in a state with all configured and activated circuits running.

Use one of the following procedures after completing either "Upgrading with the PP310 Upgrade Kit" on page 11 or "Upgrading with the PP332 Upgrade Kit" on page 12.

Migrating from a Previous Operating System

You should see the following upgrade script output when you complete the steps described in . The upgrade script output produced when you complete the steps described in is very similar, and you must respond to the same prompts.

```
Gathering system information.
* Please wait this could take up to 45 seconds.
Found:
 System type      PP310
 Bios             2.21
 Memory installed 1024 MB
 Slot 0:    Type T1E1
    FPGA 0xea  * needs 0xea
 Slot 1:    Type Serial
    FPGA 0x73
 Slot 2:    Type FXS
    FPGA 0x5010150
 ID restored  No


Hit return to continue...


This application will prepare the installed hardware for CTPOS 6.0R1. It will
upgrade FPGAs if necessary, upgrade the bios if necessary, and can migrate
the ID of a system running CTPOS 4.6R7 or 5.4R3.

This application will reboot the system multiple times. Please continue the
process through to completion. Failure to do so can leave the system in an
unknown state.

Hit return to continue...

The bios configuration needs to be changed.
Hit return to setup the bios configuration and reboot.
```

> NOTE: The set and reboot for the BIOS appears only for the PP310 processor.
>
> For the PP332 processor, the BIOS version is 2.14 and a BIOS upgrade is not required.

1. Press Enter. For the PP310, the BIOS configuration is updated and the device reboots. The following upgrade script output is displayed for the PP310. The upgrade script output for the PP332 is very similar, and you must respond to the same prompts.

```
Gathering system information.
* Please wait this could take up to 45 seconds.
Found:
 System type      PP310
 Bios             2.21
 Memory installed 1024 MB
 Slot 0:   Type T1E1
     FPGA 0xea  * needs 0xea
 Slot 1:   Type Serial
     FPGA 0x73
 Slot 2:   Type FXS
     FPGA 0x5010150
 ID restored  No

Hit return to continue...

Do you want to restore the ID from a CTPOS 4.6R7 or 5.4R3 system?
```

> **NOTE:** For the PP332 processor, the BIOS version is 2.14 and a BIOS upgrade is not required.

2. Enter **y**. The following output is displayed:

```
Please insert the old flash into the compact flash to USB
adapter and plug the adapter into the usb slot on the CPU.

Hit return when you are finished.
```

3. Insert the old (256 MB) CompactFlash card into the CompactFlash adapter (see Figure 4 on page 17).

Figure 4: CompactFlash Adapter with CompactFlash Card Inserted

USB to CompactFlash adapter

256 MB upgrade CompactFlash card

CompactFlash

256*MB*

g015410
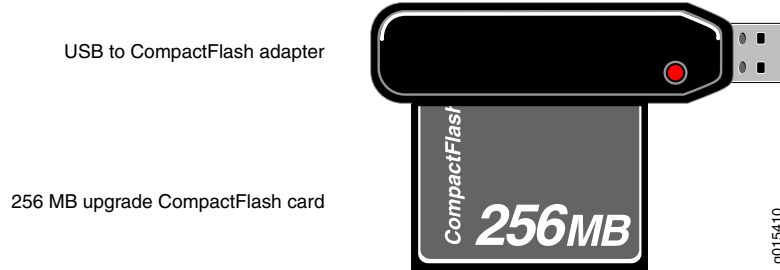
4. Connect the adapter to the CTP2000 USB port.

5. Press Enter to indicate that you are finished inserting the CompactFlash card into the adapter and connecting the adapter. Follow the onscreen instructions.

```
Got old CTPOS version: 4.6R7


Gathering old system information.


Please remove the old flash, hit return when finished.


Migrating system ID to new flash.
* The system will reboot when finished.


INIT: Sending processes the TERM signal
```

```
Gathering system information.
* Please wait this could take up to 45 seconds.
Found:
 System type      PP310
 Bios             2.21
 Memory installed 1024 MB
 Slot 0:   Type T1E1
    FPGA 0xea  * needs 0xea
 Slot 1:   Type Serial
    FPGA 0x73
 Slot 2:   Type FXS
    FPGA 0x5010150
 ID restored  Yes


Hit return to continue...
```

```
Restarting syslog.

. done.
Upgrading T1E1 card in slot 0 to FPGA rev 0xea.

Upgrading FPGA on card 0. Please wait for completion.

. done.
Upgrading FPGA on card 0 complete.

Upgrading Winmon. Please wait for completion.

..... . done.
Upgrading Winmon complete.

Upgrading Daughter cards. Please wait for completion.

. done.
Upgrading Daughter cards complete.




**** ****
Finished preparing system for running CTPOS 6.0R1.
Finished migrating ID from CTPOS . Reboot required.
**** ****

**** ****
Please verify that all circuits and system setting are
correct after the system reboots.
**** ****
Hit return to reboot the system.
```

> **NOTE:** For the PP332 processor, the BIOS version is 2.14 and a BIOS upgrade is not required.

6. Press Enter to reboot the system.

Preparing a System for Firstboot Using CTPOS 7.0R1 and Later

You should see the following upgrade script output when you complete the steps described in "Upgrading with the PP310 Upgrade Kit" on page 11. The upgrade script output produced when you complete the steps described in "Upgrading with the PP332 Upgrade Kit" on page 12 is very similar, and you must respond to the same prompts.

```
Gathering system information.
* Please wait this could take up to 45 seconds.
Found:
 System type      PP310
 Bios             2.21
 Memory installed 1024 MB
 Slot 0:    Type T1E1
     FPGA 0xea  * needs 0xea
 Slot 1:    Type Serial
     FPGA 0x73
 Slot 2:    Type FXS
     FPGA 0x5010150
 ID restored  No


Hit return to continue...



This application will prepare the installed hardware for CTPOS 6.0R1. It will
upgrade FPGAs if necessary, upgrade the BIOS if necessary, and can migrate
the ID of a system running CTPOS 4.6R7 or 5.4R3.

This application will reboot the system multiple times. Please continue the
process through to completion. Failure to do so can leave the system in an
unknown state.
Hit return to continue...

The BIOS configuration needs to be changed.
Hit return to setup the BIOS configuration and reboot.
```

> **NOTE:** The set and reboot for the BIOS appears only for the PP310 processor.
>
> For the PP332 processor, the BIOS version is 2.14 and a BIOS upgrade is not required.

1. Press Enter. The BIOS configuration is updated, the device reboots, and the following output is displayed:

```
Gathering system information.
* Please wait this could take up to 45 seconds.
Found:
 System type      PP310
 Bios             2.21
 Memory installed 1024 MB
 Slot 0:    Type T1E1
     FPGA 0xea  * needs 0xea
 Slot 1:    Type Serial
     FPGA 0x73
 Slot 2:    Type FXS
     FPGA 0x5010150
 ID restored  No


Hit return to continue...
```

> **NOTE:** For the PP332 processor, the BIOS version is 2.14 and a BIOS upgrade is not required.

2. Reboot the device. The following output is displayed:

3. Enter **n** when you receive the following prompt (PP310 only):

```
Do you want to restore the ID from a CTPOS 4.6R7 or 5.4R3 system? [n]
```

The upgrade continues to completion, displaying the following information:

```
Upgrading T1E1 card in slot 0 to FPGA rev 0xea.
Upgrading FPGA on card 0. Please wait for completion.

. done.
Upgrading FPGA on card 0 complete.


Upgrading Winmon. Please wait for completion.
```

```
..... . done.
Upgrading Winmon complete.


Upgrading Daughter cards. Please wait for completion.

. done.
Upgrading Daughter cards complete.



**** ****
Finished preparing system for running CTPOS 6.0R1.
The system needs to be powered down.
**** ****
Hit return to power down the system.
```

4. Press Enter to power off the system.

Creating Dual Image Partitioning and Upgrading One of the Images on CTP Node (CTP Menu)

CTPOS 9.0R1 and later releases support creating dual image partitioning on the CompactFlash card. Dual image on the CompactFlash contains two logical images, where the first image consists first five partitions (1,5,6,7,8) and the second image consists five partitions (1,9,10,11,12). The first partition (bootable) is common to both images. You can upgrade any one of the images anytime after creating the dual image partitioning.

The following are the prerequisites to create dual image partitioning on the CompactFlash card:

- Use Secure Copy Protocol (SCP) to copy the **dual_image_upgrade.sh** script to the **/tmp** directory on the CTP node.

- Change the **dual_image_upgrade.sh** script permission to 755 by executing **chmod 755 /tmp/dual_image_upgrade.sh**. Otherwise, the permission will be denied.

- Run the **dual_image_upgrade.sh** script as root.

> **NOTE:** The dual image upgrade feature is only supported on the CTP150 and CTP2000 (only PP332 and PP833 processors are supported, PP310 is not supported) platforms.
>
> The dual image upgrade feature is supported on CTP 7.1R3, 7.2R1, and 7.3x releases. If you want to upgrade an older CTP, then you need to first upgrade to one of these releases.

To create dual image partitioning on the CompactFlash card, execute the **./dual_image_upgrade.sh -y** script, where the **-y** option is used to start the dual image upgrade in non-interactive mode.

```
[root@ctp_71:/tmp 3]# ./dual_image_upgrade.sh -y
Unmounting all partitions of /dev/sda
mounting tmpfs at /mnt/ramdisk[  OK  ]
================================================================
No. of partitions on /dev/sda    : 5
CTPOS installed on               : Image1 only
Running Image                    : Image1
(9.0R1-comp-190503-160652-load-190518-164510))


NOTE:
9.0R1-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.0R1 : Release Name
        comp-YYMMDD-HHMMSS : Root-FS/Kernel compile timestamp
        load-YYMMDD-HHMMSS : Image upgrade timestamp


Currently single partition exists on the Flash card
You can create Dual partitions which would have Dual Images
Dual Image on Flash has two logical images as :
        Image1 - consists Five partitions (1,5,6,7,8)
        Image2 - consists Five partitions (1,9,10,11,12)
        First partition(bootable) is common to both Image1 and Image2
You can only upgrade either images(Image1 or Image2) anytime
after creation of Dual Image partitions
================================================================
***Re-partition for dual image upgrade started***
***This may take few minutes***
Mounting Image1 to /mnt/ ...[  OK  ]
Checking flash partition Tarball sizes...
        /boot partition Tarball size         : 20472 K
        /flash_root partition Tarball size   : 123375 K
        /flash_home partition Tarball size   : 3 K
        /flash_var partition Tarball size    : 86 K
        /flash_local partition Tarball size  : 6821 K
```

```
Flash partion Tarball size      : 150757 K or 147 M
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
Free space on the system        : 7632 M
Backing up flash partions to ramdisk...
        /boot [  OK  ]
        /flash_root [  OK  ]
        /flash_home [  OK  ]
        /flash_var [  OK  ]
        /flash_local [  OK  ]
********** Re-partitioning flash for dual image **********
Creating new flash partitions... [  OK  ]
Creating ext3 file system on new partitions...
        CTP_BOOT...[  OK  ]
        CTP_ROOT...[  OK  ]
        CTP_HOME...[  OK  ]
        CTP_VAR...[  OK  ]
        CTP_LOCAL...[  OK  ]
        CTP_ROOT_2...[  OK  ]
        CTP_HOME_2...[  OK  ]
        CTP_VAR_2...[  OK  ]
        CTP_LOCAL_2...[  OK  ]
***Re-partition of flash card complete ***
Mounting Image1 to /mnt/ ...[  OK  ]
Restoring Image1 archives to new flash partions ...
        boot.tgz to /boot  [  OK  ]
        flash_root.tgz to /flash_root  [  OK  ]
        flash_home.tgz to /flash_home  [  OK  ]
        flash_var.tgz to /flash_var  [  OK  ]
        flash_local.tgz to /flash_local  [  OK  ]
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
Mounting Image1 to / ...[  OK  ]
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
  RAM disk /mnt/ramdisk has been created on RAM(total-8044 MB)
  You must now transfer your flash image .tgz file to /mnt/ramdisk,
  and then re-execute this script to complete the installation.
  NOTE: There is 7629 MB available space in /mnt/ramdisk(RAM)
  Please enter the size of your flash image tarball in MB: 147
  This image will fit in the available RAM.
  Please proceed with transfer.
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Exiting...
```

This creates the **/mnt/ramdisk** directory on RAM memory. You must now transfer your image archive **CTPOS_9.0R1_partitions.tgz** file to the **/mnt/ramdisk** directory, and then you have to execute this script again to complete the installation.

> **NOTE:** Ensure that you have enough memory to store the image archive **CTPOS_9.0R1_partitions.tgz** file in **/mnt/ramdisk** (RAM). If the **CTPOS_9.0R1_partitions.tgz** file size is larger than the available RAM memory, you should not continue with this image upgrade process. Contact JTAC for assistance.

To upgrade the dual image using the CTP Menu:

1. Download the image archive (CTPOS_9.0R1_partitions.tgz) file and copy it to the **/mnt/ramdisk** directory.

2. Execute the **./dual_image_upgrade.sh** script again for dual image upgrade.

```
[root@ctp_71:/tmp 6]# ./dual_image_upgrade.sh -y
Unmounting all partitions of /dev/sda
=============================================================
No. of partitions on /dev/sda    : 9
CTPOS installed on               : Image1 only
Running Image                    : Image1
(9.0R1-comp-190503-160652-load-190518-164510))
Non-Running Image                : Image2 (Empty)

NOTE:
9.0R1-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.0R1 : Release Name
        comp-YYMMDD-HHMMSS : Root-FS/Kernel compile timestamp
        load-YYMMDD-HHMMSS : Image upgrade timestamp
Dual Image on Flash has two logical images :
        Image1 - consists Five partitions (1,5,6,7,8)
        Image2 - consists Five partitions (1,9,10,11,12)
        First partition(bootable) is common to both Image1 and Image2
=============================================================
CTPOS_9.0R1_partitions.tgz Image archive file found at /mnt/ramdisk
Verifying CTPOS_9.0R1_partitions.tgz archive ...
CTPOS_9.0R1_partitions.tgz md5sum - Matched
```

```
!!!  There is 7484 MB free space available on /mnt/ramdisk(RAM)
***Upgrading Image2 partition with CTPOS_9.0R1_partitions.tgz ***
Mounting Image2 to /mnt/ ...[  OK  ]
Extracting CTPOS_9.0R1_partitions.tgz to Image2 ...
        flash_root.tgz to /mnt/flash_root [  OK  ]
        flash_home.tgz to /mnt/flash_home [  OK  ]
        flash_var.tgz to /mnt/flash_var [  OK  ]
        flash_local.tgz to /mnt/flash_local [  OK  ]
        flash_boot.tgz to /boot [  OK  ]
Unmounting Image2...[  OK  ]
Updating grub conf files... [  OK  ]
Unmounting all partitions of /dev/sda
*** ***
Upgrading Image2 partition with CTPOS_9.0R1_partitions.tgz complete
The system needs to be rebooted
*** ***
```

3. Enter **y** to reboot the system automatically.

```
Do you want to reboot system now [y/n]?: y
Going for system[root@ctp_71:/tmp 7]# Stopping CTP daemon         [  OK  ]
```

This successfully upgrades the second image partition with the image archive
CTPOS_9.0R1_partitions.tgz file. You can now see dual entries in the GRUB menu, and you can select
any one of the images from the GRUB menu during the bootup process.

> **NOTE:** If the dual image upgrade fails multiple times, reboot the CTP node and then try upgrading
> the dual image again.

You can change the primary boot option for the dual image by selecting the **7) Dual Image Boot Operations**
option from the CTP Main Menu on the CTPOS 9.0R1 release.

> **NOTE:** CTPOS 7.x release does not have the **7) Dual Image Boot Operations** option in the CTP
> Main Menu. However, you can select or change the booting image from the GRUB menu during
> the CTPOS bootup process.

To configure dual image boot operations:

1. Select **7) Dual Image Boot Operations** from the **CTP Main Menu**.

```
========================================================================
= (ctp_95 01/29/19 00:56:24  UTC) | CTP Main Menu
========================================================================


Please select a number from the following list:
-----------------------------------
0) Exit to Shell
1) Bundle Operations
2) Node Synchronization
3) Node Summary
4) Node Diagnostics
5) Node Operations
6) Save Running Database to Flash
7) Dual Image Boot Operations
------------ Your choice [3]: 7
```

2. Select **1) Configure Primary Boot option for Dual Image** from the **Dual Image Boot Operations** menu and then enter **y** to confirm the change.

```
========================================================================
= (ctp_95 01/29/19 00:56:26  UTC) | Dual Image Boot Operations
========================================================================


Please select a number from the following list:
-----------------------------------
0) Back to Previous Menu
1) Configure Primary Boot option for Dual Image
------------ Your choice [0]: 1


***
*** You are about to modify a system parameter that will require
*** a system reboot when complete.
***
*** If you decide to continue, the system will automatically
*** reboot upon leaving these menus.
***
*** Note: If these parameters are changed incorrectly,
***       system may not be reachable via the network
***       after the system reboots.
***
```

```
        Are you sure? y[n]: y
Primary Boot Image   : 9.0R1-comp-xxxx-xxxx
Secondary Boot Image : 2.4.29
```

3. Enter **y** to set the existing secondary boot image as the primary boot image.

```
Set Primary Boot to 2.4.29 (y/n)? [n] y
*****************************************************
*** Primary Boot: changed to 2.4.29
```

4. Select **0) Back to Previous Menu** from the **Dual Image Boot Operations** menu and then enter **y** to confirm the system reboot.

```
=========================================================================
= (ctp_95 01/29/19 00:56:32  UTC) | Dual Image Boot Operations
=========================================================================

Please select a number from the following list:
------------------------------------
0) Back to Previous Menu
1) Configure Primary Boot option for Dual Image
------------ Your choice [1]: 0

***
*** The system will reboot now
***
        Are you sure? y[n]: y
Waiting for system to reboot...
```

Registering Your Upgrade

To register your upgrade:

1. Locate the Access Install Base web page at
   https://www.juniper.net/customers/csc/management/updateinstallbase.jsp

2. Enter the following required information:

- System Model Number

- System Serial Number

- Support/Level Service Part Number

- Interface Card/Module Model Number—Include for replacement RTM

- Interface Card/Module Serial Number—Include for replacement RTM

- Support/Level Service Part Number

- Company Name

- Site Address

- Where Equipment Will Be Moved

- Authorized Contract Name, Phone, and Email

- Name of the Upgrade—Enter the name of your upgrade kit: CTP2000-RAM-RTM-UPG or CTP2000-RAM-UPG

3. Click **Submit**.

Related Procedures

IN THIS SECTION

The following procedures are referenced by the upgrade procedures.

Servicing the CTP2000 CPU

This topic describes how to remove the CTP2000 CPU from the chassis for service or upgrade, and how to return the CPU to the chassis. Follow proper antistatic procedures when you perform the following procedures.

To remove the CPU from the CTP2000 chassis:

1. Ground yourself by using an antistatic wrist strap or other device, and connect it to one of the ESD grounding jacks, if available, or another grounding device.

2. Power off the unit.

3. If an Ethernet cable is connected to the CPU (PP310 only), disconnect the cable.

4. Using a Phillips screwdriver, loosen each of the retaining screws on the outside edge of the CPU until the ejector that the screw secures is released.

5. Use the ejectors to remove the card from the chassis.

To return the CPU to the chassis:

1. Guide the CPU into the chassis by placing it between the guides of the slot and pushing the module until it stops.

   The module stops sliding when the ejectors make contact with the chassis.

2. Tighten each of the retaining screws on the outside edge of the CPU.

3. If an Ethernet cable was connected to the CPU (PP310 only), reconnect the cable.

Installing or Replacing CTP2000 DRAM Memory Modules in the PP310 or PP332 CPU

The PP310 accepts standard 200-pin DDR SODIMM modules fitted with 2.5V PC2100 DDR SDRAM without ECC. ECC is supported by devices soldered onto the board. Two sockets are provided that can accommodate SODIMMs of 512 MB or 1 GB capacities.

The PP332 accepts standard 200-pin DDR SODIMM modules fitted with 2.5V PC2100 or PC2700 DDR SDRAM. Both 64-bit non-ECC SODIMM modules and 72-bit ECC SODIMM modules are supported. If ECC is required, then ECC modules must be fitted. Two sockets are provided that can accommodate modules up to 1 GB capacity each

When fitting only one SODIMM (for either CPU) this must be in the SODIMM #1 position.

To install or replace a memory module in the PP310 CPU:

1. Ground yourself by using an antistatic wrist strap or other device, and connect it to one of the ESD grounding jacks, if available, or another grounding device.

2. Remove the new memory module from its antistatic bag.

3. Remove the CPU board from the CTP2000 chassis. See "Servicing the CTP2000 CPU" on page 29.

4. To remove a memory module:

   - Release the memory module by using your thumb to raise the end of the memory module to the angle shown in Figure 5 on page 31.

     NOTE: Figure 5 on page 31 shows the PP310 CPU. The memory module is removed and replaced in the same manner for the PP332 CPU.

   - Hold the memory module between your thumb and forefinger and gently pull it out of the socket.

Figure 5: DRAM Memory Module Replacement — PP310
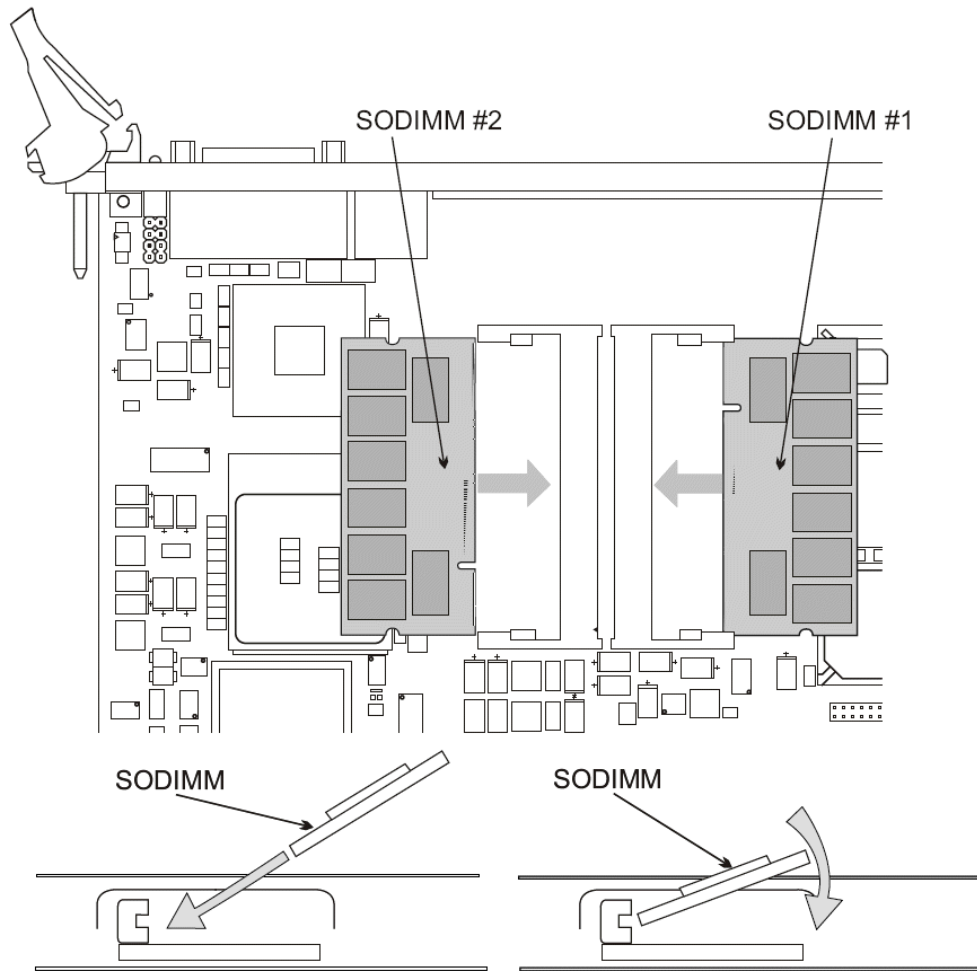

5. To insert the new memory module:

   - Hold the module between your thumb and forefinger and insert one end into the socket at the angle shown in Figure 5 on page 31.

   - Lower the free end of the module until it snaps into place.

6. Return the CPU to the chassis and secure it in place. See "Servicing the CTP2000 CPU" on page 29.

Restoring BIOS Defaults for the CTPOS 7.0R1 and Later Upgrade (PP310)

You must restore default BIOS settings (stored in CMOS) during the CTPOS 7.0R1 upgrade process for the PP310. Refer to Figure 6 on page 32 when performing the following procedure.

Figure 6: Jumper Setting for Restoring BIOS Defaults
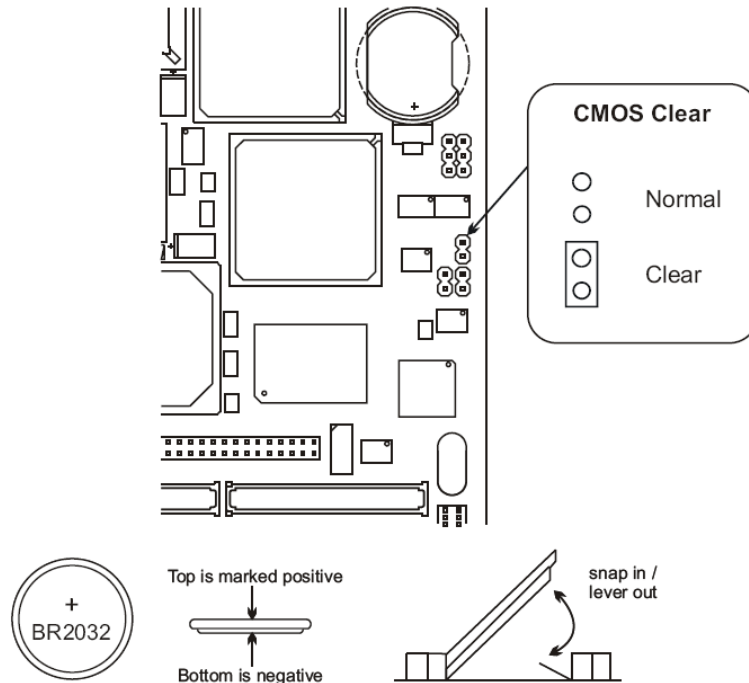
To restore default BIOS settings:

1. Remove the CPU from the CTP2000 device chassis. See "Servicing the CTP2000 CPU" on page 29.

2. Locate the BIOS reset pins, which are shown as two black circles inside a figure 8 and captioned as CMOS Clear.

   NOTE: The two BIOS reset pins are the only reset pins that are used in this procedure.

3. Attach the BIOS reset jumper included in the CTP2000 upgrade kit to the BIOS reset pins in order to short them together.

4. Insert the CPU into the device. See "Servicing the CTP2000 CPU" on page 29.

5. Apply power to the device for 10 seconds.

6. Power off the device.

7. Remove the CPU from the chassis.

8. Remove the BIOS reset jumper so that the BIOS reset pins are no longer shorted together.

9. Insert the CPU into the device. When you power on the device, the default BIOS settings will be in effect.

## Installing or Removing a CTP2000 Series CompactFlash Card

On the CTP2000 series devices with the new PP833 processor, the CompactFlash card is installed on the processor itself (which may be located under an installed PMC card), which prevents insertion or removal of the CompactFlash card until the PMC card is removed. On the CTP2000 series devices with the PP310 and PP332 processors, the CompactFlash card is installed on the processor rear transition module (RTM). Some CTP devices may ship with a CompactFlash card already installed.

To remove or install the CompactFlash card for the CTP2000 series with the new PP833 processor (see):

1. Power off the unit.

2. If installed, remove the PP833 PMC card by unscrewing the retaining screws and pushing the extractors outward with the latching buttons depressed.

3. You can then remove or install the CompactFlash card in the flash socket.

4. If being used, reinstall the PP833 PMC card into the chassis, and secure the retaining screws.

Figure 7: Installing CompactFlash on the PP833 processor
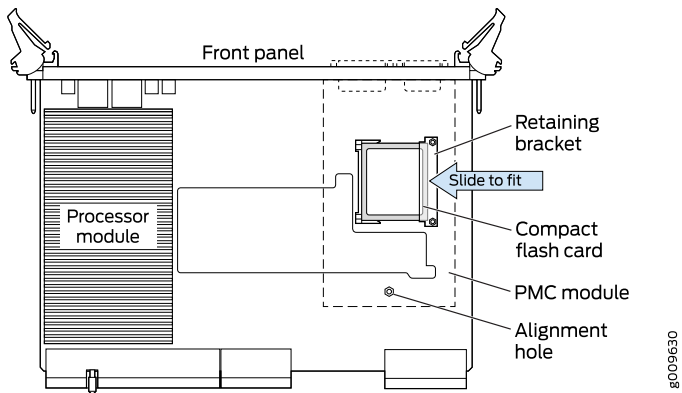
To remove or install the CompactFlash card for the CTP2000 series with the PP310 and PP332 processors (see):

1. Power off the unit.

2. Remove the processor RTM by unscrewing the retaining screws and pushing the extractors outward with the latching buttons depressed.

3. Remove the CompactFlash card retaining screw and nut. You can then remove or install the CompactFlash card in the flash socket (see).

4. Reinstall the CompactFlash card retaining screw and nut.

5. Reinstall the processor RTM into the chassis, and secure the retaining screws.

Figure 8: CompactFlash on the RTM

CompactFlash locking screw

CompactFlash card

g015386
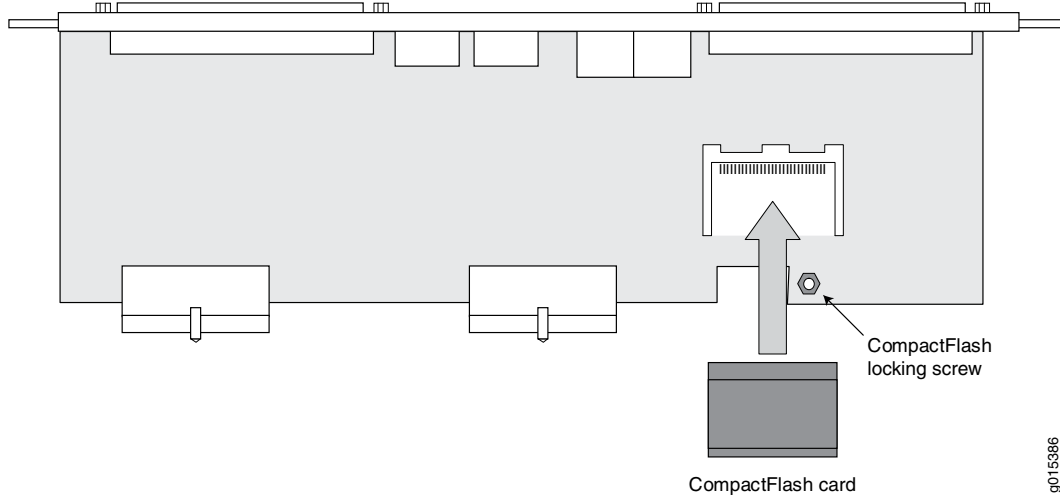
SEE ALSO

Installing a CTP Interface Module, Processor Module, or Clock Module