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Juniper Networks CTP150, CTP151, and CTP2000 Circuit to Packet Platform

Upgrading to CTPOS 9.1R3.1 (Dual Image)

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CTP2000 Hardware Documentation
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CHAPTER 1

Upgrading to Dual Image on CTP150, CTP151, and CTP2000 series Devices

IN THIS CHAPTER

- Prerequisites for Dual Image Upgrade | 2
- Upgrading to Dual Image on CTP151 | 5
- Upgrading to Dual Image on CTP150 and CTP2000 Series Devices | 53

Starting from CTPOS and CTPView Release 9.1R3.1, you can install dual image of CTPOS 9.1R3.1 on CTP150, CTP151, and CTP2000 series devices. This topic describes the following upgrade procedures. Follow proper antistatic procedures throughout.

NOTE: CTPOS Release 9.1R3.1 supports CTP150, CTP151, and CTP2000 series devices.

Prerequisites for Dual Image Upgrade

Purpose

Before you upgrade to dual image, ensure that you meet the following broad level requirements.

Action

- **Dual upgrade requires having a console connection (and not SSH) to the device.**
- We recommend the following working USB models when you are upgrading from an USB.
  - LEXAR USB Flash Drive
  - UNIGEN PSK8000S1
- The dual image upgrade feature is supported on CTPOS 7.3Rx, 9.0R1, 9.1R1, and 9.1R2 releases. However, if you want to upgrade any earlier CTPOS versions to CTPOS 9.1R3.1, then you must **first** upgrade the

earlier versions to CTPOS 7.3R7-1 or CTPOS 7.3R8 on CTP150/2000 devices and to CTPOS 9.1R1 or 9.1R2 on CTP151 device.

- The dual image upgrade feature is supported on CTP 2000 (PP833 and PP332) and CTP 150 devices running CTPOS 7.3R7-1 or 7.3R8, or 9.0R1 releases. This feature is also supported on CTP 151 device running CTPOS 9.1Rx releases.
- Partition geometry will be different on the two CTP2000 category of platforms—PP833 and PP332. CTP150 platforms will have legacy bios supported partitions while CTP151 platforms will have UEFI partitions on the disk.

  The partitions geometry details on both category of platforms are:

Table 1: Legacy Bios Supported Platforms–CTP2000 (PP833, PP332), CTP150

Label	Size	Type
CTP_BOOT	100M	Ext3
CTP_ROOT_1	1400M	Ext3
CTP_HOME_1	50M	Ext3
CTP_VAR_1	50M	Ext3
CTP_LOCAL_1	400M	Ext3
CTP_ROOT_2	1400M	Ext3
CTP_HOME_2	50M	Ext3
CTP_VAR_2	50M	Ext3
CTP_LOCAL_2	400M	Ext3

Following partitions will be created on CTP151 for dual image and first two partitions will be common for both images. The first partition (BIOS Type) will have 1M size and will have no label name. This partition is required for supporting dual boot feature (legacy Bios + UEFI boot).

Table 2: b. UEFI Supported Platforms–CTP151

Label	Size	Type
	1M	BIOS
CTP_EFI	100M	EFI
CTP_ROOT_1	2G	Ext4

Table 2: b. UEFI Supported Platforms–CTP151 *(continued)*

Label	Size	Type
CTP_BOOT_1	100M	Ext4
CTP_HOME_1	100M	Ext4
CTP_VAR_1	100M	Ext4
CTP_LOCAL_1	670M	Ext4
CTP_ROOT_2	2G	Ext4
CTP_BOOT_2	100M	Ext4
CTP_HOME_2	100M	Ext4
CTP_VAR_2	100M	Ext4
CTP_LOCAL_2	100M	Ext4
Total Size	670M	

- Following files will be available in CTPOS 9.1R3 Release to install the dual image:

File Name	Purpose
acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz	Dual image upgrade archive file for Legacy BIOS platforms (CTP150, PP332(02), and PP833(03)) running 9.0x image
acorn_310_dual_image_upgrade_ctp151_211221.tgz	Dual image upgrade archive file for UEFI platforms (CTP 151) running 9.1x image
acorn_429_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz	Dual image upgrade archive file for Legacy BIOS platforms (CTP150, PP332 & PP833) running 7.x image
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz	Image partitions archive file for CTP 150, PP833 and PP332. This file needs to be copied in /mnt/ramdisk during later execution of dual upgrade process as suggested by logs.

File Name	Purpose
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz	Image partitions archive file for CTP 151. This file needs to be copied in /mnt/ramdisk during later execution of dual upgrade process as suggested by logs.
ctpos_usb_install_9.1R3-1_ctp150_ctp2k-02_-03_211221.img	USB install image file for CTP 150 and PP833 systems. **NOTE:** This image is not supported on PP332 system.
ctpos_usb_install_9.1R3-1_ctp151_211221.img **NOTE:** This file is provided as a compressed file (.gz) which was compressed using gzip. Instructions on how to uncompress it are included in the "Installing Dual Image on CTP151 from USB" section below.	USB install image files for CTP 151 systems.

Upgrading to Dual Image on CTP151

You can upgrade to CTPOS 9.1R3.1 on a CTP151 device through three different interface methods:

1. CLI or manual
2. USB
3. CTPView

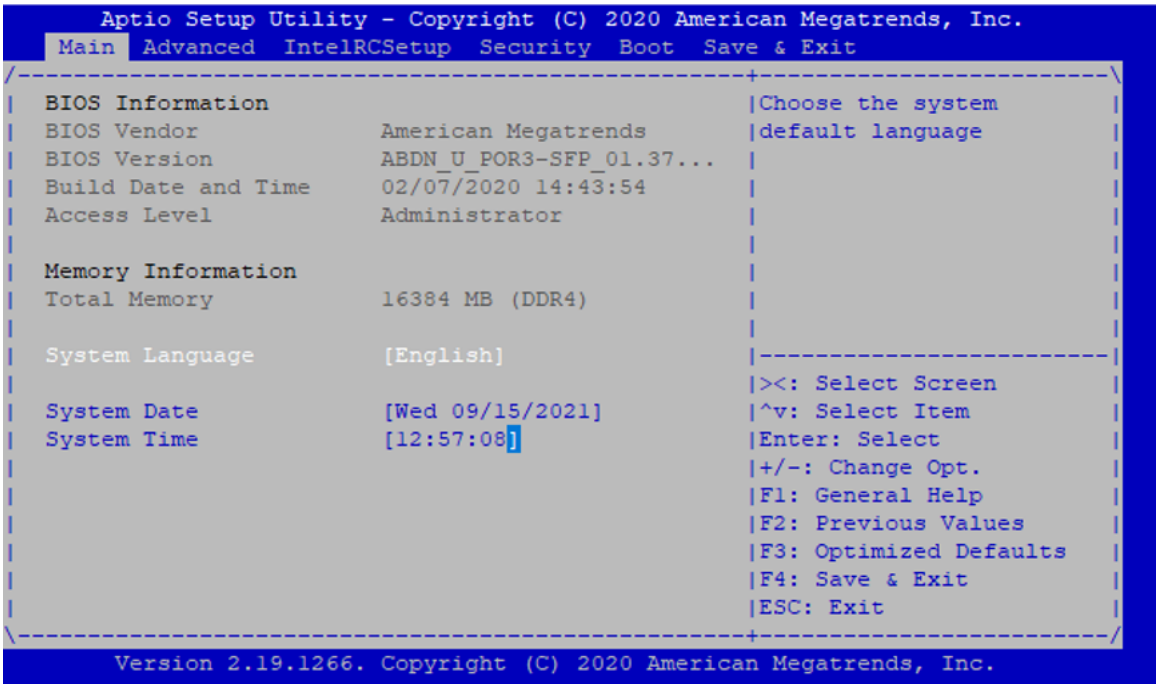
1. Preparing CTP151 before Upgrade | **6**
2. Upgrading to Dual Image on CTP151 | **10**

Preparing CTP151 before Upgrade

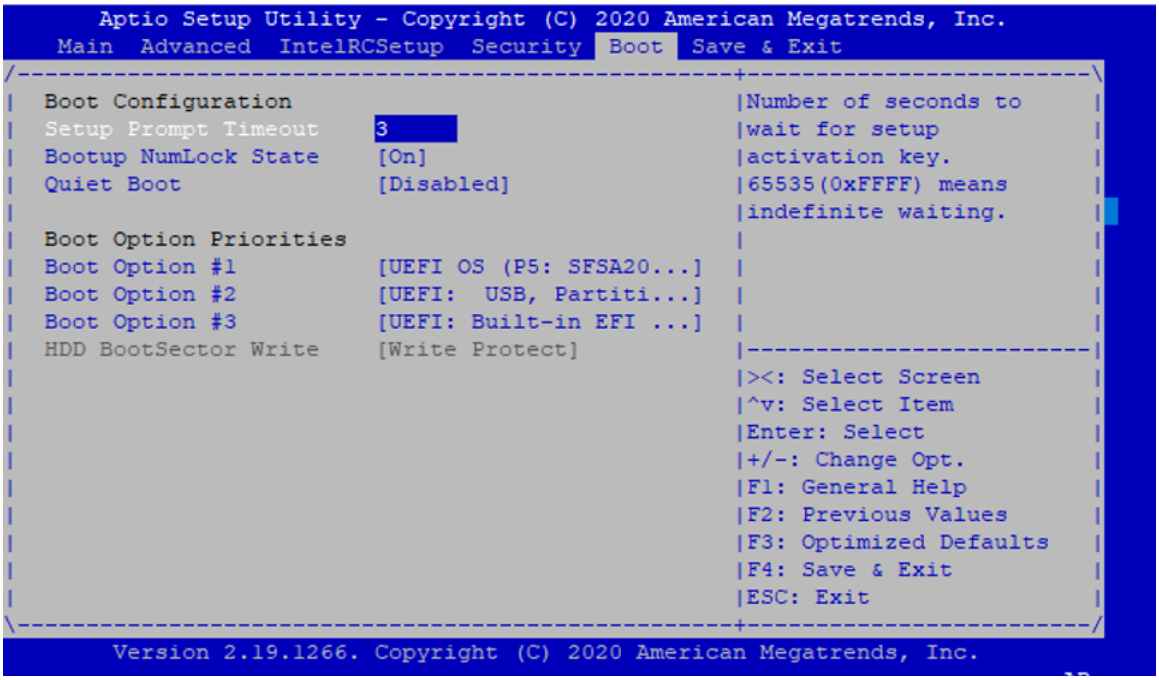
Before you starting upgrading to CTPOS 9.1R3.1, ensure that you complete the following tasks.

1. Confirm the existing version running on your CTP151 device.
   Assuming that your CTP151 node is running CTPOS 9.1R1,
   [root@ctp_87:/home/ctp_cmd 1]# cmd -v
   CTPOS CLI version: 9.1R1 191223
   Compile Time: Mon Dec 23 2019 01:32:31 PM

2. Reboot CTP Node. Click *Delete* or *Esc* prior to GRUB load menu.
   The BIOS menu appears.



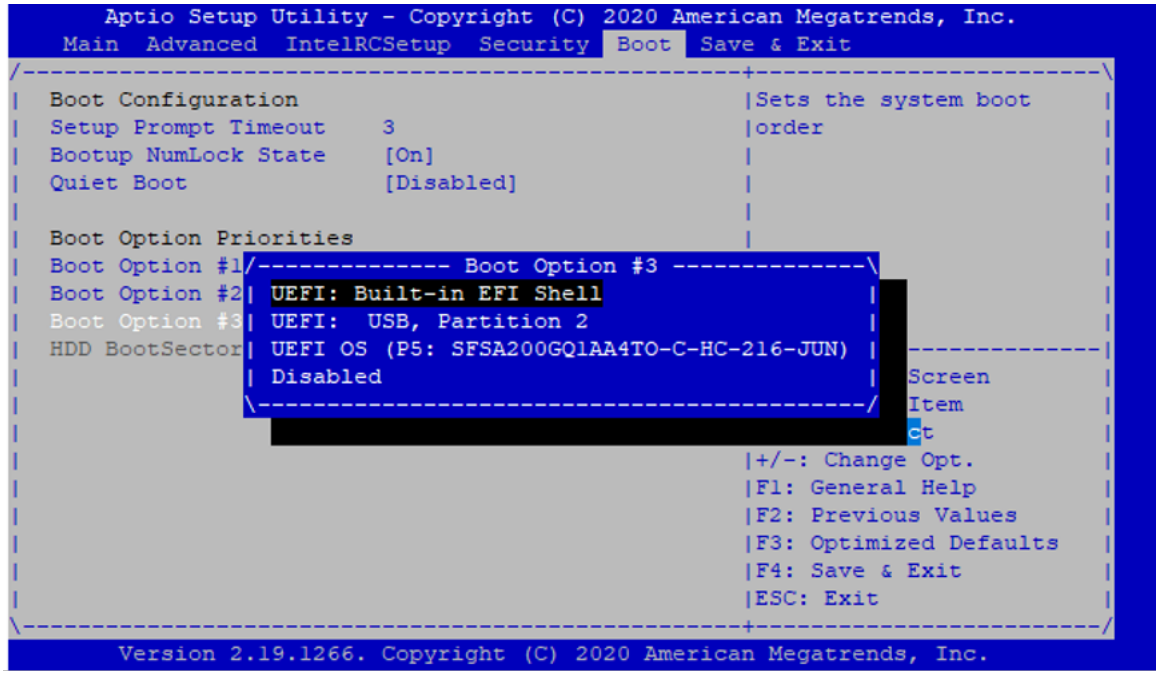
3. Select **Boot** menu. The Boot menu is displayed.



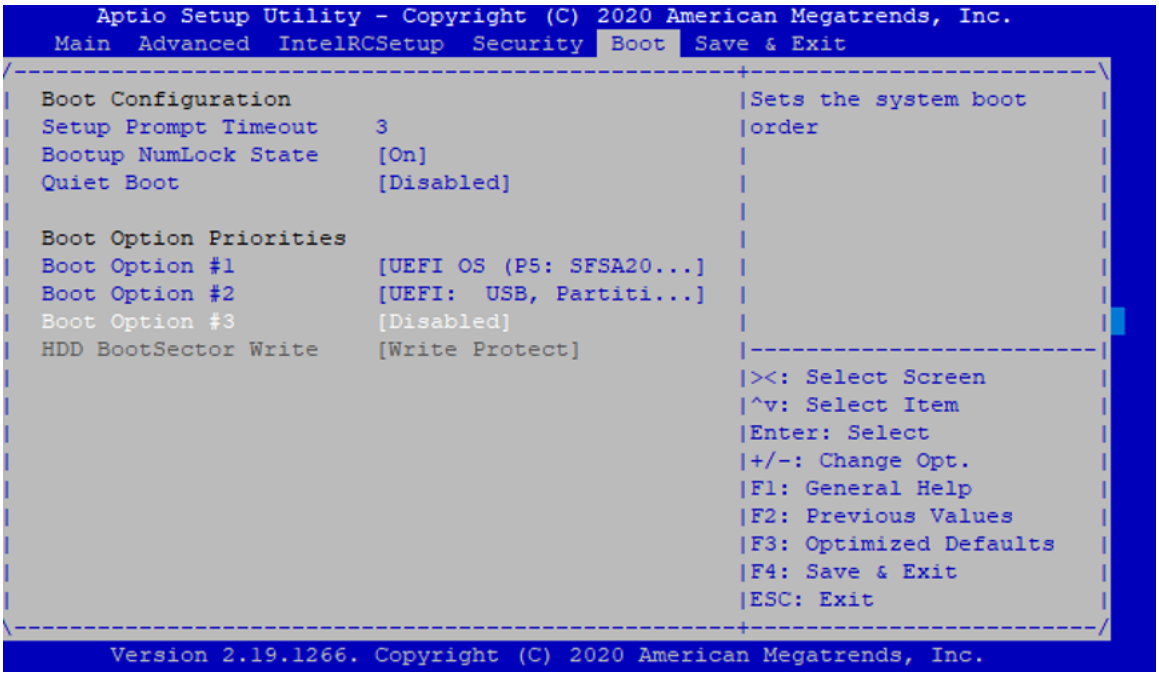
Ensure that the Boot Option #1 has UEFI OS. If not, select UEFI OS as Boot Option #1.

4. Select the last Boot Option.
   In this case, last Boot option is **#3**. Select Boot Option #3 and press *Enter*.

The Boot Option #3 window appears.

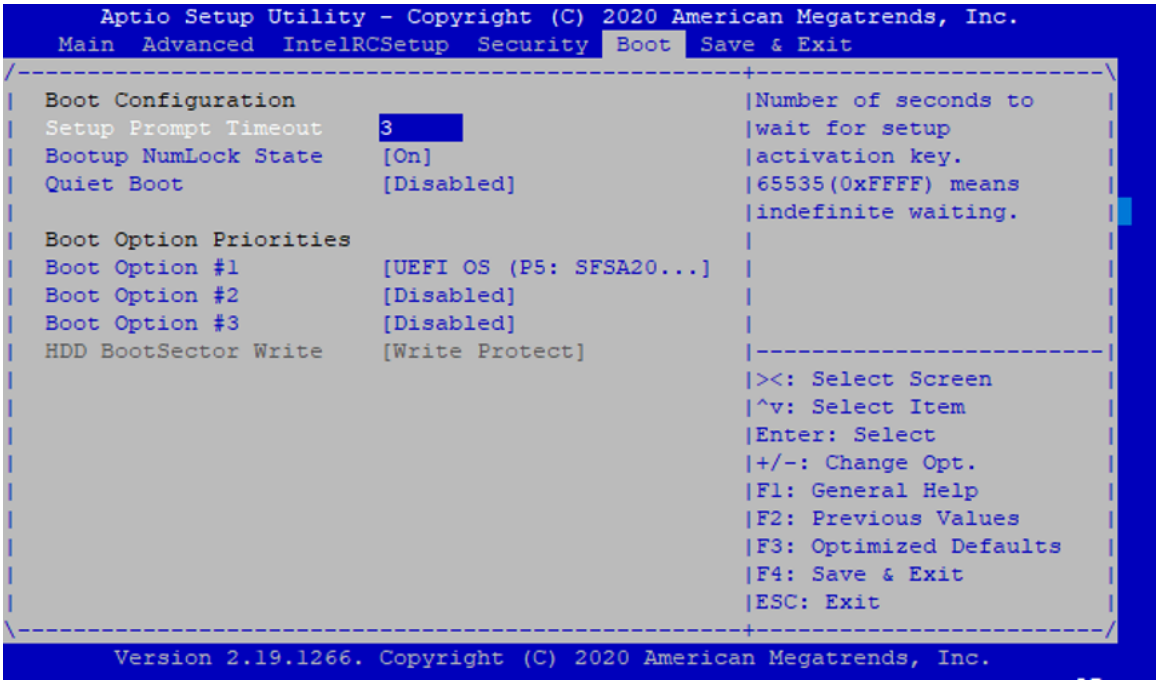


5. Select *Disabled* and press Enter.

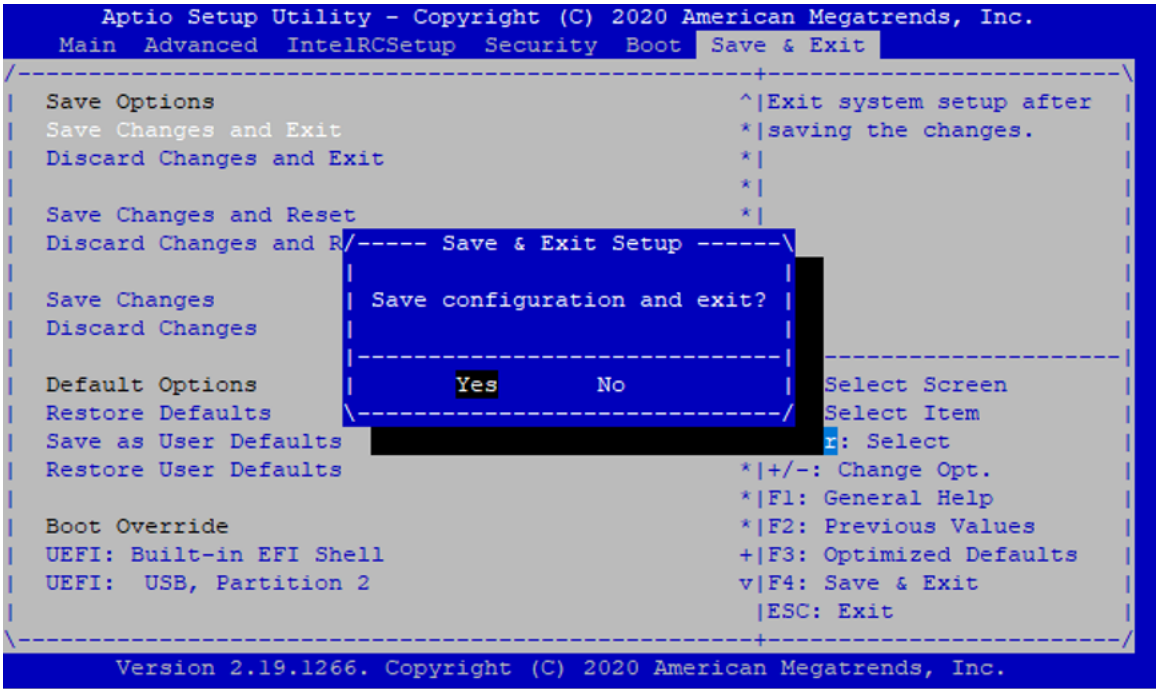


The Boot Option #3 is now disabled.

6. Similarly, disable all the other boot options except for Boot Option #1.
   Only Boot Option #1 should be enabled with UEFI OS.



7. Save and exit the BIOS configuration.
   Go to *Save & Exit* menu and select *Yes*.



```
GNU GRUB  version 2.02~beta3-4ubuntu2.2

 /----------------------------------------------------------------------------\
 |*CTPOS WRLv7                                                                |
 |                                                                            |
 |                                                                            |
 |                                                                            |
 |                                                                            |
 |                                                                            |
 \----------------------------------------------------------------------------/

      Use the ^ and v keys to select which entry is highlighted.
      Press enter to boot the selected OS, `e' to edit the commands
      before booting or `c' for a command-line. ESC to return previous
      menu.

……….
……….
……….
……

[root@ctp_87:/home/ctp_cmd 1]# cmd -v

        CTPOS CLI version: 9.1R1 191223
        Compile Time: Mon Nov 29 2021 01:32:31 PM
```

Upgrading to Dual Image on CTP151

IN THIS SECTION

- Installing Dual Image on CTP151 Manually through CLI | **10**
- Installing Dual Image on CTP151 from USB | **39**
- Installing Dual Image on CTP151 from CTPView | **53**

Installing Dual Image on CTP151 Manually through CLI

The following steps illustrate how to manually upgrade a CTPOS 9.1R3.1 dual image from an existing single image or a dual image using CLI commands.

NOTE: The steps involved to upgrade dual image on a CTP151 device varies from the steps to upgrade on a CTP150 or CTP2000 series device.

The package *acorn_310_dual_image_upgrade_ctp151_211221.tgz* is needed to upgrade CTP151 to CTPOS 9.1R3.1. Extract this package from the tarball *ctp_complete_9.1R3-1_211221.tgz* that is available in the Juniper Networks download page at https://support.juniper.net/support/downloads/ for CTPOS 9.1R3.1 Release. This package, when executed:

On a single image system, will	• Upgrade the system to dual image (porting the previous single image contents into image 1 of the dual image flash). • Prepare the system to accept image upgrade tar ball (create RAM disk).
On a dual image system, will	Prepare the system to accept image upgrade tar ball (create RAM disk)

1. Copy **acorn_310_dual_image_upgrade_ctp151_211221.tgz** to **/tmp** of CTP Device.
   /xxxx/xxxx/tmp# scp acorn_310_dual_image_upgrade_ctp151_211221.tgz ctp_cmd@10.216.118.87:/tmp
   No login banner configured
   Password:
   acorn_310_dual_image_upgrade_ctp151_211221.tgz
   100% 21MB 2.6MB/s 00:08
   tmp#

2. Run "upgrade y" on CTP Node for a non-interactive installation. You can also run “upgrade” to install in an interactive way.

   NOTE: When "upgrade" is executed in interactive way, it allows you to select which image to overwrite on a dual image system. When issued with the “y” option, it will execute non-interactively, and choose which image to overwrite automatically. If you want to guide the upgrade process, then you must execute “upgrade” instead.

   ```
   [root@ctp-213:/home/ctp_cmd 15]# cmd -v
   CTPOS CLI version: 9.1R2-1 210302
    Compile Time: Tue Mar 02 2021 04:29:17 PM
   [root@ctp-213:/home/ctp_cmd 15]# upgrade
   ```

```
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard, setting KVER to 310

Checking for active menu sessions
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz is the newest archive file...
*****************************************************************
NOTE: CTPOS code upgrades will interrupt data on running circuits.
Say "no" to run more interactive or install a different archive)
*****************************************************************
```

Do you want to install the newest archive in quick mode (no questions)?
y[n]: **n**
Do you want to install the newest archive interactively (w/ questions)?
y[n]: **y**

```
Continuing...
Copying /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz to /tmp
cp: '/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz' and
'/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz' are the same file
===== Uncompressing and Extracting Archive =====
      Archive file: /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz
./acorn_install/
./acorn_install/secure_boot_signed_files.tgz
tar: ./acorn_install/secure_boot_signed_files.tgz: time stamp 2021-03-12 15:18:54
 is 30886675.033439198 s in the future
./acorn_install/sgdisk
tar: ./acorn_install/sgdisk: time stamp 2021-03-12 15:18:54 is 30886675.030207606
 s in the future
./acorn_install/uefi_partition_files.tgz
tar: ./acorn_install/uefi_partition_files.tgz: time stamp 2021-04-07 02:44:49
is 33087830.026518755 s in the future
./acorn_install/libstdc++.so.6
tar: ./acorn_install/libstdc++.so.6: time stamp 2021-03-12 15:18:54 is
30886675.007383593 s in the future
./acorn_install/gui_instr
tar: ./acorn_install/gui_instr: time stamp 2021-08-13 20:43:59 is
44211780.007275319 s in the future
./acorn_install/install
```

```
tar: ./acorn_install/install: time stamp 2021-08-13 20:43:46 is 44211767.006649849
 s in the future
tar: ./acorn_install: time stamp 2021-11-02 14:55:48 is 51189289.006520139 s in
 the future

Running install interactively
Backing up system identity files . . .
[  OK  ]
Shutting down ctp ...
Stopping channels scc0      [  OK  ]
Stopping channels scc1      [  OK  ]
Stopping channels cbc0      [  OK  ]
Stopping CTP daemon         [  OK  ]
Removing iTCO watchdog kernel module   [  OK  ]
Removing CTP kernel driver  [  OK  ]
Voice Compression driver not loaded
Removing Menu Semaphore:     [  OK  ]
Unmounting all partitions of /dev/sda
mounting tmpfs at /mnt/ramdisk[  OK  ]
============================================================
System Type     : CTP151
CPU Type     : bacardi
Flash Type     : 2.5" SSD Disk
Currently Running CTPOS   : 9.1R2
System State     : Running
Total RAM Size     : 16066 MB
Free RAM Size     : 15565 MB
No. of partitions on /dev/sda   : 6
CTPOS installed on    : Image1 only
Running Image     : Image1 (3.14.39ltsi-WR7.0.0.27_standard)
Non-Running Image    : Image2 (Empty)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
 9.1R3 : 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 Seven partitions (1,2,3,4,5,6,11)
 Image2 - consists Seven partitions (1,2,7,8,9,10,11)
 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
============================================================
Do you want to create Dual Image partition(y/n): y
***Re-partition for dual image upgrade started***
***This may take few minutes***
Unmounting all partitions of /dev/sda
Checking flash partition Tarball sizes...
 /flash_root partition Tarball size : 150437 K
 /flash_home partition Tarball size : 4 K
 /flash_var partition Tarball size : 273 K
 /flash_local partition Tarball size : 9331 K
Flash partion Tarball size : 160045 K or 156 M
Free space on the system  : 15159 M
Backing up flash partions to ramdisk...
 /flash_root [  OK  ]
 /flash_home [  OK  ]
 /flash_var [  OK  ]
 /flash_local [  OK  ]
 /flash_efi [  OK  ]
********** Re-partitioning flash for dual image **********
Creating new flash partitions... [  OK  ]
Creating ext3 file system on new partitions...
 EFI...[  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  ]
 CTP_APP...
***Re-partition of flash card complete ***
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
Restoring Image1 archives to new flash partions ...
 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  ]
 flash_efi.tgz to /flash_efi  [  OK  ]
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
```

```
Unmounting all partitions of /dev/sda
Mounting Image1 to / ...[  OK  ]
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
  RAM disk /mnt/ramdisk has been created on RAM(total-16066 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 15562 MB available space in /mnt/ramdisk(RAM)
  Please enter the size of your flash image tarball in MB: 300
  This image will fit in the available RAM.
  Please proceed with transfer.
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Exiting...
===== Archive Cleanup =====
Unmounting USB storage device
Done...
```

3. Copy CTPOS_9.1R3-1_partitions_ctp151_211221.tgz file to /mnt/ramdisk directory on CTP Node.

   /xxxx/xxxx/tmp#**scp CTPOS_9.1R3-1_partitions_ctp151_211221.tgz ctp_cmd@10.216.118.213:/mnt/ramdisk**

```
No login banner configured
Password:
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz 100% 150MB 2.5MB/s 01:01
```

   [root@ctp_213:/tmp 23]# **ls -ltrh /mnt/ramdisk/**

```
total 151M
-rwxr-xr-x 1 ctp_cmd ctp_cmd 151M Sep 15 12:48
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
```

4. Run "upgrade" on CTP Node. Type “y” when asked for system reboot. User can run “upgrade y” to execute in non-interactive way.

   [root@ctp_213:/tmp 25]# **upgrade**

```
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard, setting KVER to 310

Checking for active menu sessions
Found USB storage device... Mounting
```

```
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz is the newest archive file...
*********************************************************************
NOTE: CTPOS code upgrades will interrupt data on running circuits.
Say "no" to run more interactive or install a different archive)
*********************************************************************
```

Do you want to install the newest archive in quick mode (no questions)? y[n]: **n**
Do you want to install the newest archive interactively (w/ questions)? y[n]: **y**

```
Continuing...
Copying /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz to /tmp
cp: '/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz' and
'/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz' are the same file
===== Uncompressing and Extracting Archive =====
      Archive file: /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz
./acorn_install/
./acorn_install/secure_boot_signed_files.tgz
tar: ./acorn_install/secure_boot_signed_files.tgz: time stamp 2021-03-12 15:18:54
 is 30886330.23389914 s in the future
./acorn_install/sgdisk
tar: ./acorn_install/sgdisk: time stamp 2021-03-12 15:18:54 is 30886330.230667405
 s in the future
./acorn_install/uefi_partition_files.tgz
tar: ./acorn_install/uefi_partition_files.tgz: time stamp 2021-04-07 02:44:49
is 33087485.226975947 s in the future
./acorn_install/libstdc++.so.6
tar: ./acorn_install/libstdc++.so.6: time stamp 2021-03-12 15:18:54 is
30886330.207823382 s in the future
./acorn_install/gui_instr
tar: ./acorn_install/gui_instr: time stamp 2021-08-13 20:43:59 is
44211435.207699514 s in the future
./acorn_install/install
tar: ./acorn_install/install: time stamp 2021-08-13 20:43:46 is 44211422.207092389
 s in the future
tar: ./acorn_install: time stamp 2021-11-02 14:55:48 is 51188944.206996152 s in
 the future
```

```
Running install interactively
[  OK  ]
Unmounting all partitions of /dev/sda
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
============================================================
System Type     : CTP151
CPU Type     : bacardi
Flash Type     : 2.5" SSD Disk
Currently Running CTPOS   : 9.1R2
System State     : Running
Total RAM Size     : 16066 MB
Free RAM Size     : 15408 MB
No. of partitions on /dev/sda   : 10
CTPOS installed on    : Image1 only
Running Image     : Image1 (9.1R2-1-comp-210302-042917-load-200320-034309')
Non-Running Image    : Image2 (Empty)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
 9.1R3 : 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_9.1R3-1_partitions_ctp151_211221.tgz Image archive file found at
/mnt/ramdisk
Verifying CTPOS_9.1R3-1_partitions_ctp151_211221.tgz archive ...
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz md5sum - Matched
!!!  There is 15408 MB free space available on /mnt/ramdisk(RAM)
Please choose Image no. for upgrading:
 1. Upgrade to Image1:
 2. Upgrade to Image2:
 3. Exit:
```

Please enter valid input: **2**

```
***Upgrading Image2 partition with CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
***
Unmounting all partitions of /dev/sda
```

```
Mounting Image2 to /mnt/ ...[  OK  ]
Extracting CTPOS_9.1R3-1_partitions_ctp151_211221.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  ]
[  OK  ]

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 If you do not transfer system identity files (config and
 user information), CTP will go to first boot which requires a
 console connection to complete. You need to have console access
 to do the password and ethernet configs during first boot.

 If you transfer your identity files you do not need a
 console connection (but it is always recommended to use
 console access for upgrades). When upgrading from CTPOS
 7.x release, only the ethernet configs will be transferred
 and all other configs will be lost.
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Are you sure you want to transfer system identity files? y/n :**n**

```

*** Proceeding without transferring system identity files. ***

*** You need to do first boot after rebooting the system. ***
Unmounting Image2...[  OK  ]
Updating grub conf files... [  OK  ]
Unmounting all partitions of /dev/sda
*** ***
Upgrading Image2 partition with CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
complete
The system needs to be rebooted
*** ***
```

Do you want to reboot system now [y/n]?: **y**

```
*** ***
!!!!!!!Rebooting System...
*** ***
```

```
Broadcast meHangup
[root@ctp-213:/tmp 26]# iptables: Bad rule (does a matching rule exist in that
 chain?).
ip6tables: Bad rule (does a matching rule exist in that chain?).
CTP daemon not running
Removing iTCO watchdog kernel module   [  OK  ]
CTP kernel driver not loaded
Voice Compression driver not loaded
Stopping OpenBSD Secure Shell server: sshd[  OK  ]
Stopping atd: [  OK  ]
Stopping system message bus: dbus.
Shutting down irqbalance: [  OK  ]
stopping rsyslogd ... [  OK  ]
Stopping crond: [  OK  ]
Shutting down interface eth4: [  OK  ]
Shutting down loopback interface: [  OK  ]
Disabling IPv4 packet forwarding: [  OK  ]
Backing up /var  to nonvolatile storage..
/etc/rc6.d/K80local: line 148: [: 48460: unary operator expected
/var Backup Failed : Please clean up /var/log
Backing up /home to nonvolatile storage..
mount: /flash_home not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
mount: /flash_home not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
mount: /flash_root not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
Backing up /     to nonvolatile storage..
mount: /flash_root not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
Sending all processes the TERM signal...
snmpd[8465]: Received TERM or STOP signal...  shutting down...
```

```
[1]+  Stopped                 su

[1]+  Stopped                 su
```

```
[ctp_cmd@ctp-213:~ 5]> exit
Sending all processes the KILL signal...
Unmounting remote filesystems...
Deactivating swap...
Unmounting local filesystems...
Rebooting...

error: no such device: LINUX-EFI.
error: serial port `com0' isn't found.
error: terminal `serial' isn't found.
error: terminal `serial' isn't found.

                    GNU GRUB  version 2.02~juniper/rel_v4~
 /------------------------------------------------------------------------\
 |*CTPOS 9.1R3-comp-211221-164106-load-200320-034644                      |
 | CTPOS 9.1R2-1-comp-210302-042917-load-200320-034309                    |
 |                                                                        |
 |                                                                        |
 |                                                                        |
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 |                                                                        |
 |                                                                        |
 \------------------------------------------------------------------------/

      Use the ^ and v keys to select which entry is highlighted.
      Press enter to boot the selected OS, `e' to edit the commands
      before booting or `c' for a command-line. ESC to return previous
      menu.

error: no suitable video mode found.

Booting in blind mode

0000:00:1a.0: ttyS0 at I/O 0xe060 (irq = 16, base_baud = 115200) is a 16550A
serial 0000:00:1a.1: enabling device (0001 -> 0003)
```

```
0000:00:1a.1: ttyS1 at I/O 0xe050 (irq = 17, base_baud = 115200) is a 16550A
serial 0000:00:1a.2: enabling device (0001 -> 0003)
0000:00:1a.2: ttyS2 at I/O 0xe040 (irq = 18, base_baud = 115200) is a 16550A
Linux agpgart interface v0.103
[drm] Initialized drm 1.1.0 20060810
brd: module loaded
loop: module loaded
isci: Intel(R) C600 SAS Controller Driver - version 1.1.0
mpt2sas version 16.100.00.00 loaded
ahci 0000:00:14.0: AHCI 0001.0301 32 slots 1 ports 6 Gbps 0x20 impl SATA mode
ahci 0000:00:14.0: flags: 64bit ncq led clo only pmp pio ems deso sadm sds apst

scsi0 : ahci
scsi1 : ahci
scsi2 : ahci
scsi3 : ahci
scsi4 : ahci
scsi5 : ahci
ata1: DUMMY
ata2: DUMMY
ata3: DUMMY
ata4: DUMMY
ata5: DUMMY
ata6: SATA max UDMA/133 abar m2048@0xdff9d000 port 0xdff9d380 irq 46
igb: Intel(R) Gigabit Ethernet Network Driver - version 5.0.5-k
igb: Copyright (c) 2007-2013 Intel Corporation.
igb 0000:04:00.0: enabling device (0140 -> 0142)
tsc: Refined TSC clocksource calibration: 2200.000 MHz
igb 0000:04:00.0: added PHC on eth0
igb 0000:04:00.0: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.0: eth0: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:11
ata6: SATA link up 6.0 Gbps (SStatus 133 SControl 300)
ata6.00: ATA-9: SFSA200GQ1AA4TO-C-HC-216-JUN, SBR13025, max UDMA/133
ata6.00: 390721968 sectors, multi 2: LBA48 NCQ (depth 31/32), AA
ata6.00: configured for UDMA/133
scsi 5:0:0:0: Direct-Access     ATA      SFSA200GQ1AA4TO- SBR1 PQ: 0 ANSI: 5
sd 5:0:0:0: [sda] 390721968 512-byte logical blocks: (200 GB/186 GiB)
sd 5:0:0:0: [sda] Write Protect is off
sd 5:0:0:0: [sda] Write cache: enabled, read cache: enabled, doesn't support
DPO or FUA
 sda: sda1 sda2 sda3 sda4 sda5 sda6 sda7 sda8 sda9 sda10 sda11
sd 5:0:0:0: [sda] Attached SCSI disk
igb 0000:04:00.0: eth0: PBA No: 106300-000
igb 0000:04:00.0: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
```

```
igb 0000:04:00.1: enabling device (0140 -> 0142)
Switched to clocksource tsc
igb 0000:04:00.1: added PHC on eth1
igb 0000:04:00.1: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.1: eth1: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:22
igb 0000:04:00.1: eth1: PBA No: 106300-000
igb 0000:04:00.1: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:04:00.2: enabling device (0140 -> 0142)
igb 0000:04:00.2: added PHC on eth2
igb 0000:04:00.2: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.2: eth2: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:33
igb 0000:04:00.2: eth2: PBA No: 106300-000
igb 0000:04:00.2: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:04:00.3: enabling device (0140 -> 0142)
igb 0000:04:00.3: added PHC on eth3
igb 0000:04:00.3: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.3: eth3: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:44
igb 0000:04:00.3: eth3: PBA No: 106300-000
igb 0000:04:00.3: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:06:00.0: enabling device (0140 -> 0142)
igb 0000:06:00.0: added PHC on eth4
igb 0000:06:00.0: Intel(R) Gigabit Ethernet Network Connection
igb 0000:06:00.0: eth4: (PCIe:2.5Gb/s:Width x1) 00:a0:c9:00:00:00
igb 0000:06:00.0: eth4: PBA No: 000300-000
igb 0000:06:00.0: Using MSI-X interrupts. 4 rx queue(s), 4 tx queue(s)
ixgbe: Intel(R) 10 Gigabit PCI Express Network Driver - version 4.2.1-k
ixgbe: Copyright (c) 1999-2015 Intel Corporation.
ixgb: Intel(R) PRO/10GbE Network Driver - version 1.0.135-k2-NAPI
ixgb: Copyright (c) 1999-2008 Intel Corporation.
ehci_hcd: USB 2.0 'Enhanced' Host Controller (EHCI) Driver
ehci-pci: EHCI PCI platform driver
uhci_hcd: USB Universal Host Controller Interface driver
xhci_hcd 0000:00:15.0: xHCI Host Controller
xhci_hcd 0000:00:15.0: new USB bus registered, assigned bus number 1
hub 1-0:1.0: USB hub found
hub 1-0:1.0: 4 ports detected
xhci_hcd 0000:00:15.0: xHCI Host Controller
xhci_hcd 0000:00:15.0: new USB bus registered, assigned bus number 2
hub 2-0:1.0: USB hub found
hub 2-0:1.0: 4 ports detected
usbcore: registered new interface driver usb-storage
usbcore: registered new interface driver usbserial
usbcore: registered new interface driver usbserial_generic
usbserial: USB Serial support registered for generic
```

```
i8042: PNP: No PS/2 controller found. Probing ports directly.
i8042: Can't read CTR while initializing i8042
i8042: probe of i8042 failed with error -5
mousedev: PS/2 mouse device common for all mice
input: PC Speaker as /devices/platform/pcspkr/input/input1
rtc_cmos 00:04: RTC can wake from S4
rtc_cmos 00:04: rtc core: registered rtc_cmos as rtc0
rtc_cmos 00:04: alarms up to one month, y3k, 242 bytes nvram, hpet irqs
hpet1: lost 3 rtc interrupts
usb 2-4: new SuperSpeed USB device number 2 using xhci_hcd
md: linear personality registered for level -1
md: raid0 personality registered for level 0
md: raid1 personality registered for level 1
md: raid10 personality registered for level 10
md: raid6 personality registered for level 6
md: raid5 personality registered for level 5
md: raid4 personality registered for level 4
md: multipath personality registered for level -4
md: faulty personality registered for level -5
device-mapper: ioctl: 4.27.0-ioctl (2013-10-30) initialised: dm-devel@redhat.com
usbcore: registered new interface driver btusb
sdhci: Secure Digital Host Controller Interface driver
sdhci: Copyright(c) Pierre Ossman
sdhci-pci 0000:00:1c.0: SDHCI controller found [8086:19db] (rev 11)
usb-storage 2-4:1.0: USB Mass Storage device detected
mmc0: SDHCI controller on PCI [0000:00:1c.0] using ADMA
sdhci-pltfm: SDHCI platform and OF driver helper
usbcore: registered new interface driver usbhid
usbhid: USB HID core driver
oprofile: using NMI interrupt.
u32 classifier
    Actions configured
scsi6 : usb-storage 2-4:1.0
TCP: cubic registered
NET: Registered protocol family 10
sit: IPv6 over IPv4 tunneling driver
NET: Registered protocol family 17
Key type dns_resolver registered
Using IPI No-Shortcut mode
bio: create slab <BIO-1> AT 1
Btrfs loaded
console [netcon0] enabled
netconsole: network logging started
rtc_cmos 00:04: setting system clock to 2020-03-20 03:50:13 UTC (1584676213)
```

```
ALSA device list:
  No soundcards found.
Freeing unused kernel memory: 744K (c2153000 - c220d000)
Write protecting the kernel text: 9704k
Write protecting the kernel read-only data: 3288k
NX-protecting the kernel data: 6680k
Starting initramfs...
scsi 6:0:0:0: Direct-Access     Lexar    USB Flash Drive  1100 PQ: 0 ANSI: 6
sd 6:0:0:0: [sdb] 62517248 512-byte logical blocks: (32.0 GB/29.8 GiB)
sd 6:0:0:0: [sdb] Write Protect is off
sd 6:0:0:0: [sdb] Write cache: enabled, read cache: enabled, doesn't support
DPO or FUA
GPT:Primary header thinks Alt. header is not at the end of the disk.
GPT:6291455 != 62517247
GPT:Alternate GPT header not at the end of the disk.
GPT:6291455 != 62517247
GPT: Use GNU Parted to correct GPT errors.
 sdb: sdb1 sdb2 sdb3
sd 6:0:0:0: [sdb] Attached SCSI removable disk
random: nonblocking pool is initialized
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): mounted filesystem with ordered data mode
Copying data from  to ramfs

INIT: version 2.88 booting

EXT4-fs (sda7): mounted filesystem with ordered data mode. Opts: (null)
EXT4-fs (sda8): mounted filesystem with ordered data mode. Opts: (null)
EXT4-fs (sda9): mounted filesystem with ordered data mode. Opts: (null)
EXT4-fs (sda10): mounted filesystem with ordered data mode. Opts: (null)
Starting udev
udevd[425]: starting version 182
ismt_smbus 0000:00:12.0: enabling device (0140 -> 0142)
udevd[514]: symli801_smbus 0000:00:1f.4: enabling device (0000 -> 0003)
ink '../../sda9'i801_smbus 0000:00:1f.4: SMBus using PCI interrupt
 '/dev/disk/by-partlabel/Linux\x20root\x20filesystem.udev-tmp' failed: File
exists

INIT: Entering runlevel: 3

Mounting CTP_ROOT r/w ...

Making Ramdisk for /home ...
```

```
Discarding device blocks: 1024/4096   done
Filesystem label=
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks
1024 inodes, 4096 blocks
0 blocks (0.00%) reserved for the super user
First data block=1
Maximum filesystem blocks=4194304
1 block group
8192 blocks per group, 8192 fragments per group
1024 inodes per group

Allocating group tables: 0/1 done
Writing inode tables: 0/1 done
Creating journal (1024 blocks): done
Writing superblocks and filesystem accounting information: 0/1 done

Making Ramdisk for /var ...
Mounting all filesystems...
Setting system time from hardware clock...
Correct grub.conf!
Found CTP_151 WITH system modifications

***** First boot of this flash. Setting up basic system configuration. *****
************** Setting up the network ***************

Need to update SYS_TYPE to bacardi in num_eth file
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
SLOT0_BAR0 added/removed: 0x00000000dfc00000(old) 0x00000000dfa00000(new)
SLOT1_BAR0 added/removed: 0x00000000dfd00000(old) 0x00000000dfc00000(new)
Using /etc/sysconfig/platform.conf ...
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
Loading sensors modules. Please wait, this could take ~30 seconds
Assigning Mac address to all available ethernet interfaces
Configure supported protocols:

0)  IPv4 Only
1)  IPv6 Only
2)  IPv4 & IPv6
```

Please select your option (rtn for 0):

```
There are 5 ethernet devices available for use. The default device
is the device through which the default gateway can be accessed.
Ctp circuits can run over any ethernet device, default or not.
A default device must be configured, other devices may be configured
and enabled, or disabled. Here is a list ot the available devices
and their descriptions:

 eth0: 10/100/1000 Copper (labeled 0 on front panel)
 eth1: 10/100/1000 Copper (labeled 1 on front panel)
 eth2: 10/100/1000 Copper (labeled 2 on front panel)
 eth3: 10/100/1000 Copper (labeled 3 on front panel)
 eth4: 10/100/1000 Copper (labeled MGMT on front panel)

What device would you like to make the IPV4 default device? (rtn for eth0): eth4
OK, eth4 (10/100/1000 Copper (labeled MGMT on front panel)) will be configured
 as IPV4 default device.
```

Please input the hostname (return for localhost): **ctp-213**

```
===== Configuration for eth4 (default device):
```

Please input the ip (return for 127.0.0.1): **10.54.240.213**

Please input the netmask (return for 255.255.255.0): **255.255.252.0**

Please input the gateway (return for 127.0.0.1): **10.54.243.254**

Please input the mtu in bytes (return for 1500):

```
Add route to interface eth4 [n]

=====================================
=== OS Security level set to LOW ===
=====================================

Backing up /etc to nonvolatile storage..
Backing up /usr/local to nonvolatile storage..
************** Setting up date/time *****************
```

Setting the date (GMT). Please input the year [2008-2037] (return for 2020):

Setting the date (GMT). Please input the month [1-12] (return for 03):

Setting the date (GMT). Please input the day [1-31] (return for 20):

Setting the date (GMT). Please input the hour [0-23] (return for 03):

Setting the date (GMT). Please input the minute [0-59] (return for 53):

```
Fri Mar 20 03:53:00 UTC 2020
AcornSetUp return = 1
Checking modules.conf indicates system changes needed!
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
Starting system message bus: Unknown username "avahi" in message bus configuration
 file
dbus.
iptables: Applying firewall rules: [  OK  ]
ip6tables: Applying firewall rules: [  OK  ]
Bringing up loopback interface: [  OK  ]
Setting 802.1Q VLAN parameters: Set name-type for VLAN subsystem. Should be
visible in /proc/net/vlan/config
[  OK  ]
Bringing up interface eth4: [  OK  ]
Starting OpenBSD Secure Shell server: sshd[  OK  ]
Starting atd: [  OK  ]
Starting irqbalance: [  OK  ]
starting rsyslogd ... [  OK  ]
Backing up /etc to nonvolatile storage..
Starting snmpd      [  OK  ]
Stopping snmpd      [  OK  ]
Backing up /etc to nonvolatile storage..
Backing up /var  to nonvolatile storage..
Starting sticky dev is /dev/sda
[  OK  ]

Starting crond: [  OK  ]
Loading sensors modules. Please wait, this could take ~30 seconds
===== This release supports FPGA reload during runtime
----- Function: check_gluon_bacardi
----- Found 2 gluon/bacardi interface cards
===== Start GLUON runtime FPGA load at 03:53:15
Removing iTCO watchdog kernel module   [  OK  ]
CTP kernel driver not loaded
Voice Compression driver not loaded
Installing iTCO watchdog kernel module   [  OK  ]
Installing HDLC kernel driver [  OK  ]
Installing CTP kernel driver [  OK  ]
Installing HDLC FR kernel driver [  OK  ]
Installing HDLC PPP kernel driver [  OK  ]
Installing HDLC RAW kernel driver [  OK  ]
Installing HDLC CISCO kernel driver [  OK  ]
```

```
Installing layer-2 bridge kernel module [  OK  ]
Removing iTCO watchdog kernel module   [  OK  ]
Removing layer-2 bridge kernel module   [  OK  ]
Removing HDLC FR kernel driver [  OK  ]
Removing HDLC PPP kernel driver [  OK  ]
Removing HDLC RAW kernel driver [  OK  ]
Removing CTP kernel driver  [  OK  ]
Removing HDLC CISCO kernel driver [  OK  ]
Voice Compression driver not loaded
----- Card 0 bd_rev: 02, fpga_rev: 22
----- Card 1 bd_rev: 02, fpga_rev: 22
Write Address(offset): 0xdfa00000(0x60020): 0x20
Write Address(offset): 0xdfa00000(0x1010): 0x400000
Write Address(offset): 0xdfc00000(0x60020): 0x20
Write Address(offset): 0xdfc00000(0x1010): 0x400000
----- Power down slot 0... at 03:53:30
----- Power down slot 1... at 03:53:30
----- Rescanning PCI devices ... at 03:53:33
Installing iTCO watchdog kernel module   [  OK  ]
Installing HDLC kernel driver [  OK  ]
Installing CTP kernel driver [  OK  ]
Installing HDLC FR kernel driver [  OK  ]
Installing HDLC PPP kernel driver [  OK  ]
Installing HDLC RAW kernel driver [  OK  ]
Installing HDLC CISCO kernel driver [  OK  ]
Installing layer-2 bridge kernel module [  OK  ]
----- Card 0 runtime fpga_rev: 21
----- Card 1 runtime fpga_rev: 21
===== Finish GLUON runtime FPGA load at 03:53:37
----- Function: check_gluon_bacardi
----- Found 2 gluon/bacardi interface cards
iTCO watchdog kernel module already loaded
CTP kernel driver already loaded
Layer-2 bridge kernel module already loaded
Check CTP kernel driver [  OK  ]
Checking for required memory [  OK  ]
Checking for required bios   [  OK  ]
Starting CTP daemon:          [  OK  ]
Checking fpga for all cards .
Some card FPGAs have incorrect versions.
Attempting to automatically upgrade cards.

Gathering system information.
* Please wait this could take up to 45 seconds.
```

```
Found:
 System type      bacardi
 Memory installed 1024 MB
 Slot 0:   Type T1E1
    FPGA 0x21  * needs 0x23
 Slot 1:   Type T1E1
    FPGA 0x21  * needs 0x23
 ID restored  No

Upgrading T1E1 card in slot 0 to fpga rev 0x23.
Upgrading fpga on card 0. Please wait for completion.

..... ..... ..... ..... ..... ..... ... done.
Upgrade complete.

Upgrading T1E1 card in slot 1 to fpga rev 0x23.
Upgrading fpga on card 1. Please wait for completion.

..... ..... ..... ..... ..... ..... ... done.
Upgrade complete.

**** ****
Cards are ready for running CTPOS 9.1R3.
This is a CTP151/bacardi system.
The CTP daemon must be restarted to load new FPGAs.
Backing up /var  to nonvolatile storage..
Backing up /home to nonvolatile storage..
Backing up /     to nonvolatile storage..

Rebooting now.

INIT: **** ****

Switching to runlevel: 6

INIT: Sending processes the TERM signal

CTP daemon not running
Removing iTCO watchdog kernel module   [  OK  ]
Removing layer-2 bridge kernel module   [  OK  ]
Removing HDLC FR kernel driver [  OK  ]
Removing HDLC PPP kernel driver [  OK  ]
Removing HDLC RAW kernel driver [  OK  ]
```

```
Removing CTP kernel driver  [  OK  ]
Removing HDLC CISCO kernel driver [  OK  ]
Voice Compression driver not loaded
Removing Menu Semaphore:     [  OK  ]
Stopping OpenBSD Secure Shell server: sshd[  OK  ]
Stopping atd: [  OK  ]
Stopping system message bus: dbus.
Shutting down irqbalance: [  OK  ]
stopping rsyslogd ... [  OK  ]
Stopping crond: [  OK  ]
Shutting down interface eth4: [  OK  ]
Shutting down loopback interface: [  OK  ]
Disabling IPv4 packet forwarding: [  OK  ]
Backing up /var  to nonvolatile storage..
Backing up /home to nonvolatile storage..
Backing up /     to nonvolatile storage..
Rebooting...


error: no such device: LINUX-EFI.
error: serial port `com0' isn't found.
error: terminal `serial' isn't found.
error: terminal `serial' isn't found.

                    GNU GRUB  version 2.02~juniper/rel_v4~

 /-------------------------------------------------------------------------\
 |*CTPOS 9.1R3-comp-211221-164106-load-200320-034644                       |
 | CTPOS 9.1R2-1-comp-210302-042917-load-200320-034309                     |
 |                                                                         |
  |                                                                         |
 |                                                                         |
 \-------------------------------------------------------------------------/


      Use the ^ and v keys to select which entry is highlighted.
      Press enter to boot the selected OS, `e' to edit the commands
      before booting or `c' for a command-line. ESC to return previous
      menu.


error: no suitable video mode found.

Booting in blind mode
```

```
0000:00:1a.0: ttyS0 at I/O 0xe060 (irq = 16, base_baud = 115200) is a 16550A
serial 0000:00:1a.1: enabling device (0001 -> 0003)
0000:00:1a.1: ttyS1 at I/O 0xe050 (irq = 17, base_baud = 115200) is a 16550A
serial 0000:00:1a.2: enabling device (0001 -> 0003)
0000:00:1a.2: ttyS2 at I/O 0xe040 (irq = 18, base_baud = 115200) is a 16550A
Linux agpgart interface v0.103
[drm] Initialized drm 1.1.0 20060810
brd: module loaded
loop: module loaded
isci: Intel(R) C600 SAS Controller Driver - version 1.1.0
mpt2sas version 16.100.00.00 loaded
ahci 0000:00:14.0: AHCI 0001.0301 32 slots 1 ports 6 Gbps 0x20 impl SATA mode
ahci 0000:00:14.0: flags: 64bit ncq led clo only pmp pio ems deso sadm sds apst

scsi0 : ahci
scsi1 : ahci
scsi2 : ahci
scsi3 : ahci
scsi4 : ahci
scsi5 : ahci
ata1: DUMMY
ata2: DUMMY
ata3: DUMMY
ata4: DUMMY
ata5: DUMMY
ata6: SATA max UDMA/133 abar m2048@0xdff9d000 port 0xdff9d380 irq 46
igb: Intel(R) Gigabit Ethernet Network Driver - version 5.0.5-k
igb: Copyright (c) 2007-2013 Intel Corporation.
igb 0000:04:00.0: enabling device (0140 -> 0142)
tsc: Refined TSC clocksource calibration: 2199.999 MHz
igb 0000:04:00.0: added PHC on eth0
igb 0000:04:00.0: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.0: eth0: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:11
ata6: SATA link up 6.0 Gbps (SStatus 133 SControl 300)
ata6.00: ATA-9: SFSA200GQ1AA4TO-C-HC-216-JUN, SBR13025, max UDMA/133
ata6.00: 390721968 sectors, multi 2: LBA48 NCQ (depth 31/32), AA
ata6.00: configured for UDMA/133
scsi 5:0:0:0: Direct-Access     ATA      SFSA200GQ1AA4TO- SBR1 PQ: 0 ANSI: 5
sd 5:0:0:0: [sda] 390721968 512-byte logical blocks: (200 GB/186 GiB)
sd 5:0:0:0: [sda] Write Protect is off
sd 5:0:0:0: [sda] Write cache: enabled, read cache: enabled, doesn't support
DPO or FUA
 sda: sda1 sda2 sda3 sda4 sda5 sda6 sda7 sda8 sda9 sda10 sda11
```

```
sd 5:0:0:0: [sda] Attached SCSI disk
igb 0000:04:00.0: eth0: PBA No: 106300-000
igb 0000:04:00.0: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:04:00.1: enabling device (0140 -> 0142)
Switched to clocksource tsc
igb 0000:04:00.1: added PHC on eth1
igb 0000:04:00.1: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.1: eth1: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:22
igb 0000:04:00.1: eth1: PBA No: 106300-000
igb 0000:04:00.1: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:04:00.2: enabling device (0140 -> 0142)
igb 0000:04:00.2: added PHC on eth2
igb 0000:04:00.2: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.2: eth2: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:33
igb 0000:04:00.2: eth2: PBA No: 106300-000
igb 0000:04:00.2: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:04:00.3: enabling device (0140 -> 0142)
igb 0000:04:00.3: added PHC on eth3
igb 0000:04:00.3: Intel(R) Gigabit Ethernet Network Connection
igb 0000:04:00.3: eth3: (PCIe:5.0Gb/s:Width x4) 00:11:22:33:44:44
igb 0000:04:00.3: eth3: PBA No: 106300-000
igb 0000:04:00.3: Using MSI-X interrupts. 8 rx queue(s), 8 tx queue(s)
igb 0000:06:00.0: enabling device (0140 -> 0142)
igb 0000:06:00.0: added PHC on eth4
igb 0000:06:00.0: Intel(R) Gigabit Ethernet Network Connection
igb 0000:06:00.0: eth4: (PCIe:2.5Gb/s:Width x1) 00:a0:c9:00:00:00
igb 0000:06:00.0: eth4: PBA No: 000300-000
igb 0000:06:00.0: Using MSI-X interrupts. 4 rx queue(s), 4 tx queue(s)
ixgbe: Intel(R) 10 Gigabit PCI Express Network Driver - version 4.2.1-k
ixgbe: Copyright (c) 1999-2015 Intel Corporation.
ixgb: Intel(R) PRO/10GbE Network Driver - version 1.0.135-k2-NAPI
ixgb: Copyright (c) 1999-2008 Intel Corporation.
ehci_hcd: USB 2.0 'Enhanced' Host Controller (EHCI) Driver
ehci-pci: EHCI PCI platform driver
uhci_hcd: USB Universal Host Controller Interface driver
xhci_hcd 0000:00:15.0: xHCI Host Controller
xhci_hcd 0000:00:15.0: new USB bus registered, assigned bus number 1
hub 1-0:1.0: USB hub found
hub 1-0:1.0: 4 ports detected
xhci_hcd 0000:00:15.0: xHCI Host Controller
xhci_hcd 0000:00:15.0: new USB bus registered, assigned bus number 2
hub 2-0:1.0: USB hub found
hub 2-0:1.0: 4 ports detected
usbcore: registered new interface driver usb-storage
```

```
usbcore: registered new interface driver usbserial
usbcore: registered new interface driver usbserial_generic
usbserial: USB Serial support registered for generic
i8042: PNP: No PS/2 controller found. Probing ports directly.
i8042: Can't read CTR while initializing i8042
i8042: probe of i8042 failed with error -5
mousedev: PS/2 mouse device common for all mice
input: PC Speaker as /devices/platform/pcspkr/input/input1
rtc_cmos 00:04: RTC can wake from S4
rtc_cmos 00:04: rtc core: registered rtc_cmos as rtc0
rtc_cmos 00:04: alarms up to one month, y3k, 242 bytes nvram, hpet irqs
usb 2-4: new SuperSpeed USB device number 2 using xhci_hcd
md: linear personality registered for level -1
usb-storage 2-4:1.0: USB Mass Storage device detected
md: raid0 personality registered for level 0
scsi6 : usb-storage 2-4:1.0
md: raid1 personality registered for level 1
md: raid10 personality registered for level 10
md: raid6 personality registered for level 6
md: raid5 personality registered for level 5
md: raid4 personality registered for level 4
md: multipath personality registered for level -4
md: faulty personality registered for level -5
device-mapper: ioctl: 4.27.0-ioctl (2013-10-30) initialised: dm-devel@redhat.com
usbcore: registered new interface driver btusb
sdhci: Secure Digital Host Controller Interface driver
sdhci: Copyright(c) Pierre Ossman
sdhci-pci 0000:00:1c.0: SDHCI controller found [8086:19db] (rev 11)
mmc0: SDHCI controller on PCI [0000:00:1c.0] using ADMA
sdhci-pltfm: SDHCI platform and OF driver helper
usbcore: registered new interface driver usbhid
usbhid: USB HID core driver
oprofile: using NMI interrupt.
u32 classifier
    Actions configured
TCP: cubic registered
NET: Registered protocol family 10
sit: IPv6 over IPv4 tunneling driver
NET: Registered protocol family 17
Key type dns_resolver registered
Using IPI No-Shortcut mode
bio: create slab <bio-1>
Btrfs loaded
console [netcon0] enabled
```

```
netconsole: network logging started
rtc_cmos 00:04: setting system clock to 2020-03-20 03:58:12 UTC (1584676692)
scsi 6:0:0:0: Direct-Access     Lexar    USB Flash Drive  1100 PQ: 0 ANSI: 6
sd 6:0:0:0: [sdb] 62517248 512-byte logical blocks: (32.0 GB/29.8 GiB)
sd 6:0:0:0: [sdb] Write Protect is off
sd 6:0:0:0: [sdb] Write cache: enabled, read cache: enabled, doesn't support
DPO or FUA
ALSA device list:
GPT:Primary header thinks Alt. header is not at the end of the disk.
GPT:6291455 != 62517247
GPT:Alternate GPT header not at the end of the disk.
GPT:6291455 != 62517247
GPT: Use GNU Parted to correct GPT errors.
 sdb: sdb1 sdb2 sdb3
sd 6:0:0:0: [sdb] Attached SCSI removable disk
  No soundcards found.
Freeing unused kernel memory: 744K (c2153000 - c220d000)
Write protecting the kernel text: 9704k
Write protecting the kernel read-only data: 3288k
NX-protecting the kernel data: 6680k
Starting initramfs...
random: nonblocking pool is initialized
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): mounted filesystem with ordered data mode
Copying data from  to ramfs

INIT: version 2.88 booting

EXT4-fs (sda7): mounted filesystem with ordered data mode. Opts: (null)
EXT4-fs (sda8): mounted filesystem with ordered data mode. Opts: (null)
EXT4-fs (sda9): mounted filesystem with ordered data mode. Opts: (null)
EXT4-fs (sda10): mounted filesystem with ordered data mode. Opts: (null)
Starting udev
udevd[426]: starting version 182
ismt_smbus 0000:00:12.0: enabling device (0140 -> 0142)
i801_smbus 0000:00:1f.4: enabling device (0000 -> 0003)
i801_smbus 0000:00:1f.4: SMBus using PCI interrupt

INIT: Entering runlevel: 3

Mounting CTP_ROOT r/w ...
Making Ramdisk for /home ...
Discarding device blocks: 1024/4096 done
Filesystem label=
```

```
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks
1024 inodes, 4096 blocks
0 blocks (0.00%) reserved for the super user
First data block=1
Maximum filesystem blocks=4194304
1 block group
8192 blocks per group, 8192 fragments per group
1024 inodes per group

Allocating group tables: 0/1 done
Writing inode tables: 0/1 done
Creating journal (1024 blocks): done
Writing superblocks and filesystem accounting information: 0/1 done

Making Ramdisk for /var ...
Mounting all filesystems...
Setting system time from hardware clock...
Correct grub.conf!
***** Normal boot up of this flash. *****
Checking modules.conf indicates system changes needed!
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
SLOT0_BAR0 added/removed: 0x00000000df900000(old) 0x00000000dfa00000(new)
SLOT1_BAR0 added/removed: 0x00000000dfb00000(old) 0x00000000dfc00000(new)
Using /etc/sysconfig/platform.conf ...
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
Loading sensors modules. Please wait, this could take ~30 seconds
Assigning Mac address to all available ethernet interfaces
Starting system message bus: Unknown username "avahi" in message bus configuration
 file
dbus.
iptables: Applying firewall rules: [  OK  ]
ip6tables: Applying firewall rules: [  OK  ]
Bringing up loopback interface: [  OK  ]
Setting 802.1Q VLAN parameters: Set name-type for VLAN subsystem. Should be
visible in /proc/net/vlan/config
[  OK  ]
Bringing up interface eth4: [  OK  ]
Starting OpenBSD Secure Shell server: sshd[  OK  ]
Starting atd: [  OK  ]
```

```
Starting irqbalance: [  OK  ]
starting rsyslogd ... [  OK  ]
Starting sticky dev is /dev/sda
[  OK  ]
Starting crond: [  OK  ]
Loading sensors modules. Please wait, this could take ~30 seconds
===== This release supports FPGA reload during runtime
----- Function: check_gluon_bacardi
----- Found 2 gluon/bacardi interface cards
===== Start GLUON runtime FPGA load at 03:58:36
Removing iTCO watchdog kernel module   [  OK  ]
CTP kernel driver not loaded
Voice Compression driver not loaded
Installing iTCO watchdog kernel module   [  OK  ]
Installing HDLC kernel driver [  OK  ]
Installing CTP kernel driver [  OK  ]
Installing HDLC FR kernel driver [  OK  ]
Installing HDLC PPP kernel driver [  OK  ]
Installing HDLC RAW kernel driver [  OK  ]
Installing HDLC CISCO kernel driver [  OK  ]
Installing layer-2 bridge kernel module [  OK  ]
Removing iTCO watchdog kernel module   [  OK  ]
Removing layer-2 bridge kernel module   [  OK  ]
Removing HDLC FR kernel driver [  OK  ]
Removing HDLC PPP kernel driver [  OK  ]
Removing HDLC RAW kernel driver [  OK  ]
Removing CTP kernel driver  [  OK  ]
Removing HDLC CISCO kernel driver [  OK  ]
Voice Compression driver not loaded
----- Card 0 bd_rev: 02, fpga_rev: 22
----- Card 1 bd_rev: 02, fpga_rev: 22
Write Address(offset): 0xdfa00000(0x60020): 0x20
Write Address(offset): 0xdfa00000(0x1010): 0x400000
Write Address(offset): 0xdfc00000(0x60020): 0x20
Write Address(offset): 0xdfc00000(0x1010): 0x400000
----- Power down slot 0... at 03:58:51
----- Power down slot 1... at 03:58:51
----- Rescanning PCI devices ... at 03:58:54
Installing iTCO watchdog kernel module   [  OK  ]
Installing HDLC kernel driver [  OK  ]
Installing CTP kernel driver [  OK  ]
Installing HDLC FR kernel driver [  OK  ]
Installing HDLC PPP kernel driver [  OK  ]
Installing HDLC RAW kernel driver [  OK  ]
```

```
Installing HDLC CISCO kernel driver [  OK  ]
Installing layer-2 bridge kernel module [  OK  ]
----- Card 0 runtime fpga_rev: 23
----- Card 1 runtime fpga_rev: 23
===== Finish GLUON runtime FPGA load at 03:58:58
----- Function: check_gluon_bacardi
----- Found 2 gluon/bacardi interface cards
iTCO watchdog kernel module already loaded
CTP kernel driver already loaded
Layer-2 bridge kernel module already loaded
Check CTP kernel driver [  OK  ]
Checking for required memory [  OK  ]
Checking for required bios   [  OK  ]
Starting CTP daemon:          [  OK  ]
Checking fpga for all cards . . . . . . . . . . [  OK  ]

No login banner configured
```

ctp-213 login: **ctp_cmd**
Password:

```
Last login: Wed Nov 17 11:22:29 UTC 2021 on console
Last login: Fri Mar 20 03:59:44 UTC 2020 on console
-------------------------------------------------------------
You need to set up system passwords of default user accounts.
-------------------------------------------------------------
Changing root's password!
###############################################################################
###############################################################################
###############################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!

Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
###############################################################################
###############################################################################
###############################################################################
```

Enter New Password for root
Retype New Password for root

```
Changing ctp_cmd's password!
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!


Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
```

Enter New Password for ctp_cmd
Retype New Password for ctp_cmd

```
Changing ctp's password!
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!


Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
```

Enter New Password for ctp
Retype New Password for ctp

```
Changing ctp_sa's password!
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!
```

```
Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
```

```
Enter New Password for ctp_sa
Retype New Password for ctp_sa
```

```
Changing ctp_audit's password!
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!


Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
```

```
Enter New Password for ctp_audit
Retype New Password for ctp_audit
```

```
Backing up /home to nonvolatile storage..
Backing up /     to nonvolatile storage..
[ctp_cmd@ctp-213:~ 1]> cmd -v

 CTPOS CLI version: 9.1R3-1 211221
Compile Time: Tue Dec 21 2021 07:07:53 PM
Flash: Dual Image
```

Installing Dual Image on CTP151 from USB

The USB flash image *ctpos_usb_install_9.1R3-1_ctp151_211221.img* is needed to upgrade to CTPOS 9.1R3.1 in the CTP151 device. Download this image from the Juniper Networks download page at https://support.juniper.net/support/downloads/ for CTPOS 9.1R3.1 Release.

When USB install for dual upgrade is executed:

On a single image system, it will	• upgrade system to dual image (porting the previous single image contents into image 1 of the dual image flash) • prepare the system to accept image upgrade tar ball (create RAM disk)
On a dual image system, it will	prepare the system to accept image upgrade tar ball (create RAM disk)
For a blank or corrupted system	Blank or corrupted "/dev/sda" disk may occur due to one of the following reasons: • **/dev/sda** disk is blank • **/dev/sda** is not having CTPOS 9.1Rx or 9.0Rx installed • **/dev/sda** is installed with CTPOS 9.1Rx or 9.0Rx but CTP151 node is not booting up from /dev/sda disk If any of the above is true, you must recover CTP151 using the USB installation image of 9.1R1 or 9.1R2 release. For this, you need to follow instructions in the release notes of respective release to install image on CTP151. Following a successful installation, you can proceed further for 9.1R3.1 USB installation on CTP151. You may contact JTAC for the links to download 9.1R1 or 9.1R2 release and associated release notes.

To install dual image from USB:

1. Insert your USB disk into the CTP 151 platform, and burn the USB install image to it.

Uncompress ctpos_usb_install_9.1R3-1_ctp151_211221.img.gz file using "gunzip" tool on your server.

You can check <check USB device name> using “fdisk -l” command for the inserted USB.

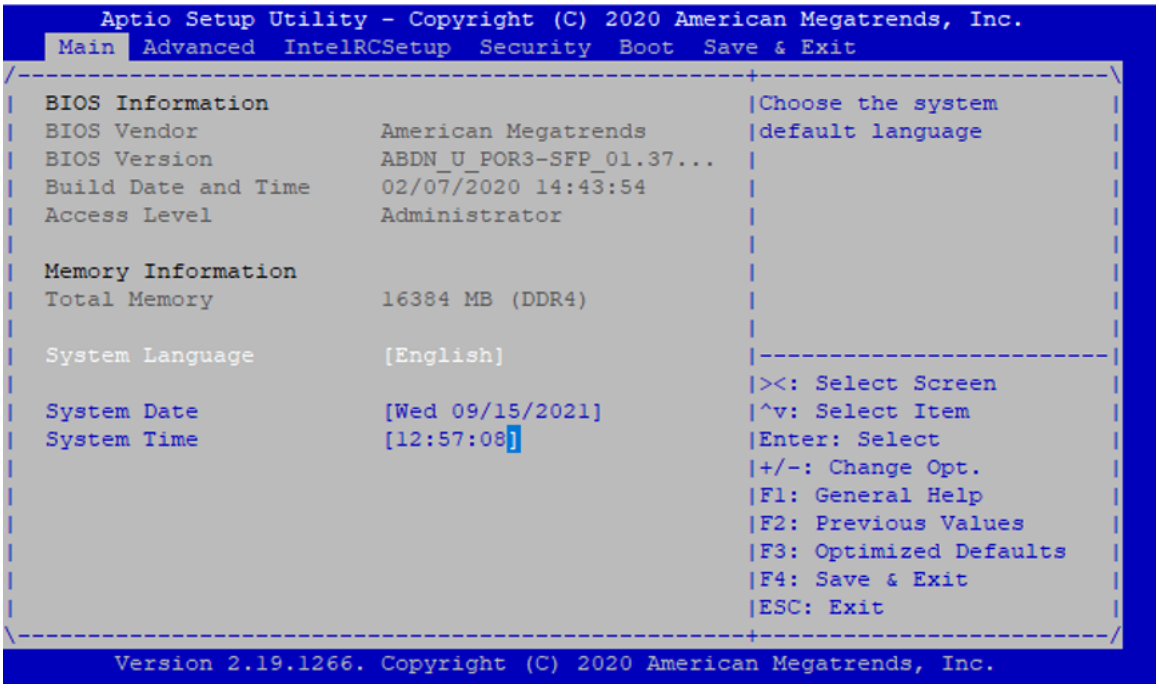
Insert the USB, if it is not already inserted in CTPOS node.

```
# ssh root@198.1.1.1 dd if=ctpos_usb_install_9.1R3-1_ctp151_211221.img
of=<USB device name> bs=1M
```

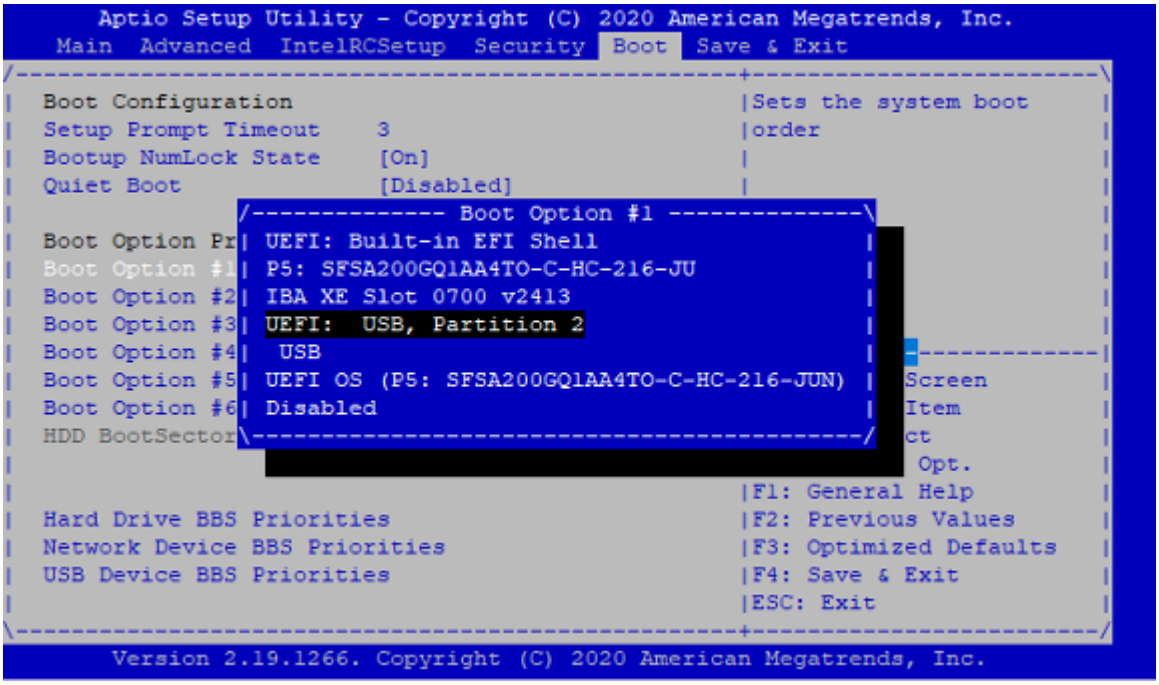
Change "198.1.1.1" IP address in the above command with your server IP.

```
NOTE: Please find the USB device (like /dev/sdb) on the system(fdisk -l) where
 you have connected USB disk hardware and feed this device name in “of=” in
above command.
```

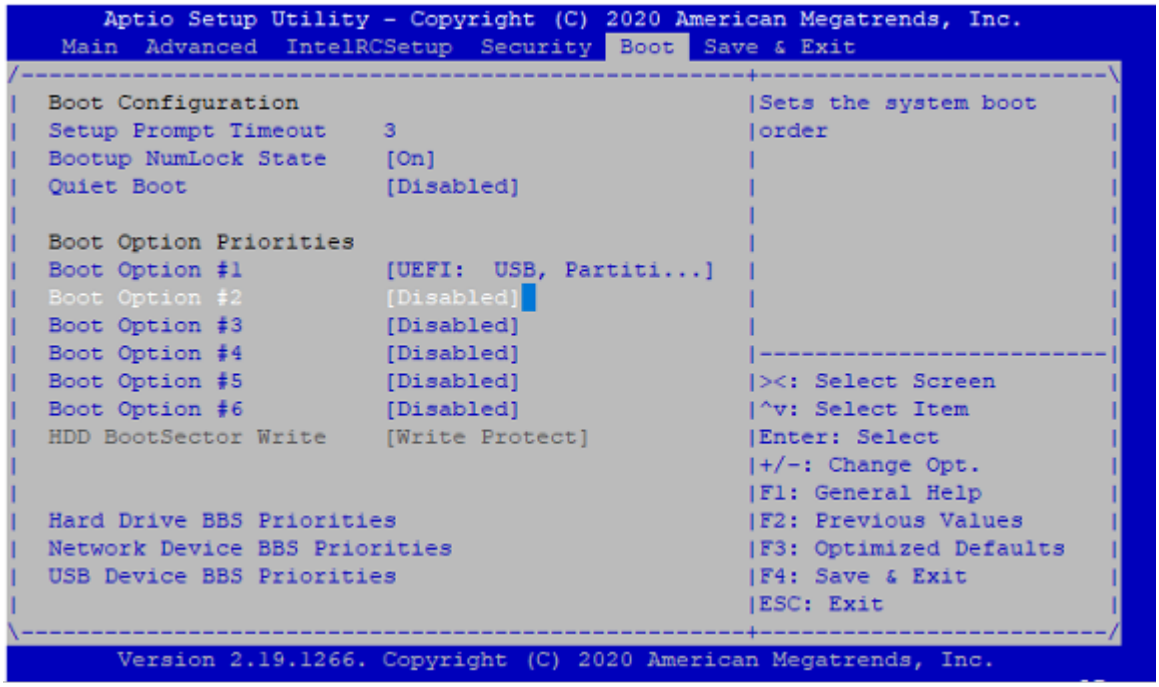
2. Reboot CTP Node. Press *Delete* or *ESC* key to enter BIOS menu.



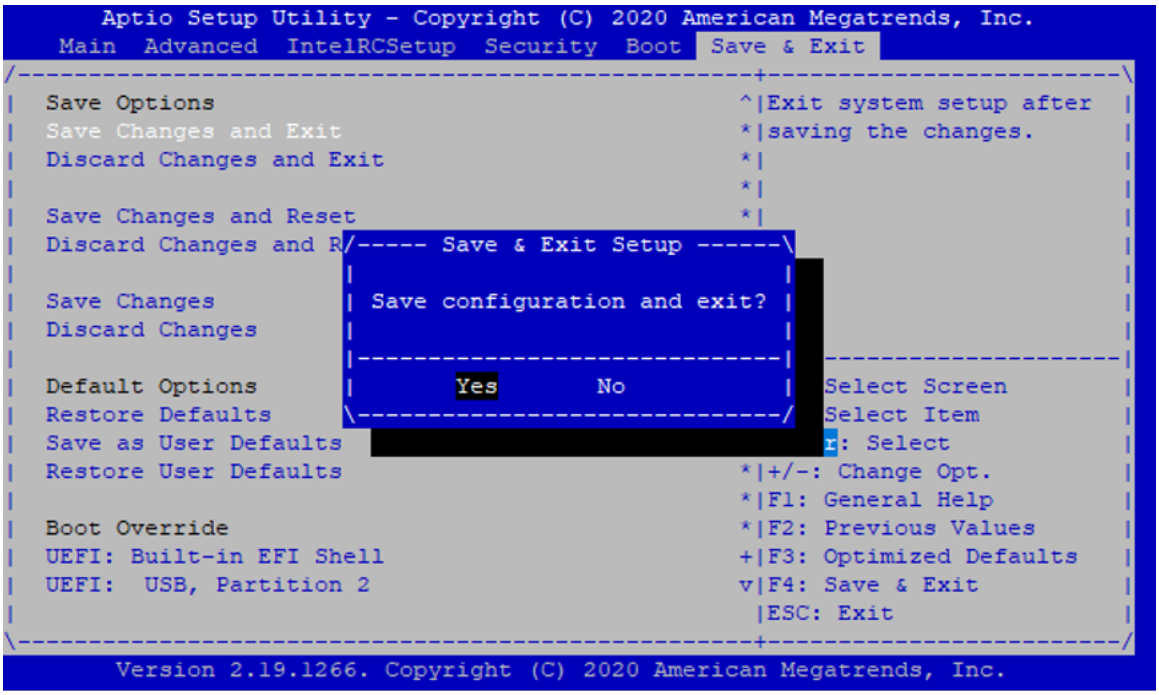
3. Ensure that the Boot Option #1 has UEFI USB selected. If not, select UEFI USB as Boot Option #1.



4. Ensure to disable all other Boot Options in boot menu, Only UEFI USB Boot Option #1 should be Enabled. For disabling a Boot Option, go to “Boot Option #” which needs to be disabled and press *Enter* and select *Disabled*.



5. Go to *Save and Exit* menu.
   Select *Save Changes and Exit*.
   Press *Enter* and select *Yes*.



   The system will reboot.

6. During the boot up process of USB install image, the user menu for USB installation for Dual Image Upgrade is displayed and you will be prompted to select the destination disk. Select **0** option and appropriate options for USB installation.

```
============================================================
============================================================
===== CTPOS USB installation - Version 0.54
============================================================
============================================================
--- Checking for programs... Done.
--- Detecting system type: CTP151
--- Detecting disks/partitions on system... Done.
--- Detecting available image files...   Only one image file exists: 9.1R3.1
  ---------------------------------------------
  Please Select a destination disk from the list:
    0) SATA Disk /dev/sda (186.3G)
  ---------------------------------------------
```

Selection: **0**

```
-----------------------------------------------
  Here are your installation selections:
    Image file:       9.1R3.1
    Destination disk: /dev/sda
  -----------------------------------------------
```

Continue with installation? y[n]: **y**

```
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard, setting KVER to 310

Checking for active menu sessions
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz is the newest archive file...
===== UncompreEXT4-fs (sda3): mounted filesystem with ordered data mode. Opts:
 (null)
ssing and Extracting Archive =====
      Archive file: /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz
./acorn_install/
./acorn_install/secure_boot_signed_files.tgz
./acorn_install/sgdisk
./acorn_install/uefi_partition_files.tgz
./acorn_install/libstdc++.so.6
./acorn_install/install

Running install non-interactively


!!!EXT4-fs (sda3): mounted filesystem with ordered data mode. Opts: (null)
!!!!!!!!!!!!!!!!EXT4-fs (sda5): mounted filesystem with ordered data mode. Opts:
 (null)
!!!!!!!!!!!!!!!!EXT4-fs (sda6): mounted filesystem with ordered data mode. Opts:
 (null)
!!!!!!!!!!!!!!!!EXT4-fs (sda7): mounted filesystem with ordered data mode. Opts:
 (null)
!!!!!!!
```

```
!!!! You are executing in Non-Interactive Mode
!!!! SYSTEM will *REBOOT* automatically once the
!!!! execution completes successfully
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!


!!!! During this process, it is possible that you may
!!!! lose IP connectivity.  Juniper recommends having a
!!!! console connection to the device.  If you lose IP
!!!! connectivity and do not have console access, you
!!!! WILL lose access to the device.
Backing up system identity files . . .
[  OK  ]
Unmounting all partitions of /dev/sda
mounting tmpfs at /mnt/ramdisk[  OK  ]
============================================================
System Type                              : CTP151
CPU Type                                 : bacardi
Flash Type                               : 2.5" SSD Disk
Currently Running CTPOS                  : 9.1R1
System State                             : Running
Total RAM Size                           : 16063 MB
Free RAM Size                            : 15265 MB
No. of partitions on /dev/sda            : 6
CTPOS installed on                       : Image1 only
Running Image                         : Image1 (3.14.39ltsi-WR7.0.0.27_standard)
Non-Running Image                        : Image2 (Empty)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : 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 Seven partitions (1,2,3,4,5,6,11)
        Image2 - consists Seven partitions (1,2,7,8,9,10,11)
        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***
Unmounting all partitions of /dev/sda
Checking flash partition Tarball sizes...
        /flash_root partition Tarball size      : 154677 K
        /flash_home partition Tarball size      : 4 K
        /flash_var partition Tarball size       : 162 K
        /flash_local partition Tarball size     : 9331 K
Flash partion Tarball size      : 164174 K or 160 M
Free space on the system        : 14851 M
Backing up flash partions to ramdisk...
        /flash_root [  OK  ]
        /flash_home [  OK  ]
        /flash_var [  OK  ]
        /flash_local [  OK  ]
        /flash_efi [  OK  ]
********** Re-partitioning flash for dual image **********
Creating new flash partitions...  sda: sda1 sda2 sda3 sda4 sda5 sda6 sda7 sda8
 sda9 sda10 sda11
[  OK  ]
Creating ext3 file system on new partitions...
        EFI...[  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  ]
        CTP_APP...
***Re-partition of flash cardkjournald starting.  Commit interval 5 seconds
EXT3-fs (sda3): using internal journal
EXT3-fs (sda3): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda4): using internal journal
EXT3-fs (sda4): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
EXT3-fs (sda6): mounted filesystem with ordered data mode
 complete ***
Unmounting all partitions of /dev/sda
```

```
Mounting Image1 to /mnt/ ...[  OK  ]
Restoring Image1 archives to new flash partions ...
        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  ]
        flash_efi.tgz to /flash_efi  [  OK  ]
Unmounting Image1...[  OK  ]
Unmounting all partitionskjournald starting.  Commit interval 5 seconds
EXT3-fs (sda3): using internal journal
EXT3-fs (sda3): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda4): using internal journal
EXT3-fs (sda4): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
EXT3-fs (sda6): mounted filesystem with ordered data mode
 of /dev/sda
Unmounting all partitions of /dev/sda
Mounting Image1 to / ...[  OK  ]
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
  RAM disk /mnt/ramdisk has been created on RAM(total-16063 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 15261 MB available space in /mnt/ramdisk(RAM)
  You are advised to download dual image archive file whose
  size is less than free RAM memory(15261) on this node
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!kjournald starting.
 Commit interval 5 seconds
EXT3-fs (sda3): using internal journal
EXT3-fs (sda3): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda4): using internal journal
EXT3-fs (sda4): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
```

```
EXT3-fs (sda6): mounted filesystem with ordered data mode
!!!!!!!!!!!!
Exiting...
===== Archive Cleanup =====
Unmounting USB storage device
Done...
GPT PMBR size mismatch (6291455 != 60088319) will be corrected by w(rite).
Command Output:

Disk /dev/sda: 186.3 GiB, 200049647616 bytes, 390721968 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 0E9C13BE-FA3E-4EB3-BBA3-0A813A86E00D

Device            Start          End   Size Type
/dev/sda1          2048         4095     1M BIOS boot partition
/dev/sda2          4096       413695   200M EFI System
/dev/sda3        413696      8605695   3.9G Linux filesystem
/dev/sda4       8605696      9015295   200M Linux filesystem
/dev/sda5       9015296      9424895   200M Linux filesystem
/dev/sda6       9424896     11472895  1000M Linux filesystem
/dev/sda7      11472896     19664895   3.9G Linux filesystem
/dev/sda8      19664896     20074495   200M Linux filesystem
/dev/sda9      20074496     20484095   200M Linux filesystem
/dev/sda10     20484096     22532095  1000M Linux filesystem
/dev/sda11     22532096    360452095 161.1G Linux filesystem


Disk /dev/sdb: 28.7 GiB, 30765219840 bytes, 60088320 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 03D08B8F-6A06-4087-8982-BAACD6757C4F

Device           Start          End   Size Type
/dev/sdb1         2048         4095     1M BIOS boot partition
/dev/sdb2         4096       208895   100M EFI System
/dev/sdb3       208896      6291422   2.9G Linux filesystem
Copied /root/CTPOS_9.1R3-1_partitions_ctp151_211221.tgz to /mnt/ramdisk
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard, setting KVER to 310
```

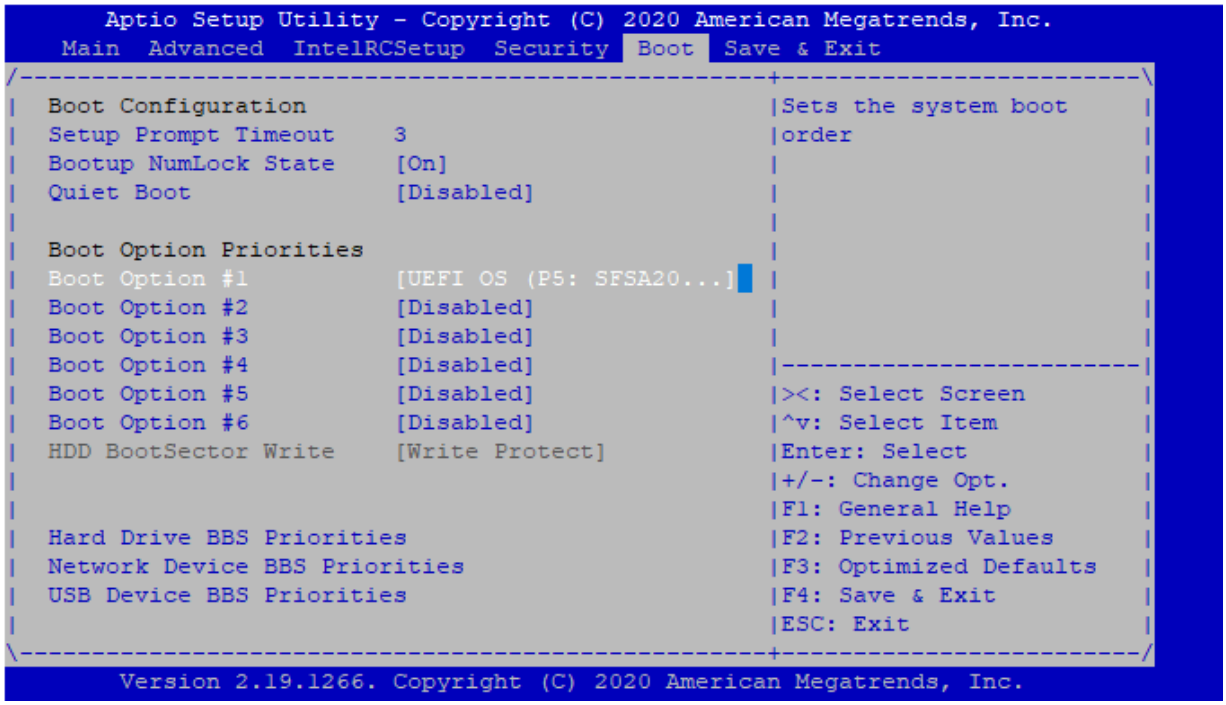
```
Checking for active menu sessions
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz is the newest archive file...
===== Uncompressing and Extracting Archive =====
      Archive file: /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz
./acorn_install/
./acorn_install/secure_boot_signed_files.tgz
./acorn_install/sgdisk
./acorn_install/uefi_partition_files.tgz
./acorn_install/libstdc++.so.6
./acorn_install/install

Running install non-interactively


!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!! You are executing in Non-Interactive Mode
!!!! SYSTEM will *REBOOT* automatically once the
!!!! execution completes successfully
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!


!!!! During this process, it is possible that you may
!!!! lose IP connectivity.  Juniper recommends having a
!!!! console connection to the device.  If you lose IP
!!!! connectivity and do not have console access, you
!!!! WILL lose access to the device.
[  OK  ]
Unmounting all partitions of /dev/sda
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
============================================================
System Type                             : CTP151
CPU Type                                : bacardi
Flash Type                              : 2.5" SSD Disk
Currently Running CTPOS                 : 9.1R1
System State                            : Running
```

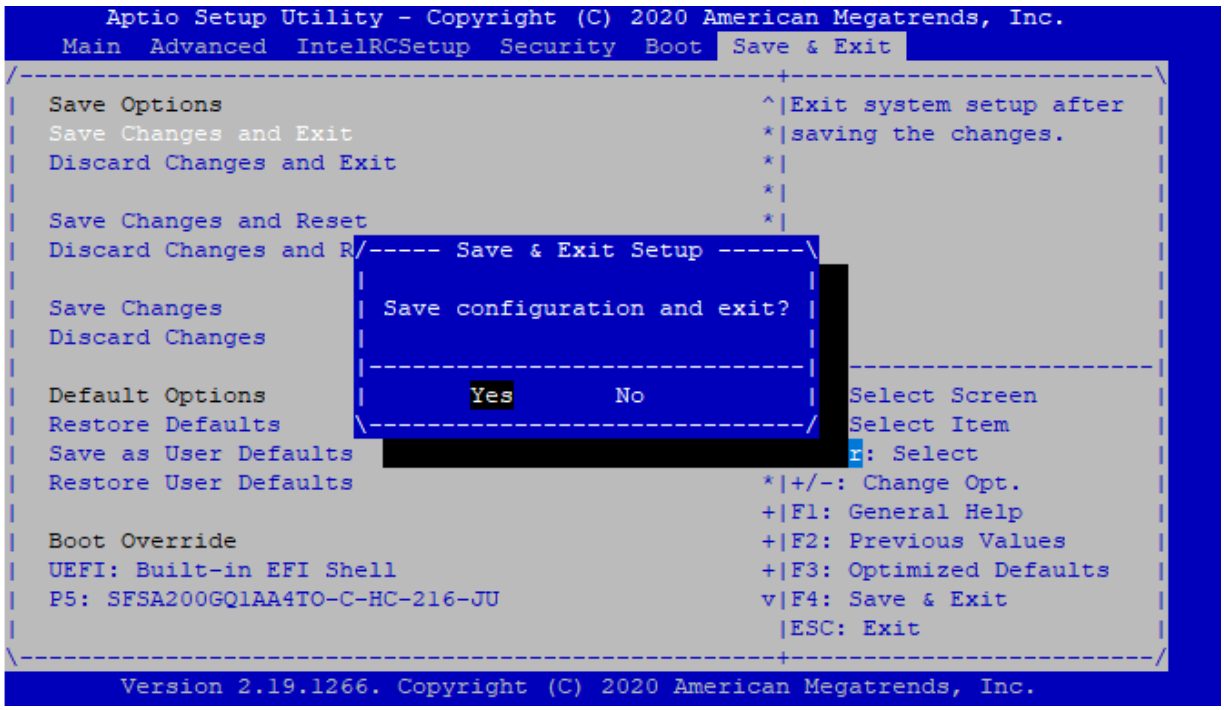
```
Total RAM Size                          : 16063 MB
Free RAM Size                           : 15109 MB
No. of partitions on /dev/sda           : 10
CTPOS installed on                      : Image1 only
Running Image                           : Image1
(9.1R1-comp-191223-013231-load-211102-114559')
Non-Running Image                       : Image2 (Empty)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : 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_9.1R3-1_partitions_ctp151_211221.tgz Image archive file found at
/mnt/ramdisk
Verifying CTPOS_9.1R3-1_partitions_ctp151_211221.tgz archive ...
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz md5sum - Matched
!!!  There is 15109 MB free space available on /mnt/ramdisk(RAM)
***Upgrading Image2 partition with CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
***
Unmounting all partitions of /dev/sda
Mounting Image2 to /mnkjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): using internal journal
EXT3-fs (sda7): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda8): using internal journal
EXT3-fs (sda8): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda9): using internal journal
EXT3-fs (sda9): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda10): using internal journal
EXT3-fs (sda10): mounted filesystem with ordered data mode
t/ ...[  OK  ]
Extracting CTPOS_9.1R3-1_partitions_ctp151_211221.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  ]
```

```
[  OK  ]
Transferring system identity files . . .
[  OK  ]
Unmounting Image2...[  OK  ]
Updating grub conf files... [  OK  ]
Unmounting all partitions of /dev/sda
*** ***
Upgrading Image2 partition with CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
complete
The system needs to be rebooted
*** ***
*** ***
!!!!!!!Rebooting System...
*** ***
INIT: Switching to runlevel: 6
INIT: Sending processes the TERM signal
Stopping OpenBSD Secure Shell server: sshdstopped /usr/sbin/sshd (pid 983)
.
Stopping Advanced Configuration and Power Interface daemon: stopped
/usr/sbin/acpid (pid 993)
acpid.
Stopping atd: OK
Stopping system message bus: dbus.
Shutting down irqbalance: stopped irqbalance (pid 1008)
done
Stopping ntpd: done
stopping rsyslogd ... done
stopping statd: done
Stopping crond: OK
Stopping network management services:snmpd[1025]: Received TERM or STOP signal...
  shutting down...
 snmpd
 snmptrapd.
Sending all processes the TERM signal...
Sending all processes the TERM signal...
Sending all processes the KILL signal...
Unmounting remote filesystems...
Deactivating swap...
Unmounting local filesystems...
Rebooting... sd 5:0:0:0: [sda] Synchronizing SCSI cache
reboot: Restarting system
reboot: machine restart
```

7. Go to BIOS menu and change boot priority #1 to **UEFI OS** and save the changes.

The device will boot up with CTPOS 9.1R3.1.





Installing Dual Image on CTP151 from CTPView

See *Installing CTPOS 9.1R3.1 Dual Image on CTP device from CTPView* section in CTPView Network Management System Administration Guide

Upgrading to Dual Image on CTP150 and CTP2000 Series Devices

You can upgrade to CTPOS 9.1R3.1 on a CTP150 and CTP2000 Series device through three different interface methods.

1. CLI or manual
2. USB
3. CTPView

1. Upgrading to Dual Image on CTP150 or CTP2000 Series Device | 53

Upgrading to Dual Image on CTP150 or CTP2000 Series Device

IN THIS SECTION

- Installing Dual Image on CTP150 or CTP2000 Series Device Manually through CLI | 53
- Installing Dual Image on CTP150 or CTP2000 Series device from USB | 62
- Installing Dual Image on CTP150 or CTP2000 Series device from CTPView | 79

Installing Dual Image on CTP150 or CTP2000 Series Device Manually through CLI

The following steps illustrate how to manually upgrade to a CTPOS 9.1R3.1 dual image from an existing single image or a dual image using CLI commands.

> **NOTE:** The steps involved to upgrade dual image on a CTP150 or CTP2000 series device varies from the steps to upgrade dual image on a CTP151 device.

The package *acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz* is needed to upgrade to CTPOS 9.1R3.1 on CTP150 or CTP2000 Series devices running CTPOS 9.0Rx and *acorn_429_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz* package is needed to upgrade to CTPOS

9.1R3.1 on CTP150 or CTP2000 Series devices running CTPOS 7.3Rx. Extract the package from the tarball *ctp_complete_9.1R3-1_211221.tgz* that is available in the Juniper Networks download page at https://support.juniper.net/support/downloads/ for CTPOS 9.1R3.1 Release. This package, when executed:

On a single image system, it will	• Upgrade the system to dual image (porting the previous single image contents into image 1 of the dual image flash). • Prepare the system to accept image upgrade tar ball (create RAM disk).
On a dual image system, will	Prepare the system to accept image upgrade tar ball (create RAM disk).

The “upgrade” program is executed to run *acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz* or *acorn_429_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz* package on CTP2000 and CTP150.

When running “upgrade” program from a CTPOS version 9.x, the *acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz* is required.

When running “upgrade” program from a CTPOS version 7.x, the *acorn_429_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz* is required.

The following steps show how to upgrade to a CTPOS 9.1R3.1 dual image on an existing CTPOS 9.0R1 on a CTP150 device.

1. Copy **acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz** to **/tmp** of CTP Device.
   /tmp#scp acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz ctp_cmd@10.216.118.87:/tmp
   No login banner configured
   Password:

2. Run "upgrade y" on CTP Node. You can also run “upgrade” to execute in interactive way.

   NOTE: This “upgrade” program, when issued with the “y” option, will execute non-interactively, and not ask the you for any inputs. If you want to guide the upgrade process, then you must execute “upgrade” instead.

```
[root@ctp_87:/tmp 4]# upgrade y
```

```
[root@ctp_219:/tmp 26]# ls
acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz
[root@ctp_219:/tmp 15]# upgrade y
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard. Could not set KVER.
Exiting..\n\nChecking for active menu sessions
```

```
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz is the newest
 archive file...
Copying /tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz to /tmp
cp: '/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz' and
'/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz' are the same
 file
===== Uncompressing and Extracting Archive =====
      Archive file:
/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz
./acorn_install/
./acorn_install/gui_instr
tar: ./acorn_install/gui_instr: time stamp 2021-08-13 20:41:38 is
57784861.093926227 s in the future
./acorn_install/install
tar: ./acorn_install/install: time stamp 2021-08-13 20:34:54 is 57784457.092679816
 s in the future
tar: ./acorn_install: time stamp 2021-08-13 20:41:30 is 57784853.092440233 s in
 the future

Running install non-interactively


!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!! You are executing in Non-Interactive Mode
!!!! SYSTEM will *REBOOT* automatically once the
!!!! execution completes successfully
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Backing up system identity files . . .
[  OK  ]
Shutting down ctp ...
Stopping CTP daemon         [  OK  ]
Removing CTP kernel driver  [  OK  ]
Voice Compression driver not loaded
Removing Menu Semaphore:     [  OK  ]
Unmounting all partitions of /dev/sda
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
```

```
Mounting Image1 to /mnt/ ...[  OK  ]
mounting tmpfs at /mnt/ramdisk[  OK  ]
============================================================
System Type                              : CTP150
CPU Type                                 : gluon
Flash Type                               : 4G Compact Flash
Currently Running CTPOS                  : 9.0R1
System State                             : Running
Total RAM Size                           : 997 MB
Free RAM Size                            : 592 MB
No. of partitions on /dev/sda            : 9
CTPOS installed on                       : Image1 & Image2
Running Image                            : Image1
(9.0R1-comp-190503-160652-load-190518-164510)
Non-Running Image                        : Image2
(9.0R1-comp-190503-160652-load-190518-114638)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : 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
============================================================
*** Image archive not found at /mnt/ramdisk    ***
*** Please copy CTPOS Image archive .tgz first  ***
*** and then re-execute dual image upgrade           ***
!!!  NOTE: There is 592 MB available space in /mnt/ramdisk(RAM)
!!!  If your flash image .tgz is larger than this, *do not* continue
!!!  with this image upgrade. Please contact JTAC for assistance.
Unmounting all partitions of /dev/sda
Unmounting all partitions of /dev/sda
Mounting Image1 to / ...[  OK  ]
Exiting...
===== Archive Cleanup =====
Unmounting USB storage device
Done...
[root@ctp_219:/tmp 16]#
```

3. Copy CTPOS_partitions tar ball to **/mnt/ramdisk** of CTP Node.

tmp#**scp CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz ctp_cmd@10.216.118.87:/mnt/ramdisk**

```
No login banner configured

Password:
```

[root@ctp_87:/tmp 5]# **ls -ltrh /mnt/ramdisk/**

```
total 149M
-rwxr-xr-x 1 ctp_cmd ctp_cmd 149M Sep 15 12:48
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz
```

4. Run "upgrade" on CTP Node. Type “y” when asked for system reboot. You can run “upgrade y” to execute in a non-interactive way.

[root@ctp_219:/tmp 16]# **upgrade**

```
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard. Could not set KVER.
Exiting..\n\nChecking for active menu sessions
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz is the newest
 archive file...
**************************************************************
NOTE: CTPOS code upgrades will interrupt data on running circuits.
Say "no" to run more interactive or install a different archive)
**************************************************************
```

Do you want to install the newest archive in quick mode (no questions)? y[n]: **n**
Do you want to install the newest archive interactively (w/ questions)? y[n]: **y**

```
yContinuing...
Copying /tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz to /tmp
cp: '/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz' and
'/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz' are the same
 file
```

```
===== Uncompressing and Extracting Archive =====
      Archive file:
/tmp/acorn_310_dual_image_upgrade_ctp150_ctp2k-02_-03_211221.tgz
./acorn_install/
./acorn_install/gui_instr
tar: ./acorn_install/gui_instr: time stamp 2021-08-13 20:41:38 is 57784688.7664793
 s in the future
./acorn_install/install
tar: ./acorn_install/install: time stamp 2021-08-13 20:34:54 is 57784284.765239345
 s in the future
tar: ./acorn_install: time stamp 2021-08-13 20:41:30 is 57784680.765001678 s in
 the future

Running install interactively
[  OK  ]
Unmounting all partitions of /dev/sda

Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
============================================================
System Type                          : CTP150
CPU Type                             : gluon
Flash Type                           : 4G Compact Flash
Currently Running CTPOS              : 9.0R1
System State                         : Running
Total RAM Size                       : 997 MB
Free RAM Size                        : 444 MB
No. of partitions on /dev/sda        : 9
CTPOS installed on                   : Image1 & Image2
Running Image                        : Image1
(9.0R1-comp-190503-160652-load-190518-164510)
Non-Running Image                    : Image2
(9.0R1-comp-190503-160652-load-190518-114638)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : 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_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz Image archive file found
 at /mnt/ramdisk
Verifying CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz archive ...
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz md5sum - Matched
!!!  There is 444 MB free space available on /mnt/ramdisk(RAM)
Please choose Image no. for upgrading:
        1. Upgrade to Image1:
        2. Upgrade to Image2:
        3. Exit:
```

Please enter valid input: **2**

```
***Upgrading Image2 partition with
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz ***
Unmounting all partitions of /dev/sda
Mounting Image2 to /mnt/ ...[  OK  ]
Extracting CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.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  ]

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 If you do not transfer system identity files (config and
 user information), CTP will go to first boot which requires a
 console connection to complete. You need to have console access
 to do the password and ethernet configs during first boot.

 If you transfer your identity files you do not need a
 console connection (but it is always recommended to use
 console access for upgrades). When upgrading from CTPOS
 7.x release, only the ethernet configs will be transferred
 and all other configs will be lost.
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Are you sure you want to transfer system identity files? y/n :**n**

```
*** Proceeding without transferring system identity files. ***
```

```
*** You need to do first boot after rebooting the system. ***
Unmounting Image2...[  OK  ]
Updating grub conf files... [  OK  ]
Unmounting all partitions of /dev/sda
*** ***
Upgrading Image2 partition with
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz complete
The system needs to be rebooted
*** ***
```

Do you want to reboot system now [y/n]?: **y**

```
*** ***
!!!!!!!Rebooting System...
*** ***
INIT:
Broadcast message from root@ctp_219 (console) (Tue Oct 15 01:25:27 2019):

The system is going down for reboot NOW!
Hangup
[root@ctp_219:/tmp 17]# iptables: Bad rule (does a matching rule exist in that
 chain?).
ip6tables: Bad rule (does a matching rule exist in that chain?).
CTP daemon not running
CTP kernel driver not loaded
Voice Compression driver not loaded
Stopping OpenBSD Secure Shell server: sshd[  OK  ]
Stopping atd: [  OK  ]
Stopping system message bus: dbus.
Shutting down irqbalance: [ FAIL ]
Stopping ntpd: [  OK  ]
Stopping FreeRADIUS daemon radiusd[  OK  ]
stopping rsyslogd ... [  OK  ]
Stopping crond: [  OK  ]
Stopping snmpd      snmpd[1577]: Received TERM or STOP signal...  shutting
down...

[  OK  ]
Shutting down interface eth0: [  OK  ]
Shutting down loopback interface: [  OK  ]
Disabling IPv4 packet forwarding: [  OK  ]
Backing up /var  to nonvolatile storage..
/etc/rc6.d/K80local: line 147: [: 580: unary operator expected
```

```
/var Backup Failed : Please clean up /var/log
Backing up /home to nonvolatile storage..
mount: /flash_home not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
mount: /flash_home not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
mount: /flash_root not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
Backing up /     to nonvolatile storage..
mount: /flash_root not mounted or bad option

       In some cases useful info is found in syslog - try
       dmesg | tail or so.
Sending all processes the TERM signal...
logout
Sending all processes the KILL signal...
Unmounting remote filesystems...
Deactivating swap...
Unmounting local filesystems...
Rebooting... reboot: Restarting system
Phoenix TrustedCore(tm) Server
Copyright 1985-2007 Phoenix Technologies Ltd.
All Rights Reserved
Juniper JPR-BIGBYP (B131) V3.0 (05/13/2009)

CPU = Intel(R) Celeron(R) D CPU        440  @ 2.00GHz
No TPM or TPM has problem
1024M System RAM Passed
512 KB L2 Cache
System BIOS shadowed
Video BIOS shadowed
Fixed Disk 0: AT




Press <DEL> to enter SETUP
```

```
        Initializing cgroup subsys cpuset
Initializing cgroup subsys cpu
Initializing cgroup subsys cpuacct
Linux version 3.14.39ltsi-WR7.0.0.27_standard (svikrams@bng-ctp-build2) (gcc
version 4.9.1 (Wind River Linux 4.9.1-37) ) #2 SMP Wed Sep 4 19:55:27 IST 2019
KERNEL supported cpus:
  Intel GenuineIntel
  AMD AuthenticAMD
  NSC Geode by NSC
  Cyrix CyrixInstead
  Centaur CentaurHaulskeys to select which entry is highlighted.
  Transmeta GenuineTMx86t the selected OS, 'e' to edit the
  Transmeta TransmetaCPUoting, 'a' to modify the kernel arguments
  UMC UMC UMC UMCing, or 'c' for a command-line.
e820: BIOS-provided physical RAM map:
BIOS-e820: [mem 0x0000000000000000-0x000000000009cbff] usableconds.
BIOS-e820: [mem 0x000000000009cc00-0x000000000009ffff] reserved
BIOS-e820: [mem 0x00000000000ce000-0x00000000000cffff] reserved
BIOS-e820: [mem 0x00000000000dc000-0x00000000000fffff] reserved
```

The system will reboot and come up with CTPOS 9.1R3.1 image.

Installing Dual Image on CTP150 or CTP2000 Series device from USB

The USB flash image *ctpos_usb_install_9.1R3-1_ctp150_ctp2k-02_-03_211221.img* is needed to upgrade to CTPOS 9.1R3.1 on a CTP150 or CTP2000 series device. Download this image from the Juniper Networks download page at https://support.juniper.net/support/downloads/ for CTPOS 9.1R3.1 Release.

NOTE: USB install is not supported for CTP2000 platforms with 02 (PP332) processor.

When USB install for dual upgrade is executed:

On a single image system, it will	• upgrade system to dual image (porting the previous single image contents into image 1 of the dual image flash) • prepare the system to accept image upgrade tar ball (create RAM disk)
On a dual image system, it will	prepare the system to accept image upgrade tar ball (create RAM disk)

Following steps illustrate how to upgrade dual image CTPOS 9.1R3.1 on a CTP2000 device with PP833 processor.

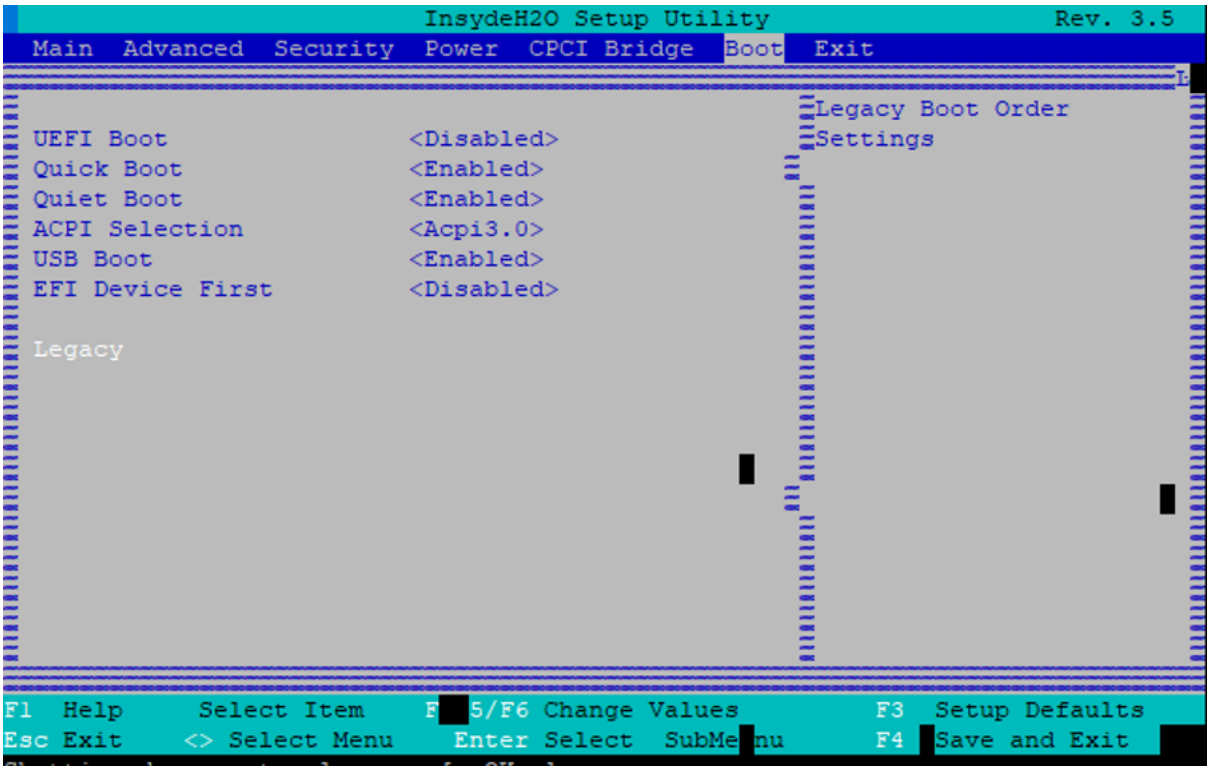
1. Insert your USB disk into the CTP150 or CTP2000 series device, and burn the USB install image to it.

   ```
   ssh root@198.1.1.1 dd
   if=ctpos_usb_install_9.1R3-1_ctp150_ctp2k-02_-03_211221.img of=<USB device
   name> bs=1M
   ```

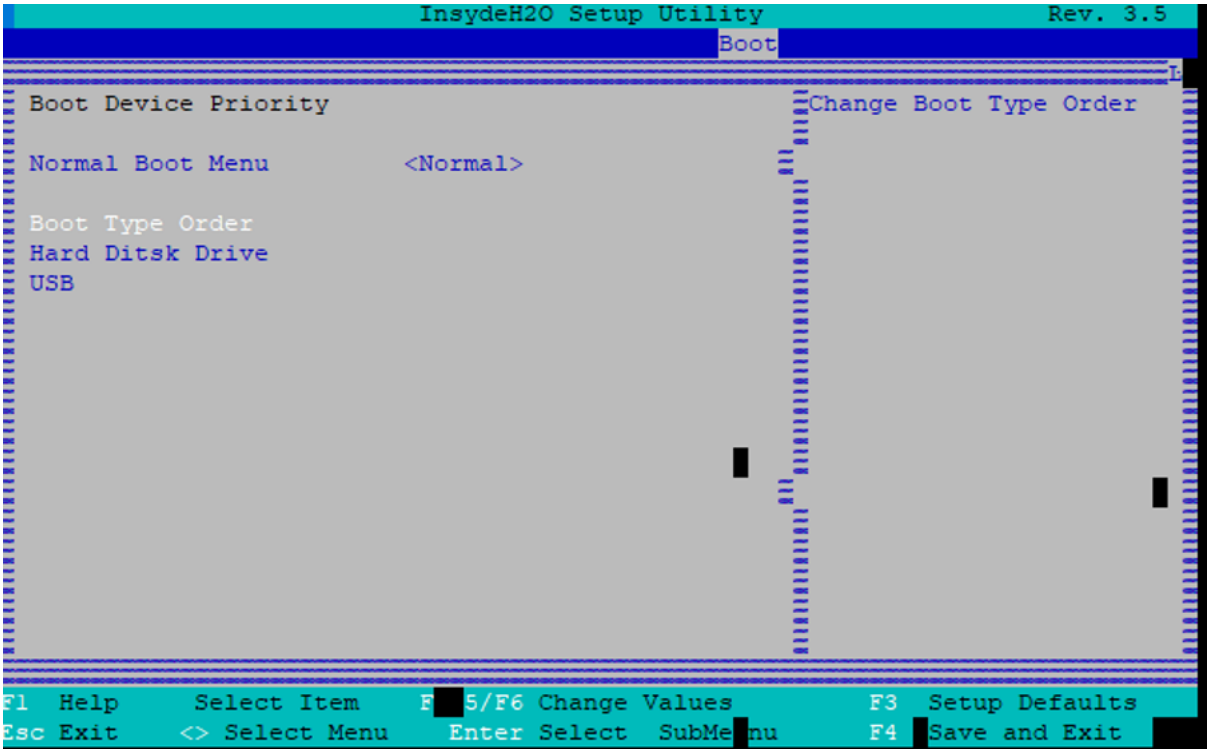
   ```
   NOTE: Please find the USB device (like /dev/sdb) on the system(fdisk -l) where
    you have connected USB disk hardware and feed this device name in “of=” in
   above command.
   ```

   In the above command, replace "198.1.1.1" IP address with your server IP.

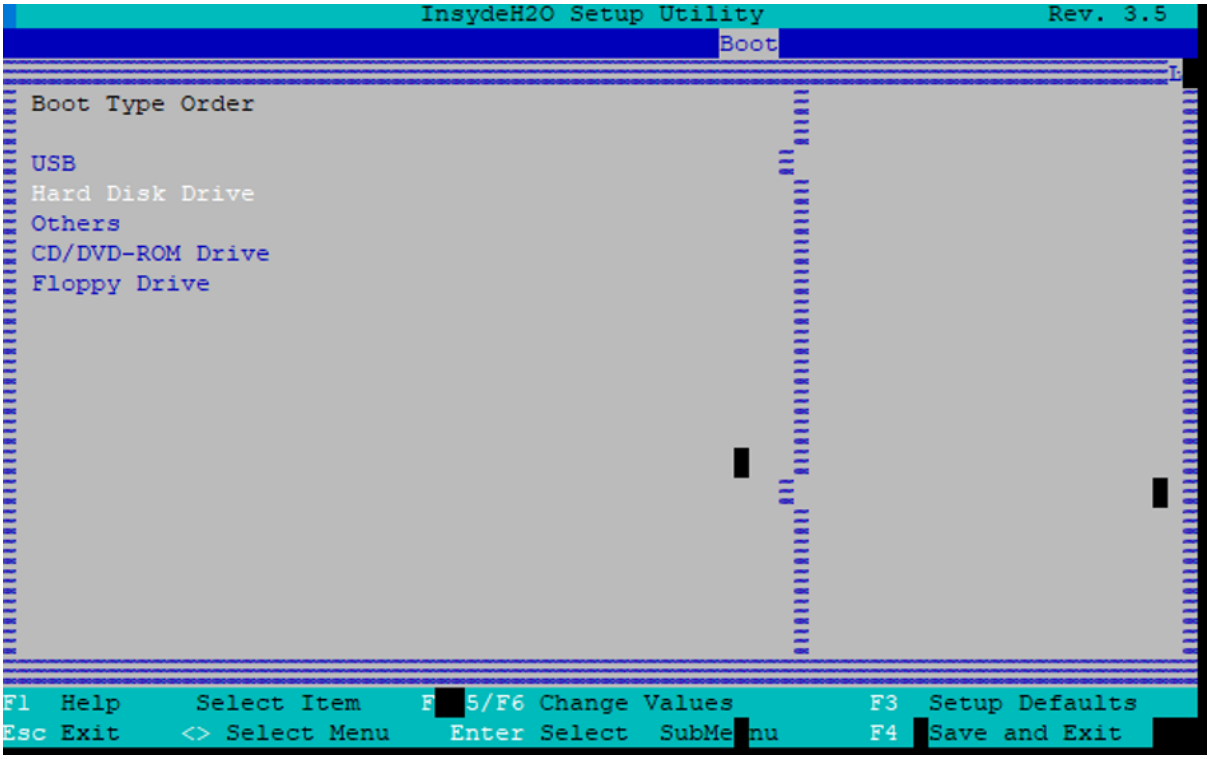
2. Reboot CTP Node.
   Press *F2 key* twice to go to the BIOS menu in CTP2000 series device with PP833 processor.
   If you are doing USB install on a CTP150 device, press *Backspace* to enter the BIOS menu.



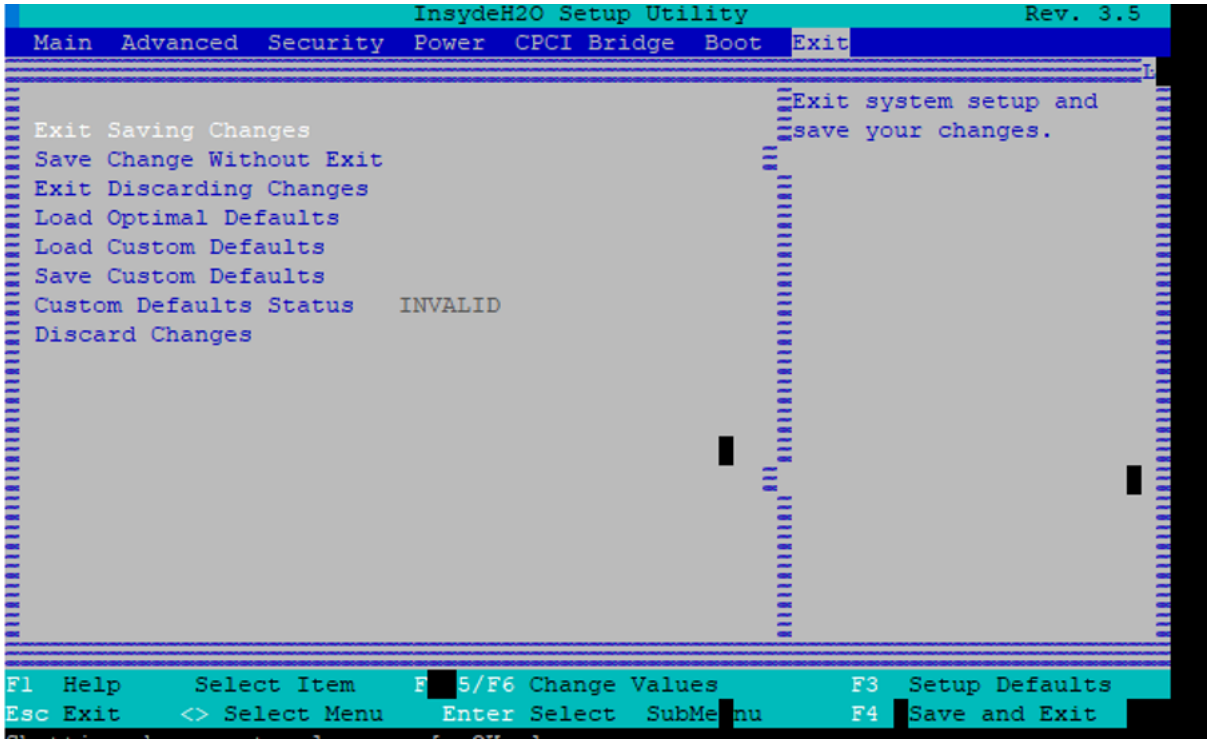
3. Press *Enter* and select **Boot Type Order**.



4. Press Enter. Press <F5> key to display the USB option.

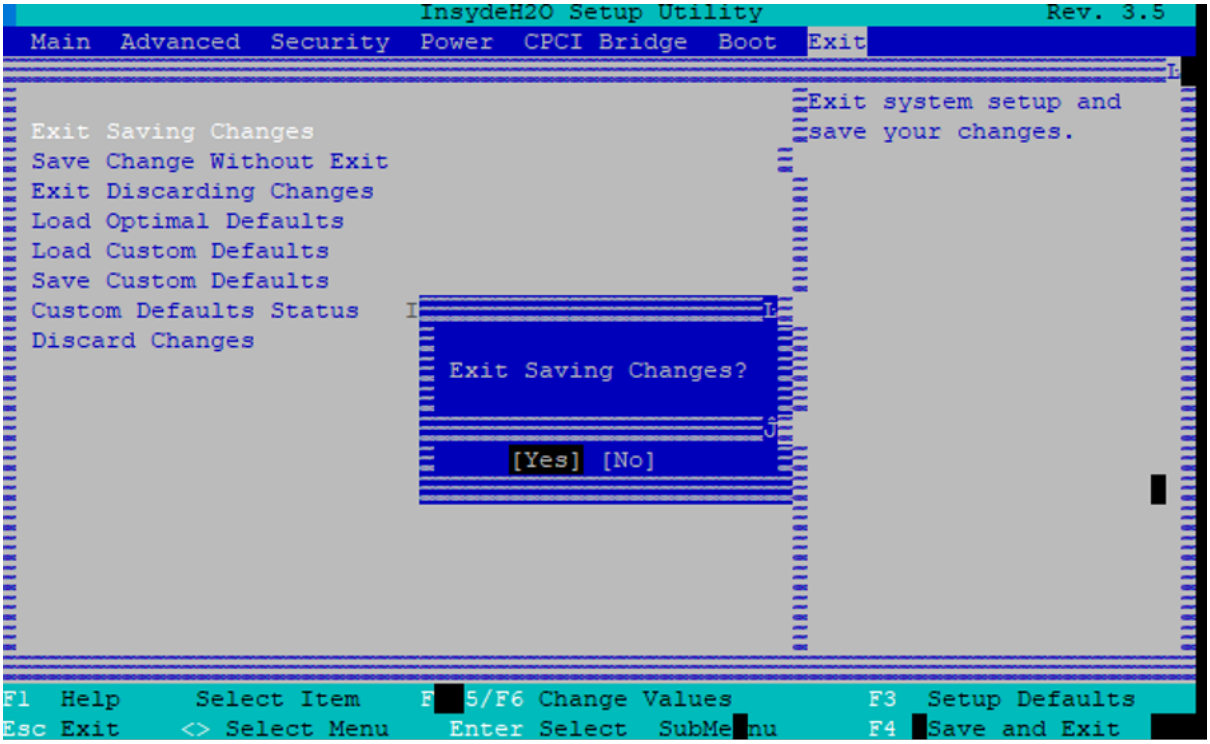


5. Press *Esc* key twice and go to **Exit**.



6. Select **Exit Saving Changes** and enter *Yes*.

The system will boot and comes up with USB menu displaying the following.




```
============================================================
============================================================
===== CTPOS USB installation - Version 0.54
============================================================
============================================================
--- Checking for programs... Done.
--- Detecting system type: CTP2000_PP833
--- Detecting disks/partitions on system... Done.
--- Detecting available image files...   Only one image file exists: 9.1R3.1
  ------------------------------------------------
  Please Select a destination disk from the list:
    0) USB Disk /dev/sda (3.8G)
  ------------------------------------------------
```

Selection: **0**

```
------------------------------------------------
  Here are your installation selections:
    Image file:       9.1R3.1
```

```
    Destination disk: /dev/sda
  ----------------------------------------------
```

Continue with installation? y[n]: **y**

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!kjournald starting.  Commit interval
 5 seconds
EXT3-fs (sdb5): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sdb5): using internal journal
EXT3-fs (sdb5): mounted filesystem with ordered data mode
!!!!!!!!!!!!!!!!
!!!! You are executing in Non-Interactive Mode
!!!! SYSTEM will *REBOOT* automatically once the
!!!! execution completes successfully
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!


!!!! During this process, it is possible that you may
!!!! lose IP connectivity.  Juniper recommends having a
!!!! console connection to the device.  If you lose IP
!!!! connectivity and do not have console access, you
!!!! WILL lose access to the device.
Backing up system identity files . . .
[  OK  ]
Unmounting all partitions of /dev/sda
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
Unmounting Image1...[  OK  kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
EXT3-fs (sda6): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda7): using internal journal
```

```
EXT3-fs (sda7): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda8): using internal journal
EXT3-fs (sda8): mounted filesystem with ordered data mode
]
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...journald starting.  Commit interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
[1;34m[  OK  ]
mounting tkjournald starting.  Commit interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
EXT3-fs (sda6): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda7): using internal journal
EXT3-fs (sda7): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda8): using internal journal
EXT3-fs (sda8): mounted filesystem with ordered data mode
mpfs at /mnt/ramdisk[  OK  ]
============================================================
System Type                              : CTP2000
CPU Type                                 : pp833
Flash Type                               : 4G Compact Flash
Currently Running CTPOS                  : 7.3R7
System State                             : Running
Total RAM Size                           : 8043 MB
Free RAM Size                            : 7290 MB
No. of partitions on /dev/sda            : 9
CTPOS installed on                       : Image1 & Image2
Running Image                            : Image1 (2.4.29)
Non-Running Image                        : Image2
(9.0R1-comp-190503-160652-load-210705-163325)
```

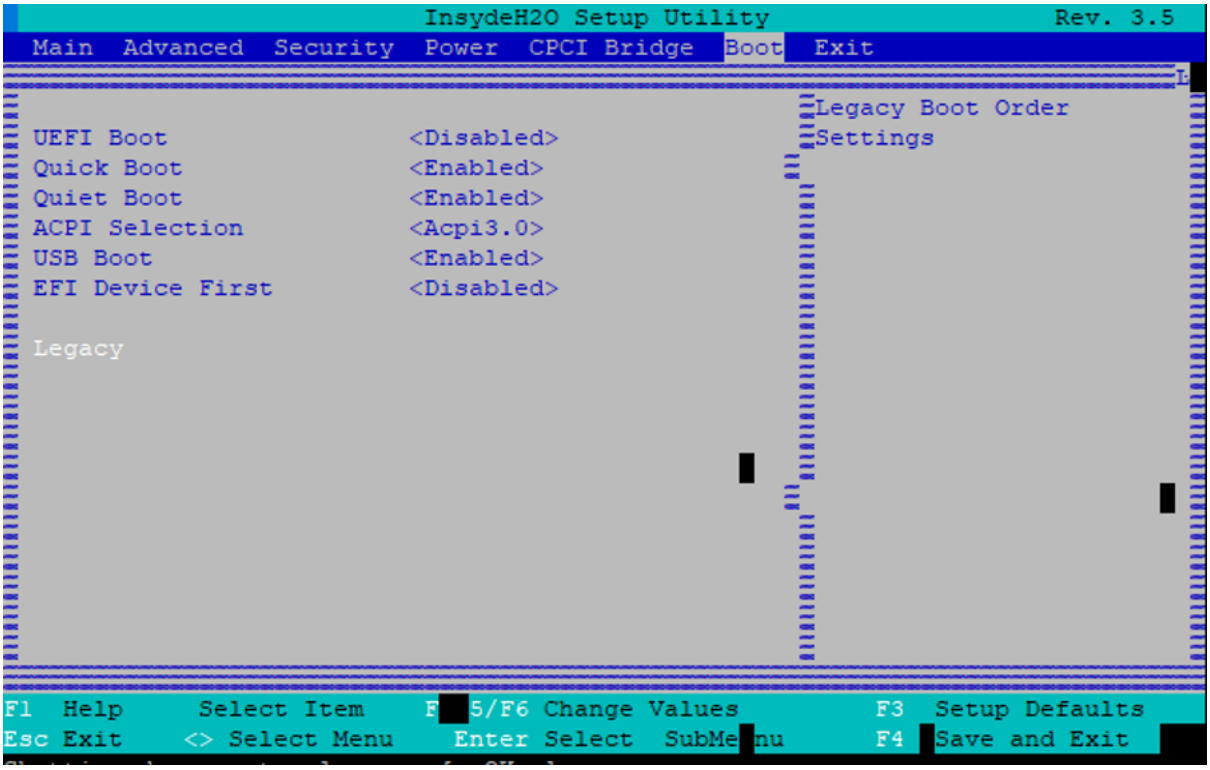
```
NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : Release Name
        comp-YYMMDD-HHMMSS : Root-FS/Kernel compile timestamp
        load-YYMMDD-HHMMSS : Image upgrade timestamp
Dual Image on Flash has two logical images :
        Image1 - consists Five partitions (1,5,6,7,8)
        Image2 - consists Five partitions (1,9,10,11,12)
        First partition(bootable) is common to both Image1 and Image2
============================================================
*** Image archive not found at /mnt/ramdisk    ***
*** Please copy CTPOS Image archive .tgz first  ***
*** and then re-execute dual image upgrade           ***
!!!  NOTE: There is 7289 MB available space in /mnt/ramdisk(RAM)
!!!kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
  If your flash image .tgz is larger than this, kjournald starting.  Commit
interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
EXT3-fs (sda6): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda7): using internal journal
EXT3-fs (sda7): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda8): using internal journal
EXT3-fs (sda8): mounted filesystem with ordered data mode
*do not* continue
!!!  with this image upgrade. Please contact JTAC for assistance.
Unmounting all partitions of /dev/sda
Unmounting all partitions of /dev/sda
Mounting Image1 to / ...[  OK  ]
Exiting...
Command Output:
```

```
Disk /dev/sda: 3.8 GiB, 4110188544 bytes, 8027712 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x000509ff

Device     Boot     Start       End  Blocks  Id System
/dev/sda1  *         2016    201599   99792  83 Linux
/dev/sda2          203616   7572095 3684240   5 Extended
/dev/sda5          205632   3026015 1410192  83 Linux
/dev/sda6         3028032   3126815   49392  83 Linux
/dev/sda7         3128832   3227615   49392  83 Linux
/dev/sda8         3229632   3832415  301392  83 Linux
/dev/sda9         3834432   6654815 1410192  83 Linux
/dev/sda10        6656832   6755615   49392  83 Linux
/dev/sda11        6757632   6856415   49392  83 Linux
/dev/sda12        6858432   7461215  301392  83 Linux


Disk /dev/sdb: 29.8 GiB, 32008830976 bytes, 62517248 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x9835fec0

Device    Boot     Start       End  Blocks  Id System
/dev/sdb1 *         2048    206847  102400  83 Linux
/dev/sdb2         206848   6291000 3042076+ 83 Linux
Copied /root/ CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz to
/mnt/ramdisk


!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!! You are executing in Non-Interactive Mode
!!!! SYSTEM will *REBOOT* automatically once the
!!!! execution completes successfully
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!


!!!! During this process, it is possible that you may
!!!! lose IP connectivity.  Juniper recommends having a
```

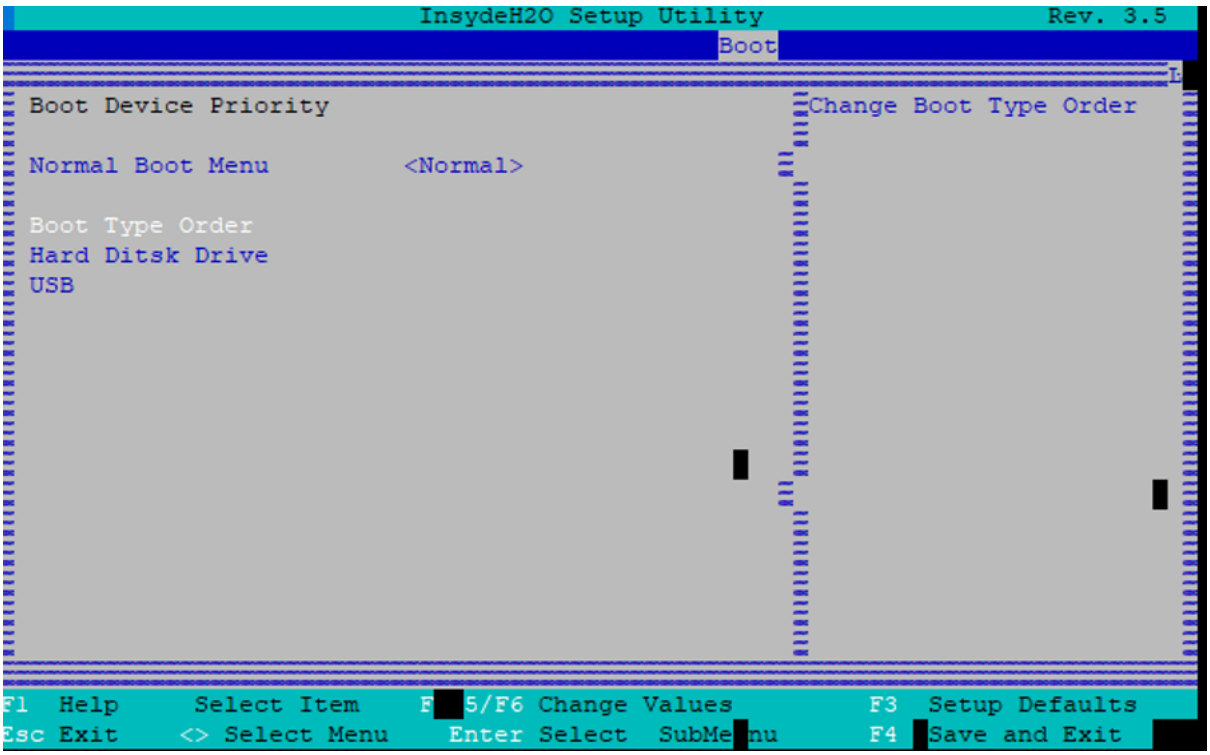
```
!!!! console connection to the device.  If you lose IP
!!!! connectivity and do not have console access, you
!!!! WILL lose access to the device.
[  OK  ]
Unmounting all partitions of /dev/sda
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
============================================================
System Type                              : CTP2000
CPU Type                                 : pp833
Flash Type                               : 4G Compact Flash
Currently Running CTPOS                  : 7.3R7
System State                             : Running
Total RAM Size                           : 8043 MB
Free RAM Size                            : 7138 MB
No. of partitions on /dev/sda            : 9
CTPOS installed on                       : Image1 & Image2
Running Image                            : Image1 (2.4.29)
Non-Running Image                        : Image2
(9.0R1-comp-190503-160652-load-210705-163325)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : 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_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz Image archive file found
 at /mnt/ramdisk
Verifying CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz archive ...
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz md5sum - Matched
!!!  There is 7138 MB free space available on /mnt/ramdisk(RAM)
/dev/sda1 on /boot type ext3 (rw,relatime,errors=continue,barrier=1,data=ordered)
***Upgrading Image1 partitiokjournald starting.  Commit interval 5 seconds
EXT3-fs (sda1): using internal journal
EXT3-fs (sda1): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): warning: maximal mount count reached, running e2fsck is
recommended
```

```
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda6): using internal journal
EXT3-fs (sda6): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda7): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda7): using internal journal
EXT3-fs (sda7): mounted filesystem with ordered data mode
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda8): using internal journal
EXT3-fs (sda8): mounted filesystem with ordered data mode
n with CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz ***
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
Extracting CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz to Image1
...
        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  ]
kjournald starting.  Commit interval 5 seconds
EXT3-fs (sda5): warning: maximal mount count reached, running e2fsck is
recommended
EXT3-fs (sda5): using internal journal
EXT3-fs (sda5): mounted filesystem with ordered data mode
Transferring system identity files . . .
[  OK  ]
Unmounting Image1...[  OK  ]
Updating grub conf files... [  OK  ]
Unmounting all partitions of /dev/sda
*** ***
Upgrading Image2 partition with
CTPOS_9.1R3-1_partitions_ctp150_ctp2k-02_-03_211221.tgz complete
The system needs to be rebooted
*** ***
*** ***
!!!!!!!Rebooting System...
*** ***
```

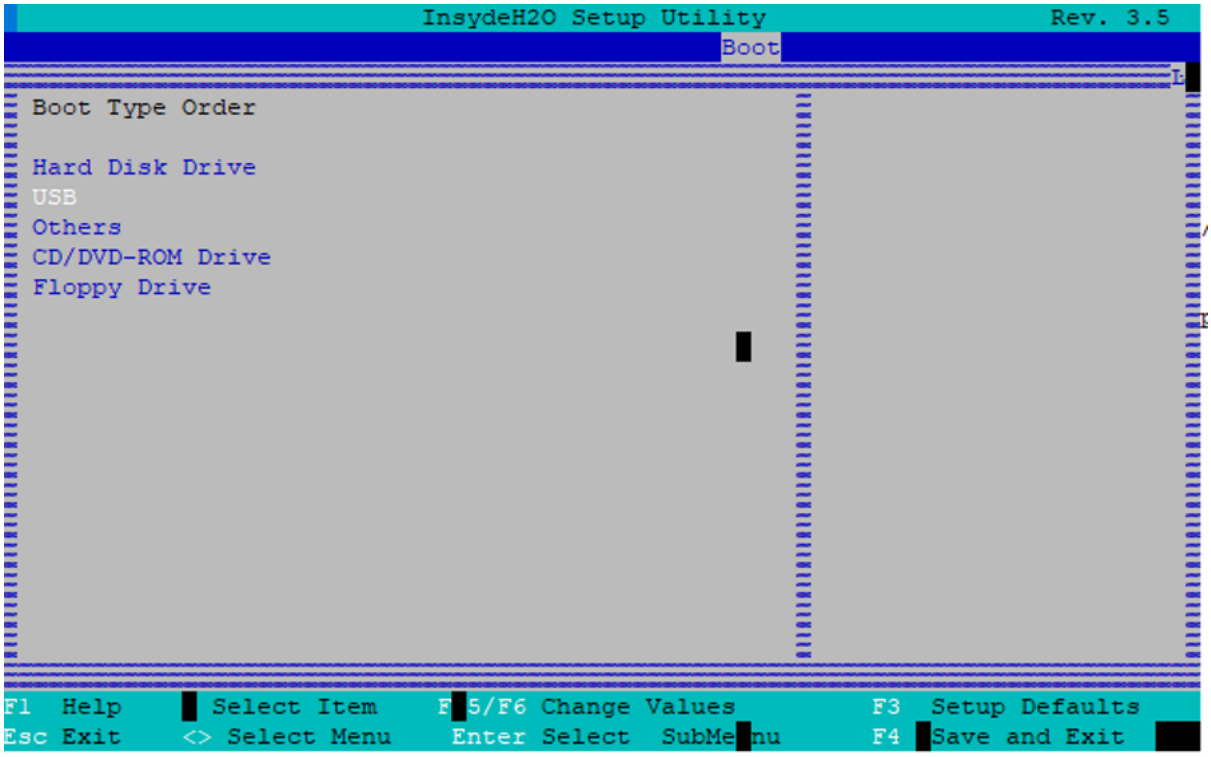
7. Type *F2* key twice to go to BIOS menu in PP833.



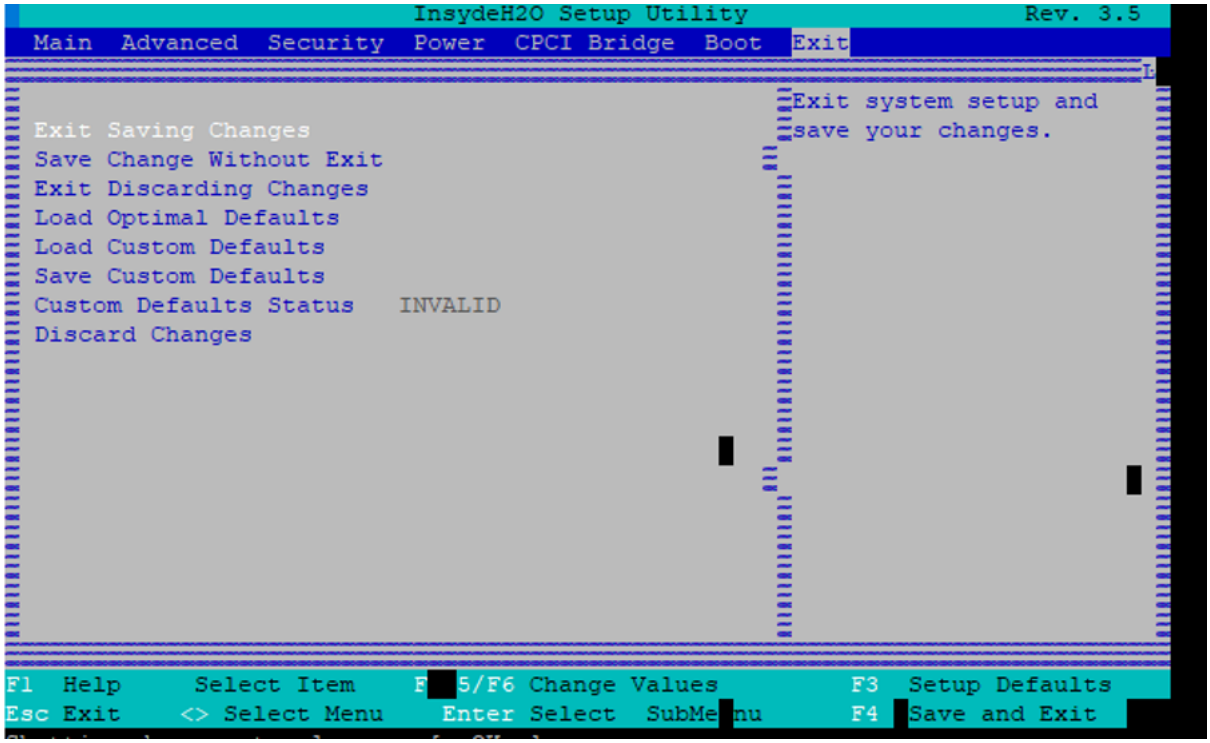
8. Press *Enter* and select **Boot Type Order**.



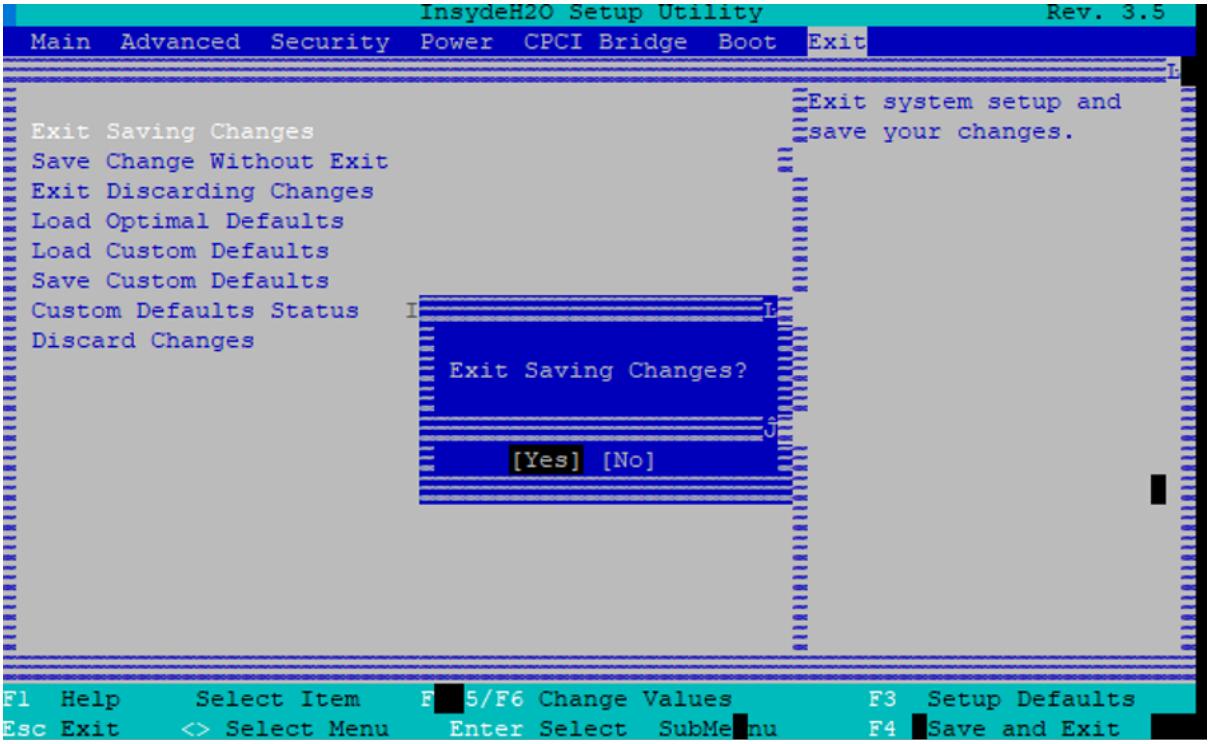
9. Press *Enter* and press F5 key to see the *Hard Disk Drive* option as a first boot order priority.



10. Press *Esc* key twice. Go to **Exit**.



11. Select **Exit Saving Change**s and select **Yes**.



12. The system will boot and come up with 9.1R3.1 image.

```
GNU GRUB  version 0.97  (624K lower / 3134204K upper memory)


   CTP_ROOT (9.1R3-comp-211221- 164106-load-211122-192436)
   CTP_ROOT (9.0R1-comp-190503-160652-load-210705-163325)









      Use the ^ and v keys to select which entry is highlighted.
      Press enter to boot the selected OS, 'e' to edit the
      commands before booting, 'a' to modify the kernel arguments
      before booting, or 'c' for a command-line.

   The highlighted entry will be booted automatically in 1 seconds.
```

Installing Dual Image on CTP150 or CTP2000 Series device from CTPView

See *Installing CTPOS 9.1R3.1 Dual Image on CTP device from CTPView* section in CTPView Network Management System Administration Guide.

CHAPTER 2

Personality Transfer

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Personality Transfer

Till now, when you upgrade 9.x CTP device to 9.1R3.1 via the current dual image upgrade process, you were forced to “First Boot” the system, which can be a tedious and time-consuming effort.

Personality Transfer feature copies the files that are modified as part of your configuration changes to the system (such as, ctp_dbase, service config files, system settings - IP address, default ethernet, and so on) to the new CTPOS 9.1R3.1 image so that all the user system/node/bundle configurations remain intact. With this feature you need not “First Boot” the system forcefully, thus saving the time.

Starting from the CTPOS Release 9.1R3.1, the Personality Transfer feature is introduced to help you upgrade to dual image seamlessly, without first boot. This feature is supported on CTP150, CTP151, and CTP2000 series devices.

You can upgrade using three different interface methods.

1. CLI or Manual
2. USB
3. CTPView

- You can either choose to upgrade seamlessly in a non-interactive mode (USB or CTPView) or interactive mode (CLI or Manual).
- You can use the Personality Transfer feature to upgrade the CTP devices which are running only CTPOS 9.0R1, 9.1R1, or 9.1R2.1 images.
- When upgrading the CTP devices running CTPOS 7.x image, *only the ethernet configuration files are restored* and all other configuration files are NOT restored.

NOTE: If Ethernet segregation is enabled on a CTPOS 7.3 system and Personality Transfer is chosen during upgrade to CTPOS 9.1R3.1, the configuration for Ethernet segregation is lost after upgrade. In such a case, Ethernet segregation must be enabled after upgrade.

- Personality Transfer is applied if you upgrade CTP in non-interactive mode.
  If you choose to upgrade in an interactive mode, you are prompted whether you want to retain system identity files.
  If you select Yes, personality transfer feature is applied, else it is not.
- In case of an existing 9.0R1 dual-imaged system, where the active partition is running 7.3 version of CTPOS, an upgrade to 9.1R3.1 will replace the image in partition with 7.3 version. The CTP may go to 'first boot' state in such a scenario when upgrade is performed through CTPView or in non-interactive mode locally. If upgrade is performed using CTPView, when such a condition arises, the upgrade page will show the error message **Connection to ctp not recovered** due to the 'first boot' condition having occurred even though the upgrade will happen successfully. To recover the connection of CTPView with CTP, CTP should be re-connected to CTPView.
- All the CTP system identity files are copied during Personality Transfer. If you want to know what files compromise the personality files you can contact JTAC for further help.
- When you upgrade from 9.1Rx to 9.1R3.1 dual image, the following messages are displayed:
  - *Non-interactive mode*

```
[root@md-ctp-151-35:/tmp 11]# ls
acorn_310_dual_image_upgrade_ctp151_211221.tgz

[root@md-ctp-151-35:/tmp 12]#
[root@md-ctp-151-35:/tmp 12]# upgrade y
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard, setting KVER to 310

Checking for active menu sessions
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp151_211020.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz is the newest archive file...

===== Uncompressing and Extracting Archive =====
Archive file: /tmp/ acorn_310_dual_image_upgrade_ctp151_211221.tgz
```

```
acorn_install/
acorn_install/secure_boot_signed_files.tgz

……
……..
……..

Running install non-interactively


!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!! You are executing in Non-Interactive Mode
!!!! SYSTEM will *REBOOT* automatically once the
!!!! execution completes successfully
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
Backing up system identity files . . .
[ OK ]
```

```
……
……
……
Mounting Image2 to /mnt/ ...[  OK  ]
Extracting CTPOS_9.1R3-1_partitions_ctp151_211221.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  ]
[  OK  ]
```

Transferring system identity files . . .

[OK]

Now, the personality transfer is applied.

```
Unmounting Image2...[  OK  ]
Updating grub conf files... [  OK  ]
```

- *Interactive Mode*

```
[root@ctp_215:/tmp 12]# cmd -v

        CTPOS CLI version: 9.1R1 191223
```

```
        Compile Time: Mon Dec 23 2019 01:32:31 PM

[root@ctp_215:/tmp 13]# ls -lrt /mnt/ramdisk/
total 157364
-rwx------ 1 root root 161136861 Oct 29 17:55
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
[root@ctp_215:/tmp 14]#
```

[root@ctp_215:/tmp 14]# **upgrade**

```
CTP system software upgrade utility - Version 1.5.0
Found kernel version 3.14.39ltsi-WR7.0.0.27_standard, setting KVER to 310

Checking for active menu sessions
Found USB storage device... Mounting
System version is 310
Here is a list of all the found compatible CTP code archive files:
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz

Removing old installation residue...
/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz is the newest archive file...
*****************************************************************
NOTE: CTPOS code upgrades will interrupt data on running circuits.
Say "no" to run more interactive or install a different archive)
*****************************************************************
```

Do you want to install the newest archive in quick mode (no questions)? y[n]: **n**

Do you want to install the newest archive interactively (w/ questions)? y[n]: **y**

```
Copying /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz to /tmp
cp: '/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz' and
'/tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz' are the same file
===== Uncompressing and Extracting Archive =====
      Archive file: /tmp/acorn_310_dual_image_upgrade_ctp151_211221.tgz
./acorn_install/
./acorn_install/secure_boot_signed_files.tgz
tar: ./acorn_install/secure_boot_signed_files.tgz: time stamp 2021-03-12 15:18:54
 is 43190481.600093562 s in the future
./acorn_install/sgdisk
tar: ./acorn_install/sgdisk: time stamp 2021-03-12 15:18:54 is 43190481.596867394
 s in the future
./acorn_install/uefi_partition_files.tgz
```

```
tar: ./acorn_install/uefi_partition_files.tgz: time stamp 2021-04-07 02:44:49
is 45391636.593182705 s in the future
./acorn_install/libstdc++.so.6
tar: ./acorn_install/libstdc++.so.6: time stamp 2021-03-12 15:18:54 is
43190481.574013122 s in the future
./acorn_install/gui_instr
tar: ./acorn_install/gui_instr: time stamp 2021-08-13 20:43:59 is
56515586.573900869 s in the future
./acorn_install/install
tar: ./acorn_install/install: time stamp 2021-08-13 20:43:46 is
56515573.573279414 s in the future
tar: ./acorn_install: time stamp 2021-11-02 14:55:48 is 63493095.573150446 s
in the future

Running install interactively
[  OK  ]
Unmounting all partitions of /dev/sda
Unmounting Image1...[  OK  ]
Unmounting all partitions of /dev/sda
Mounting Image1 to /mnt/ ...[  OK  ]
================================================================
System Type                              : CTP151
CPU Type                                 : bacardi
Flash Type                               : 2.5" SSD Disk
Currently Running CTPOS                  : 9.1R1
System State                             : Running
Total RAM Size                           : 16061 MB
Free RAM Size                            : 15407 MB
No. of partitions on /dev/sda            : 10
CTPOS installed on                       : Image1 only
Running Image                            : Image1
(9.1R1-comp-191223-013231-load-191029-175301')
Non-Running Image                        : Image2 (Empty)

NOTE:
9.1R3-comp-YYMMDD-HHMMSS-load-YYMMDD-HHMMSS decoded as :
        9.1R3 : 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_9.1R3-1_partitions_ctp151_211221.tgz Image archive file found at
/mnt/ramdisk
Verifying CTPOS_9.1R3-1_partitions_ctp151_211221.tgz archive ...
CTPOS_9.1R3-1_partitions_ctp151_211221.tgz md5sum - Matched
!!!  There is 15407 MB free space available on /mnt/ramdisk(RAM)
Please choose Image no. for upgrading:
        1. Upgrade to Image1:
        2. Upgrade to Image2:
        3. Exit:
```

Please enter valid input: **2**

```
***Upgrading Image2 partition with CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
***
Unmounting all partitions of /dev/sda
Mounting Image2 to /mnt/ ...[  OK  ]
Extracting CTPOS_9.1R3-1_partitions_ctp151_211221.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  ]
[  OK  ]

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
If you do not transfer system identity files (config and
user information), CTP will go to first boot which requires a
console connection to complete. You need to have console access
to do the password and ethernet configs during first boot.

If you transfer your identity files you do not need a
console connection (but it is always recommended to use
console access for upgrades). When upgrading from CTPOS
7.x release, only the ethernet configs will be transferred
and all other configs will be lost.
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Are you sure you want to transfer system identity files? y/n :**y**

```
Transferring system identity files . . .
```

```
[  OK  ]
Unmounting Image2...[  OK  ]
Updating grub conf files... [  OK  ]
Unmounting all partitions of /dev/sda
*** ***
Upgrading Image2 partition with CTPOS_9.1R3-1_partitions_ctp151_211221.tgz
complete
The system needs to be rebooted
*** ***
```

Do you want to reboot system now [y/n]?: **y**

```
*** ***
!!!!!!!Rebooting System...
*** ***
.
.
.


***** Normal boot up of this flash. *****

Checking modules.conf indicates system changes needed!
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
SLOT0_BAR0 added/removed: 0x00000000dfa00000(old) 0x00000000dfb00000(new)
Using /etc/sysconfig/platform.conf ...
Using modules.conf.nova
Backing up /etc to nonvolatile storage..
Loading sensors modules. Please wait, this could take ~30 seconds
Assigning Mac address to all available ethernet interfaces
Starting system message bus: Unknown username "avahi" in message bus
configuration file
dbus.
iptables: Applying firewall rules: [  OK  ]
ip6tables: Applying firewall rules: [  OK  ]
Bringing up loopback interface: [  OK  ]
Setting 802.1Q VLAN parameters: Set name-type for VLAN subsystem. Should be
visible in /proc/net/vlan/config
[  OK  ]
Bringing up interface eth4: [  OK  ]
Starting OpenBSD Secure Shell server: sshd[  OK  ]
Starting atd: [  OK  ]
Starting irqbalance: [  OK  ]
```

```
starting rsyslogd ... [  OK  ]
Starting sticky dev is /dev/sda
[  OK  ]

Starting crond: [  OK  ]
Loading sensors modules. Please wait, this could take ~30 seconds
===== This release supports FPGA reload during runtime
----- Function: check_gluon_bacardi
----- Found 2 gluon/bacardi interface cards
===== Start GLUON runtime FPGA load at 18:16:06
Removing iTCO watchdog kernel module   [  OK  ]
CTP kernel driver not loaded
Voice Compression driver not loaded
Installing iTCO watchdog kernel module   [  OK  ]
Installing HDLC kernel driver [  OK  ]
Installing CTP kernel driver [  OK  ]
Installing HDLC FR kernel driver [  OK  ]
Installing HDLC PPP kernel driver [  OK  ]
Installing HDLC RAW kernel driver [  OK  ]
Installing HDLC CISCO kernel driver [  OK  ]
Installing layer-2 bridge kernel module [  OK  ]
Removing iTCO watchdog kernel module   [  OK  ]
Removing layer-2 bridge kernel module   [  OK  ]
Removing HDLC FR kernel driver [  OK  ]
Removing HDLC PPP kernel driver [  OK  ]
Removing HDLC RAW kernel driver [  OK  ]
Removing CTP kernel driver  [  OK  ]
Removing HDLC CISCO kernel driver [  OK  ]
Voice Compression driver not loaded
----- Card 0 bd_rev: 02, fpga_rev: 22
----- Card 1 bd_rev: 04, fpga_rev: 2b
Write Address(offset): 0xdfb00000(0x60020): 0x20
Write Address(offset): 0xdfb00000(0x1010): 0x400000
Write Address(offset): 0xdfd00000(0x60020): 0x20
Write Address(offset): 0xdfd00000(0x1010): 0x400000
----- Power down slot 0... at 18:16:21
----- Power down slot 1... at 18:16:21
----- Rescanning PCI devices ... at 18:16:24
Installing iTCO watchdog kernel module   [  OK  ]
Installing HDLC kernel driver [  OK  ]
Installing CTP kernel driver [  OK  ]
Installing HDLC FR kernel driver [  OK  ]
Installing HDLC PPP kernel driver [  OK  ]
Installing HDLC RAW kernel driver [  OK  ]
```

```
Installing HDLC CISCO kernel driver [  OK  ]
Installing layer-2 bridge kernel module [  OK  ]
----- Card 0 runtime fpga_rev: 23
----- Card 1 runtime fpga_rev: 2c
===== Finish GLUON runtime FPGA load at 18:16:28
----- Function: check_gluon_bacardi
----- Found 2 gluon/bacardi interface cards
iTCO watchdog kernel module already loaded
CTP kernel driver already loaded
Layer-2 bridge kernel module already loaded
Check CTP kernel driver [  OK  ]
Checking for required memory [  OK  ]
Checking for required bios   [  OK  ]
Starting CTP daemon:          [  OK  ]
Checking fpga for all cards . . . . . [  OK  ]
```

- After reboot, CTP will not run 'first boot' if personality transfer is applied. However, you are prompted to change the password of default user accounts on first time login.

```
ctp_215 login: ctp_cmd
Password:
Last login: Wed Nov 17 11:22:29 UTC 2021 on console
Last login: Tue Oct 29 18:16:56 UTC 2019 on console
-------------------------------------------------------------
You need to set up system passwords of default user accounts.
-------------------------------------------------------------
Changing root's password!
###############################################################################
###############################################################################
###############################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!
Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
###############################################################################
###############################################################################
###############################################################################
Enter New Password for root
Retype New Password for root
89
 Changing ctp_cmd's password!
```

```
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!
Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
Enter New Password for ctp_cmd
Retype New Password for ctp_cmd
Changing ctp's password!
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!
Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
Enter New Password for ctp
Retype New Password for ctp
Changing ctp_sa's password!
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!
Password recovery is not a simple process:

90
 - It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
Enter New Password for ctp_sa
Retype New Password for ctp_sa
Changing ctp_audit's password!
```

```
################################################################################
################################################################################
################################################################################
                  PLEASE REMEMBER THESE PASSWORDS!!!
Password recovery is not a simple process:
- It is service affecting.
- It requires console access to the CTP
- It requires rebooting of the device
################################################################################
################################################################################
################################################################################
Enter New Password for ctp_audit
Retype New Password for ctp_audit
Backing up /home to nonvolatile storage..
Backing up /     to nonvolatile storage..
[ctp_cmd@ctp_215:~ 1]>
```

After the password script finishes the upgrade is complete.