# HPE Aruba Networking Central On-Premises

# 3.0.3.2

# Non-Appliance Installation and Setup Guide

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# About this Guide

This New HPE Aruba Networking Central On-Premises Installation and Setup Guide provides detailed instructions to install and setup the software.

## Related Documents

- New HPE Aruba Networking Central On-Premises Installation and Setup Guide
- New HPE Aruba Networking Central On-Premises User Guide
- HPE GreenLake Account Home User Guide

## Conventions

The following conventions are used throughout this guide to emphasize important concepts:

*Table 1: Typographical Conventions*

| Type Style | Description |
|---|---|
| *Italics* | This style is used to emphasize important terms and to mark the titles of books. |
| System items | This fixed-width font depicts the following:<br>■ Sample screen output<br>■ System prompts<br>■ Keys that are pressed |
| Bold | ■ Text typed into a GUI element<br>■ GUI elements that are clicked or selected |

The following informational icons are used throughout this guide:

**Note:**
Indicates helpful suggestions, pertinent information, and important things to remember.

**Caution:**
Indicates a risk of damage to your hardware or loss of data.

**Warning:**
Indicates a risk of personal injury or death.

## Contacting Support

*Table 1: Contact Information*

| | |
|---|---|
| Main Site | arubanetworking.hpe.com |
| Support Site | networkingsupport.hpe.com |
| Airheads Social Forums and Knowledge Base | community.arubanetworks.com |
| North American Telephone | 1-800-943-4526 (Toll Free) |
| International Telephone | arubanetworks.com/support-services/contact-support/ |
| Software Licensing Site | licensemanagement.hpe.com |
| End-of-life Information | networkingsupport.hpe.com/end-of-life |
| Security Incident Response Team | Site: arubanetworks.com/support-services/security-bulletins/<br>Email: aruba-sirt@hpe.com |

# Installation Workflow

The installation and deployment of New HPE Aruba Networking Central On-Premises includes a list of steps. Before starting the installation, ensure that you have all the pre-requisites and good network connectivity. For the list of installation requirements and prerequisites, see Prerequisites.

To install the New HPE Aruba Networking Central On-Premises software, complete the following steps:

## Step 1: Unpacking and Rack Mounting

To initiate the installation, check the package and ensure that the components are in good condition and ready to be deployed.

This step consists of the following tasks:

1. Unpacking the New HPE Aruba Networking Central On-Premises Kit
2. Mounting the Server on the Rack
3. Power-On the server
4. Checking the Server Readiness, see Deployment.
    a. Check the CPU
    b. Check the Memory
    c. Check the Hard disk
    d. Add ILO version, NIC version, and ROM version, For more information, see Prerequisite in Installing Service Pack section.
5. Setting up the Console Access

## Step 2: Setting up the Server

To ensure an efficient deployment process, set up the key elements in the server for installing the New HPE Aruba Networking Central On-Premises software.

This step consists of the following tasks:

1. Setting Up the iLO Network Configuration Utility
2. Setting the RAID Level
3. Checking the System Information

> **Note:**
> Setting up a new, non-appliance-based server typically takes about 1 hour.

## Step 3: Installing ISO

To install the image from HPE Networking Support Portal, download and copy the ISO file.

This step consists of the following tasks:

1. Downloading the ISO Image
2. Downloading Apps Package Files
3. Installing ISO Files
4. Reboot the Server

> **Note:**
> Installing ISO approximately takes 45 minutes to 1 hour.

## Step 4: Installing Software

To deploy the New HPE Aruba Networking Central On-Premises software, configure the network setting.

This step consists of the following tasks:

1. Step 1: Login to New HPE Aruba Networking Central On-Premises
2. Step 2: Run the Network Setup from the CLI
    a. Step a: Setting Connections to the Server
    b. Step b: Setting up the Permanent Network
3. Step 3: Copy the New HPE Aruba Networking Central On-Premises Software
4. Step 4: Installation

**Note:**

- Running the network setup and establishing server connections typically takes about 15 minutes.
- Copying the software requires approximately 20 to 30 minutes, depending on network bandwidth.
- The complete software installation, including the application package, takes around 1 hour and 15 minutes.

## Step 5: Configuring the Cluster

Once the ISO and New HPE Aruba Networking Central On-Premises software installations are complete, you can set up the New HPE Aruba Networking Central On-Premises cluster.

**Note:**
Complete the ISO and software installation on all cluster nodes before initiating cluster configuration.

This step consists of the following tasks:

1. Setting up the Cluster Using Web Browser
2. Configuring Cluster

**Note:**

- Configuring the cluster typically requires approximately three to four hours.
- In case the setup wizard or the setup cluster fails, it is recommended to perform a Factory Reset for all the nodes in the cluster.

# Installation Server Requirements

To complete the New HPE Aruba Networking Central On-Premises setup, ensure that the following server requirements are met:

## Server Hardware Details

New HPE Aruba Networking Central On-Premises can be installed on an Aruba Central ready Airwave appliance and Aruba Central appliance. The supported servers are:

- **HPE ProLiant DL365 Gen11** server with 128 physical cores, 1024 GB RAM, 7 Hard Disks with 1.6 TB each (RAID 6), and 10 Gbps interface speed.
- **HPE ProLiant DL360 Gen11** server with 48 physical cores, 512 GB RAM, 5 Hard Disks with 1.6 TB each (RAID 6), and 10 Gbps interface speed.
- **HPE ProLiant DL360 Gen10** server with 40 physical cores, 512 GB RAM, 4 Hard Disks with 960 GB each (RAID 0), and 10 Gbps network interface speed.

# Prerequisites

Watch a video for this task—Prerequisites.

## Server Specific Prerequisites

The following list outlines the prerequisites for each server type in New HPE Aruba Networking Central On-Premises, HPE DL365 Gen11, HPE DL360 Gen11, and HPE DL360 Gen10.

**For HPE DL365 Gen 11 server**

- To install New HPE Aruba Networking Central On-Premises on HPE DL365 Gen 11 server ensure that the following specifications are met:
  - **CPU with 128 physical cores (2*AMD EPYC 9555 64-Core Processor), 1024 GB RAM, 7 Hard Disks with 1.6 TB each (RAID 6) and 10Gig Interface**
  - To connect HPE DL365 server to 10-Gigabit Ethernet (GbE) interface on New HPE Aruba Networking Central On-Premises, you must use only the Intel **E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter**
  - For successful installation, the server must meet or exceed these minimum component versions:
    - NIC Version—4.2
    - ROM—2.12
    - ILO—1.56

    **Note:**
    Installation is not supported on older server component versions, but it will work on higher versions.
  - Ensure that the servers are connected to 10-Gigabit Ethernet (GbE) interface and the interface names are correctly entered. For Gen 11 servers, the interfaces can be ens22f0 or ens22f1 or different. You must identify the correct interface name and provide it during the network configuration.

- All hard drives present in the server must be Solid State Drives (SSDs). Installation is not supported if there any other type of drives for example, HDDs or hybrid drives present in the server.
- You must configure all the disks in RAID and only one logical drive must be present in server. The configuration must present a single logical drive and the RAID array must include all installed SSDs.

**For HPE DL360 Gen 11 server**

- To install New HPE Aruba Networking Central On-Premises on HPE DL360 Gen 11 server ensure that the following specifications are met:
  - **CPU with 48 physical cores, 512 GB RAM, 5.7 TB Hard disk (RAID 6), and 10Gig Interface**
  - To connect HPE DL360 server to 10-Gigabit Ethernet (GbE) interface on New HPE Aruba Networking Central On-Premises, you must use only the Intel **E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter**
  - For successful installation, the server must meet or exceed these minimum component versions:
    - NIC Version—11.1.1
    - ROM—2.68
    - ILO—1.56

    **Note:**
    Installation is not supported on older server component versions, but it will work on higher versions.
  - Ensure that the servers are connected to 10-Gigabit Ethernet (GbE) interface and the interface names are correctly entered. For Gen 11 servers, the interfaces can be ens15f0 or ens15f1 or different. You must identify the correct interface name and provide it during the network configuration.
  - All hard drives present in the server must be Solid State Drives (SSDs). Installation is not supported if there any other type of drives for example, HDDs or hybrid drives present in the server.
  - You must configure all the disks in RAID and only one logical drive must be

present in server. The configuration must present a single logical drive and the RAID array must include all installed SSDs.

**For HPE DL360 Gen 10 server**

- To install New HPE Aruba Networking Central On-Premises on HPE DL360 Gen 10 server ensure that the following specifications are met:
  - **CPU with 40 physical cores, 512 GB RAM, 3.84 TB Hard disk (RAID 0), and 10Gig Interface**
  - To connect HPE DL360 server to 10-Gigabit Ethernet (GbE) interface on New HPE Aruba Networking Central On-Premises, you must use only the Intel **Ethernet 10Gb 2-port 562SFP+ Adapter**
  - For successful installation, the server must meet or exceed these minimum component versions:
    - NIC Version—11.1.1
    - ROM—2.68
    - ILO—2.72

    **Note:**
    Installation is not supported on older server component versions, but it will work on higher versions.
  - Ensure that the servers are connected to 10-Gigabit Ethernet (GbE) interface and the interface names are correctly entered. For Gen 10 servers, the interfaces can be ens1f0 or ens1f1 or different. You must identify the correct interface name and provide it during the network configuration.
  - All hard drives present in the server must be Solid State Drives (SSDs). Installation is not supported if there any other type of drives for example, HDDs or hybrid drives present in the server.
  - You must configure all the disks in RAID and only one logical drive must be present in server. The configuration must present a single logical drive and the RAID array must include all installed SSDs.

## Global Prerequisites

The following prerequisites apply to all server types:

- Minimum 200 GB web server storage is required to proceed with the installation.
- The nodes of a New HPE Aruba Networking Central On-Premises cluster must be deployed in the same data center and same L2 VLAN setup. It is a prerequisite to get 10 Gbps throughput for intra-cluster communication.
- During cluster setup, ensure that the node running the highest software version is selected as the first node. The software gets synchronized from the first node to the other nodes.
- Server's iLO port is connected to a switch and it is configured with ILO IP, Gateway IP, and Netmask which are reachable. The iLO credentials are placed on the top of the server. Ensure to make a note of the iLO credentials.
- The iLO setup timezone should be current date and time. It should not have a older timezone.
- If your system is running the below mentioned server component version or higher version, you can skip the service pack installation.
  - NIC Version—11.1.1
  - ROM—2.68
  - ILO—2.72

  If your system is running lower version of server component as mentioned, then you must install the service pack. For more information, see Installing Service Pack . For additional assistance, contact Aruba TAC (Technical Assistance Center) team.
- To install Service pack, go to **Firmware** and **OS Software** > **Update Firmware** from the right menu, browse for the service pack and install it.
- During New HPE Aruba Networking Central On-Premises installation, it is recommended not to rename or modify any file names for *.iso and *.tar.gz, as renaming the file names might lead to installation failure.
- A valid FQDN for each New HPE Aruba Networking Central On-Premises server node, which resolves with the IP address (VIP) you configure in the network settings during New HPE Aruba Networking Central On-Premises setup. These FQDN should be resolvable by any client that you will log into New HPE Aruba Networking Central On-Premises.

**Note:**

- New HPE Aruba Networking Central On-Premises supports a maximum of 64 characters for FQDN. This is also applicable for CNAME (Canonical Name) entries.
- Currently, all the IPs are automatically generated based on Node FQDNs.

- The primary NTP server is mandatory while installing New HPE Aruba Networking Central On-Premises.
- Ensure that the following details are mentioned correctly and are reachable while configuring the cluster:
  - FQDN, IP Address, Subnet Mask, Gateway, DNS IP for each node in the cluster, VIP (Virtual IP for each cluster), and cluster FQDN
  - POD IP range should be within xxx.xx.x.x/16 subnet
  - Service IP range should be with xxx.xx.x.x/23 subnet

  **Note:**
  If the network falls within the same range, you must update the values; otherwise, you can continue using the default settings.
- All the nodes in the cluster must have the same interface speed, same network, same subnet mask, and same gateway. Mixed mode is not supported. For example, if it is a 3-node cluster, all 3 nodes must have 10 Gbps speed where each node is provisioned with dedicated iLO and in-band management connectivity.

| Nodes | ILO IP | Management IP | FQDN | Serial Number |
|---|---|---|---|---|
| Node 1 | 10.149.1.000 | 10.14.120.11 | cop1.hpe-bgl.eu | 3M1D0M12XN |
| Node 2 | 10.149.2.000 | 10.14.120.12 | cop2.hpe.bgl.eu | 3M1D0N12BP |
| Node 3 | 10.149.3.000 | 10.14.120.13 | cop3.hpe.bgl.eu | 3M1D0P12AB |

# Required Setup Details

You must keep the following details ready before starting the installation process:

- IP Address
- FQDNs
- CNAMES:

- cluster_fqdn
- central-<cluster_fqdn>
- apigw-<cluster_fqdn>
- ccs-user-api-<cluster_fqdn>
- sso-<cluster_fqdn>

## Password Specifications

New HPE Aruba Networking Central On-Premisesconfiguration requires the password specifications. The password must be alphanumeric. The minimum requirement is 14 characters that include a combination of letters, numbers, and special characters.

This password specification is applicable for the following operations:

- For setup-wizard through a web browser during fresh installation.
- For setup-cluster through CLI during fresh installation.
- GUI password change through CLI. For more information, see Reset GUI Admin Password on The CLI Bank.
- CLI password change through CLI. For more information, see Reset CLI Admin Password on The CLI Bank.

*Table 1: Password Requirements*

| Requirement | Description |
|---|---|
| Password length | The minimum number of alphanumeric characters required for a password is **14**.<br>Range: 14 - 48 (combination of alphabets, numbers, and special characters). |
| Password character | Password should contain at least **5** unique characters.<br>The password should not contain the strings of username in any form.<br>Password must not contain more than two identical characters consecutively. |
| Upper Case characters | Use a minimum of 1 uppercase alphabet in password.<br>Alphabets **A** to **Z**. |

| Requirement | Description |
|---|---|
| Lower Case characters | Use a minimum of 1 lowercase alphabet in password.<br>Alphabets **a** to **z**. |
| Numbers | Use a minimum of 1 digit (number) in password.<br>Numbers **0** - **9**. |
| Special characters | Use a minimum of 5 special character in password.<br>Supported special characters are **~**, **!**, **@**, **#**, **$**, **%**, **^**, **&**, *, **(**, **)**, **<**, **>**, **{**, **}**, **;**, **:**, **.** and **,**. |

## Supported Ports and FQDNs

As a part of the HPE GreenLake updates, New HPE Aruba Networking Central On-Premises requires multiple FQDNs along with node FQDNS and ports configured for New HPE Aruba Networking Central On-Premises cluster.

## Multiple FQDNs

**Note:**

- The multiple FQDNs created must resolve to the same Cluster Virtual IP Address (VIP).
- These multiple FQDNs should be resolvable by both primary and secondary DNS servers configured on New HPE Aruba Networking Central On-Premises.

All the FQDNs should be resolved to the same IP address (both IPv4 or IPv6 address must be resolved in a dual-stack cluster setup) and the new FQDNs should be in the format mentioned below:

- cluster_fqdn
- central-<cluster_fqdn>
- apigw-<cluster_fqdn>
- ccs-user-api-<cluster_fqdn>
- sso-<cluster_fqdn>

The following table provides details of the multiple FQDNs and their canonical names that are configured for New HPE Aruba Networking Central On-Premises cluster:

*Table 1: Multiple FQDNs Example*

| FQDN | Canonical Names (cnames) |
|---|---|
| cop-deployment.companyx.com | Central-UI home page access from the browser |
| central-cop-deploy-ment.companyx.com | Central-UI NMS page access from the browser |
| apigw-cop-deploy-ment.companyx.com | Central NBAPI access from the cus-tomer application |
| ccs-user-api-cop-deploy-ment.companyx.com | Central-UI API access |
| sso-cop-deployment.companyx.com | Central-UI authentication page access |

Additionally, the DNS servers must also resolve the public and private DNS namespaces required by the organization.

## Inbound and Outbound Ports/URLs

The following table lists the required ports and URLs that needs to be enabled and allowed over the network and there should not be a any port access restriction between New HPE Aruba Networking Central On-Premises nodes within a cluster for inter-node communication:

*Table 2: Domain Names and Ports for New HPE Aruba Networking Central On-Premises*

| Protocol and port | Domain Names and Purpose |
|---|---|
| **Inbound Ports Traffic** | |
| TCP 443 | To access and manage New HPE Aruba Networking Central On-Premises |
| | For HTTPS and web-socket between New HPE Aruba Networking Central On-Premises and devices. |
| | For synchronization of health status between the Disaster Recovery (DR) clusters. |

| Protocol and port | Domain Names and Purpose |
|---|---|
| TCP 22 | To access and manage New HPE Aruba Networking Central On-Premises through SSH CLI. |
| | For synchronization of data between DR clusters. |
| TCP 80 | For browser redirect from HTTP to HTTPS. |
| TCP 2379, 2380, 4433, 6433, and 10250 | For communication between New HPE Aruba Networking Central On-Premises nodes in a cluster. |
| TCP 4343 | To access the setup-wizard installation. |
| | The New HPE Aruba Networking Central On-Premises setup-wizard is shut down and the port 4343 is closed after 2 hours when the New HPE Aruba Networking Central On-Premises setup is completed successfully. The time span of 2 hours is provided to the user to inspect the status of the New HPE Aruba Networking Central On-Premises cluster setup. |
| TCP 22020 | To allow remote console (RCS) access of device from New HPE Aruba Networking Central On-Premises. |
| TCP 8888 | For HTTP-based firmware image download for CX and PVOS Switches. |
| TCP 9092 | Facilitates data replication between DR clusters. |
| **Outbound Ports Traffic** | |
| TCP 25, 465, or 587 | Dependent on the SMTP configuration for alerts, reports, and New HPE Aruba Networking Central On-Premises account registration. |
| UDP 123 | To access ntp.ubuntu.com. |
| | This is default destination. Users can reconfigure this port. |
| TCP 22 | To access nexus2.airwave.com to support connection. |
| | For synchronization of data between Disaster Recovery (DR) clusters. |
| TCP 9092 | Facilitates data replication between DR clusters. |

| Protocol and port | Domain Names and Purpose |
|---|---|
| TCP 443 | Following URLs are required to access and allow New HPE Aruba Networking Central On-Premises to check firmware versions for Online Upgrades.<br>■ Quay - ""quay.io"" ""stage.quay.io"" ""cdn.quay.io"" ""cdn01.quay.io"" ""cdn02.quay.io"" ""cdn03.quay.io""<br>■ ECR - 192111006018.dkr.ecr.us-west-2.amazonaws.com<br>■ NSP - https://api.networkingsupport.hpe.com/<br>■ Coreupdate - https://coreupdate.central.arubanetworks.com/<br>■ https://coreupdate-prod.central.arubanetworks.com/<br>**Note for Airgap deployment:**<br>In a New HPE Aruba Networking Central On-Premises setup that is deployed in Airgap mode, accessing the above URLs is not a requirement as New HPE Aruba Networking Central On-Premises supports upgrade in an Airgap environment. |
| | To access maps.googleapis.com to translate, address. |
| | To access api.mapbox.com to view maps from user's browser. |
| | To access d1c50u1zbkqmph.cloudfront.net for CDN from user's browser. |
| | To access https://enterpriselicense.hpe.com for licensing. |
| | To access help.arubanetworks.com for documentation from user's browser. |
| | To access subnet.min.io for License registration and Health Check. |
| | To access api.bcti.brightcloud.com and api-dualstack.bcti.brightcloud.com for downloading URL classification from the GW and AP devices. |
| | From user's Web browser, to access networkingsupport.hpe.com for support. |
| | From user's Web browser, to access airheads.hpe.com for accessing airheads community. |
| | For synchronization of health status between the DR clusters. |

## New HPE Aruba Networking Central On-Premises Installation Checklist

This checklist ensures smooth deployment and configuration of New HPE Aruba Networking Central On-Premises

Following are the mandatory requirements to install New HPE Aruba Networking Central On-Premises on a **HPE DL365 Gen 11 server**:

### Hardware Specification

- Ensure the server has a CPU with 128 physical cores.
- Verify the server has 1024 GB RAM.
- Confirm the server has a 7 Hard Disks with 1.6 TB each configured in RAID 6.
- Confirm the server has a 10Gig Interface.

### Network Adapter Requirements

- Use only the Intel Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter to connect the server to the 10-Gigabit Ethernet (GbE) interface.

### Minimum Server Component Versions

Ensure the server meets the following minimum component version requirements:

- NIC Version: 4.2
- ROM Version: 2.12
- ILO Version: 1.56

### Network Interface Configuration

- Ensure the server is connected to a 10-Gigabit Ethernet (GbE) interface.
- Only a single interface (10 Gig) is required and there is no support for a LAG.
- Identify and correctly enter the interface name during network configuration. For Gen 11 servers, interface names may include ens22f0, ens22f1, or others. You must identify the correct interface name and provide it during the network configuration.

### Storage Requirements

- Verify that all hard drives in the server are Solid State Drives (SSDs). Installation is not supported with HDDs or hybrid drives.
- Ensure all disks are configured in RAID with only one logical drive present.

Following are the mandatory requirements to install New HPE Aruba Networking Central On-Premises on a **HPE DL360 Gen 11 server**:

### Hardware Specification

- Ensure the server has a CPU with 48 physical cores.
- Verify the server has 512 GB RAM.
- Confirm the server has a 5 Hard Disks with 1.6 TB each configured in RAID 6.
- Confirm the server has a 10Gig Interface.

### Network Adapter Requirements

- Use only the Intel Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter to connect the server to the 10-Gigabit Ethernet (GbE) interface.

### Minimum Server Component Versions

Ensure the server meets the following minimum component version requirements:

- NIC Version: 4.2
- ROM Version: 2.12
- ILO Version: 1.56

### Network Interface Configuration

- Ensure the server is connected to a 10-Gigabit Ethernet (GbE) interface.
- Only a single interface (10 Gig) is required and there is no support for a LAG.
- Identify and correctly enter the interface name during network configuration. For Gen 11 servers, interface names may include ens15f0, ens15f1, or others. You must identify the correct interface name and provide it during the network configuration.

### Storage Requirements

- Verify that all hard drives in the server are Solid State Drives (SSDs). Installation is not supported with HDDs or hybrid drives.
- Ensure all disks are configured in RAID with only one logical drive present.

Following are the mandatory requirements to install New HPE Aruba Networking Central On-Premises on a **HPE DL360 Gen 10 server**:

### Hardware Specification

- Ensure the server has a CPU with 40 physical cores.
- Verify the server has 512 GB RAM.
- Confirm the server has a 3.84 TB Hard Disk configured in RAID 0.
- Confirm the server has a 10Gig Interface.

### Network Adapter Requirements

- Use only the Intel Ethernet 10Gb 2-port 562SFP+ Adapter to connect the server to the 10-Gigabit Ethernet (GbE) interface.

### Minimum Server Component Versions

Ensure the server meets the following minimum component version requirements:

- NIC Version: 11.1.1
- ROM Version: 2.68
- ILO Version: 2.72

### Network Interface Configuration

- Ensure the server is connected to a 10-Gigabit Ethernet (GbE) interface.
- Only a single interface (10 Gig) is required and there is no support for a LAG.
- Identify and correctly enter the interface name during network configuration. For Gen 10 servers, interface names may include ens1f0, ens1f1, or others. You must identify the correct interface name and provide it during the network configuration.

### Storage Requirements

- Verify that all hard drives in the server are Solid State Drives (SSDs). Installation is not supported with HDDs or hybrid drives.
- Ensure all disks are configured in RAID with only one logical drive present.

Following are the mandatory requirements that must be followed while installing New HPE Aruba Networking Central On-Premises on any server (HPE 360 Gen 10 or Gen 11 and HPE 365 Gen 11):

### Cluster Deployment

- Ensure all cluster nodes are deployed in the same data center and same L2 VLAN setup.
- Verify that the setup achieves 10 Gbps throughput for intra-cluster communication.

### iLO Configuration

- Confirm the server's iLO port is connected to a switch and it is configured with ILO IP, Gateway IP, and Netmask which are reachable.
- Verify the iLO credentials are placed on top of the server and make a note of them.
- Set the iLO timezone to the current date and time. Ensure the timezone is not older.

### FQDN Configuration

- Provide a valid FQDN for each server node that:
  - Resolves with the IP address configured in the network settings.
  - Is resolvable by any client accessing the New HPE Aruba Networking Central On-Premises.

### NTP Server

- Configure a primary NTP server, which is mandatory for installation.

### Service Pack Installation

Verify server component versions:

- NIC Version: 11.1.1
- ROM Version: 2.68
- ILO Version: 2.72
- If the server is running lower versions than specified, install the service pack.
- Navigate to **Firmware** and **OS Software** > **Update Firmware** from the right menu from the right menu, browse for the service pack and install it.

### File Naming

- During installation, do not rename or modify file names for the following files:
  - *.iso
  - *.tar.gz
- Ensure file names remain unchanged to avoid installation failures.

**Cluster Configuration Details**

Ensure the following details are correctly mentioned and reachable for each node in the cluster:

- FQDN
- IP Address
- Subnet Mask
- Gateway
- DNS IP
- VIP (Virtual IP for each cluster)
- Cluster FQDN

**IP Range Requirements**

Ensure the following IP ranges align with the correct subnet:

- POD IP Range should be within xxx.xx.x.x/16 subnet.
- Service IP Range should be within xxx.xx.x.x/23 subnet.

> **Note:**
> If the network falls within the same range, you must update the values; otherwise, you can continue using the default settings.

## Deployment

In New HPE Aruba Networking Central On-Premises on Bare Metal (non-appliance), customers deploy New HPE Aruba Networking Central On-Premises on HPE servers as mentioned in the following tables:

- HPE OEM ProLiant DL365 Gen11 8SFF CTO Server Specifications
- HPE OEM ProLiant DL360 Gen11 8SFF CTO Server Specifications

- HPE OEM ProLiant DL360 Gen10 8SFF CTO Server Specifications

**Attention**

While using New HPE Aruba Networking Central On-Premises on bare metal mode, you should only use the following servers platform along with the configurations mentioned in the following tables:

- HPE OEM ProLiant DL 365 Gen11 8SFF CTO
- HPE OEM ProLiant DL360 Gen11 8SFF CTO
- HPE OEM ProLiant DL360 Gen10 8SFF CTO

**Note:**
While using HPE DL360 servers, you can use a mix of Gen 10 and Gen 11 servers.

The following accessories are required to support New HPE Aruba Networking Central On-Premises on both Appliance and Non-Appliance mode for Gen 10 or Gen 11:

- Aruba 10Gb SFP+ to SFP+ 1m Direct Attach Cable J9281D
- Aruba 10Gb SFP+ to SFP+ 3m Direct Attach Cable J9283D
- Aruba 10Gb SFP+ to SFP+ 7m Direct Attach Cable J9285D
- 9150D (Aruba 10G SFP+ LC SR 300m OM3 MMF (Short-rangeTransceiver with supported fiber cable)
- J9151E - HPE Aruba 10G SFP+ LC LR 10km SMF (Long-rangeTransceiver with supported fiber cable)

The following table lists the only supported server specification that can be purchased from HPE to support New HPE Aruba Networking Central On-Premises on Bare Metal mode for HPE DL365 Gen 11:

*Table 1: HPE OEM ProLiant DL365 Gen11 8SFF CTO Server Specifications*

| Quantity | Product Part Number | Description |
|---|---|---|
| 1 | P67161-B21 | HPE OEM ProLiant DL365 Gen11 8SFF Configure-to-order Server |

| Quantity | Product Part Num-ber | Description |
|---|---|---|
| 1 | P67161-B21 UUF | HPE OEM DL365 Gen11 8SFF CTO Svr |
| 2 | P76562-B21 | AMD EPYC 9555 3.2-3.4GHz 64-core 360W Processor for HPE OEM |
| 2 | P76562-B21 0D1 | Factory Integrated |
| 16 | P64986-B21 | HPE 64GB (1x64GB) Dual Rank x4 DDR5-6400 CAS-52-52-52 EC8 Registered Smart Memory Kit |
| 16 | P64986-B21 | Factory Integrated |
| 1 | P55020-B21 | HPE ProLiant DL365 Gen11 8SFF Tri-Mode U.3 x1 BC FIO Backplane Kit |
| 7 | P49049-B21 | HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD |
| 7 | P49049-B21 0D1 | Factory Integrated |
| 1 | P56915-B21 | HPE ProLiant DL3X5 Gen11 1U x16 Riser Kit |
| 1 | P56915-B21 0D1 | Factory Integrated |
| 1 | P51178-B21 | Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE |
| 1 | P51178-B21 0D1 | Factory Integrated |
| 1 | P01367-B21 | HPE 96W Smart Storage Lithium-ion Battery with 260mm Cable Kit |
| 1 | P01367-B21 0D1 | Factory Integrated |
| 1 | P57884-B21 | HPE ProLiant DL3X5 Gen11 Smart Storage Battery 2P 96W Cable Kit |
| 1 | P57884-B21 0D1 | Factory Integrated |
| 1 | P47781-B21 | HPE MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller |

| Quantity | Product Part Number | Description |
|---|---|---|
| 1 | P47781-B21 0D1 | Factory Integrated |
| 1 | P10106-B21 | Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE |
| 1 | P10106-B21 0D1 | Factory Integrated |
| 7 | P58462-B21 | HPE ProLiant DL3XX Gen11 1U Performance Fan Kit |
| 7 | P58462-B21 0D1 | Factory Integrated |
| 2 | P03178-B21 | HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit |
| 2 | P03178-B21 0D1 | Factory Integrated |
| 1 | BD505A | HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features |
| 1 | BD505A 0D1 | Factory Integrated |
| 1 | P56901-B21 | HPE ProLiant DL365 Gen11 8SFF OROC x1 SAS/SATA/NVMe Cable Kit |
| 1 | P56901-B21 0D1 | Factory Integrated |
| 1 | P52351-B21 | HPE DL3XX Gen11 Easy Install Rail 2 Kit |
| 1 | P52351-B21 0D1 | Factory Integrated |
| 2 | P58457-B21 | HPE ProLiant DL3X5 Gen11 1U CPU Performance Heat Sink Kit |
| 2 | P58457-B21 0D1 | Factory Integrated |

The following table lists the only supported server specification that can be purchased from HPE to support New HPE Aruba Networking Central On-Premises on Bare Metal mode for HPE DL360 Gen 11:

*Table 2: HPE OEM ProLiant DL360 Gen11 8SFF CTO Server Specifications*

| Quantity | Product Part Number | Description |
|---|---|---|
| 1 | P55428-B21 | HPE OEM ProLiant DL360 Gen11 SFF NC Configure-to-order Server |
| 1 | P55428-B21 UUF | HPE OEM ProLiant DL360 Gen11 SFF NC Configure-to-order Server |
| 2 | P67827-B21 | Intel Xeon-Gold 6530 2.1GHz 32-core 270W Processor for HPE OEM |
| 2 | P67827-B21 0D1 | Factory Integrated |
| 16 | P64706-B21 | HPE 32GB (1x32GB) Dual Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit |
| 16 | P64706-B21 0D1 | Factory Integrated |
| 1 | P48895-B21 | HPE ProLiant DL360 Gen11 8SFF x1 U.3 Tri-Mode Back-plane Kit |
| 1 | P48895-B21 0D1 | Factory integrated |
| 5 | P49049-B21 | HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD |
| 5 | P49049-B21 0D1 | Factory Integrated |
| 1 | P48926-B21 | HPE ProLiant DL3X0 Gen11 1U 8SFF Display Port/USB/Optical Drive Blank Kit |
| 1 | P48926-B21 0D1 | Factory Integrated |
| 1 | 726536-B21 | HPE 9.5mm SATA DVD-ROM Optical Drive |
| 1 | 726536-B21 0D1 | Factory Integrated |
| 1 | P51178-B21 | Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE |
| 1 | P51178-B21 0D1 | Factory Integrated |
| 1 | P01366-B21 | HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit |
| 1 | P01366-B21 0D1 | Factory Integrated |
| 1 | P48918-B21 | HPE ProLiant DL360 Gen11 Storage Controller Enable-ment Cable Kit |
| 1 | P48918-B21 0D1 | Factory Integrated |

| Quantity | Product Part Number | Description |
|---|---|---|
| 1 | P47781-B21 | HPE MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller |
| 1 | P47781-B21 0D1 | Factory Integrated |
| 1 | P10106-B21 | Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE |
| 1 | P10106-B21 0D1 | Factory Integrated |
| 1 | P48908-B21 | HPE ProLiant DL3X0 Gen11 1U High Performance Fan Kit |
| 1 | P48908-B21 0D1 | Factory Integrated |
| 1 | P03178-B21 | HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit |
| 1 | P03178-B21 0D1 | Factory Integrated |
| 1 | BD505A | HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features |
| 1 | BD505A 0D1 | Factory Integrated |
| 1 | P48830-B21 | HPE ProLiant DL3XX Gen11 CPU2 to OCP2 x8 Enablement Kit |
| 1 | P48830-B21 0D1 | Factory Integrated |
| 1 | P52416-B21 | HPE ProLiant DL360 Gen11 OROC Tri-Mode Cable Kit |
| 1 | P52416-B21 0D1 | Factory Integrated |
| 1 | P26489-B21 | HPE ProLiant DL300 Gen10 Plus 1U Cable Management Arm for Rail Kit |
| 1 | P26489-B21 0D1 | Factory Integrated |
| 2 | P48905-B21 | HPE ProLiant DL3XX/560 Gen11 High Performance Heat Sink Kit |
| 2 | P48905-B21 0D1 | Factory Integrated |
| 1 | P52341-B21 | HPE ProLiant DL3XX Gen11 Easy Install Rail 3 Kit |
| 1 | P52341-B21 | Factory integrated |

The following table lists the only supported server specification that can be purchased from HPE to support New HPE Aruba Networking Central On-Premises on Bare Metal mode for HPE DL360 Gen 10:

*Table 3: HPE OEM ProLiant DL360 Gen10 8SFF CTO Server Specifications*

| Quantity | Product Part Number | Description |
|---|---|---|
| 1 | 869121-B21 | HPE OEM ProLiant DL360 Gen10 8SFF Configure-to-order Server |
| 1 | 869121-B22 | HPE OEM DL360 Gen10 8-SFF CTO Server |
| 1 | 869121-B23 | OEM LL DL360 Gen10 6138 Xeon-G FIO Kit |
| 1 | 869121-B24 | OEM LL DL360 Gen10 6138 Xeon-G Kit |
| 1 | 869121-B25 | Factory Integrated |
| 16 | 869121-B26 | HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit |
| 16 | 869121-B27 | Factory Integrated |
| 1 | 869121-B28 | HPE DL360 Gen10 8SFF Display Port/USB/Optical Drive Blank Kit |
| 1 | 869121-B29 | Factory Integrated |
| 4 | 869121-B30 | HPE 960GB SATA 6G Mixed Use SFF SC Multi Vendor SSD |
| 4 | 869121-B31 | Factory Integrated |
| 1 | 726536-B21 | HPE 9.5mm SATA DVD-ROM Optical Drive |
| 1 | 726536-B21 0D1 | Factory Integrated |
| 1 | 727055-B21 | HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter |
| 1 | 727055-B21 0D1 | Factory Integrated |
| 1 | P01366-B21 | HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit |
| 1 | P01366-B21 0D1 | Factory Integrated |
| 1 | 804331-B21 | HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller |
| 1 | 804331-B21 0D1 | Factory Integrated |
| 1 | 865408-B21 | HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit |
| 1 | 865408-B21 0D1 | Factory Integrated |
| 1 | 512485-B21 | HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features |

| Quantity | Product Part Number | Description |
|---|---|---|
| 1 | 512485-B21 0D1 | Factory Integrated |
| 1 | 734811-B21 | HPE 1U Cable Management Arm for Rail Kit |
| 1 | 734811-B21 0D1 | Factory Integrated |
| 1 | 864279-B21 | HPE Trusted Platform Module 2.0 Gen10 Option |
| 1 | 864279-B21 0D1 | Factory Integrated |
| | 872211-B21 | HPE OEM 1U Non-Brand Gen10 Bezel FIO Kit |
| 1 | 873770-B21 | HPE DL3XX Gen10 Rear Serial Cable and Enablement Kit |
| 1 | 873770-B21 0D1 | Factory Integrated |
| 1 | 874543-B21 | HPE 1U Gen10 SFF Easy Install Rail Kit |
| 1 | 874543-B21 0D1 | Factory Integrated |
| Total = 68 | | |

**Note:**
To onboard an IAP websocket connection, you must upload any trusted CA certificate to the New HPE Aruba Networking Central On-Premises cluster.

## Installing Service Pack

If your system is running the below mentioned server component version or higher version, you can skip the service pack installation.

- NIC Version—11.1.1
- ROM—2.68
- ILO—2.72

Admins must prepare all the New HPE Aruba Networking Central On-Premises nodes to upgrade with HPE release Service Pack for proper functioning of the nodes. It is recommended by HPE to keep iLO to the supported Service Pack as it improves the reliability and performance of the servers.

The Service pack consists of a number of firmwares and other associated drivers of different components such as Power Controller, NIC, ILO5, RAID, BIOS, and so on. This

Service pack fixes any kind of known vulnerabilities and provides security updates for the drivers along with additional features.

To install the iLO service pack, complete the following steps:

**Prerequisite**

- Download new iLO Service Pack from HPE Support Portal, HPE Support Center.
- Download custom patched Service Pack by HPE from, SPP Custom Download.

  Before proceeding to COP iLO installation, your COP server should meet the following minimum criteria with respect to server components:

  - NIC version—11.1.1
  - ROM—2.68
  - ILO—2.72

  **Note:**
  New HPE Aruba Networking Central On-Premises supports "2022.09.01.00" or higher service pack versions.

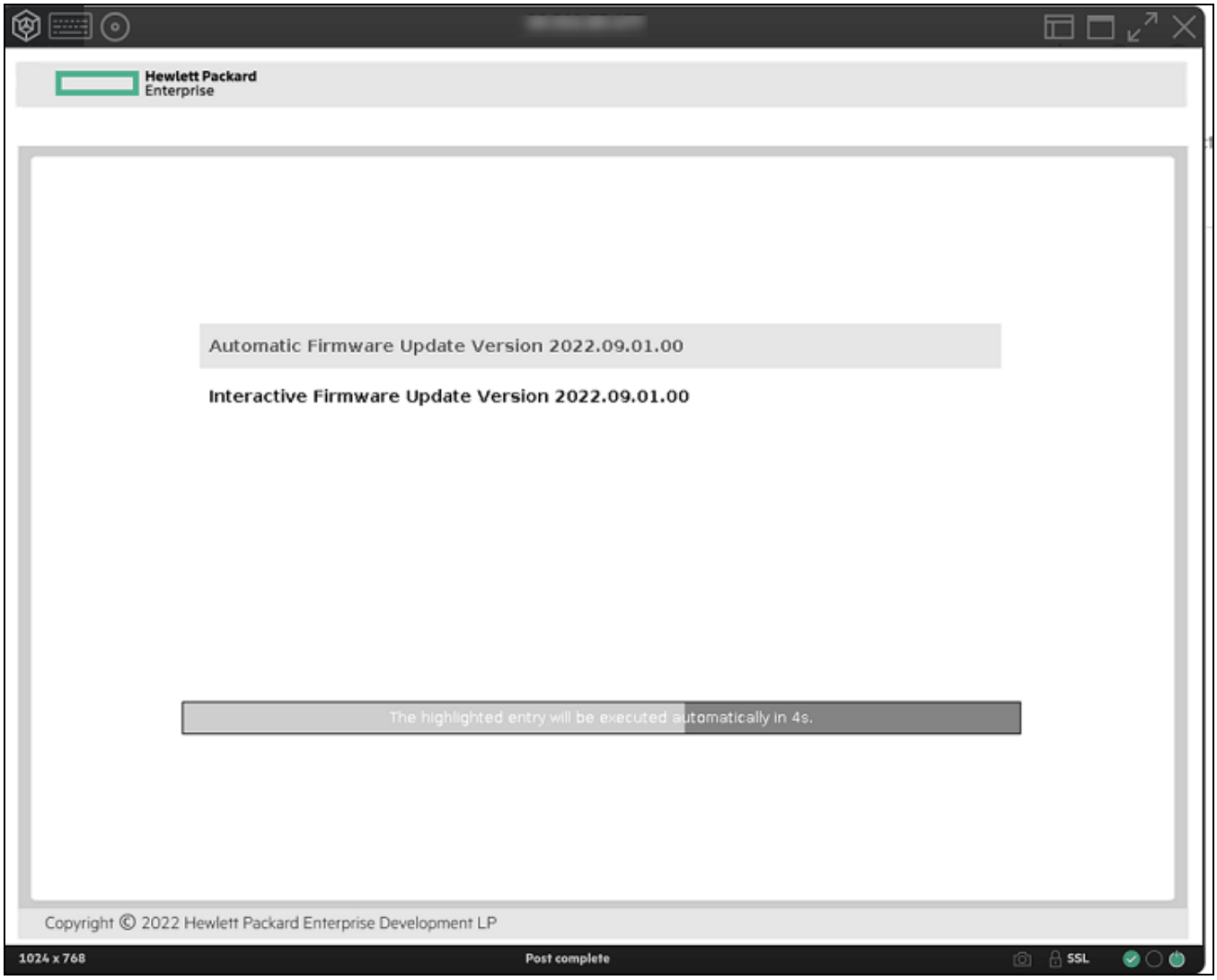
- For a fast and simultaneous installation of the SP ISO image, host the SP ISO image on the webserver, for example, Apache which is used to mount the ISO from iLO virtual disk option.

  1. Login to ILO with copilo user.

     **Note:**
     - For HPE Aruba Networking Central appliances, the default ILO credentials are copilo and server serial number whereas, for Airwave appliances, it is the iLO password on the server.
     - One the iLO console, ensure that under **Security** > **Encryption** > **Current Settings**, **Security State** is set to **Production**.

  2. Mount the Service Pack ISO and perform the installation.

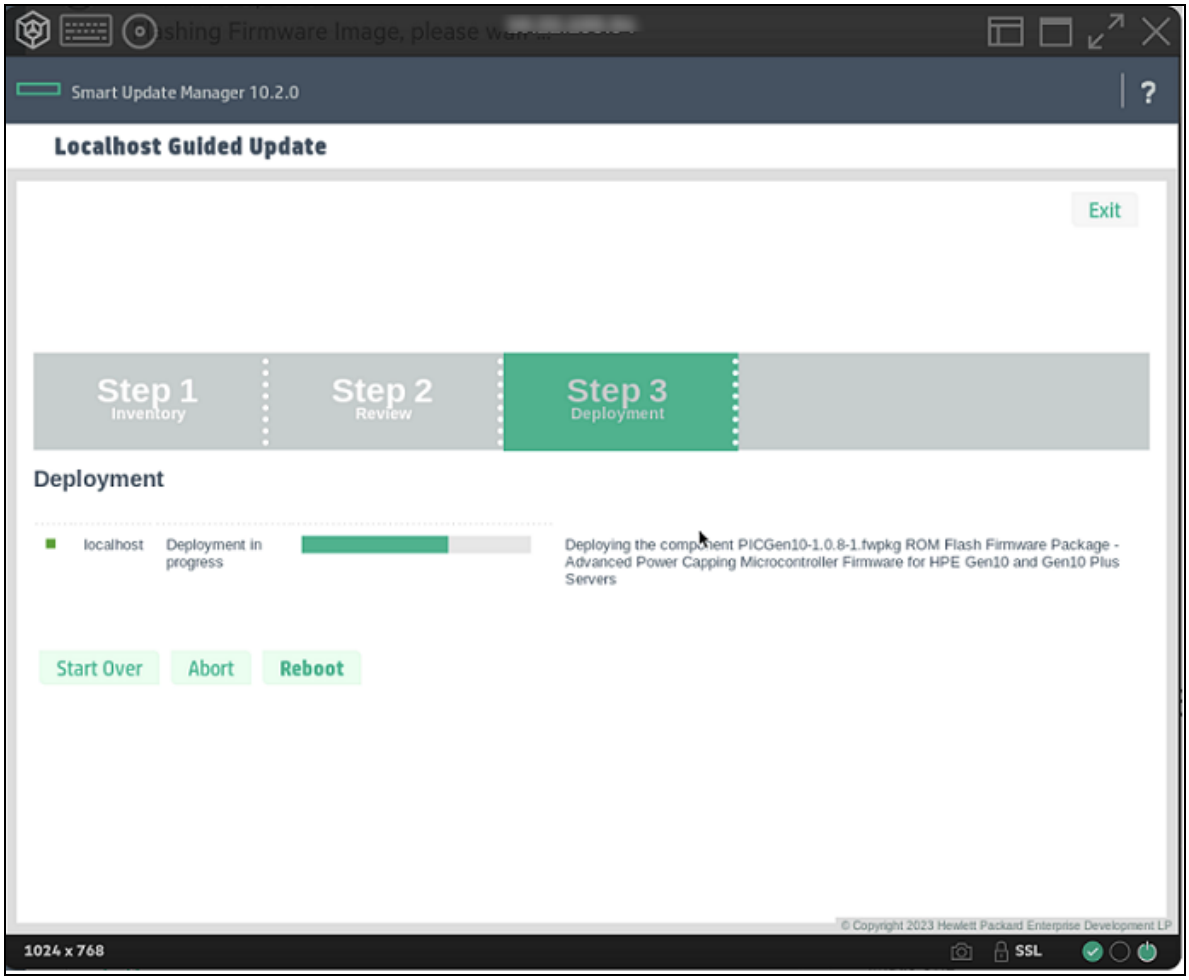
*Figure 1: ILO Service Pack Installation*




**Note:**

- Service pack installation takes approximately 1 hour for each node in the cluster.
- You can trigger the Service Pack upgrade only from the iLO console. This operation cannot be done from the COP CLI console.

*Figure 2: Status*



# Unpacking and Rack Mounting

To initiate the installation, check the package and ensure that the components are in good condition and ready to be deployed.

There are two different ways to install New HPE Aruba Networking Central On-Premises through ISO, you can mount the server through virtual media (remote server) or you can mount the server from your local system.

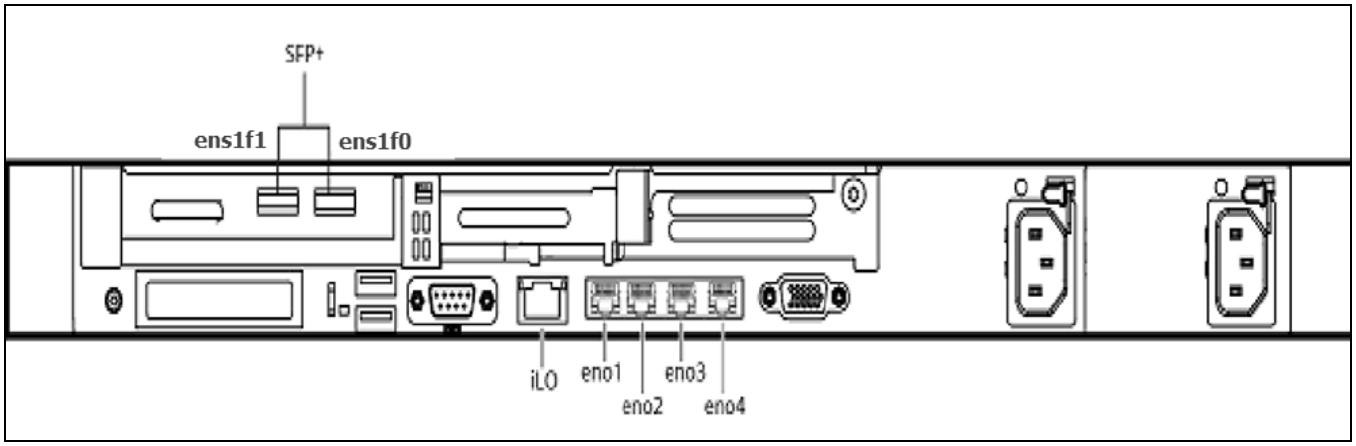
**Note:**
It is recommended to use virtual media to mount the server as the network connectivity from ISO server is consistent, and there will be no connectivity lose.

**Prerequisite**

Since iLO is not present in the server by default, you must first mount the server to the rack. You must set the network function and connect the server physically to the monitor and keyboard.

1. Boot the server.
2. After the booting is complete, there will be options to configure the server with ILO IP and other network parameters. For more information see, Configuring ILO IP Address in Installing ISO.
3. Reboot the server.
4. After the reboot is successful, you can initiate a remote session to the server ILO IP address.

To set connections to the server, connect a 10G SFP cable to the SFP+ port through the compatible SFP transceivers.


SFP+
ens1f1
ens1f0
iLO
eno1
eno2
eno3
eno4

Before installing New HPE Aruba Networking Central On-Premises, you must first prepare the server. Ensure that you have all the prerequisites and good network connectivity. For the list of prerequisites, see Prerequisites.

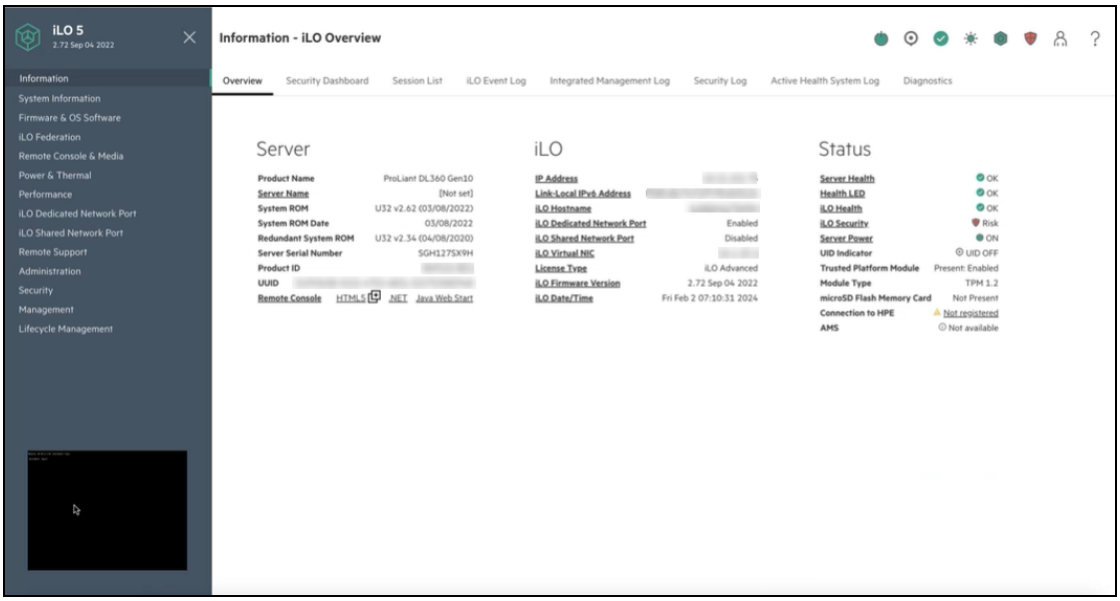
## Setting Up the iLO Network Configuration Utility

**Note:**
You must connect an Ethernet cable to the iLO port to a network with DHCP, or connect a monitor and keyboard to the server to configure a static IP for iLO.

You can now login to the iLO server with the default credentials provided by HPE.

**Note:**
For New HPE Aruba Networking Central On-Premises appliances, the default ILO credentials are copilo and server serial number whereas, for Airwave appliances, it is the iLO password on the server.

1. Enter the Local login name and password. This administrator username and password is provided on the server in the form of a sticker.
   The **Information-iLO Overview** page is displayed.



2. Right-click on the command line console on the left pane and select **HTML 5 Console**.
   The HTML 5 console is displayed.
3. Reboot the server using either of the following two options:
   - On the **Information-iLO Overview** page, click the **Power** icon and then select **Cold Boot.**
   - On the console, click the **Menu** icon, and select **Power** > **Cold Boot**.

   The **Power** button displays four options, **Momentary Press, Press and Hold, Cold Boot, and Reset**. All these options can be used to reboot the server.

   > **Note:**
   > HPE Aruba Networking recommends using Cold boot for rebooting the server. It brings down all the services gracefully and all the services are powered off.
4. Click **OK** on the confirmation dialog box.
5. Go back to the **System Configuration** screen using the navigation tabs at the top of the browser screen.
6. Click **iLO 5 Configuration Utility**.

   The **iLO 5 Configuration Utility** page is displayed.
7. Click **Network Options** and add the network settings.

   The **Network Options** is displayed where you can perform the iLO network settings.
8. Click **Edit/Remove User** and change the password.
9. Click **Save and Exit**.
10. Click **Yes, Save Changes**.

    The Information pop-up box is displayed with the reboot message.
11. Click **Reboot**.
    The reboot starts.
    You can view all the system information like the memory, Processors, UPI Speed, Legacy BIOS information when the server is rebooting.

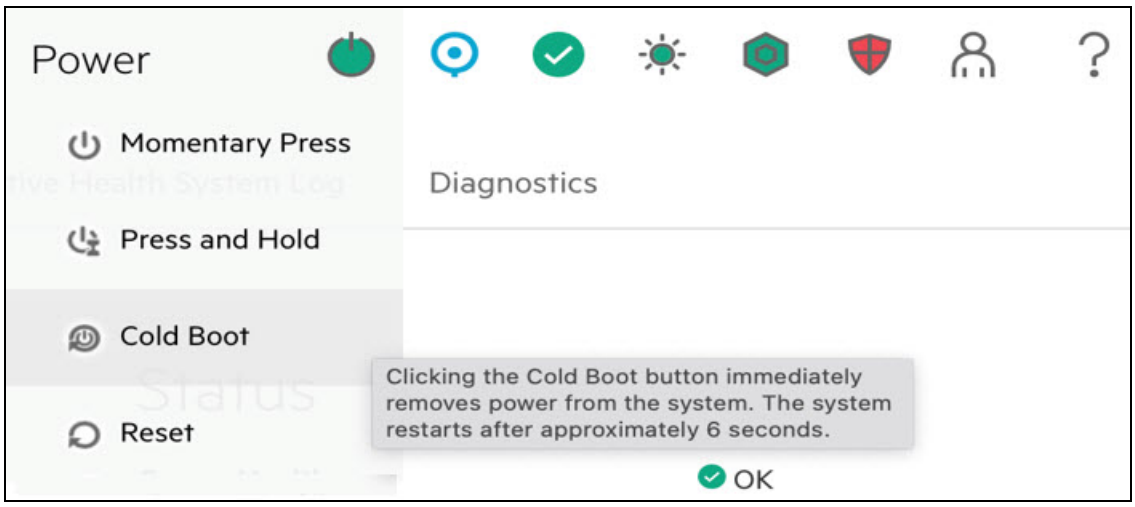
12. Close the console.

## Setting the RAID Level

This section outlines the steps to configure RAID-6 and the BIOS settings for an HPE DL360 Gen11 server.

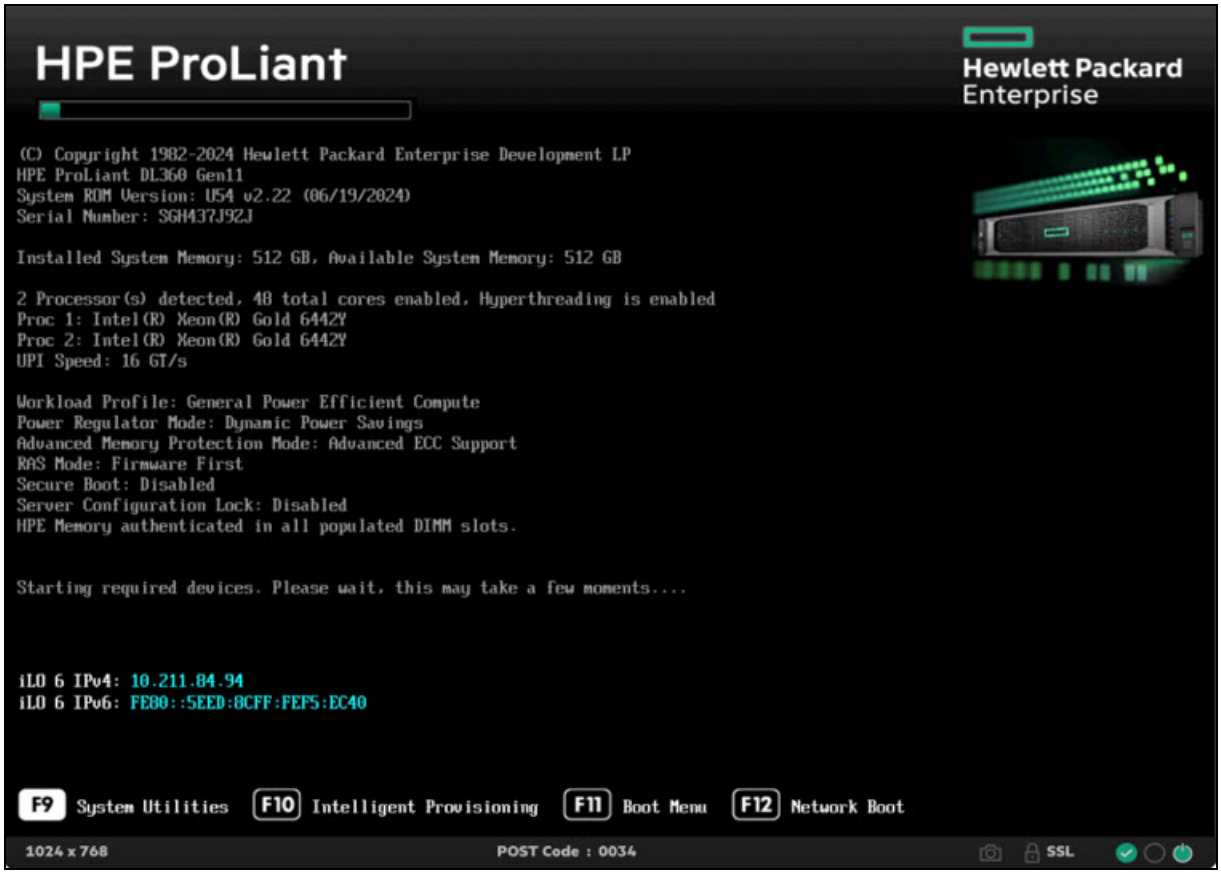
To configure RAID level and BIOS configuration, complete the following steps:

1. On the **Information-iLO Overview** page, click the **Power** button and then select **Cold Boot** to reboot the server.

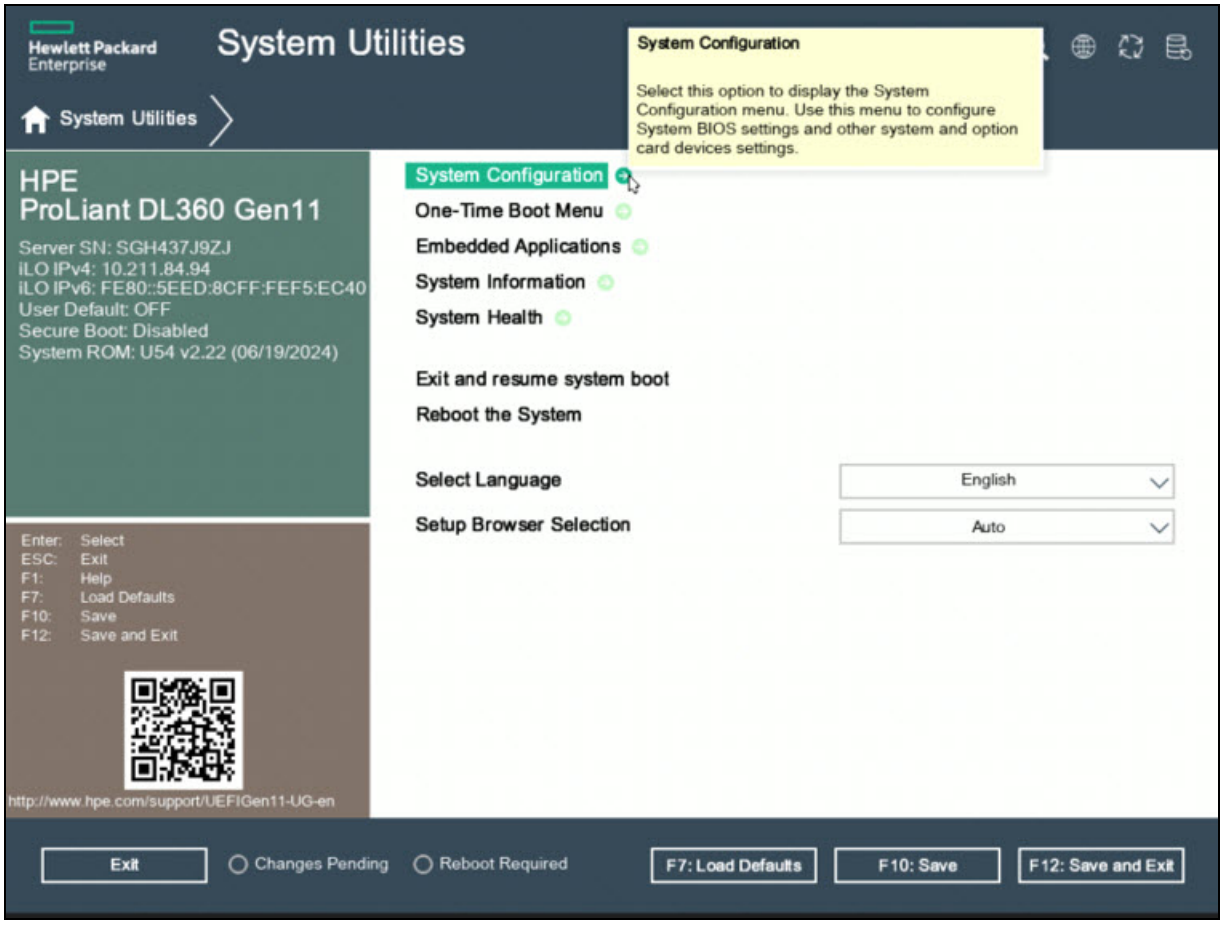



2. Select **HTML5 Console** to open the server console.

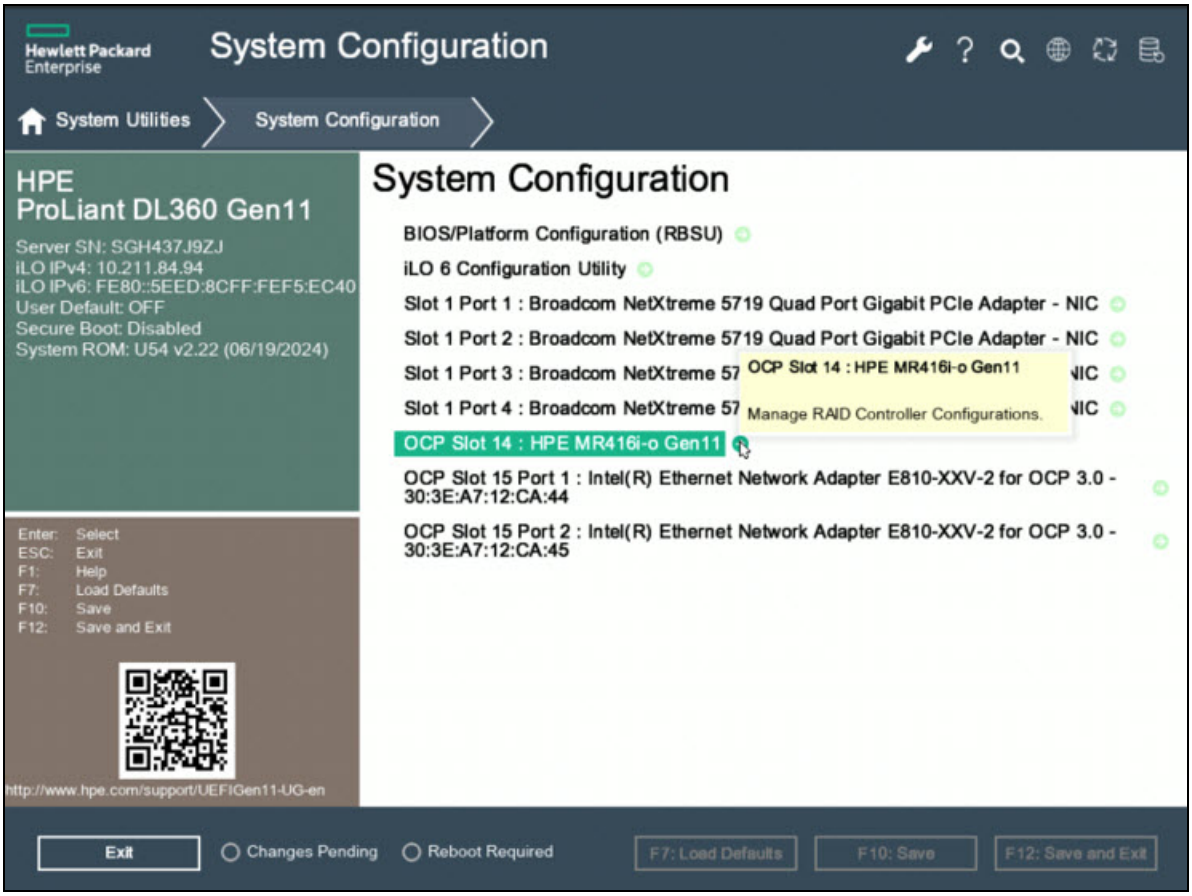
3. Press **F9** to enter the **System Utilities**.



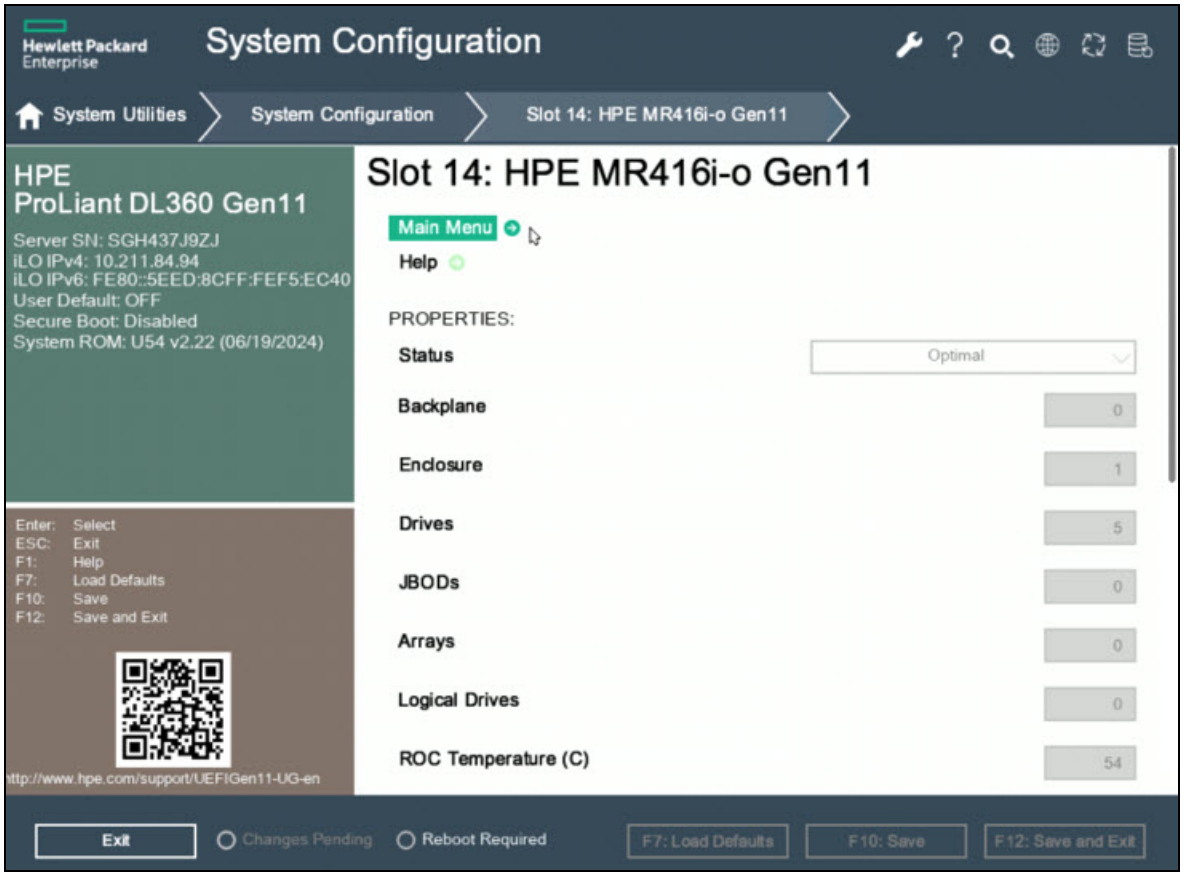
4. In the **System Utilities**, select **System Configuration**.



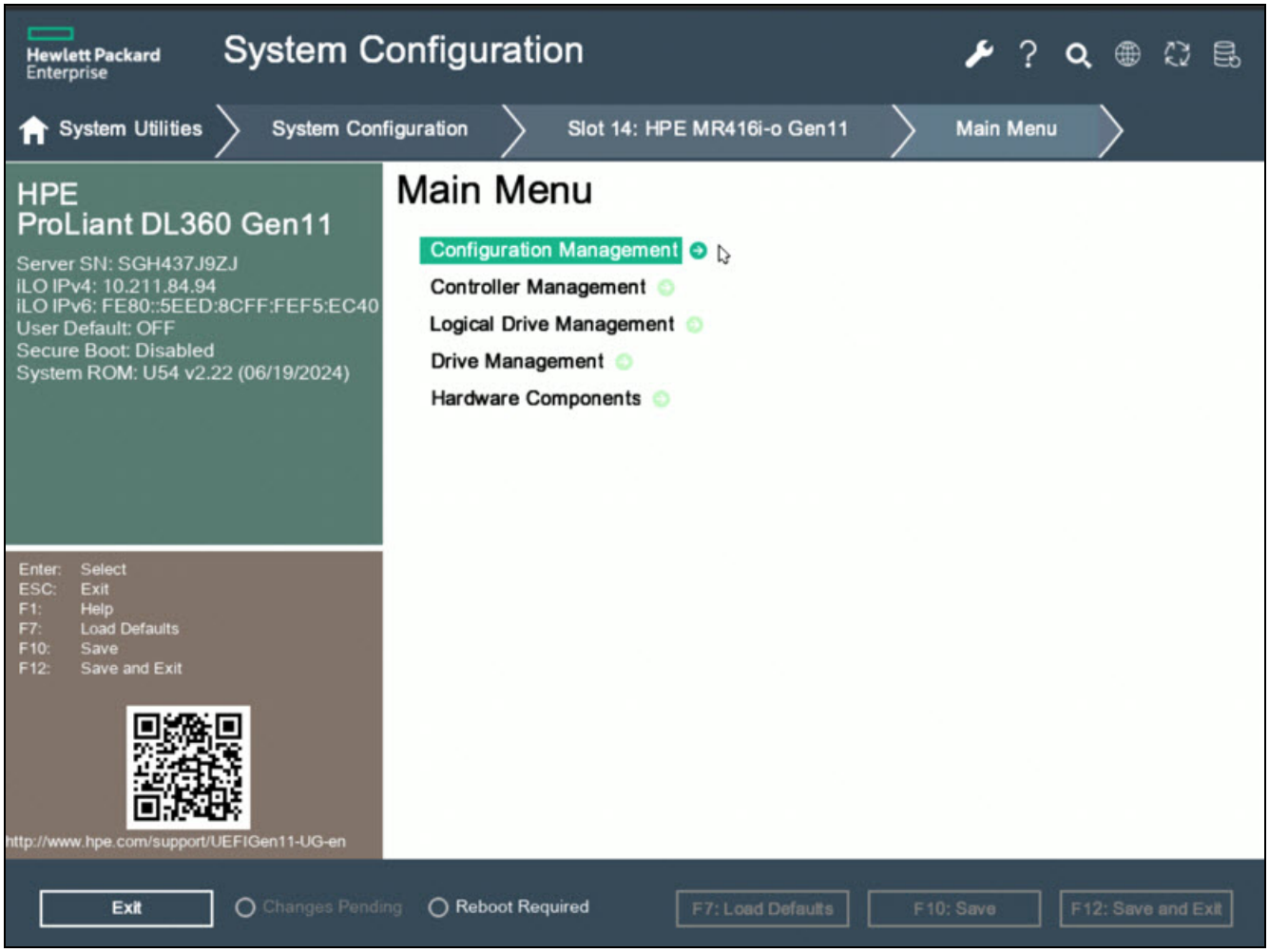

5. In the **System Configuration** tab, select **OCP Slot 14: HPE MR4 16i-o Gen11**.



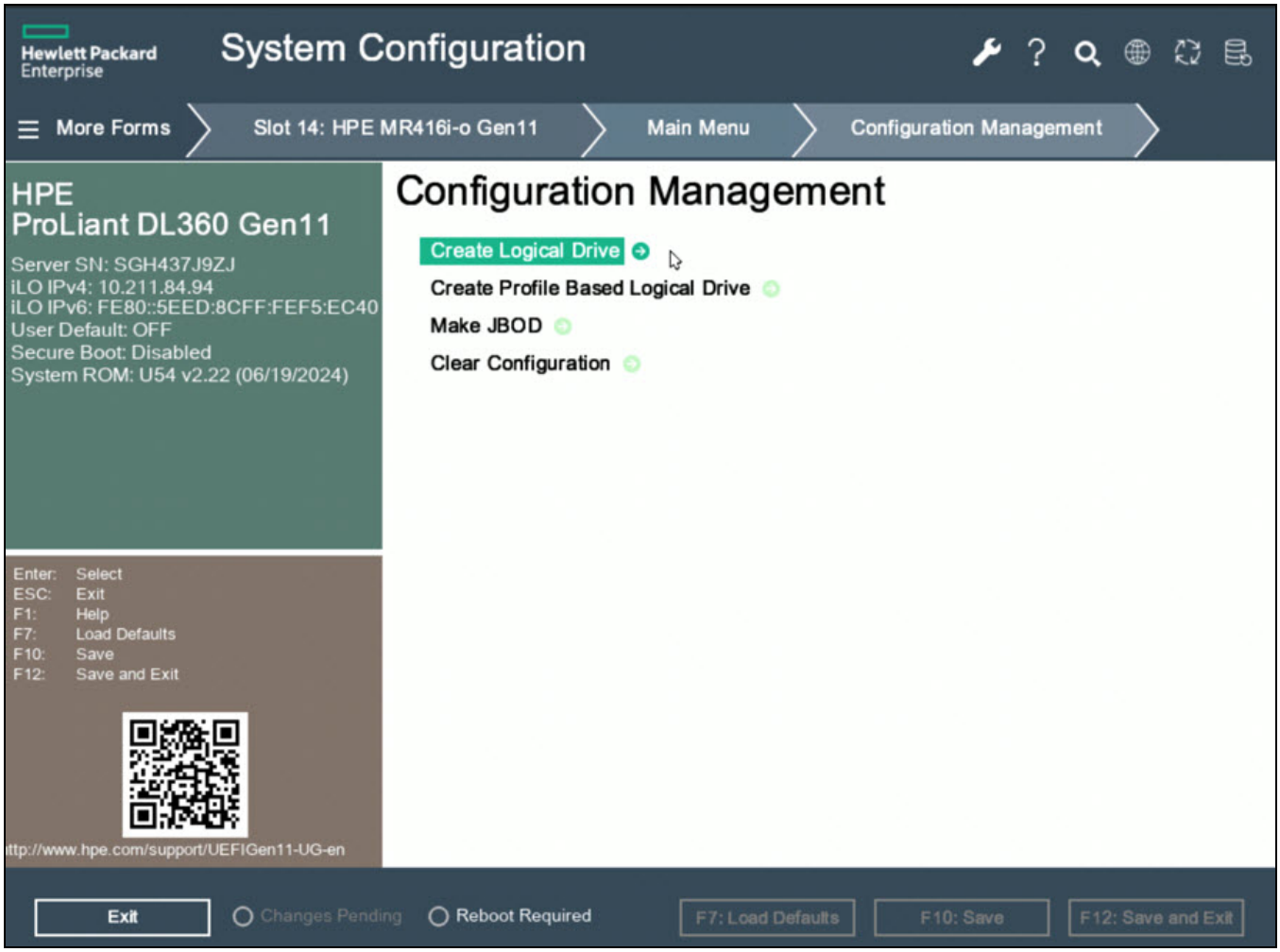

6. In the Slot 14 tab, select **Main Menu**.



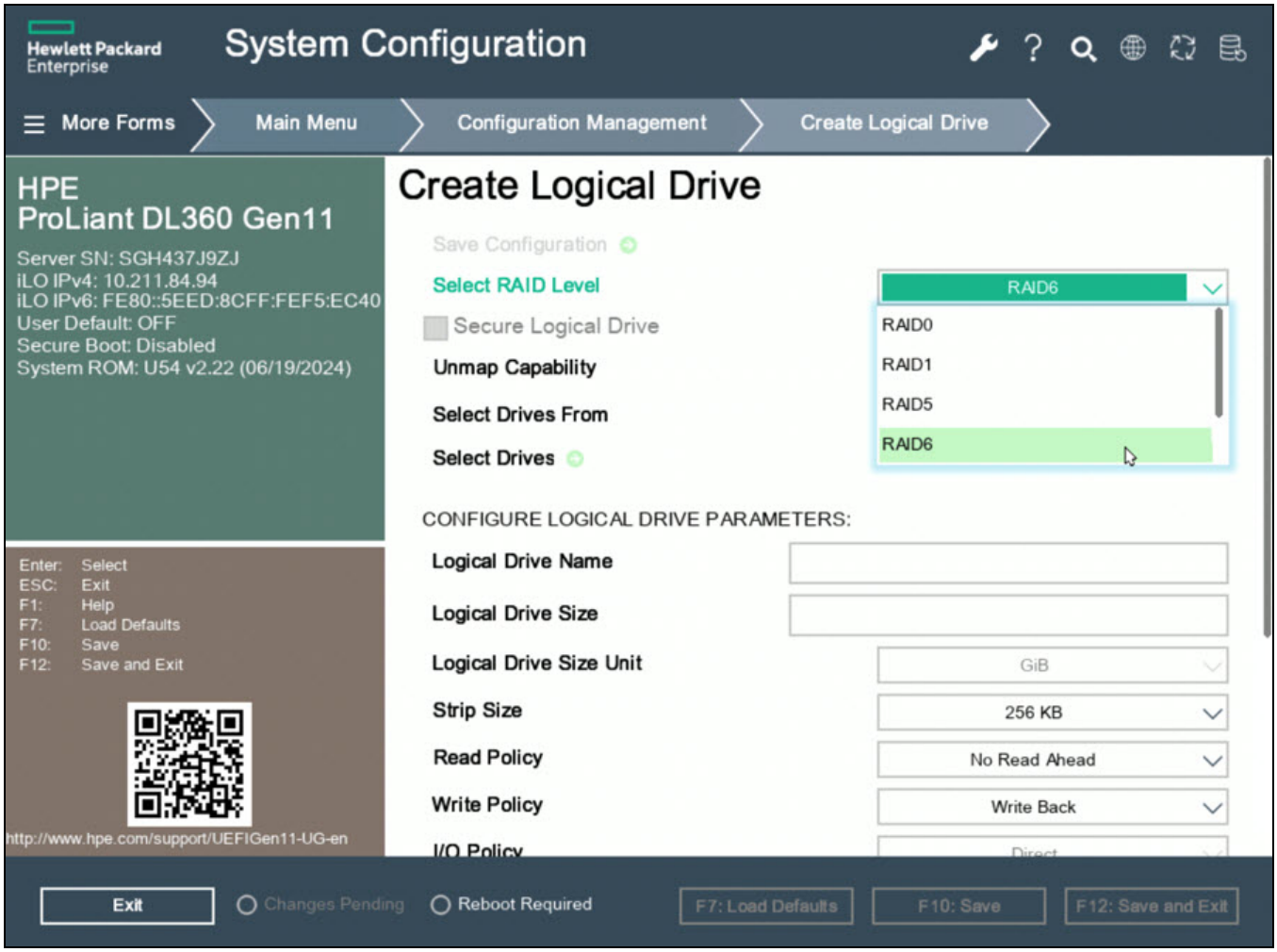

7. In the **Main Menu** tab, select **Configuration Management**.

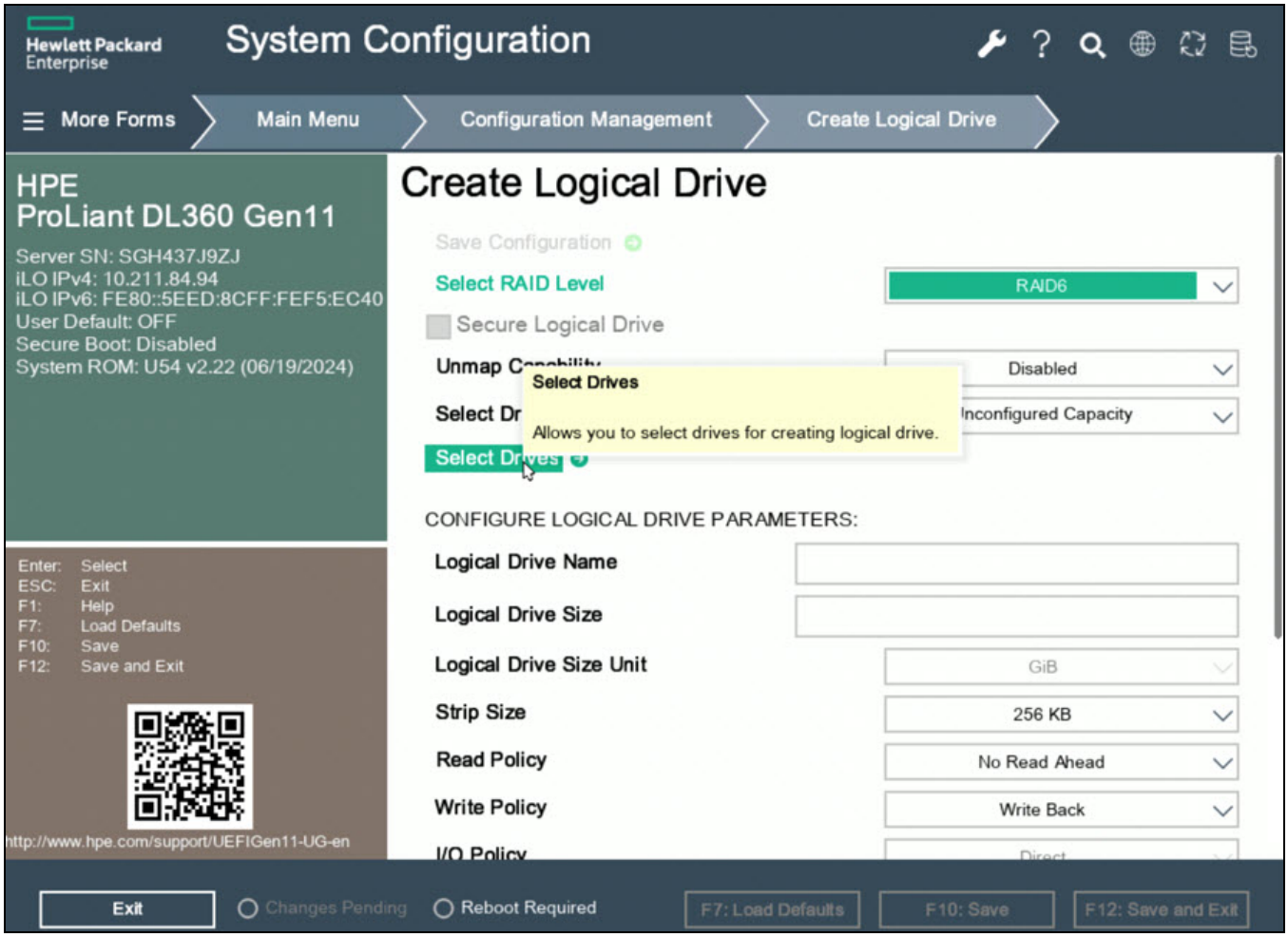



8. In the **Configuration Management**, select **Create Logical Drive**.

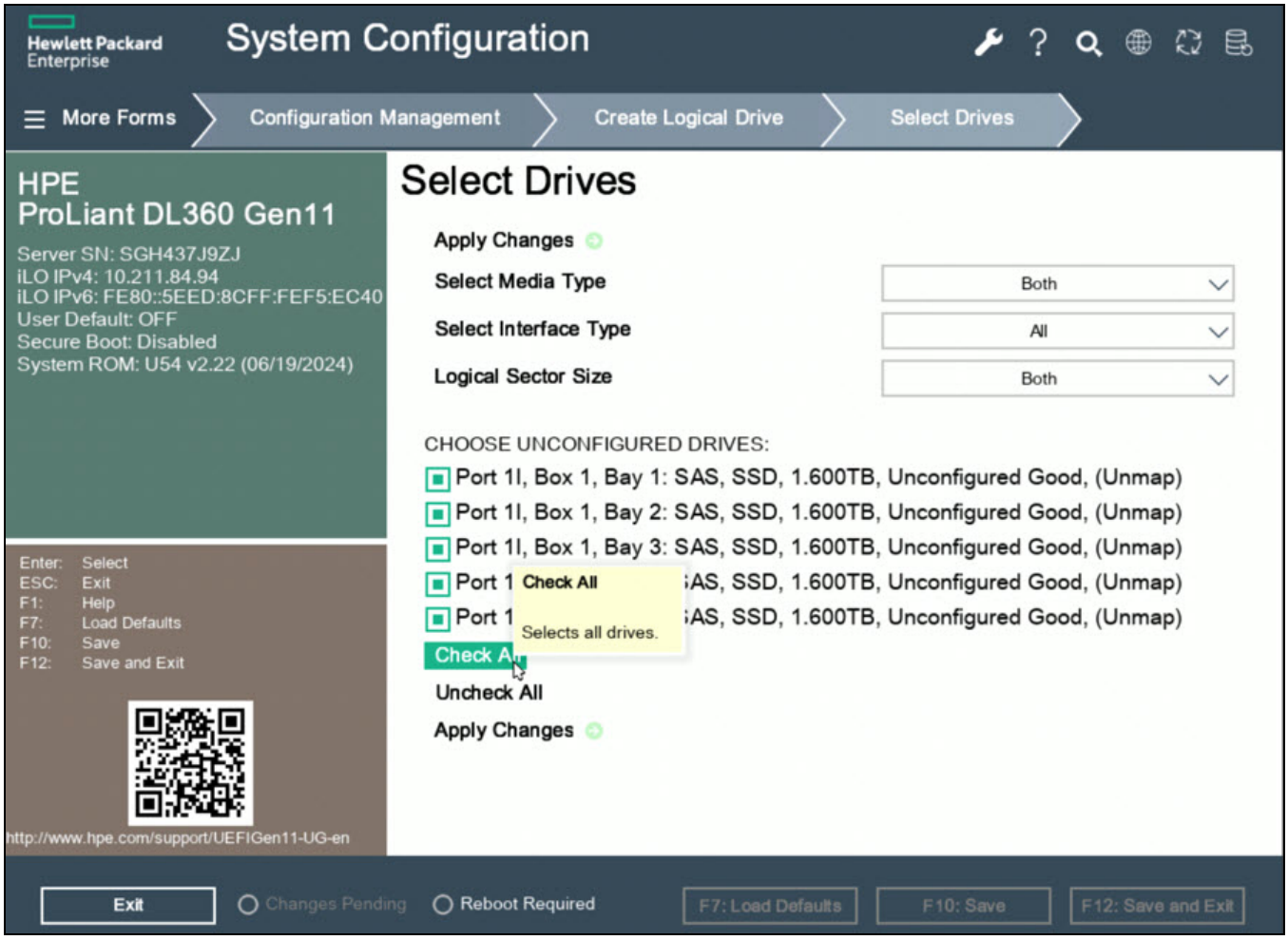


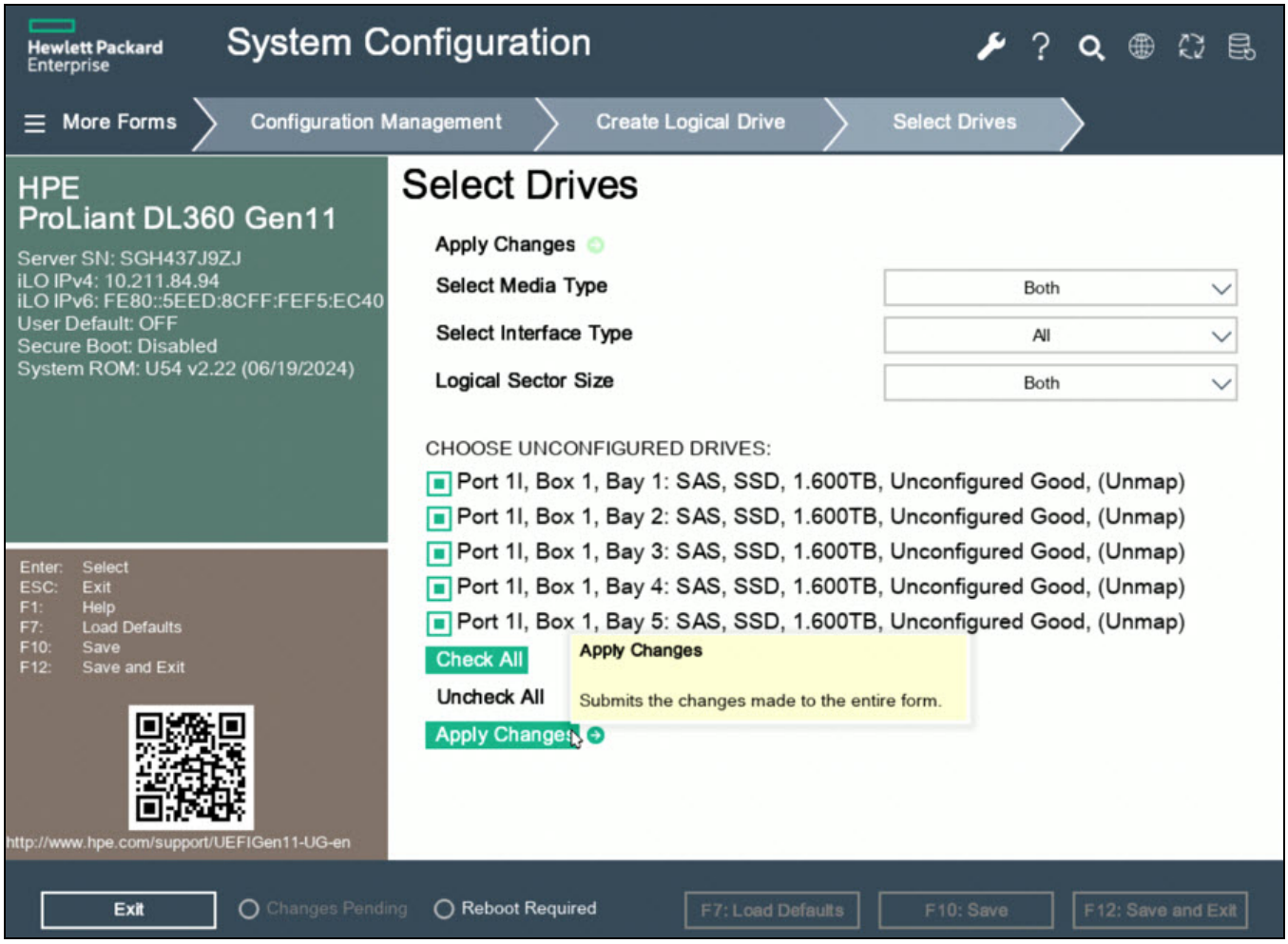

9. In the **Create Logical Drive** tab, select **RAID6** from the **Select RAID Level** drop-down list and then click **Select Drives**.


Hewlett Packard Enterprise
System Configuration
More Forms
Main Menu
Configuration Management
Create Logical Drive
HPE ProLiant DL360 Gen11
Server SN: SGH437J9ZJ
iLO IPv4: 10.211.84.94
iLO IPv6: FE80::5EED:8CFF:FEF5:EC40
User Default: OFF
Secure Boot: Disabled
System ROM: U54 v2.22 (06/19/2024)
Create Logical Drive
Save Configuration
Select RAID Level
RAID6
Secure Logical Drive
Unmap Capability
Select Drives From
Select Drives
RAID0
RAID1
RAID5
RAID6
CONFIGURE LOGICAL DRIVE PARAMETERS:
Logical Drive Name
Logical Drive Size
Logical Drive Size Unit
GiB
Strip Size
256 KB
Read Policy
No Read Ahead
Write Policy
Write Back
I/O Policy
Direct
Enter: Select
ESC: Exit
F1: Help
F7: Load Defaults
F10: Save
F12: Save and Exit
http://www.hpe.com/support/UEFIGen11-UG-en
Exit
Changes Pending
Reboot Required
F7: Load Defaults
F10: Save
F12: Save and Exit

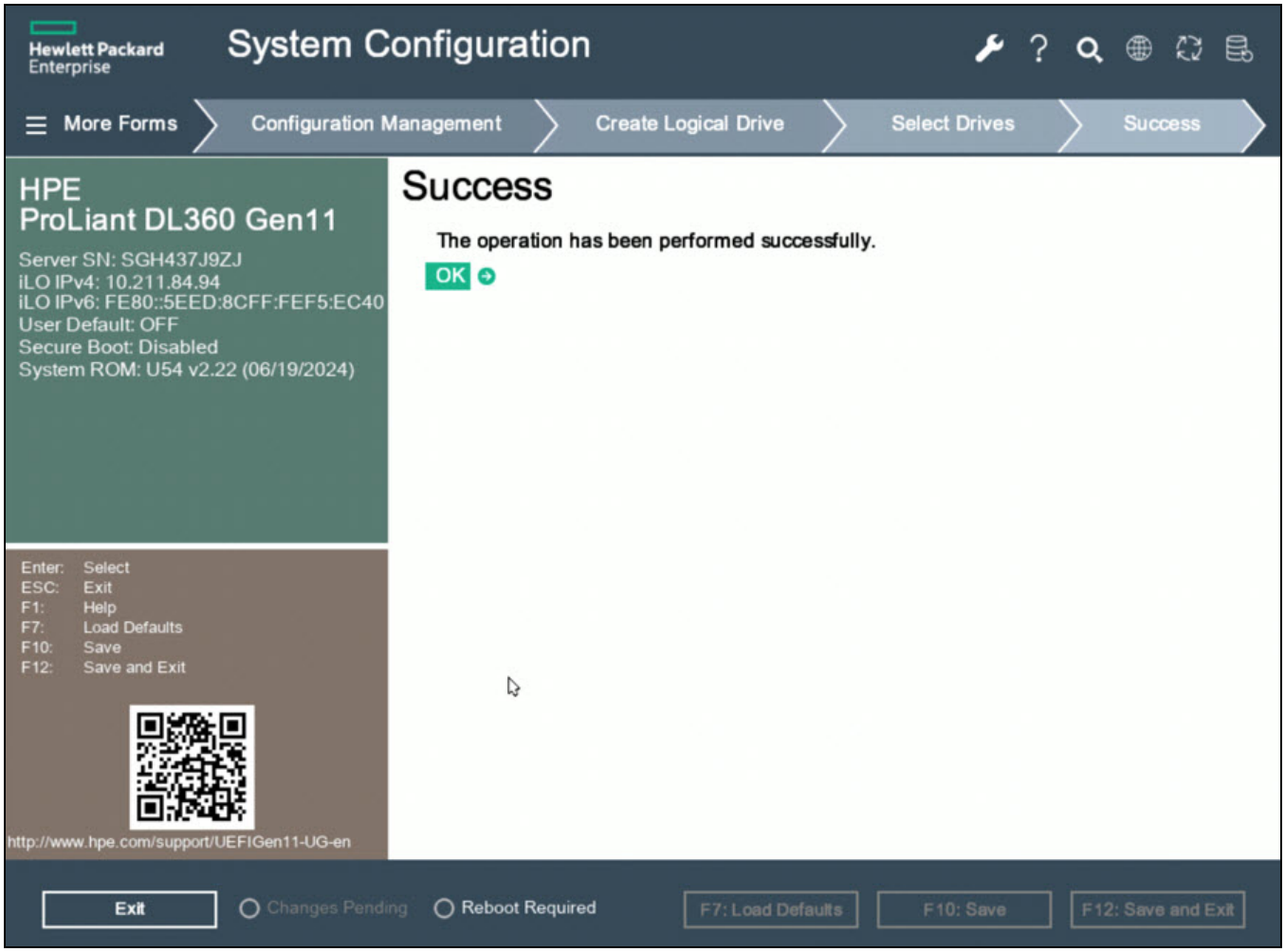



10. In the **Select Drives** tab, under **Choose Unconfigured Drives**, select **Check All** and click **Apply Changes**.


Hewlett Packard Enterprise
System Configuration
More Forms
Configuration Management
Create Logical Drive
Select Drives
HPE ProLiant DL360 Gen11
Server SN: SGH437J9ZJ
iLO IPv4: 10.211.84.94
iLO IPv6: FE80::5EED:8CFF:FEF5:EC40
User Default: OFF
Secure Boot: Disabled
System ROM: U54 v2.22 (06/19/2024)
Select Drives
Apply Changes
Select Media Type
Both
Select Interface Type
All
Logical Sector Size
Both
CHOOSE UNCONFIGURED DRIVES:
Port 1I, Box 1, Bay 1: SAS, SSD, 1.600TB, Unconfigured Good, (Unmap)
Port 1I, Box 1, Bay 2: SAS, SSD, 1.600TB, Unconfigured Good, (Unmap)
Port 1I, Box 1, Bay 3: SAS, SSD, 1.600TB, Unconfigured Good, (Unmap)
Check All
Selects all drives.
Uncheck All
Apply Changes
Enter: Select
ESC: Exit
F1: Help
F7: Load Defaults
F10: Save
F12: Save and Exit
http://www.hpe.com/support/UEFIGen11-UG-en
Exit
Changes Pending
Reboot Required
F7: Load Defaults
F10: Save
F12: Save and Exit

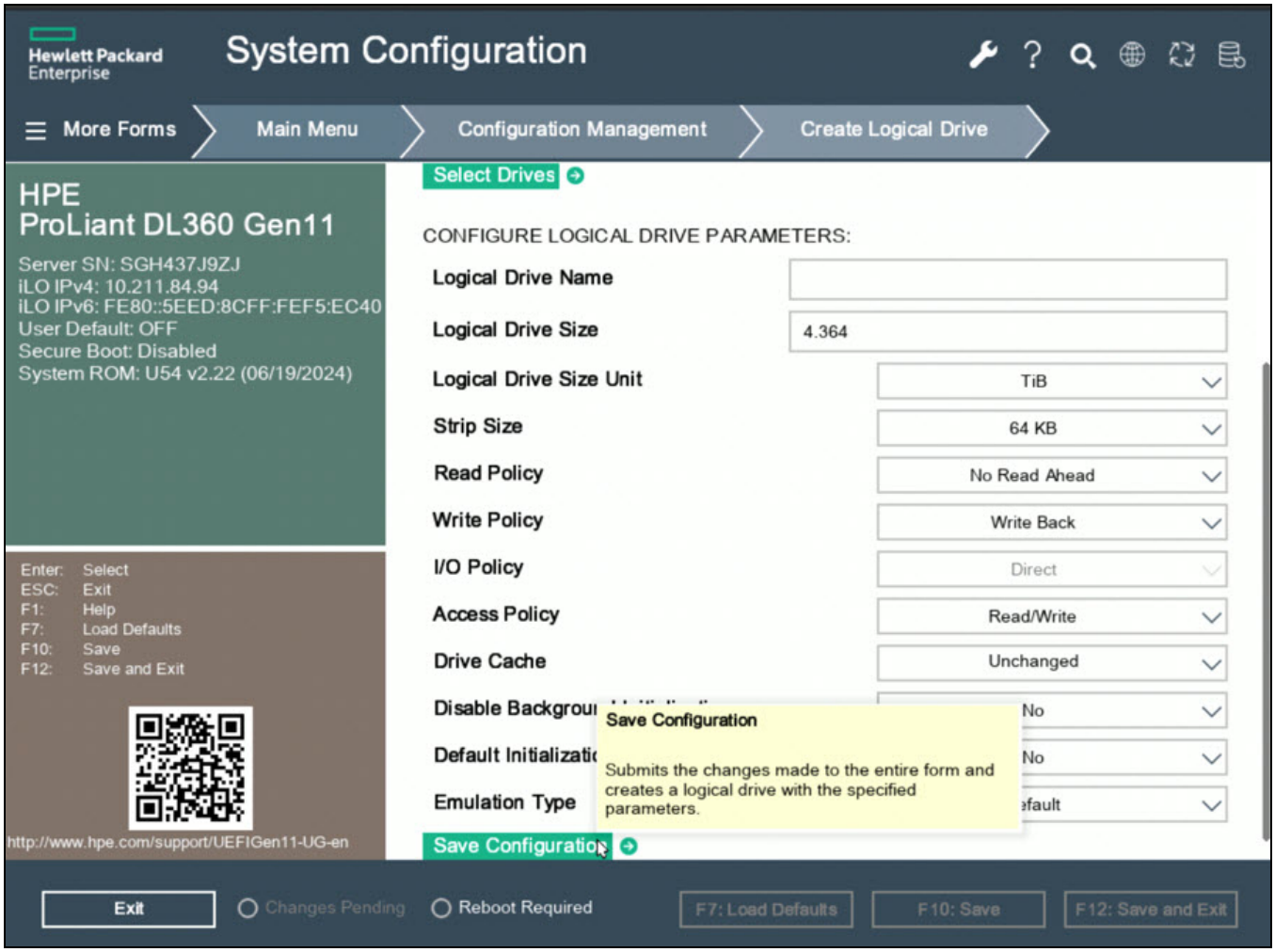



11. In the **Success** tab, click **OK**.



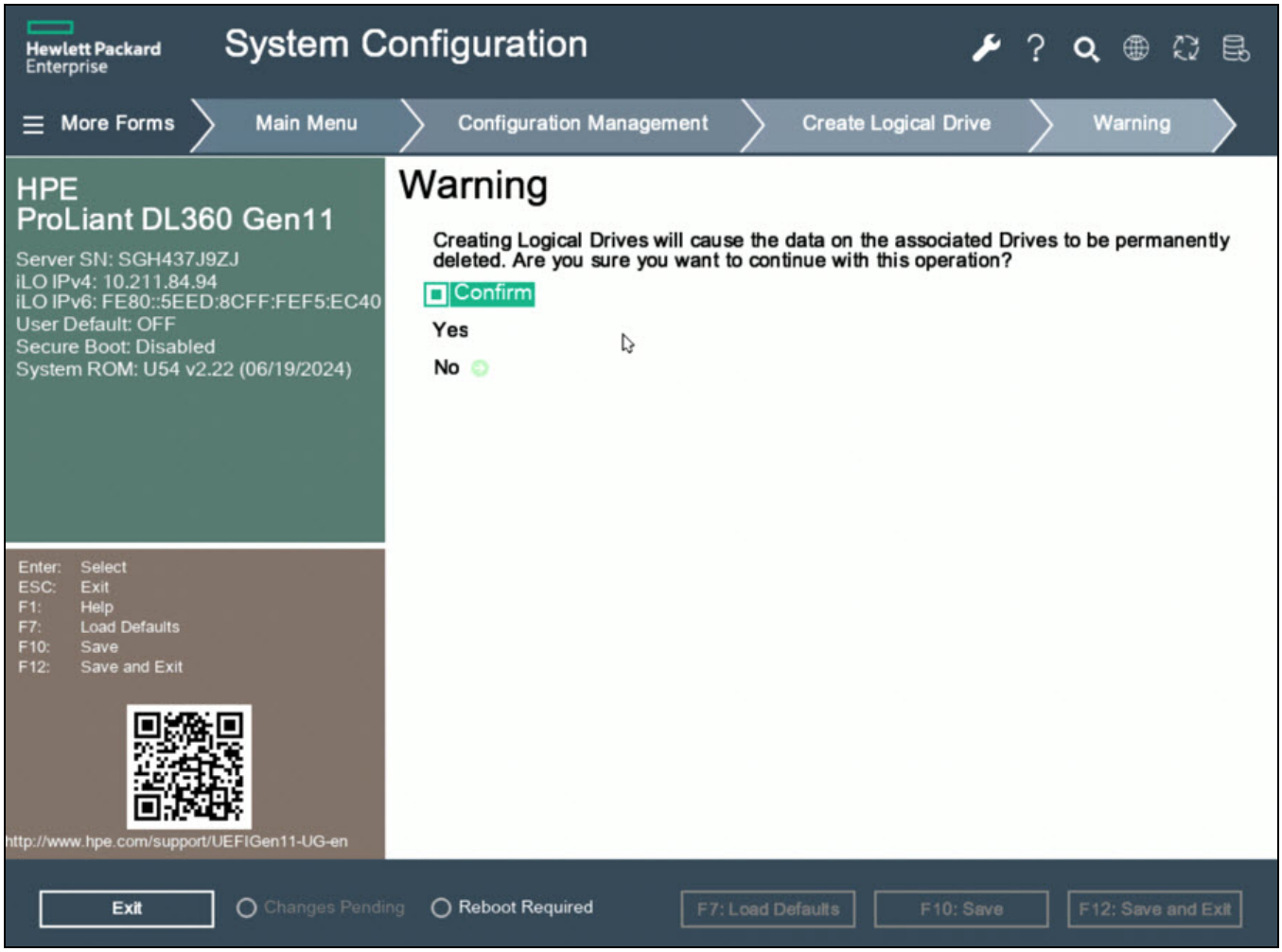

The **Create Logical Drive** tab appears.

12. In the **Create Logical Drive** tab, select **Save Configuration**.



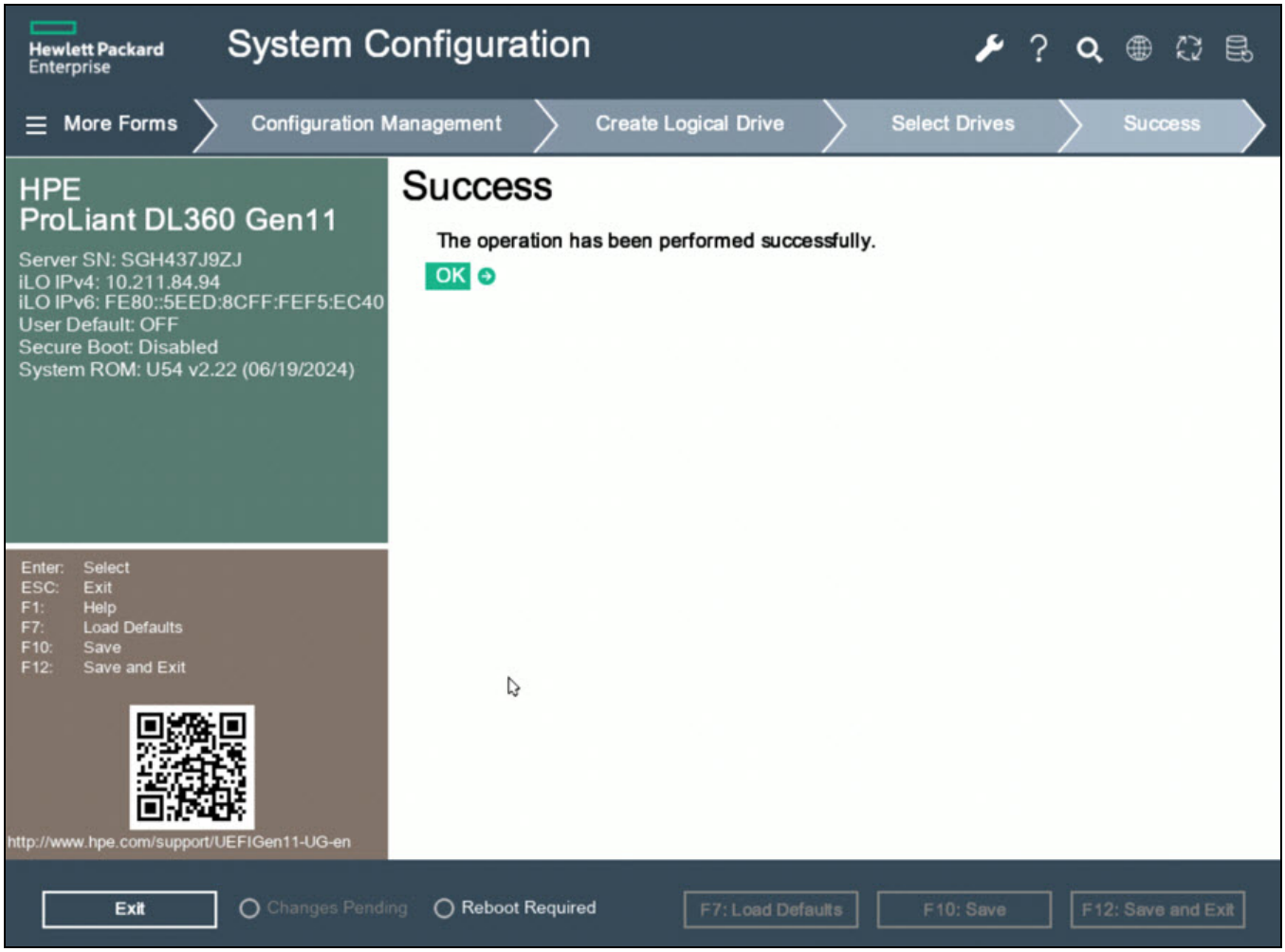

The **Warning** tab opens.

13. Select **Confirm** and click **Yes**.

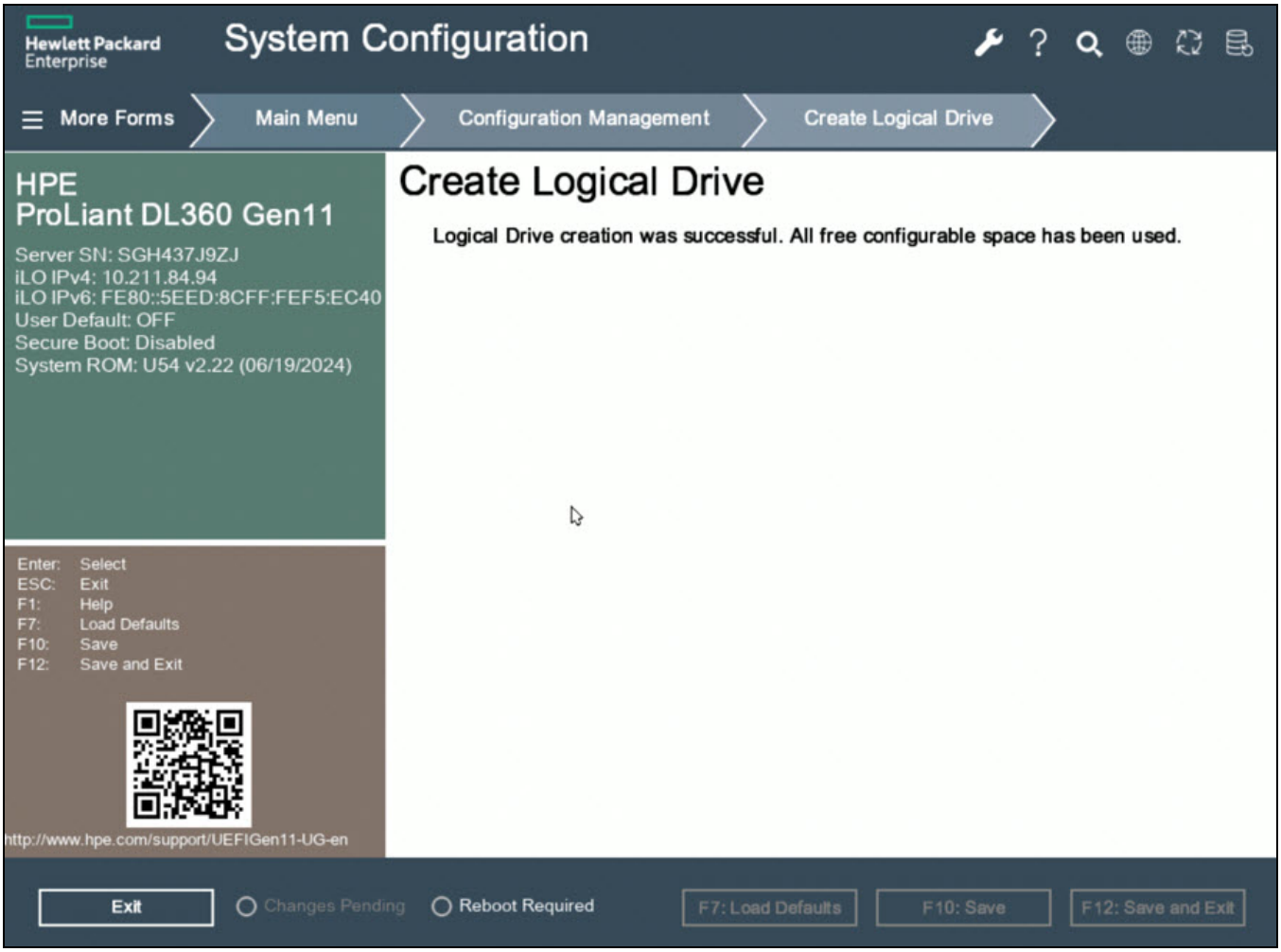



A success message appears.

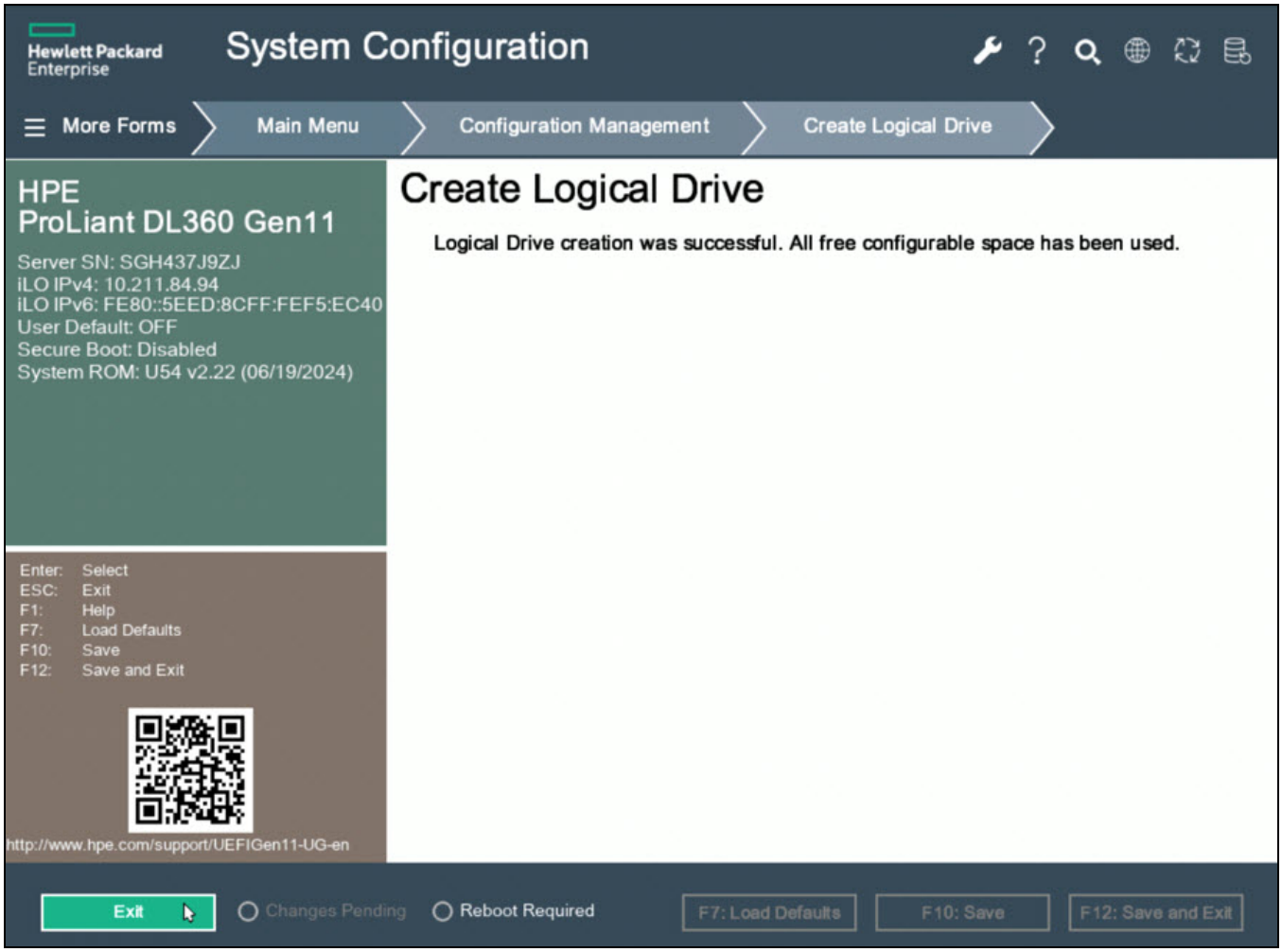
14. Click **OK**.



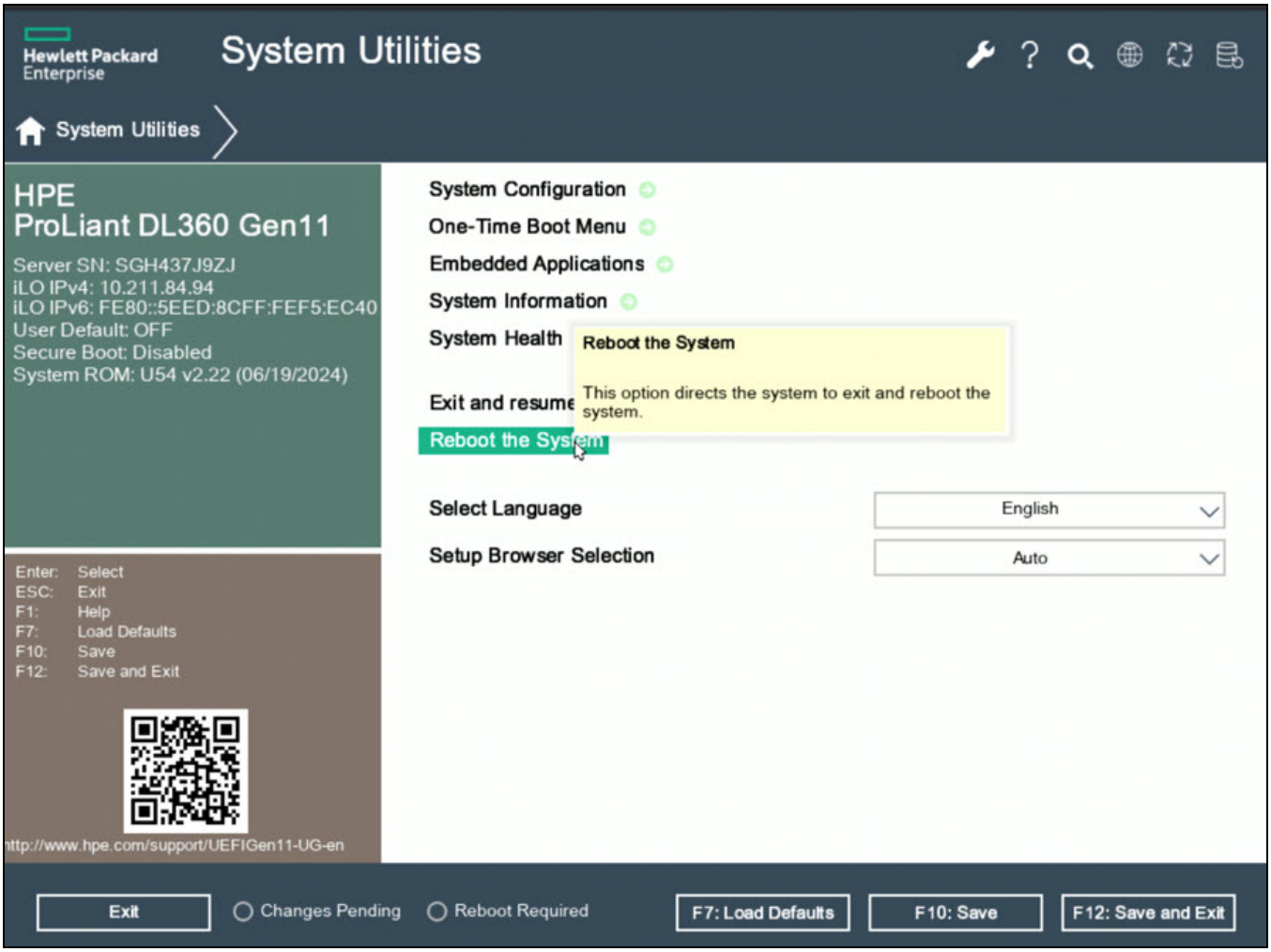

The **Create Logical Drive** tab displays the following message, **Logical drive creation was successful. All free configurable space has been used**.




15. Select **Exit** three times at the bottom-left corner of the screen to get the option **Reboot the System**.

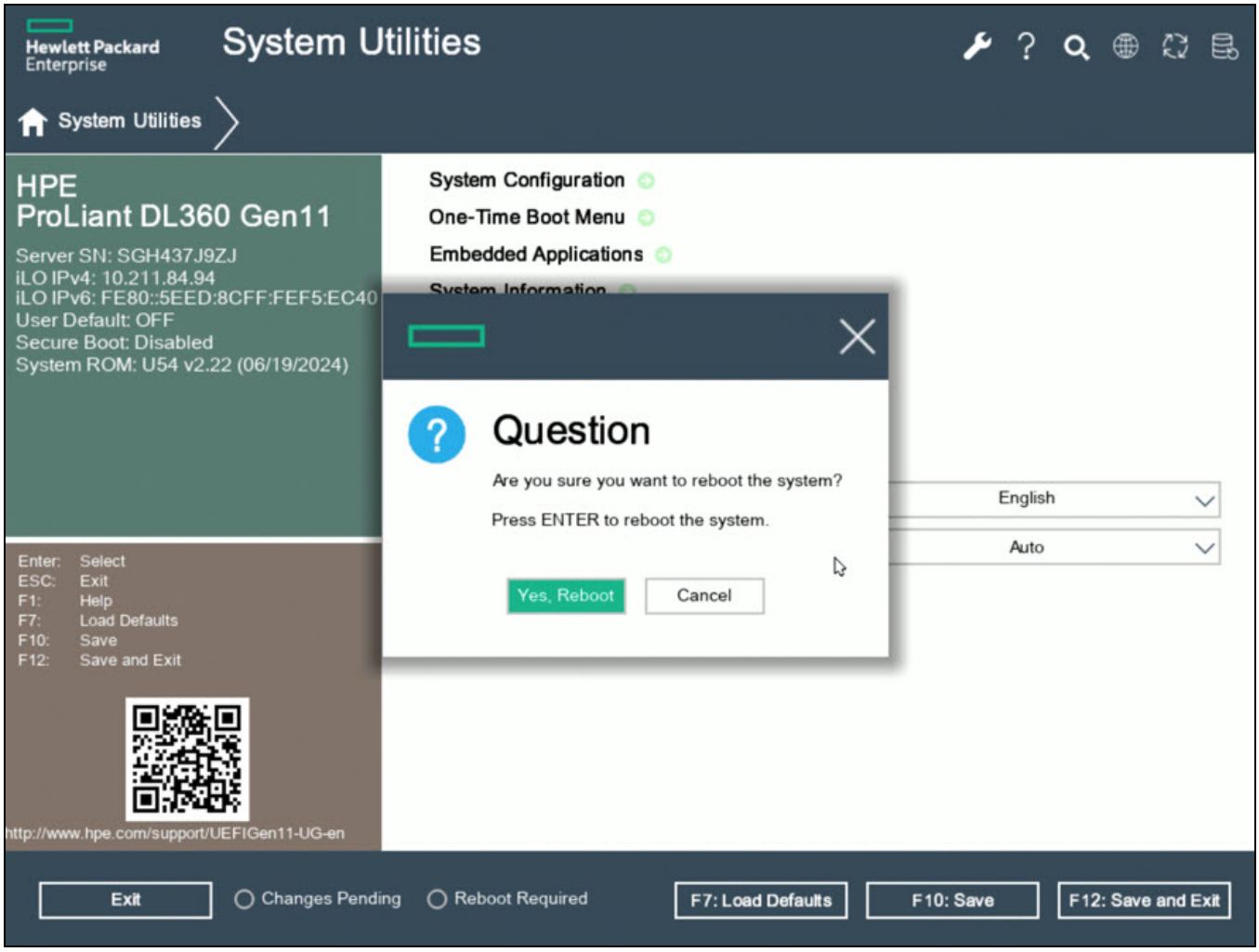



16. Select **Reboot the System**.

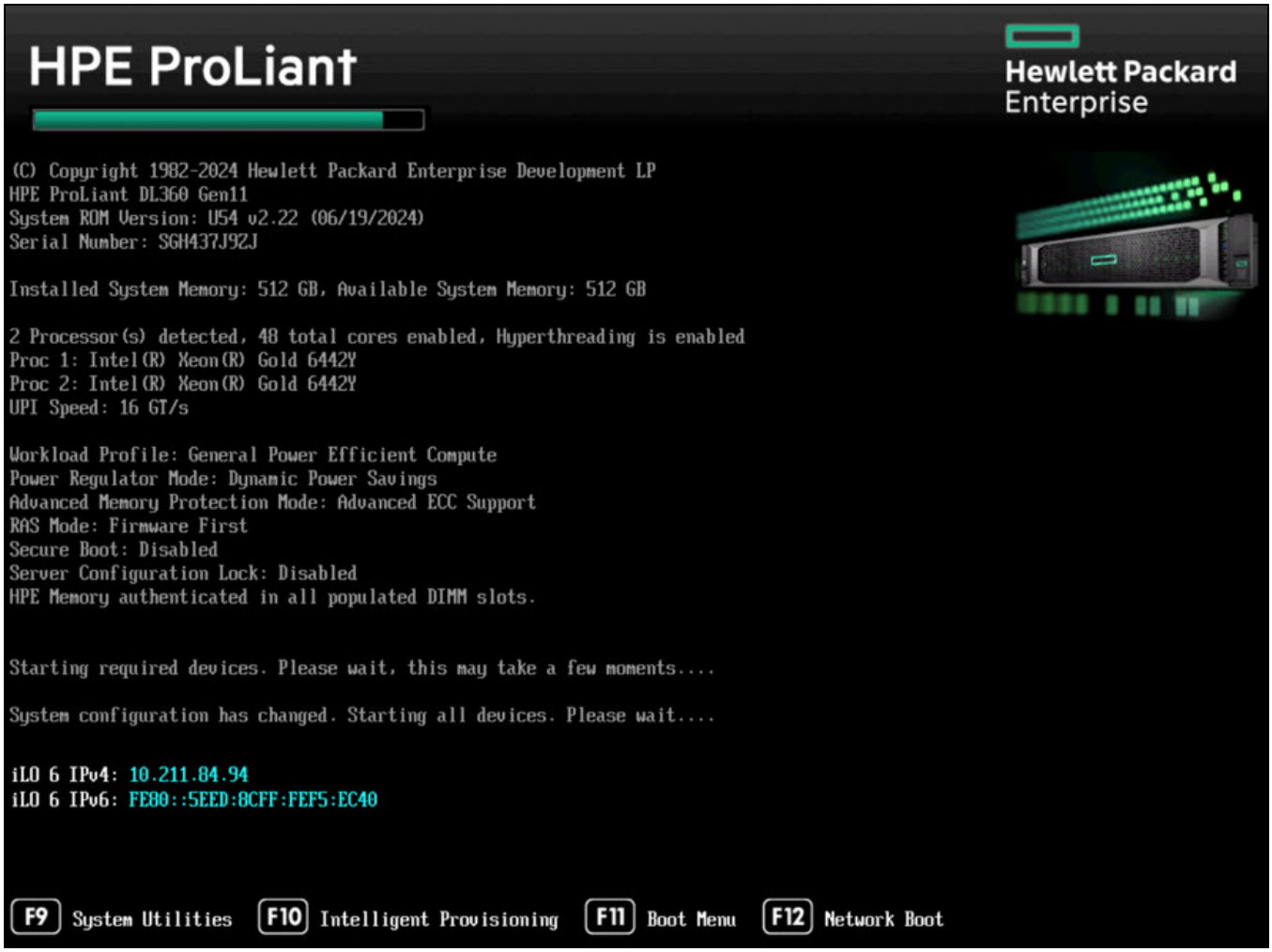



A confirmation dialog box appears.

17. Click **Yes, Reboot** to confirm the reboot.



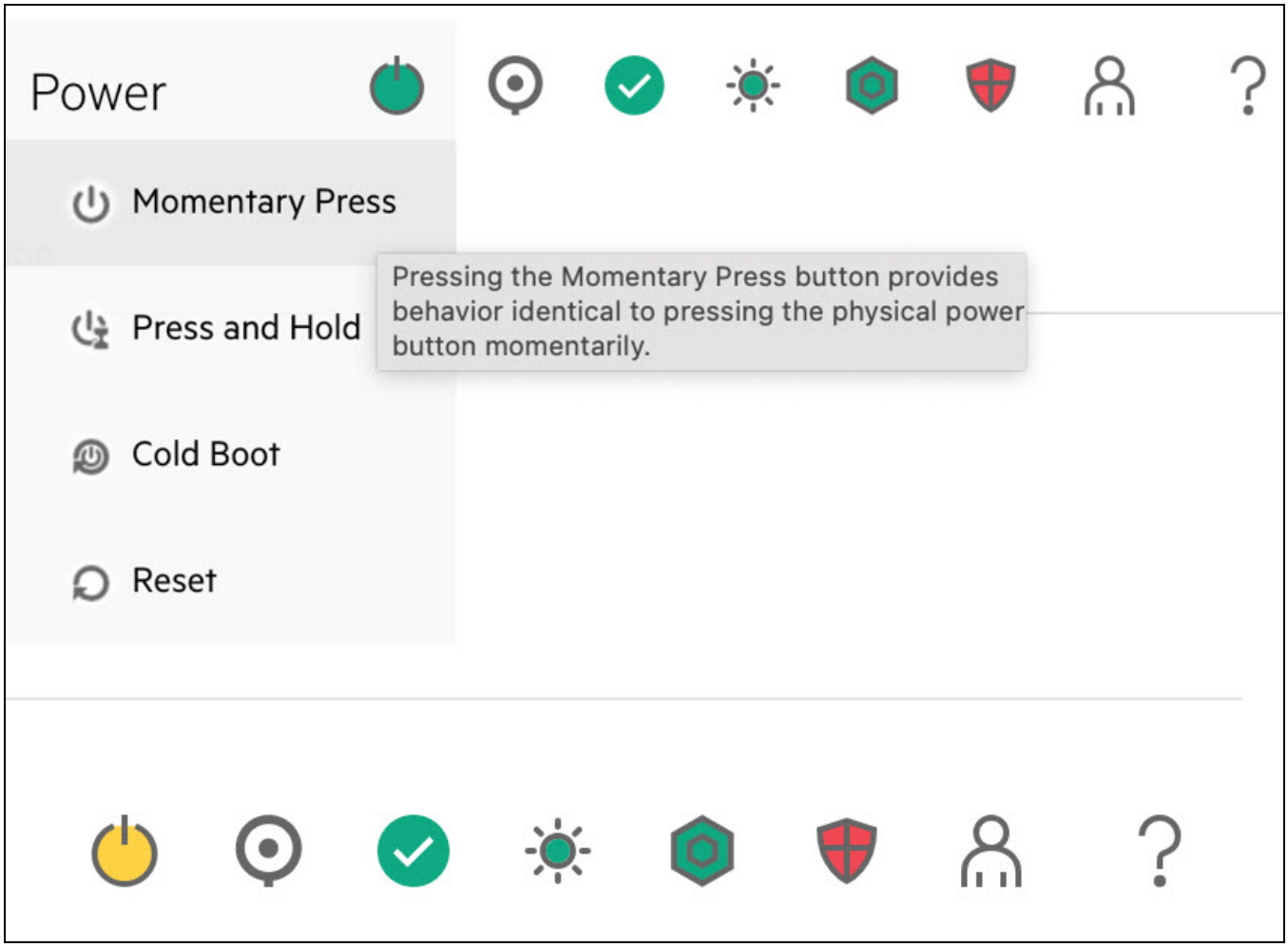

The following screen appears where you can verify the RAID6 configuration.



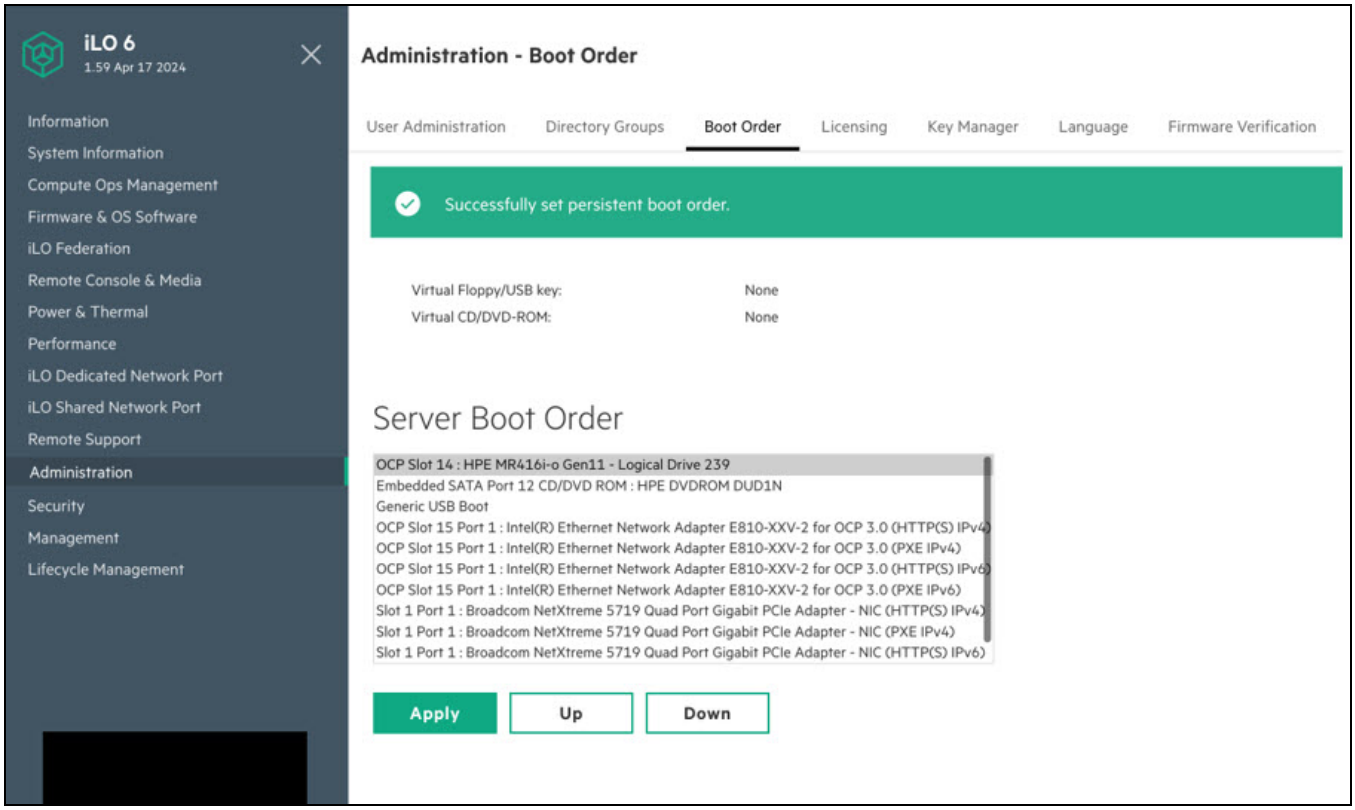

## Boot Order Configuration

To configure the boot order, complete the following steps:

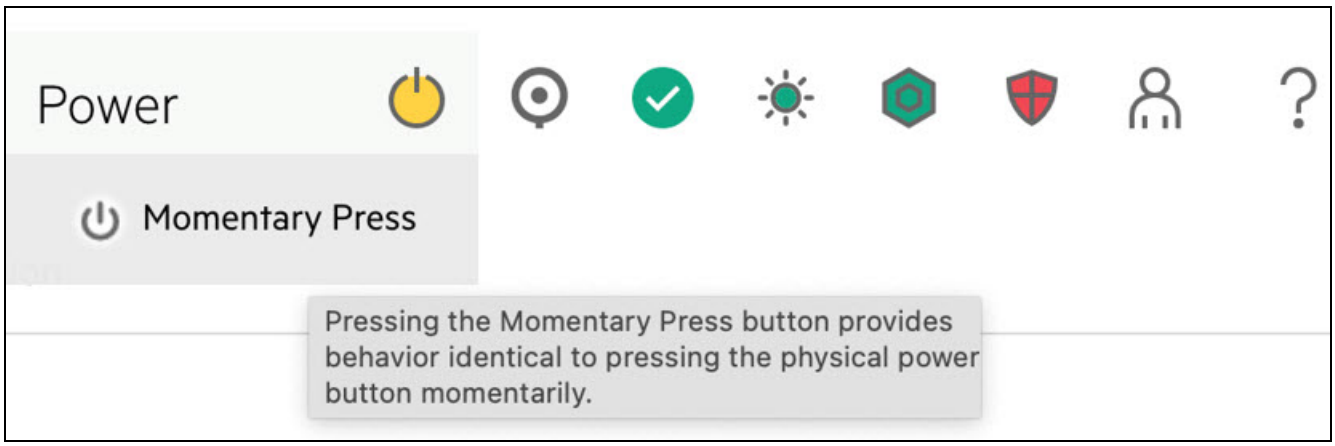
1. After the server reboot is complete, select **Momentary Press** to toggle the power to set the boot order.




2. In the console, under **Administration** > **Boot Order**, select **OCP Slot 14: HPE MR416i-o Gen11 – Logical drive 239** as the first boot option and click **Apply**.




3. Select **Momentary Press** to reboot the server again.




The following message is displayed, **Congratulations! You are all set with RAID 6 and Boot Order configurations**

**Note:**

- For Gen10 HPE servers, you must select RAID level as **RAID0**.
- Configuring Legacy BIOS from the **Boot Mode** options is mandatory in HPE DL360 Gen10 servers. For more information, see Configuring Boot Mode.
- For Gen11 HPE servers, you must select RAID level as **RAID6**.
- HPE DL360 Gen11 servers do not support Legacy BIOS. In HPE DL360 Gen 11, the supported boot mode is by default **Unified Extensible Firmware Interface (UEFI)**. You cannot select the boot order in New HPE Aruba Networking Central On-Premises.

## Checking the System Information

After setting up the boot order and boot mode, you can proceed with the installation, provided other software and hardware requirements are present. To verify the system information, perform the following steps:

1. From the **Information-iLO Overview** page. Click **System Information** on the left pane.
2. Click the **Memory** option from the top menu.
3. Scroll down and verify the **Memory Summary**. The total memory should be 512GB.
4. Scroll down to verify the memory slots. Total number of slots should be 16 and the RAM status should be **Good, In Use**.
5. Select **Processors** from the top menu to view the processor details.
   The processors information with the number of cores is displayed.

   **Note:**
   HPE Aruba Networking recommends using **Intel(R) Xenon(R) Gold 6138 CPU@ 2.00GHz** processor and the total execution technology should be 80 threads.

Your server is ready for New HPE Aruba Networking Central On-Premises installation.

## Configuring Boot Mode

The **Boot Mode** must be set to Legacy BIOS for HPE DL360 Gen10 servers.

After log in to the iLO server, navigate to **Administrator** > **Boot Order**. In the **Boot Mode** section, select **Legacy BIOS** for HPE DL360 Gen10 servers. If the **Legacy BIOS** option is disabled, then you must disable the secure boot before configuring the **Boot Mode**.

To change the **Boot Mode**, complete the following steps.

1. Log in to the iLO server as an administrator.
2. Reboot the server by clicking on **Power** icon and selecting **Cold Boot**.
3. Confirm the cold boot operation when prompted and wait for the **Power-On Self-Test (POST)** screen to be displayed.
4. On a Windows system, press **F9**, or on a Mac system, press **Fn+F9** to open **System Utilities**.
5. Enter the Administrator password.
6. Click **System Configuration**.
7. Click **BIOS/Platform Configuration (RBSU)**.
8. Click **Server Security**.
9. Select **Secure Boot Settings**.
10. In the **Attempt Secure Boot** drop-down, select **Disable**.

    By default, the secure boot is set to **Disable**.
11. In the pop-up window, click **OK** when prompted to reboot the server after the configuration change.
12. Click on **Exit** until the **System Utilities** page is displayed.
13. Click **Reboot the System**, and confirm the reboot operation.

    In the iLO server navigate to **Information** > **Security Dashboard**, to confirm if the **Secure Boot** is disabled.
14. Navigate to **Administrator** > **Boot Order**.
15. Click the **Power** icon and then select **Momentary Press**.
16. In the **Boot Mode** section, select **Legacy BIOS**.
17. Click **Apply**.

18. Click the **Power** icon and then select **Momentary Press**.

    The server boots up using the Legacy BIOS mode.

# Installing ISO

New HPE Aruba Networking Central On-Premises supports cluster configurations consisting of 3, 5, 7, 9, and 11 nodes. This document provides guidance for planning and performing the installation of New HPE Aruba Networking Central On-Premises on non-appliance mode. For more information on cluster device scaling, see Cluster Scaling.

For more information on New HPE Aruba Networking Central On-Premises deployment, see Deployment.

Watch a video for this task—Installing ISO.

## Downloading the ISO Image

Download the image from HPE Networking Support Portal (NSP) to either of the following two options.

- Place New HPE Aruba Networking Central On-Premises ISO image onto an HTTPS server. HTTPS Server must be reachable from the New HPE Aruba Networking Central On-Premises server iLO IP address. Through the New HPE Aruba Networking Central On-Premises server iLO interface, attach the ISO image on the HTTPS server with the CD/DVD "Virtual Media URL" option.
- Place New HPE Aruba Networking Central On-Premises ISO image onto your local PC. Through the New HPE Aruba Networking Central On-Premises server iLO interface, attach the ISO image from your local PC with the CD/DVD "Local *.ISO file" option.

**Note:**

- Local ISO-based installations are sensitive to network glitches. It is recommended to use a web server to perform the ISO install.
- If you are downloading and installing the image from your local PC, ensure that you are always connected to the network. Any network disconnection will result in failures.

## Downloading Apps Package Files

By default, New HPE Aruba Networking Central On-Premises 3.0.2.1 Apps_package comes in two parts (part-01 an part-02).

- COP-apps-pkg-3030-58-20260515-prod.tar.gz.part-01
- COP-apps-pkg-3030-58-20260515-prod.tar.gz.part-02

You must download these two files to the local machine.

## Validating Checksum for the Downloaded Files

After downloading the files (.tar and iso files), you must perform the checksum validation to verify the integrity and accuracy of the downloaded files. You can validate the checksum through md5sum and sha256sum. When you run md5sum and sha256sum against the downloaded files, an output is generated. This output must match with the checksum file to ensure that the files were downloaded correctly and are free from any errors.

**Note:**
Due to network, disk space, or any other potential issues, if the checksum is not matching with the downloaded file, then redownload the file and verify the checksum again.

## Installing ISO Files

There are 3 ways to install New HPE Aruba Networking Central On-Premises ISO to the Central Appliance. You can use either of the following options:

- Option 1: Using the ISO image on an HTTPS server or CD/DVD "Virtual Media URL"
- Option 2: Using the iLO interface with ISO image on the local PC or DVD (CD/DVD "Local *.iso file")
- Option 3: Using the USB drive

### Important Note

HPE recommends using HTTPS Server (CD/DVD "Virtual Media URL") option

**Note:**

- During New HPE Aruba Networking Central On-Premises installation on the iLO server, if there are any iLO accounts created by the customer, those accounts will be deleted. Only 'administrator' account can be created and retained as a part of the ISO installation.
- For non-appliance installations, the 'copilo' user will not be created.

## Option 1: Installing New HPE Aruba Networking Central On-Premises ISO Files Using the ISO Image on an HTTPS Server

1. From the downloaded files, right-click on the .iso file and click **Copy Link Address**.

   For example, <https://<ip address>/.iso>
2. Login to the server that was set up in the first workflow.
3. You can mount the image using either of the following options:
   - From the User Interface (UI)
     a. Click **Remote Console & Media** option from the left-hand menu.

        The **Remote Console & Media- iLO Integrated Remote Console** page is displayed.

     b. Click **Virtual Media** from the top menu.

     c. From the **Connect CD/DVD-ROM**, click **Insert Media** button.

     d. Paste the URL copied in step 1 in the **Image URL** field.

     e. Select the **Boot on Next Reset** checkbox.

     f. Reboot the server by clicking on **Power** icon > **Cold Boot**.
   - From the console:

     **Note:**
     These steps are only applicable for HPE Gen 10 servers.

     a. Click the icon > **CD/DVD** > **Virtual Media URL**.

        The **Virtual Media URL** pop-up is displayed.

> **Note:**
> Select Local *.iso image if the image is downloaded into your local PC and relevant options to upload the image is displayed.

b. Paste the URL copied in step 1 in the **Virtual Media URL** field and click **Apply**.

4. Reboot the server by clicking on **Power** icon > **Cold Boot**.

> **Note:**
> - ISO installation starts, and this installation takes approximately 45 minutes.
> - While installing the ISO, you will be prompted to enter an admin password. Provide the password to continue with the installation.

Once the installation is complete, a blank screen is displayed with a message, **Reboot: System halted**, to reboot the server.

5. Reboot the server by clicking on **Power** icon > **Cold Boot**.
A message, **Media Ejected Successfully**, is displayed.

## Option 2: Installing New HPE Aruba Networking Central On-Premises ISO Files Using the iLO Interface with ISO Image on the PC

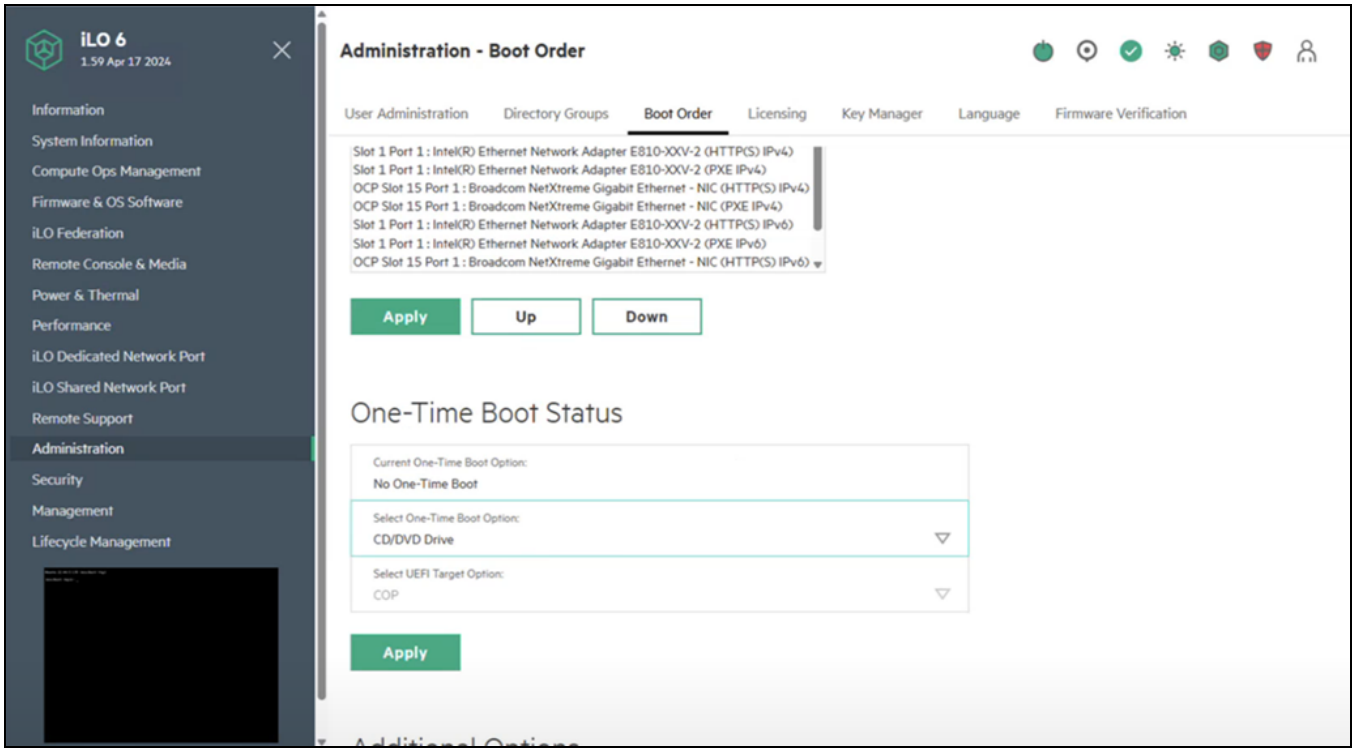
To install New HPE Aruba Networking Central On-Premises ISO files using the iLO interface with ISO image on your personal computer, complete the following steps:

1. Obtain the iLO IP address assigned statically or by DHCP.
2. Login to the iLO IP address using the following credentials:
   - **Username**—administrator and **Password**—Provided on the sticker attached to the server.

   > **Note:**
   > If you are reinstalling ISO, contact HPE Aruba Networking TAC for the password.

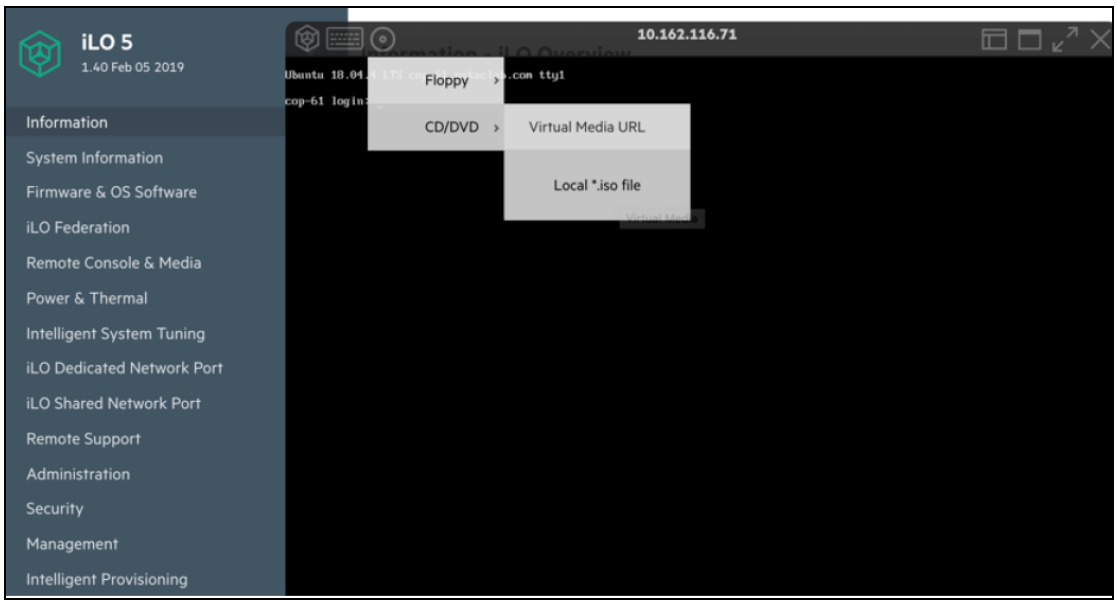
3. Download the ISO image to the computer.
4. Select **Administration**> **Boot Order** and under **One-Time Boot Status** option, select **Select One-Time Boot Option** as **CD/DVD Drive** and then click **Apply**.

*Figure 1: ISO Boot Order*




5. Connect to the Java Web Console or HTML console on the iLO.
6. Select the Disk icon > CD/DVD > Local *.iso file.
7. Browse and select the ISO file from the computer and the ISO file is mounted to the server.

*Figure 2: iLO Java Console Page*



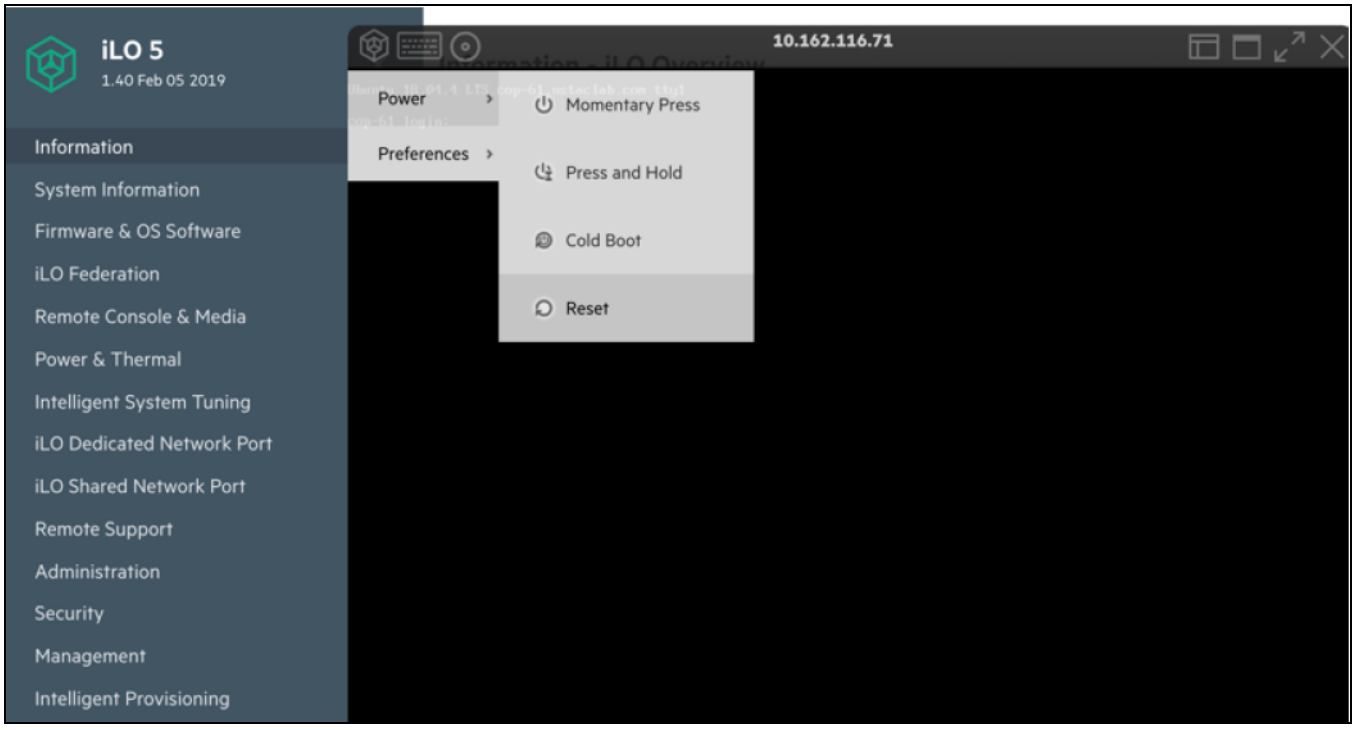
8. Reboot using the **iLO icon** > **Power** > **Cold Boot**. The server boots up with an ISO image and installs the Central OS.

   **Note:**
   - If a logout or login occurs, or the browser is refreshed, or the iLO console window is closed during the installation process, the mounted ISO (CD/DVD > Local *.iso file) is disconnected. This disconnection typically causes the installer to fail, indicating that an installation step has failed.
   - Ensure that the browser remains open, and do not log out or close the iLO console window while the ISO installation is in progress.

   The installation process takes approximately 1 hour 15 minutes to complete.

   Once the installation is complete, a blank screen is displayed with a message, **Reboot: System halted**, to reboot the server.

   *Figure 3: iLO Power Page*




9. Proceed to network setup after reboot.

## Option 3: Installing New HPE Aruba Networking Central On-Premises ISO Files Using the USB Drive

USB drive installation involves creating a bootable USB drive containing the ISO and the apps-pakage files. Once the USB is connected to the server, the ISO installation process is initiated, and the required apps-package files are copied to the server.

> **Note:**
> In USB-based installation mode, you do not have to download the apps-package files separately. It is part of the USB installation procedure.

## Important Notes

- **Supported Client OS and Specs**
  - Ubuntu-based Linux - 18.04+ 64Bit
  - MAC OS - Sonoma version 14.5
  - Client laptop must have RAM 16 GB and Hard Disk with 500 GB free space
- **Supported USB**
  - Sandisk CZ73 Flair 512GB Pen drive
  - Kingston Data Traveler Max (DTMAXA/512GB)

### Prerequisite

- While performing a USB drive ISO installation, secure boot must be disabled
- Internet connection is required to download the libraries (xorriso package) on the client laptop
  - Run *sudo apt install xorriso* for Ubuntu linux
  - Run *brew install xorriso* for MacOS
- Download the ISO and respective app package file on the client laptop from the NSP portal
- Download the required script to create the bootable USB drive from the NSP portal
- iLO settings must be in production (**Security** > **Encryption** > **Update Security Settings** > **Security State**)

**Note:**

The ISO installation takes approximately 2 to 3 hours, however, it will vary based on the client laptop specifications. It can go up to 7 hours with low-end laptop specifications.

To install New HPE Aruba Networking Central On-Premises using the USB Drive, complete the following steps:

1. Extract the USB script using the **tar -xvzf COP-usb-scripts-3030-28-20260426.tar.gz** command and place it in the same folder where ISO and apps-package files are present.
2. Plug in the USB drive to the client laptop and run the extracted script and select the appropriate USB disk.

```
For Ubuntu/ Linux OS — sudo ./bootable_usb_linux.sh

For MAC OS client — sudo ./bootable_usb_mac.sh
```

```
Available USB Drives:
-------------------------------------
1. /dev/disk2

Select a USB Drive by number: 1

You selected /dev/disk2




The bootable USB will include COP-apps-pkg-<Build name>-qa-tar.gz

Do you want to proceed with creating the bootable USB with apps_pkg? (Y/N) : Y

Starting USB creation process...




======================================================================
IMPORTANT Do not unplug or disconnect /dev/disk2 while the ISO is being
written.
Interrupting this process may corrupt your USB drive.


Do you want to proceed with writing the ISO to /dev/disk2? (Y/N) : Y

[2026-01-15 22:04:19] Starting SUB writing process to /dev/disk2
```

```
Data synced successfully!
Unmounting /dev/disk2 to ensure all data is written...
Disk /dev/disk2 ejected

================================================================================
Bootable USB creation complete!
================================================================================


[2026-02-09 06:21:10] Script completed successfully


[2026-02-09 06:21:10] Total execution time: 82 minutes and 6 seconds
```

3. After you receive the success message, unplug the USB drive from the client laptop and plug it in the New HPE Aruba Networking Central On-Premises server.

   **Note:**
   Do not attach the USB drive to the iLO port. You must use any other USB port.

4. Login to the iLO IP address with the following credentials:
   - **Username**—administrator and **Password**—Provided on the sticker attached to the server.

     **Note:**
     If you are reinstalling ISO, contact HPE Aruba Networking TAC for the password.

5. In **Administration** > **Boot Order**, select the following based on the server type:
   - For HPE DL 360 Gen 11 and HPE DL365 Gen 11, select **Generic USB Port** option from the list
   - For the HPE DL360 Gen10, move and select the **USB Storage Device** to the top of the boot order using the Up button.
6. Click **Apply**.
7. Reboot using the **iLO icon** > **Power** > **Cold Boot**. The server boots up with an ISO image and installs the Central OS.

> **Note:**
> In this process, the apps package files are copied to the server while the ISO installation process is initiated. You do not have to copy the apps package file separately.

After the server Reboots, ISO installation is completed, and the user login prompt is displayed.

## IMPORTANT CONSIDERATIONS

Ensure that the following prerequisites are met before setting up New HPE Aruba Networking Central On-Premises.

> **Note:**
> Any mistype or incorrect details in the **Network Settings** cannot be modified after the cluster setup. The only option is to perform Factory Reset and re-run New HPE Aruba Networking Central On-Premises.

- FQDN, IP Address, Subnet Mask, Gateway, DNS IP is configured for each node in cluster
- VIP (Virtual IP for cluster), Subnet Mask, Gateway, and multiple FQDNs (FQDNs for VIP) for the cluster is configured

> **Note:**
> - The New HPE Aruba Networking Central On-Premises appliance opens multiple ports for communication, so it is recommended that you host the New HPE Aruba Networking Central On-Premises appliance behind a firewall.
> - In New HPE Aruba Networking Central On-Premises deployment, the port 8888 is a dedicated inbound port which is used for HTTP-based firmware image download on CX and PVOS devices.
> - During the ISO installation process, progress may remain at, for example, 15% or 40% for an extended period (sometimes hours) before completing quickly. This is an expected behavior.

## Cluster Scaling

Scaling devices in a cluster enables you to add or optimize devices to increase the capacity of the cluster. New HPE Aruba Networking Central On-Premises supports switches, gateways, and HPE Aruba Networking APs. When multiple nodes are added in the cluster, accordingly the number of supported devices increase.

*Table 1: Maximum Number of Supported Devices on HPE DL360 Gen 10 and Gen 11*

| Appliance | Node Type | AP only (Overlay or Underlay) | Switches (AOS-CX only) | Mixed-Mode (Bridge + Tunnel WLAN) | |
|---|---|---|---|---|---|
| | | | | APs | Switches (AOS-CX) |
| DL360 Gen 10 and Gen 11 | 3 | 2000 | 400 | 1600 | 400 |
| | 5 | 8000 | 1600 | 6400 | 1600 |
| | 7 | 12000 | 2400 | 9600 | 2400 |
| | 9 | 16000 | 3200 | 12800 | 3200 |
| | 11 | 20000 | 4000 | 16000 | 4000 |

*Table 2: Maximum Number of Supported Devices on HPE DL365 Gen 11*

| Appliance | Node Type | AP only (Overlay or Underlay) | Switches (AOS-CX only) | Mixed Mode (Bridge + Tunnel WLAN) | |
|---|---|---|---|---|---|
| | | | | APs | Switches (AOS-CX) |
| DL365 Gen 11 | 3 | 10000 | 2000 | 8000 | 2000 |
| | 5 | 20000 | 4000 | 16000 | 4000 |
| | 7 | 30000 | 6000 | 24000 | 6000 |
| | 9 | 40000 | 8000 | 32000 | 8000 |
| | 11 | 50000 | 10000 | 40000 | 10000 |

## Feature Availability on HPE Gen10 DL360—3-Node Cluster

The HPE Gen10 DL360 3-node cluster is supported for core management functionality and is optimized for performance and high availability (HA). A subset of advanced capabilities that require additional system capacity are supported on larger clusters and are not included in 3-node HPE Gen10 DL360 deployments.

Features that are **excluded** in a 3-node HPE Gen10 DL360 cluster:

- **Selected AI Network Insights capabilities**
- **Extensions**
- **Selected Client Insight features**
  - **Client Classification Rule**
  - **Client Tag**

During the installation and setup process, the administrator account on the iLO logs out and a new New HPE Aruba Networking Central On-Premises iLO user account is created. The BIOS password is secured as an internal hash.

## Step 1: Login to New HPE Aruba Networking Central On-Premises

Before proceeding with the procedure for running the network the setup cluster, perform the following steps:

1. Login to New HPE Aruba Networking Central On-Premises with copadmin as username and the serial number as the password. To retrieve the server serial number, follow the steps:
    a. Navigate to the server and click **Information** on the left pane.

       The **Information - ILO Overview** page is displayed. Under **Server** details, you can see the **Server Serial Number**.
    b. Open the console again.

**Note:**

- To log into iLO web interface, enter the credentials:
  - Username: copilo
  - Password: server serial number
- To log into iLO console, enter the credentials:
  - Username: copadmin
  - Password: server serial number

## Step 2: Run the Network Setup from the CLI

1. Log in to New HPE Aruba Networking Central On-Premises CLI through a serial console.
2. At the prompt, login to the server using the following credentials:

- user name = copadmin
- password = <server serial number>

Before configuring the New HPE Aruba Networking Central On-Premises server, ensure that the following details are ready:

*Table 1: Parameters*

| Parameters | Description | Example |
|---|---|---|
| FQDN | FQDN of the cluster | cop-deployment.companyx.com |
| IP Address | IP address of the New HPE Aruba Networking Central On-Premises server | 10.250.0.10 |
| Subnet Mask | Subnet mask of the New HPE Aruba Networking Central On-Premises server | 255.255.255.0 |
| Gateway | Gateway details of the cluster | 10.250.0.1 |
| Primary DNS Server | Primary DNS Server for the cluster | 172.20.0.10 |
| Secondary DNS Server | Secondary DNS Server for the cluster | 172.20.11 |
| Primary NTP | Primary NTP Server for the cluster | 172.20.0.12 |
| Virtual IP (VIP) | Virtual IP of the cluster | 10.250.0.100 |

**Attention**: Any mistype or incorrect details in the **Network Settings** cannot be reverted. The only option to make network changes is to reinstall the New HPE Aruba Networking Central On-Premises ISO image.

After logging in to the server, perform the following steps:

### Step a: Setting Connections to the Server

Connect a 10G SFP cable to the SFP+ port through the compatible SFP transceivers. For detailed interface mapping categorized by server model see the table, 10 GbE Interface Mapping by Server Model (with iLO Port Labels).

**Note:**
To view all the supported SFP modules, see Supported SFP Modules.

*Table 2: 10 GbE Interface Mapping by Server Model (with iLO Port Labels)*

| Server Model | iLO Port Label (Adapter) | Linux Interface Name (10 GbE) |
|---|---|---|
| HPE DL 360 Gen 10 | Port 1 (10 GbE) | ens1f0 |
| | Port 2 (10 GbE) | ens1f1 |
| | Port 3 (10 GbE) | ens1f2 |
| | Port 4 (10 GbE) | ens1f3 |
| HPE DL360 Gen11 | Port 1 | ens15f0 |
| | Port 2 | ens15f1 |
| HPE DL365 Gen11 | Port 1 | ens22f0 |
| | Port 2 | ens22f1 |

### Step b: Setting up the Permanent Network

#### Prerequisites

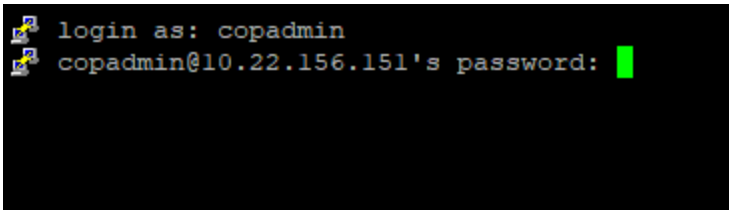
Ensure that the following actions are complete before setting up the permanent network:

- You must have the cluster FQDNs ready before performing a permanent network setting.
- The New HPE Aruba Networking Central On-Premises ISO installation is completed on a Central-ready appliance.
- The New HPE Aruba Networking Central On-Premises server is manually rebooted.

Perform the following steps to set up a permanent network:

1. Login to New HPE Aruba Networking Central On-Premises server using the following default credentials as mentioned in Step 1 under **Step 1: Configure iLO IP Address**.

*Figure 1: CLI Login Page*

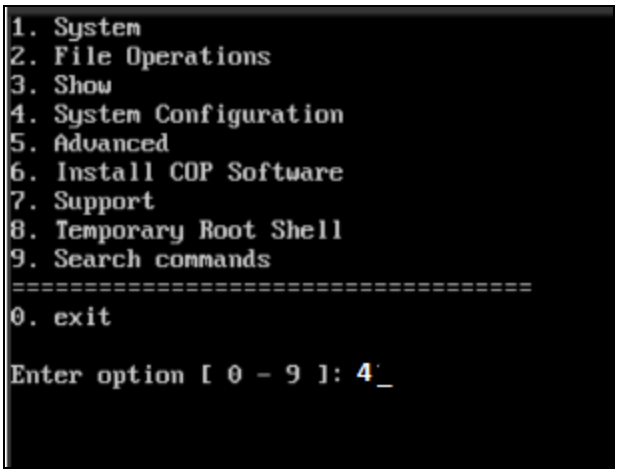



The New HPE Aruba Networking Central On-Premises CLI menu is displayed.

> **Note:**
> You can derive the serial number from the label of the Central appliance. For example, SGH****.

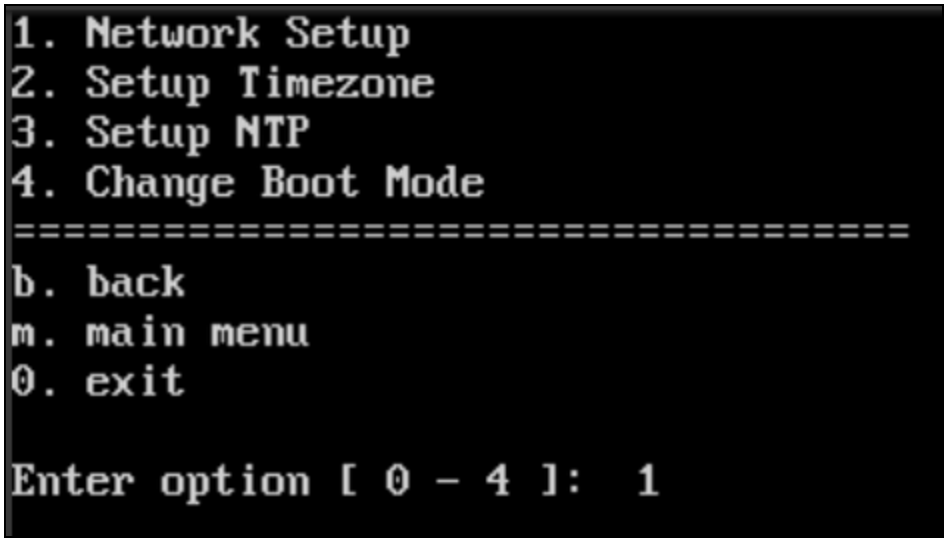
2. Enter 4 to select the System Configuration option and go to the next menu item.

*Figure 2: CLI Main Menu Page*



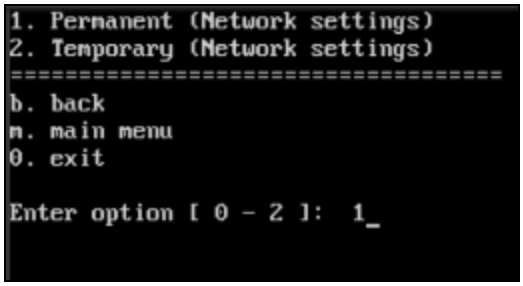

3. Enter 1 to select the Network Setup option and go to the next menu item.

*Figure 3: CLI Network Setup Page*




4. Enter 1 to select the Permanent (Network Settings) option and go to the next menu item.

   *Figure 4: CLI Permanent Network Page*



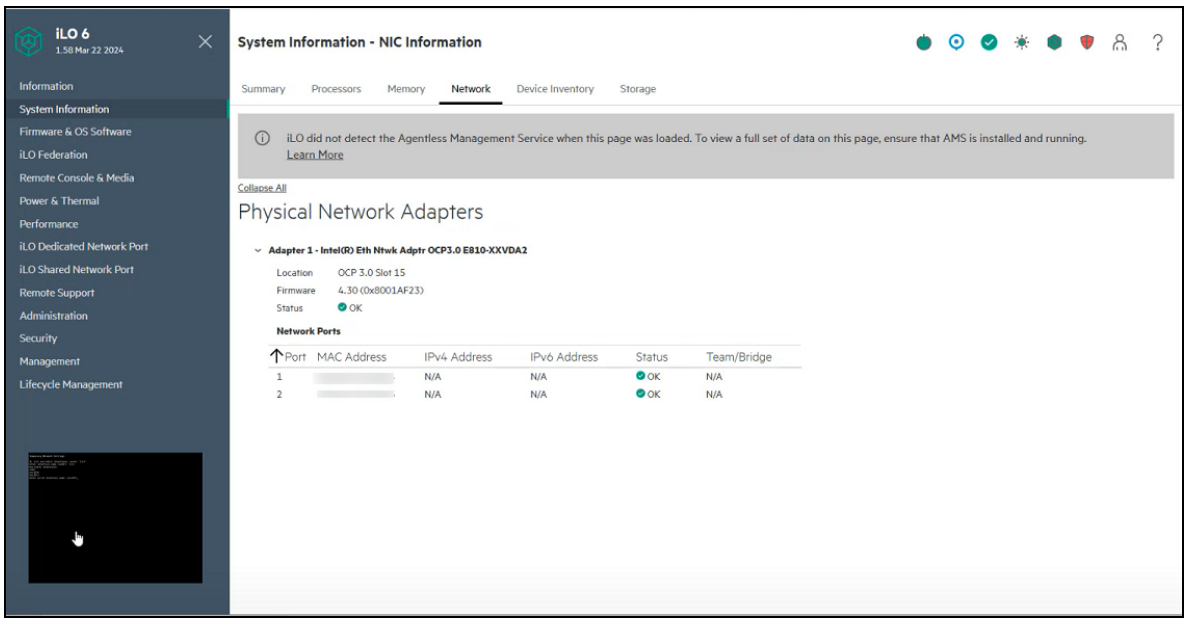

5. This is an optional setting. To set up the cluster in dual-stack cluster setup, enter **Yes** when prompted to enable dual-stack cluster setup.
6. Enter **list** to list all the interfaces and then enter the valid interface name.
7. When prompted, enter the following network settings to set up the permanent network:

- Interface name
- Server IP address
- Subnet mask
- Gateway IP address
- DNS server IP address

- Secondary DNS IP address
- Hostname
- Timezone
- IPv6 address
- IPv6 Gateway (Only for dual-stack cluster setup)
- IPv6 Subnet mask (Only for dual-stack cluster setup)

**Note:**

- If any information in the Network Settings is entered incorrectly, it cannot be undone. The only way to modify the network configuration afterward is to reinstall the ISO image.
- In a dual-stack setup, the DNS server can be configured using either an IPv4 or IPv6 address.
- For the connected interface information, navigate to **System Information** > **Network** to check all the available interfaces.




Enter **m** to go back to the main menu.

## Step 3: Copy the New HPE Aruba Networking Central On-Premises Software

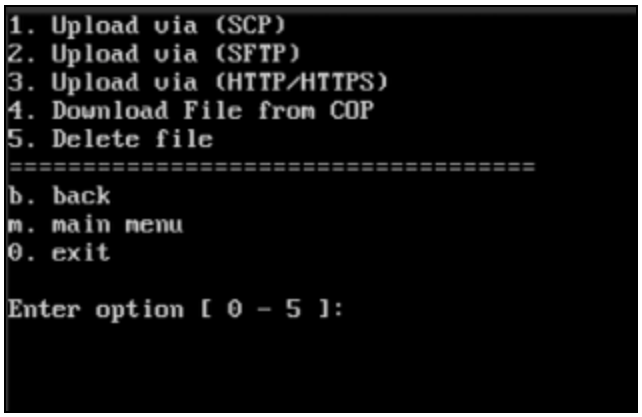
**Note:**
This step is not required when you are installing the ISO using USB drive. For more information on installing ISO using USB drive, see Installing ISO.

1. From the CLI options displayed, enter **2** to select the **File Operations** option and go to the next menu item.

   *Figure 5: CLI Menu Page*

2. You can upload a file through SCP, SFTP, or HTTP/HTTPS. Select desired option by entering the corresponding number.

   *Figure 6: Upload File*




**Note:**
Ensure that the apps package is downloaded to SCP server or SFTP server and you have the file path ready.

3. Enter the file path (remote host) where the package is downloaded. Upload the following two apps package parts:
   - COP-apps-pkg-3021-128-20260204-prod.tar.gz.part-01
   - COP-apps-pkg-3021-128-20260204-prod.tar.gz.part-02

   **Note:**
   - HPE Aruba Networking recommends to enter the file path manually rather than copying the file path.
   - You must upload both the file parts (part-01 and part-02) one after the other.
4. Press **Enter**.
5. Enter the password.
   The copying takes approximately 30 minutes. After the file is copied, perform the checksum validation for the .tar.gz file. You can validate the checksum by comparing the checksum value populated on the screen with the checksum file given by Aruba. For more information, see Validating Checksum for the Downloaded Files.

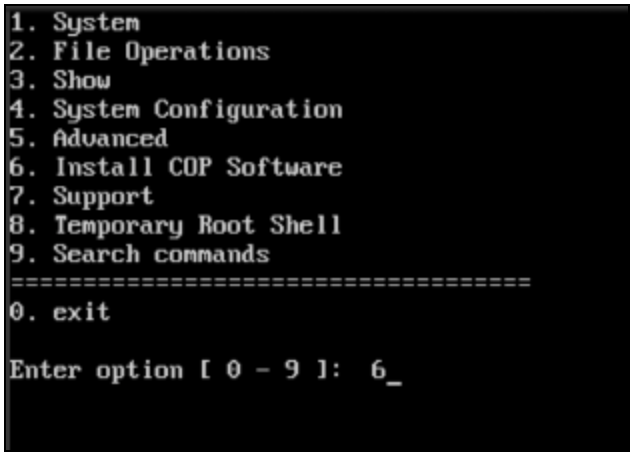
   After this press **m** to go back to the main menu and start the installation.

## Step 4: Installation

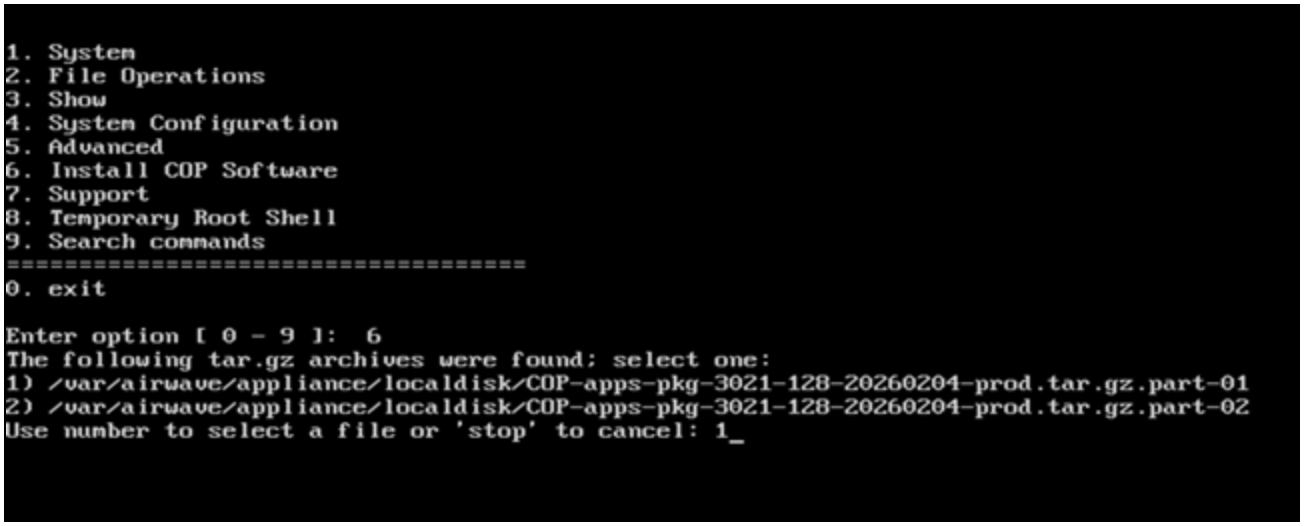
To install the New HPE Aruba Networking Central On-Premises software through the CLI, complete the following steps:

1. In the New HPE Aruba Networking Central On-Premises CLI, enter 6 to select the Install COP Software option.

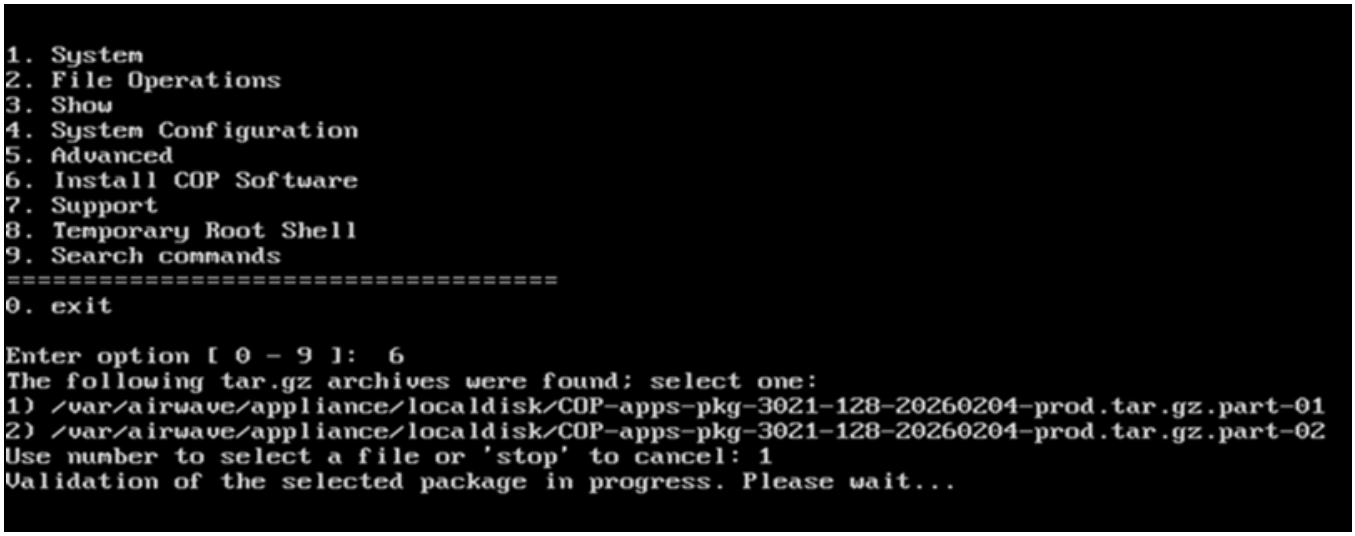
*Figure 7: CLI Main Menu Page*




A list of available tarball file candidates is displayed along with the two file parts (part-01 and part-02).




2. Select either part by choosing option 1 or 2.




3. After the validation successful, wait for the software installation to complete.
4. When prompted, press **Enter** and reboot the server.

Once the ISO and software installations are complete, you can proceed with configuring the cluster. For more information, see Configuring the Cluster.

# Configuring the Cluster

Now that New HPE Aruba Networking Central On-Premises software installation is complete, you can now set up the cluster.

Watch a video for this task—Cluster Configuration.

**Attention**

Cluster setup can be done through the web browser or the CLI menu. During installation of the New HPE Aruba Networking Central On-Premises software, you can specify the required cluster size (5), provide the host name for the cluster node, and set up the NTP server.

## Setting up the Cluster Using Web Browser

To set up the New HPE Aruba Networking Central On-Premises cluster through the web browser, complete the following steps:

1. Open the browser and enter any one of the New HPE Aruba Networking Central On-Premises node IP address in the following format: https://<node IP>:4343.

   **Note:**
   You must log in to the node running the highest software version, as this node serves as the first node. During cluster setup, the software is synchronized from this node to the other nodes in the cluster.

2. Press Enter.

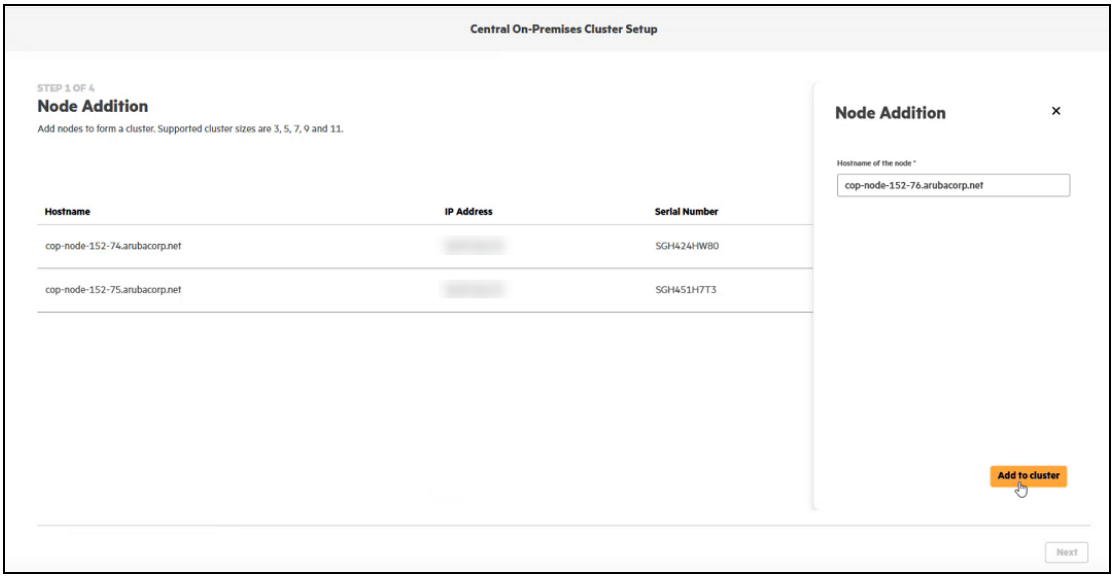
   a. Login prompt is displayed. Login using the following credentials:

      - Username as copadmin
      - Password as the server serial number

      The **Setup Wizard** page is displayed. By default, the self node through which you logged in is displayed. In a dual-stack cluster setup, the **IP**

**Address** column displays the IPv6 Address.

3. Click the **+** icon at the top-right corner to add your nodes directly. For example if you have a 3 node cluster, you must add the other 2 nodes of the cluster by providing the node hostname.




4. Click **Next** after you have added the required number of nodes to the cluster.

   The **Version Selection** page appears.

**Note:**

- New HPE Aruba Networking Central On-Premises automatically updates the node the **IP Address**, **Serial Number**, and **Version** information.
- All the nodes in the cluster must have the same interface speed, same network, same subnet mask, and same gateway. Mixed mode is not supported. For example, if it is a 3-node cluster, all 3 nodes must have 10 Gbps speed.

5. Click the **Version** drop-down list to select the version of the nodes.

   The **Version** drop-down list is only available if you have installed COP ISO images from different versions of New HPE Aruba Networking Central On-Premises. The drop-down list shows all the versions on New HPE Aruba Networking Central On-Premises from where the images are installed. When you select a specific version from drop-down list, for example, 3.0.0.0, then all other nodes also change to 3.0.0.0 version automatically and forms a cluster.

   If all the images in the cluster are from the same New HPE Aruba Networking Central On-Premises version the drop-down list is not available and the version number is displayed in the **Version** field by default.

   **Note:**
   During cluster setup, ensure that you log in to the node running the highest software version, as this node becomes the first node from which the software is synchronized to the other nodes.The cluster setup fails in the following scenarios:

   - The version selected from the drop-down list is lower than the software version installed on the first node.
   - Any node (other than the first node) is running a higher software version than the first node.

   If the cluster setup fails, contact the HPE Aruba Networking Technical Support team to resolve the issue.

6. Click **Next**.

   The **Cluster Details** page is displayed. For more information, see Configuring Cluster.

## Configuring Cluster

> **Note:**
> Incorrect configuration of FQDN, DNS, IP, or NTP settings cannot be reversed. It would require reinstalling the ISO and re deploying the system.

To configure the credentials for an administrator, complete the following steps:

1. In the Cluster FQDN field, enter the FQDN, for example (cop-vip-xxx-xx.arubacoep.net).
2. Enter the **POD IP Range**.

   The POD IP range should be with xxx.xx.x.x/16 subnet for IPv4.

   If dual-stack is enabled, the POD IP range should be with xxxx:x:x:x/64 subnet for IPv6.
3. Enter the **Service IP Range**.

   The Service IP range should be with xxx.xx.x.x/23 subnet for IPv4.

   If dual-stack is enabled, the Service IP range should be with xxxx:x:x:x/112 subnet for IPv6.

   > **Note:**
   > - The POD IP range and the Service IP range should not conflict with your network.
   > - The POD IP range xxx.xx.x.x/16 and the Service IP range xxx.xx.x.x/23 is reserved for internal New HPE Aruba Networking Central On-Premises cluster networking for IPv4.
   > - The POD IP range and the Service IP range must not fall within the multicast IP range (224.0.0.0 to 239.255.255.255).
   > - In a dual-stack cluster setup the POD IP range xxxx:x:x:x/64 and the Service IP range xxxx:x:x:x/112 is reserved for internal New HPE Aruba Networking Central On-Premises cluster networking for IPv6.
4. Enter the NTP server details.

   NTP server is mandatory to keep all the cluster nodes in the same timestamp.

**Note:**

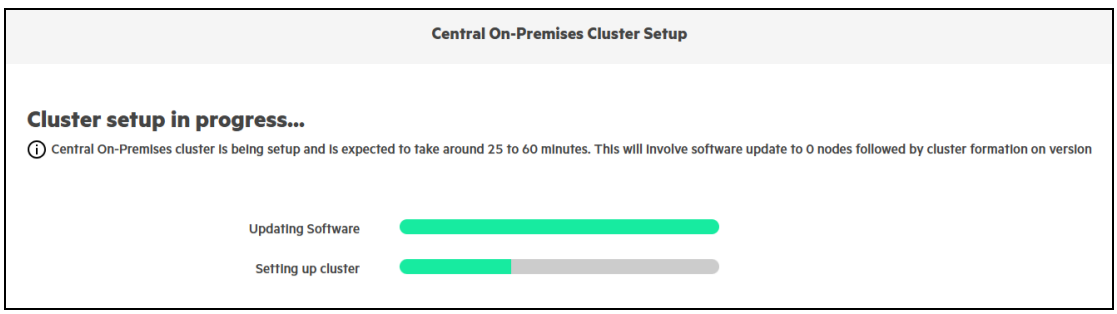
- If dual-stack is enabled, you can enter either an IPv4 or IPv6 address for the NTP server details.
- New HPE Aruba Networking Central On-Premises recommends the secure NTP feature for your setups. You will be prompted to specify a secure key, compliant with the algorithm, if the **Secure NTP** option is selected.
- For a better synchronization, you must use a single reliable NTP server.

5. Enable the **Secure NTP** check-box and provide the following details:

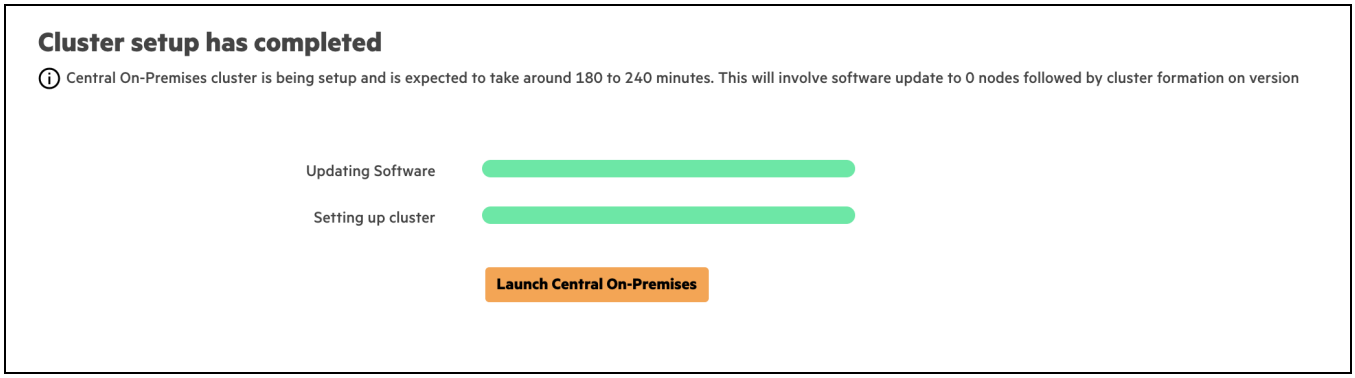
- **Key Type**—Select the required option from the **Key Type** drop-down.
- **Key ID**—Specify the key ID for the primary NTP server.
- **Pre-shared Key (PSK)**—Specify the existing PSK.

6. Click **Next**.
7. Under **Cluster Username**, provide the following details to access the cluster through the GUI (user interface):
    a. **Password**—Specify the GUI password.
    b. **Repeat Password**—Retype the GUI password.
8. Under **CLI Username**, provide the following details to access the cluster through the CLI (Command Line Interface):
    a. **Password**—Specify the CLI password.
    b. **Repeat Password**—Retype the CLI password.
9. Click **Finish**.

   The cluster setup progress screen is displayed.




After the cluster setup is complete, you will see a launch button.




**Note:**
After the pop-up appears, you may be prompted to enter a password. Once the password is provided, the iLO interface will perform a reset and automatically log you out.

Click **Launch Central On-Premises** to open the New HPE Aruba Networking Central On-Premises user interface.

**Note:**
The **Launch Central On-Premises** button is approximately available only for one hour. You are automatically logged out after an hour, and though the installation is successful, you will need to use the New HPE Aruba Networking Central On-Premises product cluster FQDN directly to access the user interface.

Once the HPE GreenLake Account Home sign in page appears, you must log in using the following credentials:

- **Username**—admin@clusterFQDN
- **Password**—Use the same password that you configured in the setup wizard page

## Factory Reset

Factory Reset enables you to restore the nodes in case there is any failure while installation.

**Note:**

- Factory Reset is not a mandatory step while installing New HPE Aruba Networking Central On-Premises. In case the setup wizard or the setup cluster fails, it is recommended to perform a Factory Reset for all the nodes in the cluster individually.
- In case of a system failure, run the Factory Reset from the iLO console.
- In case of IP or FQDN changes, a factory reset is required. If the cluster is already up and running, ensure that you take a backup of the system before performing the factory reset.

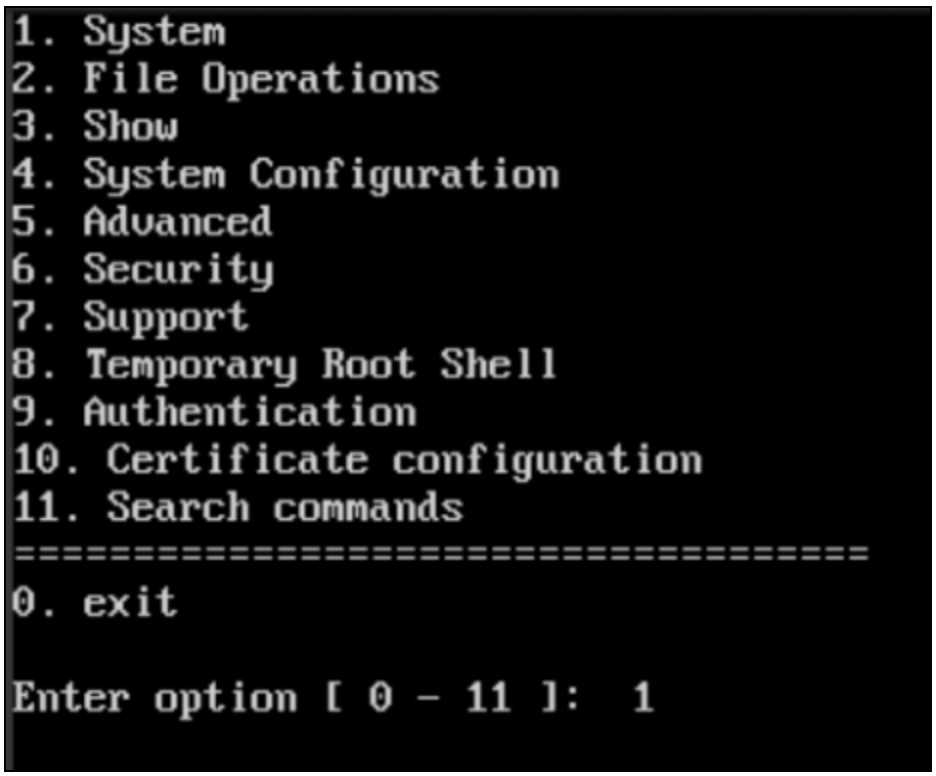
To perform a factory reset, complete the following steps:

1. Login to New HPE Aruba Networking Central On-Premises.

   The user name is copadmin and the password is the CLI password that you set while configuring the cluster through CLI. For more information, see Configuring Cluster.

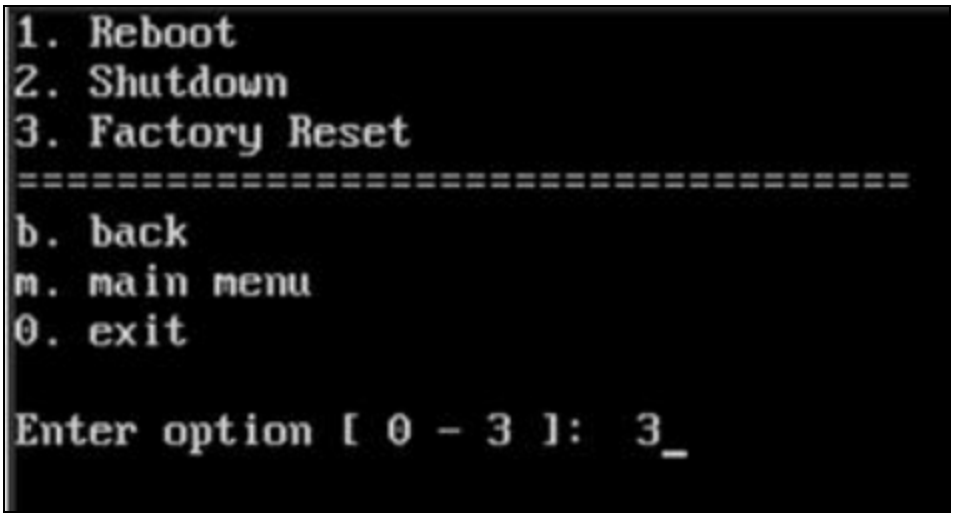
2. From the CLI options displayed, enter **1** to select the **System** option.

   *Figure 1: CLI Menu*



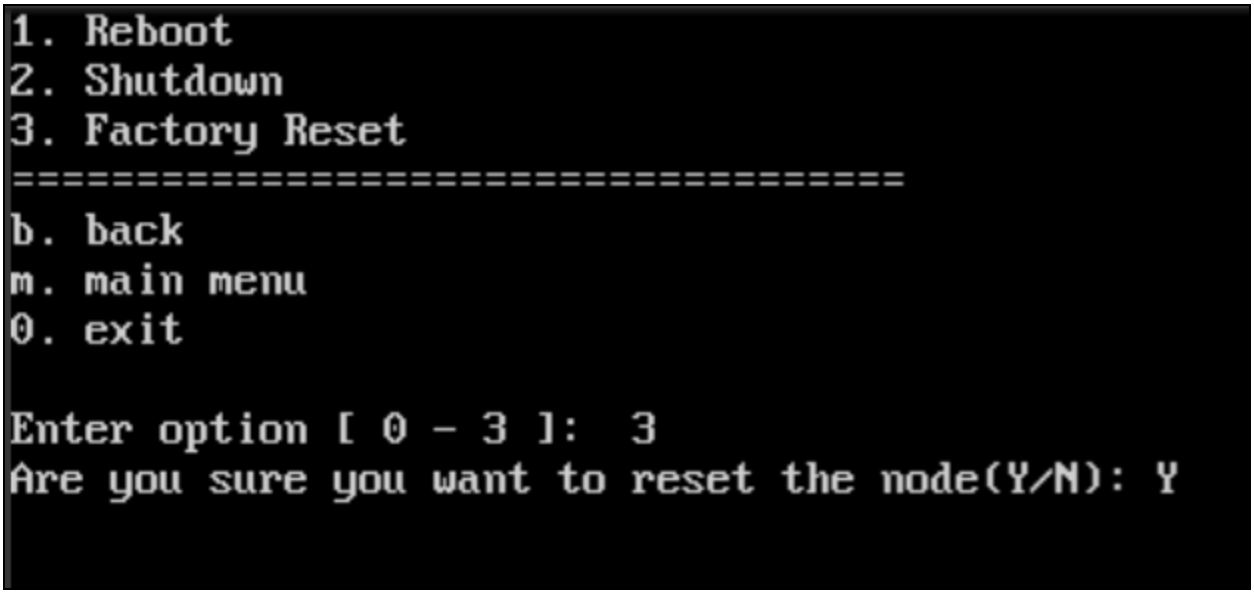
The **System** menu displays the following options:

*Figure 2: System Menu Options*



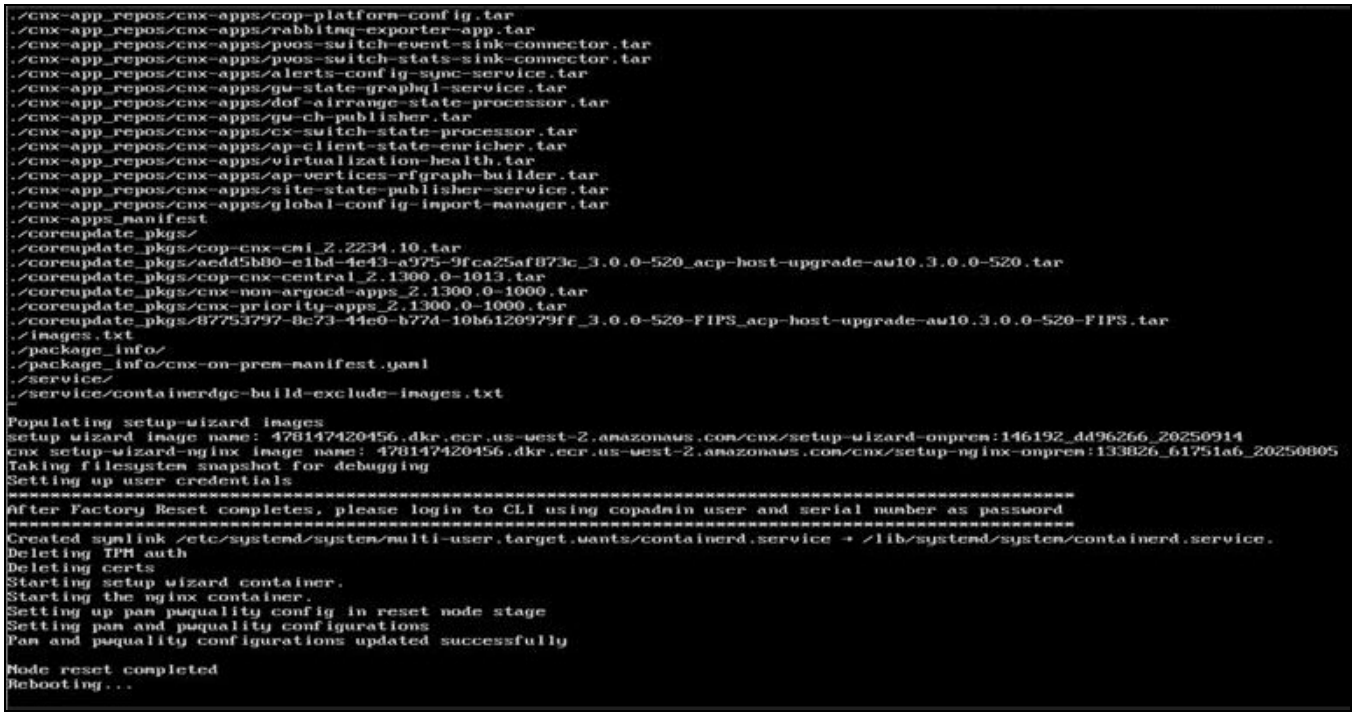

3. Enter **3** to select **Factory Reset** and confirm to begin the node reset.

*Figure 3: Factory Reset*




The Factory Reset operation starts. It takes approximately 45 to 50 minutes to complete depending on the number of devices present in the cluster.

*Figure 4: Factory Reset Operation Completion*




After the factory reset is complete, you can login again and start the installation process. For more information, see Configuring the Cluster.