



Cisco Smart PHY Deployment Overview

This guide provides information about the deployment of Cisco Smart PHY application in offline environments without the Internet connectivity.

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Offline Deployment

Cisco Smart PHY software image is a compressed tarball file that contains all the scripts, helm charts, and container images required for installing the Deployer and the Cisco Smart PHY cluster. It also contains copy of these instructions and configuration examples.

Use the `deployer` script available in the software image to set up the Deployer virtual machine (VM) and clusters.

The installation process creates the following components:

- Deployer: The controller used to configure and deploy the cluster.
- Smart PHY Cluster: The Cisco Smart PHY application runs on this cluster.

The Deployer VM supports two types of Cisco Smart PHY cluster deployments:

- Multinode cluster: Consists of 12 VMs deployed across three VMware ESXi hosts. Each VMware ESXi host server hosts a control-plane VM, etcd VM, Infra VM, and Operations VM.
- All-in-one (AIO) cluster: Runs as a single VM.



Note We recommend the multinode cluster for production deployments due to their increased resiliency.

The following table contains the minimum resources for each type of VM:

| VM Type | CPU Cores | RAM Size (GB) | SSD Storage Size (GB) |
|----------|-----------|---------------|-----------------------|
| Deployer | 4 | 16 | 110 |

| VM Type | CPU Cores | RAM Size (GB) | SSD Storage Size (GB) |
|---------------|-----------|---------------|-----------------------|
| All-in-one | 18 | 96 | 700 |
| Control Plane | 2 | 16 | 65 |
| etcd | 2 | 16 | 65 |
| infra | 14 | 64 | 1500 |
| ops | 16 | 64 | 620 |

Prerequisites for Cluster Deployment

The following prerequisite components are required to install, operate, and manage a Cisco Smart PHY cluster.

- Staging server: Physical or virtual machine to run the installation script
- An ESXi host to run the Deployer VM.
- Cisco Smart PHY servers: Three ESXi hosts are required to run a multinode cluster
- VMware vSphere virtualization platform

Prerequisites for Cisco Smart PHY ESXi Hosts

Three ESXi hosts are required to run a Cisco Smart PHY multinode cluster.

You can deploy Cisco Smart PHY on a non-UCS environment like customer-managed VMware infrastructure. The preferred deployment environment is Cisco Unified Computing System (UCS M5).

The minimum compute, storage, and networking requirements for the VMware ESXi host are listed in the following table.

| Component | Specification |
|-----------|---|
| Processor | 34 vCPUs |
| Memory | 160 GB |
| Storage | 2250 GB Minimum 50000 IOPS (Input/output operations per second) Latency of < 5 ms |
| NIC | 2x 10G vNIC |

Prerequisites for VMware vSphere

VMware ESXi and VMware vCenter Server are mandatory components of the Cisco Smart PHY servers, and is necessary for cluster deployment.

- Hypervisor: VMware ESXi 6.5 Update 3 or VMware ESXi 6.7
- Host Management: VMware vCenter Server 6.5 or VMware vCenter Server 6.7

If the VMware ESXi 6.7 is installed on the host, ensure that the VMware vCenter Server version is 6.7.

Deploy Cisco Smart PHY

Deploying Cisco Smart PHY in an offline environment involves the following process.

1. (Optional) Configure UCS server: Not required if you are deploying using third party servers. For details, see [Configure UCS Servers](#).
2. Prepare a staging server.
3. Prepare a cluster configuration file.
4. Deploy the cluster.

If required, repeat the step 3 and 4 to deploy another cluster.

