Performing Cisco Smart PHY In-Place Software Upgrade

Feature History

Feature Name	Release information	Description
Support for Cisco Smart PHY In-Place Software Upgrade	Cisco Smart PHY, Release 22.2	You can perfom in-place software upgrade on Cisco Smart PHY. Use the in-place upgrade to update your existing installation to the new version of Cisco Smart PHY, retaining your existing configuration.

Cisco Smart PHY supports in-place software upgrade. Use the in-place upgrade to update your existing installation to the new version of Cisco Smart PHY, retaining your existing configuration.

Note The software upgrade process retains all the application data.

Prerequisites for In-Place Upgrade

1. Cisco Smart PHY 22.4 supports the following upgrade paths:

Current version of Cisco Smart PHY	Upgrade Path to Cisco Smart PHY 22.4
Cisco Smart PHY 22.3.1, Cisco Smart PHY 22.3, or Cisco Smart PHY 22.2.1	Direct upgrade to Cisco Smart PHY 22.4
Cisco Smart PHY 22.2	First upgrade to Cisco Smart PHY 22.2.1, then upgrade to Cisco Smart PHY 22.4

Use the Deployer tool bundled along with the software package.

> **Note** We highly recommend that you upgrade to the latest version of Cisco Smart PHY.

2. Ensure that the cluster configuration file (Day-0 Config File), used during installation is available.

3. Ensure that the SSH user private key for Smart PHY Cluster and Deployer VM is available.

> **Note**
> - The SSH user private key is generated at the time of Smart PHY installation and is available in the installation folder.
>
> - SSH to all the cluster VMs should be possible through the cluster private key.
>
> - Ensure the user and group for the private key file is same as the user running the upgrade operation.

4. Ensure that Deployer VM admin password and all application-specific OpsCenter passwords (cee-opscenter, opshub-opscenter, and smartphy-opscenter) are available, and match with the previous deployment.

5. Ensure that a Staging environment having network connectivity with Deployer VM and Cluster VMs is available.

6. Ensure all the cluster VMs are up and running using vCenter or by checking the individual cluster.

7. Ensure that all the clocks of all the ESXi host's involved in the upgrade are synchronized.

8. Ensure that the clocks for the staging server, Deployer VM, and Cluster VM are in sync; preferably pointing to the same NTP server.

9. Ensure that the cluster does not have the following critical alerts that are related to disk usage:

   - **node-disk-running-Low-24hours**

   - **node-disk-running-Low-2hours**

   - **node-disk-running-full-24hours**

   - **node-disk-running-full-2hours**

> **Note** In case you see any of these alerts, contact Cisco Technical support.

10. Ensure that from the Staging environment, the deploy tool must have connectivity to the following resources:

    - Local DNS server

    - vCenter server

    - NTP server

    - All ESXi hosts

Limitations for In-Place Upgrade

- You can use the `./deploy -c <config.yaml> -u` command to upgrade the cluster charts or the application images. You cannot use the `./deploy -c <config.yaml> -u` command to modify any cluster parameters and environmental parameters such as NTP server IP, DNS configuration, VM IP, datastore folder, etc.See Deploying the Deployer VM and Cisco Smart PHY Cluster to modify any cluster parameter.

Upgrading Smart PHY

Use the following steps to perform Cisco Smart PHY In-Place software upgrade:

Step 1 Download the latest Smart PHY release package using the link shared by Cisco.

Step 2 Copy the downloaded Smart PHY release package to the Staging environment.

```
cp download-path/smartphy-installer-<new-version>.tgz
staging-server-path/smartphy-installer-<new-version>.tgz
```

Step 3 Extract the image contents.

```
cd staging-server-path && tar -xvfz smartphy-installer-<new-version>.tgz
```

Step 4 Access the new installation directory.

```
cd smartphy-installer-<new-version>
```

Step 5 Copy the cluster configuration file used for cluster installation into the new installation directory.

```
cp filepath/config.yaml smartphy-installer-<new-version>/config.yaml
```

`filepath/config.yaml` is the cluster configuration file that is used in the previous Smart PHY install or upgrade.

Step 6 Copy the SSH user private key file for Deployer VM and Cluster VM into the new installation directory.

Note The private key must be in pem format and the name of the private key must be identical to the cluster configuration file entry.

```
cp filepath/private-key-file.pem smartphy-installer-<new-version>/private-key-file.pem
```

`filepath/private-key-file.pem` is the private key file that is generated during the previous Smart PHY install or upgrade.

Step 7 Upload the application software package to the Deployer VM.

```
./deploy -c <config.yaml> -u -s
```

This step is optional. Use this step to upload the application software package to the Deployer VM and perform the upgrade later using Step 8.

Observe the Deployer tool logs visible on the terminal and check whether the package is sucessfully uploaded into the Deployer VM. You can also log in to the Deployer VM and check the availability of the software package under the `/data/software/images` directory.

Step 8 Install the application software package software to the target cluster.

```
./deploy -c <config.yaml> -u
```

Step 9 Continue monitoring the log statements in the Deployer tool and provide the password, if prompted. The upgrade process may take several minutes to complete. On successful completion of the upgrade, the message `Upgrade has been done successfully!!` displays on the terminal.

Troubleshooting Common Error Messages

During the upgrade process, you can monitor the Operational Hub Alert Dashboard for upgrade related alerts.

The following table describes common errors which may display during a software upgrade.

Table 1: Common Error Messages Displayed During a Software Upgrade

Error Message	Reason for Error Message	Action Performed
`The cluster sync failed during the upgrade. Attempting to recover the cluster.`	Cluster sync is unsuccessful	The Deployer tool automatically attempts to recover the cluster.
`Post-upgrade cluster status check failed, the cluster is likely not healthy`	The charts are not deployed or the essential pods fail to load	No user action is needed.
`Unable to apply some pre upgrade cluster configuration`	The Deployer tool undertakes additional functionality which requires special configuration changes.	The upgrade process automatically retries the configuration changes. No manual intervention is required.

For any other issues, contact Cisco Technical Support