Abstract
This guide provides cabling procedures for HPE Synergy components. For a mobile-friendly version of this guide, see www.hpe.com/info/synergy-cabling-guide.
Notices

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Connecting to HPE Synergy Console through frame link module KVM ports

Procedure

1. For initial hardware install, identify a frame that contains an HPE Synergy Composer. To access HPE OneView before hardware setup is complete, access the HPE Synergy console through the identified frame.
2. Connect a monitor cable to the monitor port on one of the frame link modules on the rear of the frame.
3. Connect a USB cable to the USB port on the same frame link module.
4. Connect a monitor to the frame with the monitor cable.
5. Connect a USB keyboard and mouse to the USB ports on the monitor, and connect the monitor USB to the frame with the USB cable.

   An alternative is to connect the USB keyboard and mouse to a USB hub connected to the frame.
Connecting to HPE Synergy Console through the front panel KVM ports

Procedure

1. For initial hardware install, identify a frame that contains an HPE Synergy Composer. To access HPE OneView before hardware setup is complete, access the HPE Synergy console through the identified frame.
2. Connect a monitor cable to the monitor port on the front panel module on the front of the frame.
3. Connect a USB cable to the USB port on the front panel module.
4. Connect a monitor to the frame with the monitor cable.
5. Connect a USB keyboard and mouse to the USB ports on the monitor, and connect the monitor USB to the frame with the USB cable.

   An alternative is to connect the USB keyboard and mouse to a USB hub connected to the frame.
Connecting to HPE Synergy Console through the front panel laptop port

Procedure

1. For initial hardware install, identify a frame that contains an HPE Synergy Composer. To access HPE OneView before hardware setup is complete, access the HPE Synergy console through the identified frame.

2. Configure the notebook computer Ethernet port for DHCP and enable auto-negotiation.

3. Use a CAT5 cable to connect the notebook computer Ethernet port to the notebook port on the front panel module.

4. Wait for the notebook computer to be assigned an IP address.

5. On the notebook computer, launch a VNC client application to connect to the HPE Synergy console.
   a. If prompted by the VNC client, enter the HPE Synergy frame IP address (including port 5900) to use for the connection:
      192.168.10.1:5900

6. Access the HPE Synergy console through the VNC client connection.
In a single-frame system, use two stacking cables to connect two HPE Synergy 40Gb F8 Switch Modules or two HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy switches.

This example shows the HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy. The cabling varies depending on the modules being stacked.

**Procedure**

1. Connect a stacking cable from port Q7 on the first master switch to port Q7 on the second module.
2. Connect a stacking cable from port Q8 on the first master switch to port Q8 on the second module.
Cabling master and satellite interconnect modules in multiple frames (nonredundant)

In a multiframe system, connect:

- an HPE Synergy 40Gb F8 Switch Module
- or an HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy as the master module for a satellite HPE Synergy 20Gb Interconnect Link Module in a different frame.

This example shows the HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy master module and HPE Synergy 20Gb Interconnect Link Module satellite modules. The cabling varies depending on the modules being linked.

Procedure

1. Using interconnect link cables, connect the L1 and L4 ports on the master to the L1 and L2 ports on one satellite module.
   
   The master and satellite modules being linked must be installed in the same interconnect bay number, in different frames.

2. Use interconnect link cables to connect the L2 and L3 ports on the same master to the L1 and L2 ports on the other satellite module.
Cabling master and satellite interconnect modules in multiple frames (with redundancy)

In a multiframe system, connect:

- an HPE Synergy 40Gb F8 Switch Module
- or an HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy

as the master module for a satellite HPE Synergy 20Gb Interconnect Link Module in a different frame.

This example shows two HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy master modules and HPE Synergy 20Gb Interconnect Link Module satellite modules. The cabling varies depending on the modules being linked.

Procedure

1. Using interconnect link cables, connect the L1 and L4 ports on one master module to the L1 and L2 ports on one satellite module.
   The master and satellite modules being linked must be installed in the same interconnect bay number, in different frames.
2. Use interconnect link cables to connect the L2 and L3 ports on the same master module to the L1 and L2 ports on the other satellite module.
3. Using interconnect link cables, make the same master and satellite port connections for the other interconnect modules.
4. Connect a stacking cable from port Q7 on the first master switch to port Q7 on the second master module.
5. Connect a stacking cable from port Q8 on the first master switch to port Q8 on the second master module.
Management ring connections

Cabling a single-frame management ring

Use a minimum of CAT6A patch cables for HPE Synergy management ring connections.

Procedure

1. Connect the frame link module LINK ports together.
2. Connect the MGMT port on the top frame link module to the management network.
3. Connect the MGMT port on the bottom frame link module to the management network.
Use a minimum of CAT6A patch cables for HPE Synergy management ring connections.

**Procedure**

1. Connect the **LINK** ports on all frame link modules together in a ring.
2. Connect the **MGMT** ports of two of the installed frame link modules to the management network.

   Hewlett Packard Enterprise recommends connecting the two management uplinks from separate frames, if possible.
Cabling a single-frame management ring with HPE Synergy Image Streamer

A single-frame HPE Synergy Image Streamer configuration is not supported in a production environment. A single-frame configuration is not HA.

Use a minimum of CAT6A patch cables for HPE Synergy management ring connections.

Procedure

1. Connect the frame link module LINK ports together.
2. Connect the MGMT port on the top frame link module to the management network.
3. Connect the MGMT port on the bottom frame link module to an uplink port on the HPE Virtual Connect SE 40Gb F8 Module.

The translation from 10GBASE-T to QSFP+ is completed by connecting a dual 10GBASE-T QSFP+ RJ45 transceiver adapter to a QSFP+ to SFP+ adapter.

For more information about HPE Synergy Image Streamer, see the QuickSpecs on the Hewlett Packard Enterprise website.
Cabling a three-frame management ring with HPE Synergy Image Streamer

This example shows the recommended install locations for appliance modules in a three-frame configuration:

- HPE Synergy Composer in appliance bay 1 of frame 1, and appliance bay 1 of frame 2
- HPE Synergy Image Streamer in appliance bay 2 of frame 2, and appliance bay 2 of frame 3

Use a minimum of CAT6A patch cables for HPE Synergy management ring connections.

**Procedure**

1. Connect the **LINK** ports on all frame link modules together in a ring.
2. On frames where HPE Synergy Image Streamer is installed in a front appliance bay, connect the **MGMT** ports on the frame link modules to uplink ports on the HPE Virtual Connect SE 40Gb F8 Modules.

   The translation from 10GBASE-T to QSFP+ is completed by connecting a dual 10GBASE-T QSFP+ RJ45 transceiver adapter to a QSFP+ to SFP+ adapter.

   For more information about HPE Synergy Image Streamer, see the QuickSpecs on the Hewlett Packard Enterprise website.
3. Connect the **MGMT** ports of two of the installed frame link modules to the management network.

   Hewlett Packard Enterprise recommends connecting the two management uplinks from separate frames, if possible.
Cabling a four- or five-frame management ring with HPE Synergy Image Streamer

This example illustrates a four-frame HPE Synergy configuration with the following appliance configuration:

- HPE Synergy Composer in appliance bay 1 of frame 1, and appliance bay 1 of frame 4.
- HPE Synergy Image Streamer in appliance bay 2 of frame 2, and appliance bay 2 of frame 3.

Use a minimum of CAT6A patch cables for HPE Synergy management ring connections.

Procedure

1. Connect the **LINK** ports on all frame link modules together in a ring.
2. On frames where HPE Synergy Image Streamer is installed in a front appliance bay, connect the **MGMT** ports on the frame link modules to uplink ports on the HPE Virtual Connect SE 40Gb F8 Modules.

   The translation from 10GBASE-T to QSFP+ is completed by connecting a dual 10GBASE-T QSFP+ RJ45 transceiver adapter to a QSFP+ to SFP+ adapter.
For more information about HPE Synergy Image Streamer, see the QuickSpecs on the Hewlett Packard Enterprise website.

3. Connect the MGMT ports of two of the installed frame link modules to the management network.

Hewlett Packard Enterprise recommends connecting the two management uplinks from separate frames, if possible.
To cable an HPE Synergy frame for power line redundancy, use the following recommendation as a best practice.

Power line redundancy may be achieved by connecting 1+1, 2+2, or 3+3 power supplies to Phase A+B.

Procedure

1. Connect power supplies 1, 2, and 4 to the A-side power distribution unit.
   After power is supplied to the frame, it powers up automatically.
2. Connect power supplies 3, 5, and 6 to the B-side power distribution unit.
3. Verify that the power supply cords are securely connected using the reusable cable tie wraps.
This example shows a redundant power feed configuration. Your configuration can vary depending on the PDUs installed.

To cable an HPE Synergy frame for power line redundancy, use the following recommendation as a best practice.

Power line redundancy may be achieved by connecting 1+1, 2+2, or 3+3 power supplies to Phase A+B.

**Procedure**

1. Connect power supplies 1, 2, and 4 to the A-side power distribution unit.
   After power is supplied to an HPE Synergy frame, it powers up automatically.
2. Connect power supplies 3, 5, and 6 to the B-side power distribution unit.
3. Verify that the power supply cords are securely connected using the reusable cable tie wraps.
Power cabling options
Documentation and troubleshooting resources for HPE Synergy

HPE Synergy documentation

The Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs) is a task-based repository. It includes installation instructions, user guides, maintenance and service guides, best practices, and links to additional resources. Use this website to obtain the latest documentation, including:

- Learning about HPE Synergy technology
- Installing and cabling HPE Synergy
- Updating the HPE Synergy components
- Using and managing HPE Synergy
- Troubleshooting HPE Synergy

HPE Synergy Configuration and Compatibility Guide

The HPE Synergy Configuration and Compatibility Guide is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides an overview of HPE Synergy management and fabric architecture, detailed hardware component identification and configuration, and cabling examples.

HPE OneView User Guide for HPE Synergy

The HPE OneView User Guide for HPE Synergy is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It describes resource features, planning tasks, configuration quick start tasks, navigational tools for the graphical user interface, and more support and reference information for HPE OneView.

HPE OneView Global Dashboard

The HPE OneView Global Dashboard provides a unified view of health, alerting, and key resources managed by HPE OneView across multiple platforms and data center sites. The HPE OneView Global Dashboard User Guide is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides instructions for installing, configuring, navigating, and troubleshooting the HPE OneView Global Dashboard.

HPE Synergy Software Overview Guide

The HPE Synergy Software Overview Guide is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides detailed references and overviews of the various software and configuration utilities to support HPE Synergy. The guide is task-based and covers the documentation and resources for all supported software and configuration utilities available for:

- HPE Synergy setup and configuration
- OS deployment
- Firmware updates
- Troubleshooting
- Remote support

Best Practices for HPE Synergy Firmware and Driver Updates

The Best Practices for HPE Synergy Firmware and Driver Updates is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides information on recommended best
practices to update firmware and drivers through HPE Synergy Composer, which is powered by HPE OneView.

HPE OneView Support Matrix for HPE Synergy

The HPE OneView Support Matrix for HPE Synergy is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It maintains the latest software and firmware requirements, supported hardware, and configuration maximums for HPE OneView.

HPE Synergy Image Streamer Support Matrix

The HPE Synergy Image Streamer Support Matrix is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It maintains the latest software and firmware requirements, supported hardware, and configuration maximums for HPE Synergy Image Streamer.

HPE Synergy Glossary

The HPE Synergy Glossary, in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs), defines common terminology associated with HPE Synergy.

HPE Synergy troubleshooting resources

HPE Synergy troubleshooting resources are available within HPE OneView and in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs).

Troubleshooting within HPE OneView

HPE OneView graphical user interface includes alert notifications and options for troubleshooting within HPE OneView. The UI provides multiple views of HPE Synergy components, including colored icons to indicate resource status and potential problem resolution in messages.

You can also use the Enclosure view and Map view to quickly see the status of all discovered HPE Synergy hardware.

HPE Synergy Troubleshooting Guide

The HPE Synergy Troubleshooting Guide is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides information for resolving common problems and courses of action for fault isolation and identification, issue resolution, and maintenance for both HPE Synergy hardware and software components.

HPE Error Message Guide for HPE Synergy

The HPE Error Message Guide for HPE Synergy is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides information for resolving common problems associated with specific error messages received for both HPE Synergy hardware and software components.

HPE OneView and HPE OneView REST API scripting help

The HPE OneView Help, the HPE OneView REST API Scripting Help, and the HPE OneView API Reference are readily accessible, embedded online help available within the HPE OneView user interface. These help files include "Learn more" links to common issues, as well as procedures and examples to troubleshoot issues within HPE Synergy.

The help files are also available in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs).
HPE Synergy QuickSpecs

HPE Synergy has system specifications as well as individual product and component specifications. For complete specification information, see the HPE Synergy and individual Synergy product QuickSpecs on the Hewlett Packard Enterprise website (www.hpe.com/info/gs).
Websites

General websites

Hewlett Packard Enterprise Information Library  www.hpe.com/info/EIL
Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix  www.hpe.com/storage/spock
Storage white papers and analyst reports  www.hpe.com/storage/whitepapers

For additional websites, see Support and other resources.
Support and other resources

Accessing Hewlett Packard Enterprise Support

• For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:
  http://www.hpe.com/assistance
• To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:
  http://www.hpe.com/support/hpesc

Information to collect

• Technical support registration number (if applicable)
• Product name, model or version, and serial number
• Operating system name and version
• Firmware version
• Error messages
• Product-specific reports and logs
• Add-on products or components
• Third-party products or components

Accessing updates

• Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
• To download product updates:
  Hewlett Packard Enterprise Support Center www.hpe.com/support/hpesc
  Software Depot www.hpe.com/support/softwaredepot
• To subscribe to eNewsletters and alerts:
  www.hpe.com/support/e-updates
• To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center More Information on Access to Support Materials page:
  www.hpe.com/support/AccessToSupportMaterials

IMPORTANT:

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HP Passport set up with relevant entitlements.

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your
convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:
http://www.hpe.com/support/selfrepair

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

Remote support and Proactive Care information

<table>
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<th>Website</th>
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Proactive Care customer information

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Warranty information

To view the warranty for your product, see the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products document, available at the Hewlett Packard Enterprise Support Center:
www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional warranty information

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<td><a href="http://www.hpe.com/support/Networking-Warranties">www.hpe.com/support/Networking-Warranties</a></td>
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Regulatory information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:
www.hpe.com/support/Safety-Compliance-EnterpriseProducts
Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

www.hpe.com/info/environment

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (docsfeedback@hpe.com). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.