

Implementing Data Center Networks, Rev. 23.41

Overview

The Aruba Implementing Data Center Networks course provides the skills and knowledge to design, implement, and configure complex data center solutions based on AOS-CX switches. Data center networks are at a breaking point. HPE offers a new architectural approach that provides simplified, scalable, and automated connectivity for virtualized compute, storage, and cloud. Data center networking requirements have evolved rapidly, with emerging technologies increasingly focused on supporting more automation and simplified operations in virtualized data centers.

This course will explain the HPE Aruba Networking solutions and technologies for data center networks and their use cases for traditional two and three-tier and modern spine and leaf data center architectures.

Ideal candidate for this course

Typical candidates for this course are network professionals responsible for planning, implementing, and supporting data center networking infrastructure.

Suggested prerequisites

- ArubaOS-CX Switching Fundamentals
- Implementing ArubaOS-CX Switching

Or

- Aruba Campus Access Fundamentals
- Implementing Aruba Campus Access

Course Outline

- **Introduction to data center networks**

- Define data center networks
 - Discuss common drivers for data center networks
 - Distinguish common data center network requirements
 - Differentiate data center versus campus networks

- **Data center network products and technologies**

- Introduce HPE Aruba Networking data center products and technologies

- Compare the data center management options and advantages
 - Deployment models, products, and technologies

List and demonstrate connection high availability, fault tolerance and load balancing

- **Data center network design**

- Define requirements for data center network design
- Introduce data center network design
- Describe data center policy design
- Compare the data center management options and advantages
- Demonstrate the supported HPE Aruba Data Center Reference Architectures

- **Switch provisioning and staging**

- Switch staging options
- Manual provisioning
- ZTP provisioning
- Remote management

- **Layer 2 collapsed core**

- Debate the L2 collapsed core solution and advantages
- Describe the components of the solution

- **Switch virtualization and stacking**

- List HPE Aruba Networking switch virtualization and stacking options and their characteristics
- Explain the difference between stacking and virtualization and their use cases on DCN
- Describe HPE Aruba Networking VSX technology
- Explain how VSX could be deployed in a data center
- Examine the usage and benefits of VSX in a data center

- **Loop prevention**

- Link aggregation group (LAG) and multi-chassis LAG
- Load balancing
- Spanning tree protocols
- Redundant network links:
 - Multiple Spanning Tree Protocol
 - Loop protect
 - Rapid Ring Protection Protocol

- **Virtual Routing and Forwarding (VRF)**

Describe the concepts behind VRF
Explain VRF features
Demonstrate common use cases for VRF
Configure and maintain an AOS-CX switch running multiple VRFs

- **Leaf spine networks**

Debate the spine and leaf solution and advantages
Describe the components of the solution

- **Virtual Extensible VLAN (VXLAN)**

Describe the VXLAN feature
Describe basic VXLAN operations
Describe the MAC learning process in a VXLAN
Describe virtual VXLAN to physical VLAN network integration
Explain the basic configuration of a VXLAN tunnel

- **EVPN**

Introduce EVPN concepts and use cases
Explain the EVPN configuration process
Describe EVPN monitoring and troubleshooting
Optimize the EVPN environment with ARP and ND suppression
Describe the EVPN fabric configuration steps to handle multicast traffic
Explain IPv6 EVPN overlay over an IPv4 underlay configuration

- **Aruba Fabric Composer**

Define the purpose of Aruba Fabric Composer
Navigate menus and identify icons
Manage network services using Guided Set Up
Explain the benefits of integrating Aruba Fabric Composer with VMware vSphere, HPE iLO, and Pensando Policy Service Manager
Integrate Aruba Fabric Composer with VMware products and solutions
Integrate Aruba Fabric Composer with HPE iLO to configure, monitor securely, and update your HPE servers
Integrate Aruba Fabric Composer with Pensando Policy Services Manager to set up policy for securing your network

- **Securing the data center with the Aruba CX 10000 Switch**

Define and describe 10K Switch features that improve network performance, security and design
Manage network services with Aruba Fabric Composer
Implement policy and network segmentation using Aruba Fabric Composer or Pensando Policy Service Manager
Utilize analytics gathered by telemetry to view network configuration and view alerts

- **Data center bridging (DCB)**

Describe DCB and IP ECN
Configure DCB and IP ECN
Describe DCB monitoring options

- **Network Analytics Engine (NAE)**

Describe NAE use cases to monitor and troubleshoot the network.
Describe NAE agents
Describe NAE troubleshooting

- **REST API**

Describe the need for the API
List the REST API features and functions
Demonstrate an AOS-CX REST API use case

- **Aruba Central on Prem (COP)**

Describe COP
Explain COP use cases for DCN