

HPE Digital Learner Aruba Content Pack

HPE course number	CP059
Content Pack length	30 hours
Content Pack Category	Category 1
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The HPE Digital Learner Aruba content pack includes technical training on Aruba's industry-leading networking technologies. These introductory-level Aruba courses sharpen networking skills on the latest Aruba products. Self-directed labs are not included with Aruba eLearning courses but can be purchased separately through [HPE Press](#).

These fundamental eLearning courses are designed to help students prepare for associate-level Aruba certifications by covering concepts related to Aruba wireless mobility, network security, and wired switching. Product courses provide the knowledge and skills to manage campus networks, and learn about Aruba Central, Instant AP, and SD Branch.

In addition to eLearning content, the content pack includes playlists of short learning videos related to the Aruba portfolio. These videos cover concepts, best practices and new product features. As new courses are available, they are added to the content pack to keep skills up to date.

Notice for Aruba Partners: Courses completed on HPE Digital Learner are applicable towards requirements for the Aruba PrfN program once labs are completed. Self-directed labs are not included with HPE Digital Learner and can be purchased separately on [HPE Press](#). Please visit the Aruba partner portal for [program requirements](#).

Why HPE Education Services?

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Audience

This content pack is for IT professionals, network administrators, network engineers and consultants.

Content Pack components

This content pack consists of the following courses:

- Aruba Fundamentals:
 - Aruba Networking Essentials
 - Aruba Mobility Essentials
 - Aruba Network Security Essentials
 - Aruba ClearPass Fundamentals
- Aruba Product Training:
 - Managing Campus Networks with Aruba Central
 - Configuring Aruba SD Branch
- Short Learning Videos/Playlist
 - Modern Campus Network Design
 - Modern Campus Network Management Techniques
 - Introduction to ArubaOS 10
 - Zero Trust Security with Aruba Networks
 - Introduction to Remote Access Solutions by Aruba
 - IPv6 in ArubaOS-CX Switches

Prerequisites

Students should be familiar with wired and wireless networking concepts.

Content Pack objectives

After completing the content pack, you should be able to:

- Understand the basics of wired and wireless computer networking
- Understand fundamental Aruba networking concepts related to wireless mobility, wired switching, and network security
- Understand how to manage and configure campus networks with Aruba products
- Understand new features and best practices for Aruba technologies
- Understand the industry trends shaping modern networks

Certifications and related examinations

- The Aruba Mobility and Networking Essentials courses prepare students for the HPE Fast Start badge.
- The Aruba ClearPass Fundamentals eLearning course covers concepts on Aruba ClearPass that help prepare students for associate-level Aruba certification.

Detailed course outline

Aruba Networking Essentials

- Aruba Networking Essentials teaches the basics of a computer network, compares local and wide area networks, explores use cases, and identifies implementation types. Communication over networks relies on protocols. Once you learn about networks, you are well on your way to understanding network communications and are prepared to learn VLANs and how to configure an Aruba OS Switch.

Course Outline

- Introduction
 - Aruba switching introduction
 - Networking in everyday life
 - Networking layers
 - Basic networking with Aruba OS-CX
- Switching
 - VLANs 802.1Q Edge Access Ports
 - Configuring trunking between multiple switches
 - Watching out for loops
 - Lags
- Network Design and Routing
 - Network design
 - Routing and gateways
 - Static routes
 - Dynamic routing protocols

Aruba Mobility Essentials

- In Aruba Mobility Essentials, you learn how radio frequency (RF) works. You compare wired and wireless networks and learn how communication over wireless networks relies on standards and protocols. Once you learn about these, you are well on your way to understanding what it takes to deploy and manage a WLAN, and are familiar with Aruba's differentiated technology that makes it a leader at the edge.

Course Outline

- Intro to Wireless Networking
 - Wired vs wireless
 - WLAN organizations
 - Data modulation
 - Antennas
 - RF signal propagation, power, and channels
 - MIMO CCI
 - Planning concepts
 - Wireless Architecture
 - Terminology
 - Roaming
 - WLAN architecture
 - WLAN security and access control
 - WLAN usage
 - Redundancy
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Aruba Networking Security Essentials

- In Aruba Network Security Essentials, you explore the threats that pose a risk to a basic computer network and the security technologies available to harden your devices against these attacks. How are messages encrypted? What exactly is malware? What technologies can we deploy that allow networks to defend themselves? Our lives and business rely on having trusted secure access to our networks—but what does it take to ensure that security? The Aruba Network Security Essentials course is a starting point for individuals interested in a career as a security professional, and for anyone who wants to get familiar with Aruba's security technologies. To get deeper technical knowledge with Aruba network security, see the [Aruba Certified Network Security Associate \(ACNSA\) certification & training](#).

Course Outline

- Part 1: Introduction to Network Security and Aruba's Security Strategy
 - Security threats and threat assessment
 - Malware and viruses
 - Denial of services (DoS) and distributed denial of services (DDoS)
 - Eavesdropping and man-in-the-middle attacks
 - Address resolution protocol (ARP)
 - Regulatory requirements
 - Out-of-band management (OoBM)
 - Remote authentication
 - Securing protocols
 - Physical security
 - Authenticated network time protocol (NTP)
 - Dynamic host configuration protocol (DHCP) snooping
 - ARP protection
 - Lab demo: Aruba Switch hardening
- Part 2: Wireless Security
 - How to harden wireless devices
 - Security protocols
 - Lab demo: Aruba Mobility Controller hardening
 - Secure communications with data encryption technologies
 - Symmetric and asymmetric encryption
 - Hash algorithms
 - DH (Diffie-Hellman) algorithm
 - Certificates
 - Public key infrastructure (PKI)
 - Network authentication methods
 - Lab demo: Prepare clients for 802.1X and EAP-TLS
 - Lab demo: Configure a WPA3-Enterprise WLAN that uses EAP-TLS

Aruba ClearPass Fundamentals

- The Aruba ClearPass Fundamentals eLearning course prepares participants with foundational skills in network access control using the ClearPass product portfolio. This self-paced session includes instructional modules to lead participants through implementation and configuration of a ClearPass network access control solution. This course is the first of two sections in the complete ClearPass Essentials course and builds the learner's foundational knowledge in authentication and access control using ClearPass. The complete ClearPass Essentials course is also available in a 5-day instructor-led option.
- This course primarily focuses on ClearPass fundamentals but provides the basics on the device configuration required when considering the interaction between the network access control device and ClearPass. Participants learn how to configure access control logic within the Policy Manager and how to use ClearPass Guest to configure a convenient, yet secure, public access network. Participants also explore device profiling. In addition, this course covers integration with external Active Directory servers and monitoring.
- Self-directed labs are available for separate purchase at [HPE Press](#).

Course Outline

- Intro to ClearPass
 - Authentication, Authorization, Accounting
 - External Connectivity
 - Endpoint Profiling
 - Roles and Enforcement
 - Configuring Services
 - Wired Authentication
 - Configuring Web Services
 - Introduction to Guest
 - Guest Access with Self Registration
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Managing Campus Networks with Aruba Central

- The Aruba Central eLearning course covers the central campus cloud-based management system that lets you centrally manage and monitor wired and wireless networks. It covers the Aruba Central management service options for onboarding devices by managing Aruba Instant and Aruba Switches. Participants view the advanced analytics services and connectivity health of devices and clients, providing insights into Wi-Fi analytics for smart business decisions. The course teaches how to simplify visitor access management with fully secure and scalable guest access, including guest cloud services. Through lecture, students discover the comprehensive management, device connectivity, network health, and user account activity with Aruba Central.
- Self-directed labs are available for separate purchase at [HPE Press](#).

Course Outline

- Central Introduction
- Managed Service Provider
- Central Onboarding
- Central Groups, Sites and Labels
- IAP & Switch Configuration
- Visual RF (VRF) and Topology
- Troubleshooting with Central
- Application Presence: Analytic UCC
- Administration and Maintenance

Configuring Aruba SD Branch

- This self-paced course teaches the knowledge and skills to set up, configure and troubleshoot an Aruba SD Branch installation. Using eLearning modules, this course provides the technical understanding to configure an SD Branch installation consisting of multiple WAN uplinks and branch redundancy. Participants learn how to use the Aruba Central cloud platform and, specifically, the Gateway Management app to install and build a complete, SD Branch network. In addition, this course covers monitoring, reporting, and integration with other cloud-based security vendors.
- Self-directed labs are available for separate purchase at [HPE Press](#).

Course Outline

- Introduction to Aruba Central
- Introduction to SD Branch
- Monitoring SD Branch Deployments
- SD Branch Configuration
- SD Branch Routing
- SD Branch Redundancy
- SD Branch Troubleshooting
- Third Party Integration

Aruba Modern Campus Network Design

- A successful modern network architect requires a keen understanding of business requirements, network components, and the challenges of architecting good solutions. In the Modern Campus Network Design course, you get a high level overview of key network design topics trending in the edge era.

Course Outline

- Trends and Challenges
 - Centralized vs localized
 - Edge services
 - Decentralized users
 - IoT deployments
 - Modern Campus Architectures
 - Individual components
 - 2-tier and 3-tier design assembly
 - Redundancy
 - Virtualization solutions
 - Cloud vs Edge Solutions
 - Benefits and motivators
 - Advantages of hybrid approach
 - Network Management Systems
 - Evolution from disparate systems
 - AI and machine learning
 - Edge/cloud delivery models
 - Security
 - Perimeter security
 - Centralized security
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Aruba Modern Campus Network Management Techniques

- The devices we manage evolve as new protocols, security mechanisms, and redundancy solutions emerge; and so the techniques we use to manage these dynamic systems must respond to—and even anticipate—this changing landscape. In the Modern Campus Network Management Techniques course, you learn key aspects of the network management journey and the newer technologies and techniques to help you embrace the edge. The course covers network management challenges that drive new technologies, classic Network Management System (NMS) tools, and the modern NMS tools like Aruba ESP developed to reduce overhead, speed diagnosis, and improve situational awareness.

Course Outline

- Network Management Challenges and Motivators
- Network Management System (NMS) Tools
 - SNWP
 - Syslog
 - Individual device management
- Modern NMS Tools
 - SOAR and SIEM systems
 - Scripting tools
 - Automation and orchestration
- Aruba ESP
 - Unified infrastructure
 - Zero Trust Security
 - AIOps

Introduction to ArubaOS 10

- As part of the Aruba Edge Services Platform or Aruba ESP, the new ArubaOS 10 ushers in exciting new features.
- AOS 10 AP Deployment
 - This course covers AP deployment for remote workers and the new distributed workforce with Microbranch AP. When an AP is deployed, there are two basic options for routing the user's data from the SSID—Bridge Mode and Tunnel Mode. However, with the introduction of ArubaOS 10 for the APs and controllers, you now have a blended option that uses the routing and firewall capability built into the AP to determine which clients are bridged locally and which clients are tunneled back to the gateway. All of this is capable for the first time on a single SSID.
- AOS 10 Device Deployment
 - The Aruba Edge Services Platform tightly integrates into Aruba Central. With Aruba Central, each device must be “onboarded” to be managed and monitored. One of the new features in ArubaOS 10 is the Autocluster configuration.

Course Outline

- Microbranch AP
- Bridge WLAN
- Tunnel WLAN
- Mixed Mode WLAN
- Device Onboarding
- Gateway Autoclustering

Zero Trust Security with Aruba Networks

- The concepts of Zero Trust Security have been a part of the Aruba topology from the beginning. With the release of the Aruba Edge Services Platform (Aruba ESP), there is a new chapter in the Zero Trust story. This series introduces the elements of Aruba ESP and explains how they fit into your Zero Trust Strategy.

Course Outline

- Introduction to Zero Trust Security
 - Video introduction to the concept of mapping the five domains of Zero Trust Security to the five functions of the NIST Cybersecurity Framework
 - Zero Trust Security with Aruba Networks and NIST Identify
 - Identify and document assets, resources, environments and risks
 - Understand and identify what currently exists on your network
 - Zero Trust Security with Aruba Networks and NIST Protect
 - Protecting clients and assets in your environment.
 - Zero Trust Security with Aruba Networks and NIST Detect
 - Detecting anomalies on your network
 - Using the Aruba Edge Services Platform (Aruba ESP) with its combination of AI insights and cloud-sourced data
 - Zero Trust Security with Aruba Networks and NIST Respond
 - Plan and prepare the actions to take during a cyber threat
 - Zero Trust Security with Aruba Networks and NIST Recover
 - Post-incident reaction
 - The importance of communications and reporting to a successful recovery
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Introduction to Remote Access Solutions by Aruba

- This course introduces Aruba Networks Remote Access Solutions to IT professionals who need to deploy remote access solutions for business continuity.

Course Outline

- Remote Access Solutions Introduction
- Configuring Aruba Remote Access Point Solutions
- Configuring and Troubleshooting Aruba VIA VPN
- IAP VPN DHCP Options Explained
- Managing Campus Networks with Aruba Central
- SD Branch Configuration of Virtual Gateways for IAP VPN
- Aruba User Experience Insight Solution Overview

IPv6 in ArubaOS-CX Switches

- This playlist introduces IPv6 (Internet Protocol version 6) in relation to ArubaOS-CX switches. Students receive an introduction and demonstration on IPv6 address assignment and IPv6 routing with Aruba CX switches.

Course Outline

- Introduction to IPV6 Address Assignment Options
 - Video preview showing how to configure IPv6 address assignment options on Aruba OS-CX Switches, including
 - Stateless address auto configuration (SLAAC)
 - Stateless DHCPv6
 - Stateful DHCPv6
- IPv6 Address Assignment Demo
 - IPv6 address assignment configured on ArubaOS-CX switches
- IPv6 Routing
 - Introduction to IPv6 routing with static IPv6 routes and OSPFv3
- IPv6 Routing Demo Part 1—Introduction
 - Lab topology and infrastructure
- IPv6 Routing Demo Part 2—Environment Configuration
- IPv6 Routing Demo Part 3—Static Routes and OSPFv3
- IPv6 Routing Demo Part 4—Passive Interface, Route Redistribution and Monitoring

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