



# Arista Cloud Engineer

## Level 1 Outline



ACE:L1 Data Sheet  
v2022.1

### Description

The 5-day ACE Level 1 course provides foundational networking knowledge and skills from a modern perspective in Arista's EOS networking environment. The attendees will progress through networking fundamental topics ranging from Ethernet, TCP/IP, Routing, and Switching to network design based on modern Leaf-Spine architecture used in today's Enterprise Data Center and Campus networks. Students additionally will be introduced to network automation with Arista's CloudVision solution.

### Topics

#### Network Engineering Fundamentals

- Layered Network Architecture
- Ethernet, IPv4, IPv6, TCP, UDP
- Modern Connectivity - Fiber Optics, WiFi, PoE

#### Working with Arista EOS

- Arista EOS Software Approaches
  - Single EOS
  - State Driven, NetDB, NetDL
  - EOS Command Line Interface (CLI)
- Arista Hardware Approach
  - Merchant Silicon
  - Deep Buffer
  - Interface Flexibility (10G to 400G)
- Zero Touch Provisioning (ZTP)
  - Initial Switch Config
  - ZTP Requirements and Bootstrap
  - Config vs Scripts
- Initial Switch Setup
- Authentication, Authorization, and Accounting (AAA)
  - TACACS+ vs RADIUS
  - AAA Configuration
- ARP, DHCP
- Introduction to IPv6
  - Format and Scope of IPv6 Address
- First-Hop Redundancy Protocols (FHRP)
  - ARP and DHCP
  - VRRP - Virtual Router Redundancy Protocol
  - Arista vARP
  - High-Availability Designs

#### CloudVision Portal (CVP) Overview and Architecture

- Introduction to Automation and CloudVision
  - Network Automation
  - DIY, DevOps, Turnkey (CV, Studio)
  - State Streaming, SysDB/NetDB, NetDL
  - CloudVision Partner Integration
  - Overview of Installation
- CloudVision Deployment
  - Cloud-based CVaaS, Appliance, Virtual (OVA, KVM)
  - Software, Authentication and Connectivity Requirements
  - CVP Setup
  - Enabling eAPI
- Initial Switch Behavior
  - Zero Touch Provisioning (ZTP)
  - Process, Modes, Provisioning
  - DHCP Configuration
  - ZTP Bootstrap with CVP
  - Zero Touch Replacement
- Automating Configuration with Configlets
  - Configlet and Container Plan
  - Creating Containers
  - Creating Configlet Builder
  - Python Library
- Change Control
  - Compliance
  - Create Change Control
  - Add/Remove Metrics
- Day 2 Network Operations
  - Real-Time Telemetry, Analytics
  - Client to Cloud Visibility
  - Troubleshooting with CLI and CVP
  - Image Management
  - Data Plane Visibility



#### Layer 2 Operations

- L2 Switching
- L2 Redundancy
- VLANs and Trunk - 802.1Q
- Spanning Tree Protocol (STP)
- Per VLAN Spanning Tree (PVST)
- Link Aggregation
  - Port Channel
  - Link Aggregation Control Protocol (LACP)
  - Multi-Chassis Link Aggregation (MLAG)

#### Layer 3 Operations

- Routing Fundamentals
  - Layer 3 Redundancy
  - Routing Terminology
  - ECMP
  - OSPF, ISIS, BGP
- OSPF
  - Overview
  - Link-State Protocol
  - Hierarchical Scalability
  - Areas and Addressing
- VRF and VPN
- WAN Connectivity
  - Internet Connectivity
  - Ethernet-based WAN
  - Data Center Interconnect
- BGP
  - BGP Introduction
  - Enabling BGP
  - BGP Peer Groups
  - BGPv4 Routes
  - BGP Operations
  - BGP Labeled Unicast (BGP-LU)
  - Layer 3 Leaf Spine with BGP

#### Data Center Leaf-Spine Architectures

- Data Center and Cloud
  - Client to Cloud Model
  - Traffic Patterns
  - Traditional Data Center Architectures
  - Cloud-Scale DC Networking
- Arista Solution
  - L2LS - L2 MLAG Underlay - VXLAN Overlay
  - L3LS - eBGP with EVPN Overlay/Underlay - VXLAN Data Plane
  - Scale-out Architecture
- VXLAN Operations
  - Overlay Network
  - VXLAN Data Plane

#### Campus Architectures

- Traditional Campus Architectures
- Campus Networking Evolution
- Modern L-S Campus Network
- WiFi Fundamentals and Design
- CloudVision Cognitive Unified Edge (CV-CUE)
- Power over Ethernet (PoE)
- Unified Wired and WiFi

### Labs

The ACE Level 1 course includes diverse practical labs built on current EOS and CloudVision platforms. Labs are accessible for three weeks, one week during the instructor-led course, and two additional weeks to work on labs independently. Each student is given their own dedicated environment. Students can connect to these cloud-based labs from anywhere at any time.

### Lab Activities

- OSI, MAC Addresses and IP Addresses
- Intro to EOS Command Line Interface (CLI)
- Understanding and Working with IP and ARP
- Configuring LACP and MLAG
- CVP Introduction - Navigation
- Cabling & Interface Speed Configuration
- Setting up Management Connectivity to Arista Switches
- Configuring Layer 2
- Routing
- CloudVision - Configlet Management

### Target Audience

The ACE Level 1 course is best suited for individuals entering the network engineering field and are looking to acquire the essential knowledge and skills applied to modern network infrastructure.

### Certification

ACE Level 1 certification requires a 2-hour multiple choice exam. Candidates must complete the ACE Level 1 course prior to attempting the exam.

### Latest Schedule

<https://www.sdn-pros.com/global-schedule>

### Follow-on Courses / Certifications

ACE : L2



Product Specialties



Vertical Specialties



Data Sheet PDF

Course Schedule