



## Arista Cloud Engineer

### Media & Entertainment (M&E) Specialist Outline



Media & Entertainment  
v2021.1

#### Description

The 5-day ACE Media & Entertainment (M&E) Specialist course is built to establish a firm foundation for newcomers to networking and the individuals who will be designing and configuring scalable professional media networks based on modern Leaf-Spine architecture.

#### Topics

##### Media over IP

- Requirements of M&E Customers
- One Medium for all I/O
- Quality of Experience
- Network-Wide Telemetry
- Open APIs for Broadcast Integration
- Arista Media Network Approach

##### Working with Arista EOS

- Arista EOS Software Approach
  - Single EOS for All M&E Use Cases
  - State Driven, NetDB, Net DL
  - 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 Boot-up
- Configuring M&E Basic Operations
  - Device Parameters
  - NTP, Ethernet Management Port
- 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
  - Recommended Practices for Media Networks Design

##### Foundation of Networking

- Layered Network Architecture
- Ethernet, IPv4, IPv6, TCP, UDP
- Cabling for Modern Media Connectivity

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

- Introduction to 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
  - Container and Configlet Plan
  - Creating Containers
  - 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
- Spanning Tree Protocol (STP)
- Link Aggregation
  - Port Channel
  - Link Aggregation Control Protocol (LACP)
  - Multi-Chassis Link Aggregation (MLAG)
- VLANs and Trunk – 802.1Q
- Per VLAN Spanning Tree (PVST)

#### Layer 3 Operations

- Routing Fundamentals
  - Layer 3 Redundancy
  - ECMP
- OSPF
  - Enabling OSPF
  - Configuring OSPF in a L-S Design
  - OSPF Network Types
- VRF and VPN
- WAN Connectivity for M&E
  - Internet Connectivity
  - Ethernet-based WAN
  - DCI for Media
- BGP
  - Enabling BGP
  - BGP Peer Groups, Routes, Operations
  - BGP Labeled Unicast (BGP-LU)
  - L3 L-S Design with BGP
  - Recommended Practices for M&E
- Multicast
  - IP Multicast
  - Large-Scale Multicast Support
  - Multicast Flow Orchestration
  - Arista Media Control Service (MCS)
  - Multicast Protocols - DM, SM, PIM, IGMP
  - PIM-SM, PIM SSM, PMBR, Rendezvous Point (RP)
  - Multicast Operation, Addressing, Routing, Load Balancing
  - Multicast Groups Address

#### Leaf-Spine DC Architectures

- Media Move to Leaf-Spine Architecture
- Scale-Out Architecture for M&E
- L2 LS, L3 LS
- VXLAN Data Plane

#### Precision Time Protocol (PTP)

- Overview of PTP
- PTP for LAN and WAN
- Recommended Practices

#### Labs

The ACE M&E Specialist course includes diverse practical labs. The 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
- Installing and Working with EOS and CloudVision
- CVP Introduction - Navigation
- Setting up Management Connectivity to Arista Switches
- Configuring Layer 2
- Configuring BGP
- Cabling & Interface Speed Configuration
- Intro to EOS Command Line Interface (CLI)
- CloudVision - Configlet Management
- Understanding and Working with IP and ARP
- Configuring LACP and MLAG
- Protocol Independent Multicast Sparse-mode

#### Target Audience

The ACE M&E Specialist certification course is best suited for individuals who are looking to acquire the essential knowledge and skills to design and configure a modern resilient multimedia network infrastructure.

#### Specialization

The ACE M&E Specialist requires a 2-hour multiple choice exam. Candidates must complete the M&E course prior to attempting the exam.

#### Latest Schedule

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