Arista Foundations Track

COURSE OVERVIEW
This course aims to provide a comprehensive understanding of foundational networking concepts, Arista EOS fundamentals, Layer 2 switching, and advanced networking topics. It prepares learners for the Level 1 Associate certification and serves as a stepping stone for further specialization.

PREREQUISITES
Basic familiarity with computer networks is recommended but not required. No prior certification or course completion is necessary to enroll in this track.

COURSE OBJECTIVES
- Core networking principles including OSI model, TCP/IP, and subnetting
- Arista EOS architecture and CLI usage
- Layer 2 technologies such as VLANs, STP, and Link Aggregation
- Advanced topics including IPv6, QoS, and network security
- Introduction to CloudVision and automation methods

COURSE OUTLINE
Network Engineering Fundamentals
- Network Introduction
  - Introduction to Networks
  - Introduction to Network Models
  - OSI in Action
  - Wireshark and TCP/IP
- Physical Layer
  - Cabling and Connectivity - Part 1 - Copper and PoE
  - Cabling and Connectivity - Part 2 - Fiber and Wireless
- Data Link Layer
  - Ethernet and MAC Address
  - L2 Devices Learning and Forwarding
- Network Layer
  - Introduction to IPv4
  - What is a Subnet Mask?
  - IPv4 Classes
  - Reserved IPv4 Addresses
  - Default Gateway
  - Subnetting

- Network Protocols
  - DHCP
  - ICMP
  - DNS
  - ARP
  - NTP
- Transport & Application Layer
  - Transport Layer Responsibilities
  - TCP vs UDP

Arista EOS Fundamentals

- EOS Overview
  - Consistent Networking with EOS
  - Introduction to Arista EOS
  - What is SysDB
  - Introduction to Network Database (NetDB)
  - EOS Network DataLake (NetDL)
  - Arista cEOS
  - The Secret Sauce of Arista EOS Quality
- Getting Started with EOS
  - Connect to Network Devices
  - EOS Booting Process
  - CLI Configuration Modes
  - CLI Basic Config
  - Interfaces and Ports
  - Configuration Checkpoints
  - Configuration Sessions
  - Lab - Introduction to EOS CLI
  - Lab - Setting up the Management Connectivity
  - Lab - Understanding and Working with Network Protocols

Layer 2 Switching Fundamentals

- Neighbour Discovery
  - Introduction to Neighbour Discovery
  - Creating a Network Diagram using LLDP
  - Lab - Creating a Network Diagram using LLDP
- Virtual Local Area Networks (VLANs)
  - Introduction to VLANs
  - Introduction to Trunking Protocols 802.1Q
  - Configuring VLANs on a Single Switch
  - Configuring VLANs between two switches
  - Inter-VLAN Routing
  - Configuring Router on a Stick
  - Configuring Inter-VLAN Routing with SVIs
  - Lab - Configure VLANs
  - Lab - Configure Inter-VLAN Routing

- Spanning Tree Protocol (STP)
  - Introduction to Spanning Tree Protocol (STP)
  - STP Operation
  - STP Port States
  - STP Modes
  - Lab - Configure STP
- Link Aggregation Protocol
  - Introduction to Link Aggregation
  - Configuring Link Aggregation
  - Introduction to MLAG
  - Lab - Configuring LACP and MLAG

Supplemental: Advanced Networking Concepts

- Security
  - Introduction to Access Lists
  - ACL Types
  - Authentication, Authorization, Accounting (AAA)
  - DHCP Snooping
  - IP Source Guard and ARP Inspection
  - Lab - Access List
  - Lab - Troubleshooting ACL
- Quality of Service
  - Introduction to QoS
  - Classification and Marking
  - Congestion Management
  - Policing and Shaping
  - Lab - Configure QoS
- IPv6
  - Introduction to IPv6
  - IPv6 Address Types
  - Lab - Configure IPv6 Addresses
- CloudVision
  - Why Automation
  - Automation Methods
  - Introduction to CloudVision

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