Arista Networking - Data Center Engineering (DCENG)

ID DCENG **Price** CHF 4,995.—(excl. VAT) **Duration** 5 days

Who should attend

Senior network engineers & architects, network operations & advanced-level network administrators

This course is part of the following Certifications

ACE - Professional Data Center (AN-DC-PR)
ACE - Specialist Data Center Engineering (AN-DC-EN)

Prerequisites

- Solid understanding of Layer 2 and 3 core network technologies and protocols
- Understanding of Spine/Leaf designs is a benefit

Course Objectives

At the end of the course, you should be able to:

- Understand the principles and architectural differences between Layer 2 and Layer 3 Leaf-Spine designs.
- Configure VLANs, STP, LACP, and MLAG to implement robust Layer 2 network topologies.
- Deploy default gateway redundancy mechanisms such as VRRP and VARP within a data center.
- Design and implement Layer 3 Leaf-Spine networks using BGP-based underlay and VXLAN-eVPN overlays.
- Configure VXLAN data plane and control plane options, including HER and eVPN route types.
- Implement symmetric and asymmetric IRB models for advanced routing scenarios.
- Build and manage L2LS and L3LS data center fabrics using Arista CVP Studios.

Course Content

LAYER 2 LEAF SPINE DESIGN OVERVIEW

L2LS architecture

- Drivers for L2LS topologies
- L2LS design overview
- L2LS performance, redundancy and scale

Layer 2 Technologies VLANs

- VLAN overview
- Configuring access and trunk ports
- Introduction to inter-vlan routing
- Configuring sub-interfaces
- Configuring SVI's
- Troubleshooting VLANs

STP

- Spanning tree overview
- STP enhancements
- Configuring STP
- Troubleshooting STP
- LAB – STP
- LAB – Troubleshooting STP

LACP

- LACP overview
- Configuring LACP
- Troubleshooting LCP

MLAG

- MLAG overview
- Configurating MLAG
- Troubleshooting MLAG
- LAB – deploying MLAG
- LAB – troubleshooting MLAG

Default gateway redundancy (FHRP)

- FHRP overview
- Configuring VRRP
- Configuring VARP

Building L2LS Fabric Build LSLS DC network using CLI

- Configuring L2LS with CLI
- LAB – Build LSLS with MLAG and VARP

Build LSLS DC network using CVP Configlets

- L2LS design and topology review
- Configuring L2LS with CVP configlets

LAYER 3 LEAF SPINE DESIGN OVERVIEW

L2LS review

- L2LS Design review
- L2LS Example

L3LS design

- Introduction to L3LS designs
- VXLAN and eVPN importance in L3LS designs
- Why BGP underlay in L3LS designs

Underlay routing options OSPF

- OSPF overview

IS-IS

- IS-IS overview and operations
- IS-IS communications

Introduction to BGP

- BGP Overview
- BGP functions and facts
- BGP operations
- BGP route advertisement

eBGP underlay configuration

- L3LS eBGP underlay configuration
- eBGP load balancing configuration
- eBGP configuration enhancements

BGP underlay deployment options

- BGP with BLAG
- Variations of BGP in L3LS
- LAB – Underlay addressing with eBGP

VXLAN DESIGN

VXLAN Overview

- Introduction to VXLAN
- VXLAN load balancing with ECMP

VXLAN control plane options

- ARP refresher
- VXLAN multicast control plane
- VXLAN HER control plane
- Configuring VXLAN HER
- VXLAN VCS control plane
- VXLAN eVPN control plane
- LAB – Configure VXLAN data plane with HER

VXLAN with MLAG

- Introduction to VXLAN with MLAG
- Configuring VXLAN with MLAG

VXLAN best practices

- MTU and Jumbo frames

Troubleshooting VXLAN

- Troubleshooting VXLAN

EVPN OVERLAY

eVPN fundamentals

- Introduction to eVPN
- eVPN terminology
- VRF operations
- MP-BGP control plane
- Configuring MP-eBGP for eVPN
- eVPN route type 2 (MAC-IP)
- eVPN route type 5 (IP Prefix)
- eVPN route type 3 (IMET)
- LAB – L2eVPN

eVPN advanced concepts

- VLAN based service interface
- VLAN aware bundle service interface
- Introduction to IRB
- Symmetric vs. Asymmetric IRG
- Symmetric IRB deep dive
- Configuring Symmetric IRB
- Configuring Asymmetric IRB
- LAB – L3 eVPN Symmetric IRB
- LAB – L3 eVPN Asymmetric IRB

eVPN Multihoming

- Introduction to Active-Active multihoming
- Route type 1 and ESI
- Route type 1 and route type 4
- Active-Active multihoming configuration
- LAB – eVPN multihoming

eVPN design best practices

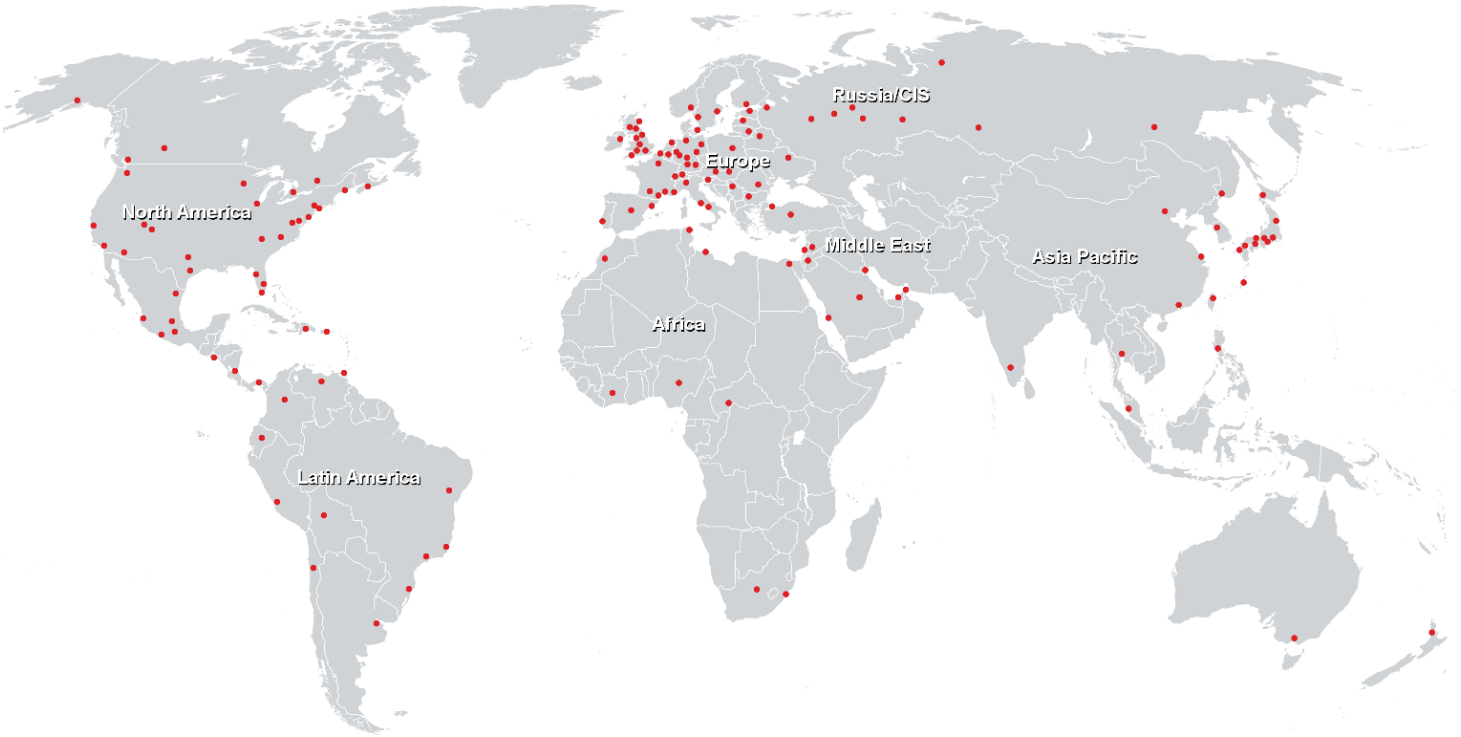
- iBGP between MLAG pairs and eBGP multihop command
- eBGP for underlay and overlay

Configuring L3LS DC network with CVP Studios

- Configuring L3LS using Studios
- Configuring eVPN services, host interfaces and external networks using Studios
- LAB – Building L3LS, eVPN and MLAG with Studios

Arista Networking - Data Center Engineering (DCENG)

Training Centres worldwide





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