Arista Networking - Campus Engineering (CAMPENG)

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

Who should attend

Network engineers and administrators managing campus network infrastructure and responsible for troubleshooting and maintaining campus networks.

This course is part of the following Certifications

ACE - Professional Campus (AN-CA-PR)
ACE - Specialist Campus Engineering Wired (AN-CA-EN)

Prerequisites

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

Course Objectives

At the end of this course, you will be able to:

- Explain the Arista Cognitive Campus architecture and how it differs from traditional campus network designs.
- Design wired campus networks in both L2 and L3, selecting the appropriate architecture (L2LS, L3LS, VXLAN-EVPN, Border Leafs).
- Implement core Layer 2 campus technologies, including VLANs, Spanning Tree, LACP, MLAG, and First Hop Redundancy Protocols.
- Deploy resilient campus solutions, leveraging features such as Cognitive PoE, Stateful Switchover (SSO), and Smart System Upgrades (SSU).
- Configure and operate an eBGP-based underlay, understanding its role in scalable L3LS campus designs.
- Implement VXLAN and EVPN architectures, including control plane options, MLAG integration, and best practices.
- Build and automate campus networks using Arista CloudVision, deploying L2LS and L3LS designs with CLI, CVP configlets, and CVP Studios.

Course Content

ARISTA CAMPUS ARCHITECTURE

Arista Cognitive Campus Solution

- Arista Cognitive Campus Overview

Arista campus architecture overview

- Traditional campus architecture overview
- Arista Universal cloud network architecture
- Campus fabric architecture

Arista Campus Design

- Campus network design options
- Design 1 – L2LS with external gateway
- Design 2 – L2LS
- Design 3 – L2LS with VXLAN-EVPN
- Design 4 – L3LS
- Design 5 – L3LS with Border leafs
- Design 6 – L3LS with VXLAN-EVPN
- Design 7 – L3LS with VXLAN-EVPN and Border leafs

Resiliency solutions

- Cognitive PoE
- Stateful Switchover (SSO)
- Smart System Upgrades (SSU)

Arista stacking

- SWAG Overview
- SWAG Architecture
- MLAG vs SWAG
- SWAG Provisioning

BUILDING A L2 WIRED CAMPUS NETWORK

VLANs and Inter-VLAN routing

- VLAN Overview
- Configuring Access and Trunk Ports
- Introduction to Inter-VLAN Routing
- Configuring Sub Interfaces
- Configuring SVIs
- Troubleshooting VLANs
- Lab - Configuring VLANs

Spanning Tree

- Spanning Tree Overview
- STP Enhancements
- Configuring STP on an Arista Switch
- Troubleshooting STP on an Arista Switch
- Lab - Configuring MSTP

LACP

- LACP Overview
- Configuring LACP
- Troubleshooting LACP

MLAG

- MLAG Overview
- Configuring MLAG
- Troubleshooting MLAG
- Lab - Deploying MLAG

First Hop Redundancy Protocol

- FHRP Overview
- Configuring VRRP
- Configuring VARP
- Lab - Configuring VARP

Build L2LS Campus network using CLI

- Configuring L2LS Campus with CLI

Build L2LS Campus network using CVP configlets

- L2LS Campus design and topology overview
- Configure L2LS campus with CVP configlets

Build L2LS Campus network using CVP Studios

- Onboarding devices to Studios
- Configure L2LS network using Studios
- Configure access interfaces
- Submit workspace and execute change control
- Configure L2LS Campus w/ext gateway using Studios
- Lab – Deploying L2 Campus with Studios

BUILDING A L3 WIRED CAMPUS NETWORK

L2LS Review

- L2LS Design Review
- L2LS Example

L3LS Design

- Introduction to L3LS Design
- VXLAN and EVPN Importance in L3LS Design
- Why BGP Underlay in L3LS Design

Introduction to BGP

- Introduction to BGP and Routing
- BGP Functions and Facts
- BGP Operation
- BGP Route Advertisement

eBGP Underlay configuration

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

BGP underlay deployment options

- BGP with MLAG
- Variations of BGP in L2LS
- Lab – L3LS Campus underlay with eBGP

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
- DF Bit, VTEP, MLAG, and Timers

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 IRB vs asymmetric IRB
- Symmetric IRB deep dive
- Configuring symmetric IRB
- Configuring asymmetric IRB
- Lab – L3 EVPN Symmetric IRB

eVPN design best practices

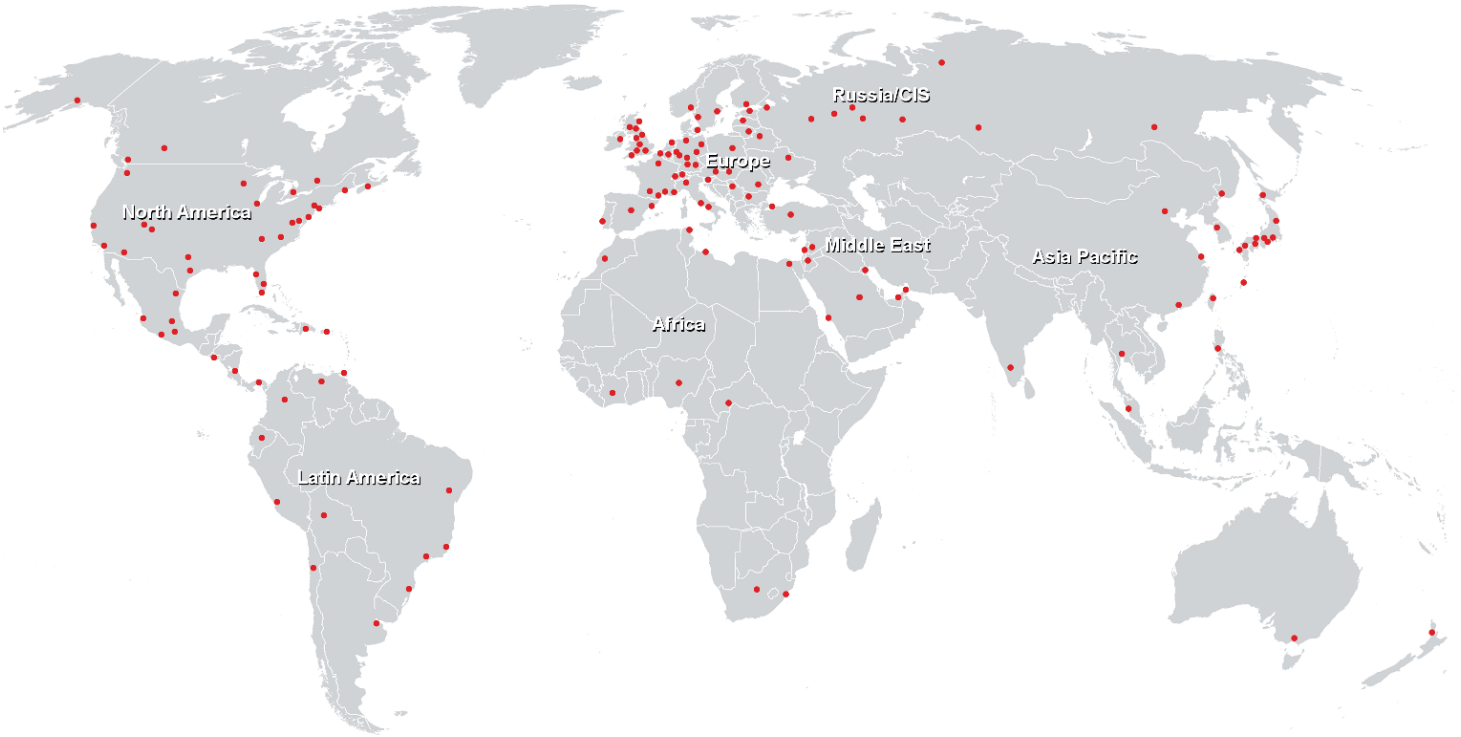
- iBGP between MLAG pairs and eBGP multihop command
- eBGP for underlay and overlay

Build L3LS Campus network using CVP Studios

- Configuring L3LS Campus with CVP Studios
- Configuring L3LS Campus with VXLAN and eVPN using Studios
- Lab – Deploying L3LS Campus with VXLAN and eVPN using Studios

Arista Networking - Campus Engineering (CAMPENG)

Training Centres worldwide





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