Arista Networking - Automation Foundations (AUTOFDN)

ID AUTOFDN **Price** CHF 3,995.—(excl. VAT) **Duration** 5 days

Who should attend

Individuals with mid-to-high level experience as network engineers with prior exposure to Python and Ansible Basics.

Prerequisites

- Knowledge and/or experience with Ansible, Python and Jinja would be beneficial
- Understanding of Arista Layer 2 and L3 network designs
- Experience with Arista CloudVision is beneficial

Course Objectives

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

- Understand the basics of automation using CloudVision, Ansible and Python
- Automate EOS and CloudVision with Ansible
- Automate through various methods such as Python & EOS API's, AVD with GitHub, and PyAVD (AVD with Python)
- Integrate Arista's CloudVision to automate and orchestrate network operations

Course Content

Automation & NetOps foundations

Network automation foundations

- Introduction to network automation
- Approaches to network automation
- History of network automation

Core principles of network automation

- Software development and network automation
- Network automation concepts and practices

Automation tools

Automation tools overview

- Automation tools and data formats
- Programmability IDEs overview

VS Code development environment

- Introduction to Visual Studio Code
- VS Code themes, fonts and icons
- Customizing VS Code layout
- VS Code extensions
- VS Code debugger
- Reviewing VS Code
- LAB – Explore VS Code IDE

Git version control

- Understanding Git version control
- Git demo
- GitHub demo
- LAB – Working with Git
- LAB – Collaborate using GitHub

Python fundamentals

- Why Python matters for network automation
- Understanding Python variables
- Advanced Python concepts
- Working with Python variables, lists and dictionaries
- Introduction to Python and eAPI
- Getting information from EOS devices
- Parsing CLI output with Python
- Parsing JSON with python
- LAB – Python fundamentals
- LAB – Understanding structured data

Understanding APIs

Application programmatic interfaces - APIs

- APIs in network automation
- The history of HTTP and its role in networking
- Understanding HTTP messages
- HTTP authentication

Securing APIs with PKI

- TLS and SSL overview
- TLK certificates and trust chains
- Why use certificates in network automation
- Creating and installing TLS certificates
- Client TLS certificates for API authentication

Using REST API clients

- Introduction to EchoAPI
- REST API client requests and responses
- HTTP Auth with REST API client
- Organizing requests in REST API clients
- REST API client scripts
- LAB – Using REST API clients

Ansible fundamentals

Getting started with Ansible

- Introduction to Ansible
- Ansible use cases

Building automation with Ansible

- Understanding Ansible files
- Working with Ansible variables
- Ansible variables demo
- Using Ansible debug
- Ansible debug demo
- LAB – Ansible fundamentals

CloudVision fundamentals

CloudVision overview

- Introduction to CloudVision
- CloudVision deployment
- CloudVision and device communication

CloudVision high availability

- CloudVision cluster redundancy
- CloudVision dual cluster deployment
- CloudVision backups

CloudVision portal setup and operations

- CloudVision multi-node OVA installation demo
- Upgrading CloudVision demo
- CloudVision backup and restore demo
- Getting familiar with CloudVision interface demo
- LAB – Navigating CloudVision

CloudVision network provisioning

- CloudVision device management overview
- Legacy provisioning overview and demo
- MLAG configuration demo
- CloudVision snapshots
- LAB – Configlets
- LAB - Snapshots

Change control

- CloudVision change control overview
- Change control demo
- LAB – Change control

Automated device onboarding in CloudVision

- Zero touch provisioning and replacement
- ZTP demo – deploying vEOS to CloudVision
- ZTR demo – replacing a device in CloudVision

CloudVision Studios

- Configuration management with Studios
- CloudVision tags
- Inventory and topology Studio overview
- Inventory and topology Studio demo
- Interface configuration and Studio demo
- Date and time Studio overview
- Date and time Studio demo
- Postcard telemetry Studio overview
- Mirroring Studio overview
- Authentication Studio overview
- Authentication Studio demo
- Management connectivity Studio demo
- LAB – Using Studios
- LAB – Clean up Studios

Working with static config Studios

- Static configuration Studio overview
- Adding devices to CloudVision Studios inventory
- Using static configuration Studio
- Migrating legacy configlets to Studios
- LAB – Static configuration Studio

Software management with CloudVision

- Software management overview
- Software image management demo

CloudVision telemetry

- Modern network telemetry with CloudVision
- Telemetry use cases in CloudVision
- Compliance overview

CloudVision monitoring overview

- CloudVision dashboards
- CloudVision events
- CloudVision topology overview
- Topology icons and settings
- CloudVision topology tags

AQL and NetSQL

- Querying NetDB and NetSQL
- Querying ARP entries using AQL notebook and dashboards
- Querying BGP sessions using AQL notebook and dashboards
- Querying device state and software versions using NetSQL
- LAB – Dashboards and events
- LAB - Topology

Using Ansible and Jinja

Network automation with Jinja

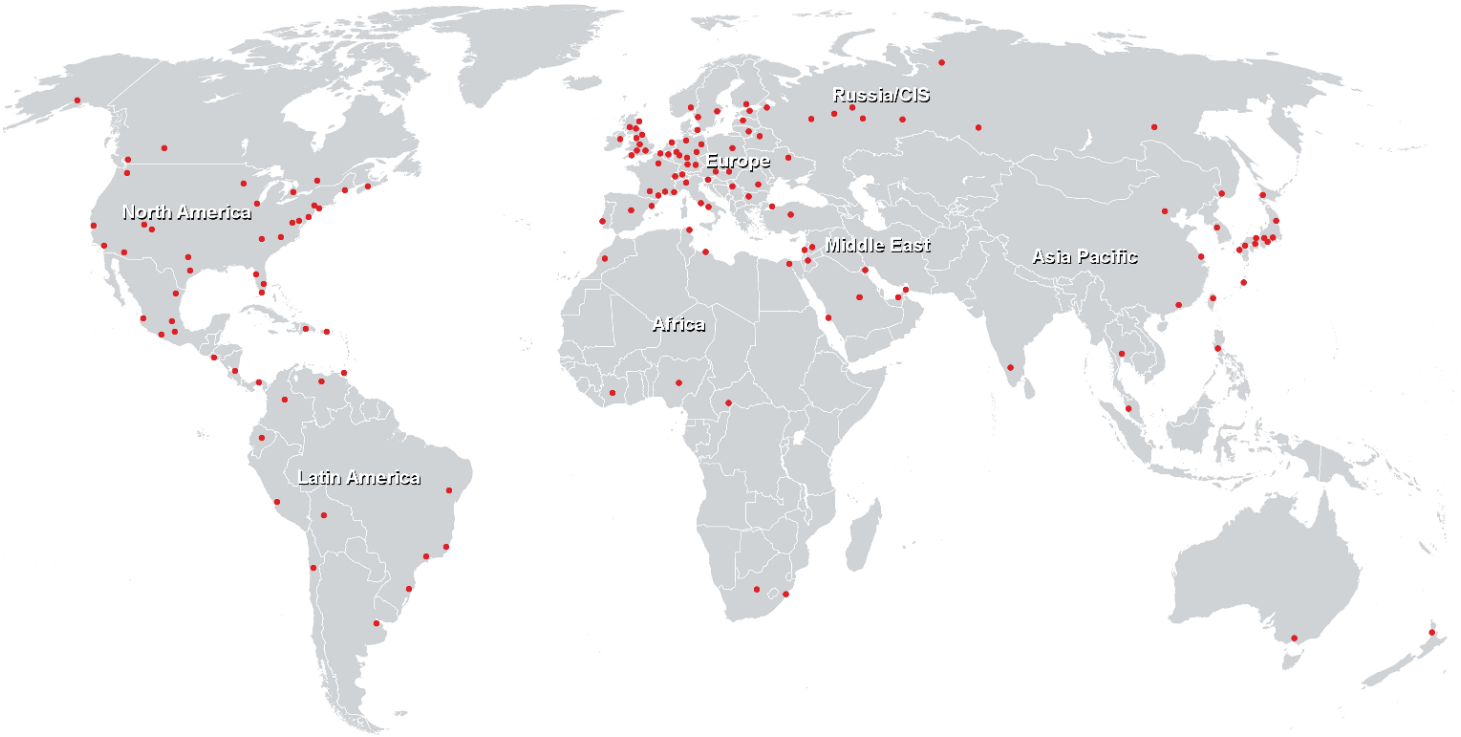
- Introduction to Jinja
- Jinja file layout
- Jinja variable files
- Building and organizing data models
- Building and applying configurations with Ansible and CloudVision

Building and deploying configurations with Jinja

- Why Jinja – manual configuration challenges
- Setting up Jinja and building your first template in Ansible
- Building the Jinja data model and generating underlay contigs
- Upload and deploy Jinja configs through CloudVision
- Deploying configs directly with eAPI and Jinja
- Deploying Jinja templates via CloudVision configlets
- LAB – Automating configuration with Ansible and Jinja

Arista Networking - Automation Foundations (AUTOFDN)

Training Centres worldwide



Fast Lane Institute for Knowledge Transfer (Switzerland) AG

Husacherstrasse 3
CH-8304 Wallisellen
Tel. +41 44 832 50 80

info@flane.ch, https://www.flane.ch