



Information Technology

Network Automation with Python and Ansible

Course Introduction

This course is designed to provide participants with hands-on experience in automating network tasks using Python and Ansible. It covers the essentials of Python scripting for network automation, the architecture and operation of Ansible, and practical techniques for automating configuration and management of network devices. By the end of the course, learners will be able to write scripts and playbooks to efficiently manage multi-vendor network environments.

Target Audience

- Network Engineers
- Systems Administrators
- DevOps Engineers
- IT Professionals
- Network Architects:

Learning Objectives

- Understand the role and importance of network automation
- Set up the development environment for Python and Ansible
- Learn Python programming fundamentals relevant to network automation

Course Outline

- **DAY 01**

Introduction to Network Automation and Python Basics

- Network automation concepts and benefits
- Installing and configuring Python environment
- Python syntax, variables, data types, and control flow
- Functions and modules in Python
- Introduction to working with network libraries (e.g., Netmiko)

- **Day 02**

Python for Network Device Automation

- Apply Python to interact with network devices
- Automate basic tasks such as device configuration and data collection
- SSH access using Python (Netmiko/Paramiko)
- Collecting device information using Python scripts
- Reading from and writing to files
- Parsing data with Regular Expressions and JSON/YAML
- Intro to REST APIs and using Python to consume them

- **Day 03**

Introduction to Ansible and Its Architecture

- Understand Ansible components and structure
- Learn how to write and execute Ansible playbooks
- Ansible installation and configuration
- Inventory files and YAML syntax
- Writing Ansible playbooks
- Using variables, loops, and conditionals in playbooks
- Executing ad-hoc commands and modules

- **Day 04**

Ansible for Network Automation

- Automate network tasks using Ansible modules
- Manage configurations across multiple network devices
- Ansible network modules (ios_config, ios_facts, etc.)
- Templating with Jinja2

- Managing VLANs, interfaces, and routing protocols via playbooks
- Multi-device configuration deployments
- Working with Ansible facts and filters
- **Day 05**

Integration, Troubleshooting & Real-World Use Cases

- Integrate Python and Ansible for hybrid automation
- Troubleshoot scripts and playbooks
- Apply skills to real-world scenarios
- Combining Python and Ansible for complex tasks
- Error handling and debugging in automation scripts
- Version control with Git
- Final project: Automate a complete network deployment scenario
- Best practices and career tips

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
April 28, 2025	May 2, 2025	5 days	5950.00 \$	South Africa - Cape Town
July 21, 2025	July 25, 2025	5 days	4950.00 \$	UAE - Abu Dhabi
Nov. 24, 2025	Nov. 28, 2025	5 days	4950.00 \$	UAE - Dubai