

Python Network Automation

Audience Course Python Network Automation

The Course Python Network Automation is intended for developers and system administrators who want to learn how to use Python to configure and analyze network equipment.

Prerequisites for the Python Network Automation Training

Experience with Python programming is not strictly necessary to participate in this course. Experience with Python programming is beneficial to good understanding.

Implementation Training Python Network Automation

The theory in the course Python Network Automation is discussed on the basis of presentation slides. Illustrative demos clarify the concepts. The theory is interchanged with exercises. Course times are from 9:30 to 16:30.

Certificate Python Network Automation

Participants receive an official certificate Python Network Automation after successful completion of the course.

Duration: 4 days

Price: € 2650

[Open Schedule](#)



Python Network Automation



Content Course Python Network Automation

In the course Python Network Automation participants learn to use Python and special Python networking libraries to automatically manage and configure networks. The focus is on the use of Python for interacting with network equipment. The course uses the Graphical Network Simulator-3, GNS3, with which complex networks can be simulated. Network engineers can use the acquired knowledge directly in their daily work.

Python Intro

The course starts with a discussion of the basic Python syntax with variables, data types, control flow, functions, modules and packages.

Classes and Objects

Next attention is paid to classes and objects in Python, including encapsulation, inheritance, polymorphism and abstract classes.

Python Libraries

Widely used Python libraries such as those for regular expressions and the access of files including XML and JSON files are on the program of the course as well.

Python Network Access

The Graphical Network Simulator-3, GNS3, is then loaded with images of Cisco IOS, Juniper vSRX and Arista vEOS to access and configure these network systems with Python.

Serial Connections

Setting up serial connections, encoding and decoding, configuring Cisco devices and module enhancement are treated also.

Network Automation

Then the course will discuss the automation of networks with the SSH tools Paramiko and Netmiko and the open source Napalm Network API.

Parallel Processing

Finally, after a treatment of making backups, parallel processing in Python with multiple threads and processes is on the program. Netmiko is used here as well.

Modules Course Python Network Automation

Module 1 : Python Essentials	Module 2 : Classes and Objects	Module 3 : Python Libraries
Python 2 versus Python 3 Lines and Indentation Python Data Types Numbers and Strings Lists and Tuples Sets and Dictionaries Python Flow Control Comprehensions Functions Modules and Packages Exception Handling	Python Object Orientation Creating Classes Class Members Creating and Using Objects Property Syntax Static Methods Encapsulation Inheritance and Polymorphism Constructor Chaining Overriding Methods Abstract Classes	Regular Expressions Logging Log Configuration Generators Unit Testing Dates and Times JSON Access XML Access Numpy Library Pandas Library Plotting
Module 4 : Python Network Access	Module 5 : File Access	Module 6 : Serial Connections
VM Installations Install GNS3 VM Cisco IOS Images Juniper vSRX Images Arista vEOS Images Connect to Images Cisco IOS in GNS3 Arista vEOS in GNS3 Juniper vSRX in GNS3 Configuring Images	Creating Files File Processing Reading Files Tell, Seek and Cursors With Keyword Reading into List CSV File Access CSV Custom Delimiters Iterating over Files Copying Files	Bytes Objects Encoding and Decoding Communication Basics Connecting to Console Port Open Connection to Device Configure Cisco Devices Pyserial Refactoring Custom Serial Module Module Enhancement Configuration Automation
Module 7 : Network Automation	Module 8 : Backups	Module 9 : Parallel Processing
Telnet Protocol Basics Connecting to Network Devices getpass Module Configure Multiple Devices Configure Loopback Interfaces Automation with Paramiko SSH on Cisco Devices Configure OSPF Automation with Netmiko Automation with Napalm	Cisco Backup Configuration Secure Copying with SCP Netmiko Prompt Global Config Mode Backup Improvement Preparing Router for SCP Configure EOS Switches Check Interface Status Merging Configurations Configuration Rollback	Processing Theory Multiple Threads Multiple Processing Subprocess Module Os Module Synchronization Global Interpreter Lock Multiprocessing with Netmiko Shutil Module Troubleshooting Netmiko