



PYTHON TRAINING

Python For Networking

Master Python scripting for network automation, configuration, and infrastructure management.

DURATION

2 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

- Globally Recognized Certification

- Expert-Led Hands-On Training

- Flexible Scheduling

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COURSE OVERVIEW

This intermediate-level "Python For Networking" course at Computer Pride is meticulously designed to equip network professionals with the essential Python scripting skills needed to automate, manage, and scale modern network infrastructures. In today's dynamic IT landscape, manual network configurations and troubleshooting are no longer sustainable. This course bridges the gap between traditional networking and programming, empowering participants to leverage Python's versatility for tasks ranging from routine device configurations to complex network orchestration. You will delve into Python fundamentals tailored for network contexts, explore popular libraries for interacting with network devices via SSH/Telnet, and master the art of API-driven network management.

Upon completion, you will be proficient in automating repetitive network tasks, parsing configuration data, monitoring network health, and interacting with SDN controllers and cloud-based network services. The professional benefits are profound: increased operational efficiency, reduced human error, faster deployment cycles, and the ability to proactively manage intricate network environments. This certification significantly enhances your value proposition in the job market, positioning you as a forward-thinking network engineer ready to tackle the challenges of next-generation networks.

Duration	2 hours
Level	Intermediate
Vendor	Python

COURSE CURRICULUM

01 Module 1: Python Fundamentals for Network Engineers

- Introduction to Python syntax and data structures (lists, dictionaries, tuples)
- Control flow statements (if/else, for loops, while loops)
- Functions and modules in Python
- Setting up a Python development environment (pip, virtual environments)
- Basic file I/O for network data

02 Module 2: Interacting with Network Devices

- Connecting to devices using Telnet and SSH (paramiko, telnetlib)
- Introduction to Netmiko for multi-vendor device interaction
- Executing show commands and capturing output
- Sending configuration commands and validating changes
- Error handling and exception management in network scripts

03 Module 3: Network Configuration Management & Data Parsing

- Parsing command-line output using regular expressions (re module)
- Using TextFSM for structured data extraction
- Configuration templating with Jinja2
- Working with YAML and JSON for configuration data
- Building idempotent configuration scripts

04 Module 4: API-Driven Network Management

- Introduction to REST APIs and HTTP methods
- Interacting with network devices via RESTCONF/NETCONF
- Using Python's requests library for API calls
- Working with SDN controllers (e.g., Cisco DNA Center, OpenDaylight) APIs

- Automating cloud network services (e.g., AWS VPC, Azure VNet) with Python SDKs

05 Module 5: Network Monitoring and Troubleshooting Automation

- Automating ping and traceroute checks
- Collecting network device telemetry data
- Basic SNMP interactions with Python
- Implementing automated health checks and alerts
- Log file parsing and analysis for troubleshooting

06 Module 6: Building Practical Network Automation Tools

- Developing a simple network inventory script
- Creating a script for bulk configuration deployment
- Automating VLAN provisioning or firewall rule updates
- Integrating Python scripts with version control (Git basics)
- Best practices for secure and scalable network automation

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Network Automation Engineer**
- > **DevOps Network Specialist**
- > **Cloud Network Architect (with automation focus)**

FREQUENTLY ASKED QUESTIONS

Q: What specific types of network devices and vendors will I learn to automate using Python in this course?

This course focuses on automation principles applicable across various vendors. You'll gain practical experience automating common tasks on devices from major vendors like Cisco, Juniper, and Arista, primarily through SSH/Telnet with libraries like Netmiko, and also learn to interact with devices supporting RESTCONF/NETCONF APIs, which are becoming standard across modern network equipment. The core methodologies are transferable, allowing you to adapt your skills to any programmable network device.

Q: What foundational networking knowledge and Python experience are recommended as prerequisites for 'Python For Networking'?

To get the most out of this course, a solid understanding of fundamental networking concepts is crucial. This includes familiarity with TCP/IP, routing protocols (e.g., OSPF, BGP), switching concepts (VLANs, STP), and basic network troubleshooting. While it's an 'Intermediate' Python course, a basic grasp of Python syntax (variables, data types, basic loops) would be beneficial, though Module 1 will cover Python fundamentals tailored for network use cases.

Q: How will the skills acquired in this course directly impact my daily responsibilities as a network administrator or engineer?

This course will fundamentally transform your daily workflow. You'll learn to automate repetitive and time-consuming tasks such as configuration backups, firmware upgrades, device auditing, and configuration changes across hundreds of devices. This will free up significant time for strategic network planning and complex problem-solving, reduce human error,

and enable rapid, consistent deployments. You'll move from reactive troubleshooting to proactive network management, significantly increasing your efficiency and job satisfaction.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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