PYTHON TRAINING

Python Network Engineering Training Certification Course

Learn to automate network tasks, configure devices, and manage infrastructure using Python. Become a skilled Python Network Engineer.

DURATION
2 hours

LEVEL
Intermediate

FORMAT
Instructor-Led

- Globally Recognized Certification
- Expert-Led Hands-On Training
- Flexible Scheduling

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COURSE OVERVIEW

The Python Network Engineering Training Certification Course is meticulously designed for IT professionals eager to revolutionize their approach to network management through powerful scripting and automation. This intensive program bridges the gap between traditional manual networking practices and modern, programmatic control, equipping you with the essential skills to automate repetitive tasks, manage device configurations at scale, and significantly enhance network visibility. You'll delve into core Python concepts tailored specifically for network environments, exploring fundamental libraries and frameworks that facilitate seamless interaction with network devices, such as Netmiko for SSH/Telnet automation, Paramiko for secure remote connections, and the 'requests' library for interacting with RESTful APIs.

This certification will empower you to transition from error-prone, manual configurations to highly efficient, script-driven operations. You will learn to effectively parse complex device output, deploy consistent configuration changes across multiple vendors, implement robust network monitoring solutions, and integrate with modern network architectures leveraging APIs like RESTCONF and NETCONF. By mastering these critical skills, you'll significantly boost your productivity, reduce operational costs, and contribute to building more resilient and agile network infrastructures.

Upon successful completion, you will possess a robust and practical toolkit for network automation, positioning you as an invaluable asset in any organization striving for digital transformation and operational excellence. This course is ideally suited for network engineers, administrators, and architects who are keen to future-proof their careers and fully embrace the power of software-defined networking principles.

Duration	2 hours
Level	Intermediate
Vendor	Python

COURSE CURRICULUM

01 Module 1: Python Fundamentals for Network Engineers

- Python basics refresher for network professionals
- Setting up your network automation development environment (IDE, virtual environments)
- Introduction to interacting with network devices (SSH, Telnet concepts)
- Overview of key Python networking libraries (Netmiko, Paramiko, Nornir)

02 Module 2: Programmatic Device Interaction with Netmiko & Paramiko

- Establishing secure SSH and Telnet connections using Netmiko
- Executing CLI commands and parsing output efficiently
- Automating configuration changes (sending config sets, commit/rollback)
- Secure file transfers (uploads/downloads) with Paramiko (SFTP)
- Implementing robust error handling and exception management in network scripts

03 Module 3: Configuration Management and State Automation

- Dynamic configuration generation using Jinja2 templating
- Developing idempotent configuration scripts for consistent deployments
- Automating network device backups and restoration processes
- Managing multiple devices concurrently (introduction to threading/asyncio for network tasks)

04 Module 4: Interacting with Network APIs (RESTCONF & NETCONF)

- Understanding Network APIs: REST, RESTCONF, and NETCONF protocols
- Utilizing the 'requests' library for effective RESTful API interactions
- Working with data serialization formats: JSON and XML for network data exchange
- Practical examples with vendor-specific APIs (e.g., Cisco DNA Center, Meraki, Arista EOS)
- Implementing basic API authentication methods for secure access

05 Module 5: Network Monitoring, Data Parsing, and Troubleshooting Automation

- Extracting structured data from unstructured CLI output using TextFSM and Genie
- Building simple monitoring scripts (e.g., interface status, routing table health checks)
- Introduction to log analysis and event correlation for network events
- Automating common network troubleshooting workflows

06 Module 6: Advanced Automation Concepts and Capstone Project

- Integrating Python scripts with network orchestrators and automation platforms (e.g., Ansible basics)
- Developing a comprehensive network automation capstone project (e.g., VLAN deployment, configuration audit)
- Best practices for script development, documentation, and version control (Git essentials)
- Strategies for deploying and integrating network automation solutions into production environments

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

> **Network Automation Engineer**

> **DevNet Specialist**

> **Senior Network Administrator with Automation Expertise**

FREQUENTLY ASKED QUESTIONS

Q: What foundational programming knowledge is recommended before enrolling in this Python Network Engineering course?

While the course includes a concise Python basics review tailored for network professionals, participants are expected to have a foundational understanding of general Python programming concepts. This includes familiarity with variables, data types (such as lists, dictionaries, strings), control flow statements (if/else, loops), and the ability to define and use functions. Prior experience with basic scripting or another programming language is highly beneficial, alongside a solid grasp of core networking fundamentals (OSI model, routing protocols, switching concepts, IP addressing, and subnetting).

Q: How does this certification directly enhance my career prospects as a Network Engineer in Kenya's dynamic IT landscape?

This certification significantly enhances your career prospects by positioning you at the forefront of modern network engineering, equipping you with highly sought-after automation skills crucial for efficiency, scalability, and innovation. In Kenya, organizations across various sectors – including telecommunications, financial services, and data centers – are increasingly adopting automation to manage complex network infrastructures. Graduates will be uniquely prepared for roles requiring programmatic control over networks, capable of reducing manual errors, accelerating deployments, optimizing operational costs, and implementing robust security policies, making them exceptionally attractive to employers looking to modernize their network operations and drive digital transformation.

Q: Will the course cover vendor-specific network automation tools, or is it purely focused on generic Python libraries?

This course primarily focuses on mastering core Python libraries such as Netmiko, Paramiko, requests, and Jinja2, which are inherently vendor-agnostic and provide a powerful, foundational understanding of programmatic network interaction applicable across diverse environments. However, to ensure practical relevance, the curriculum also includes dedicated sections with practical examples and discussions on how these core libraries effectively integrate with and apply to vendor-specific APIs (e.g., Cisco, Juniper, Arista) and introduces concepts relevant to enterprise-grade automation platforms like Ansible. This balanced approach ensures you can apply your Python automation skills across multi-vendor networks and various automation ecosystems.

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+	10,000+	50+
Years of Excellence	Professionals Trained	Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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