Current Technologies
Computer Learning Centers

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WHERE GREAT TRAINING HAPPENS EVERYDAY!

Intermediate Python for Network Engineers (IPYNE)

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The Intermediate Python for Network Engineers (IPYNE) training is tailored for network professionals seeking to expand their skills in network programmability and automation using Python. Ideal for those looking to deepen their knowledge, this training emphasizes practical applications that enhance network efficiency and reduce repetitive tasks through automation. Participants will gain hands-on experience with real-world use cases, such as automating device configurations, managing network inventories, and integrating with Cisco products such as IOS XE, Meraki, and ThousandEyes using REST APIs. The training introduces intermediate programming concepts such as creating modular and reuseable code with object-oriented programming, building simple web interfaces with Flask, and leveraging large language models for intelligent automation workflows. Upon completion, you will be able to design and implement Python-based automation solutions that interact with network infrastructure and streamline operational tasks.

This training also earns you 29 Continuing Education (CE) credits toward recertification.

How you'll benefit

This class will help you:

- Gain hands-on experience using Python to automate, configure, and monitor network devices, increasing efficiency and reducing manual errors
- Develop practical skills in leveraging modern tools and libraries—such as Netmiko, PyATS, and REST APIs—for scalable and reliable network automation
- Learn to build and deploy reusable automation solutions, including scripts, web interfaces, and API wrappers, to streamline network operations
- Acquire foundational knowledge in integrating advanced technologies like CI/CD, telemetry, and large language models (LLMs) to enhance and future-proof network management
- Earn 29 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are in the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Course Duration
5 days

Course Price
$4,395.00 or 44 CLCs

Methods of Delivery
- Instructor Led
- Virtual ILT
- On-Site

Who Should Attend

The primary audience for this course is as follows:

- Network Engineers with little or no programming or Python experience
- Network Administrators
- Network Managers
- Systems Engineers

Prerequisites

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Familiarity and basic understanding of core networking concepts
- Familiarity with Cisco IOS-XE software or other Cisco network device configuration and operation skills
- Cisco CCNA certification or equivalent knowledge

OUTLINE

Module 1: Python Programming for Network Engineers

Module 2: Write Your First Python Scripts

Module 3: Python Development Environment Setup

Module 4: Device Inventory Automation

Module 5: Scale Configuration of Network Devices

Module 6: Network Monitoring and Validation

Module 7: Device Configuration Backup Automation

Module 8: HTTP API Fundamentals

Module 9: Cisco ThousandEyes Network Insights with HTTP API Automation

Module 10: Network Automation Debugging and Testing

Module 11: HTTP API Automation Wrapper

Module 12: Build a Web Interface for Network Automation

Module 13: Large Language Models for Network Automation

LAB OUTLINE

- Lab 1: Interact with Python Using the Interpreter
- Lab 2: Run Your First Script
- Lab 3: Install Python and Setup Developer Environment
- Lab 4: Create a Device Inventory Tool
- Lab 5: Create a Network Device Configuration Tool
- Lab 6: Monitor and Validate Device Configurations
- Lab 7: Create a Backup Tool for Network Configurations
- Lab 8: Retrieve Data from Cisco Meraki Dashboard API
- Lab 9: Create and Monitor ThousandEyes Network Tests
- Lab 10: Write Unit Tests for Network Automation Scripts
- Lab 11: Harden Automation Scripts with Logging and Error Handling

- Lab 12: Build a Reusable Cisco ThousandEyes API Automation Wrapper
- Lab 13: Build a Web Interface for Network Device Management
- Lab 14: Build a Web Interface for Network Automation
- Lab 15: Build a Network Automation Tool with Ollama