IPYNE

Intermediate Python for Network Engineers

40 horas | Profissional | Cisco

Cisco Continuing Education Credits

29 CE Credits

INTRODUÇÃO

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, with hands-on experience automating Cisco IOS XE, Meraki, and ThousandEyes.

OBJETIVO DO CURSO

Describe Python versatility for network programmability and automation

Explain why network programmability is needed

Describe programmatic interaction with network devices

Identify practical Python tools for network automation

Write and run basic Python scripts

Introduce standard and third-party libraries

Implement Python tools for automating device inventory

Organize code with functions for inventory management

Use external libraries (Netmiko) for SSH connections

Parse and analyze device output

Implement tools for testing with PyATS and Genie

Create tools for backing up device configs

Describe HTTP REST API fundamentals

Automate interactions with APIs (Cisco Meraki, ThousandEyes)

Explain debugging, logging, unit testing, and CI/CD integration

Handle API errors and implement telemetry with OpenTelemetry

PÚBLICO-ALVO

Network Engineers with little or no Python experience, Network Administrators, Network Managers, Systems Engineers

PRÉ-REQUISITOS

No formal prerequisites. Recommended: core networking concepts, Cisco IOS-XE familiarity, CCNA certification or equivalent.

CONTEÚDO PROGRAMÁTICO

Course Outline

Python Programming for Network Engineers

Write Your First Python Scripts

Python Development Environment Setup

Device Inventory Automation

Scale Configuration of Network Devices

Network Monitoring and Validation

Device Configuration Backup Automation

HTTP API Fundamentals

Cisco ThousandEyes Network Insights with HTTP API Automation

Network Automation Debugging and Testing

HTTP API Automation Wrapper

Build a Web Interface for Network Automation

Large Language Models for Network Automation

Lab Outline

Interact with Python Using the Interpreter

Run Your First Script

Install Python and Setup Developer Environment

Create a Device Inventory Tool

Create a Network Device Configuration Tool

Monitor and Validate Device Configurations

Create a Backup Tool for Network Configurations

Retrieve Data from Cisco Meraki Dashboard API

Create and Monitor ThousandEyes Network Tests

Write Unit Tests for Network Automation Scripts

Build a Reusable Cisco ThousandEyes API Automation Wrapper

Build a Web Interface for Network Device Management

Build a Network Automation Tool with Ollama