PYTHON PROGRAMMING FOR CISCO
NETWORKING ENGINEERS

Course Code: 7254

Learn how to configure and manage Cisco network devices using Python programming.

Using hands-on lab-based learning, this course takes you all the way from the basics of Python programming to the specific skills and tools needed to manage network devices en masse using programming and reduces implementation time for software-based technologies in a Cisco enterprise.

The course provides a comprehensive Python programming experience for Cisco networking professionals to automate and manage across the entire Cisco networking product line. With a focus on the Python programming language, you will learn to write, edit, modify, and expand complex Python scripts to utilize APIs and data models to effectively automate Cisco networking tasks throughout the enterprise. This will enable you to create and implement Python programming to automate configuration and operational needs in a Cisco enterprise.

What You’ll Learn

When enroll in Python Programming for Cisco Networking Engineers training course at Global Knowledge, you will do the following:

• Write and test several functional Python scripts.
• Write, edit, modify, and expand complex Python scripts to utilize APIs and data models.
• Use the following APIs to automate configuration and management of Cisco
networking devices:
  - Paramiko
  - REST
  - XML
  - JSON
  - NETCONF
  - RESTCONF

- Use the YANG and MIT data models to read and manage objects to automate configuration and management of Cisco networking devices.
- Use the following DevOps / learning tools to enable efficient use of APIs and data models and effectively create Python scripts:
  - Postman
  - IDEs for both Windows and Linux
    - Notepad++
    - Sublime
    - PyCharm
    - Microsoft Visual Studio
    - Anaconda
    - Linux VI Editor
  - Lint tools for XML and JSON
  - Visore for Cisco Data Center
  - API Inspector for Cisco ACI
  - YANG Validator

- Automate configuration of multiple Cisco devices.

Who Needs to Attend

Engineers who implement software-based technologies in a Cisco enterprise or configure/manage network devices.

Prerequisites

Knowledge of Cisco networking devices is required. Knowledge of ACI is useful but not a prerequisite. Knowledge of programming or Python is NOT required.
GLOBAL KNOWLEDGE

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CLASSROOM LIVE $4,395 USD 5 days

Classroom Live Outline

• Introduction
• Fundamental Python programming
• Python data structure
• Using Python to read from and write to a file
• Python loops and conditional code
• GitHub
• Programming Python Functions
• Python Libraries, Packages, and Modules
• Integrated Development Environments
• Python code analysis and error handling
• Cisco-supported APIs and automation protocols
• Cisco IOS XE RESTCONF API
• Cisco IOS XE NETCONF API
• Cisco ASA REST API
• Cisco Nexus NX-OS APIs
• YANG data model
• Cisco Application Centric Infrastructure
• Cisco ACI whitelists
• Extracting XML and JSON from the Cisco ACI
• Modifying the ACI policy with Postman and Python
• The Cisco ACI Visore tool
• Cisco UCS topology
• Configuring UCS with Python
• LABS
• Classroom Live Labs
• Practice the effects of fundamental Python commands
• Program Python data structure
• Create Python scripts to interact with files
• Write scripts to demonstrate Python loops and conditional code
• Create a Python script
• Share files using Git and GitHub
• Write Python Functions
• Write Python code of Modules and Packages
• Implement Python code in IDEs
• Debug and test Python code
• Create, execute, and validate a Python script with an IDE
• Explore and validate automation protocols
• Perform a configuration change on an IOS XE device with the RESTCONF API
• Perform a configuration change on an IOS XE device with the NETCONF API
• Perform a configuration change on an ASA device with the REST API
• Perform a configuration change on a Nexus NX-OS device using APIs
• Troubleshoot existing Python scripts with an IDE
• Analyze YANG files with the online YANG validator tool
• Perform an ACI fabric discovery
• Manually configure a Cisco ACI whitelist
• Extract XML and JSON from the Cisco ACI
• Utilize the API inspector and Postman to create Python scripts
• Use the Cisco ACI Visore tool
• Create a Python script to modify an ACI fabric
• Manually configure Cisco UCS
• Configure UCS with Python
• Create a Python script to modify a UCS configuration

Classroom Live Labs
In addition to coursework, Global Knowledge also provides hands-on labs that present students with real-world scenarios that they can bring directly to the workplace. With labs, you will:
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Jan 27 - 31, 2020 | 8:30 AM - 4:30 PM | SAN JOSE, CA
Mar 2 - 6, 2020 | 8:30 AM - 4:30 PM | DALLAS, TX
Mar 9 - 13, 2020 | 8:30 AM - 4:30 PM | WASHINGTON, DC
Mar 16 - 20, 2020 | 8:30 AM - 4:30 PM | RESEARCH TRIANGLE PARK, NC
May 18 - 22, 2020 | 8:30 AM - 4:30 PM | WASHINGTON, DC
Virtual Classroom Live Outline

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Dec 9 - 13, 2019 | 8:30 AM - 4:30 PM EST
Jan 13 - 17, 2020 | 8:30 AM - 4:30 PM EST
Jan 27 - 31, 2020 | 11:30 AM - 7:30 PM EST
Feb 3 - 7, 2020 | 8:30 AM - 4:30 PM EST
Feb 24 - 28, 2020 | 8:30 AM - 4:30 PM EST
Mar 2 - 6, 2020 | 9:30 AM - 5:30 PM EST
Mar 9 - 13, 2020 | 8:30 AM - 4:30 PM EST
Mar 23 - 27, 2020 | 11:30 AM - 7:30 PM EST
Apr 6 - 10, 2020 | 8:30 AM - 4:30 PM EST
Apr 20 - 24, 2020 | 11:30 AM - 7:30 PM EST
May 11 - 15, 2020 | 8:30 AM - 4:30 PM EST
May 18 - 22, 2020 | 9:30 AM - 5:30 PM EST
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PRIVATE GROUP TRAINING 5 days

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

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