Programming for Network Engineers (PRNE) v2.0

What you'll learn

The Programming for Network Engineers (PRNE) v2.0 training is designed to equip you with fundamental skills in Python programming. Through a combination of lectures and lab experience in simulated network environments, you will learn to use Python basics to create useful and practical scripts with Netmiko to retrieve data and configure network devices. Upon completion of this training, you should have a basic understanding of Python, including the knowledge to create, apply, and troubleshoot simple network automation scripts.

How you'll benefit

This training will help you:

Explain the need for network engineers to learn how to program

Explain how programming relates to the journey into network automation and programmability

Create useful and practical scripts to retrieve data and configure network devices

Create, apply, and troubleshoot simple network automation scripts

Gain hands-on experience with Python programming

Who should enroll

This training is intended for:

Network administrators

Network engineers with little or no programming or Python experience

Network managers

Systems engineers

Technology areas

Network programming

Python

Network engineering

Training overview

Objectives

After taking this training, you should be able to:

Create a Python script

Describe data types commonly used in Python coding

Describe Python strings and their use cases

Describe Python loops, conditionals, operators, and their purposes and use cases

Describe Python classes, methods, functions, namespaces, and scopes

Describe the options for Python data manipulation and storage

Describe Python modules and packages, their uses, and their benefits

Explain how to manipulate user input in Python

Describe error and exception management in Python

Describe Python code debugging methods

Prerequisites

Before taking this training, you should have:

Familiarity with Cisco IOS®-XE software or other Cisco network device configuration and operation skills

Basic network management knowledge

Cisco CCNA® certification or equivalent knowledge

The following Cisco training may help you meet these prerequisites:

Implementing and Administering Cisco Solutions (CCNA)

Lab outline

Execute Your First Python Program

Use the Python Interactive Shell

Explore Foundation Python Data Types

Explore Complex Python Data Types

Use Standard String Operations

Use Basic Pattern Matching

Reformat MAC Addresses

Use the if-else Construct

Use for Loops

Use while Loops

Create and Use Functions

Create and Use Classes

Use the Python main() Construct

Traverse the File Structure

Read Data in Comma-Separated Values (CSV) Format

Read, Store, and Retrieve Data in XML Format

Read, Store, and Retrieve Date in JavaScript Object Notation (JSON) Format

Read, Store, and Retrieve Data in a Raw or Unstructured Format