Cisco DNA Programmability Fundamentals (DNAPF)

Course Outline

Module 1: Programmable Infrastructure Overview

- Lesson 1: Digital Enterprise Definition
- Lesson 2: The 4 Pillars of Digitization (IoT, Mobility, Big Data, and Cloud)
- Lesson 3: Digital Disruption
- Lesson 4: What is Network Programmability?
- Lesson 5: What to Automate?
- Lesson 6: Business Benefits of Programmability
- Lesson 7: Simplification
- Lesson 8: Quantifying Programmability
- Lesson 9: Programmability Use Cases

Module 2: Cisco's Digital Network Architecture (DNA)

- Lesson 1: The Digital Business
- Lesson 2: Digital Network Architecture Overview
- Lesson 3: Digital Network Architecture Components
- Lesson 4: Benefits of DNA
- Lesson 5: DNA Use Cases
- Lesson 6: Case Study: NYU Security

Module 3: Cisco Programmable Infrastructure

- Lesson 1: Programmability
- Lesson 2: UCS
- Lesson 3: Automation
- Lesson 4: Enterprise Networking (APIC-EN, CMX, PI)
- Lesson 5: Open Daylight (RESTCONF, NETCONF)
- Lesson 6: DC Networking (ACI, NX-OS)
- Lesson 7: Software Defined Storage
- Lesson 8: Collaboration (Spark, Tropo, Acano)
- Lesson 9: Management, Monitoring, and Analytics (UCS-D, DCNM)
- Lesson 10: Case Study: AMBU Health Board - Health Care Automation

Module 4: REST APIs and Python

- Lesson 1: How API enables Business Automation
- Lesson 2: What is REST?
- Lesson 3: How to make a REST API Call
- Lesson 4: REST API Request and Response
- Lesson 5: Python Basics
- Lesson 6: Python and JSON
- Lesson 7: Using Python with Rest APIs
- Lesson 8: Coding and Parsing with Python
- Lesson 9: Use Case - Creating a List of Users

Module 5: Spark API

- Lesson 1: Spark Automation Business Benefits
- Lesson 2: Introduction to Spark API
- Lesson 3: Using Spark API with Python
- Lesson 4: Using Spark API with Postman
- Lesson 5: Use Case - Wi-Fi Public and Guest Access
- Lesson 6: Use Case - Post Message in a Spark Room

Module 6: Cisco Mobility Experience (CMX) APIs

- Lesson 1: CMX Programmability Benefits
- Lesson 2: Introduction to CMX 10 Mobility Services
- Lesson 3: CMX 10 Mobility Services REST API
- Lesson 4: CMX Deep Dive using the Notifications Resource
- Lesson 5: Programming CMX Notifications for Applications and 3rd Party Systems
- Lesson 6: CMX/MSE REST API
- Lesson 7: Use Case - Find the IP Address of the WLC
- Lesson 8: Case Study: University of Melbourne - Wi-Fi Analytics

Module 7: APIC-EM and Rest APIs

- Lesson 1: APIC-EM Automation Enterprise Benefits
- Lesson 2: Controller Basics
- Lesson 3: APIC-EM Overview
- Lesson 4: APIC-EM Applications and Use Cases
- Lesson 5: APIC-EM REST API Python
- Lesson 6: Application Design for Python with APIC-EM
- Lesson 7: Use Case - Find out the Device Name using the IP Address
- Lesson 8: Case Study: Symantec - Network Automation

Module 8: RESTCONF, NETCONF, and YANG

- Lesson 1: Why Models are Important
- Lesson 2: Standard Device Interfaces
- Lesson 3: YANG Data Modeling
- Lesson 4: NETCONF Protocol
- Lesson 5: RESTCONF Protocol
- Lesson 6: Programming with NETCONF and Python
- Lesson 7: Use Case - Create a Python Script to retrieve Interface Stats with NETCONF/YANG and post to Spark

Module 9: Implementing DevOps

- Lesson 1: The Transition to DevOps
- Lesson 2: Spark for Human Interactions
- Lesson 3: Tropo for Human Interactions
- Lesson 4: NeXt UI Tool Kit
- Lesson 5: Programming using Spark, Tropo, and NeXt
- Lesson 6: Use Case - Post Message from a Tropo Script to Cisco Spark Spaces