Automating Cisco Data Center Networking Solutions (CPLL-DCNAUTO)

Duration: 180 Days

The Automating Cisco Data Center Networking Solutions (DCNAUTO) Learning Path teaches you how to implement and optimize automation in Cisco data center environments. You will gain hands-on experience with Cisco Nexus platforms, programmability features, and modern automation tools used to streamline operations across switching, compute, and fabric controllers. The Learning Path covers foundational concepts in network programmability, then advances into day-zero provisioning, on-box automation using Bash, Python, and Guest Shell, and off-box automation with Cisco NX-API, NETCONF/RESTCONF, and YANG models. You will also explore Infrastructure as Code (IaC) workflows with Cisco Nexus Dashboard Fabric Controller (NDFC), Ansible, and Terraform, as well as network validation and testing with Cisco pyATS. Finally, you will learn how AI-driven operations enhance network automation and simplify lifecycle management.

This Learning Path prepares you for the 300-635 DCNAUTO v2.0 exam. If passed, you earn the Cisco Certified Specialist - Data Center Networking Automation certification and satisfy the concentration exam requirements for the Cisco Certified Network Professional (CCNP) Data Center and Automation certifications.

Skills You'll Learn:

- Design automated solutions for Cisco data center networks
- Implement Infrastructure as Code (IaC) using tools like Ansible, Terraform, Jinja2, and Python
- Program network elements and leverage model-driven interfaces such as NETCONF, gNMI, and gRPC
- Configure Day 0 provisioning with POAP and Bash scripting
- Automate on-box tasks using Cisco NX-OS
- Validate network automation using pyATS
- Simulate production-like environments with Cisco Modeling Labs
- Integrate telemetry and health monitoring with Nexus Dashboard
- Extend automation capabilities with AI agents
- Evaluate security implications of AI-based automation solutions
- Demonstrate real-time, intelligent decision-making with AI in data center environments

Learning Path Objectives:

1. Cisco Nexus Switch Automation: Gain hands-on experience automating Cisco NX-OS devices using both on-box and off-box tools. Learn to streamline Day-0 provisioning and enable programmability using APIs and scripting.
2. Network Configuration as Code: Build repeatable and scalable configurations using Ansible, Terraform, and GitOps workflows. Learn to treat infrastructure as code for automated network provisioning.
3. Day-Ops and Automation: Validate network changes, collect telemetry, and automate health checks using tools like pyATS and gNMI. Gain visibility and insight into network operations and troubleshooting.
4. Leveraging AI for DC Automation: Explore how AI enhances network automation workflows. Learn to use AI-assisted tools, evaluate security implications, and integrate AI agents with controllers and platforms.