

## Implementing Automation for Cisco Data Center Solutions

**Duration: 3 Days**    **Course Code: DCAUI**    **Version: 1.0**

### Overview:

The Implementing Automation for Cisco Data Center Solutions (DCAUI) course teaches you how to implement Cisco® Data Center automated solutions including programming concepts, orchestration, and automation tools. Through a combination of lessons and hands-on practice, you will manage the tools and learn the benefits of programmability and automation in the Cisco-powered Data Center. You will examine Cisco Application Centric Infrastructure (Cisco ACI®), software-defined networking (SDN) for data center and cloud networks, Cisco Nexus® (Cisco NX-OS) platforms for device-centric automation, and Cisco Unified Computing System (Cisco UCS®) for Data Center compute. Study the current ecosystem of application programming interfaces (APIs), software development toolkits, and relevant workflows along with open industry standards, tools, and APIs, such as Python, Ansible, Git, JavaScript Object Notation (JSON), Yaml Ain't Markup Language (YAML), Network Configuration Protocol (NETCONF), Representational State Transfer Configuration Protocol (RESTCONF), and Yet Another Generation (YANG).

### Target Audience:

Individuals looking to understand how to implement automated solutions in a Cisco Data Center

### Objectives:

- **After completing this course you should be able to:**
- Review Cisco ACI fundamental concepts and GUI workflows, and create the case for implementing automation
- Introduce the Cisco ACI REST API, the tools already available on the Cisco Application Policy Infrastructure Controller (APIC), and understand basic API interaction using Postman
- Understand the functionality provided by the Python ACI libraries and write scripts that apply configuration and verify state on the Cisco ACI fabric
- Understand Cisco ACI Ansible modules, build playbooks that apply Infrastructure-as-Code concepts to Cisco ACI tenant configuration, and generate a health report using Ansible
- Understand Cisco ACI Apps Center integration and the benefits of integrating Kubernetes infrastructure with Cisco ACI
- Understand the API types and capabilities available on Cisco Nexus product family
- Understand Day 0 operations and how Zero Touch Provisioning (ZTP), PowerOn Auto Provisioning (POAP), and enhanced Pre-boot eXecution Environment (iPXE) fulfill these goals with their respective tooling
- Understand functionality provided by the on-box tooling on the Cisco Nexus series switches and implement simple solutions to improve daily operation
- Use Python and Ansible to leverage the NX-API to implement and verify configuration state using modern workflows
- Understand the paradigm shift of Model-Driven Telemetry and explore a fully set up pipeline for data collection and analysis

### Prerequisites:

Attendees should meet the following prerequisites:

- Basic programming language concepts
- Basic understanding of virtualization and VMware
- Ability to use Linux and command line interface (CLI) tools, such as Secure Shell (SSH) and bash
- CCNP level data center knowledge
- Foundational understanding of Cisco ACI
- CCNABC - Cisco CCNA Routing and Switching Boot Camp (CCNAX - Accelerated)
- DCCOR - Implementing and Operating Cisco Data Center Core Technologies
- DCFNDU - Understanding Cisco Data Center Foundations

### Testing and Certification

Recommended as preparation for the following exams:

- **300-635** - Automating Cisco Data Center Solutions (DCAUTO) exam
- After you pass **300-635 DCAUTO** exam, you earn the **Cisco Certified DevNet Specialist – Data Center Automation and Programmability** certification, and you satisfy the concentration exam requirements for both the CCNP Data Center certification and the Cisco Certified DevNet Professional certification.

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## Content:

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|-------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------|
| Describing the Cisco ACI Policy Model                       | Introducing Cisco NX-OS Programmability                              | Automating Cisco UCS Using Developer Tools      |
| Describing the Cisco APIC REST API                          | Describing Day-Zero Provisioning with Cisco NX-OS                    | Implementing Workflows Using Cisco UCS Director |
| Using Python to Interact with the ACI REST API              | Implementing On-Box Programmability and Automation with Cisco NX-OS  | Describing Cisco DCNM                           |
| Using Ansible to Automate Cisco ACI                         | Implementing Off-Box Programmability and Automation with Cisco NX-OS | Describing Cisco Intersight                     |
| Describing Cisco ACI Apps Center and Kubernetes Integration | Understanding Model-Driven Telemetry                                 |                                                 |

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## Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

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