

Cisco 300-915 DevNet Automation Exam Prep

Prepare for Cisco 300-915 DevNet. Learn Python, APIs, and Ansible for network automation.

IT Certifications Instructor: Brian Mitchell • 5 sections • 46 lessons • 15.50h total

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About this course

This course is for network engineers and IT professionals preparing for the Cisco 300-915 exam. You will learn how to automate Cisco networks using Python, APIs, and tools like Ansible to solve real problems. We will break down complex topics into manageable steps.

You will get hands-on with practical cases, step-by-step guides, and downloadable templates. We cover everything from API fundamentals to advanced automation workflows, using real Cisco device simulations and problem-solving sessions.

Course curriculum

Foundations and Preparation

- **Understanding the Cisco 300-915 Exam Structure (12m)**
Learn the exam format, key domains, and how to plan your study strategy for success.
- **Setting Up Your DevNet Lab Environment (18m)**
Step-by-step guide to configure a virtual lab with Cisco devices and tools for hands-on practice.
- **Python Basics for Network Engineers (25m)**
Get started with Python syntax and data structures essential for network automation tasks.
- **Introduction to REST APIs and HTTP Methods (15m)**
Learn how REST APIs work and use HTTP methods like GET and POST for device communication.
- **Working with JSON and YAML in Automation (20m)**
Practical session on parsing and generating JSON and YAML files for configuration data.
- **Git Basics for Version Control in Automation Projects (10m)**
Use Git to manage your automation scripts and collaborate with team members effectively.
- **Downloadable Templates for Lab Setup and Notes (8m)**
Access ready-to-use templates for organizing your study materials and lab configurations.

Core Automation Concepts

- **Cisco DNA Center and ACI API Fundamentals (22m)**
Explore how to interact with Cisco DNA Center and ACI using their REST APIs for automation.
- **Using Python Requests Library for API Calls (28m)**
Hands-on practice with the Requests library to send and receive API requests to Cisco devices.
- **Automating Device Configuration with NETCONF and YANG (30m)**
Learn NETCONF and YANG models to programmatically configure and manage network devices.
- **Introduction to Ansible for Network Automation (24m)**
Get started with Ansible playbooks to automate repetitive network tasks across multiple devices.
- **Building Your First Automation Script: A Real Case Study (35m)**
Create a Python script to automate a common network task, with a downloadable template included.
- **Error Handling and Logging in Automation Scripts (14m)**
Practical techniques to handle errors and log activities in your automation workflows.
- **Testing and Validating Automation Scripts (16m)**
Learn how to test your scripts in a lab environment before deploying to production.
- **Integrating Cisco APIs with External Tools (20m)**
Problem-solving session on connecting Cisco APIs to tools like Slack or monitoring systems.
- **Security Best Practices for Automation (12m)**
Understand secure coding practices and how to protect credentials in your automation projects.

Deep Dive into Cisco Automation Tools

- **Advanced Python for Cisco Automation (26m)**
Dive deeper into Python libraries like Netmiko and Paramiko for SSH-based device management.

- **Working with Cisco SD-WAN APIs (23m)**
Learn to automate SD-WAN configurations and monitoring using its REST API.
- **Ansible Roles and Playbooks for Complex Networks (32m)**
Build reusable Ansible roles to manage large-scale network automation efficiently.
- **Real Case Study: Automating VLAN Deployment (28m)**
Analyze and implement a real-world scenario for automating VLAN setups across switches.
- **Using Postman for API Testing and Development (18m)**
Hands-on guide to use Postman for testing Cisco APIs and debugging automation scripts.
- **Troubleshooting Automation Workflows (20m)**
Problem-solving session to identify and fix common issues in automation pipelines.
- **Integrating with Cisco Meraki APIs (15m)**
Learn how to automate Meraki cloud-managed devices using their API endpoints.
- **Downloadable Script Templates for Common Tasks (10m)**
Get pre-built templates for tasks like backup, monitoring, and configuration changes.

Advanced Application and Integration

- **Building End-to-End Automation Pipelines (30m)**
Design and implement full automation workflows from data collection to deployment.
- **Using Webhooks for Event-Driven Automation (22m)**
Set up webhooks to trigger automation scripts based on network events or alerts.
- **Real Case Study: Automating Network Compliance Checks (35m)**
Analyze a compliance scenario and build a script to automate security and policy checks.
- **Scaling Automation with Containerization (25m)**
Learn to use Docker and Kubernetes to scale your automation tools for larger networks.
- **Integrating Cisco APIs with CI/CD Pipelines (28m)**
Step-by-step guide to integrate automation scripts into Jenkins or GitLab CI/CD.
- **Advanced Error Handling and Retry Logic (16m)**
Implement robust error handling with retries and fallbacks for reliable automation.
- **Monitoring and Logging Automation Activities (20m)**
Use tools like ELK stack to monitor and log your automation processes in real-time.
- **Problem-Solving Session: Network Migration Automation (32m)**
Work through a complex migration project using automation to minimize downtime.
- **Customizing Ansible Modules for Cisco Devices (24m)**
Develop custom Ansible modules tailored to specific Cisco automation needs.
- **Downloadable Integration Templates (12m)**
Access templates for integrating automation with monitoring, ticketing, and alerting systems.

Implementation and Next Steps

- **Preparing for the 300-915 Exam: Practice Questions (20m)**
Review sample exam questions and learn strategies for tackling the test effectively.
- **Creating a Study Plan for Exam Success (15m)**
Develop a personalized study schedule based on your strengths and weaknesses.

- **Real Case Study: Full Network Automation Project (40m)**
Walk through a complete project from planning to execution, with downloadable resources.
- **Deploying Automation in Production Environments (22m)**
Best practices for rolling out automation scripts safely in live networks.
- **Continuous Learning: Staying Updated with Cisco DevNet (12m)**
Learn how to keep up with new APIs, tools, and certifications in the DevNet ecosystem.
- **Building a Portfolio of Automation Projects (18m)**
Showcase your skills with a portfolio of scripts and case studies for career advancement.
- **Problem-Solving Session: Common Exam Scenarios (25m)**
Tackle typical exam scenarios with hands-on problem-solving and explanations.
- **Final Review: Key Concepts and Tips (14m)**
Summarize the most important topics and share last-minute tips for the exam.
- **Downloadable Exam Prep Checklist (8m)**
Get a checklist to track your progress and ensure you're ready for the 300-915 exam.
- **Next Steps: Advanced Certifications and Career Paths (16m)**
Explore further certifications and roles in network automation and DevOps.
- **Q&A and Community Resources (10m)**
Join the discussion and access community forums for ongoing support and networking.
- **Course Wrap-Up and Final Project Submission (12m)**
Submit your final automation project and receive feedback for improvement.

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