

Cisco CCNP Automation Core (350-901 AUTOCOR) v2.0

This CCNP Automation core training prepares network engineers for the 350-901 AUTOCOR exam, so you can learn how to automate, scale, and secure modern networks using infrastructure-as-code. This network automation training focuses on the real work of NetDevOps: managing configurations, pipelines, and operational workflows with tools that network teams actually use. You'll learn how network automation tools fit together, the role of APIs in network automation, and how to design systems that are testable, repeatable, and secure. Along the way, you'll get familiar with API-driven Cisco enterprise platforms and controller-based networking solutions. You'll also build a foundation in AI for network engineers, showing you how LLMs can assist with scripting, troubleshooting, and automated network operations.

[CBT Nuggets course material](#) →

 STUDY PLAN

WEEK 1

Understand YAML and Ansible

- Learning the Basics of YAML
- Digging Deeper into YAML
- Setting Up Ansible
- Validation

Manage Configurations with Ansible

- Configurations
- VLANs
- OSPF
- ACLs
- Writing Archives
- Validation

Working with Python

- Variables and Data Types
- Lists and Dictionaries
- For and While Loops
- Writing If Blocks
- Functions
- Opening Text and YAML Files
- Validation

Understand Network Automation Libraries

- Sending Commands with Netmiko
- Changing Configurations with Netmiko
- Getting Information with NAPALM
- Nornir

Validation

Understand YANG for Network Automation

Introducing YANG - The Modern Way to Automate Networks

Interpreting YANG Data

YANG Suite

Validation

Manage NETCONF Devices

Understanding NETCONF

Targeting NETCONF Data

Changing NETCONF Data

Validation

Interact with REST APIs

Understanding APIs and REST

REST Headers and Responses

Testing the REST API

Pagination

Validation

Configure Devices with RESTCONF

HTTP GET Requests

Configure OSPF using RESTCONF

Configure ACLs using RESTCONF

Validation

Manage Git Repositories

What Even is Git Anyway?

Creating Repositories, Staging Files and Committing

Creating Timelines with Different Branches

Fixing Mistakes

Collaboration with Github

Cherry-Picking and Squashing

Validation

Understand Containerisation

Understanding Containers

Learning the Basic Docker Commands

Creating Shells, Managing Instances and Deleting Images

Creating a Dockerfile

Validation

Manage Containers with Docker Compose

Container-Based Architectures

Creating Multiple Containers

Defining our Intent with Docker Compose

Storing Data with Volumes

Validation

Understand Gitlab

Understanding Gitlab

Installing and Setting Up Gitlab

Adding a Gitlab Runner

Creating New Users and Adding Members

Validation

Build Gitlab Pipelines

Merging Branches

Python and Missing Dependencies

Linting

Creating Tests

Building the Pipeline

Validation

Understand Containers & Gitlab

Planning the Solution

Installing Docker on the Runner

Creating the Containerised Environment

Building the Pipeline

Validation

Understand PyATS

The PyATS Inventory

Parsing Show Command Output

Learning Interface Information

Learning Other Features

Validation

Automate Securely with Encryption

Encrypting Files with Vault

Viewing, Editing and Rekeying Files

Using Vault in the Pipeline

SSH Key-Based Authentication

Validation

Automate with Terraform

Terraform Basics

Creating Users

Variables

Exploring Additional Resources

Validation

Construct Network Simulations

What is CML?

Taking a Tour of CML

Automating CML with Terraform

CML in a CI/CD Pipeline

Validation

Understand Netbox

Setting Up The NetBox Container

Building Out The NetBox Inventory

Ansible NetBox Inventory

Creating NetBox Resources with Terraform

Validation

Implement Streaming Telemetry

What is Streaming Telemetry?

Configuring Model Driven Telemetry

gNMI

Validation

Understand Logging and Webhooks

Python Logging Basics

Logging to Consoles, Files and Servers

Logging with Netmiko

Webhooks

Validation

Understand Automation Architectures & Approaches

Different Approaches to Automation

Which Cisco Controller Should You Use?

Comparing Imperative and Declarative Configuration Management

Validation

Understand PKI and HTTP Techniques

Token Authentication

Rate Limiting

Certificate Authorities

Validation

Explore Cisco APIs

Catalyst Center REST API

Catalyst SD-WAN Manager REST API

Identity Services Engine API

The Ansible URI Module

Validation

Understand Artificial Intelligence Basics

Artificial Intelligence in Network Automation

Data Privacy and IP Ownership Considerations

Hallucinations and Output Validation

Considerations for Using AI Responsibly

Validation

Implement AI for Network Automation

Model Context Protocol

Building a FastMCP Server

Managing the Network with MCP

Managing Netbox with MCP

Codex Integrations

Validation