Ansible for Automated Network Configuration Management Training Course



20 - 24 Dec 2026

Doha

5500 € (Per Person)

Ref: #NO5199_230574

Course Introduction / Overview:

This course provides a comprehensive exploration of network automation using Ansible, the leading open-source platform for configuration management and application deployment. In today's rapidly evolving IT landscape, manual network configuration is no longer sustainable, leading to errors, inconsistencies, and slow service delivery. This training course is designed to transition network professionals from traditional, command-line-based management to a modern, automated, and code-driven approach. We will delve into the core principles of Infrastructure as Code (IaC), a concept championed by experts like Jason Edelman in his book "Network Programmability and Automation". Participants will learn to write idempotent playbooks, manage multi-vendor environments, and leverage dynamic inventories to scale operations effectively. At BIG BEN Training Center, we focus on practical, hands-on learning, ensuring that by the end of the course, you can confidently build, test, and deploy automated network solutions that enhance reliability, enforce compliance, and accelerate business agility. This program is your definitive guide to mastering Ansible for robust and scalable network configuration management, transforming your operational capabilities from reactive to proactive.

Target Audience / This training course is suitable for:

- Network Engineers and Administrators.
- Systems Administrators managing network infrastructure.
- DevOps Engineers and SREs.
- IT Infrastructure Managers and Team Leads.
- Network Architects and Designers.
- Information Security Engineers focused on network compliance.
- Cloud Engineers responsible for network provisioning.

Target Sectors and Industries:

- Telecommunications and Internet Service Providers.
- Financial Services and Banking.
- Healthcare and Pharmaceutical sectors.
- Technology, Software, and Cloud Services.
- Government Agencies and Public Sector Organizations.
- Higher Education and Research Institutions.
- Retail and E-commerce.
- Energy and Utilities.

Target Organizations Departments:

- Network Operations Center (NOC).
- IT Infrastructure and Operations.
- DevOps and Platform Engineering.
- Information Security and Compliance.
- Cloud and Virtualization Teams.
- Data Center Management.
- IT Architecture and Strategy.

Course Offerings:

By the end of this course, the participants will have able to:

- Write and execute Ansible playbooks to configure network devices.
- Manage network configurations across multi-vendor environments like Cisco, Juniper, and Arista.
- Utilize Jinja2 templates to generate dynamic and standardized device configurations.
- Implement Infrastructure as Code (IaC) principles for network management.
- Automate routine network tasks such as backups, upgrades, and compliance checks.
- Secure sensitive information like credentials and API keys using Ansible Vault.
- Build and manage dynamic inventories for scalable network automation.
- Develop reusable automation content with Ansible Roles.
- Integrate Ansible with version control systems like Git for configuration tracking.
- Troubleshoot and debug Ansible playbooks for network environments.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, practical, and engaging, ensuring participants gain tangible skills. This course moves beyond theoretical lectures by immersing attendees in a hands-on lab environment that mirrors real-world network infrastructure challenges. Our approach is centered on a "learn by doing" philosophy, where participants spend a significant portion of their time writing, testing, and deploying their own Ansible playbooks. The curriculum incorporates a blend of expert-led instruction, live demonstrations, and individual and group exercises. We utilize real-world case studies to illustrate best practices for network automation, configuration management, and compliance. Collaborative sessions and peer-to-peer discussions are encouraged to foster a shared learning environment where participants can exchange ideas and solve complex problems together. Instructors provide continuous, constructive feedback throughout the course, guiding participants through challenges and ensuring a deep understanding of the concepts. This immersive and practical methodology guarantees that attendees leave with the confidence and competence to implement Ansible automation solutions within their own organizations immediately.

Course Agenda (Course Units):

Unit One: Fundamentals of Ansible for Network Automation

- Introduction to Network Automation and Infrastructure as Code (IaC).
- Understanding Ansible's architecture and core components.
- Setting up a lab environment with Ansible and network devices.
- Mastering YAML syntax for writing Ansible playbooks.
- Executing ad-hoc commands for quick network tasks.
- Establishing connectivity to network devices (SSH, NETCONF).
- Introduction to Ansible's network-specific modules.

Unit Two: Mastering Ansible Playbooks for Networking

- Anatomy of an Ansible Playbook for network configuration.
- Using network modules for Cisco IOS, Juniper Junos, and Arista EOS.
- Gathering network device facts for informed automation.
- Using variables to make playbooks flexible and reusable.
- Registering command output for validation and further processing.
- Implementing handlers to trigger actions based on configuration changes.
- Controlling play execution with tasks, plays, and strategies.

Unit three: Advanced Playbook Development and Templating

- Leveraging Jinja2 templates for dynamic configuration generation.
- Implementing loops to iterate over lists of devices or interfaces.
- Using conditionals for logic-based task execution.
- Organizing complex automation with Ansible Roles.
- Ensuring idempotent configurations to prevent unintended changes.
- Managing and validating network state.
- Techniques for effective error handling and playbook debugging.

Unit Four: Scaling Network Automation and Management

- Creating and managing static and dynamic inventories.
- Using inventory plugins for cloud and virtualization platforms.
- Securing sensitive data with Ansible Vault.
- Strategies for managing multi-vendor network environments.
- Developing workflows for complex, multi-step network changes.
- Automating network device backups and restores.
- Best practices for structuring large Ansible projects.

Unit Five: Enterprise Automation and Best Practices

- Integrating Ansible with version control systems like Git.
- Building a CI/CD pipeline for network infrastructure changes.
- Introduction to Ansible Automation Platform (Tower/AWX).
- Automating network compliance checks and remediation.
- Developing custom Ansible modules for unique requirements.
- Testing and validating network automation code.
- Final project: Building a complete network automation workflow.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

As network automation becomes standard, how does the role of a traditional network engineer evolve from a hands-on operator to a strategic developer of infrastructure as code?

What unique qualities does this course offer compared to other courses?

This training course distinguishes itself by focusing on the strategic implementation of network automation rather than just the technical syntax of Ansible. While many courses teach you how to write a playbook, we teach you how to think like a network automation engineer. Our curriculum is built around vendor-agnostic principles and industry best practices, ensuring the skills you acquire are transferable across diverse, multi-vendor environments. We place a strong emphasis on integrating automation into a broader operational framework, covering critical topics like version control with Git, building CI/CD pipelines for network changes, and establishing a "source of truth" for your infrastructure. This strategic approach transforms participants from simple script-runners into architects of resilient, scalable, and auditable network systems. Furthermore, the course is intensely practical, with a lab-centric design that forces participants to solve realistic problems, from managing configuration drift to automating compliance checks. You will not just learn Ansible; you will learn how to leverage it to build a modern, efficient, and proactive network management practice.