

Training: CompTIA
CompTIA AutoOps+ Prep Course

TRAINING GOALS:

CompTIA AutoOps+ validates your skills to automate, secure, and optimize IT operations across cloud and hybrid environments. As part of CompTIA's new Expansion Series, AutoOps+ is designed to augment your core IT competencies with specialized expertise in automation, scripting, and infrastructure management. Gain hands-on experience to bridge traditional IT roles with modern DevOps practices.

Skills you'll learn

- Use scripting and automation to streamline IT workflows and manage enterprise systems efficiently.
- Automate configuration, provisioning, and maintenance using infrastructure-as-code and modern toolchains.
- Build and manage CI pipelines to automate testing, ensure quality, and improve collaboration between teams.
- Implement secure, compliant delivery pipelines that enable rapid, reliable deployment and operational efficiency.

Job roles that benefit from AutoOps+ skills

- Systems Administrator / Systems Engineer
- Cloud Administrator / Cloud Engineer
- Junior / Mid-level DevOps Engineer
- Network Operations Specialist / Network Engineer
- Site Reliability Engineer (SRE) / Platform Engineer
- Help Desk Tier 3 / Advanced Tech Support Specialist

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CONSPECT:

- Implementing System Configuration
 - Outline the Challenges of Manual Configuration
 - Manual versus Automated Operations
 - Configuration Requirements
 - Automation Scenarios
 - Manual Configuration Techniques
 - Manual vs Automated Configuration
 - Drift Issues
 - Service Level Expectations
 - Identify Deployment Types and Environments
 - Deployment Platforms
 - Virtual Machines and Virtual Servers
 - Containerization
 - Compare VM and Docker Deployments
 - Container Orchestration
 - Configure Network Components
 - Cloud Concepts
 - Utilize Remote Access and APIs
 - Remote Access Types
 - Configuring SSH Access
 - APIs and SDKs
 - Command-Line Tools
 - Machine Identities
 - Perform CRUD Operations via REST
 - How CRUD Works in REST APIs
 - HTTP Requests, Headers, and Tools
- Explaining Coding and Scripting Fundamentals
 - Use Code to Support Automation
 - The Benefits of Using Code to Support Automation
 - Script Components
 - Managing Data and Outcomes with Scripts
 - Exit Codes
 - Automating Repetition, Data Storage, and Decision-Making with Scripts
 - Controlling Standard Stream Redirection



- Foregrounding and Backgrounding Scripts
- The Importance of Commenting Code
- Commenting in Scripting and Programming Languages
- Secure and Manage Code for Automated Environments
 - Setting Up a Coding Workspace
 - Setting up a Coding Workstation
 - Setting up a Virtual Machine for Testing
 - Trusted Code
 - Using Certificates and a PKI for Code Signing
 - Control Access to Resources
 - Dependencies
 - Dependency Files
- Script with Bash
 - What is Bash?
 - Working in the Bash Shell
 - Writing Bash Scripts
 - File Manipulation Utilities
 - Practical Examples of Bash
- Script with PowerShell
 - What is PowerShell?
 - Working with PowerShell
 - PowerShell Scripting Fundamentals
 - Practical Examples of PowerShell
- Script with Python
 - What is Python?
 - Working in the Python Environment
 - Run the pip Package Manager
 - Python Virtual Environments
 - Using Python for Automation and Development
 - Practical Examples of Python
- Managing and Maintaining Reliable Code
 - Implement Source and Version Control
 - Source Control
 - Branching and Pull Request Workflows
 - Branching Strategies in Practice
 - Git Commands

- Essential Git Commands in Action
- Correcting Git Issues
- Semantic Versioning
- Semantic Versioning Explained Visually
- Implementing Hooks and Linting
- Merge Conflicts
- Apply Debugging, Validation, and Recovery Techniques
 - The Troubleshooting Mindset
 - Identifying and Fixing Syntax Errors
 - Finding and Fixing Syntax Errors
 - AI Code Generation
 - Debugging Strategies and Tools
 - AI-Assisted Debugging
 - Recovering from Mistakes in Git
- Explaining Modern Automation Practices and Technologies
 - Summarize Automation and Orchestration Concepts
 - Automation Concepts
 - Automation versus Orchestration
 - From Automation to Orchestration
 - DevOps Basics
 - Introduction to CI/CD
 - Continuous Integration/Continuous Deployment
 - Infrastructure as Code Concepts
 - Automate Configurations
 - Implement Automation with Scripting Tools
 - Automated Workflows and Pipeline Orchestration
 - Explain Syntax Rules for Automation Technologies
 - Syntax Formats
 - Automation Technologies
 - Core Automation Tools and Engines
 - Syntax Rules: JSON
 - Syntax Rules: YAML
 - Validate YAML Syntax
 - Similarities and Differences between JSON and YAML
 - Syntax Rules: Puppet/Chef DSL
 - Syntax Rules: HCL



- Automate with Configuration Management Tools
 - Configuration Management Tools
 - Automate Configuration with Ansible (YAML)
 - Automate Configuration with Puppet and/or Chef (DSL)
 - Automate Configurations with Terraform (HCL)/OpenTofu
- Implementing Continuous Integration Workflows
 - Build Continuous Integration Toolchains
 - Environment Factors
 - Tooling
 - Inside a CI Toolchain
 - Workflow Orchestration
 - Pipeline Structure and Execution
 - Workflow Triggers
 - Workflow Management
 - Integrate Continuous Testing and Feedback Workflows
 - Design and Manage Continuous Integration Workflows
 - Design in CI Workflows
 - Anatomy of a CI Pipeline
 - Pipeline Triggers and Workflow Management
 - Run a Triggered Build
 - Secrets and Artifacts
 - Using a Secret Variable to Protect Your Pipeline
 - Task Runners
 - Pipeline Files
 - Decoding the Jenkinsfile
 - Hooks and ChatOps
 - Cloud Events
 - Event-Driven CI/CD
 - Create an Event Notification
- Implementing Continuous Delivery Workflows
 - Deploy Applications Using Continuous Delivery Workflows
 - From Continuous Integration to Continuous Delivery
 - Deployment Workflows
 - Patch and Redeploy
 - Delivery Methods
 - Zero-Downtime Deployment in Action

- Validate, Test, and Troubleshoot Deployment Pipelines
 - Quality Assurance Testing
 - QA Testing in DevOps Pipelines
 - Validation and Remediation Strategies and Tools
 - Post-Deployment Validation
 - Troubleshooting CI/CD Pipelines
- Executing End-to-End CI/CD Workflows
 - Run CI/CD Pipelines for Production Deployment
 - CD Implementation
 - Full CI/CD Pipeline with Git
 - Deploy to Production Safely
 - Detect and Manage Configuration Drift
 - Configuration Drift
 - What Is Configuration Drift?
 - Detecting Drift with Terraform Plan
 - Post-Deploy Drift Checks
 - Establish Monitoring and Governance in Cloud Environments
 - Auditability and Governance
 - Reliability and Maintainability Metrics
 - Viewing SLIs, SLOs, and SLAs
 - Monitoring Tools
 - AWS CloudWatch Overview
 - Implement a Monitoring Loop
- Practicing Site Reliability Engineering
 - Explain SRE Concepts and Practices
 - SRE Concepts
 - Metrics
 - Service Level Agreements
 - Populate an SLA Template
 - Incident Response
 - Design for Resilience
 - Monitoring and Observability
 - Use SRE Tools and Techniques
 - Automation and Pipelines
 - Monitoring and Observability Tools
 - Observability Stack Overview

- Incident Management Tools
- Security and Compliance Tools
- Cost Optimization Practices
- Integrating It All: The SRE Toolchain
- Operate SRE Workflows
 - SRE Workflow and Daily Operations
 - Case Study: Ensuring Web Application Reliability
 - Troubleshooting Live Systems

REQUIREMENTS:

Recommended experience: 2–3 years in a core IT operations role (e.g., network, cloud, or systems administrator); CompTIA Network+, Linux+, Cloud+, or Server+ recommended, or similar certifications.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by CompTIA (course completion). This course will help prepare you for the CompTIA AutoOps+ certification exam, which is available through the Pearson VUE test centers.

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TRAINER:

Authorized CompTIA Trainer.