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

Each participant in an authorized training CompTIA AutoOps+ Prep Course held in Exclusive Networks will receive a free AT0-001 CompTIA AutoOps+ Certification Exam vouchers.

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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

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        - 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

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        - 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

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- 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

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- 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

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- 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.

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