

COURSE OUTLINE

Puppet for System Administrators

Duration: 4 Days

Prerequisites:

- Basic understanding of Linux/Unix system administration, including familiarity with the command line interface and system configuration.
- Fundamental knowledge of system operations such as managing services, packages, and basic system troubleshooting.
- A conceptual understanding of what configuration management is and its benefits.
- Basic knowledge of programming or scripting would be beneficial, but not mandatory.
- An eagerness to learn automation tools and a willingness to embrace new technologies.

These prerequisites are designed to ensure that participants can fully engage with the course material and gain the maximum benefit from their training. No prior experience with Puppet is necessary, as the course is structured to introduce Puppet's concepts and practices from the ground up.

Course Description:

The "Puppet for System Administrators" course is designed to provide IT professionals with a comprehensive understanding of Puppet, an industry-leading infrastructure automation and configuration management tool. Learners will gain insights into how Puppet can streamline their system administration tasks, ensuring consistency and reliability across their IT environment. Module 1: About Puppet sets the stage by introducing Puppet's functionality and its role in DevOps practices. Module 2: Why Puppet illustrates the benefits and rationale behind choosing Puppet over other tools. Module 3: The Classroom Environment prepares learners for practical exercises. Subsequent modules delve deeper into Puppet's capabilities, with Module 4: Modules and Classes explaining the basic building blocks, Module 5: Puppet Agent & Puppet Master discussing the client-server architecture, and Module 6: Reporting focusing on monitoring and feedback. Advanced topics include Module 11: Defined Resource Types, Module 12: Advanced Classes, and Module 15: Puppet Enterprise, which covers the commercial version offering additional features. Module 13: Puppet Forge introduces the community repository, while Module 14: Troubleshooting & Best Practices and Module 16: Live Management equip learners with problem-solving skills and real-time management techniques, respectively. By completing this course, learners will be well-versed in Puppet, enhancing their credentials with puppet courses and puppet training to effectively manage and automate their IT infrastructure.

Target Audience:

Koenig Solutions' Puppet for System Administrators course is designed for IT professionals seeking to automate and manage their server infrastructure efficiently.

- System Administrators
- DevOps Engineers
- IT Automation Professionals
- Infrastructure Architects
- Security Engineers
- Cloud Administrators
- Operations Engineers
- Network Administrators
- Site Reliability Engineers (SREs)
- Technical Operations Personnel
- Software Developers with a focus on DevOps practices

Course Outlines:

- Module 1 – Introduction to Puppet
 - What is Puppet and why to use Puppet
 - How it works
 - Deployment
 - Puppet Components
 - The Puppet Language
- Module 2 – Installation
 - Prerequisite for Installation
 - Lab: Installation Configuration of Puppet Server (Master Node)
 - Lab: Install and configure Puppet Agent on nodes (Agent Nodes)
 - Lab: On server, sign the certificates for nodes.
- Module 3 – Resources: File
 - Discussion about the File Resource
 - Getting help in Puppet
 - Get details of Resource from the system
 - Lab: Creating Our First Manifest
 - Lab: Local Manifests on client
 - Lab: How to write multiple resource in a single manifest
 - Lab: Configuring Tags
 - Lab: Recovering Overwritten Files
 - Lab: Disable Backup Overwritten Files

- Module 4 – Resources: Packages & Services
 - Discussion about the Package and Service Resource.
 - Lab: Install and Uninstall the Packages
 - Lab: Install multiple package
 - Lab: To Install a specific version packages and Update the Package
 - Lab: Start and Stop the Service
 - Lab: Enabling the Service at boot time
 - Lab: To Reload a specific service
- Module 5 – Resources: Users and Groups
 - Discussion about the User Resource
 - Lab: Adding and Removing User Account
 - Lab: Adding and Removing Group
 - Lab: Adding the user in Supplementary Group
 - Lab: SSH Access Control
- Module 6 – Node Declaration, Facts and Facts
 - Organizing Manifests
 - Discussion about the Facts and Facts Tool
 - Lab: Creating node declaration on Puppet Master (Single Node and Multiple Node Declaration)
 - Lab: Node Declaration using Regular Expression
 - Lab: Demonstration of using the Facts
 - Lab: Demonstration of Facts command examples
- Module 7 – Learning Classes and Modules
 - Metaparameters, Resource References, and Ordering
 - Discussion about the Class and Modules
 - Lab: Demonstration of creating the Class
 - Lab: Creation of Webserver using Class
 - Lab: Module Structure I (Using local path)
 - Lab: Module Structure II (Using module path)
 - Lab: Managing Files using "filedemo" module
 - Lab: Managing Users and Groups using "localuser" module
 - Lab: Search and Install Module from the Forge
 - Lab: Using class inheritance and overriding
- Module 8 – Configuring Profiles & Roles and working with Variables
 - Define the Use of Profiles and Roles
 - Lab: Creation of Profiles
 - Lab: Creation of Roles
 - Lab: Demonstration of working with variables
- Module 9 – Posix and Containment of Class
 - Discussion about the Posix
 - Overview of the contain function
 - Lab: Demonstration of Posix
 - Lab: Demonstrate the use of contain function
- Module 10 – Bolt Orchestration Tool
 - Discussion about the Bolt Orchestration
 - Lab: Create a Bolt project and set up targets
 - Lab: set up Docker targets
 - Lab: Create your targets
 - Lab: Run a command on a target
 - Lab: Create an inventory file to group your targets
 - Lab: Write a Bolt plan
 - Lab: Run a script on your targets
 - Lab: Upload an HTML homepage to your targets
- Module 11 – Configuring Hiera
 - Overview of Hiera
 - Hiera Hierarchies
 - Layered Hierarchies
 - Lab: Configuring Hiera
- Module 12 – Conditional Statements
 - Understand and use these conditional statements:
 - If
 - Unless
 - Case
 - Selector
 - Lab: Using conditional statements.
- Module 13 – Installation of Puppet Enterprise
 - Hardware Requirement for Trial use
 - Network Considerations
 - Lab: Installation steps of Puppet Enterprise
- Module 14 – Troubleshooting and Standard Log Files
 - Discussion about the Troubleshooting Techniques
 - Overview of the location of standard Log File

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