Advanced Junos Platform Automation and DevOps

Duration: 3 Days **Course Code: AJAUT**

Overview:

The three-day AJAUT course gives students hands-on experience with DevOps and infrastructure as code (IaC) with devices running the Junos OS. Students will learn the tools needed to operate an open-source DevOps environment. Specifically, students will learn to use Docker, GitLab, Ansible, The Robot Framework, and Jenkins. Students will learn and utilize the tools to build a working DevOps project using two Juniper vMX devices.

This course uses Junos OS Release 17.3R1, PyEZ 2.1, Python 2.7, Git 2.17, and Ansible 2.4.

Target Audience:

This course benefits individuals responsible for configuring, monitoring, and automating devices running the Junos OS.

Objectives:

- Upon completion of this course, you should be able to:
- Understand DevOps and how the DevOps process can improve Junos Automation.
- Create, configure, and manage Docker Containers.
- Use GitLab as a repository for code and configuration data.
- Use Ansible and Jinja2 templates to configure multiple Junos devices.
- Use Ansible to enforce design constraints using templates.
- Use Ansible to build Ansible playbooks that work in multi-vendor environments.
- Install and configure Robot to perform automated tests on Junos devices.
- Use Jenkins to implement continuous code and configuration integration.
- Implement a DevOps automated lab testing solution

Prerequisites:

Students should have taken the Junos Platform Automation and DevOps (JAUT) course or have equivalent knowledge.

Content:

Day 1

1 COURSE INTRODUCTION

2 Introduction to DevOps and Event Driven Infrastructure

- DevOps
- Infrastructure as Code
- Event Driven Infrastructure (EDI)

3 Using Docker for DevOps

- Introduction to Docker Containers
- Installing and Configuring Docker
- Managing Docker Networking
- Managing Applications Running in Docker
- Monitoring and Troubleshooting Docker

LAB 1: Using Docker Containers

4 Using GitLab as a Configuration and Code Repository

- Version Control Benefits
- Git and GitLab Explained
- GitLab Install Overview
- Creating GitLab Projects
- Creating Git Repositories
- Staging and Committing Files
- Cloning and Pushing Repository Data
- Branching and Merging
- Resolving Merge Conflicts

LAB 2: Using GitLab

Day 2

Using Ansible to Manage Networking Devices

- Review of Ansible Basics
- Using Ansible with Jinja2 Templates
- Using Ansible to Enforce Network Design Constraints using Templates
- Using Ansible for (NOOB) Deployments while Maintaining Idempotency

Managing Devices Running Junos OS using Ansible Roles

- Creating Multivendor Playbooks
- Using GitLab with Ansible for Automated Version Control
- Using Ansible for Auditing
- Using Ansible with Vagrant

LAB 3:

Using Ansible in a DevOps Environment

Day 3

Robot Framework

- Robot Overview
- Examine the pybot_jrouter Module
- Creating Robot Framework Keywords
- Creating Robot Framework Resource Files
- Perform Automated Testing using Robot
- Automated Testing - Use Case

LAB 4: Automation Testing with the Robot Framework

7 Jenkins

- Jenkins Overview
- Creating Process Automation using Jenkins
- Installing and using the Robot Plugin for Jenkins
- Retrieving Repository Data from a Git Repository
- Executing Ansible Playbooks from within Jenkins
- Lab 5: Junos Process Automation with Jenkins

LAB 5: Using Jenkins to Implement Continuous Integration

Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639

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