Version : **2020.01**

Last update: 2020/08/29 14:04

DOE400 - Puppet: Infrastructure Automation and Delivery

Presentation

Objectives: Master infrastructure automation and delivery with Puppet.
Who can benefit: Linux Technicians and Administrators.
Prerequisites: One of the following certifications or the equivalent skills: CompTIA Linux+ Powered by LPI or LPIC-1 or SUSE CLA or ITT Debian Linux - Technician or ITT CentOS Linux - Technician.
Learning technique: Clear, theoretical course content divided into lessons and extensive LABS.
Student Progression: Student progression is monitored both in terms of effective attendance and in terms of comprehension using self-assessment tests.
Duration: 2 days (14 hours).

Prerequisites

Hardware

- A computer running MacOS, Linux, Windows™ or Solaris™,
- AZERTY FR or QWERTY US keyboard,
- Minimum 4 GB of RAM,
- Minimum dual-core processor,
- Headphones/Earphones,
- A microphone (optional).

Software

- If Windows™ - Putty and WinSCP,
- Chrome or Firefox web browser.

Internet

- A fast Internet connection (4G minimum) and **no** proxy,
- Unhindered access to the following domains : https://my-short.link, https://itraining.center, https://ittraining.io, https://ittraining.institute, https://ittraining.support.

Curriculum

Day #1

- **DOE400 - Puppet: Infrastructure Automation and Delivery** - 1 hour.
  - Prerequisites
    - Hardware
    - Software
    - Internet
  - Using the Infrastructure
    - Connecting to the Cloud Server
      - Linux, MacOS and Windows 10 with a built-in ssh client
      - Windows 7 and Windows 10 without a built-in ssh client
    - Starting the Virtual Machine
    - Connecting to the Virtual Machine
  - Course Curriculum
- **DOF401 - Puppet in Stand-Alone Mode** - 2 hours.
  - What is Puppet?
  - Working with Puppet
    - Using Manifests
      - LAB #1 - Managing files
        - 1.1 - Changing an existing file on the server
        - 1.2 - Implementing a Dry Run with Puppet
      - LAB #2 - Managing packages
      - LAB #3 - Managing services
    - Managing Puppet code with Git
      - LAB #4 - Creating a local Repository
        - 4.1 - Git branches
      - LAB #5 - Creating a non-local Repository
      - LAB #6 - Cloning a Repository
      - LAB #7 - Applying changes automatically
      - LAB #8 - Implementing on a node
- **DOE402 - Puppet Resources** - 2 hours.
  - LAB #1 - The file resource
    - The source attribute
    - The owner attribute
    - The group attribute
    - The mode attribute
    - The ensure attribute
    - The recurse attribute
  - LAB #2 - The package resource
    - The ensure attribute
    - Installing packages
    - Ruby Gems
    - Deleting packages
  - LAB #3 - The service resource
    - The hasstatus attribute
    - The pattern attribute

        - The hasrestart and restart attributes
    - LAB #4 - The user resource
        - Creating a user
    - LAB #5 - The cron resource
        - The user attribute
        - The environment attribute
        - The weekday attribute
        - The monthday attribute
        - The fqdn_rand function
    - LAB #6 - The exec resource
        - The exec attribute
        - The cwd attribute
        - The command attribute
        - The creates attribute
        - The user attribute
        - The onlyif attribute
        - The unless attribute
        - The refreshonly attribute
        - The logoutput attribute
        - The timeout attribute

- **DOE403 - Variables, Expressions, Facts and Iterations** - 2 hours.
    - LAB #1 - Variables
        - Simple variables
        - Tables
        - Hashes
    - LAB #2 - Expressions
        - Math Expressions
        - Boolean Expressions
        - Regular Expressions
        - Conditional Expressions
    - LAB #3 - Facts
        - Facts in a Hash
        - Facts in an Expression
        - External Facts
        - Executable Facts
    - LAB #4 - Iterations
        - Iteration and Tables
        - Iteration and Hashes

Day #2

- **DOE404 - Hiera and Modules** - 2 hours.
    - Preparation
    - Hiera
        - Presentation
        - LAB #1 - Environments
        - LAB #2 - Hiera data types
        - LAB #3 - Interpolation
            - Data sources based on Facts

        - LAB #4 - Creating resources with Hiera data
        - LAB #5 - Managing secret data
    - Modules
        - LAB #6 - Installing Modules
        - LAB #7 - Using Modules
            - puppetlabs/mysql
            - puppetlabs/apache
            - puppet/archive

- **DOE405 - Puppet in agent-master mode** - 4 hours.
    - Preparation
        - Connecting to the Cloud Server
            - Linux, MacOS and Windows 10 with a built-in ssh client
            - Windows 7 and Windows 10 without a built-in ssh client
        - Configuring VirtualBox
        - Starting the Virtual Machines
        - Connecting to the Virtual Machines
        - Configuring the time zone
        - Deactivating SELinux in puppetslave02
    - LAB #1 - Configuring the Puppet Server
        - Installing puppetserver
        - Configuring puppetserver
    - LAB #2 - Configuring puppet-agent
        - Installing puppet-agent
        - Configuring puppet-agent
    - LAB #3 - Creating a user
    - LAB #4 - Configuring ssh
    - LAB #5 - Configuring Netfilter
        - Executing puppet-agent on node01.i2tch.loc
        - Executing puppet-agent on node02.i2tch.loc
    - LAB #6 - Deploying Apache with Puppet in agent-master mode
        - Creating a role
        - Creating Manifests
        - Creating the configuration files
        - Creating Templates
        - Deploying Apache

- **DOE406 - Course completion** - 1 hour.
    - What's next?
        - Training materials
        - What you need
            - Hardware
            - Software
            - Virtual Machine
        - Installing the working environment
            - Installing Git
                - Linux
                - Windows
            - Installing VirtualBox
            - Installing Vagrant
            - Installing the Puppet virtual machine
                - Linux

        - Windows
    - Connecting to the Puppet virtual machine
        - Linux
        - Windows
- What we covered
    - Day #1
    - Day #2
- Resetting the course infrastructure
- Evaluate the training session
- Thanks
