

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://itraining.io>, <https://itraining.institute>, <https://itraining.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
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