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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

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