Puppet is a configuration management tool. It provides the capability to define which software and configuration a system requires and then maintain a specified state after an initial setup.

DAY: 01

1. **Introduction**
- Welcome note
- What you should know
- Configuration management (CM)
- Tools available in market for CM
- Why Puppet
- Puppet Features
    - Idempotency
    - Cross-Platform (using RAL)
    - Multi Node parallel execution (MCollective)
    - Puppet DB
    - Puppet Dashboard
    - Puppet IDE (Geppetto)

2. **Puppet architecture**
- Puppet master
- Puppet agent
- Puppet standalone

3. **Puppet configuration**
- Puppet master configuration
- Puppet agent configuration
- Puppet standalone configuration

4. **Puppet components**
- Nodes
- Resources
- Modules
    - Manifests
    - Files
    - Templates
    - Spec
    - Tests
- Classes
- Facts

DAY: 02

5. Puppet workflow
- Work flow or lifecycle of puppet execution
  - o Certificate signing request and approval
  - o Facts collection by agents and forwarding to master
  - o Parsing all applicable manifests while considering facts and create catalog and pass to agent
  - o Agent validate system state (drain/desired) and apply catalog accordingly
  - o Once catalog run, it creates run report and pass to master
  - o Master store run report in Puppet DB
  - o Puppet dashboard connect to puppet DB to read run reports and show processed data on dashboard
- Puppet components involved while creating catalog

6. Puppet DSL
- DSL synopsis
- Variables (String, Integer, Boolean, Array, Hash)
- If/Else conditions
- Case statement
- Iteration (loops)
- Relationship meta parameters (Before, Require, Notify and Subscribe)
- Use of different resources (Files, User, Group, Service, Package, Mount, etc)

7. System configuration with puppet
- Configure basic resources on a system with Puppet
- Run the agent and apply catalog
- Debug, if any failure
- SSH service configuration via puppet
- NTP service configuration via puppet
- LAMP server configuration via puppet

DAY: 03

8. Puppet module development
- Puppet modules development
- Customizing existing modules
- Modules from Puppet Forge
- Explore puppet modules on GitHub/GitLab

DAY: 04

9. Play with Puppet templates/files
     Create ERB templates
     Create EPP templates
     Usage of templates and files

10. Hiera

- What is hiera
- Hiera hierarchy
- Use case of hiera
- Use hiera with site, roles, profiles

DAY: 05

Migration and Upgradation
. Challenges while migrating puppet code for different platform provider
. Upgrading Puppet version and testing exiting code on next version and way around