

## Cisco CCNA (200-301)

### Identifying Configuration Management Methods

Learning Objective: Identify the use of Puppet, Chef, and Ansible for configuration management.

Description: Configuration management mechanisms are used widely across the network. You will learn the basics of Puppet, Chef, and Ansible.

- **What is configuration management?**
  - helps to control and enforce consistency of a system
  - Use automation instead of manual configuration
  - Consistency over scale
  - "Desired State" the intent of our system
    - eg. Software and version installed
    - System attributes
    - Specific configuration
  
- **What are benefits of configuration management?**
  - Quick provisioning of Infrastructure
    - Sequential and Manual --> Parallel and Automated
  - No variation across the board (system variation)
  - Version controlled infrastructure
    - Infrastructure as Code (single source of trust)
  
- **What tools will be looking at today and why are they important?**
  - Automation and Orchestration
  - Idempotent Behavior (checks to see if state is ok before it needs to be run)
  - Gather information, query devices
  - Modules and libraries
  - DevOps Configuration Tools
    - Puppet
      - Language: Ruby Based
      - Managed Node Requirements: Agent Based
      - Centralized Management: Puppet Master
      - Script Names: Manifest/Module
      - Configuration Management: Pull
    - Chef
      - Language: Ruby (configurations)
      - Git is required for configuration
      - Managed Node Requirements: Agent Based
      - Centralized Management: Chef Server (required)
      - Script Names: Recipe/Cookbooks
      - Configuration Management: Pull
    - Ansible (Open Source Tool)
      - Language: Python + YAML
        - YAML (readable)
      - Managed Node Requirements: Agentless
      - SSH based
      - Centralized Management: Any computer
      - Script Names: Playbook/Roles
      - Configuration Management: Push and Pull

**Endnotes, External and Etc.**

- 6.6 Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible