

# Configuration Management Tools



- Configuration management systems are designed to make controlling large numbers of devices easy for administrators and operations teams.
- They allow you to control many different systems in an automated way from one central location.
- Popular options (open source and free, with paid for Enterprise editions available):
  - Ansible
  - Puppet
  - Chef

# Configuration Management Tool Benefits

## Configuration Management Tools:

- Can automate the provisioning and deployment of servers and network devices
- Require little knowledge of programming
- Have established development practices including version control and testing

# Ansible



- Can be run from any machine with Python 2 or Python 3 installed
- Agentless
- Push model
- Communicates over SSH by default
- Simpler than most other tools
- Originally released in 2012

# Ansible



- Ansible modules are pre-built Python scripts.
- Many pre-built network modules exist.
- Ansible inventory files define all hosts that will be managed by the control workstation.
- Ansible playbooks are YAML files that outline the instructions it needs to run.

# Puppet



- Typically uses an agent on the target devices
- ‘Puppet Master’ runs on Linux server
- Pull model, agent checks in every 30 mins by default
- Written in Ruby
- Uses proprietary DSL rather than YAML
- A ‘Manifest’ defines the device’s properties
- It can check configuration consistency
- Created in 2005

# Chef



- An agent must be installed on the target devices
- Pull model
- Written in Ruby
- Terminology is Cook Book > Recipe
- Released in 2009

# Configuration Management Tool Support

- Ansible, Puppet and Chef were designed primarily for server system administration
- Ansible is typically more suitable for network environments than Puppet and Chef because it does not require an agent. It is also simpler to learn and use
- Cisco devices usually can't run an agent (Puppet works on some Nexus switches, more support may be added in future)