Using Chef Client with Cisco NX-OS

This chapter includes the following sections:

About Chef

Chef is an open-source software package that is developed by Chef Software, Inc. The software package is a systems and cloud infrastructure automation framework that deploys servers and applications to any physical, virtual, or cloud location, no matter the size of the infrastructure. Each organization consists of one or more workstations, a single server, and every node that the chef-client has configured and is maintaining. Cookbooks and recipes are used to tell the chef-client how each node should be configured. The chef-client, which is installed on every node, does the actual configuration.

A Chef cookbook is the fundamental unit of configuration and policy distribution. A cookbook defines a scenario and contains everything that is required to support that scenario, including libraries, recipes, files, and more. A Chef recipe is a collection of property definitions for setting state on the device. The details for checking and setting these property states are abstracted away so that a recipe may be used for more than one operating system or platform. While recipes are commonly used for defining configuration settings, they also can be used to install software packages, copy files, start services, and more.

The following references provide more information from Chef:

Topic	Link
Chef home	https://www.chef.io
Chef overview	https://docs.chef.io/chef_overview.html
Chef documentation (all)	https://docs.chef.io/

Prerequisites

The following are prerequisites for Chef:

- You must have a Cisco device and operating system software release that supports the installation:
  - Cisco Nexus 3500 Series switch
  - Cisco Nexus 3100 Series switch
  - Cisco Nexus 3000 Series switch
  - Cisco NX-OS Release 7.0(3)I2(1) or higher
- You must have the required disk storage available on the device for Chef deployment:
  - A minimum of 500 MB free disk space on bootflash
- You need a Chef server with Chef 12.4.1 or higher.
- You need Chef Client 12.4.1 or higher.

Chef Client NX-OS Environment

The chef-client software must be installed on a Cisco Nexus platform in the Guest Shell (the Linux container environment running CentOS). This software provides a secure, open execution environment that is decoupled from the host.

Starting with the Cisco NX-OS Release 9.2(1), the Bash-shell (native WindRiver Linux environment underlying NX-OS) install of chef-client is no longer supported.

The following documents provide step-by-step guidance about agent-software download, installation, and setup:

Topic	Link
Chef Client: Installation and setup on Cisco Nexus platform (manual setup)	cisco-cookbook::README-install-agent.md
Chef Client: Installation and setup on Cisco Nexus platform (automated installation using the Chef provisioner)	cisco-cookbook::README-chef-provisioning.md

cisco-cookbook

cisco-cookbook is a Cisco-developed open-source interface between the abstract resources configuration in a Chef recipe and the specific implementation details of the Cisco NX-OS and platforms. This cookbook is installed on the Chef Server and is required for proper Chef Client operation on Cisco Nexus devices.

The cisco-cookbook can be found on Chef Supermarket.

The following documents provide more detail for cisco-cookbook and generic cookbook installation procedures:

Topic	Link
cisco-cookbook location	https://supermarket.chef.io/cookbooks/cisco-cookbook

Topic	Link
Resource Type Catalog	https://github.com/cisco/cisco-network-chef-cookbook/tree/master#resource-by-tech
cisco-cookbook: Source Code Repository	https://github.com/cisco/cisco-network-chef-cookbook/tree/master
cisco-cookbook: Setup and usage	https://github.com/cisco/cisco-network-chef-cookbook/blob/master/README.md#setup
Chef Supermarket	https://supermarket.chef.io
Chef NX-OS Manifest Examples	https://github.com/cisco/cisco-network-chef-cookbook/tree/master/recipes