Overview

This chapter contains the following sections:

About Cisco UCS Director Express for Big Data Baremetal Agent

You can use Cisco UCS Director Express for Big Data Baremetal Agent (Baremetal Agent) to automate the process of using a Preboot Execution Environment (PXE) to install operating systems on baremetal servers or virtual machines.

Baremetal Agent provides the following services that are required for a functional PXE install environment:

- Dynamic Host Control Protocol (DHCP)
- Hypertext Transfer Protocol (HTTP)
- Trivial File Transfer Protocol (TFTP)

When this environment is operational and Baremetal Agent and Cisco UCS Director Express for Big Data are correctly configured, you can build PXE installation tasks into any Cisco UCS Director Express for Big Data infrastructure workflow.

You can access Baremetal Agent through Cisco UCS Director Express for Big Data or Secure Shell (SSH).

Minimum System Requirements

For proper installation and operation of Baremetal Agent, your environment must meet the minimum system requirements.

Minimum Requirements for VMware vSphere

Name	Requirements
VMware vCenter Server	4.0 and later
Minimum reservation in VMware vCenter	Minimum number of CPUs—2 Memory—3 GB Hard disk—40 GB

Guidelines and Limitations

Before you install Baremetal Agent, take note of the following guidelines and limitations.

Number of Cisco UCS Director Express for Big Data applications per Cisco UCS Director Express for Big Data application.

Each Baremetal Agent application can connect to only one Cisco UCS Director Express for Big Data node.

A single Cisco UCS Director Express for Big Data node cannot support multiple Baremetal Agent applications.

Network Reachability

After installation and configuration, your environment must have the following network reachability:

- Baremetal Agent must be able to reach Cisco UCS Director Express for Big Data over the network.

- Cisco UCS Director Express for Big Data must be able to reach Baremetal Agent over the network.

- The baremetal servers must be on the same network as Baremetal Agent.

DHCP Configuration

If you use DHCP, you must locate one DHCP server in the same PXE VLAN as Baremetal Agent and configure that DHCP server with the IP address range required by your DHCP server.

VLAN Configuration

When setting up the network configuration, the most common configuration uses one PXE VLAN and one Management VLAN (separate VLANs). However, Baremetal Agent supports one VLAN for both, if you prefer. For more information about the network configuration options, see
http://www.cisco.com/c/en/us/support/servers-unified-computing/ucs-director/products-installation-guides-list.html.

You must configure the VLANs end-to-end between Cisco UCS, Cisco UCS Director Express for Big Data, and Baremetal Agent. However, when you configure Baremetal Agent, do not assume that routing will occur between the PXE_VLAN Layer 2 network and the Management VLAN network.

If you configure Baremetal Agent to use DHCP, you must locate and configure the DHCP server in the PXE VLAN and its subnet. This DHCP server serves the transient IP address required for the PXE process. In an environment with two VLANs, the server is allocated an IP address from the subnet of the Management VLAN. This IP address is typically assigned from an IP address pool that is managed by Cisco UCS Director Express for Big Data.

If you configure Baremetal Agent with two VLANs, you must set up two IP address attributes:

- One IP address for Baremetal Agent in the PXE VLAN

- A second IP address for Baremetal Agent in the Management VLAN

TFTP Server

With Baremetal Agent, you use the Cisco UCS Director Express for Big Data TFTP server to ensure that configurations, such as dynamic variables, function properly.

When you add a Baremetal Agent account, Baremetal Agent configures the TFTP server when services are started.