



# Overview of Cisco UCS Manager

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## About Cisco UCS Manager

Cisco UCS Manager is the management system for all components in a UCS Manager. Cisco UCS Manager runs within the fabric interconnect. You can use any of the interfaces available with this management service to access, configure, administer, and monitor the network and server resources for all chassis connected to the fabric interconnect.

### Multiple Management Interfaces

Cisco UCS Manager includes the following interfaces you can use to manage a Cisco UCS domain:

- Cisco UCS Manager GUI
- Cisco UCS Manager CLI
- XML API
- KVM
- IPMI

Almost all tasks can be performed in any of the interfaces, and the results of tasks performed in one interface are automatically displayed in another.

However, you cannot do the following:

- Use Cisco UCS Manager GUI to invoke Cisco UCS Manager CLI.
- View the results of a command invoked through Cisco UCS Manager CLI in Cisco UCS Manager GUI.
- Generate CLI output from Cisco UCS Manager GUI.

### Centralized Management

Cisco UCS Manager centralizes the management of resources and devices, rather than using multiple management points. This centralized management includes management of the following devices in a Cisco UCS domain:

- Fabric interconnects.
- Software switches for virtual servers.
- Power and environmental management for chassis and servers.
- Configuration and firmware updates for server network interfaces (Ethernet NICs and converged network adapters).
- Firmware and BIOS settings for servers.

### Support for Virtual and Physical Servers

Cisco UCS Manager abstracts server state information—including server identity, I/O configuration, MAC addresses and World Wide Names, firmware revision, and network profiles—into a service profile. You can apply the service profile to any server resource in the system, providing the same flexibility and support to physical servers, virtual servers, and virtual machines connected to a virtual device provided by a VIC adapter.

### Role-Based Administration and Multi-Tenancy Support

Cisco UCS Manager supports flexibly defined roles so that data centers can use the same best practices with which they manage discrete servers, storage, and networks to operate a Cisco UCS domain. You can create user roles with privileges that reflect user responsibilities in the data center. For example, you can create the following:

- Server administrator roles with control over server-related configurations.
- Storage administrator roles with control over tasks related to the SAN.
- Network administrator roles with control over tasks related to the LAN.

Cisco UCS is multi-tenancy ready, exposing primitives that allow systems management software using the API to get controlled access to Cisco UCS resources. In a multi-tenancy environment, Cisco UCS Manager enables you to create locales for user roles that can limit the scope of a user to a particular organization.

## Tasks You Can Perform in Cisco UCS Manager

You can use Cisco UCS Manager to perform management tasks for all physical and virtual devices within a Cisco UCS domain.

### Cisco UCS Hardware Management

You can use Cisco UCS Manager to manage all hardware within a Cisco UCS domain, including the following:

- Chassis
- Servers
- Fabric interconnects
- Fans

- Ports
- Interface cards
- I/O modules

### **Cisco UCS Resource Management**

You can use Cisco UCS Manager to create and manage all resources within a Cisco UCS domain, including the following:

- Servers
- WWN addresses
- MAC addresses
- UUIDs
- Bandwidth

### **Server Administration**

A server administrator can use Cisco UCS Manager to perform server management tasks within a Cisco UCS domain, including the following:

- Create server pools and policies related to those pools, such as qualification policies
- Create policies for the servers, such as discovery policies, scrub policies, and IPMI policies
- Create service profiles and, if desired, service profile templates
- Apply service profiles to servers
- Monitor faults, alarms, and the status of equipment

### **Network Administration**

A network administrator can use Cisco UCS Manager to perform tasks required to create LAN configuration for a Cisco UCS domain, including the following:

- Configure uplink ports, port channels, and LAN PIN groups
- Create VLANs
- Configure the quality of service classes and definitions
- Create the pools and policies related to network configuration, such as MAC address pools and Ethernet adapter profiles

### **Storage Administration**

A storage administrator can use Cisco UCS Manager to perform tasks required to create SAN configuration for a Cisco UCS domain, including the following:

- Configure ports, port channels, and SAN PIN groups
- Create VSANs
- Configure the quality of service classes and definitions

- Create the pools and policies related to the network configuration, such as WWN pools and Fibre Channel adapter profiles

## Tasks You Cannot Perform in Cisco UCS Manager

You cannot use Cisco UCS Manager to perform certain system management tasks that are not specifically related to device management within a Cisco UCS domain.

### No Cross-System Management

You cannot use Cisco UCS Manager to manage systems or devices that are outside the Cisco UCS domain where Cisco UCS Manager is located. For example, you cannot manage heterogeneous environments, such as non-Cisco UCS x86 systems, SPARC systems, or PowerPC systems.

### No Operating System or Application Provisioning or Management

Cisco UCS Manager provisions servers and, as a result, exists below the operating system on a server. Therefore, you cannot use it to provision or manage operating systems or applications on servers. For example, you cannot do the following:

- Deploy an OS, such as Windows or Linux
- Deploy patches for software, such as an OS or an application
- Install base software components, such as anti-virus software, monitoring agents, or backup clients
- Install software applications, such as databases, application server software, or web servers
- Perform operator actions, including restarting an Oracle database, restarting printer queues, or handling non-Cisco UCS user accounts
- Configure or manage external storage on the SAN or NAS storage

## Cisco UCS Manager in a High Availability Environment

In a high availability environment with two fabric interconnects, you can run a separate instance of Cisco UCS Manager on each fabric interconnect. The Cisco UCS Manager on the primary fabric interconnect acts as the primary management instance, and the Cisco UCS Manager on the other fabric interconnect is the subordinate management instance.

The two instances of Cisco UCS Manager communicate across a private network between the L1 and L2 Ethernet ports on the fabric interconnects. Configuration and status information is communicated across this private network to ensure that all management information is replicated. This ongoing communication ensures that the management information for Cisco UCS persists even if the primary fabric interconnect fails. In addition, the "floating" management IP address that runs on the primary Cisco UCS Manager ensures a smooth transition in the event of a failover to the subordinate fabric interconnect.