



Introduction

- [Introduction, on page 1](#)
- [Cisco UCS Central Use Cases, on page 2](#)
- [Scope, on page 2](#)
- [Terminology, on page 3](#)
- [Cisco UCS Central User Documentation Reference, on page 5](#)

Introduction

Cisco UCS Central simplifies Cisco UCS management. From a single Cisco UCS domain to multiple Cisco UCS domains, Cisco UCS Central delivers standardization, aggregation, global policy enforcement, and global ID consistency.

While Cisco UCS Manager provides policy-driven management for a single Cisco UCS domain, Cisco UCS Central manages and monitors domain activity globally. These capabilities extend across multiple Cisco UCS Manager domains worldwide, providing an even greater degree of administrative power, operational efficiency, and policy-driven automation.

Cisco UCS Central supports scaling to and managing of 10,000 servers. This represents approximately 70 to 125 Cisco UCS Manager domains, depending on domain size. Cisco tested Cisco UCS Central rigorously with more than 200 Cisco UCS domains and more than 6000 service profiles.

The setup architecture of UCS Central is flexible. It allows you to manage your registered UCS domain, and the number and geographic dispersion of those domains. Some principles apply throughout the different architectures, while others are more pertinent for a specific size.

It is important to plan for growth and envision the eventual size and scope of a UCS deployment when implementing Cisco UCS Central. An organization could start with a few UCS domains, but then dramatically scale over a period of 1-3 years. Even if you do not expect significant growth, it is always best to build and plan for future management.

Also, consider whether the environment is Brownfield or Greenfield.

Brownfield

A Brownfield environment is one in which Cisco UCS Central contains UCS domains that were previously built and deployed through Cisco UCS Manager. They contain localized objects such as pools, policies, VLANs, VSANs, templates, and service profiles for each UCS domain. In Brownfield environments, if an

object is local, that means that the Cisco UCS Manager owns the object, so only a Cisco UCS Manager administrator can add, modify, or delete the object.

Greenfield

A Greenfield environment is one in which Cisco UCS Central only contains objects that were created through Cisco UCS Central. Therefore, these objects are global in scope. Only a Cisco UCS Central Administrator can add, modify, or delete these objects from Cisco UCS Central. A Cisco UCS Manager Administrator cannot change them. Cisco UCS Central maintains read and write ownership of all global objects.

When you deploy global service profiles from Cisco UCS Central to a blade server in a UCS domain, a shadow copy of the global service profile deploys to Cisco UCS Manager. In Cisco UCS Manager, in the Server, LAN, and SAN tabs, the global policies, VLANs, VSANs, vNIC/vHBA templates, and global service profiles display with the global icon. This indicates that they are global and therefore, controlled by Cisco UCS Central. Global service profile templates do not copy-down to Cisco UCS Manager.

Cisco UCS Central Use Cases

Cisco UCS Central has many use cases that justify its implementation in all sizes of UCS environments. Before Cisco UCS Central existed, deploying UCS domains was largely repetitive, manual, and time consuming. It required strict attention to the creation and consistency of ID pools, policies, VLANs, VSANs, templates and service profiles.

It is easy to misconfigure an ID pool. For example, you could configure a MAC address pool with the exact scheme of another existing UCS domain in the same environment. This results in MAC address conflicts. Cisco UCS Central inventories the entire registered UCS environment and eliminates such conflicts.

Scope

In this guide, we discuss different architecture considerations for different-size clients.

We categorized environments based on average sizes of the existing UCS Central client base. We also considered some of the largest UCS Central environments, those exceeding 300 registered domains, and more than 6,000 managed servers. The current version of UCS Central has been tested to support environments containing up to 10,000 registered servers.

In this guide, we are defining the following size ranges:

- Small environment: 1-3 registered UCS domains
- Medium environment: 4-12 registered UCS domains
- Large environment: >12 registered UCS domains

Terminology

Term	Description
Cisco UCS Manager	Embedded ASIC software within the Cisco UCS fabric interconnect that manages a Cisco UCS domain .
Cisco UCS domain	A collection of resources that includes a pair of fabric interconnects with connected systems such as: <ul style="list-style-type: none"> • 1–20 B-Series chassis • C-Series servers • UCS Mini • UCSM domains
Cisco UCS Central	Virtual appliance that aggregates and simplifies the management of one or more Cisco UCS domain (s).
Domain Group	Named grouping of multiple Cisco UCS domains, based on configuration similarities and often based on geography. In a domain group, Cisco UCS Central applies operational and server policies, VLANs and VSANs, for domain group identification. The domain group construct only exists, and is only applied, within Cisco UCS Central. There is no concept of a domain group within a UCS domain.
Subdomain Group	A child of the domain group. Inherits its properties from the parent. Can have unique policies for the domains in the subdomain group. Domain group hierarchy supports up to five nested levels.
Ungrouped domain(s)	Domains that do not belong to any domain group. Upon Cisco UCS domain registration, no operational policies are inherited until a Cisco UCS domain is placed within a domain group.
Local	Reference to an object that is owned and modifiable in a single Cisco UCS Manager domain; for example, local policies or local pools.
Global	A reference to an object that is owned and modifiable in Cisco UCS Central; for example, global service profiles, global policies, and global pools.
Localize	Create a local copy of a global object, which is modifiable from a local domain, and read-only in Cisco UCS Central.
Globalize	Change a pool or policy reference from local to global. For example, use a global action in Cisco UCS Manager to create a reference to a global object. If the global object does not exist, then the reference is not satisfied. Create a global object to satisfy the reference. If no global object exists, the reference remains in a pending global state.
Register	Initial process through which a Cisco UCS Manager domain connects to Cisco UCS Central and sets up management of itself from Cisco UCS Central.

Term	Description
Unregister	Intentional removal of a Cisco UCS domain from Cisco UCS Central management. This is not recommended unless the unregistration is permanent.
Lost Visibility	Unintentional loss of connectivity between Cisco UCS Manager and Cisco UCS Central.
Suspend State	Intentionally halts management communications between Cisco UCS Central and Cisco UCS Manager. Cisco UCS Manager is registered with Cisco UCS Central, but there is no management communication between the two. This is a safety mechanism to prevent unintended changes. Typically initiated by a Cisco UCS domain, due to an unexpected state. For example, if Cisco UCS Central was restored to an older version, and the Cisco UCS domain received an older version of a policy during regular policy resolution.
Acknowledge State	Normal state between Cisco UCS Central and Cisco UCS Manager. Management communications are re-established between Cisco UCS Central and Cisco UCS Manager. Acknowledgement occurs within Cisco UCS Manager in the Admin-Cisco UCS Central registration pane.

Domains, Pods, Clusters, or Blocks

For Cisco UCS fabric interconnects, managing 1 to 20 chassis, avoid using the terms pods, clusters, or blocks, in favor of domains. Past usage of certain terminology in a single Cisco UCS Manager context may need revisiting in the truly global context of Cisco UCS Central. For example, prior to Cisco UCS Manager 2.1, VLANs were referred to as global in scope, within a single UCS domain. This also referred to a VLAN created and used in both fabrics, A and B. Understanding common names, terms, and context is essential.

Ownership

Typically, we use the terms local and global in relation to Cisco UCS managed objects (MOs), such as pool, policies, service profile, adapters, blades, and chassis. Managed objects are owned either locally (by a specific Cisco UCS domain) or globally (by Cisco UCS Central). An object that is owned locally has read-write access in the local domain, but read-only access in Cisco UCS Central.

Correspondingly, an object that is owned globally has read-write access in Cisco UCS Central, but read-only access in any local domain. While Cisco UCS Central does own a global object, it does not directly modify a local copy (at the domain level). Instead, Cisco UCS Central updates the global object in Cisco UCS Central and then issues an update event to the XML-API to update the local shadow copy of that global object.

Best Practice Terminology

The term “Best Practices” is intended more to define guidelines, recommendations and suggestions, rather than specifying the only way to perform desired functions. The only valid Best Practice is whatever works best for your organization and operating requirements, factoring in the appropriate context and any exceptional conditions.

Flexibility, adaptability, and consistency are all hallmarks of Cisco UCS Manager, and carry forward as architectural goals for Cisco UCS Central. The Cisco UCS Central management model's impact differs significantly from the standalone, local management model. Administrative power is strongly concentrated within Cisco UCS Central, and the scope of change can be broad. Unexpected service interruptions could be a consequence of not following recommended practices. Administrators are strongly advised to:

- Model and test as much as possible, in advance of production deployment. Use a test environment with a Cisco UCS Central instance and registered Cisco UCS emulators.
- Be conservative with global configuration changes that may impact local services.
- Run **Estimate Impact** on actions to ensure that potential impacts are understood. The personalization settings allow you to set the estimate impact to run on most applicable actions.
- Use maintenance polices for service profiles, and service profile templates set to USER-ACK.

Cisco UCS Central is integrated with and leverages Cisco UCS Manager to carry out its actions. Cisco UCS Central is designed to centralize policy definition and to create pools of global identifiers that multiple Cisco UCS domains can consume in a consistent manner.

Even as Cisco UCS Central increases its functionality and adds features, Cisco UCS Manager continues to be the interface for direct management of the Cisco UCS domain, as well as the vehicle for enforcing consistency of global policies.

Cisco UCS Central User Documentation Reference

The Cisco UCS Central following use case-based documents to understand and configure Cisco UCS Central:

Guide	Description
Cisco UCS Central Getting Started Guide	Provides a brief introduction to the Cisco UCS infrastructure, Cisco UCS Manager, and Cisco UCS Central. Includes an overview of the HTML5 UI, how to register Cisco UCS domains in Cisco UCS Central, and how to activate licenses.
Cisco UCS Central Administration Guide	Provides information on administrative tasks, such as user management, communication, firmware management, backup management, and Smart Call Home.
Cisco UCS Central Authentication Guide	Provides information on authentication tasks, such as passwords, users and roles, RBAC, TACACS+, RADIUS, LDAP, and SNMP.
Cisco UCS Central Server Management Guide	Provides information on server management, such as equipment policies, physical inventory, service profiles and templates, server pools, server boot, and server policies.
Cisco UCS Central Storage Management Guide	Provides information on storage management, such as ports and port channels, VSAN and vHBA management, storage pools, storage policies, storage profiles, disk groups, and disk group configuration.
Cisco UCS Central Network Management Guide	Provides information on network management, such as ports and port channels, VLAN and vNIC management, network pools, and network policies.

Guide	Description
Cisco UCS Central Operations Guide	Best practices for setting up, configuring, and managing domain groups for small, medium and large deployments.
Cisco UCS Central Troubleshooting Guide	Provides help for common issues in Cisco UCS Central.