Overview

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This guide includes the following information:

- Configure/Enable Server Ports; Configure/Enable Uplink Ports; Configure/Enable FC Ports.

- Create LAN Pin Groups

- Create VLANs and VLAN groups

- Create Server Links

- Configure QoS System Class

- Configure Global Policies

- Monitor Network Health

- Traffic Monitoring

Cisco UCS Manager User CLI Documentation

Cisco UCS Manager offers you a new set of smaller, use-case based documentation described in the following table:

Guide	Description
Cisco UCS Manager Getting Started Guide	Discusses Cisco UCS architecture and Day 0 operations, including Cisco UCS Manager initial configuration, and configuration best practices.

Guide	Description
Cisco UCS Manager Administration Guide	Discusses password management, role-based access configuration, remote authentication, communication services, CIMC session management, organizations, backup and restore, scheduling options, BIOS tokens and deferred deployments.
Cisco UCS Manager Infrastructure Management Guide	Discusses physical and virtual infrastructure components used and managed by Cisco UCS Manager.
Cisco UCS Manager Firmware Management Guide	Discusses downloading and managing firmware, upgrading through Auto Install, upgrading through service profiles, directly upgrading at endpoints using firmware auto sync, managing the capability catalog, deployment scenarios, and troubleshooting.
Cisco UCS Manager Server Management Guide	Discusses the new licenses, registering Cisco UCS domains with Cisco UCS Central, power capping, server boot, server profiles and server-related policies.
Cisco UCS Manager Storage Management Guide	Discusses all aspects of storage management such as SAN and VSAN in Cisco UCS Manager.
Cisco UCS Manager Network Management Guide	Discusses all aspects of network management such as LAN and VLAN connectivity in Cisco UCS Manager.
Cisco UCS Manager System Monitoring Guide	Discusses all aspects of system and health monitoring including system statistics in Cisco UCS Manager.

Multilayer Network Design

When you design a data center using a modular approach, the network is divided into three functional layers: Core, Aggregation, and Access. These layers can be physical or logical, and you can add and remove them without redesigning the entire data center network.

Because of the hierarchical topology of a modular design, the addressing is also simplified within the data center network. Modularity implies isolation of building blocks, which are separated from each other and communicate through specific network connections between the blocks. Modular design provides easy control of traffic flow and improved security. In other words, these blocks are independent from each other; a change in one block does not affect other blocks. Modularity also enables faster moves, adds, and changes (MACs) and incremental changes in the network.

Modular networks are scalable. Scalability allows for the considerable growth or reduction in the size of a network without making drastic changes. Scalable data center network design is achieved by using the principle of hierarchy and modularity.

Keep a network as simple as possible. Modular designs are simple to design, configure, and troubleshoot.

- **Access Layer**—The access layer is the first point of entry into the network for edge devices, end stations, and servers. The Access layer grants user access to network devices and provides connectivity to servers. The switches in the access layer are connected to two separate distribution layer switches for redundancy. The data center access layer provides Layer 2, Layer 3, and mainframe connectivity. The design of the access layer varies, depending on whether you use Layer 2 or Layer 3 access. The access layer in the data center is typically built at Layer 2, which allows better sharing of service devices across multiple servers. This design also enables the use of Layer 2 clustering, which requires the servers to be Layer 2 adjacent. With Layer 2 access, the default gateway, you can configure for the servers at the aggregation layer.

- **Aggregation Layer**—The aggregation (or distribution) layer aggregates the uplinks from the access layer to the data center core. This layer is the critical point for control and application services. Security and application service devices (such as load-balancing devices, SSL offloading devices, firewalls, and IPS devices) are often deployed as modules in the aggregation layer. The aggregation layer provides policy-based connectivity.

- **Core Layer**—Also known as backbone, the core layer provides high-speed packet switching, scalability and high availability, and fast convergence. Implementing a data center core is a best practice for large data centers. When you implement the core in an initial data center design, it eases network expansion and avoids disruption to the data center environment.

  Use the following criteria to determine whether a core solution is appropriate: The data center typically connects to the campus core using Layer 3 links. The data center network is summarized, and the core injects a default route into the data center network.

    - Ethernet bandwidth requirements

    - Port density

    - Administrative domains

    - Anticipated future development