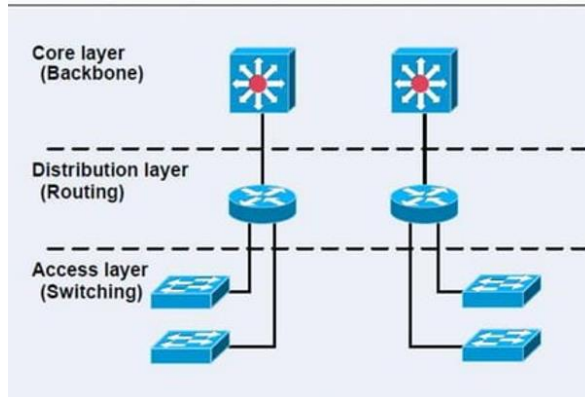


# Three –Tier hierarchical network model

## Core, Access and Distribution Layers

- Cisco has developed a layered hierarchical model for designing a reliable network infrastructure.
- This three-layer model helps you design, implement, and maintain a scalable, reliable, and cost-effective network.
- Each of layers has its own features and functionality, which reduces network complexity.



## **Access**

- controls user and workgroup access to the resources on the network.
- This layer usually incorporates Layer 2 switches and access points that provide connectivity between workstations and servers.
- You can manage access control and policy, create separate collision domains, and implement port security at this layer.

## **Distribution**

- Serves as the communication point between the access layer and the core.
- Its primary functions are to provide routing, filtering, and WAN access and to determine how packets can access the core.
- This layer determines the fastest way that network service requests are accessed – for example, how a file request is forwarded to a server – and, if necessary, forwards the request to the core layer.
- This layer usually consists of routers and multilayer switches.

## **Core**

- Also referred to as the network backbone, this layer is responsible for transporting large amounts of traffic quickly.
- The core layer provides interconnectivity between distribution layer devices it usually consists of high speed devices, like high end routers and switches with redundant links.

## **Benefits of Cisco Three-Layer hierarchical model**

- 1. The main benefits** of Cisco Three-Layer hierarchical model is that it helps to design, deploy and maintain a scalable, trustworthy, cost effective hierarchical internetwork.
- 2. Better Performance:** Cisco Three Layer Network Model allows in creating high performance networks
- 3. Better management & troubleshooting:** Cisco Three Layer Network Model allows better network management and isolate causes of network trouble.
- 4. Better Filter/Policy creation and application:** Cisco Three Layer Network Model allows better filter/policy creation application.
- 5. Better Scalability:** Cisco Three Layer Network Model allows us to efficiently accommodate future growth.
- 6. Better Redundancy:** Cisco Three Layer Network Model provides better redundancy. Multiple links across multiple devices provides better redundancy. If one switch is down, we have another alternate path to reach the destination.