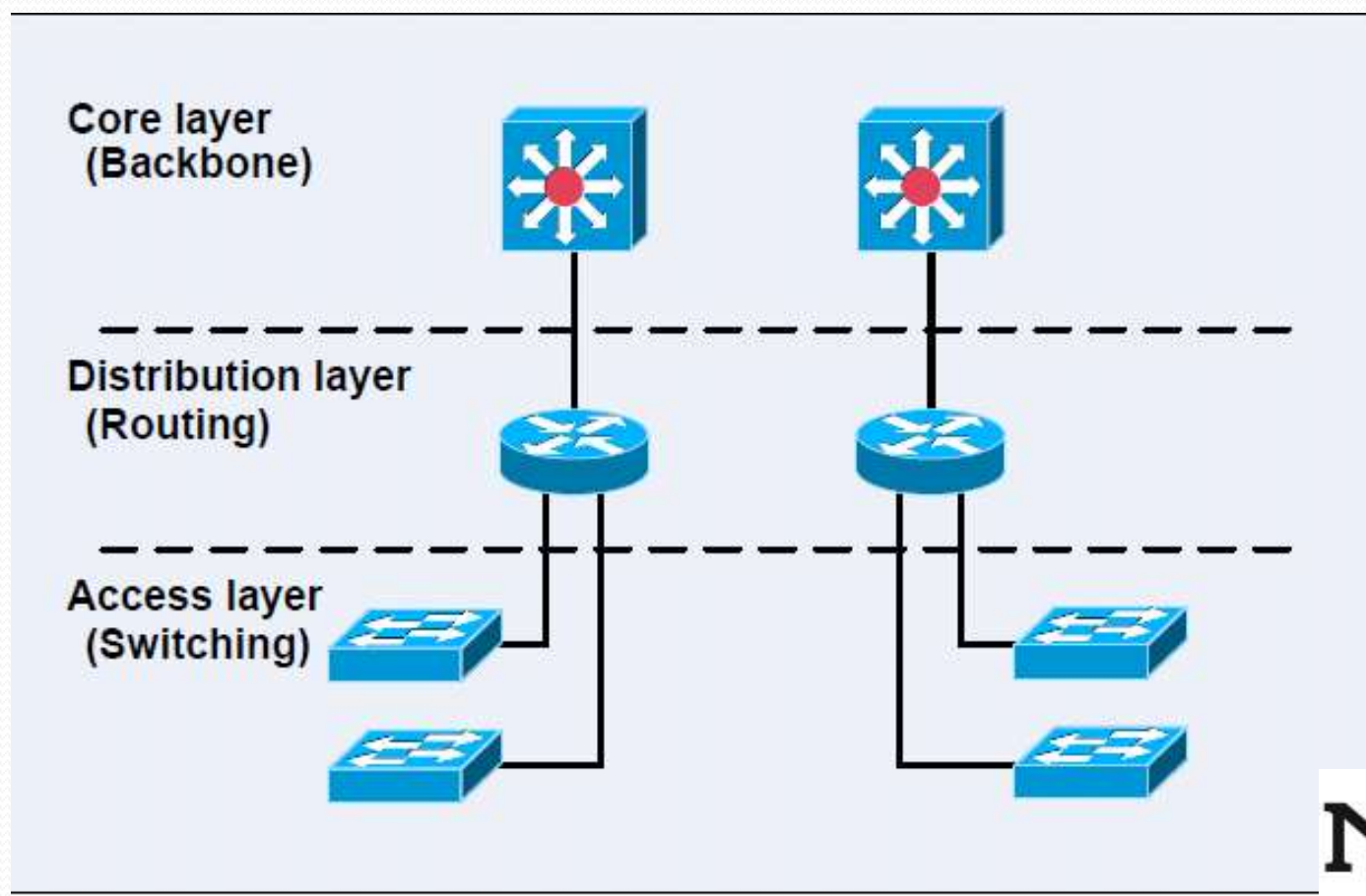


NetProtocolXpert

Enhance Internet Engineering

Cisco Three Layer / Three-tier
Hierarchical Network Model

Cisco suggests a Three-Tier (Three Layer) hierarchical network model, that consists of three layers: the Core layer, the Distribution layer, and the Access layer. Cisco Three-Layer network model is the preferred approach to network design.



Core Layer

- Core Layer consists of biggest, fastest, and most expensive routers with the highest model numbers and Core Layer is considered as the back bone of networks.
- Core Layer routers are used to merge geographically separated networks.
- The Core Layer routers move information on the network as fast as possible.
- The switches operating at core layer switches packets as fast as possible.

Distribution layer

- The Distribution Layer is located between the access and core layers.
- The purpose of this layer is to provide boundary definition by implementing access lists and other filters.
- Therefore the Distribution Layer defines policy for the network.
- Distribution Layer include high-end layer 3 switches.
- Distribution Layer ensures that packets are properly routed between subnets and VLANs in your enterprise.

Access layer

- Access layer includes access switches which are connected to the end devices (Computers, Printers, Servers etc).
- Access layer switches ensures that packets are delivered to the end devices.

Benefits of Cisco Three-Layer hierarchical model

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.

- **Better Performance:**

Cisco Three Layer Network Model allows in creating high performance networks

- **Better management & troubleshooting:**

Cisco Three Layer Network Model allows better network management and isolate causes of network trouble.

- **Better Filter/Policy creation and application:**

Cisco Three Layer Network Model allows better filter/policy creation application.

- **Better Scalability:**

Cisco Three Layer Network Model allows us to efficiently accommodate future growth.

- **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.