The distribution layer is the second layer of the Cisco three-layer hierarchical model

The Cisco three-layer hierarchical model contains three layers: core, distribution, and access. The core layer is the backbone of the network. It provides a high-speed connection between different distribution layer devices. The distribution layer connects the access layer to the core layer. The access layer provides initial connections to end users.

The distribution layer is the smart layer in the three-layer model. Routing, filtering, and QoS policies are managed at the distribution layer. Distribution layer devices also often manage individual branch-office WAN connections.

The switch working in the distribution layer is called distribution switch which receives traffic from the access layer and forwarding it to the core layer, determining the workgroup access as well as providing policy-based connectivity.

A distribution switch aggregates the traffic from the access layer, and forward and switch the data packets. A distribution switch handles local routing, filtering, traffic balancing, QoS priority management, and security mechanisms, IP address conversion, traffic shaping, and multicast management based on the user traffic of the access layer, according to which then forward user traffic to the core switching layer or route locally.

Step 1: Arranging devices and creating connections using Ethernet and serial cable between devices according to the image above

PC0

IP config : 172.16.1.2

Default Gateway: 172.16.1.1

PC1

IP config : 192.168.1.2

Default Gateway: 192.168.1.1

DS\_1

F0/0 : 172.16.1.1

F0/1 : 10.0.0.1

S0/0/0 : 30.0.0.1

Clock rate: 64000

RIP v2 : 10.0.0.0 30.0.0.0 172.16.0.0

DS\_2

F0/0 : 192.168.1.1

F0/1 : 20.0.0.1

S0/0/0 : 30.0.0.2

Clock rate: 64000

RIP v2 : 20.0.0.0 30.0.0.0 192.168.1.0

Core\_1

F0/0 : 10.0.0.2

S0/0/0 : 40.0.0.1

RIP v2 : 10.0.0.0 40.0.0.0

Core\_2 :

F0/0 : 20.0.0.2

S0/0/0 : 40.0.0.2

Clock rate: 64000

RIP v2 : 20.0.0.0 40.0.0.0