Data Center

Routers Model :
-C7200

Switches :
-IOU Switches (Image i86bi)

IP : 10.0.0.102/30 — ISP Router — IP : 10.0.0.86/30 — ISP Router 2

IP : 10.0.0.101/30 — Router 1 — IP : 10.0.0.62/30

IP : 10.0.0.85/30 — Router 1 Standby — IP : 10.0.0.66/30

Honeypot — IP : 10.0.0.61/30 (VMnet 4)

IP : 10.0.0.65/30 Standby (VMnet 5)

Sophos Firewall

Sophos Web Application Firewall :
IP : 192.168.1.250/24
Getaway : 192.168.1.1

IP : 10.0.0.54/30 (VMnet 3) — IP : 10.0.0.50/30 (VMnet 2)

-IP Class A With Subnet Mask /30 :
1-Core Switch 1
2-Core Switch 2
3-Distributed Switch 1
4-Distributed Switch 2

Domain Controller — IP : 10.0.0.202/30

IP : 10.0.0.53/30 — Core Switch 2 — IP : 10.0.0.2/30

IP : 10.0.0.49/30 — Core Switch 1 — IP : 10.0.0.1/30

IP : 10.0.0.9/30 — IP : 10.0.0.29/30 — IP : 10.0.0.25/30 — IP : 10.0.0.5/30

Info :
-OSPF is The Protocol Used Between Core and Distributed Switches.
-Core Switch 1&2 Working as a Router.
-Distributed Switch2 &1 are Work For Routing and Switching.

Info :
-We Will Use Port Channel (Desirable Mode)

Info :
-Distributed Switch 2 is VTP Server.

CME Server

IP : 10.0.0.10/30 — IP : 10.0.0.26/30 — IP : 10.0.0.30/30 — IP : 10.0.0.6/30

Distributed Switch 2 — IP : 10.0.0.22/30 — IP : 10.0.0.21/30 — Distributed Switch 1 — IP : 10.0.0.201/30

Info :
-The Cable Between Switches Will be Layer 3 to Reduce The Headache Spanning Tree Protocol (Preventing a Loop).

-But in This Scenario Loop Will Be Between Access Switches So We Can Prevent That With Access Switch For Every VLAN It's Called "Local VLAN" .

Info :
-All Cables Between Core and Distributed Switches are Layer 3.
-And All Cables Between Distributed and Access Switches and CME Server are Layer 2 (Trunk 802.1q).
-Cables Between Same Switches are Layer 3.

Info :
We Doesn't Use ICL Protocol Because it Add Header Have Big Size on Packet

Info :
-Distributed Switch 2 Will Work on VTP V3 Protocol To Distribute VLANS on Access Switches.

Info :
-All End Point Will Take IP From DHCP Except Printers

Administrative Staff — Access Switch — Switch 1

PC 1 — IP Phone 1
PC 2 — IP Phone 2
PC 3 — IP Phone 3
PC 4 — IP Phone 4
PC 5 — IP Phone 5
HP Printer
Canon Printer

Control — Switch 3

PC 1 - Control — Control - IP Phone
PC 2- Control
Control Printer

Information Technology — Switch 4

PC 1 - IT — IT – IP Phone
PC 2 - IT
PC 3 - IT

Teaching Staff — Access Switch — Switch 2

PC 1 - TS — IP Phone 1
PC 2 - TS — IP Phone 2
PC 3 - TS — IP Phone 3
PC 4 - TS — IP Phone 4
PC 5 - TS — IP Phone 5
PC 6 - TS — IP Phone 6
Printer

Virtual Switch 1

The Backup Server is not connected to the Internet and is connected to the network in cases of necessity to take a backup or restore data

This Virtual Switch Connect To Another Data Store In Server To Store Backup

Local - Backup Server
Physical Server

Info :
-VTP Modes :
1-Server :
Change
Edit on
Pass Change (Pass Through)
2-Client :
Edit on
Pass Change (Pass Through)
3-Transparent :
Change
Pass Change (Pass Through)

Info :
-We Will Use Switch Virtual Interface or SVI To Access Remotely on Switches.

-VLAN's :
[Default VLAN : VLAN 1]

1- IT -> VLAN 10 :
IP (Distributed Switch) : 172.16.0.1/26
IP (Access Switch) : 172.16.0.2/26
Network : 172.16.0.0
IP Range : 172.16.0.1 - 172.16.0.1.62
Broadcast : 172.16.0.63
Default Gateway : Distributed Switch 1

2- Administrative Staff -> VLAN 20 :
IP (Distributed Switch) : 172.16.0.65/26
IP (Access Switch) : 172.16.0.66/26
Network : 172.16.0.64
IP Range : 172.16.0.65 - 172.16.0.126
Broadcast : 172.16.0.127
Default Gateway : Distributed Switch 1

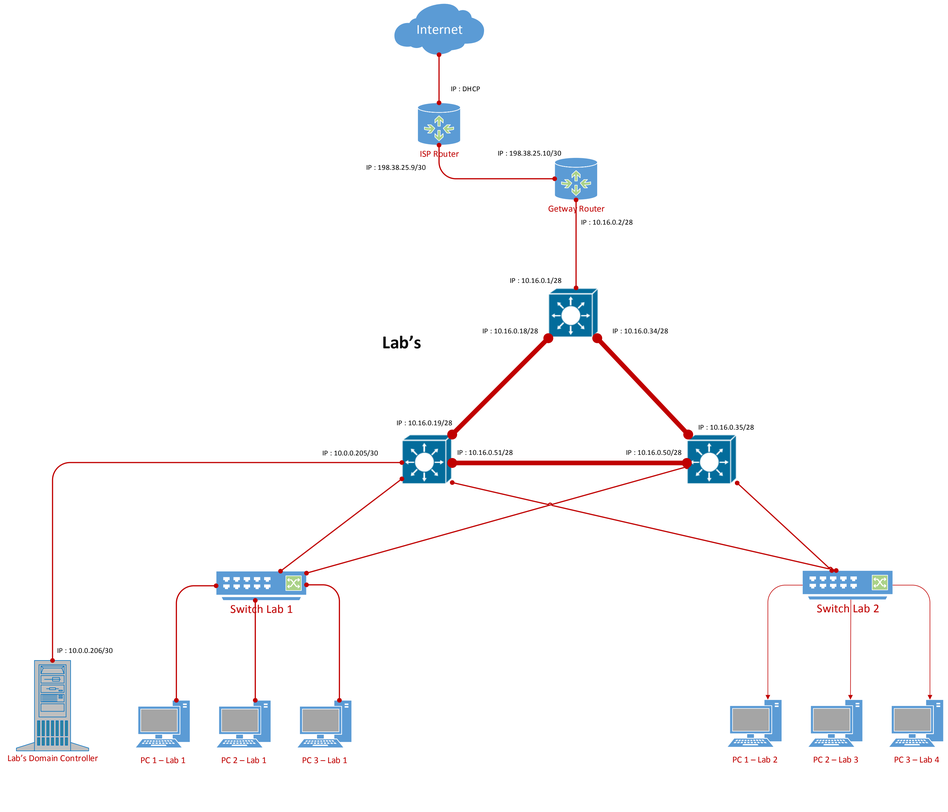
3- Teaching Staff -> VLAN 30 :
IP (Distributed Switch) : 172.16.0.129/26
IP (Access Switch) : 172.16.0.130/26
Network : 172.16.0.128
IP Range : 172.16.0.129 - 172.16.0.190
Broadcast : 172.16.0.191
Default Gateway : Distributed Switch 2

4-Control -> VLAN 40 :
IP (Distributed Switch) : 172.16.0.193/26
IP (Access Switch) : 172.16.0.194/26
Network : 172.16.0.192
IP Range : 172.16.0.193 - 172.16.0.254
Broadcast : 172.16.0.255
Default Gateway : Distributed Switch 2

IP Address:	172.16.0.1
Network Address:	172.16.0.0
Usable Host IP Range:	172.16.0.1 - 172.16.0.62
Broadcast Address:	172.16.0.63
Total Number of Hosts:	64
Number of Usable Hosts:	62
Subnet Mask:	255.255.255.192
Wildcard Mask:	0.0.0.63
Binary Subnet Mask:	11111111.11111111.11111111.11000000
IP Class:	C
CIDR Notation:	/26
IP Type:	Private
Short:	172.16.0.1 /26
Binary ID:	10101100000100000000000000000001
Integer ID:	2886729729
Hex ID:	0xac100001
in-addr.arpa:	1.0.16.172.in-addr.arpa
IPv4 Mapped Address:	::ffff:ac10.01
6to4 Prefix:	2002:ac10.01::/48

Virtual Switch 2

Physical Server — TP-Link Access Point — Laptop 1 — Laptop 2 — Smart Phone 1



Info :
1-Lab 1 -> VLAN 50 :
IP (Distributed Switch) : 172.18.0.1/26
IP (Access Switch) : 172.18.0.2/26
Network : 172.18.0.0
IP Range : 172.18.0.1 - 172.18.0.62
Broadcast : 172.18.0.63
Default Gateway : Distributed Switch 2

2-Lab 2 -> VLAN 60 :
IP (Distributed Switch) : 172.18.0.65/26
IP (Access Switch) : 172.18.0.66/26
Network : 172.18.0.64
IP Range : 172.18.0.65 - 172.18.0.126
Broadcast : 172.18.0.127
Default Gateway : Distributed Switch 1