Boston (HQ)

192.168.10.0/26

\* Technical 192.168.10.0/27 (255.255.255.224) (1,30) (29-1-2)

\* Finance 192.168.10.32/28 (255.255.255.240) (33,46) (10)

\* HR 192.168.10.48/29 (255.255.255.248) (49,54) (3)

\* BOR1 - 192.168.10.248/30 (255.255.255.252) (249,254)

\* BOR2 – 192.168.10.252/30(255.255.255.252)

Mumbai (HQ)

192.168.20.0/26

\* Technical 192.168.20.0/27 (255.255.255.224) (1,30) (30-1-2)

\* Finance 192.168.20.32/28 (255.255.255.240) (33,46) (110)

\* HR 192.168.20.48/29 (255.255.255.248) (49,54) (5)

New York

192.168.1.0/26

\* Technical 192.168.1.0/27 (255.255.255.224) (1,30) (30-1)

\* HR 192.168.1.32/29 (255.255.255.248) (33,38) (5)

London

192.168.2.0/26

\* Technical 192.168.2.0/27 (255.255.255.224) (1,30) (30-1)

\* HR 192.168.2.32/29 (255.255.255.248) (33,38) (5)

Germany

192.168.3.0/26

\* Technical 192.168.3.0/27 (255.255.255.224) (1,30) (30-1)

\* HR 192.168.3.32/29 (255.255.255.248) (33,38) (5)

Router-to-router

192.168.0.0/24

BOR3 🡪 CR 192.168.0.0/30

MUR3 🡪 CR 192.168.0.4/30

NYR2 🡪 NYR1 192.168.0.8/30

LNR2 🡪 CR 192.168.0.12/30

GER2 🡪 LNR1 192.168.0.16/30

CPT Steps:

Hardware:

PC0 – 6 🡪 6 PCs (= 2 in 3 VLANS) to SW1 (all F’s)

SW1 🡪 1 Switch (2960 model) to PC0-6 and R1 (F’s and G)

BOR1 🡪 1 Router (4321 model) to SW1 (G)

CLI:

* Add IP addresses to all PCs. Check subnet mask, default gateway IP carefully
* Select VLAN specific interfaces using ‘int range’ and make access switchports and create VLANs
* Now create a trunkport on SW1 to BOR1 interface to allow all three VLANs
* Now at BOR1, create a ROAS connection

1.2 Basic Redundancy

In this, we added three extra switches. Now each VLAN has its own dedicated switch and all switches meet at another switch SWSTP1. This SWSTP1 meets BOR1.

* Configure only their particular VLAN using ‘switchport access vlan <vlan>’
* While connecting these VLAN switches to the main SWSTP1 switch, use trunk connections. Because for future upgrades, they may have to pass other VLAN’s traffic also. Now these VLANs know only their VLAN. To pass other VLAN’s traffic it should be having its own VLAN variable.(vlan 20, 30). But we will do this in next upgrade.
* A switch will accept all VLAN traffic. But filter what to send out using ‘switchport trunk allowed vlan <vlan>,<vlan>,..’. Let’s do this at SWSTP1. But there are no VLAN variables for VLANs 10,20,30. Create them at SWSTP1. Then use the allowed command.
* Configure ROAS at BOR1. We will add a new router and switch in a later HSRP upgrade.

1.3 DHCP - DNS

We take two servers one for DHCP and one for DNS. We have reAs per the requirements of the project, we kept DHCP server in the Technical department. DNS was made as a separate VLAN. All three departments and DNS, total four VLANs connected via trunk from switch to Router using ROAS.

* Ip helper-address command must be used on both ROAS’s main and sub interfaces. Only then DHCP can be accessed.
* Making DNS as separate VLAN is the only option it seems
* Don’t forget to turn on DHCP and DNS on their respective servers

1.4