1. Do the basic configuration and clock rate to the router serial DCE interface and enable the interface also. This configuration below has been done to the F3 Core Router

en

conf t

hostname F-3-Router

int se0/1/0

no shut

clock rate 64000

exit

int se0/1/1

no shut

exit

int g0/0

no shut

do wr

**\*\* Continue the same configuration to the remaining router and be aware of dce interface before assigning the clock rate**

1. Configure the password on line console
2. Configure the vlan in each switch of all floor. Let’s begin with First Floor

en

conf t

hostname F1-SW

int g0/1

switchport mode trunk

int range f0/1-3

switchport mode access

switchport access vlan 80

vlan 80

name Reception

int range f0/4-5

switchport mode access

switchport access vlan 70

vlan 70

name Store

int range f0/6-7

switchport mode access

switchport access vlan 60

vlan 60

name Logistics

do wr

**Continue the configuration on the remaining switches.**

1. Configure the IP address to the router interface

Let’s begin with F1 router

en

conf t

int se0/1/0

ip address 10.10.10.5 255.255.255.252

int se0/1/1

ip address 10.10.10.9 255.255.255.252

do wr

for F2 router

en

conf t

int se0/1/0

ip address 10.10.10.1 255.255.255.252

int se0/1/1

ip address 10.10.10.10 255.255.255.252

do wr

for F3 router

en

conf t

int se0/1/0

ip address 10.10.10.6 255.255.255.252

int se0/1/1

ip address 10.10.10.2 255.255.255.252

do wr

1. Configure inter-vlan routing

Let’s begin by creating sub-interfaces on F1 router

en

conf t

int g0/0.80

encapsulation dot1Q 80

ip address 192.168.8.1 255.255.255.0

int g0/0.70

encapsulation dot1Q 70

ip address 192.168.7.1 255.255.255.0

int g0/0.60

encapsulation dot1Q 60

ip address 192.168.6.1 255.255.255.0

do wr

For F2 Router

en

conf t

int g0/0.50

encapsulation dot1Q 50

ip address 192.168.5.1 255.255.255.0

int g0/0.40

encapsulation dot1Q 40

ip address 192.168.4.1 255.255.255.0

int g0/0.30

encapsulation dot1Q 30

ip address 192.168.3.1 255.255.255.0

do wr

For F1 Router

en

conf t

int g0/0.10

encapsulation dot1Q 10

ip address 192.168.1.1 255.255.255.0

int g0/0.20

encapsulation dot1Q 20

ip address 192.168.2.1 255.255.255.0

do wr

1. Let’s Configure the Router’s as the DHCP server

Begin with F1-Router

en

conf t

service dhcp

ip dhcp pool Reception

network 192.168.8.0 255.255.255.0

default-router 192.168.8.1

dns-server 192.168.8.1

exit

ip dhcp pool Store

network 192.168.7.0 255.255.255.0

default-router 192.168.7.1

dns-server 192.168.7.1

exit

ip dhcp pool Logistics

network 192.168.6.0 255.255.255.0

default-router 192.168.6.1

dns-server 192.168.6.1

exit

do wr

F2-Router

en

conf t

service dhcp

ip dhcp pool Finance

network 192.168.5.0 255.255.255.0

default-router 192.168.5.1

dns-server 192.168.5.1

exit

ip dhcp pool HR

network 192.168.4.0 255.255.255.0

default-router 192.168.4.1

dns-server 192.168.4.1

exit

ip dhcp pool Sales

network 192.168.3.0 255.255.255.0

default-router 192.168.3.1

dns-server 192.168.3.1

exit

do wr

For F3-Router

en

conf t

service dhcp

ip dhcp pool IT

network 192.168.1.0 255.255.255.0

default-router 192.168.1.1

dns-server 192.168.1.1

exit

ip dhcp pool Admin

network 192.168.2.0 255.255.255.0

default-router 192.168.2.1

dns-server 192.168.2.1

exit

do wr

1. Configure the Dynamic Routing between the Router

For the this project we will use OSPF as the routing protocol

Let’s Begin with F1-Router

en

conf t

router ospf 10

network 10.10.10.4 255.255.255.252 area 0

network 10.10.10.8 255.255.255.252 area 0

network 192.168.8.0 255.255.255.0 area 0

network 192.168.7.0 255.255.255.0 area 0

network 192.168.6.0 255.255.255.0 area 0

do wr

For F2-Router

en

conf t

router ospf 10

network 10.10.10.0 255.255.255.252 area 0

network 10.10.10.8 255.255.255.252 area 0

network 192.168.5.0 255.255.255.0 area 0

network 192.168.4.0 255.255.255.0 area 0

network 192.168.3.0 255.255.255.0 area 0

do wr

For F3-Router

en

conf t

router ospf 10

network 10.10.10.0 255.255.255.252 area 0

network 10.10.10.4 255.255.255.252 area 0

network 192.168.1.0 255.255.255.0 area 0

network 192.168.2.0 255.255.255.0 area 0

do wr

1. Configuring the Access Point on Each floor for the wireless network

Click on the Access Point, then select port 01 and then set the SSID and password credentials for the wireless connection.

1. Configure the SSH to all the router for Remote Login

F1-Router

en

conf t

ip domain name ashraful.com

username admin password admin

crypto key generate rsa

1024

line vty 0 15

login local

transport input ssh

do wr

**Continue the same configuration on the remaining router**.

1. In IT department add a PC called IT-Admin PC and use the port f0/6 for the test of remote login

en

conf t

int f0/6

switchport mode access

switchport access vlan 10

1. Configure the port security to IT Dept Switch to Allow only IT-Admin-PC to the access the port f0/6 . We will use Sticky method to obtain mac-address with the violation mode of shutdown.

en

conf t

int f0/6

switchport port-security

switchport port-security maximum 1

switchport port-security mac-address sticky

switchport port-security violation shutdown

do wr

