**I . CONFIGURATION IP ET ROUTE STATIC**

**----------SPOKE1**

CONF T

INT F0/0

IP ADD 30.0.0.1 255.255.255.252

NO SH

IP ROUTE 0.0.0.0 0.0.0.0 F1/0

END

**------SPOKE2**

CONF T

INT F0/0

IP ADD 40.0.0.1 255.255.255.252

NO SH

IP ROUTE 0.0.0.0 0.0.0.0 F1/0

END

**-----FAI**

CONF T

INT F0/0

IP ADD 10.0.0.2 255.255.255.252

NO SH

END

CONF T

INT F1/0

IP ADD 30.0.0.2 255.255.255.252

NO SH

END

CONF T

INT F1/1

IP ADD 40.0.0.2 255.255.255.252

NO SH

END

**--------HUB**

CONF T

INT F1/0

IP ADD 10.0.0.1 255.255.255.252

NO SH

IP ROUTE 0.0.0.0 0.0.0.0 F1/0

END

**II. ROUTAGE OSPF**

**----- SPOKE1 -----**

conf t

router ospf 1

network 30.0.0.0 0.0.0.3 area 0

end

----- SPOKE2 -----

conf t

router ospf 1

network 40.0.0.0 0.0.0.3 area 0

end

**----- FAI -----**

conf t

router ospf 1

network 10.0.0.0 0.0.0.3 area 0

network 30.0.0.0 0.0.0.3 area 0

network 40.0.0.0 0.0.0.3 area 0

end

**----- HUB -----**

conf t

router ospf 1

network 10.0.0.0 0.0.0.3 area 0

end

**III.CONFIGURATION TUNNEL GRE AND NHRP**

**-------HUB------**

CONF T

INT TUNNEL0

IP ADD 100.0.0.1 255.255.255.252

TUNNEL SOURCE F1/0

TUNNEL KEY 2024

TUNNEL MODE GRE MULTIPOINT

IP NHRP AUTH CISCO

IP NHRP NETWORK-ID 2024

IP NHRP MAP MULTI DYN

EXIT

**---SPOKE1**

CONF T

INT TUNNEL0

IP ADD 24.0.0.1 255.255.255.252

TUNNEL SOURCE F0/0

TUNNEL KEY 2024

TUNNEL MODE GRE MULTIPOINT

IP NHRP AUTH CISCO

IP NHRP NETWORK-ID 2024

IP NHRP NHS 100.0.0.1

IP NHRP MAP 100.0.0.1 10.0.0.1

IP NHRP MAP MULTICAST 100.0.0.1

EXIT

conf t

router ospf 1

network 24.0.0.0 0.0.0.3 area 0

end

**------SPOKE2**

CONF T

INT TUNNEL0

IP ADD 25.0.0.1 255.255.255.252

TUNNEL SOURCE F0/0

TUNNEL KEY 2024

TUNNEL MODE GRE MULTIPOINT

IP NHRP AUTH CISCO

IP NHRP NETWORK-ID 2024

IP NHRP NHS 100.0.0.1

IP NHRP MAP 100.0.0.1 10.0.0.1

IP NHRP MAP MULTICAST 100.0.0.1

EXIT

**IV. LA PROTECTION**

**----- SUR HUB,SPOKE1 ,SPOKE2 ,**

crypto isakmp policy 1

encry aes

hash sha

group 5

authen pre-share

exit

crypto isakmp key cisco address 0.0.0.0 0.0.0.0

crypto ipsec transform-set isga esp-aes esp-sha-hmac

mode transport

exit

**V. LA PROTECTION DU TUNNEL**

**----- SUR HUB SPOKE1 ,SPOKE2 ,**

crypto ipsec profile isga

set transform-set isga

exit

int tunn 0

tunnel protection ipsec profile isga

**---SPOKES**

**SH IP ROUTE OSPF**

**SH CRYP ISAKMP SA**