Roteador - HSRP

#R1>enable
#R1# config terminal
#R1(config)# interface f0/0 -> interface de dentro
#R1(config-if)# standby 1 ip 192.168.0.254 / ip virtual-> gateway-padrão do grupo HSRP, para os pcs colocarem
#R1(config-if)# standby 1 priority 200 / 180 para um segundo / 160 para um terceiro
#R1(config-if)# standby 1 preempt
#R1(config-if)# standby 1 track f0/1 60 -> interface de fora
#R1(config-if)# end
#R1#wr

Roteador - Subinterfaces

#interface fast 0/X -> interface que terá as subinterfaces (a de dentro)
#(config-if)**)no shut?**
#(config-if)**)**exit
#interface fast 0/X.X -> a interface anterior mais o .nº da vlan
#**(subint - fas)**encapsulation dot1q X -> nº da vlan
#**(subint - fas)**ip address 192.168.X.1 -> ip da subinterface, onde X é o nº da vlan

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LP - Telnet/SSH

#mudar hostname
#enable secret utfpr
#username admin priv 15 secret utfpr
#ip domain-name www.utfpr.edu.br
#crypto key generate rsa
#1024
#line vty 0 15
#(line-vty)login local
#(line-vty)transport input ssh/telnet

Para switch, deve-se criar uma interface de VLAN para setar o ip.
Switch#(config)interface vlan X -> vlan a qual o switch faz parte
Switch#(config-if)ip address 192.168.X.254 -> X é a vlan
Switch#(config-if)default-gateway 192.168.X.1 -> o gateway default desta VLAN
Switch#(config-if)no shut

Switch - TRUNK

Switch(config-if)# interface fa0/X
Switch(config-if)# switchport mode trunk
Switch(config-if)# switchport trunk encapsulation dot1q // se tiver sub interface
Switch(config-if)# switchport trunk allowed vlan 10,20, 30

Switch - EtherChannel

ativo tem que ser pelo menos um de um lado, ou seja n pode ser passivo passivo

interface port-channel 1 ou 2
switchport mode trunk
switchport trunk allowed vlan all
no shut
exit
interface range fa0/2-3
switchport mode trunk
switchport trunk allowed vlan all
channel-protocol LACP/PAGP
channel-group 1 ou 2 mode active/passive(LACP) - desirable/auto(PAGP) //um de um lado outro do outro

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Switch - Spanning-Tree Protocol (raiz)

Switch(config)#spanning-tree vlan X root primary
Switch(config)#spanning-tree vlan Y root primary
Switch(config)#spanning-tree vlan Z root primary

Switch - Port Security

#entra na porta
#interface fa0/X
#switchport mode access
#switchport access vlan X
#switchport port-security
#switchport port-security maximum 10
#switchport port-security mac-address aa:bb:cc:00:00:00:00::0 -> pode ser sticky
#switchport port-security violation -----> shutdown/restrict/protect
Shutdown desliga a porta
Restrict não permite acesso e avisa
Protect não permite acesso mas não avisa

Switch - VTP

#S1(config)# vtp mode server
Device mode already VTP SERVER.
#S1(config)# vtp domain utfpr
Changing VTP domain name from NULL to utfpr
#S1(config)# end

#S2(config)# vtp mode client
Setting device to VTP CLIENT mode
#S2(config)# vtp domain utfpr
Changing VTP domain name from NULL to utfpr
#S2(config)# end

#S3(config)# vtp mode transparent
Setting device to VTP CLIENT mode
#S3(config)# vtp domain utfpr
Changing VTP domain name from NULL to utfpr
#S3(config)# end

Roteador - PPP (PAP e CHAP) Serial

#interface serial X/X/X
#(config-if)encapsulation PPP
#(config-if)authentication CHAP -> ou PAP
se CHAP,
#username outroRot password senha

Roteador - NAT

#interface fast X/X -> a interface de fora
#(config-if)ip nat outside
#(config-if)exit

#interface fast X/X -> as (sub)interfaces de dentro
#(config-if)ip nat inside
#(config-if)exit
#access-list 1 permit 192.168.1.0 0.0.0.255 -> redes abaixo, máscara invertida
#ip nat inside source list 1 interface fast 0/1 overload -> interface de FORA
#ip route 0.0.0.0 0.0.0.0 10.15.2.254 -> rede coringa, máscara coringa, gateway-padrão

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Roteador - DHCP

#ip dhcp excluded-address 192.168.1.1 192.168.1.10 -> exclui esta faixa de ip
#ip dhcp pool nome
#(dhcp-config)network 192.168.1.0 255.255.255.0 -> rede que vai aplicar e máscara da rede
#(dhcp-config)dns-server 10.15.2.254 -> ip do servidor dns
#(dhcp-config)default-router 192.168.1.1 -> ip do gateway padrão desta rede

---

Roteador - Roteamento IPv4 (OSPF)

#router ospf 1
#(config - router)router-id 1.1.1.1 -> colocar um id diferente para cada roteador

#(config - router)network 192.168.1.0 0.0.0.255 area 0 -> ip da rede e máscara invertida, fazer para todas as redes que saem deste roteador
#(config - router)default-information originate
#(config - router)end
#clear ip ospf process
#yes

Roteador - Roteamento IPv6 (OSPF)

#ipv6 unicast-routing
#ipv6 router ospf 1
#(config - router)router-id 1.1.1.1 -> colocar um id diferente para cada roteador
entrar em todas as interfaces que saem do roteador
#(config-if)ipv6 enable
#(config-if)ipv6 ospf 1 area 0
#(config-if)default-information originate -> eu acho que essa parte deveria ficar no cfg-router
#(config-if)end
#clear ipv6 ospf process
#yes

Etherchannel - LACP / PagP (fazer nos dois switch)

#interface port-channel 1 ou 2
#switchport mode trunk
#switchport trunk allowed vlan x,y,z
#no shut
#exit
#interface range fa 0/x-y
#channel-protocol lacp ou pagp
#channel-group 1 ou 2 mode--------> se lacp -> active / passive (um em cada switch, sem repetir)
se pagp -> desirable/ auto (um em cada switch, sem repetir)

Comandos de verificação

show vlan brief
show ip interface brief
show etherchannel summary

exemplo ssh no cmd:
ssh -l admin 192.168.30.254

Máscara /24 = 255.255.255.0 Invertida /24 = 0.0.0.255
Máscara /30 = 255.255.255.252 Invertida /30 = 0.0.0.3

LANS

Criar trunks
switchport mode trunk
switchport trunk allowed vlan all

VTP
vtp mode transparent, client ou server
vtp domain

Vlan
vlan *numero*
name Pesquisa
entrar nas portas e permitir as vlans:
switchport mode access
switchport access vlan all

SUBINTERFACES ROTEADOR
interface fa0/0
no shut
Router(config)#interface fa 0/0.10
Router(config-subif)#description geral
Router(config-subif)#encapsulation dot1q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface fa 0/0.20
Router(config-subif)#description geral
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#exit

Spanning-tree (no switch raiz)
Switch(config)#spanning-tree vlan 10 root primary
Switch(config)#spanning-tree vlan 20 root primary
Switch(config)#spanning-tree vlan 30 root primary

TELNET
hostname SwitchC
enable secret utfpr
username admin priv 15 secret utfpr
line vty 0 15
transport input telnet
login local
interface vlan 30
ip address 192.168.30.253 255.255.255.0
SwitchC(config)#ip default-gateway 192.168.30.1

SSH
hostname SwitchA
ip domain-name www.utfpr.edu.br
crypto key generate rsa
1024
enable secret utfpr
username admin priv 15 secret utfpr
line vty 0 15
login local
transport input ssh

interface vlan 30
ip address 192.168.30.254 255.255.255.0
SwitchC(config)#ip default-gateway 192.168.30.1 //ip é o default

Etherchannel
ativo tem que ser pelo menos um de um lado, ou seja n pode ser passivo passivo
interface port-channel 1
switchport mode trunk
switchport trunk allowed vlan all
no shut
exit
interface range fa0/2-3
channel-protocol LACP/PAGP
channel-group 1 mode active/passive(LACP) - desirable/auto(PAGP) //um de um lado outro do outro

NAT

PORT SECURITY
interface
switchport port-security mac-address sticky, anotar as outras
switchport port-security maximum 2

no raiz:
interface fa0/1
switchport mode trunk
switchport trunk allowed vlan 10,20,30

WANS

show ip ospf neighbor
ipv6
ping
ver se a adjacencia ta ok, se construiu a tabela de roteamento
acessar até o de fora
(no matriz)
ipv6 route::/0 2001:db8:ca5a:faca::1
ip route 0.0.0.0 0.0.0.0 200.1.1.1

Exemplo WANs, sem HSRP

INICIANDO ROUTER
Router(config)#enable secret utfpr
Router(config)#username admin priv 15 secret utfpr
Router(config)#ip domain-name www.utfpr.edu.br
Router(config)#hostname Filial1
FAZENDO LP PARA TELNET
Filial1(config)#line vty 0 15
Filial1(config-line)#login local
Filial1(config-line)#transport input telnet
INICIANDO AS INTERFACES COM OS SEUS IPs
Filial1(config)#interface fa0/0
Filial1(config-if)#ip address 200.100.3.1 255.255.255.0
Filial1(config-if)#no shut
Filial1(config-if)#ipv6 enable
Filial1(config-if)#ipv6 address 201:470:da6b:dddd::1/64
Filial1(config-if)#exit
Filial1(config)#interface serial 0/0/0

Filial1(config-if)#ip address 200.100.1.2 255.255.255.252
Filial1(config-if)#no shut
Filial1(config-if)#ipv6 enable
Filial1(config-if)#ipv6 address 2001:470:da6b:bbbb::2/64
Filial1(config-if)#exit
INICIANDO OSPF IPv4
Filial1(config)#router ospf 1
Filial1(config-router)#network 200.100.1.0 0.0.0.3 area 0
Filial1(config-router)#network 200.100.3.0 0.0.0.255 area 0
Filial1(config-router)#router-id 2.2.2.2
Filial1(config-router)#default-information originate
Filial1(config-router)#end
Filial1#clear ip ospf process
INICIANDO OSPF IPv6
Filial1(config)#ipv6 unicast-routing
Filial1(config)#ipv6 router ospf 1
Filial1(config-rtr)#router-id 2.2.2.2
Filial1(config-rtr)#default-information originate
Filial1(config-rtr)#end
Filial1#clear ipv6 ospf process
Reset ALL OSPF processes? [no]: yes
Filial1(config)#interface fa0/0
Filial1(config-if)#ipv6 ospf 1 area 0
Filial1(config)#interface serial 0/0/0
Filial1(config-if)#ipv6 ospf 1 area 0
Filial1(config-if)#encapsulation ppp -> setando ppp para a interface serial

INICIANDO ROUTER
Router(config)#enable secret utfpr
Router(config)#username admin priv 15 secret utfpr
Router(config)#ip domain-name www.utfpr.edu.br
Router(config)#hostname Filial2
PREPARANDO A CRYPTO KEY PARA SSH/CHAP
Filial2(config)#crypto key generate rsa
How many bits in the modulus [512]: 1024
INICIANDO AS INTERFACES COM OS SEUS IPs
Filial2(config)#interface fa 0/0
Filial2(config-if)#ip address 200.100.4.1 255.255.255.0
Filial2(config-if)#no shut
Filial2(config-if)#ipv6 enable
Filial2(config-if)#ipv6 address 2001:470:da6b:cccc::2/64
Filial2(config-if)#exit
Filial2(config)#interface serial 0/0/1
Filial2(config-if)#ip address 200.100.2.2 255.255.255.252
Filial2(config-if)#no shut
Filial2(config-if)#ipv6 enable
Filial2(config-if)#ipv6 address 2001:470:da6b:eeee::1
Filial2(config-if)#exit
INICIANDO OSPF IPv4
Filial2(config)#router ospf 1
Filial2(config-router)#network 200.100.4.0 0.0.0.255 area 0
Filial2(config-router)#network 200.100.2.0 0.0.0.3 area 0
Filial2(config-router)#router-id 3.3.3.3
Filial2(config-router)#default-information originate
Filial2(config-router)#end
Filial2#clear ip ospf process
Reset ALL OSPF processes? [no]: yes
INICIANDO OSPF IPv6

Filial2(config)#ipv6 unicast-routing
Filial2(config)#ipv6 router ospf 1
Filial2(config-rtr)#router-id 3.3.3.3
Filial2(config-rtr)#default-information originate
Filial2(config-rtr)#end
Filial2#clear ipv6 ospf process
Reset ALL OSPF processes? [no]: yes
Filial2(config)#interface fa 0/0
Filial2(config-if)#ipv6 ospf 1 area 0
Filial2(config-if)#exit
Filial2(config)#username Matriz password utfpr -> necessário ter o username do outro lado no CHAP
Filial2(config)#interface se 0/0/1
Filial2(config-if)#ipv6 ospf 1 area 0
Filial2(config-if)#encapsulation ppp -> colocando PPP + CHAP na interface serial
Filial2(config-if)#ppp authentication chap

INICIANDO ROUTER
Router(config)#enable secret utfpr
Router(config)#username admin priv 15 secret utfpr
Router(config)#hostname Matriz
Matriz(config)#ip domain-name www.utfpr.edu.br
PREPARANDO A CRYPTO KEY PARA SSH/CHAP
Matriz(config)#crypto key generate rsa
How many bits in the modulus [512]: 1024
FAZENDO LP PARA SSH
Matriz(config)#line vty 0 15
Matriz(config-line)#login local
Matriz(config-line)#transport input ssh
INICIANDO AS INTERFACES COM OS SEUS IPs
Matriz(config)#interface serial 0/0/0
Matriz(config-if)#ip address 200.100.1.1 255.255.255.252
Matriz(config-if)#no shut
Matriz(config-if)#ipv6 enable
Matriz(config-if)#ipv6 address 2001:470:da6b:bbbb::1/64
Matriz(config-if)#exit
Matriz(config)#interface serial 0/0/1
Matriz(config-if)#ip address 200.100.2.1 255.255.255.252
Matriz(config-if)#no shut
Matriz(config-if)#ipv6 enable
Matriz(config-if)#ipv6 address 2001:470:da6b:cccc::1/64
Matriz(config-if)#exit
Matriz(config)#interface fa 0/1
Matriz(config-if)#ip address 200.1.1.2 255.255.255.252
Matriz(config-if)#ip nat inside
Matriz(config-if)#no shut
Matriz(config-if)#ipv6 enable
Matriz(config-if)#ipv6 address 2001:db8:ca5a:faca::2/64
Matriz(config-if)#exit
Matriz(config)#interface fa 0/0
Matriz(config-if)#ip address 200.100.100.1 255.255.255.0
Matriz(config-if)#ip nat inside
Matriz(config-if)#no shut
Matriz(config-if)#ipv6 enable
Matriz(config-if)#ipv6 address 2001:470:da6b:aaaa::1/64
Matriz(config-if)#exit
INICIANDO OSPF IPv4
Matriz(config)#router ospf 1
Matriz(config-router)#network 200.1.1.0 0.0.0.3 area 0

Matriz(config-router)#network 200.100.1.0 0.0.0.3 area 0
Matriz(config-router)#network 200.100.2.0 0.0.0.3 area 0
Matriz(config-router)#network 200.100.100.0 0.0.0.255 area 0
Matriz(config-router)#router-id 1.1.1.1
Matriz(config-router)#default-information originate
Matriz(config-router)#end
Matriz#clear ip ospf process
Reset ALL OSPF processes? [no]: yes
INICIANDO OSPF IPv6
Matriz(config)#ipv6 unicast-routing
Matriz(config)#ipv6 router ospf 1
Matriz(config-rtr)#router-id 1.1.1.1
Matriz(config-rtr)#default-information originate
Matriz(config-rtr)#end
Matriz#clear ipv6 ospf process
Reset ALL OSPF processes? [no]: yes
Matriz(config)#interface serial 0/0/0
Matriz(config-if)#ipv6 ospf 1 area 0
Matriz(config-if)#encapsulation ppp -> setando PPP para esta interface serial
Matriz(config-if)#exit
Matriz(config)#username Filial2 password utfpr -> necessário ter o username do outro lado no CHAP
Matriz(config)#interface serial 0/0/1
Matriz(config-if)#ipv6 ospf 1 area 0
Matriz(config-if)#encapsulation ppp -> setando PPP com CHAP para esta interface serial
Matriz(config-if)#ppp authentication chap
Matriz(config-if)#exit
Matriz(config)#interface fa 0/0
Matriz(config-if)#ipv6 ospf 1 area 0
Matriz(config-if)#exit
Matriz(config)#interface fa 0/1
Matriz(config-if)#ipv6 ospf 1 area 0
Matriz(config-if)#exit
SE TUDO DER RUIM BOTE ISSO na matriz
Matriz(config)ipv6 route::/0 2001:db8:ca5a:faca::1
Matriz(config)ip route 0.0.0.0 0.0.0.0 200.1.1.1