📘 Documentación MEGA LABORATORIO CCNA

# 1. Topología y Dispositivos

- Cluster Data Center  
 - 3 Switches L3 (Catalyst 3560)  
 - 8 Switches L2 (Catalyst 2960)  
 - 6 PCs  
 - 1 Servidor NTP  
 - 1 Servidor AAA  
 - 1 Servidor SYSLOG  
 - 1 Servidor DHCP, DNS y HTTP

# 2. Configuración de Switches

## 2.1 Switch Principal (SWP1)

Configuración de VTP:  
vtp mode server  
vtp domain Servero.hn

Configuración de VLANs:  
vlan 10 name contabilidad  
vlan 11 name marketing  
vlan 12 name ventas  
vlan 13 name administración  
vlan 14 name servidores

Spanning Tree:  
spanning-tree mode rapid-pvst  
spanning-tree vlan 1,10,11,12,13,14 priority 4096

SVIs y DHCP Relay:  
interface vlan 10  
 ip address 192.168.10.1 255.255.255.0  
 ip helper-address 192.168.140.10  
  
interface vlan 11  
 ip address 192.168.11.1 255.255.255.0  
 ip helper-address 192.168.140.10  
  
interface vlan 12  
 ip address 192.168.12.1 255.255.255.0  
 ip helper-address 192.168.140.10  
  
interface vlan 13  
 ip address 192.168.13.1 255.255.255.0  
 ip helper-address 192.168.140.10  
  
interface vlan 14  
 ip address 192.168.140.1 255.255.255.0  
 ip helper-address 192.168.140.10

ACLs por VLAN:  
VLAN10\_TO\_OTHERS → reglas ICMP, DNS, SMB, denegar acceso a VLAN11 y VLAN12.  
VLAN11\_TO\_OTHERS → reglas ICMP, DNS, HTTPS hacia VLAN12, SMB hacia VLAN13, denegar VLAN10.  
VLAN12\_TO\_OTHERS → reglas ICMP, DNS, HTTPS hacia VLAN11, SMB hacia VLAN13, denegar VLAN10.  
VLAN13\_TO\_OTHERS → acceso total.  
VLAN14\_TO\_OTHERS → ICMP, DNS, RDP a VLAN13, denegar acceso a VLAN10-12.

## 2.2 Switch Secundario (SWP2)

Configuración de VTP:  
vtp mode client  
vtp domain Servero.hn  
spanning-tree mode rapid-pvst  
spanning-tree vlan 1,10,11,12,13,14 priority 8192

## 2.3 Switches de Distribución (SWD1-SWD4)

Configuración de VTP:  
vtp mode client  
vtp domain Servero.hn  
spanning-tree mode rapid-pvst  
spanning-tree vlan 1,10,11,12,13,14 priority 12288

## 2.4 Switches de Acceso (SWA-SWH)

Configuración de VTP:  
vtp mode client  
vtp domain Servero.hn  
spanning-tree mode rapid-pvst  
spanning-tree vlan 1,10,11,12,13,14 priority 61440

# 3. EtherChannel

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Canal | Dispositivos | Puertos | Protocolo | Modo | Observación |
| Po1 | SWP1 – SWP2 | Gi0/1–Gi0/2 | LACP | active/active | Uplink al Core |
| Po2 | SWP1 – SWD1 | Fa0/1–Fa0/2 | LACP | active/active | Uplink redundante |
| Po3 | SWP1 – SWD2 | Fa0/3–Fa0/4 | LACP | active/active | Respaldo |
| Po4 | SWP2 – SWD3 | Fa0/1–Fa0/2 | LACP | active/active | Uplink |
| Po5 | SWP2 – SWD4 | Fa0/3–Fa0/4 | LACP | active/active | Uplink |

# 4. Servicios de Red

## 4.1 Syslog

logging 192.168.140.11  
logging trap informational  
service timestamps log datetime msec

## 4.2 NTP

ntp server 192.168.140.12

## 4.3 AAA (TACACS+ y RADIUS con fallback local)

aaa new-model  
tacacs-server host 192.168.140.11 key TacKey123  
radius-server host 192.168.1.150 auth-port 1812 acct-port 1813 key RadKey123  
  
aaa authentication login default group tacacs+ group radius local  
aaa authentication enable default group tacacs+ group radius enable  
aaa authorization exec default group tacacs+ local  
aaa authorization commands 15 default group tacacs+ local  
aaa accounting exec default start-stop group radius  
aaa accounting commands 15 default start-stop group tacacs+  
  
line vty 0 4  
 login authentication default  
 transport input ssh  
line console 0  
 login authentication default

# 5. VPN Site-to-Site

## 5.1 Router Data Center

access-list 110 permit ip 192.168.140.0 0.0.0.255 192.168.120.0 0.0.0.255  
access-list 110 permit ip 192.168.10.0 0.0.0.255 192.168.120.0 0.0.0.255  
crypto isakmp policy 10  
 encryption aes 256  
 authentication pre-share  
 group 5  
crypto isakmp key vpnpa66 address 10.0.3.2  
crypto ipsec transform-set VPN-SET esp-aes esp-sha-hmac  
crypto map VPN-MAP 10 ipsec-isakmp  
 description VPN conexion a RB  
set peer 10.0.3.2  
 set transform-set VPN-SET  
 match address 110  
interface GigabitEthernet 0/0/0  
 crypto map VPN-MAP

## 5.2 Router Borde (RB)

access-list 110 permit ip 192.168.120.0 0.0.0.255 192.168.140.0 0.0.0.255  
access-list 110 permit ip 192.168.120.0 0.0.0.255 192.168.10.0 0.0.0.255  
crypto isakmp policy 10  
 encryption aes 256  
 authentication pre-share  
 group 5  
crypto isakmp key vpnpa66 address 10.0.0.1  
crypto ipsec transform-set VPN-SET esp-aes esp-sha-hmac  
crypto map VPN-MAP 10 ipsec-isakmp  
 description VPN conexion a ROUTERDATACENTER  
set peer 10.0.0.1  
 set transform-set VPN-SET  
 match address 110  
interface GigabitEthernet 0/0/2  
 crypto map VPN-MAP

# 6. Confirmación de Servicios

- Resolver DNS  
- Conexión VPN establecida  
- Syslog operativo  
- ACLs aplicadas