Configuración de las VPCS

Recepcion
Se configura la ip con el comando:
ip 192.168.12.11/24
save

Gerencia
ip 192.168.12.12/24
save

Servicio al Cliente
ip 192.168.12.13/24
save
Repetir el paso con el siguiente ip para las siguientes computadoras.

Oficinas Piso 1
ip 192.168.12.15/24
save
Repetir el paso con el siguiente ip para las siguientes computadoras.

Oficinas A Piso 2
ip 192.168.12.41/24
save
Repetir el paso con el siguiente ip para las siguientes computadoras.

Oficinas B Piso 2
ip 192.168.12.43/24
save
Repetir el paso con el siguiente ip para las siguientes computadoras.

Oficinas C Piso 2
ip 192.168.12.46/24
save
Repetir el paso con el siguiente ip para las siguientes computadoras.

Gerencia a Nivel 2, oficina A 1

```
Terminal
Nivel1_R ×

VPCS> ping 192.168.12.41

84 bytes from 192.168.12.41 icmp_seq=1 ttl=64 time=0.656 ms
84 bytes from 192.168.12.41 icmp_seq=2 ttl=64 time=1.006 ms
84 bytes from 192.168.12.41 icmp_seq=3 ttl=64 time=0.938 ms
84 bytes from 192.168.12.41 icmp_seq=4 ttl=64 time=1.102 ms
84 bytes from 192.168.12.41 icmp_seq=5 ttl=64 time=0.794 ms

VPCS>
```

ARP

```
15 20.048552056  aa.bb.cc.00.01.22   Spanning-tree-(for-... STP    60 Conf. Root = 32768/1/aa.bb.cc.00.01.00  Cost = 0  Port = 0x80...
14 21.991762919  Private_66:68:21    Broadcast           ARP    64 Who has 192.168.12.41? Tell 192.168.12.12
15 21.992539605  Private_66:68:1e    Private_66:68:21    ARP    64 192.168.12.41 is at 00:50:79:66:68:1e
16 21.993567583  192.168.12.12       192.168.12.41       ICMP   98 Echo (ping) request  id 0xb234  seq 1/256  ttl 64 (reply in 1
```

Mac address table de los switches despues del primer ping
Switch 1

```
Switch>sh mac address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
   1    0050.7966.681e    DYNAMIC     Et0/0
   1    0050.7966.6821    DYNAMIC     Et2/2
   1    0642.905e.0a44    DYNAMIC     Et2/2
   1    1627.f54c.ae4b    DYNAMIC     Et0/0
   1    4242.9292.bf85    DYNAMIC     Et2/0
   1    4e05.c115.3058    DYNAMIC     Et0/0
   1    72a9.fa7a.f6cc    DYNAMIC     Et2/1
   1    aa91.7cca.bec7    DYNAMIC     Et0/0
   1    aabb.cc00.0200    DYNAMIC     Et0/0
   1    de6d.d36a.8cf3    DYNAMIC     Et0/0
Total Mac Addresses for this criterion: 10
```

Switch 2

```
Switch>sh mac address-table
          Mac Address Table
-------------------------------------------------

Vlan      Mac Address       Type        Ports
----      -----------       --------    -----
   1      0050.7966.681e    DYNAMIC     Et1/2
   1      0050.7966.6821    DYNAMIC     Et0/0
   1      0642.905e.0a44    DYNAMIC     Et0/0
   1      1627.f54c.ae4b    DYNAMIC     Et1/1
   1      4242.9292.bf85    DYNAMIC     Et0/0
   1      4a5a.5b06.e187    DYNAMIC     Et1/2
   1      4e05.c115.3058    DYNAMIC     Et0/1
   1      72a9.fa7a.f6cc    DYNAMIC     Et0/0
   1      aa91.7cca.bec7    DYNAMIC     Et2/1
   1      aabb.cc00.0100    DYNAMIC     Et0/0
   1      de6d.d36a.8cf3    DYNAMIC     Et2/2
Total Mac Addresses for this criterion: 11
Switch>
```

Ping desde Nivel1_SC1 (nivel 1 servicio al cliente) hacia Nivel2_OC1 (Nivel 2, Oficina C)

```
VPCS> ping 192.168.12.46

84 bytes from 192.168.12.46 icmp_seq=1 ttl=64 time=0.740 ms
84 bytes from 192.168.12.46 icmp_seq=2 ttl=64 time=0.813 ms
84 bytes from 192.168.12.46 icmp_seq=3 ttl=64 time=0.754 ms
84 bytes from 192.168.12.46 icmp_seq=4 ttl=64 time=0.859 ms
84 bytes from 192.168.12.46 icmp_seq=5 ttl=64 time=0.861 ms
```

Captura de paquete ARP y ICMP desde Nivel1_SC1

	Time	Source	Destination	Protocol	Length	Info
22	26.313911829	aa:bb:cc:00:02:00	CDP/VTP/DTP/PAgP/UD…	DTP	90	Dynamic Trunk Protocol
23	26.748155886	Private_66:68:24	Broadcast	ARP	64	Who has 192.168.12.46? Tell 192.168.12.13
24	26.748956957	Private_66:68:15	Private_66:68:24	ARP	64	192.168.12.46 is at 00:50:79:66:68:15
25	26.749150446	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xc935, seq=1/256, ttl=64 (reply in 2…
26	26.749810968	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xc935, seq=1/256, ttl=64 (request in…
27	26.879247699	fe80::b405:7eff:fe7…	ff02::2	ICMPv6	70	Router Solicitation from b6:05:7e:75:a5:57
28	27.751214609	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xca35, seq=2/512, ttl=64 (reply in 2…
29	27.751980106	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xca35, seq=2/512, ttl=64 (request in…
30	28.138991067	aa:bb:cc:00:01:02	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 0 Port = 0x80…
31	28.753291085	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xcb35, seq=3/768, ttl=64 (reply in 3…
32	28.753894902	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xcb35, seq=3/768, ttl=64 (request in…
33	29.755146032	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xcc35, seq=4/1024, ttl=64 (reply in …
34	29.755936510	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xcc35, seq=4/1024, ttl=64 (request i…
35	30.140101131	aa:bb:cc:00:01:02	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 0 Port = 0x80…
36	30.758048718	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xcd35, seq=5/1280, ttl=64 (reply in …
37	30.758702640	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xcd35, seq=5/1280, ttl=64 (request i…

Captura de paquete ARP y ICMP desde Nivel2_OC1

	Time	Source	Destination	Protocol	Length	Info
13	16.750028194	aa:bb:cc:00:02:30	CDP/VTP/DTP/PAgP/UD…	DTP	60	Dynamic Trunk Protocol
14	16.750072008	aa:bb:cc:00:02:30	CDP/VTP/DTP/PAgP/UD…	DTP	90	Dynamic Trunk Protocol
15	17.184940806	Private_66:68:24	Broadcast	ARP	64	Who has 192.168.12.46? Tell 192.168.12.13
16	17.185081714	Private_66:68:15	Private_66:68:24	ARP	64	192.168.12.46 is at 00:50:79:66:68:15
17	17.185875827	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xc935, seq=1/256, ttl=64 (reply in 1…
18	17.186026410	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xc935, seq=1/256, ttl=64 (request in…
19	18.188032634	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xca35, seq=2/512, ttl=64 (reply in 2…
20	18.188158746	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xca35, seq=2/512, ttl=64 (request in…
21	18.570883712	aa:bb:cc:00:02:30	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 100 Port = 0x…
22	19.190008665	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xcb35, seq=3/768, ttl=64 (reply in 2…
23	19.190095386	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xcb35, seq=3/768, ttl=64 (request in…
24	20.192004299	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xcc35, seq=4/1024, ttl=64 (reply in …
25	20.192173691	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xcc35, seq=4/1024, ttl=64 (request i…
26	20.570974221	aa:bb:cc:00:02:30	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 100 Port = 0x…
27	21.194758888	192.168.12.13	192.168.12.46	ICMP	98	Echo (ping) request id=0xcd35, seq=5/1280, ttl=64 (reply in …
28	21.194915042	192.168.12.46	192.168.12.13	ICMP	98	Echo (ping) reply id=0xcd35, seq=5/1280, ttl=64 (request i…
29	22.184355829	fe80::410:61ff:fe3b…	ff02::2	ICMPv6	70	Router Solicitation from 06:10:61:3b:a6:4d
30	22.580346794	aa:bb:cc:00:02:30	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 100 Port = 0x…

Ping desde Nivel1_R(Nivel 1 Recepcion) hacia Nivel2_OB1 (Nivel 2, Oficina B)

Captura de paquetes desde Nivel1_R

	Time	Source	Destination	Protocol	Length	Info
9	4.012058292	aa:bb:cc:00:01:12	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 0 Port = 0x80…
10	4.553708275	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf636, seq=2/512, ttl=64 (reply in 1…
11	4.556007969	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf636, seq=2/512, ttl=64 (request in…
12	5.556843757	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf736, seq=3/768, ttl=64 (reply in 1…
13	5.557527334	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf736, seq=3/768, ttl=64 (request in…
14	6.016564832	aa:bb:cc:00:01:12	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 0 Port = 0x80…
15	6.558914761	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf836, seq=4/1024, ttl=64 (reply in …
16	6.560683874	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf836, seq=4/1024, ttl=64 (request i…
17	7.561305051	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf936, seq=5/1280, ttl=64 (reply in …
18	7.562306197	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf936, seq=5/1280, ttl=64 (request i…
19	8.018474333	aa:bb:cc:00:01:12	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 0 Port = 0x80…
20	10.020818209	aa:bb:cc:00:01:12	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 0 Port = 0x80

Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface eth0, id 0

Captura de paquetes desde Nivel2_OB1

	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf736, seq=3/768, ttl=64 (reply in 2)
2	0.000030101	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf736, seq=3/768, ttl=64 (request in…
3	0.458509960	aa:bb:cc:00:02:02	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 100 Port = 0x…
4	1.003051001	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf836, seq=4/1024, ttl=64 (reply in …
5	1.003250136	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf836, seq=4/1024, ttl=64 (request i…
6	2.004488515	192.168.12.11	192.168.12.43	ICMP	98	Echo (ping) request id=0xf936, seq=5/1280, ttl=64 (reply in …
7	2.004517218	192.168.12.43	192.168.12.11	ICMP	98	Echo (ping) reply id=0xf936, seq=5/1280, ttl=64 (request i…
8	2.465979016	aa:bb:cc:00:02:02	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 100 Port = 0x…
9	4.472694419	aa:bb:cc:00:02:02	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/1/aa:bb:cc:00:01:00 Cost = 100 Port = 0x…