1-

No.	Time	Source	Destination	Protocol	Lengtl	Info
1	0.000000	Private_66:68:00	Broadcast	ARP	64	Who has 192.168.1.100? Tell 192.168.1.1
2	1.005646	Private_66:68:00	Broadcast	ARP	64	Who has 192.168.1.100? Tell 192.168.1.1
3	2.011005	Private_66:68:00	Broadcast	ARP	64	Who has 192.168.1.100? Tell 192.168.1.1

No.	Time	Source	Destination	Protocol	Lengtl	Info
13	21.251735	c2:01:43:24:00:00	Private_66:68:02	ARP	60	192.168.1.100 is at c2:01:43:24:00:00
14	21.266711	192.168.1.3	192.168.1.100	ICMP	98	Echo (ping) request id=0x3a84, seq=1/256, ttl=64 (reply in 15)
15	21.281713	192.168.1.100	192.168.1.3	ICMP	98	Echo (ping) reply id=0x3a84, seq=1/256, ttl=255 (request in 14)
16	22.002259	c2:01:43:24:f1:00	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/0/c2:01:43:24:00:00 Cost = 0 Port = 0x8029
17	22.302523	192.168.1.3	192.168.1.100	ICMP	98	Echo (ping) request id=0x3b84, seq=2/512, ttl=64 (reply in 18)
18	22.317523	192.168.1.100	192.168.1.3	ICMP	98	Echo (ping) reply id=0x3b84, seq=2/512, ttl=255 (request in 17)
19	23.337653	192.168.1.3	192.168.1.100	ICMP	98	Echo (ping) request id=0x3c84, seq=3/768, ttl=64 (reply in 20)
20	23.352653	192.168.1.100	192.168.1.3	ICMP	98	Echo (ping) reply id=0x3c84, seq=3/768, ttl=255 (request in 19)
21	24.013242	c2:01:43:24:f1:00	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/0/c2:01:43:24:00:00 Cost = 0 Port = 0x8029
22	24.373200	192.168.1.3	192.168.1.100	ICMP	98	Echo (ping) request id=0x3d84, seq=4/1024, ttl=64 (reply in 23)
23	24.388232	192.168.1.100	192.168.1.3	ICMP	98	Echo (ping) reply id=0x3d84, seq=4/1024, ttl=255 (request in 22)
24	25.408372	192.168.1.3	192.168.1.100	ICMP	98	Echo (ping) request id=0x3e84, seq=5/1280, ttl=64 (reply in 25)
25	25.423370	192.168.1.100	192.168.1.3	ICMP	98	Echo (ping) reply id=0x3e84, seq=5/1280, ttl=255 (request in 24)
26	26.008889	c2:01:43:24:f1:00	Spanning-tree-(for-…	STP	60	Conf. Root = 32768/0/c2:01:43:24:00:00 Cost = 0 Port = 0x8029

Ping from:	Ping to:	Connectivity (yes or no)	Packets (PC1-Switch1 link)	Packets (PC3-Switch1 link)
PC2	Switch1	No		ARP Broadcast
PC2	PC3	No		ARP Broadcast
PC2	192.168.1.34	No		ARP Broadcast
PC3	Switch 1	Yes		ICMP-request, reply
PC3	PC2	No		ARP Broadcast
PC3	192.168.1.34	No		ARP Broadcast
Switch1	PC3	Yes		ICMP-request, reply
Switch1	192.168.1.34	No		ARP Broadcast

A Conectividade só é estabelecida com sucesso, quando ambos estão na mesma VLAN e conseguem trocar pacotes ICMP e ARP.

2.2-

Ping from:	Ping to:	Connectivity (yes or no)	Filtered packets
PC1	Switch 1	yes	ARP, ICMP
PC1	Switch 2	yes	ARP, ICMP
PC1	PC2	no	ARP
PC1	PC3	no	ARP
PC2	Switch 1	no	ARP
PC2	Switch 2	no	ARP
PC2	PC2	yes	ICMP
PC2	PC3	yes	ARP, ICMP

Não há comunicação direta entre VLANs diferentes. Somente dispositivos na mesma VLAN podem se comunicar diretamente.

3.4 -

```
192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
   192.168.1.0/24 is directly connected, GigabitEthernet0/0.2
   192.168.1.254/32 is directly connected, GigabitEthernet0/0.2
192.168.20.0/24 is variably subnetted, 2 subnets, 2 masks
   192.168.20.0/24 is directly connected, GigabitEthernet0/0.3
   192.168.20.254/32 is directly connected, GigabitEthernet0/0.3
```

O router tem conhecimento das redes 192.168.1.0/24 e 192.168.20.0/24, ambas divididas em sub-redes menores e cada uma dessas sub-redes está diretamente conectada a uma interface do router, o que significa que o router pode enviar pacotes diretamente para dispositivos nessas redes.

3.5 -

Ping from:	Ping to:	Connectivity (yes or no)	Filtered packets
PC4	Switch 4	✖	ARP
PC4	Router	Sim	ICMP
PC4	PC5	✖	ARP
PC4	192.1.1.100	✖	ARP
PC5	Switch 4	✖	ARP
PC5	Router	Sim	ICMP
PC5	PC4	✖	ARP
PC5	192.1.1.100	✖	ARP

No diagrama, o ping dos PCs para o router funciona porque foi configurado um trunk entre o switch (ESW4) e o router (R1), permitindo que várias VLANs (neste caso, VLAN 1, VLAN 2 e VLAN 3) sejam transportadas sobre o mesmo link físico entre o switch e o router.