

TENEMOS:

- RED: 192.168.1.0
- TIPO DE RED: CLASE C
- MASCARA POR DEFECTO: 255.255.255.0 – 11111111.11111111.11111111.00000000
- PREFIJO: /24

NECESITAMOS:

- 8 SUBREDES
- CADA LAN UNA SUBRED DISTINTA
- DEFINIR CADA SUBRED
- ELEGIR Y DOCUMENTAR LA SUBRED Y DIRECCIONES

Como inicialmente tenemos una red de **clase c**, su máscara por defecto deja un espacio de **8 bits** para hosts. Esto representado sería una potencia de $2^8 = 256 - 2$ (red y broadcast) = **254 host** posibles. Pero como necesitamos 8 subredes, vamos a coger **3 bits** de la máscara para poder dividirla y tener suficiente espacio en cada subred para las ips necesarias y una posible ampliación de dispositivos en el futuro.

11111111.11111111.11111111.11100000 = 255.255.255.224

/24 + 3 bits = /27 sería el nuevo prefijo de la máscara de subred.

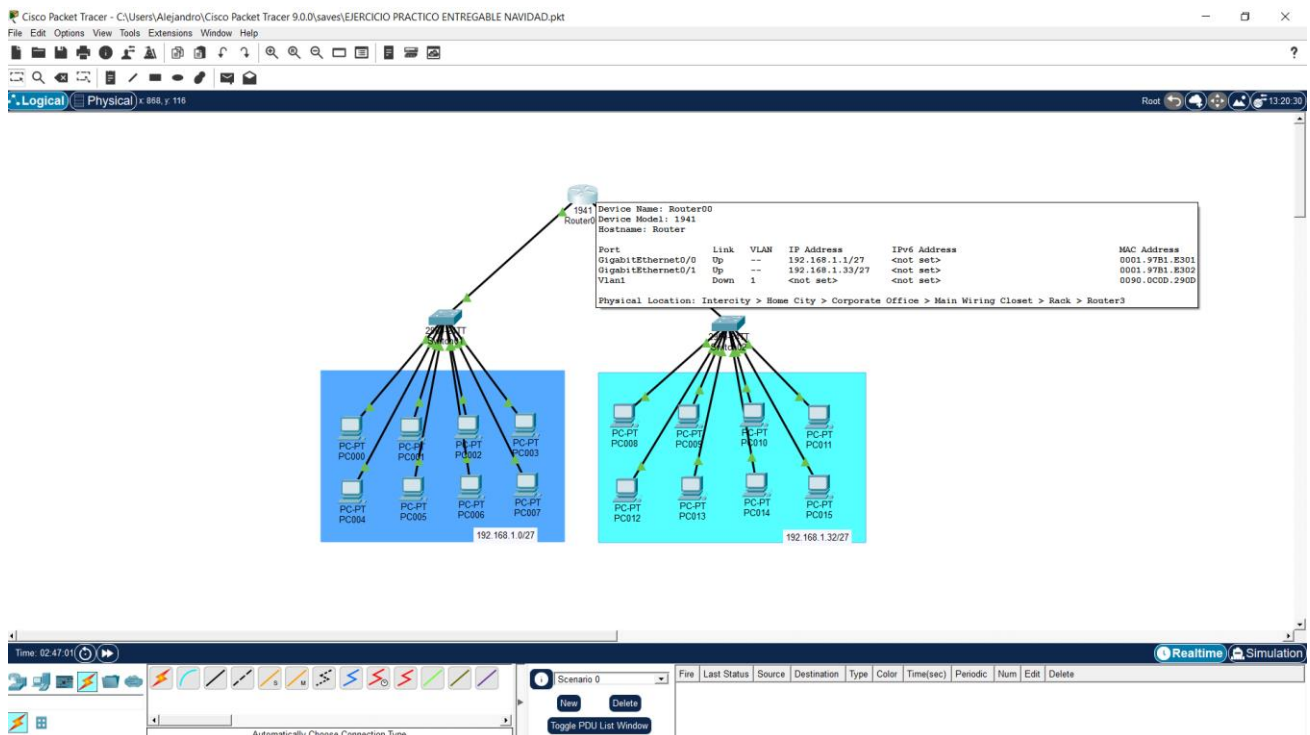
Quedarían **5 bits** para hosts ($2^5 = 32 - 2$ (red y broadcast) = **30**) que serían **30 dispositivos** para cada subred, espacio mas que suficiente para lo que necesitamos.

REPRESENTACIÓN EN TABLA:

NÚMERO	RED	MÁSCARA	PREFIJO	IP INICIO	IP FIN	BROADCAST
1	192.168.1.0	255.255.255.224	/27	192.168.1.1	192.168.1.30	192.168.1.31
2	192.168.1.32	255.255.255.224	/27	192.168.1.33	192.168.1.62	192.168.1.63
3	192.168.1.64	255.255.255.224	/27	192.168.1.65	192.168.1.94	192.168.1.95
4	192.168.1.96	255.255.255.224	/27	192.168.1.97	192.168.1.126	192.168.1.127
5	192.168.1.128	255.255.255.224	/27	192.168.1.129	192.168.1.158	192.168.1.159
6	192.168.1.160	255.255.255.224	/27	192.168.1.161	192.168.1.190	192.168.1.191
7	192.168.1.192	255.255.255.224	/27	192.168.1.193	192.168.1.222	192.168.1.223
8	192.168.1.224	255.255.255.224	/27	192.168.1.225	192.168.1.254	192.168.1.255

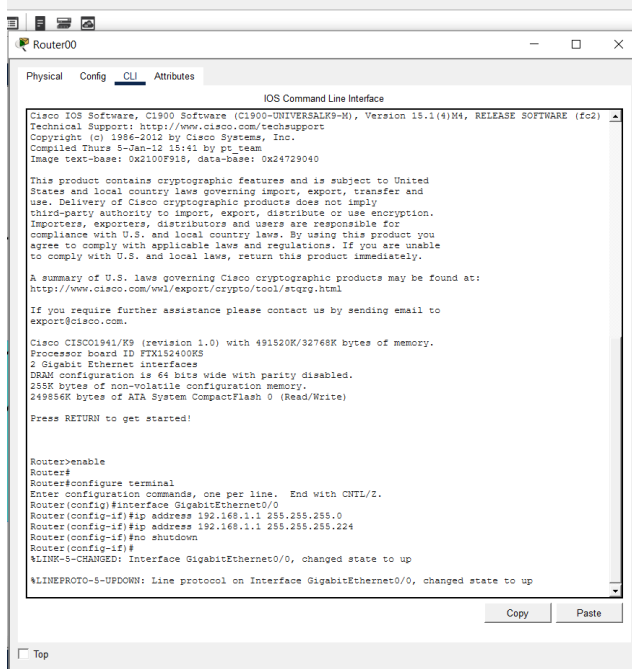
CISCO PACKET TRACER:

SUBRED 1	192.168.1.0
ROUTER (GIGABIT 0)	192.168.1.1
PC000	192.168.1.2
PC001	192.168.1.3
PC002	192.168.1.4
PC003	192.168.1.5
PC004	192.168.1.6
PC005	192.168.1.7
PC006	192.168.1.8
PC007	192.168.1.9
LIBRES	192.168.1.10 - 192.168.1.30
BROADCAST	192.168.1.31
SUBRED 2	192.168.1.32
ROUTER (GIGABIT 1)	192.168.1.33
PC008	192.168.1.34
PC009	192.168.1.35
PC010	192.168.1.36
PC011	192.168.1.37
PC012	192.168.1.38
PC013	192.168.1.39
PC014	192.168.1.40
PC015	192.168.1.41
LIBRES	192.168.1.42 - 192.168.1.62
BROADCAST	192.168.1.63



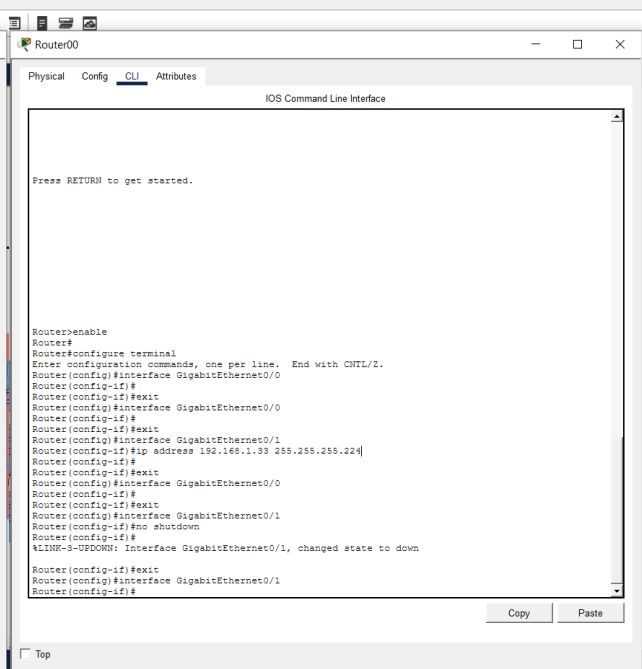
COMANDOS SUBRED 1

RCICIO PRACTICO ENTREGABLE NAVIDAD.pkt



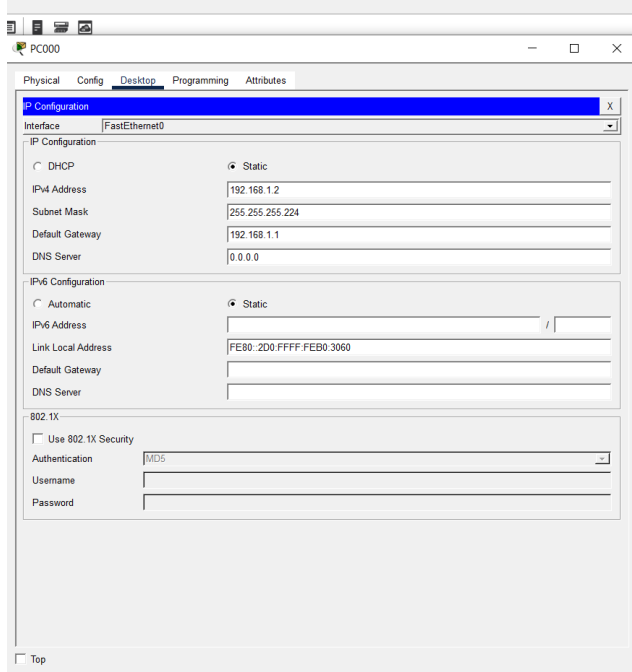
COMANDO SUBRED 2

RCICIO PRACTICO ENTREGABLE NAVIDAD.pkt

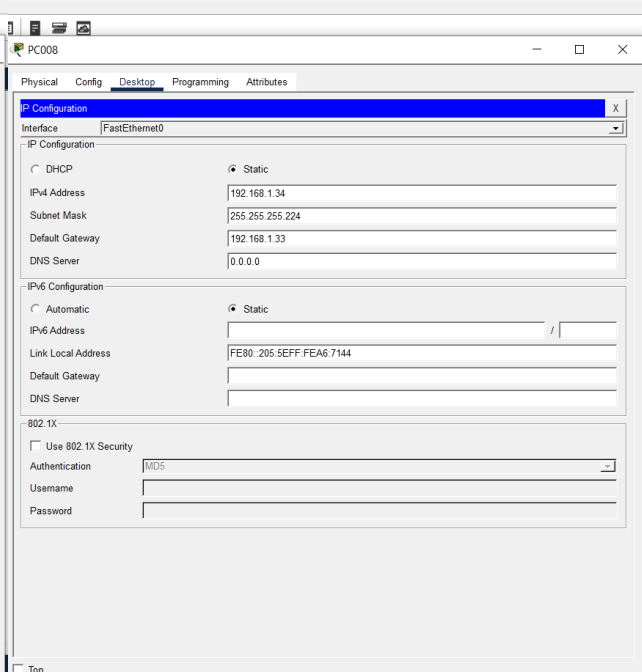


CONFIGURACION IP DE 1 ORDENADOR DE CADA SUBRED

RCICIO PRACTICO ENTREGABLE NAVIDAD.pkt



RCICIO PRACTICO ENTREGABLE NAVIDAD.pkt



COMPROBACIONES DE CONECTIVIDAD / PING SUBREDES DISTINTAS

ICICIO PRACTICO ENTREGABLE NAVIDAD.pkt

The image shows two side-by-side screenshots of the Cisco Packet Tracer PC Command Line interface for two different PCs, PC000 and PC008. Both windows have tabs for Physical, Config, Desktop, Programming, and Attributes, with the Desktop tab selected. The Command Prompt window in each shows the output of a series of ping commands.

PC000 Command Prompt:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.34

Pinging 192.168.1.34 with 32 bytes of data:

Reply from 192.168.1.34: bytes=32 time=1ms TTL=127
Reply from 192.168.1.34: bytes=32 time=1ms TTL=127
Reply from 192.168.1.34: bytes=32 time=1ms TTL=127
Reply from 192.168.1.34: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.1.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.37

Pinging 192.168.1.37 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.37: bytes=32 time=1ms TTL=127
Reply from 192.168.1.37: bytes=32 time=1ms TTL=127
Reply from 192.168.1.37: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.1.37:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 3ms

C:\>
```

PC008 Command Prompt:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.2: bytes=32 time=1ms TTL=127
Reply from 192.168.1.2: bytes=32 time=1ms TTL=127
Reply from 192.168.1.2: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.3: bytes=32 time=1ms TTL=127
Reply from 192.168.1.3: bytes=32 time=1ms TTL=127
Reply from 192.168.1.3: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

COMPROBACIONES DE CONECTIVIDAD / PING MISMA SUBRED, ENTRE MISMA SUBRED Y GATEWAY

ICICIO PRACTICO ENTREGABLE NAVIDAD.pkt

The image shows two side-by-side screenshots of the Cisco Packet Tracer PC Command Line interface for two different PCs, PC002 and PC010. Both windows have tabs for Physical, Config, Desktop, Programming, and Attributes, with the Desktop tab selected. The Command Prompt window in each shows the output of a series of ping commands.

PC002 Command Prompt:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time=1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

PC010 Command Prompt:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.32

Pinging 192.168.1.32 with 32 bytes of data:

Reply from 192.168.1.34: bytes=32 time=30ms TTL=128
Reply from 192.168.1.35: bytes=32 time=30ms TTL=128
Reply from 192.168.1.37: bytes=32 time=30ms TTL=128
Reply from 192.168.1.40: bytes=32 time=30ms TTL=128
Reply from 192.168.1.38: bytes=32 time=40ms TTL=128
Reply from 192.168.1.41: bytes=32 time=40ms TTL=128
Reply from 192.168.1.33: bytes=32 time=1ms TTL=255
Reply from 192.168.1.34: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.37: bytes=32 time=1ms TTL=128
Reply from 192.168.1.38: bytes=32 time=1ms TTL=128
Reply from 192.168.1.39: bytes=32 time=1ms TTL=128
Reply from 192.168.1.40: bytes=32 time=1ms TTL=128
Reply from 192.168.1.41: bytes=32 time=1ms TTL=128
Reply from 192.168.1.32: bytes=32 time=1ms TTL=255
Reply from 192.168.1.34: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.37: bytes=32 time=1ms TTL=128
Reply from 192.168.1.38: bytes=32 time=1ms TTL=128
Reply from 192.168.1.39: bytes=32 time=1ms TTL=128
Reply from 192.168.1.40: bytes=32 time=1ms TTL=128
Reply from 192.168.1.41: bytes=32 time=1ms TTL=128
Reply from 192.168.1.33: bytes=32 time=1ms TTL=255

Ping statistics for 192.168.1.32:
    Packets: Sent = 4, Received = 31, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 48ms, Average = 11ms

C:\>ping 192.168.1.40

Pinging 192.168.1.40 with 32 bytes of data:

Reply from 192.168.1.40: bytes=32 time=1ms TTL=128
Reply from 192.168.1.40: bytes=32 time=1ms TTL=128
Reply from 192.168.1.40: bytes=32 time=1ms TTL=128
Reply from 192.168.1.40: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.40:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

