

SUBREDES CLASE B CON MASCARA DE LOGITUD FIJA (CIDR)

128	64	32	16	8	4	2	1
7	6	5	4	3	2	1	0

Para la red con dirección 135.40.0.0/16 obtener 10 Subredes:

Paso 1: identificar cual es la clase de esta red

Clase B

Paso 2: Identificar la máscara de red

255.255.0.0 11111111.11111111.00000000.00000000 la máscara de la red original

Paso 3: encontrar un numero de n que elevado sea mayor al número de subredes.

$2^n \geq 10$ subredes; $2^4 \geq 10$; $16 \geq 10$ $n=4$

Paso 4: transformar la máscara de red original a la máscara que ocupara la subred que ocuparía $n=4$

255.255.240.0 11111111.11111111.11110000.00000000 mascara de subred

Paso 5: Encontrar el número mágica

$256 - 240 = 16$

Una vez que se el número máximo en CIDR primero pongo la dirección de red de todas las subredes y en base a esa subred pongo la primera IP, la última IP y el Broadcast ya que es correlativa al tener todas las subredes iguales por número de host.

Nombre subred	Dirr.Red	Ma	Masket	Primera IP	Ultima IP	Broadcast
Subred 1	135.40.0.0	/20	255.255.240.0	135.40.0.1	135.40.15.254	135.40.15.255
Subred 2	135.40.16.0	/20	255.255.240.0	135.40.16.1	135.40.31.254	135.40.31.255
Subred 3	135.40.32.0	/20	255.255.240.0	135.40.32.1	135.40.47.254	135.40.47.255
Subred 4	135.40.48.0	/20	255.255.240.0	135.40.48.1	135.40.63.254	135.40.63.255
Subred 5	135.40.64.0	/20	255.255.240.0	135.40.64.1	135.40.79.254	135.40.79.255
Subred 6	135.40.80.0	/20	255.255.240.0	135.40.80.1	135.40.95.254	135.40.95.255
Subred 7	135.40.96.0	/20	255.255.240.0	135.40.96.1	135.40.111.254	135.40.111.255
Subred 8	135.40.112.0	/20	255.255.240.0	135.40.112.1	135.40.127.254	135.40.127.255
Subred 9	135.40.128.0	/20	255.255.240.0	135.40.128.1	135.40.143.254	135.40.143.255
Subred 10	135.40.144.0	/20	255.255.240.0	135.40.144.1	135.40.159.254	135.40.159.255

En la última subred 10 para saber cuál es sería:

135.40.144.0 ($144+16-1=254$) -----> 135.40.159.254

22 - Subnetting Clase B con Máscara de Longitud Fija (CyERD)

<https://www.youtube.com/watch?v=SN9VKtRt3I>

SUBREDES CLASE B CON MASCARA DE LOGITUD VARIABLE (VLMS)

Dada la red con dirección 135.40.0.0/16, encontrar 6 subredes:

Tercer octeto								Cuarto Octeto							
128	64	32	16	8	4	2	1	128	64	32	16	8	4	2	1
32768	16384	8192	4096	2048	1024	512	256	128	64	32	16	8	4	2	1
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0

Hay que ordenarlos las subredes de mayor y menor;

Subred	Host	Dir Sub	1º IP	Últ. IP	Broadcast	GW	MSR dec.	MSR
Alumnos	3000	135.40.0.0	135.40.0.1	135.40.15.254	135.40.15.255	135.40.0.1	255.255.240.0	/20
Docentes	2540	135.40.16.0	135.40.16.1	135.40.31.254	135.40.31.255	135.40.16.1	255.255.240.0	/20
Secretarias	1230	135.40.32.0	135.40.32.1	135.40.39.254	135.40.39.255	135.40.32.1	255.255.248.0	/21
Manten.	1000	135.40.40.0	135.40.40.1	135.40.43.254	135.40.43.255	135.40.40.1	255.255.252.0	/22
Administr.	450	135.40.44.0	135.40.44.1	135.40.45.254	135.40.45.255	135.40.44.1	255.255.254.0	/23
Cafetería	320	135.40.46.0	135.40.46.1	135.40.47.254	135.40.47.255	135.40.46.1	255.255.254.0	/23

135.40.48.0

23 - Subnetting Clase B con VLSM (CyERD)

<https://www.youtube.com/watch?v=OUhu2fisQ4w>

Comprobación en la calculadora <http://www.vlsmcalc.net/>

Major network: 135.40.0.0/16

Subnets

Name	Size
Alumnos	3000
Docentes	2540
Secretarias	1230
Mantenimiento	1000
Administrativos	450
Cafetería	320

Number of subnets: 6 Change

Sort results by: size

Submit

Subnetting Successful

Major Network: 135.40.0.0/16
Available IP addresses in major network: 65534
Number of IP addresses needed: 8540
Available IP addresses in allocated subnets: 12276
About 19% of available major network address space is used
About 70% of subnetted network address space is used

Subnet Name	Needed Size	Allocated Size	Address	Mask	Dec Mask	Assignable Range	Broadcast
Alumnos	3000	4094	135.40.0.0	/20	255.255.240.0	135.40.0.1 - 135.40.15.254	135.40.15.255
Docentes	2540	4094	135.40.16.0	/20	255.255.240.0	135.40.16.1 - 135.40.31.254	135.40.31.255
Secretarias	1230	2046	135.40.32.0	/21	255.255.248.0	135.40.32.1 - 135.40.39.254	135.40.39.255
Mantenimiento	1000	1022	135.40.40.0	/22	255.255.252.0	135.40.40.1 - 135.40.43.254	135.40.43.255
Administrativos	450	510	135.40.44.0	/23	255.255.254.0	135.40.44.1 - 135.40.45.254	135.40.45.255
Cafetería	320	510	135.40.46.0	/23	255.255.254.0	135.40.46.1 - 135.40.47.254	135.40.47.255