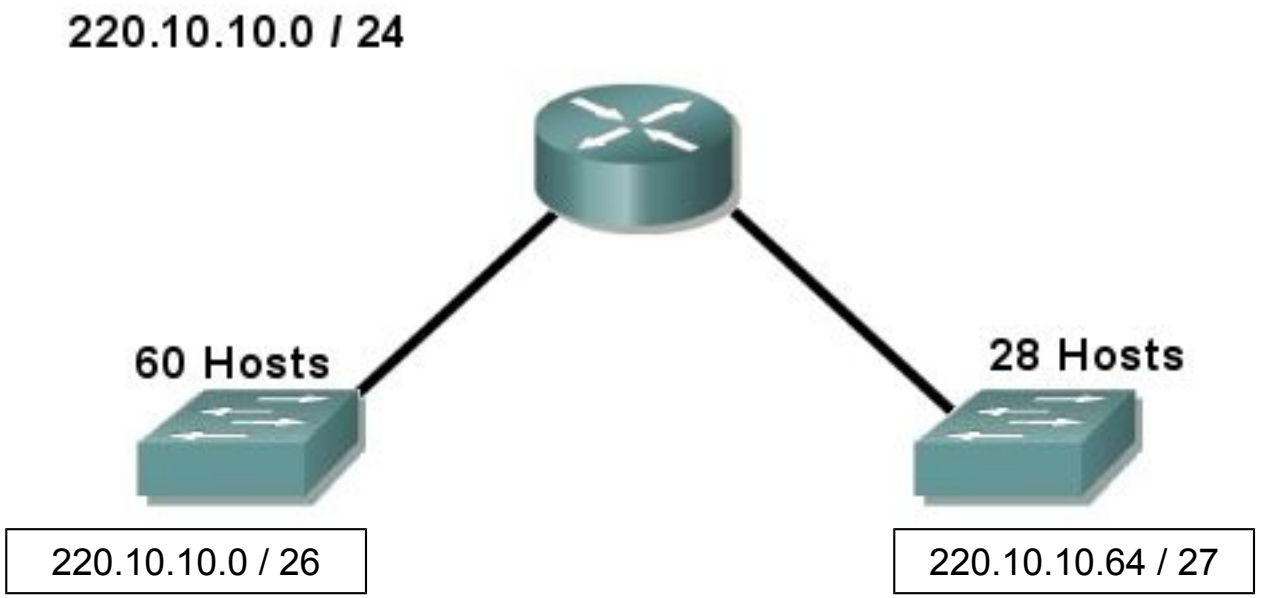
VLSM CHART - 24 to 30 Bits

/24 255.255.255.0 256 Hosts	/25 255.255.255.128 128 Hosts	/26 255.255.255.192 64 Hosts	/27 255.255.255.224 32 Hosts	/28 255.255.255.240 16 Hosts	/29 255.255.255.248 8 Hosts	/30 255.255.255.252 4 Hosts
0 - 255	0 - 127	0 - 63	0 - 31	0 - 15	0 - 7	0 - 3
						4 - 7
					8 - 15	8 - 11
						12 - 15
				16 - 31	16 - 23	16 - 19
						20 - 23
					24 - 31	24 - 27
						28 - 31
			32 - 63	32 - 47	32 - 39	32 - 35
						36 - 39
					40 - 47	40 - 43
						44 - 47
				48 - 63	48 - 55	48 - 51
						52 - 55
					56 - 63	56 - 59
						60 - 63
		64 - 127	64 - 95	64 - 79	64 - 71	64 - 67
						68 - 71
					72 - 79	72 - 75
						76 - 79
				80 - 95	80 - 87	80 - 83
						84 - 87
					88 - 95	88 - 91
						92 - 95
			96 - 127	96 - 111	96 - 103	96 - 99
						100 - 103
					104 - 111	104 - 107
						108 - 111
				112 - 127	112 - 119	112 - 115
						116 - 119
					120 - 127	120 - 123
						124 - 127
	128 - 255	128 - 191	128 - 159	128 - 143	128 - 135	128 - 131
						132 - 135
					136 - 143	136 - 139
						140 - 143
				144 - 159	144 - 151	144 - 147
						148 - 151
					152 - 159	152 - 155
						156 - 159
			160 - 191	160 - 175	160 - 167	160 - 163
						164 - 167
					168 - 175	168 - 171
						172 - 175
				176 - 191	176 - 183	176 - 179
						180 - 183
					184 - 191	184 - 187
						188 - 191
		192 - 255	192 - 223	192 - 207	192 - 199	192 - 195
						196 - 199
					200 - 207	200 - 203
						204 - 207
				208 - 223	208 - 215	208 - 211
						212 - 215
					216 - 223	216 - 219
						220 - 223
			224 - 255	224 - 239	224 - 231	224 - 227
						228 - 231
					232 - 239	232 - 235
						236 - 239
				240 - 255	240 - 247	240 - 243
						244 - 247
					248 - 255	248 - 251
						252 - 255

Solution - VLSM Exercise # 1

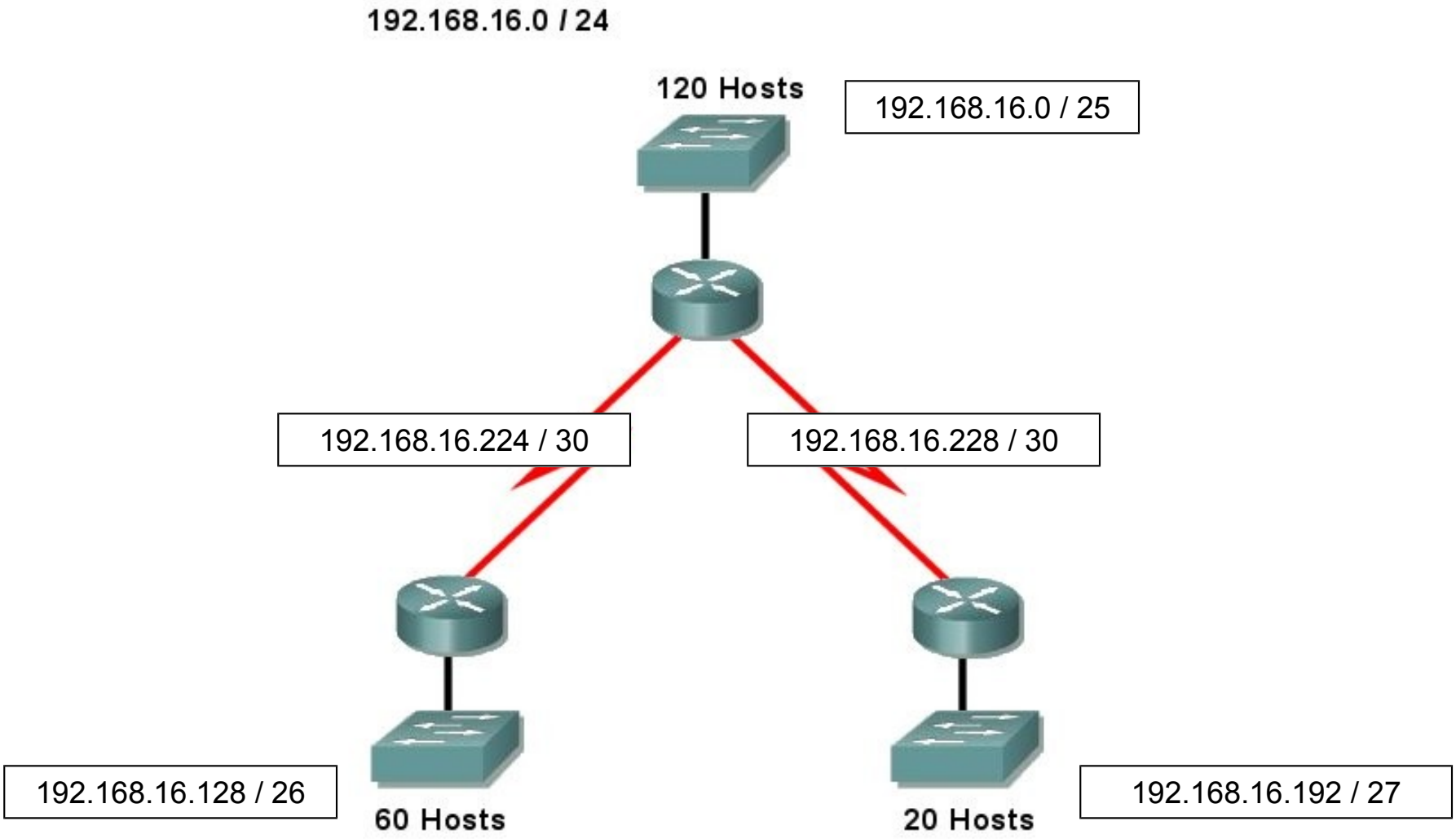


Solution - VLSM Exercise # 1

220.10.10.0 / 24

	Network:	1 1 0 1 1 1 0 0 . 0 0 0 0 1 0 1 0 . 0 0 0 0 1 0 1 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0
	Borrow 2 - 26 Network bits - 6 Host bits - Magic Number = 64	
60 Hosts	**220.10.10.0 / 26**	1 1 0 1 1 1 0 0 . 0 0 0 0 1 0 1 0 . 0 0 0 0 1 0 1 0 . **0 0** 0 0 0 0 0 0
	220.10.10.64 / 26	. . . . . **0 1**
	220.10.10.128 / 26	. . . . . **1 0**
	220.10.10.192 / 26	1 1 0 1 1 1 0 0 . 0 0 0 0 1 0 1 0 . 0 0 0 0 1 0 1 0 . **1 1** 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 0 0 0 0 0 0
	Borrow 1 More - 27 Network bits - 5 Host bits - Magic Number = 32	
28 Hosts	**220.10.10.64 / 27**	1 1 0 1 1 1 0 0 . 0 0 0 0 1 0 1 0 . 0 0 0 0 1 0 1 0 . 0 1 **0** 0 0 0 0 0
	220.10.10.96 / 27	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 0 0 0 0 0

Solution - VLSM Exercise # 2



Solution - VLSM Exercise # 2

192.168.16.0 / 24

Network:	1	1	0	0	0	0	0	0	.	1	0	1	0	1	0	0	0	.	0	0	0	1	0	0	0	0	.	0	0	0	0	0	0	0	0
Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	0	0	0	0	0	0	0	0

Borrow 1 - 25 Network bits - 7 Host bits - Magic Number = 128

120 Hosts **192.168.16.0 / 25**	1	1	0	0	0	0	0	0	.	1	0	1	0	1	0	0	0	.	0	0	0	1	0	0	0	0	.	**0**	0	0	0	0	0	0	0
192.168.16.128 / 25																												**1**							
Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	0	0	0	0	0	0	0

Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64

60 Hosts **192.168.16.128 / 26**	1	1	0	0	0	0	0	0	.	1	0	1	0	1	0	0	0	.	0	0	0	1	0	0	0	0	.	1	**0**	0	0	0	0	0	0
192.168.16.192 / 26																													**1**						
Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	0	0	0	0	0	0

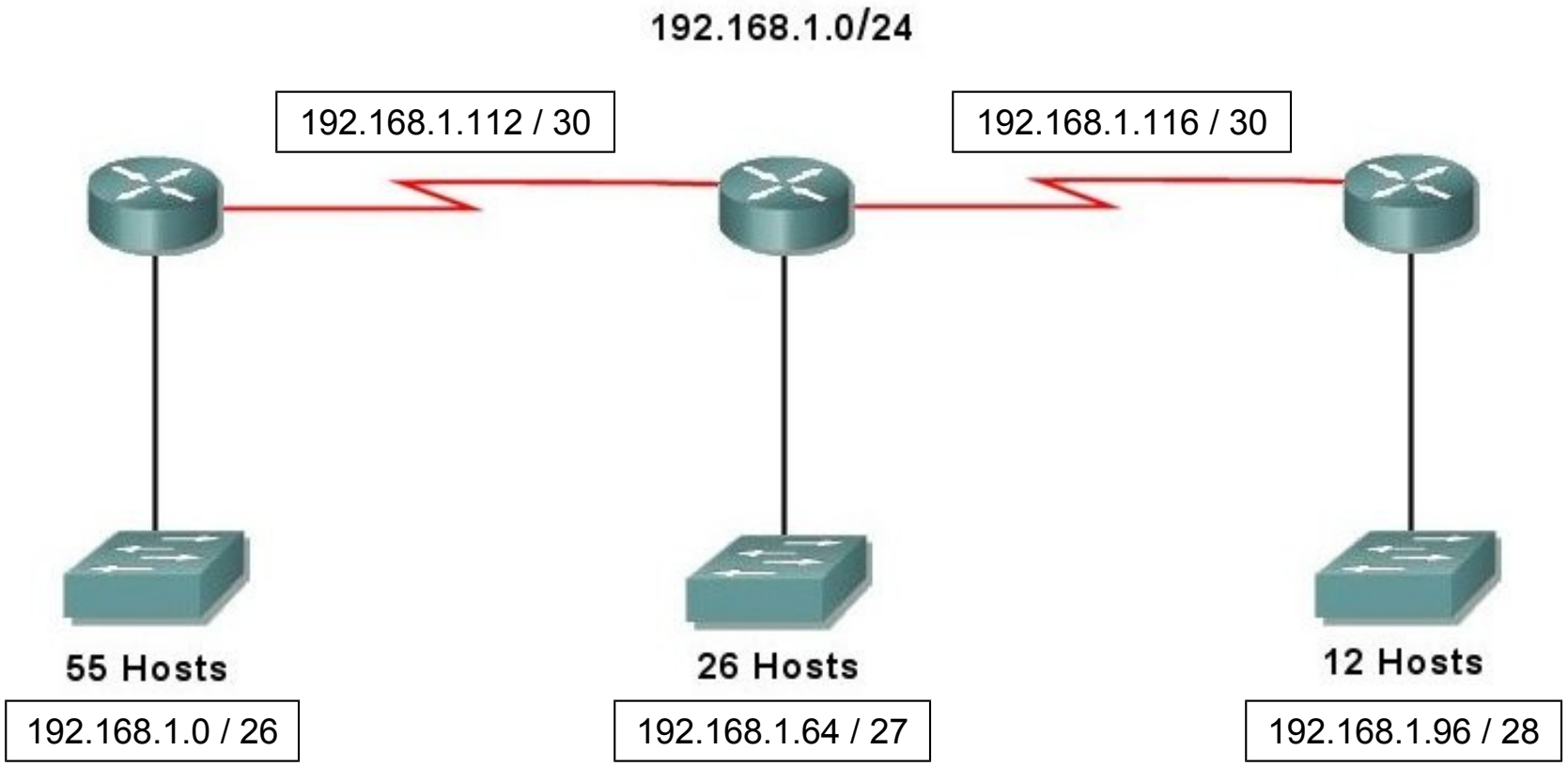
Borrow 1 More - 27 Network bits - 5 Host bits - Magic Number = 32

20 Hosts **192.168.16.192 / 27**	1	1	0	0	0	0	0	0	.	1	0	1	0	1	0	0	0	.	0	0	0	1	0	0	0	0	.	1	1	**0**	0	0	0	0	0
192.168.16.224 / 27																														**1**					
Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	0	0	0	0	0

Borrow 3 More - 30 Network bits - 2 Host bits - Magic Number = 4

2 Hosts **192.168.16.224 / 30**	1	1	0	0	0	0	0	0	.	1	0	1	0	1	0	0	0	.	0	0	0	1	0	0	0	0	.	1	1	1	**0**	**0**	**0**	0	0
2 Hosts **192.168.16.228 / 30**														•																	**0**	**0**	**1**		
•														•																		•			
•														•																		•			
•														•																		•			
192.168.16.252 / 30	1	1	0	0	0	0	0	0	.	1	0	1	0	1	0	0	0	.	0	0	0	1	0	0	0	0	.	1	1	1	**1**	**1**	**1**	0	0
Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	0	0

Solution - VLSM Exercise # 3

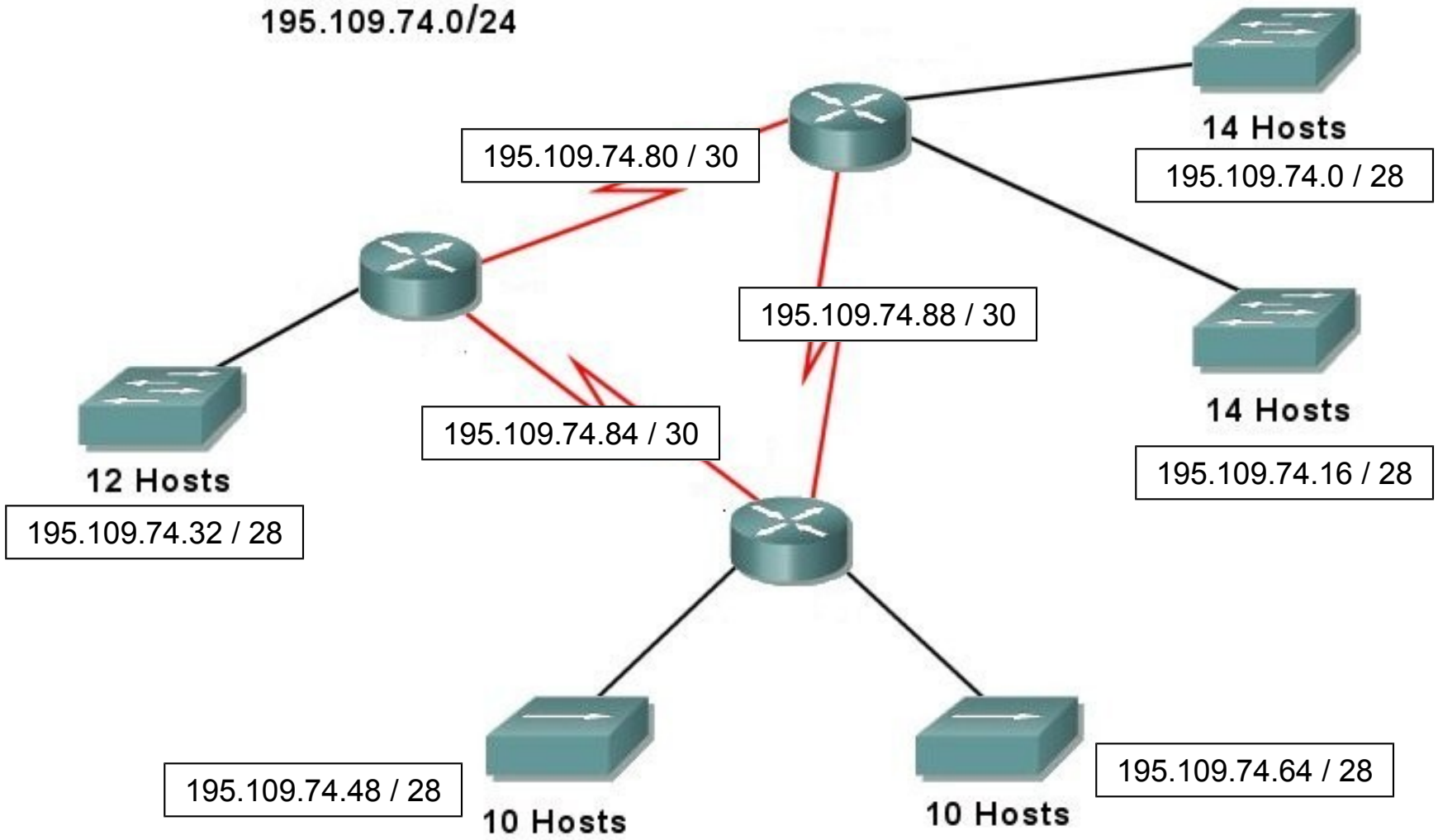


Solution - VLSM Exercise # 3

192.168.1.0 / 24

	Network:	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0
	Borrow 2 - 26 Network bits - 6 Host bits - Magic Number = 64	
55 Hosts	**192.168.1.0 / 26**	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . **0 0** 0 0 0 0 0 0
	192.168.1.64 / 26	**0 1**
	192.168.1.128 / 26	**1 0**
	192.168.1.192 / 26	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . **1 1** 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 0 0 0 0 0 0
	Borrow 1 More - 27 Network bits - 5 Host bits - Magic Number = 32	
26 Hosts	**192.168.1.64 / 27**	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . 0 1 **0** 0 0 0 0 0
	192.168.1.96 / 27	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 0 0 0 0 0
	Borrow 1 More - 28 Network bits - 4 Host bits - Magic Number = 16	
12 Hosts	**192.168.1.96 / 28**	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . 0 1 1 **0** 0 0 0 0
	192.168.1.112 /28	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 0 0 0 0
	Borrow 2 More - 30 Network bits - 2 Host bits - Magic Number = 4	
2 Hosts	**192.168.1.112 / 30**	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . 1 1 1 1 **0 0** 0 0
2 Hosts	**192.168.1.116 / 30**	**0 1**
	192.168.1.120 / 30	**1 0**
	192.168.1.124 / 30	1 1 0 0 0 0 0 0 . 1 0 1 0 1 0 0 0 . 0 0 0 0 0 0 0 1 . 1 1 1 1 **1 1** 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0

Solution - VLSM Exercise # 4



Solution - VLSM Exercise # 4

195.109.74.0 / 24

	Network:	1	1	0	0	0	0	1	1	.	0	1	1	0	1	1	0	1	.	0	1	0	0	1	0	1	0	.	0	0	0	0	0	0	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	0	0	0	0	0	0	0	0

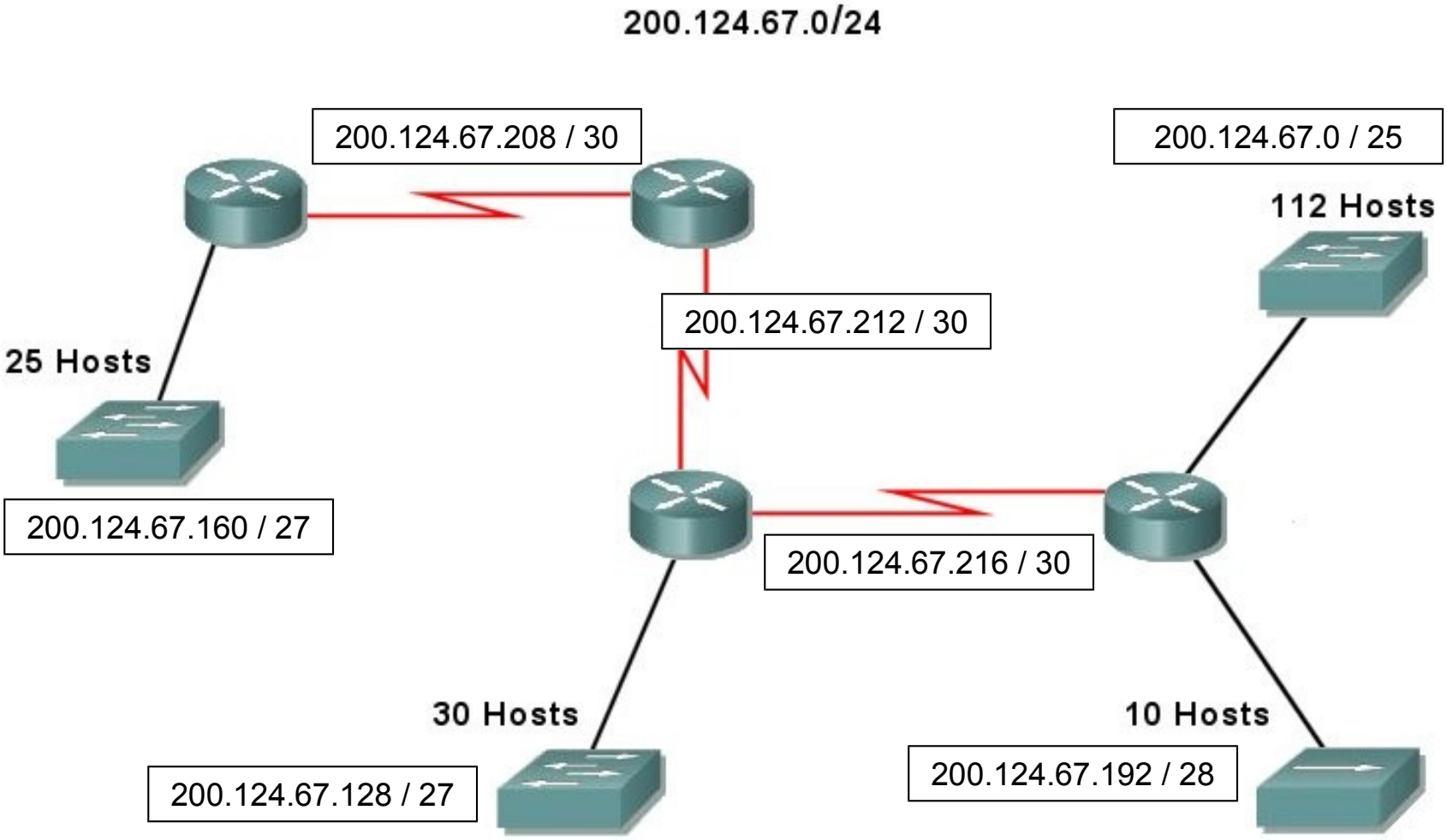
Borrow 4 - 28 Network bits - 4 Host bits - Magic Number = 16

14 Hosts	**195.109.74.0 / 28**	1	1	0	0	0	0	1	1	.	0	1	1	0	1	1	0	1	.	0	1	0	0	1	0	1	0	.	**0**	**0**	**0**	**0**	0	0	0	0
14 Hosts	**195.109.74.16 / 28**														•														**0**	**0**	**0**	**1**				
12 Hosts	**195.109.74.32 / 28**														•														**0**	**0**	**1**	**0**				
10 Hosts	**195.109.74.48 / 28**														•														**0**	**0**	**1**	**1**				
10 Hosts	**195.109.74.64 / 28**														•														**0**	**1**	**0**	**0**				
	195.109.74.80 / 28														•														**0**	**1**	**0**	**1**				
	195.109.74.96 / 28														•														**0**	**1**	**1**	**0**				
	•														•															•							
	•														•															•							
	•														•															•							
	195.109.74.240 / 28	1	1	0	0	0	0	1	1	.	0	1	1	0	1	1	0	1	.	0	1	0	0	1	0	1	0	.	**1**	**1**	**1**	**1**	0	0	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	0	0	0	0

Borrow 2 More - 30 Network bits - 2 Host bits - Magic Number = 4

2 Hosts	**195.109.74.80 / 30**	1	1	0	0	0	0	1	1	.	0	1	1	0	1	1	0	1	.	0	1	0	0	1	0	1	0	.	0	1	0	1	**0**	**0**	0	0
2 Hosts	**195.109.74.84 / 30**														•																	**0**	**1**		
2 Hosts	**195.109.74.88 / 30**														•																	**1**	**0**		
	195.109.74.92 / 30	1	1	0	0	0	0	1	1	.	0	1	1	0	1	1	0	1	.	0	1	0	0	1	0	1	0	.	0	1	0	1	**1**	**1**	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	0	0

Solution - VLSM Exercise # 5

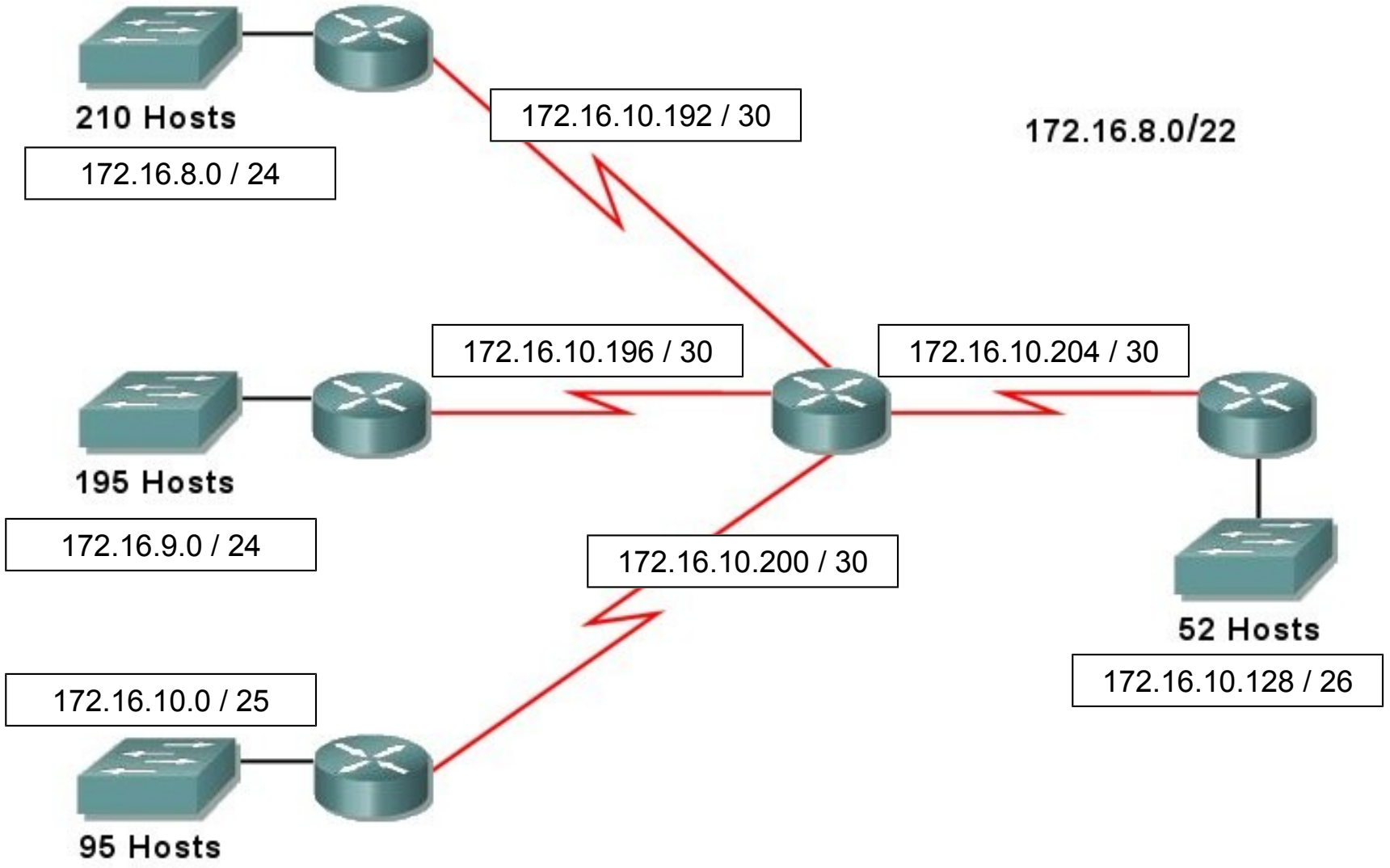


Solution - VLSM Exercise # 5

200.124.67.0 / 24

	Network:	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0
	Borrow 1 - 25 Network bits - 7 Host bits - Magic Number = 128	
112 Hosts	**200.124.67.0 / 25**	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . **0** 0 0 0 0 0 0 0
	200.124.67.128 / 25	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 0 0 0 0 0 0 0
	Borrow 2 More - 27 Network bits - 5 Host bits - Magic Number = 32	
30 Hosts	**200.124.67.128 / 27**	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . 1 **0 0** 0 0 0 0 0
25 Hosts	**200.124.67.160 / 27**	• **0 1**
	200.124.67.192 / 27	• **1 0**
	200.124.67.224 / 27	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . 1 **1 1** 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 0 0 0 0 0
	Borrow 1 More - 28 Network bits - 4 Host bits - Magic Number = 16	
10 Hosts	**200.124.67.192 / 28**	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . 1 1 0 **0** 0 0 0 0
	200.124.67.208 / 28	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 0 0 0 0
	Borrow 2 More - 30 Network bits - 2 Host bits - Magic Number = 4	
2 Hosts	**200.124.67.208 / 30**	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . 0 1 0 1 **0 0** 0 0
2 Hosts	**200.124.67.212 / 30**	• **0 1**
2 Hosts	**200.124.67.216 / 30**	• **1 0**
	200.124.67.220 / 30	1 1 0 0 1 0 0 0 . 0 1 1 1 1 1 0 0 . 0 1 0 0 0 0 1 1 . 0 1 0 1 **1 1** 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0

Solution - VLSM Exercise # 6

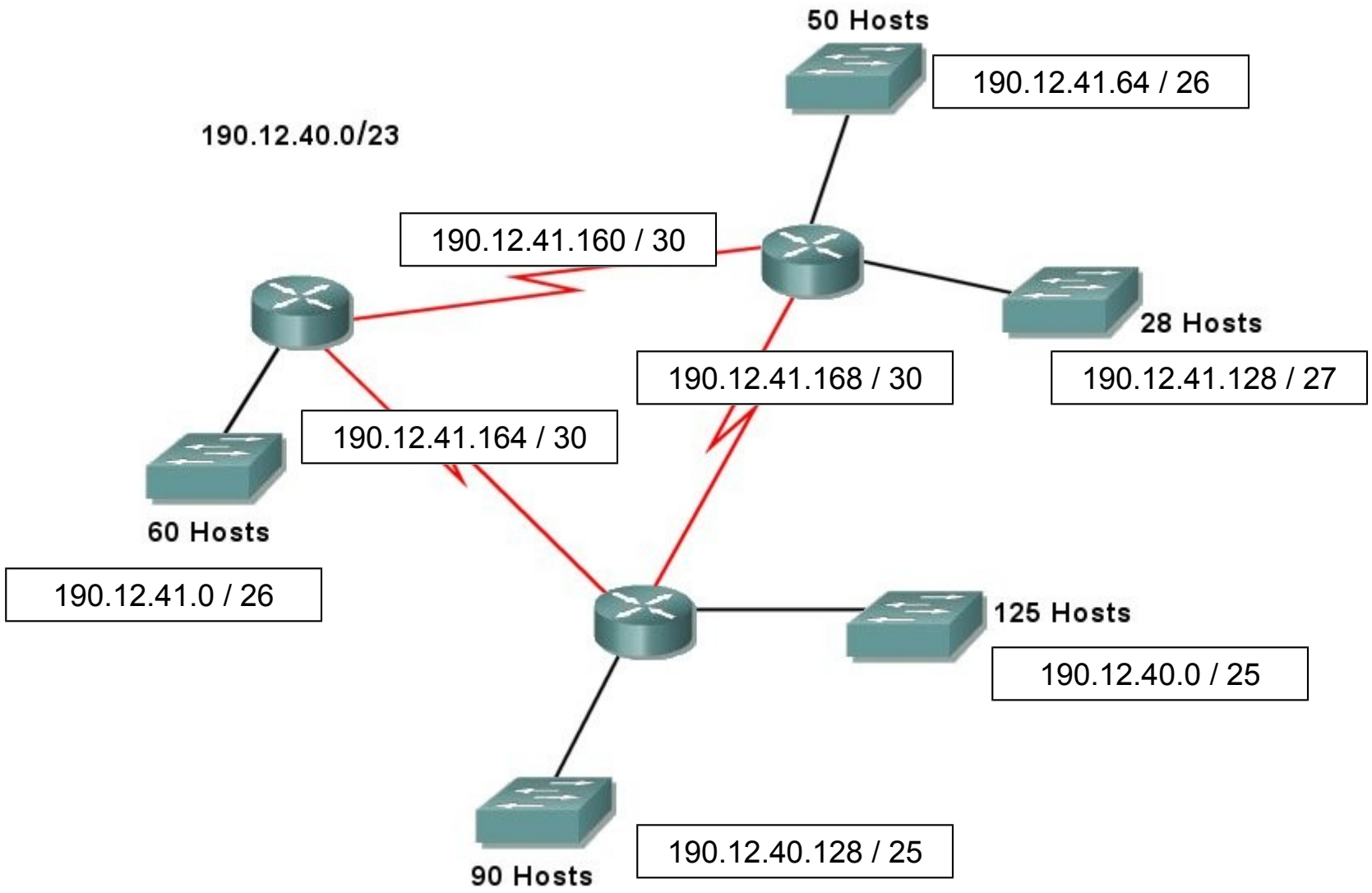


Solution - VLSM Exercise # 6

172.16.8.0 / 22

	Network:	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 0 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0 . 0 0 0 0 0 0 0 0
	Borrow 2 - 24 Network bits - 8 Host bits - Magic Number = 256	
210 Hosts	**172.16.8.0 / 24**	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 **0 0** . 0 0 0 0 0 0 0 0
195 Hosts	**172.16.9.0 / 24**	**0 1**
	172.16.10.0 / 24	**1 0**
	172.16.11.0 / 24	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 **1 1** . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0
	Borrow 1 More - 25 Network bits - 7 Host bits - Magic Number = 128	
95 Hosts	**172.16.10.0 / 25**	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 1 0 . **0** 0 0 0 0 0 0 0
	172.16.10.128 / 25	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 0 0 0 0 0 0 0
	Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64	
52 Hosts	**172.16.10.128 / 26**	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 1 0 . 1 **0** 0 0 0 0 0 0
	172.16.10.192 / 26	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 0 0 0 0 0 0
	Borrow 4 More - 30 Network bits - 2 Host bits - Magic Number = 4	
2 Hosts	**172.16.10.192 / 30**	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 1 0 . 1 1 **0 0 0 0** 0 0
2 Hosts	**172.16.10.196 / 30**	**0 0 0 1**
2 Hosts	**172.16.10.200 / 30**	**0 0 1 0**
2 Hosts	**172.16.10.204 / 30**	**0 0 1 1**
	•	•
	•	•
	172.16.10.252 / 30	1 0 1 0 1 1 0 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 1 1 0 . 1 1 **1 1 1 1** 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0

Solution - VLSM Exercise # 7

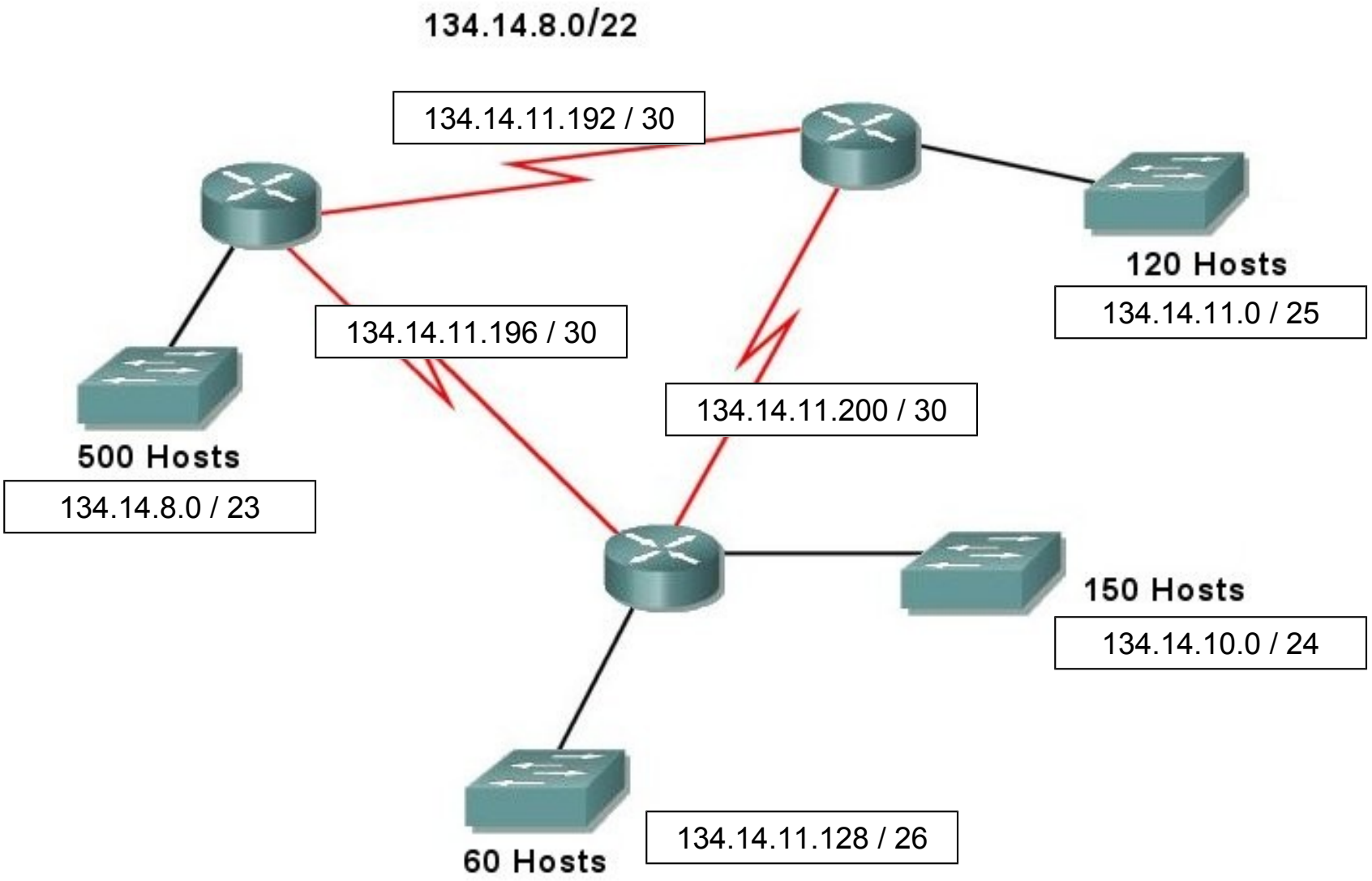


Solution - VLSM Exercise # 7

190.12.40.0 / 23

	Network:	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 0 . 0 0 0 0 0 0 0 0
	Borrow 2 - 25 Network bits - 7 Host bits - Magic Number = 128	
125 Hosts	**190.12.40.0 / 25**	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 **0 . 0** 0 0 0 0 0 0 0
90 Hosts	**190.12.40.128 / 25**	• **0 . 1**
	190.12.41.0 / 25	• **1 . 0**
	190.12.41.128 / 25	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 **1 . 1** 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 0 0 0 0 0 0 0
	Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64	
60 Hosts	**190.12.41.0 / 26**	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 1 . 0 **0** 0 0 0 0 0 0
50 Hosts	**190.12.41.64 / 26**	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 0 0 0 0 0 0
	Borrow 1 More - 27 Network bits - 5 Host bits - Magic Number = 32	
28 Hosts	**190.12.41.128 / 27**	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 1 . 1 0 **0** 0 0 0 0 0
	190.12.41.160 / 27	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 0 0 0 0 0
	Borrow 3 More - 30 Network bits - 2 Host bits - Magic Number = 4	
2 Hosts	**190.12.41.160 / 30**	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 1 . 1 0 1 **0 0 0** 0 0
2 Hosts	**190.12.41.164 / 30**	• **0 0 1**
2 Hosts	**190.12.41.168 / 30**	• **0 1 0**
	190.12.41.172 / 30	• **0 1 1**
	•	• •
	•	• •
	190.12.41.252 / 30	1 0 1 1 1 1 1 0 . 0 0 0 0 1 1 0 0 . 0 0 1 0 0 1 0 1 . 1 0 1 **1 1 1** 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0

Solution - VLSM Exercise # 8



Solution - VLSM Exercise # 8

134.14.8.0 / 22

	Network:	1 0 0 0 0 1 1 0 . 0 0 0 0 1 1 1 0 . 0 0 0 0 1 0 0 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0 . 0 0 0 0 0 0 0 0
	Borrow 1 - 23 Network bits - 9 Host bits - Magic Number = 2	
500 Hosts	**134.14.8.0 / 23**	1 0 0 0 0 1 1 0 . 0 0 0 0 1 1 1 0 . 0 0 0 0 1 0 **0 1** 0 . 0 0 0 0 0 0 0 0
	134.14.10.0 / 23	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 0 . 0 0 0 0 0 0 0 0
	Borrow 1 More - 24 Network bits - 8 Host bits - Magic Number = 256	
150 Hosts	**134.14.10.0 / 24**	1 0 0 0 0 1 1 0 . 0 0 0 0 1 1 1 0 . 0 0 0 0 1 0 1 **0 1** . 0 0 0 0 0 0 0 0
	134.14.11.0 / 24	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0
	Borrow 1 More - 25 Network bits - 7 Host bits - Magic Number = 128	
120 Hosts	**134.14.11.0 / 25**	1 0 0 0 0 1 1 0 . 0 0 0 0 1 1 1 0 . 0 0 0 0 1 0 1 1 . **0 1** 0 0 0 0 0 0 0
	134.14.11.128 / 25	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 0 0 0 0 0 0 0
	Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64	
60 Hosts	**134.14.11.128 / 26**	1 0 0 0 0 1 1 0 . 0 0 0 0 1 1 1 0 . 0 0 0 0 1 0 1 1 . 1 **0 1** 0 0 0 0 0 0
	134.14.11.192 / 26	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 0 0 0 0 0 0

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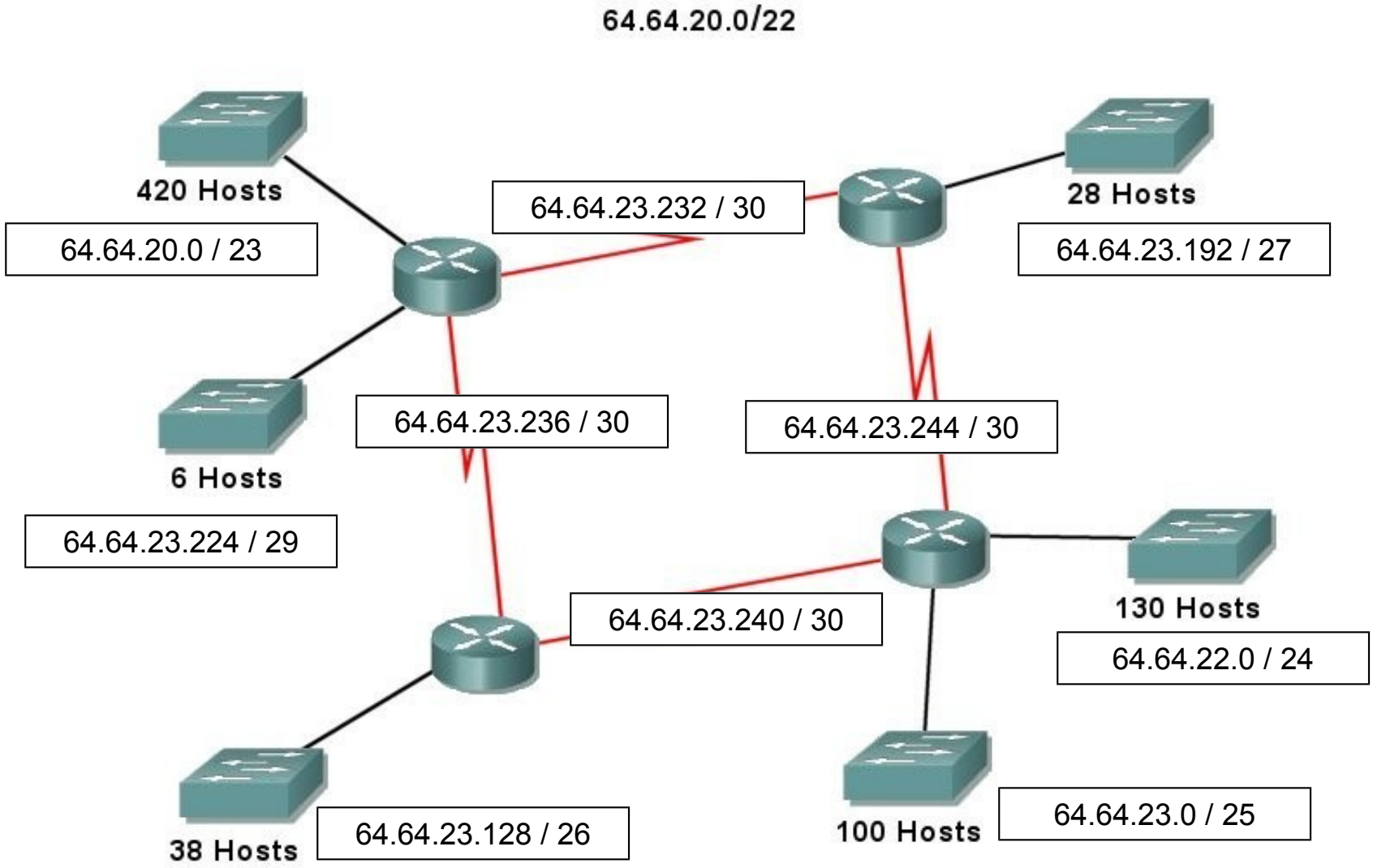
Solution - VLSM Exercise # 8

Borrow 4 More - 30 Network bits - 2 Host bits - Magic Number = 4

2 Hosts	**134.14.11.192 / 30**	1	0	0	0	0	1	1	0	.	0	0	0	0	1	1	1	0	.	0	0	0	0	1	0	0	0	.	1	1	**0**	**0**	**0**	**0**	0	0
2 Hosts	**134.14.11.196 / 30**														•																**0**	**0**	**0**	**1**		
2 Hosts	**134.14.11.200 / 30**														•																**0**	**0**	**1**	**0**		
	134.14.11.204 / 30														•																**0**	**0**	**1**	**1**		
	•														•																	•				
	•														•																	•				
	134.14.11.252 / 30	1	0	0	0	0	1	1	0	.	0	0	0	0	1	1	1	0	.	0	0	0	0	1	0	0	0	.	1	1	**1**	**1**	**1**	**1**	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	0	0

Solution - VLSM Exercise # 9



Solution - VLSM Exercise # 9

64.64.20.0 / 22

	Network:	0 1 0 0 0 0 0 0 . 0 1 0 0 0 0 0 0 . 0 0 0 1 0 1 0 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 0 0 . 0 0 0 0 0 0 0 0
	Borrow 1 - 23 Network bits - 9 Host bits - Magic Number = 2	
420 Hosts	**64.64.20.0 / 23**	0 1 0 0 0 0 0 0 . 0 1 0 0 0 0 0 0 . 0 0 0 1 0 1 **0 1** 0 . 0 0 0 0 0 0 0 0
	64.64.22.0 / 23	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 0 . 0 0 0 0 0 0 0 0
	Borrow 1 More - 24 Network bits - 8 Host bits - Magic Number = 256	
130 Hosts	**64.64.22.0 / 24**	0 1 0 0 0 0 0 0 . 0 1 0 0 0 0 0 0 . 0 0 0 1 0 1 1 **0 1** . 0 0 0 0 0 0 0 0
	64.64.23.0 / 24	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0
	Borrow 1 More - 25 Network bits - 7 Host bits - Magic Number = 128	
100 Hosts	**64.64.23.0 / 25**	0 1 0 0 0 0 0 0 . 0 1 0 0 0 0 0 0 . 0 0 0 1 0 1 1 1 . **0 1** 0 0 0 0 0 0 0
	64.64.23.128 / 25	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 0 0 0 0 0 0 0
	Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64	
38 Hosts	**64.64.23.128 / 26**	0 1 0 0 0 0 0 0 . 0 1 0 0 0 0 0 0 . 0 0 0 1 0 1 0 0 . 1 **0 1** 0 0 0 0 0 0
	64.64.23.192 / 26	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 0 0 0 0 0 0
	Borrow 1 More - 27 Network bits - 5 Host bits - Magic Number = 32	
28 Hosts	**64.64.23.192 / 27**	0 1 0 0 0 0 0 0 . 0 1 0 0 0 0 0 0 . 0 0 0 1 0 1 0 0 . 1 1 **0 1** 0 0 0 0 0
	64.64.23.224 / 27	
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 0 0 0 0 0

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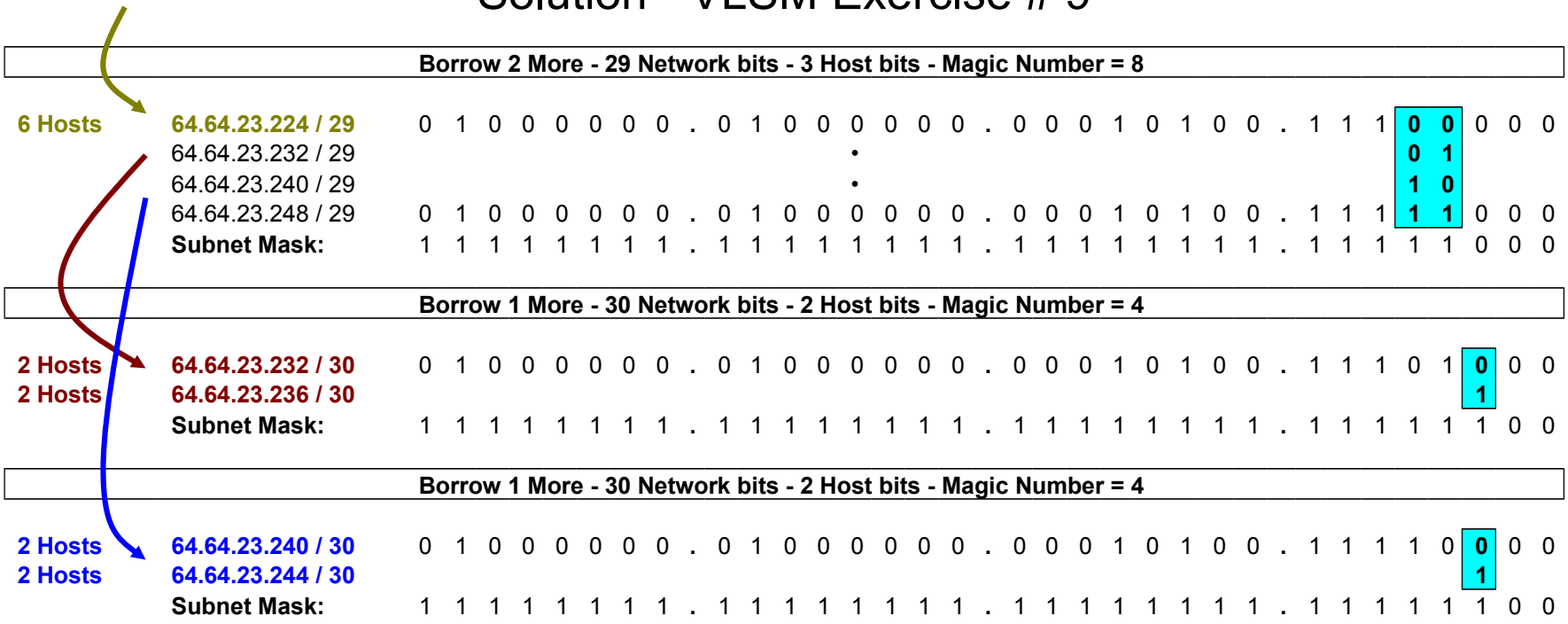
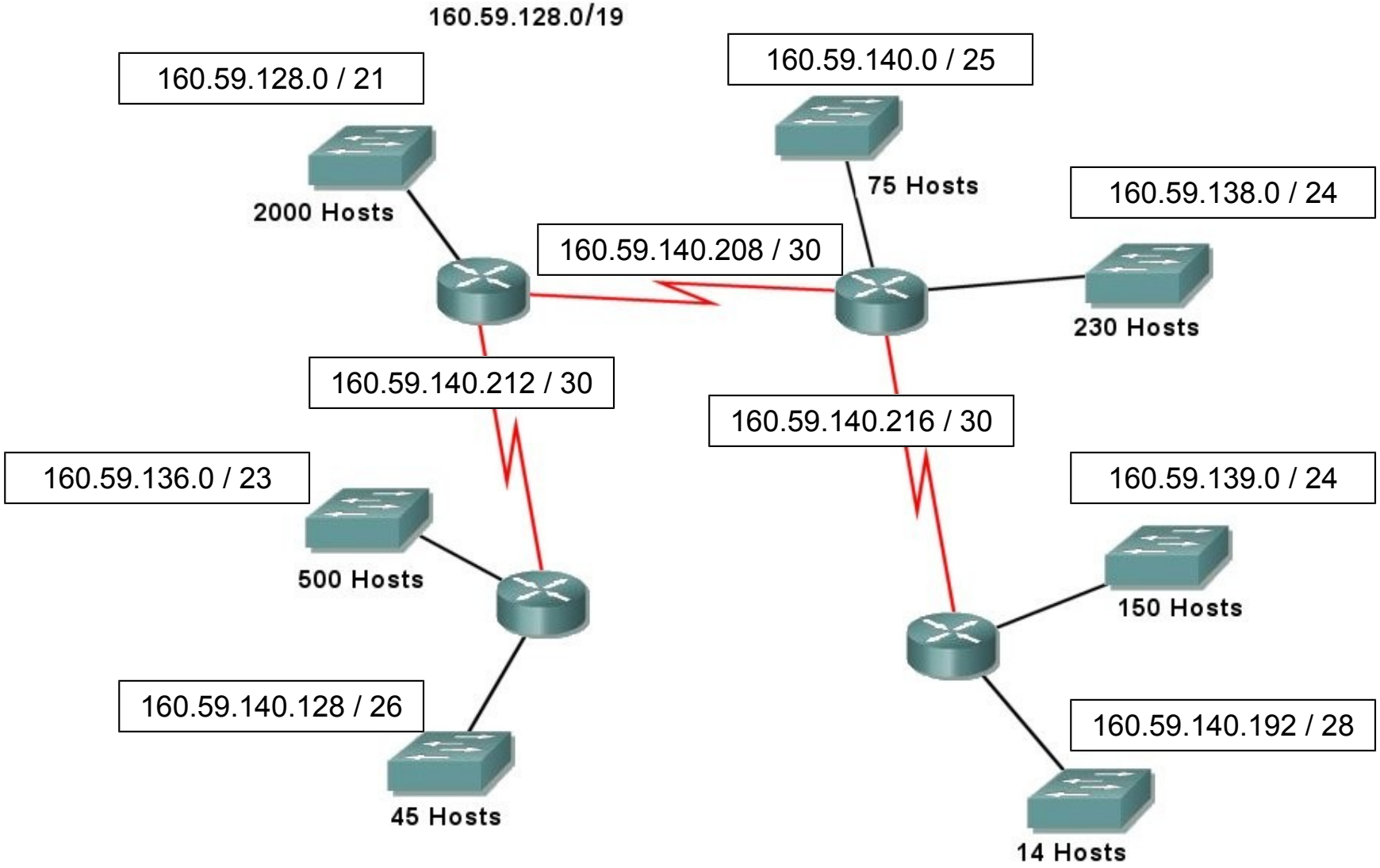
Solution - VLSM Exercise # 9



Solution - VLSM Exercise # 10



Solution - VLSM Exercise # 10

160.59.128.0 / 19

	Network:	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 0 0 0 0 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 0 0 0 0 0 . 0 0 0 0 0 0 0 0

Borrow 2 - 21 Network bits - 11 Host bits - Magic Number = 8

2000 Hosts	**160.59.128.0 / 21**	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 **0 0** 0 0 0 . 0 0 0 0 0 0 0 0
	160.59.136.0 / 21	• **0 1** •
	160.59.144.0 / 21	• **1 0** •
	160.59.152.0 / 21	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 **1 1** 0 0 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 0 0 0 . 0 0 0 0 0 0 0 0

Borrow 2 More - 23 Network bits - 9 Host bits - Magic Number = 2

500 Hosts	**160.59.136.0 / 23**	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 0 1 **0 0** 0 . 0 0 0 0 0 0 0 0
	160.59.138.0 / 21	• **0 1** •
	160.59.140.0 / 21	• **1 0** •
	160.59.144.0 / 21	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 0 1 **1 1** 0 . 0 0 0 0 0 0 0 0
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 0 . 0 0 0 0 0 0 0 0

Borrow 1 More - 24 Network bits - 8 Host bits - Magic Number = 256

230 Hosts	**160.59.138.0 / 24**	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 0 1 0 1 **0** . 0 0 0 0 0 0 0 0
150 Hosts	**160.59.139.0 / 24**	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 0 0 0 0 0 0 0 0

Borrow 1 More - 25 Network bits - 7 Host bits - Magic Number = 128

75 Hosts	**160.59.140.0 / 25**	1 0 1 0 0 0 0 0 . 0 0 1 1 1 0 1 1 . 1 0 0 0 1 1 0 0 . **0** 0 0 0 0 0 0 0
	160.59.140.128 / 25	**1**
	Subnet Mask:	1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1 1 . 1 0 0 0 0 0 0 0

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Solution - VLSM Exercise # 10

Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64

45 Hosts	**160.59.140.128 / 26**	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	0	0	0	0	.	1	**0**	0	0	0	0	0
	160.59.140.192 / 26																													**1**					
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	0	0	0	0	0

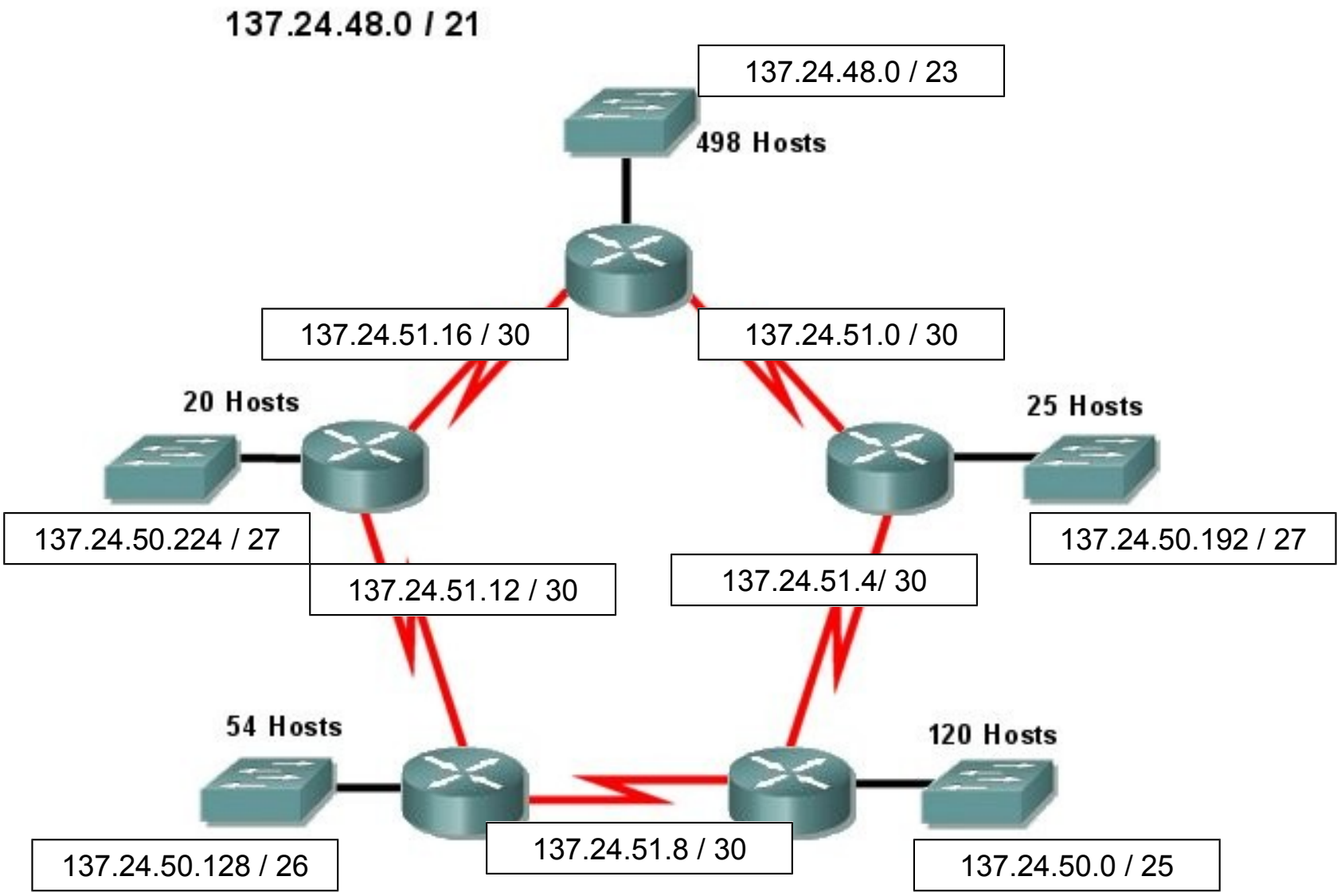
Borrow 2 More - 28 Network bits - 4 Host bits - Magic Number = 16

14 Hosts	**160.59.140.192 / 28**	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	0	0	0	0	.	1	1	**0**	**0**	0	0	0	0
	160.59.140.208 / 28														•																**0**	**1**				
	160.59.140.224 / 28														•																**1**	**0**				
	160.59.140.240 / 28	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	0	0	0	0	.	1	1	**1**	**1**	0	0	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	0	0	0	0

Borrow 2 More - 30 Network bits - 2 Host bits - Magic Number = 4

2 Hosts	**160.59.140.208 / 30**	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	0	0	0	0	.	1	1	0	1	**0**	**0**	0	0
2 Hosts	**160.59.140.212 / 30**														•																		**0**	**1**		
2 Hosts	**160.59.140.216 / 30**														•																		**1**	**0**		
	160.59.140.220 / 30	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	0	0	0	0	.	1	1	0	1	**1**	**1**	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	0	0

VLSM Exercise # 11



Solution - VLSM Exercise # 11

137.24.48.0 / 21

	Network:	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	0	0	0	.	0	0	0	0	0	0	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	0	0	0	.	0	0	0	0	0	0	0	0
Borrow 2 - 23 Network bits - 9 Host bits - Magic Number = 2																																				
498 Hosts	**137.24.48.0 / 23**	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	**0**	**0**	0	.	0	0	0	0	0	0	0	0
	137.24.50.0 / 23														•										**0**	**1**					•					
	137.24.52.0 / 23														•										**1**	**0**					•					
	137.24.54.0 / 23	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	**1**	**1**	0	.	0	0	0	0	0	0	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	0	.	0	0	0	0	0	0	0	0
Borrow 2 More - 25 Network bits - 7 Host bits - Magic Number = 128																																				
120 Hosts	**137.24.50.0 / 25**	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	0	1	**0**	.	**0**	0	0	0	0	0	0	0
	137.24.50.128 / 25														•												**0**		**1**		•					
	137.24.51.0 / 25														•												**1**		**0**		•					
	137.24.51.128 / 25	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	0	1	**1**	.	**1**	0	0	0	0	0	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	0	0	0	0	0	0	0
Borrow 1 More - 26 Network bits - 6 Host bits - Magic Number = 64																																				
54 Hosts	**137.24.50.128 / 26**	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	0	1	0	.	1	**0**	0	0	0	0	0	0
	137.24.50.192 / 26																													**1**							
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	0	0	0	0	0	0
Borrow 1 More - 27 Network bits - 5 Host bits - Magic Number = 32																																				
25 Hosts	**137.24.50.192 / 27**	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	1	1	0	0	.	1	1	**0**	0	0	0	0	0
20 Hosts	**137.24.50.224 / 27**																														**1**					
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	0	0	0	0	0

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Borrow 3 More - 30 Network bits - 2 Host bits - Magic Number = 4

2 Hosts	**137.24.51.0 / 30**	1	0	0	0	1	0	0	1	.	0	0	0	1	1	0	0	0	.	0	0	1	1	0	0	1	1	.	0	0	0	0	0	0	0	0
2 Hosts	**137.24.51.4 / 30**														•																	0	0	1		
2 Hosts	**137.24.51.8 / 30**														•																	0	1	0		
2 Hosts	**137.24.51.12 / 30**														•																	0	1	1		
2 Hosts	**137.24.51.16 / 30**														•																	1	0	0		
	•														•																		•				
	•														•																		•				
	160.59.140.252 / 30	1	0	1	0	0	0	0	0	.	0	0	1	1	1	0	1	1	.	1	0	0	0	1	1	0	0	.	1	1	1	1	1	1	0	0
	Subnet Mask:	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	1	1	.	1	1	1	1	1	1	0	0