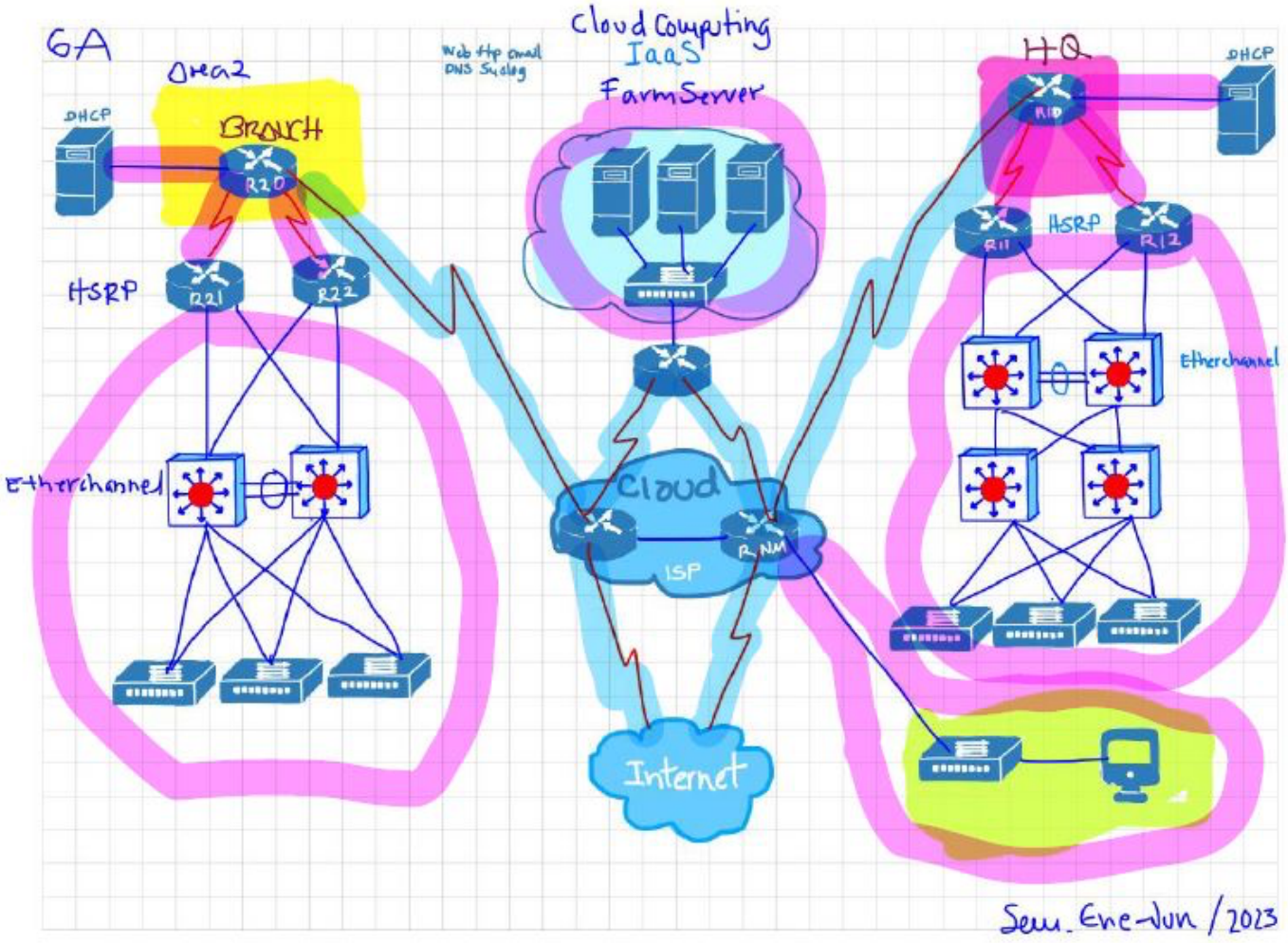

Blue -> Public
Pink -> Private

REQUIREMENTS

NETWORK

Address: 10.0.0.0 /8 (PRIVATE)

Class

needed subnets

needed usable host

Total # subnets

bits borrowed

SUBNET MASK

Default

Custom

HOST ADDRESS

Total #

usable

1	0
2	1
4	2
8	3
16	4
32	5
64	6
128	7
256	8
512	9
1024	10
2048	11
4096	12
8192	13

$2^n = 2^{11}$ = 2048

$2^m = 2^{13}$ = 8192

$2^n = 2^{10}$ = 1024

$2^m = 2^1$ = 2

$2^n = 2^8$ = 256

$2^n = 2^2$ = 4

$2^n = 2^2$ = 4

$2^m = 2^6$ = 64

#	SubNetID	Range	BroadCast
0	10.0.0.0 /21		
1	10.00000000.00001000.0	10.0.8.0/21	
2	10.00000000.00010000.0	10.0.16.0/21	
3			
:			
8188	10.11111111.11100000.0	10.255.224.0/21	
8189	10.11111111.11101000.0	10.255.232.0/21	
8190	10.11111111.11110000.0	10.255.240.0/21	(2000)
8191	10.11111111.11111000.0	10.255.248.0/21	(2000)
0	10.255.11101000.0	10.255.232.0/22	
1	10.255.11101100.0	10.255.236.0/22	(1000)
0	10.255.11101000.0	10.255.232.0/24	
1	10.255.11101001.0	10.255.233.0/24	
2	10.255.11101010.0	10.255.234.0/24	
3	10.255.11101011.0	10.255.235.0/24	(250)
0	10.255.234.00000000		
1	100		
:			
42	00	.168 /30	
43	00	.172 /30	T
44	00	.176 /30	S
45	00	.180 /30	R
46	00	.184 /30	Q
47	00	.188 /30	P
48		.192/30	O
49		.196 /30	N
50		10.255.234.200 /30	N

51	110011	00	.204 /30	M
52	110100	00	.208 /30	L
53	110101	00	.212 /30	K
54	110110	00	.216/30	J
55	110111	00	.220/30	I
56	111000	00	.224/30	H
57	111001	00	.228 /30	G
58	111010	00	.232 /30	F
59	111011	00	.236 /30	E
60	111100	00	.240 /30	D
61	111101	00	.244 /30	C
62	111110	00	.248/30	B
63 10.255.234.	111111	00	10.255.234.252 /30	A

REQUIREMENTS

NETWORK

Address PUBLIC

20.0.0.0 /8

Subnet Mask

#	SubNetID	Range	BroadCast
0	20.00000000.00000000.00000000	20.0.0.0 /30	
1	20.00000000.00000000.00000100	20.0.0.4/30	
:			
4194296	20.11111111.11111111.11111000	20.255.255.224 /30	
4194297	20.11111111.11111111.11111001	20.255.255.228 /30 (4) E	
298	20.11111111.11111111.11111010	20.255.255.232 /30 (4) F	
299	20.11111111.11111111.11111011	20.255.255.236 /30 (4) E	
300	20.11111111.11111111.11111100	20.255.255.240 /30 (4) D	
301	20.11111111.11111111.11111101	20.255.255.244 /30 (4) C	
302	20.11111111.11111111.11111110	20.255.255.246 /30 (4) B	
303	20.11111111.11111111.11111111	20.255.255.252 /30 (4) A	

REQUIREMENTS

VLANS

NETWORK

Address: 10.255.248.0

Subnet Mask: 255.255.248.0

#	SubNetID	Range	BroadCast
0	10.255.248.0 /23		
1	10.255.11111 01 0.0	10.255.250.0/23	
2	10.255.11111 10 0.0	10.255.252.0 /23 VLAN 20	
3	10.255.11111 11 0.0	10.255.254.0 /23 VLAN 40	
0	10.255.111101 00 0000000	10.255.250.0 /25	
1	01 0000000	10.255.250.128 /25	
2	10 0000000	10.255.251.0 /25	
3	11 0000000	10.255.251.128 /25 VLAN 10	
0	10.255.251.0 0 000000	10.255.251.0/26	
1	1 000000	10.255.251.64 /26 VLAN 30	
0	10.255.251.00 0 00000	10.255.251.0/27	
1	1 00000	10.255.251.32 /27 VLAN 99	

$2^n = 2^9 = 512$

$2^m = 2^2 = 4$

$2^n = 2^7 = 128$

$2^m = 2^2 = 4$

$2^n = 2^6 = 64$

$2^m = 2^1 = 2$

$2^n = 2^5 = 32$

$2^1 = 2^m = 2$

REQUIREMENTS

VLANS

NETWORK

Address: 10.255.240.0 /21

Subnet Mask:

#	SubNetID	Range	BroadCast
	10.255.240.0 /21		
0	10.255.1111 00 00.00000000	10.255.240.0 /23	
1	01	10.255.242.0 /23	
2	10	10.255.244.0 /23 VLAN 20	
3	11	10.255.246.0 /23 VLAN 40	
	10.255.242.0 /23		
0	10.255.1111 00 10.00000000	10.255.242.0 /25	
1	10.1	10.255.242.126 /25	
2	1.0	10.255.243.0 /25	
3	1.1	10.255.243.126 /25 VLAN 10	
	10.255.243.0 /25		
0	10.255.243.0 0000 0000	10.255.243.0 /26	
1	11	10.255.243.64 /26 VLAN 30	
	10.255.243.0 /26		
0	10.255.243.000 00000	10.255.243.0/27	
1	1	10.255.243.32/27 VLAN 99	