Subnetting

CIDR notation

Subnet Mask:

255.0.0.0 → /8 → default class A

255.255.255.0 → /24 → default class C

255.255.255.240 → /28

↳ 1111 0000

4 bit for subnetting

→ If this is a class C
then there is no subnet
and this is default mask for class C

→ If this is a class B
then there are $2^8 - 2$ subnets

→ If this is a class A
then there are $2^{16} - 2$ subnets

CISCO → IP SUBNET 0 → Remove (-2)

Block Size = 256 - Mask

As Net Admin:

$Q_1 \rightarrow$ How many Subnets?

$2^4 - 2 = 16 - 2 = 14$

$Q_2 \rightarrow$ How many host per subnet?

$2^4 - 2 = 16 - 2 = 14$

$Q_3 \rightarrow$ What are the valid Subnets?

192.168.10.16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, 240

$Q_4 \rightarrow$ What are the broadcast Address of each subnet?

192.168.10.31, 47, 63, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239

$Q_5 \rightarrow$ What are the valid host of each subnet?

192.168.10.(17-30), (33-46) (49-62), (65-78), (81-94), (97-110), (113-126), (129-142), (145-158), (161-174), (177-206), (209-222), (225-238)

Scenerio: Subnet the network address

192.168.10.0 with subnet mask

\28 (CIDR)

192 → 1100 0000 → class C

Subnet Mask: 11111111.11111111.11111111.11110000

255. 255. 255. 240

00010000

00011111

Q_1: You are given a host IP

192.168.10.174 \28

Subnet Address → 192.168.10.160

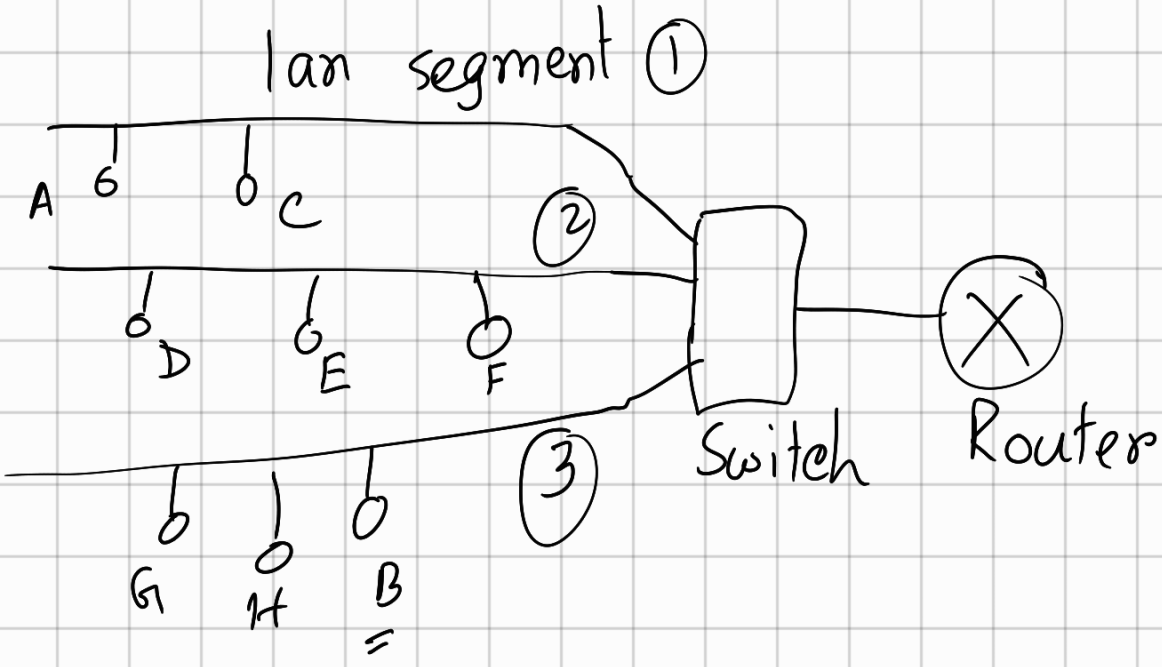
Broadcast Address → 192.168.10.175

Q_2: A router has received a packet with the following IP Address as destination

→ 192.168.10.159 \28

Ans: Router should broadcast the packet to the subnet 192.168.10.144

But Router will drop the packet to avoid storm. It is called limited broadcasting



192.168.10.255 → not limiting Broadcast

CCNA course BOOK → chapte 2 & 3
↳ Study Guide for subnetting