Intro

The 30-second subnetting trick, CIDR tables, and everything CompTIA and Cisco expect you to know cold.

Intro text

The Subnetting Trick (do this on every question)

Given an IP and CIDR (e.g. 192.16-8.1.77/26):
1. Block size = 256 − interesting octet value → 256 − 192 = 64
2. Subnets fall on multiples of the block size → 0, 64, 128, 192
3. 77 falls between 64 and 128 → subnet is 192.168.1.64
4. Range: 192.168.1.64 – 192.168.1.127 · Broadcast: .127 · Usable: .65 – .126

Subnetting trick steps

CIDR Quick Table

CIDR	Subnet Mask	Wildcard	Usable Hosts
/24	255.25-5.255.0	0.0.0.255	254
/25	255.255.2-55.128	0.0.0.127	126
/26	255.255.2-55.192	0.0.0.63	62
/27	255.255.2-55.224	0.0.0.31	30
/28	255.255.2-55.240	0.0.0.15	14
/29	255.255.2-55.248	0.0.0.7	6
/30	255.255.2-55.252	0.0.0.3	2
/23	255.25-5.254.0	0.0.1.255	510
/22	255.25-5.252.0	0.0.3.255	1,022
/21	255.25-5.248.0	0.0.7.255	2,046

CIDR Quick Table (cont)

/16	255.255.0.0	0.0.255.255	65,534

Formula: usable hosts = 2^(host bits) − 2 (subtract network + broadcast)

Private IP Ranges (RFC 1918)

Class	Range	CIDR	Addresses
A	10.0.0.0 – 10.255.25-5.255	/8	16,777,216
B	172.16.0.0 – 172.31.25-5.255	/12	1,048,576
C	192.168.0.0 – 192.168.2-55.255	/16	65,536

Also know: 127.0.0.0/8 = loopback · 169.25-4.0.0/16 = APIPA (link-local, DHCP failed)

Classful Boundaries

Class	First Octet	Default Mask
A	1 – 126	/8
B	128 – 191	/16
C	192 – 223	/24

(127 is reserved — loopback, not Class A usable.)

Special-Purpose Addresses

Address	Meaning
0.0.0.0/0	Default route — "everythin-g"
255.255.2-55.255	Limited broadcast — "eve-ryone here"
Network address	First address in subnet (not assignable)
Broadcast address	Last address in subnet (not assignable)

Special addresses to know

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Footer

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