

# Classless Inter-Domain Routing

- CIDR is a global address assignment convention that defines how the Internet Assigned Numbers Authority (IANA), its member agencies, and ISPs should assign the globally unique IPv4 address space to individual organizations.
- CIDR, defined in RFC 4632, has two main goals. First, CIDR defines a way to assign public IP addresses, worldwide, to allow route aggregation or route summarization. These route summaries greatly reduce the size of routing tables in Internet routers. Second, CIDR defines rules that allow an ISP to assign public IP addresses in blocks other than an entire Class A, B, or C network. CIDR allows ISPs to assign a public IPv4 address block of a size that better matches the needs of that customer.

# Variable Length Subnet Masks ( VLSM )

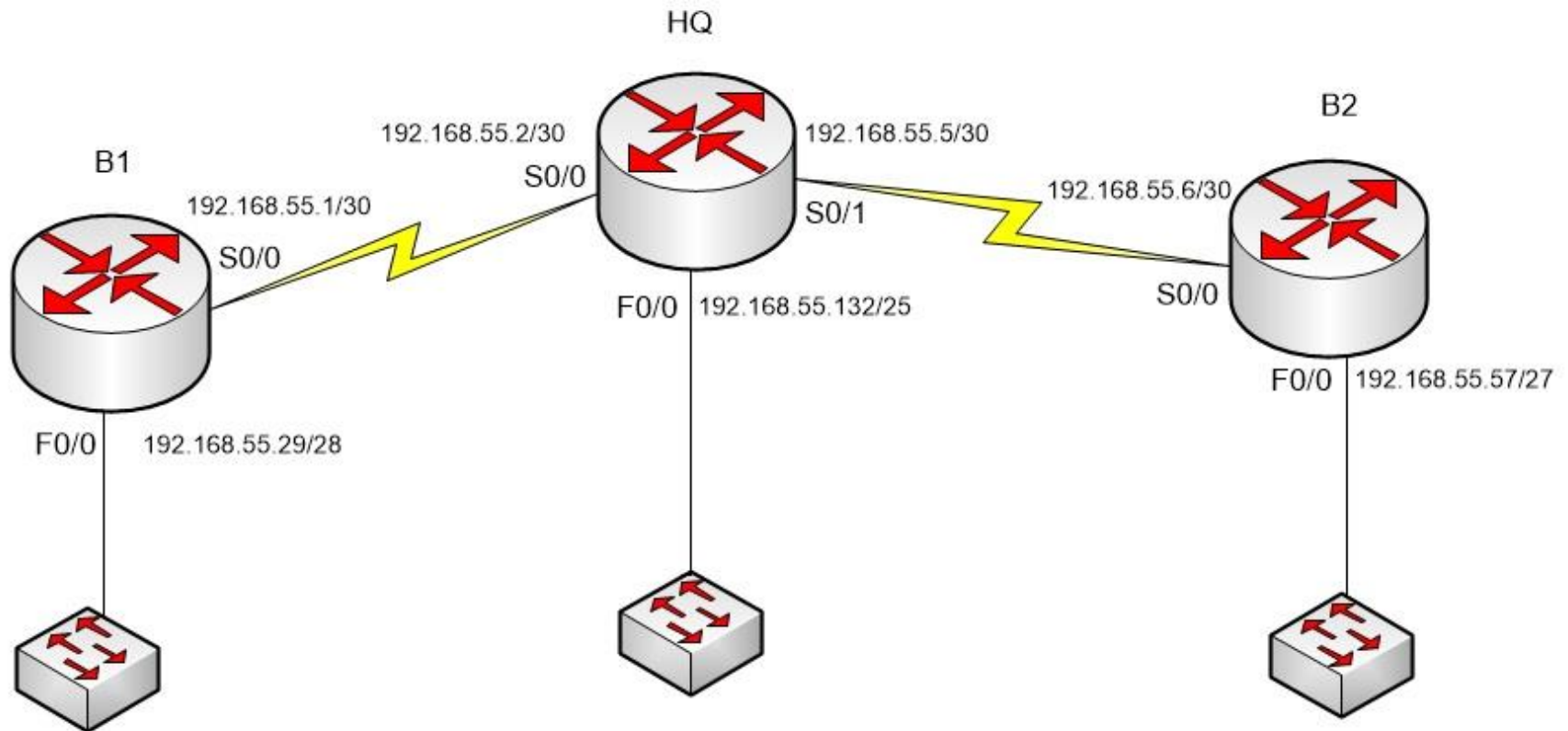
- The capability to specify a different subnet mask for the same Class A, B, or C network number on different subnets. VLSM can help optimize available address space.
- VLSM occurs when an internetwork uses more than one mask for different subnets of a single Class A, B, or C network.

## Ex

- Point-to-Point need 2 IP → /30
- LAN need 100 IP → /25

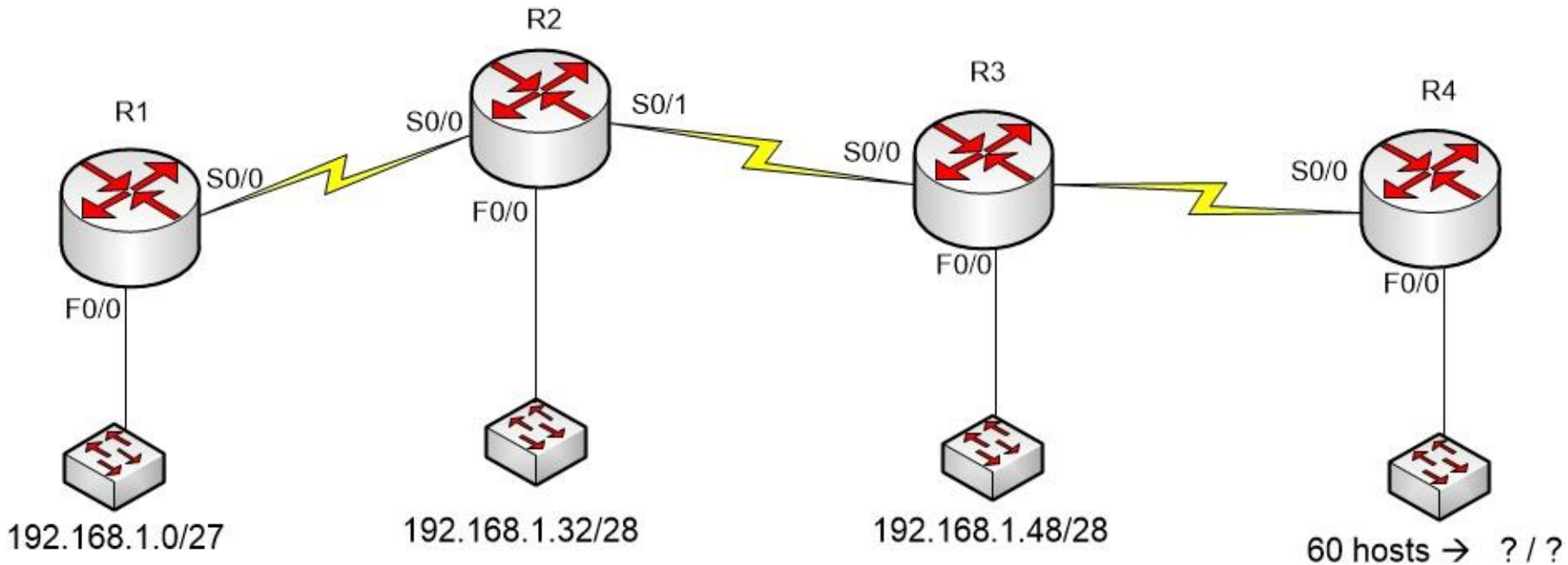
# Variable Length Subnet Masks ( VLSM )

## Solution to VLSM design example 1



# Variable Length Subnet Masks ( VLSM )

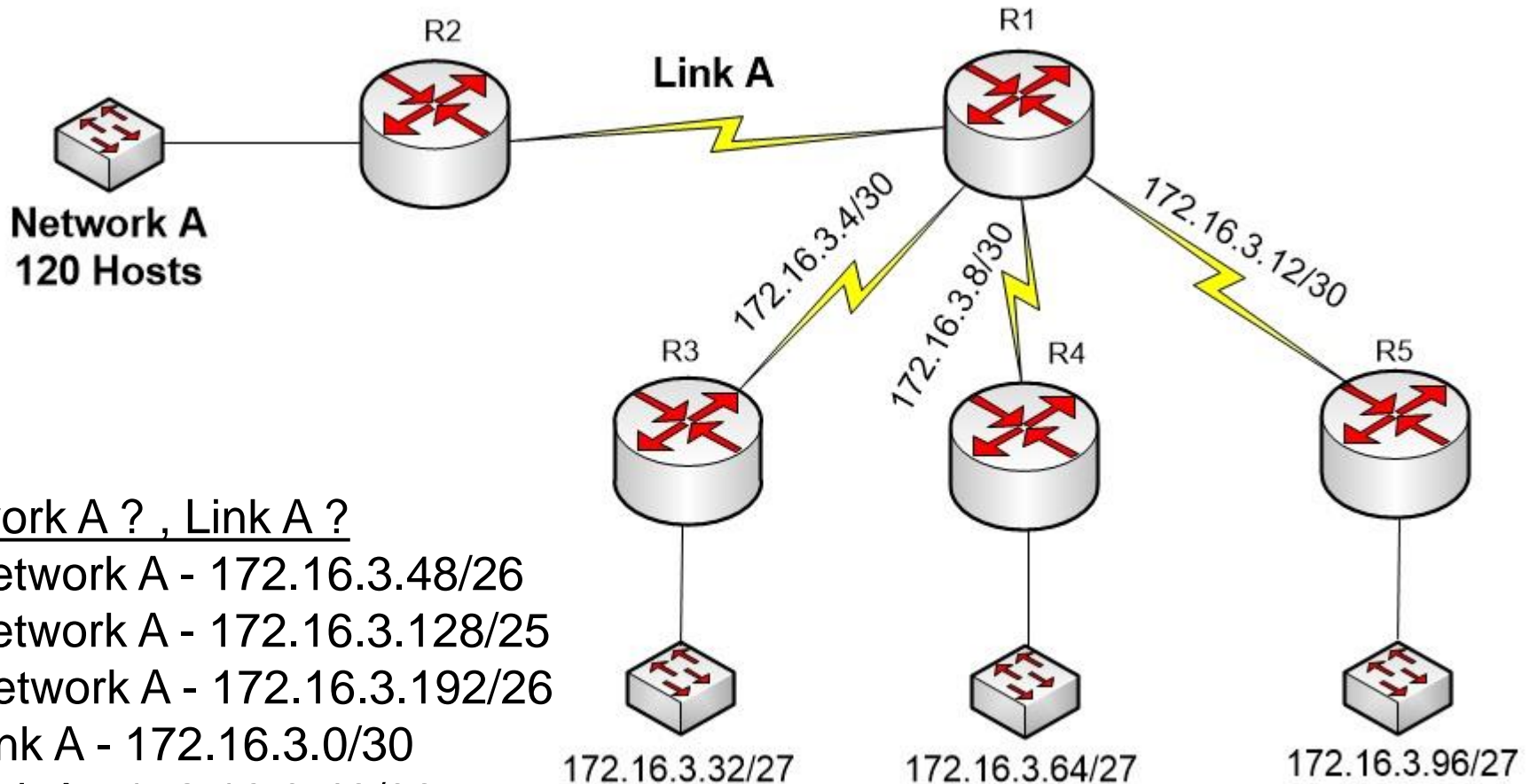
## Solution to VLSM design example 2



- A) 192.168.1.56/27
- B) 192.168.1.64/26
- C) 192.168.1.64/27
- D) 192.168.1.56/26

# Variable Length Subnet Masks ( VLSM )

## Solution to VLSM design example 3



Network A ? , Link A ?

- A) Network A - 172.16.3.48/26
- B) Network A - 172.16.3.128/25
- C) Network A - 172.16.3.192/26
- D) Link A - 172.16.3.0/30
- E) Link A - 172.16.3.40/30
- F) Link A - 172.16.3.112/30

# Variable Length Subnet Masks ( VLSM )

## Solution to VLSM design example 4

Network A ? , Network B ?

- A) 255.255.255.0
- B) 255.255.254.0
- C) 255.255.255.192
- D) 255.255.0.0
- E) 255.255.255.128

