

CIDR Classless Inter-Domain Routing

- A problem with classful addresses was that if a company had more than 254 hosts they would need to be assigned a Class B network
- They would have much less than the 65,534 hosts allocated, so this wasted a huge amount of the global address space
- Classless Inter-Domain Routing (CIDR) was introduced in 1993 to alleviate this problem

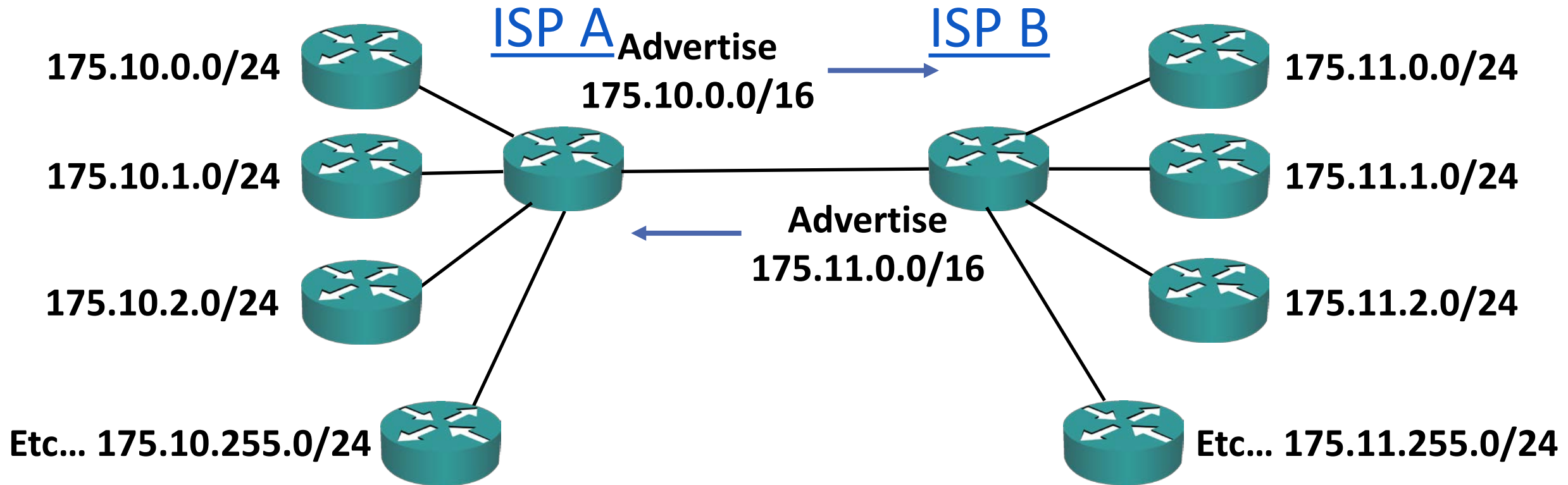
CIDR Classless Inter-Domain Routing

- CIDR removed the fixed /8, /16 and /24 requirements for the address classes, and allowed them to be split or 'subnetted' into smaller networks
- For example 175.10.10.0/20
- Companies can now be allocated an address range which more closely matches their needs and does not waste addresses

CIDR and Route Summarisation



- Another benefit of CIDR is that aggregate blocks of networks can be advertised on the Internet



Route Summarisation Benefits



- ISP A does not know about all 256 /24 networks reachable in ISP B
- It only has the single 175.11.0.0/16 summary route
- This reduces the size of ISP A's routing table and takes up less memory
- If an individual link goes down in ISP B, it has no impact on ISP A. The single summary route does not change
- (Routers in ISP B would have to recalculate their routing table if a link went down)
- This restricts issues to the local part of the network and reduces CPU load