Ministry of Educations and Sciences Republic of Kazakhstan

South Kazakhstan Medical Academy

PRESENTATION

The theme: Protocols

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Protocol

A protocol is the special set of rules that end points in a telecommunication connection use when they communicate. Protocols specify interactions between the communicating entities.

A protocol is a set of rules which define:

- How to establish communication between the machines
- The format of any data which is to be exchanged between the machines
- How errors in the data will be detected
- How errors will be corrected
- Methods of compressing the data to transmit it faster and more efficiently
- How the connection between the machines is to be terminated

TCP/IP

TCP/IP, or the Transmission Control Protocol/Internet Protocol, is a suite of communication protocols used to interconnect network devices on the internet. TCP/IP can also be used as a communications protocol in a private network (an intranet or an extranet).

TCP/IP uses the client/server model of communication in which a user or machine (a client) is provided a service (like sending a webpage) by another computer (a server) in the network.

Advantage of TCP/IP: TCP/IP is nonproprietary and, as a result, is not controlled by any single company. Therefore, the internet protocol suite can be modified easily. It is compatible with all operating systems, so it can communicate with any other system.

The internet protocol suite is also compatible with all types of computer hardware and networks. TCP/IP is highly scalable and, as a routable protocol, can determine the most efficient path through the network.

Network Identifier and Host identifier

The 5 Different Classes Of IP Address

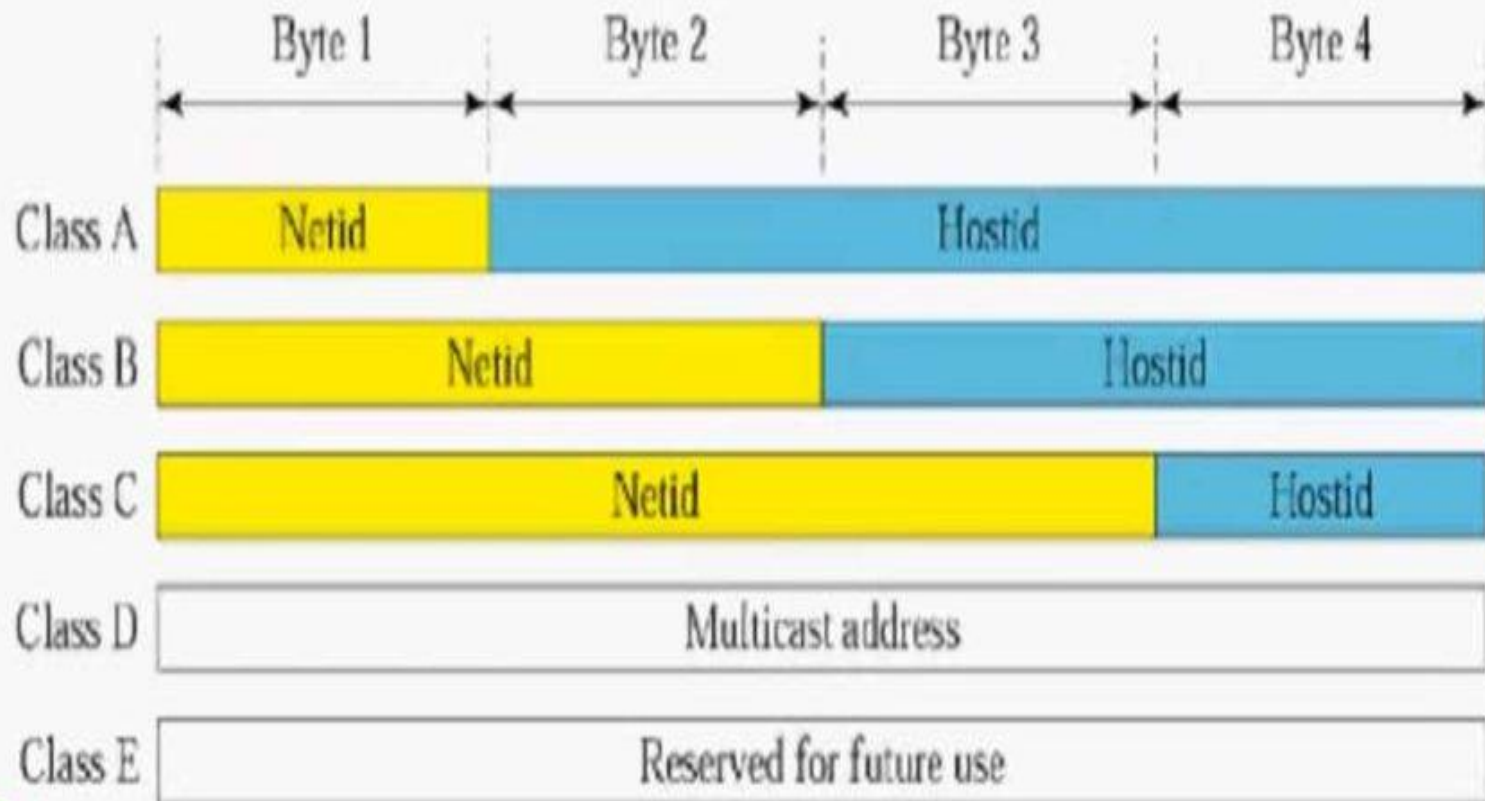Class A :   1.0.0.0 to 127.255.255.255
Class B : 128.0.0.0 to 191.255.255.255
Class C : 192.0.0.0 to 223.255.255.255
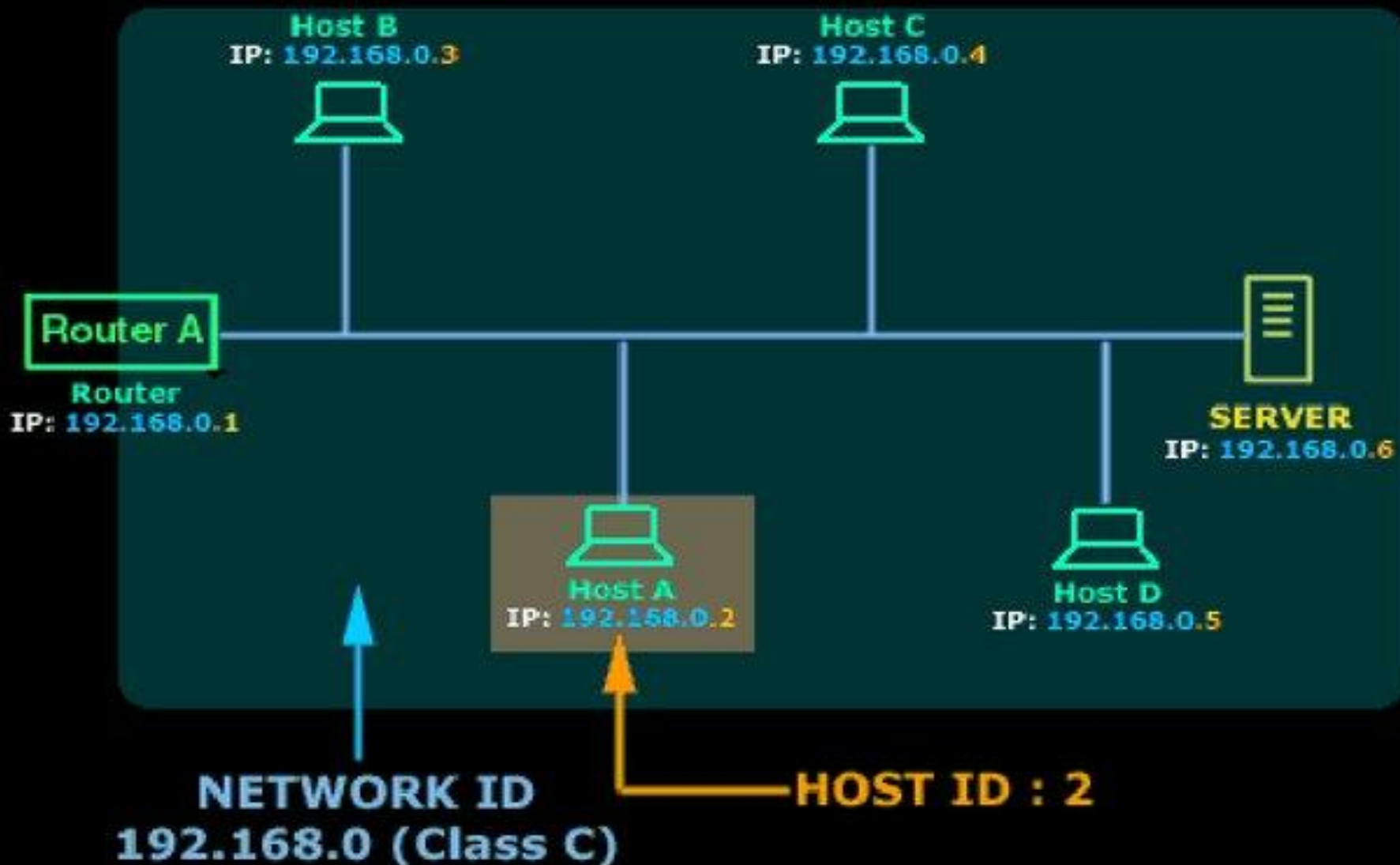Class D : 224.0.0.0 to 239.255.255.255
Class E : 240.0.0.0 to 255.255.255.255

The IP Classes listed above are not all usable by hosts!
Here we are simply looking at the range each Class covers

Net ID and Host ID

Understanding Network and Host ID concepts

Host B
IP: 192.168.0.3

Host C
IP: 192.168.0.4

Router A

Router
IP: 192.168.0.1

SERVER
IP: 192.168.0.6

Host A
IP: 192.168.0.2

Host D
IP: 192.168.0.5

NETWORK ID
192.168.0 (Class C)

HOST ID : 2

The above *Class C network* has a Network ID of 192.168.0
As you can see, the *Host ID* varies for each Host

https://www.youtube.com/watch?v=1Il7Oy4JiLY
http://www.vlsm-calc.net/ipclasses.php
http://www.firewall.cx/networking-topics/protocols/protocols-ip/165-protocols-ipnetwork-id.html