

Networks – Pramoda Medis

Exercise 02

IP ADDRESS EXERCISES

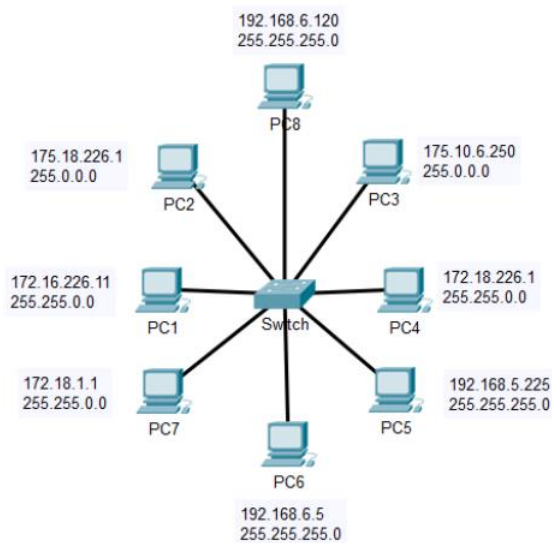
1. The IP addresses of devices and their subnet masks are shown below. Find out which part of the address is network and which part is host.

- a) 192.168.6.25, 255.255.0.0
- b) 170.10.0.15, 255.255.255.0
- c) 10.10.10.1, 255.255.255.0

Answers

	Network	Host
a	192.168	6.25
a	255.255	0
b	170.10.0	15
b	255.255.255	0
c	10.10.10	1
c	255.255.255	0

2. Which of the computers in the network below can operate with each other?



Answers

- PC1→172.16 - Nothing
- PC2→175 - PC3
- PC3→175 - PC2
- PC4→172.18 - PC7
- PC5→192.168.5 - Nothing
- PC6→192.168 - PC8
- PC7→172.18 - PC4
- PC8→192.168.6 - PC6

3. The computer, "laptop" and mobile device in the picture are connected to the Internet via the router in the picture.

The router's IP address is 172.18.226.1 and the subnet mask is 255.255.255.0.



a) What should the IP addresses and masks of terminal devices be like in order for Internet access to be possible?

b) What kind of IP address should be defined as the default gateway for terminal device

Answers

a) PC - IP address is 172.18.226.2 and the mask is 255.255.255.0

Mobile - IP address is 172.18.226.3 and the mask is 255.255.255.0

Laptop - IP address is 172.18.226.4 and the mask is 255.255.255.0

b) The default gateway for terminal should be 172.18.226.1 (Same as the router IP address)

4. What is the first and last address available for devices on the networks below. Why?

a) 192.0.0.0 ; 255.255.255.0

b) 172.0.0.0 ; 255.255.0.0

c) 112.0.0.0 ; 255.0.0.0

d) 192.168.0.0 ; 255.255.0.0

Answers

	Network address	Broadcast address
a	192.0.0.0	192.0.0.254
b	172.0.0.0	172.0.0.254
c	112.0.0.0	112.0.0.254
d	192.168.0.0	192.168.254

The reason is the network is identifying for network itself, the broadcast is for sending data to all devices so everything in between can be used. So we have to give the first address as the network address and the last address as the broadcast address and the range in between can use for IP addresses.

5. Find out from your own computer:

- a) Your IP address
- b) Gateway IP address
- c) DNS server IP address
- d) DHCP server IP address
- e) Does your computer use a public or private IP address

Answers

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Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
Physical Address. . . . . : AA-39-26-DC-6E-37
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : 
Description . . . . . : Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
Physical Address. . . . . : 28-39-26-5D-1C-F7
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IPv6 Address. . . . . : 2001:14bb:a5:cd48:5044:bf01:e95b:5092(Preferred)
Temporary IPv6 Address. . . . . : 2001:14bb:a5:cd48:a1e9:9493:9a10:824d(Preferred)
Link-local IPv6 Address . . . . . : fe80::e059:1e7b:e133:1a34%15(Preferred)
IPv4 Address. . . . . : 192.168.3.247(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Monday, January 20, 2025 8:42:28 PM
Lease Expires . . . . . : Tuesday, January 21, 2025 1:42:19 AM
Default Gateway . . . . . : fe80::9031:18ff:fe19:1e70%15
                          192.168.3.202
DHCP Server . . . . . : 192.168.3.202
DHCPv6 IAID . . . . . : 237517094
DHCPv6 Client DUID. . . . . : 00-01-00-01-2E-3E-00-5F-28-39-26-5D-1C-F7
DNS Servers . . . . . : 192.168.3.202
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : Bluetooth Device (Personal Area Network)
Physical Address. . . . . : 28-39-26-5D-1C-F8
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

PS C:\Users\user>
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- a) Your IP address - 192.168.3.247
- b) Gateway IP address - 192.168.3.202
- c) DNS server IP address - 255.255.255.0
- d) DHCP server IP address - 192.168.3.202
- e) Does your computer use a public or private IP address – It's a private address because it is as 192.168.3.247