

Lab 11

Class A 255.0.0.0

Class B 255.255.0.0

Class C 255.255.255.0

For router

enable

configure terminal

interface FastEthernet1/0

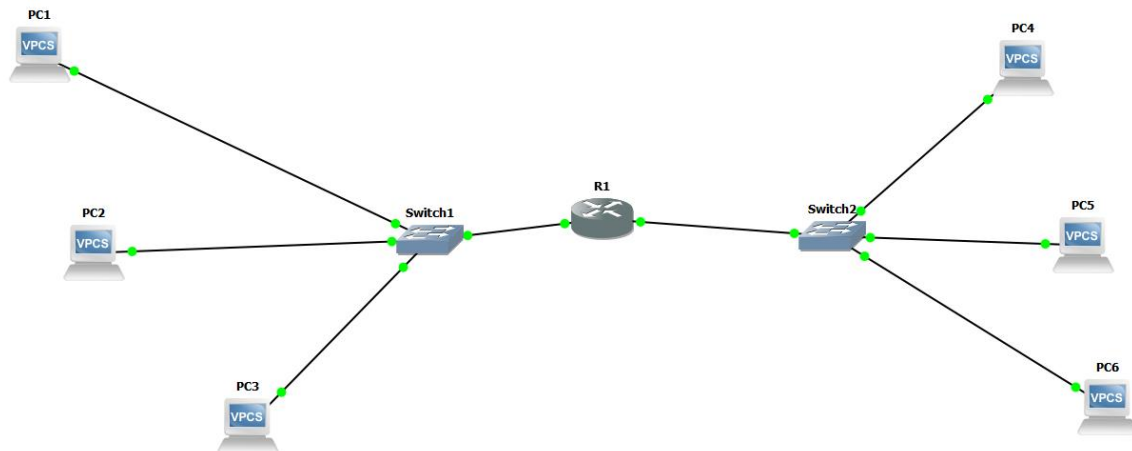
ip address 192.168.0.1 255.255.255.0

no shutdown

exit

exit

show ip interface brief



```

R1
PC1
Connected to Dynamics VM "R1" (ID 1, type C7200) - Console port
Press ENTER to get the prompt.
-UPDOWN: Interface FastEthernet0/0, changed state to up
*Nov 17 12:09:24.959: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Nov 17 12:09:24.963: %LINK-3-UPDOWN: Interface Ethernet1/1, changed state to up
*Nov 17 12:09:24.967: %LINK-3-UPDOWN: Interface Ethernet1/2, changed state to up
*Nov 17 12:09:24.967: %LINK-3-UPDOWN: Interface Ethernet1/3, changed state to up
*Nov 17 12:09:25.027: %SYS-5-CONFIG_I: Configured from memory by console
*Nov 17 12:09:25.119: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 7200 Software (C7200-ADVENTERPRISEK9-M), Version 12.4(24)T5,
RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2011 by Cisco Systems, Inc.
Compiled Fri 04-Mar-11 06:49 by prod_rel_team
*Nov 17 12:09:25.119: %SNMP-5-COLDSTART: SNMP agent on host R1 is undergoing a c
old start
*Nov 17 12:09:25.147: %CRYPTO-6-ISAKMP on OFF: ISAKMP is OFF
*Nov 17 12:09:25.147: %CRYPTO-6-GDOI ON OFF: GDOI is OFF
*Nov 17 12:09:25.971: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to down
*Nov 17 12:09:25.971: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
0, changed state to down
*Nov 17 12:09:25.978: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
1, changed state to down
*Nov 17 12:09:25.978: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
2, changed state to down
*Nov 17 12:09:25.978: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
3, changed state to down
*Nov 17 12:09:27.027: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state
to administratively down
*Nov 17 12:09:27.027: %LINK-5-CHANGED: Interface Ethernet1/0, changed state to a
dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/1, changed state to a
dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/2, changed state to a
dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/3, changed state to a
dministratively down
R1#enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0
% Incomplete command.

R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.0.4 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Nov 17 12:13:59.935: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Nov 17 12:14:00.935: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R1(config-if)#exit
R1(config)#exit
R1#
*Nov 17 12:14:24.123: %SYS-5-CONFIG_I: Configured from console by console
R1#enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

```

R1
PC1
administratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/1, changed state to a
dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/2, changed state to a
dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/3, changed state to a
dministratively down
R1#enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0
% Incomplete command.

R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.0.4 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Nov 17 12:13:59.935: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state t
o up
*Nov 17 12:14:00.935: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
R1(config-if)#exit
R1(config)#exit
R1#
*Nov 17 12:14:24.123: %SYS-5-CONFIG_I: Configured from console by console
R1#enable
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
R1(config-if)#exit
R1(config)#interface portEthernet1/0
^
% Invalid input detected at '^' marker.

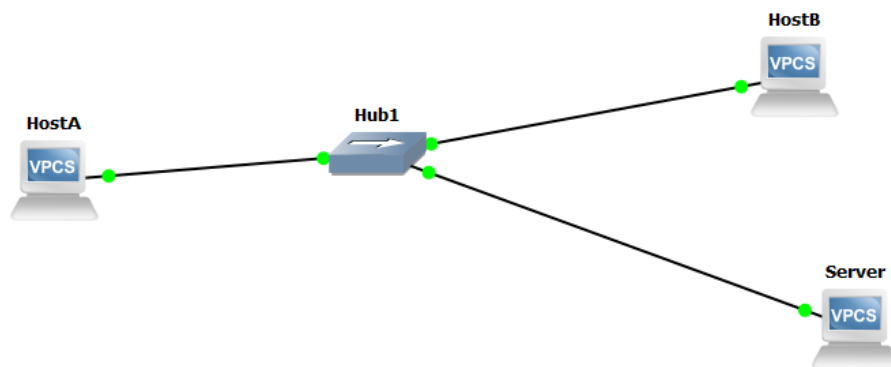
R1(config)#interface Ethernet1/0
R1(config-if)#ip address 192.168.1.7 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Nov 17 12:19:05.251: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Nov 17 12:19:06.251: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
0, changed state to up
R1(config-if)#exit
R1(config)#exit
R1#
*Nov 17 12:19:19.759: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief
Interface IP-Address OK? Method Status Prot
ocol
FastEthernet0/0 192.168.0.4 YES manual up up
Ethernet1/0 192.168.1.7 YES manual up up
Ethernet1/1 unassigned YES unset administratively down down
Ethernet1/2 unassigned YES unset administratively down down
Ethernet1/3 unassigned YES unset administratively down down
R1#
```

subnet mask and ping PC5
from PC1.

```
PC1> ping 192.168.1.5
84 bytes from 192.168.1.5 icmp_seq=1 ttl=63 time=46.551 ms
84 bytes from 192.168.1.5 icmp_seq=2 ttl=63 time=31.011 ms
84 bytes from 192.168.1.5 icmp_seq=3 ttl=63 time=31.125 ms
84 bytes from 192.168.1.5 icmp_seq=4 ttl=63 time=30.669 ms
84 bytes from 192.168.1.5 icmp_seq=5 ttl=63 time=30.896 ms

PC1> 
```

Task 2



```
HostA>  
HostA> ip 192.168.0.35 255.255.255.0 192.168.0.1  
Checking for duplicate address...  
PC1 : 192.168.0.35 255.255.255.0 gateway 192.168.0.1  
  
HostA> show ip  
  
NAME          : HostA[1]  
IP/MASK        : 192.168.0.35/24  
GATEWAY        : 192.168.0.1  
DNS            :  
MAC            : 00:50:79:66:68:00  
LPORT          : 10006  
RHOST:PORT     : 127.0.0.1:10007  
MTU:           : 1500  
  
HostA> 
```

```
HostB> ip 192.168.0.1 255.255.255.0  
Checking for duplicate address...  
PC1 : 192.168.0.1 255.255.255.0  
  
HostB> show ip  
  
NAME          : HostB[1]  
IP/MASK        : 192.168.0.1/24  
GATEWAY        : 255.255.255.0  
DNS            :  
MAC            : 00:50:79:66:68:05  
LPORT          : 10008  
RHOST:PORT     : 127.0.0.1:10009  
MTU:           : 1500  
  
HostB> 
```

```
Server> ip 192.168.0.10 255.255.255.0 192.168.0.1
Checking for duplicate address...
PC1 : 192.168.0.10 255.255.255.0 gateway 192.168.0.1

Server> show ip

NAME       : Server[1]
IP/MASK    : 192.168.0.10/24
GATEWAY    : 192.168.0.1
DNS        :
MAC        : 00:50:79:66:68:03
LPORT      : 10010
RHOST:PORT : 127.0.0.1:10011
MTU        : 1500

Server> █
```

A->B then server

```
HostA>
HostA> ip 192.168.0.35 255.255.255.0 192.168.0.1
Checking for duplicate address...
PC1 : 192.168.0.35 255.255.255.0 gateway 192.168.0.1

HostA> show ip

NAME       : HostA[1]
IP/MASK    : 192.168.0.35/24
GATEWAY    : 192.168.0.1
DNS        :
MAC        : 00:50:79:66:68:00
LPORT      : 10006
RHOST:PORT : 127.0.0.1:10007
MTU        : 1500

HostA> ping 192.168.0.1
84 bytes from 192.168.0.1 icmp_seq=1 ttl=64 time=1.016 ms
84 bytes from 192.168.0.1 icmp_seq=2 ttl=64 time=1.032 ms
84 bytes from 192.168.0.1 icmp_seq=3 ttl=64 time=1.193 ms
84 bytes from 192.168.0.1 icmp_seq=4 ttl=64 time=1.109 ms
84 bytes from 192.168.0.1 icmp_seq=5 ttl=64 time=0.898 ms

HostA> ping 192.168.0.10
84 bytes from 192.168.0.10 icmp_seq=1 ttl=64 time=0.603 ms
84 bytes from 192.168.0.10 icmp_seq=2 ttl=64 time=0.879 ms
84 bytes from 192.168.0.10 icmp_seq=3 ttl=64 time=0.814 ms
84 bytes from 192.168.0.10 icmp_seq=4 ttl=64 time=1.007 ms
84 bytes from 192.168.0.10 icmp_seq=5 ttl=64 time=1.054 ms

HostA> █
```

Host B to A then server

```
HostB> show ip

NAME       : HostB[1]
IP/MASK    : 192.168.0.1/24
GATEWAY    : 255.255.255.0
DNS        :
MAC        : 00:50:79:66:68:05
LPORT      : 10008
RHOST:PORT : 127.0.0.1:10009
MTU:       : 1500

HostB> ping 192.168.0.35
84 bytes from 192.168.0.35 icmp_seq=1 ttl=64 time=0.330 ms
84 bytes from 192.168.0.35 icmp_seq=2 ttl=64 time=0.349 ms
84 bytes from 192.168.0.35 icmp_seq=3 ttl=64 time=1.211 ms
84 bytes from 192.168.0.35 icmp_seq=4 ttl=64 time=1.505 ms
84 bytes from 192.168.0.35 icmp_seq=5 ttl=64 time=1.510 ms

HostB> ping 192.168.0.10
84 bytes from 192.168.0.10 icmp_seq=1 ttl=64 time=1.682 ms
84 bytes from 192.168.0.10 icmp_seq=2 ttl=64 time=1.819 ms
84 bytes from 192.168.0.10 icmp_seq=3 ttl=64 time=1.964 ms
84 bytes from 192.168.0.10 icmp_seq=4 ttl=64 time=2.247 ms
84 bytes from 192.168.0.10 icmp_seq=5 ttl=64 time=1.883 ms

HostB> █
```

Server to hostA to hostB

```
Press '?' to get help.

Executing the startup file

Server> ip 192.168.0.10 255.255.255.0 192.168.0.1
Checking for duplicate address...
PC1 : 192.168.0.10 255.255.255.0 gateway 192.168.0.1

Server> show ip

NAME       : Server[1]
IP/MASK     : 192.168.0.10/24
GATEWAY     : 192.168.0.1
DNS         :
MAC         : 00:50:79:66:68:03
LPORT      : 10010
RHOST:PORT  : 127.0.0.1:10011
MTU         : 1500

Server> ping 192.168.0.35
84 bytes from 192.168.0.35 icmp_seq=1 ttl=64 time=1.134 ms
84 bytes from 192.168.0.35 icmp_seq=2 ttl=64 time=1.090 ms
84 bytes from 192.168.0.35 icmp_seq=3 ttl=64 time=1.405 ms
84 bytes from 192.168.0.35 icmp_seq=4 ttl=64 time=1.024 ms
84 bytes from 192.168.0.35 icmp_seq=5 ttl=64 time=0.942 ms

Server> ping 192.168.0.1
84 bytes from 192.168.0.1 icmp_seq=1 ttl=64 time=1.066 ms
84 bytes from 192.168.0.1 icmp_seq=2 ttl=64 time=1.118 ms
84 bytes from 192.168.0.1 icmp_seq=3 ttl=64 time=1.348 ms
84 bytes from 192.168.0.1 icmp_seq=4 ttl=64 time=0.877 ms
84 bytes from 192.168.0.1 icmp_seq=5 ttl=64 time=1.163 ms

Server> █
```

Third task

```
HostB> ip 192.168.0.1 255.255.255.224
Checking for duplicate address...
PC1 : 192.168.0.1 255.255.255.224

HostB> █
```

What is the effect of changing the subnet mask on the network?

```

HostA>
HostA> ip 192.168.0.35 255.255.255.224 192.168.0.1
not same subnet

HostA> ip 192.168.0.35 255.255.255.224
Checking for duplicate address...
PC1 : 192.168.0.35 255.255.255.224

HostA> ping 192.168.0.1
host (255.255.255.224) not reachable

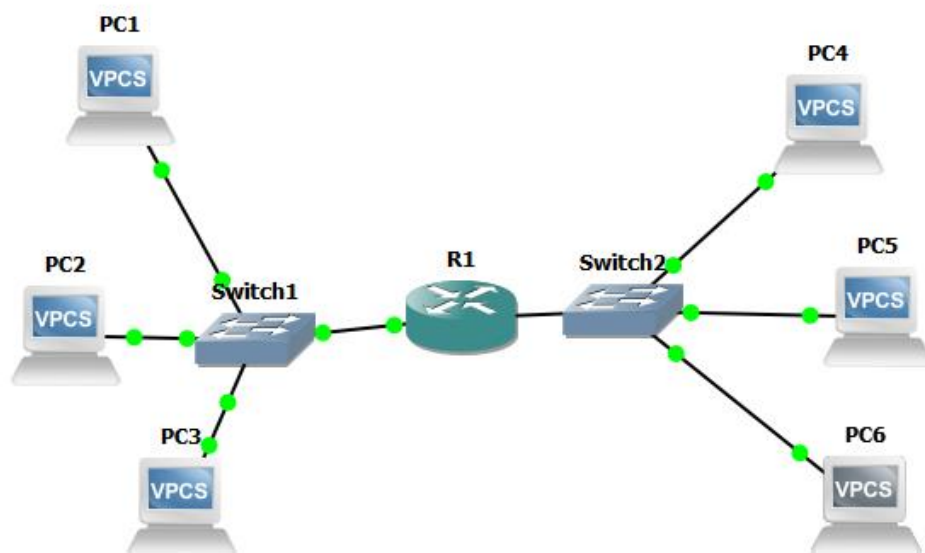
HostA> 

```

We do not have enough space to connect more hosts as class c requires less host connection and more networks can be connected.

Post lab

Class B does not allow to v=connect more than 1 network so we are able to ping within that network but not any other network connected to the router



```
R1
R1(config)#interface Ethernet1/0
R1(config-if)#ip address 192.168.1.7 255.255.0.0
R1(config-if)#no shutdown
% 192.168.0.0 overlaps with FastEthernet0/0
Ethernet1/0: incorrect IP address assignment
R1(config-if)#ip address 192.168.1.7 255.255.0.0
R1(config-if)#exit
R1(config)#exit
R1#
*Nov 17 13:11:22.811: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief
Interface                IP-Address      OK? Method Status      Prot
ocol
FastEthernet0/0          192.168.0.4     YES manual  up          up
Ethernet1/0              192.168.1.7     YES manual  administratively down down
Ethernet1/1              unassigned      YES unset   administratively down down
Ethernet1/2              unassigned      YES unset   administratively down down
Ethernet1/3              unassigned      YES unset   administratively down down
R1#
```

```
PC1 - PuTTY
VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

PC1> ip 192.168.0.1 255.255.0.0
Checking for duplicate address...
PC1 : 192.168.0.1 255.255.0.0

PC1> ping 192.168.1.5
host (192.168.1.5) not reachable

PC1> ping 192.168.0.3
64 bytes from 192.168.0.3 icmp_seq=1 ttl=64 time=1.376 ms
64 bytes from 192.168.0.3 icmp_seq=2 ttl=64 time=1.256 ms
64 bytes from 192.168.0.3 icmp_seq=3 ttl=64 time=0.800 ms
64 bytes from 192.168.0.3 icmp_seq=4 ttl=64 time=1.349 ms
64 bytes from 192.168.0.3 icmp_seq=5 ttl=64 time=0.793 ms

PC1>
```