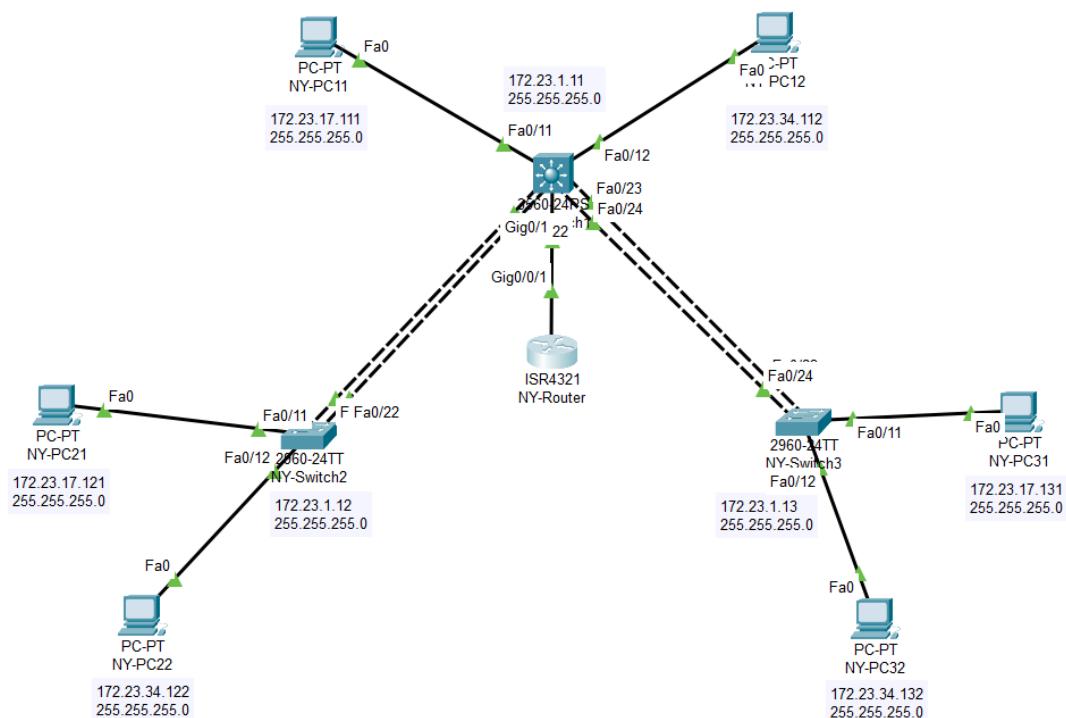


Lab 3

Description: We used a router on a stick to be able to communicate with outside of our vlans.

Topology:



Syntax:

Command	Description	Cisco IOS Mode
Int G0/1	Navigates to the interface you want to configure	Int config
Switchport mode trunk	Sets the interface to trunk port	Int config

Switchport trunk encapsulation dot1q	Changes the encapsulation to IEEE 802.1Q	Int Config
Switchport trunk allowed vlan all	Allows all vlans on the trunk port	Int config

Verification:

B. This screenshot shows NY-Switch1s VLAN table.

```
NY-Switch1#show vlan
VLAN Name          Status    Ports
---- -----
1    default        active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                           Fa0/9, Fa0/10, Fa0/13, Fa0/14
                           Fa0/15, Fa0/16, Fa0/17,
Fa0/18
                           Fa0/19, Fa0/20, Gig0/1,
Gig0/2
17   BLUE           active    Fa0/11
34   GREEN          active    Fa0/12
1002 fddi-default  active
1003 token-ring-default  active
1004 fdnet-default  active
1005 trnet-default  active

VLAN Type SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode Transl
Trans2
---- -----
1    enet 100001    1500   -     -     -     -     0     0
17   enet 100017    1500   -     -     -     -     0     0
34   enet 100034    1500   -     -     -     -     0     0
1002 fddi 101002    1500   -     -     -     -     0     0
1003 tr  101003    1500   -     -     -     -     0     0
1004 fdnet 101004   1500   -     -     -     ieee -     0     0
```

C. These screenshots show NY-Switch2s VLAN table, interfaces that are trunks and it's etherchannel summary.

```
NY-Switch2#show vlan
VLAN Name          Status    Ports
---- -----
1    default        active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                           Fa0/9, Fa0/10, Fa0/13, Fa0/14
                           Fa0/15, Fa0/16, Fa0/17,
Fa0/18
                           Fa0/19, Fa0/20, Fa0/23,
Fa0/24
                           Gig0/1, Gig0/2
17   BLUE           active    Fa0/11
34   GREEN          active    Fa0/12
1002 fddi-default  active
1003 token-ring-default  active
1004 fdnet-default  active
1005 trnet-default  active

VLAN Type SAID      MTU    Parent RingNo BridgeNo Stp  BrdgMode Transl
Trans2
---- -----
1    enet 100001    1500   -     -     -     -     0     0
17   enet 100017    1500   -     -     -     -     0     0
34   enet 100034    1500   -     -     -     -     0     0
1002 fddi 101002    1500   -     -     -     -     0     0
1003 tr  101003    1500   -     -     -     -     0     0
1004 fdnet 101004   1500   -     -     -     ieee -     0     0
```

```

NY-Switch2#show int status
Port      Name      Status    Vlan     Duplex   Speed Type
Po2       connected trunk      auto     auto    10/100BaseTX
Fa0/1     notconnect 1      auto     auto    10/100BaseTX
Fa0/2     notconnect 1      auto     auto    10/100BaseTX
Fa0/3     notconnect 1      auto     auto    10/100BaseTX
Fa0/4     notconnect 1      auto     auto    10/100BaseTX
Fa0/5     notconnect 1      auto     auto    10/100BaseTX
Fa0/6     notconnect 1      auto     auto    10/100BaseTX
Fa0/7     notconnect 1      auto     auto    10/100BaseTX
Fa0/8     notconnect 1      auto     auto    10/100BaseTX
Fa0/9     notconnect 1      auto     auto    10/100BaseTX
Fa0/10    notconnect 1      auto     auto    10/100BaseTX
Fa0/11    connected 17      auto     auto    10/100BaseTX
Fa0/12    connected 34      auto     auto    10/100BaseTX
Fa0/13    notconnect 1      auto     auto    10/100BaseTX
Fa0/14    notconnect 1      auto     auto    10/100BaseTX
Fa0/15    notconnect 1      auto     auto    10/100BaseTX
Fa0/16    notconnect 1      auto     auto    10/100BaseTX
Fa0/17    notconnect 1      auto     auto    10/100BaseTX
Fa0/18    notconnect 1      auto     auto    10/100BaseTX
Fa0/19    notconnect 1      auto     auto    10/100BaseTX
Fa0/20    notconnect 1      auto     auto    10/100BaseTX
Fa0/21    Link to NY-Switch1 connected trunk      auto     auto    10/100BaseTX
Fa0/22    Link to NY-Switch2 connected trunk      auto     auto    10/100BaseTX
Fa0/23    notconnect 1      auto     auto    10/100BaseTX
Fa0/24    notconnect 1      auto     auto    10/100BaseTX
Gig0/1    notconnect 1      auto     auto    10/100BaseTX
Gig0/2    notconnect 1      auto     auto    10/100BaseTX

NY-Switch2#show etherchannel summary
Flags: D - down      P - in port-channel
I - stand-alone s - suspended
H - Hot-standby (LACP only)
R - Layer3      S - Layer2
U - in use       f - failed to allocate aggregator
u - unsuitable for bundling
w - waiting to be aggregated
d - default port

Number of channel-groups in use: 1
Number of aggregators: 1

Group Port-channel Protocol Ports
-----+-----+-----+
2      Po2 (SU)      LACP      Fa0/21(P) Fa0/22(P)

```

D. These screenshots show NY-Switch3s VLAN table, NY-Switch3s and NY-Switch1s interfaces that are trunks and their etherchannel summaries.

```

NY-Switch3#show vlan
VLAN Name          Status Ports
---- --
1   default        active Fa0/1, Fa0/2, Fa0/3, Fa0/4
                  Fa0/5, Fa0/6, Fa0/7, Fa0/8
                  Fa0/9, Fa0/10, Fa0/13, Fa0/14
                  Fa0/15, Fa0/16, Fa0/17, Fa0/18
                  Fa0/19, Fa0/20, Fa0/21, Fa0/22
                  Gig0/1, Gig0/2

17  BLUE          active Fa0/11
34  GREEN          active Fa0/12

1002 fddi-default active
1003 token-ring-default active
1004 fdnet-default active
1005 trnet-default active

VLAN Type SAID    MTU Parent RingNo BridgeNo Stp BrdgMode Transl Trans2
---- --
1   enet 100001 1500 -   -   -   -   0   0
17  enet 100017 1500 -   -   -   -   0   0
34  enet 100034 1500 -   -   -   -   0   0
1002 fddi 101002 1500 -   -   -   -   0   0
1003 tr 101003 1500 -   -   -   -   0   0
1004 fdnet 101004 1500 -   -   ieee -   0   0
1005 trnet 101005 1500 -   -   ibm -   0   0

VLAN Type SAID    MTU Parent RingNo BridgeNo Stp BrdgMode Transl Trans2
---- --
Remote SPAN VLANs

Primary Secondary Type Ports
-----+-----+-----+

```

```

NY-Switch1#show int status
Port      Name      Status    Vlan     Duplex   Speed Type
Po2       connected trunk      auto     auto    10/100BaseTX
Po3       connected trunk      auto     auto    10/100BaseTX
Fa0/1     notconnect 1      auto     auto    10/100BaseTX
Fa0/2     notconnect 1      auto     auto    10/100BaseTX
Fa0/3     notconnect 1      auto     auto    10/100BaseTX
Fa0/4     notconnect 1      auto     auto    10/100BaseTX
Fa0/5     notconnect 1      auto     auto    10/100BaseTX
Fa0/6     notconnect 1      auto     auto    10/100BaseTX
Fa0/7     notconnect 1      auto     auto    10/100BaseTX
Fa0/8     notconnect 1      auto     auto    10/100BaseTX
Fa0/9     notconnect 1      auto     auto    10/100BaseTX
Fa0/10    notconnect 1      auto     auto    10/100BaseTX
Fa0/11    connected 17      auto     auto    10/100BaseTX
Fa0/12    connected 34      auto     auto    10/100BaseTX
Fa0/13    notconnect 1      auto     auto    10/100BaseTX
Fa0/14    notconnect 1      auto     auto    10/100BaseTX
Fa0/15    notconnect 1      auto     auto    10/100BaseTX
Fa0/16    notconnect 1      auto     auto    10/100BaseTX
Fa0/17    notconnect 1      auto     auto    10/100BaseTX
Fa0/18    notconnect 1      auto     auto    10/100BaseTX
Fa0/19    notconnect 1      auto     auto    10/100BaseTX
Fa0/20    notconnect 1      auto     auto    10/100BaseTX
Fa0/21    Link to NY-Switch2 connected trunk      auto     auto    10/100BaseTX
Fa0/22    Link to NY-Switch2 connected trunk      auto     auto    10/100BaseTX
Fa0/23    Link to NY-Switch3 connected trunk      auto     auto    10/100BaseTX
Fa0/24    Link to NY-Switch3 connected trunk      auto     auto    10/100BaseTX
Gig0/1    notconnect 1      auto     auto    10/100BaseTX
Gig0/2    notconnect 1      auto     auto    10/100BaseTX

NY-Switch3#show etherchannel summary
Flags: D - down      P - in port-channel
I - stand-alone s - suspended
H - Hot-standby (LACP only)
R - Layer3      S - Layer2
U - in use       f - failed to allocate aggregator
u - unsuitable for bundling
w - waiting to be aggregated
d - default port

Number of channel-groups in use: 1
Number of aggregators: 1

Group Port-channel Protocol Ports
-----+-----+-----+
3      Po3 (SU)      LACP      Fa0/23(P) Fa0/24(P)

```

```

NY-Switch1#show etherchannel summary
Flags: D - down      P - in port-channel
      I - stand-alone S - suspended
      H - Hot-standby (LACP only)
      R - Layer3       S - Layer2
      U - in use       f - failed to allocate aggregator
      u - unsuitable for bundling
      w - waiting to be aggregated
      d - default port

Number of channel-groups in use: 2
Number of aggregators: 2

Group Port-channel Protocol Ports
-----+-----+-----+
2     Po2 (SU)        LACP   Fa0/21(P) Fa0/22(P)
3     Po3 (SU)        LACP   Fa0/23(P) Fa0/24(P)

```

E. This screenshot shows that NY-PC11 can reach NY-PC21 and NY-PC31.

```

C:\>ping 172.23.17.121

Pinging 172.23.17.121 with 32 bytes of data:

Reply from 172.23.17.121: bytes=32 time<1ms TTL=128

Ping statistics for 172.23.17.121:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.17.131

Pinging 172.23.17.131 with 32 bytes of data:

Reply from 172.23.17.131: bytes=32 time<1ms TTL=128

Ping statistics for 172.23.17.131:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

F. This screenshot shows that NY-PC12 can reach NY-PC22 and NY-PC32.

```

C:\>ping 172.23.34.122

Pinging 172.23.34.122 with 32 bytes of data:

Reply from 172.23.34.122: bytes=32 time<1ms TTL=128

Ping statistics for 172.23.34.122:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.34.132

Pinging 172.23.34.132 with 32 bytes of data:

Reply from 172.23.34.132: bytes=32 time<1ms TTL=128

Ping statistics for 172.23.34.132:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

G. These screenshots shows NY-Router's abbreviated interfaces, routing table and NY-Switch1's interfaces that are trunks.

```
Router#show ip int brief
Interface          IP-Address      OK? Method Status
Protocol
GigabitEthernet0/0/0 unassigned     YES unset administratively down down
GigabitEthernet0/0/1 unassigned     YES unset up up
GigabitEthernet0/0/1.1 172.23.1.1   YES manual up up
GigabitEthernet0/0/1.17 172.23.17.1 YES manual up up
GigabitEthernet0/0/1.34 172.23.34.1 YES manual up up
Vlan1              unassigned     YES unset administratively down down
-
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter
area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route
Gateway of last resort is not set

172.23.0.0/16 is variably subnetted, 6 subnets, 2 masks
C     172.23.1.0/24 is directly connected, GigabitEthernet0/0/1.1
L     172.23.1.1/32 is directly connected, GigabitEthernet0/0/1.1
C     172.23.17.0/24 is directly connected, GigabitEthernet0/0/1.17
L     172.23.17.1/32 is directly connected, GigabitEthernet0/0/1.17
C     172.23.34.0/24 is directly connected, GigabitEthernet0/0/1.34
L     172.23.34.1/32 is directly connected, GigabitEthernet0/0/1.34

NY-Switch1#show int status
Port      Name           Status    Vlan    Duplex  Speed Type
Po2                   connected  trunk   auto    auto    10/100BaseTX
Po3                   connected  trunk   auto    auto    10/100BaseTX
Fa0/1                 notconnect 1      auto    auto    10/100BaseTX
Fa0/2                 notconnect 1      auto    auto    10/100BaseTX
Fa0/3                 notconnect 1      auto    auto    10/100BaseTX
Fa0/4                 notconnect 1      auto    auto    10/100BaseTX
Fa0/5                 notconnect 1      auto    auto    10/100BaseTX
Fa0/6                 notconnect 1      auto    auto    10/100BaseTX
Fa0/7                 notconnect 1      auto    auto    10/100BaseTX
Fa0/8                 notconnect 1      auto    auto    10/100BaseTX
Fa0/9                 notconnect 1      auto    auto    10/100BaseTX
Fa0/10                notconnect 1      auto    auto    10/100BaseTX
Fa0/11                connected  17     auto    auto    10/100BaseTX
Fa0/12                connected  34     auto    auto    10/100BaseTX
Fa0/13                notconnect 1      auto    auto    10/100BaseTX
Fa0/14                notconnect 1      auto    auto    10/100BaseTX
Fa0/15                notconnect 1      auto    auto    10/100BaseTX
Fa0/16                notconnect 1      auto    auto    10/100BaseTX
Fa0/17                notconnect 1      auto    auto    10/100BaseTX
Fa0/18                notconnect 1      auto    auto    10/100BaseTX
Fa0/19                notconnect 1      auto    auto    10/100BaseTX
Fa0/20                notconnect 1      auto    auto    10/100BaseTX
Fa0/21                Link to NY-Switch2 connected  trunk   auto    auto    10/100BaseTX
Fa0/22                Link to NY-Switch2 connected  trunk   auto    auto    10/100BaseTX
Fa0/23                Link to NY-Switch3 connected  trunk   auto    auto    10/100BaseTX
Fa0/24                Link to NY-Switch3 connected  trunk   auto    auto    10/100BaseTX
g0/1                  connected  trunk   auto    auto    10/100BaseTX
g0/2                  notconnect 1      auto    auto    10/100BaseTX
```

H. These screenshots verify that all of the PCs can reach their own default gateways.

The image contains two side-by-side screenshots of a Windows command prompt window. Both windows show the output of the 'ipconfig' command and a 'ping' command to a specific IP address.

Left Window (FastEthernet0 Connection):

```
C:\>ipconfig
FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::20C:85FF:FE02:CC81
IPv6 Address.....: :::
IPv4 Address.....: 172.23.17.111
Subnet Mask.....: 255.255.255.0
Default Gateway.....: :::
                           172.23.17.1

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: :::
IPv6 Address.....: :::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: :::
                           0.0.0.0

C:\>ping 172.23.17.1

Pinging 172.23.17.1 with 32 bytes of data:

Reply from 172.23.17.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.17.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Right Window (FastEthernet0 Connection):

```
C:\>ipconfig
FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::2E0:8FFF:FE47:D7E8
IPv6 Address.....: :::
IPv4 Address.....: 172.23.34.112
Subnet Mask.....: 255.255.255.0
Default Gateway.....: :::
                           172.23.34.1

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: :::
IPv6 Address.....: :::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: :::
                           0.0.0.0

C:\>ping 172.23.34.1

Pinging 172.23.34.1 with 32 bytes of data:

Reply from 172.23.34.1: bytes=32 time=2ms TTL=255
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.34.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

```
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix.::
Link-local IPv6 Address.....:: FE80::290:2BFF:FEED:DC14
IPv6 Address.....:: :::
IPv4 Address.....:: 172.23.17.121
Subnet Mask.....:: 255.255.255.0
Default Gateway.....:: :::
172.23.17.1

Bluetooth Connection:
Connection-specific DNS Suffix.::
Link-local IPv6 Address.....:: :::
IPv6 Address.....:: :::
IPv4 Address.....:: 0.0.0.0
Subnet Mask.....:: 0.0.0.0
Default Gateway.....:: :::
0.0.0.0

C:\>ping 172.23.17.1
Pinging 172.23.17.1 with 32 bytes of data:
Reply from 172.23.17.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.17.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

```
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix.::
Link-local IPv6 Address.....:: FE80::2E0:A3FF:FE51:BC99
IPv6 Address.....:: :::
IPv4 Address.....:: 172.23.34.122
Subnet Mask.....:: 255.255.255.0
Default Gateway.....:: :::
172.23.34.1

Bluetooth Connection:
Connection-specific DNS Suffix.::
Link-local IPv6 Address.....:: :::
IPv6 Address.....:: :::
IPv4 Address.....:: 0.0.0.0
Subnet Mask.....:: 0.0.0.0
Default Gateway.....:: :::
0.0.0.0

C:\>ping 172.23.34.1
Pinging 172.23.34.1 with 32 bytes of data:
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.34.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

```
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix.::
Link-local IPv6 Address.....:: FE80::206:2AFF:FE99:542B
IPv6 Address.....:: :::
IPv4 Address.....:: 172.23.17.131
Subnet Mask.....:: 255.255.255.0
Default Gateway.....:: :::
172.23.17.1

Bluetooth Connection:
Connection-specific DNS Suffix.::
Link-local IPv6 Address.....:: :::
IPv6 Address.....:: :::
IPv4 Address.....:: 0.0.0.0
Subnet Mask.....:: 0.0.0.0
Default Gateway.....:: :::
0.0.0.0

C:\>ping 172.23.17.1
Pinging 172.23.17.1 with 32 bytes of data:
Reply from 172.23.17.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.17.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

I. This screenshot shows that NY-PC11 can reach NY-PC12, NY-PC22 and NY-PC32.

```
C:\>ping 172.23.17.1
Pinging 172.23.17.1 with 32 bytes of data:
Reply from 172.23.17.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.17.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.34.112
Pinging 172.23.34.112 with 32 bytes of data:
Reply from 172.23.34.112: bytes=32 time<1ms TTL=127

Ping statistics for 172.23.34.112:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.34.122
Pinging 172.23.34.122 with 32 bytes of data:
Reply from 172.23.34.122: bytes=32 time<1ms TTL=127

Ping statistics for 172.23.34.122:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.34.132
Pinging 172.23.34.132 with 32 bytes of data:
Reply from 172.23.34.132: bytes=32 time<1ms TTL=127

Ping statistics for 172.23.34.132:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
```

J. This screenshot shows that NY-PC12 can reach NY-PC11, NY-PC21 and NY-PC31.

```
C:\>ping 172.23.34.1
Pinging 172.23.34.1 with 32 bytes of data:
Reply from 172.23.34.1: bytes=32 time=2ms TTL=255
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255
Reply from 172.23.34.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.23.34.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>ping 172.23.17.111
Pinging 172.23.17.111 with 32 bytes of data:
Reply from 172.23.17.111: bytes=32 time<1ms TTL=127

Ping statistics for 172.23.17.111:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.17.121
Pinging 172.23.17.121 with 32 bytes of data:
Reply from 172.23.17.121: bytes=32 time<1ms TTL=127

Ping statistics for 172.23.17.121:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.23.17.131
Pinging 172.23.17.131 with 32 bytes of data:
Reply from 172.23.17.131: bytes=32 time<1ms TTL=127

Ping statistics for 172.23.17.131:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

K. All of the PCs can reach every pc, but can not ping the switches. The switches discard the requests to increase their efficiency.

L.This screenshot shows the implementation and demonstration of Rapid Spanning-Tree Protocol.

```
NY-Switch1#spanning-tree mode rapid
NY-Switch1#
NY-Switch1#
%SYS-5-CONFIG_I: Configured from console by console

NY-Switch1#show spann
NY-Switch1#show spanning-tree
VLAN001
  Spanning tree enabled protocol rstp
  Root ID    Priority    24577
              Address    0006.2A45.EECE
              This bridge is the root
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    24577  (priority 24576 sys-id-ext 1)
              Address    0006.2A45.EECE
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time 20

  Interface   Role Sts Cost      Prio.Nbr Type
----- -----
Po2          Desg FWD 9       128.27  Shr
G10/1        Desg FWD 4       128.25  P2p
Po3          Desg FWD 9       128.28  Shr

VLAN0017
  Spanning tree enabled protocol rstp
  Root ID    Priority    32785
              Address    0001.C94B.3598
              Cost        9
              Port        27 (Port-channel2)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID  Priority    32785  (priority 32768 sys-id-ext 17)
              Address    0006.2A45.EECE
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time 20

  Interface   Role Sts Cost      Prio.Nbr Type
----- -----
Po2          Root FWD 9       128.27  Shr
Fa0/11       Desg FWD 19      128.11  P2p
Gi0/1        Desg FWD 4       128.25  P2p

VLAN0034
  Spanning tree enabled protocol rstp
  Root ID    Priority    32802
              Address    0001.C94B.3598
              Cost        9
              Port        27 (Port-channel2)
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
```

Conclusion:

This lab was very similar to what we do in class in my opinion. There were a few new commands I had to research but everything else came pretty easily. I did struggle for a little while with one of the EtherChannels not working on one of the switches, but after a little trial and error I got it working. I enjoy these labs, working on getting better at the commands and wiring a small network.