Lab #7

Computer Networking

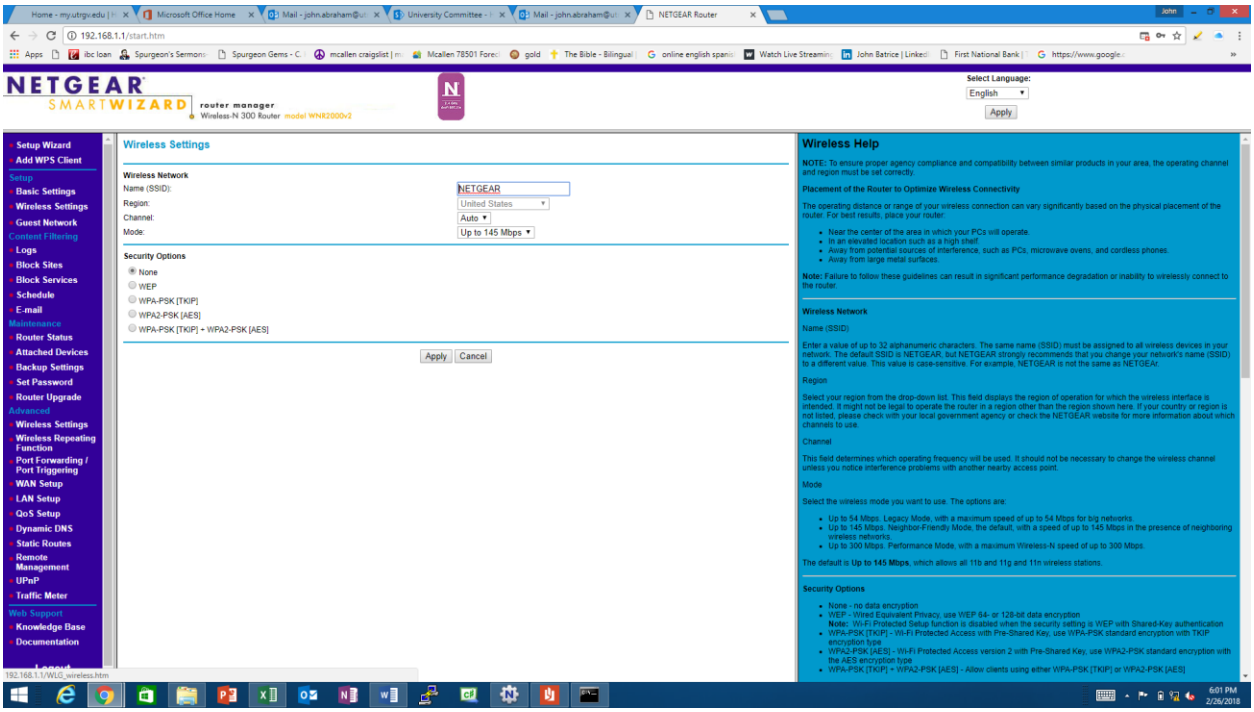
Dr. Abraham

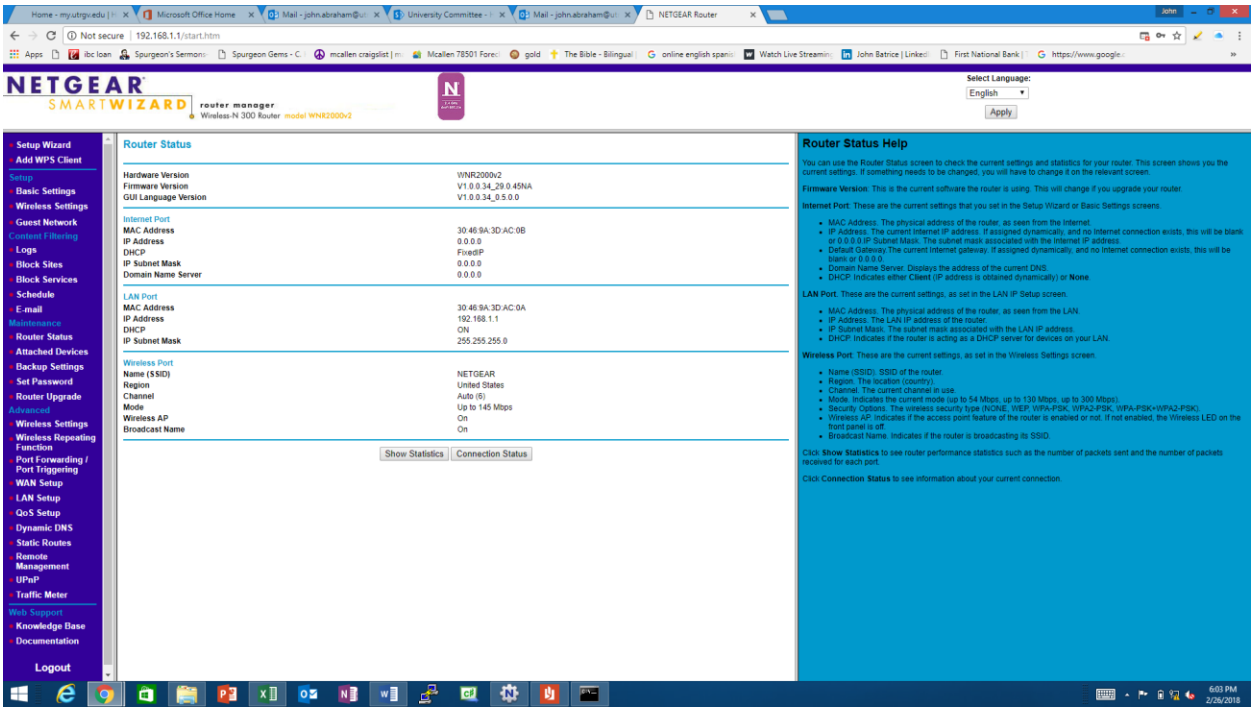
Due March 8, 2018

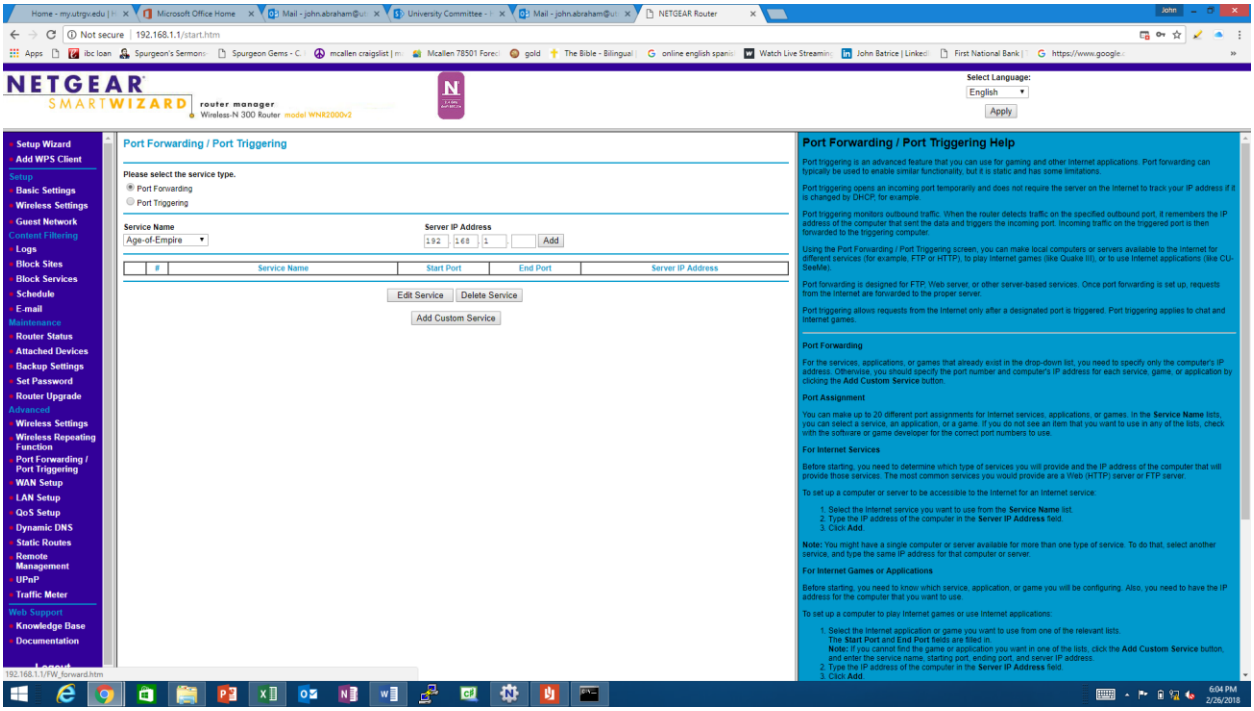
Every network administrator needs to know router settings. You were given a group assignment to set up Cisco routers.

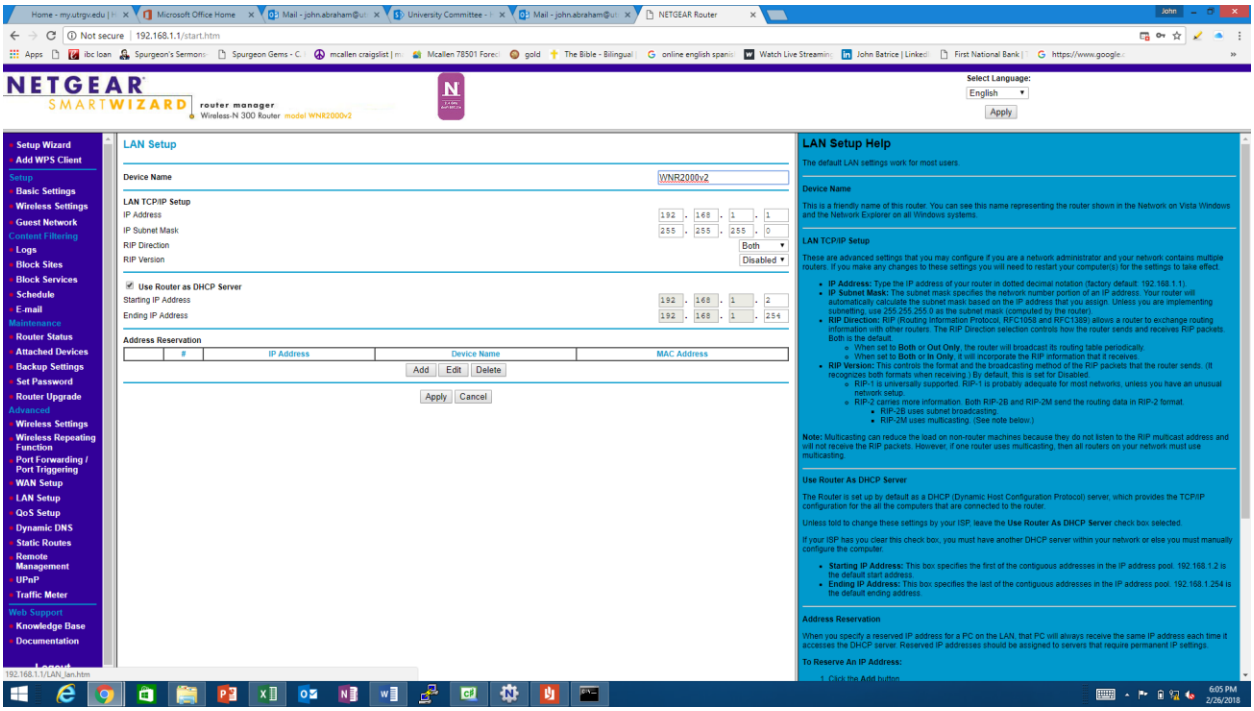
This assignment is for everyone and you may use any available routers. Set up home/office router and screen capture as you perform the setup. If you already have a router setup at home, login and learn the settings. Make sure to include lots of explanation on each capture. I will paying particular attention to LAN, WAN settings, DHCP, NAT, Security, routing tables and port forwarding screens.

If you need to use a router for an hour or two to complete the assignment, please see me, I will lend you one.




NETGEAR
SMARTWIZARD
router manager
Wireless-N 300 Router model WNR2000v2
Select Language:
English
Apply
Setup Wizard
Add WPS Client
Setup
Basic Settings
Wireless Settings
Guest Network
Content Filtering
Logs
Block Sites
Block Services
Schedule
E-mail
Maintenance
Router Status
Attached Devices
Backup Settings
Set Password
Router Upgrade
Advanced
Wireless Settings
Wireless Repeating Function
Port Forwarding / Port Triggering
WAN Setup
LAN Setup
QoS Setup
Dynamic DNS
Static Routes
Remote Management
UPnP
Traffic Meter
Web Support
Knowledge Base
Documentation
Logout
Router Status
Hardware Version WNR2000v2
Firmware Version V1.0.0.34_29.0.45NA
GUI Language Version V1.0.0.34_0.5.0.0
Internet Port
MAC Address 30:46:9A:3D:AC:0B
IP Address 0.0.0.0
DHCP FixedIP
IP Subnet Mask 0.0.0.0
Domain Name Server 0.0.0.0
LAN Port
MAC Address 30:46:9A:3D:AC:0A
IP Address 192.168.1.1
DHCP ON
IP Subnet Mask 255.255.255.0
Wireless Port
Name (SSID) NETGEAR
Region United States
Channel Auto (6)
Mode Up to 145 Mbps
Wireless AP On
Broadcast Name On
Show Statistics
Connection Status
Router Status Help
You can use the Router Status screen to check the current settings and statistics for your router. This screen shows you the current settings. If something needs to be changed, you will have to change it on the relevant screen.
Firmware Version. This is the current software the router is using. This will change if you upgrade your router.
Internet Port. These are the current settings that you set in the Setup Wizard or Basic Settings screens.
MAC Address. The physical address of the router, as seen from the Internet.
IP Address. The current Internet IP address. If assigned dynamically, and no Internet connection exists, this will be blank or 0.0.0.0.IP Subnet Mask. The subnet mask associated with the Internet IP address.
Default Gateway.The current Internet gateway. If assigned dynamically, and no Internet connection exists, this will be blank or 0.0.0.0.
Domain Name Server. Displays the address of the current DNS.
DHCP. Indicates either Client (IP address is obtained dynamically) or None.
LAN Port. These are the current settings, as set in the LAN IP Setup screen.
MAC Address. The physical address of the router, as seen from the LAN.
IP Address. The LAN IP address of the router.
IP Subnet Mask. The subnet mask associated with the LAN IP address.
DHCP. Indicates if the router is acting as a DHCP server for devices on your LAN.
Wireless Port. These are the current settings, as set in the Wireless Settings screen.
Name (SSID). SSID of the router.
Region. The location (country).
Channel. The current channel in use.
Mode. Indicates the current mode (up to 54 Mbps, up to 130 Mbps, up to 300 Mbps).
Security Options. The wireless security type (NONE, WEP, WPA-PSK, WPA2-PSK, WPA-PSK+WPA2-PSK).
Wireless AP. Indicates if the access point feature of the router is enabled or not. If not enabled, the Wireless LED on the front panel is off.
Broadcast Name. Indicates if the router is broadcasting its SSID.
Click Show Statistics to see router performance statistics such as the number of packets sent and the number of packets received for each port.
Click Connection Status to see information about your current connection.
6:03 PM
2/26/2018


NETGEAR
SMARTWIZARD
router manager
Wireless-N 300 Router model WNR2000v2
Select Language:
English
Apply
Setup Wizard
Add WPS Client
Setup
Basic Settings
Wireless Settings
Guest Network
Content Filtering
Logs
Block Sites
Block Services
Schedule
E-mail
Maintenance
Router Status
Attached Devices
Backup Settings
Set Password
Router Upgrade
Advanced
Wireless Settings
Wireless Repeating Function
Port Forwarding / Port Triggering
WAN Setup
LAN Setup
QoS Setup
Dynamic DNS
Static Routes
Remote Management
UPnP
Traffic Meter
Web Support
Knowledge Base
Documentation
Port Forwarding / Port Triggering
Please select the service type.
Port Forwarding
Port Triggering
Service Name
Age-of-Empire
Server IP Address
192 168 1
Add
Service Name Start Port End Port Server IP Address
Edit Service
Delete Service
Add Custom Service
Port Forwarding / Port Triggering Help
Port triggering is an advanced feature that you can use for gaming and other Internet applications. Port forwarding can typically be used to enable similar functionality, but it is static and has some limitations.
Port triggering opens an incoming port temporarily and does not require the server on the Internet to track your IP address if it is changed by DHCP, for example.
Port triggering monitors outbound traffic. When the router detects traffic on the specified outbound port, it remembers the IP address of the computer that sent the data and triggers the incoming port. Incoming traffic on the triggered port is then forwarded to the triggering computer.
Using the Port Forwarding / Port Triggering screen, you can make local computers or servers available to the Internet for different services (for example, FTP or HTTP), to play Internet games (like Quake III), or to use Internet applications (like CU-SeeMe).
Port forwarding is designed for FTP, Web server, or other server-based services. Once port forwarding is set up, requests from the Internet are forwarded to the proper server.
Port triggering allows requests from the Internet only after a designated port is triggered. Port triggering applies to chat and Internet games.
Port Forwarding
For the services, applications, or games that already exist in the drop-down list, you need to specify only the computer's IP address. Otherwise, you should specify the port number and computer's IP address for each service, game, or application by clicking the Add Custom Service button.
Port Assignment
You can make up to 20 different port assignments for Internet services, applications, or games. In the Service Name lists, you can select a service, an application, or a game. If you do not see an item that you want to use in any of the lists, check with the software or game developer for the correct port numbers to use.
For Internet Services
Before starting, you need to determine which type of services you will provide and the IP address of the computer that will provide those services. The most common services you would provide are a Web (HTTP) server or FTP server.
To set up a computer or server to be accessible to the Internet for an Internet service:
1. Select the Internet service you want to use from the Service Name list.
2. Type the IP address of the computer in the Server IP Address field.
3. Click Add.
Note: You might have a single computer or server available for more than one type of service. To do that, select another service, and type the same IP address for that computer or server.
For Internet Games or Applications
Before starting, you need to know which service, application, or game you will be configuring. Also, you need to have the IP address for the computer that you want to use.
To set up a computer to play Internet games or use Internet applications:
1. Select the Internet application or game you want to use from one of the relevant lists.
The Start Port and End Port fields are filled in.
Note: If you cannot find the game or application you want in one of the lists, click the Add Custom Service button, and enter the service name, starting port, ending port, and server IP address.
2. Type the IP address of the computer in the Server IP Address field.
3. Click Add.
192.168.1.1/FW_forward.htm
6:04 PM
2/26/2018


NETGEAR
SMARTWIZARD
router manager
Wireless-N 300 Router model WNR2000v2
Select Language:
English
Apply
Setup Wizard
Add WPS Client
Setup
Basic Settings
Wireless Settings
Guest Network
Content Filtering
Logs
Block Sites
Block Services
Schedule
E-mail
Maintenance
Router Status
Attached Devices
Backup Settings
Set Password
Router Upgrade
Advanced
Wireless Settings
Wireless Repeating Function
Port Forwarding / Port Triggering
WAN Setup
LAN Setup
QoS Setup
Dynamic DNS
Static Routes
Remote Management
UPnP
Traffic Meter
Web Support
Knowledge Base
Documentation
LAN Setup
Device Name
WNR2000v2
LAN TCP/IP Setup
IP Address
IP Subnet Mask
RIP Direction
RIP Version
Both
Disabled
Use Router as DHCP Server
Starting IP Address
Ending IP Address
Address Reservation
IP Address Device Name MAC Address
Add Edit Delete
Apply Cancel
LAN Setup Help
The default LAN settings work for most users.
Device Name
This is a friendly name of this router. You can see this name representing the router shown in the Network on Vista Windows and the Network Explorer on all Windows systems.
LAN TCP/IP Setup
These are advanced settings that you may configure if you are a network administrator and your network contains multiple routers. If you make any changes to these settings you will need to restart your computer(s) for the settings to take effect.
IP Address: Type the IP address of your router in dotted decimal notation (factory default: 192.168.1.1).
IP Subnet Mask: The subnet mask specifies the network number portion of an IP address. Your router will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use 255.255.255.0 as the subnet mask (computed by the router).
RIP Direction: RIP (Routing Information Protocol, RFC1058 and RFC1389) allows a router to exchange routing information with other routers. The RIP Direction selection controls how the router sends and receives RIP packets. Both is the default.
When set to Both or Out Only, the router will broadcast its routing table periodically.
When set to Both or In Only, it will incorporate the RIP information that it receives.
RIP Version: This controls the format and the broadcasting method of the RIP packets that the router sends. (It recognizes both formats when receiving.) By default, this is set for Disabled.
RIP-1 is universally supported. RIP-1 is probably adequate for most networks, unless you have an unusual network setup.
RIP-2 carries more information. Both RIP-2B and RIP-2M send the routing data in RIP-2 format.
RIP-2B uses subnet broadcasting.
RIP-2M uses multicasting. (See note below.)
Note: Multicasting can reduce the load on non-router machines because they do not listen to the RIP multicast address and will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting.
Use Router As DHCP Server
The Router is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for the all the computers that are connected to the router.
Unless told to change these settings by your ISP, leave the Use Router As DHCP Server check box selected.
If your ISP has you clear this check box, you must have another DHCP server within your network or else you must manually configure the computer.
Starting IP Address: This box specifies the first of the contiguous addresses in the IP address pool. 192.168.1.2 is the default start address.
Ending IP Address: This box specifies the last of the contiguous addresses in the IP address pool. 192.168.1.254 is the default ending address.
Address Reservation
When you specify a reserved IP address for a PC on the LAN, that PC will always receive the same IP address each time it accesses the DHCP server. Reserved IP addresses should be assigned to servers that require permanent IP settings.
To Reserve An IP Address:
1. Click the Add button.
192.168.1.1/LAN_lan.htm
6:05 PM
2/26/2018