Cloud Computing and Virtualization Lab

Presented by:

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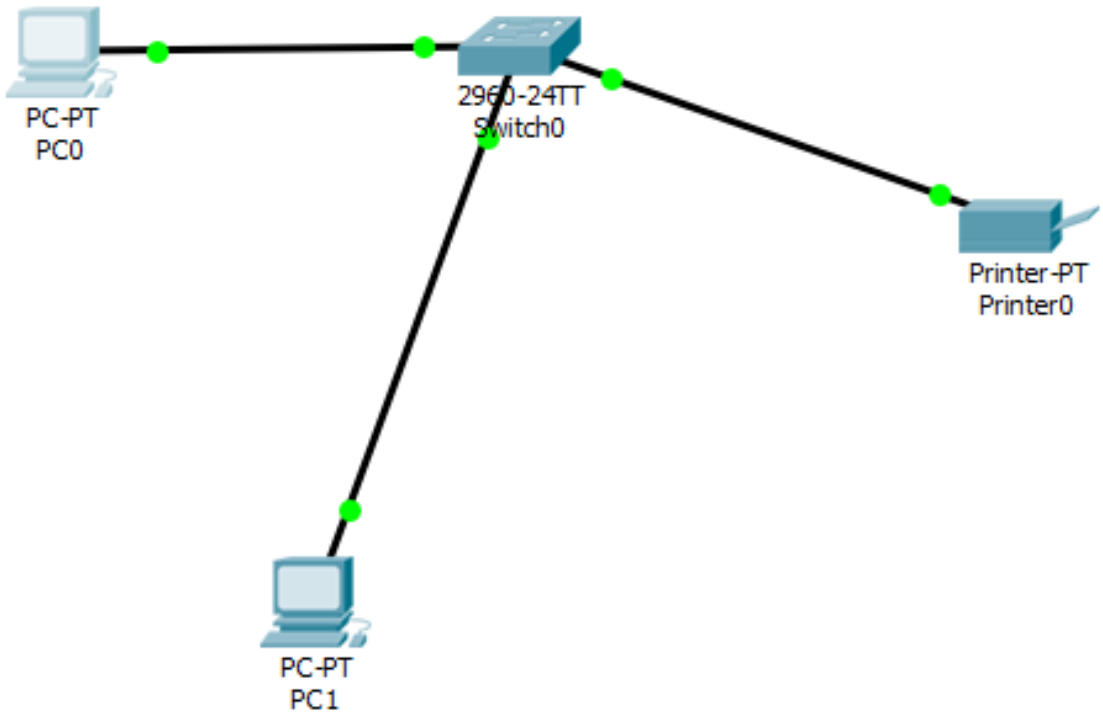
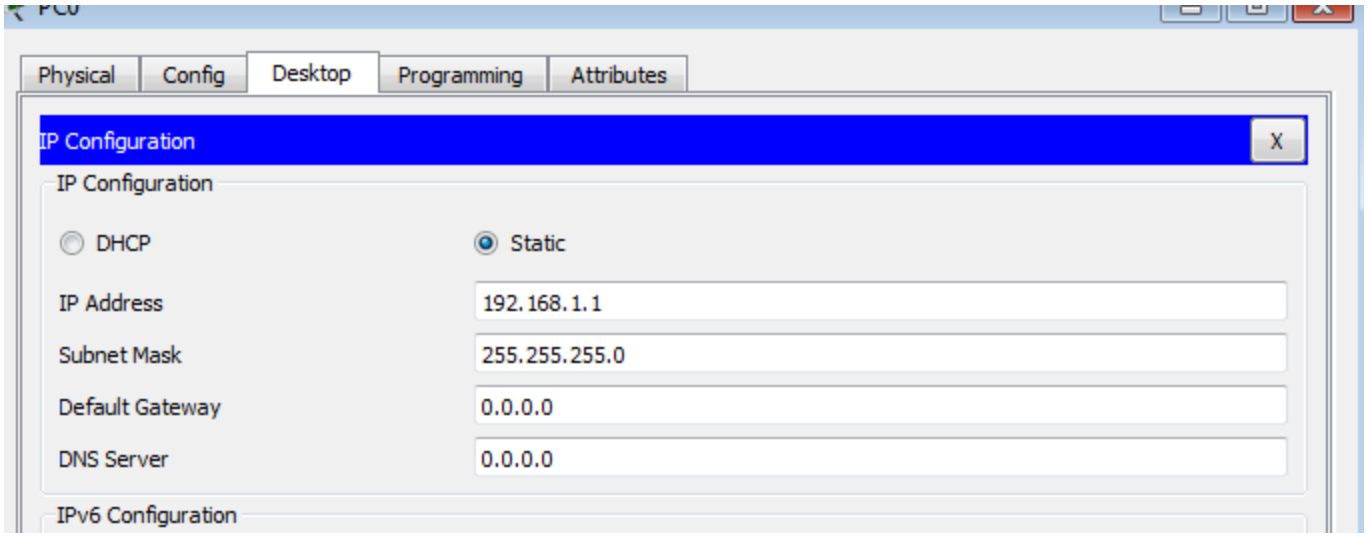
Assistant Professor

Print Server

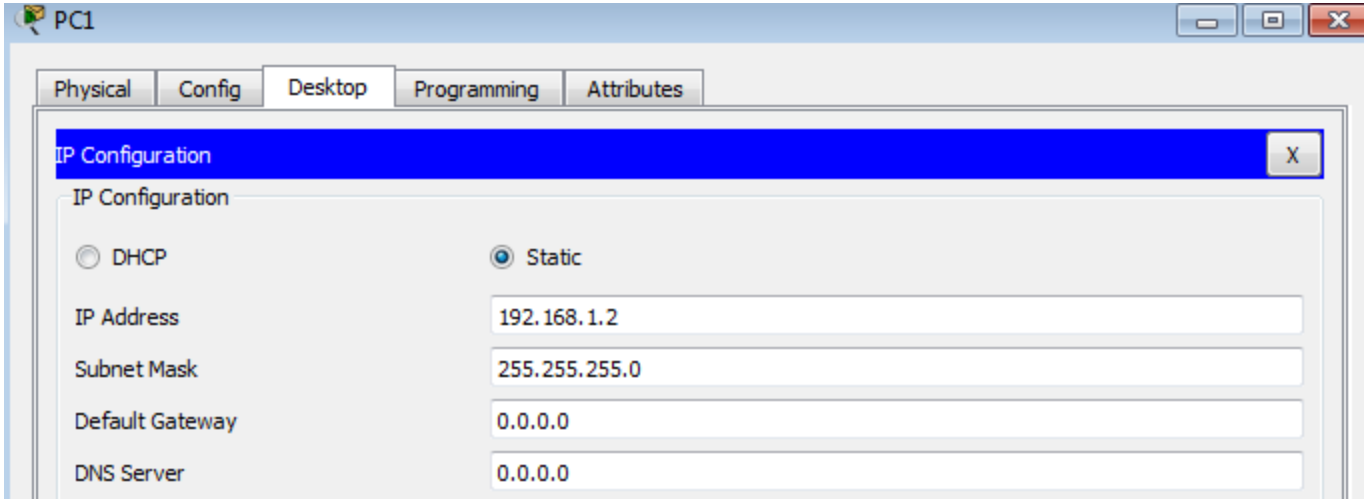
- 2 PC
- 1 Switch
- 1 Printer



Print Server



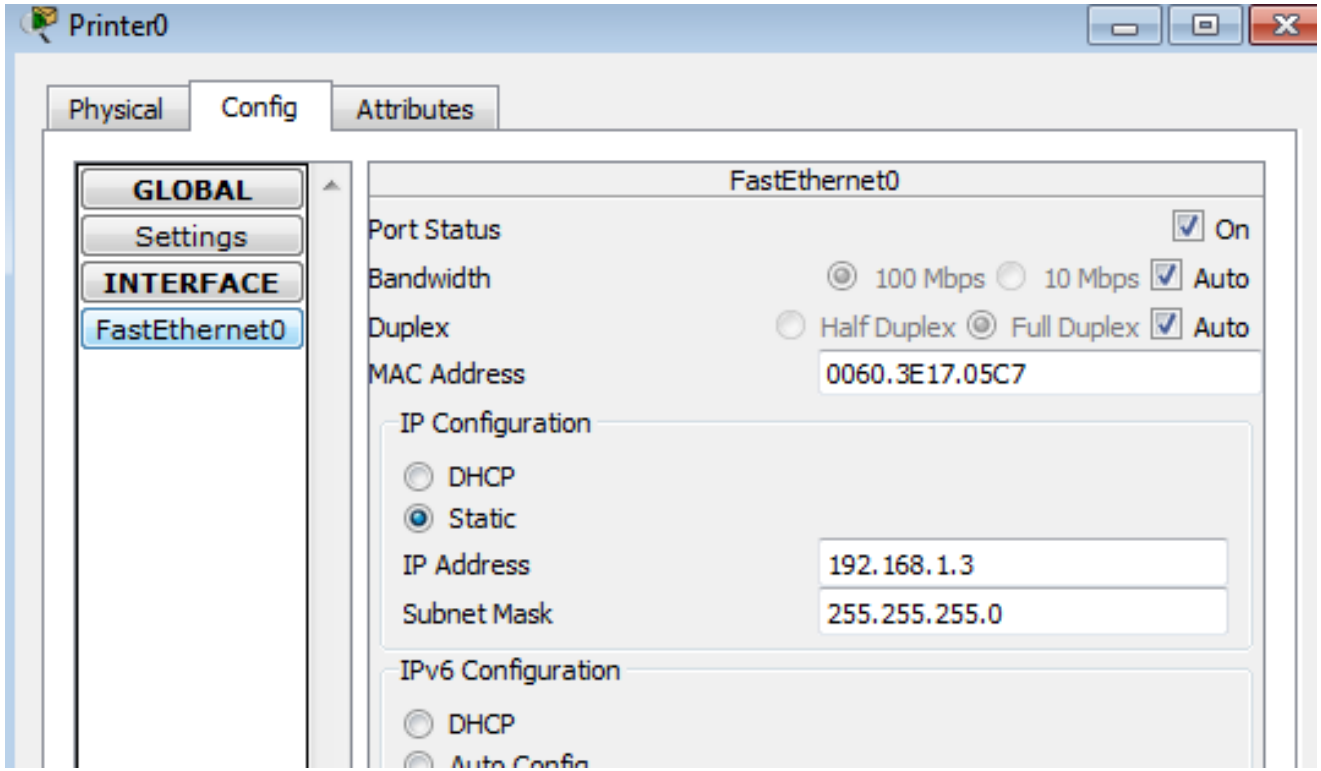
PC0



PC1

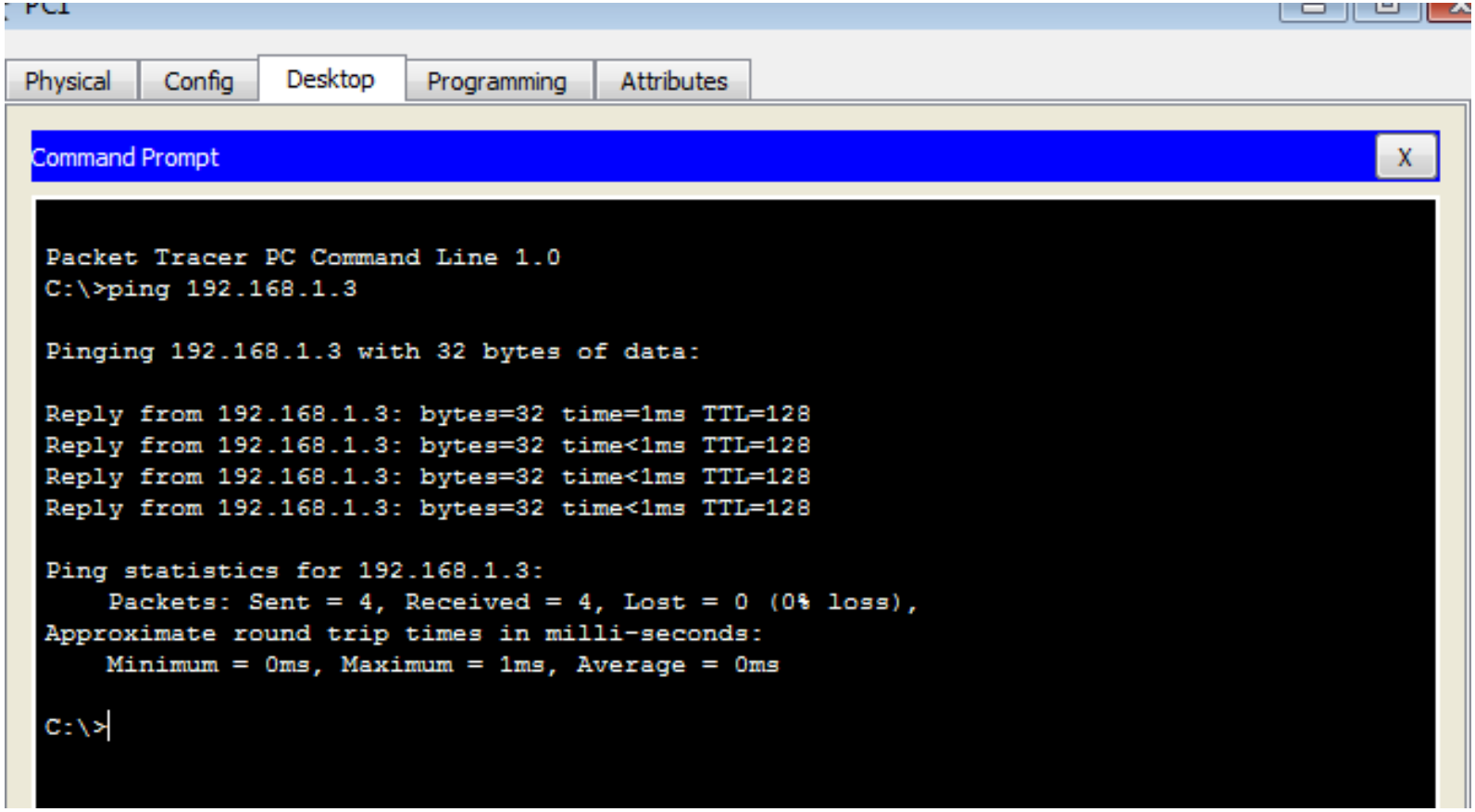
Print Server

- Assign the IP to printer



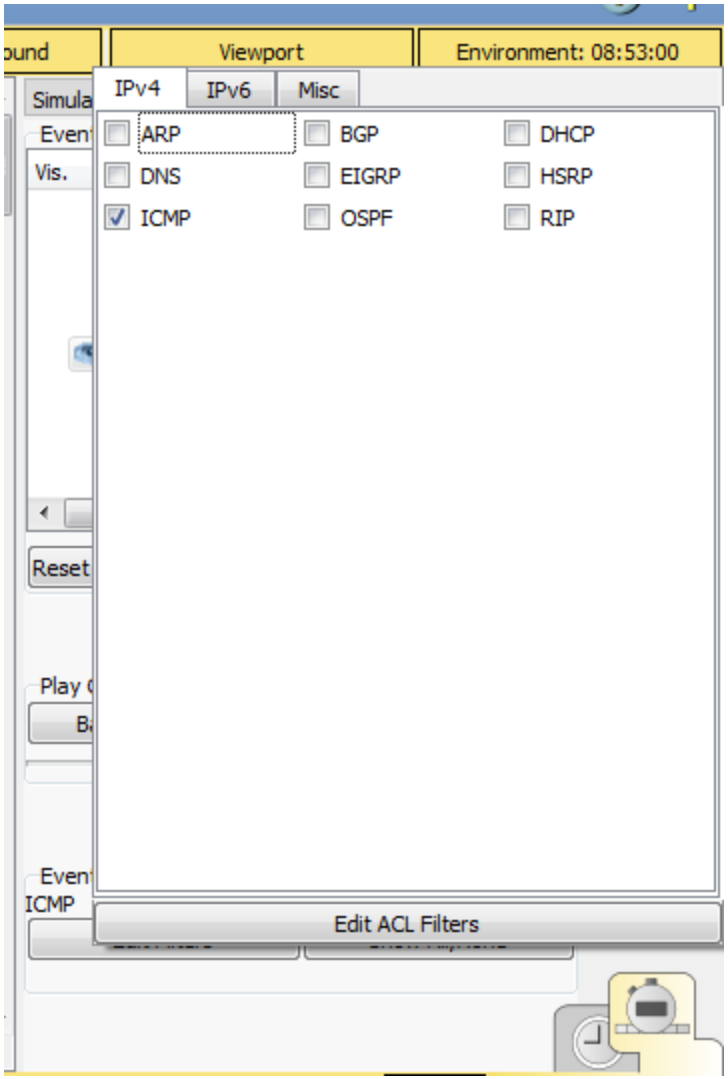
Print Server

- Click on PC and ping 192.168.1.3



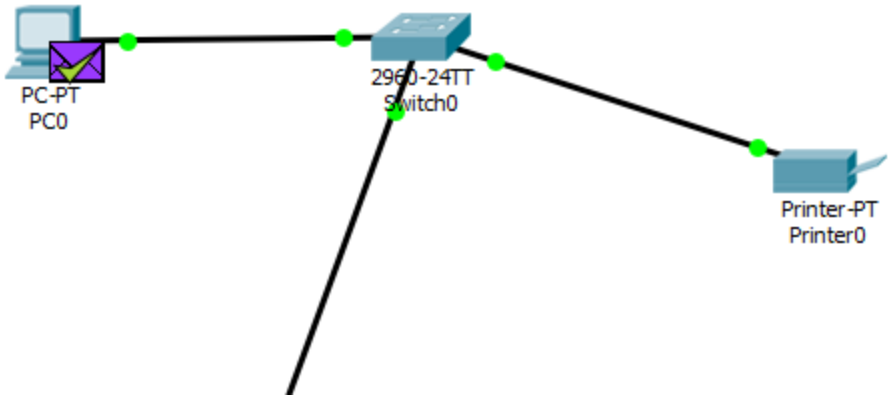
Print Server

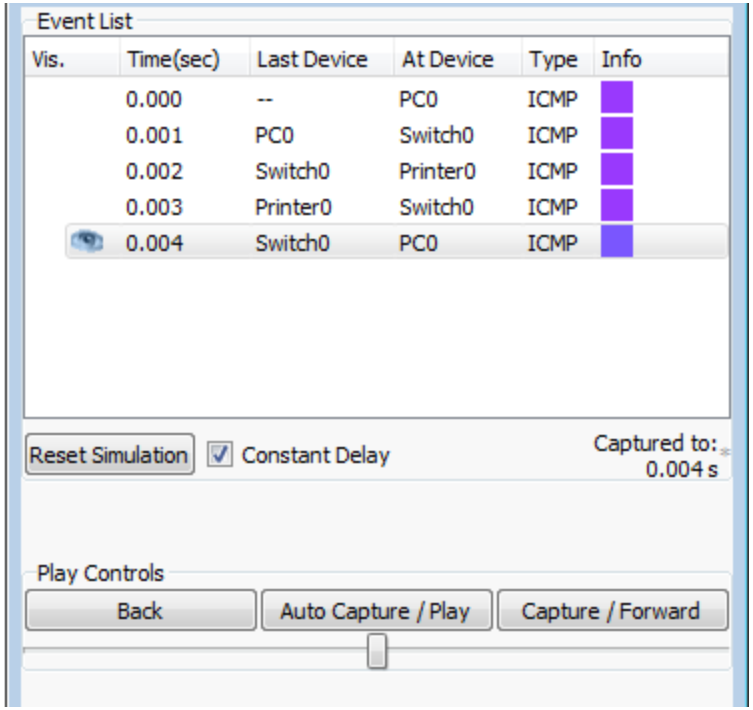
- Click on simulation
- Click on show all/none
- Click on edit filters
- Select ICMP



Print Server

- Select PDU and first click on any PC and then on Printer.
- Trace the activity of packet using Auto





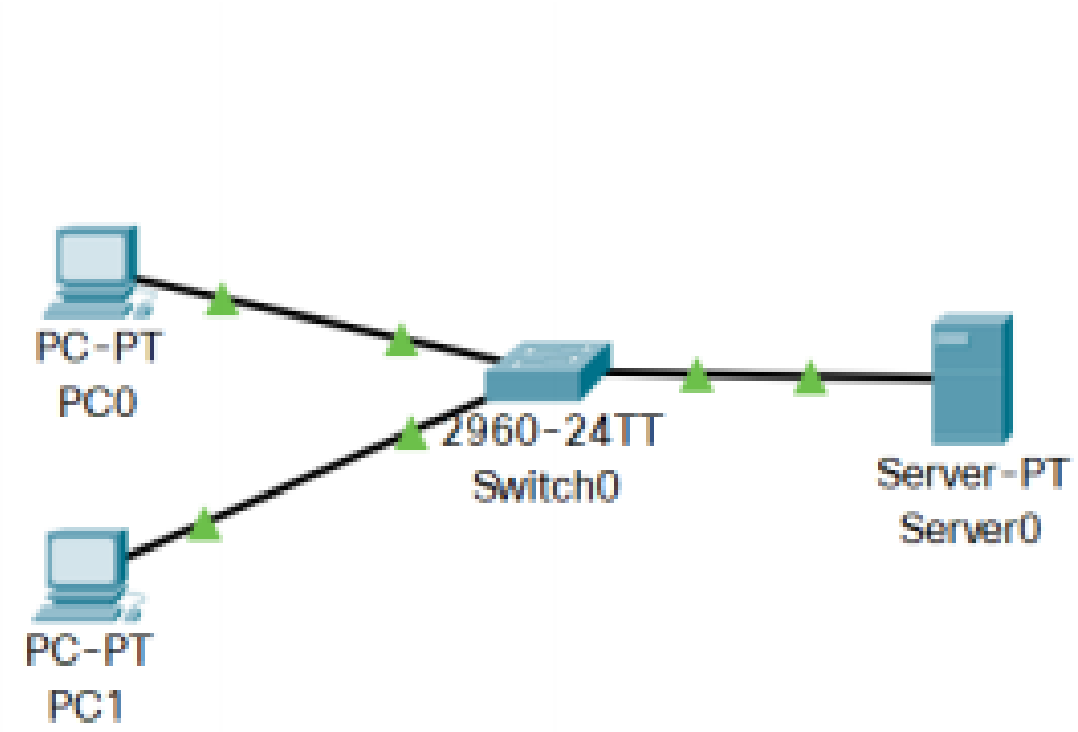
FTP

- The File Transfer Protocol is a standard network protocol used for the transfer of computer files between a client and server on a computer network.
- FTP is built on a client-server model architecture using separate control and data connections between the client and the server

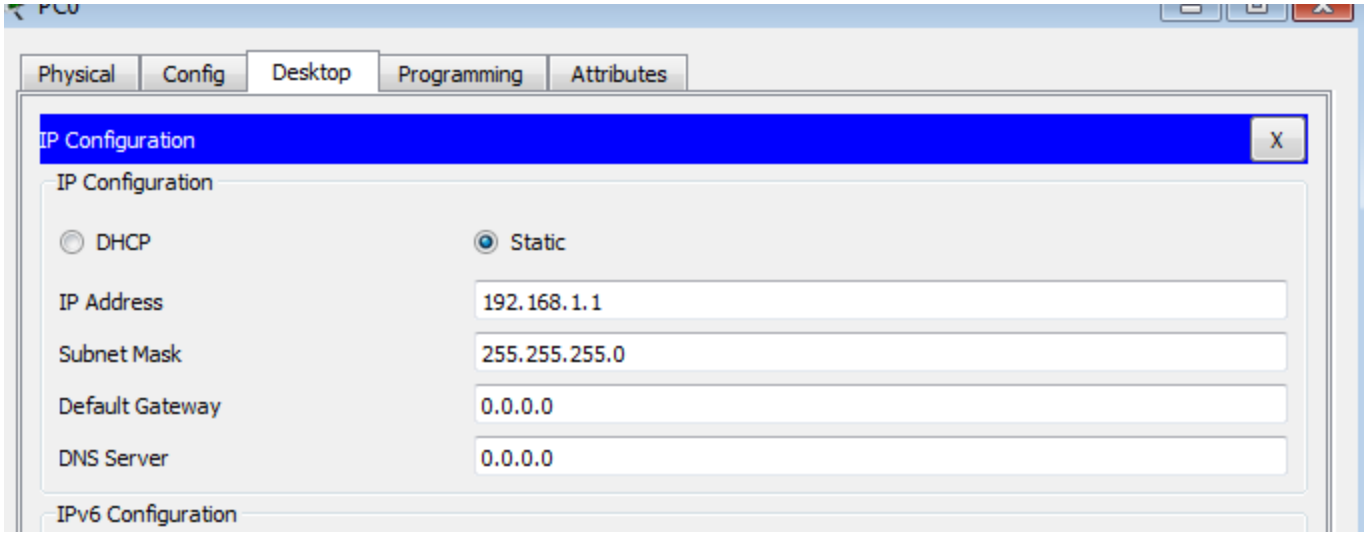
FTP Server

- An **FTP Server** is a piece of software that is running on a computer and uses the File Transfer Protocol to store and share files.
- Remote computers can connect anonymously, if allowed, or with a user name and password in order to download files from this **server** using a piece of software called a **FTP** Client

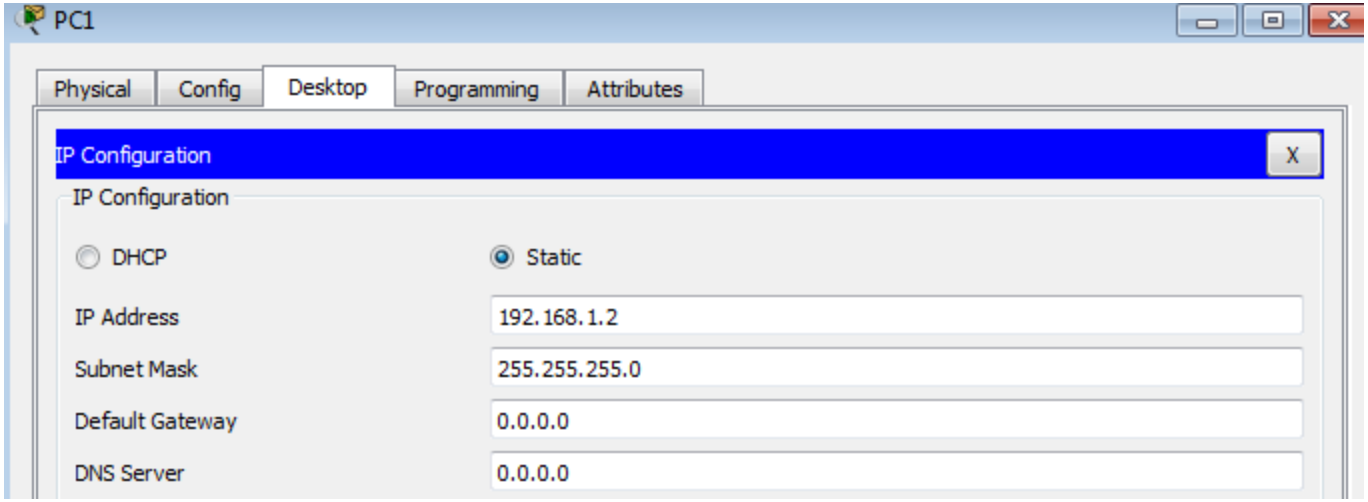
FTP Server



FTP Server



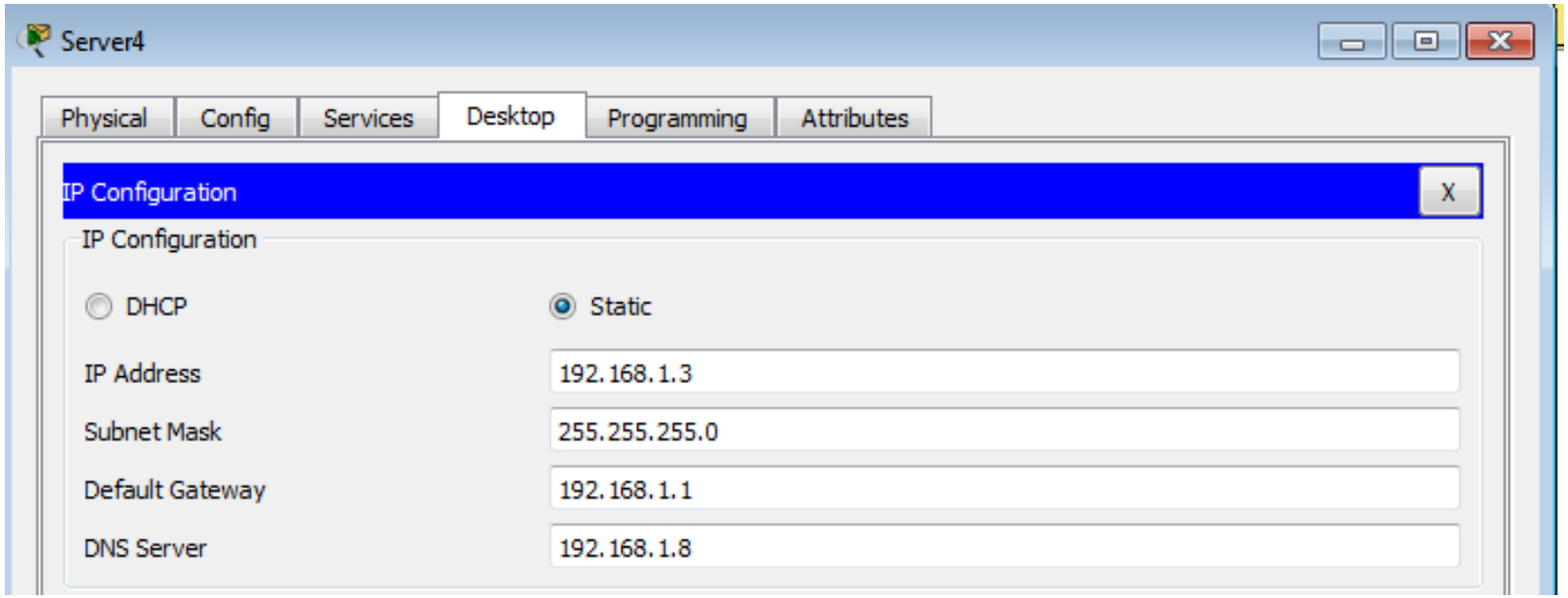
PC0



PC1

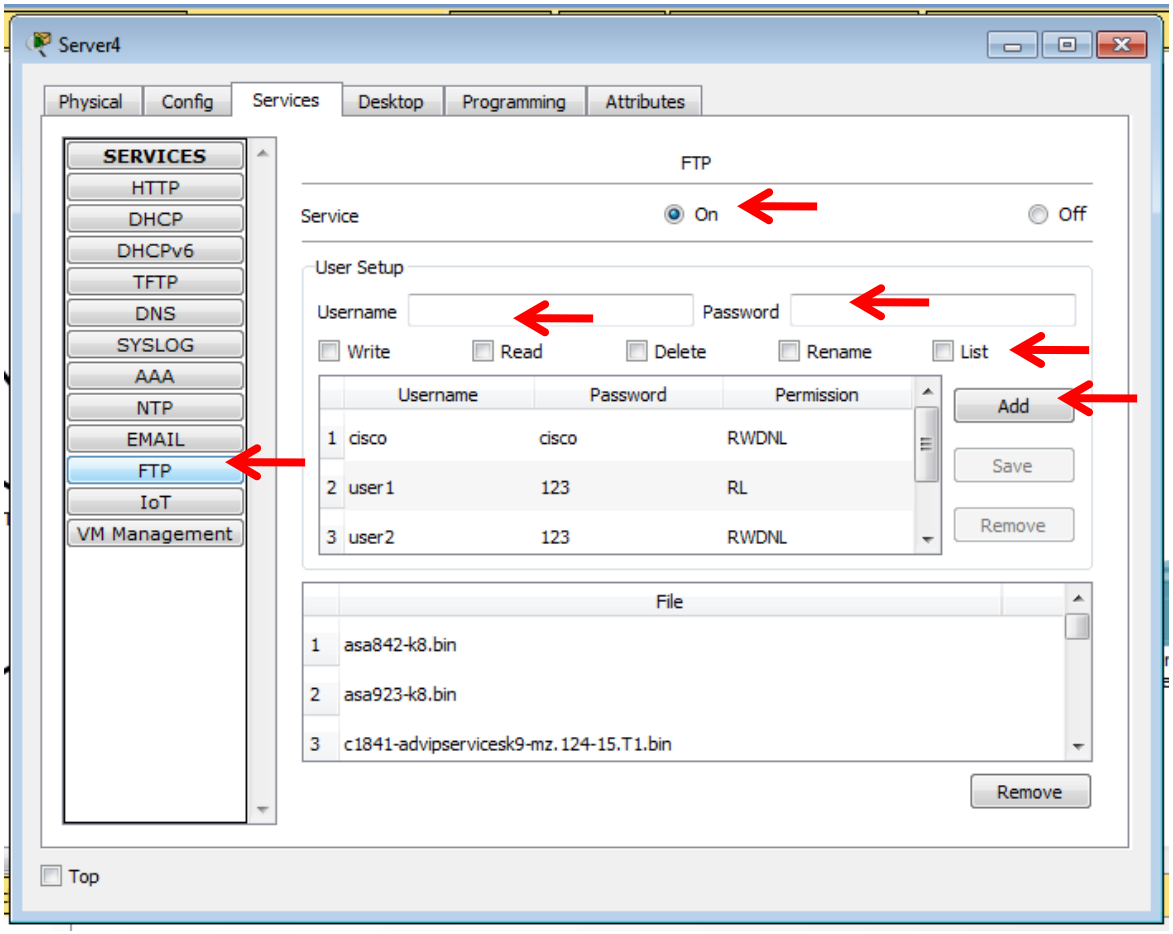
To Create a FTP Server

- Click on the Server
- Click on the Desktop tab.
  - Click on the IP Configuration icon.
  - Click on the IP Address dialog box and assign following IP



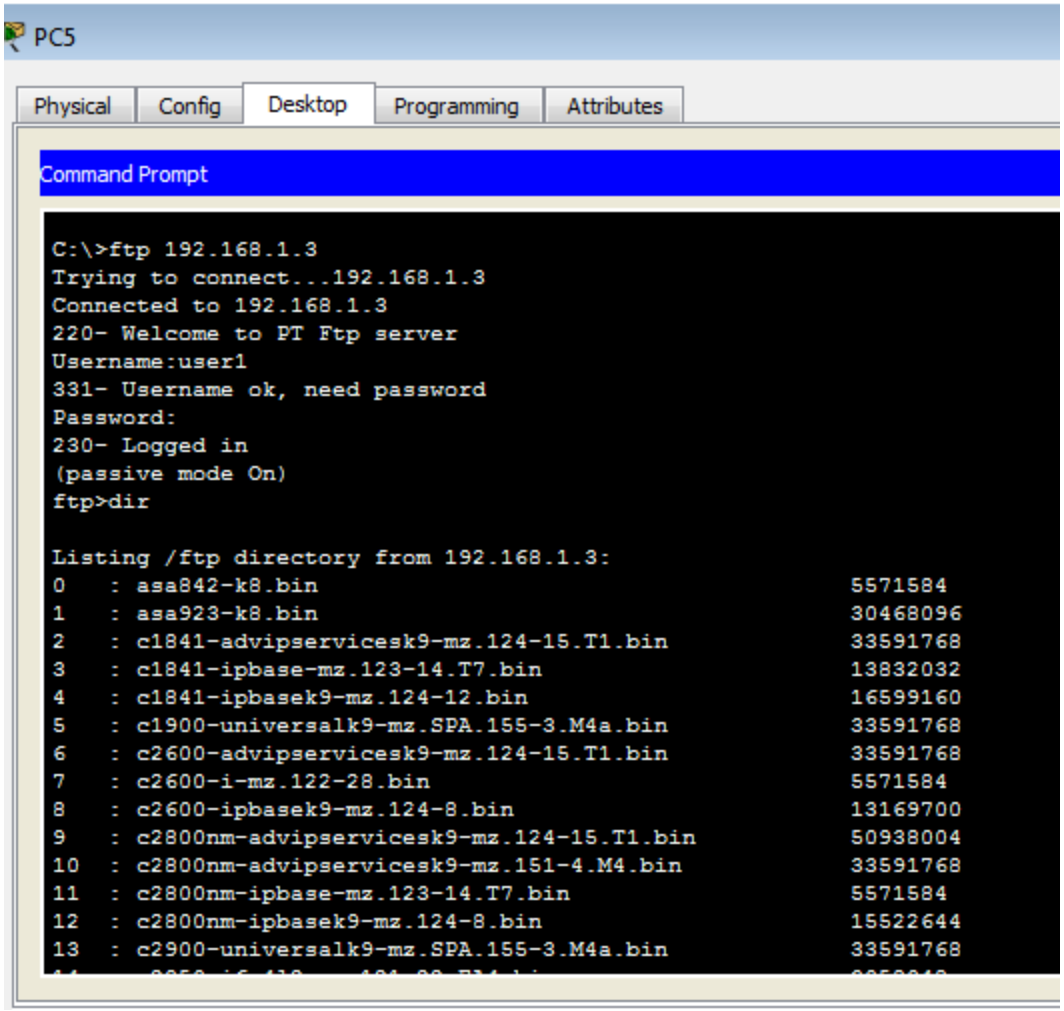
To Create a FTP Server

- Click on the Service Tab
- Select FTP service
- Check whether the FTP Services are enabled
- To add user in username and password.
- Give permission
- Click on Add.



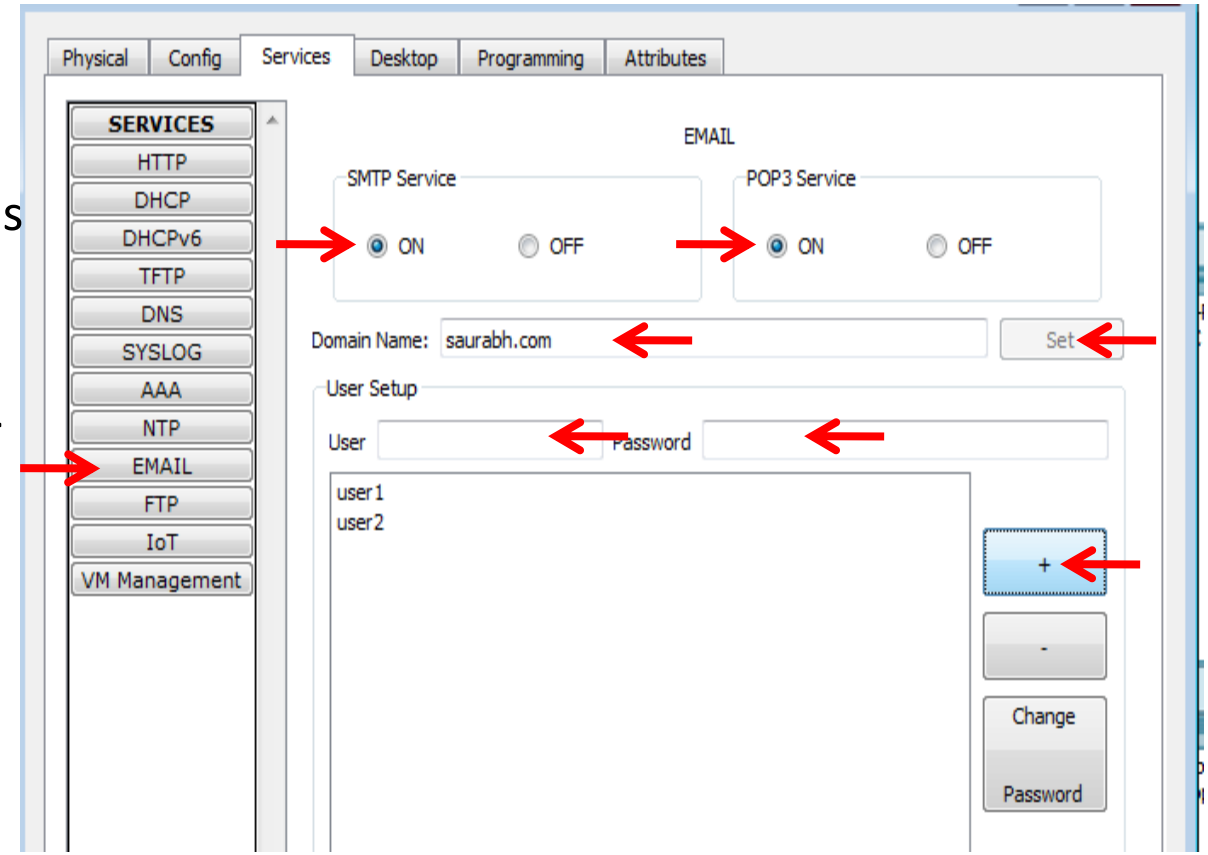
To Create a FTP Server

- Click on any PC
- Click on Desktop Tab and then Command Prompt.
- Type ftp and press enter
- Type username and password.
- Type dir
- Try to delete a file
- We are done with FTP server



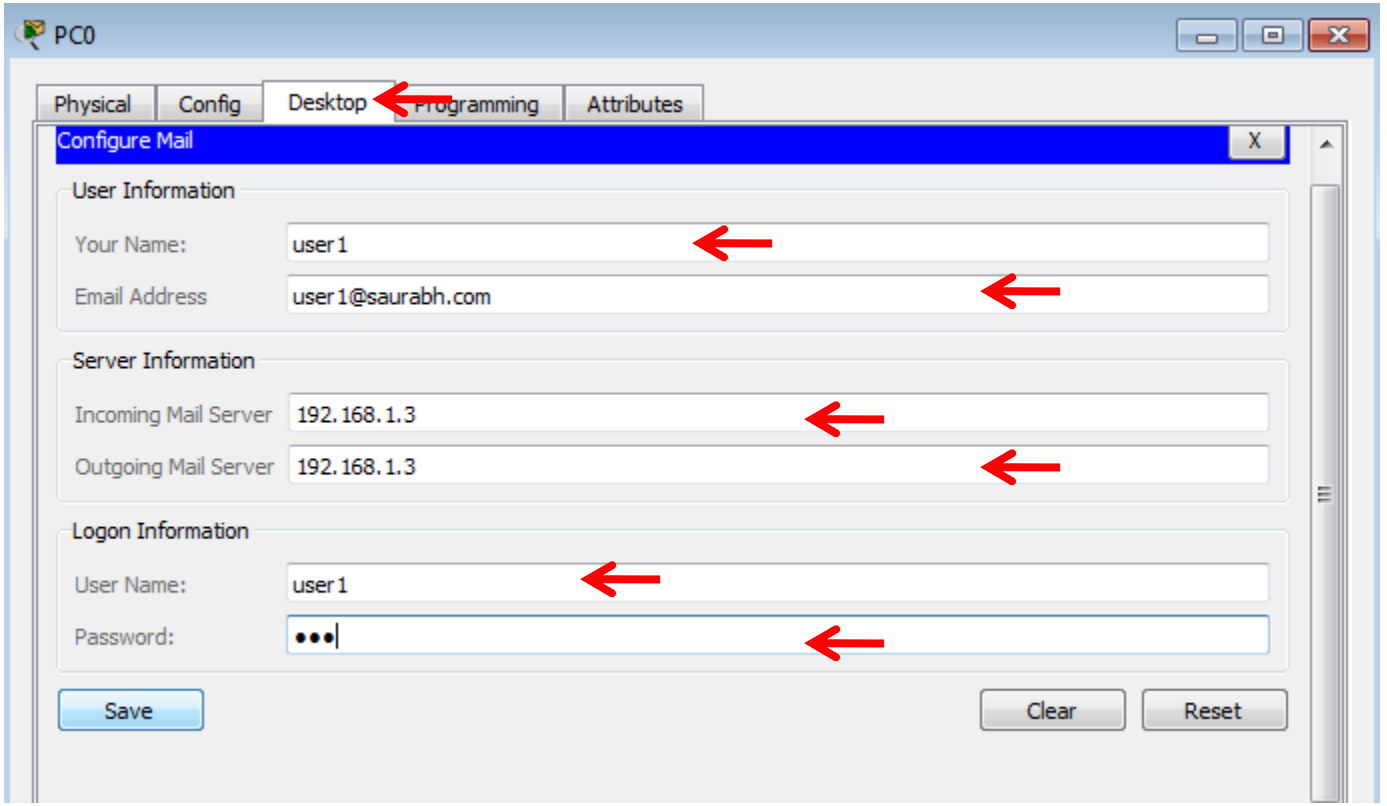
To Create a Email Server

- Click on the Server (FTP Server)
- Click on the Service Tab
- Select Email service
- Check whether the SMTP and POP3 Services are enabled
- To add a domain name
- To add at least two user
- Click on Add.



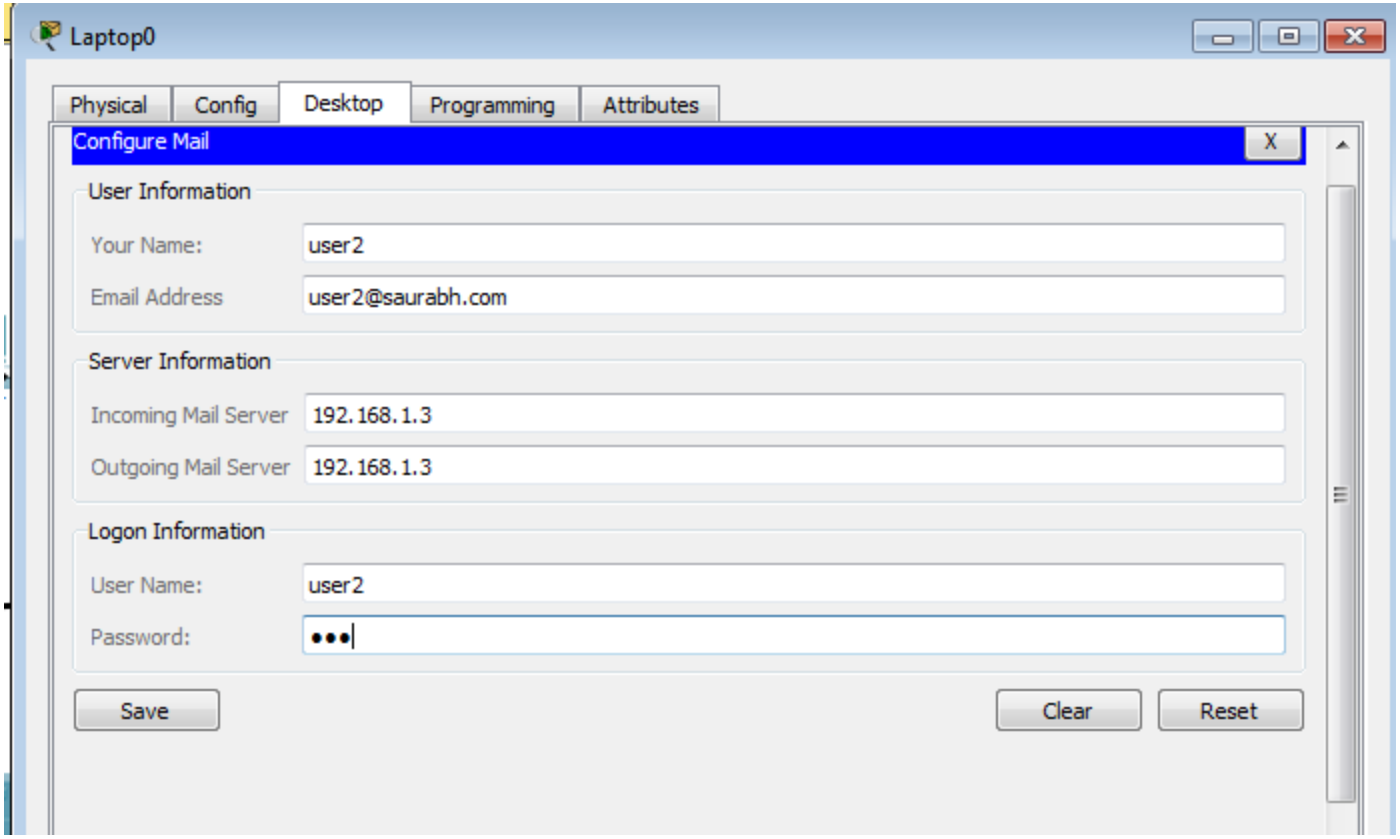
To Create a Email Server

- Click on PC0, select desktop tab and chose email
- Configure mail and click on save



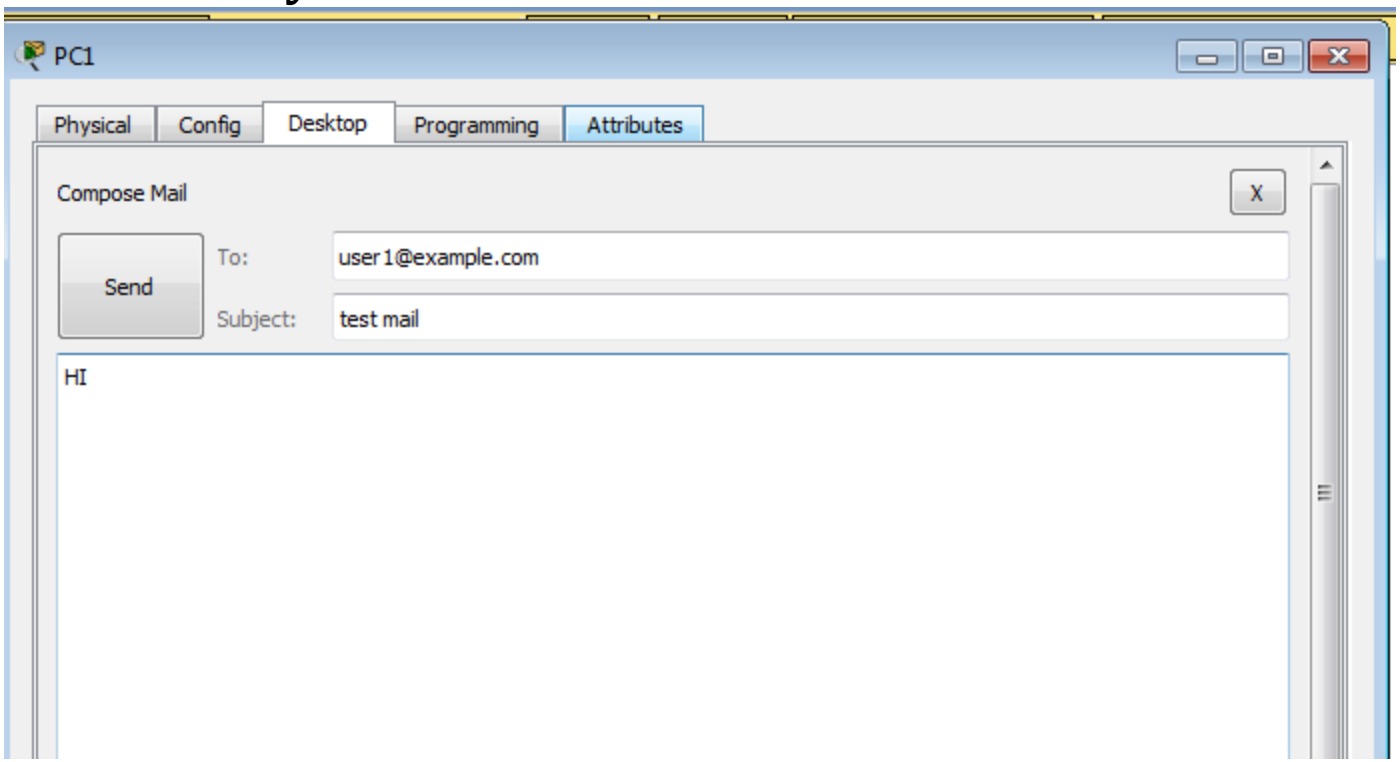
To Create a Email Server

- Click on PC1, select desktop tab and chose email
- Configure mail and click on save



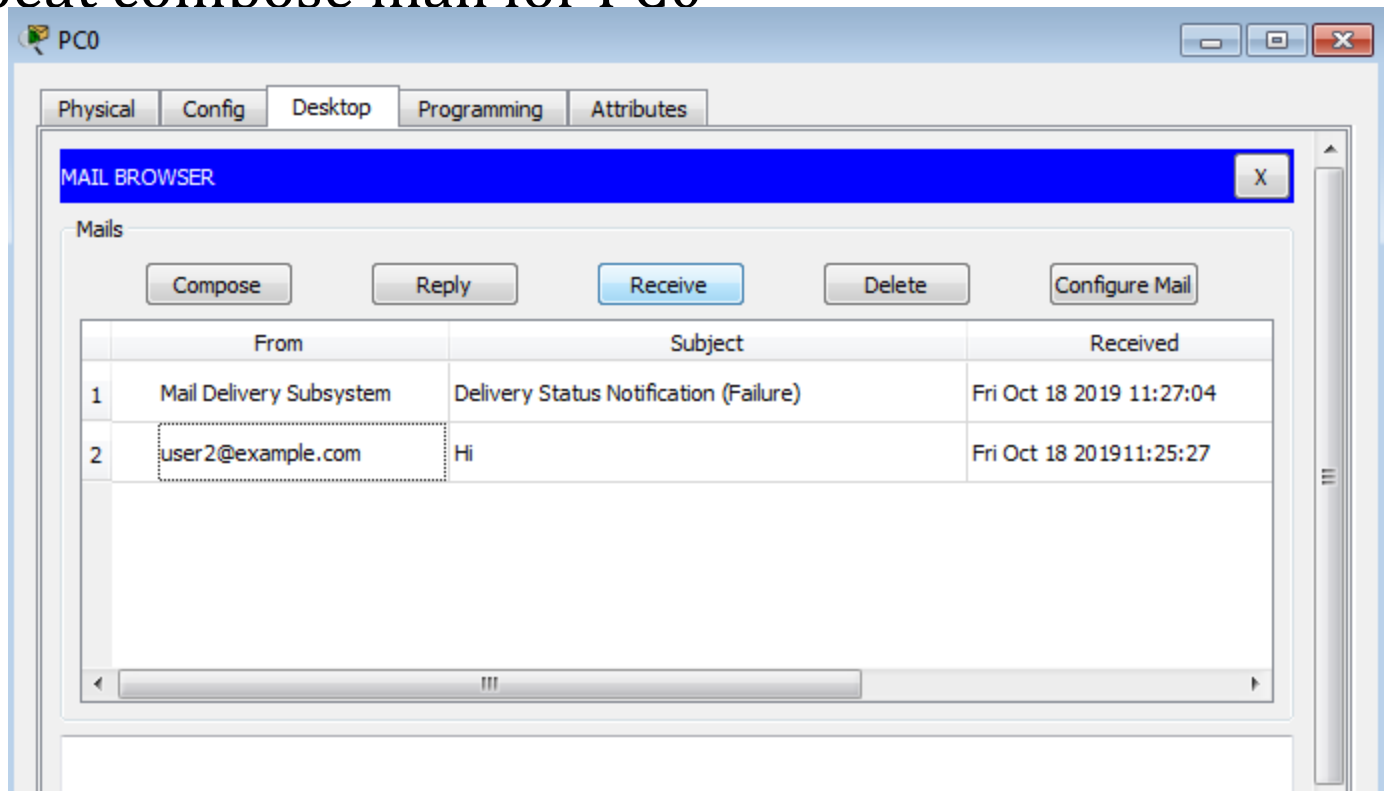
To Create a Email Server

- Click on PC1, select desktop tab and chose email
- Click on compose
- Fill the entry and click on send



To Create a Email Server

- Click on PC1, select desktop tab and chose email
- Click on receive. You will find your mail here
- Repeat compose mail for PC0



DHCP

- Dynamic Host Configuration Protocol (**DHCP**) is a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway.
- A DHCP server enables computers to request IP addresses and networking parameters automatically from the Internet service provider (ISP), reducing the need for a network administrator or a user to manually assign IP addresses to all network devices

DHCP Server

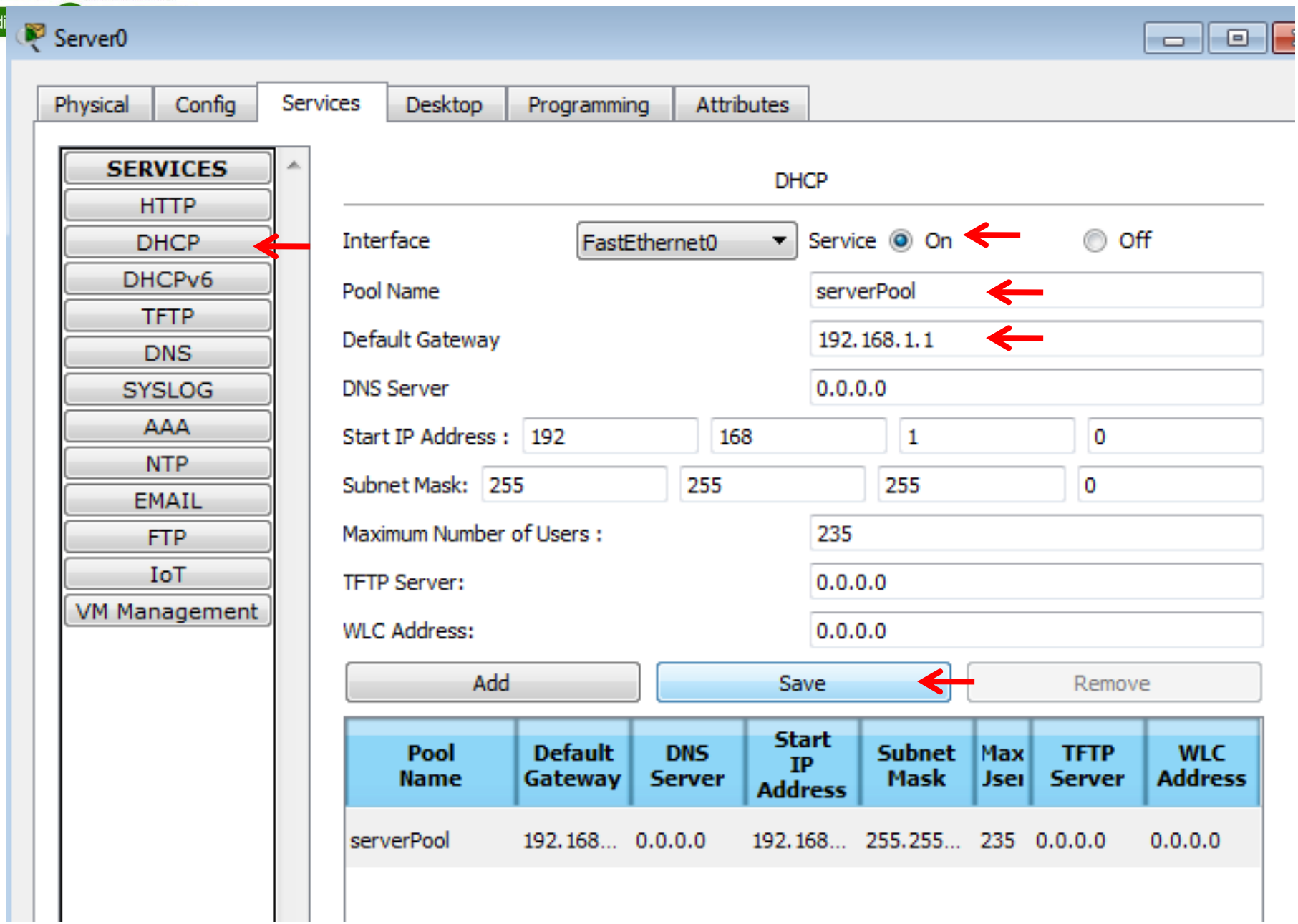
- A **DHCP Server** is a network **server** that automatically provides and assigns IP addresses, default gateways and other network parameters to client devices.
- It relies on the standard protocol known as Dynamic Host Configuration Protocol or **DHCP** to respond to broadcast queries by clients.

To Create a DHCP Server

- Click on the Server0
  - Click on the Desktop tab.
  - Click on the IP Configuration icon.
  - Click on the IP Address dialog box.
  - Type in 192.168.1.1 as the address and press enter.
  - A default value of 255.255.255.0 should appear in the Subnet Mask field.
  - Type 192.168.1.1 as the default gateway and press enter.
  - Type 0.0.0.0 as the default DNS server and press enter.

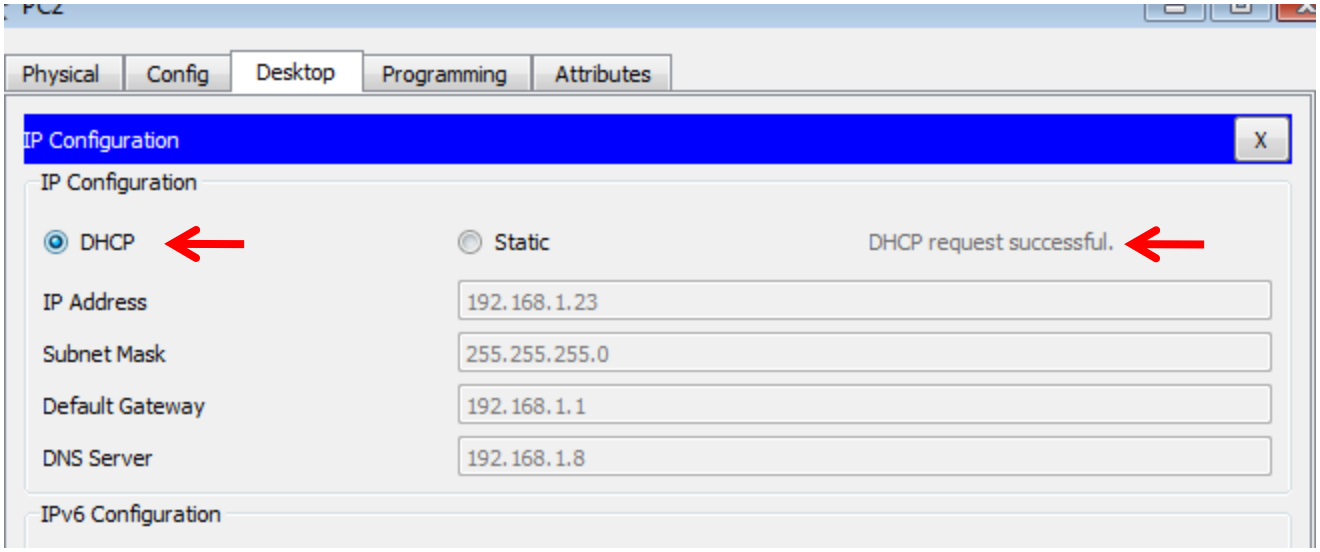
To Create a DHCP Server

- **Configure the server0**
- Select the Services tab.
- Select DHCP from the SERVICES list in the left pane.
- In the DHCP configuration window, configure a DHCP as shown in the figure with the following settings.
- Click On to turn the DCHP service on
- Pool name: serverpool
- Default Gateway: 192.168.1.1
- DNS Server: 0.0 .0.0
- Starting IP Address: 192.168.1.21
- Subnet Mask 255.255.255.0
- Click save to add the pool


Server0
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
DHCP
Interface
FastEthernet0
Service
On
Off
Pool Name
serverPool
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
Start IP Address :
192
168
1
0
Subnet Mask:
255
255
255
0
Maximum Number of Users :
235
TFTP Server:
0.0.0.0
WLC Address:
0.0.0.0
Add
Save
Remove
Pool Name
Default Gateway
DNS Server
Start IP Address
Subnet Mask
Max Jser
TFTP Server
WLC Address
serverPool
192.168...
0.0.0.0
192.168...
255.255...
235
0.0.0.0
0.0.0.0

Create a DHCP Server

- Click on the PC connected to fa0/0
- Click on the PC icon on the Logical workspace
- Select the Desktop tab and then the IP Configuration icon
- Switch to DHCP instead of Static
- Check whether DHCP is Successful.



DNS

- The Domain Name System (DNS) is a hierarchical and decentralized naming system for computers, services, or other resources connected to the Internet or a private network.
- It associates various information with domain names assigned to each of the participating entities.
- The Domain Name System delegates the responsibility of assigning domain names and mapping those names to Internet resources by designating authoritative name servers for each domain

DNS Server

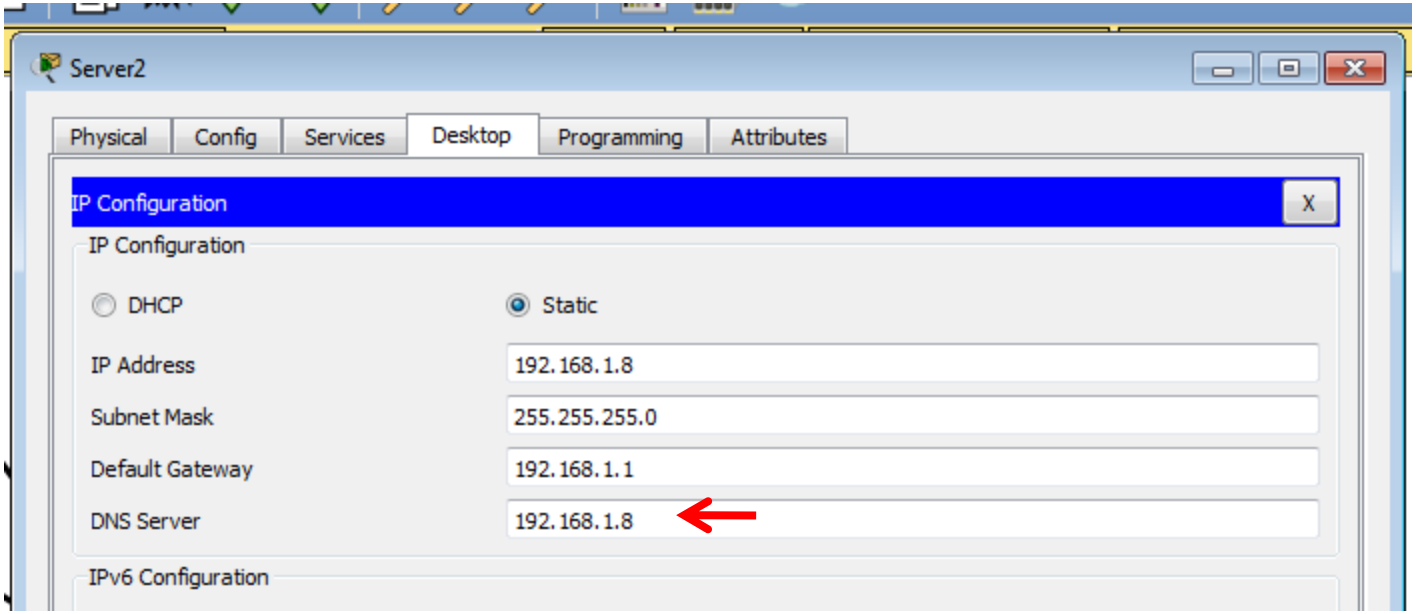
- A **DNS server** is a computer **server** that contains a database of public IP addresses and their associated hostnames, and in most cases serves to resolve, or translate, those names to IP addresses as requested.
- **DNS servers** run special software and communicate with each other using special protocols

Create a DNS Server

- Click on the Server1
  - Click on the Desktop tab.
  - Click on the IP Configuration icon.
  - Click on the IP Address dialog box.
  - Type in 192.168.1.8 as the address and press enter.
  - A default value of 255.255.255.0 should appear in the Subnet Mask field.
  - Type 192.168.1.1 as the default gateway and press enter.
  - Type 192.168.1.8 as the DNS and press enter.

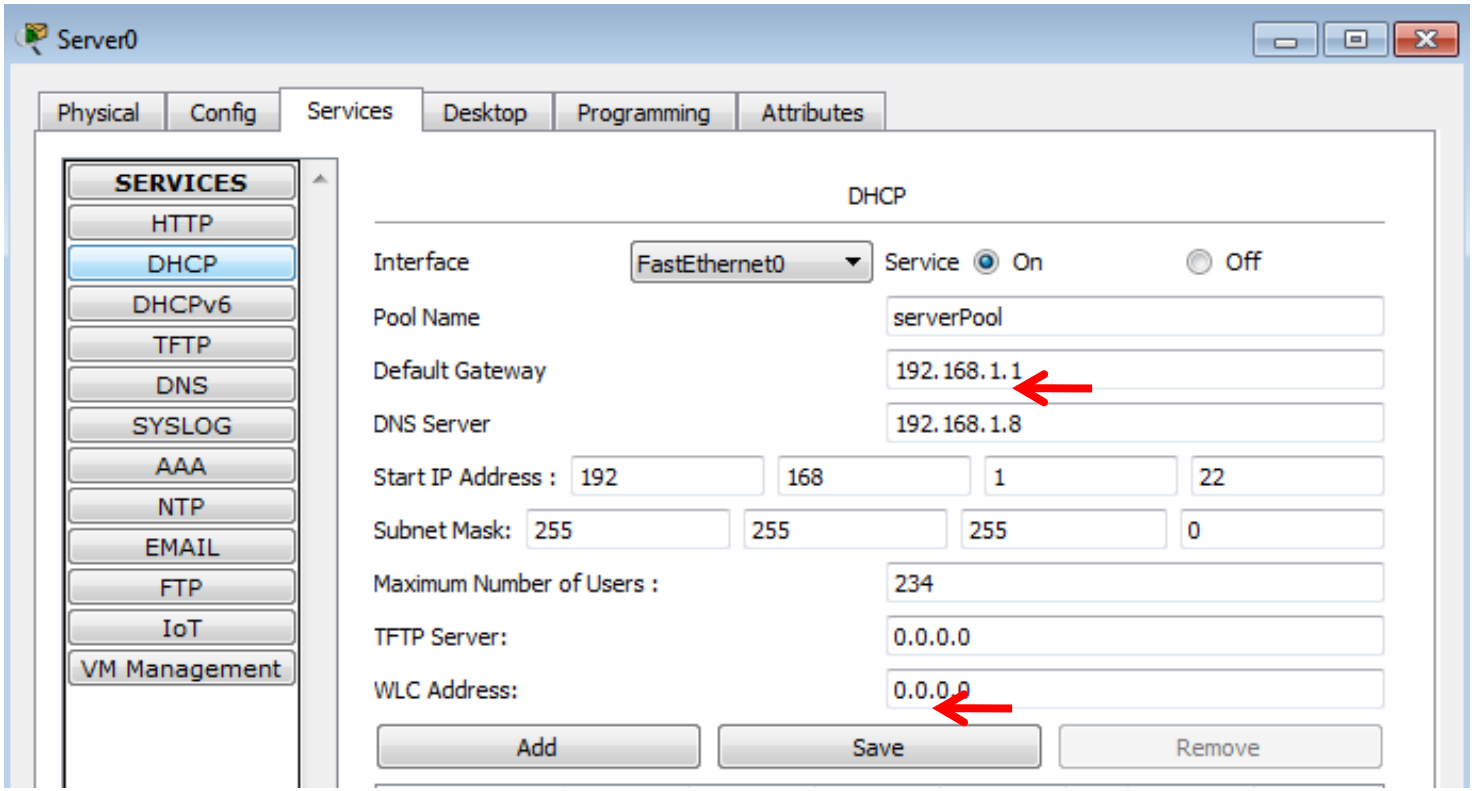
Create a DHCP Server

- Update DHCP server adding DNS server(192.168.1.8) IP in IP configuration in Desktop tab



Create a DNS Server

- Update DHCP server by adding DNS server(192.168.1.8) IP in DHCP services in service tab and then save



HTTP

- **HTTP** means HyperText Transfer Protocol. **HTTP** is the underlying protocol used by the World Wide Web and this protocol defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands
- Communication between client computers and web servers is done by sending **HTTP** Requests and receiving **HTTP** Responses

HTTP Server

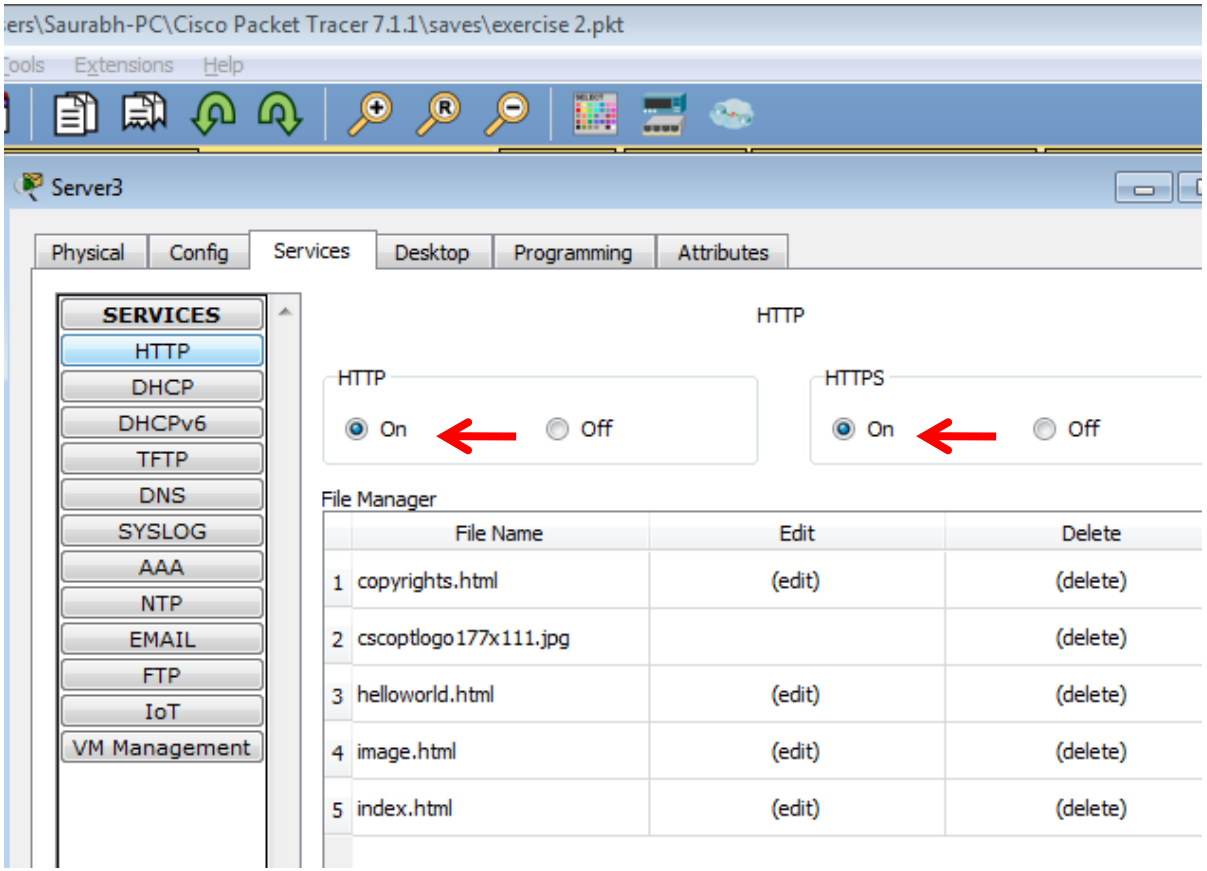
- A **HTTP server** is a computer that runs websites.
- It's a computer program that distributes web pages as they are requisitioned.

To Create a HTTP Server

- Click on the Server3 linked to fa0/1
  - Click on the Desktop tab.
  - Click on the IP Configuration icon.
  - Click on the IP Address dialog box.
  - Type in 10.0.0.10 as the address and press enter.
  - A default value of 255.0.0.0 should appear in the Subnet Mask field.
  - Type 10.0.0.1 as the default gateway and press enter.
  - Type 192.168.1.8 as the DNS and press enter.

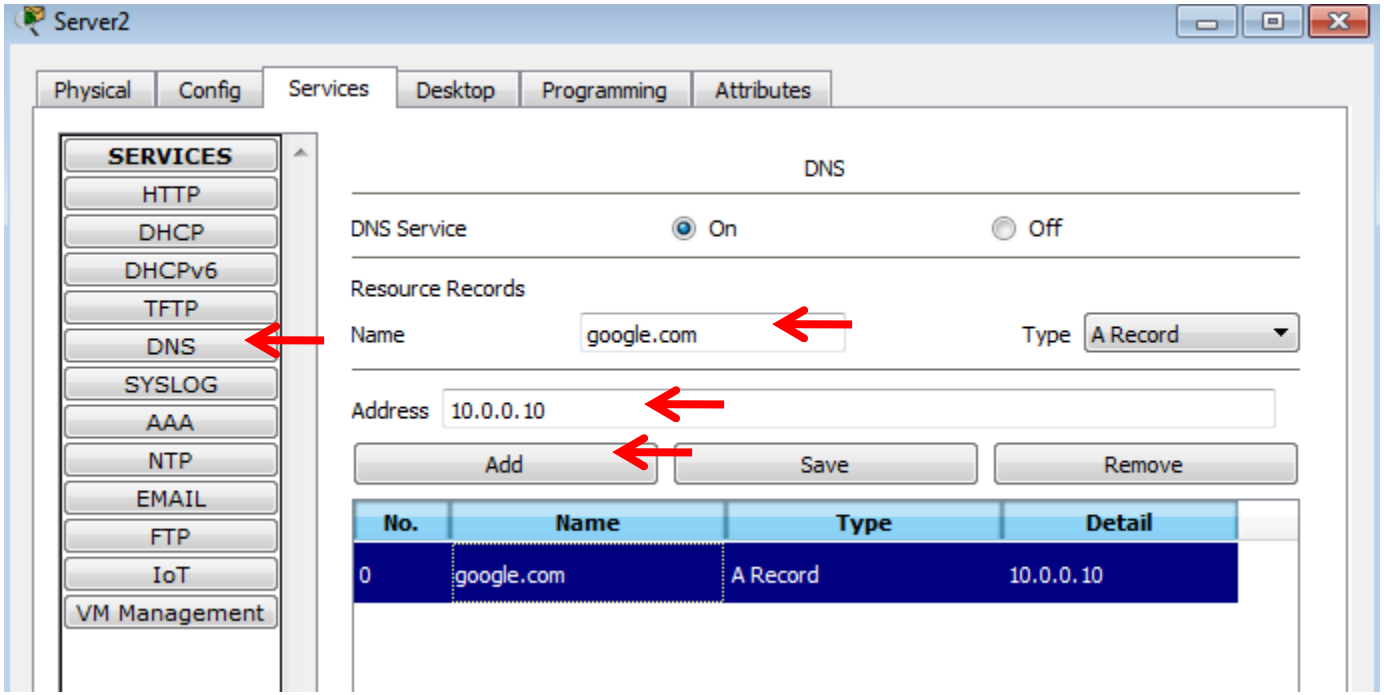
To Create a HTTP Server

- Click on the Service Tab
- Select HTTP service
- Check whether both HTTP and HTTPS are enabled.
- To Create record on DNS Server



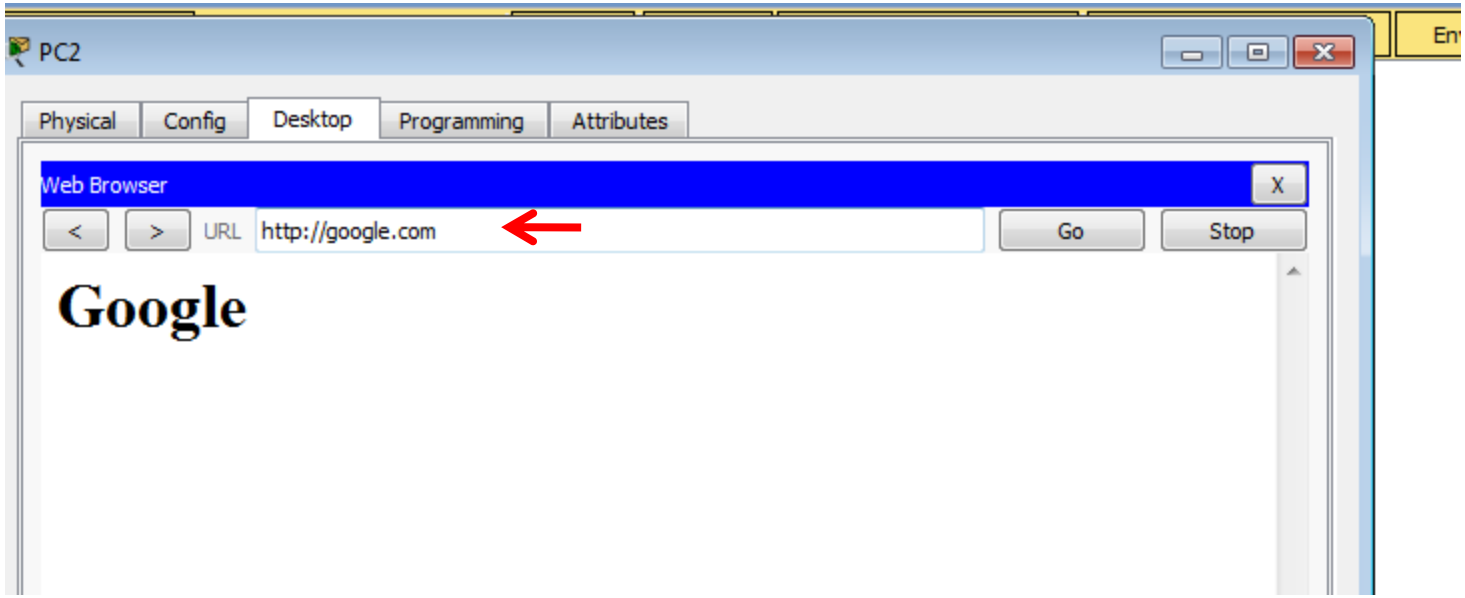
To Create a HTTP Server

- Click on the Server0 (DNS Server)
- Select the service tab and Select DNS service
  - Add a name (google.com) in name and Add a 10.0.0.10 in address
  - And then click on Add

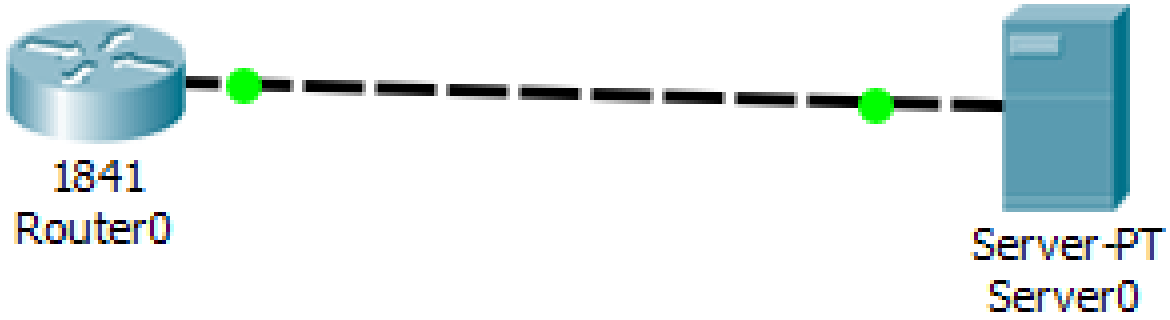


To Create a HTTP Server

- Click on the PC
  - Click on the Desktop tab and Click on the Web Browser icon.
  - In URL type: google.com
  - We are done with HTTP/HTTPS server



Network Time Protocol(NTP) Server

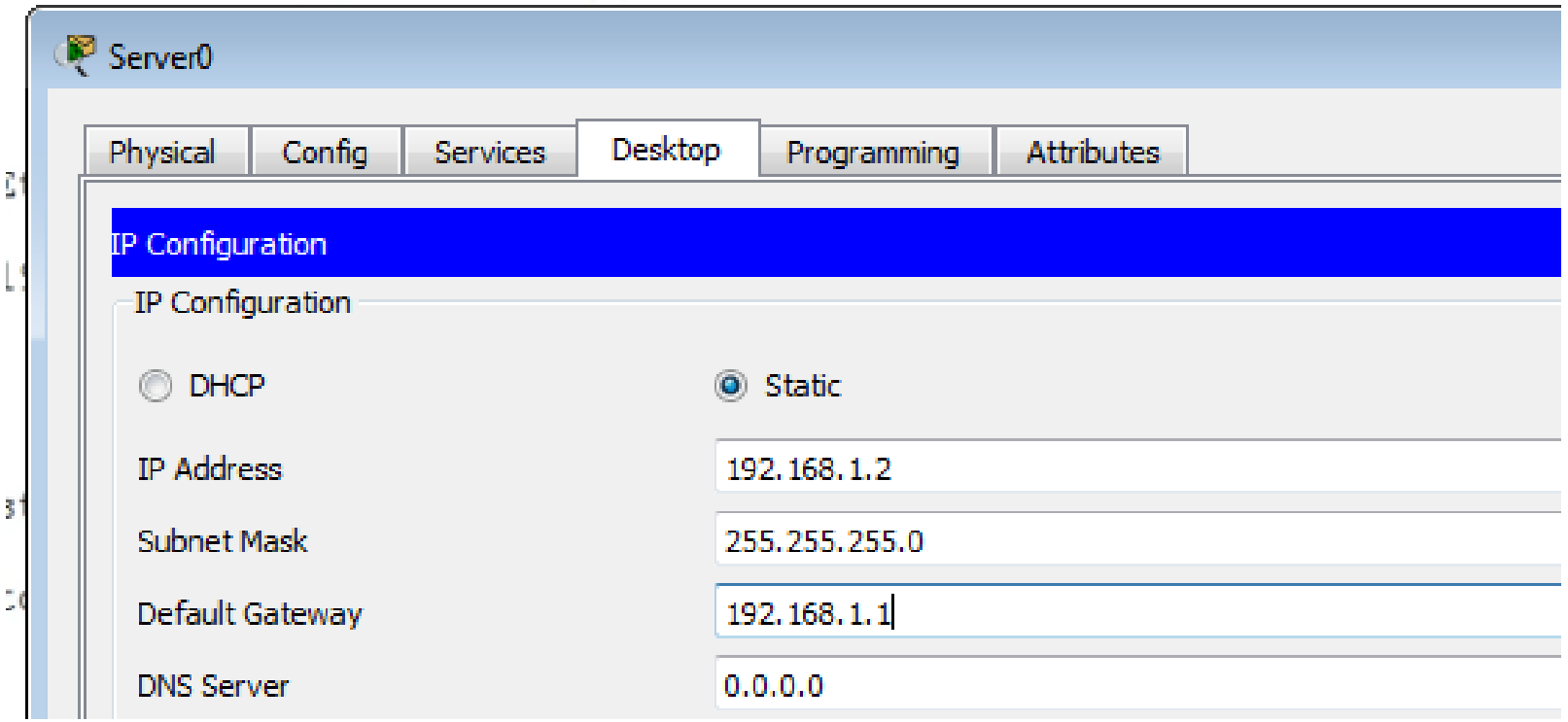


Network Time Protocol(NTP) Server

- Click on the Router and type
- **no]:** no
- **Router>**en
- **Router#**conf t
- **Router(config)#**int fa0/0
- **Router(config-if)#**ip address 192.168.1.1 255.255.255.0
- **Router(config-if)#**no sh
- **Router(config-if)#end**
- **Router#**

Network Time Protocol(NTP) Server

- Assign the IP to the server



Network Time Protocol(NTP) Server

Click on the router and type

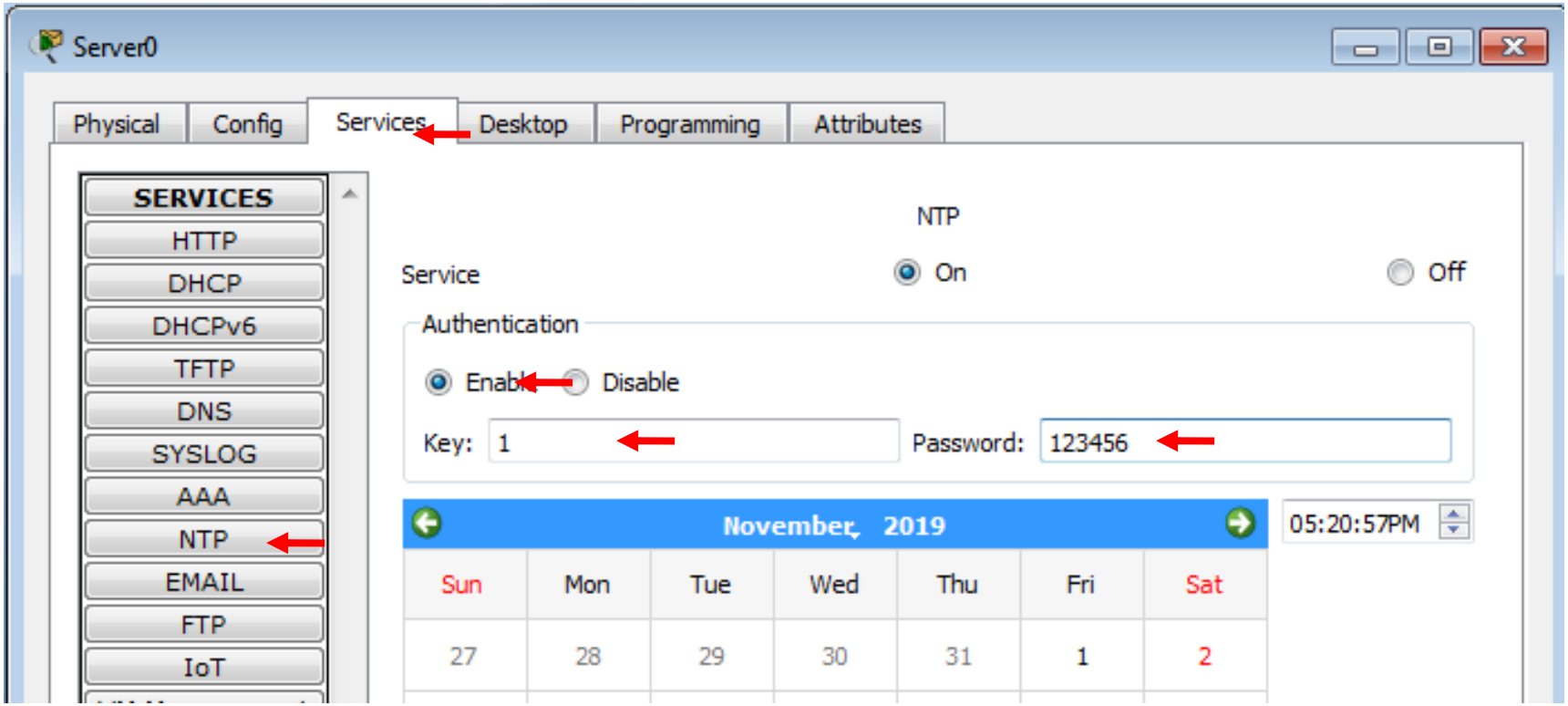
- **Router#**show clock

*0:4:50.440 UTC Mon Mar 1 1993 (please note)

- **Router#**

Network Time Protocol(NTP) Server

- Click on server and NTP service



Network Time Protocol(NTP) Server

- **Router(config)#**ntp ?
- **Router(config)#**ntp server 192.168.1.2
- **Router(config)#**ntp authentication-key 1 ?
- md5 MD5 authentication
- **Router(config)#**ntp authentication-key 1 md5 123456
- **Router(config)#**ntp update-calendar
- **Router(config)#**end
- **Router#**show clock

*0:10:37.310 UTC Mon Mar 1 1993 {compare with previous time}

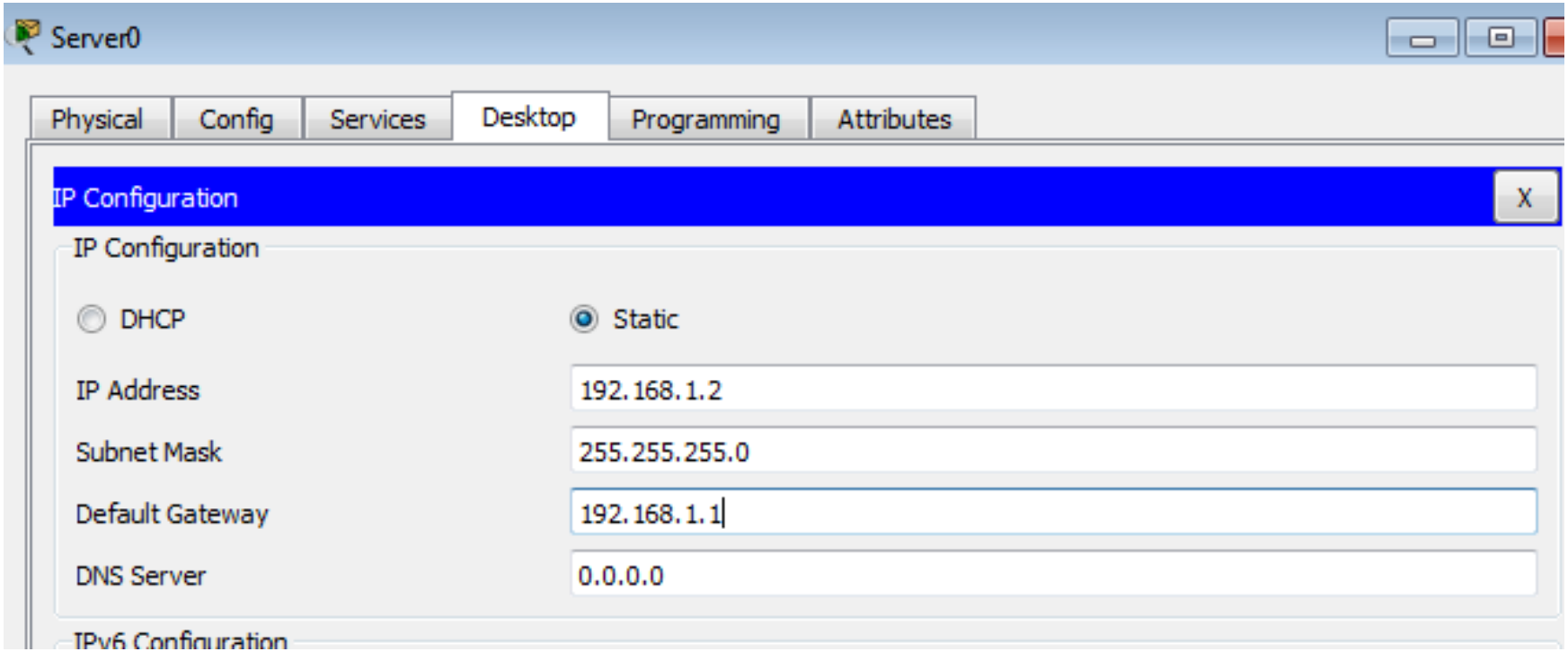
- **Router#**

Syslog Server

- 1 router 1841
- 1 Server

Syslog Server

- Assign the following IP to server

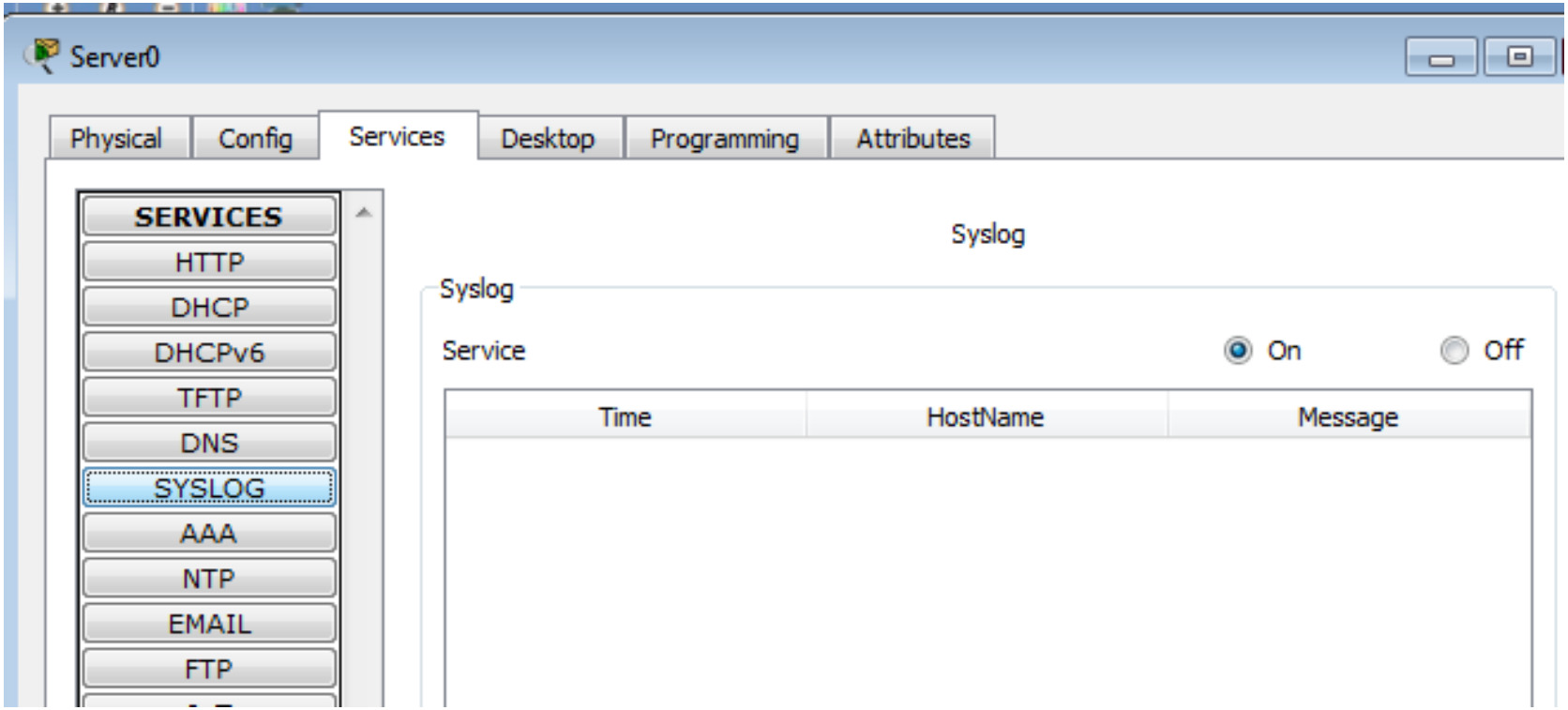


Syslog Server

- Click on the Router and type
- **no]:** no
- **Router>**en
- **Router#**conf t
- **Router(config)#**int fa0/0
- **Router(config-if)#**ip address 192.168.1.1 255.255.255.0
- **Router(config-if)#**no sh
- **Router(config-if)#end**
- **Router#**

Syslog Server

- Check the syslog service is on at server



Syslog Server

- **Click on router and type**
  - **Router(config-if)#**logging 192.168.1.2
  - **Router(config)#**logging trap debugging
  - **Router(config)#**logging on
  - **Router(config)#**int fa0/0
  - **Router(config-if)#**sh
  - **Router(config-if)#**no sh
  - **Router(config-if)#**exit
  - **Router(config)#**end
  - **Router#**ping 192.168.1.2
  - **Router#**

Syslog Server

- Check your server syslog for entries.