

***Competency-Based Learning Materials (CBLM)***



**COMPUTER SYSTEMS SERVICING NC II**

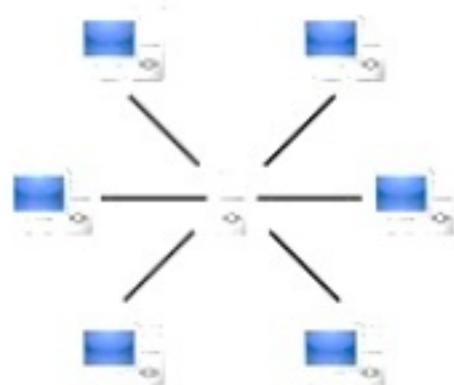
**CORE COMPETENCY # 3**

**Module Title:**

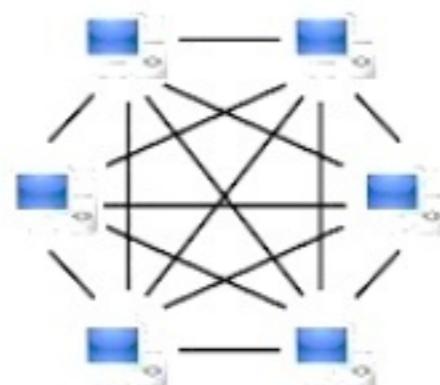
**Setting-up Computer Server**

**Unit of Competency:**

**Set-up Computer Server**



Server-based



P2P-network



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## HOW TO USE THIS MODULE

Welcome to the Module “**Setting-up Computer Server**”. This module contains training materials and activities for you to complete.

The unit of competency “**Set-up Computer Server**” contains knowledge, skills and attitudes required for a *Computer Systems Servicing NC II* course.

You are required to go through a series of learning activities in order to complete each of the learning outcomes of the module. In each learning outcome there are **Information Sheets**, **Operation Sheets**, and **Job Sheets**. Follow these activities on your own and answer the **Self-Check** at the end of each learning activity.

If you have questions, don’t hesitate to ask your teacher for assistance.

### Recognition of Prior Learning (RPL)

You may already have some of the knowledge and skills covered in this module because you have:

- been working for some time
- Already have completed training in this area.

If you can demonstrate to your teacher that you are competent in a particular skill or skills, talk to him/her about having them formally recognized so you don’t have to do the same training again. If you have a qualification or Certificate of Competency from previous trainings show it to your teacher. If the skills you acquired are still current and relevant to this module, they may become part of the evidence you can present for RPL. If you are not sure about the currency of your skills, discuss it with your teacher.

After completing this module ask your teacher to assess your competency. Result of your assessment will be recorded in your competency profile. All the learning activities are designed for you to complete at your own pace.

Inside this module you will find the activities for you to complete followed by relevant information sheets for each learning outcome. Each learning outcome may have more than one learning activity.

## **COMPUTER SYSTEM SERVICING NC II**

### **COMPETENCY-BASED LEARNING MATERIALS**

#### **List of Competencies**

| <b>NO.</b> | <b>UNIT OF COMPETENCY</b>                         | <b>MODULE TITLE</b>                                     | <b>CODE</b>      |
|------------|---|---|------------------|
| 1.         | Install and configure computer systems            | Installing and configuring computer systems             | ELC724331        |
| 2.         | Set-up computer networks                          | Setting-up computer networks                            | ELC724332        |
| 3.         | <b>Set-up Computer Servers</b>                    | <b>Setting-up Computer Servers</b>                      | <b>ELC724333</b> |
| 4.         | Maintain and repair computer systems and networks | Maintaining and repairing computer systems and networks | ELC724334        |

Program/ Course: **Computer Systems Servicing NC II**

Unit of Competency: **Set-up Computer Servers**

Module: **Setting-up Computer Servers**

## **INTRODUCTION:**

This module contains information and suggested learning activities on Computer Systems Servicing NCII.

Completion of this module will help you better understand the succeeding module on configuring and maintaining computer systems.

This module consists of **3** learning outcomes. Each learning outcome contains learning activities supported by instruction sheets. Before you perform the instructions read the information sheets and answer the self-check and activities provided to ascertain to yourself and your teacher that you have acquired the knowledge necessary to perform the skill portion of the particular learning outcome.

Upon completion of this module, report to your teacher for assessment to check your achievement of knowledge and skills requirement of this module. If you pass the assessment, you will be given a certificate of completion.

## **SUMMARY OF LEARNING OUTCOMES:**

Upon completion of the module you should be able to:

- LO1. Set-up user access
- LO2. Configure network services
- LO3. Perform testing, documentation and pre-deployment procedures

## **ASSESSMENT CRITERIA**

Refer to assessment criteria of learning outcomes # of this module.

- 1. User folder is created in accordance with network operating system (NOS) features
- 2. User access level is configured based on NOS features and established network access policies/end-user requirements.
- 3. Security check is performed in accordance with established network access policies/end-user requirements.
- 4. Normal functions of server are checked in accordance with manufacturer's instructions

|                  |                                    |           |
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Program course : **Computer Systems Servicing NCII**  
Unit of Competency : **Set-up Computer Server**  
Module : **Setting-up Computer Server**

**LO.1 Title** : **Set-up user access**

Assessment Criteria:

1. User folder is created in accordance with network operating system (NOS) features
2. User access level is configured based on NOS features and established network access policies/end-user requirements.
3. Security check is performed in accordance with established network access policies/end-user requirements.

Resources:

| <b>Equipment/Facilities</b> | <b>Tools &amp; Instruments</b> | <b>Supplies &amp; Materials</b> |
|-----------------------------|--------------------------------|---------------------------------|
| Server                      | Multi-tester                   | Connectors, RJ45                |
| Computer peripherals        | Diagnostic software            | Adaptors                        |
| Desktop computers           | Appropriate software           | Bus wires and cables            |
| Glasses                     | Assorted pliers                | Appropriate software            |
| Mask                        | Assorted screw drivers         | Computer storage media          |
| Gloves                      | Soldering gun                  |                                 |
| Anti-static wrist strap     | Allen key                      |                                 |
| USB Flash drive             |                                |                                 |

References:

1. McLaughlin, Robert, Sasser,Susan, Ralston,Mary.Fix Your Own PC.Philippine Graphic Arts, Inc Tandang Sora St.Caloocan City
2. Meralco Faoundation. Microcomputer Servicing Plus. Pasig City, Philippines.
3. Legaspi, Carlos, Caiña, Mark Anthony. Operate A Personal Computer. Dasmariñas Computer Learning Center.Dasmariñas,Cavite, Philippines
4. Bigelow, Stephen J. PC Technician's Troubleshooting ,McGraw Hill
5. [www.helpwithpcs.com](http://www.helpwithpcs.com)
6. <http://en.wikipedia.org>
1. [www.techsoup.org](http://www.techsoup.org)
8. [www.howstuffworks.com](http://www.howstuffworks.com)
9. [www.microsoft.com/technet/network](http://www.microsoft.com/technet/network)

## INFORMATION SHEET 1.1

### NETWORK OPERATING SYSTEM

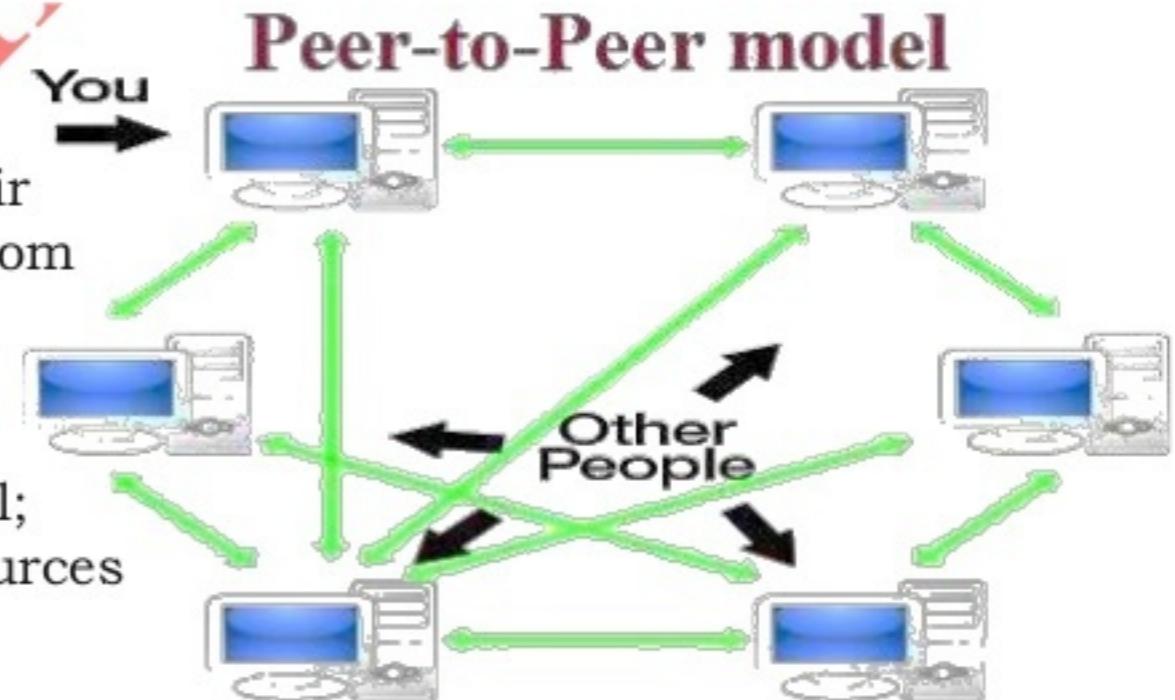
The term network operating system is used to refer to two rather different concepts:

- A specialized operating system for a network device such as a router, switch or firewall.
- An operating system oriented to computer networking, to allow shared file and printer access among multiple computers in a network, to enable the sharing of data, users, groups, security, applications, and other networking functions. Typically over a local area network (LAN), or private network. This sense is now largely historical, as common operating systems generally now have such features included.

### TYPES OF NETWORK OPERATING SYSTEM

#### 1. Peer-to-peer network

In a peer-to-peer network operating system users are allowed to share resources and files located on their computers and access shared resources from others. This system is not based with having a file server or centralized management source. A peer-to-peer network sets all connected computers equal; they all share the same abilities to use resources available on the network.



The advantages include:

- Ease of setup
- Less hardware needed, no server need be acquired

The disadvantages include:

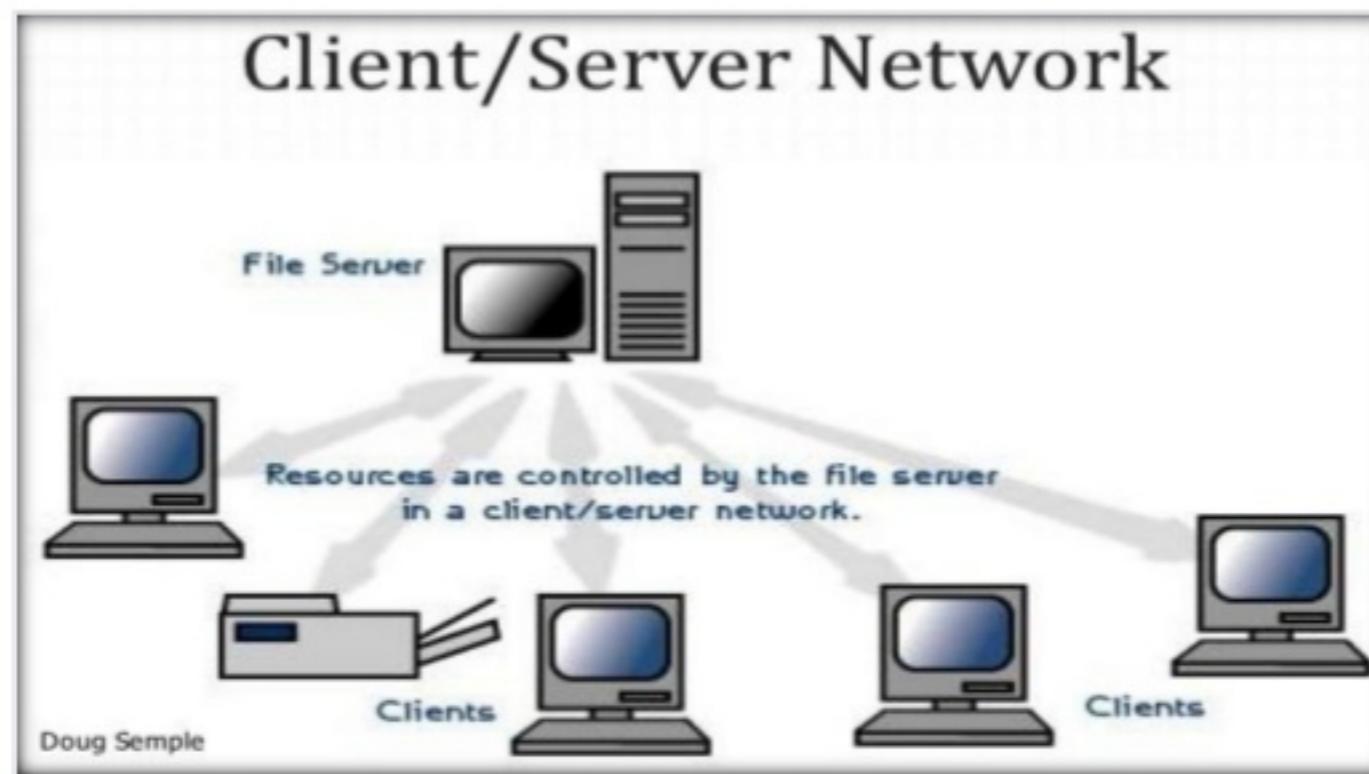
- No central location for storage
- Less security than the client-server model

#### 2. Client/Server Network

Network operating systems can be based on a client-server model (architecture) in which a server enables multiple clients to share resources. Client-server

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network operating systems allow networks to centralize functions and applications in one or more dedicated file servers. The server is the center of the system, allowing access to resources and instituting security.



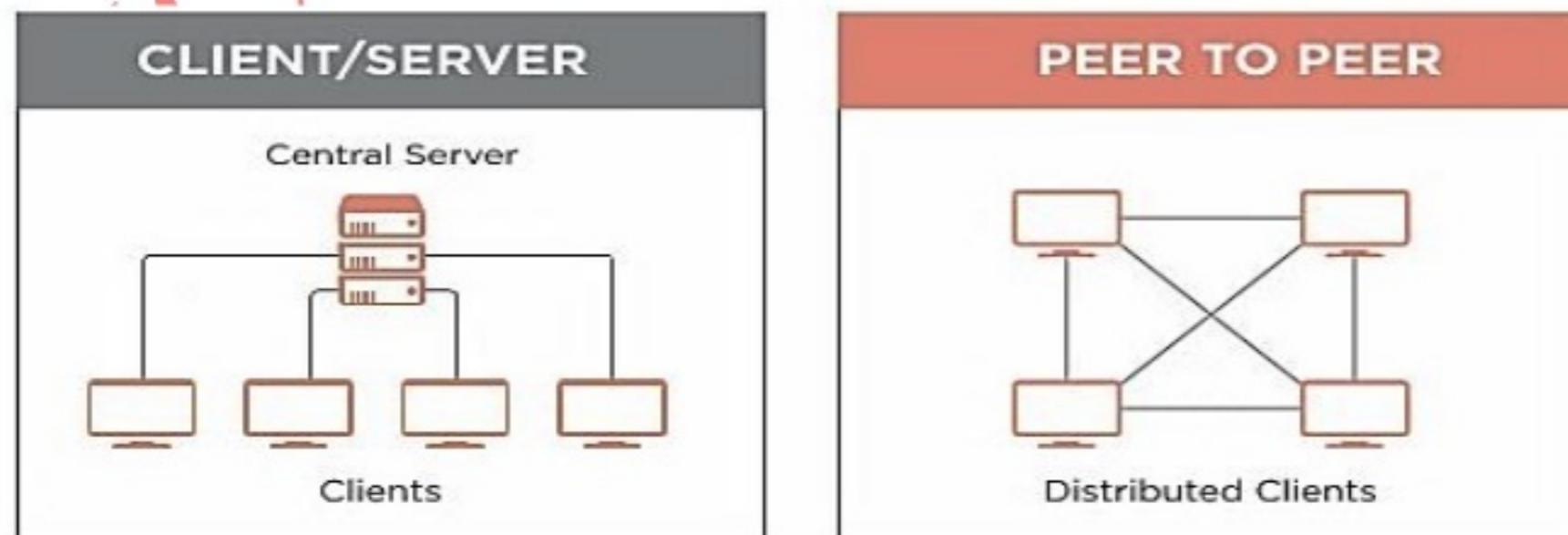
The advantages include:

- Centralized servers are more stable.
- Security is provided through the server.
- New technology and hardware can be easily integrated into the system.
- Hardware and the operating system can be specialized, with a focus on performance.
- Servers are able to be accessed remotely from different locations and types of systems.

The disadvantages include:

- Buying and running a server raises costs.
- Dependence on a central location for operation.
- Requires regular maintenance and updates.

### Client/Server Network Vs Peer to Peer Network



### **Self-Check 1.1**

1. What are the two types of Network Operating System?

- \_\_\_\_\_
- \_\_\_\_\_

2. What are the advantages of a Peer to Peer network?

3. What are the disadvantages of Peer to Peer network?

4. What are the advantages of a Client/Server network?

5. What are the disadvantages of Client/Server network?

6. Draw a simple diagram of peer to peer network vs. client/server network.

ERIC TALAMISA FILES

## **Job Sheet 1.1**

**Title : Configure Peer to Peer Network**

**Performance Objective:** Prepare the computer components & peripherals for configuring peer to peer network

**Tools/PPE:** LAN tester

**Equipment :** Computer Sets, Printer, Laptop

**Steps/Procedure:**

1. Follow information sheet 1.2 below on how to configure peer to peer network
2. Ensure that at least two computers are connected to the network.
3. Connect router to switch, and switch to PCs (No patch panel yet).
4. All the computers should have unique IP address either Static/Dynamic.
5. Configure PC name
6. Configure Advance Sharing
7. Create and share folder
8. Access shared folder from other pc on the network

**Assessment Method:** Performance Demonstration.

# **PERFORMANCE CRITERIA CHECKLIST**

## **JOB SHEET 1.1**

## **Configure Peer to Peer Network**

Trainee's Name: \_\_\_\_\_ Date : \_\_\_\_\_

| CRITERIA   | YES | NO | N/A |
|--|-----|----|-----|
| 1. Follow information sheet 3.2 below on how to configure peer to peer network |     |    |     |
| 2. Ensure that at least two computers are connected to the network.            |     |    |     |
| 3. Connect router to switch, and switch to PCs (No patch panel yet).           |     |    |     |
| 4. All the computers should have unique IP address either Static/Dynamic.      |     |    |     |
| 5. Configure PC name   |     |    |     |
| 6. Configure Advance Sharing   |     |    |     |
| 7. Create and share folder   |     |    |     |
| 8. Access shared folder from other pc on the network                           |     |    |     |

### Comments/Suggestions

Trainer's Signature: \_\_\_\_\_ Date : \_\_\_\_\_

## INFORMATION SHEET 1.2

### SET-UP PEER TO PEER NETWORK

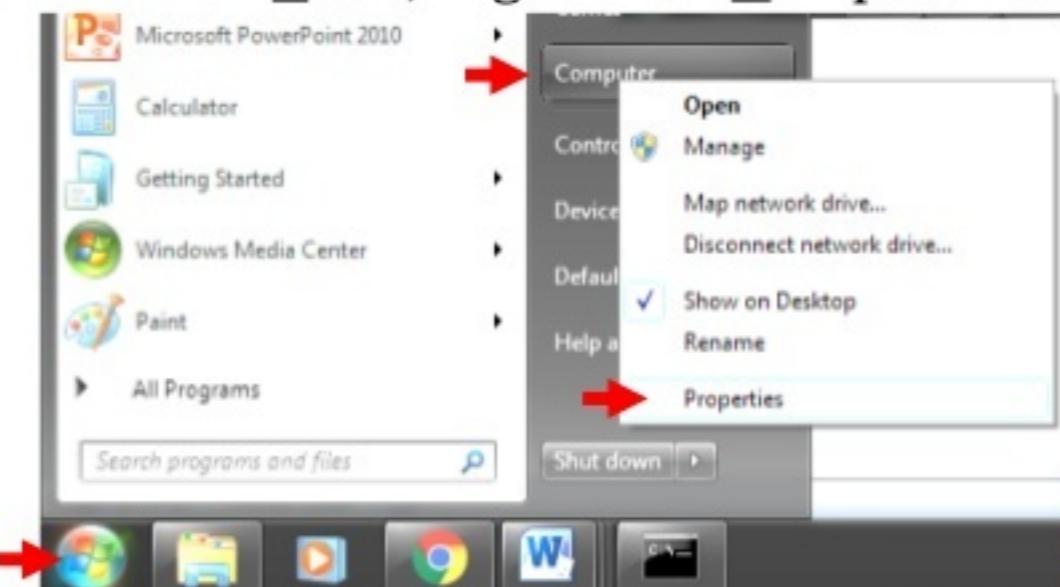
(Basic File Sharing)

Before you start:

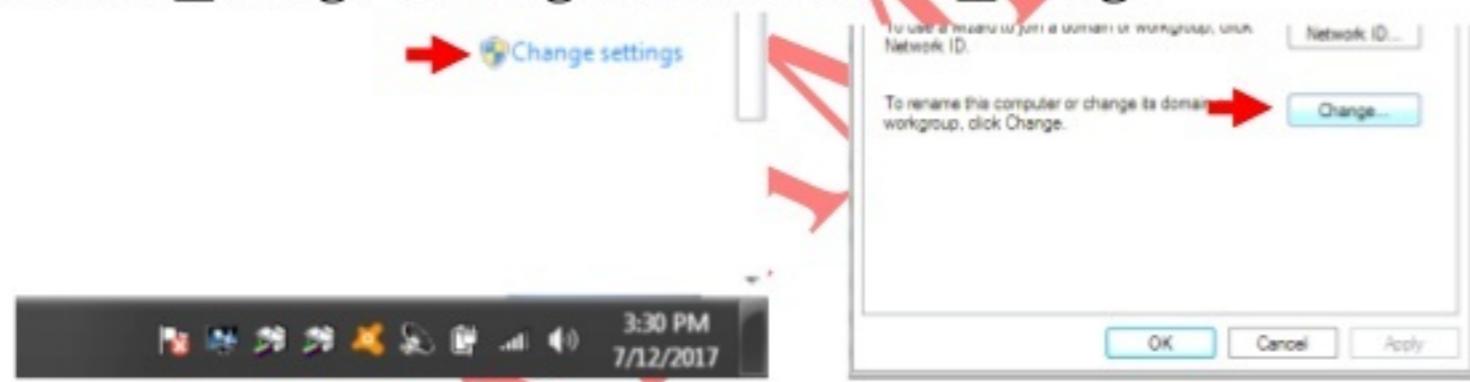
- Ensure that at least two computers are connected to the network.
- Connect router to switch, and switch to PCs (No patch panel yet).
- All the computers should have unique IP address either Static/Dynamic.

#### **Step 1 : Configure computer name and workgroup name**

1. Click on Start, Right click Computer and select Properties.



2. Select Change Settings and click on Change

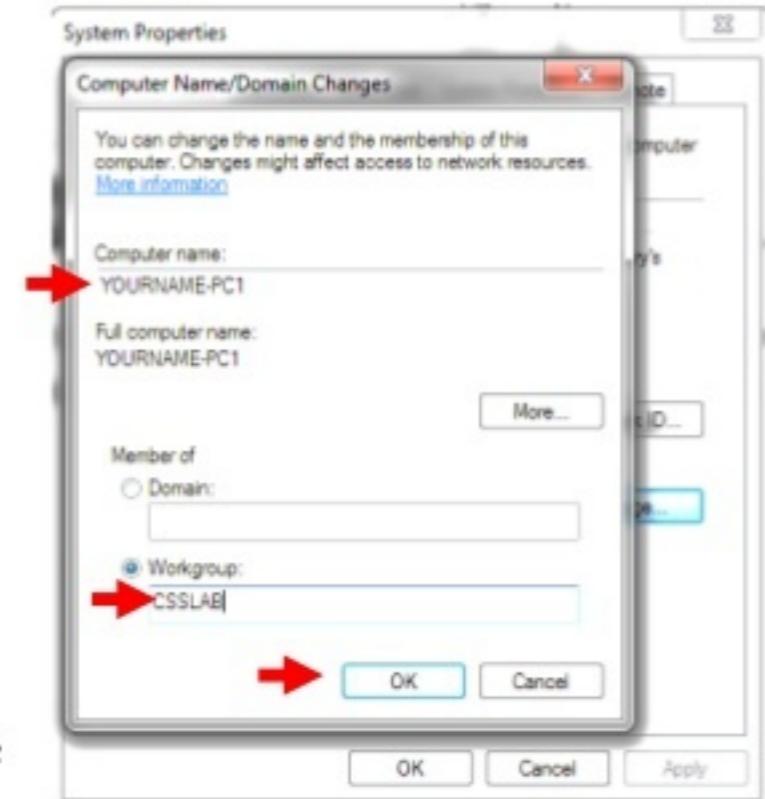


3. Type in the Computer Name and Workgroup Name.

Computer Name=YOURNAME-PC1

Workgroup Name=CSSLAB

4. Click on Ok and select Yes to Restart.



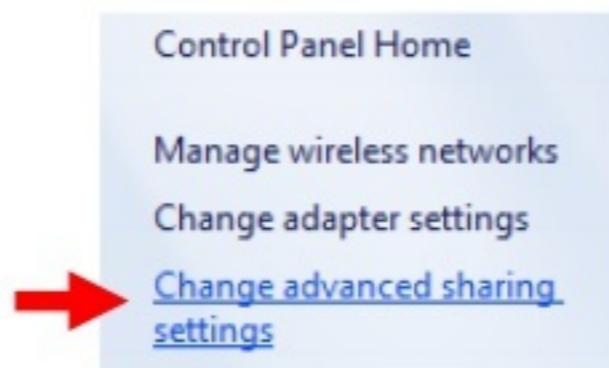
5. Do the same for other PC just change the name to YOURNAME-PC2, but use the same Workgroup Name – CSSLAB

## **Step 2 – Change advance sharing settings**

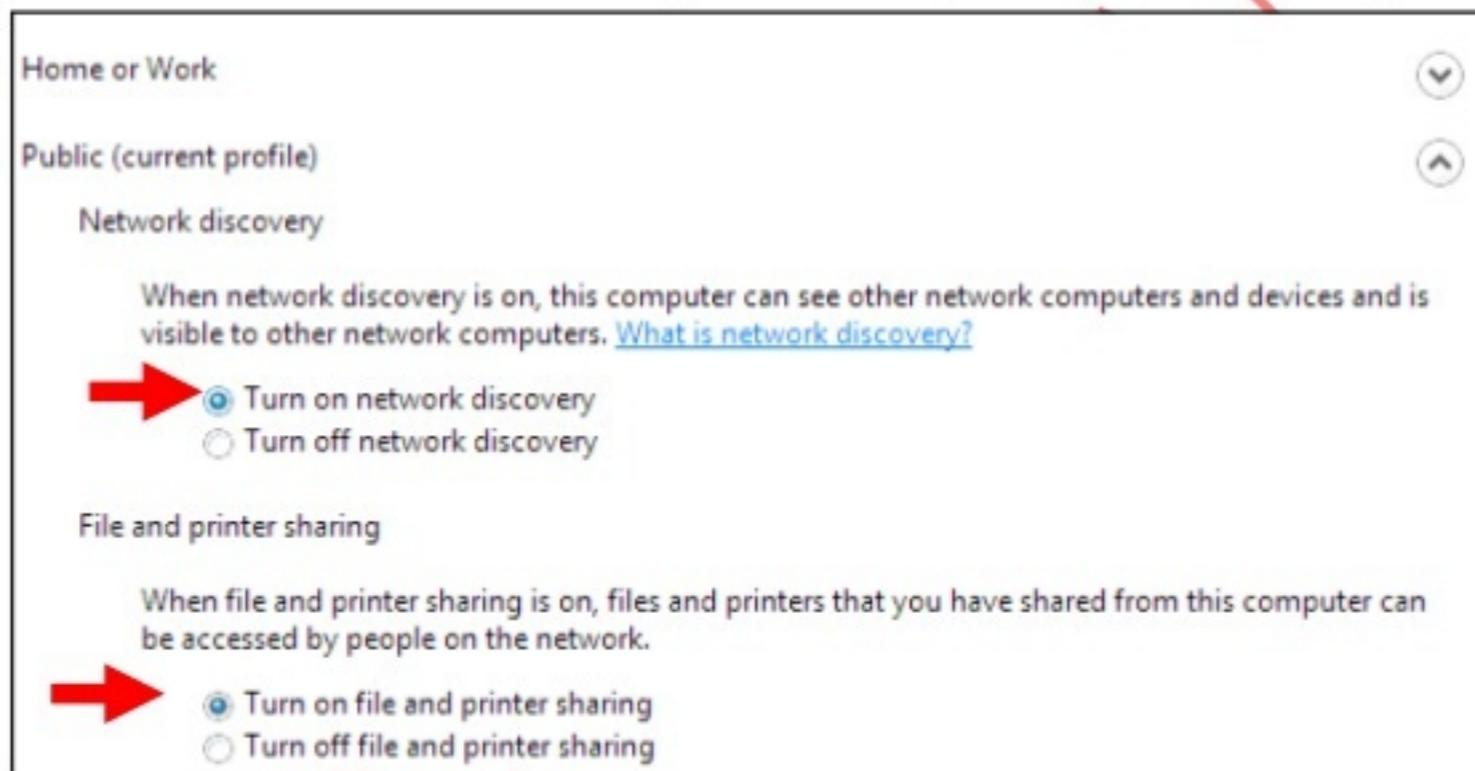
1. Right click on LAN icon (PC) or Wifi icon (Laptop) at the notification bar and select Open Network and Sharing Center



2. Select Change advanced sharing settings



3. Turn network discovery, file and printer sharing...  
Scroll down and Turn off password protected sharing



4. Do the same for Home or Work

5. Finally select save changes

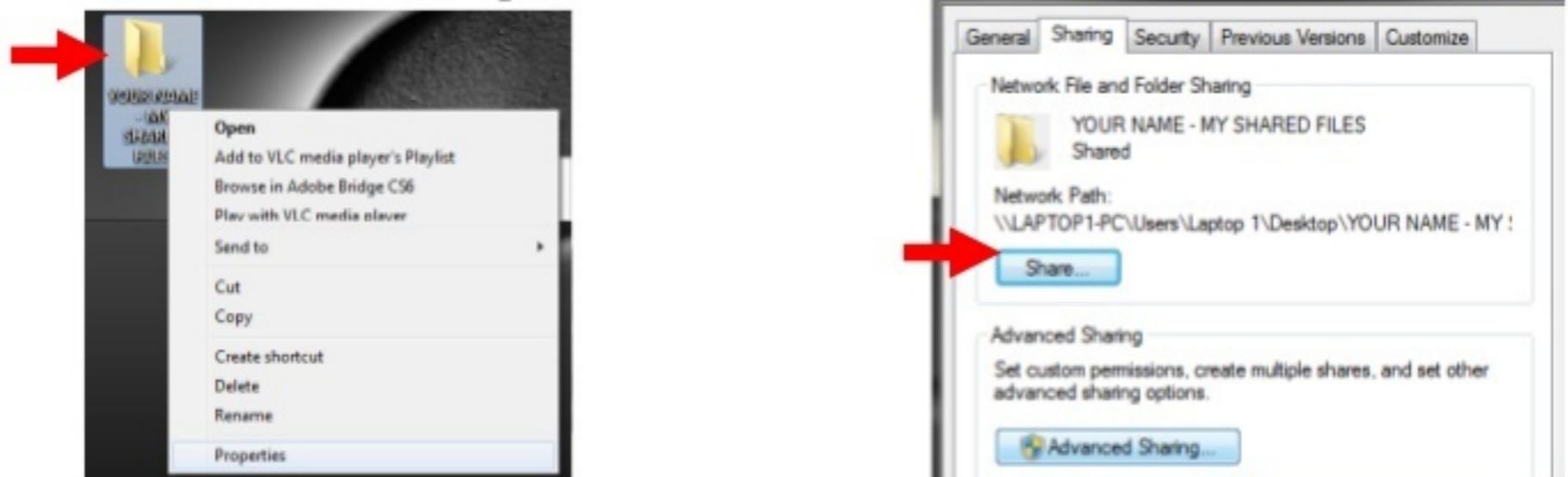


6. Do the same for the next pc.

### **Step 3 – Create and share folder**

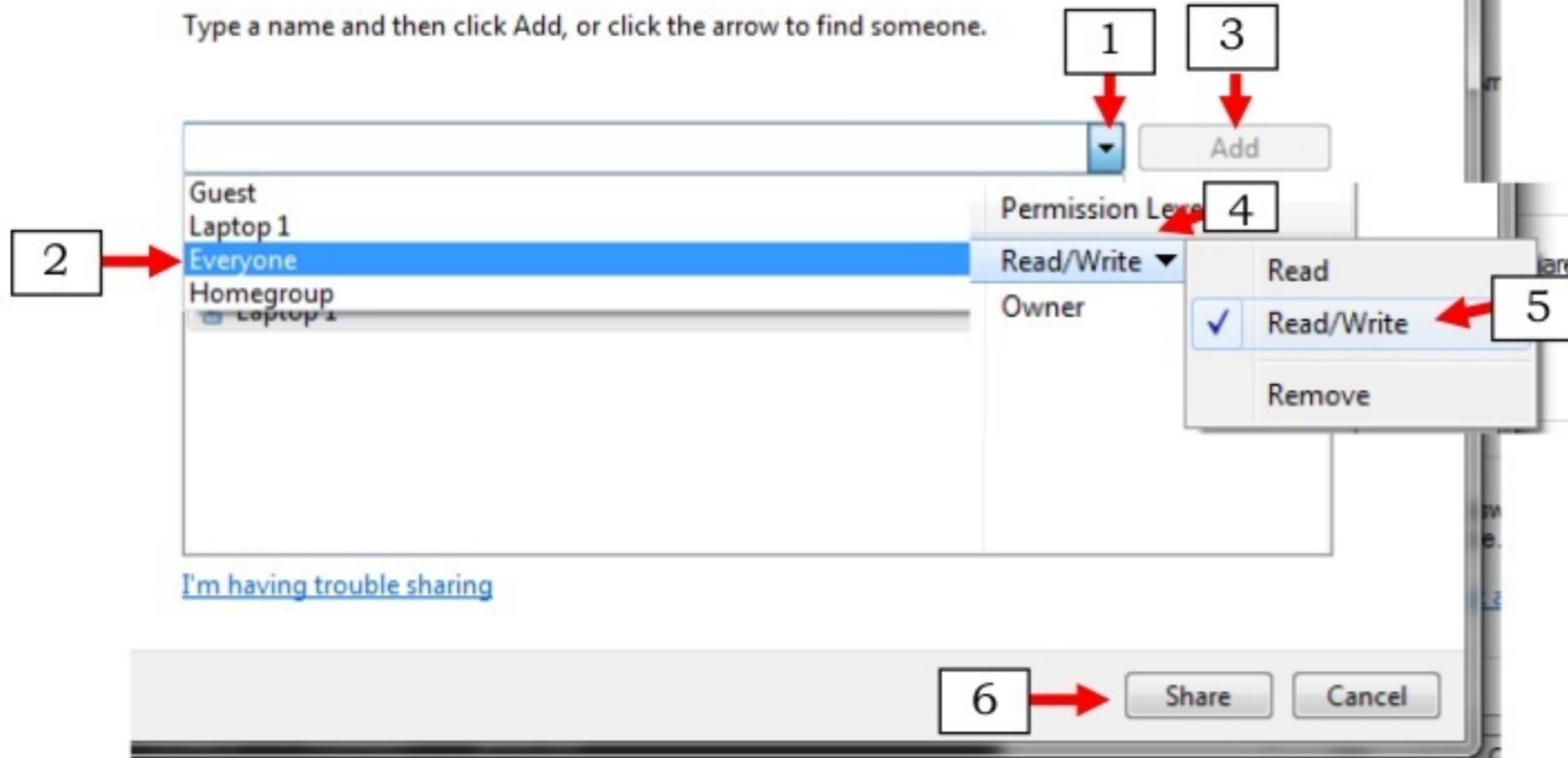
7. Create a folder on the desktop, name it to YOURNAME-My Shared Files

8. Right click on folder and select Properties



9. Click on Share, Select Everyone, click on Add,

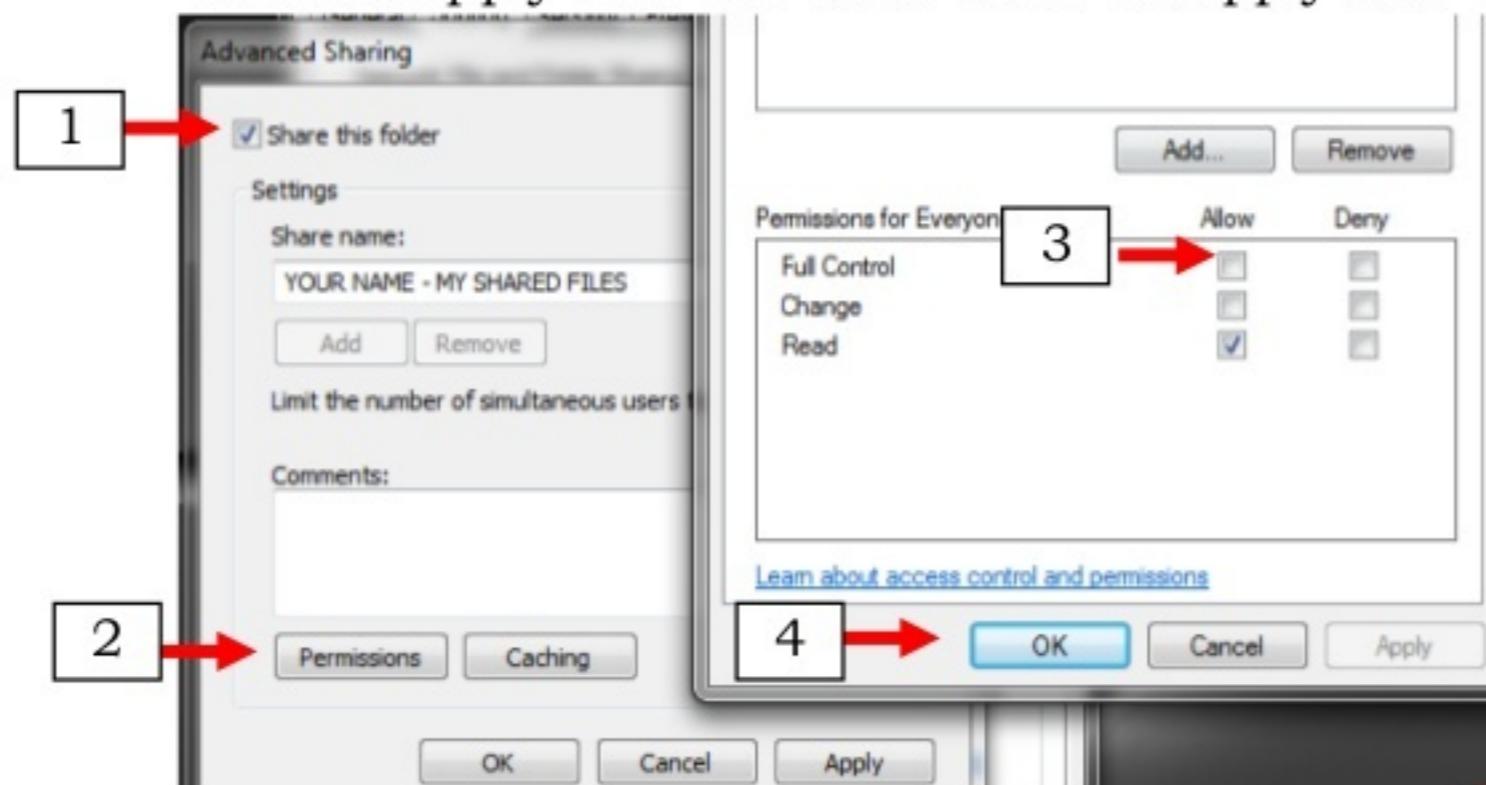
Check Permission Level to Read/Write and select Share  
Choose people to share with



10. Click on Advance Sharing

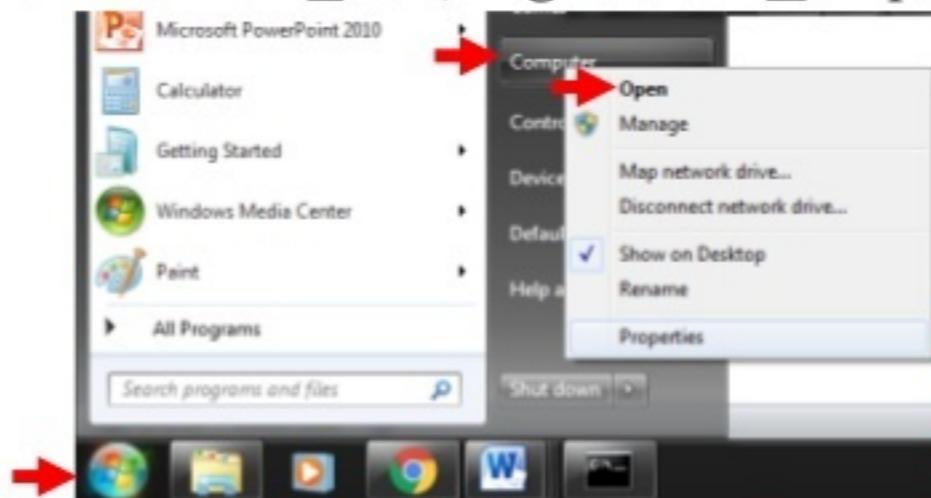


11. Check Share this folder, click on Permission and check Allow-Full Control. Click on Apply and Ok. Then Click on Apply and Ok once again.

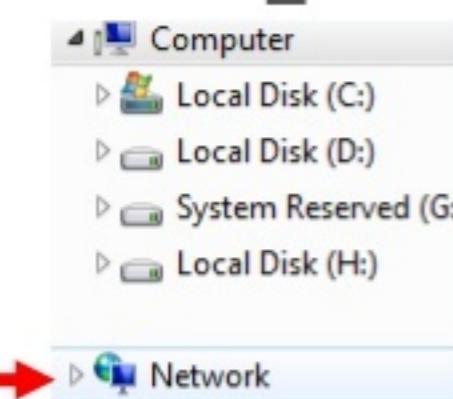


#### **Step 4 – Access shared folder from other pc on the network**

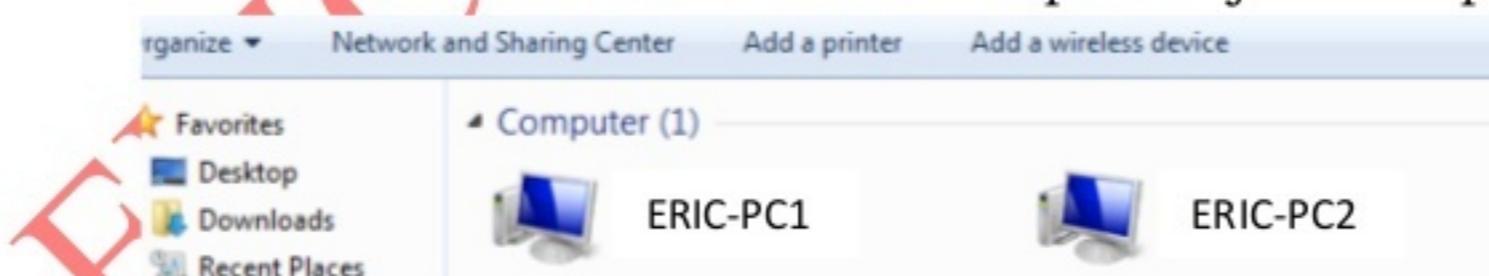
1. Click on Start, Right click Computer and select Open.



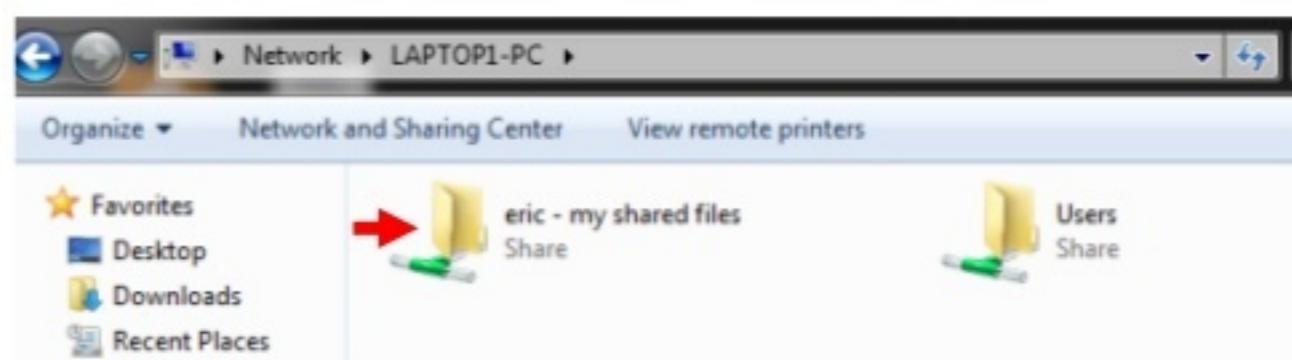
2. Click on Network



3. You should be able to see two computers just like picture below:



4. Just open the other computer and you should be able to see open the shared folder.



## **Job Sheet 1.2**

**Title : Configure Client/Server Network**

**Performance Objective:** Prepare the computer components & peripherals for configuring Client/Server Network

**Tools/PPE:** LAN tester

**Equipment :** Computer Sets, Printer, Laptop

**Steps/Procedure:**

1. Follow information sheet 1.3 below on how to configure client/server network
2. INSTALL WINDOWS SERVER Standard on PC1-SERVER
3. INSTALL WINDOWS 7 on PC2-CLIENT
4. Create Network Cable (6pcs straight through cable)
5. Set-up Basic Network Configuration
6. Install LAN drivers
7. Change PC settings
8. Set Static IP for PC SERVER
9. Set Preferred DNS for PC CLIENT
10. Run DCPROMO (Domain Controller Promoter)
11. Install Active Directory Domain Services (ADDS)
12. Configure Services (Function Discovery, SSDP, UPnP)

**Assessment Method:** Performance Demonstration.

## **PERFORMANCE CRITERIA CHECKLIST JOB SHEET 1.2**

### **Configure Client/Server Network**

Trainee's Name: \_\_\_\_\_ Date : \_\_\_\_\_

| <b>CRITERIA</b>   | <b>YES</b> | <b>NO</b> | <b>N/A</b> |
|---|------------|-----------|------------|
| 1. Follow information sheet 1.3 below on how to configure client/server network |            |           |            |
| 2. INSTALL WINDOWS SERVER Standard on PC1-SERVER                                |            |           |            |
| 3. INSTALL WINDOWS 7 on PC2-CLIENT  |            |           |            |
| 4. Create Network Cable (6pcs straight through cable)                           |            |           |            |
| 5. Set-up Basic Network Configuration   |            |           |            |
| 6. Install LAN drivers  |            |           |            |
| 7. Change PC settings   |            |           |            |
| 8. Set Static IP for PC SERVER  |            |           |            |
| 9. Set Preferred DNS for PC CLIENT  |            |           |            |
| 10. Run DCPROMO (Domain Controller Promoter)                                    |            |           |            |
| 11. Install Active Directory Domain Services (ADDS)                             |            |           |            |
| 12. Configure Services (Function Discovery, SSDP, UPnP)                         |            |           |            |

Comments/Suggestions

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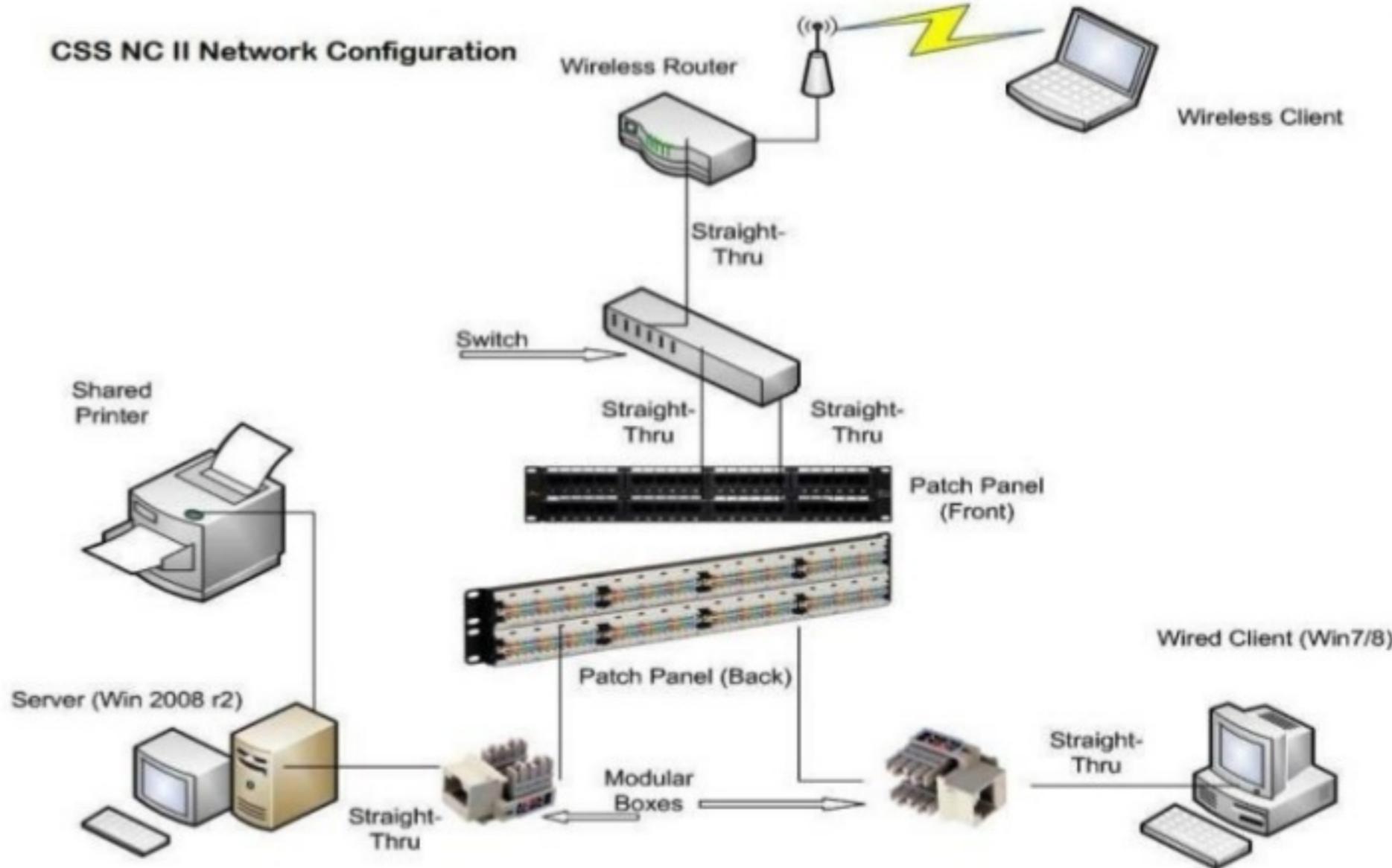
Trainer's Signature: \_\_\_\_\_ Date : \_\_\_\_\_

## INFORMATION SHEET 1.3

### SET-UP CLIENT/SERVER NETWORK

1. INSTALL WINDOWS SERVER Standard on PC1-SERVER
3. INSTALL WINDOWS 7 on PC2-CLIENT
4. Create Network Cable (6pcs straight through cable)
5. Set-up Basic Network Configuration

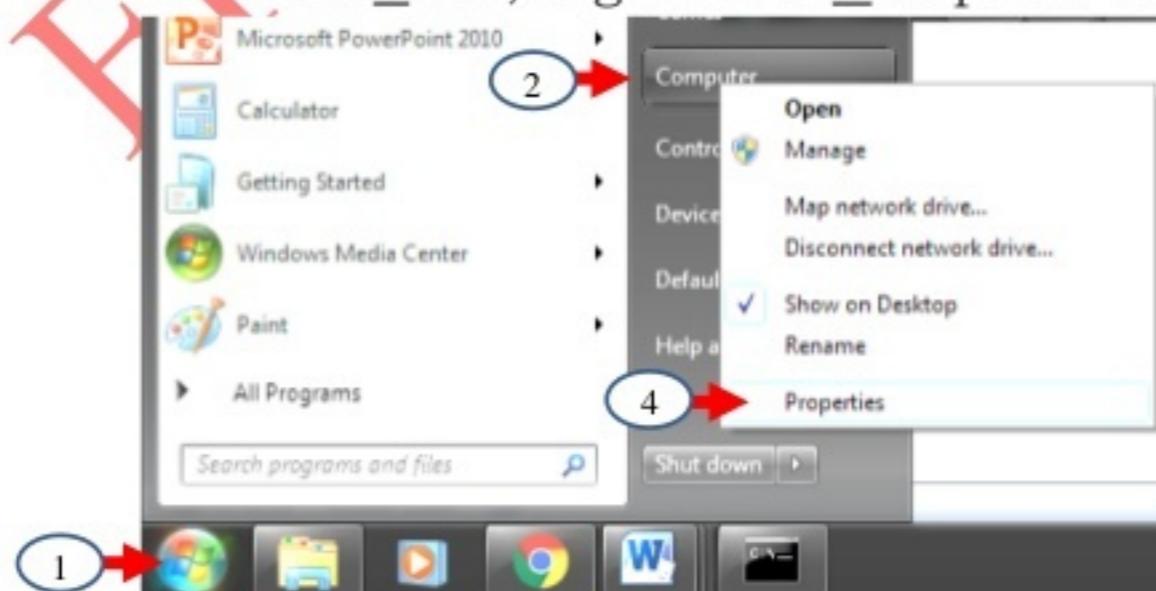
Sequence: Router > Hub > Patch Panel > Modular box > PC



6. Install LAN Driver for both PC (PC1-Server & PC2-Client)
7. Set-up computer server

#### A. Change PC Settings (PC1, PC2 & Laptop)

1. Click on Start, Right click Computer and select Properties.

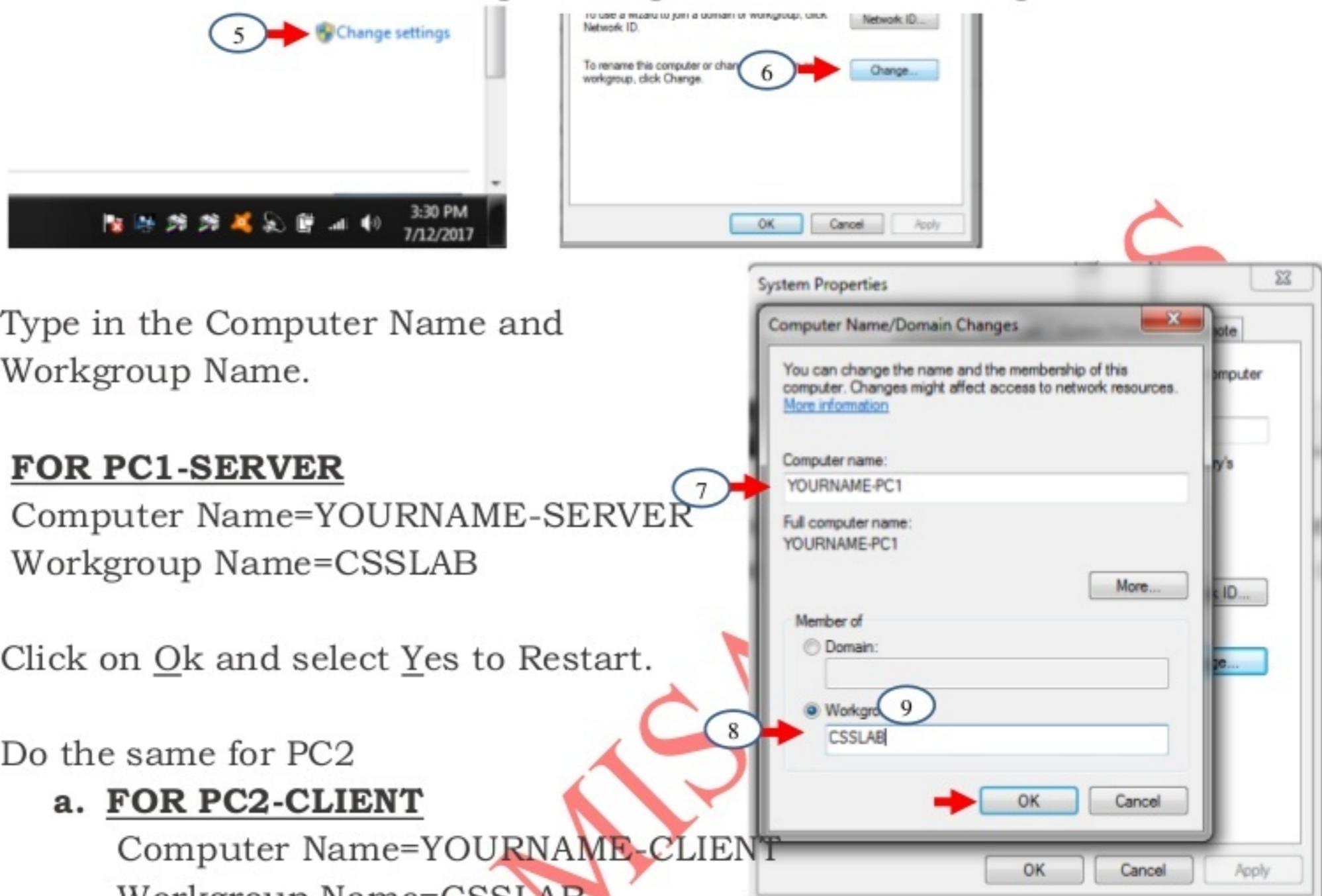


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2. Scroll down and select Change Settings and click on Change



3. Type in the Computer Name and Workgroup Name.

#### **FOR PC1-SERVER**

Computer Name=YOURNAME-SERVER  
Workgroup Name=CSSLAB

4. Click on Ok and select Yes to Restart.

5. Do the same for PC2

##### **a. FOR PC2-CLIENT**

Computer Name=YOURNAME-CLIENT  
Workgroup Name=CSSLAB

6. Do the same for Laptop

##### **a. FOR LAPTOP**

Computer Name=YOURNAME-LAPTOP  
Workgroup Name=CSSLAB

#### **B. Set Static IP Address for PC1-Server**

Normally, your computer's IP Address has a dynamic IP Address. To find out your computer's Dynamic IP simply click the Start  button, type cmd and press Enter. Then, enter the command IPCONFIG and press Enter.

```
C:\Windows\system32\cmd.exe
Copyright <c> 2009 Microsoft Corporation. All rights reserved.

C:\Users\Laptop 1>IPCONFIG

Windows IP Configuration

Wireless LAN adapter Wireless Network Connection 2:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . . . . . : 

Ethernet adapter Local Area Connection 2:
```

```

Connection-specific DNS Suffix . . . . . : 
Link-local IPv6 Address . . . . . : fe80::b935:fa6a:9413:6a60%14
IPv4 Address . . . . . : 192.168.0.100
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.0.1

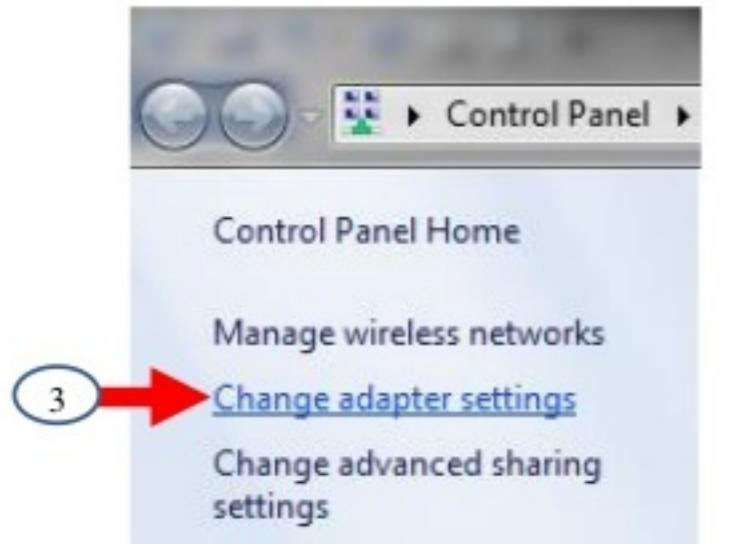
```

## To permanently set it as your Static IP

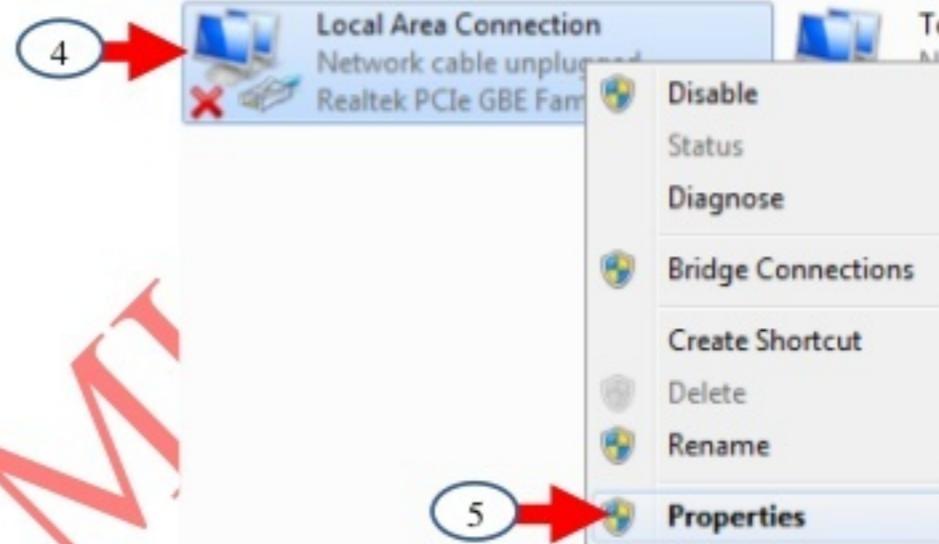
1. Right click on LAN icon (PC) at the notification bar and select Open Network and Sharing Center



2. Select Change adapter settings



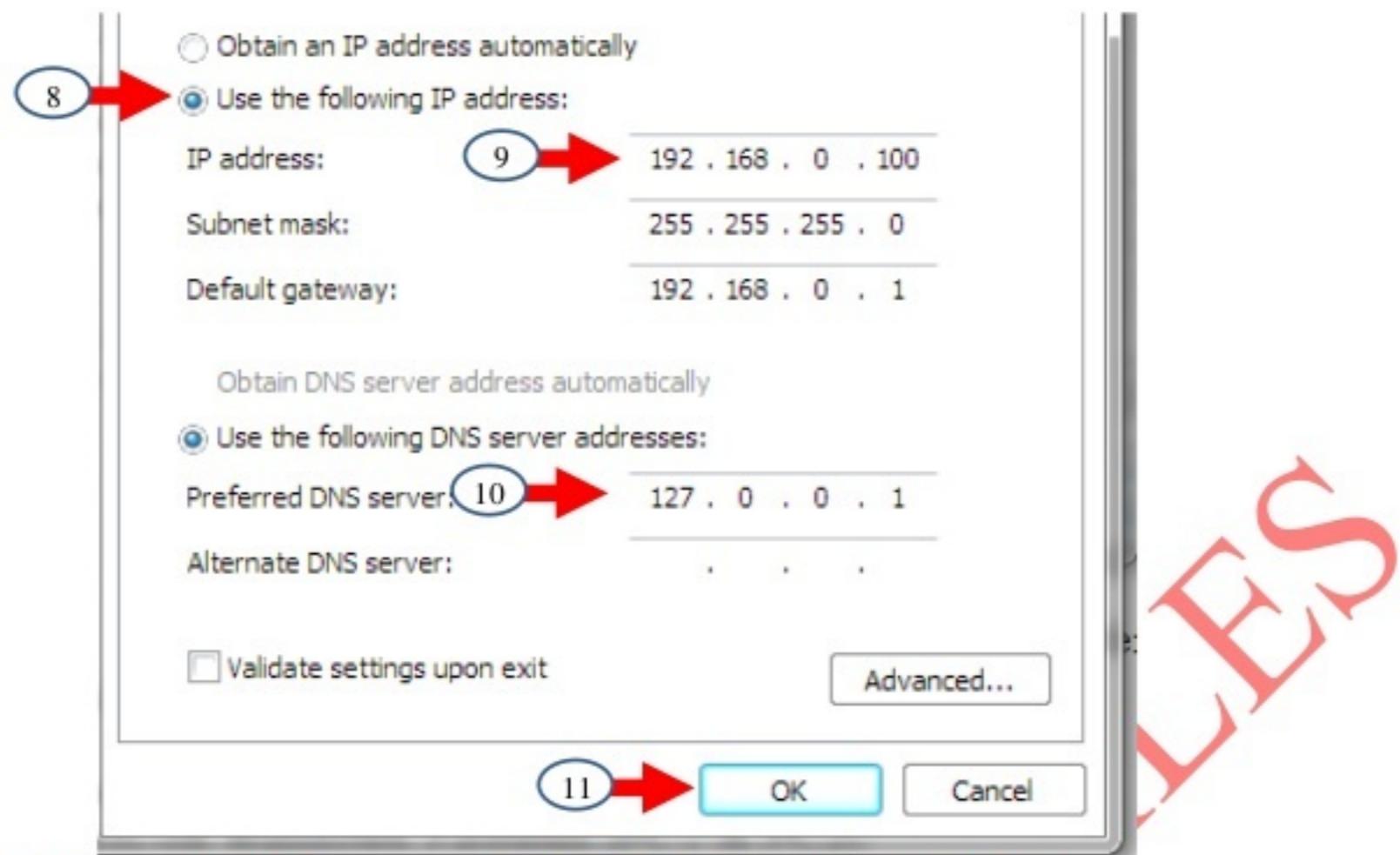
3. Right click Local Area Connection and select Properties



4. Select Internet Protocol Version 4 and click on Properties

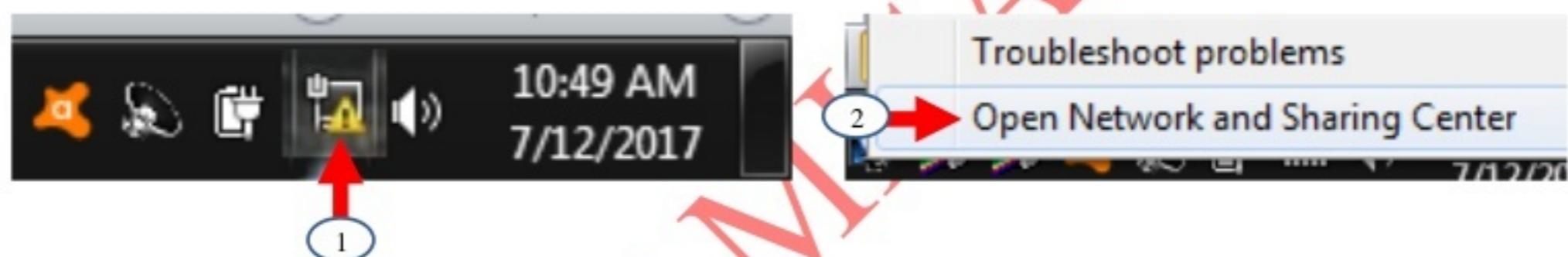


5. Select Use the following IP address and enter the IP addresses from the command prompt (IPCONFIG). Click on Ok twice to save settings.

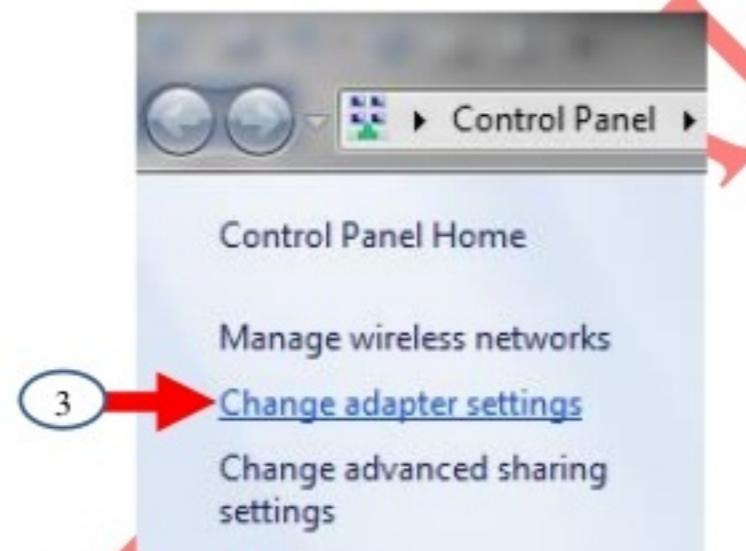


### C. Change Preferred DNS server for PC2 & Laptop client

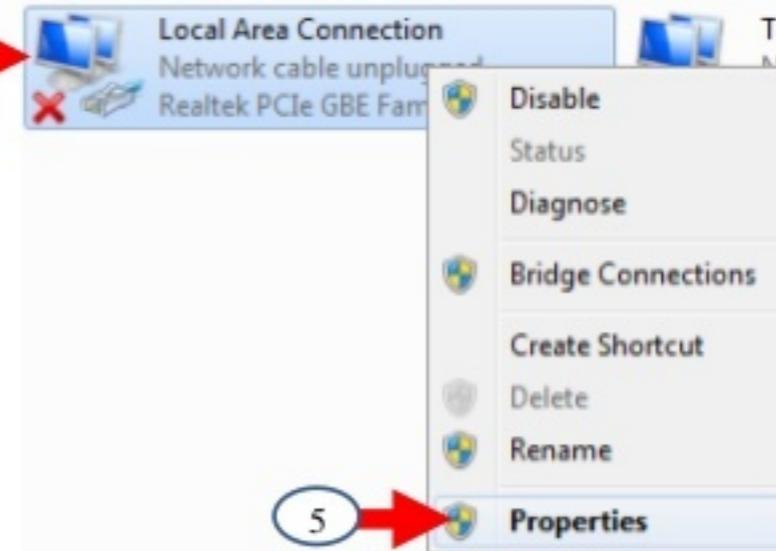
1. Right click on LAN icon (PC) at the notification bar and select Open Network and Sharing Center



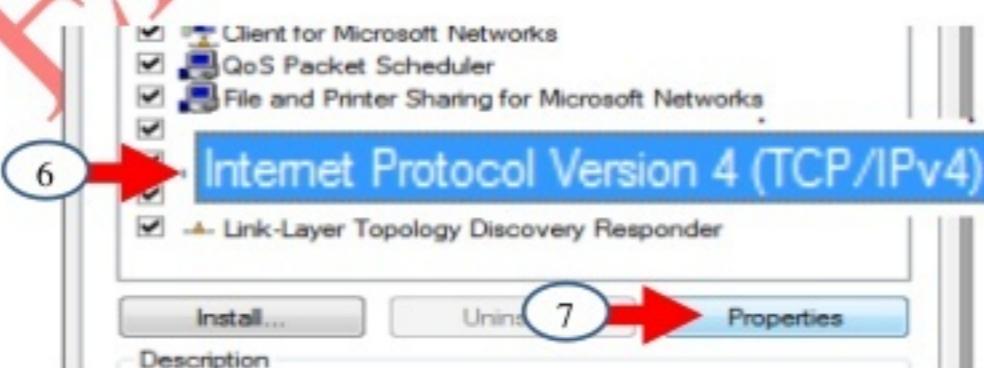
2. Select Change adapter settings

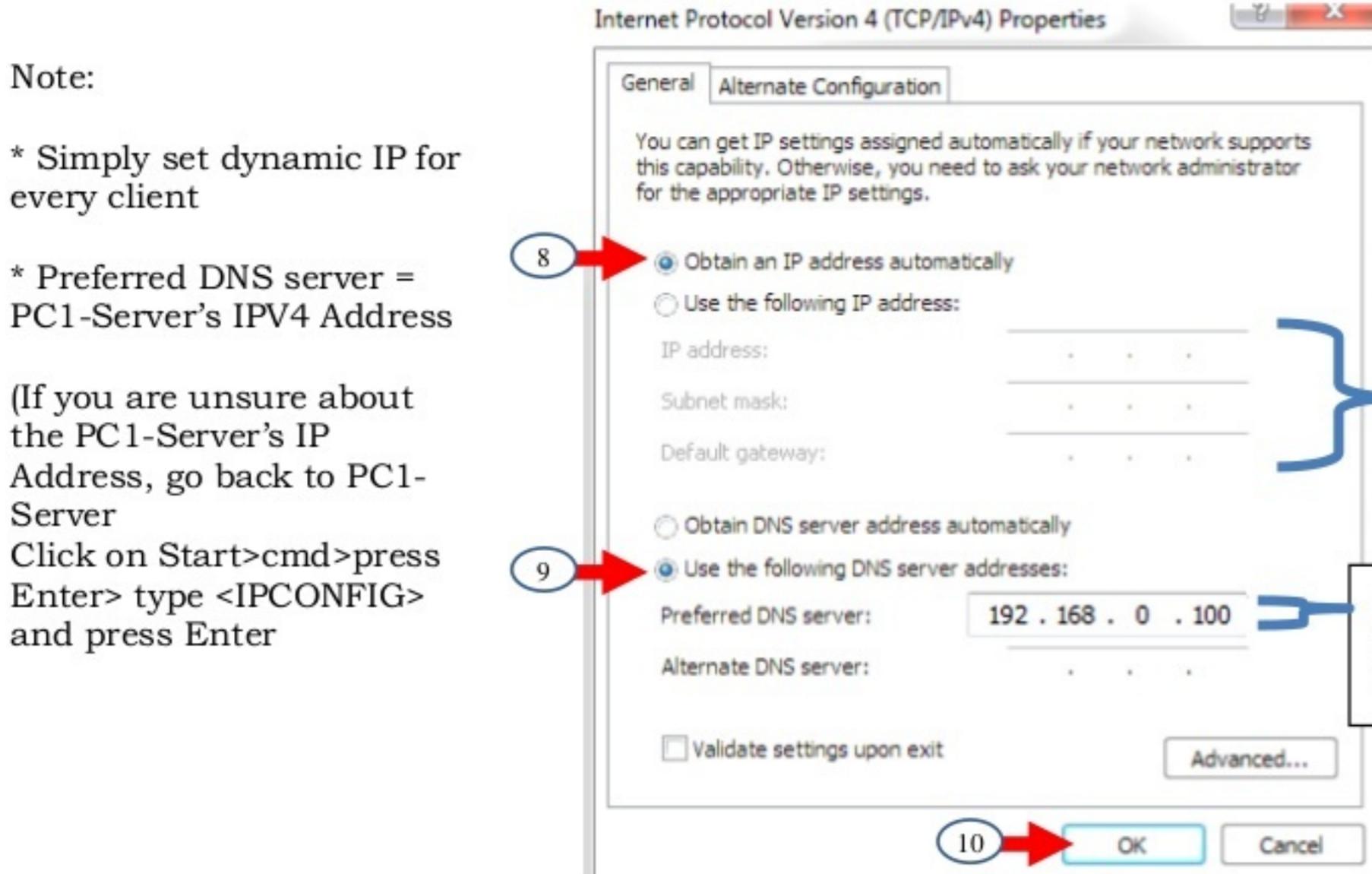


3. Right click Local Area Connection and select Properties



6. Select Internet Protocol Version 4 and click on Properties



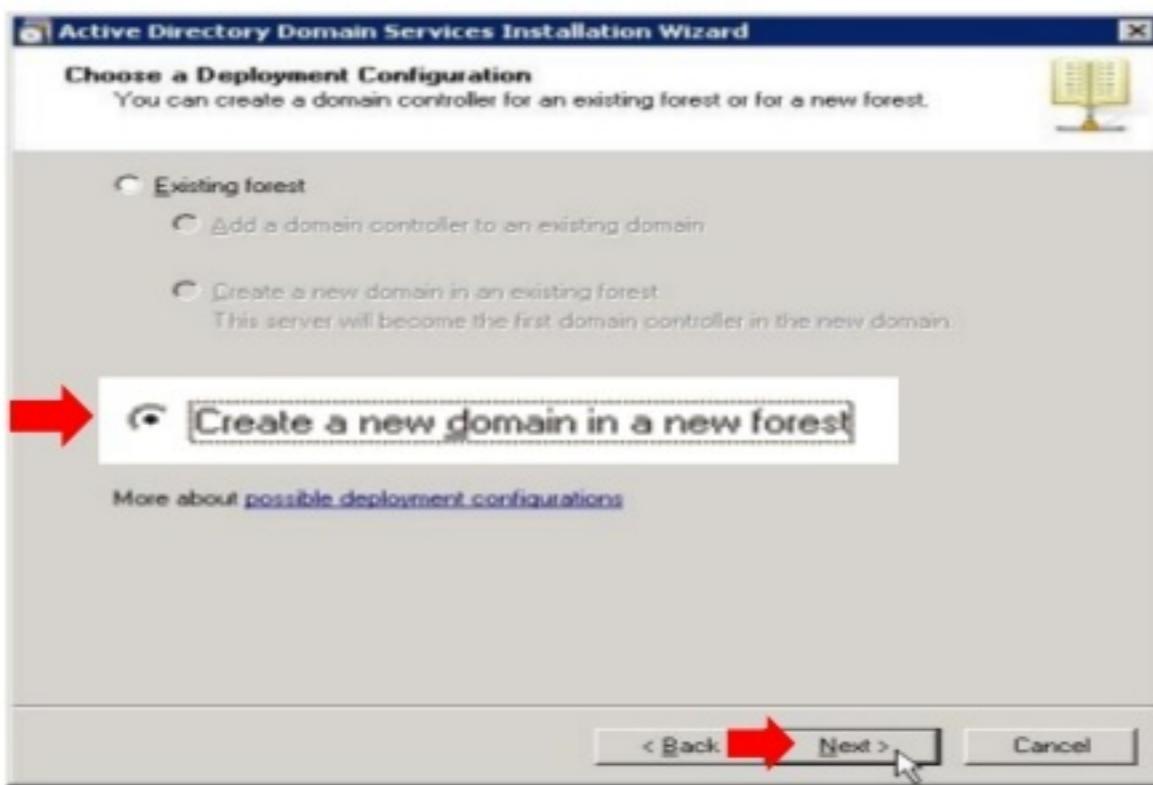


#### **D. Install Active Directory Domain Services (ADDS) – PC1-Server**

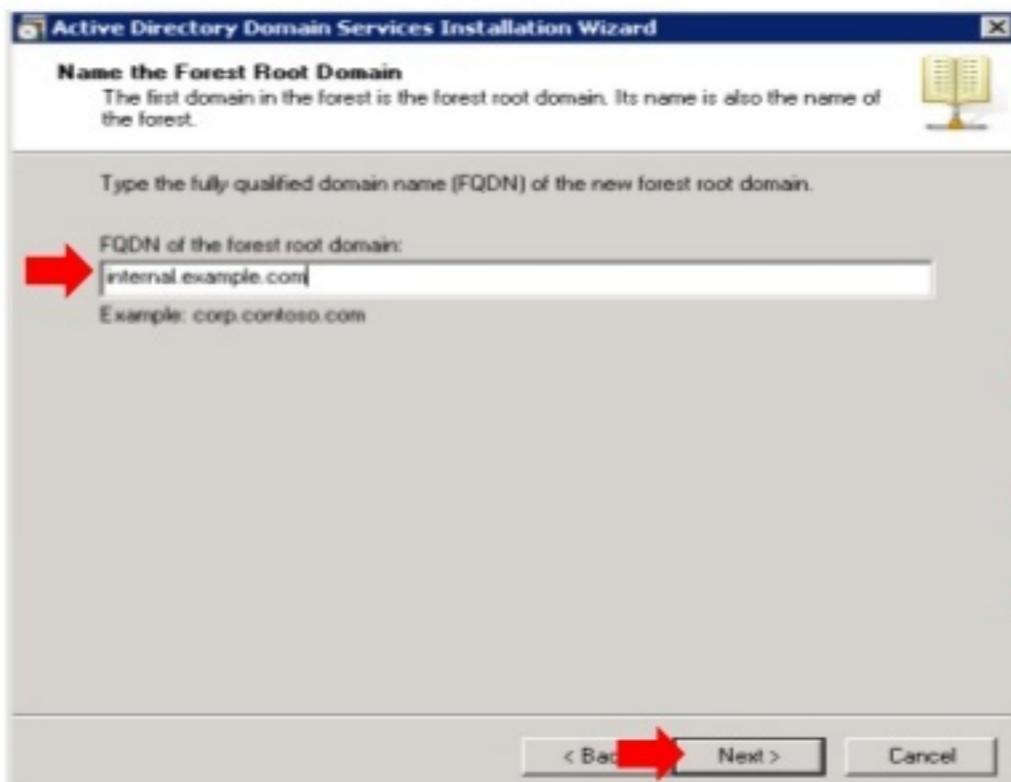
1. Click on Start>type “DCPROMO” and press Enter



2. On the Operating System Capability page, click **Next**.
3. On the Choose a Deployment Configuration page, select **Create a new domain in a new forest** and then click **Next**.



4. On the Name the Forest Root Domain page, enter the domain name that you choose during preparation steps. Then, click **Next**.  
(As an example type in: YOURNAME.COM | eric.com)



5. After the installation verifies the NetBIOS name, on the Set Forest Functional Level page, select **Windows Server 2008 R2** in the **Forest function level** list. Then, click **Next**.

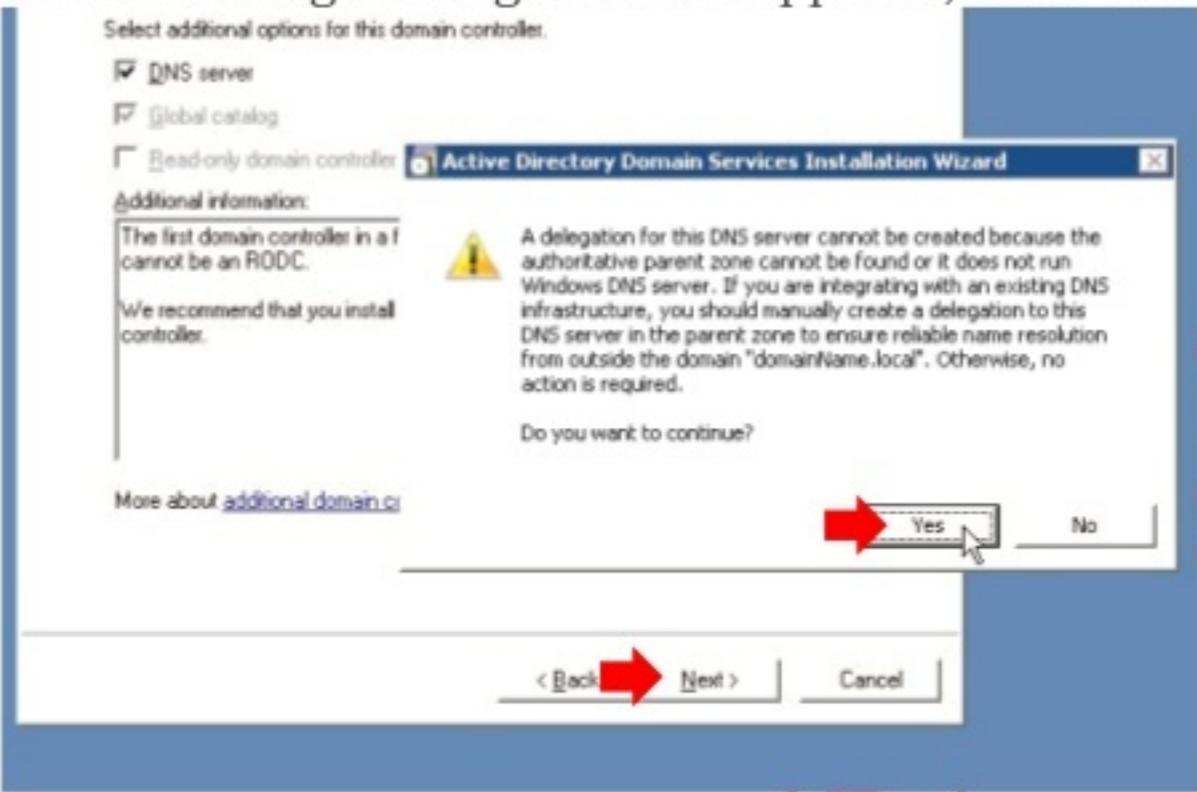


- The installation examines and verifies your DNS setting.
6. On the Additional Domain Controller Options page, ensure that the **DNS server** check box is selected, and then click **Next**.

|         |                                    |      |
|---------|------------------------------------|------|
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7. In the message dialog box that appears, click **Yes**.



8. On the Location for Database, Log Files, and SYSVOL page, accept the default values and then click **Next**.
9. On the Directory Services Restore Mode Administrator Password page, enter the domain administrator password that you chose during the preparation steps. This is not your admin password that was emailed to you during the creation of your server, although you can use that password if you want to. Then, click **Next**.



**Active Directory Domain Services Installation Wizard**

The wizard is configuring Active Directory Domain Services. This process can take from a few minutes to several hours, depending on your environment and the options that you selected.



Waiting for DNS installation to finish

**Reboot on completion**



10. If you did not select the **Reboot on completion** check box, click **Finish** in the wizard. Then, restart the server.

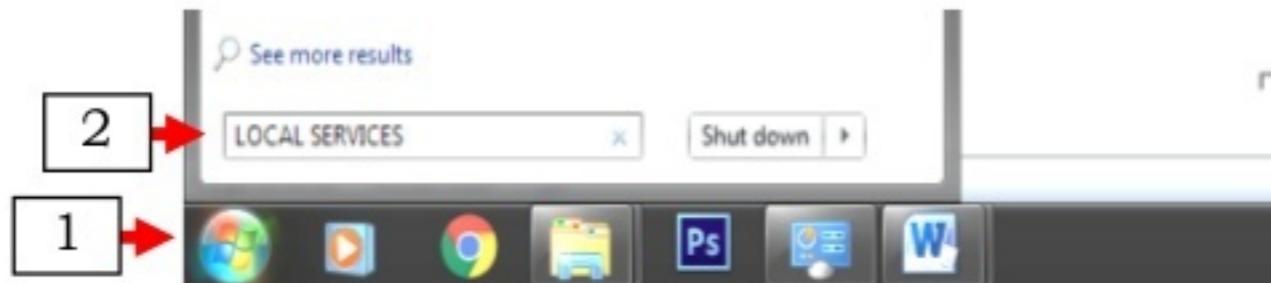


The installation of Active Directory Domain Services on your server is complete.

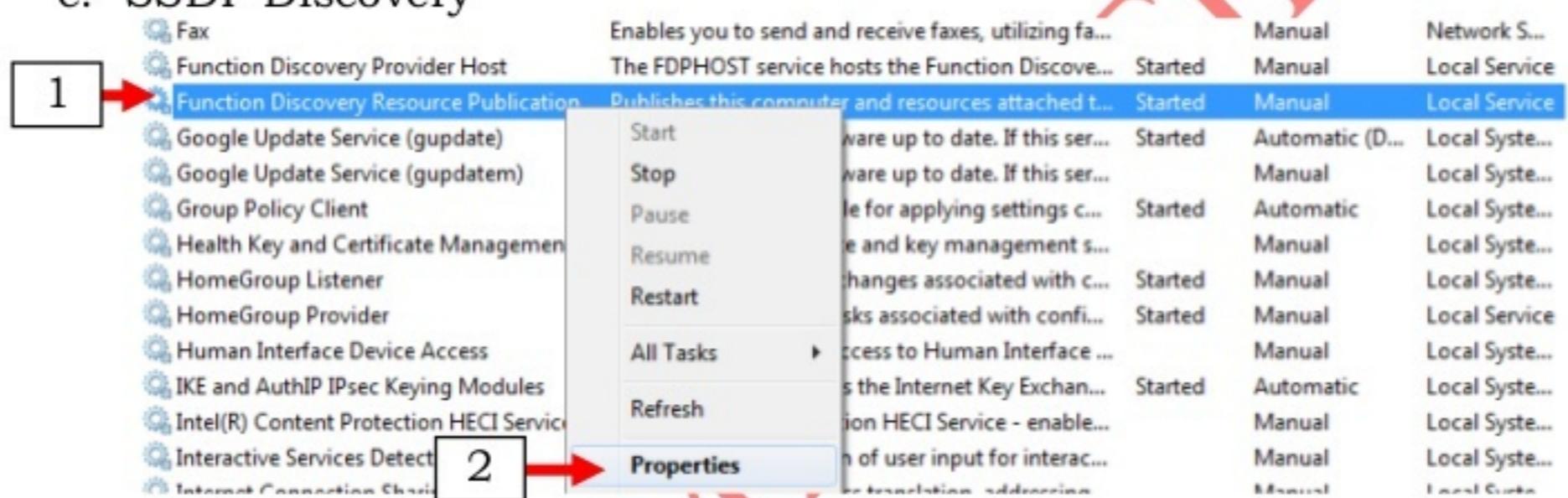
ERIC

## Run Services for PC1-Server

1. Click on Start, type “LOCAL SERVICES” and press Enter key.

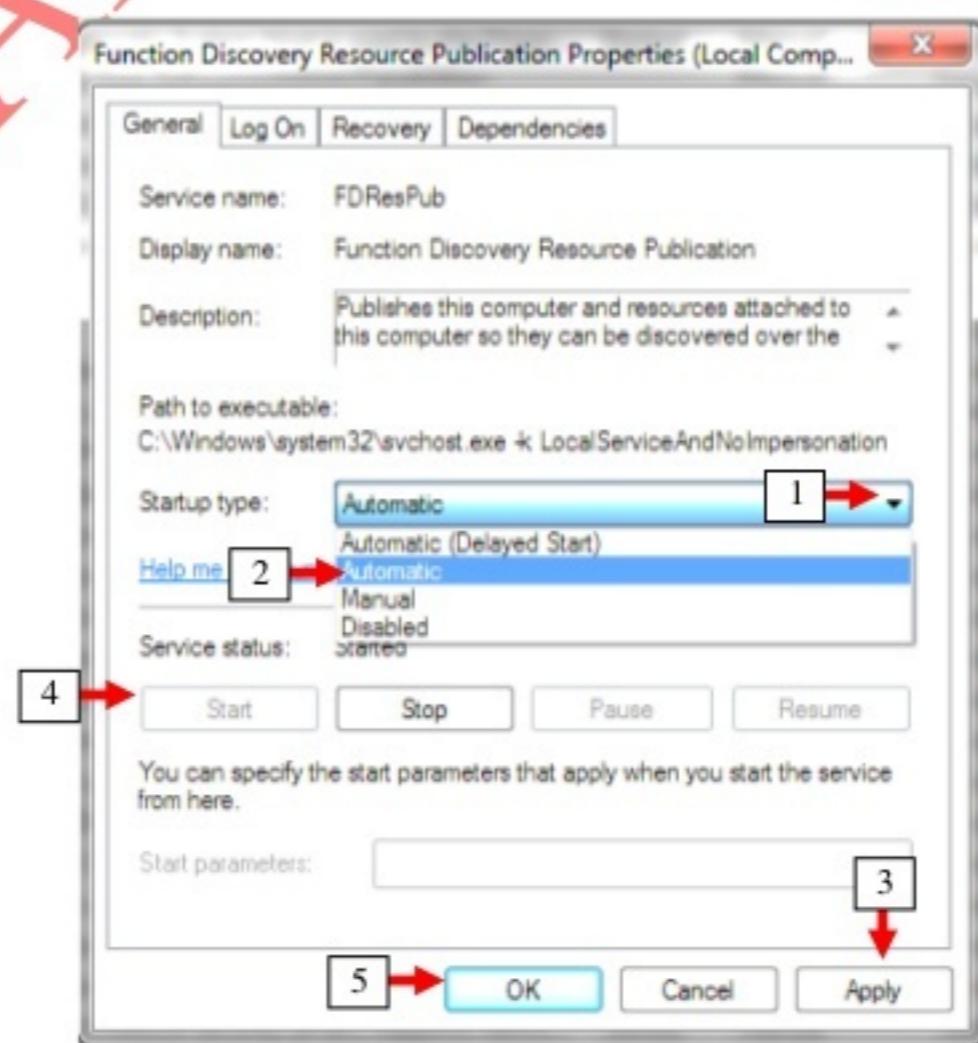


2. Maximize the window and start the following network services below:
  - a. Function Discovery Resource Publication
  - b. UPnP Device Host
  - c. SSDP Discovery



a.1 Right click on Function Discovery Resource Publication and select Properties

a.2 Select Start-up type to Automatic, click on Apply and select Start button and click Ok

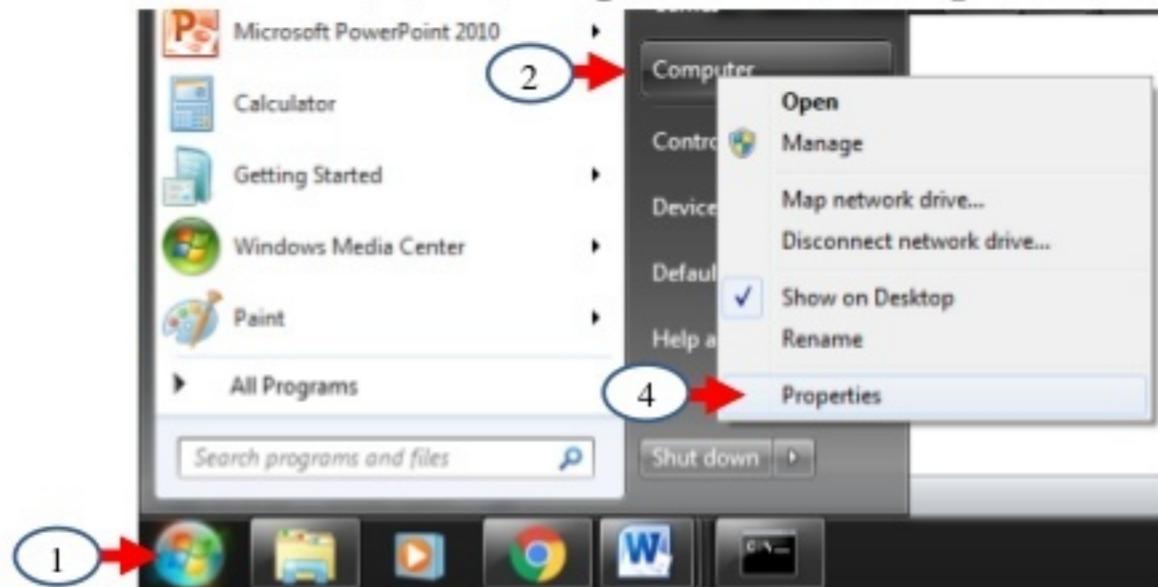


a. 3 Do the same for UPnP & SSDP

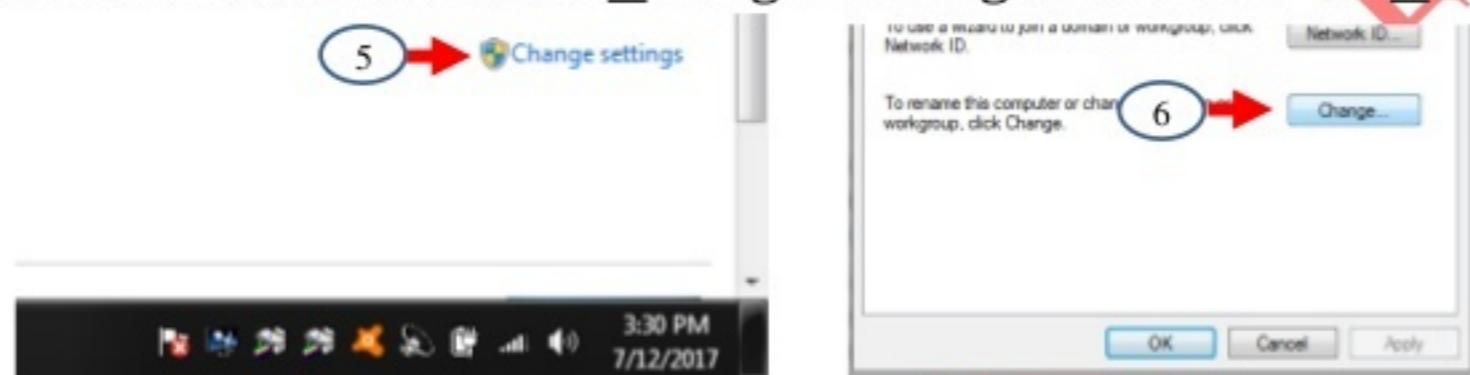
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|---------|------------------------------------|------|
| Date:   | Module: Setting-up Computer Server | Page |
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## Join PC2-Client to Domain Controller

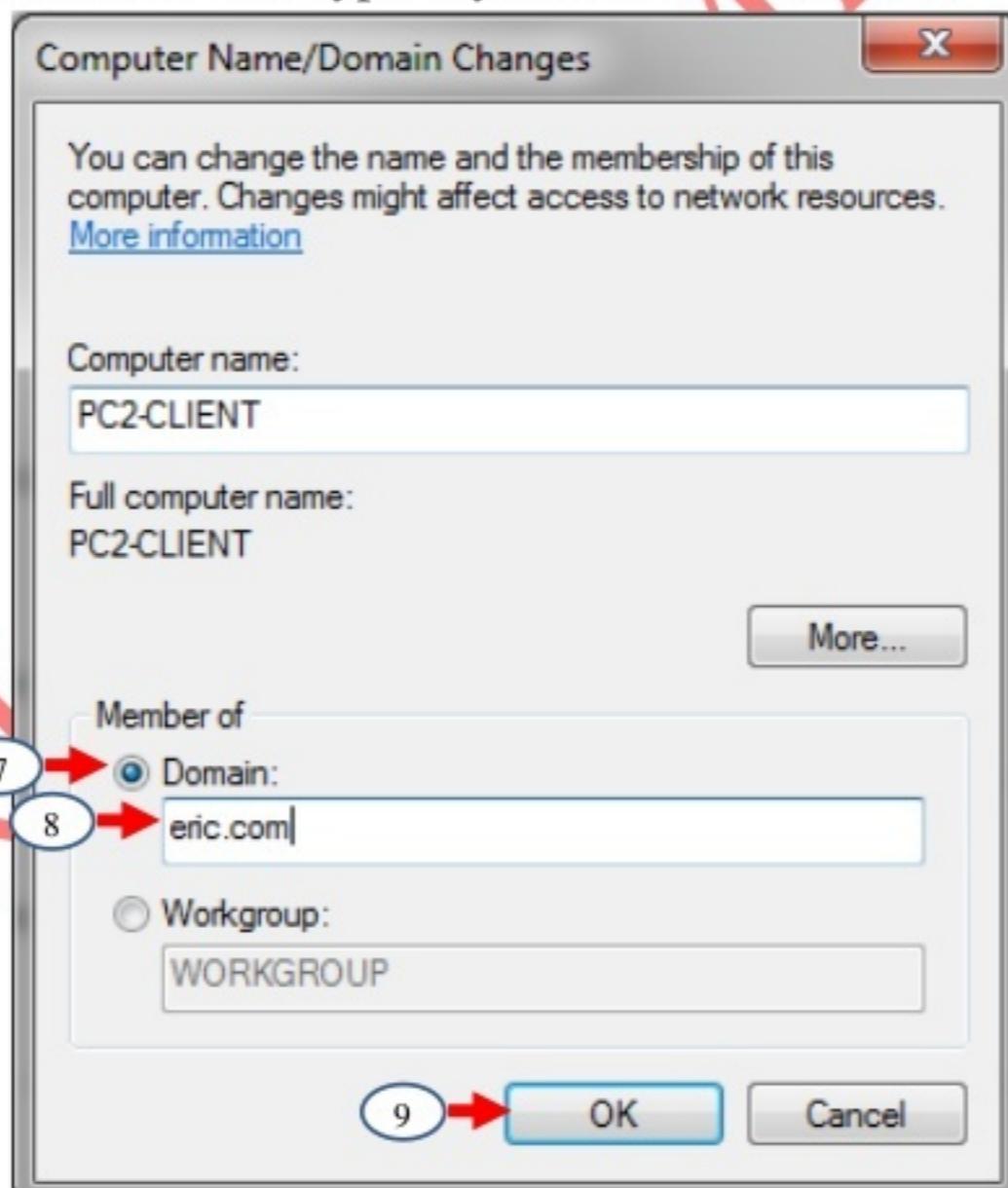
1. Click on Start, Right click Computer and select Properties.



2. Scroll down and select Change Settings and click on Change



3. Click on Domain and type in your domain controller



4. Username = administrator      Password :

5. Click on Ok and click Yes when prompted to Restart the computer

|         |                                    |      |
|---------|------------------------------------|------|
| Date:   | Module: Setting-up Computer Server | Page |
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### **SELF CHECK 2.1**

1. What are the steps you need to ensure before configuring Peer to Peer network?
  
2. Create a short outline in configuring Client/Server Network

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|         |                                    |      |
|---------|------------------------------------|------|
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| Version |                                    | 25   |

Program course : **Computer Systems Servicing NCII**

Unit of Competency : **Set-up Computer Server**  
Module : **Setting-up Computer Server**

**LO.2 Title** : **Configure network services**

Assessment Criteria:

1. Normal functions of server are checked in accordance with manufacturer's instructions
2. Required modules /add-ons are installed/updated based on NOS installation procedures
3. Network services to be configured are confirmed based on user/system requirements
4. Operation of network services are checked based on user/system requirements
5. Unplanned events or conditions are responded to in accordance with established procedures

Resources:

| <b>Equipment/Facilities</b> | <b>Tools &amp; Instruments</b> | <b>Supplies &amp; Materials</b> |
|-----------------------------|--------------------------------|---------------------------------|
| Server                      | Multi-tester                   | Connectors, RJ45                |
| Computer peripherals        | Diagnostic software            | Adaptors                        |
| Desktop computers           | Appropriate software           | Bus wires and cables            |
| Glasses                     | Assorted pliers                | Appropriate software            |
| Mask                        | Assorted screw drivers         | Computer storage media          |
| Gloves                      | Soldering gun                  |                                 |
| Anti-static wrist strap     | Allen key                      |                                 |
| USB Flash drive             |                                |                                 |

References:

1. McLaughlin, Robert, Sasser,Susan, Ralston,Mary.Fix Your Own PC.Philippine Graphic Arts, Inc Tandang Sora St.Caloocan City
2. Meralco Faoundation. Microcomputer Servicing Plus. Pasig City, Philippines.
3. Legaspi, Carlos, Caiña, Mark Anthony. Operate A Personal Computer. Dasmariñas Computer Learning Center.Dasmariñas,Cavite, Philippines
4. Bigelow, Stephen J. PC Technician's Troubleshooting ,McGaw Hill
5. [www.helpwithpcs.com](http://www.helpwithpcs.com)
6. <http://en.wikipedia.org>
7. [www.techsoup.org](http://www.techsoup.org)
8. [www.howstuffworks.com](http://www.howstuffworks.com)
9. [www.microsoft.com/technet/network](http://www.microsoft.com/technet/network)

## Information Sheet 2.1

### CONFIGURE NETWORK SERVICES

#### Managing Domain User Accounts

The next part is dedicated to helping you plan, manage, and administer user accounts in a secure and efficient manner. Microsoft Windows operating systems have come a long way since the early days of Windows Server and you have many options for managing users in Windows Server.

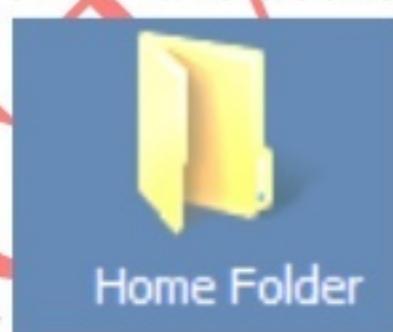
#### Types of Users

It is a good idea to have a solid grasp of fundamental concepts that underpin the managing of users. In the first part of the tutorial, describe the types of users Microsoft Windows Server defines.

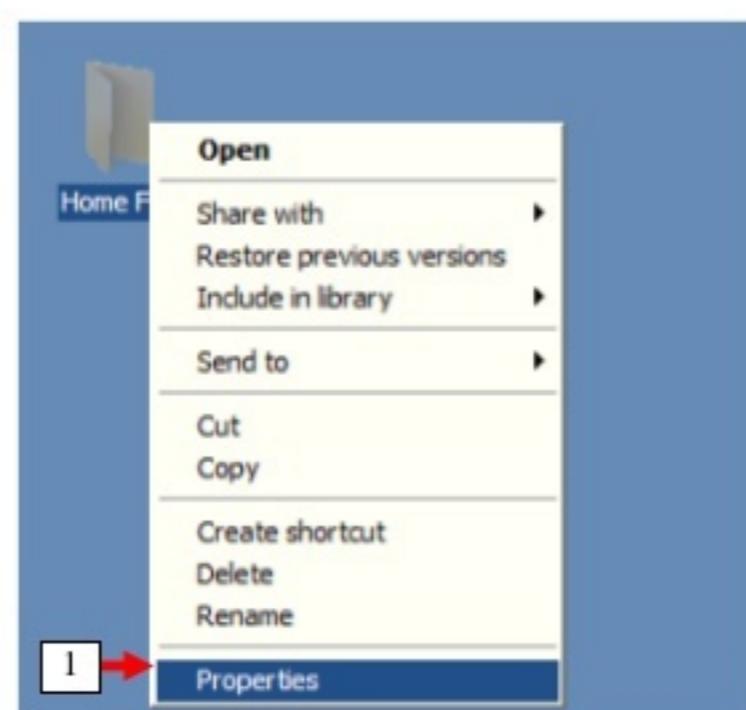
User: In Windows Server 2008, you can have local user accounts or domain user accounts. On a domain controller, local users and groups are disabled. In Active Directory, the domain user account contains user name, password, the groups of which the user is a member, and other descriptive information, such as address and phone numbers, as well as many other user descriptions and attributes, such as security and remote control configurations.

#### Creating a new domain User and Set-up Home Folder

3. Create a folder on the desktop (Home Folder)



4. Right click Folder and select Properties



5. Select Sharing and click on Advance Sharing

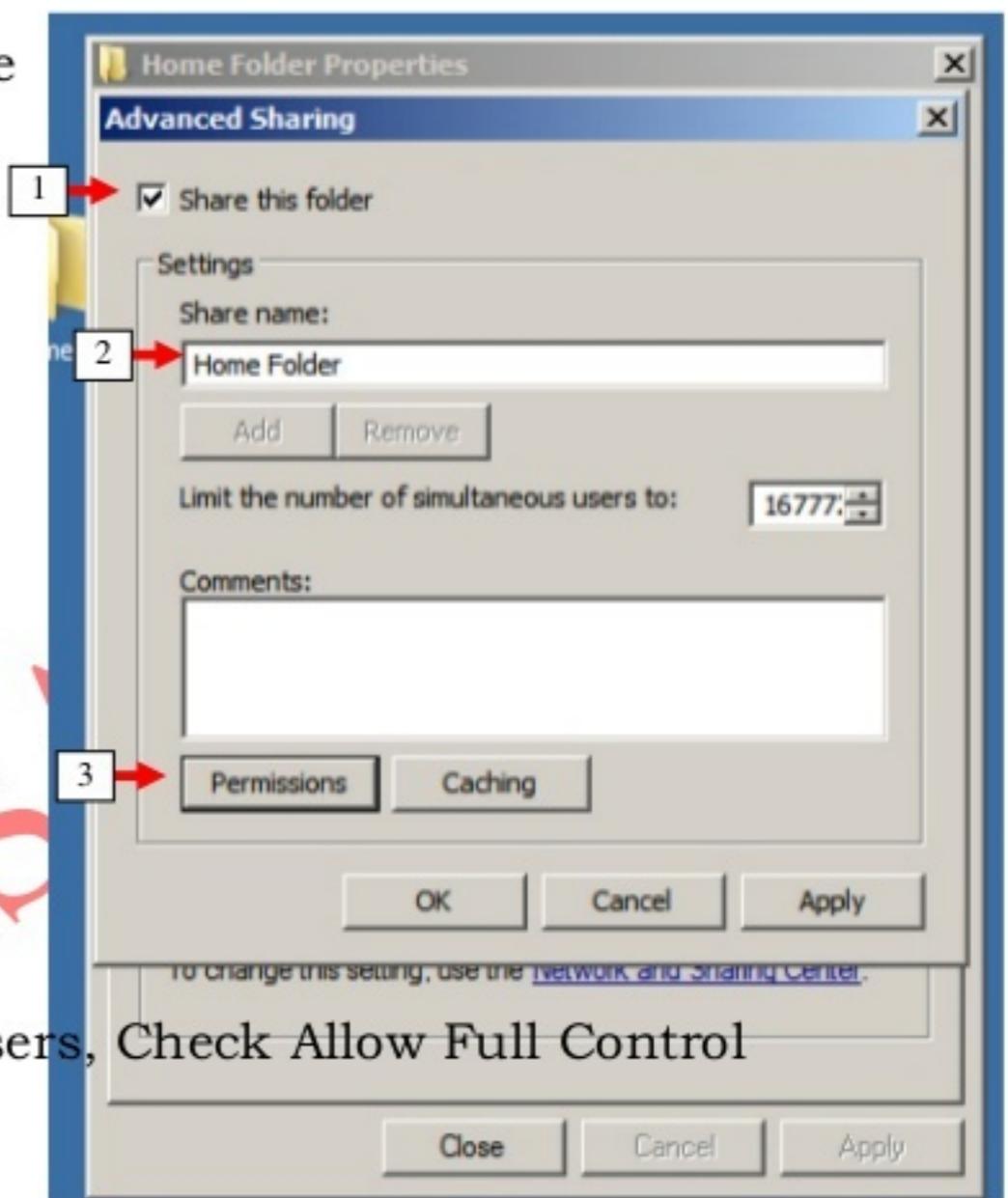
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| Date:   |
| Version |

Module: Setting-up Computer Server

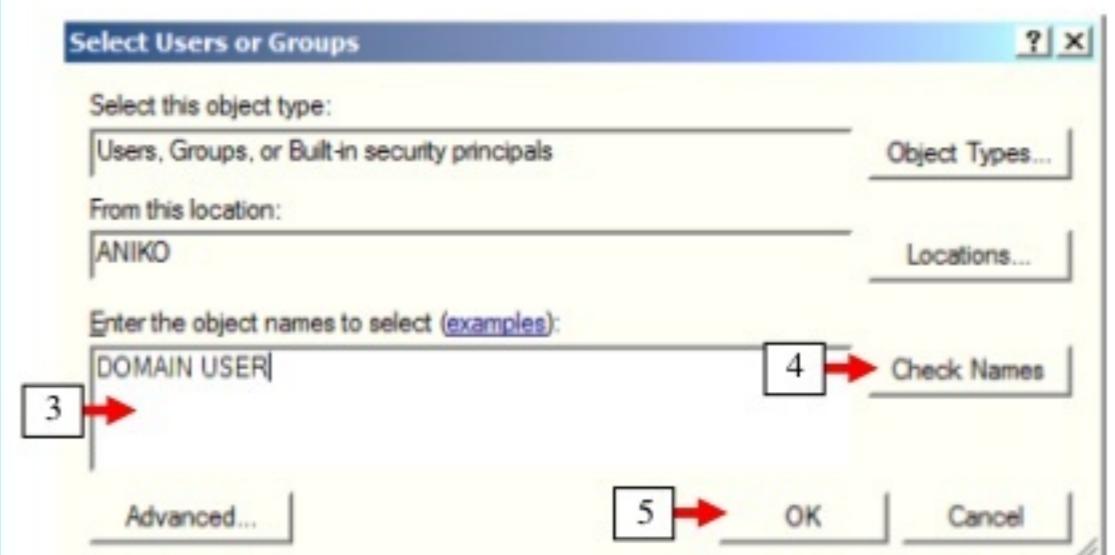
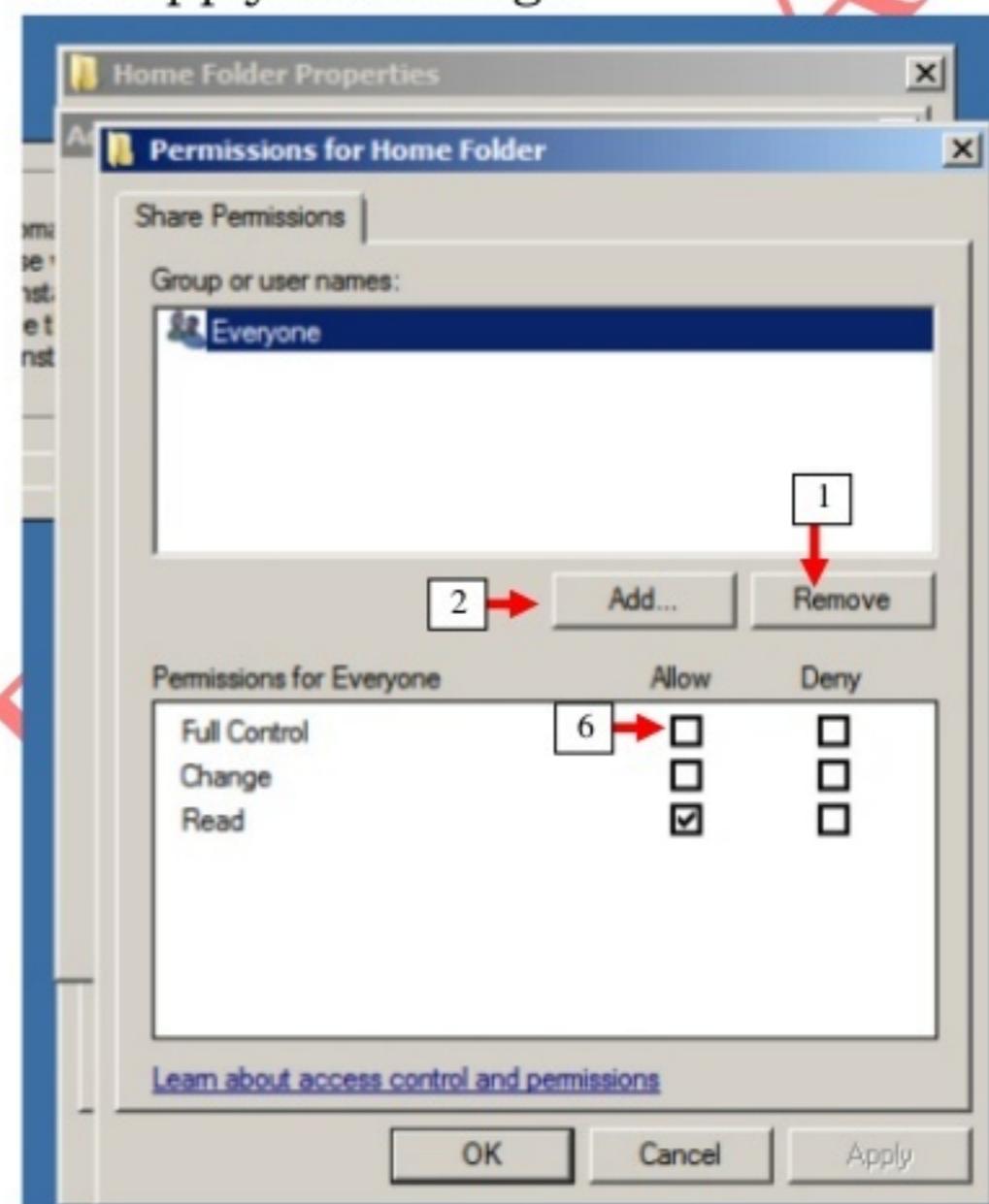


6. Check Share this folder rename share name to Home\_Folder\$(No space and hide root directory).

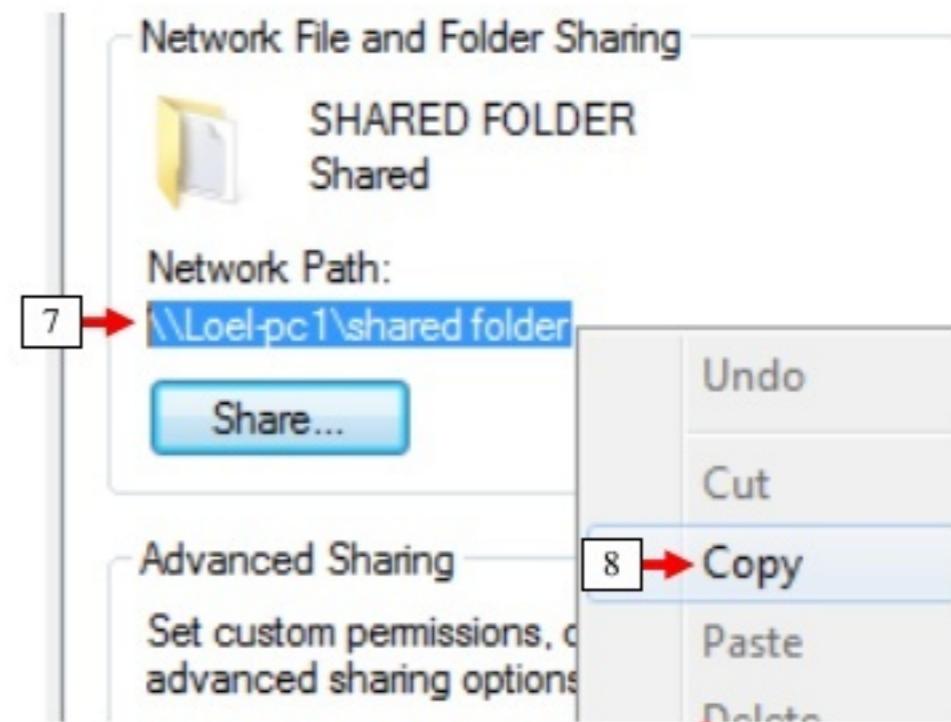
Click on Permissions



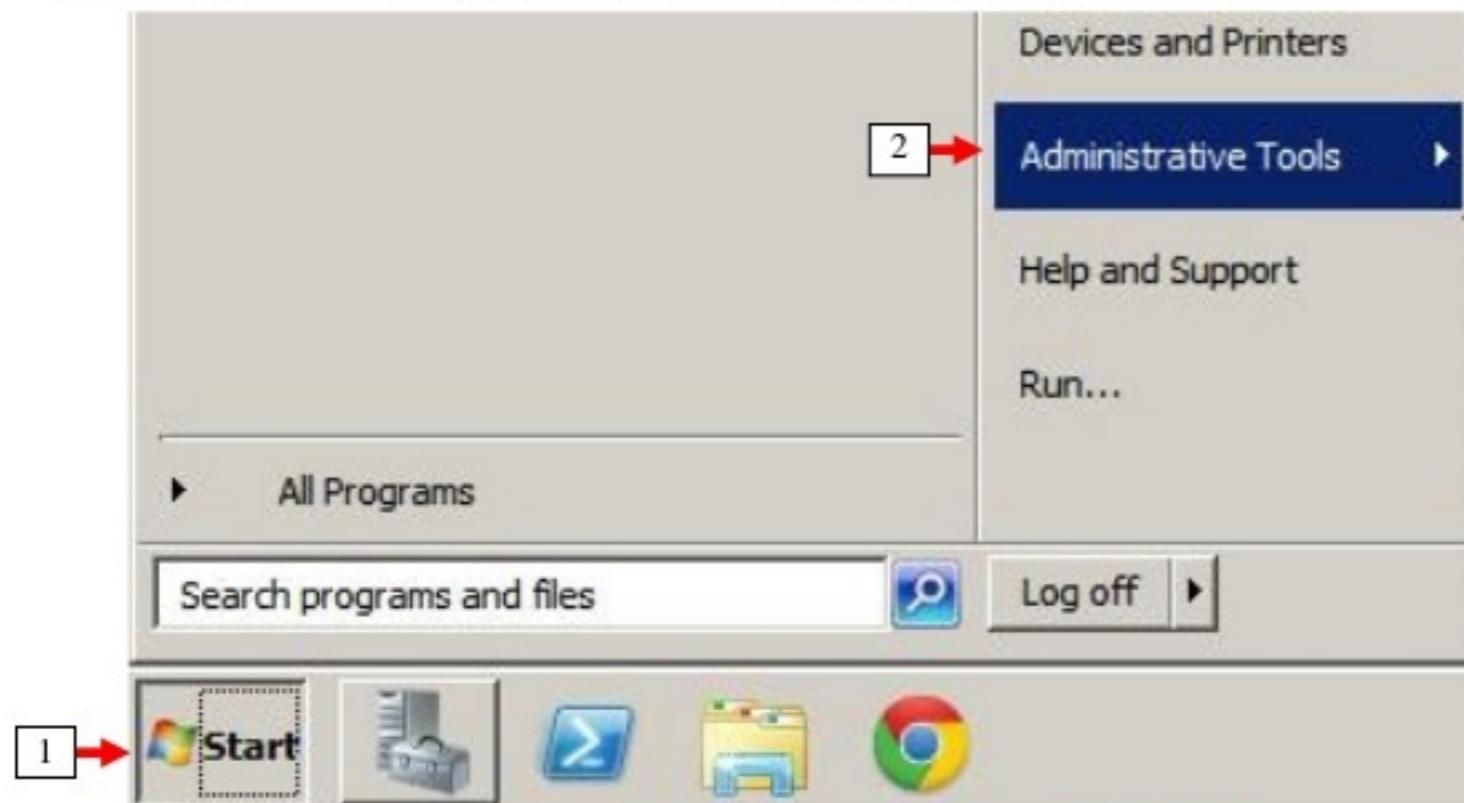
7. Remove Everyone User and Add Domain Users, Check Allow Full Control and apply all settings.



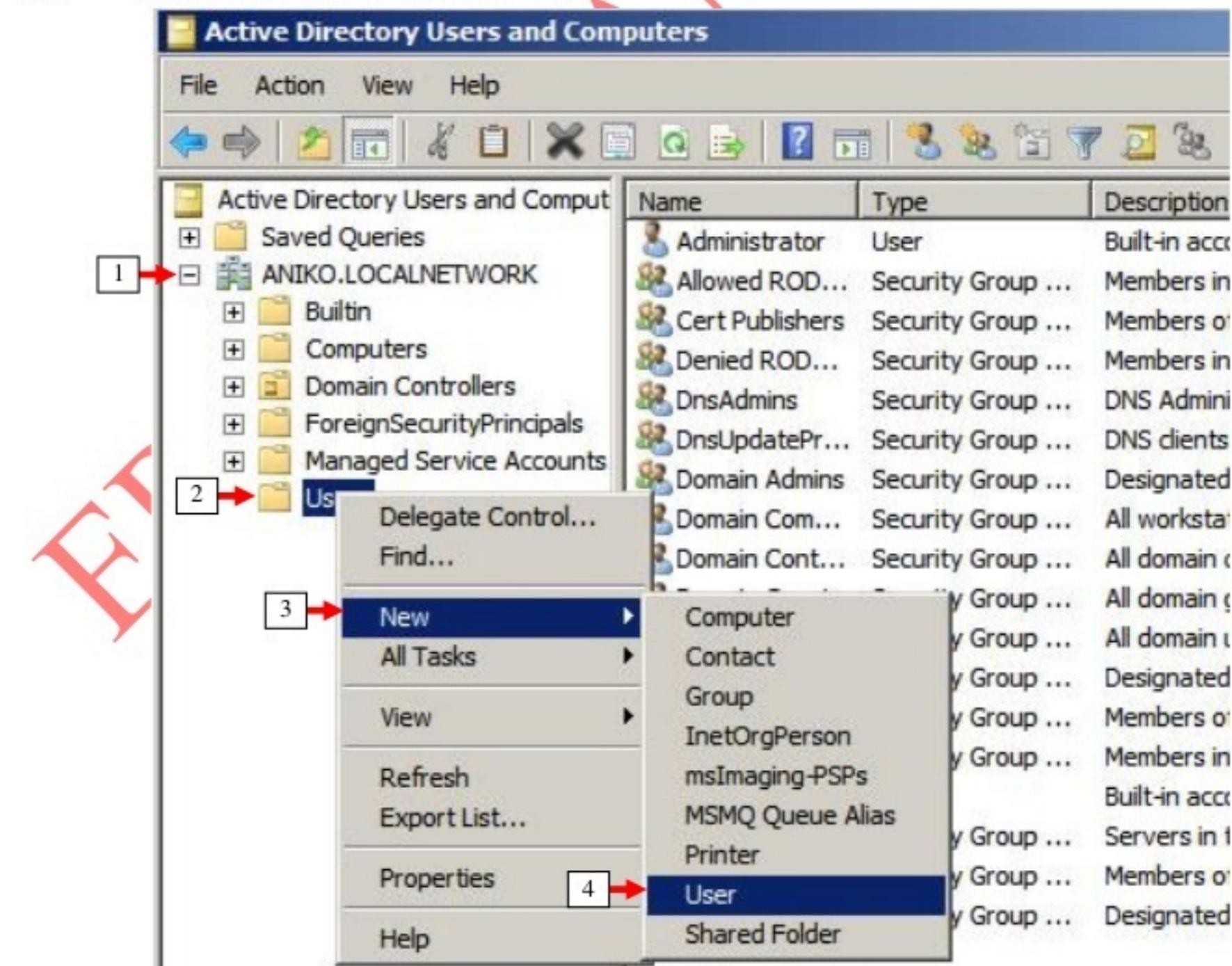
8. Highlight & Copy folder's Network Path



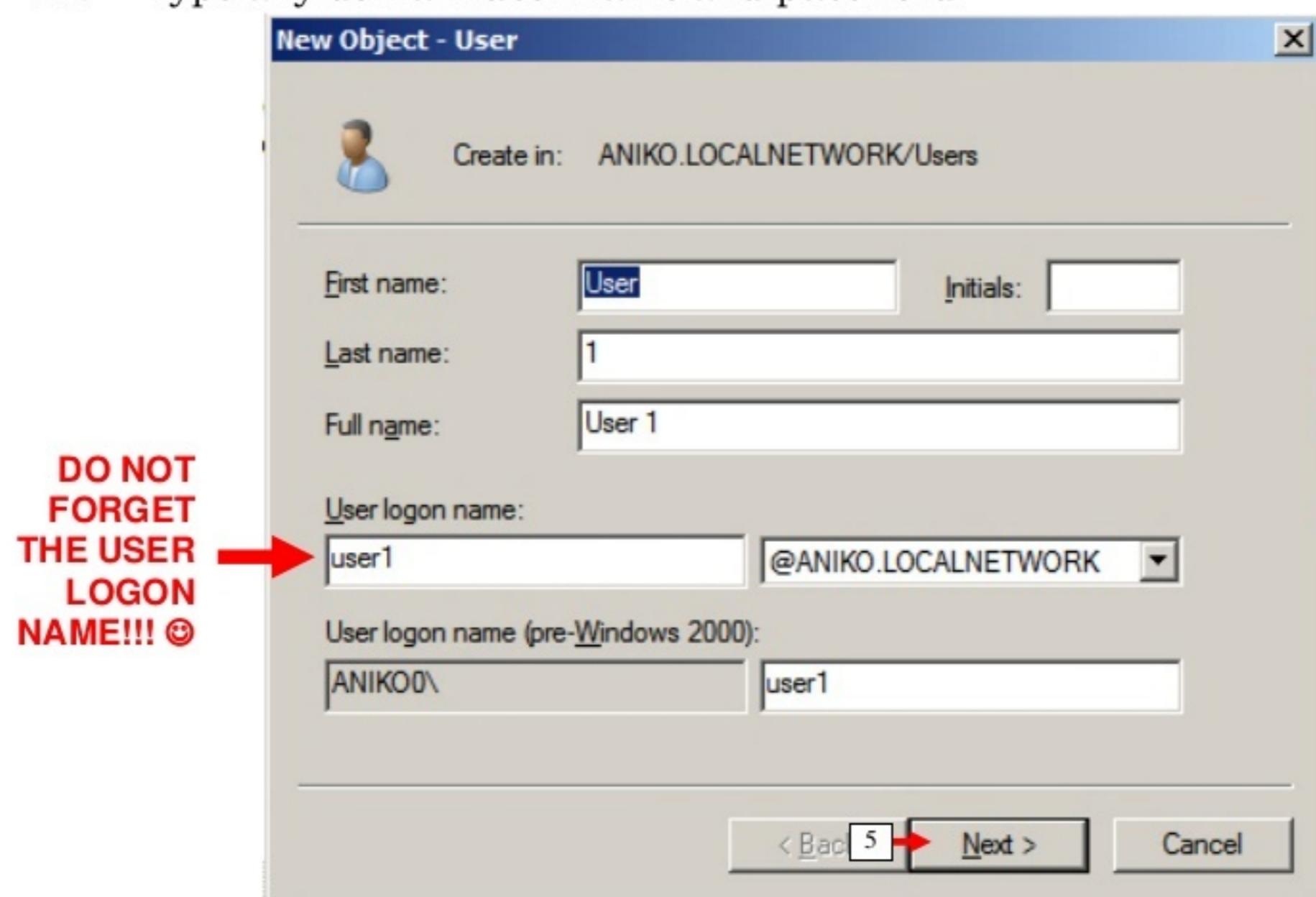
9. Click on Start>Administrative Tools



10. Create a new Domain User



11. Type any domain user name and password



13. Uncheck user must change password at next logon

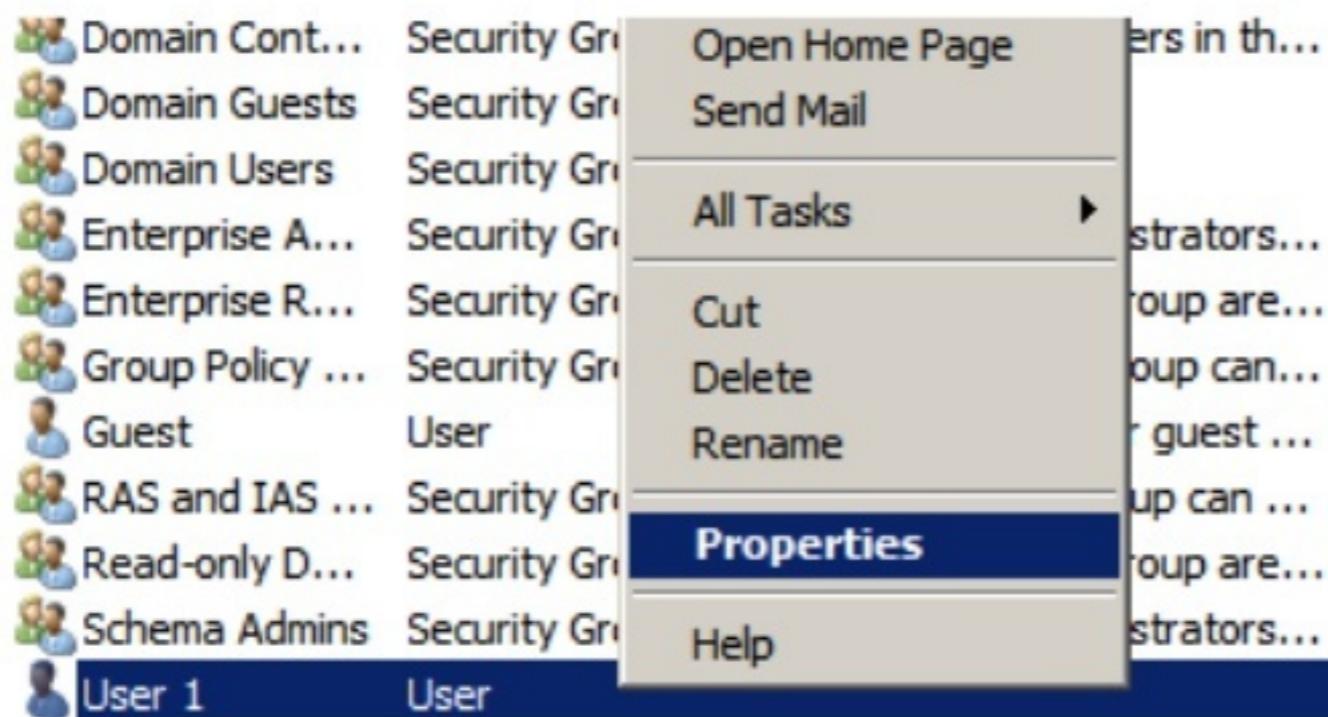


14. Click on Finish

|         |                                    |      |
|---------|------------------------------------|------|
| Date:   | Module: Setting-up Computer Server | Page |
| Version |                                    | 30   |

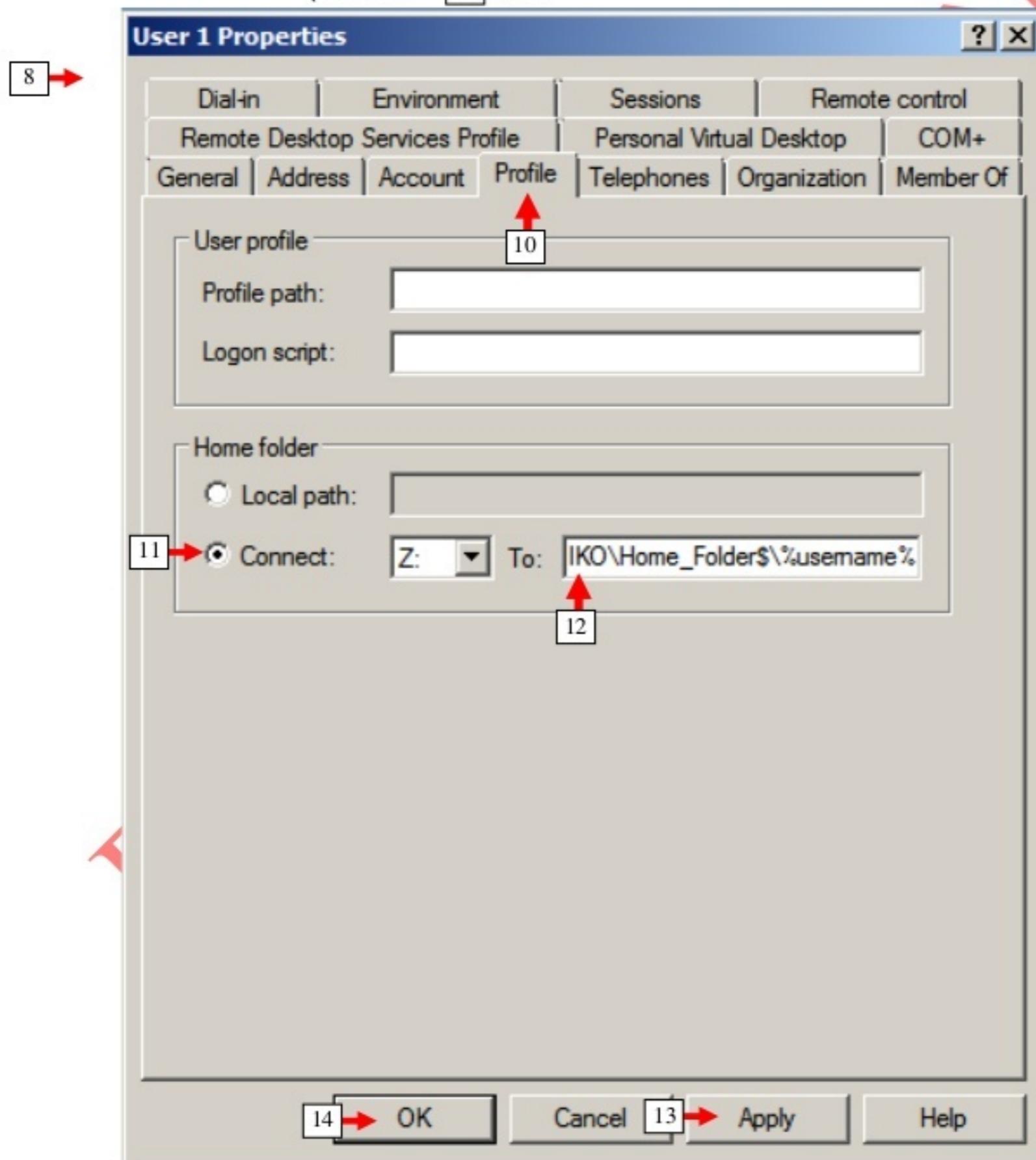
## **Connecting to Home Folder**

15. Right click on your Domain User and select Properties



16. Select Profile > Connect Any Drive Letter > Paste Home Folder's Network Path

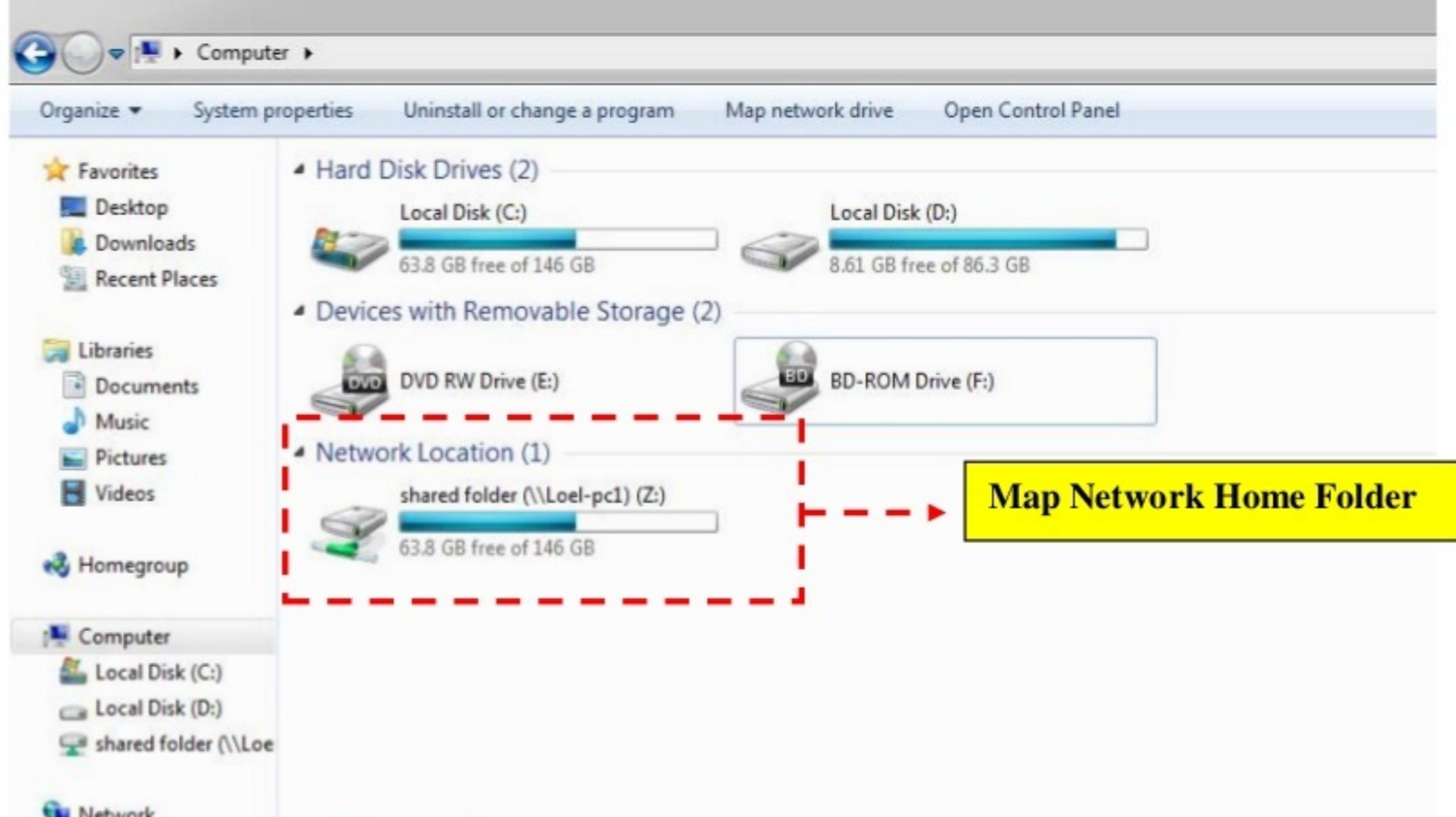
TYPE \%username%



17. Finally click on Apply and Ok

## Log on PC2-Client to your Domain

1. Restart the computer
2. Log on to your newly created domain user
3. Press Ctrl+alt+Del to login
4. Enter the domain user you have just created.
5. You should be able to see the Home Folder (Map Network Drive) as shown in the picture below



Program course : **Computer Systems Servicing NCII**  
Unit of Competency : **Set-up Computer Server**  
Module : **Setting-up Computer Server**

**LO.3 Title** : Perform testing, documentation and pre-deployment procedures

Assessment Criteria:

1. Pre-deployment procedures is undertaken based on enterprise policies and procedures
2. Operation and security check are undertaken based on end-user requirements
3. Reports are prepared/completed according to enterprise policies and procedures.

Resources:

| <b>Equipment/Facilities</b> | <b>Tools &amp; Instruments</b> | <b>Supplies &amp; Materials</b> |
|-----------------------------|--------------------------------|---------------------------------|
| Server                      | Multi-tester                   | Connectors, RJ45                |
| Computer peripherals        | Diagnostic software            | Adaptors                        |
| Desktop computers           | Appropriate software           | Bus wires and cables            |
| Glasses                     | Assorted pliers                | Appropriate software            |
| Mask                        | Assorted screw drivers         | Computer storage media          |
| Gloves                      | Soldering gun                  |                                 |
| Anti-static wrist strap     | Allen key                      |                                 |
| USB Flash drive             |                                |                                 |

References:

1. McLaughlin, Robert, Sasser,Susan, Ralston,Mary.Fix Your Own PC.Philippine Graphic Arts, Inc Tandang Sora St.Caloocan City
2. Meralco Foundation. Microcomputer Servicing Plus. Pasig City, Philippines.
3. Legaspi, Carlos, Caiña, Mark Anthony. Operate A Personal Computer. Dasmariñas Computer Learning Center.Dasmariñas,Cavite, Philippines
4. Bigelow, Stephen J. PC Technician's Troubleshooting ,McGraw Hill
5. [www.helpwithpcs.com](http://www.helpwithpcs.com)
6. <http://en.wikipedia.org>
3. [www.techsoup.org](http://www.techsoup.org)
8. [www.howstuffworks.com](http://www.howstuffworks.com)
9. [www.microsoft.com/technet/network](http://www.microsoft.com/technet/network)

## INFORMATION SHEET 3.1

### Network Testing Tools

#### What is network testing?

Network testing is a process that is used to quantitatively or qualitatively measure the performance of an IT infrastructure. It is a primitive level of fault identification that does not require tons of historical data.

#### What are network testing tools?

Network testing tools are a collection of tools that aid in measuring the performance of various aspects of a network. These tools range from ping, SNMP ping, traceroute to WMI query tool and more. Network testing tools help network admins make quick and informed decisions.

#### Why are network testing tools important?

The elemental purpose of a network is to share resources efficiently. It is crucial to establish periodic network testing with reliable network testing tools to:

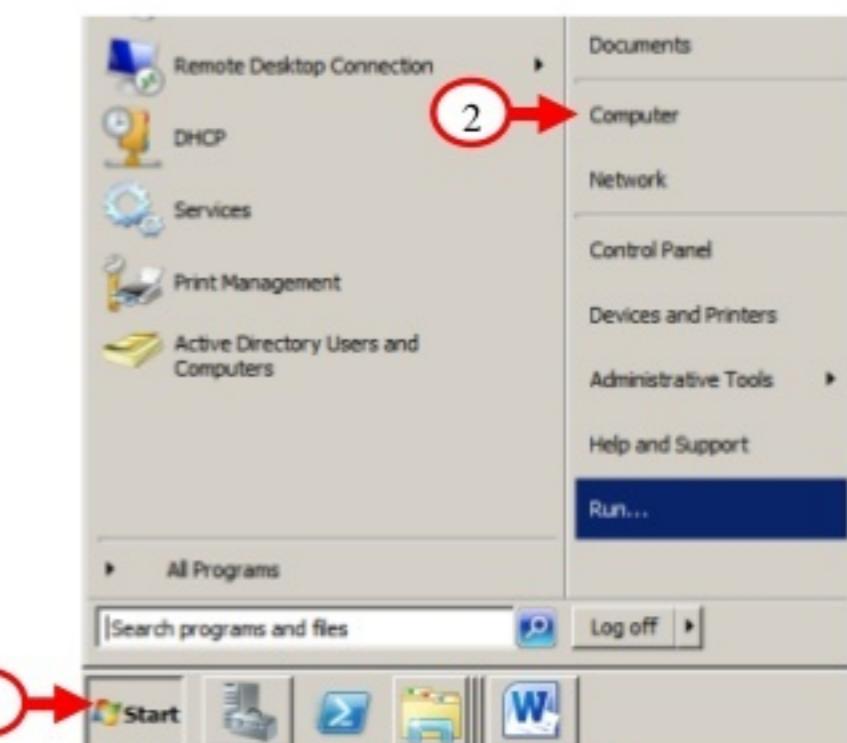
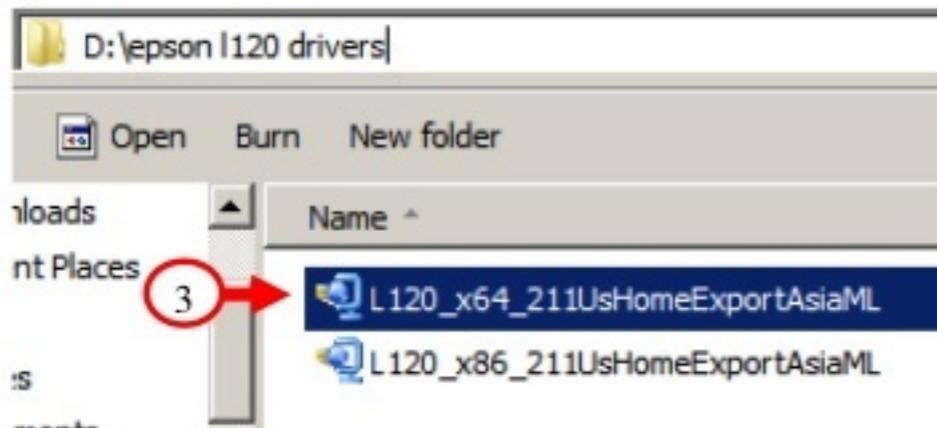
1. Understand the network's state
2. Ensure the configuration changes work as expected
3. Detect crippling network attacks
4. Provide a top-notch end-user experience

## INSTALLING AND DEPLOYING PRINTER

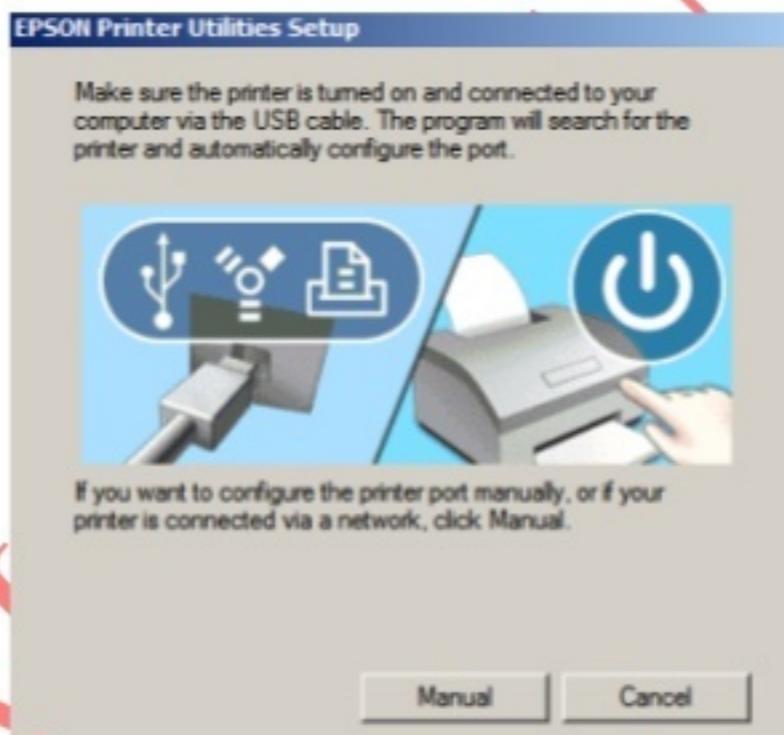
### ❖ Install Local Printer (PC1-SERVER)

#### 1. Locate and install Printer Driver

- Click on Start>Computer>Do Not Delete D:>Epson L120>Epson x64 (64bit)



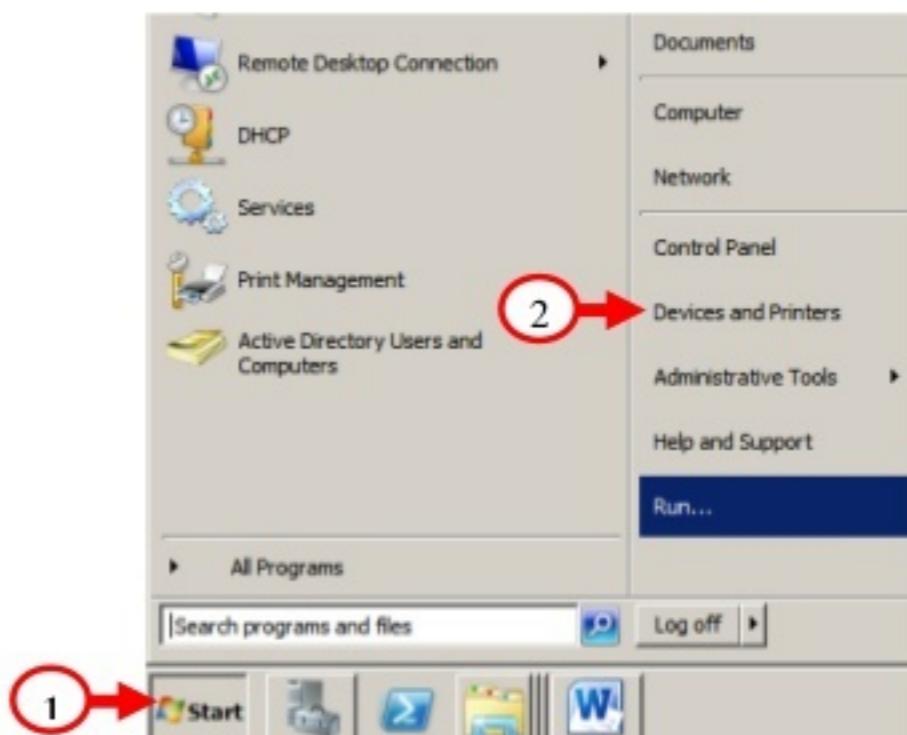
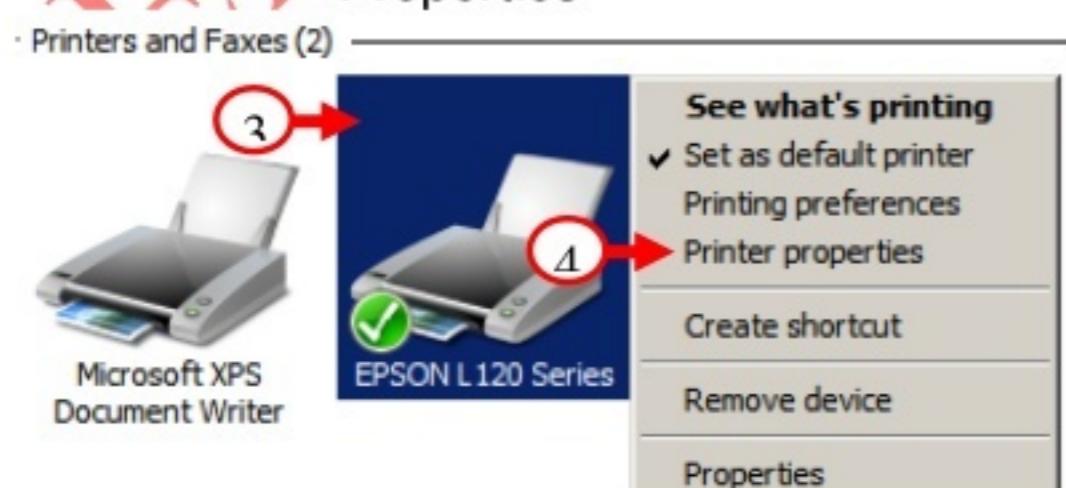
- Simply follow the on-screen instruction on how to install the printer
- At this point you must turn-on the printer



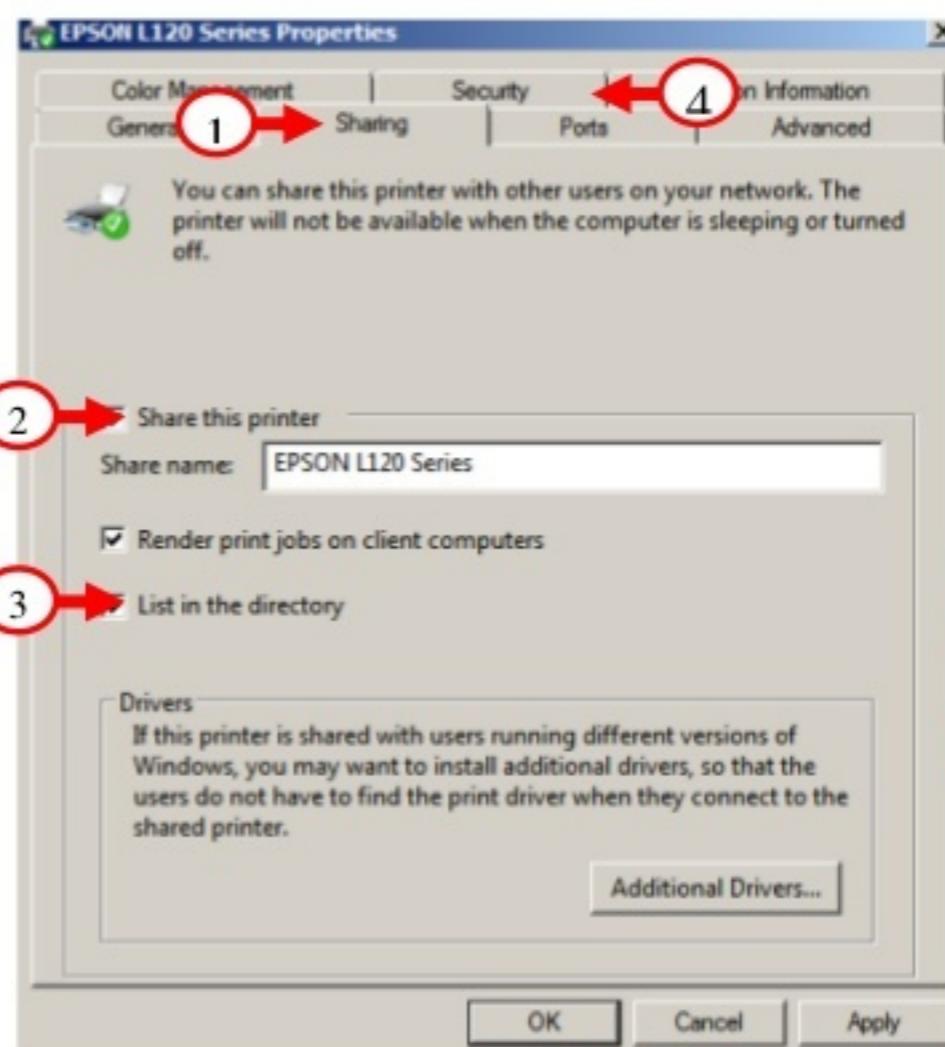
### ❖ Share Local Printer (PC1-SERVER)

- Click on Start>Devices & Printers

- Right click on Epson>Printer Properties

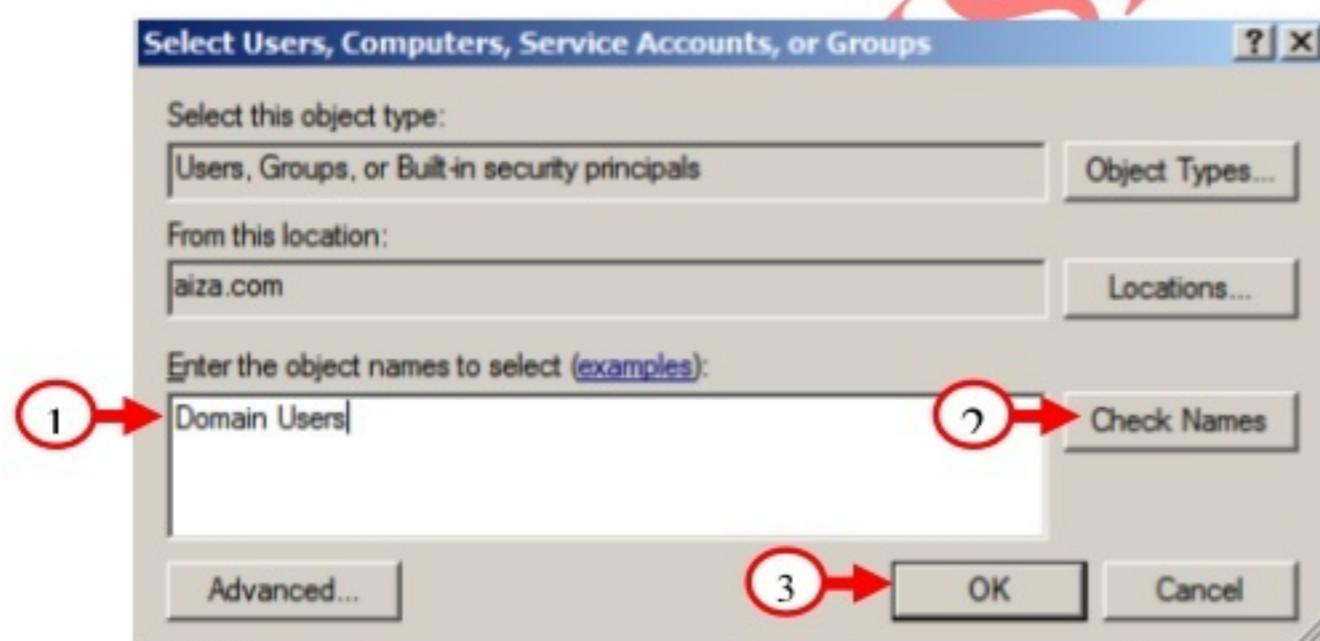


- c. Click on Sharing>Check Share this Printer and List in the Directory  
 Click on Security



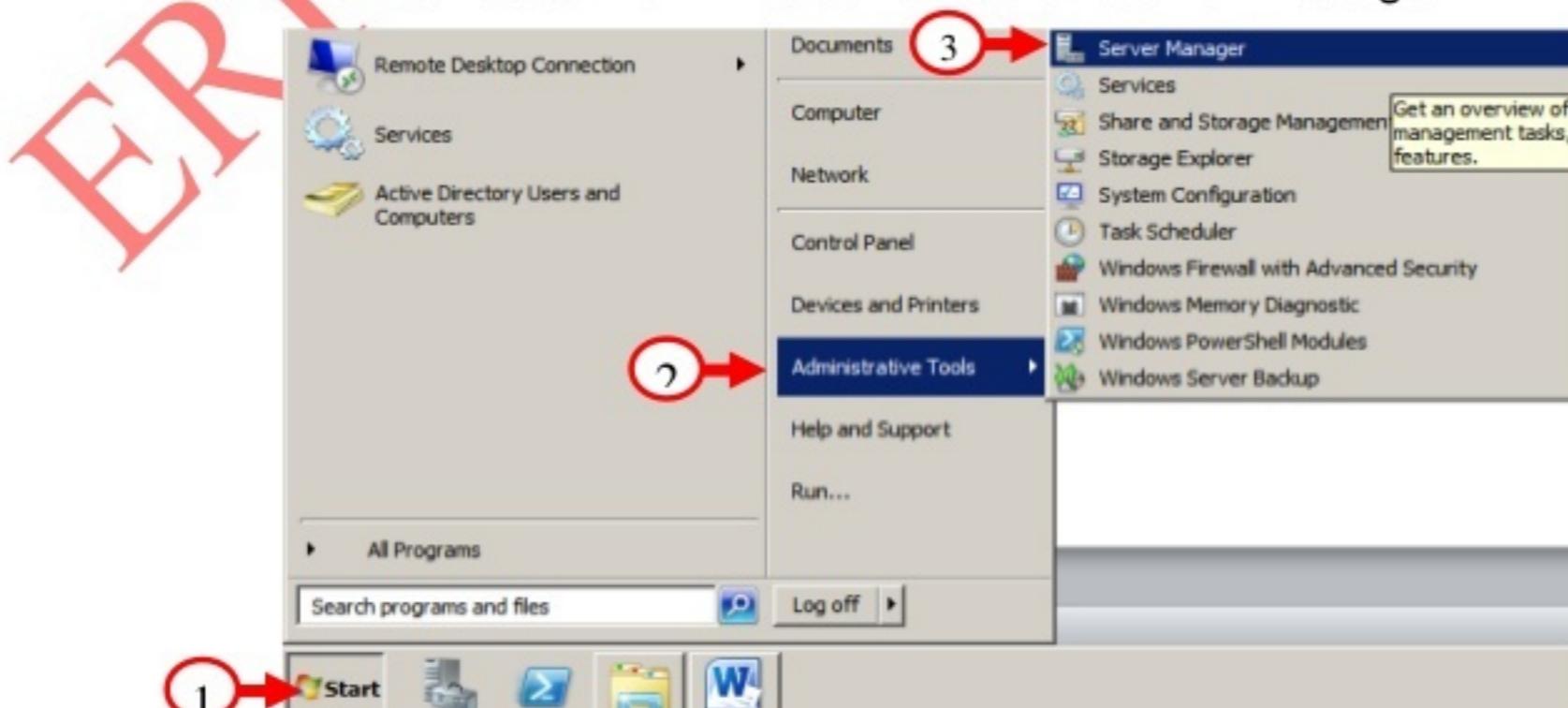
FILES

- d. Click on Add user and type Domain Users. Add your domain user also.



❖ Add New Roles (DHCP Server and Print & Document Services)-**PC1-SERVER**

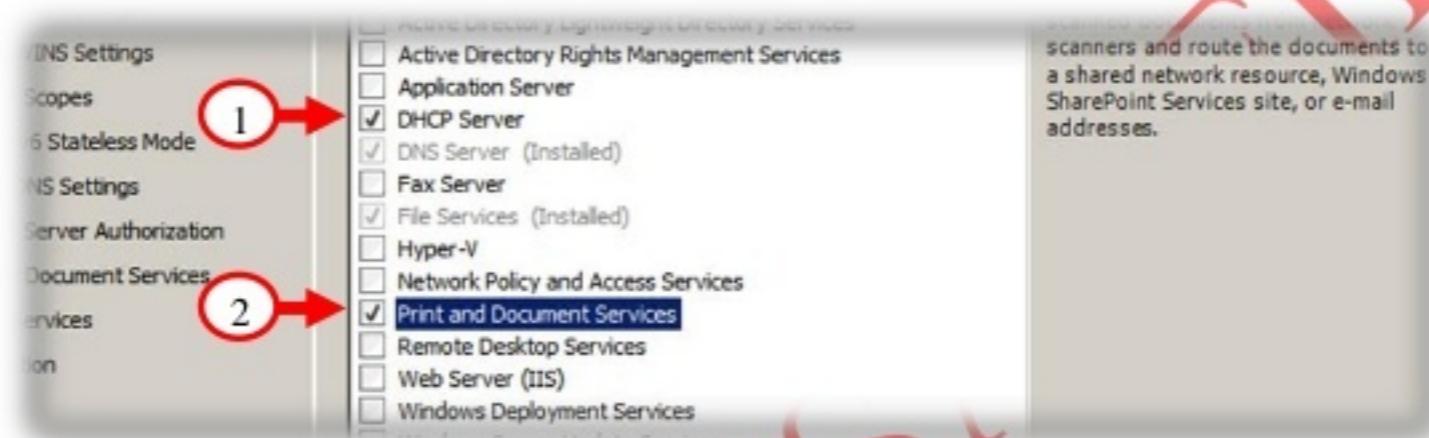
- a. Click on Start>Administrative Tools>Server Manager



b. Right click on Roles and select Add Roles



c. Click on Next and Check DHCP Server and Print & Document Services and click Next



d. Click on Next several times at least 4 times

e. Click on Add to add new scopes (Follow the example data below)

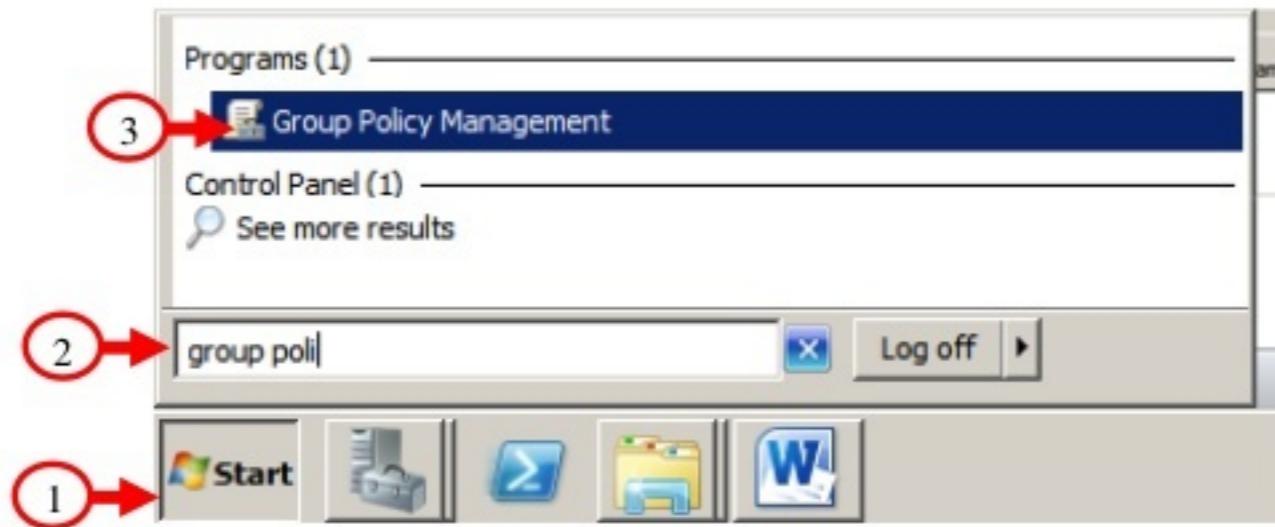
A screenshot of the 'Add or Edit DHCP Scopes' dialog box. On the left, there's a sidebar with options: Begin, Connection Bindings, Settings, Settings, Scopes (highlighted with a blue bar), Stateless Mode, Settings, Server Authorization, Document Services, and Services. In the main area, there's a sub-dialog titled 'Add Scope'. It contains fields for 'Scope name' (Montfort), 'Starting IP address' (192.168.0.100), 'Ending IP address' (192.168.0.200), 'Subnet type' (Wired (lease duration will be 8 days)), and a checked checkbox 'Activate this scope'. Below this is another sub-dialog titled 'Configuration settings that propagate to DHCP client' with fields for 'Subnet mask' (255.255.255.0) and 'Default gateway (optional)'. On the right, there's a list of existing scopes: 'Montfort' (highlighted with a red circle and arrow). There are buttons for 'Add...', 'Edit...', and 'Delete'. At the bottom, there are 'OK' and 'Cancel' buttons. Red numbers 1, 2, and 3 are overlaid on the screen to indicate steps: 1 points to the 'Add...' button, 2 points to the 'Scope name' field, and 3 points to the 'OK' button.

f. Click on Next again for several times and click on Install

|         |                                    |      |
|---------|------------------------------------|------|
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## Adding new Policy

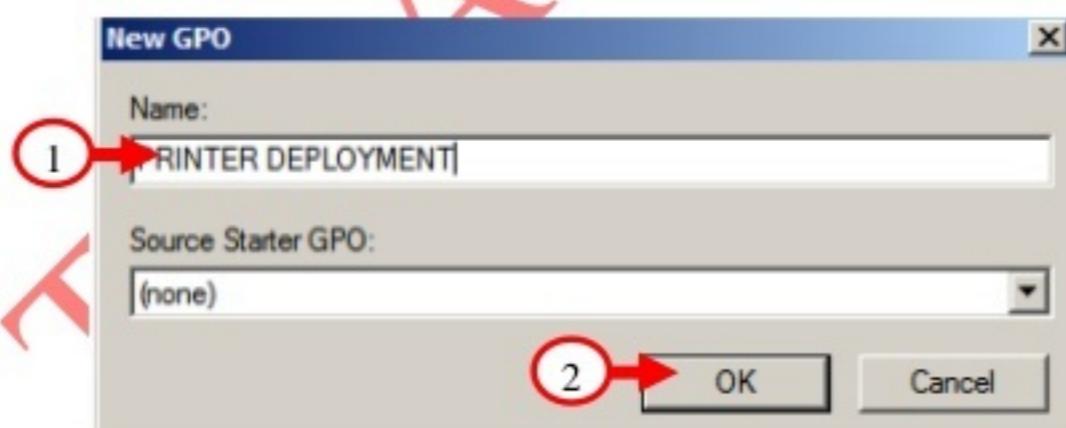
- Click on Start and search and open <group policy management>



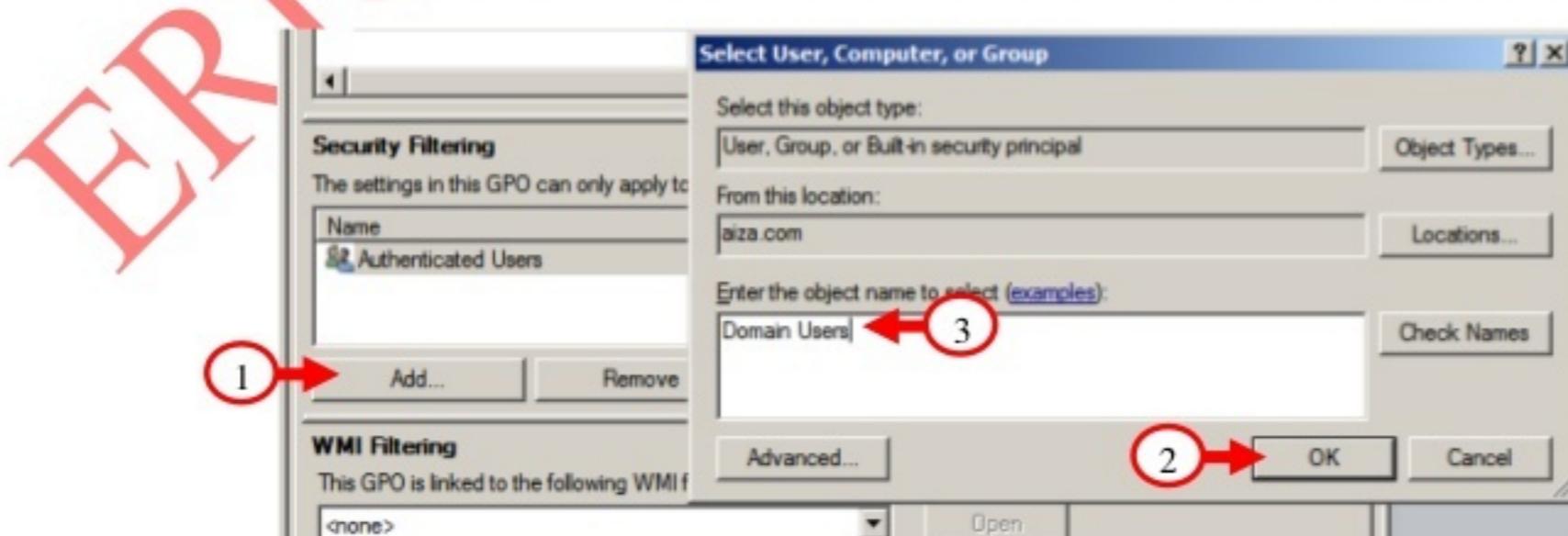
- Click on Domains>select your domain>Right click and select Create a GPO in this domain...



- Type the name "Printer Deployment" and click on Ok

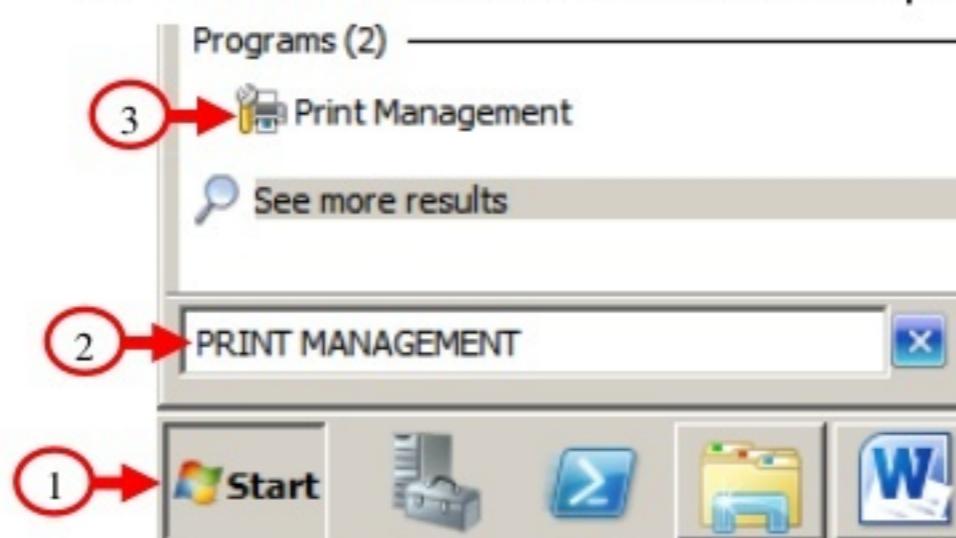


- Select the Printer Deployment Policy and click on Add. Add domain users.

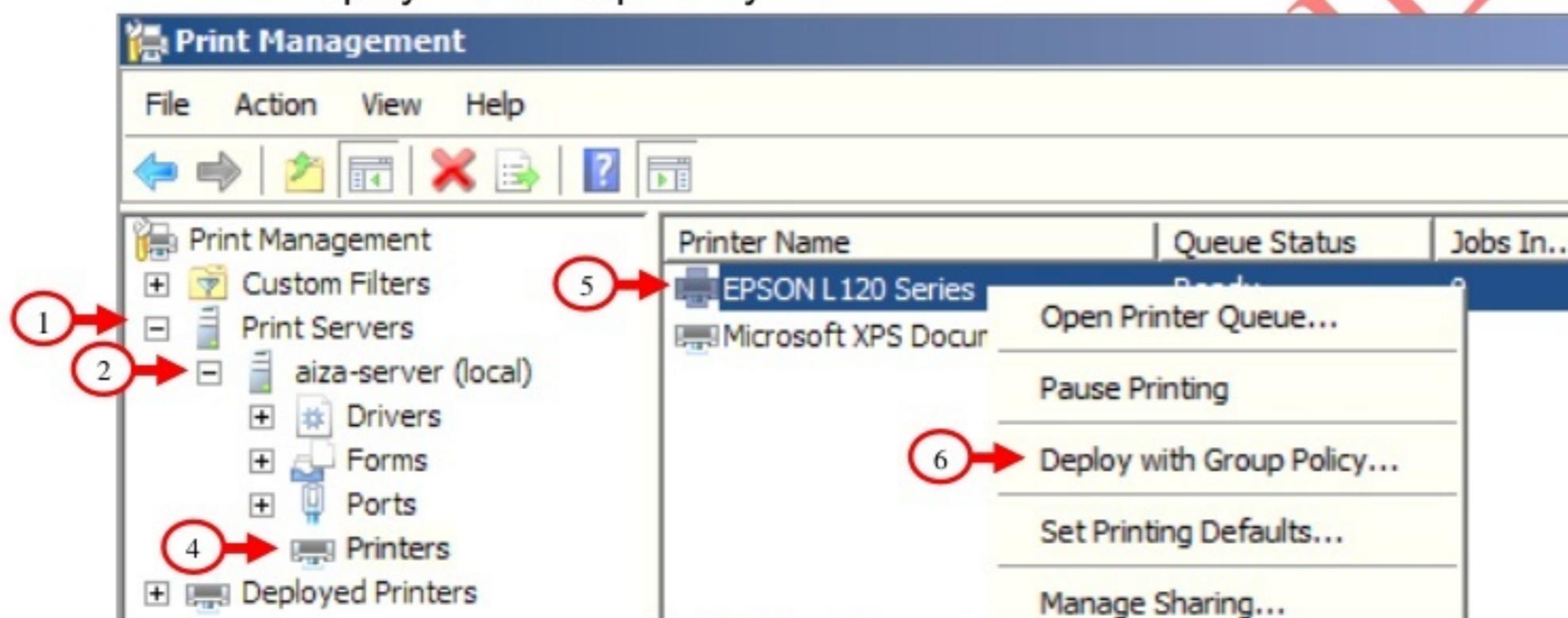


❖ Deploying Printer using the “Printer Deployment Policy”

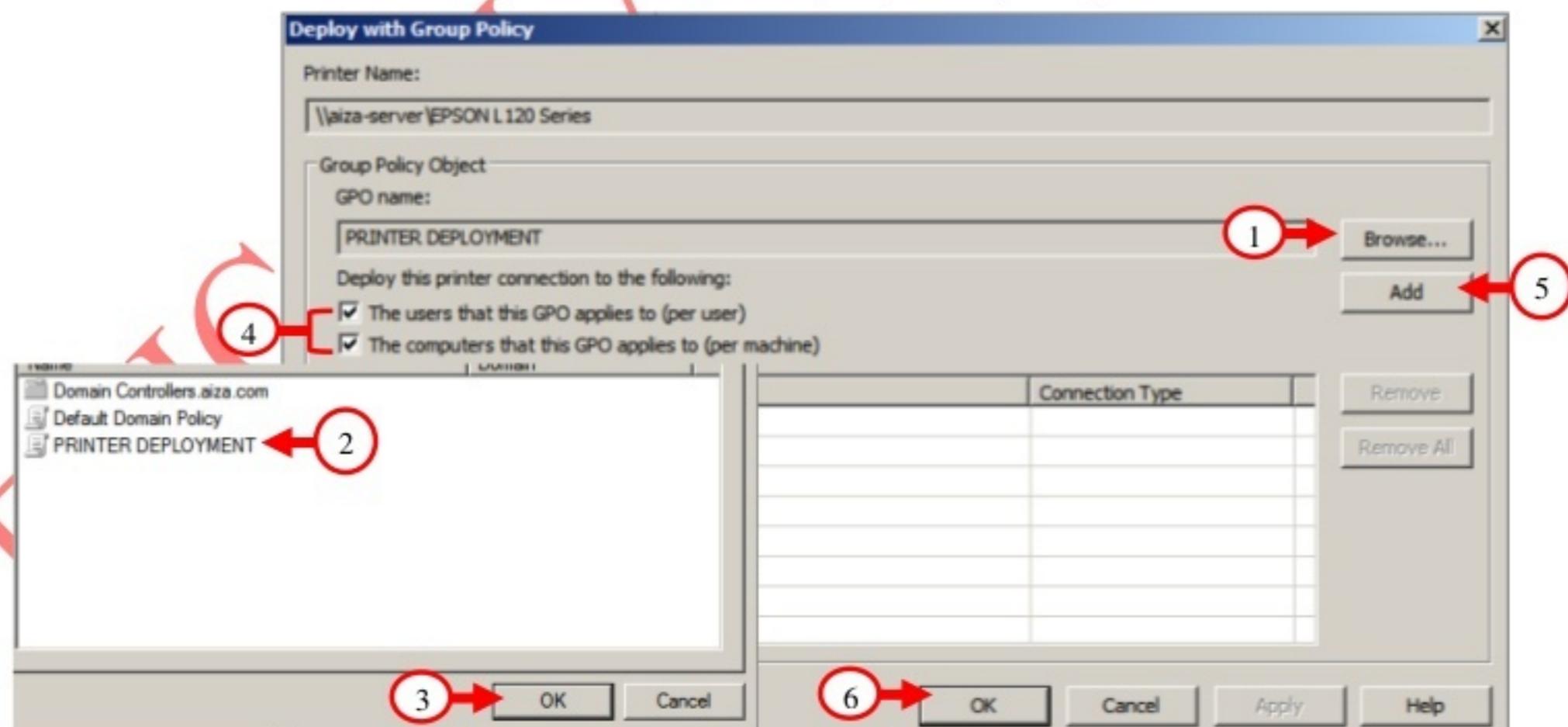
- Click on Start and search and open <Print Management>



- Click on Printer Servers>Your Domain>Printers>Right Click on Epson> Deploy with Group Policy...>



- Click on Browse>Select Printer Deployment policy>



- TO APPLY THE NEW POLICY – GO TO PC2-CLIENT

Click on Start>search and open “Command Prompt”

Type **GPUPDATE /FORCE** (Group Policy Update)

Press Enter

## Information Sheet 3.2

### Dynamic Host Connection Protocol (DHCP)

#### What is 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.

#### Why use DHCP?

Every device on a TCP/IP-based network must have a unique unicast IP address to access the network and its resources. Without DHCP, IP addresses for new computers or computers that are moved from one subnet to another must be configured manually; IP addresses for computers that are removed from the network must be manually reclaimed.

With DHCP, this entire process is automated and managed centrally. The DHCP server maintains a pool of IP addresses and leases an address to any DHCP-enabled client when it starts up on the network. Because the IP addresses are dynamic (leased) rather than static (permanently assigned), addresses no longer in use are automatically returned to the pool for reallocation.

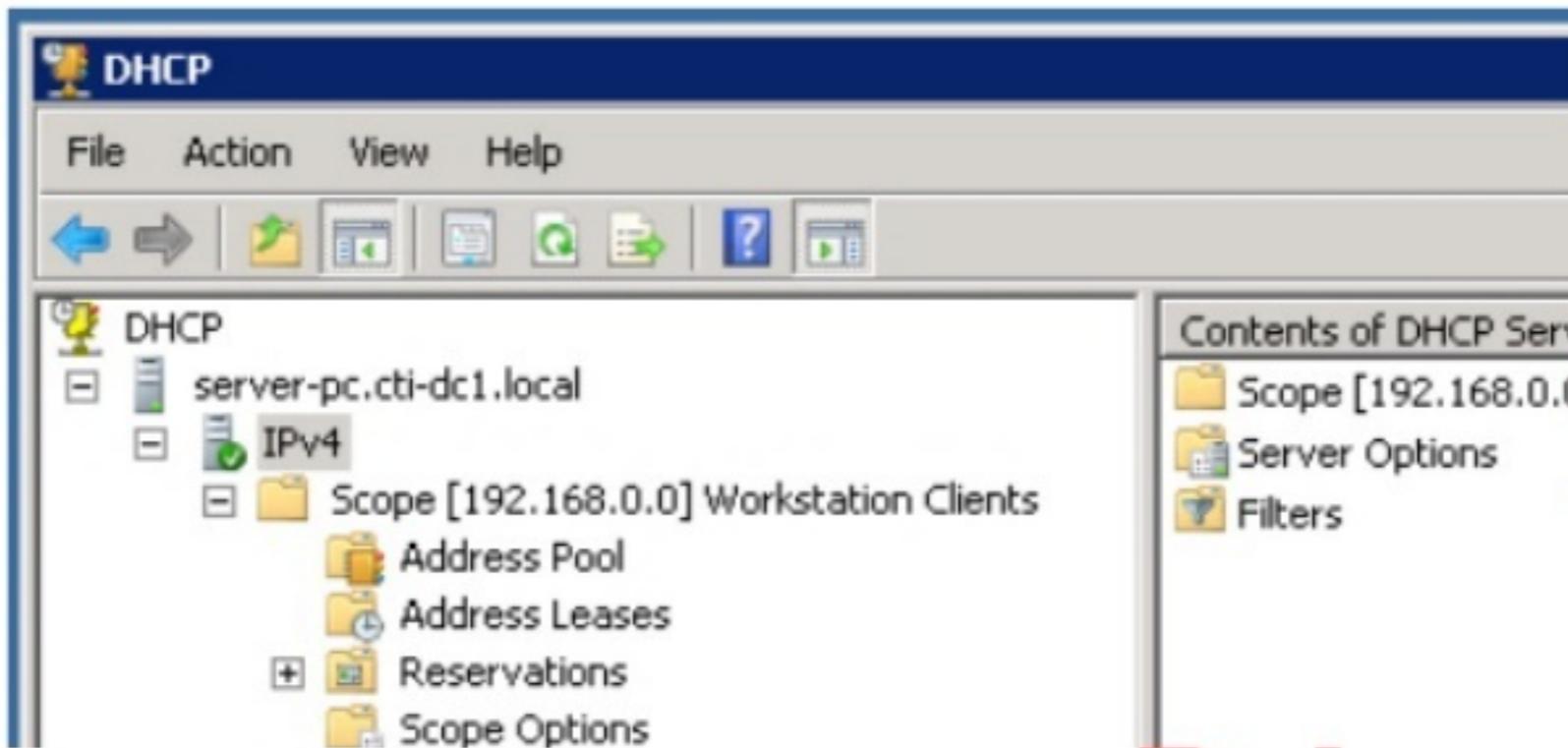
The network administrator establishes DHCP servers that maintain TCP/IP configuration information and provide address configuration to DHCP-enabled clients in the form of a lease offer. The DHCP server stores the configuration information in a database that includes:

- Valid TCP/IP configuration parameters for all clients on the network.
- Valid IP addresses, maintained in a pool for assignment to clients, as well as excluded addresses.
- Reserved IP addresses associated with particular DHCP clients. This allows consistent assignment of a single IP address to a single DHCP client.
- The lease duration, or the length of time for which the IP address can be used before a lease renewal is required.

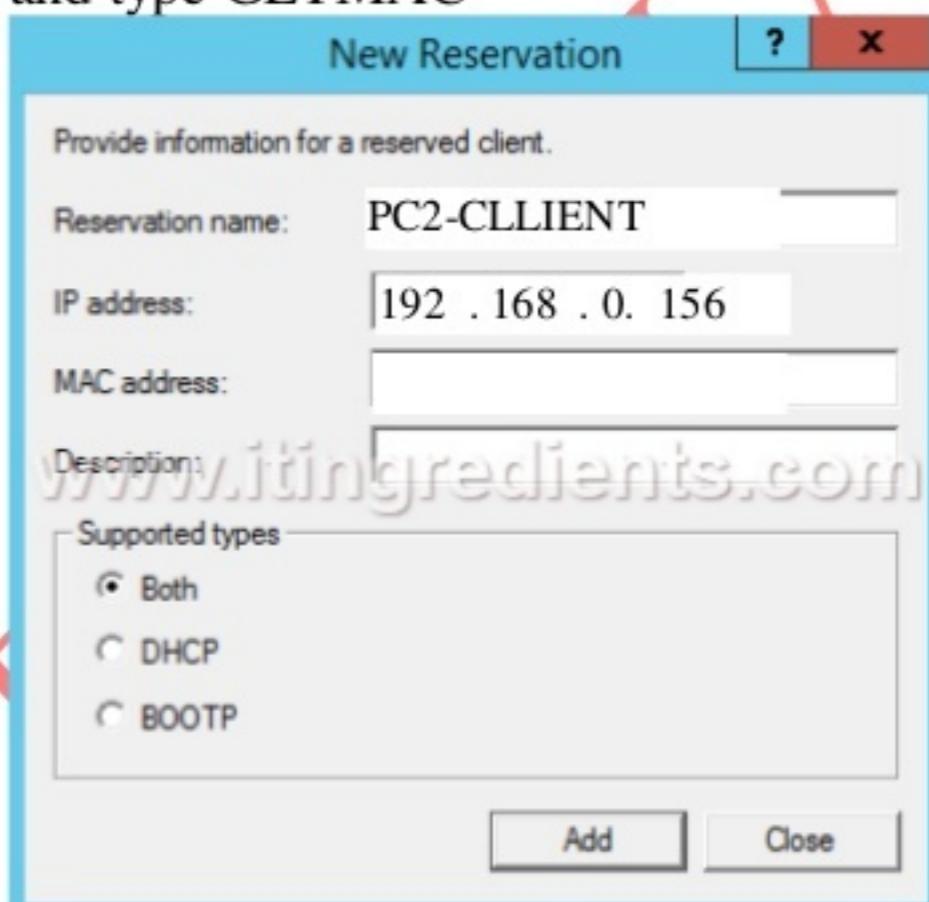
## Information Sheet 3.2

### DHCP IP RESERVATION

1. Go to Start>Administrative Tools>DHCP
2. Click on your domain>IPV4>Scope>Reservation



3. Right click on Reservation>New Reservation
4. Reservation Name : PC2-client  
IP Address : 192.168.0.156  
MAC address :  
Note: to get the MAC address, go to PC2-CLIENT open CMD (Command Prompt) and type GETMAC



5. Click On Add
6. Finally click on Close

## INFORMATION SHEET 3.2

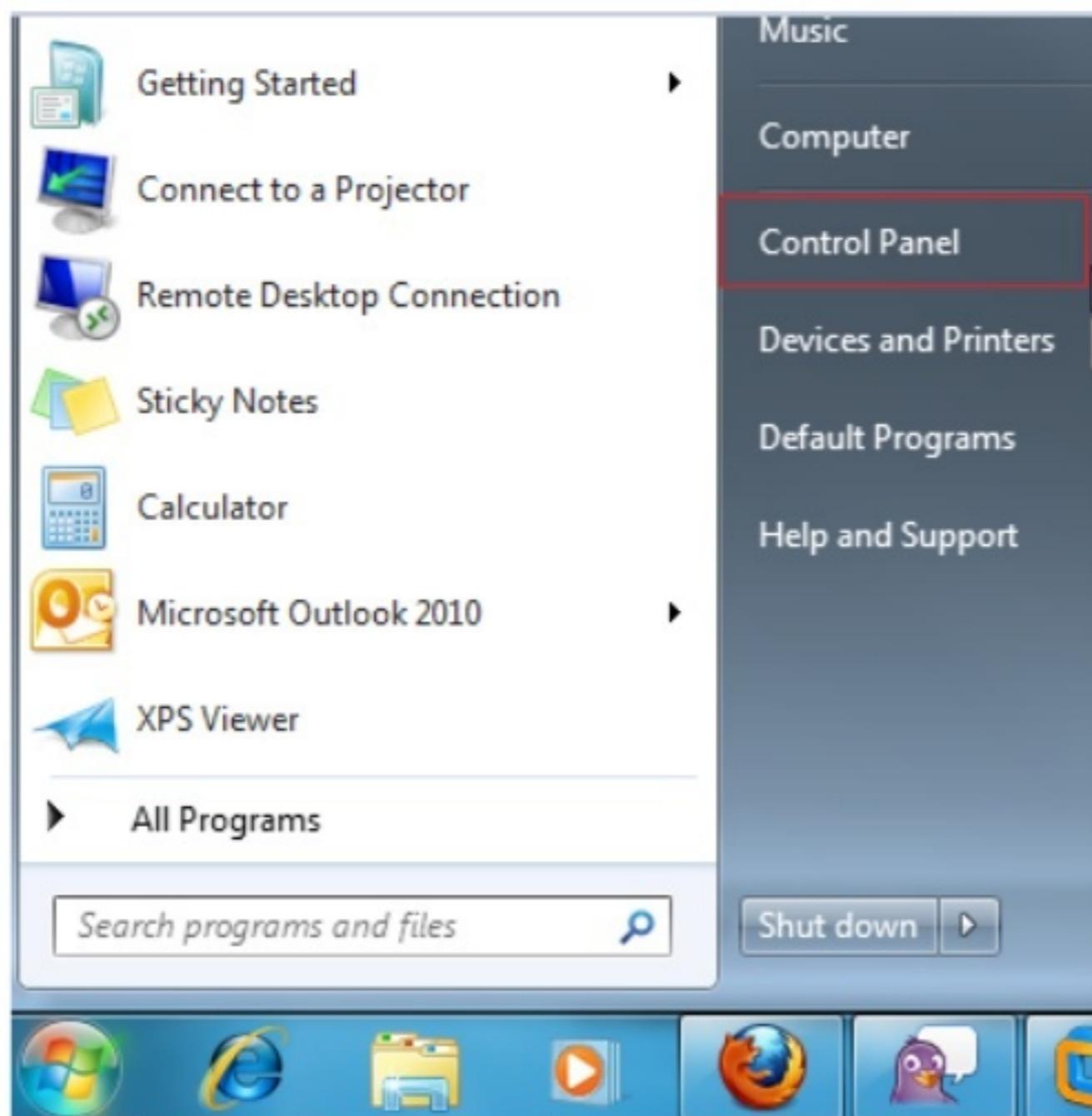
### Remote Desktop: Connect to Another Computer (Windows 7)

Source: <https://grok.lsu.edu/Article.aspx?articleid=17028>

Step 1 - On the Computer That You Plan To CONNECT TO :

These steps allow for Remote Access to a specific Windows 7 Computer. This is typically your Office Computer, however it could also be a server or other departmental resource.

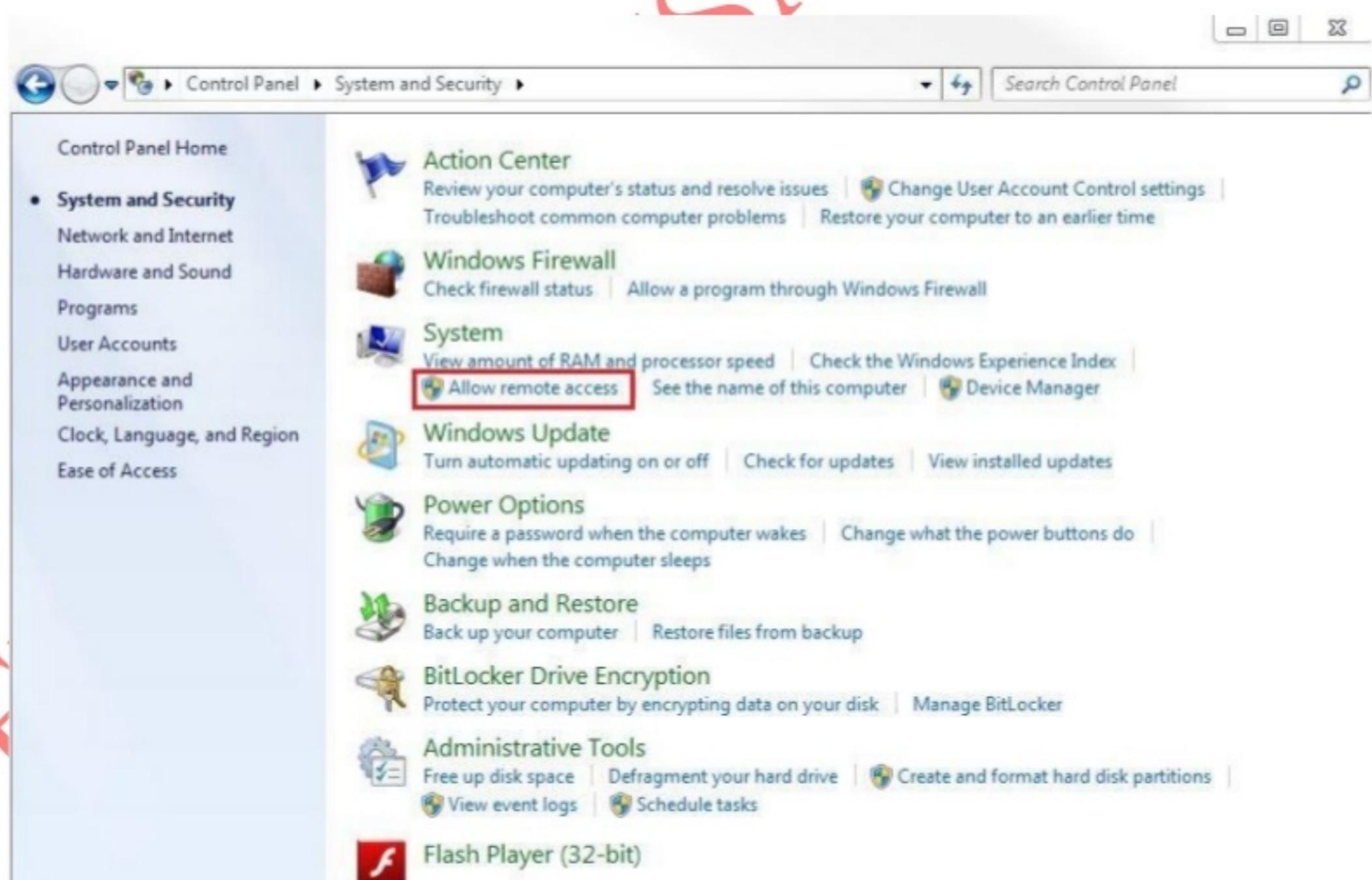
1. Open the Control Panel: **Start | Control Panel**.



**2. Click **System and Security**.**



**3. Click **Allow Remote Access**.**



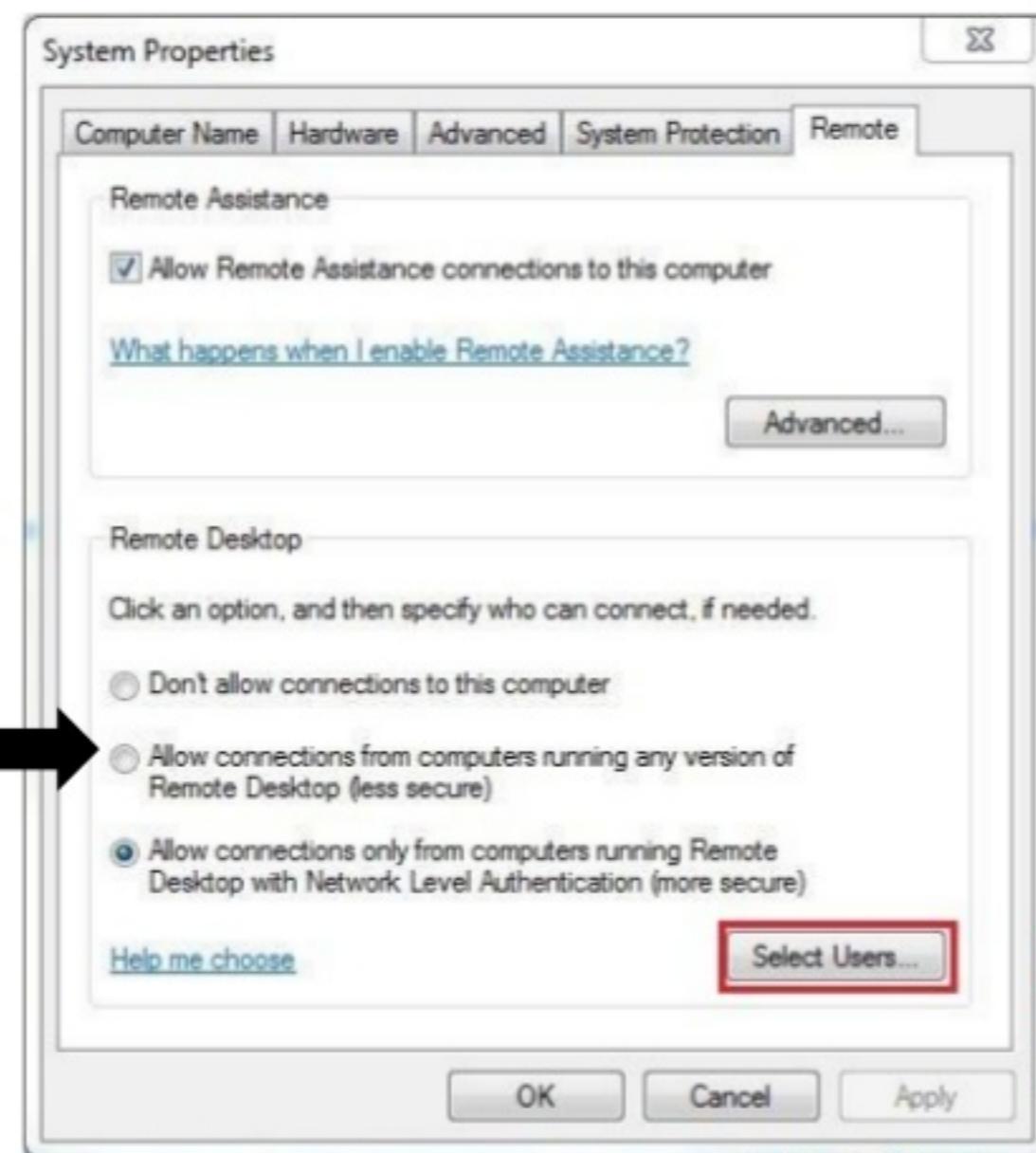
**4. Under the **Remote Tab**:**

- Select "**Allow Remote Assistance connections to this computer**".

|         |                                    |      |
|---------|------------------------------------|------|
| Date:   | Module: Setting-up Computer Server | Page |
| Version |                                    | 43   |

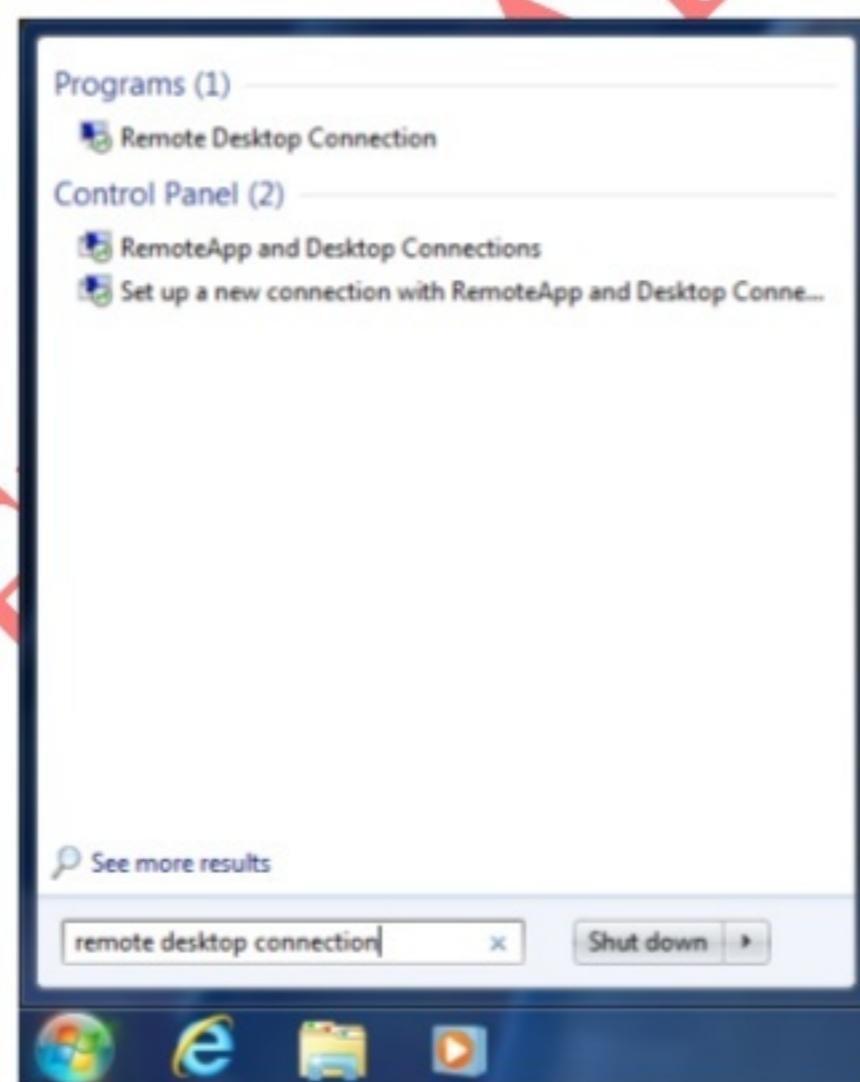
- Select "Allow connections only from computers running any versions of Remote Desktop (less secure)".

5. Click **Select Users**.



Step 2 -- Remotely Connect to Another Computer

1. Click **Start** and search for **Remote Desktop Connection**.



2. Enter the **Full Computer Name** of the computer name you want to connect or it's IP V4 ADDRESS, and click **Connect**. You may need to enter a username and password depending on the access credentials that are required the other user or the other computer.



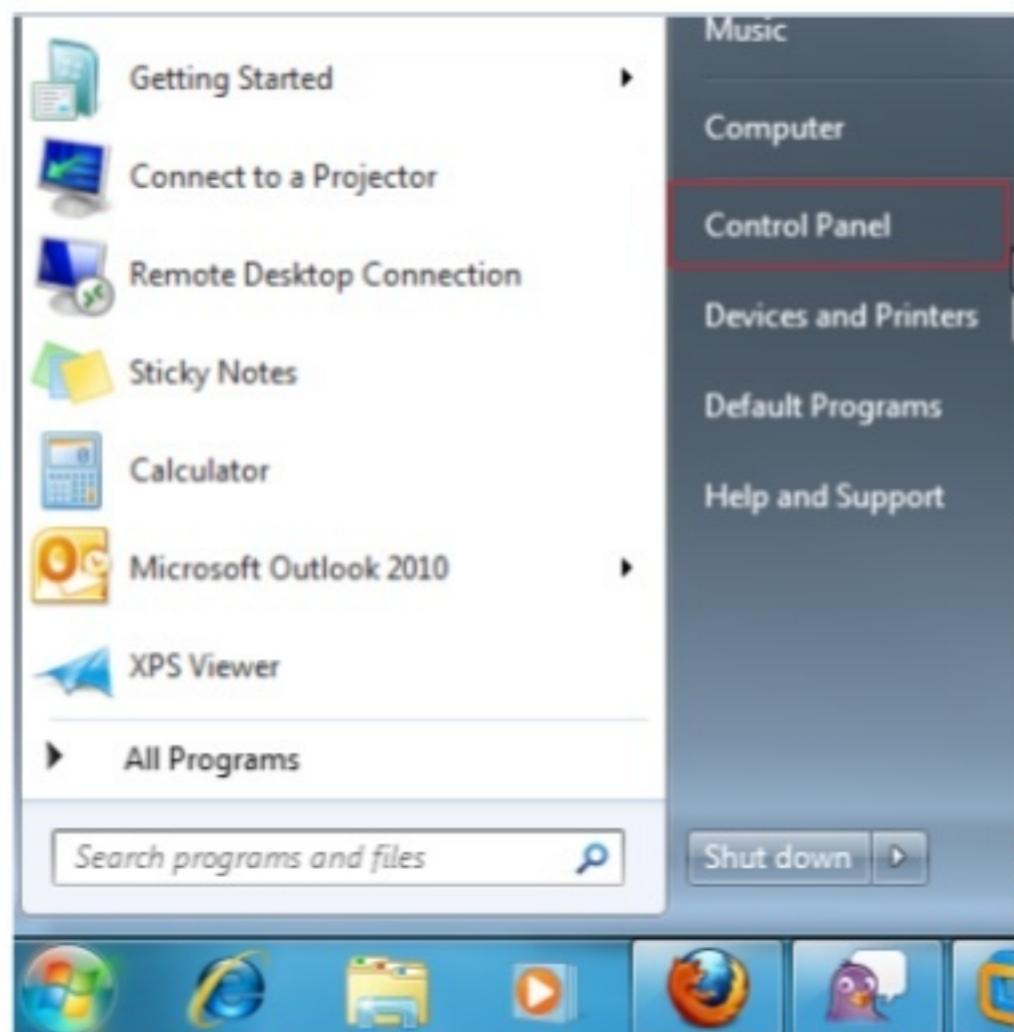
3. To Disconnect: Click **Start | Log Off**. This will log you out of the remote computer.

**Note:** If you have problems connecting to the remote computer, double-check the full computer name. If this is correct, you might need to change your firewall connection. To do this, open the **Control Panel** and select **Windows Firewall**. Make sure that under **General**, the box that reads "Don't allow exceptions" is not checked, and that under **Exceptions**, **Remote Desktop** is selected.

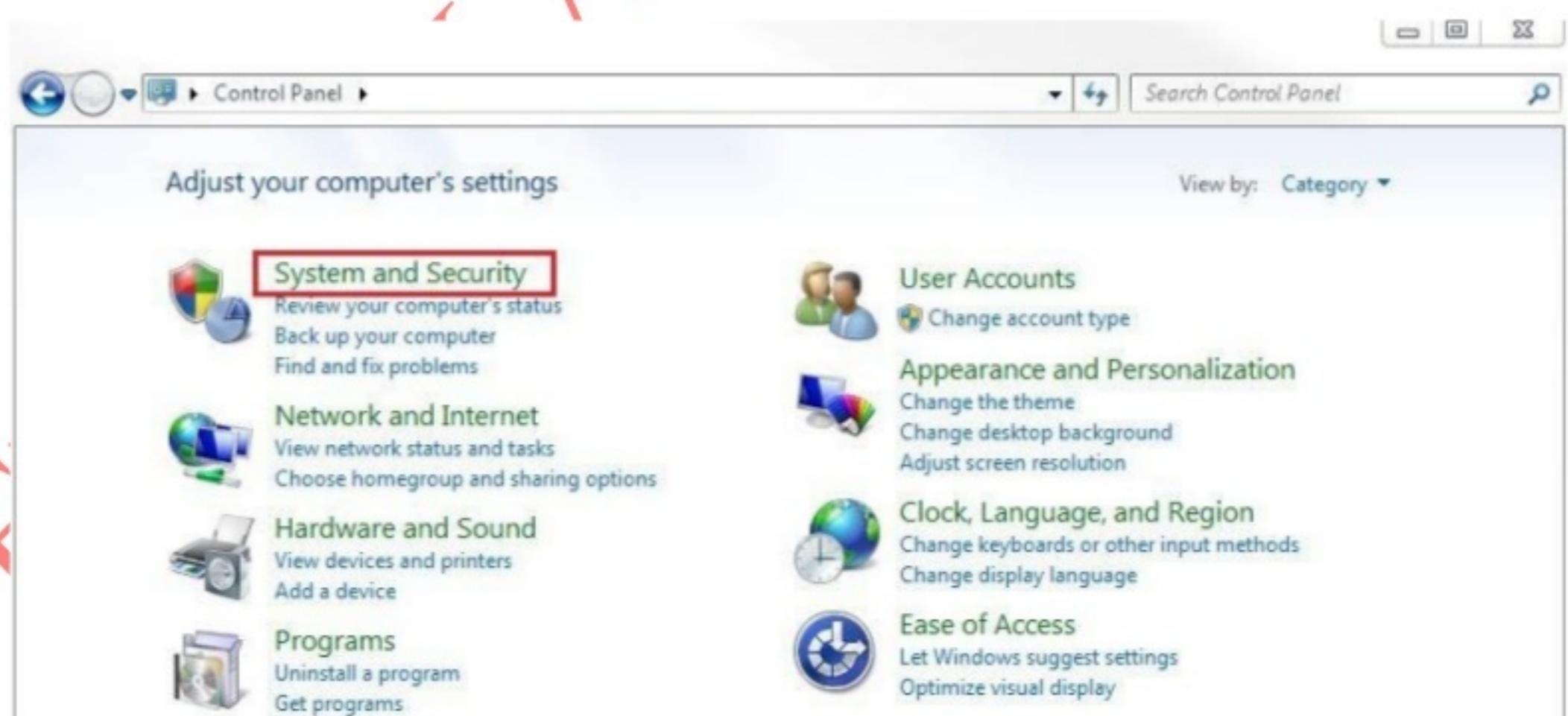
## Configure the Firewall Settings

If the Firewall is Enabled, it needs to have **Remote Desktop Exception** Enabled.

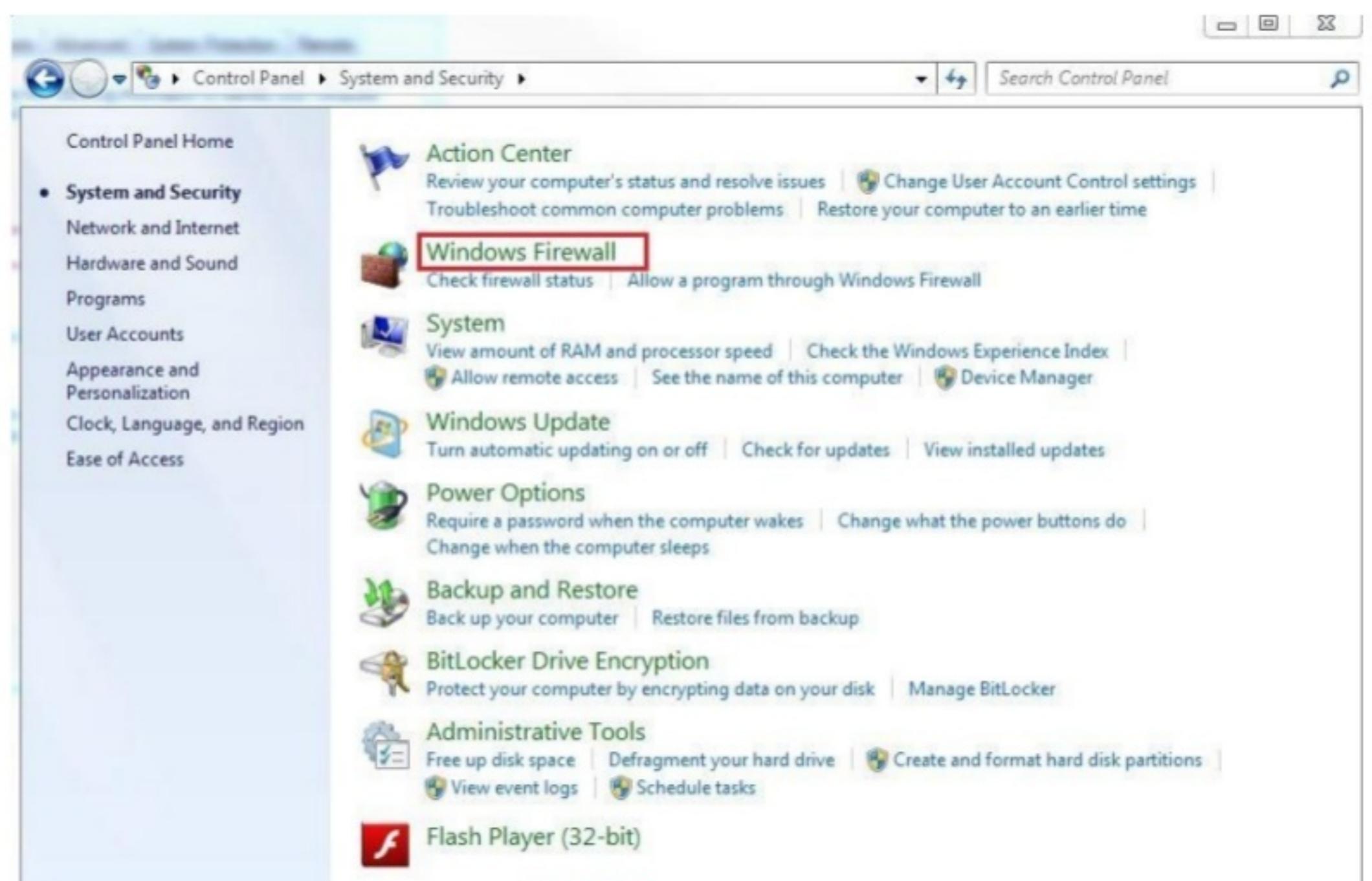
1. Click **Start | Control Panel**.



2. Click on **System and Security**.

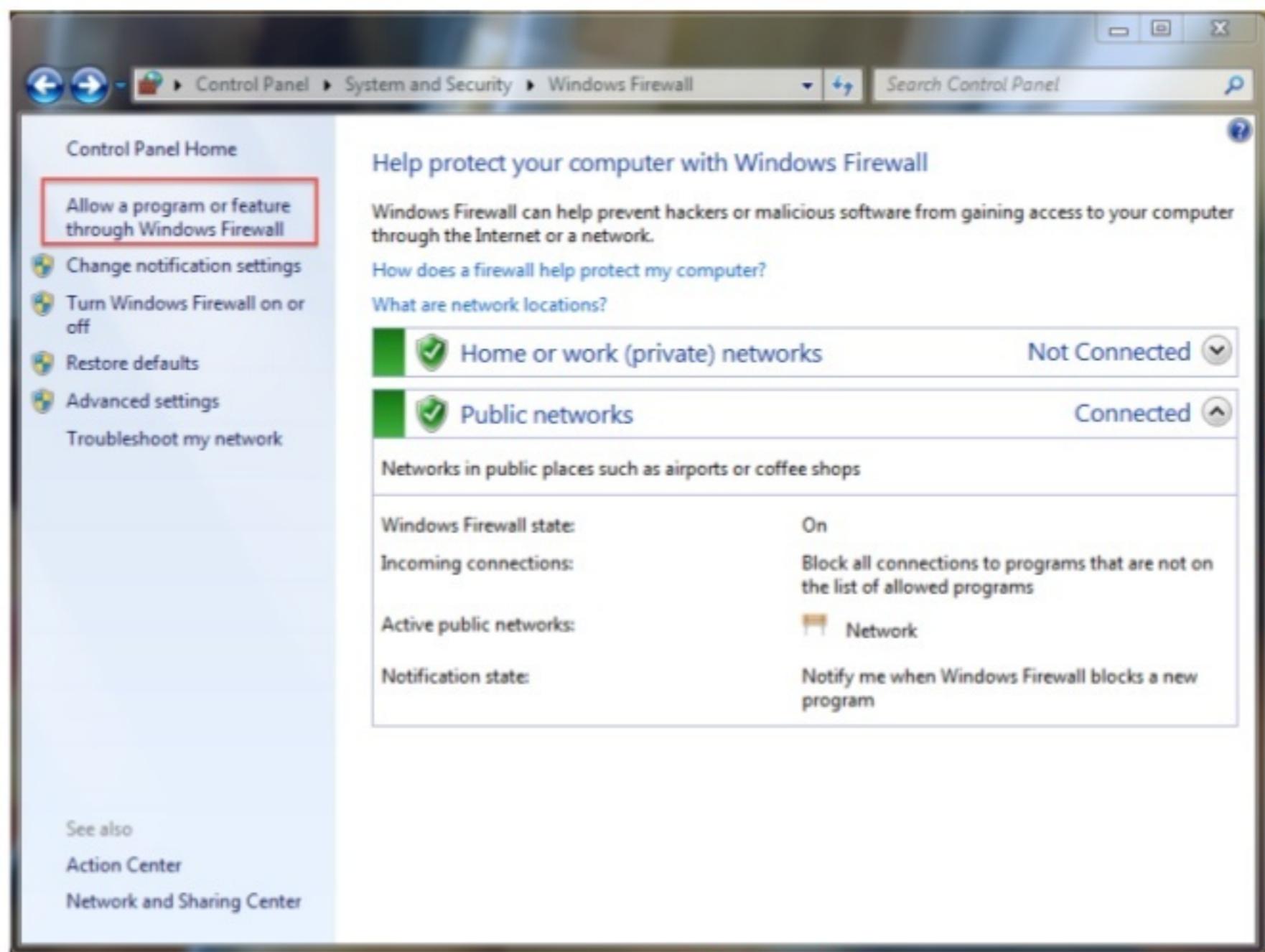


3. Click on **Windows Firewall**.



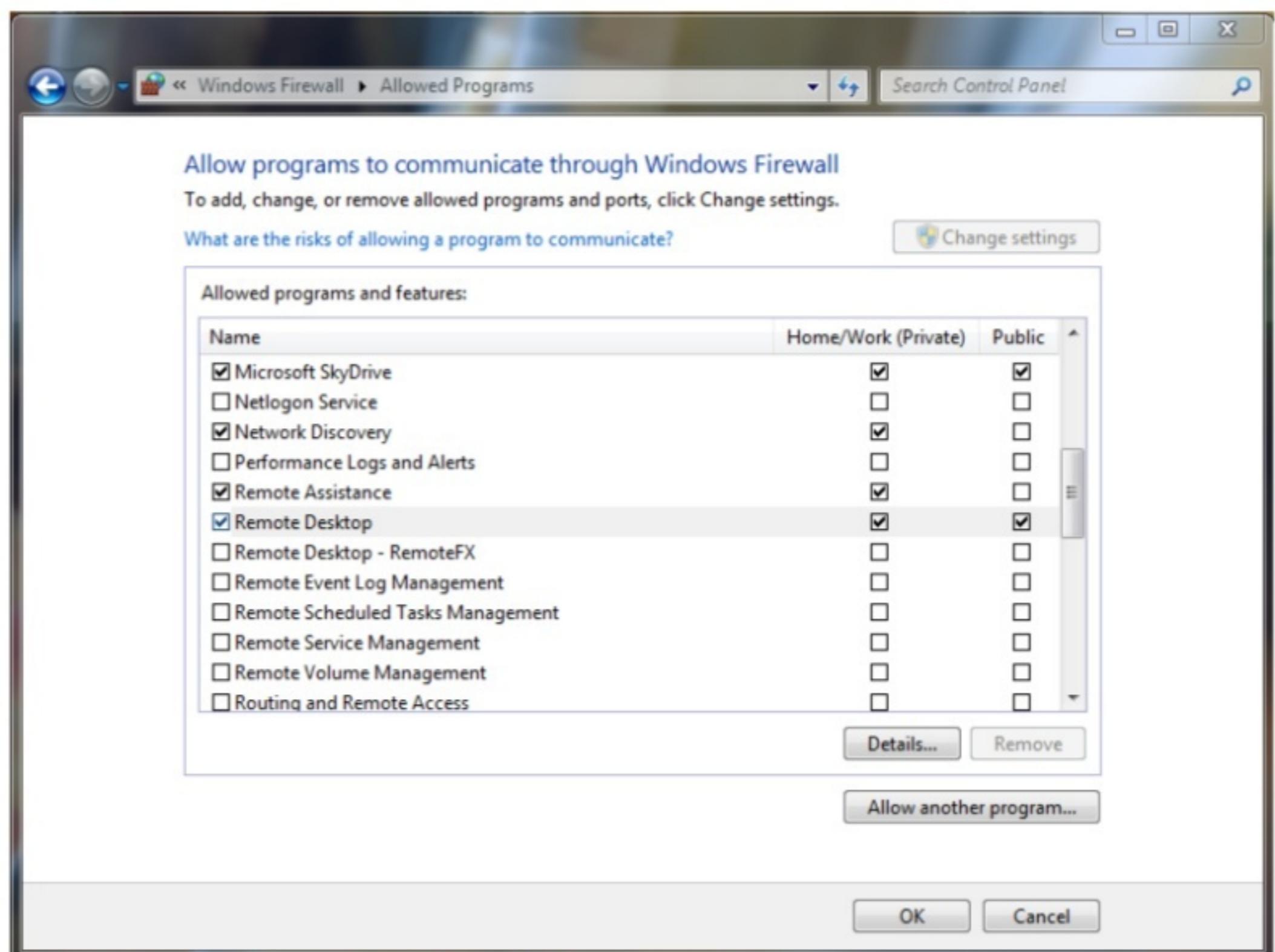
4. Click **Allow a program or feature through Windows Firewall**.

|         |                                    |      |
|---------|------------------------------------|------|
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5. Scroll through the list of programs and features until you find Remote Desktop. CHECK the box marked **Remote Desktop** and both boxes to the left field.

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6. Click **OK**.

## INFORMATION SHEET 3.4

### Simple Step : Configure Folder Redirection in Window Server 2012 R2

Source: <https://mizitechinfo.wordpress.com>

As a Server Admin, you can use GPOs to deploy scripts to users and computers.

You also can redirect folders that are included in the user's profile to a File Server. These features enable you to configure the users' desktop settings more easily and, where desirable, to create a standardized desktop environment that meets your organization's needs.

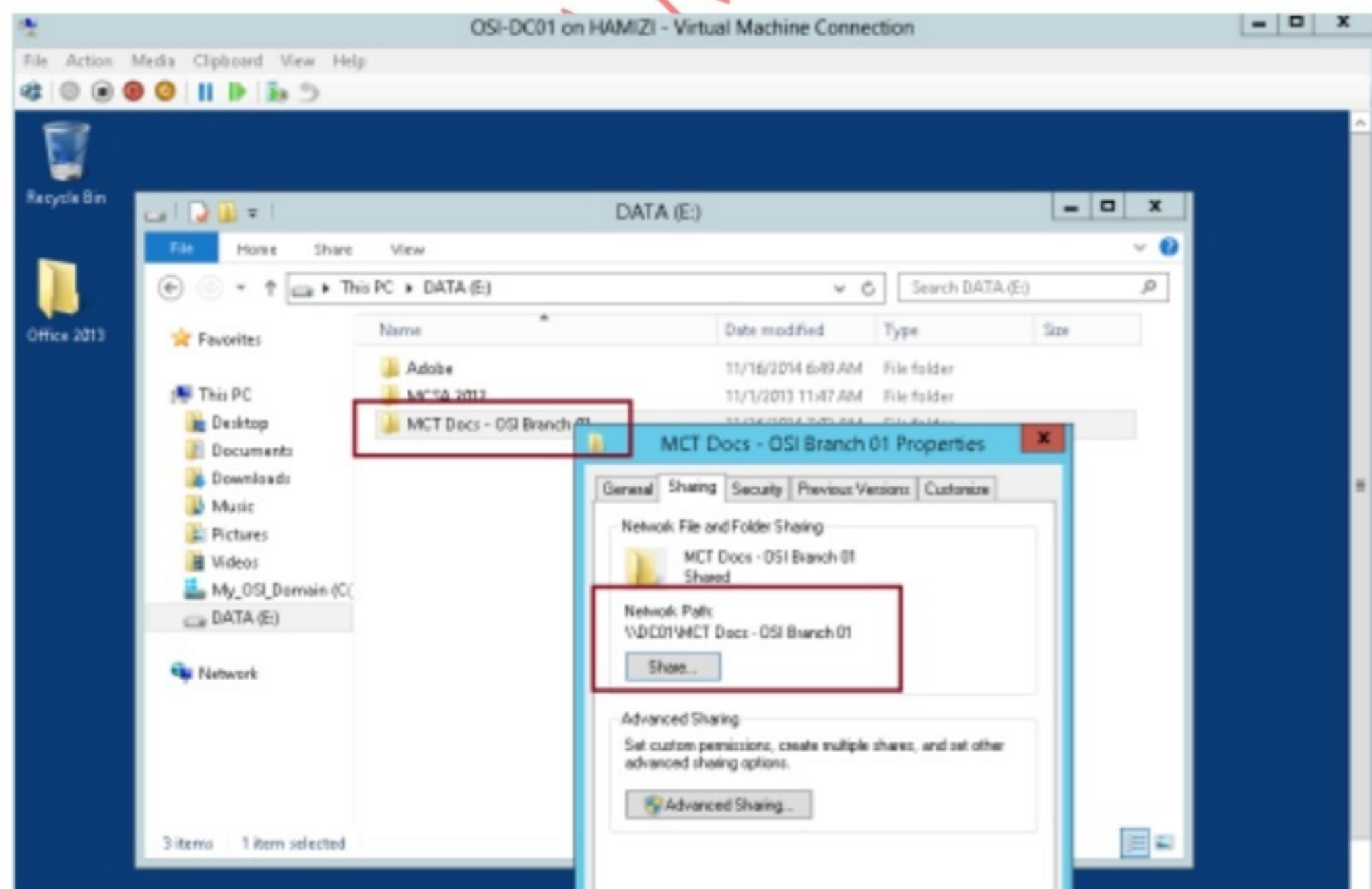
#### **So, what is Folder Redirection?**

You can use the Folder Redirection to manage data effectively and, if you choose, to back up data.

By redirecting folders, you can ensure user access to data regardless of the computers from which a user logs in.

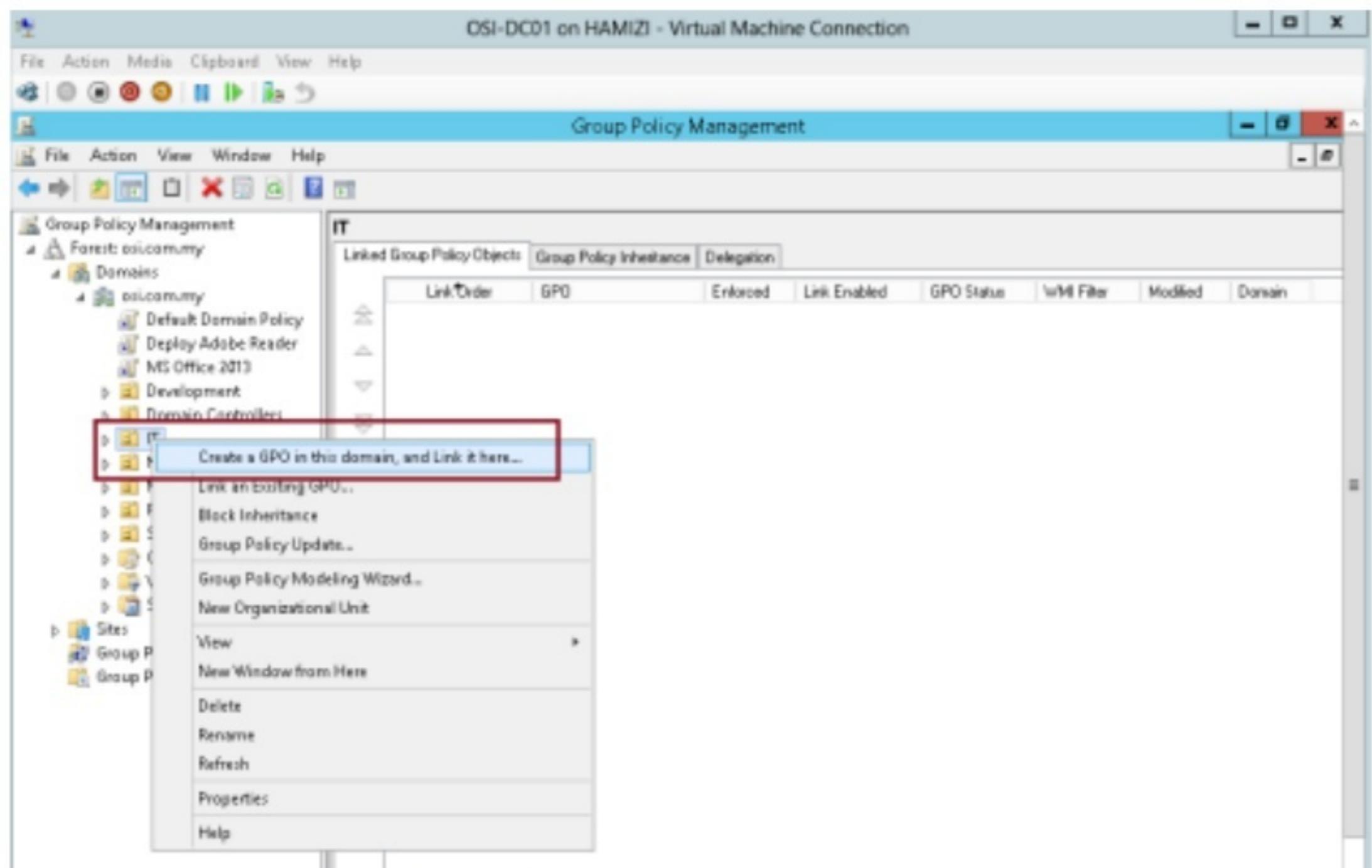
So let's go through a simple step on how to configure Folder Redirection...

1 – 1st, make sure that you have share folder for this step, for this demo, i had my shared folder created previously (MCT Docs – OSI Branch 01)...

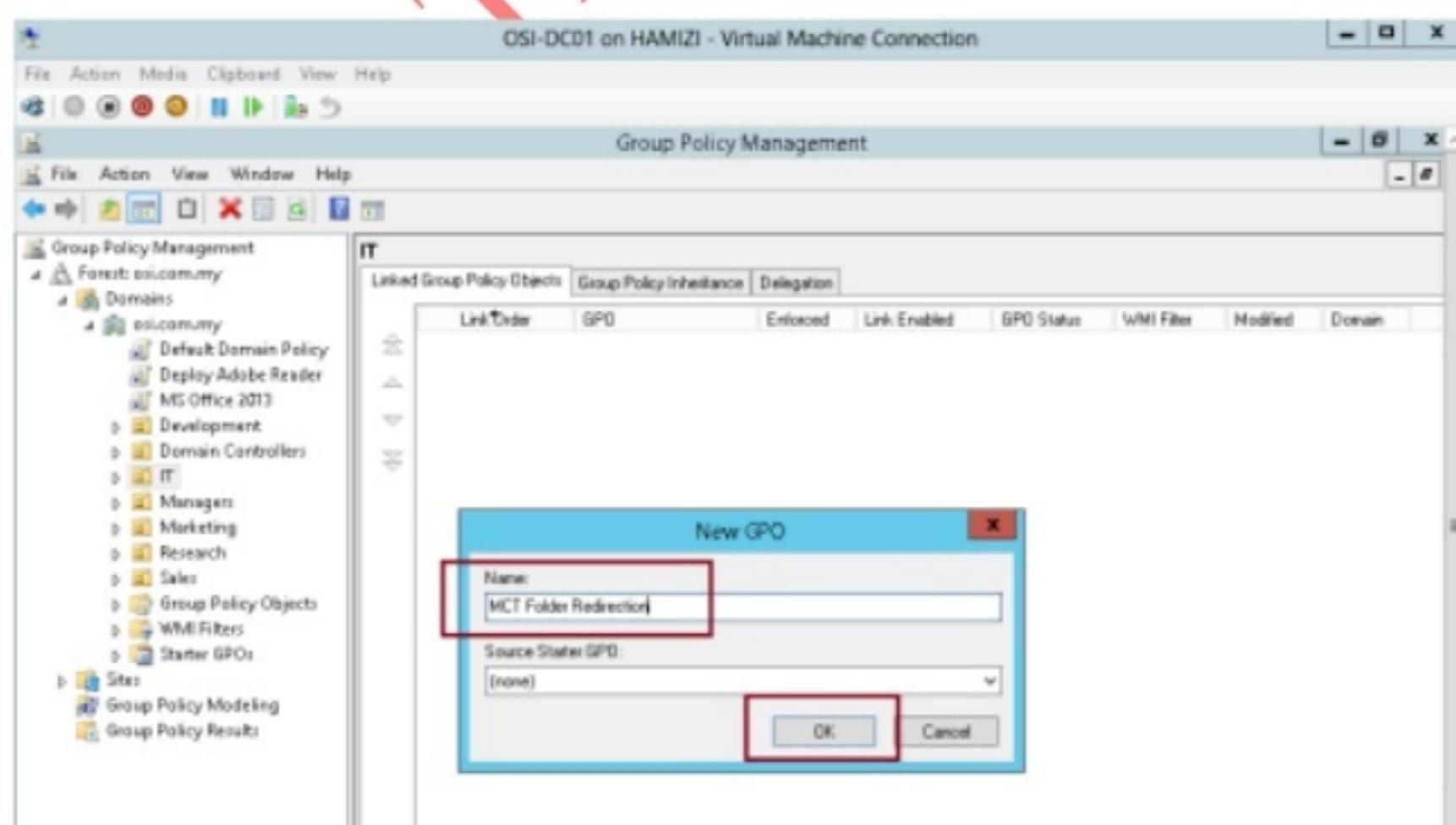


2 – Next, we need to create a new GPO and link it to the IT OU (you can use any OU you prefer)...

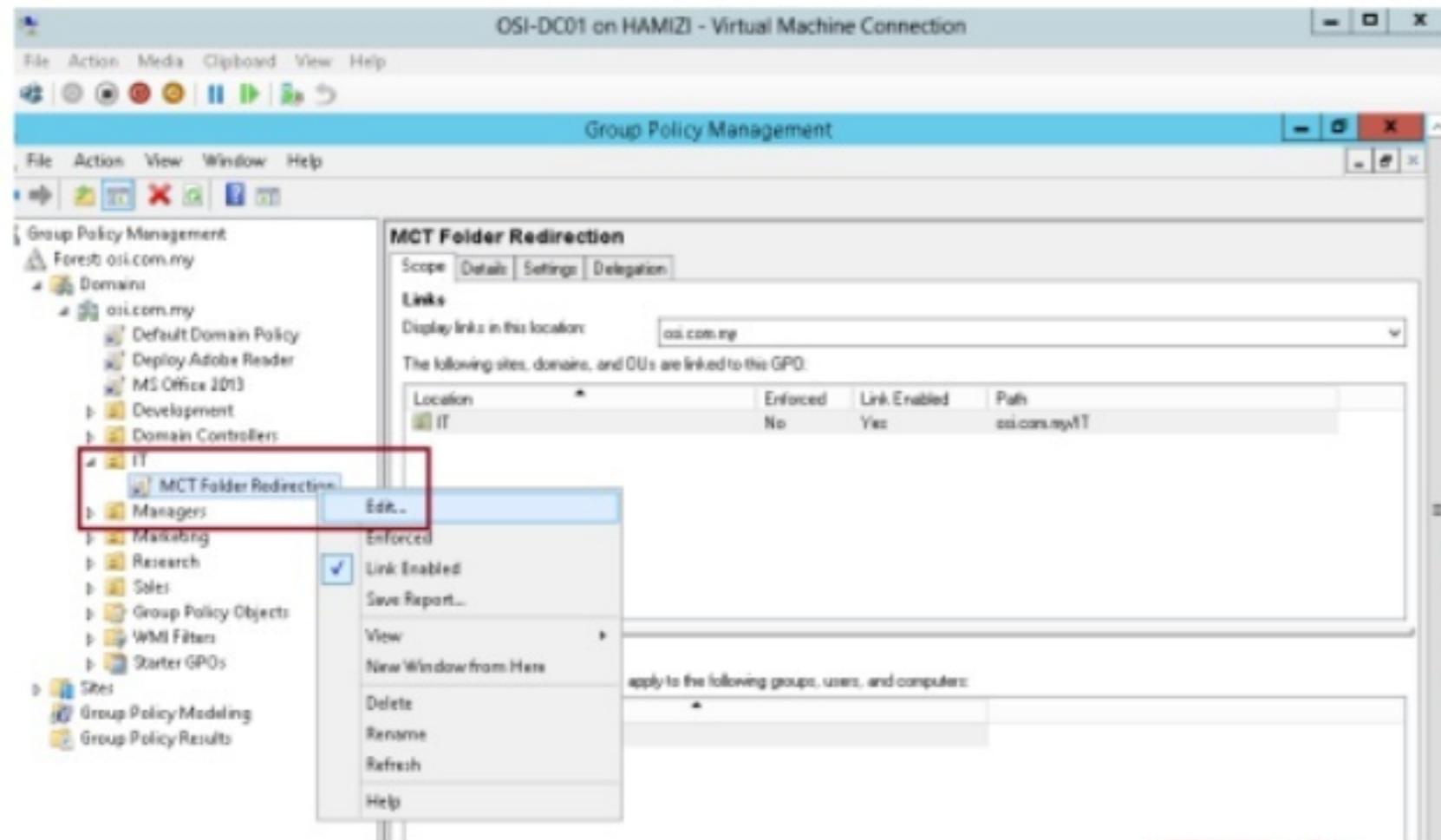
– On the Group Policy Management console, right click your OU (Organizational Unit) and then click Create a GPO in this domain and Link it here...



3 – In the Name box, type Folder Redirection, and then click OK...

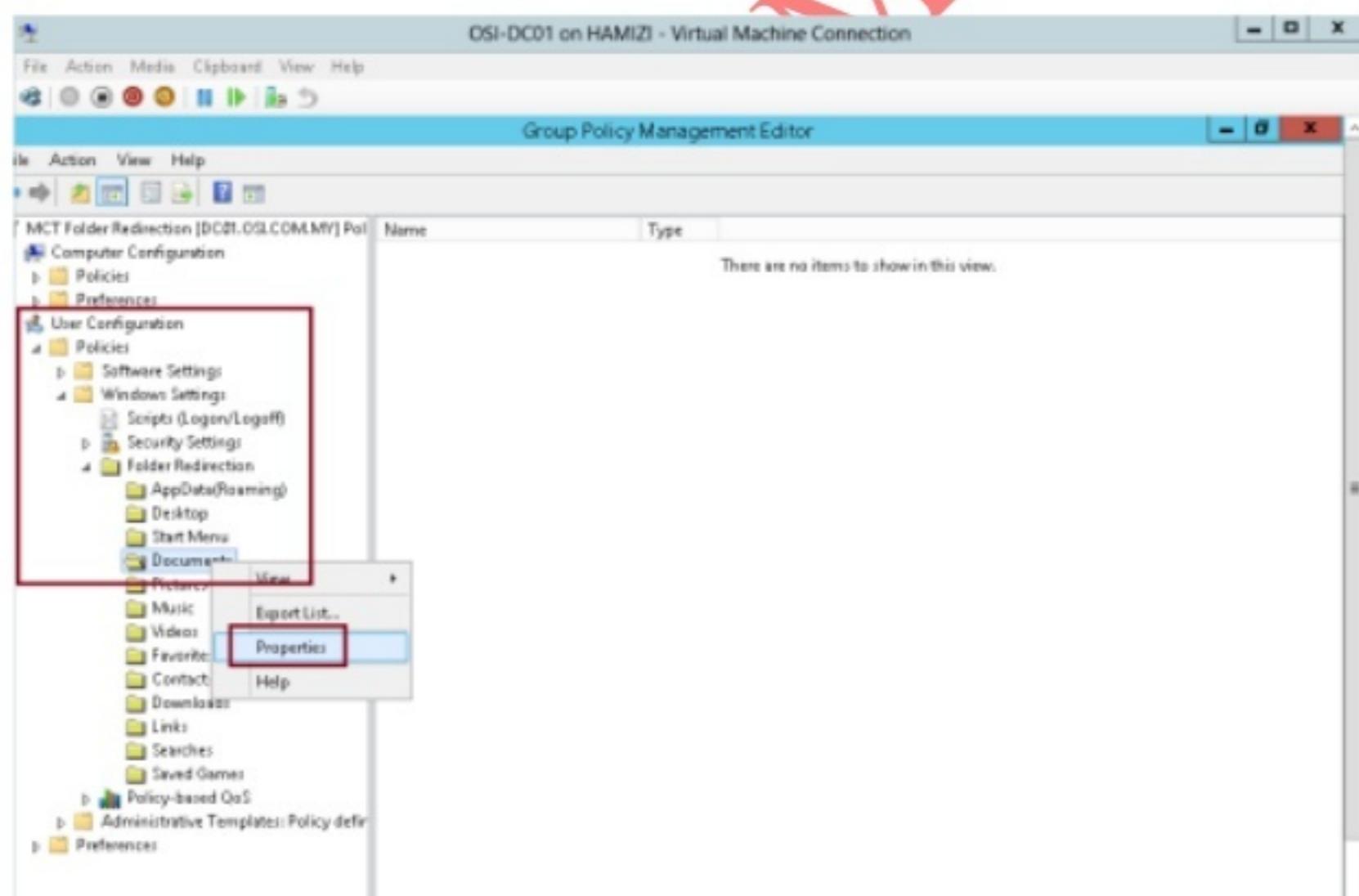


4 – Next, expand IT OU, right-click Folder Redirection, and then click Edit...



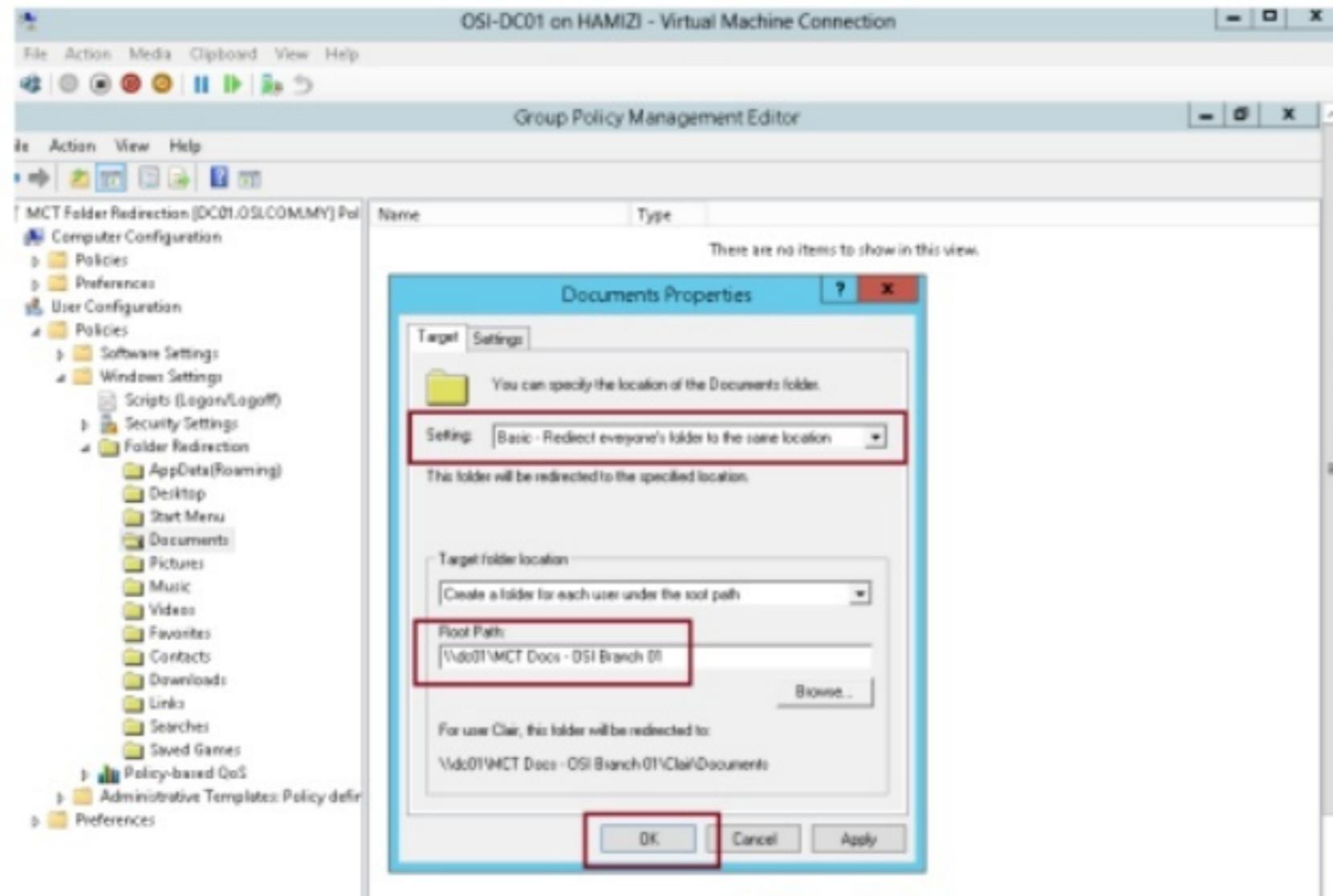
5 – In the Group Policy Management Editor, under User Configuration, expand Policies, expand Windows Settings, and then expand Folder Redirection...

– Next, right-click Documents, and then click Properties...

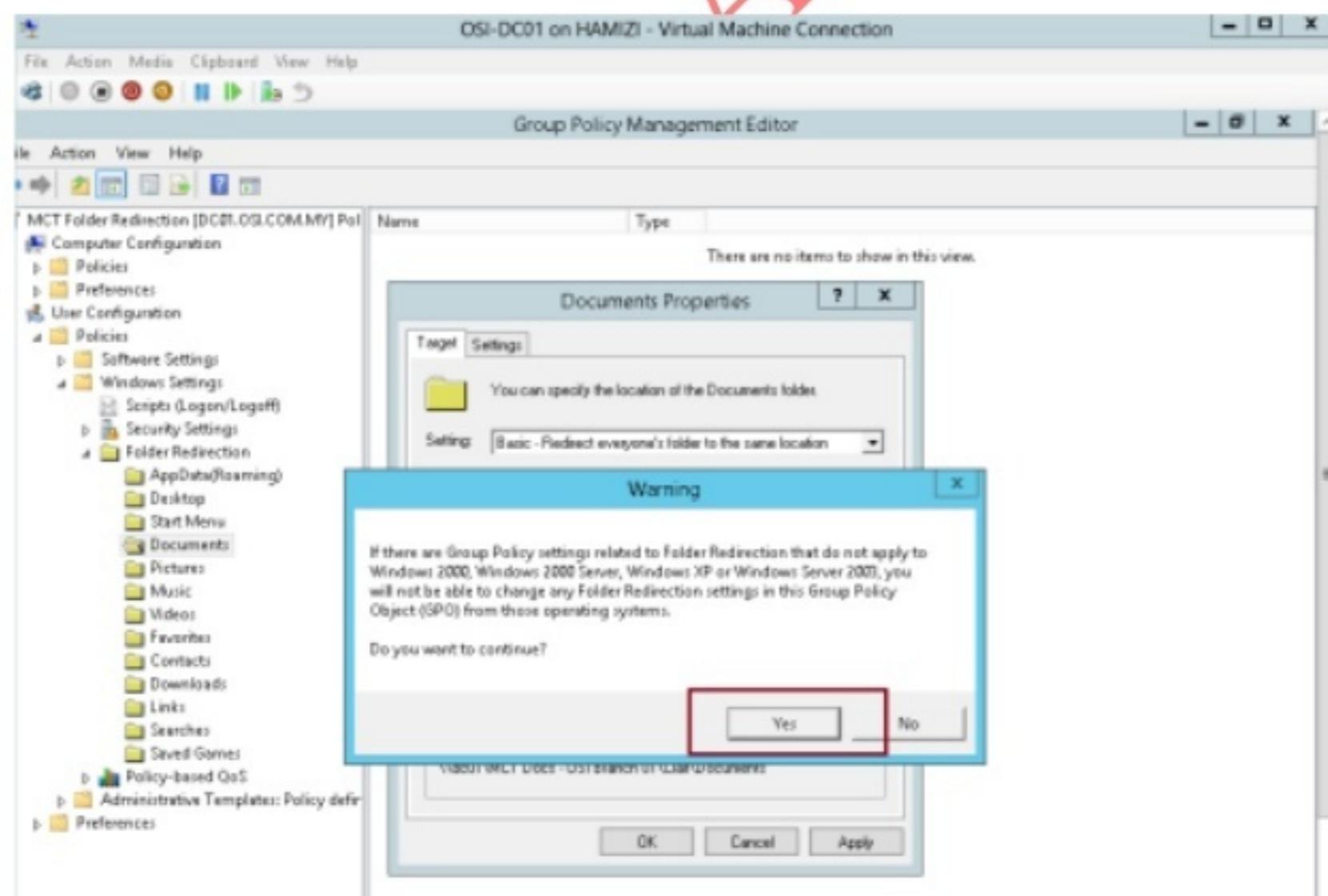


6 – In the Document Properties dialog box, on the Target tab, next to Setting, click the drop-down arrow, and then select Basic – Redirect everyone's folder to the same location...

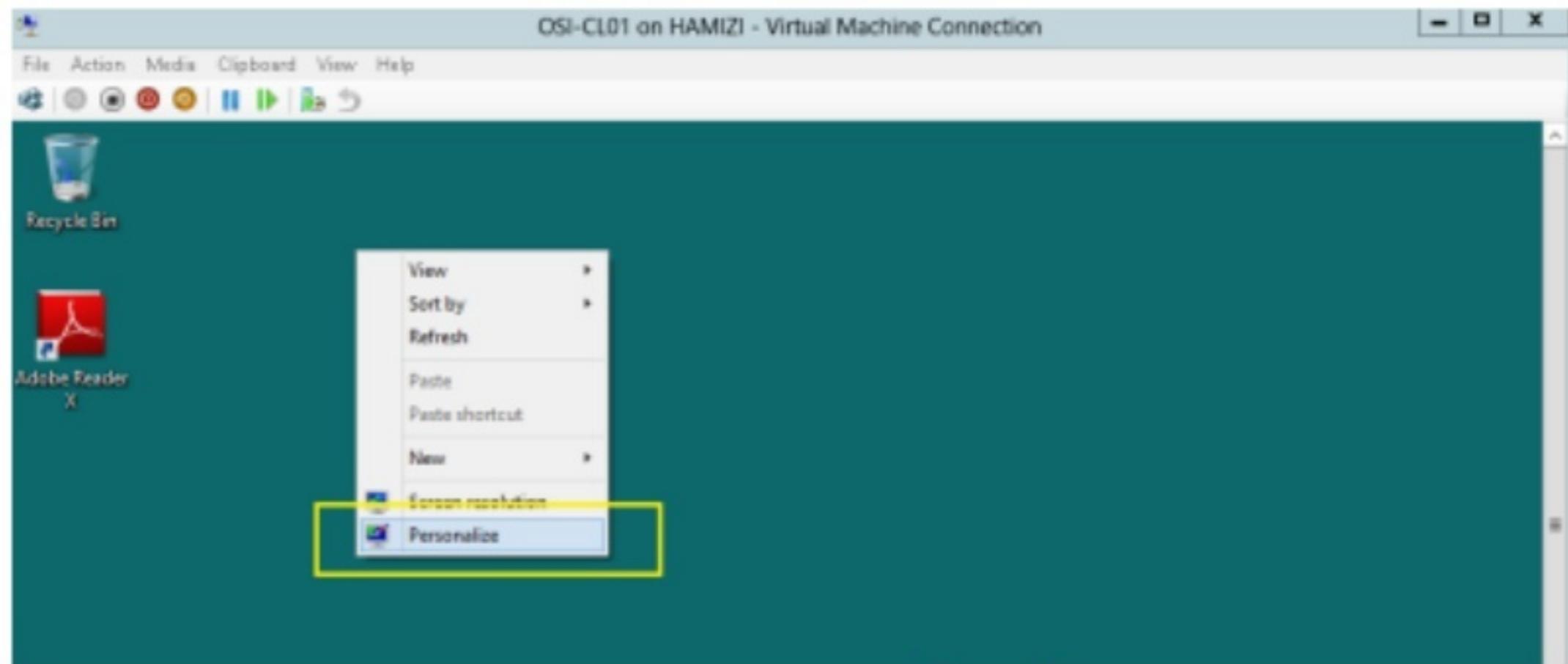
- Ensure the Target folder location box is set to Create a folder for each user under the root path...
- In the Root Path box, type \\dc01\MCT Docs – OSI Branch 01, and then click OK...



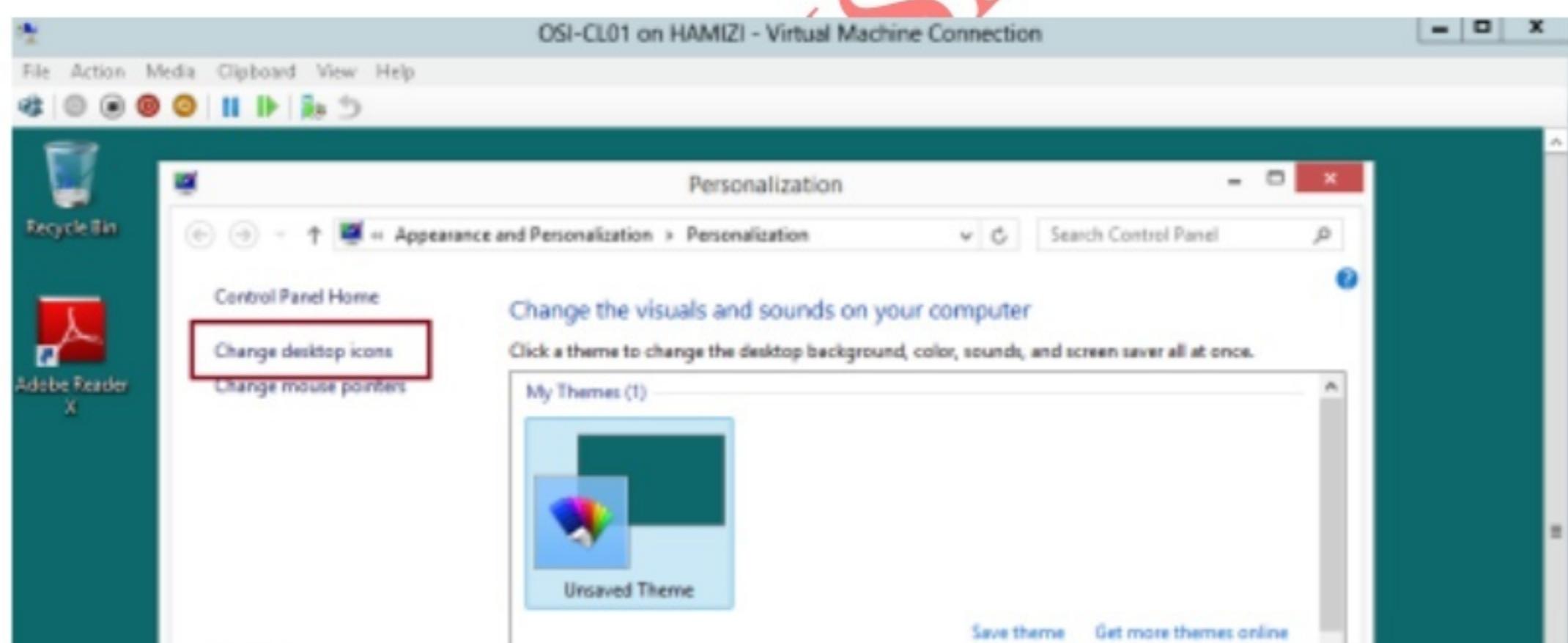
7 – In the Warning dialog box, click Yes...



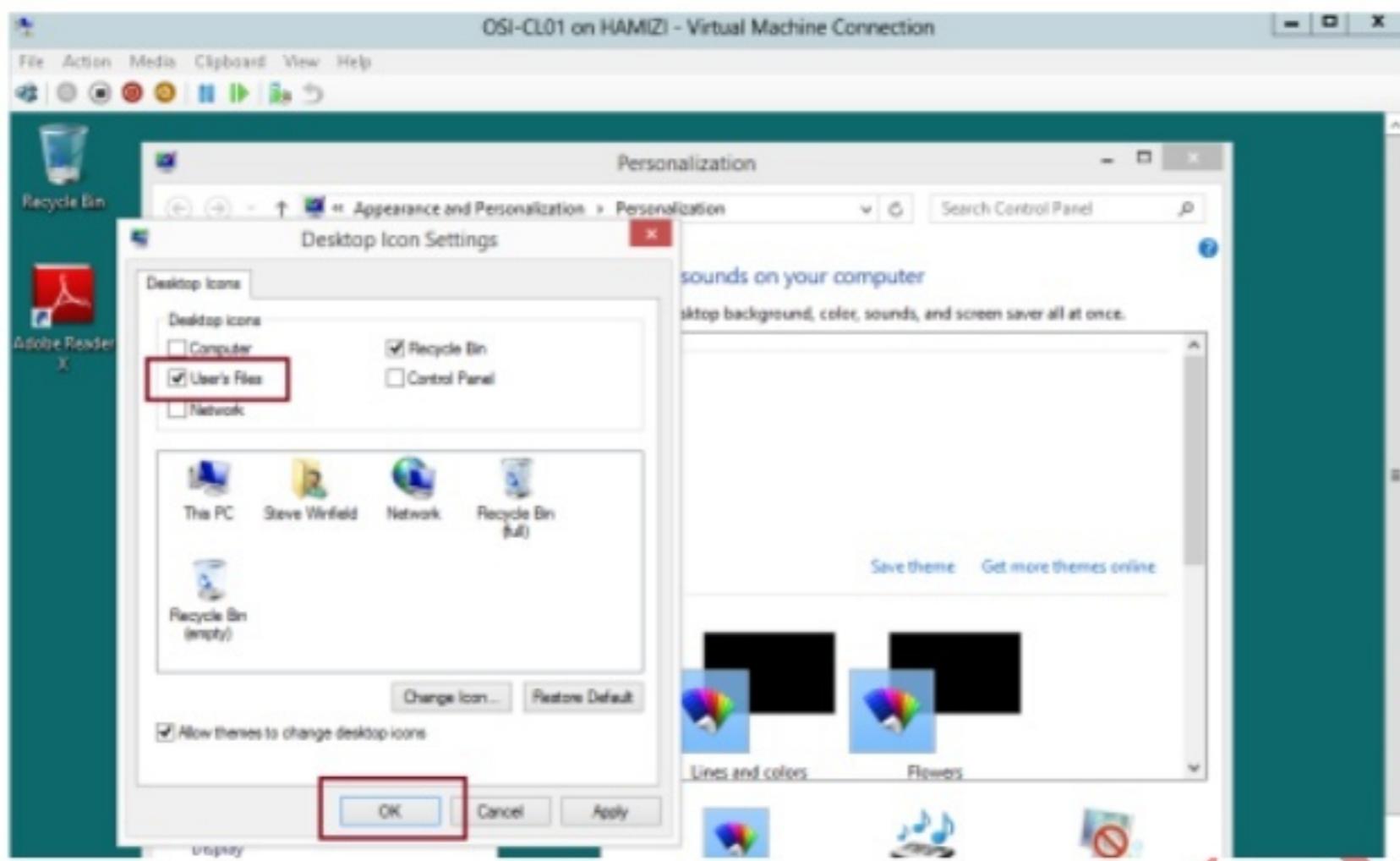
8 – Next, lets try test the folder redirection settings, switch to your client PC and log in as any of your domain user, right-click the desktop, and then click Personalize...



9 – In the navigation pane, click Change desktop icons...

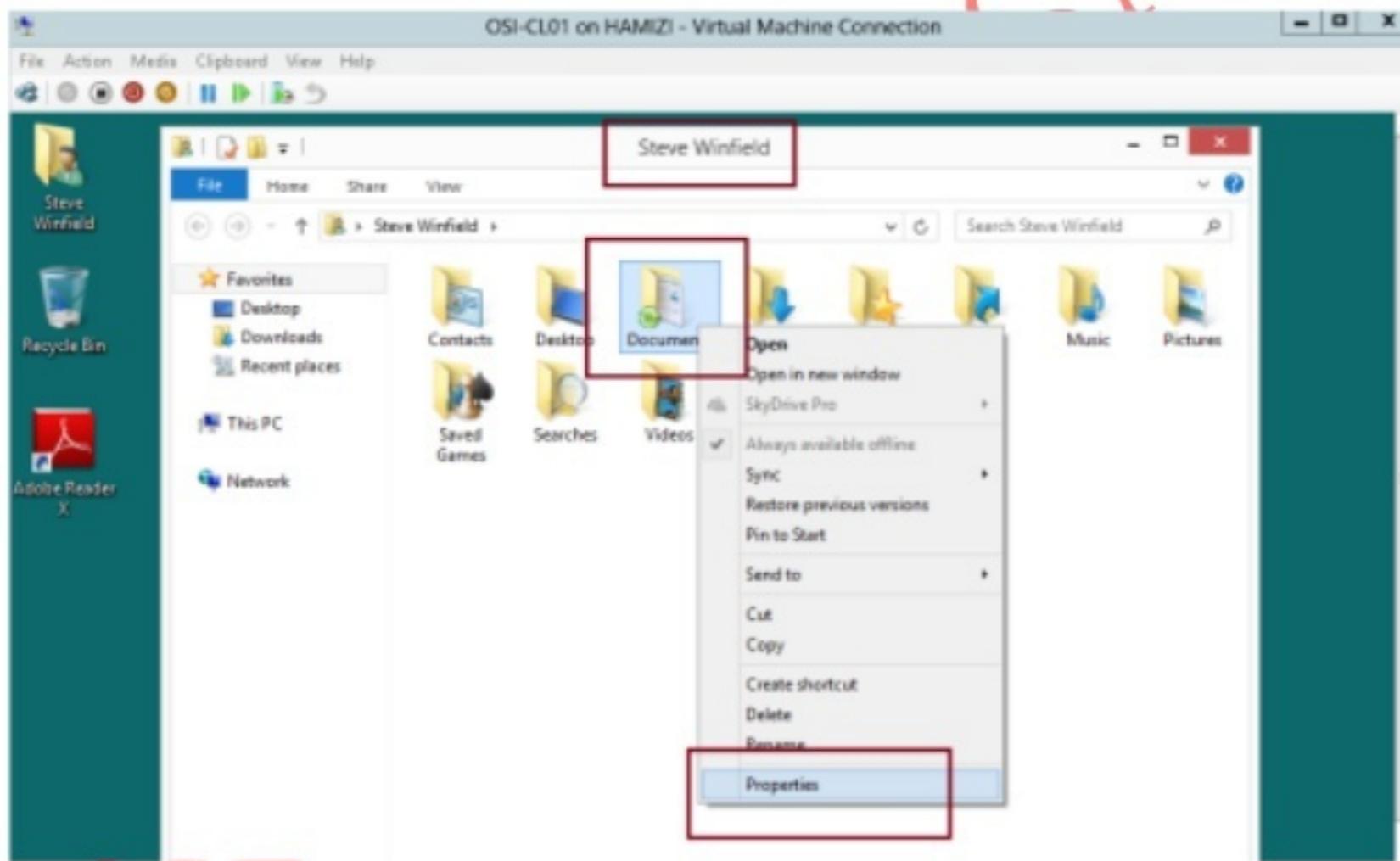


10 – In Desktop Icon Settings, select the User's Files check box, and then click OK...

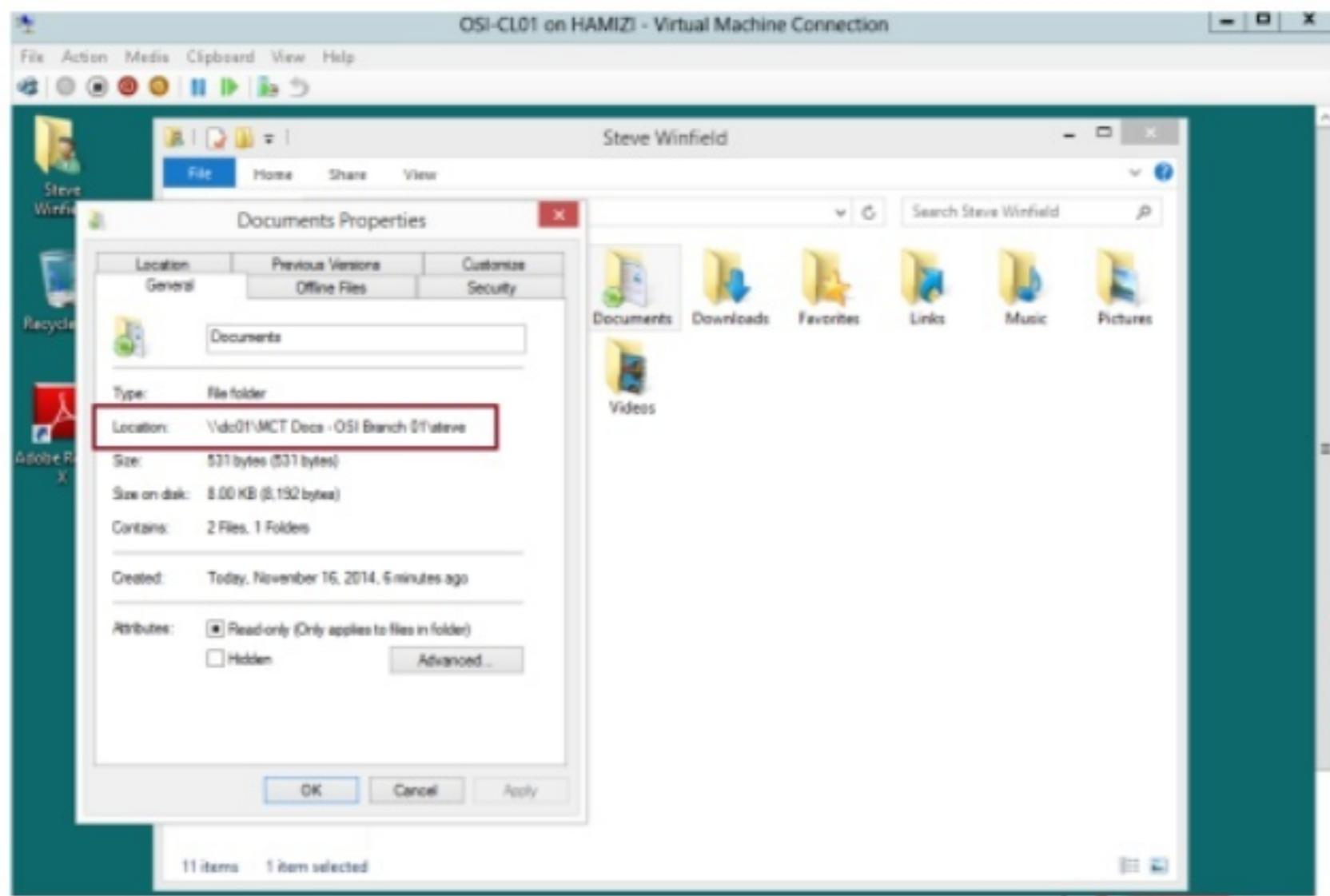


11 – On the desktop, double-click Steve Winfield folder...

– Right-click Documents, and then click Properties...



12 – In the Document Properties dialog box, verify that the location of the folder is now the network share in a subfolder named for the user...



OK, that's it for now..

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## ANSWER KEYS

### Self-Check 1.1

1. What are the two types of Network Operating System?

- Peer to Peer Network
- Client/Server Network

2. What are the advantages of a Peer to Peer network?

- Ease of setup
- Less hardware needed, no server need be acquired

3. What are the disadvantages of Peer to Peer network?

- No central location for storage
- Less security than the client-server model

4. What are the advantages of a Client/Server network?

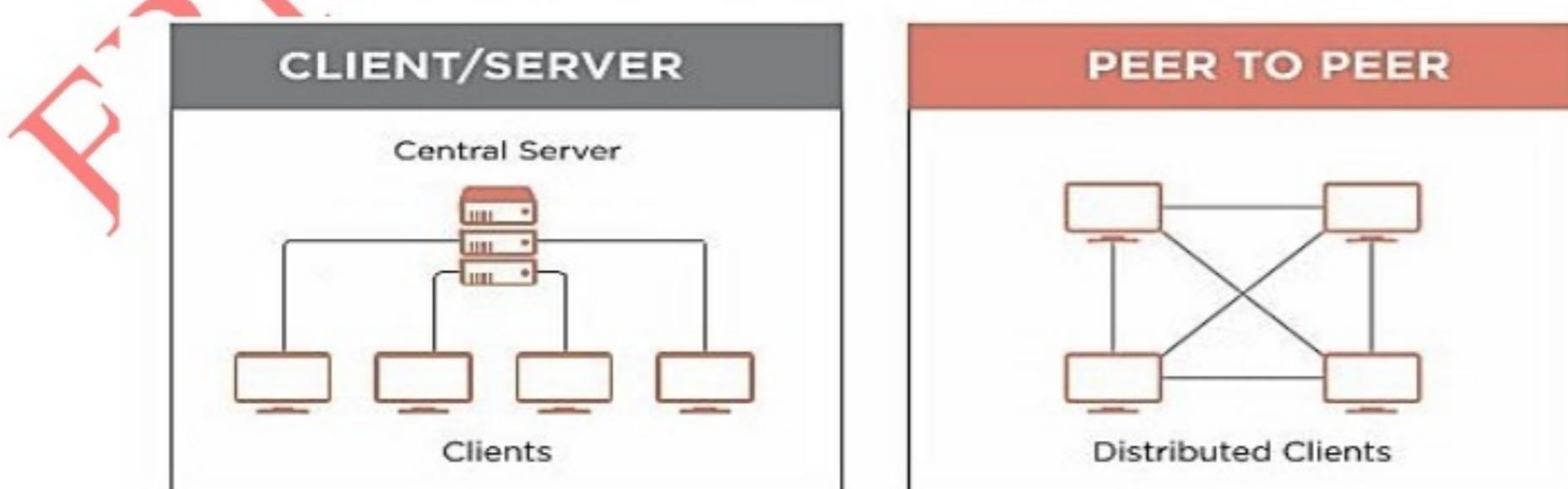
- Centralized servers are more stable.
- Security is provided through the server.
- New technology and hardware can be easily integrated into the system.
- Hardware and the operating system can be specialized, with a focus on performance.
- Servers are able to be accessed remotely from different locations and types of systems.

5. What are the disadvantages of Client/Server network?

- Buying and running a server raises costs.
- Dependence on a central location for operation.
- Requires regular maintenance and updates.

6. Draw a simple diagram of peer to peer network vs. client/server network.

### Client/Server Network Vs Peer to Peer Network



### **Self Check 2.1**

1. Steps you need to consider when configuring peer to peer network
  - Ensure that at least two computers are connected to the network.
  - Connect router to switch, and switch to PCs (No patch panel yet).
  - All the computers should have unique IP address either Static/Dynamic.
2. Outline for configuring client/server network
  - INSTALL WINDOWS SERVER Standard on PC1-SERVER
  - INSTALL WINDOWS 7 on PC2-CLIENT
  - Create Network Cable (6pcs straight through cable)
  - Set-up Basic Network Configuration
  - Install LAN drivers
  - Change PC settings
  - Set Static IP for PC SERVER
  - Set Preferred DNS for PC CLIENT
  - Run DCPROMO (Domain Controller Promoter)
  - Install Active Directory Domain Services (ADDS)
  - Configure Services (Function Discovery, SSDP, UPnP)

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