Experiment No: 5

Date:

FTP AND NFS CONFIGURATION

AIM:

To demonstrate FTP Server and NFS configuration.

PROCEDURE:

FTP:

FTP (File Transfer Protocol) is a network protocol for transmitting files between computers over Transmission Control Protocol/Internet Protocol (TCP/IP) connections. FTP is a client-server protocol that relies on two communications channels between the client and server: a command channel for controlling the conversation and a data channel for transmitting file content.

Here is how a typical FTP transfer works:

- 1. A user typically needs to log on to the FTP server, although some servers make some or all of their content available without a login, a model known as anonymous FTP.
- 2. The client initiates a conversation with the server when the user requests to download a file.
- 3. Using FTP, a client can upload, download, delete, rename, move and copy files on a server.

FTP INSTALLATION AND CONFIGURATION:

- On the taskbar, click Server Manager.
- In Server Manager, click the Manage menu, and then click Add Roles and Features.
- In the Add Roles and Features wizard, click Next.
- Select the installation type as Role-based or Feature-based and click Next.
- Select the destination server and click Next.
- On the Server Roles page, select Web Server (IIS), and click next.
- On the Select features page, click Next again.
- In the Select Role Services page, select FTP Server and its child services and click next,
- On the Confirm installation selections page, click Install.
- After successful installation, click Close.

How to use the FTP Site Wizard to Create an FTP Site with basic Read/Write Access

- Open Tools -> Internet Information Services (IIS) Manager
- In the Connections pane, expand the SERVER.
- Right-click the Sites node in the tree and click Add FTP Site, or click Add FTP Site in the Actions pane.



- When the Add FTP Site wizard appears:
 - Enter a site name (eg: "FTP_test_site") in the FTP site name box.
 - For the Physical path box, select the directory to be shared over FTP (here "FTP folder"). Click Next.

Add FTP Sit	te ? X
Site Information	
FTP site name: FTP_test_site Content Directory Physical path: C:\FTP_home	
Previous	Next Finish Cancel

- On the Binding and SSL Settings page:
 - Choose an IP address for your FTP site from the IP Address drop-down
 - By default, FTP sites and clients use port 21.

• For the SSL options, choose No SSL to disable the SSL options.

Add FTP Site	?	x
Binding and SSL Settings		
Binding		
IP Address: Port:		
192.168.0.1 🗸 21		
Enable Virtual Host Names:		
Virtual Host (example: ftp.contoso.com):		
Start FTP site automatically		
SSL No SSL		
O Allow SSL		
O Require SSL		
SSL Certificate:		
Not Select View		
Previous Next Finish (ancel	
	ancer	

- On the next page of the wizard:
 - Select "Basic" for the Authentication settings.
 - For the Authorization settings, choose "All users" from the Allow access to drop-down. We can set the access to specific users and groups also.
 - Select the Permissions option (here Read only), and click Finish.

Add FTP Site	? X
Authentication and Authorization Information	
Authentication Anonymous Image: Basic	
Allow access to: All users Permissions Read Write	
Previous Next	Finish Cancel

Client System

- Open any Explorer window.
- Type ftp://ftp_server_ip_address at the address bar (here ftp://192.168.0.1) and press Enter.



• Give the Username and Password of the domain user and click Logon.

Log On A	٩s			
? >	Either the serve accepted.	r does not allow anonymous logins or the e-mail address was not		
	FTP server:	192.168.0.1		
	<u>U</u> ser name:	x 🗸		
	Password:	•••		
	After you log on, you can add this server to your Favorites and return to it easily.			
⚠	FTP does not en server. To prot	crypt or encode passwords or data before sending them to the ect the security of your passwords and data, use WebDAV instead.		
	Log on anony	/mously <u>S</u> ave password Log On Cancel		

• The FTP_folder will be opened for reading. We can open or copy any file to our local system.

NFS:

The Network File System (NFS) is a mechanism for storing files on a network. It is a distributed file system that allows users to access files and directories located on remote computers and treat those files and directories as if they were local. Its advantages are;

- Allows easy sharing of data among clients.
- Provides centralized administration.
- Provides security, i.e. one must only secure the servers to secure data.

NFS Installation and Configuration

Installation

- 1. Launch Server Manager.
- 2. On the top menu, click Manage.
- 3. Click Add Roles and Features.
- 4. On the Before you begin screen, click Next.
- 5. On the Select installation type screen, ensure **Role-based or feature-based installation** is selected, and then click Next.
- 6. On the Server selection screen, click Next.
- 7. On the Select server roles screen, expand File and Storage Services, expand File and iSCSI Services, and then check **Server for NFS**.

B	Add Roles and Features Wizard	_ D X
Select server roles Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Add Roles and Features Wizard Select one or more roles to install on the selected server. Roles	DESTINATION SERVER server.testdomain.com
	Storage Services (Installed) V Storage Services (Installed)	
	< Previous Next >	Install Cancel

- 8. Click Next.
- 9. If an Add features that are required for Server NFS dialog box appears, click **Add Features**.
- 10. On the Select feature screen, click Next.
- 11. Confirm the installation details, and then click Install.

Configuration

- 1. Launch File Explorer.
- 2. Create a new directory for your NFS share.
- 3. Right-click the directory and click **Properties**.
- 4. Select the NFS Sharing tab.
- 5. Under the NFS Sharing tab, click the Manage NFS Sharing... button
- 6. Check the **Share this folder** check box.

NFS Advanced Sharing		
✓ Share this folder		
⊂ Settings		
Share name: NFS_home		
Network name: SERVER		
Encoding: ANSI		
✓ Kerberos v5 privacy and authentication [Krb5p]		
✓ Kerberos v5 integrity and authentication [Krb5i]		
✓ Kerberos v5 authentication [Krb5]		
✓ No server authentication [Auth_SYS]		
Enable unmapped user access		
 Allow unmapped user Unix access (by UID/GID) 		
C Allow anonymous access		
Anonymous UID: -2		
Anonymous GID; -2		
To set permissions for how users access this folder over the network, click Permissions Permissions		
OK Cancel Apply		

- 7. Enter a name into the Share name text field. This will be used when a user connects to your NFS share.
- 8. Click the **Permissions** button.
- 9. By default, all machines have Read-only access. Click **Add** and then enter the IP address or hostname of the client(s) you want to allow connections to.
- 10. When added, you may also select whether they have readwrite access or read-only access.

	NFS Share	Permissic	ons ? X
NFS Share Path: <u>N</u> ame:	C:\NFS_share		
192.168.0.2 ALL MACHINES	Read-Write Read-Only	ANSI ANSI	Root Access Disallowed Root Access Disallowed
			Add <u>R</u> emove
<u>Iype of access:</u> Encoding:	Read-Write ANSI	•	Allo <u>w</u> root access
		[<u>O</u> K <u>C</u> ancel

- 11. Click **OK**.
- 12. Click **Apply** and then **OK**.

Setting the Security Permissions

- 1. Right click on the folder and click on **Properties**.
- 2. Click on **Security**.

NFS_share Properties	×		
Previous Versions Customize NFS Sharing			
Object name: C:\NFS_share			
Group or user names:			
CREATOR OWNER			
Administrators (TESTDOMAIN\Administrators)			
To change permissions, click Edit.			
Permissions for CREATOR OWNER Allow Deny			
Full control			
Modify			
Read & execute			
List folder contents			
Read			
Write 🗸			
For special permissions or advanced settings, Advanced click Advanced.			
OK Cancel Apply			

3. Click on **Edit**.

Permissions f	or NFS_share	x
Security		
Object name: C:\NFS_share		
Group or user names:		
SYSTEM		
Administrator		
Administrators (TESTDOMAI	N\Administrators)	
	Add	Remove
Permissions for SYSTEM	Allow	Deny
Full control	✓	
Modify	✓	
Read & execute	✓	
List folder contents	✓	
Read	✓	
ОК	Cancel	Apply

4. Click on Add, type Everyone in the object names field and click on Check Names. Click OK.

Select Users, Computers, Service Accounts, or	Groups X
Select this object type:	
Users, Groups, or Built-In security principals	Object Types
From this location:	Locations
Enter the object names to select (<u>examples</u>):	Locations
Everyone	Check Names
Advanced OK	Cancel

5. Give permissions to the user type Everyone. Click **Apply** and **Ok**.

Permissions f	or NFS_share	×
Security		
Object name: C:\NFS_share		
Group or user names:		
SYSTEM		
Administrator	N\Administrators)	
& Everyone		
	Add	Remove
Permissions for Everyone	Allow	Deny
Full control		
Modify	•	
Read & execute	✓	
List folder contents	✓	
Read	~	
ОК	Cancel	Apply
	Cancer	7. ppiy

Enabling the NFS client on a Windows 7 system:

- 1. Click on **Start** and select the **Control Panel**.
- 2. Select Programs.
- 3. Select Programs and Features.
- 4. Select **Turn Windows Features on or off**. (Mostly, it needs to enter the domain administrator password to get the Windows Features window).
- 5. Expand Services for NFS.
- 6. Select the checkbox **Client for NFS** and click **OK**.

📴 Windows Features			
Turn Windows features on or off	0		
To turn a feature on, select its check box. To turn a feature off, clear its check box. A filled box means that only part of the feature is turned on.			
🕀 🔽 🐌 Media Features	*		
🕀 🔳 🚡 Microsoft .NET Framework 3.5.1			
🕀 💷 🚡 Microsoft Message Queue (MSMQ) Server			
🕀 🔳 📔 Print and Document Services			
Remote Differential Compression	=		
RIP Listener			
🖃 🔲 🎍 Services for NFS			
Administrative Tools			
Client for NFS			
🗉 🗉 📗 Simple Network Management Protocol (SNMP))		
Simple TCPIP services (i.e. echo, daytime etc)			
Subsystem for UNIX-based Applications	*		
ок	Cancel		

- 7. A window will pop up indicating service installation status. After successful operation, both windows will go off.
- 8. Close all windows.
- 9. Go to Start-> Computer.
- 10. Right click on Computer and click on Map network drive.

🛯 🔆 Favorites		 Hard Disk Drives (1) 	
🧮 Desktop		Local Disk (C:)	
📜 Dow	Expand		21.8 GB
🕍 Rece 🕥	Manage Open in 1	new window	vable Storage (1)
⊳ 📄 Docι ⊳ 🎝 Mus	Map network drive Disconnect network drive		
▷ 🔛 Pictu ▷ 🛃 Vide	Add a ne	twork location	
Þ 🔣 Home	Delete Rename		
Proper		5]

11. Select a suitable Drive letter. Type the NFS shared folder in the format *server_ip:/shared_folder_name*. Make sure that Reconnect at logon is checked.

🔗 😪 Map Network Drive				
What ne	etwork folder would you like to map?			
Specify the	e drive letter for the connection and the folder that you want to connect to:			
Drive:	Z: •			
Folder:	192.168.0.1:/NFS_share			
	Example: \\server\share			
	Reconnect at logon			
	Connect using different credentials			
	Connect to a Web site that you can use to store your documents and pictures.			
	Finish Cancel			

12. Now we can use the drive (here Z:) as local.

RESULT:

Installed and configured the FTP and NFS in the server and tested using the client successfully.