File Server

Required Resources

In this Lab we need an extra Windows 10 VM machine and Windows Server 2022 to act as a dedicated File Server.

Create both VMs and join them to the domain, taking into consideration the naming convention we already established in the previous lab. The new machines are named GRPxClient2 and GRPxFS. Your file server must have a static IP address that will be provided by your instructor.

In total you will have 4 VMs:

1. Domain Controller (already installed and configured in the previous lab).
2. File Server (windows Server 2022 Data Center desktop experience edition).
3. 2 client machines (one was created in the previous lab and one need to be created.

Make sure all 4 VMs have different MAC and IP addresses and all are in the same domain.

NTFS Permissions

To be able to manage file servers and sharing data between users you have to understand the NTFS file permissions. NTFS (New Technology File System) is a file system that Microsoft uses in it's operating systems. NTFS supports assigning file and folder permissions to authenticated users and groups. These permissions are as follows:

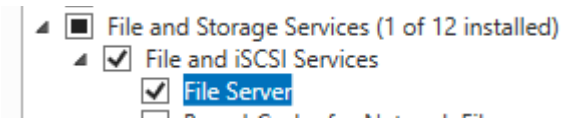
1. **Full Control:** Allows users to read, write, change, and delete files and folders. In addition, users can change permissions settings for all files and sub-folders.
2. **Modify:** Allows users to read and write files and sub-folders; also allows deletion of folders.
3. **Read & execute:** Allows users to view and run executable files, including scripts.

4. **List folder contents:** Permit viewing and listing files and sub-folders as well as executing files; inherited by folders only.
5. **Read:** Allows users to view the folder and sub-folder contents.
6. **Write:** Allows users to add files and sub-folders, allows you to write to a file.

Tasks

Setting up the File server rule

1. On your domain controller in active directory users and computers:
    a. Create a new OU named Nablus and create another one called Servers inside the Nablus OU.
    b. Find your file server object in the Computers OU and move it to Nablus\Servers.
    c. Create a nablus\Users OU and inside it Create three users [FSAdmin, User1, User2].
    d. For the purpose of this lab since Hyper-V is considered a remote desktop connection to the VMs we need to add all users to the Remote Desktop Users group.
2. Login to the File server using the FSadmin account.
3. To give FSAdmin administrative rights on the file server right click start menu and open PowerShell as administrator using the domain administrator credentials and run **compmgmt** this will open computer management as administrator.
7. In computer management go to Local users and groups\groups, double click administrators and add the FSAdmin.
4. Logoff and login back using FSAdmin.
5. In server management navigate to Manage --> Add Roles and Features.
6. Choose File and Storage Services --> File and iSCSI Services -->File Server. Finish the wizard.



Managing the File Server

1. In server manager click on **File and storage services** on the left-hand side then **shares**.
2. Click on **to create a file share, start the new share wizard**.
3. For now you can only create **SMB shares - Quick**. Select that and click **Next**.
4. For share location just click next.
5. Share name [**UsersData**] click **next**.
6. Check **Enable access-based enumeration.** Keep clicking next and finish the wizard.
7. Go to **C:\Shares** and right click **UsersData** and **open Security --> Edit--> Add.**
8. Add **User1** with **read, write & execute** permission and add **User2** with **Modify** permission. Click **OK**.
9. Open **advanced** to view the permissions.
10. In folder **UserData** create two new folders on named **User1** and the other **User2**.
11. Using notepad create a text file with text string “user1” inside and save it in User1 folder with the name user1.txt. Do the same for User2.

Accessing the Shares

1. In Client1 with user User1 open Run and type **\\GRPxFS** and hit enter.
    a. Open UserData\User1 folder and try to delete User1.txt, you won’t be able to do so.
    b. Create a new text file write something and save. Delete the file you created, this you can delete because you are the owner.
    c. Open user1.txt and modify the contents and save. This will prompt you to create a copy of the file.
2. In Client2 with user User2 logged in open Run and type **\\GRPxFS** and hit enter.
    a. Open User2 folder and delete user2.txt, you will be able to do so because you have Modify permission.
    b. Right click anywhere then **properties** --> **security** --> **edit** and try changing user2s’ permission you will not be able to do so.
    c. In the permissions for user2 dialog box click on user1 and try to give him modify permission, this will also fail.

3. On GRPxFS go to **C:\shares** and open the permissions of UserData folder and give User1 full control.
4. On Client1 with user1 logged in open **\\GRPxFS\UserData** and open the permissions.
    a. Now delete user1.txt file. Now you are permitted.
    b. Right click anywhere, open permissions and change user2s' permissions by removing his modify permissions.
5. On Client2 with user2 logged in open UserData and check your permissions [Modify Removed: cannot delete or rename files but can create].