**Assignment:** User and resource management. File and Folder Security.

**Required Resources**

* BrightSpace Course Resource Documents:
* Windows Server 2019 **Standard** from Assignment 1
* Windows 10 Education **22H2** Client from Assignment 1

**Professional Documentation**

All documentation must be done in a **professional style**. It must include:

* Title page
* **Updateable** Table of Contents
* Document introduction
* Section introductions or description, each section must be clearly identified
* Graphics or screenshots MUST include a title with a short description
* Any direct or copied quotes or graphics MUST be properly credited in a footnote
* ALL sources MUST be properly cited (APA format) and placed at the end of your document in a bibliography.
* **NO** embedded, zipped or compressed files. \*\* All scripts must be converted to text before including them in your documentation. \*\*
* **1 Professional Word Document ONLY.**

**Research and documentation sections** -Please complete all research and question responses in your own words. Research sections not completed in your own words may result in a mark of 0 for the section.

**NOTE:** Please do NOT copy and paste responses from internet, **even with a citation**. I expect each section or response to be in your own words. Be prepared to explain your responses and demonstrate your comprehension.

**No marks** will be given for cited or credited information included in document.

***\*\* I recommend completing any research section before completing any required task listed below as you will have a much better understanding of the material and data.***

**Evaluation:** This assignment is markedas per the attached Rubric (marks will be deducted for deviating from Requirements). \*\*You may be asked to demonstrate some of your assignment to show your comprehension of the material.

**Marking and Assignment Notes:**

* ScreenshotsMUST include user or device identifying information.
* Screenshots MUST be added to your document in the order of creation.
* Documentation must meet Professionalism requirements.
* **Automatic mark of 0 - Assignment not submitted or work not original.**

<http://www.nscc.ca/docs/about-nscc/policies-procedures/policy-studentcodeofconduct.pdf>

<https://www.nscc.ca/docs/about-nscc/policies-procedures/policy-academicintegrity.pdf>

**NOTE: This assignment may require some adaption, research and troubleshooting.**

Now that we have set up a Domain Development environment, we will learn more about some of the security and management requirements for a File and Folder.

**Task 1 – Adding Security Groups and users**

While we will be studying Users and Groups in much more detail shortly, for now we have to set up three Local Security Groups to use in this exercise.

* From your Server Manager / Active Directory Users and Computers:
* Create a Staff OU
* Create 4 new Global Security Groups in the staff OU:
  + Group Name = Sales\_gp
    - Add a description = Sales Group
  + Group Name = Marketing\_gp
    - Add a description = Marketing Group
  + Group Name = Management\_gp
    - Add a description = Management Group
  + Group Name = AllStaff\_gp

Add a description = All Staff Group

\*\*NOTICE: You will lose marks for incorrect naming. Please read carefully!

* Use the following table to create new employees, include departments and make them members of the groups created above based on department.
* Add each user to the All Staff Group.
  + Each User should now be members of 3 groups.

**Note:**

* User Logon Name follows Naming Convention
* Password = FirstLastInitial+Passw0rd (example: Marie Dutka = MDPassw0rd)
* \*\* Password does not expire

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **FirstName** | **LastName** | **FirstInitial** | **MiddleInitial** | **Dept & Description** |
| Charlotte | Anichka | C | A | Management |
| Myra | Dante | M | F | General |
| Brock | Finn | B | C | Management |
| Russell | Ina | R | B | General |
| Zia | Oleg | Z | R | Management |
| Carlos | Yen | C | D | Sales\_Mktg |
| Nina | Yuli | N | M | Sales\_Mktg |
| Aisha | Bruce | A | N | Management |

**Task 2 – Create and Implement a Secure Folder Structure**

Understanding File and Folder Permissions is critical to system security and management. Using the information gathered from your PowerPoint presentation and hands on practice complete to completed the folder design.

* Navigate to the root folder of your Server **H:** drive.
* Create a folder (in the **root** of the drive) named “CompanyInc”

\*\*NOTICE: You will lose marks for incorrect naming. Please read carefully!

* + Remove the **Users** group from the security permissions list but do NOT block permissions. (\*Remember Inheritance).
* Create these subfolders inside CompanyInc and assign the correct NTFS permissions to the correct group:
  + Management
    - Set security for the following groups:
      * Management: Everything **but** Full Control
      * Sales: Read and List Folder Content
      * Marketing: Read & Execute (notice this permission automatically includes read and list folder content)
  + Marketing
    - Set security for the following groups:
      * Management: Read & Execute plus Write
      * Sales: Read & Execute plus Write
      * Marketing: Everything **but** Full Control
* Inside Marketing, create an **Ad Campaign** subfolder, and set security:

**Ad Campaign** subfolder

* + - Security:
      * Management – Read & Execute plus Write

Sales – Read & Execute (\*Remember Inheritance)

* + - * Marketing – Everything but Full Control
      * Inside Ad Campaign - createa **Collateral** subfolder and set security:

**Collateral** subfolder

Security:

* Each group inherits security from Parent Folder.
  + Sales
    - Set security for the following groups:
      * Management: Default permissions & Write
      * Sales: Everything **but** Full Control
      * Marketing: Default permissions & Write
* Inside Sales, create this **Quarterly subfolder**, and set security as:

**Quarterly** subfolder

* + - Security:
      * Management – Default permissions & Write
      * Sales – Everything but Full Control
      * Marketing – Read & Execute (\*Remember Inheritance)
* **Stop**. We would like a report to track our permissions and confirm each permission was set correctly.
* If required create a Reports Folder on the root of your C drive.
* Run the following command to capture your permissions

**ICACLS H:\CompanyInc\ /T >> C:\Reports\ACLReports.txt**

* Review your permissions to ensure they are correct.
* Add a copy of your ACLReport.txt to your documentation.
* \*Be prepared to demo for comprehensive marking.

Now we will set up our share permissions.

*Additional Learning: We add the $ to the end of the share name will create a hidden share and stop the share from being visible if someone browses the network.*

* Using **Advanced Sharing** set your **Share** permissions for each of your departmental folder as required below:
* CompanyInc\Management folder.
  + Set Share Name to Management$
  + Limit the number of users to 8
  + Management Group - Share with **Full Control** permissions
  + Marketing Group - Share with **Read** permissions
  + Sales Group - Share with **Read** permissions
  + Remove ‘Everyone’ from the Share Permissions
* CompanyInc\Marketing folder
  + Set Share Name to Marketing$
  + Limit the number of users to 10
  + Management Group - Share with **Full Control** permissions
  + Marketing Group - Share with **Change** permissions
  + Sales Group - Share with **Read** permissions
  + Remove ‘Everyone’ from the Share Permissions
* CompanyInc\Sales folder
  + Set Share Name to Sales$
  + Limit the number of users to 12
  + Management Group - Share with **Full Control** permissions
  + Marketing Group - Share with **Read** permissions
  + Sales Group - Share with **Change** permissions
  + Remove ‘Everyone’ from the Share Permissions
* Test your Shares and permissions by accessing your share through your **Client** **VM**.
* Open File Explorer on your Host Machine
* In the Address Bar at the top type the following

Example. [**\\ServerHostName\ShareName**](file:///\\ServerHostName\ShareName)

* Notice the login in Window
* Log in with a user from that group.

Example. **NetBios\ABruce**

* Complete the steps above for each of your 3 new shares.
* Review the following to confirm your connection success:
  + Shares
  + Sessions
  + Open Files
* **Stop**. Be prepared to Demo your Shares, Share Access and Share permissions.

**Part 2**

Considering both **NTFS and Share** permissions, **copy** (Do NOT recreate) and complete the following summary table and add it to your documentation. Remember to record ONLY the top-level permission. Example. RX, L, R = RX

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Folder** | **User or Group** | **NTFS Permissions** | **Share Permissions** | **Effective Access**  **(POLP)** |
| Management Folder | Management Group |  |  |  |
| Sales Group |  |  |  |
| Marketing Group |  |  |  |
|  |  |  |  |  |
| Marketing Folder | Management Group |  |  |  |
| Sales Group |  |  |  |
| Marketing Group |  |  |  |
|  |  |  |  |  |
| Sales Folder | Management Group |  |  |  |
| Sales Group |  |  |  |
| Marketing Group |  |  |  |
|  |  |  |  |  |
| Ad Campaign Folder | Management Group |  |  |  |
| Sales Group |  |  |  |
| Marketing Group |  |  |  |
|  |  |  |  |  |
| Collateral Folder | Management Group |  |  |  |
| Sales Group |  |  |  |
| Marketing Group |  |  |  |
|  |  |  |  |  |
| Quarterly Folder | Management Group |  |  |  |
| Sales Group |  |  |  |
| Marketing Group |  |  |  |
|  |  |  |  |  |

**Task 3 – Home Folders (Directories), Drive Mapping and Folder Redirection.**

We will be creating a Home Folder which we will use to create Home Folders/Drives (Directories) for each of our users. Remember, even though they look and function similar to standard folders and shares they are considered a specific type of directory by Windows Servers.

*Learning Reminder: We will also set the share permissions to Full control as we will manage security permissions through NTFS. Remember permissions are cumulative and the most restrictive permissions win.*

*Additional Learning:*

* [Automatic creation of user folders for home, roaming profile and redirected folders. - Microsoft Community Hub](https://techcommunity.microsoft.com/t5/ask-the-directory-services-team/automatic-creation-of-user-folders-for-home-roaming-profile-and/ba-p/395527)
* [How to get to the Desktop, Documents, and Pictures folders in File Explorer - Microsoft Support](https://support.microsoft.com/en-gb/windows/how-to-get-to-the-desktop-documents-and-pictures-folders-in-file-explorer-3370f06b-0f8d-4b25-be9a-3ee54f381e3d)
* [Work Folders overview | Microsoft Learn](https://learn.microsoft.com/en-us/windows-server/storage/work-folders/work-folders-overview)
* In the root of the Server P drive create a folder called Home
* Use Advanced Sharing to:
  + Share name = Home$
  + Permission =
* Domain Users = Full Control
* Everyone = no permissions, please remove this group

Now that we have shared the directory we will need to configure the NTFS permissions.

* Modify your NTFS Advanced permissions of your Home folder to **disable** inheritance and set the new permissions as follows:
* \* Remember to Replace all child object permission entries with inheritable permission entries from this object.
* **\*\* Remember to Convert inherited permission into explicit permissions on this object.**
* CREATOR OWNER - Full Control (Subfolders and Files Only)
* SYSTEM - Full Control (This folder, subfolders and Files)
* Domain Admins - Full Control (This folder, subfolders and Files)
* Administrators - Full Control (This folder, subfolders and Files)
* Domain Users – (**Folder ONLY**)
  + Select these are **advanced** permissions.
  + Traverse Folder / execute file
  + List Folder / read data
  + Create Folders / append data
* Remove all other users or groups
* \*\*Make sure to enable inheritance so our permissions will continue.
* **Stop**. Take a screenshot(s) of your Advanced Permissions settings, make sure to include Advanced Permissions for all users **and** capture a screenshot of your domain users special advanced permissions and add both screenshots add it to your documentation.

Now that we have setup our required directory structure, we will need to make some modifications to our Active Directory Users and Computers to complete the setup of the home folders for each user.

Learning Reminder:

[File path formats on Windows systems | Microsoft Learn](https://learn.microsoft.com/en-us/dotnet/standard/io/file-path-formats)

[Complete List of Environment Variables in Windows 11 Tutorial | Windows 11 Forum (elevenforum.com)](https://www.elevenforum.com/t/complete-list-of-environment-variables-in-windows-11.11212/)

* Open your Users and Computers/Staff
* Arrange by type
* Select All your user types objects
* Select Properties/Profile
* Create a Home Folder for each user with the following settings:
  + Drive = P
  + Maps to Home$ share for each user (remember to use the environmental variable for user names).
  + Set the NTFS permission for each user to everything but FULL.
* **Stop**. Be prepared to Demo your Home Folder and Directories Shares and NTFS permissions.

We do not want our clients to have multiple working copies of their documents and possibly have issues with reliable backups and make it easy to management and audit document security, so we will redirect our workstations Documents and Pictures to our users Home Folders. You may use the web site [Using Folder Redirection in Group Policy | Microsoft Docs](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/dn789199(v=ws.11)) as a support to complete your folder redirection.

* Edit your current Group Policy
* Set **Folder Redirection** to redirect your users Documents to their home directory with these settings. (Some research may be required for this step.)
  + Settings = Basic
  + Target = Redirect to users home directory
  + Settings = Uncheck Grant the user exclusive rights to Documents
  + Leave all other default settings
* Now that we have redirected our Documents folder let’s use also redirect our Pictures folder.
  + Use the “Follow the Documents folder” configuration for your Pictures.

We also want to map a path to our CompanyInc directory.

* Map a drive to your CompanyInc Shares. You may use the web site [Drive Map | Microsoft Learn](https://learn.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/dn581924(v=ws.11)) as a support to complete your drive mapping and deploy using Group Policy.
* Drive Mapping Settings (one for each Departmental Share):
* Sales Share Drive = S
  + Item Level Targeting = AllStaff\_gp (user in group)
* Marketing Share Drive = M
  + Item Level Targeting = AllStaff\_gp (user in group)
* Management Share Drive = Z
  + Item Level Targeting = AllStaff\_gp (user in group)

Now we will test that all our settings, permissions, shares, mapping, etc.. have been successful.

**Test with your Client**

* Log in as your Client as Brock Finn.
* Run **gpupdate /force** in an elevated command prompt
* Restart your computer and log back in as Brock Finn.
* You should see your S: M: Z: and P: drives
  + Please troubleshoot your issues until ALL drives are accessible.
* Now let’s test our redirection, create a blank text document in notepad called “YourFirstInitialLastName.txt” and save it to the Documents folder.
* Open your File Explorer and select This PC

Also, notice we have a new icon for our Documents directory (circle with two arrows)

* Confirm you have a:
* A P: drive mapped to your home directory (notice it has a similar icon as we saw in on the Documents directory)
* Home directory contains your YourFirstNameLastName.txt file created earlier.
* Documents directory contains your YourFirstNameLastName.txt file created earlier.
* Now lets test our Departmental shares by creating a folders.
* Be prepared to **Demo** the successful creation of your drives and folder redirection with the user identified during comprehensive marking.
* **Create** a snapshot of the Server and workstation in the “off” state, following your naming convention for snapshots. Be prepared to **demo** your snapshots.
* Create “Gold” Copy of your **Server** only as we have not made any changes to the client.
* **Stop**. Capture a screenshot of the properties of your Server Gold copies, ,make sure to include, creation date, size, location and name.

**Comprehensive and Documentation Submission Marking**

|  |  |
| --- | --- |
| **Value** | **Task** |
|  | **Comprehensive Marking** |
| 3 | Demo directory design and permissions. |
| 3 | Demo your Shares, Share Access and Share permissions on Server and Client. |
| 4 | Demo your Home Folder and Directories Shares and NTFS permissions. |
| 10 | Demo the successful creation of your drives and folder redirection with the user identified during comprehensive marking.  Drive Mapping to each share (3 marks)  Home Directory (2 marks)  Folder Redirection (5 marks) |
| 1 | Snapshot of Server with correct naming convention |
| **21** | **Total Marks for comprehensive marking** |
|  | **Submitted Documentation** |
| 10 | ACLReport with correct directories and permissions. (Inheritance properly disabled and re-established were required.) |
| 36 | NTFS, Share and Effective Permissions Table completed correctly.   * NTFS = .5 * Share = .5 * Effective Permissions= 1 |
| 5 | Screenshot of Home Folder and Directory Permissions setup correctly. |
| 2 | Gold copy **properties** of **server** with required details. |
| 1 | Document follows all Professional documentation requirements as per page 1 of assignment |
| **54** | **Total Marks for document submission** |
|  |  |
| **75** | **Total Assignment Marks.** |