**Introduction:**

You are the administrator of fdm1.local domain, the organization is going through restructuring and for that you need to redesign the active directory and align it with the new structure. You are also required to fulfil the frequent routine requests such as creating users and computers accounts, applying certain configurations, sharing and auditing resources, in addition to monitoring the servers’ performance and analysing their events to help you fixing any problem or proactively preventing it from happening.

**Guidelines:**

* All Scripts should be stored in the following path: C:\Project\_Scripts.
* Any object you create should belong to its appropriate OU, and not under any default folder or OU.
* Always follow Microsoft best practices.
* Make sure the Active Directory Recycle Bin is enabled.
* Create the following folders: C:\Reports, C:\Backup.

**Tasks List:**

1. Create and run a PowerShell script called “ProjectSetup.ps1” that does the following:
   1. Backup all Active Directory objects you created this week, starting from your Geographical OU and everything underneath to C:\Backup\Old\_AD\_Design.csv
   2. Delete those objects from your Active Directory
2. Perform the below using your preferred Active Directory tool:
   1. Create the following structure in your Active Directory:

Graphical user interface, application

Description automatically generated

* 1. Move Win-Client-1 computer account to the Computers OU of the Academy.
  2. Choose the correct type and scope for each of the following groups and create them:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Members | Usage | Location | Type | Scope |
| Sales\_Staff | All Sales Employees | To group the users of the Sales department | Sales OU |  |  |
| Recruitment\_Staff | All Recruitment Employees | To group the users of the Recruitment department | Recruitment OU |  |  |
| HR\_Staff | All HR Employees | To group the users of the HR department | HR OU |  |  |
| Trainers\_Staff | All trainers and Academy Administrators | To group the users of the training unit | Trainers OU |  |  |
| Trainees\_Staff | All trainees in the Academy | To group all the trainees | Trainees OU |  |  |
| Academy\_Print | Trainers\_Staff  Trainees\_Staff | For assigning printing access on the Academy Printer | Academy OU |  |  |
| Staff\_Print | Sales\_Staff  Recruitment\_Staff  HR\_Staff | For assigning printing access on the Staff Printer | Staff OU |  |  |
| AcadShare\_Access | Trainers\_Staff | For assigning access to the Academy Share | Academy OU |  |  |
| StaffShare\_Access | Sales\_Staff  Recruitment\_Staff  HR\_Staff | For assigning access to the Staff Share | Staff OU |  |  |

1. Create a PowerShell script called “Staff\_Add.ps1” that does the following:
   1. Prompt and read the employee’s first name, last name and his/her department.
   2. Create a user account for thismployee and make sure:

Name = “FirstName LastName”

SamAccountName = FirstName.LastName

UserPrincipalName = [FirstName.LastName@fdm1.local](mailto:FirstName.LastName@fdm1.local)

Department = Employee’s Department

Path = “OU=user’s department, OU=Users, OU=Academy or Staff it depends on the user’s department, OU=Windows Project, DC=fdm1, DC=local”

Password = P@ssw0rd

User must change password at next logon

* 1. Add the created user to the applicable group, example: if he/she is a Sales employee then he/she should be added to the Sales\_Staff Group.

1. Use your script to create the following employees:

|  |  |  |
| --- | --- | --- |
| First Name | Last Name | Department |
| Sally | Gags | Sales |
| George | Smith | HR |
| Teresa | Anderson | Recruitment |
| Aaron | Patel | Recruitment |
| Rachel | Lon | Trainees |
| Ben | Adders | Trainees |
| Michael | Lu | Trainers |
| Laila | Boutros | Trainers |

1. To make Win-Client-1 the file server for this project, you need to perform the following tasks:
   1. Create a folder called “Home” in C:, share this folder with the same name and set:

**Shared permissions:** Allow “Everyone” group à Full Control

**NTFS permissions:** Allow “Authenticated Users” group à Read, Read and Execute, and List Folder Contents

“Administrators” group à Full Control

“Domain Admins” group à Full Control

No one else has any access.

* 1. Create a folder called “AcademyData” in C:, share this folder with the name AcadShare and set:

**Shared permissions:** Allow “Everyone” group à Full Control

**NTFS permissions:** Allow “AcadShare\_Access” group Read, Read and Execute, List Folder Contents, and Write

“Administrators” group à Full Control

“Domain Admins” group à Full Control

No one else has any access.

* 1. Create a folder called “StaffData” in C:, share this folder with the name StaffShare and set:

**Shared permissions:** “Everyone” group à Allow Full Control

**NTFS permissions:** “StaffShare\_Access” group à Allow Read, Read and Execute, List Folder Contents, and Write

“Administrators” group à Allow Full Control

“Domain Admins” group à Full Control

No one else has any access.

* 1. Create a PowerShell Script called “AcadDrive.ps1” that maps the AcadShare to X: Drive. Do not run this yet, you will use this later.
  2. Create a PowerShell Script called “StaffDrive.ps1” that maps the StaffShare to X: Drive. Do not run this yet, you will use this later.
  3. Enable the auditing capabilities on both folders so later on we can track who did what.
  4. Update the home folder of all the users created in task 4 in the Windows Project OU to be: [\\Win-Client-1\Home\%username%](file://Win-Client-1/Home/%25username%25) and map it to Z:

1. To make Win-Client-1 the print server for this project, you need to perform the following tasks:
   1. Install HP Color LaserJet 6040 Printer, rename it to Academy Printer and set the permission to allow print for “Academy\_Print” group, share it with the name AcadPrint and list it in the Active Directory.
   2. Install HP Color LaserJet 6040 Printer again, rename it to Staff Printer and set the permission to allow Staff\_Print group print, share it with the name StaffPrint and list it in the Active Directory.
   3. Set higher priority for the Staff Printer.
   4. Enable the auditing capabilities for both printers so later on we can track who did what.
2. Edit default GPOs, Create new GPOs and link them to the applicable containers to achieve the following requirements:
   1. Password length should be at least 8 characters, users can’t change their passwords before at least 2 days, but they must change them after 90 days, and they can’t use any of their last 14 passwords.
   2. Enable auditing users’ logon/logoff attempts, and their attempts to access the shared folders and the printers mentioned in the previous tasks.
   3. No one in fdm1.local domain should be able to shut down the PCs except the administrators.
   4. All “Windows Project” users should have the following settings:

* Redirect their Documents to their Home Directories
* Set the Internet Settings à Connections à LAN Settings à Proxy Server’s address: <http://proxy.fdmgroup.com> - port: 8080 (Note: All PCs in our domain has at least Internet Explorer 10)
* Be members of the local Remote Desktop Users of all computers within the “Windows Project” OU, so they can establish remote desktop connection with them.
  1. All trainers should have AcadShare mapped to X: and the AcadPrint printer installed.
  2. All Staff should have StaffShare mapped to X: and the StaffPrint printer installed.

1. Write and run a PowerShell Script called “Disable\_Services.ps1” that disables all unused services on the Domain Controller to save resources for the used ones, and the unused services are:

* Windows Audio
* Smart Card
* Smart Card Removal Policy
* Internet Connection Sharing

1. Your domain controller performance is very critical for that you need to write, test and schedule a PowerShell script called “PerfMonitor.ps1” that runs daily at 10:00 AM and repeats every one hour to chck if there is any process that taking more than 50% of the CPU time or Memory size and display a message on the screen with the process name and its resources usage. Try to format your output to look as follows:

Graphical user interface, text, application, email

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1. Apply the following validation of inputs to the PowerShell script in Q3, if you haven’t done so already.
   1. Check to see if user exists, and, if they do, show a message.
   2. If the user tries to add a user to a department which doesn’t exist, show the appropriate message.

11. Scenarios:

1. A user keeps trying to change his password but is unable to; list what the possible issues are. (Think of four possible reasons)
2. A manager has worked on an important report all night and has brought it on a USB, however he is unable to use the USB, what’s the possible reason?
3. His line manager has approved the use of the USB for him, create the appropriate groups, and settings to allow this and take screen shots or write down the steps taken.
4. A user complains that an application is running slowly. What are possible reasons for this (list 4 possible reasons)