

IT 236 Project Report Form

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Date:	11/19/2025
Project Phase	Microsoft Entra PowerShell Administration

Section 1: Executive Summary

This phase of the NewVue Health Infrastructure Modernization Project focused on establishing secure and reliable administrative connectivity to the Microsoft Entra environment using PowerShell. The workstation was prepared for cloud administration by installing PowerShell 7, configuring execution policies, updating PowerShellGet, and confirming module readiness.

The Microsoft.Entra PowerShell module was deployed successfully, and a secure connection was established to the cloud tenant. Core directory information—including tenant attributes, domain configuration, user objects, and group structures—was queried to validate end-to-end connectivity between the workstation and the Microsoft Entra directory service.

Collectively, these steps establish the baseline operational capability required for subsequent cloud identity management, automation, and hybrid integration activities within the NewVue Health modernization project.

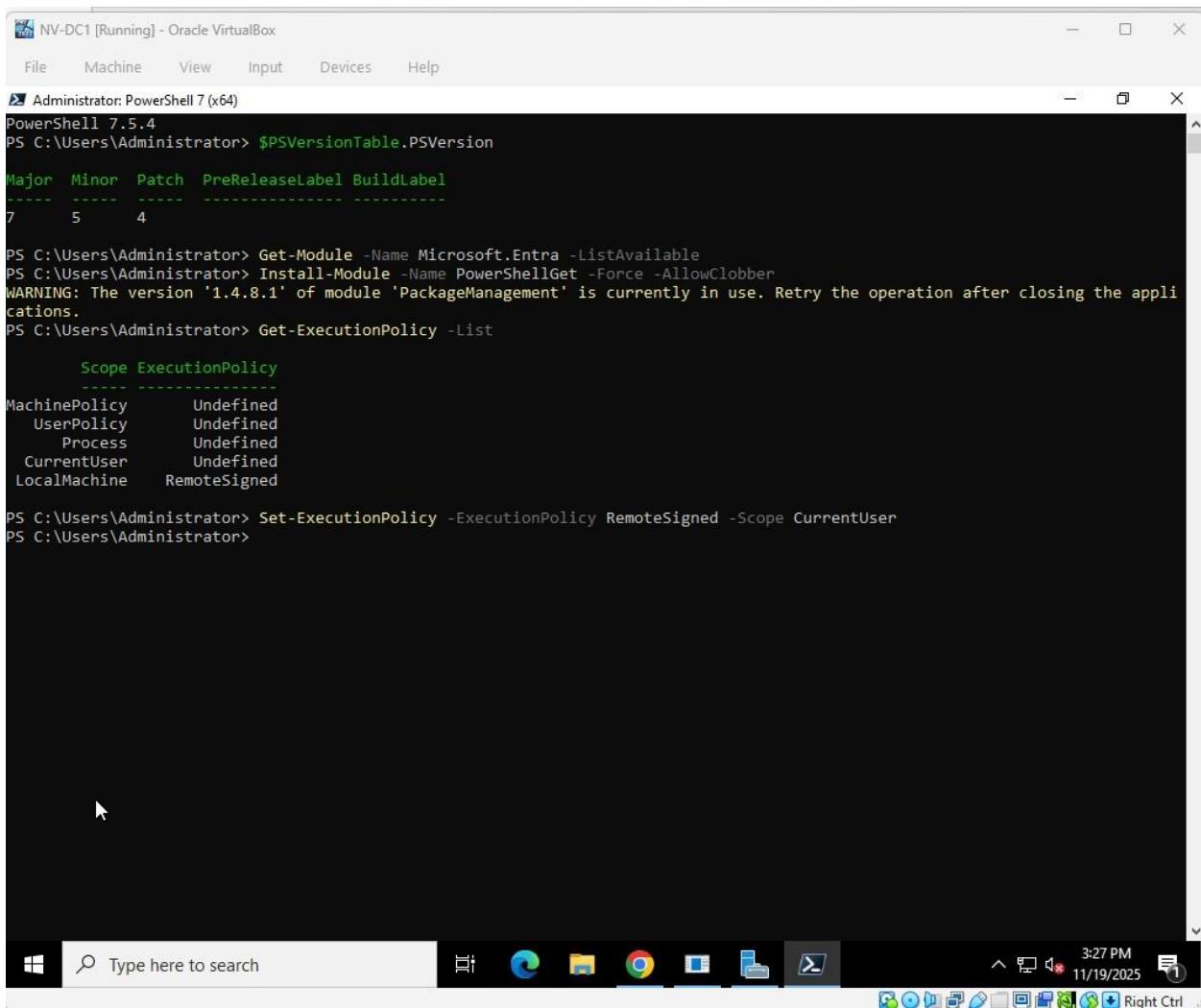
Section 2: Implementation & Verification Evidence

Task 1-Workstation Preparation (10 pts)

The workstation environment was prepared for Microsoft Entra PowerShell administration by installing PowerShell 7, validating the PowerShell version, updating PowerShellGet, checking execution policies, and confirming readiness for module installation.

Evidence Requirements

- **Evidence 1:** Screenshot showing:
 - PowerShell 7 version
 - Execution policy
 - PowerShellGet update



NV-DC1 [Running] - Oracle VirtualBox

Administrator: PowerShell 7 (x64)

```
PS C:\Users\Administrator> $PSVersionTable.PSVersion
Major  Minor  Patch  PreReleaseLabel BuildLabel
-----  -----  -----  -----
7      5       4      -          -
```

```
PS C:\Users\Administrator> Get-Module -Name Microsoft.Entra -ListAvailable
PS C:\Users\Administrator> Install-Module -Name PowerShellGet -Force -AllowClobber
WARNING: The version '1.4.8.1' of module 'PackageManagement' is currently in use. Retry the operation after closing the applications.
PS C:\Users\Administrator> Get-ExecutionPolicy -List
    Scope ExecutionPolicy
    -----
MachinePolicy      Undefined
UserPolicy        Undefined
Process           Undefined
CurrentUser        Undefined
LocalMachine      RemoteSigned
```

```
PS C:\Users\Administrator> Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Scope CurrentUser
PS C:\Users\Administrator>
```

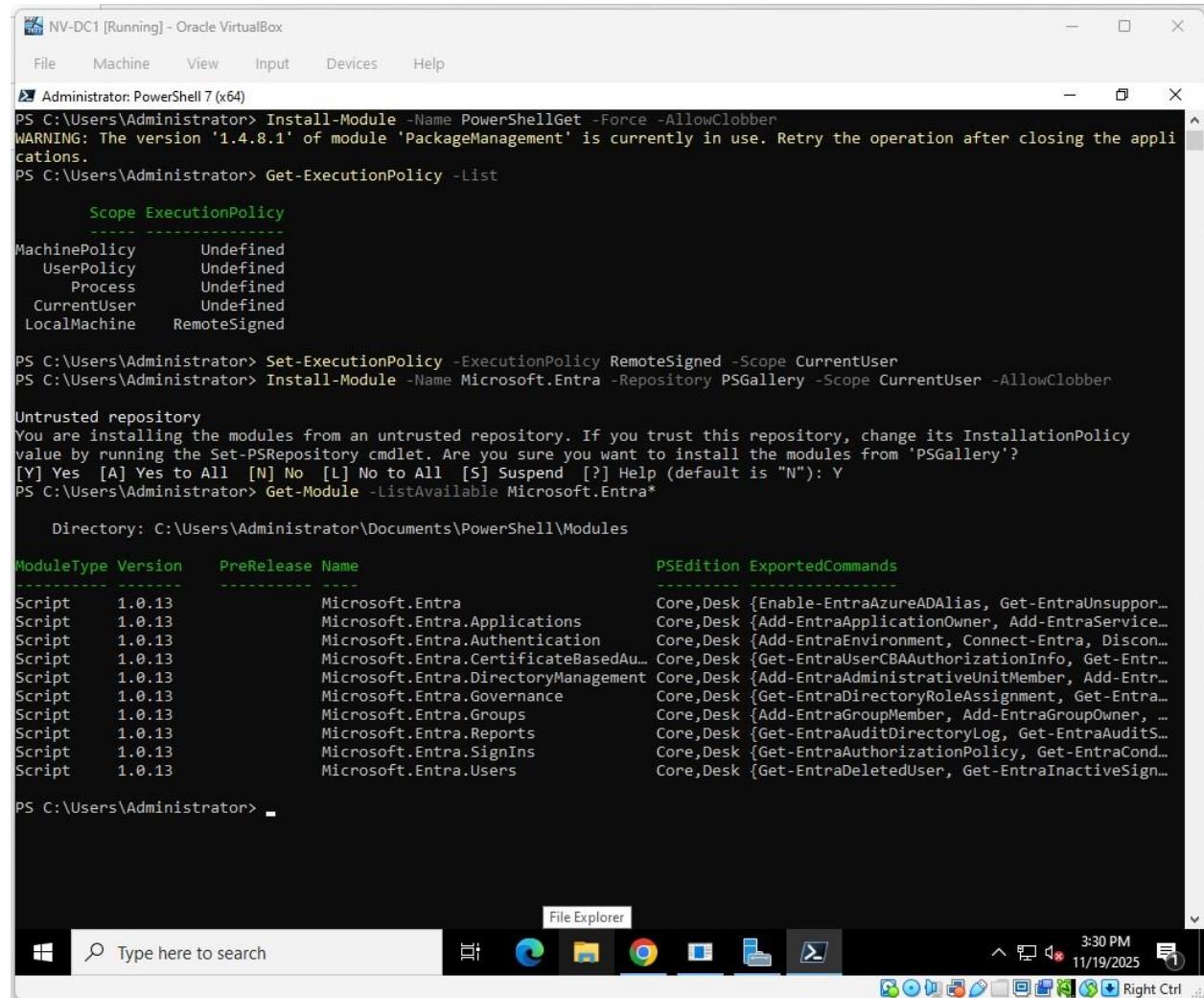
Type here to search 3:27 PM 11/19/2025 Right Ctrl

Task 2—Module Installation (10 pts)

The Microsoft.Entra PowerShell module was installed from the PowerShell Gallery, and availability of the module was verified to confirm a successful installation.

Evidence Requirements

- Evidence 2:** Screenshot showing installation and verification of the Microsoft.Entra module



The screenshot shows a Windows PowerShell window titled "NV-DC1 [Running] - Oracle VirtualBox". The window contains the following command-line session:

```
PS C:\Users\Administrator> Install-Module -Name PowerShellGet -Force -AllowClobber
WARNING: The version '1.4.8.1' of module 'PackageManagement' is currently in use. Retry the operation after closing the applications.
PS C:\Users\Administrator> Get-ExecutionPolicy -List
Scope ExecutionPolicy
-----
MachinePolicy Undefined
UserPolicy Undefined
Process Undefined
CurrentUser Undefined
LocalMachine RemoteSigned

PS C:\Users\Administrator> Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Scope CurrentUser
PS C:\Users\Administrator> Install-Module -Name Microsoft.Entra -Repository PSGallery -Scope CurrentUser -AllowClobber

Untrusted repository
You are installing the modules from an untrusted repository. If you trust this repository, change its InstallationPolicy value by running the Set-PSRepository cmdlet. Are you sure you want to install the modules from 'PSGallery'?
[Y] Yes [A] Yes to All [N] No to All [S] Suspend [?] Help (default is "N"): Y
PS C:\Users\Administrator> Get-Module -ListAvailable Microsoft.Entra*
Directory: C:\Users\Administrator\Documents\PowerShell\Modules

ModuleType Version PreRelease Name                                PSEdition ExportedCommands
----- -----------
Script    1.0.13          Microsoft.Entra                               Core,Desk {Enable-EntraAzureADAlias, Get-EntraUnsuppor...
Script    1.0.13          Microsoft.Entra.Applications                 Core,Desk {Add-EntraApplicationOwner, Add-EntraService...
Script    1.0.13          Microsoft.Entra.Authentication                Core,Desk {Add-EntraEnvironment, Connect-Entra, Discor...
Script    1.0.13          Microsoft.Entra.CertificateBasedAuth Core,Desk {Get-EntraUserCBAuthorizationInfo, Get-Entr...
Script    1.0.13          Microsoft.Entra.DirectoryManagement Core,Desk {Add-EntraAdministrativeUnitMember, Add-Entr...
Script    1.0.13          Microsoft.Entra.Governance                  Core,Desk {Get-EntraDirectoryRoleAssignment, Get-Entr...
Script    1.0.13          Microsoft.Entra.Groups                     Core,Desk {Add-EntraGroupMember, Add-EntraGroupOwner, ...
Script    1.0.13          Microsoft.Entra.Reports                   Core,Desk {Get-EntraAuditDirectoryLog, Get-EntraAudits...
Script    1.0.13          Microsoft.Entra.SignIns                  Core,Desk {Get-EntraAuthorizationPolicy, Get-EntraCond...
Script    1.0.13          Microsoft.Entra.Users                    Core,Desk {Get-EntraDeletedUser, Get-EntraInactiveSign...

PS C:\Users\Administrator>
```

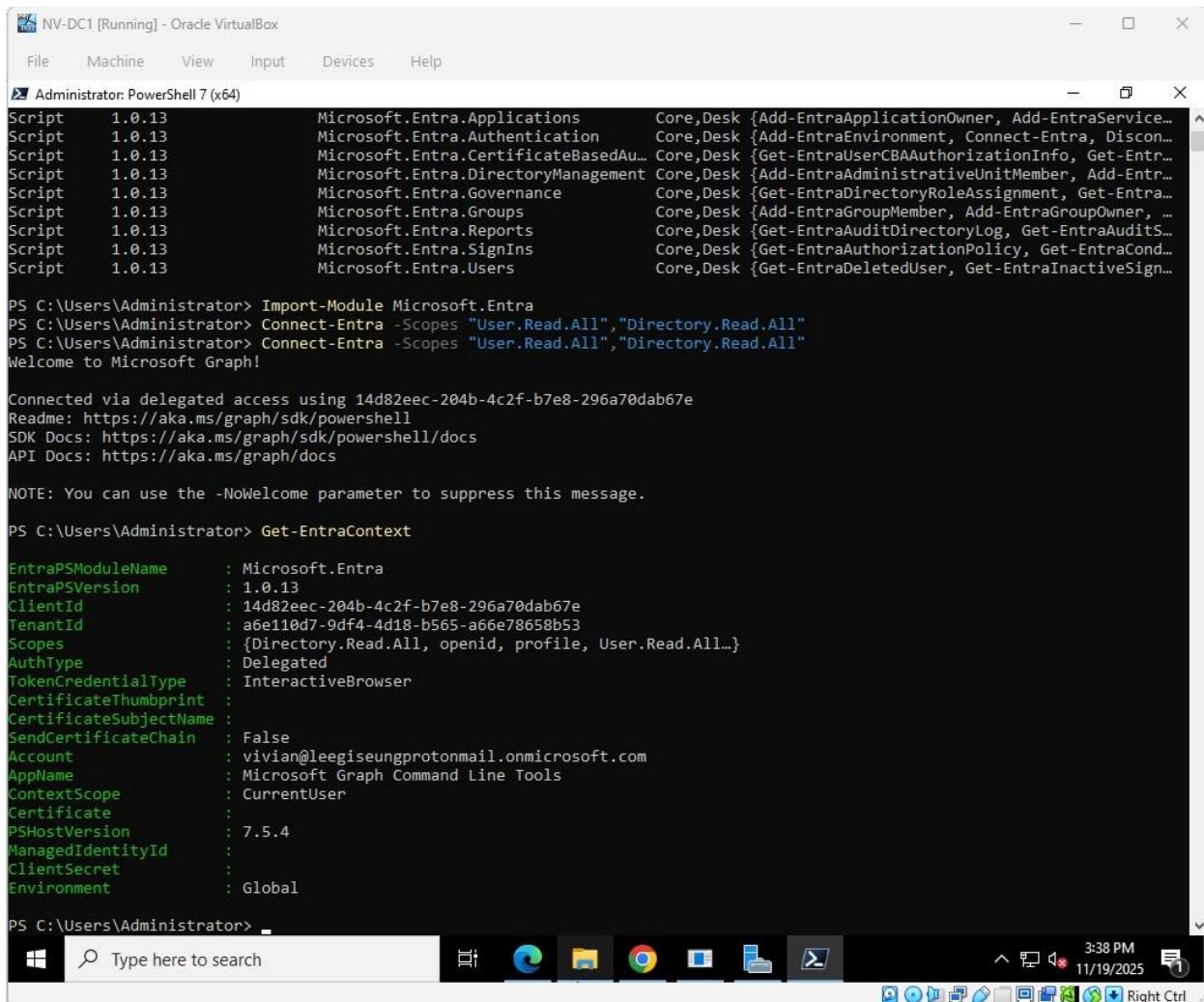
The PowerShell window is running in a Windows 7 environment, as indicated by the title bar and taskbar icons. The taskbar also shows the File Explorer icon.

Task 3—Entra Tenant Connection (10 points)

An authenticated PowerShell session was established with the Microsoft Entra tenant, and the session context was verified to confirm proper authentication and directory connectivity.

Evidence Requirements

- Evidence 3:** Screenshot of **Get-EntraContext** showing authenticated session details



```
NV-DC1 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Administrator: PowerShell 7 (x64)
Script 1.0.13 Microsoft.Entra.Applications Core,Desk {Add-EntraApplicationOwner, Add-EntraService...
Script 1.0.13 Microsoft.Entra.Authentication Core,Desk {Add-EntraEnvironment, Connect-Entra, Discon...
Script 1.0.13 Microsoft.Entra.CertificateBasedAu... Core,Desk {Get-EntraUserCBAAuthorizationInfo, Get-Entr...
Script 1.0.13 Microsoft.Entra.DirectoryManagement Core,Desk {Add-EntraAdministrativeUnitMember, Add-Entr...
Script 1.0.13 Microsoft.Entra.Governance Core,Desk {Get-EntraDirectoryRoleAssignment, Get-Entra...
Script 1.0.13 Microsoft.Entra.Groups Core,Desk {Add-EntraGroupMember, Add-EntraGroupOwner, ...
Script 1.0.13 Microsoft.Entra.Reports Core,Desk {Get-EntraAuditDirectoryLog, Get-EntraAudits...
Script 1.0.13 Microsoft.Entra.SignIns Core,Desk {Get-EntraAuthorizationPolicy, Get-EntraCond...
Script 1.0.13 Microsoft.Entra.Users Core,Desk {Get-EntraDeletedUser, Get-EntraInactiveSign...
PS C:\Users\Administrator> Import-Module Microsoft.Entra
PS C:\Users\Administrator> Connect-Entra -Scopes "User.Read.All","Directory.Read.All"
PS C:\Users\Administrator> Connect-Entra -Scopes "User.Read.All","Directory.Read.All"
Welcome to Microsoft Graph!

Connected via delegated access using 14d82eec-204b-4c2f-b7e8-296a70dab67e
Readme: https://aka.ms/graph/sdk/powershell
SDK Docs: https://aka.ms/graph/sdk/powershell/docs
API Docs: https://aka.ms/graph/docs

NOTE: You can use the -NoWelcome parameter to suppress this message.

PS C:\Users\Administrator> Get-EntraContext

EntraPSModuleName      : Microsoft.Entra
EntraPSVersion         : 1.0.13
ClientId               : 14d82eec-204b-4c2f-b7e8-296a70dab67e
TenantId               : a6e11d7-9df4-4d18-b565-a66e78658b53
Scopes                 : {Directory.Read.All, openid, profile, User.Read.All...}
AuthType               : Delegated
TokenCredentialType   : InteractiveBrowser
CertificateThumbprint  :
CertificateSubjectName :
SendCertificateChain   : False
Account                : vivian@leegiseungprotonmail.onmicrosoft.com
AppName                : Microsoft Graph Command Line Tools
ContextScope            : CurrentUser
Certificate             :
PSHostVersion          : 7.5.4
ManagedIdentityId      :
ClientSecret            :
Environment             : Global

PS C:\Users\Administrator>
```

NV-DC1 [Running] - Oracle VirtualBox

File Machine View Input Devices Help

Administrator: PowerShell 7 (x64)

```
PowerShell 7.5.4
PS C:\Users\Administrator> Get-EntraUser
Get-EntraUser: Not connected to Microsoft Graph. Use 'Connect-Entra -Scopes User.Read.All' to authenticate.
PS C:\Users\Administrator> Connect-Entra -Scopes "User.Read.All","Directory.Read.All"
Welcome to Microsoft Graph!

Connected via delegated access using 14d82eec-204b-4c2f-b7e8-296a70dab67e
Readme: https://aka.ms/graph/sdk/powershell
SDK Docs: https://aka.ms/graph/sdk/powershell/docs
API Docs: https://aka.ms/graph/docs

NOTE: You can use the -NoWelcome parameter to suppress this message.

PS C:\Users\Administrator> Get-EntraUser
```

DisplayName	Id	Mail	UserPrincipalName
Alice Morgan	83d90cb0-ce5d-4a2f-a32d-05ce86ab9843	alice.morgan@leegiseungprotonmail.onmicrosoft.com	alice.morg...
Brian Patel	c9620ac9-4bab-4117-adbd-ac45a839dd0a	brian.patel@leegiseungprotonmail.onmicrosoft.com	brian.pate...
Carla Johnson	2c59d80a-75f2-491b-beff-2dd776c0b58d	carla.johnson@leegiseungprotonmail.onmicrosoft.com	carla.john...
Daniel Kim	ab1b17a4-d1c7-42f5-86a1-0f2cb4951749	daniel.kim@leegiseungprotonmail.onmicrosoft.com	daniel.kim...
Evelyn Rodriguez	f77be2b9-ff7b-4913-bcda-6dfe7744cc16	evelyn.rodriguez@leegiseungprotonmail.onmicrosoft.com	evelyn.rod...
Vivian Goshashy	ba181a18-4d81-4a9b-8e32-6f86d7da2153		vivian@lee...

```
PS C:\Users\Administrator>
```

4:53 PM 11/19/2025

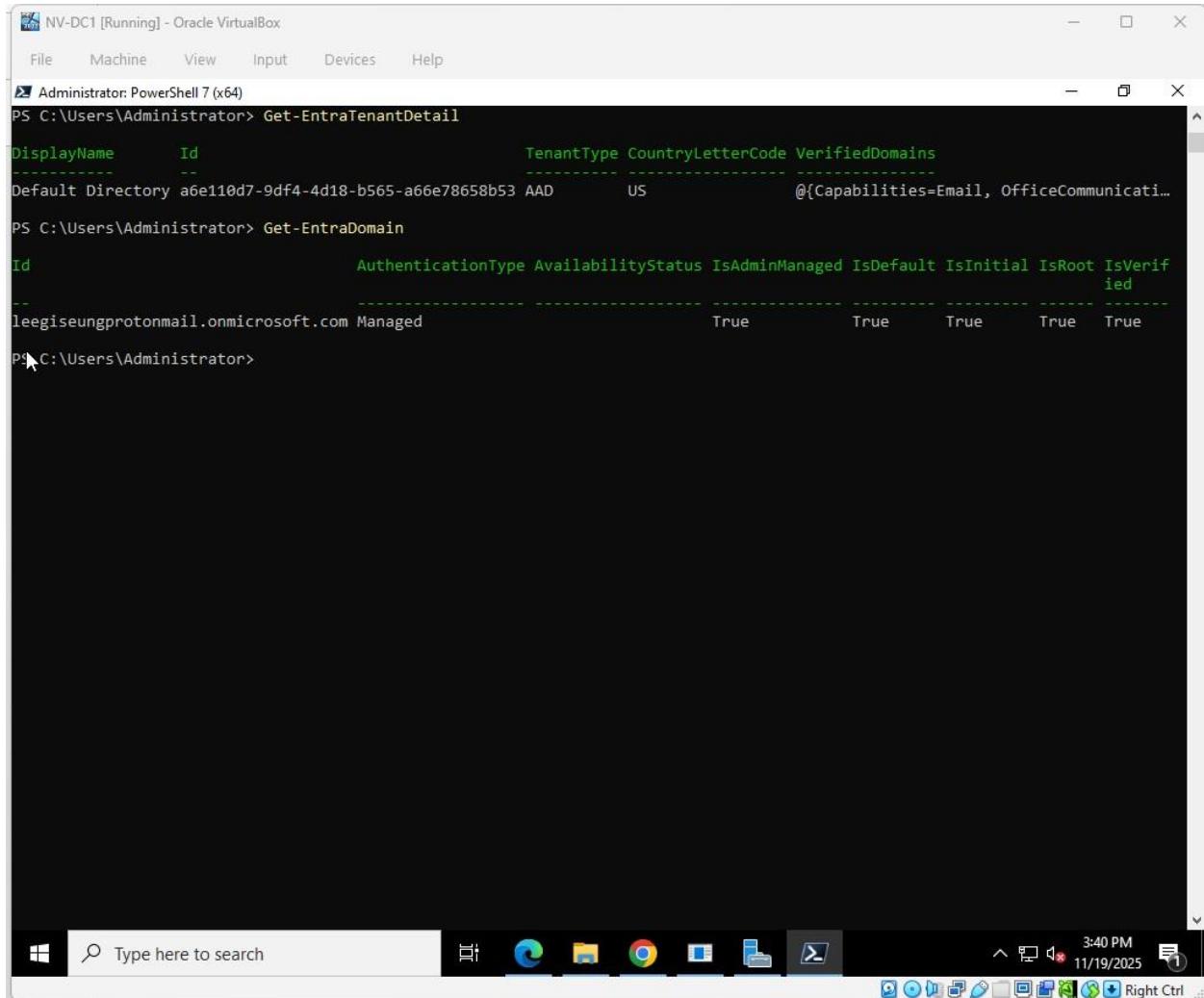


Task 4 - Tenant and Domain Information Retrieval (10 pts)

Tenant-level information and domain configuration were retrieved using Entra PowerShell cmdlets to validate visibility into core directory settings.

Evidence Requirements

- Evidence 4A: Screenshot of Get-EntraTenantDetail



The screenshot shows a Windows desktop environment with a PowerShell window open. The window title is "Administrator: PowerShell 7 (x64)". The command "Get-EntraTenantDetail" is run, displaying the following table:

DisplayName	Id	TenantType	CountryLetterCode	VerifiedDomains
Default Directory	a6e110d7-9df4-4d18-b565-a66e78658b53	AAD	US	@{Capabilities=Email, OfficeCommunicati...

Then, the command "Get-EntraDomain" is run, displaying the following table:

Id	AuthenticationType	AvailabilityStatus	IsAdminManaged	IsDefault	IsInitial	IsRoot	IsVerified
leegieseungprotonmail.onmicrosoft.com	Managed	True	True	True	True	True	True

- **Evidence 4B: Screenshot of Get-EntraDomain**

The screenshot shows a Windows PowerShell window titled "NV-DC1 [Running] - Oracle VirtualBox". The window contains two command-line sessions:

```
Administrator: PowerShell 7 (x64)
PS C:\Users\Administrator> Get-EntraTenantDetail
DisplayName      Id          TenantType CountryLetterCode VerifiedDomains
Default Directory a6e110d7-9df4-4d18-b565-a66e78658b53 AAD          US          @{Capabilities=Email, OfficeCommunicati...
PS C:\Users\Administrator> Get-EntraDomain
Id          AuthenticationType AvailabilityStatus IsAdminManaged IsDefault IsInitial IsRoot IsVerified
leegiseungprotonmail.onmicrosoft.com Managed           True        True     True    True    True
PS C:\Users\Administrator>
```

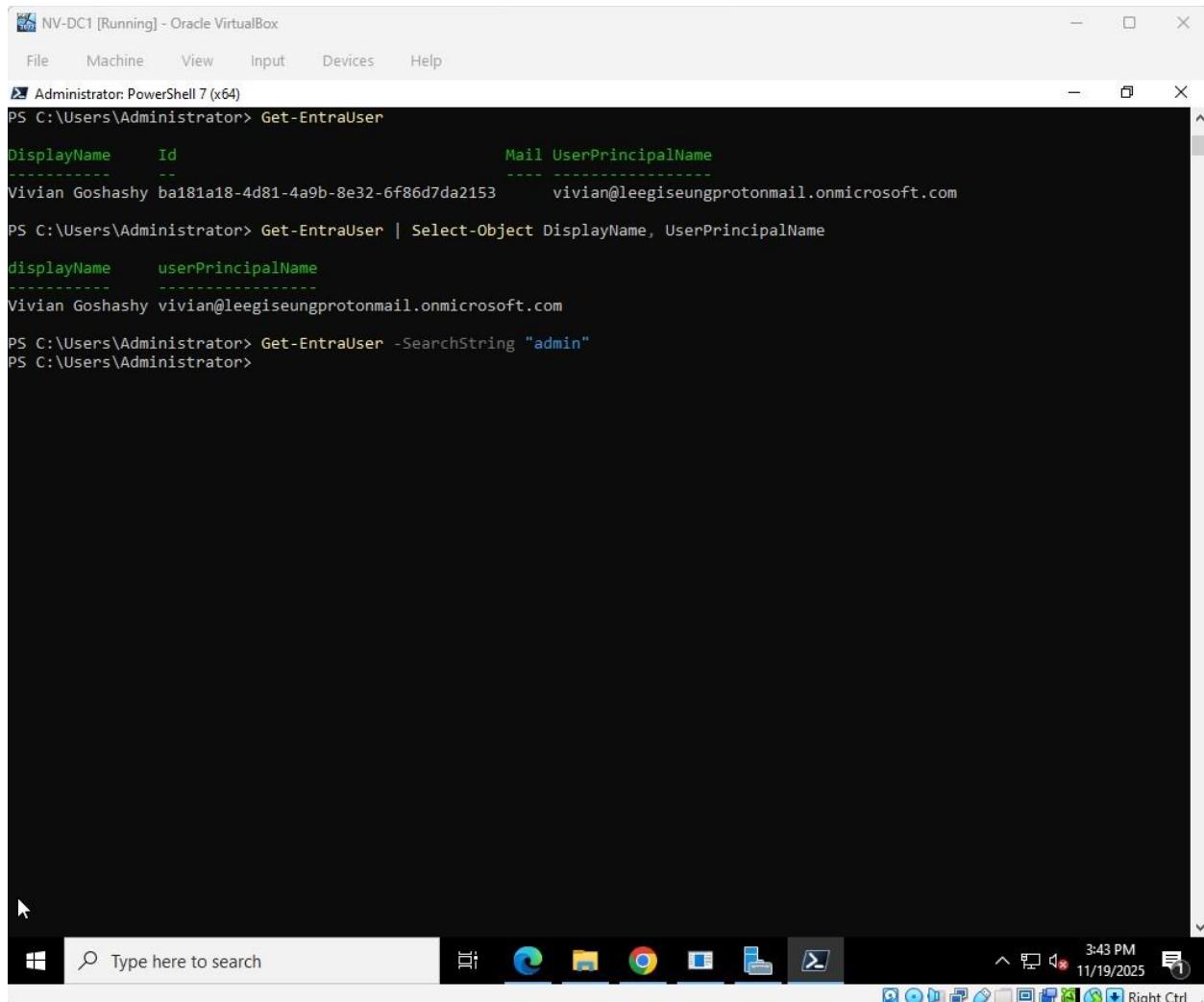
The taskbar at the bottom of the screen includes icons for File Explorer, Edge, File Manager, Task View, and Taskbar settings. The system tray shows the date and time as 11/19/2025 at 3:40 PM.

Task 5 - Cloud User Queries (10 pts)

Cloud users were queried to demonstrate directory visibility, including full listings, selected property extraction, and filtered queries based on search strings.

Evidence Requirements

- **Evidence 5:** Screenshot showing filtered or selected user query output



The screenshot shows a Windows desktop environment with a PowerShell window open. The window title is "NV-DC1 [Running] - Oracle VirtualBox". The PowerShell session is running as Administrator on Windows 7 (x64). The user is executing commands to query Azure Active Directory (AAD) users using the Get-EntraUser cmdlet.

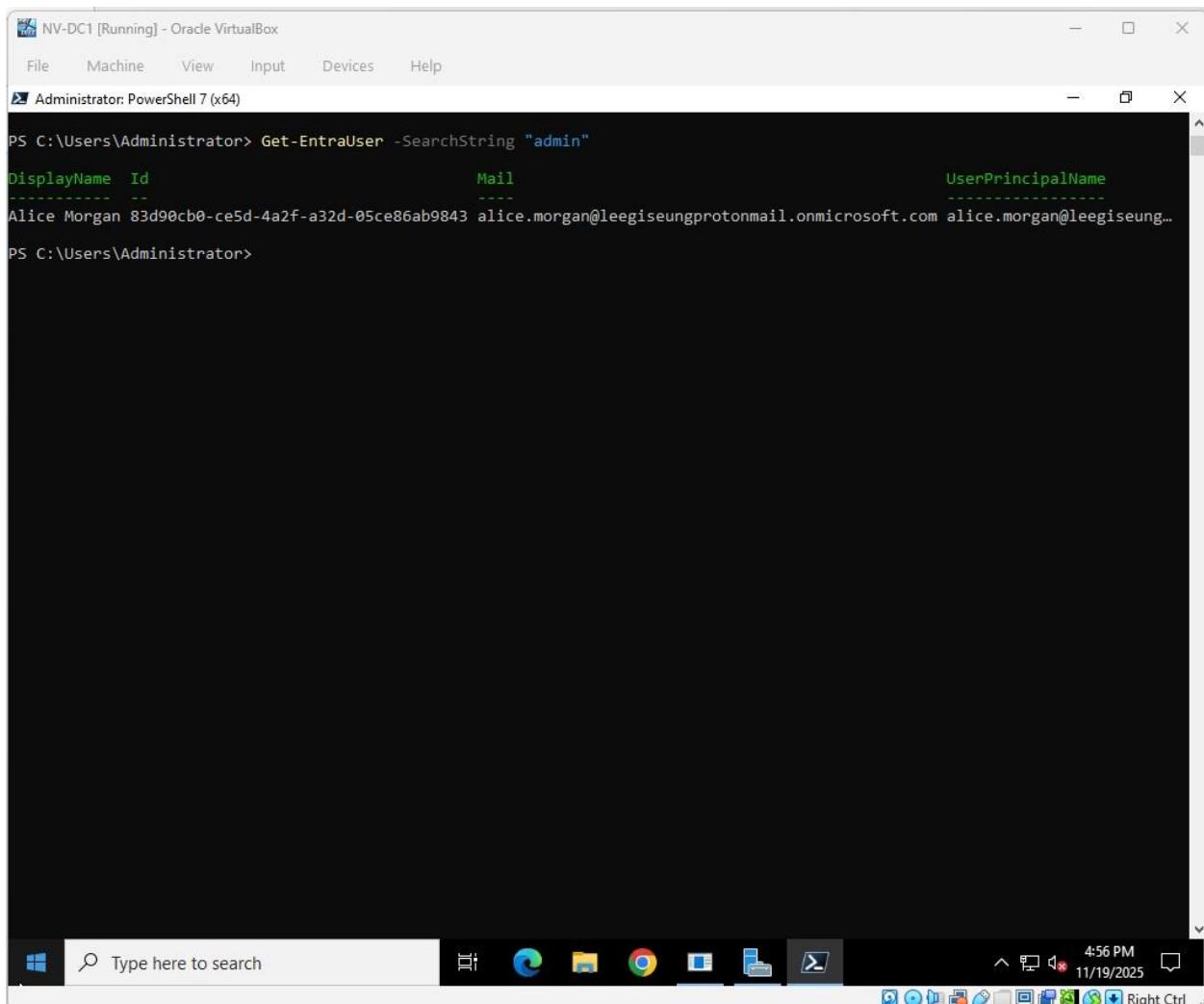
```
PS C:\Users\Administrator> Get-EntraUser
DisplayName      Id          Mail UserPrincipalName
-----      --          ----- -----
Vivian Goshashy ba181a18-4d81-4a9b-8e32-6f86d7da2153    vivian@leegiseungprotonmail.onmicrosoft.com

PS C:\Users\Administrator> Get-EntraUser | Select-Object DisplayName, UserPrincipalName
displayName      userPrincipalName
-----      -----
Vivian Goshashy vivian@leegiseungprotonmail.onmicrosoft.com

PS C:\Users\Administrator> Get-EntraUser -SearchString "admin"
PS C:\Users\Administrator>
```

The task bar at the bottom shows the date and time as 3:43 PM, 11/19/2025. The system tray icons include a battery icon, a signal strength icon, a network icon, a volume icon, and a clock icon.

Note: After users were added



```
NV-DC1 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Administrator: PowerShell 7 (x64)
PS C:\Users\Administrator> Get-EntraUser -SearchString "admin"
DisplayName Id Mail UserPrincipalName
----- -- -----
Alice Morgan 83d90cb0-ce5d-4a2f-a32d-05ce86ab9843 alice.morgan@leegiseungprotonmail.onmicrosoft.com alice.morgan@leegiseung...
PS C:\Users\Administrator>
```

The screenshot shows a Windows desktop environment with a PowerShell window open in a virtual machine. The PowerShell window title is "NV-DC1 [Running] - Oracle VirtualBox". The command "Get-EntraUser -SearchString 'admin'" is run, and the output shows a single user entry:

DisplayName	Id	Mail	UserPrincipalName
Alice Morgan	83d90cb0-ce5d-4a2f-a32d-05ce86ab9843	alice.morgan@leegiseungprotonmail.onmicrosoft.com	alice.morgan@leegiseung...

The desktop taskbar at the bottom includes icons for File Explorer, Edge, File Manager, Task View, Taskbar settings, and Start. The system tray shows the date and time as 4:56 PM, 11/19/2025.

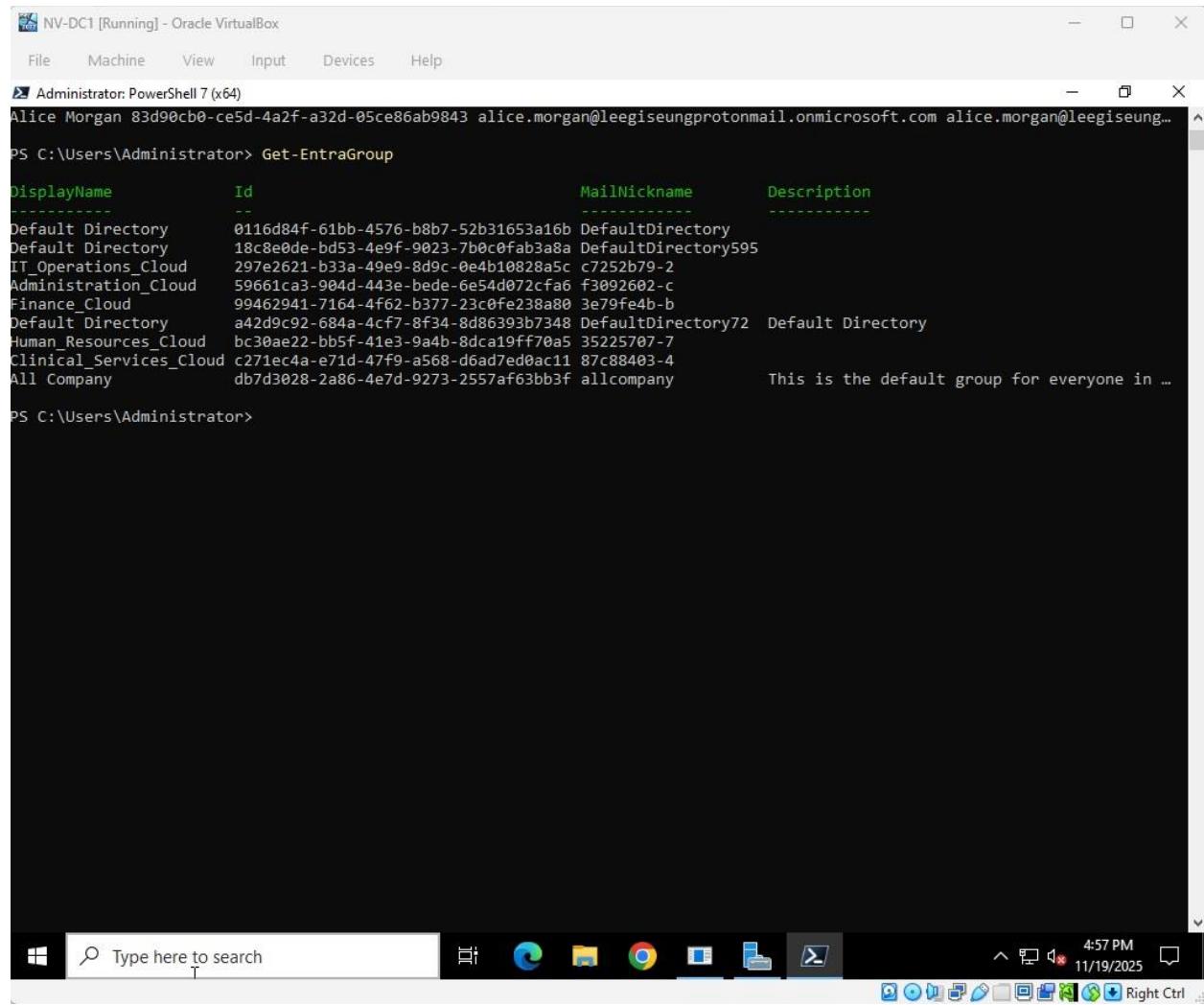
Task 4 - Cloud Group Queries (10 pts)

Cloud groups were retrieved, key attributes displayed, and group membership examined to validate Entra ID group visibility through PowerShell.

Evidence Requirements

- Evidence 6:** Screenshot of a group listing or group membership query

Note: This part should be empty before groups were created. However, when groups are created then the result is shown



The screenshot shows a Windows PowerShell window titled "NV-DC1 [Running] - Oracle VirtualBox". The window displays a list of cloud groups using the command "Get-EntraGroup". The output is a table with columns: DisplayName, Id, MailNickname, and Description. The "Description" column contains a note about the "All Company" group. The PowerShell window is running as Administrator on a Windows 10 desktop. The taskbar at the bottom shows various pinned icons and the system tray indicates the date and time as 11/19/2025 at 4:57 PM.

DisplayName	Id	MailNickname	Description
Default Directory	0116d84f-61bb-4576-b8b7-52b31653a16b	DefaultDirectory	
Default Directory	18c8e0de-bd53-4e9f-9023-7b0c0fab3a8a	DefaultDirectory595	
IT_Operations_Cloud	297e2621-b33a-49e9-8d9c-0e4b10828a5c	c7252b79-2	
Administration_Cloud	59661ca3-904d-443e-bede-6e54d072cfa6	f3092602-c	
Finance_Cloud	99462941-7164-4f62-b377-23c0fe238a80	3e79fe4b-b	
Default Directory	a42d9c92-684a-4cf7-8f34-8d86393b7348	DefaultDirectory72	Default Directory
Human_Resources_Cloud	bc30ae22-bb5f-41e3-9a4b-8dca19ff70a5	35225707-7	
Clinical_Services_Cloud	c271ec4a-e71d-47f9-a568-d6ad7ed0ac11	87c88403-4	
All Company	db7d3028-2a86-4e7d-9273-2557af63bb3f	allcompany	This is the default group for everyone in ...

