

Cloud Migration

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CPSC 253-12 18472

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13 December 2024

Securing the Kali Linux VM

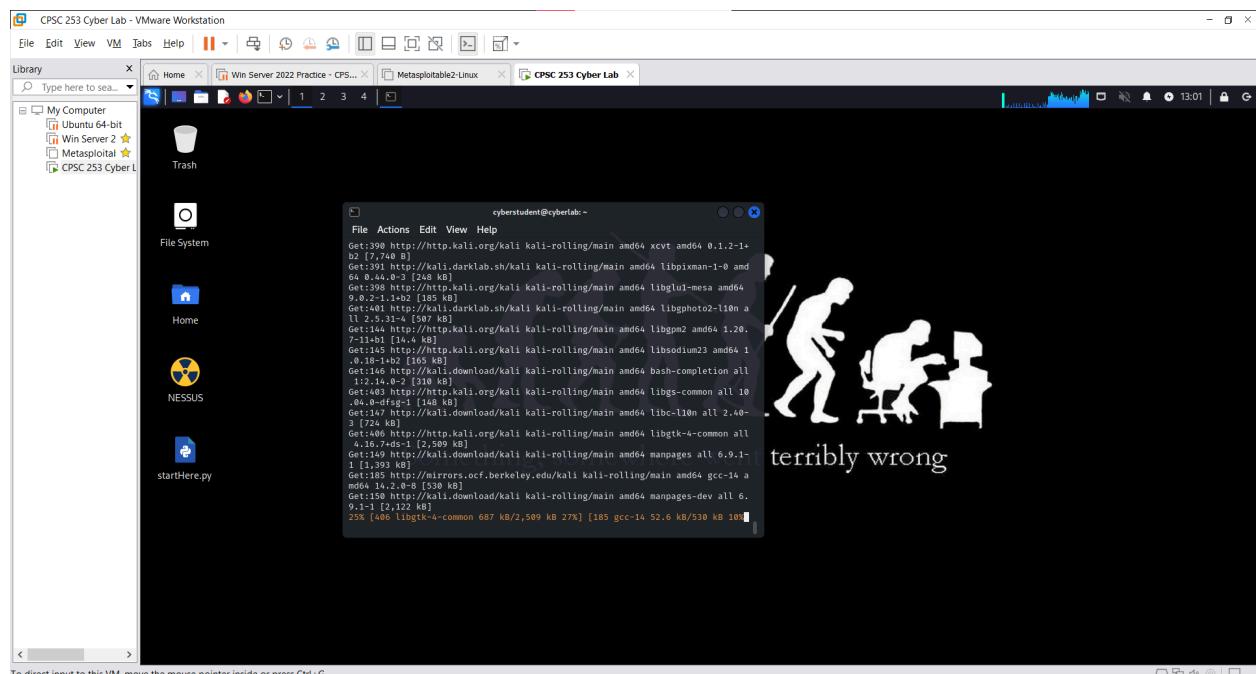
12/1/2024

```
(cyberstudent@cyberlabvm) - [~]
$ sudo apt update
[sudo] password for cyberstudent:
Get:1 http://mirrors.ocf.berkeley.edu/kali kali-rolling InRelease [41.5 kB]
Get:2 http://mirrors.ocf.berkeley.edu/kali kali-rolling/main arm64 Packages [20.1 MB]
Get:3 http://mirrors.ocf.berkeley.edu/kali kali-rolling/main arm64 Contents (deb) [48.0 kB]
Get:4 http://mirrors.ocf.berkeley.edu/kali kali-rolling/contrib arm64 Packages [87.5 kB]
Get:5 http://mirrors.ocf.berkeley.edu/kali kali-rolling/contrib arm64 Contents (deb) [157 kB]
Get:6 http://mirrors.ocf.berkeley.edu/kali kali-rolling/non-free arm64 Packages [154 kB]
Get:7 http://mirrors.ocf.berkeley.edu/kali kali-rolling/non-free arm64 Contents (deb) [829 kB]
Get:8 http://mirrors.ocf.berkeley.edu/kali kali-rolling/non-free-firmware arm64 Packages [9703 B]
Get:9 http://mirrors.ocf.berkeley.edu/kali kali-rolling/non-free-firmware arm64 Contents (deb) [22.4 kB]
Fetched 69.4 MB in 6s (12.0 MB/s)
1934 packages can be upgraded. Run 'apt list --upgradable' to see them.

$
```

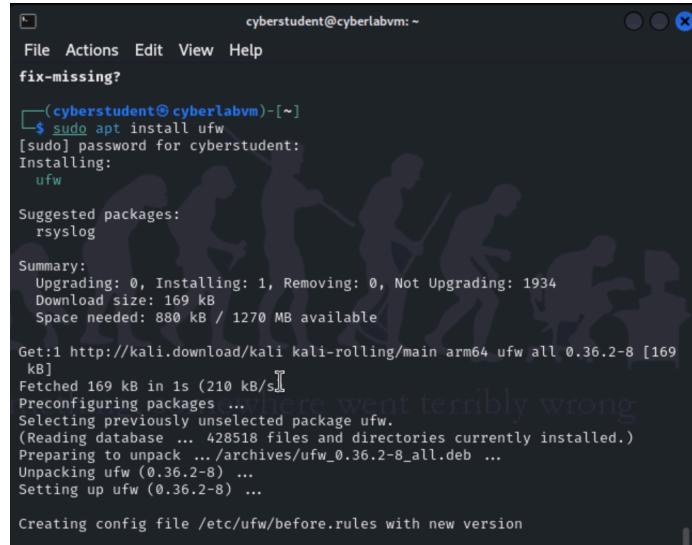
Update the Kali Linux OS via terminal which will update packages by fixing bugs and updating security patches.

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Upgrade the packages that were just updated. This will upgrade the packages to the latest versions.

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cyberstudent@cyberlabvm: ~

File Actions Edit View Help

fix-missing?

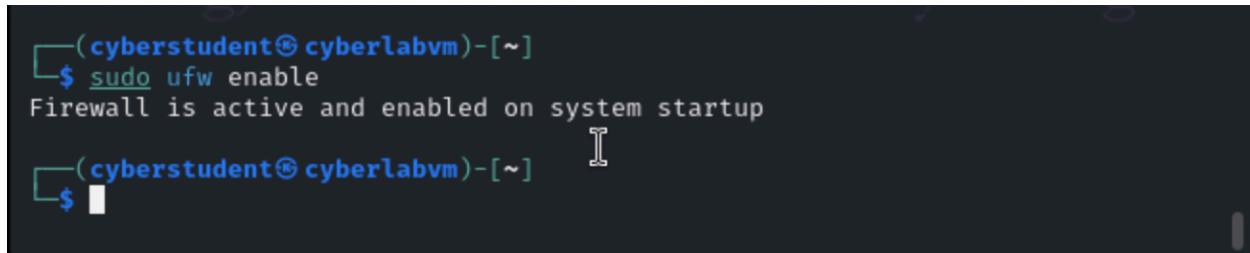
```
(cyberstudent@cyberlabvm)-[~]
$ sudo apt install ufw
[sudo] password for cyberstudent:
Installing:
  ufw

Suggested packages:
  rsyslog

Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 1934
  Download size: 169 kB
  Space needed: 880 kB / 1270 MB available

Get:1 http://kali.download/kali kali-rolling/main arm64 ufw all 0.36.2-8 [169 kB]
Fetched 169 kB in 1s (210 kB/s)
Preconfiguring packages...
Selecting previously unselected package ufw.
(Reading database ... 428518 files and directories currently installed.)
Preparing to unpack .../archives/ufw_0.36.2-8_all.deb ...
Unpacking ufw (0.36.2-8) ...
Setting up ufw (0.36.2-8) ...

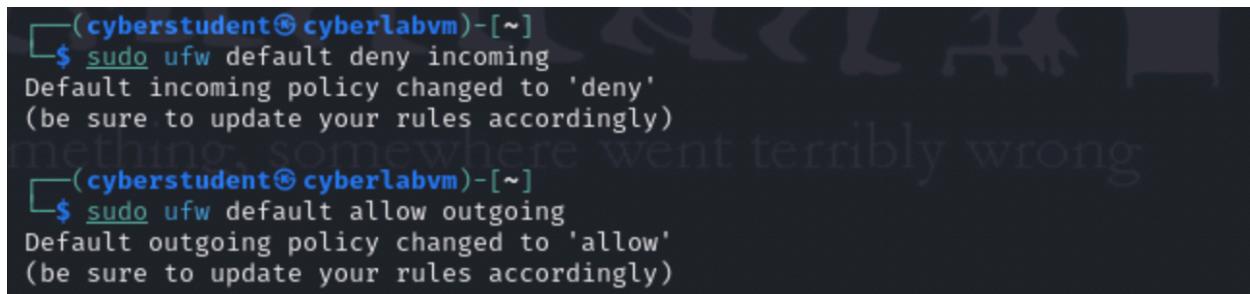
Creating config file /etc/ufw/before.rules with new version
```



```
(cyberstudent@cyberlabvm)-[~]
$ sudo ufw enable
Firewall is active and enabled on system startup
[~]
```

Install a firewall to prevent any unwanted traffic. After the firewall installation, enable the firewall as active.

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```
(cyberstudent@cyberlabvm)-[~]
$ sudo ufw default deny incoming
Default incoming policy changed to 'deny'
(be sure to update your rules accordingly)
[~]

(cyberstudent@cyberlabvm)-[~]
$ sudo ufw default allow outgoing
Default outgoing policy changed to 'allow'
(be sure to update your rules accordingly)
```

Deny incoming traffic and allow outgoing traffic. Use the command ‘sudo ufw default deny incoming’ as well as ‘sudo ufw default allow outgoing’.

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```
cyberstudent@cyberlabvm: ~
File Actions Edit View Help
└──(cyberstudent@cyberlabvm)-[~]
$ sudo apt install clamav
[sudo] password for cyberstudent:
Installing:
  clamav

Installing dependencies:
  clamav-base  clamav-freshclam  libclamav12

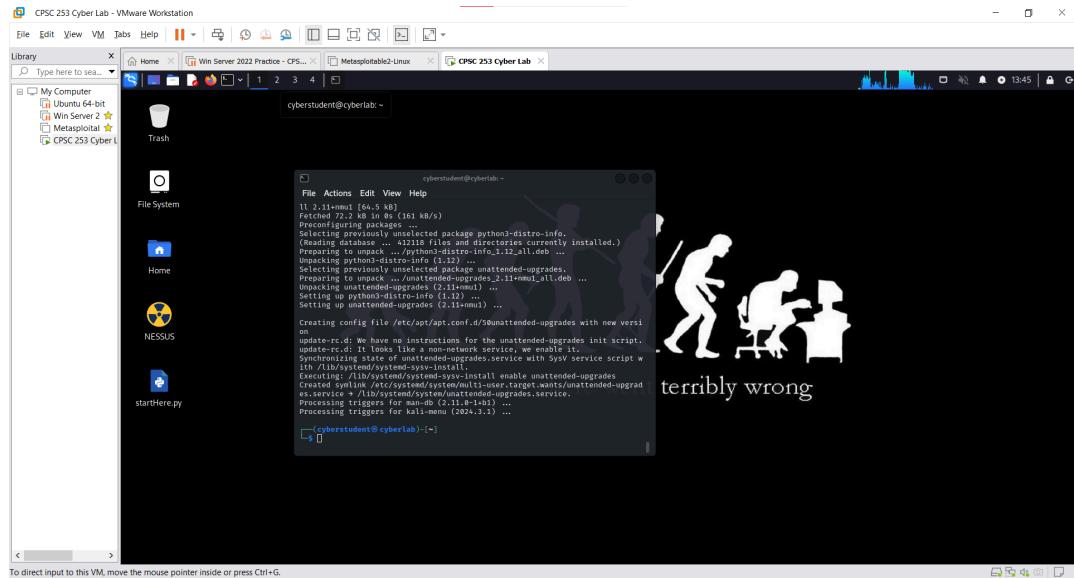
Suggested packages:
  libclamunrar  clamav-doc  libclamunrar11

Summary:
  Upgrading: 0, Installing: 4, Removing: 0, Not Upgrading: 1934
  Download size: 10.8 MB
  Space needed: 45.5 MB / 1263 MB available

Continue? [Y/n] Y
Get:1 http://http.kali.org/kali kali-rolling/main arm64 clamav-base all 1.4.1
+dfsg-1 [99.2 kB]
Get:2 http://http.kali.org/kali kali-rolling/main arm64 libclamav12 arm64 1.4
.1+dfsg-1 [5737 kB]
Get:3 http://http.kali.org/kali kali-rolling/main arm64 clamav-freshclam arm6
4 1.4.1+dfsg-1 [159 kB]
Get:4 http://http.kali.org/kali kali-rolling/main arm64 clamav arm64 1.4.1+df
sg-1 [4758 kB]
Fetched 10.8 MB in 2s (6735 kB/s)
```

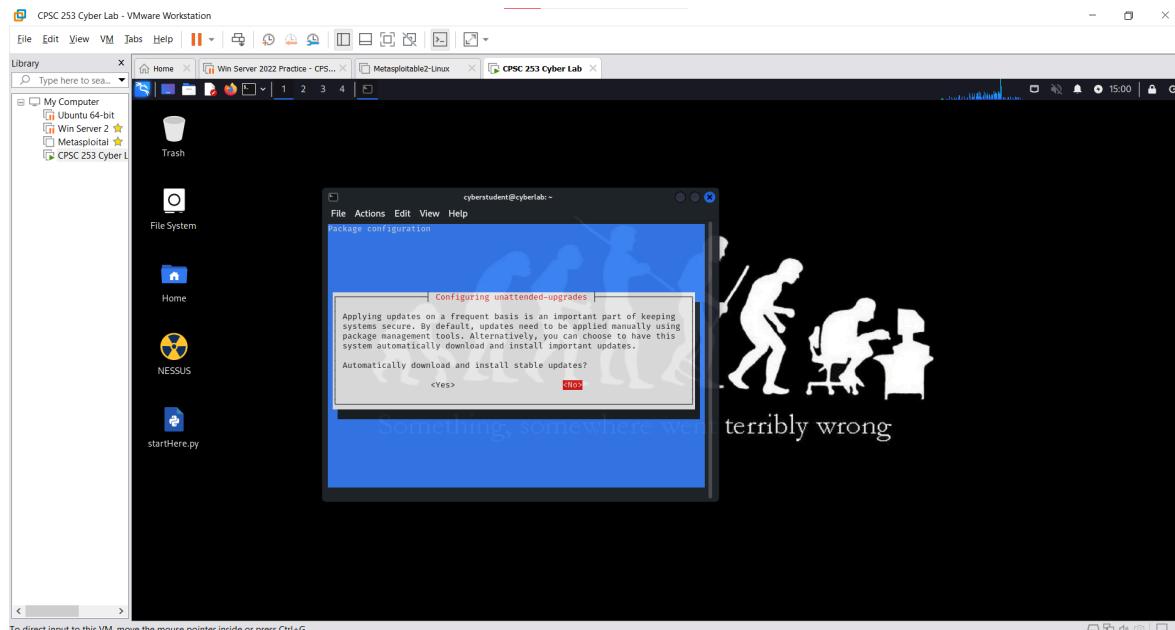
Install antivirus software through ‘sudo apt install clamav’.

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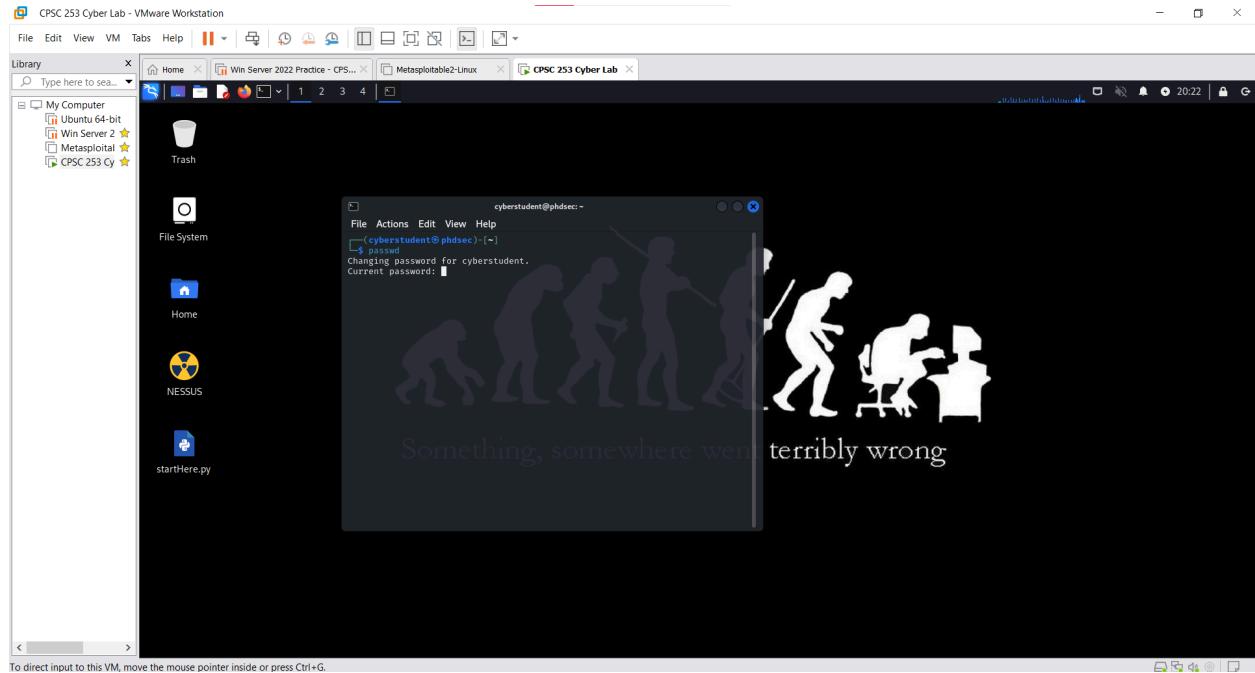
Enable automatic updates through ‘`sudo apt install unattended-upgrades`’.

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Enable automatic downloads and installations of stable updates.

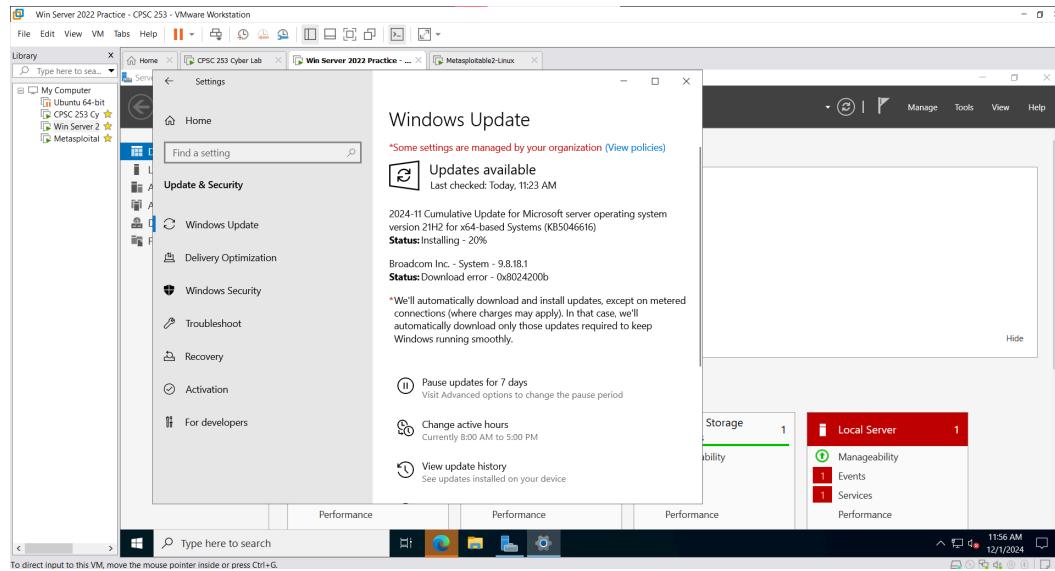
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Change the password to be more complex and meet security standards.

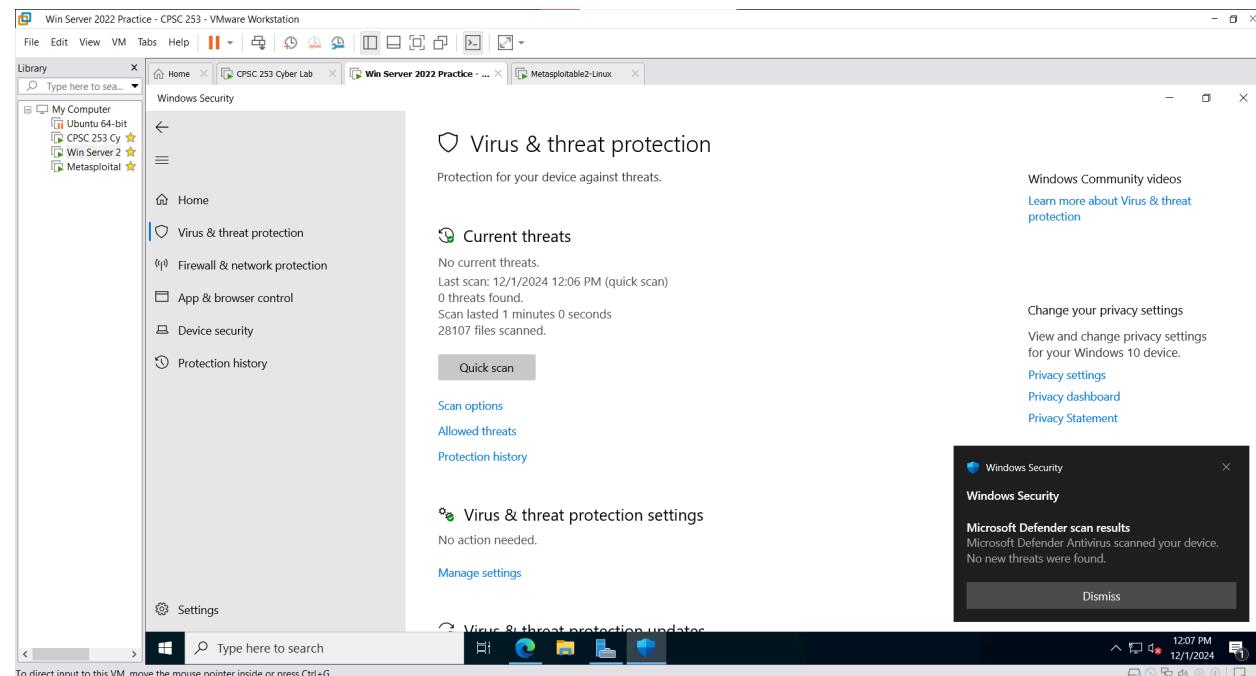
Securing the Windows VM

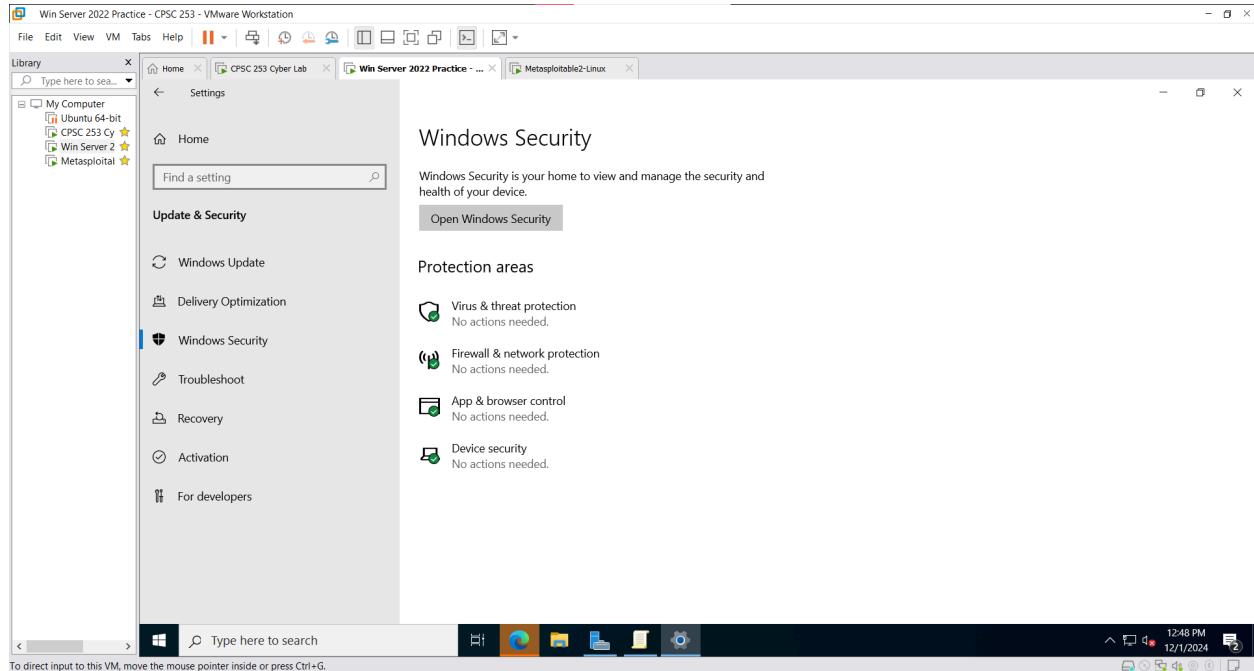
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Update the Windows OS to fix bugs and update security patches.

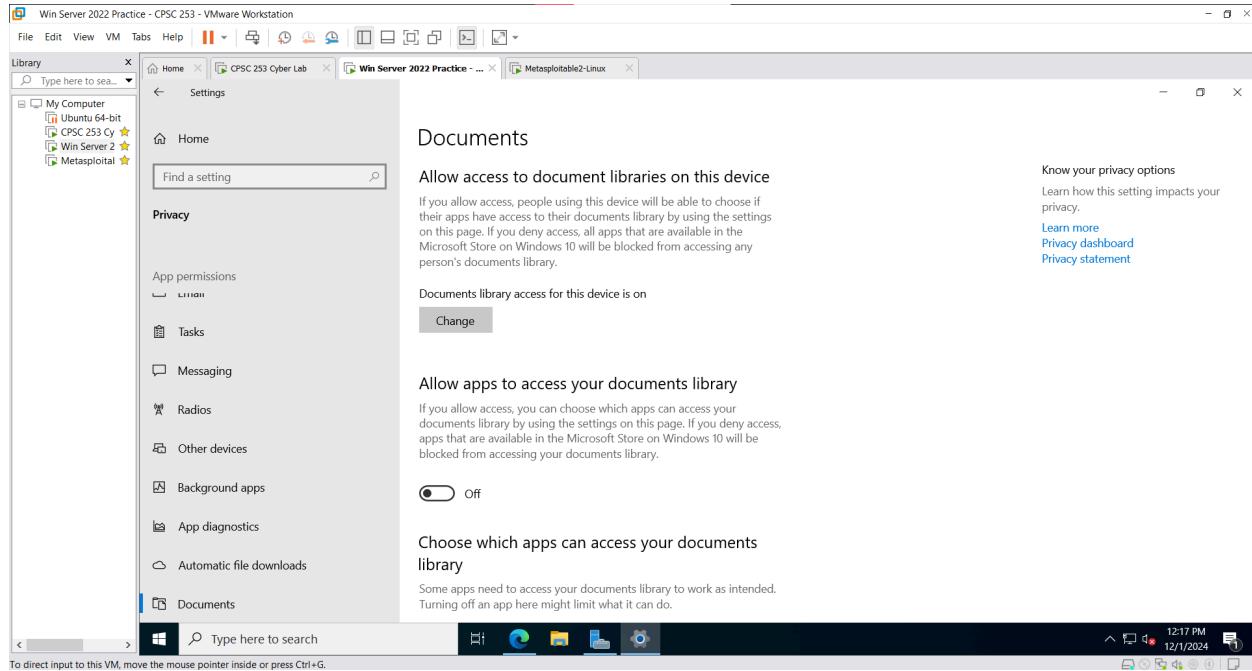
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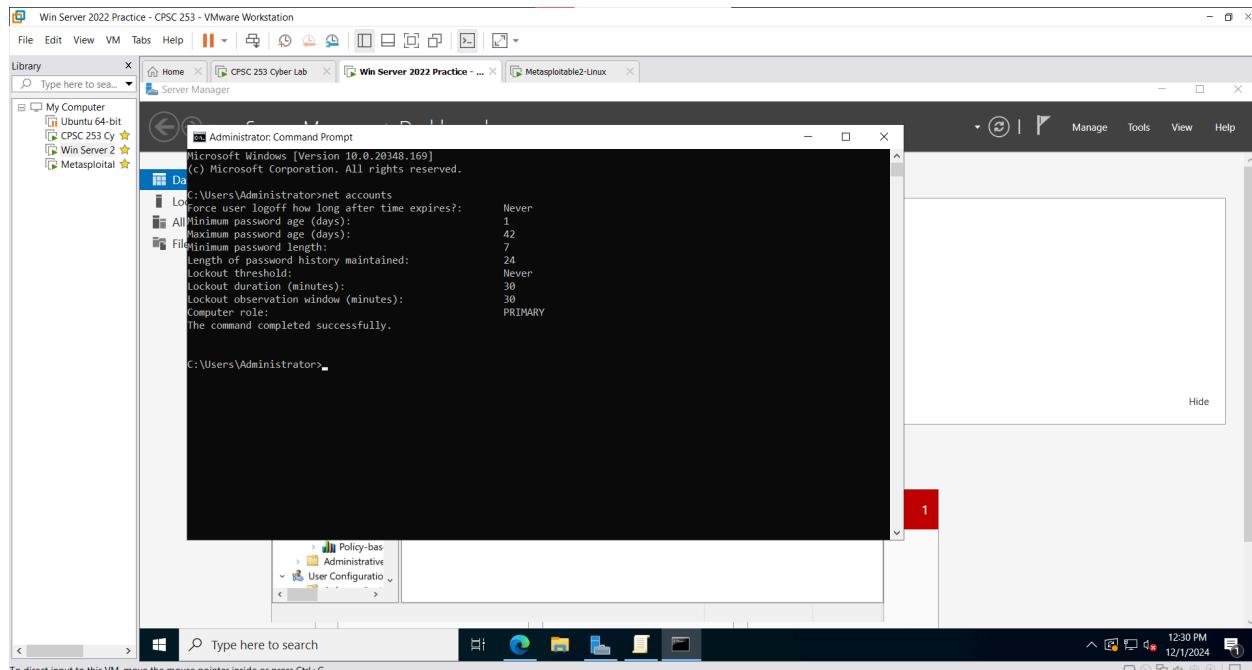
If there exists an error where Windows security applications cannot be found. Script powershell to repair Windows security. On Windows 10, launch powershell as an administrator. Run get-AppxPackage Microsoft.SecHealthUI -AllUsers | Reset-AppxPackage. If this command doesn't work, run Add-AppxPackage -Register -DisableDevelopmentMode "C:\Windows\SystemApps\Microsoft.Windows.SecHealthUI_cw5n1h2txyewy\AppXManifest.xml". Once the repairs are finished, enable virus & threat protection as well as app & browser control.

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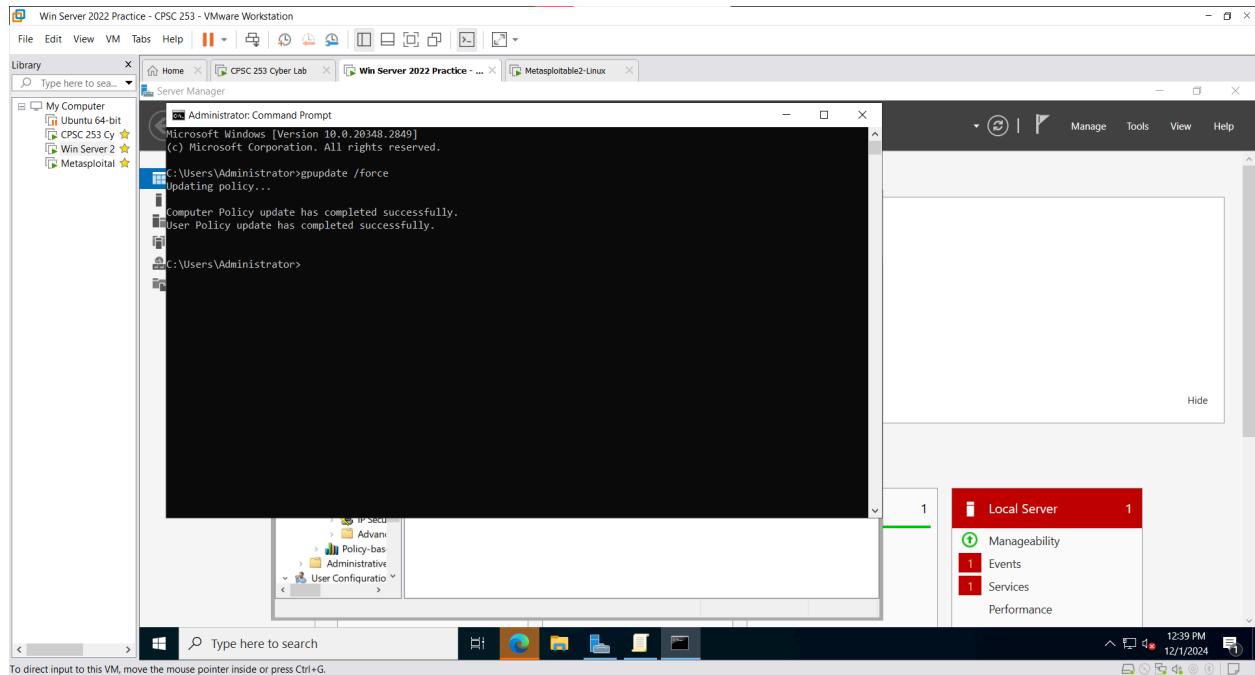
Disable all app permissions to prevent tracking and data misuse.

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Configure the existing password policy.

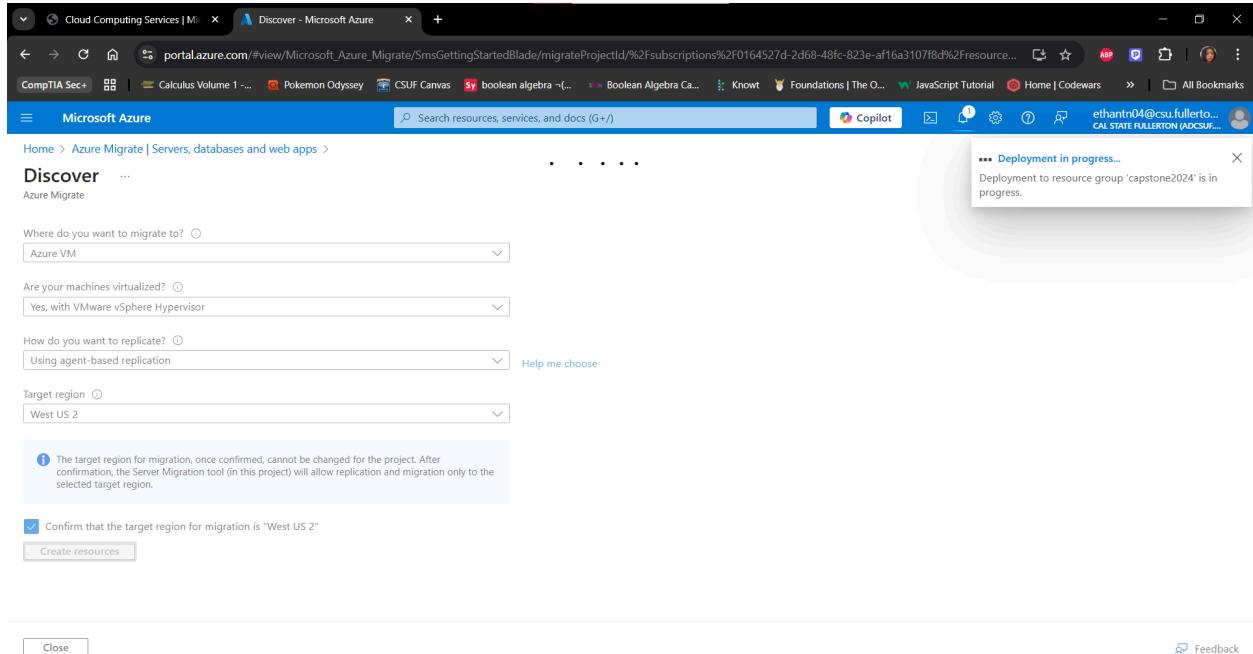
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Update domain system group policies.

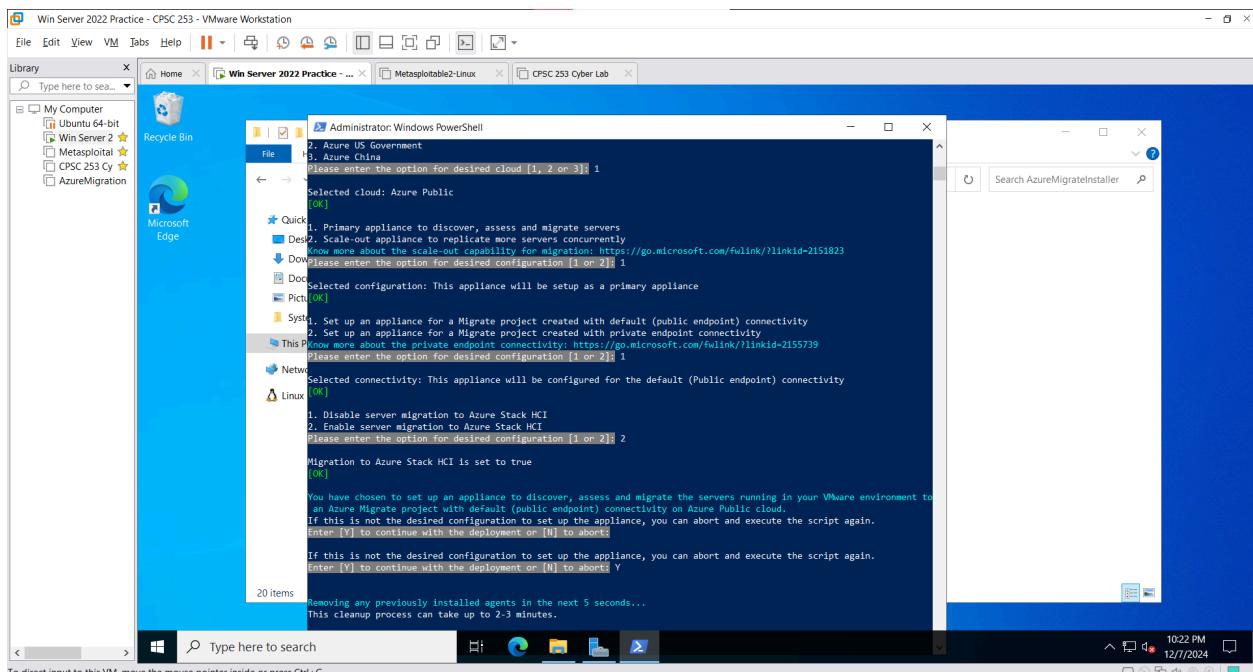
Migration Procedures

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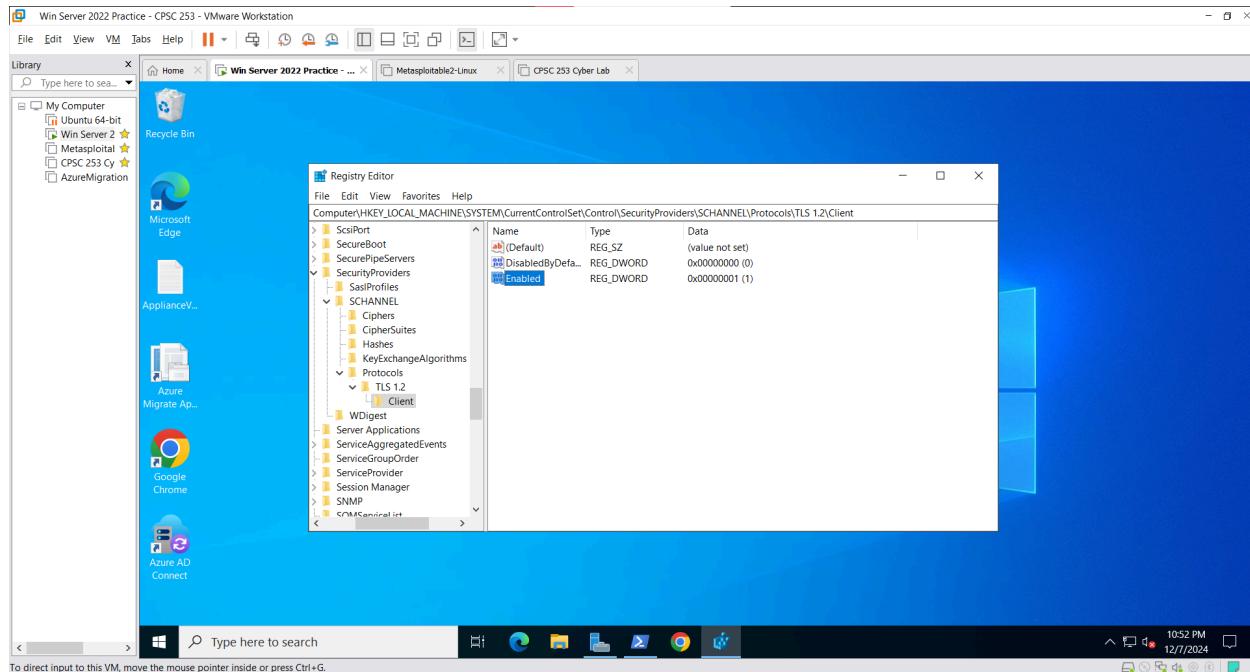
Set up Azure Migrate and bind the migration target region to the project.

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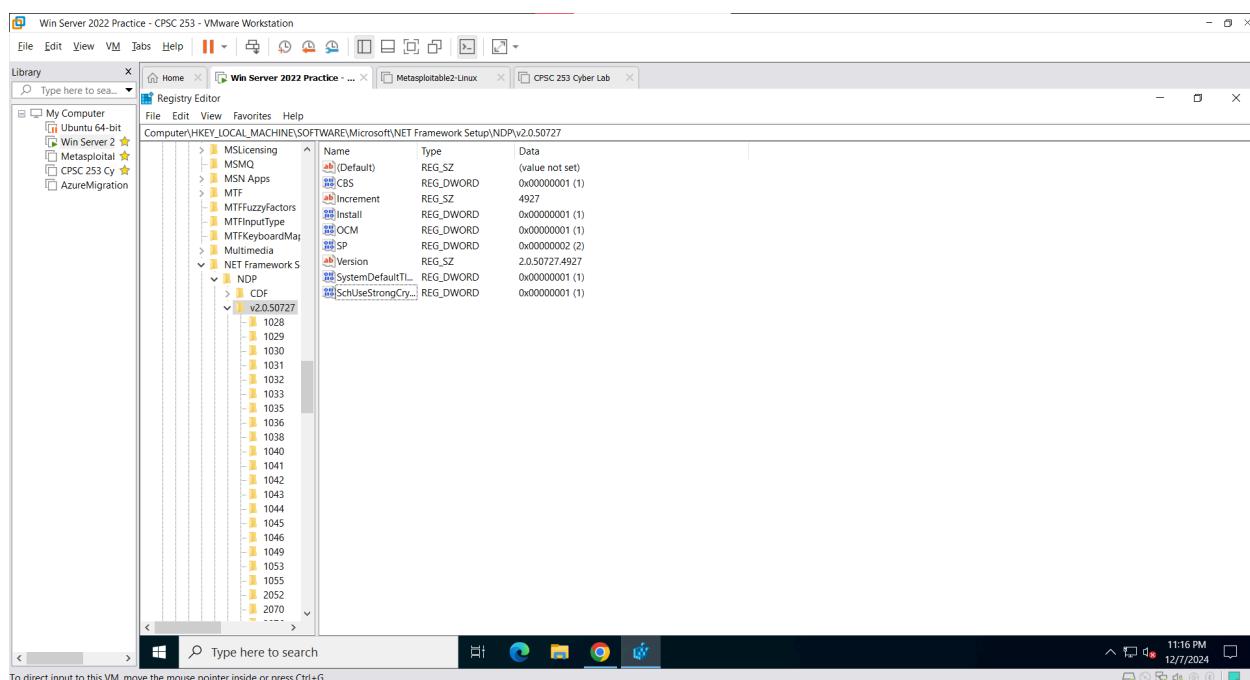
Download Entra.

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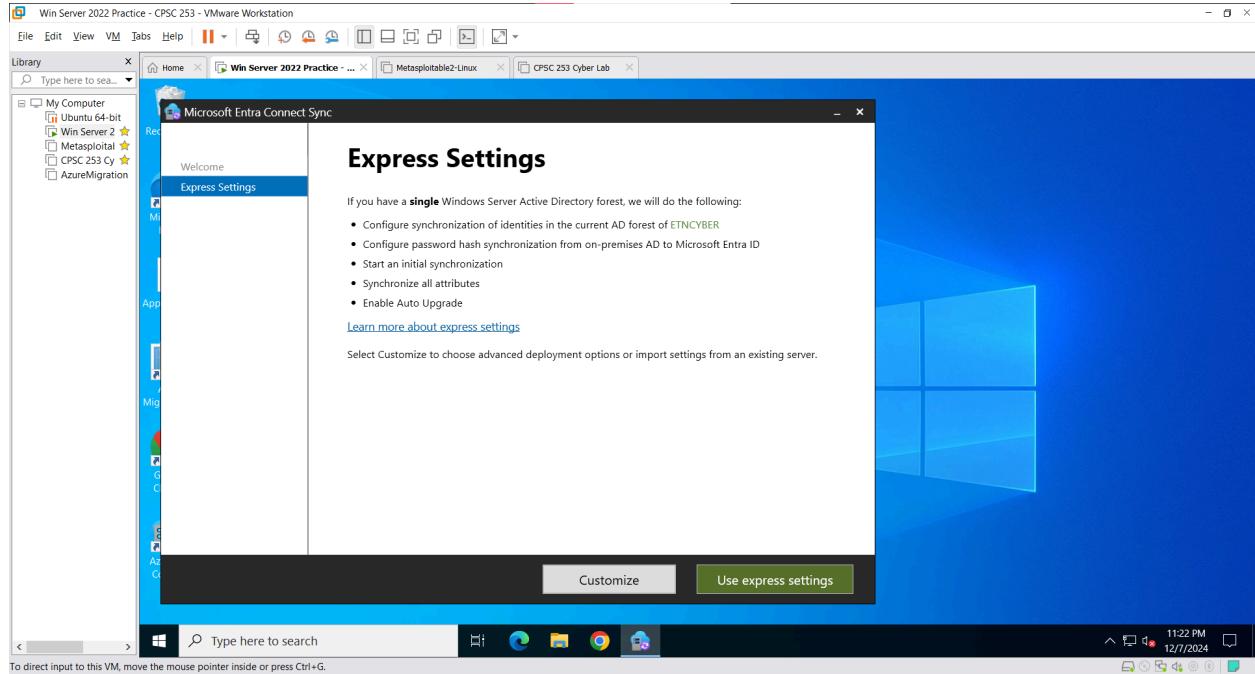
Enable TLS 1.2 for Microsoft Entra Management.

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There may exist a TLS 1.2 sync issue with Microsoft Entra Connect Sync. WIN-R -> regedit -> configure net framework and security provider protocols.

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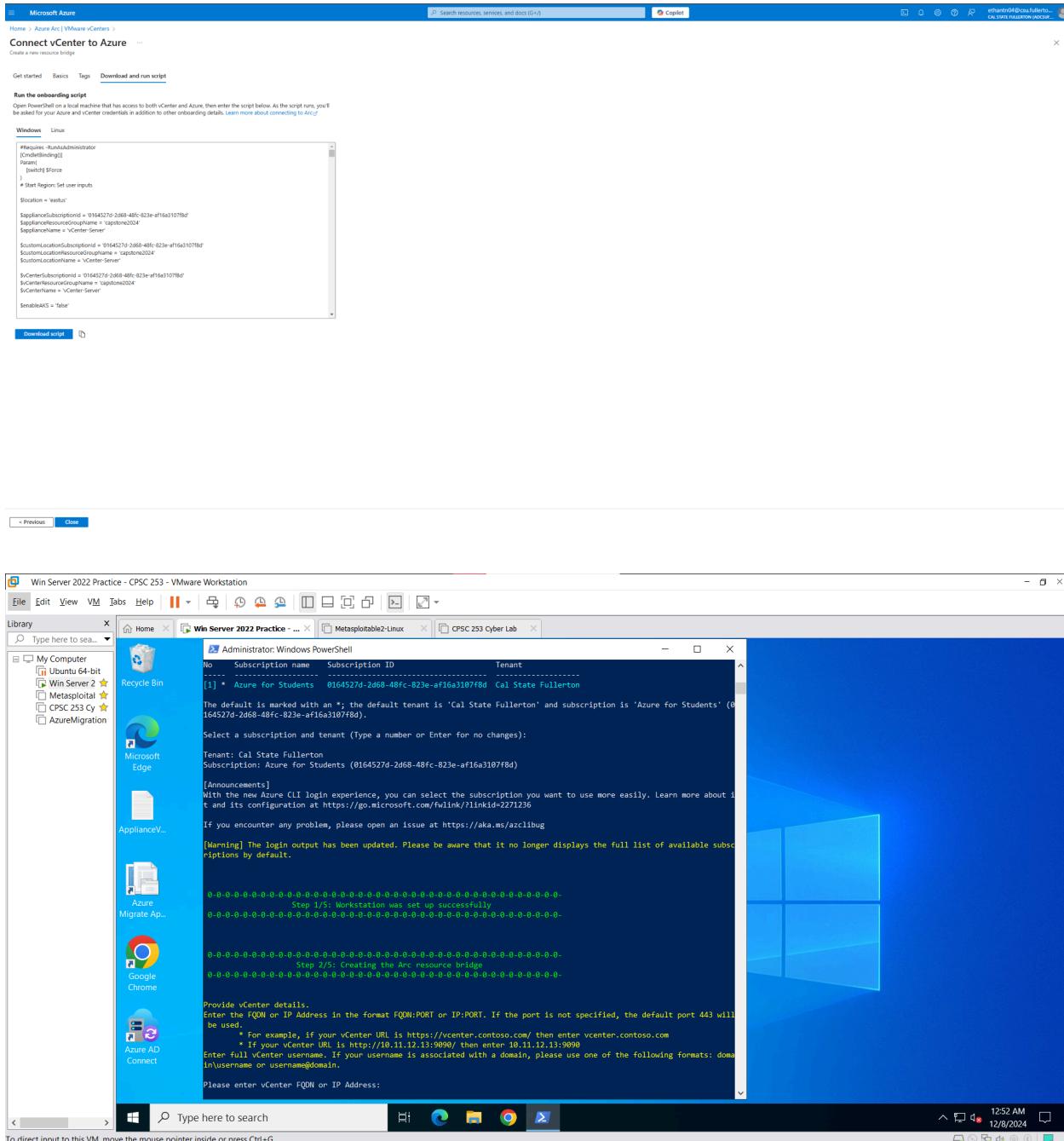


Microsoft Entra Connect Sync is now executable and bound to the user's desired Microsoft account.

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Cloud Migration

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Go through the subscription account and generate vCenter Server. Download and run the script on powershell to launch vCenter.

Procedures Summary

1. Create project and set project name
2. assign resource group
3. discover - choose where the servers are virtualized
4. name the appliance to generate a project key
5. download azure migrate appliance
6. .zip file download
7. vms open, open and copy zip file to it, extract to folder
8. open windows powershell admin
9. .\AzureMigrateInstaller.ps1
10. configures vm for discovery
11. appliance config shortcut generated on desktop
12. connect to azure, paste project key
13. log into azure
14. get credential and performance data, vcenter server
15. once servers are discovered, they can be migrated to azure
16. test migration
17. shut down machines to reduce data loss
18. migrate
19. update host ip address and domain names if needed