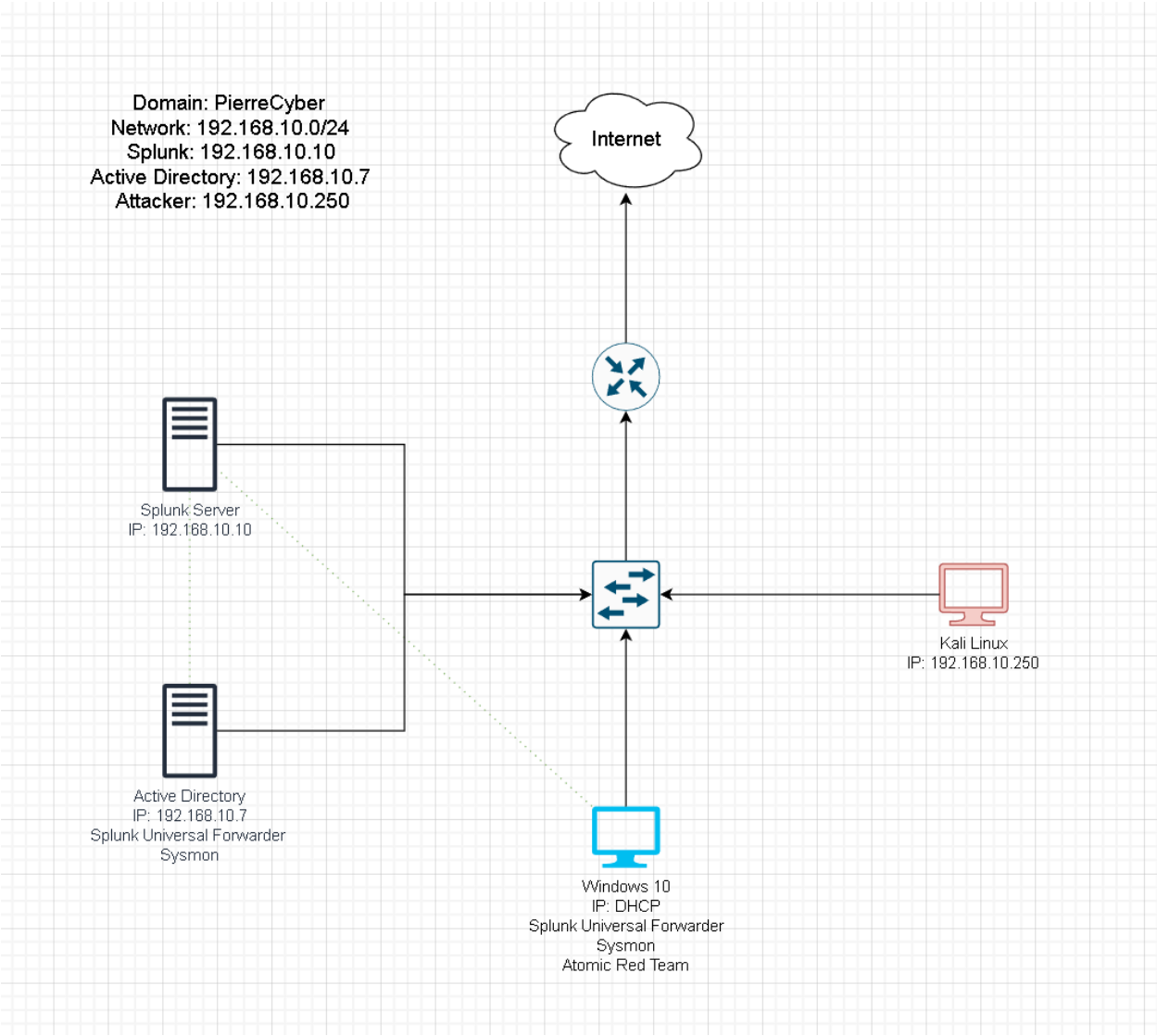
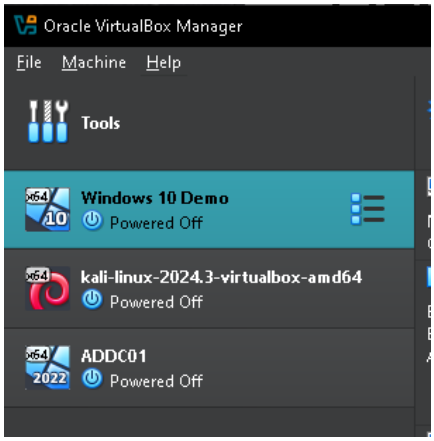
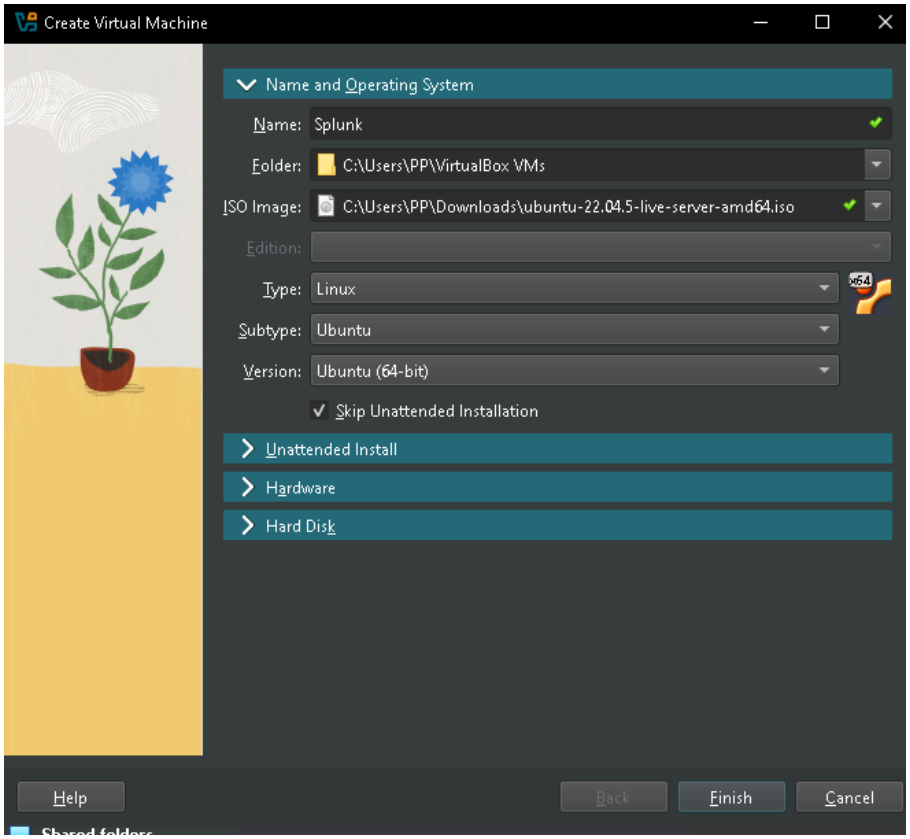
1. First, I made a logical diagram to visually map out how the lab is to be built.

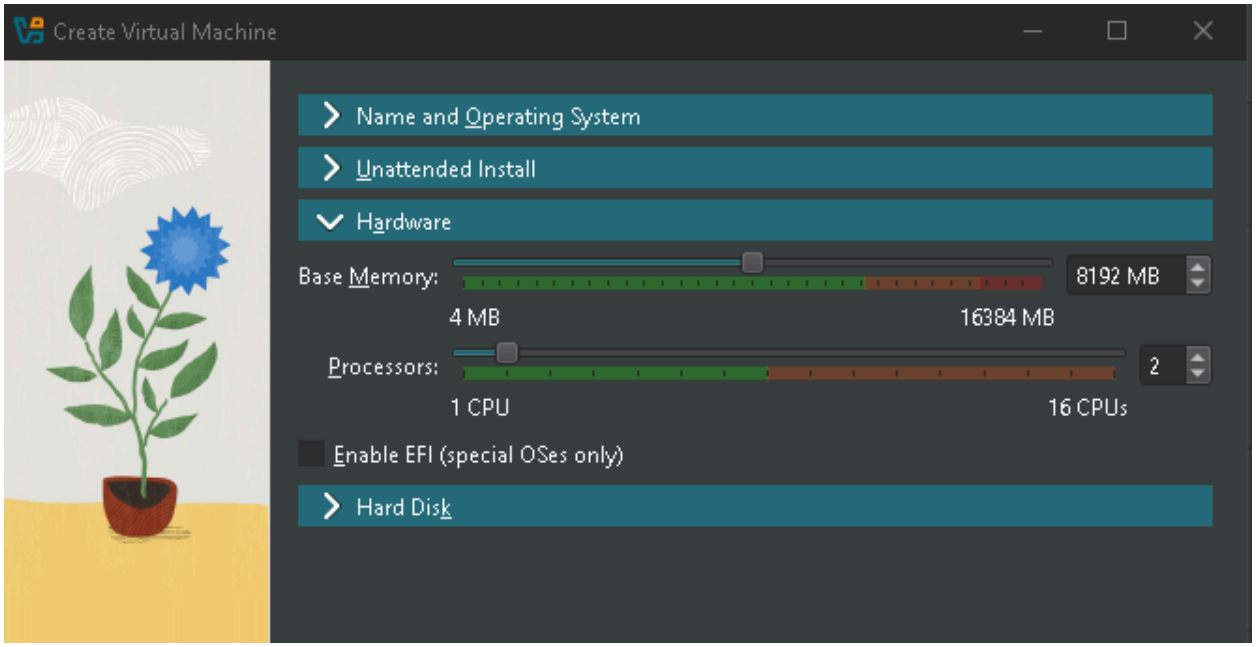


2. I used **Oracle VirtualBox** to install Windows 10, Kali Linux, and Windows server 2022 virtual machines.

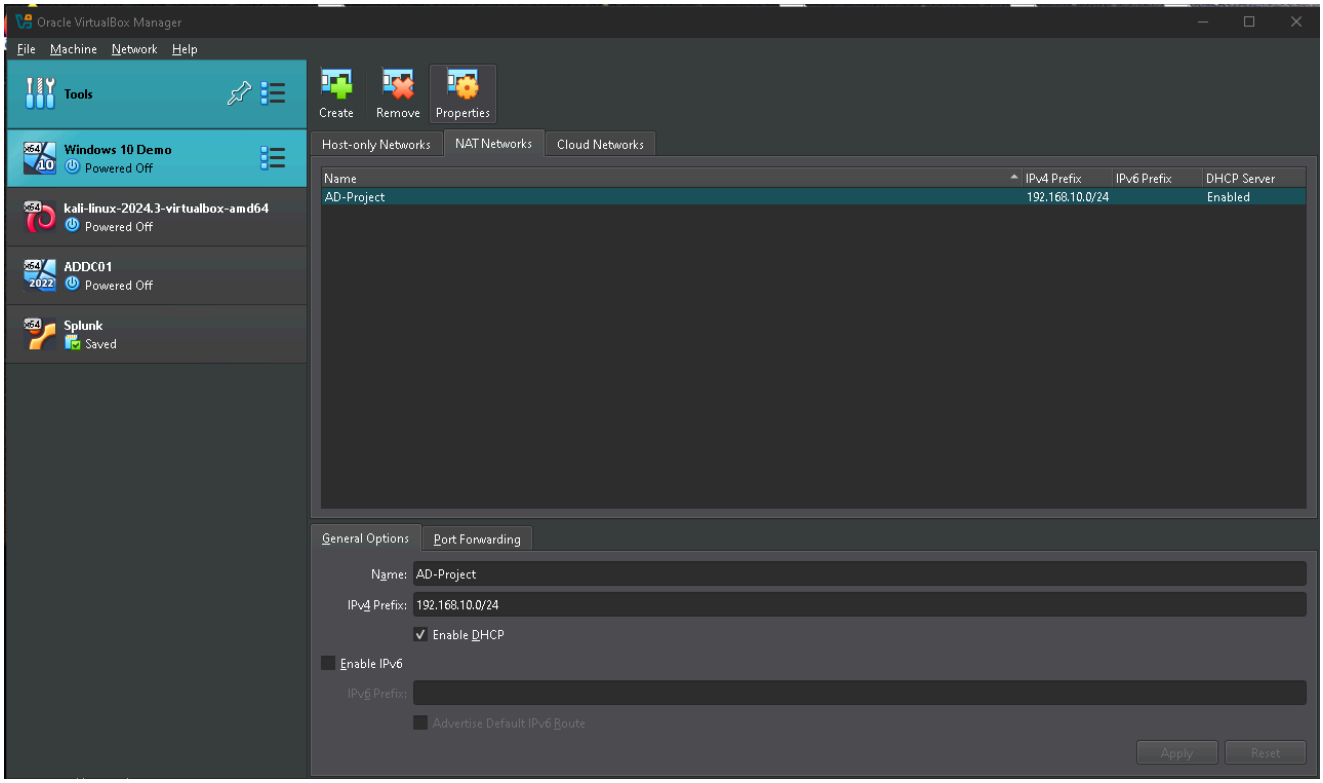


3. Then I install and configure an Ubuntu live server, which will be where the Splunk server runs. I named this server Splunk in VirtualBox and made the hardware for the machine stronger by increasing the base memory and increasing the number of processors.

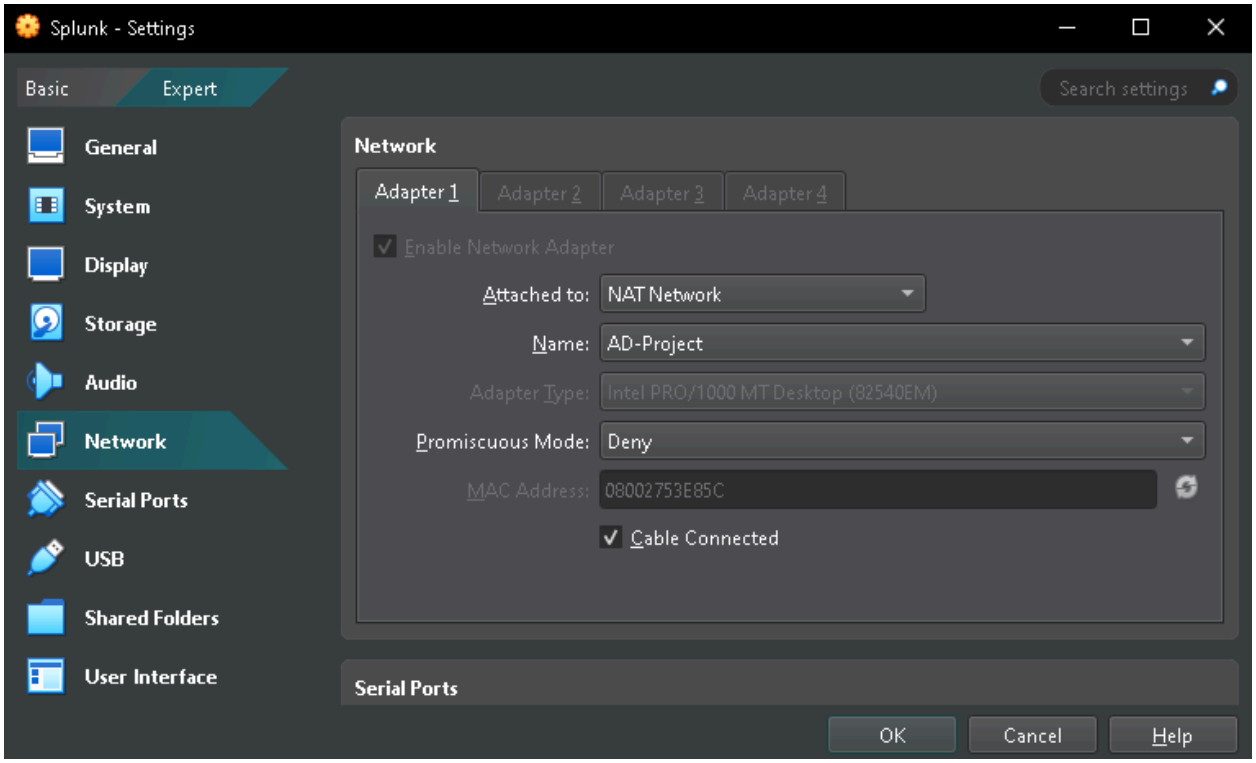




4. Setting all the virtual machines I created to NAT Network. This will allow all the machines to be on the same network and still have internet access. I entered 192.168.10.0/24 (Network IP from the Diagram) as the IPv4 Prefix.



I attached each virtual machine to the NAT Network that was created.



5. I set a new static IP address on the splunk server by using the command

sudo nano /etc/netplan/50-cloud-init.yaml

The command will show this configuration file:

```
  GNU nano 6.2                                        /etc/netplan/50-cloud-init.yaml
# This file is generated from information provided by the datasource.  Changes
# to it will not persist across an instance reboot.  To disable cloud-init's
# network configuration capabilities, write a file
# /etc/cloud/cloud.cfg.d/99-disable-network-config.cfg with the following:
# network: {config: disabled}
network:
    ethernets:
        enp0s3:
            dhcp4: true
    version: 2
```

I changed the Configurations to have no DHCP, added my static IP to **addresses**, I left **nameservers** blank(default), used Google's DNS for the next **addresses** line (can be any DNS), I left **routes** blank to include a default route via **192.168.10.1**(gateway).

```
  GNU nano 6.2                                        /etc/netplan/50-cloud-init.yaml *
# This file is generated from information provided by the datasource.  Changes
# to it will not persist across an instance reboot.  To disable cloud-init's
# network configuration capabilities, write a file
# /etc/cloud/cloud.cfg.d/99-disable-network-config.cfg with the following:
# network: {config: disabled}
network:
    ethernets:
        enp0s3:
            dhcp4: no
            addresses: [192.168.10.10/24]
            nameservers:
                addresses: [8.8.8.8]
            routes:
                - to: default
                  via: 192.168.10.1
    version: 2
```

6. I use the command **sudo netplan apply** to apply the changes of the config file.

```
pierrecyber@splunk:~$ sudo netplan apply
```

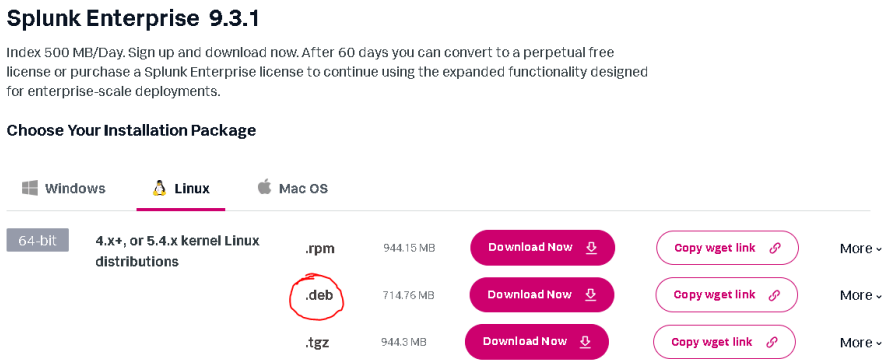
Using the command **ip a**, it shows that the IP has been changed.

```
pierrecyber@splunk:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:53:e8:5c brd ff:ff:ff:ff:ff:ff
    inet 192.168.10.10/24 brd 192.168.10.255 scope global enp0s3
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe53:e85c/64 scope link
       valid_lft forever preferred_lft forever
pierrecyber@splunk:~$ _
```

7. Next I did **ping google.com** to ensure there is a connection.

```
pierrecyber@splunk:~$ ping google.com
PING google.com (142.250.105.100) 56(84) bytes of data.
64 bytes from yt-in-f100.1e100.net (142.250.105.100): icmp_seq=1 ttl=104 time=7.54 ms
64 bytes from yt-in-f100.1e100.net (142.250.105.100): icmp_seq=2 ttl=104 time=9.56 ms
64 bytes from yt-in-f100.1e100.net (142.250.105.100): icmp_seq=3 ttl=104 time=7.22 ms
64 bytes from yt-in-f100.1e100.net (142.250.105.100): icmp_seq=4 ttl=104 time=9.64 ms
64 bytes from yt-in-f100.1e100.net (142.250.105.100): icmp_seq=5 ttl=104 time=8.45 ms
64 bytes from yt-in-f100.1e100.net (142.250.105.100): icmp_seq=6 ttl=104 time=6.91 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5012ms
rtt min/avg/max/mdev = 6.910/8.219/9.642/1.083 ms
pierrecyber@splunk:~$ _
```

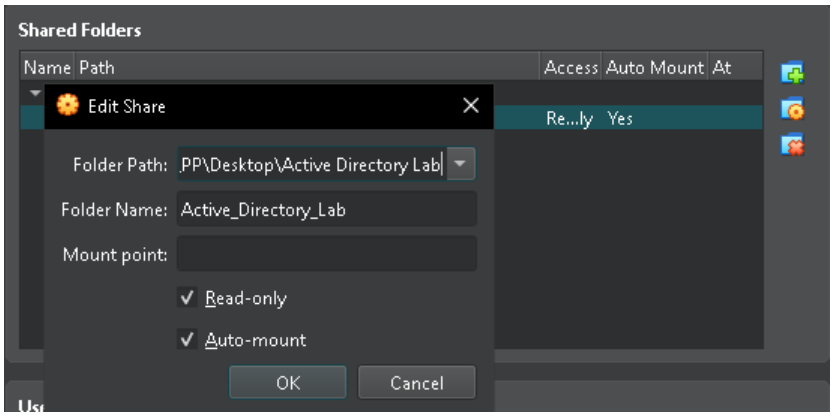
8. Now I begin to install **Splunk** on my HOST machine. I installed the **.deb** Splunk installation package.



9. I then installed the guest addons for virtual box on my ubuntu splunk server. Use **sudo apt-get install virtualbox** and hit tab to see all options. Then use **sudo apt-get install virtualbox-guest additions-iso**.

```
pierrecyber@splunk:~$ sudo apt-get install virtualbox
virtualbox                    virtualbox-guest-utils          virtualbox-qt
virtualbox-dkms               virtualbox-guest-utils-hwe      virtualbox-source
virtualbox-ext-pack           virtualbox-guest-x11
virtualbox-guest-additions-iso  virtualbox-guest-x11-hwe
pierrecyber@splunk:~$ sudo apt-get install virtualbox-guest-additions-iso _
```

10. I created a shared folder in VirtualBox. The path will be the folder where the Splunk installer was downloaded on the host.



11. Next I add the user to the **vboxsf** group using **sudo adduser pierrecyber vboxsf**. The group will not exist yet until I install some guest utilities that VBox offers. I then used **sudo apt-get install virtualbox** and hit tab, then **sudo apt-get install virtualbox-guest-utils**.

```
pierrecyber@splunk:~$ sudo adduser pierrecyber vboxsf
[sudo] password for pierrecyber:
adduser: The group `vboxsf' does not exist.
pierrecyber@splunk:~$ sudo apt-get install virtualbox
virtualbox                      virtualbox-guest-utils          virtualbox-qt
virtualbox-dkms                 virtualbox-guest-utils-hwe      virtualbox-source
virtualbox-ext-pack             virtualbox-guest-x11
virtualbox-guest-additions-iso  virtualbox-guest-x11-hwe
pierrecyber@splunk:~$ sudo apt-get install virtualbox-guest-utils
```

12. I was then allowed to add user to the **vboxsf** group.

```
pierrecyber@splunk:~$ sudo adduser pierrecyber vboxsf
[sudo] password for pierrecyber:
Adding user `pierrecyber' to group `vboxsf' ...
Adding user pierrecyber to group vboxsf
Done.
pierrecyber@splunk:~$
```

13. I created the ‘share’ directory using **mkdir share** and **ls** shows that the directory was made.

```
pierrecyber@splunk:~$ mkdir share
pierrecyber@splunk:~$ ls
share
pierrecyber@splunk:~$ ls -l
total 4
drwxrwxr-x 2 pierrecyber pierrecyber 4096 Oct 16 14:29 share
pierrecyber@splunk:~$ ls -la
total 36
drwxr-x--- 5 pierrecyber pierrecyber 4096 Oct 16 14:29 .
drwxr-xr-x 3 root        root        4096 Oct 15 22:03 ..
-rw------- 1 pierrecyber pierrecyber  231 Oct 16 14:26 .bash_history
-rw-r--r-- 1 pierrecyber pierrecyber  220 Jan  6  2022 .bash_logout
-rw-r--r-- 1 pierrecyber pierrecyber 3771 Jan  6  2022 .bashrc
drwx------ 2 pierrecyber pierrecyber 4096 Oct 15 22:05 .cache
-rw-r--r-- 1 pierrecyber pierrecyber  807 Jan  6  2022 .profile
drwxrwxr-x 2 pierrecyber pierrecyber 4096 Oct 16 14:29 share
drwx------ 2 pierrecyber pierrecyber 4096 Oct 15 22:03 .ssh
-rw-r--r-- 1 pierrecyber pierrecyber    0 Oct 15 22:06 .sudo_as_admin_successful
pierrecyber@splunk:~$ _
```

14. Next I ran the following command to mount the shared folder to the directory called "share".

```
pierrecyber@splunk:~$ sudo mount -t vboxsf -o uid=1000,gid=1000 Active_Directory_Lab share/_
```

15. I changed back to the share directory and used **ls -la**, showing that the splunk installer is in the shared folder along with other files in it.

```
pierrecyber@splunk:~/share$ ls -la
total 732412
drwxrwxrwx 1 pierrecyber pierrecyber      8192 Oct 16 14:35 .
drwxr-x--- 5 pierrecyber pierrecyber      4096 Oct 16 14:29 ..
-rwxrwxrwx 1 pierrecyber pierrecyber     28188 Oct 16 14:12 '10. splunk deb.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      6871 Oct 16 14:14 '11. VB addons.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      1249 Oct 16 14:24 '12. adduser vbox sf.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      9199 Oct 16 14:26 '13. guest utils.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      4011 Oct 16 14:28 '14. user added.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     15594 Oct 16 14:30 '15.shared directory.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      1933 Oct 16 14:35 '16. mount shared folder to share directory.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     62036 Oct  2 13:47  1.Diagram.PNG
-rwxrwxrwx 1 pierrecyber pierrecyber     17356 Oct  7 12:23 '2. VMs Installed.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     59529 Oct  7 12:47 '3.Beefy Splunk.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     72757 Oct  7 12:46 '3.Splunk VB1.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     55652 Oct 16 13:45 '4. Create NATwork.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     49894 Oct 16 13:44 '4. NAT.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     25553 Oct 16 13:47 '5. Splunk NAT.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     11186 Oct 16 14:02 '6.static ip 2.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      8653 Oct 16 13:55 '6.static ip.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber      1016 Oct 16 14:03 '7. sudo net apply.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     12983 Oct 16 14:05 '8. inet changed.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber     15162 Oct 16 14:06 '9.Ping success.PNG'
-rwxrwxrwx 1 pierrecyber pierrecyber 749476896 Oct 16 14:12 splunk-9.3.1-0b8d769cb912-linux-2.6-amd64.deb
pierrecyber@splunk:~/share$
```

16. To install the Splunk package, I ran the command:
    sudo dpkg -i splunk-9.3.1-0b8d769cb912-linux-2.6-amd64.deb

```
pierrecyber@splunk:~/share$ sudo dpkg -i splunk-9.3.1-0b8d769cb912-linux-2.6-amd64.deb
Selecting previously unselected package splunk.
(Reading database ... 94818 files and directories currently installed.)
Preparing to unpack splunk-9.3.1-0b8d769cb912-linux-2.6-amd64.deb ...
Unpacking splunk (9.3.1) ...
Setting up splunk (9.3.1) ...
complete
pierrecyber@splunk:~/share$ _
```

17. After installation I am now able to change into the Splunk directory.

```
pierrecyber@splunk:~/share$ cd /opt/splunk
pierrecyber@splunk:/opt/splunk$ ls -la
total 4880
drwxr-xr-x 11 splunk splunk    4096 Oct 16 14:41 .
drwxr-xr-x  3 root   root      4096 Oct 16 14:40 ..
drwxr-xr-x  4 splunk splunk    4096 Oct 16 14:41 bin
-r--r--r--  1 splunk splunk      57 Sep  5 17:25 copyright.txt
drwxr-xr-x 17 splunk splunk    4096 Oct 16 14:41 etc
-rw-r--r--  1 splunk splunk     426 Oct 16 14:41 ftr
drwxr-xr-x  4 splunk splunk    4096 Oct 16 14:41 include
drwxr-xr-x  9 splunk splunk    4096 Oct 16 14:41 lib
-r--r--r--  1 splunk splunk   85405 Sep  5 17:25 license-eula.txt
-r--r--r--  1 splunk splunk    1090 Aug 30 23:45 LICENSE.txt
drwxr-xr-x  3 splunk splunk    4096 Oct 16 14:41 openssl
drwxr-xr-x  3 splunk splunk    4096 Oct 16 14:40 opt
drwxr-xr-x  2 splunk splunk    4096 Oct 16 14:41 quarantined_files
-r--r--r--  1 splunk splunk     523 Sep  5 17:29 README-splunk.txt
drwxr-xr-x  4 splunk splunk    4096 Oct 16 14:41 share
-r--r--r--  1 splunk splunk 4847082 Sep  5 17:58 splunk-9.3.1-0b8d769cb912-linux-2.6-x86_64-manifest
drwxr-xr-x  2 splunk splunk    4096 Oct 16 14:41 swidtag
pierrecyber@splunk:/opt/splunk$ _
```

18. All of the user and group permissions belong to “Splunk” as seen in the above image. I changed into the user “Splunk” using **sudo -u splunk bash**.

```
pierrecyber@splunk:/opt/splunk$ sudo -u splunk bash
splunk@splunk:~$
```

19. I changed into the Splunk binaries directory with **cd bin**. I used **./splunk start** to run the installer. After accepting the agreement, it will install.

```
Starting splunk server daemon (splunkd)...
Generating a RSA private key
.................................+++++
...................+++++
writing new private key to 'privKeySecure.pem'
-----
Signature ok
subject=/CN=splunk/O=SplunkUser
Getting CA Private Key
writing RSA key
PYTHONHTTPSVERIFY is set to 0 in splunk-launch.conf disabling certificate validation fo
d with the embedded Python interpreter; must be set to "1" for increased security
Done


Waiting for web server at http://127.0.0.1:8000 to be available................. Done


If you get stuck, we're here to help.
Look for answers here: http://docs.splunk.com

The Splunk web interface is at http://splunk:8000

splunk@splunk:~/bin$
```

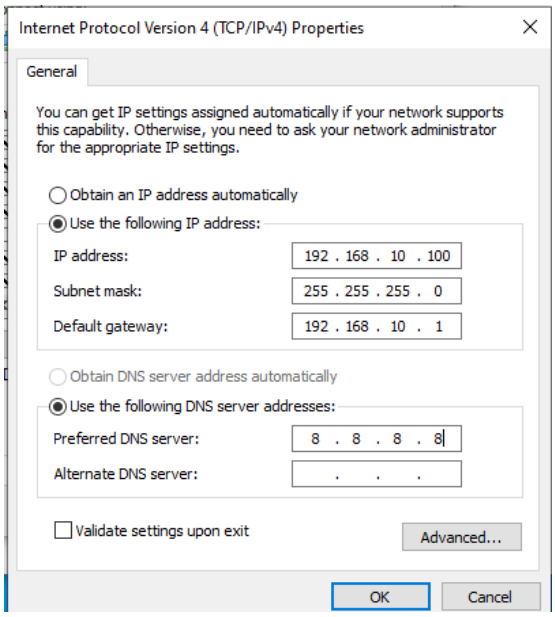
20. Next I exited out of the user “Splunk”, changed back to the bin directory, and ran the following: **sudo ./splunk enable boot-start -user splunk**. This ensures that whenever the VM reboots, Splunk will run with the user “splunk”.

```
splunk@splunk:~/bin$ exit
exit
pierrecyber@splunk:/opt/splunk$ cd bin
pierrecyber@splunk:/opt/splunk/bin$ ./splunk enable boot-start -user splunk
Cannot write to "/opt/splunk/etc/splunk-launch.conf": Permission denied
pierrecyber@splunk:/opt/splunk/bin$ sudo ./splunk enable boot-start -user splunk
Init script installed at /etc/init.d/splunk.
Init script is configured to run at boot.
pierrecyber@splunk:/opt/splunk/bin$ _
```

21. On the target machine, the IP is set by default to 192.168.10.5

```
Select Command Prompt
Microsoft Windows [Version 10.0.19045.3803]
(c) Microsoft Corporation. All rights reserved.

C:\Users\PierreCyber>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . : attlocal.net
   Link-local IPv6 Address . . . . . : fe80::ebab:87db:37a4:718a%12
   IPv4 Address. . . . . . . . . . . : 192.168.10.5
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.10.1

C:\Users\PierreCyber>
```

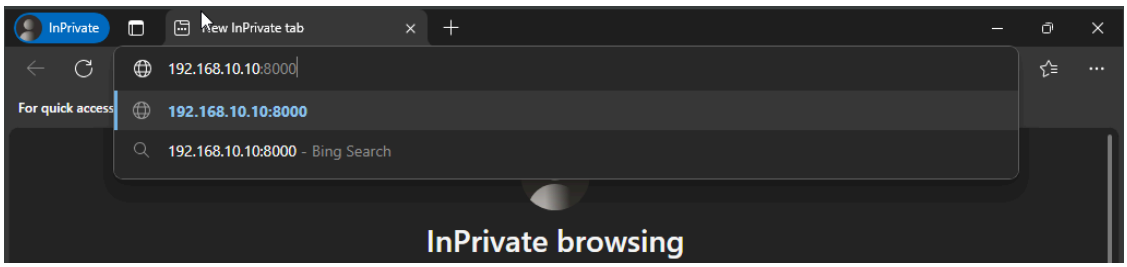
I changed this by navigating to the IPv4 Properties in the network adapter settings. I set a status IP of **192.168.10.100**, which will set the subnet to 255.255.255.0. Default gateway was set to **192.168.10.1**, and I used **8.8.8.8** (Google) for the preferred DNS.

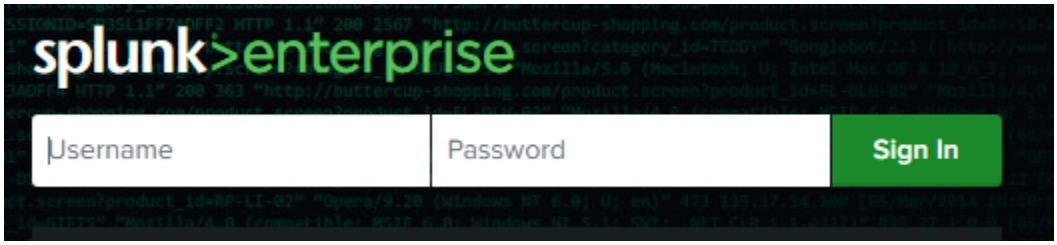


The IP has been changed:

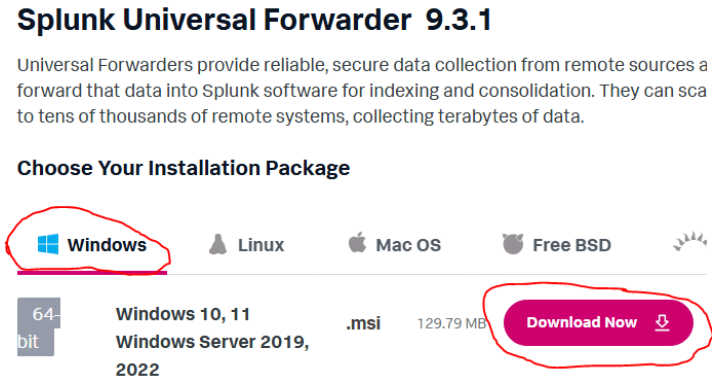
```
Connection-specific DNS Suffix  . :
Link-local IPv6 Address . . . . . : fe80::ebab:87db:37a4:718a%12
IPv4 Address. . . . . . . . . . . : 192.168.10.100
Subnet Mask . . . . . . . . . . . : 255.255.255.0
Default Gateway . . . . . . . . . : 192.168.10.1
```

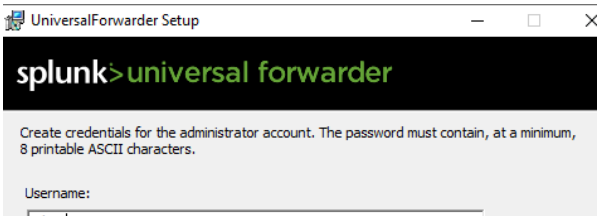
22. Visit splunk through a web browser using static IP and port **192.168.10.10:8000** and the login page should show up. I used the credentials that were created when configuring the Ubuntu LTS Splunk server.

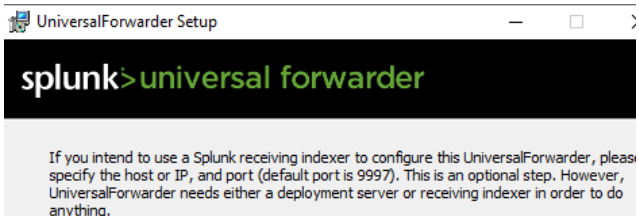




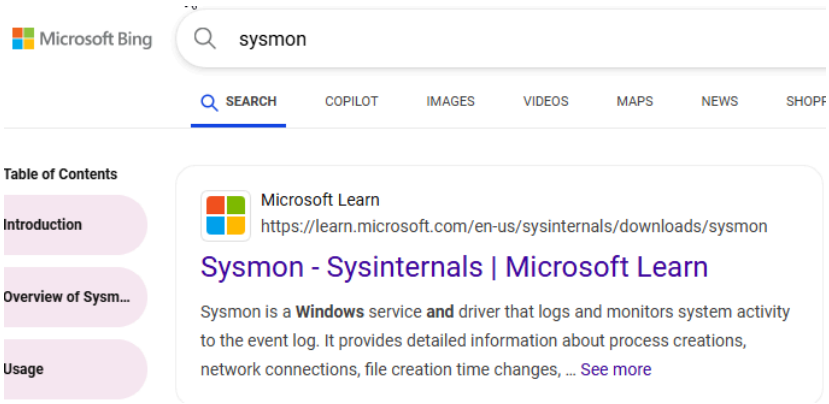
23. Next it was time to install the **Splunk Universal Forwarder** on the target machine from **Splunk.com.** I chose “admin” as a username and generated a random password. For the receiving indexer, I use **192.168.10.10** (Splunk Server IP) and use **9997** for the default port.



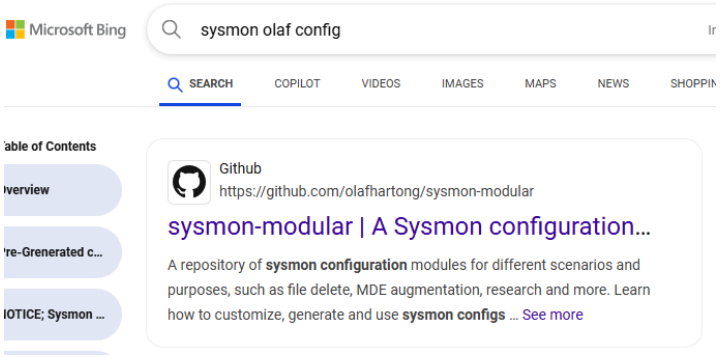




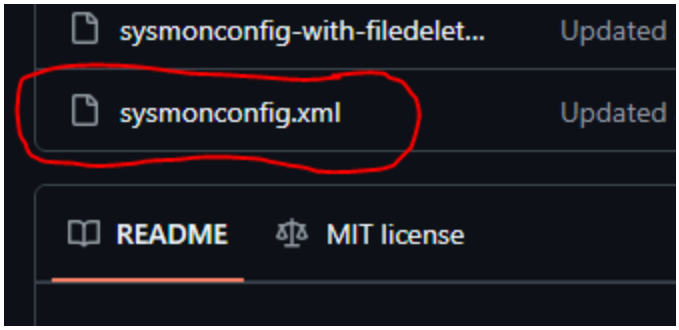
24. Then I install **Sysmon** to be able to log activity to the event log.



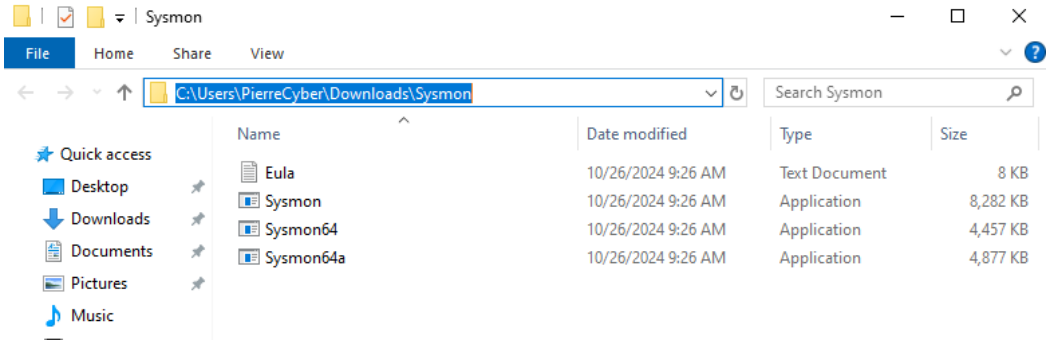
25. For Sysmon in this lab, I used Olaf's Sysmon configuration from github.



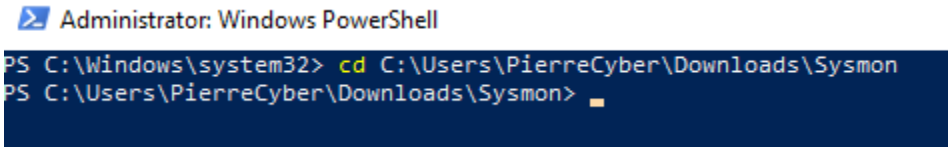
26. I scrolled down to find the **sysmonconfig.xml** file and downloaded the raw file.

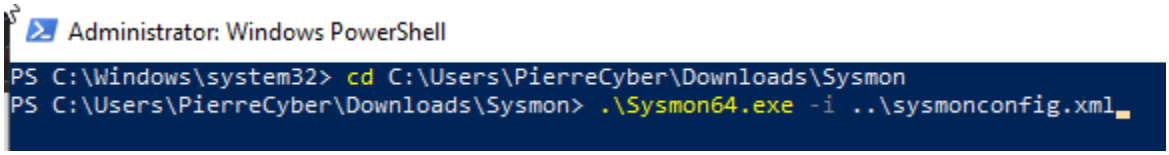


27. I navigated to the downloads folder where I installed Sysmon and extracted it. Copy the path.



28. Open **Powershell** as administrator and change directory to the path that was just copied. Then I install sysmon64.exe with the configuration file from Github, using **.\Sysmon64.exe -i ..\sysmonconfig.xml**





Sysmon service should be running after installation.

Administrator: Windows PowerShell

```
PS C:\Windows\system32> cd C:\Users\PierreCyber\Downloads\Sysmon
PS C:\Users\PierreCyber\Downloads\Sysmon> .\Sysmon64.exe -i ..\sysmonconfig.xml


System Monitor v15.15 - System activity monitor
By Mark Russinovich and Thomas Garnier
Copyright (C) 2014-2024 Microsoft Corporation
Using libxml2. libxml2 is Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.
Sysinternals - www.sysinternals.com

Loading configuration file with schema version 4.90
Configuration file validated.
Sysmon64 installed.
SysmonDrv installed.
Starting SysmonDrv.
SysmonDrv started.
Starting Sysmon64..
Sysmon64 started.
PS C:\Users\PierreCyber\Downloads\Sysmon>
```

29. Next I navigate to this folder:

C:\Program Files\SplunkUniversalForwarder\etc\system\local

Instructions are needed for the Universal Forwarder to send data to the Splunk server, so I open **Notepad** as administrator and create an Inputs.conf file with the following:

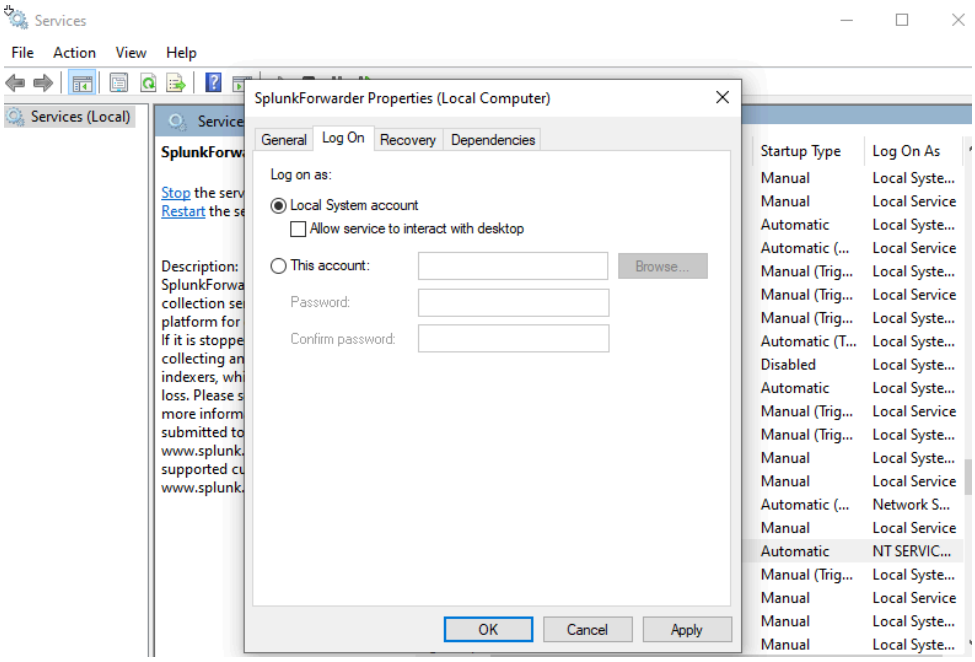
*Untitled - Notepad

File Edit Format View Help

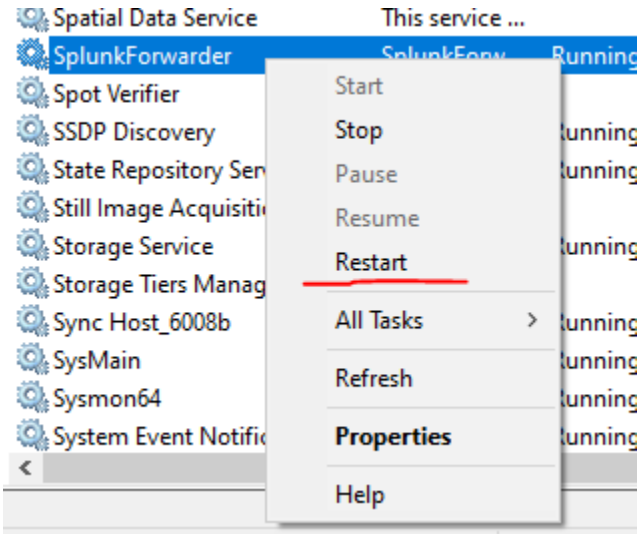
```
[WinEventLog://Application]
index = endpoint
disabled = false

[WinEventLog://Security]
index = endpoint
disabled = false

[WinEventLog://System]
index = endpoint
disabled = false

[WinEventLog://Microsoft-Windows-Sysmon/Operational]
index = endpoint
disabled = false
renderXml = true
source = XmlWinEventLog:Microsoft-Windows-Sysmon/Operational
```

Save this file to the **local** folder from the path above.

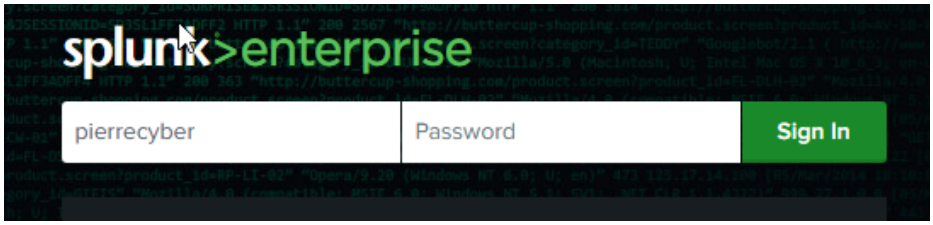
30. Open the services application from the start menu. Find the **SplunkForwarder** service and change the log on properties to **Local System Account**.



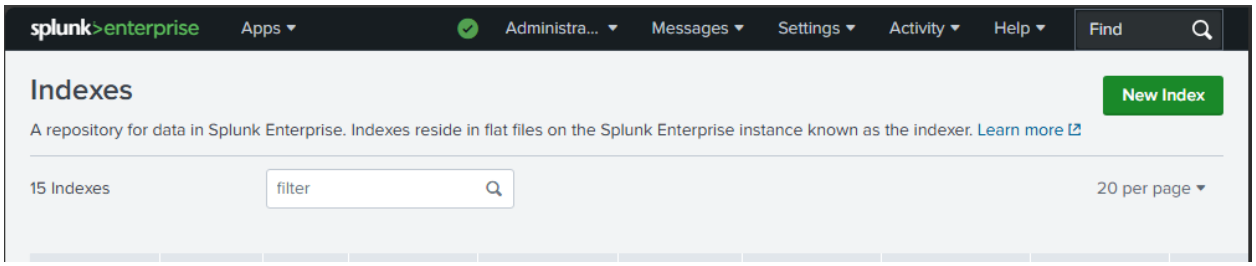
31. Because the inputs.conf file was created, the SplunkForwarder service also needs to be restarted.



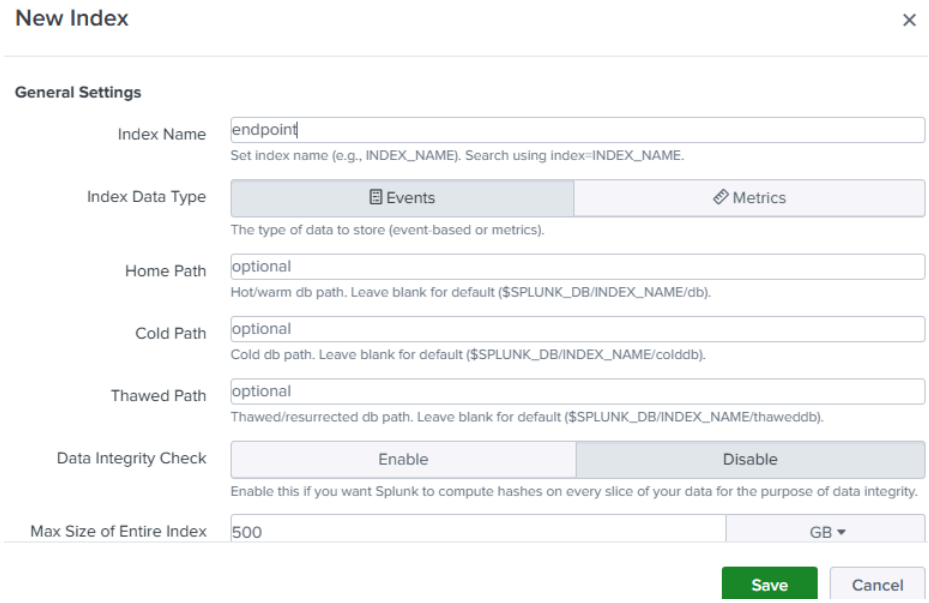
32. Next I log in to the splunk server through the browser.



Navigate to **Settings**, then **Indexes**. Select **New Index**

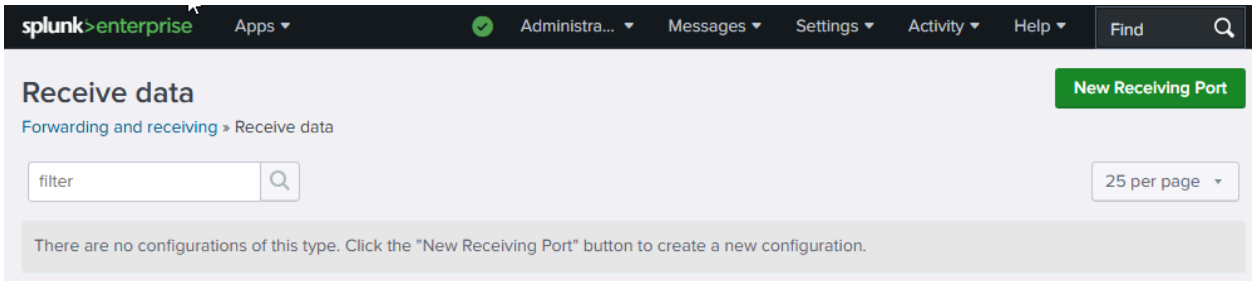


33. Here I created an index called endpoint, which is needed because that is the index specified in the input configuration file.

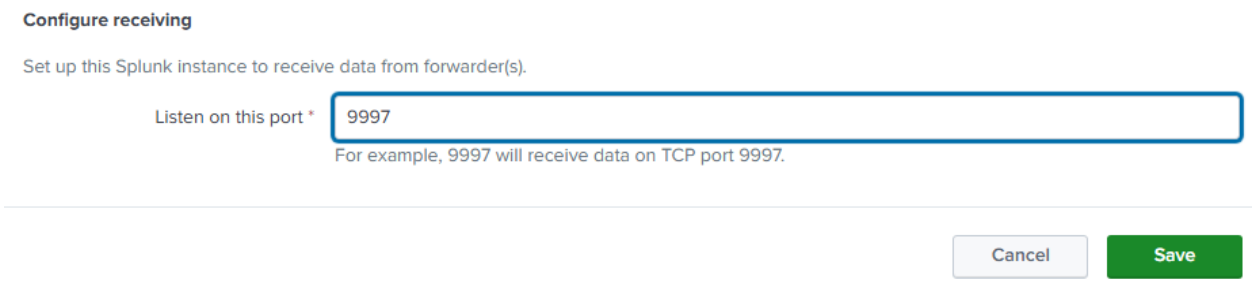


34. Navigate to **Settings**, then **Forwarding and Receiving**. Select **Configure receiving**.

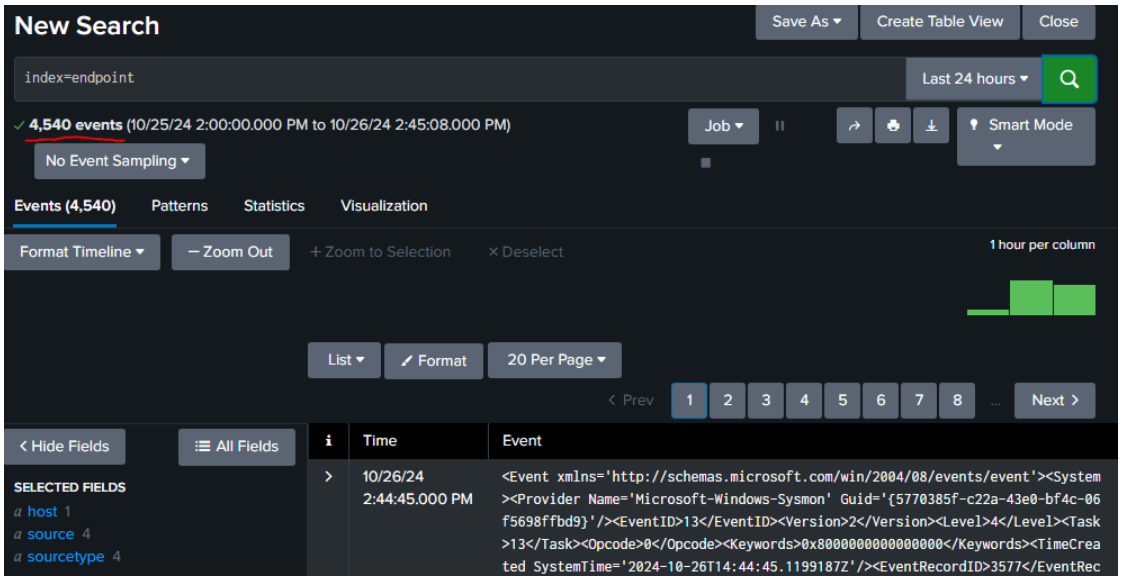
Click New Receiving Port.



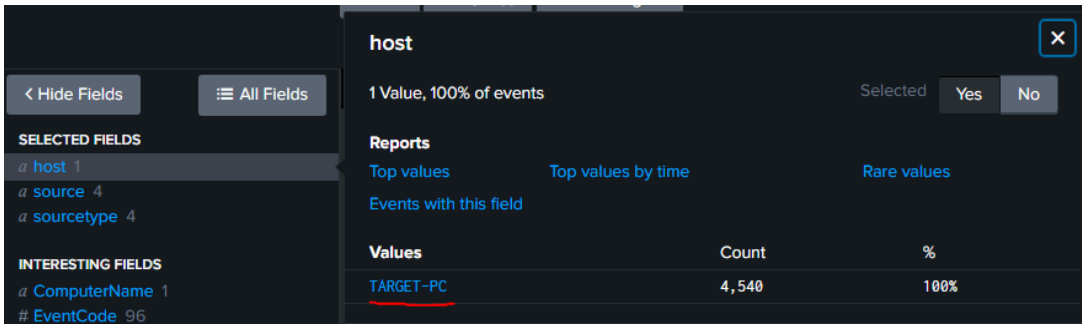
35. I entered **9997** (Splunk Default) for the forwarder to listen on this port.

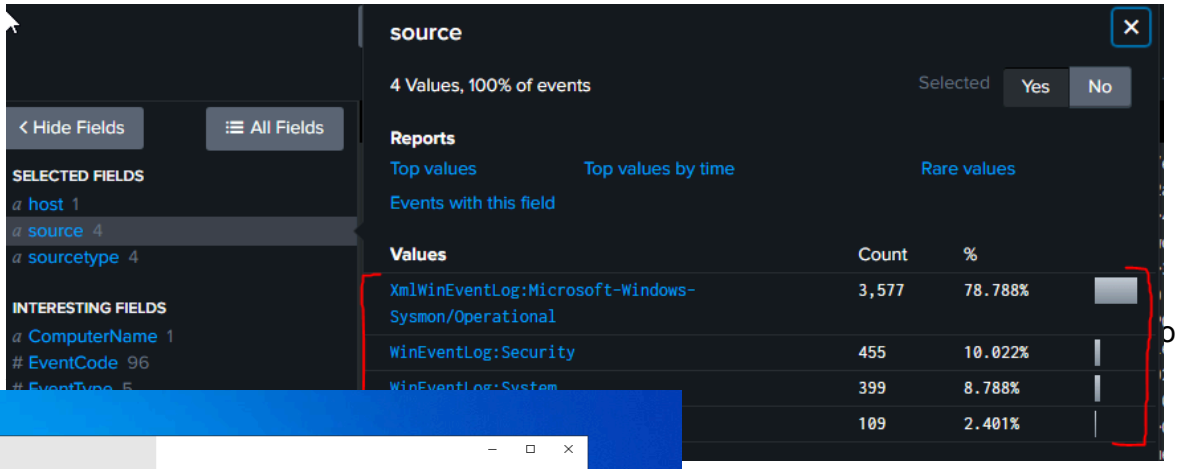


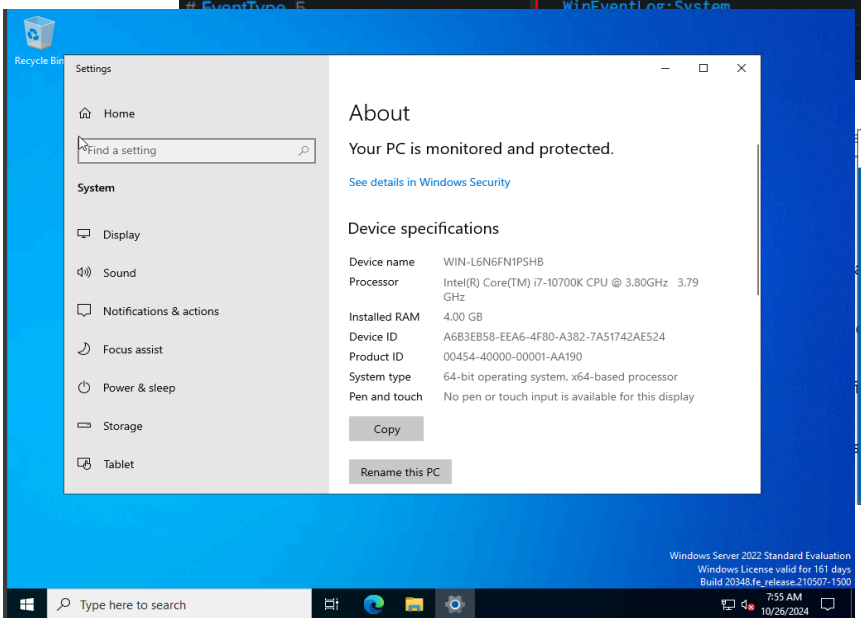
36. In the search bar, search for the endpoint index with **"index=endpoint"**. The target machine events should be being logged now.

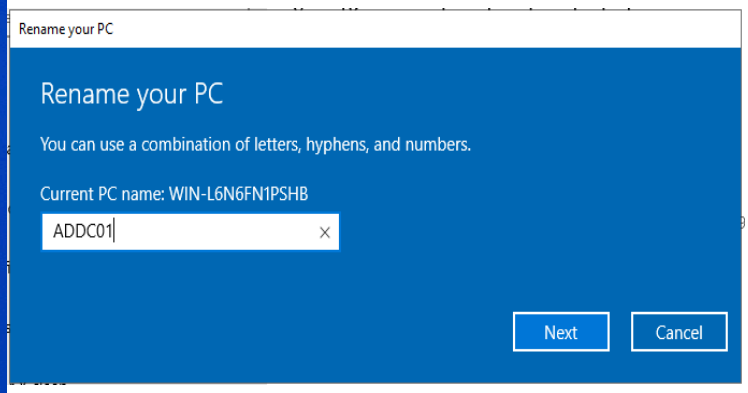


The **Target-PC** shows under hosts, as well as the source data from the input configuration file:

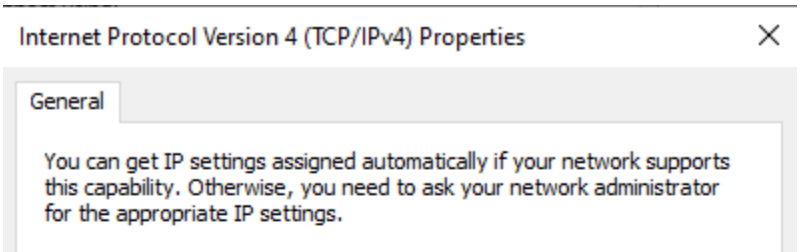








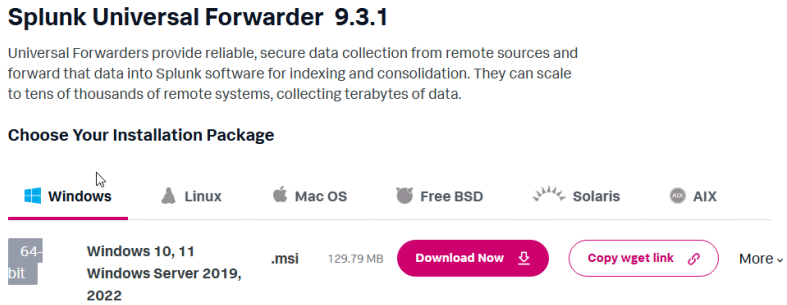
38. Next I navigate to the **IPv4 Properties** in the network adapter settings, and use the IP address **192.168.10.7** for this machine, as previously noted in the diagram. I use the Splunk server IP **192.168.10.1** for the default gateway. **8.8.8.8** (Google) is used as the preferred DNS server.

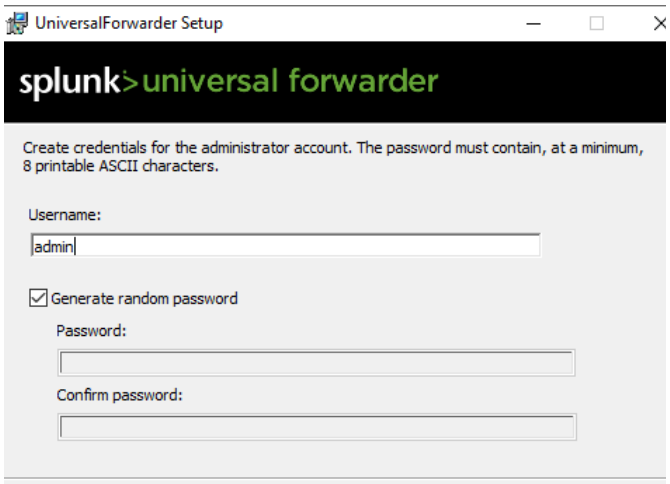


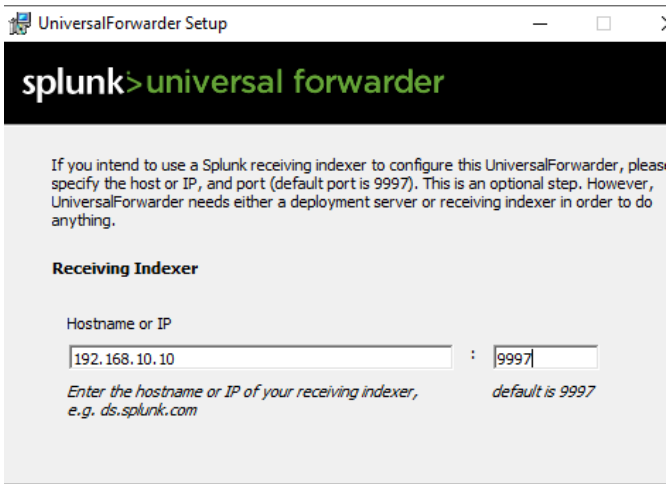
39. The new static IP has been set.

```
Connection-specific DNS Suffix  . :
Link-local IPv6 Address . . . . . : fe80::a93a:77ad:ac0b
IPv4 Address. . . . . . . . . . . : 192.168.10.7
Subnet Mask . . . . . . . . . . . : 255.255.255.0
Default Gateway . . . . . . . . . : 192.168.10.1
```

40. Next it was time to install the **Splunk Universal Forwarder** on the ADDC01 machine (windows server) from **Splunk.com.** I chose “admin” as a username and generated a random password. For the receiving indexer, I use **192.168.10.10** (Splunk Server IP) and use **9997** for the default port.

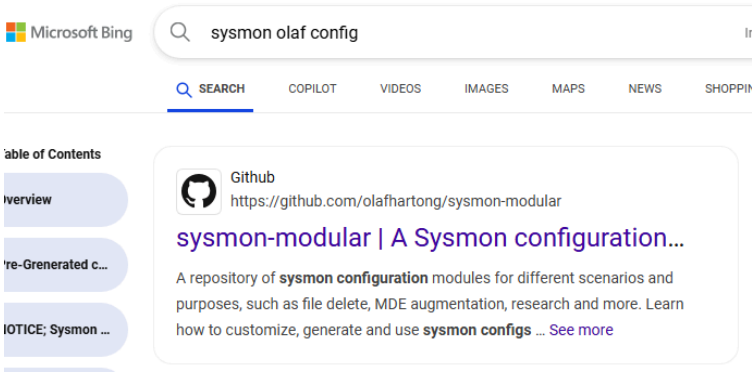




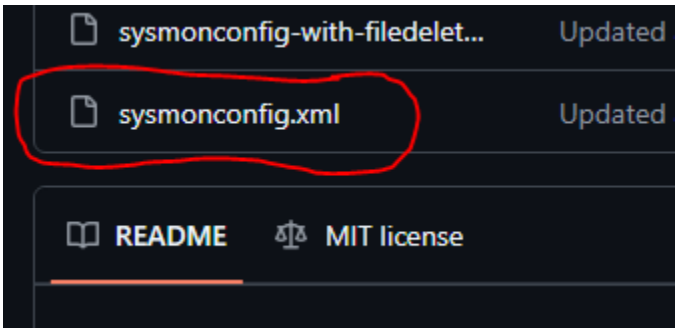


41. Then I install **Sysmon** to be able to log activity to the event log.

42. I used Olaf's Sysmon configurat



Download the **sysmonconfig.xml** raw file.

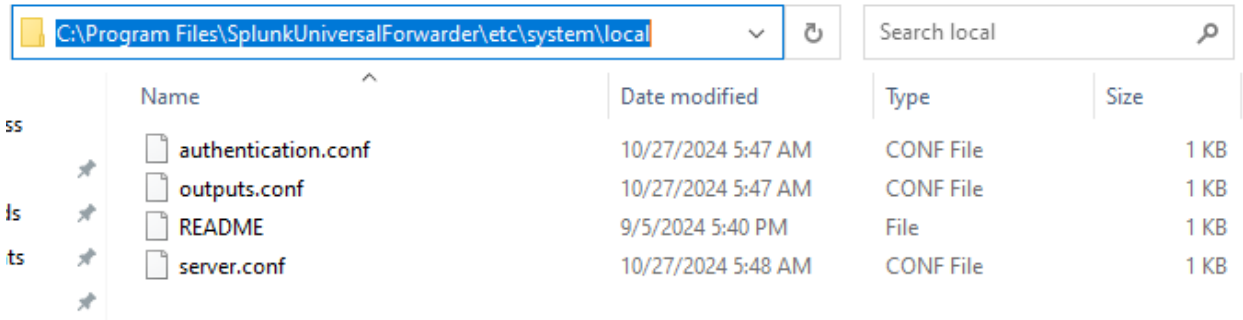


43. After extracting the Sysmon Zip file in the downloads folder, I opened **Powershell** as an administrator, and changed directory to the path where Sysmon was extracted. Then I install sysmon64.exe with the configuration file from Github, using:

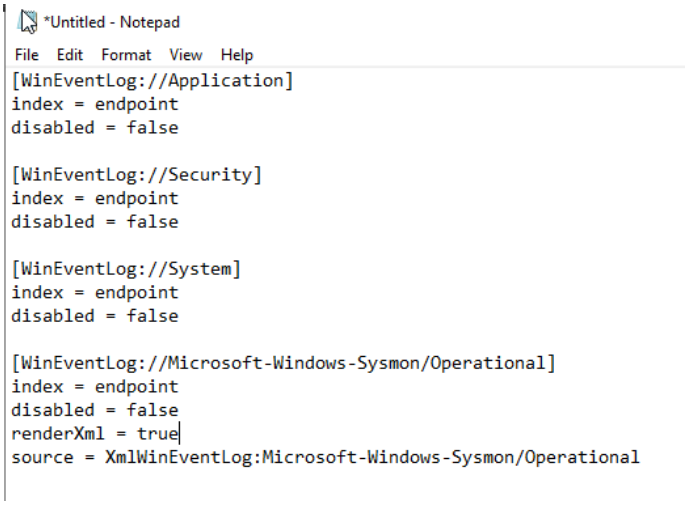
.\Sysmon64.exe -i ..\sysmonconfig.xml

```
PS C:\Users\Administrator> cd C:\Users\Administrator\Downloads\Sysmon
PS C:\Users\Administrator\Downloads\Sysmon> .\Sysmon64.exe -i ..\sysmonconfig.xml


System Monitor v15.15 - System activity monitor
By Mark Russinovich and Thomas Garnier
Copyright (C) 2014-2024 Microsoft Corporation
Using libxml2. libxml2 is Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.
Sysinternals - www.sysinternals.com

Loading configuration file with schema version 4.90
Configuration file validated.
Sysmon64 installed.
SysmonDrv installed.
Starting SysmonDrv.
SysmonDrv started.
Starting Sysmon64..
Sysmon64 started.
PS C:\Users\Administrator\Downloads\Sysmon>
```

44. I navigate to the local folder in this path:

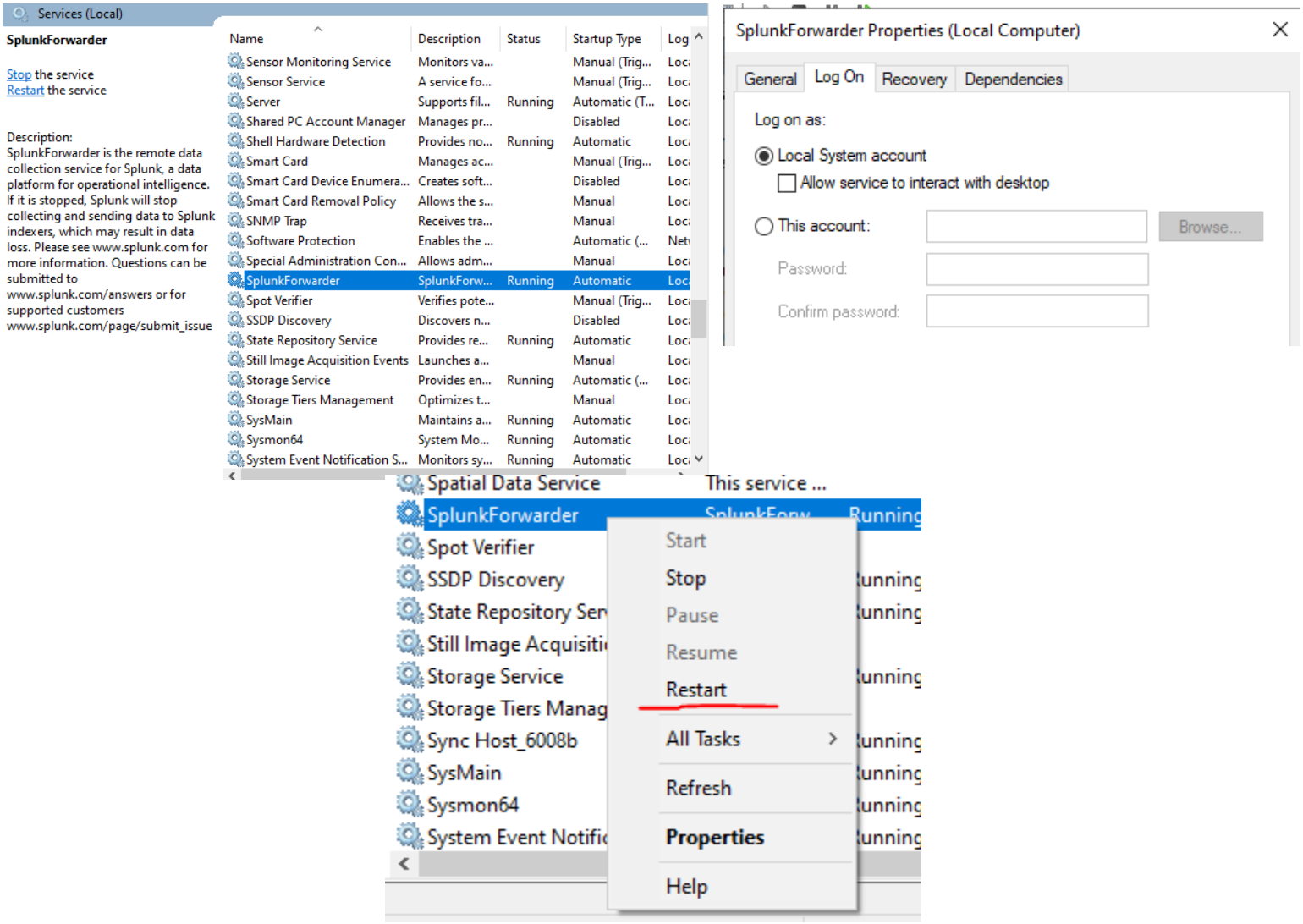


45. Instructions are needed for the Universal Forwarder to send data to the Splunk server, so I open **Notepad** as administrator and create an Inputs.conf file (same as before) with the following:

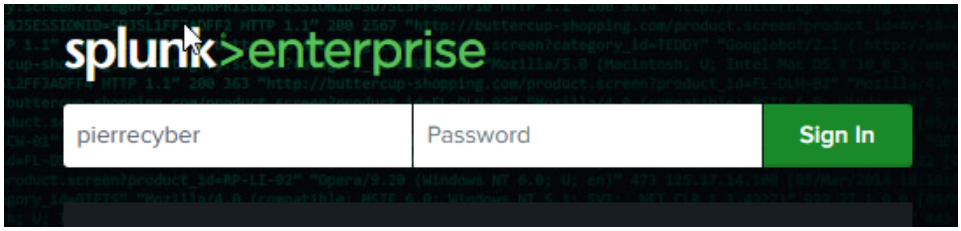


Save this file to the **local** folder from the path above.

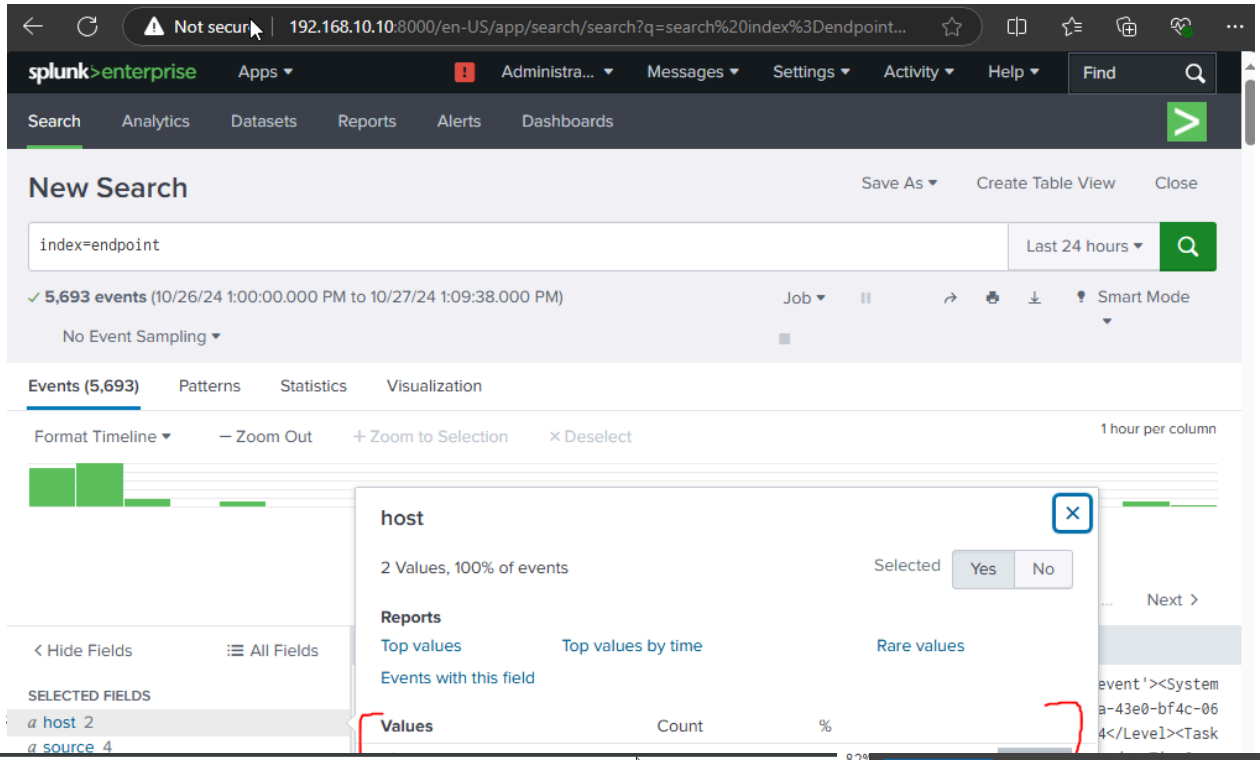
46. Open the services application from the start menu. Find the **SplunkForwarder** service and change the log on properties to **Local System Account**.

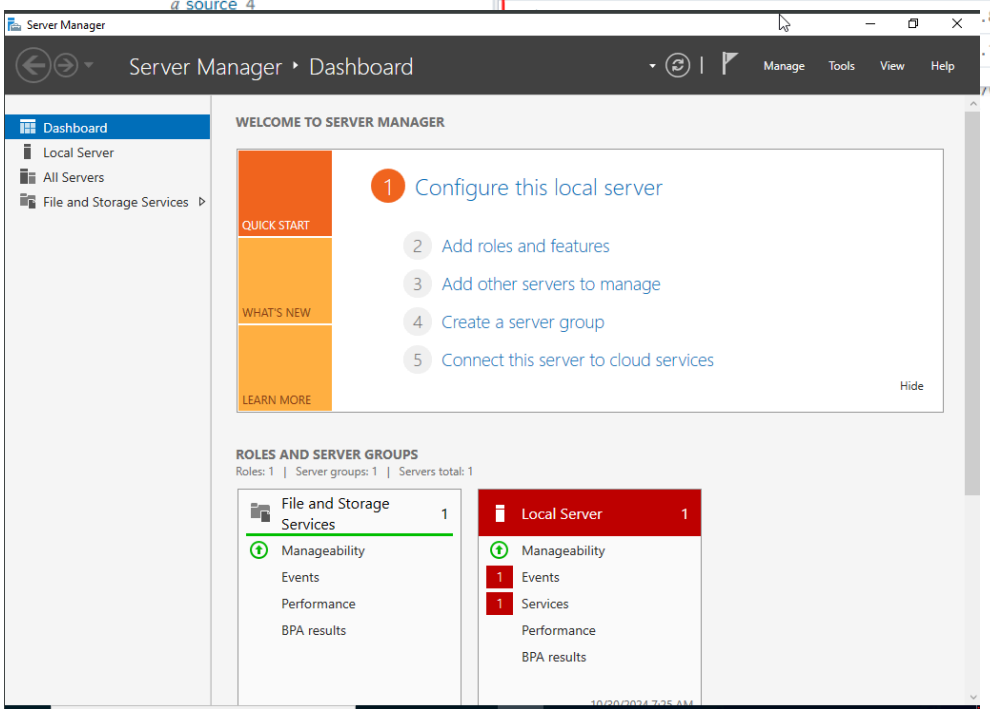


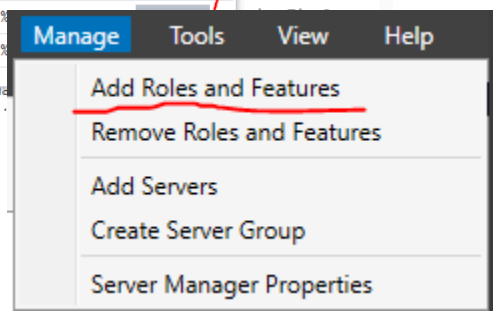
48. Now log in to the Splunk Server from a web browser.



49. Search for **“index=endpoint”** again, and you should now see that under **hosts**, **ADDC01** is also generating logs alongside the Target PC.







51. I selected **Role-Based or feature-based installation**.

Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).

- (●) **Role-based or feature-based installation**
  Configure a single server by adding roles, role services, and features.
- ( ) **Remote Desktop Services installation**
  Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.

52. Under **Server Roles**, I checked the box to install **Active Directory Domain Services**, then continued with the installation.

Select one or more roles to install on the selected server.

Roles

- [ ] Active Directory Certificate Services
- [x] Active Directory Domain Services
- [ ] Active Directory Federation Services
- [ ] Active Directory Lightweight Directory Services
- [ ] Active Directory Rights Management Services
- [ ] Device Health Attestation
- [ ] DHCP Server
- [ ] DNS Server
- [ ] Fax Server
- [■] File and Storage Services (1 of 12 installed)
- [ ] Host Guardian Service
- [ ] Hyper-V

Installation progress

DESTINATION SERVER
ADDC01

Before You Begin
Installation Type
Server Selection
Server Roles
Features
AD DS
Confirmation
Results

View installation progress

Feature installation

Installation started on ADDC01

Active Directory Domain Services
Group Policy Management
Remote Server Administration Tools
Role Administration Tools
AD DS and AD LDS Tools
Active Directory module for Windows PowerShell
AD DS Tools
Active Directory Administrative Center
AD DS Snap-Ins and Command-Line Tools

this wizard without interrupting running tasks. View task progress or open this clicking Notifications in the command bar, and then Task Details.

settings

Post-deployment Configura... TASKS

Configuration required for Active Directory Domain Services at ADDC01

Promote this server to a domain controller

Feature installation

Configuration required. Installation succeeded on ADDC01.

Add Roles and Features

Task Details

54. Select **add new forest** because a new domain is being created. The domain name must have a top level domain, so I added the extension to make it **pierrecyber.local**.

Active Directory Domain Services Configuration Wizard

Deployment Configuration

TARGET SERVER
ADDC01

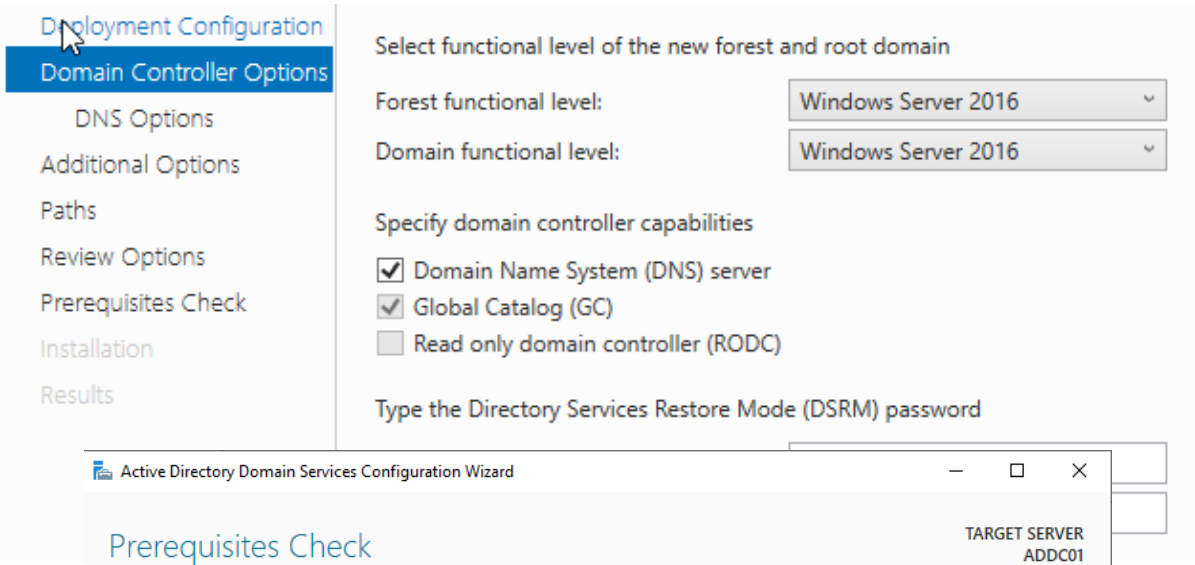
Deployment Configuration
Domain Controller Options
Additional Options
Paths
Review Options
Prerequisites Check

Select the deployment operation

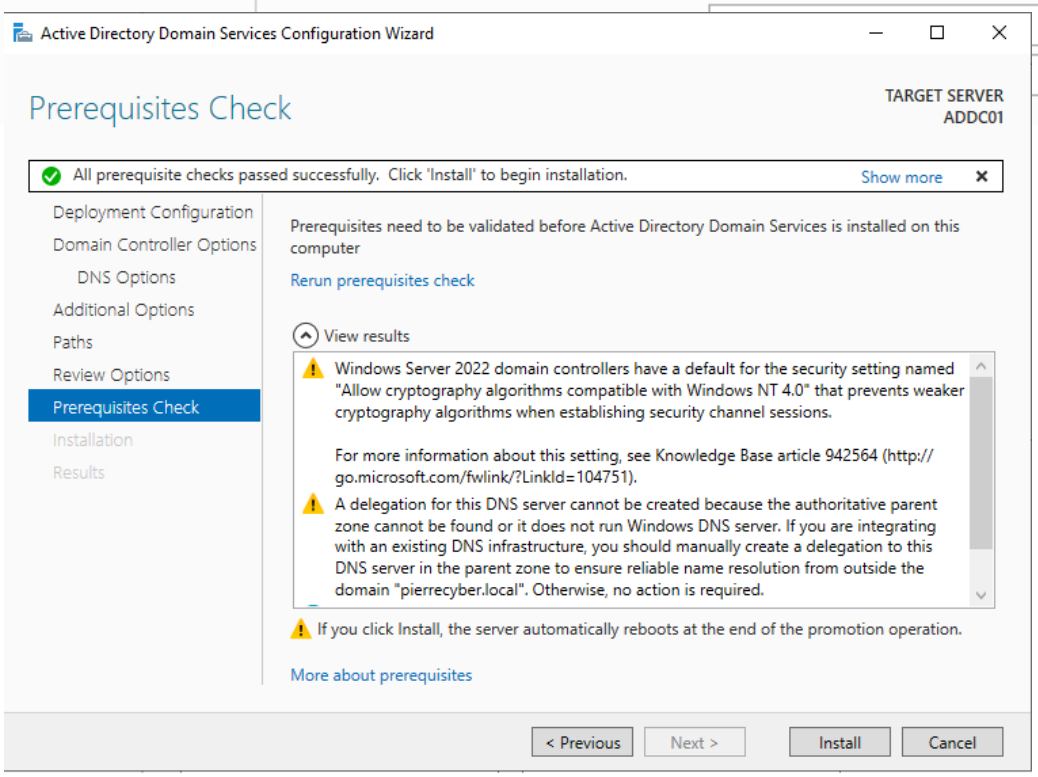
- ( ) Add a domain controller to an existing domain
- ( ) Add a new domain to an existing forest
- (●) Add a new forest

Specify the domain information for this operation

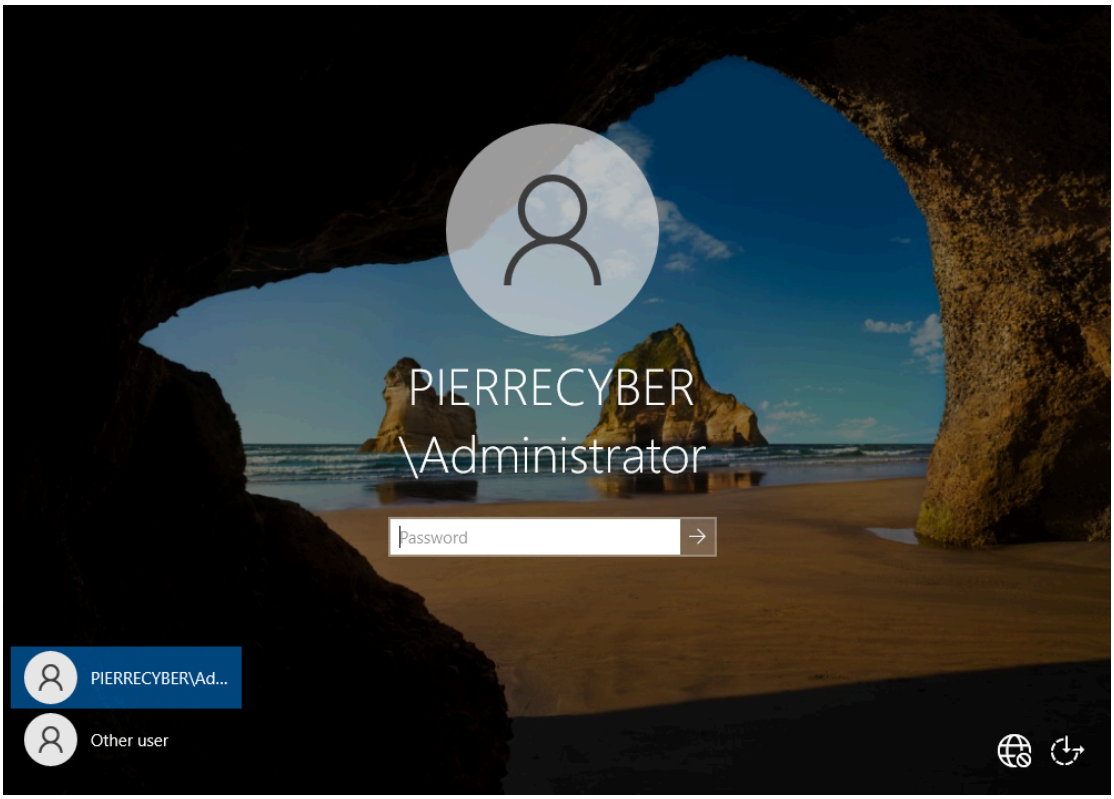
55. Under **Domain Controller Options** I created the DSRM password.



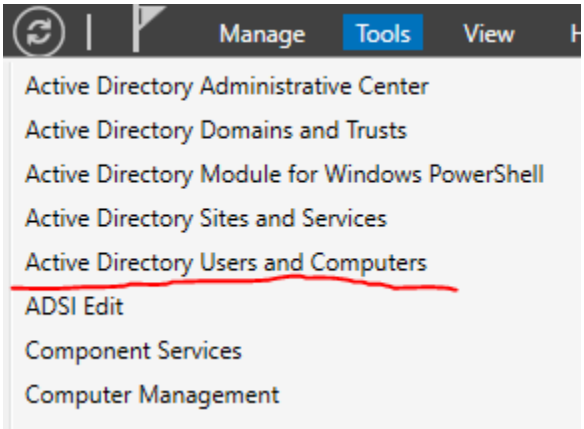
56



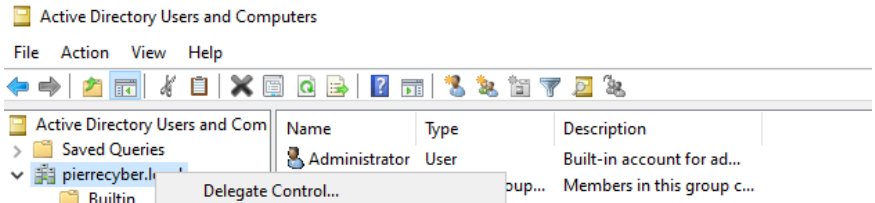
57. After restarting, the name should now include the new domain filled by a backslash, which indicates that I successfully installed Active Directory Domain Services (ADDS), and also promoted the server to a domain controller.

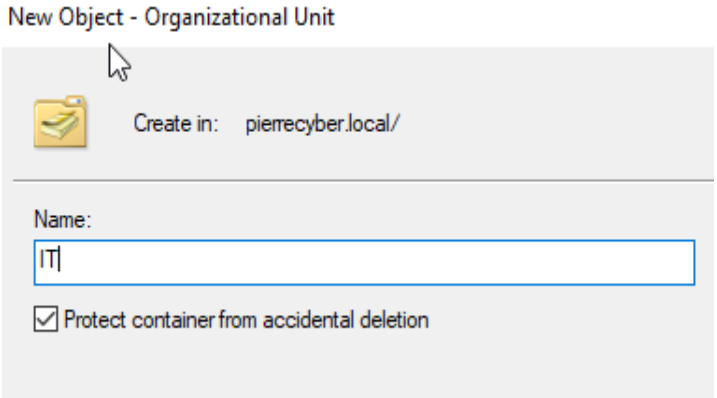


58. Then I started adding users to my domain. In the Server Manager under **Tools**, I selected **Active Directory Users and Computers**.

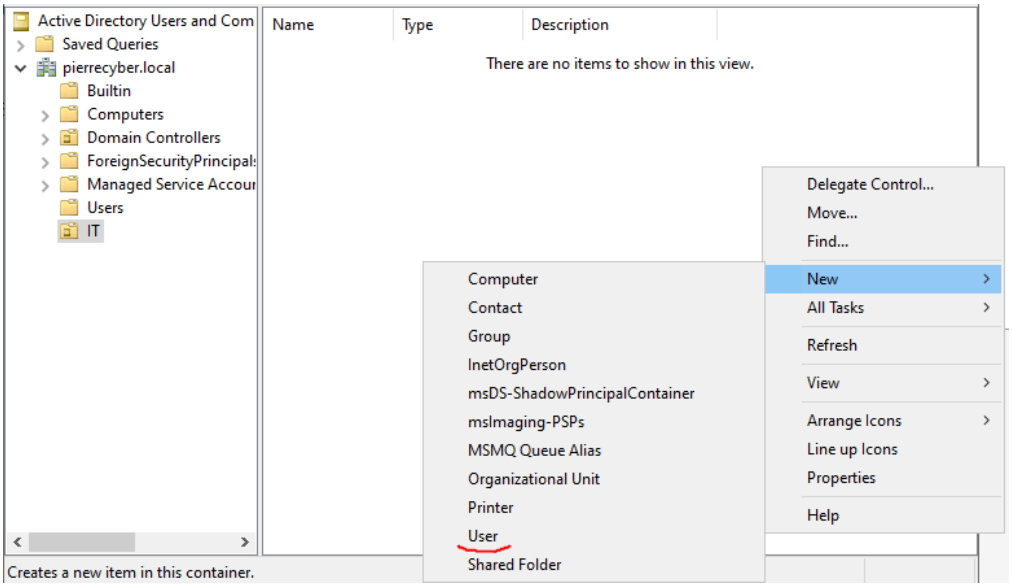


59. I create a new organizational unit by right clicking my domain and clicking **organizational unit**, and giving it the name "**IT**".

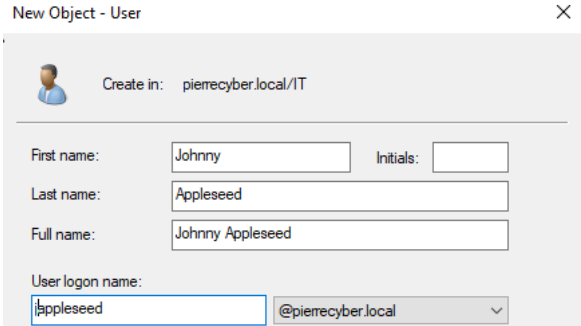




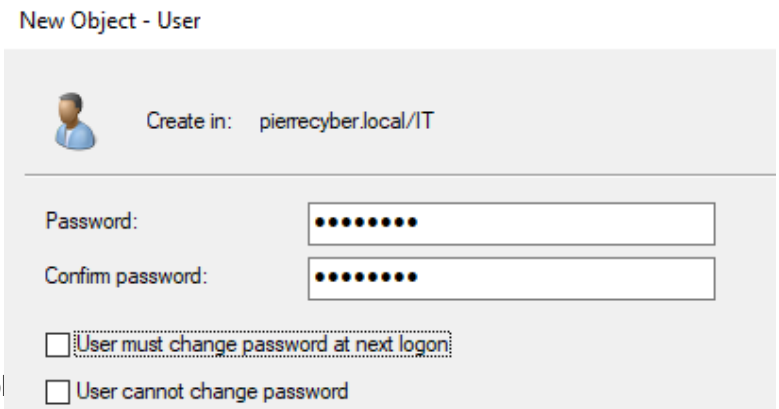
60. Next, I started creating a new user under the “IT” organizational unit by right-clicking and selecting new user.



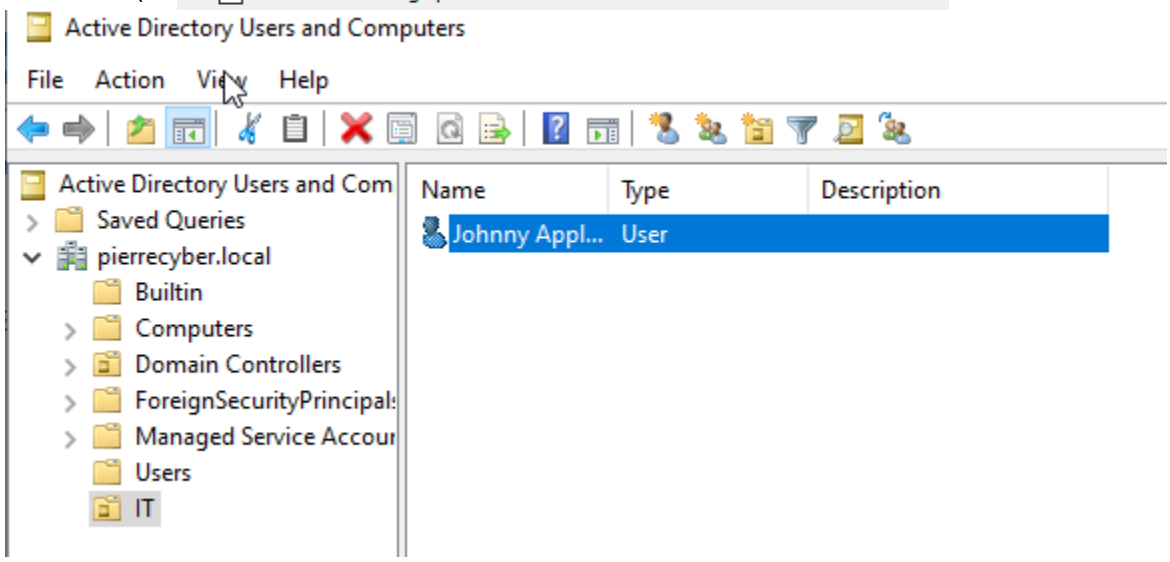
61. I input the user’s name and user logon credential.



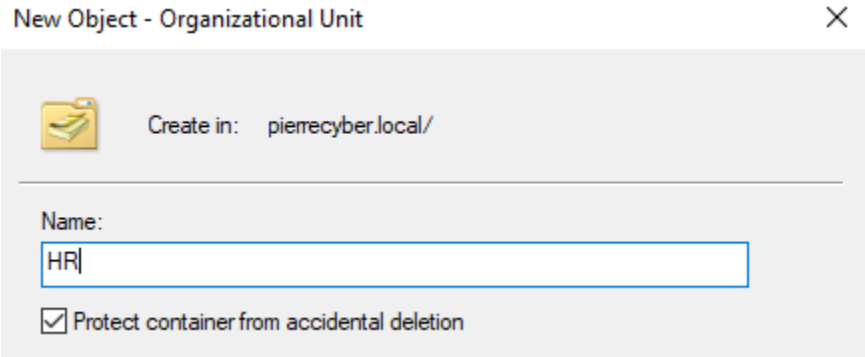
For this lab, I set a password for the user, and uncheck the box to have them change their password at next login:



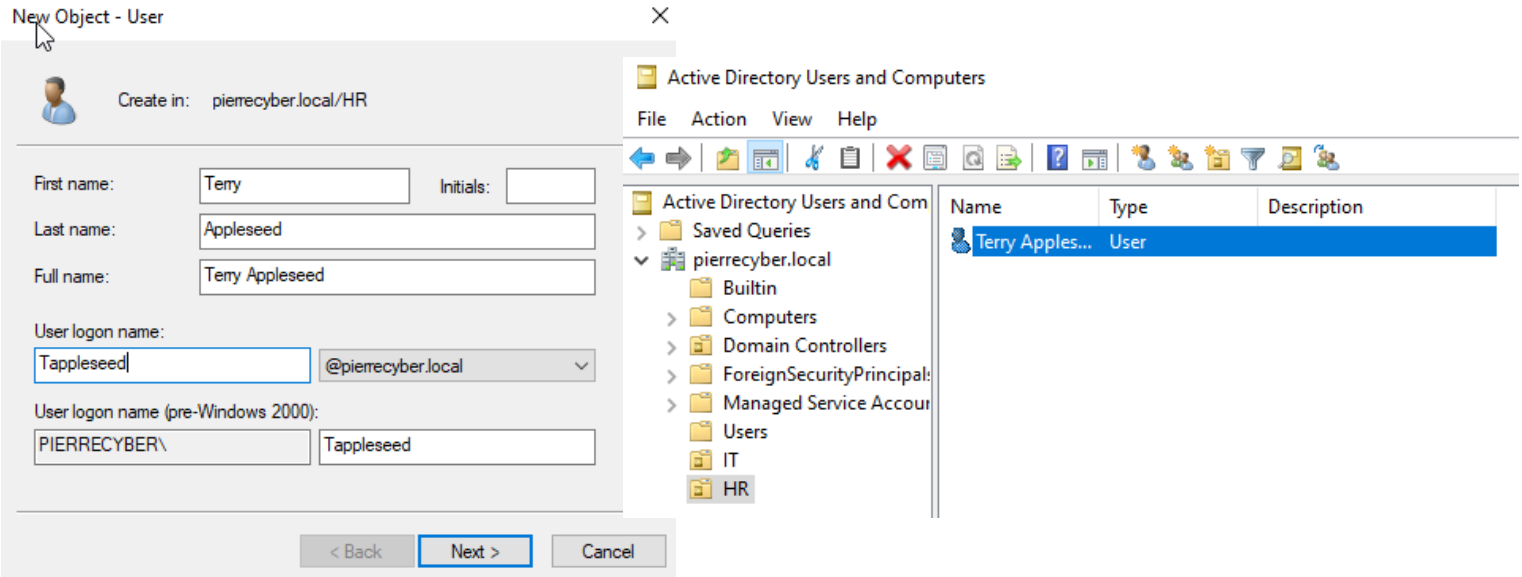
62. The user (Jo



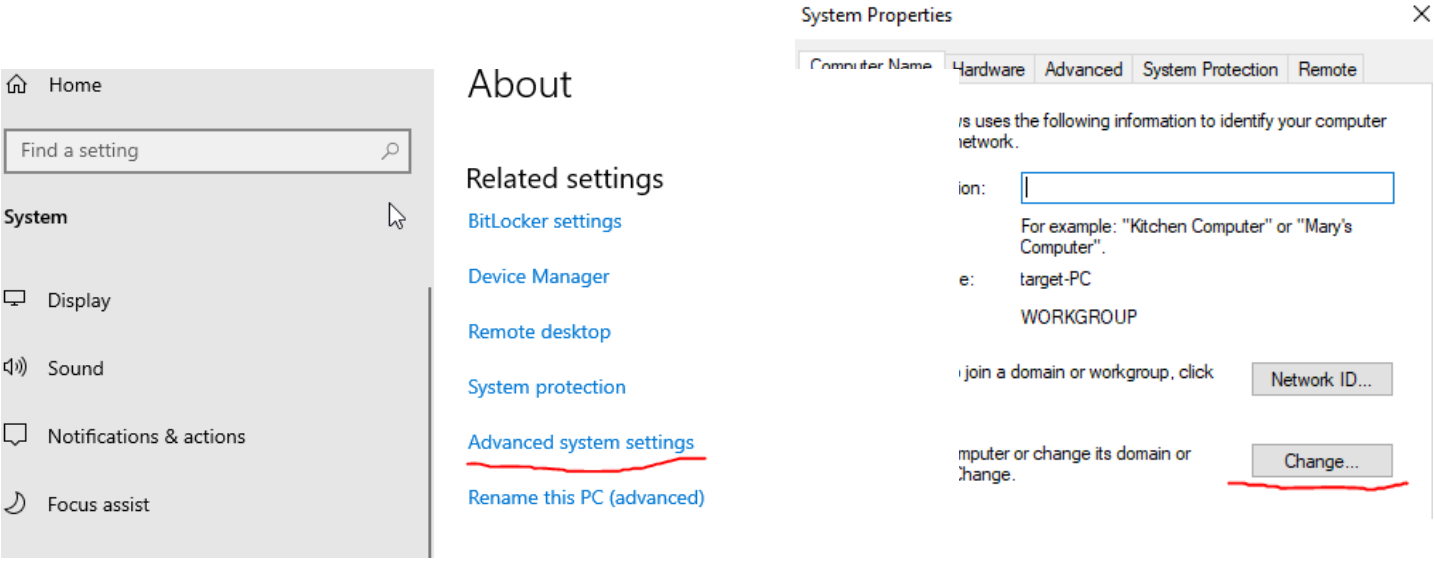
63. Next, I created another organizational unit named “**HR**”.



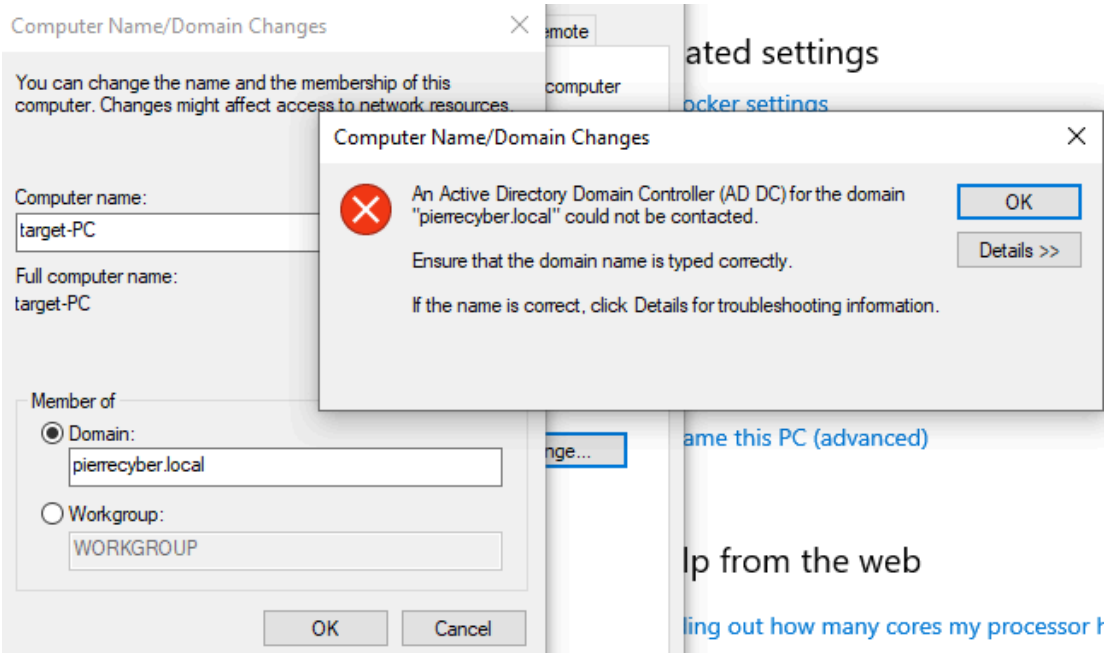
64. I created a new user under the “HR” unit named Terry Appleseed.



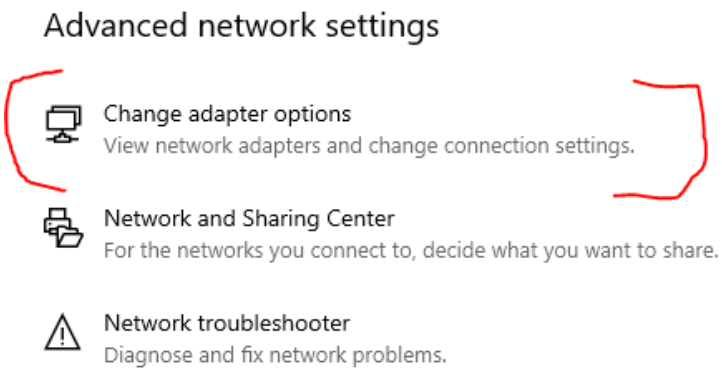
65. Now I start to add the target PC to the domain. On the **Target-PC**, I navigated to the **advanced system settings**, then **change** to update its domain.



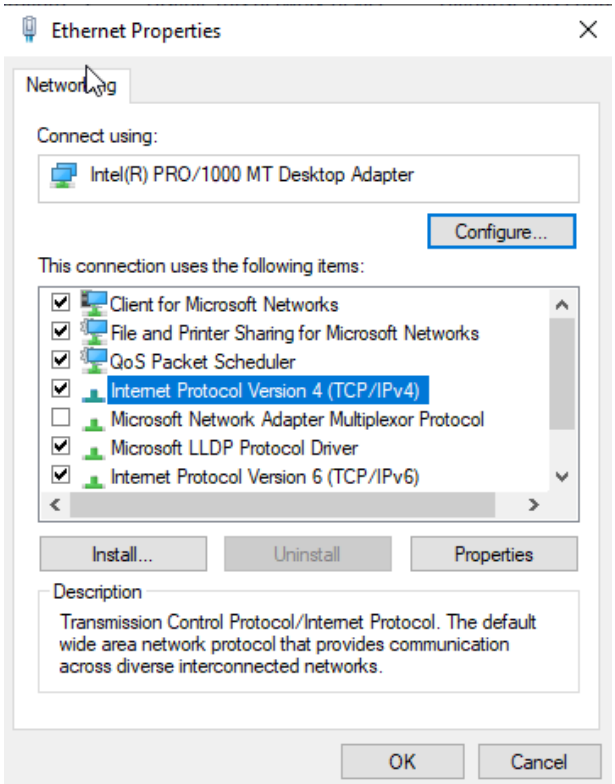
66. After typing the domain name (pierrecyber.local) and clicking “ok”, this temporary error will show up.



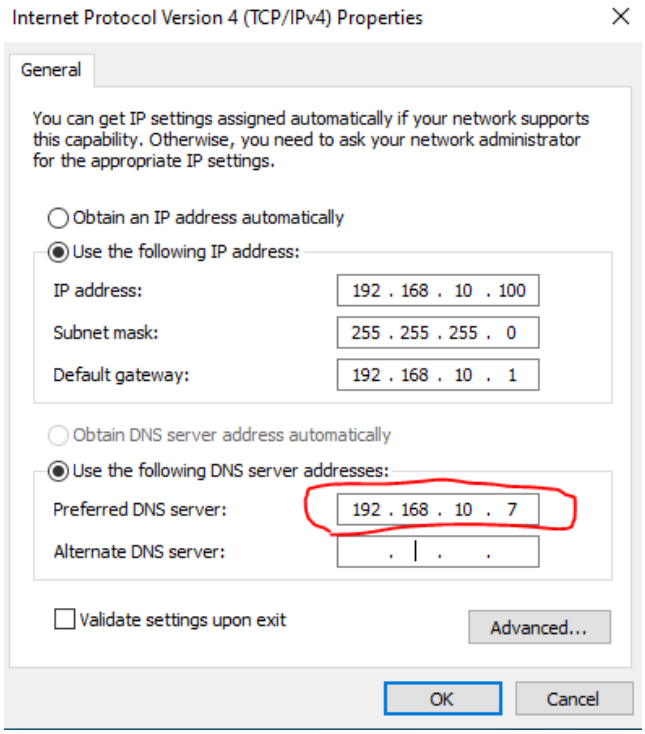
67. To fix this, I first clicked on **Change Adapter Options** in the **Advanced Network Settings**.



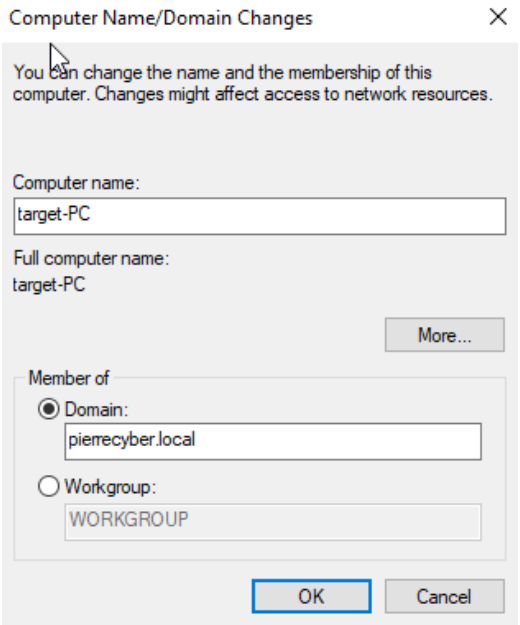
68. Under Ethernet properties, double-click **Internet Protocol Version 4**.

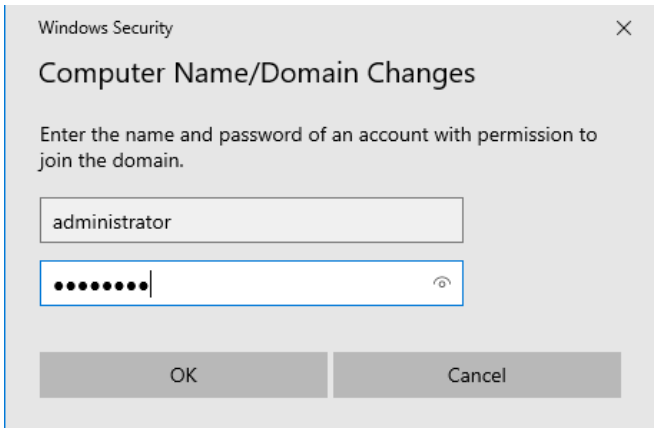


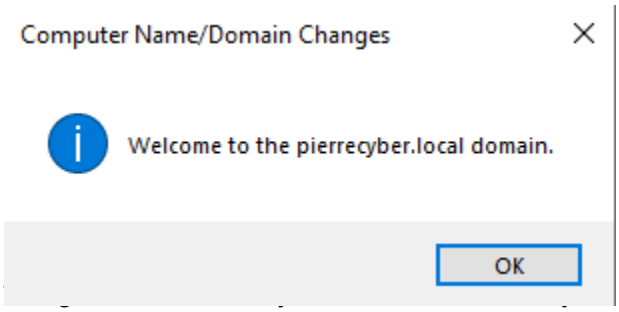
69. I changed the **preferred DNS server** from 8.8.8.8 (Google) to **192.168.10.7** (Domain Controller)



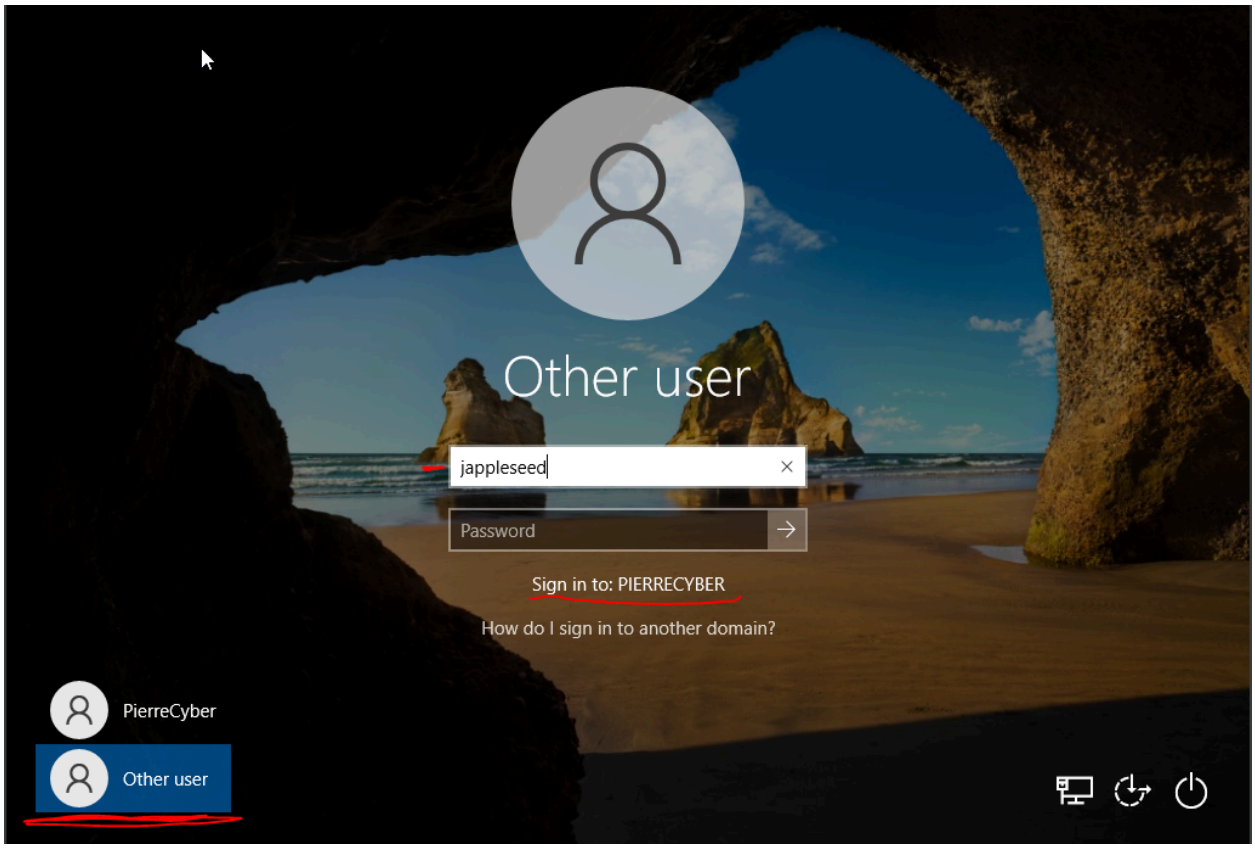
70. I went back and selected “**ok”** again after typing the domain (pierrecyber.local). This time I was prompted to enter the credentials for the server administrator account. The machine was added to the domain and I restarted the target PC.







71. Once I returned to the login screen, I wanted Appleseed”. I selected “**Other User**”, and made sure “**PIERRECYBER**” was the **Sign in to:** option. I logged in with the credentials created previously in the Server Manager.



At this point, I have successfully created 2 new users, joined a computer to a new domain, and logged in as a domain user. In the next project, I will be using the Kali Linux machine installed here to perform a brute force attack on the new users created, granting the opportunity to view telemetry via Splunk.