FSx Windows File Share and Lustre

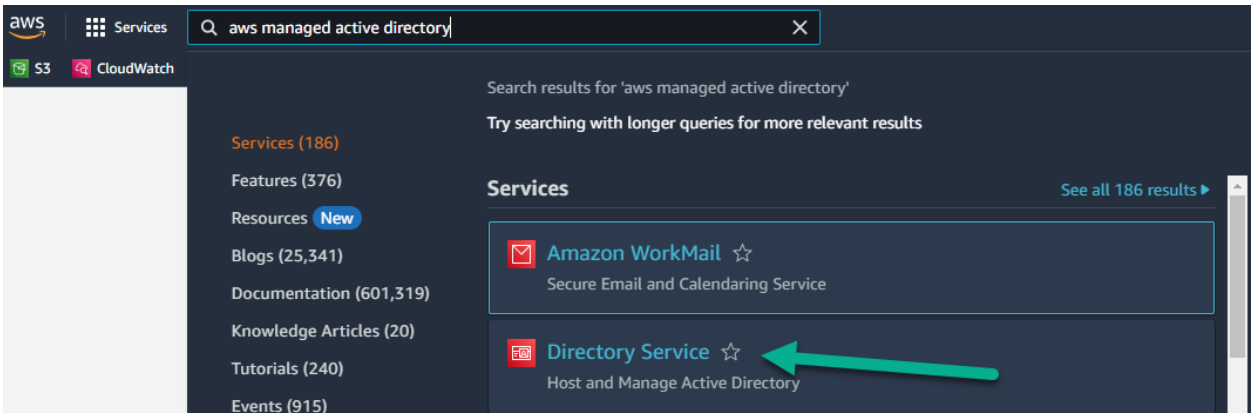
Problem Statement:

You work for XYZ Corporation and the current requirement in the organization is for faster file sharing, which can also help in data replication from On-Premises infrastructure.

You have been asked to:

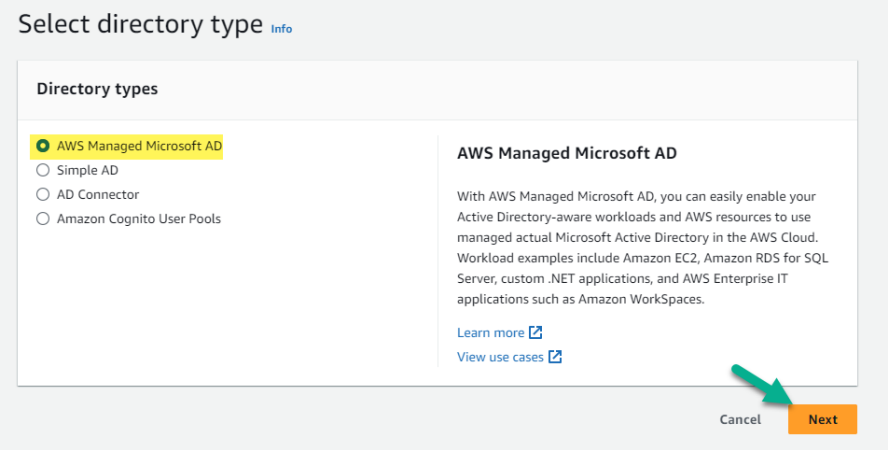
1. Create an FSx file system for a Windows file server
    a. Make sure you have an AWS Managed Active Directory with a valid domain name.
    b. Connect it to your Windows EC2 server.
2. Create an FSx file system for Lustre and attach it to an Amazon Linux 2 instance

Answer:

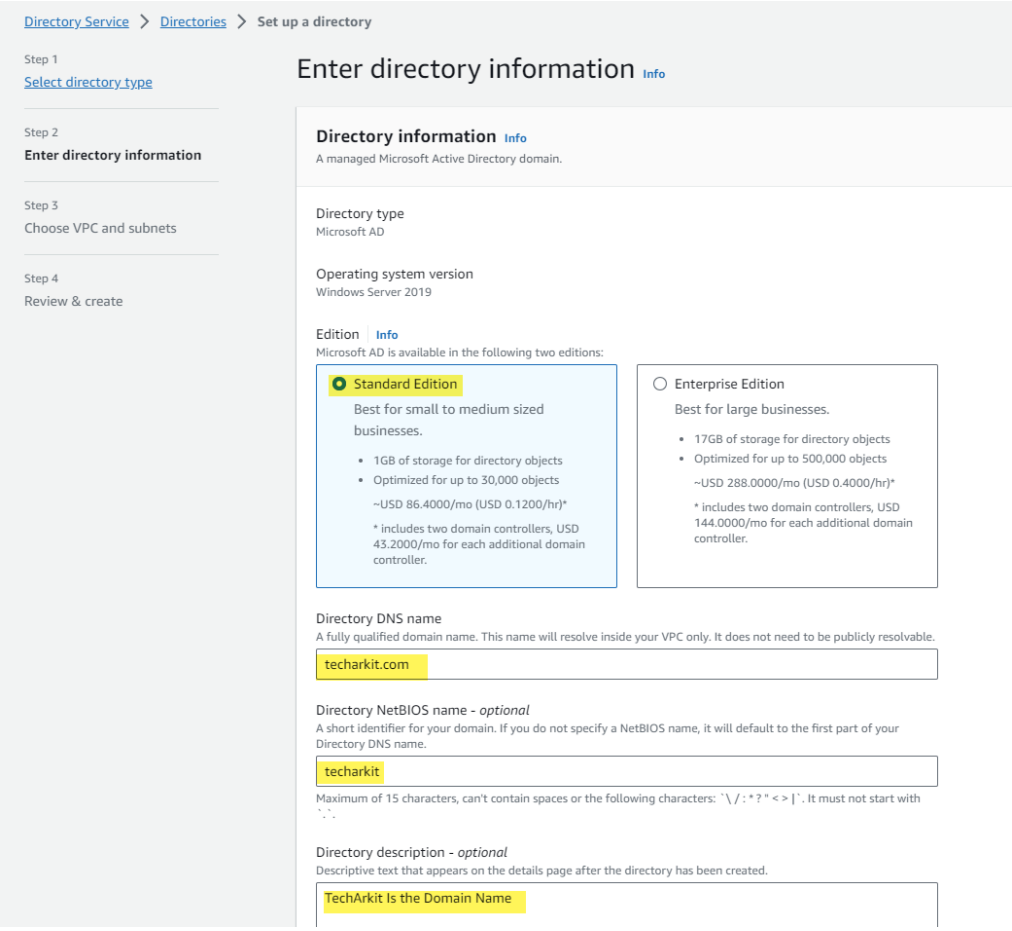


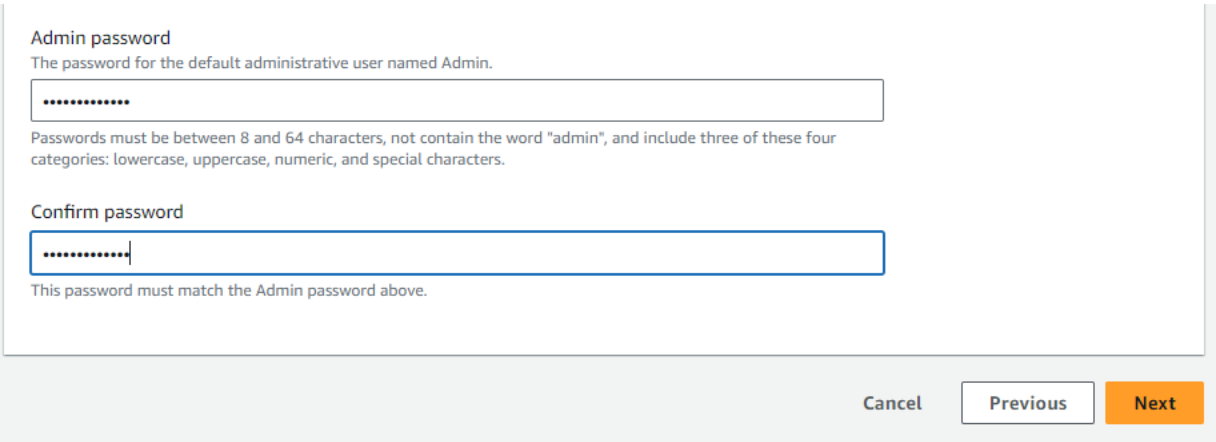
Select Dropdown "**AWS Managed Microsoft AD**"

Click on **Setup Directory**



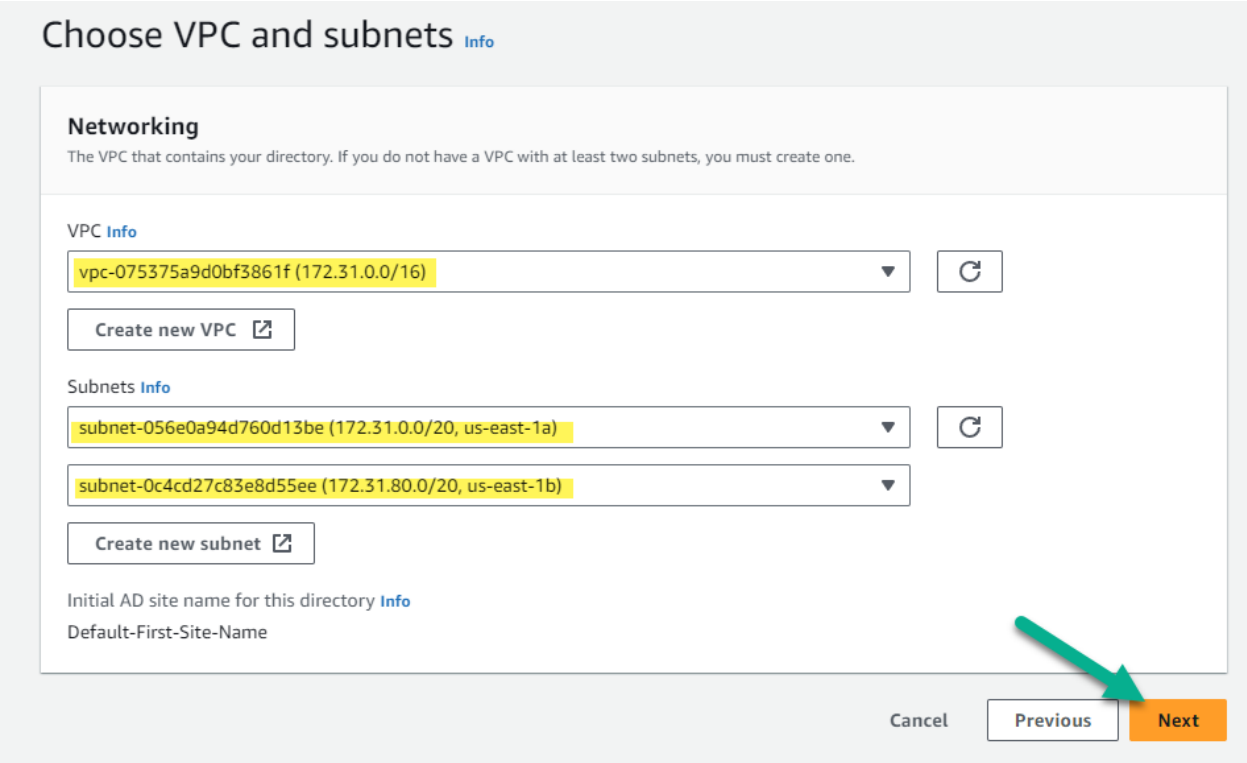
Select "**AWS Managed Microsoft AD**" Click **Next**





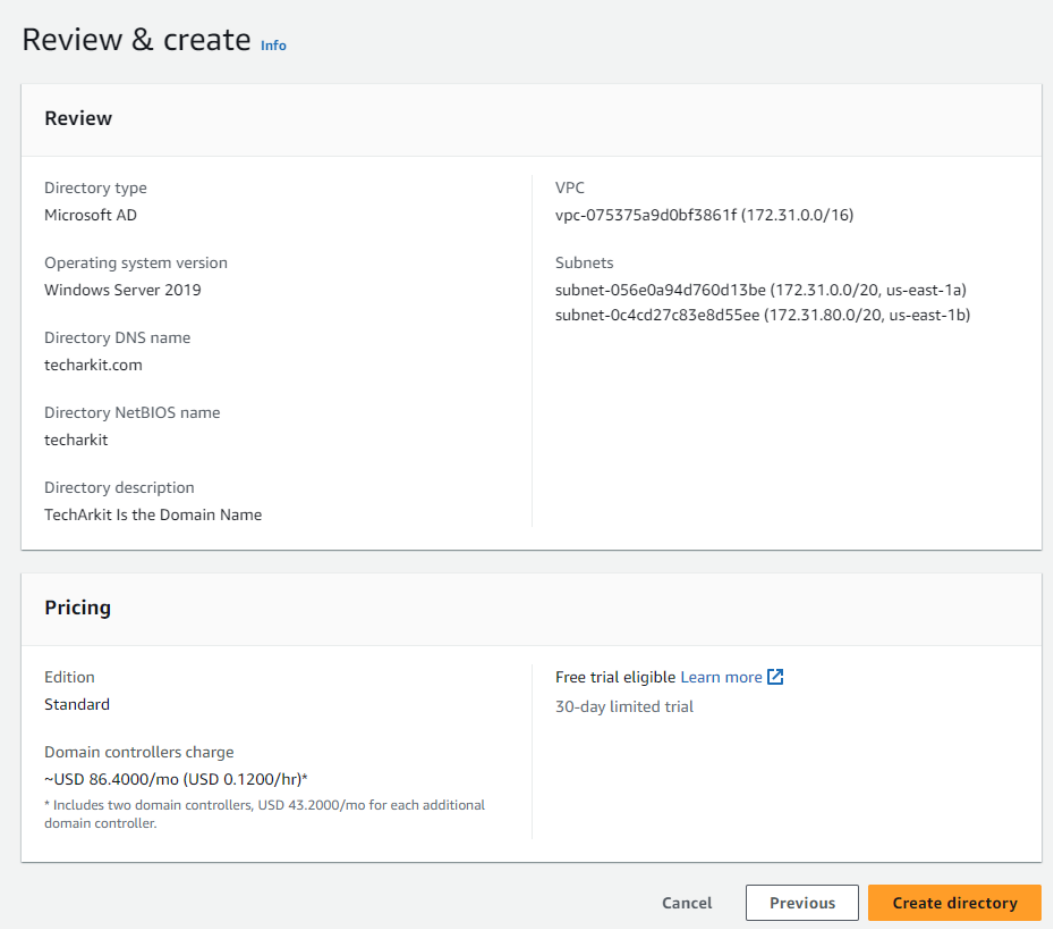
Provide Admin password and remember the password.

Click **Next**

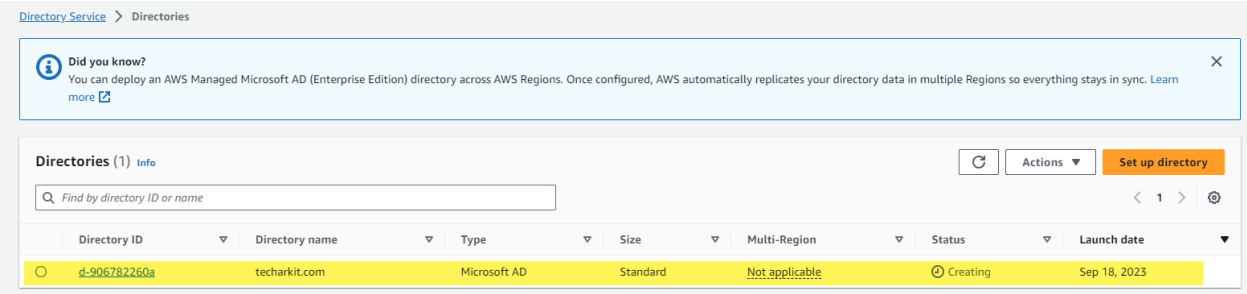


Select the Correct VPC in which subnets you wanted to deploy the Active Directory Services

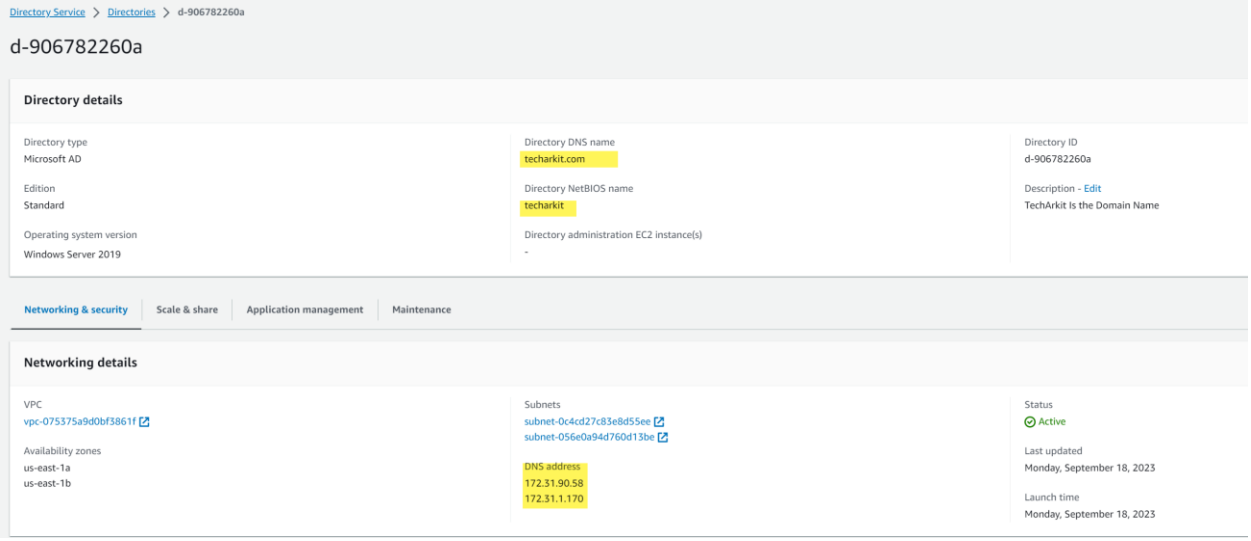
Click **Next**



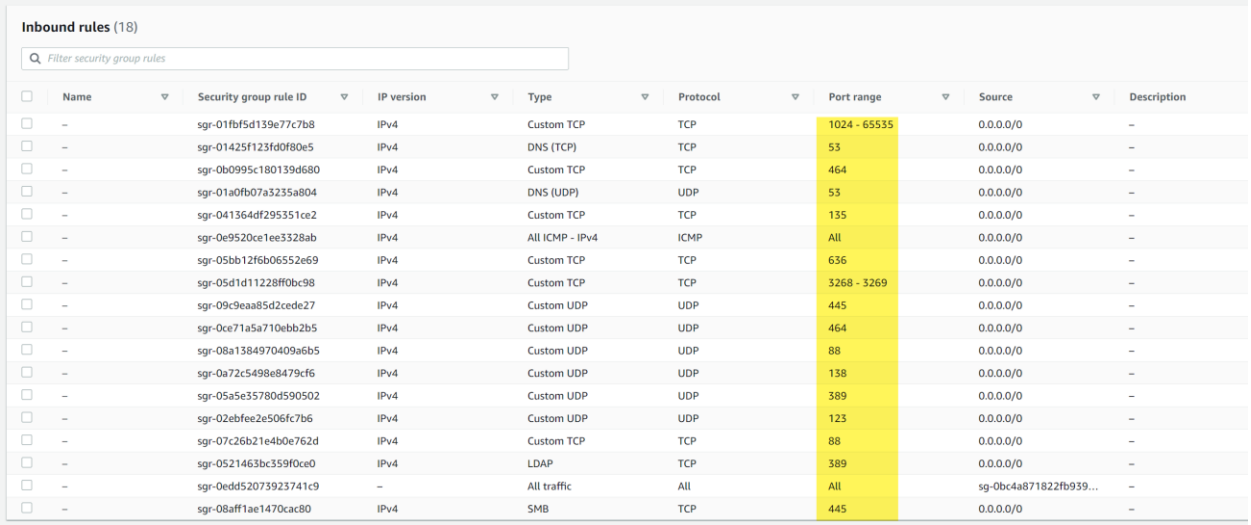
Review the provided information is correct then Click on "**Create Directory**"



Wait for 30 to 40 Minutes, Active Directory will be ready.



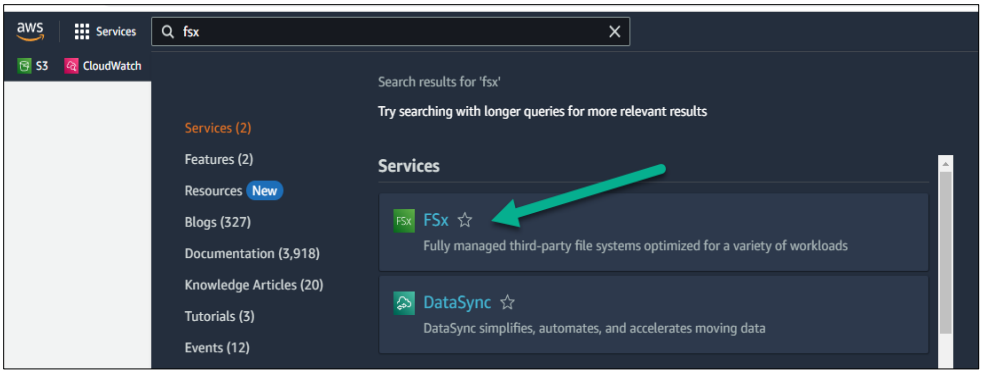
Your Directory services will be active after sometime, then it will show as status = Active.



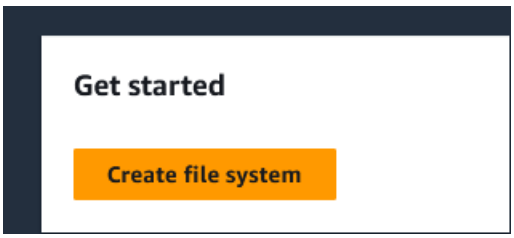
Above are the ports you need to allow from the Security group in order to communicate with Active Directory services.

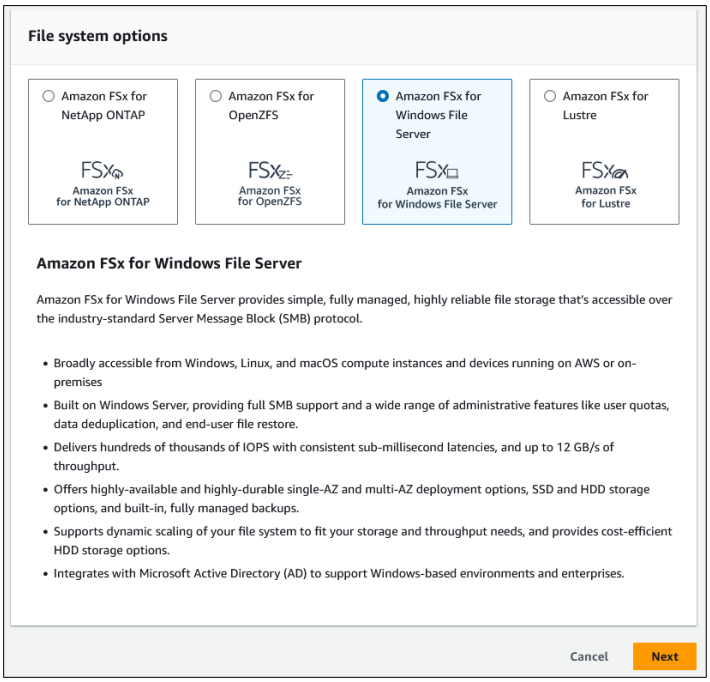
Create FSx for Windows

AWS Management console go for FSx service using search bar



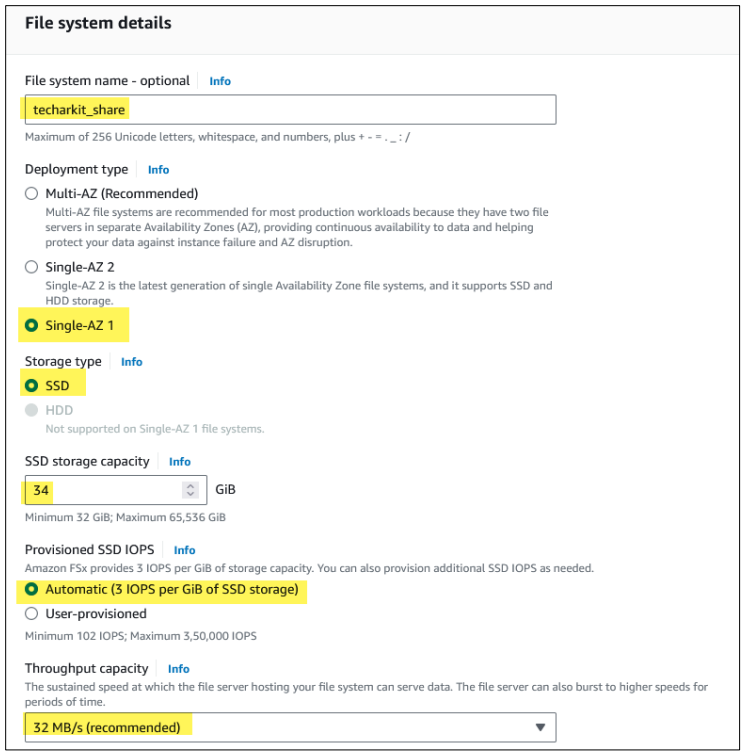
Click on "**Create File System**"

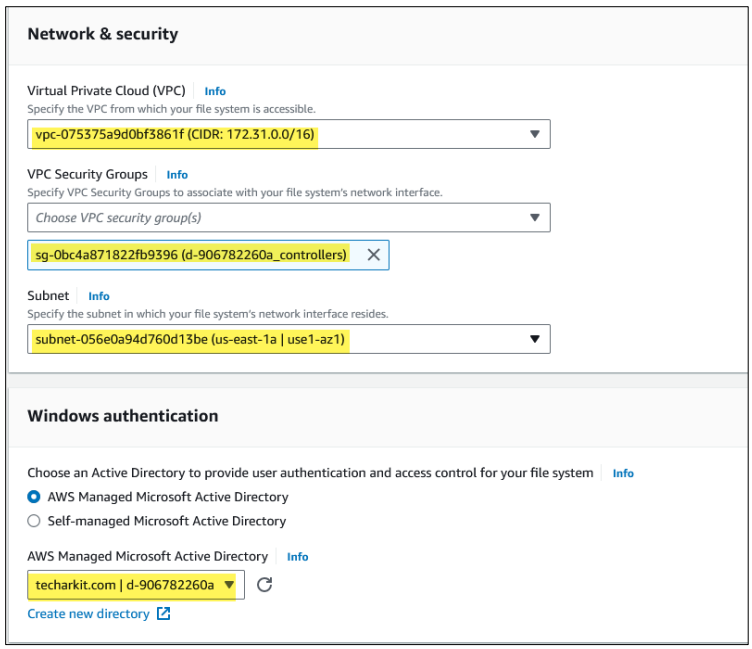




Select "**Amazon FSx for Windows File Server**"

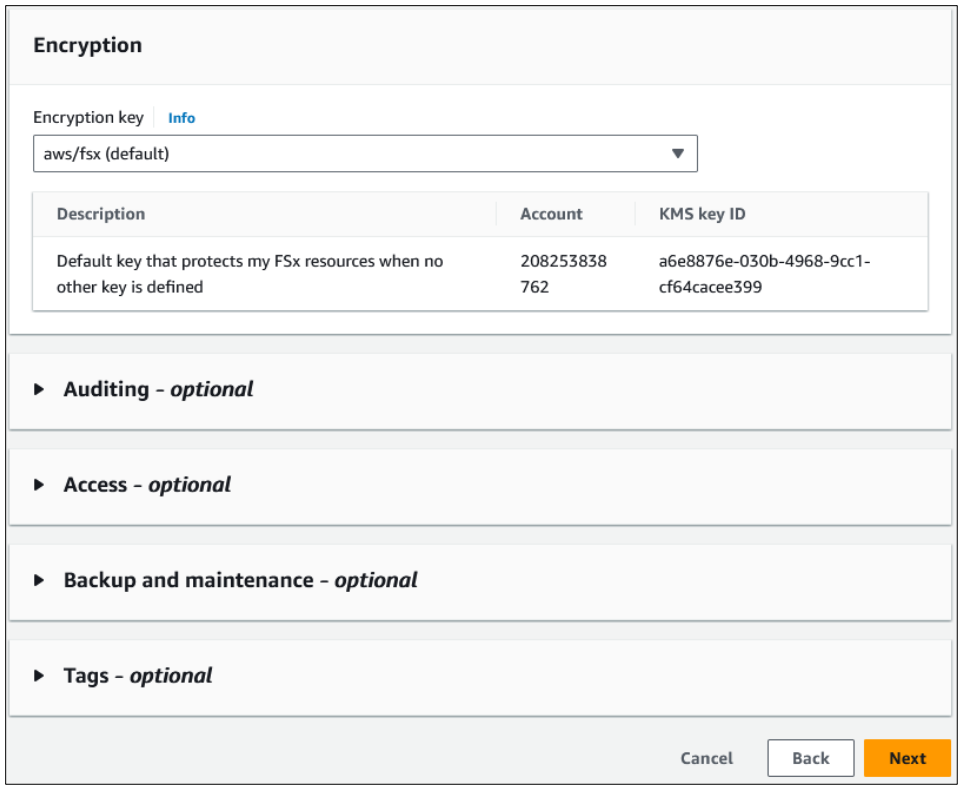
Click **Next**



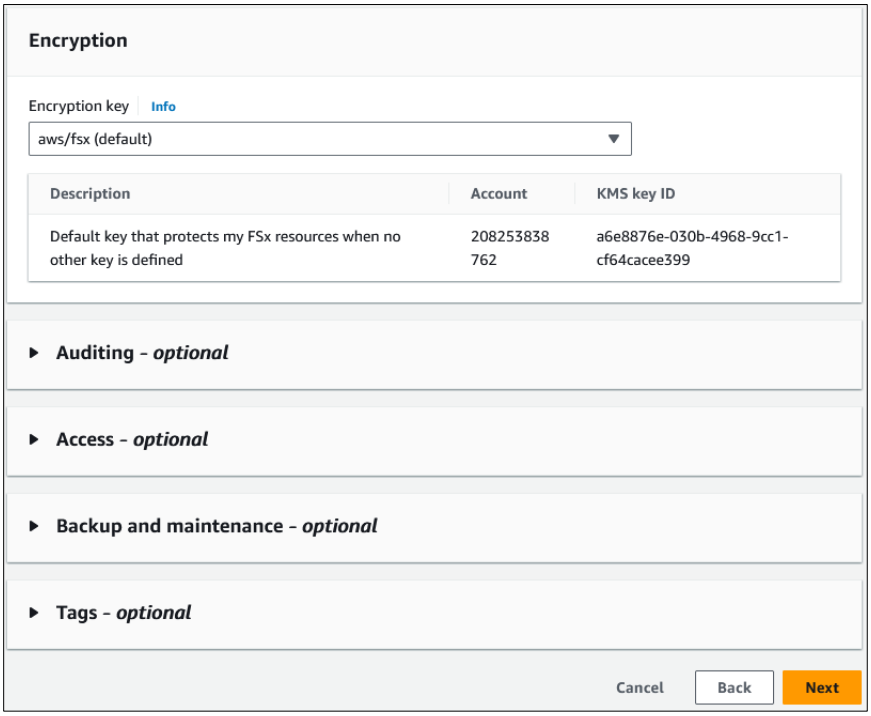


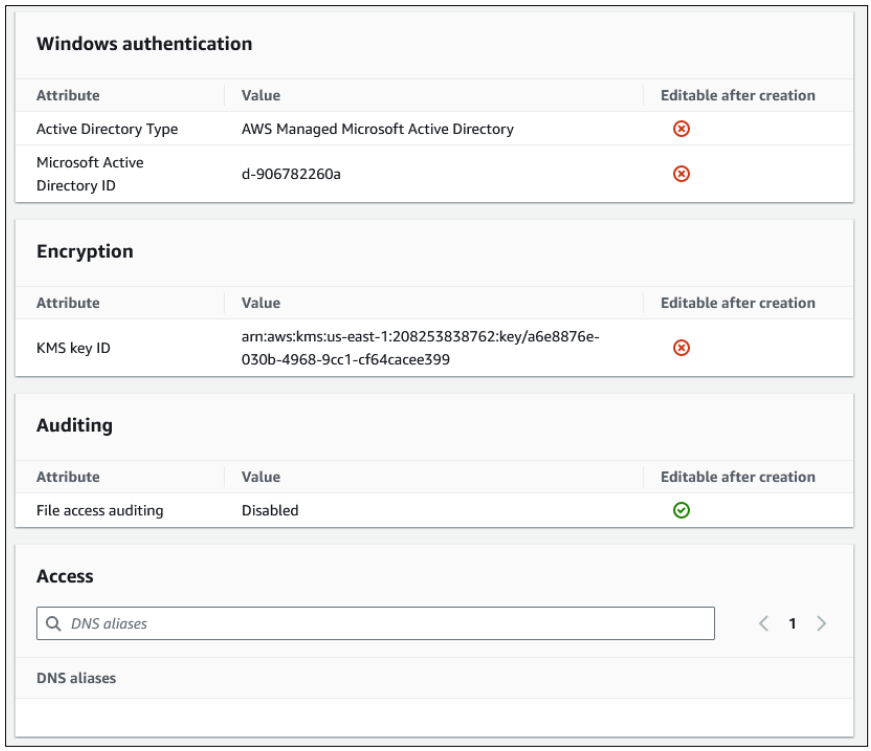
Select the Correct **VPC**, **Subnet**, and **Security Group** to avoid access level issues.

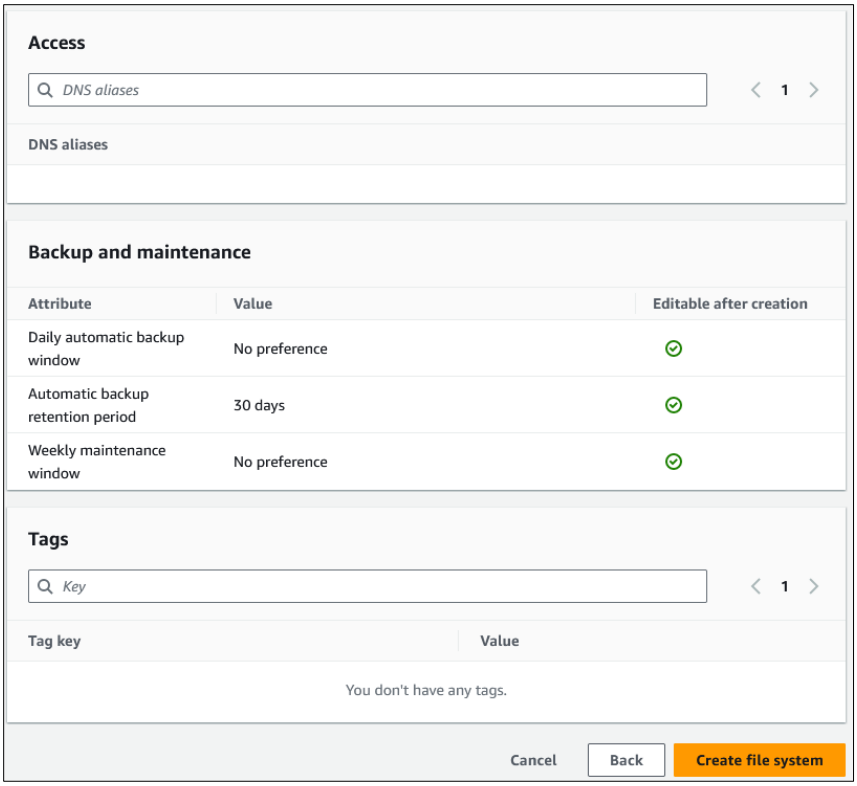
Select "**AWS Managed Microsoft Active Directory**" then select the AD you created on the first step. In my case "techarkit.com" which I have created.



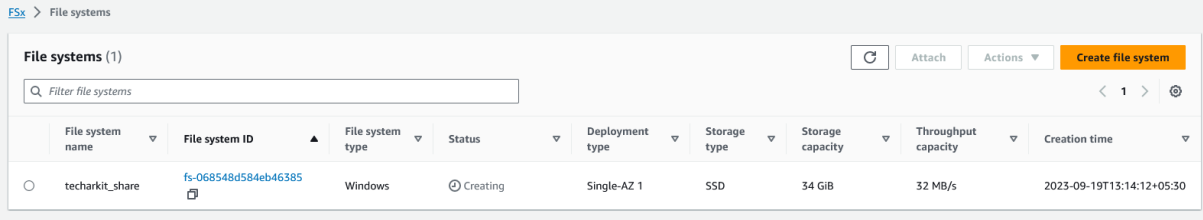
Let's leave all the default options and Click **Next**



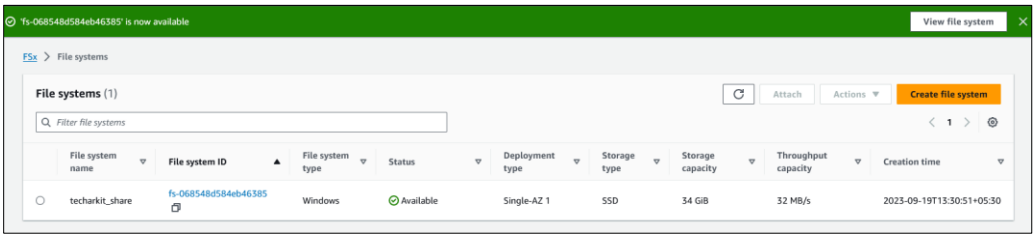


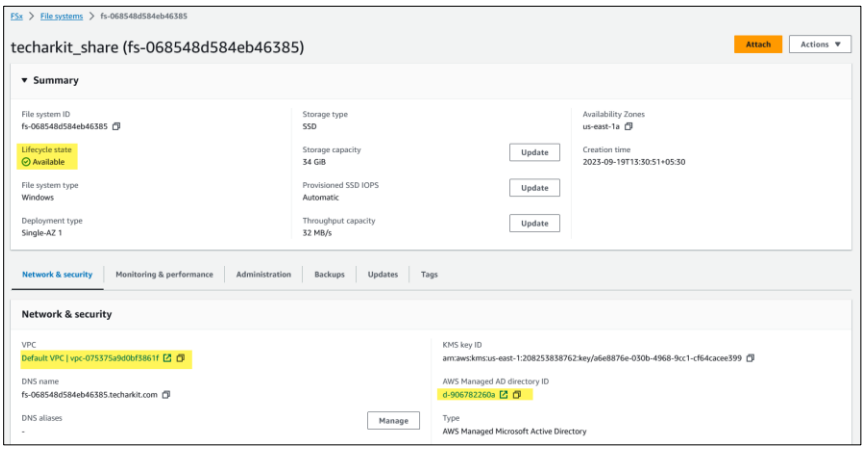


Click on **Create File System**.



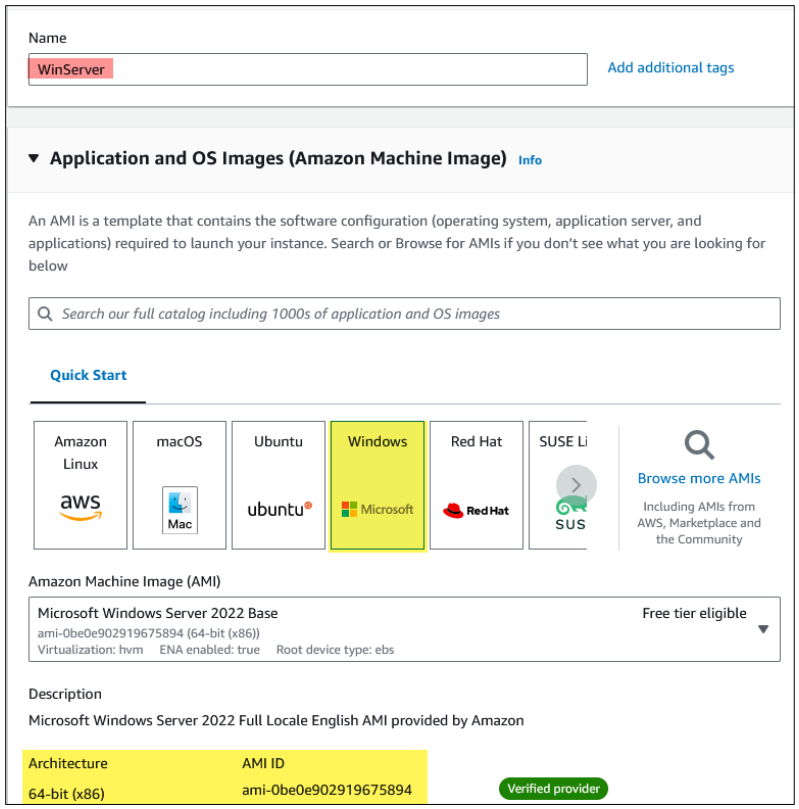
Creating will take around 25Mins for the general availability use.



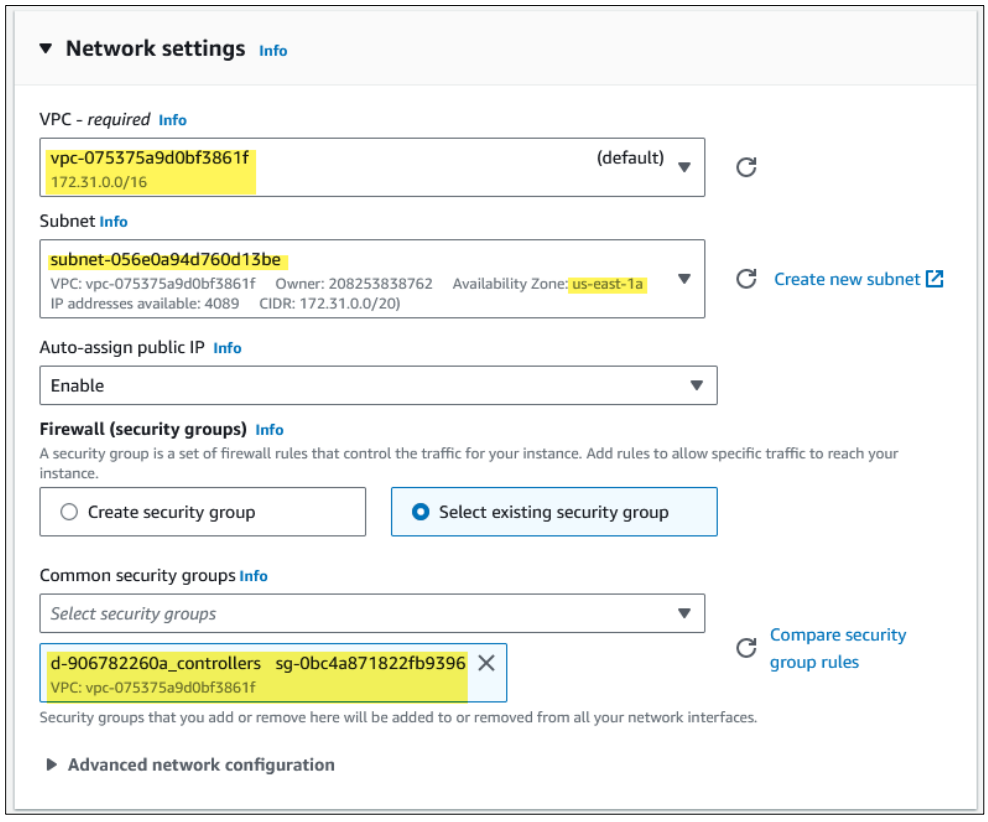


Spin up Windows EC2 Instance

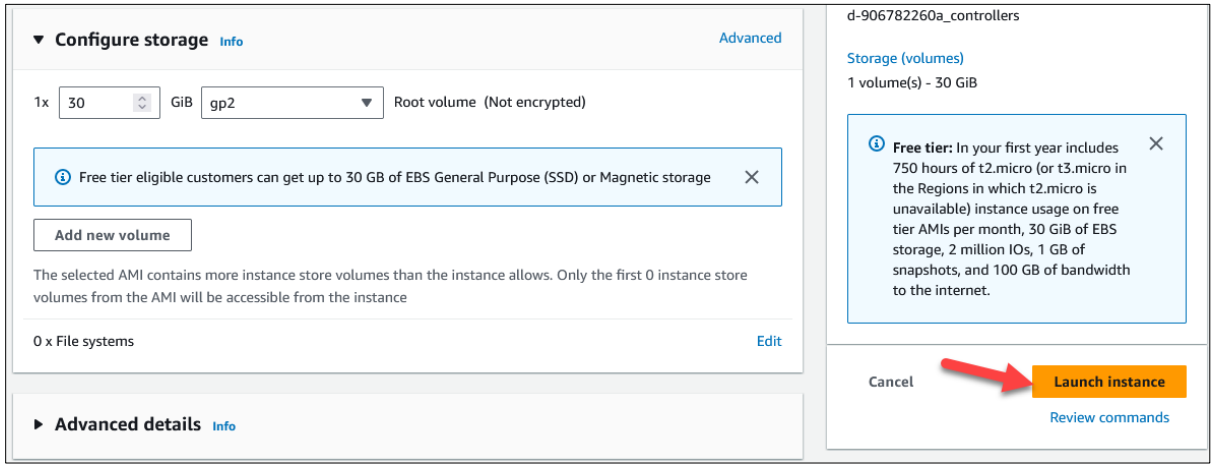
In EC2 console Click on Launch Instance then Select Windows AMI → Select Type



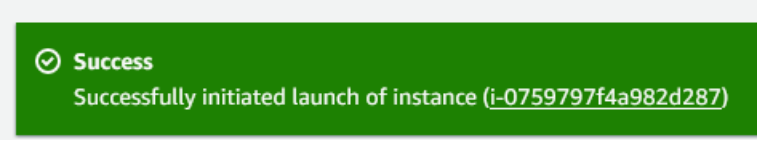
Provide Instance Name and Select Windows Server



Select the VPC and Security Group which you have used to deploy the AD Services.



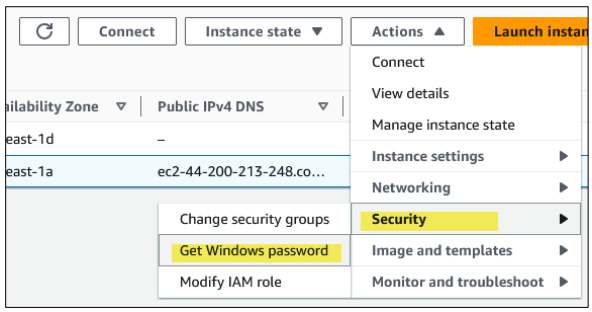
Click on **Launch Instance**.



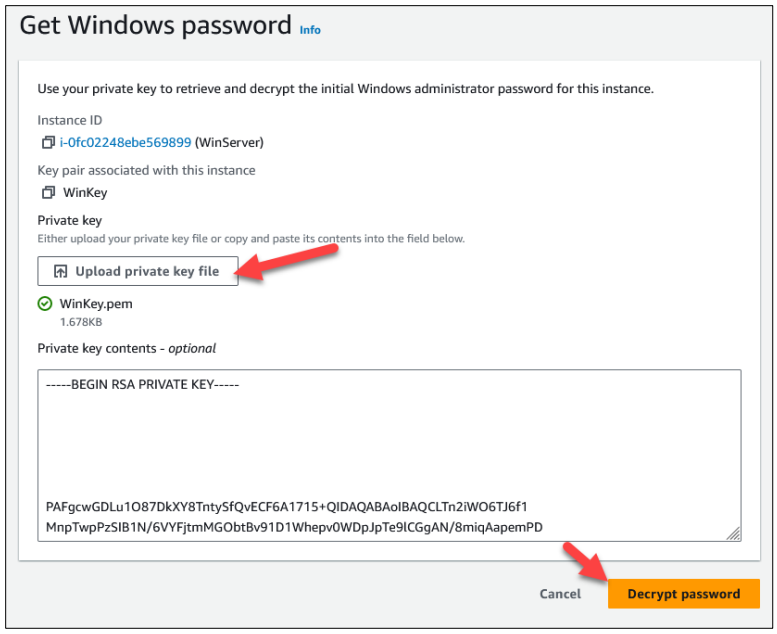
Windows EC2 instance has been launched successfully.

Note: Ensure that your EC2 is launched in the correct availability zone where your AD services are launched.

Accessing the Windows EC2 instance

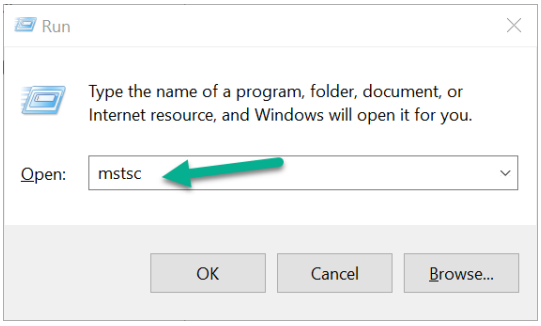


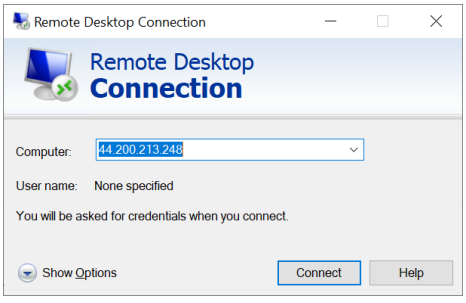
Select the Instance click on Actions → Security → Get Windows Password



From EC2 instances select the Windows instance which you have just created, then copy the Public IP address.

Windows Start → Run → mstsc

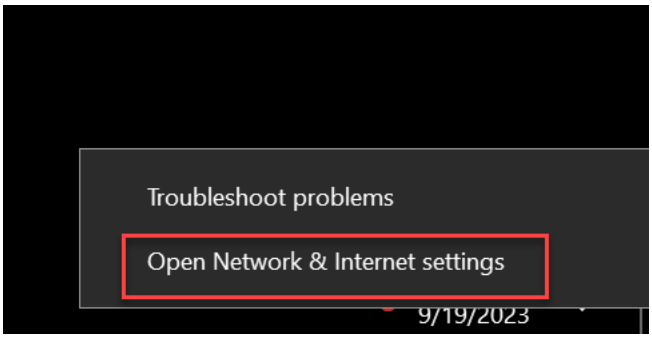




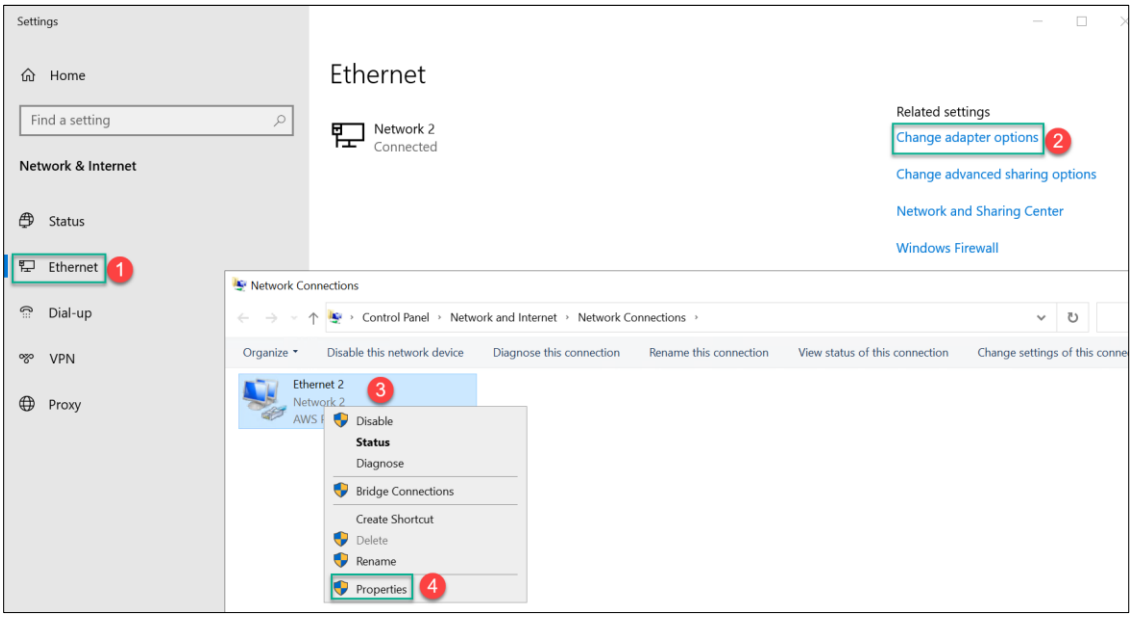
Click Connect then provide the UserName: Administrator Password: which is decrypted

Click **Yes**

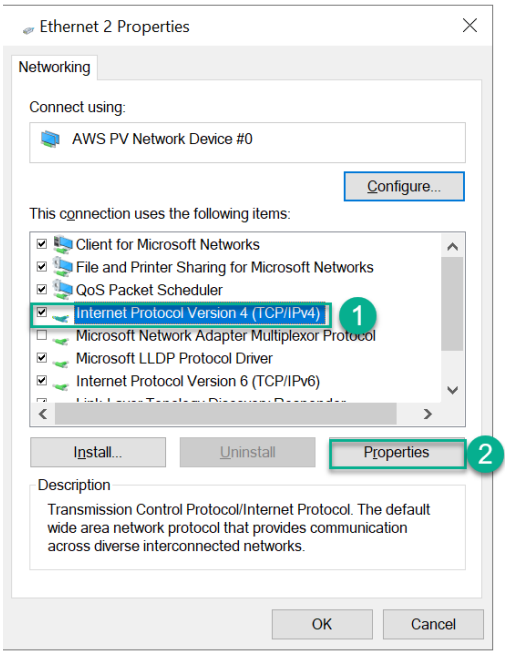
Right Click on Network Icon



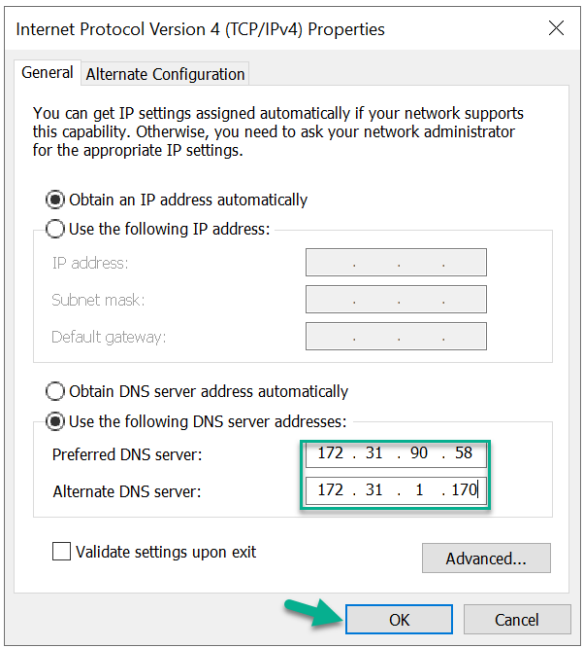
Click on "**Open Network & Internet Settings**"



Select the **Ethernet** → **Change Adapter Options** → Select the Network Card (**Right Click**) → Select **Properties**

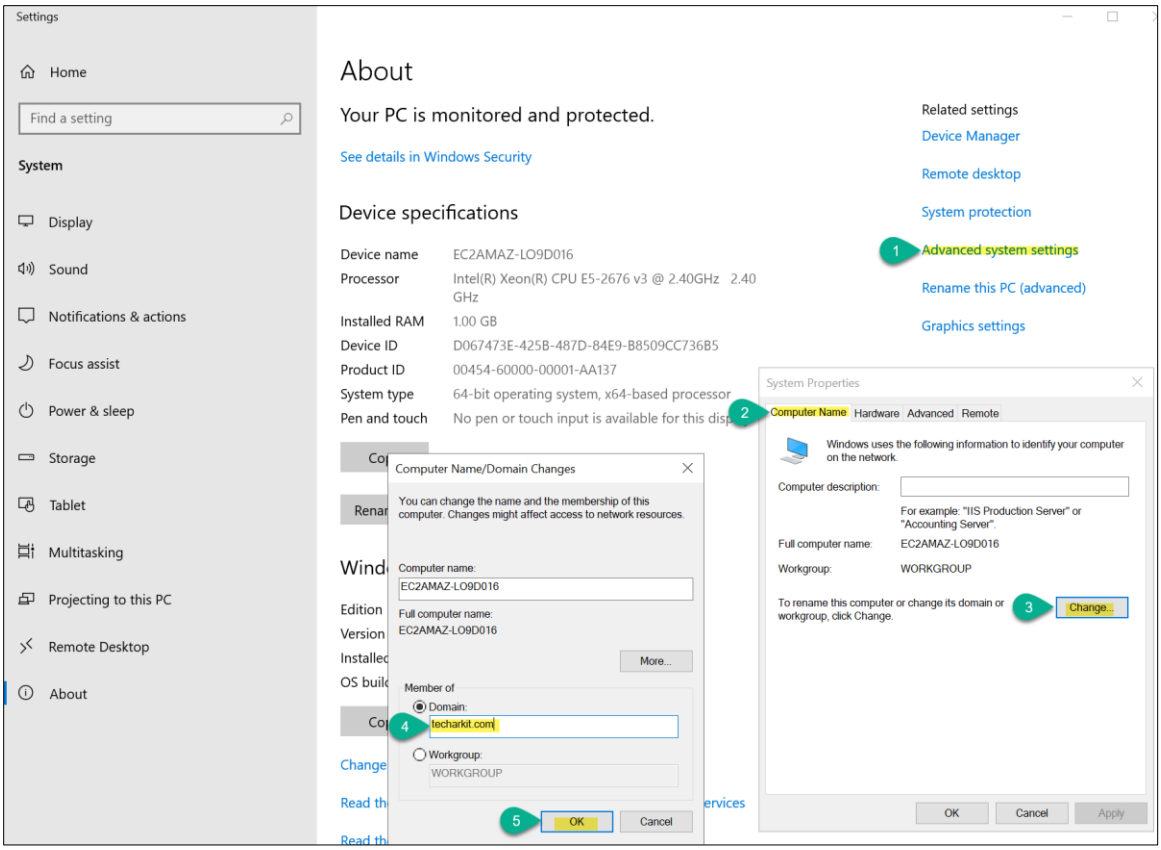


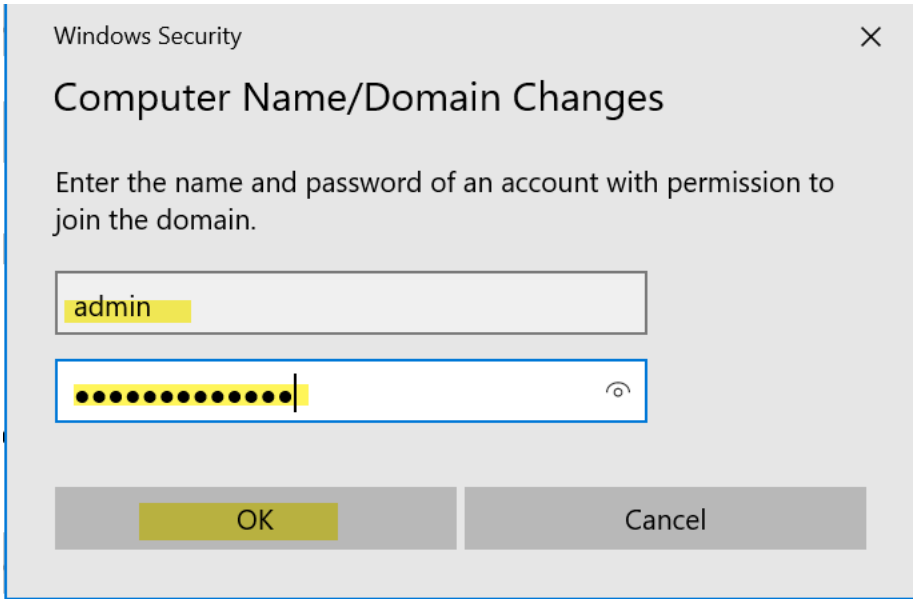
Select Internet Protocol Version 4(TCP/IPV4) → Properties



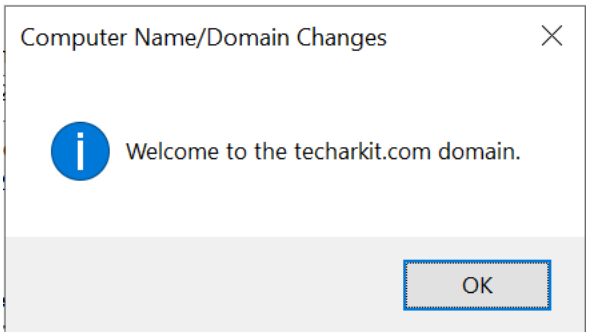
Use the Following DNS Server Addresses → Provide the DNS IPs from your domain details then Click **OK**.

Click on **Start Menu** → **File Explorer** → **This PC** (Right Click) → **Properties** → **Advanced System Settings** → **Change** → **Select Domain** → (**Domain Name** (techarkit.com)) → Click **OK**

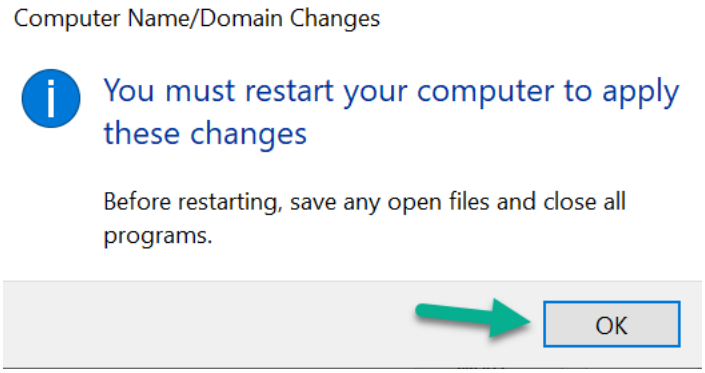




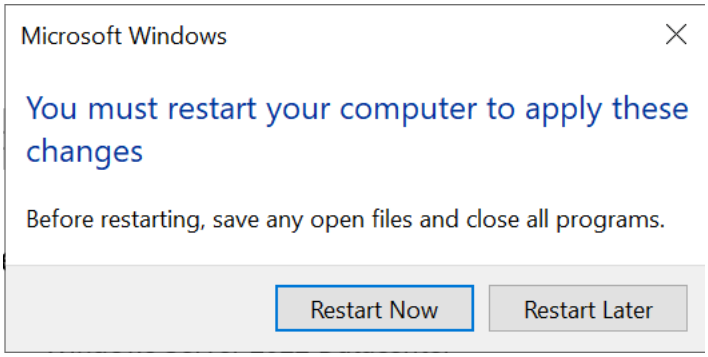
Provide the Domain Admin credentials which you have created while creating your **Active Directory Service**



Now you successfully joined your Windows server to Active Directory (**Domain**(techarkit.com)) Click **OK**



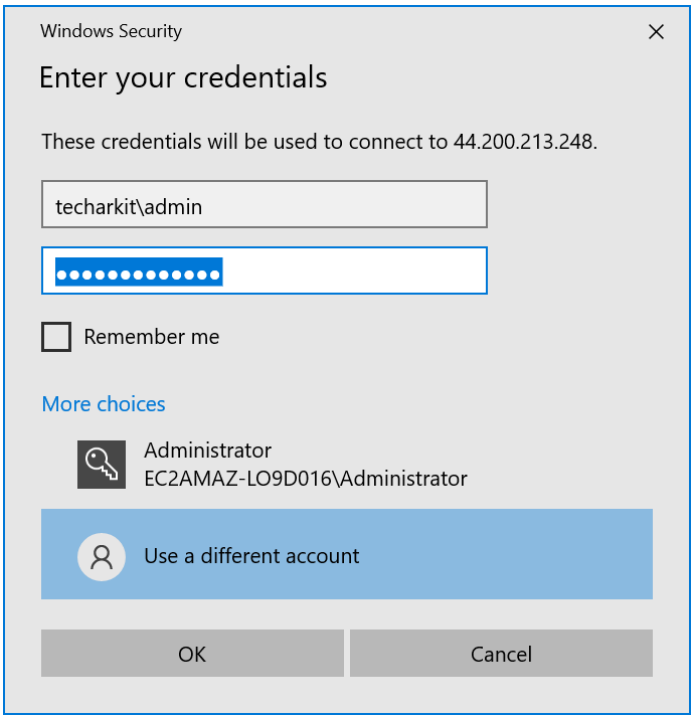
Click **OK**



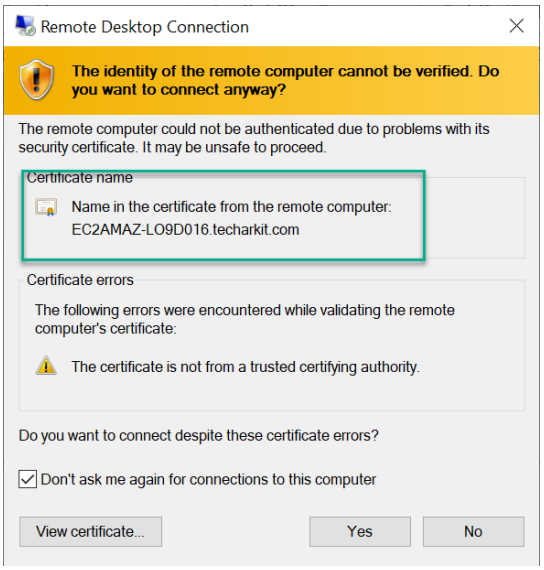
Restart Now

Domain Change will take effect, after the reboot you need to use domain admin credentials to log in to the Windows server.

Start Menu → Run → mstsc → Provide your Windows instance Public IP Address then Click OK



Provide Domain Admin credentials then click OK



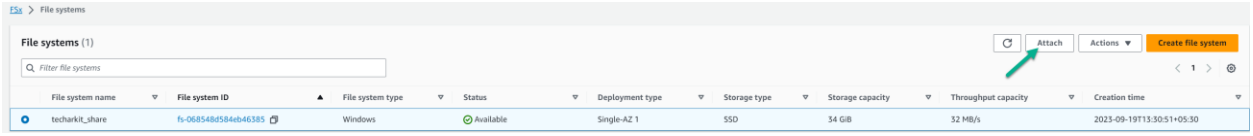
Now you can observe the change on the computer domain name in the screenshot

Click **Yes**

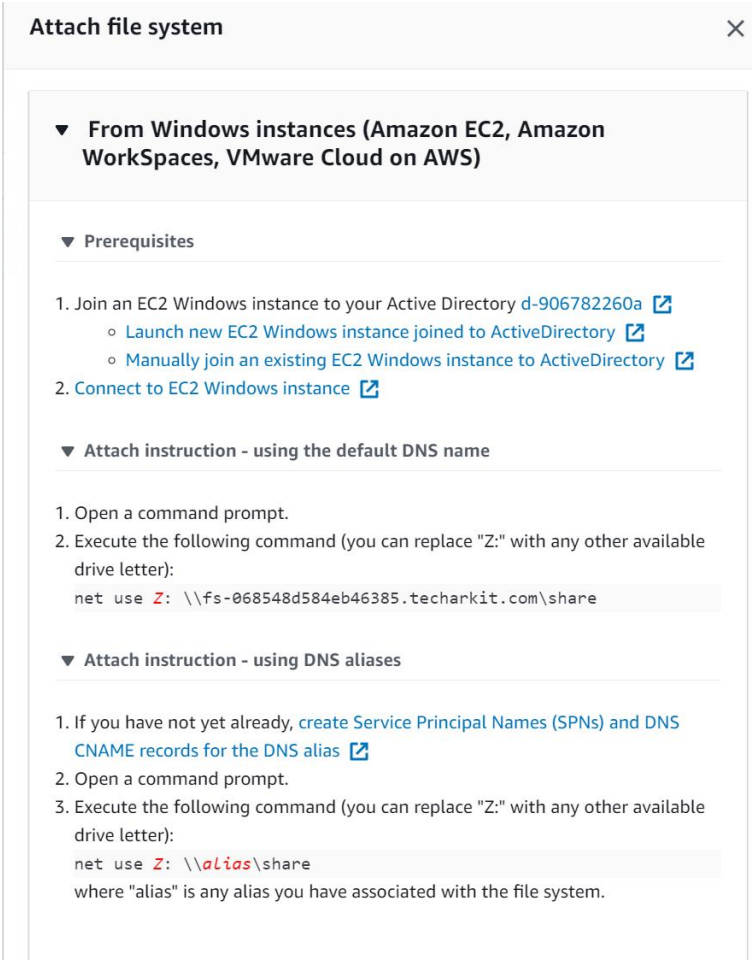
Attaching Network Drive (FSx Windows Share)

Go back to your FSx for Windows File systems

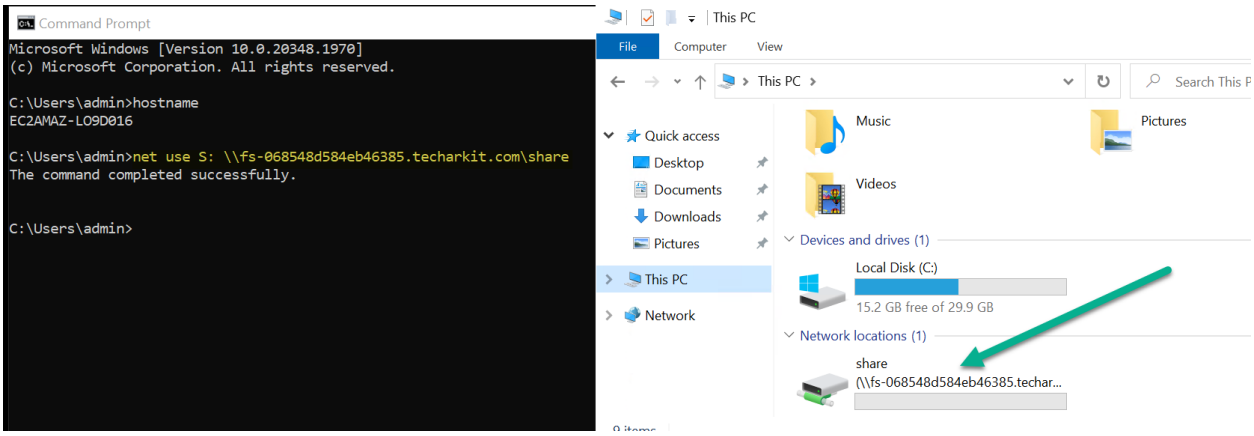
Select the one which you wanted to attached



Click **Attach**



Note: As per my FSx creation it given me the unique file server share details it might be different for you.



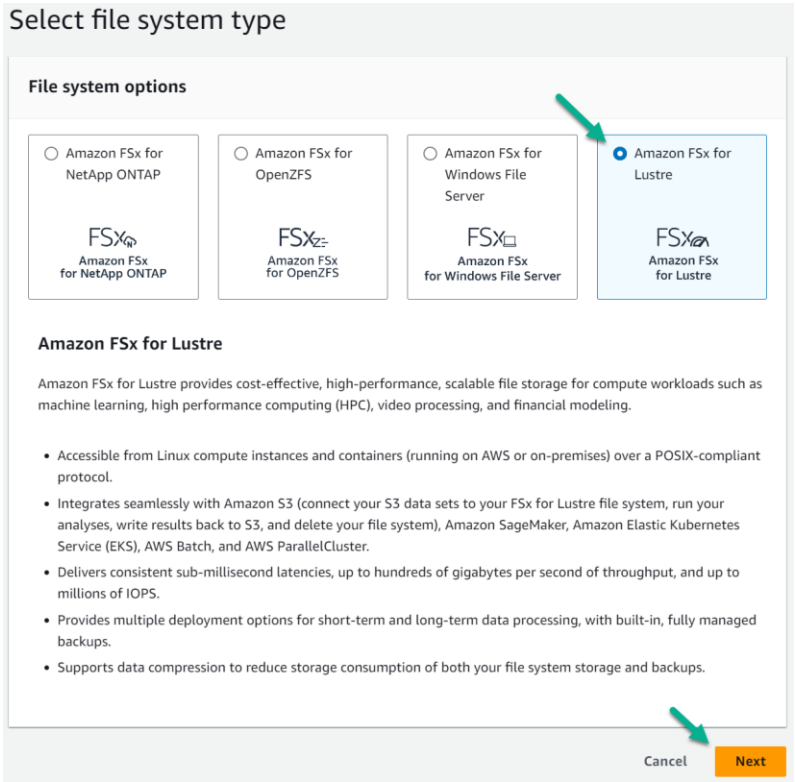
In Windows instance open a Command prompt as Administrator mode then execute the command

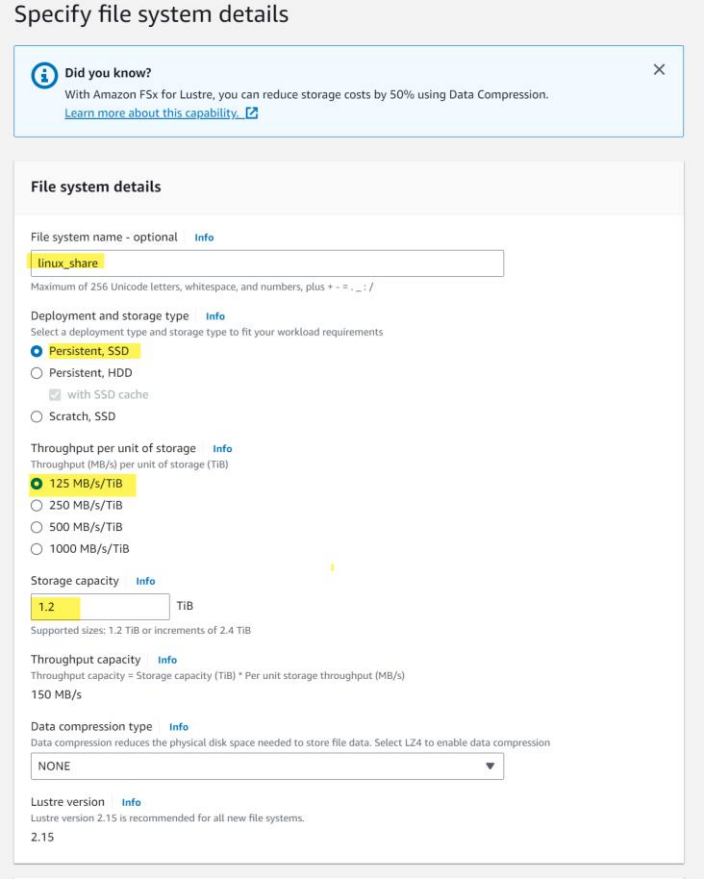
```
net use Z: \\fs-068548d584eb46385.techarkit.com\share
```

That's the conclusion you successfully completed, implementing AWS Managed Active Directory Services and Mapped FSx Windows Share to Windows Machine.

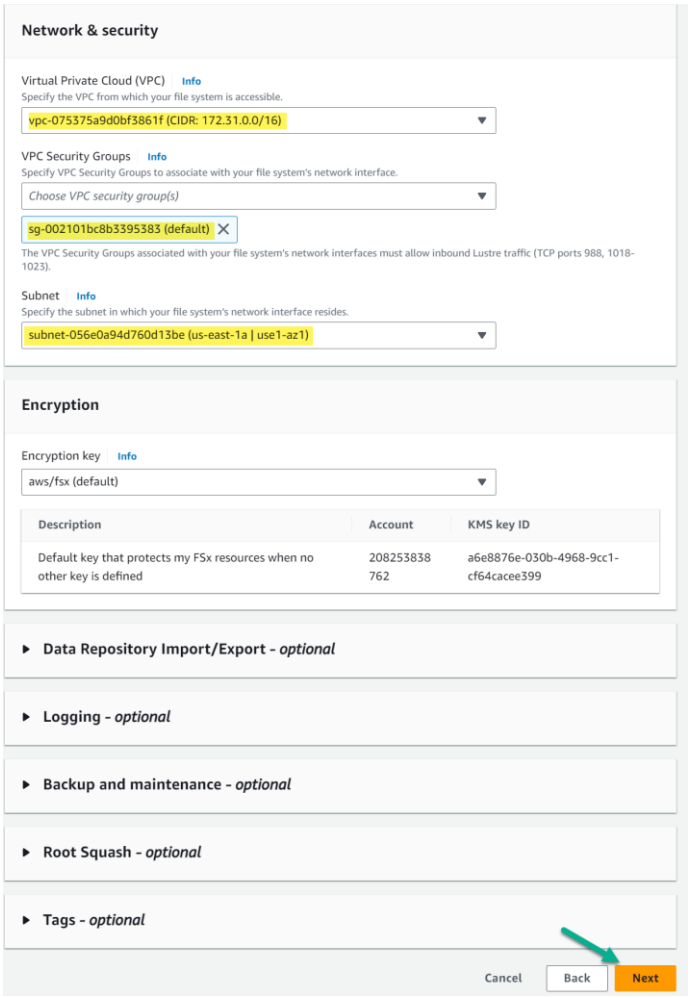
Creating Lustre File Share

Go to FSx console and select Create File System → Amazon FSx for Lustre → Next



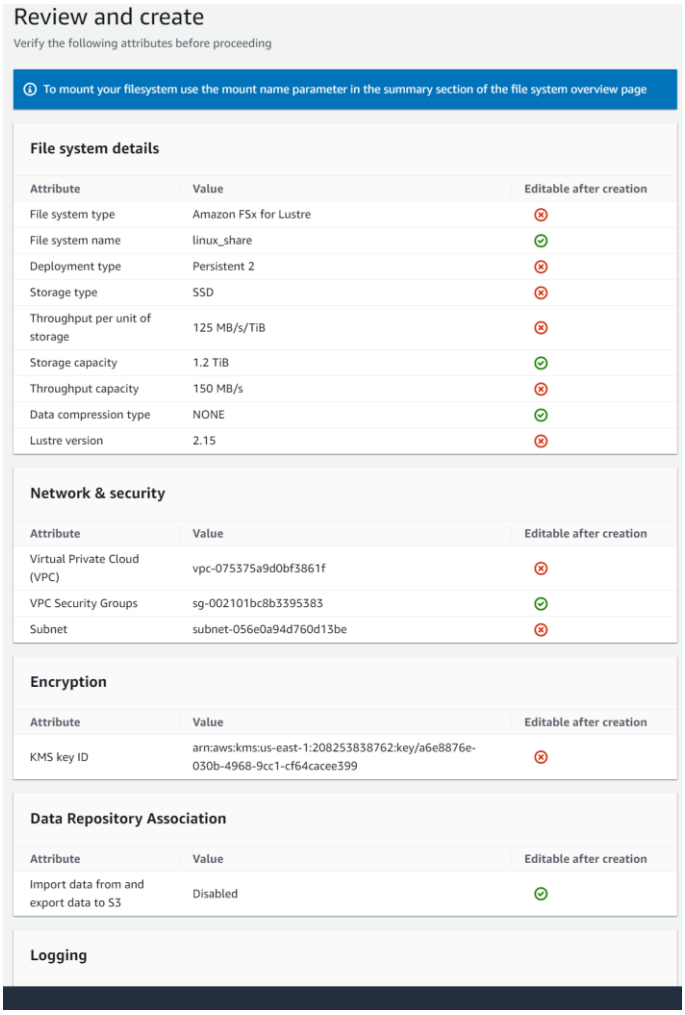


Provide the **File System Name** → **Storage Capacity** must be 1.2TiB ot 2.4TiB



Select the VPC, Subnet and Security Group where you wanted to deploy FSx for Lustre

Click **Next**



Review and create

Verify the following attributes before proceeding

To mount your filesystem use the mount name parameter in the summary section of the file system overview page

File system details

Attribute	Value	Editable after creation
File system type	Amazon FSx for Lustre	⊗
File system name	linux_share	✓
Deployment type	Persistent 2	⊗
Storage type	SSD	⊗
Throughput per unit of storage	125 MB/s/TiB	⊗
Storage capacity	1.2 TiB	✓
Throughput capacity	150 MB/s	⊗
Data compression type	NONE	✓
Lustre version	2.15	⊗

Network & security

Attribute	Value	Editable after creation
Virtual Private Cloud (VPC)	vpc-075375a9d0bf3861f	⊗
VPC Security Groups	sg-002101bc8b3395383	✓
Subnet	subnet-056e0a94d760d13be	⊗

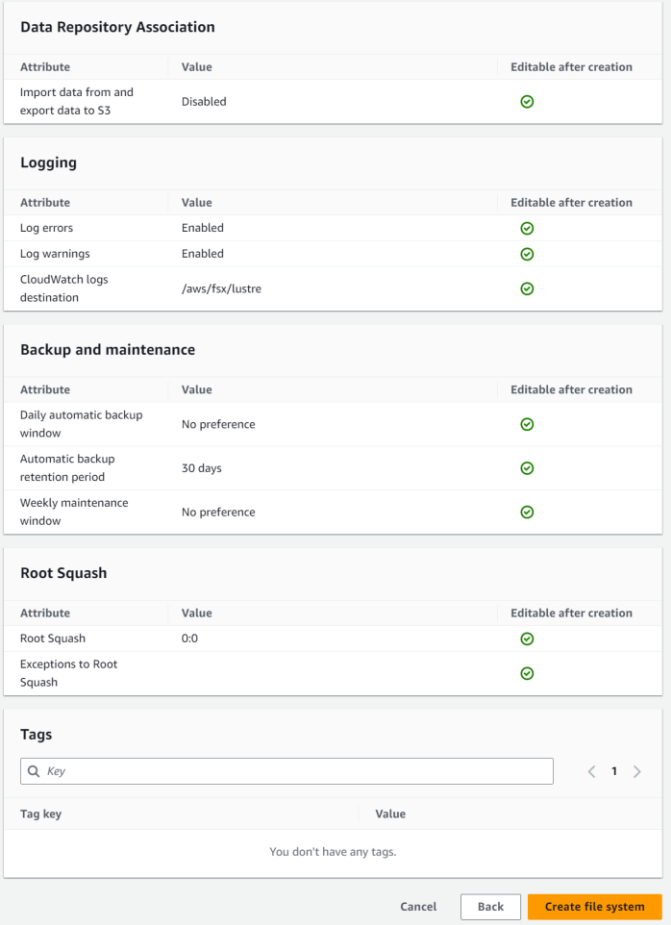
Encryption

Attribute	Value	Editable after creation
KMS key ID	arn:aws:kms:us-east-1:208253838762:key/a6e8876e-030b-4968-9cc1-cf64cacee399	⊗

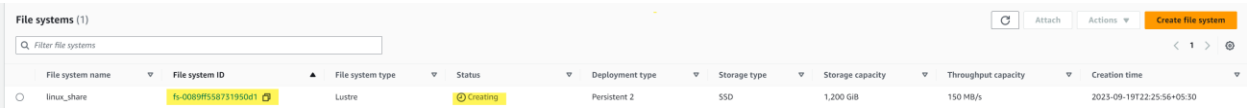
Data Repository Association

Attribute	Value	Editable after creation
Import data from and export data to S3	Disabled	✓

Logging



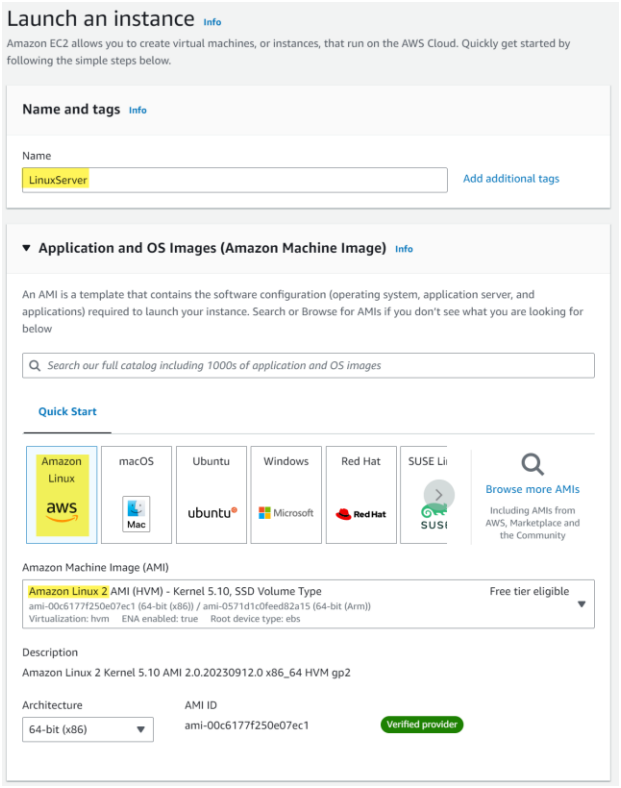
Click **Create File System**

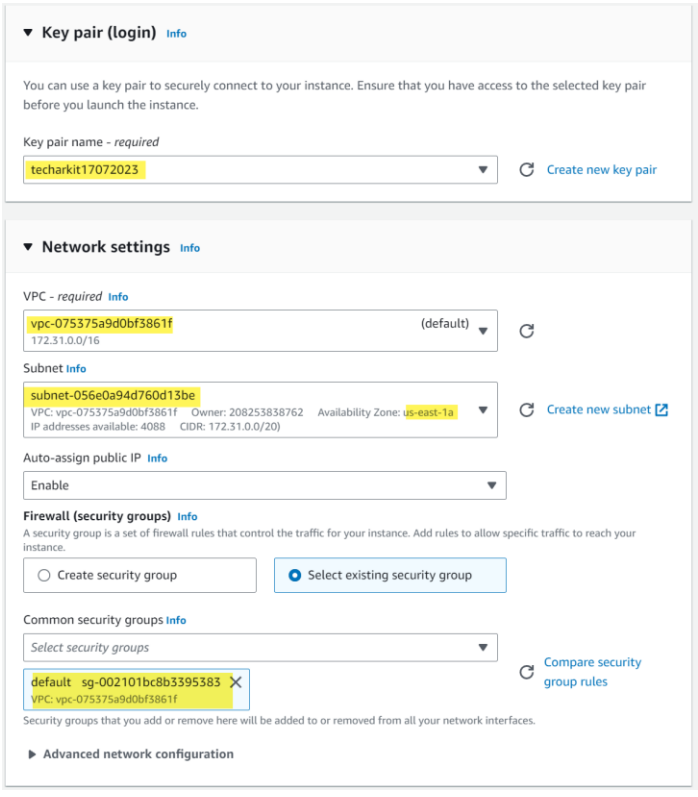


Note: Creating a File system will take around 20 – 30Mins of time

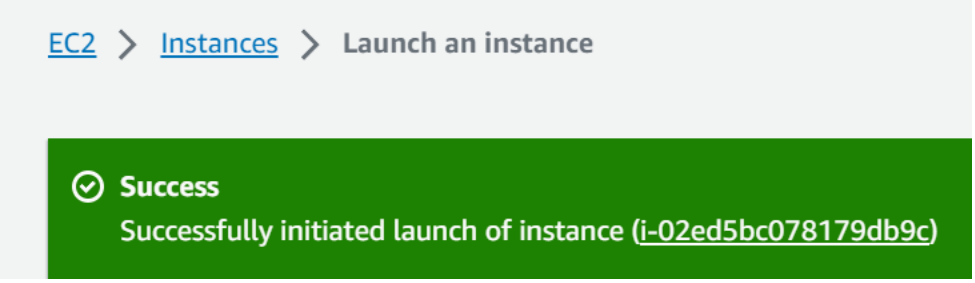
Creating Amazon Linux 2 EC2 Instance

In EC2 console Click on **Launch instance** → Provide **Instance Name** → Select **Amazon Linux** → **Amazon Linux 2** AMI→ Select **VPC, Subnet and Security Group** (Where your Lustre is created)





Click on "**Launch Instance**"



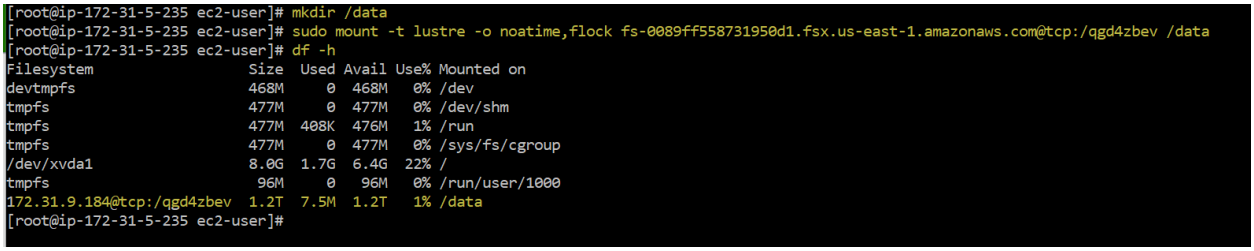
Linux EC2 instance is created successfully, Wait for 5 mins let it come online

Then access the EC2 instance and install required packages

Select the EC2 instance → Click Connect

```
sudo -s

amazon-linux-extras install -y lustre2.10
```



```
[root@ip-172-31-5-235 ec2-user]# mkdir /data

[root@ip-172-31-5-235 ec2-user]# sudo mount -t lustre -o noatime,flock fs-0089ff558731950d1.fsx.us-east-1.amazonaws.com@tcp:/qgd4zbev /data

[root@ip-172-31-5-235 ec2-user]# df -h
```

```
Filesystem                   Size  Used Avail Use% Mounted on
172.31.9.184@tcp:/qgd4zbev  1.2T  7.5M  1.2T   1% /data
```

That’s completed the given tasks.