



CONESTOGA

Connect Life and Learning

| | |
|----------------------|---|
| Student Name: | Aagam Sanjay Shah |
| Deliverable: | Practical Assignment 1 |
| Course Name: | NTWK8150-24S-Sec3-Advance Windows Server roles and Features |

| | |
|-----------------------|---|
| Date Assigned: | 29/05/2024 |
| Date Due: | 11/06/2024 |
| Rules: | <ul style="list-style-type: none">• Individual.• Cheating is not allowed.• Plagiarism counts as cheating!• That FAILURE to submit work in the course can result in a grade of 'F' or 'I' for failure to complete the course! |

Naming Convention:

Domains:

- Domain1: yourInitialsRed-PA1.local (Example sbRed-PA1.local)
→ASRed-PA1.local
- Domain2: yourInitialsGreen-PA1.local (Example sbGreen-PA1.local)
→ASGreen-PA1.local

Domain Controllers:

- Domain Controller 1: yourInitialsRed-DC1 (sbRed-DC.sbRed-PA1.local)
→ASRed-DC1
- Domain Controller 2: yourInitialsRed-DC2 (sbRed-DC2.sbRed-PA1.local)
→ASRed-DC2
- Domain Controller 3: yourInitialsGreen-DC (sbGreen-DC.sbGreen-PA1.local)
→ASGreen-DC

Member Servers:

- Member Server 1: yourInitialsgreen-MbrSrv1
→ASgreen-MbrSrv1
- Join Member Server 1 to the Green domain

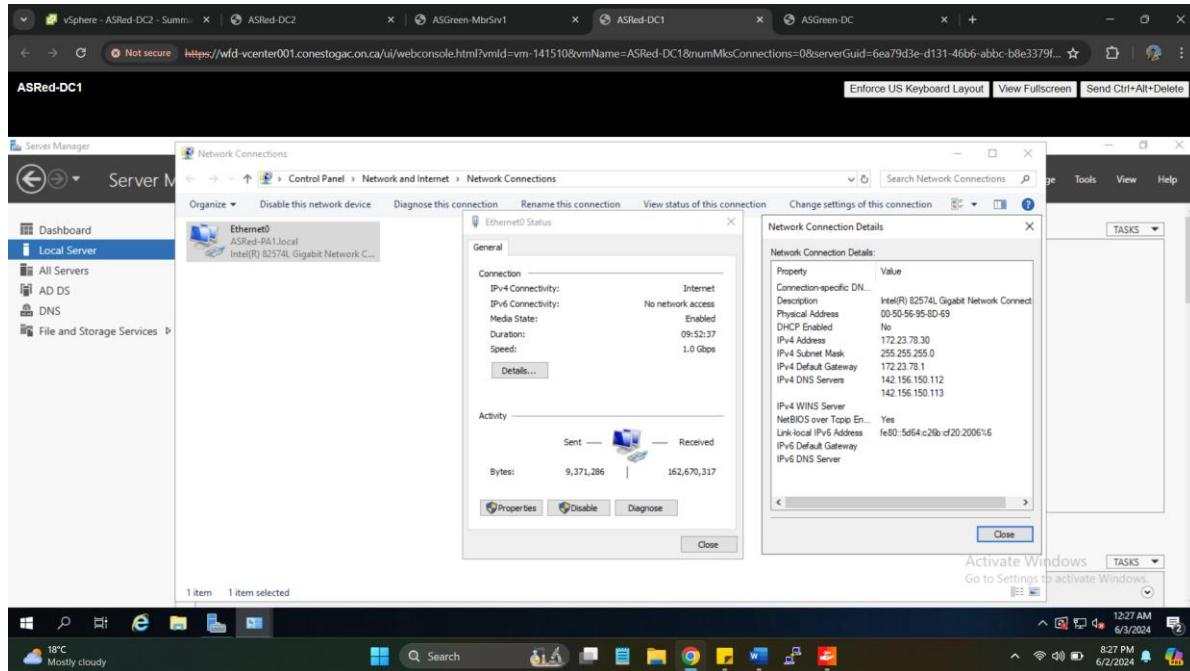
Users:

Users can have any appropriate name but, their name must include the domain colour word. For example: ScottRed.

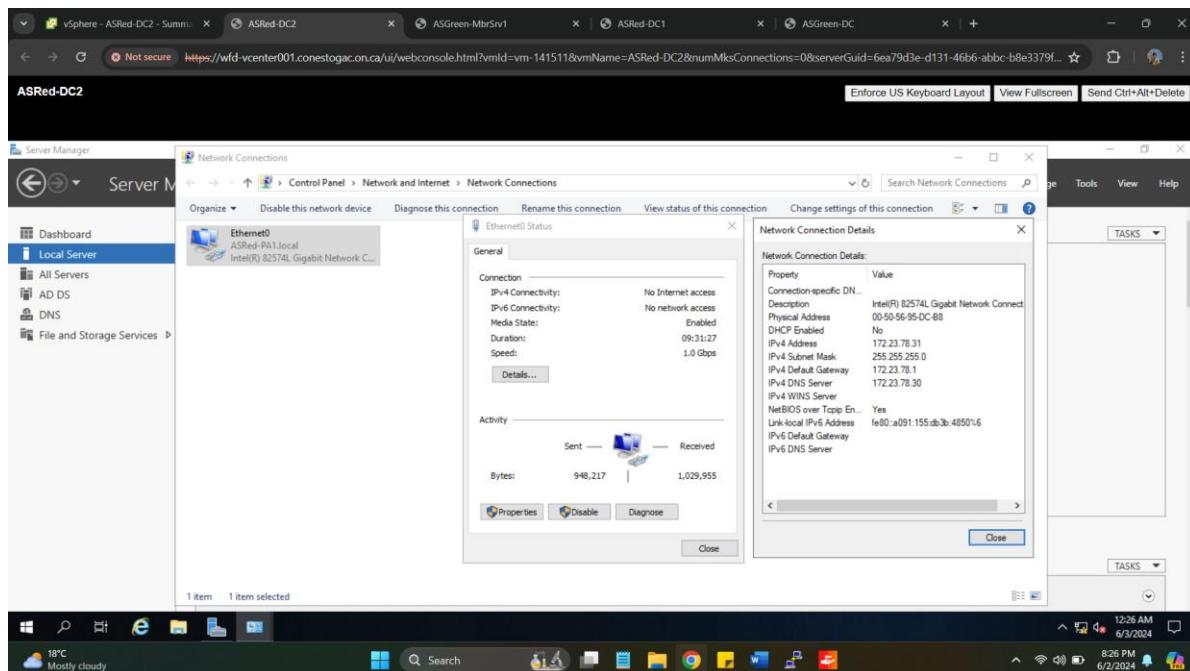
| Servers | Naming | IP address | Domain Name |
|---------------------|-----------------|---------------|-------------------|
| Red DC1 | ASRed-DC1 | 172.23.78.30 | ASRed-PA1.local |
| Red DC2 | ASRed-DC2 | 172.23.78.66 | ASRed-PA1.local |
| Green DC1 | ASGreen-DC | 172.23.78.129 | ASGreen-PA1.local |
| Green Member Server | ASGreen-MbrSrv1 | 172.23.78.130 | ASGreen-PA1.local |

1. Create 3 separate Domain Controllers in 2 separate Forests
 - a. 2 in Red Forest and 1 in Green forest
 - b. Ensure DNS is properly configured
 - c. Configure static ip addresses

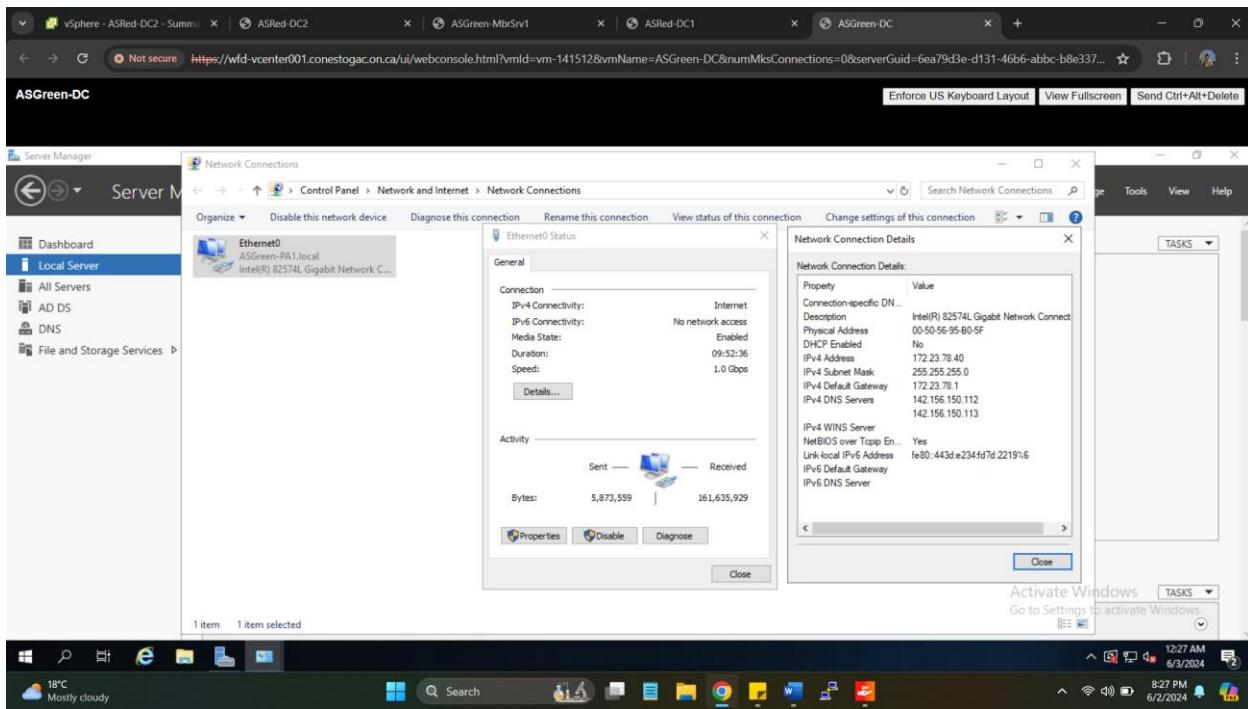
Red DC1



Red DC2

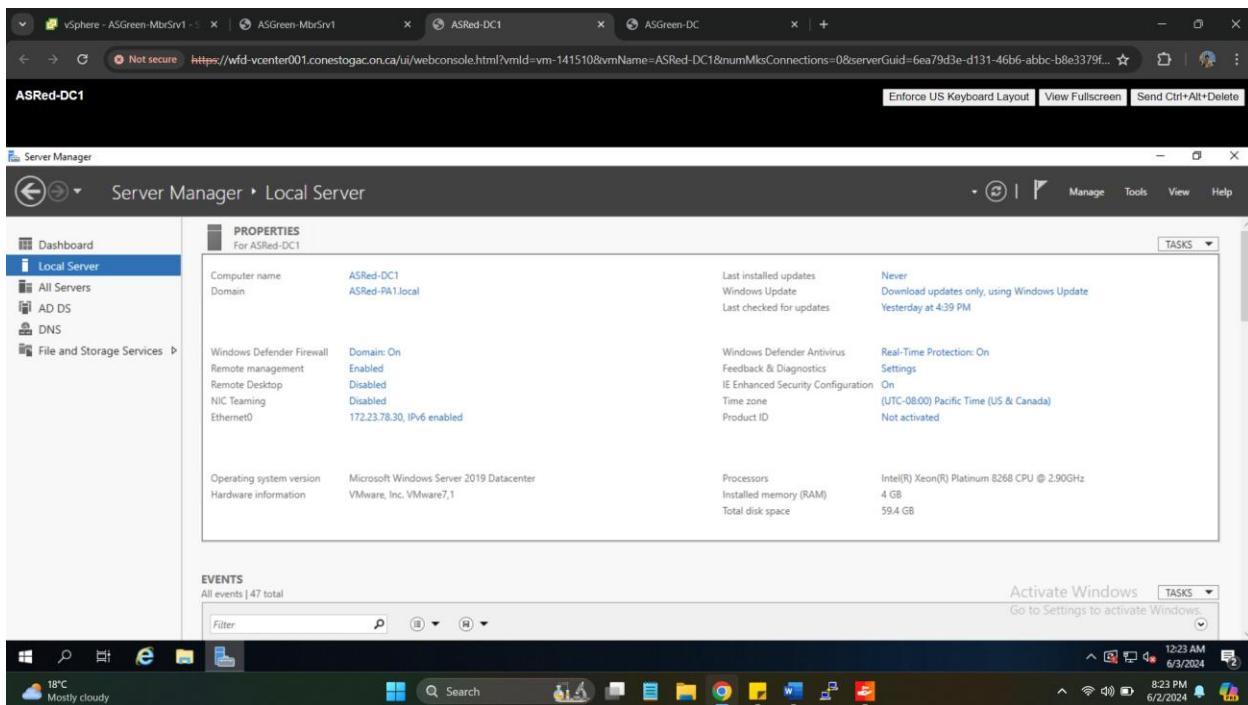


Green DC1

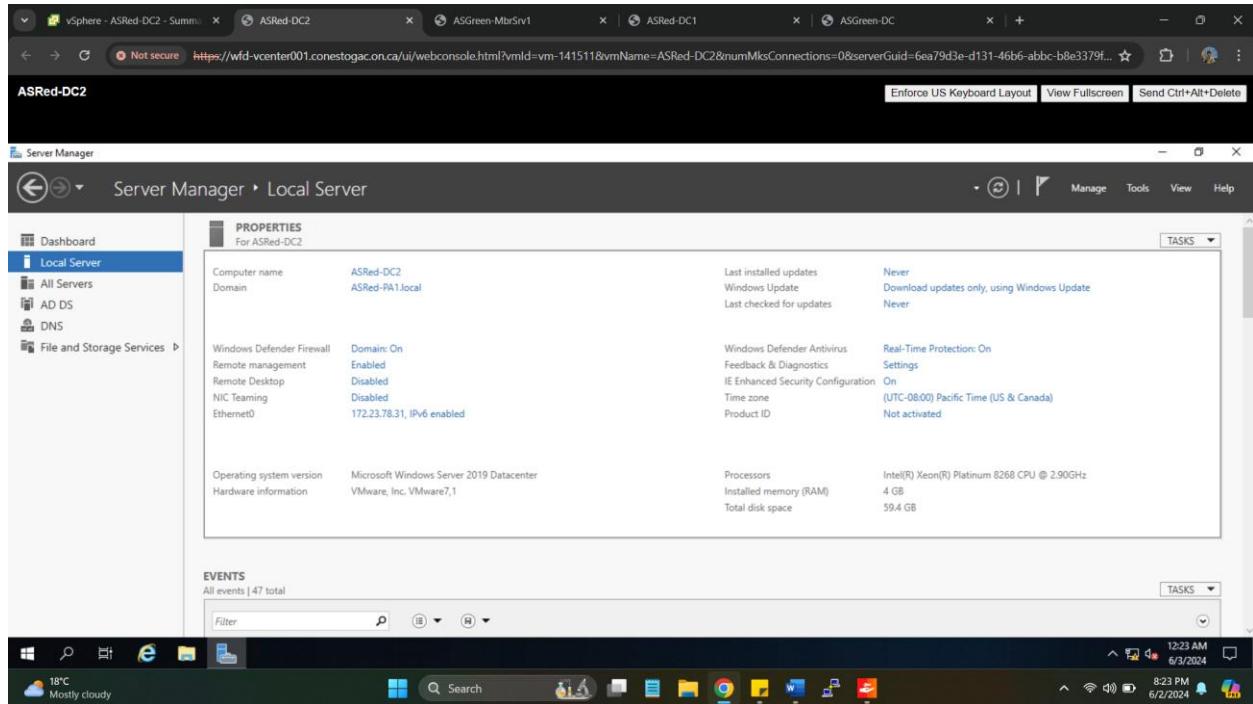


d. Include Screenshot of Server Manager \ Local for each Domain Controller

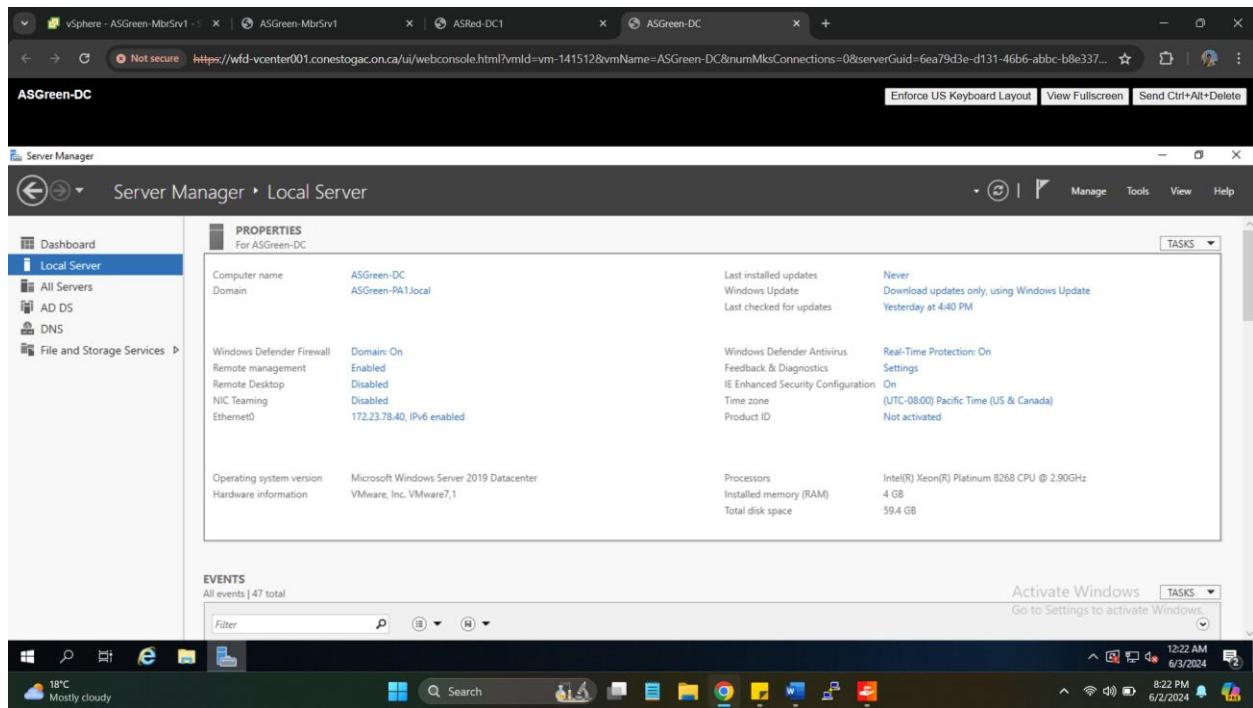
Red DC1



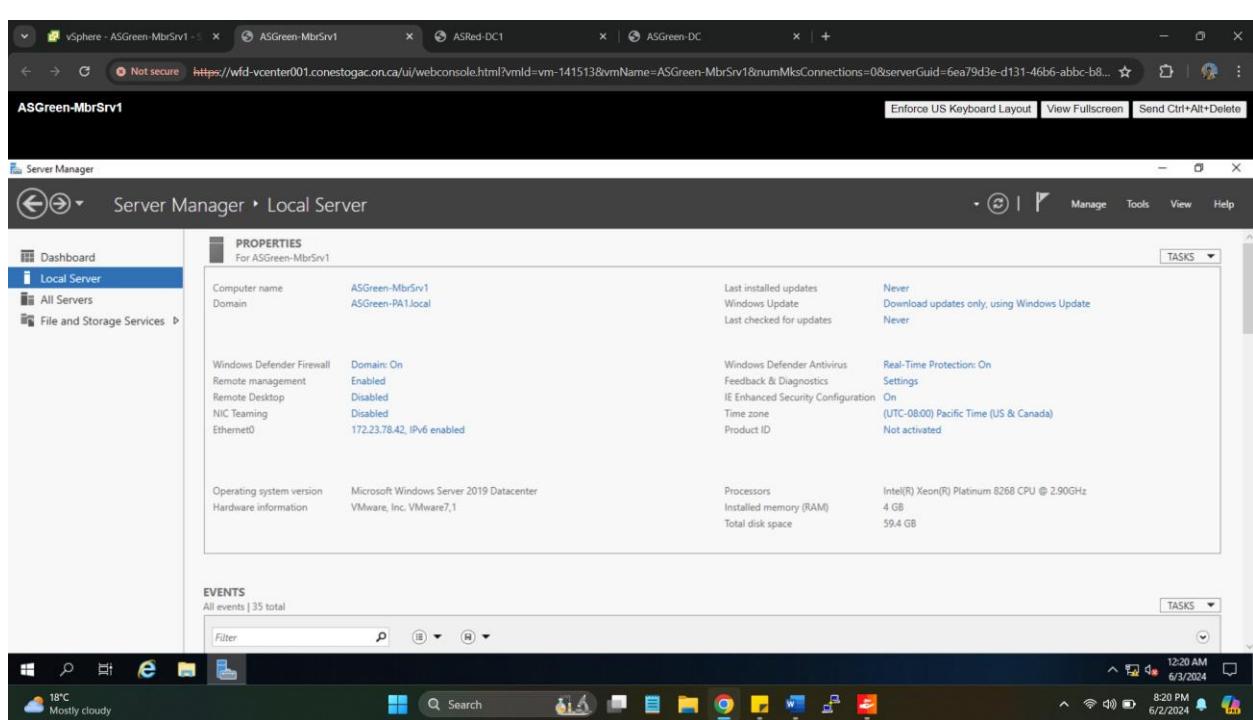
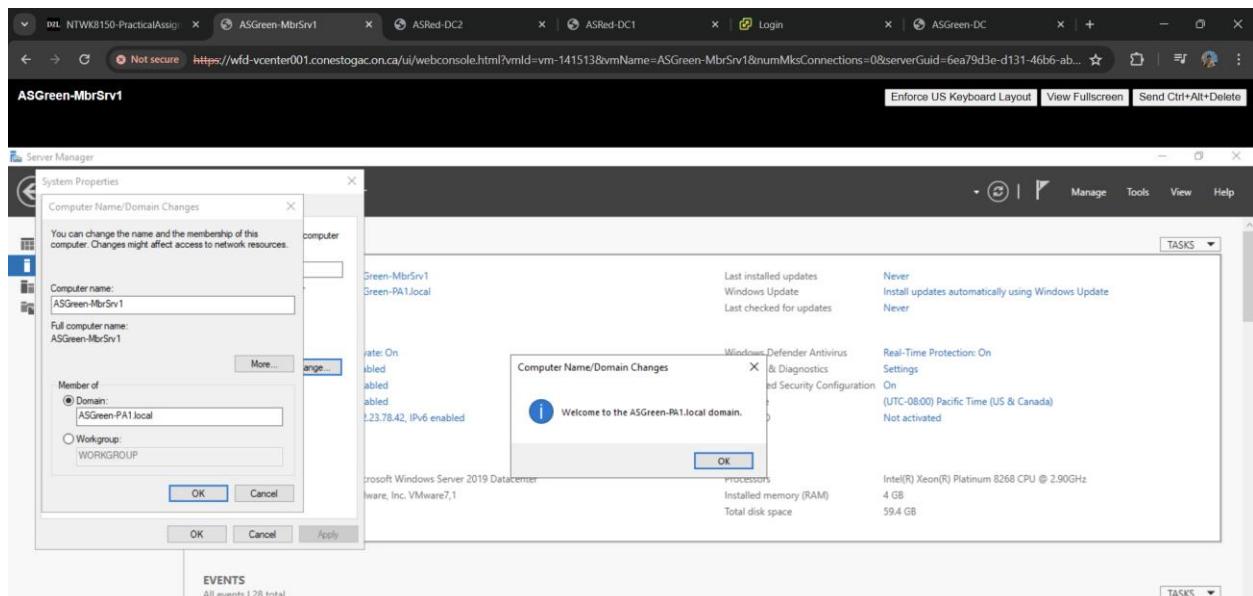
Red DC2



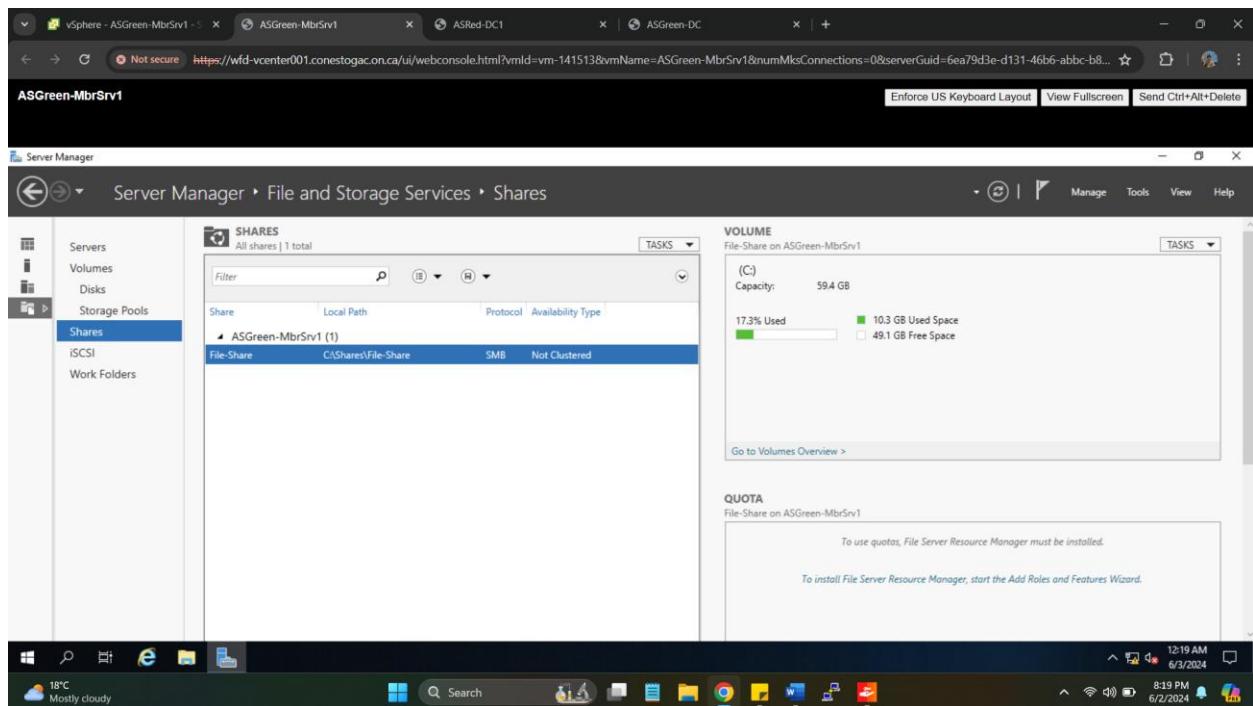
Green DC



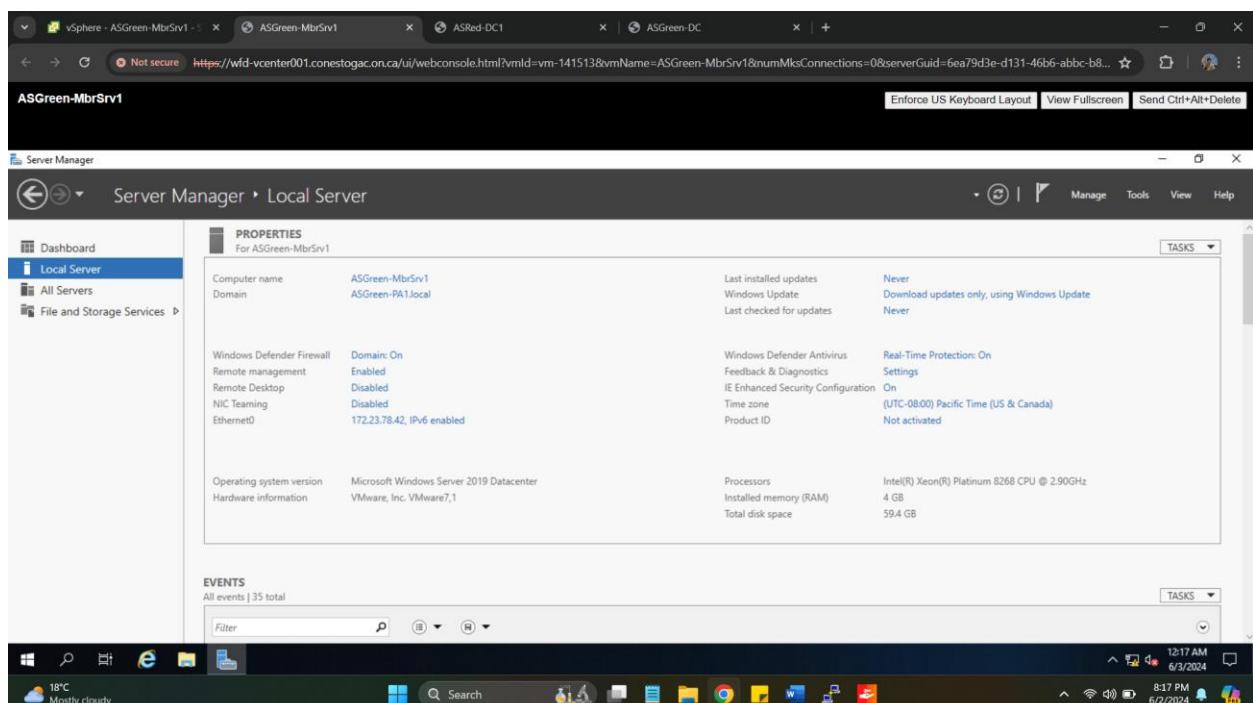
2. Join the member server to the Green Domain
 - a. Join the member server to the Green Domain



b. Create a File Share on the member server in Green Domain



c. Include Screenshot of Server Manager \ Local for the member server in Green Domain



3. Add 3 user accounts to each domain

RED DOMAIN USERS

1. AmarRed
2. AkbarRed
3. AnthonyRed

ASRed-DC1

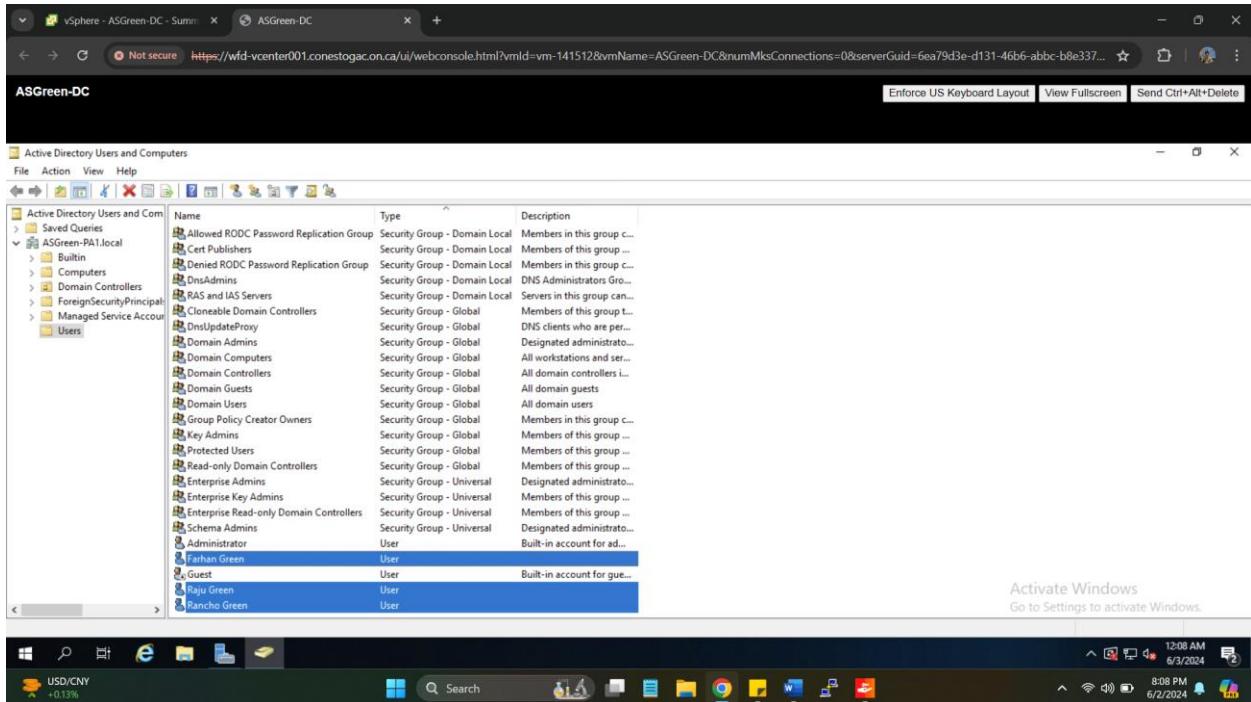
Active Directory Users and Computers

| Name | Type | Description |
|---|-------------------------------|-----------------------------|
| \$Administrator | User | Built-in account for ad... |
| Akbar Red | User | |
| Allowed RODC Password Replication Group | Security Group - Domain Local | Members in this group c... |
| Amar Red | User | |
| Anthony Red | User | |
| Cert Publishers | Security Group - Domain Local | Members of this group ... |
| Cloneable Domain Controllers | Security Group - Global | Members of this group ... |
| Denied RODC Password Replication Group | Security Group - Domain Local | Members in this group c... |
| DnsAdmins | Security Group - Domain Local | DNS Administrators Gro... |
| DnsUpdateProxy | Security Group - Global | DNS clients who are per... |
| Domain Admins | Security Group - Global | Designated administrato... |
| Domain Computers | Security Group - Global | All workstations and ser... |
| Domain Controllers | Security Group - Global | All domain controllers i... |
| Domain Guests | Security Group - Global | All domain guests |
| Domain Users | Security Group - Global | All domain users |
| Enterprise Admins | Security Group - Universal | Designated administrato... |
| Enterprise Key Admins | Security Group - Universal | Members of this group ... |
| Enterprise Read-only Domain Controllers | Security Group - Universal | Members of this group ... |
| Group Policy Creator Owners | Security Group - Global | Members in this group c... |
| Guest | User | Built-in account for gue... |
| Key Admins | Security Group - Global | Members of this group ... |
| Protected Users | Security Group - Global | Members of this group ... |
| RAS and IAS Servers | Security Group - Domain Local | Servers in this group ca... |
| Read-only Domain Controllers | Security Group - Global | Members of this group ... |
| Schema Admins | Security Group - Universal | Designated administrato... |

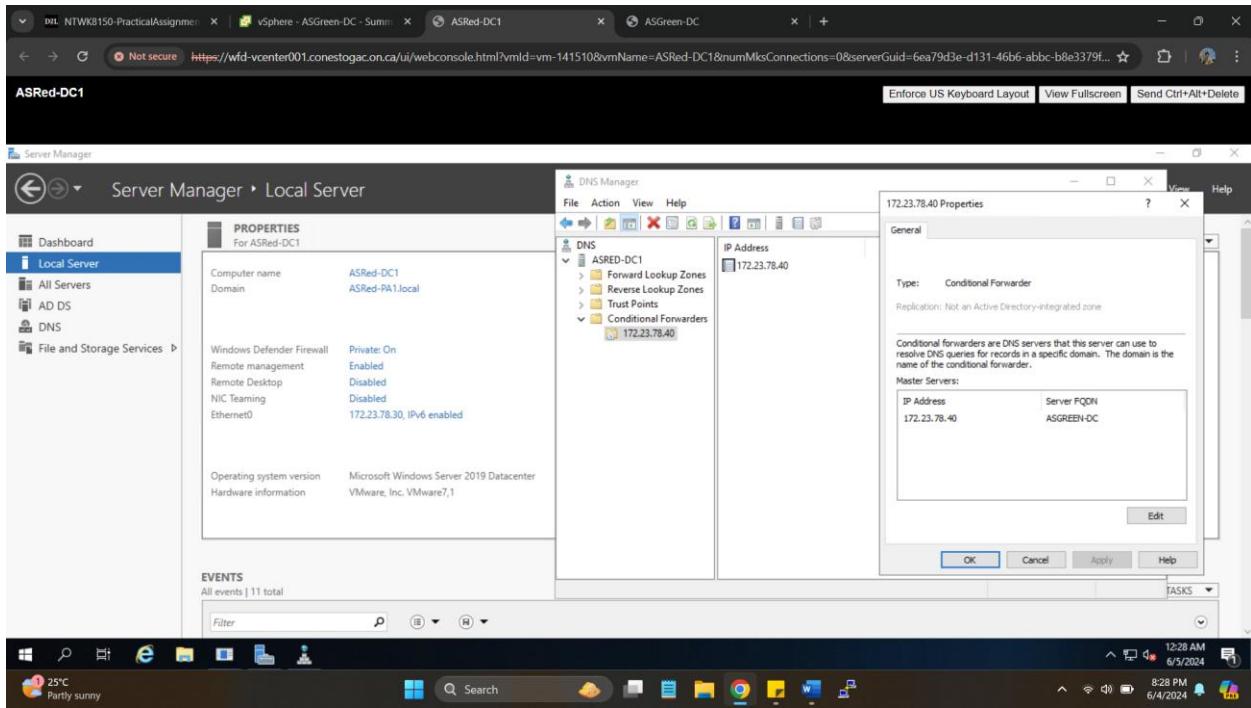
Activate Windows
Go to Settings to activate Windows.

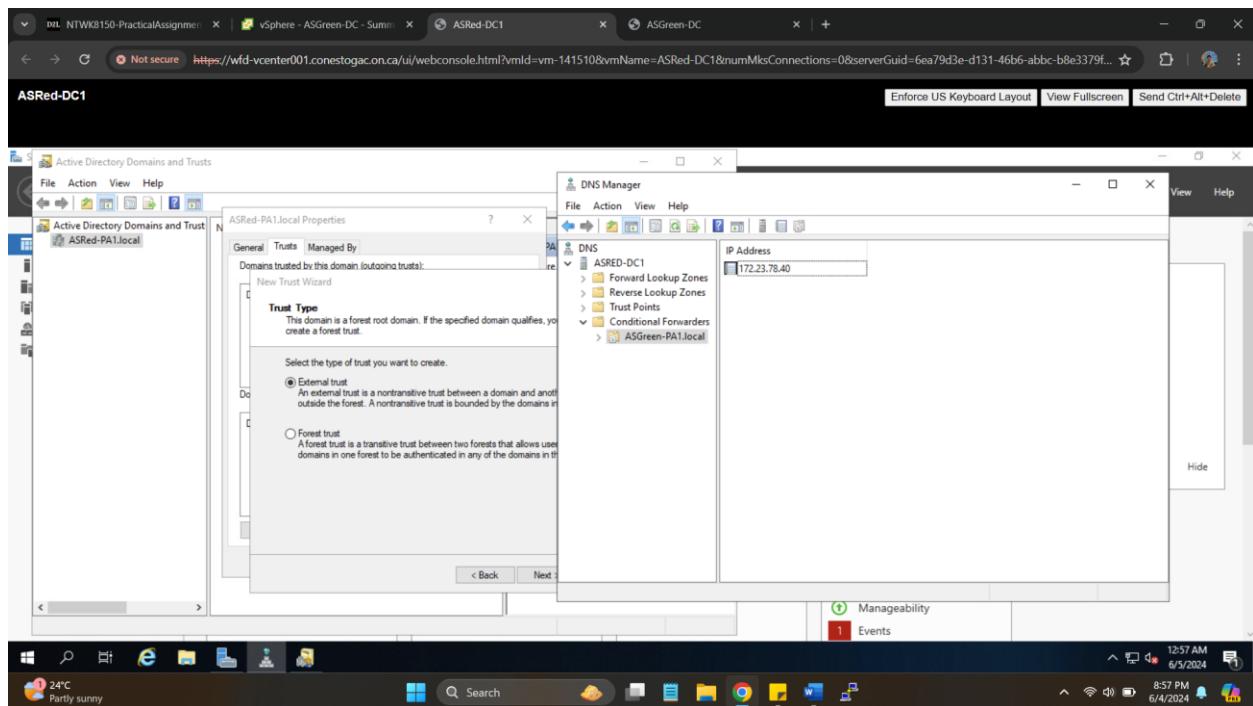
GREEN DOMAIN USERS

1. RanchoGreen
2. RajuGreen
3. FarhanGreen

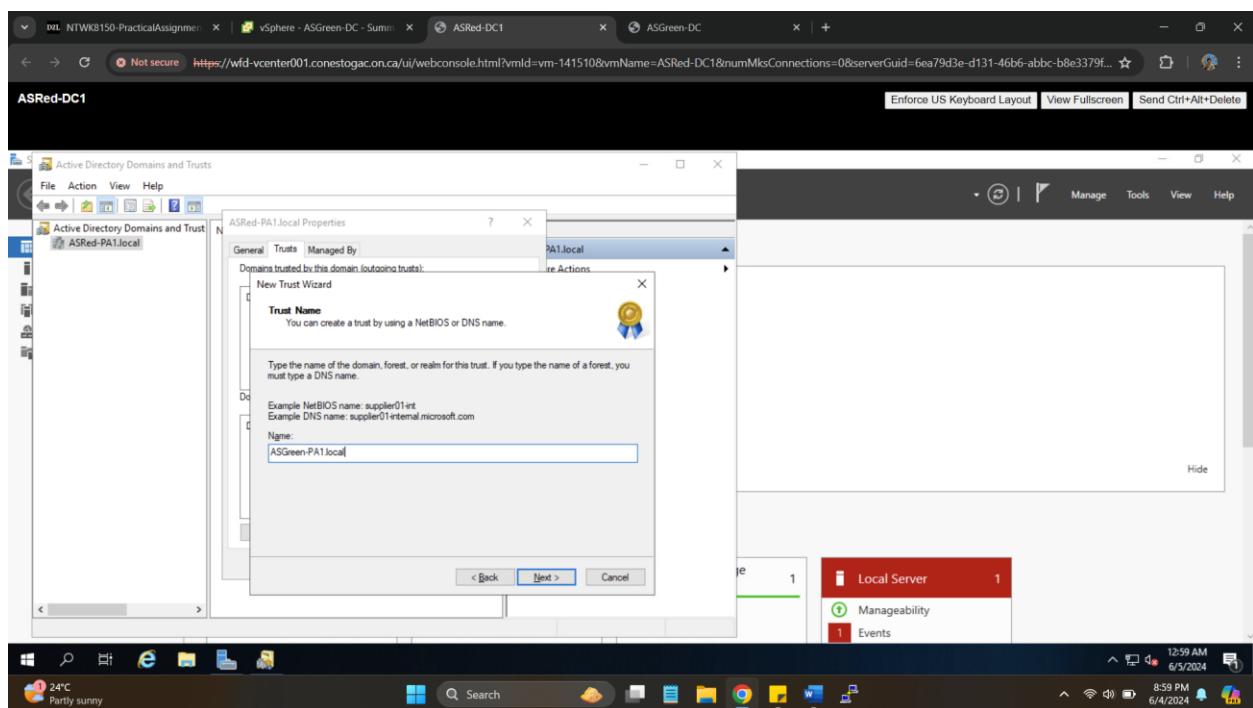


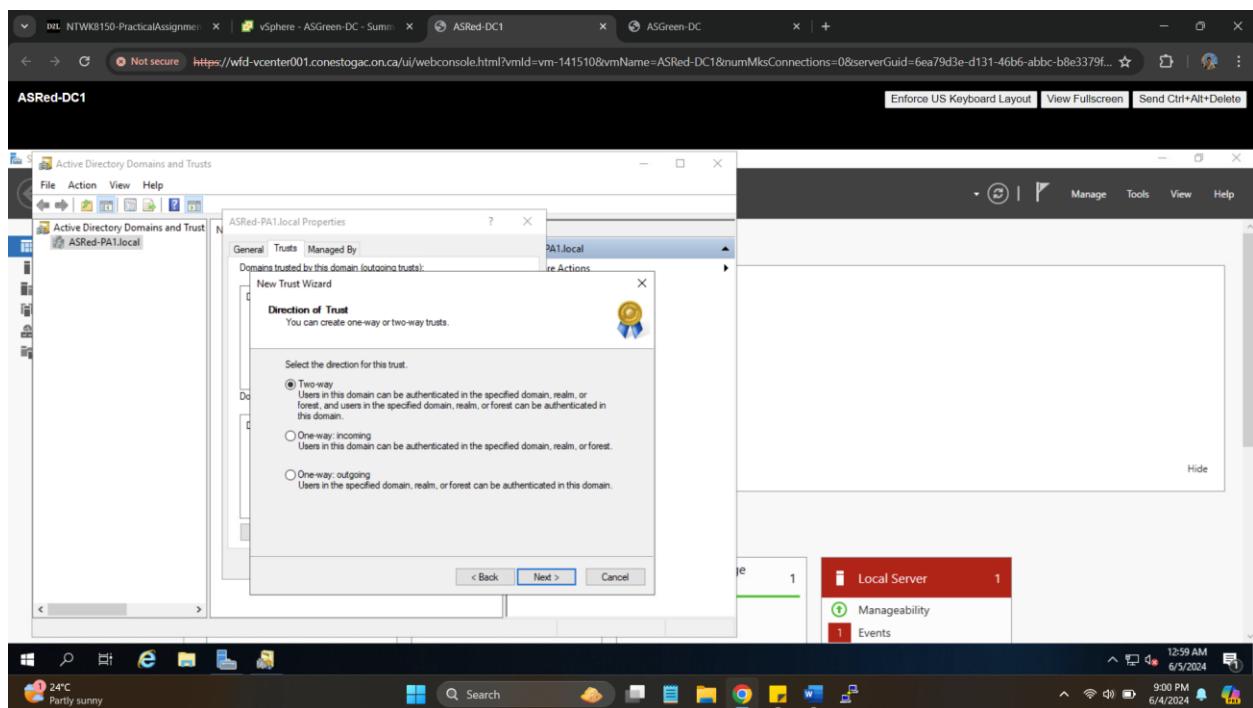
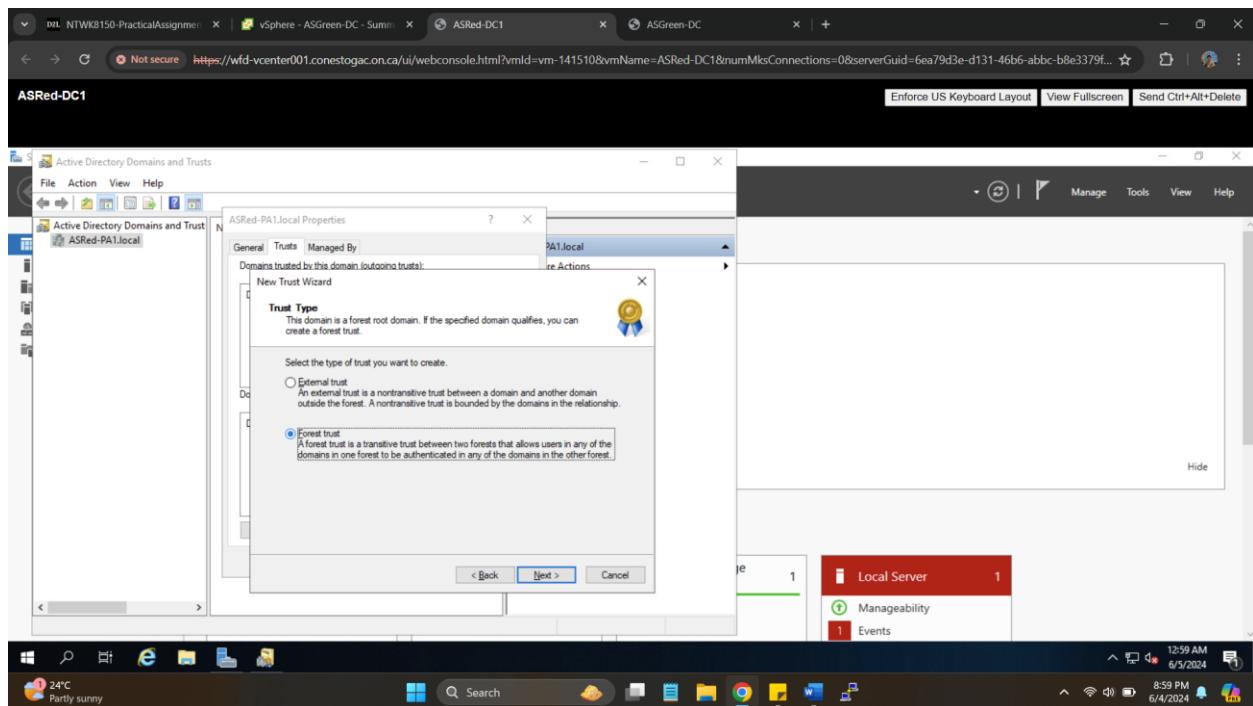
1. Create a Trust (of your choice) between the Red and Green Forests
 - a. Show which DNS solution you chose to implement

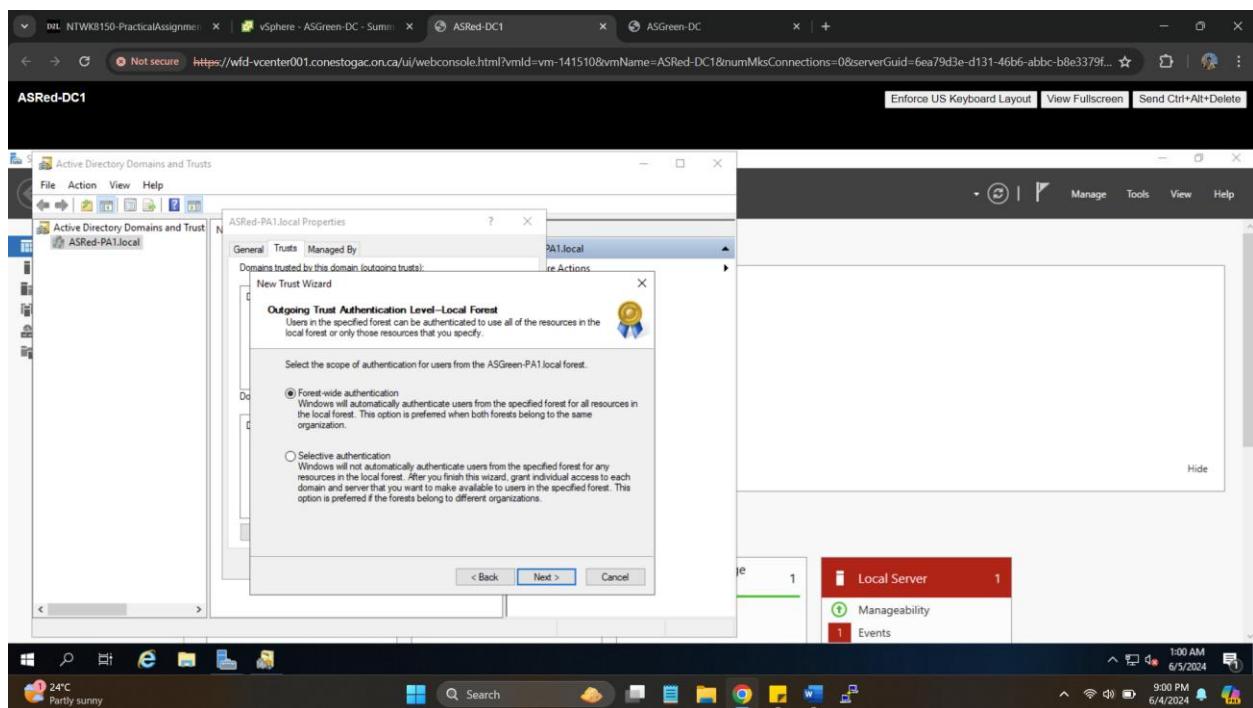
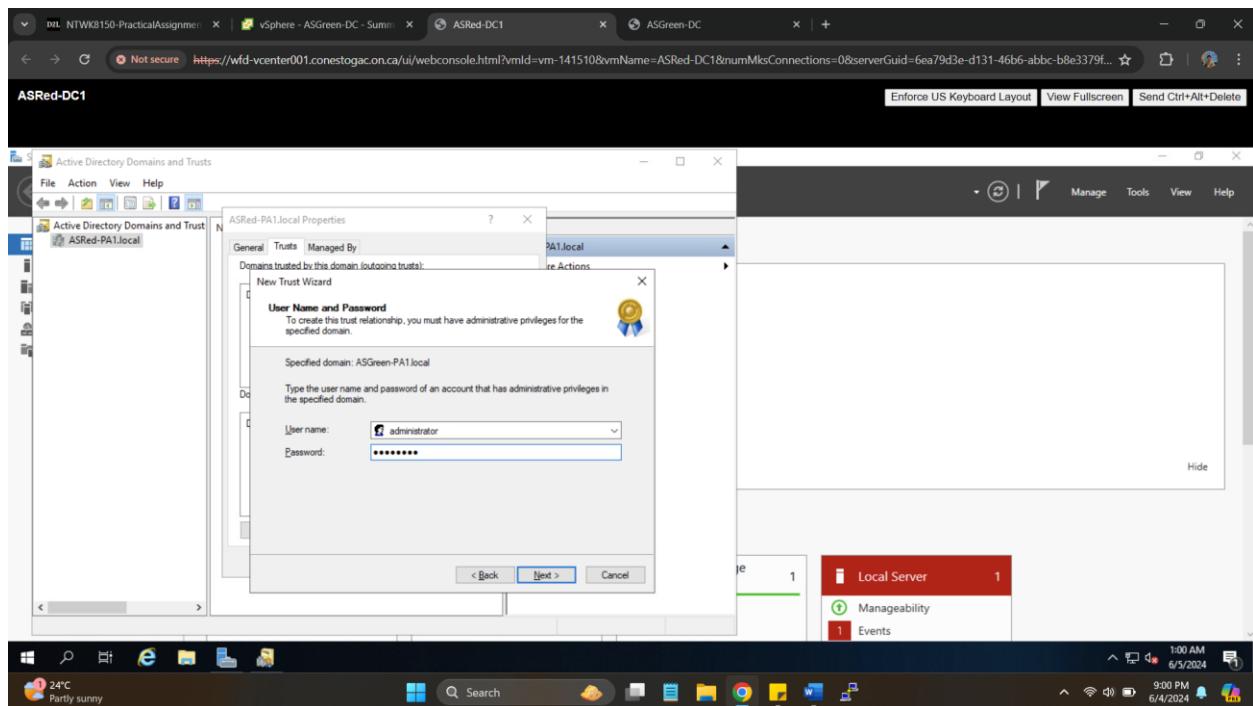


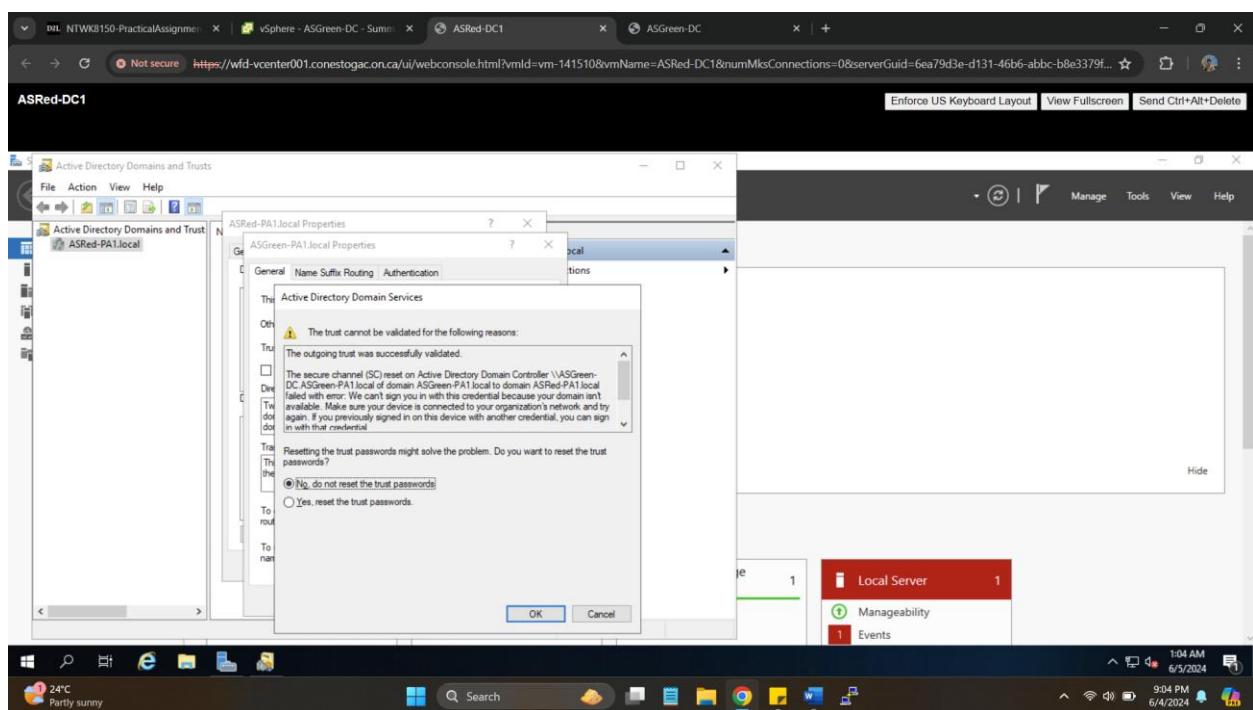
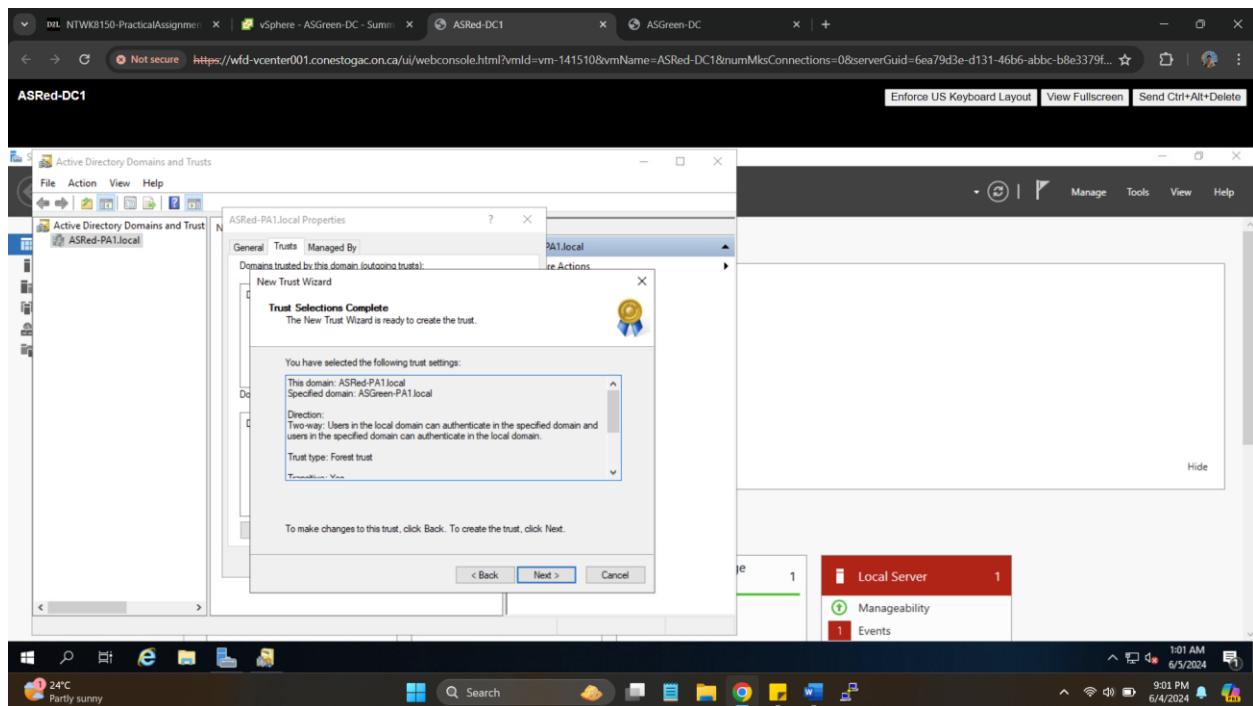


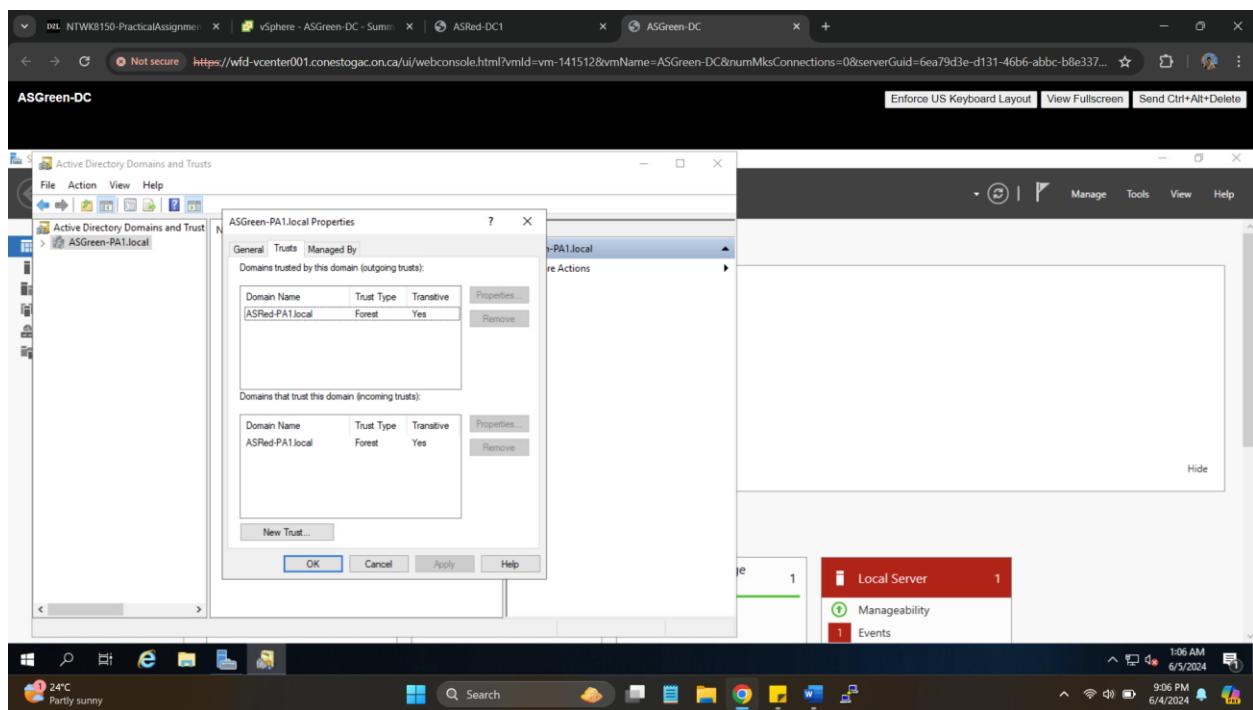
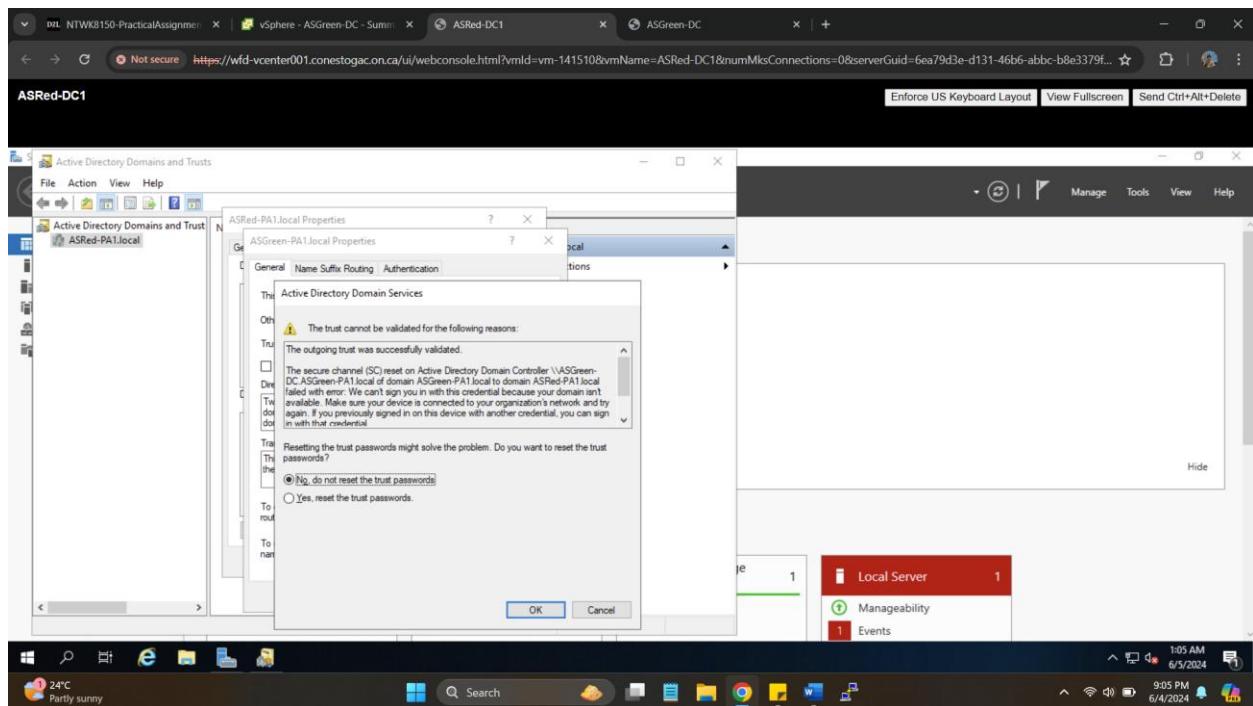
b. Show the validation of the Trust

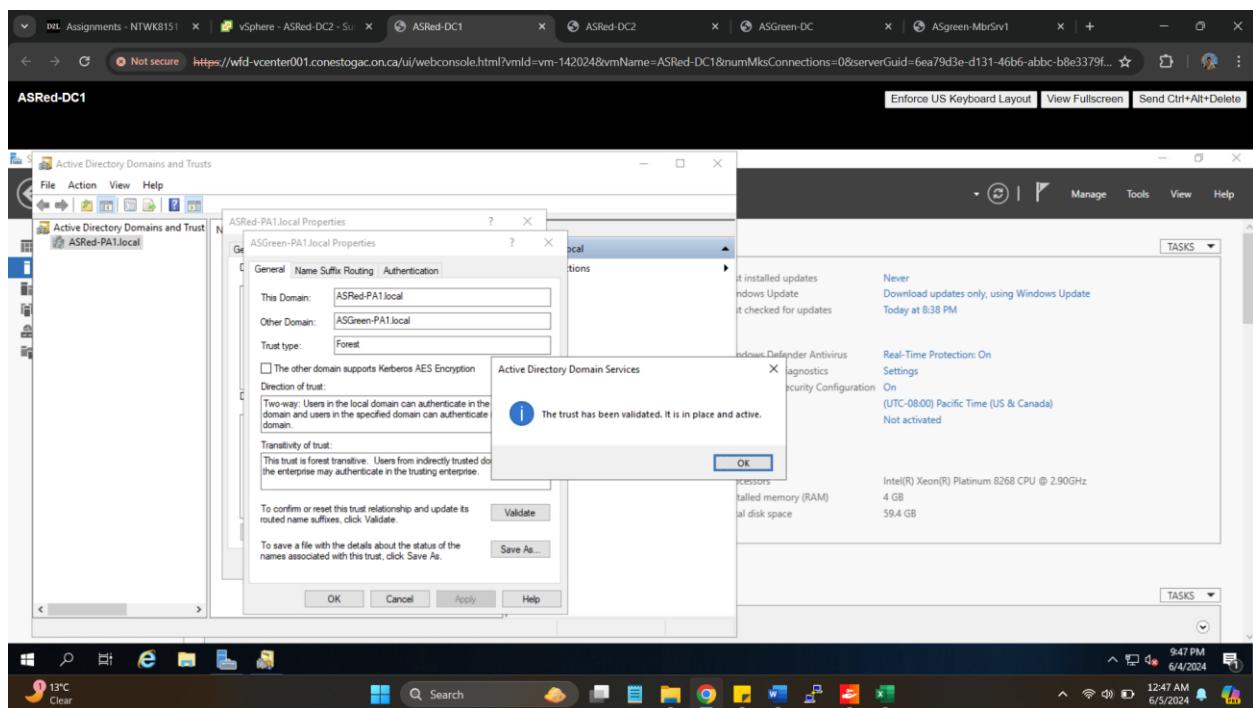
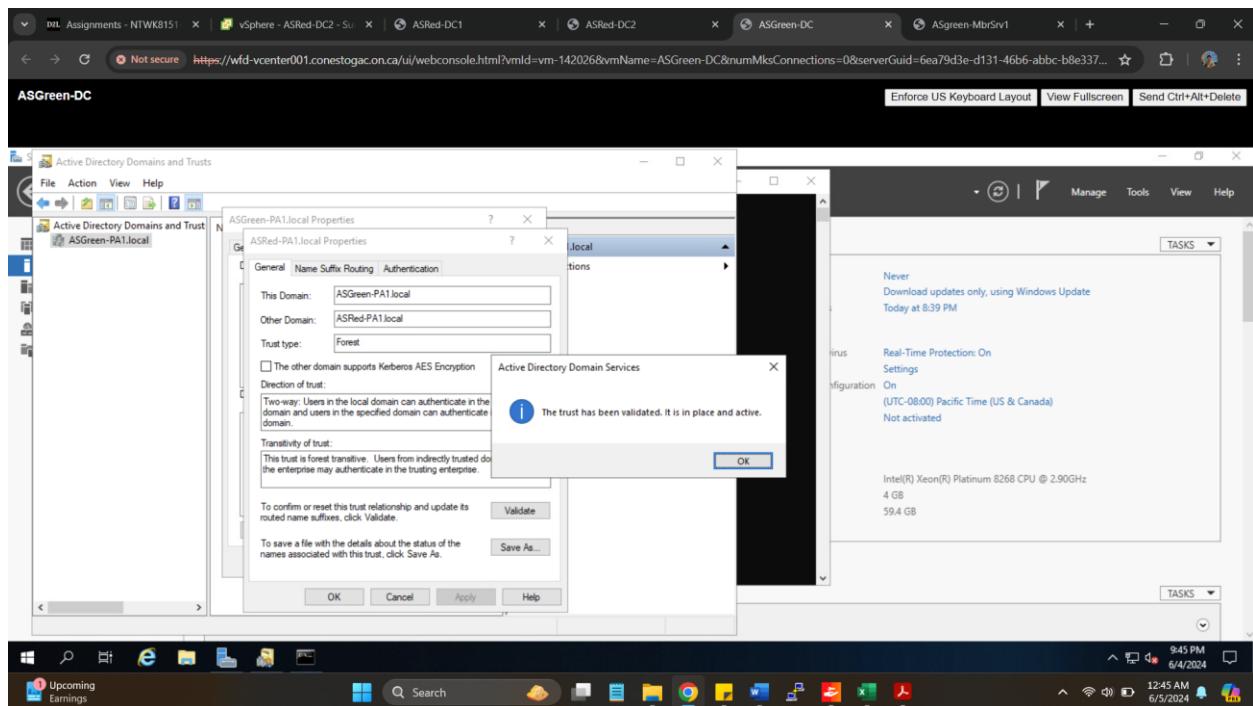






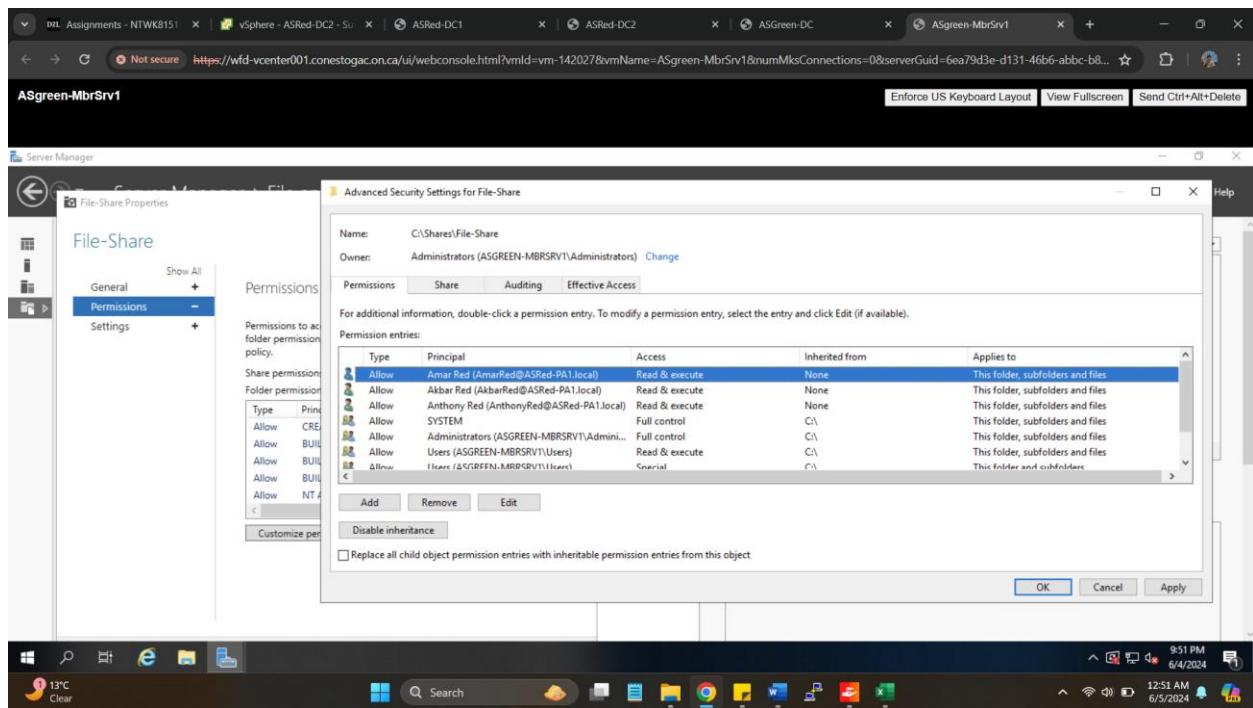






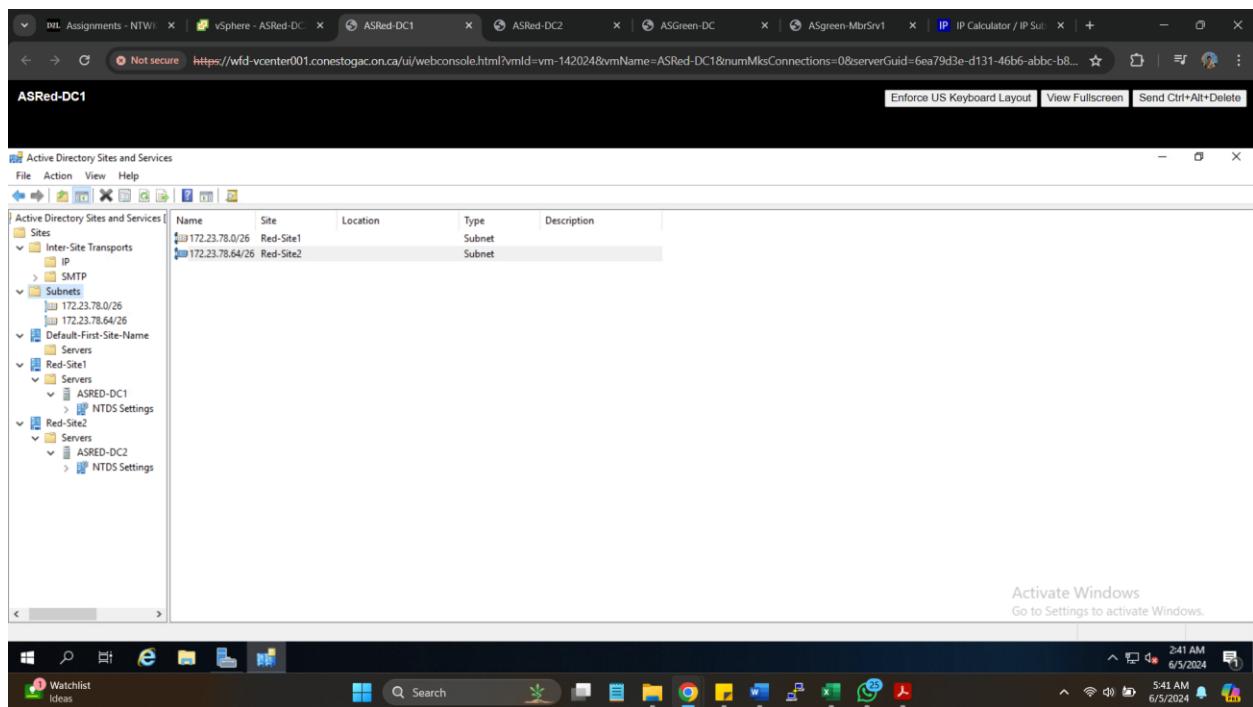
2. Grant users from the Red Forest access to the File Share on the member server in the Green Forest

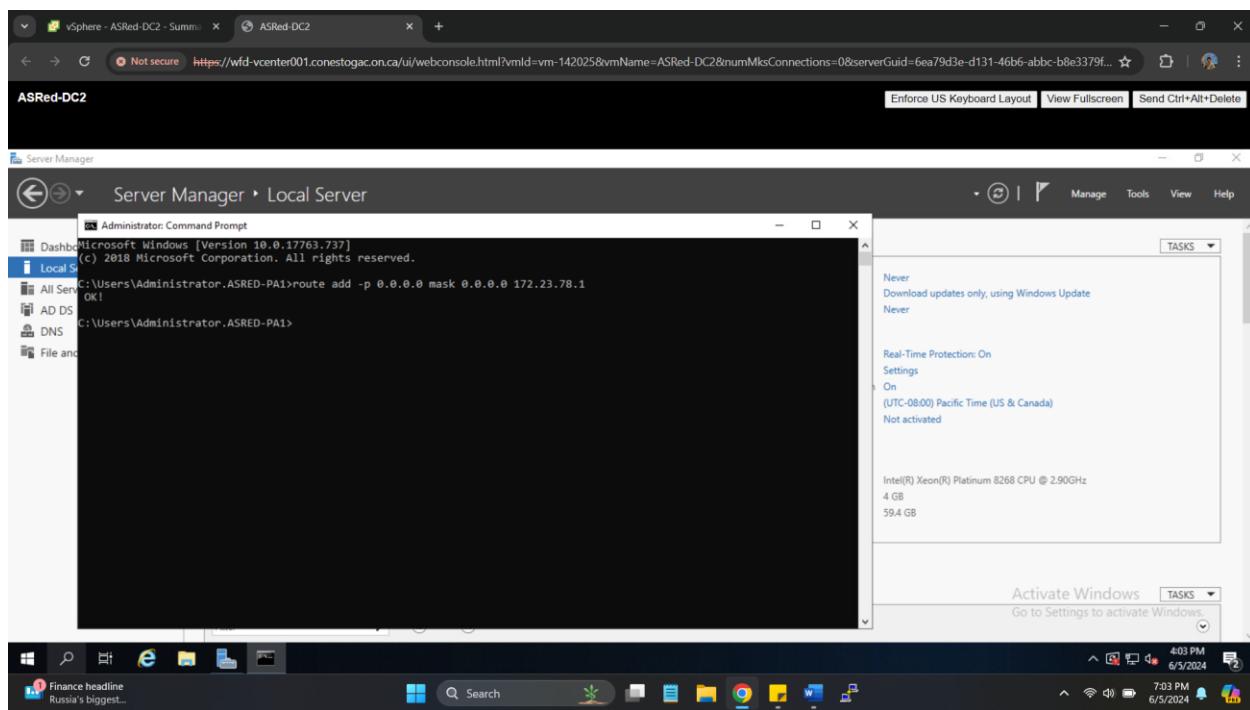
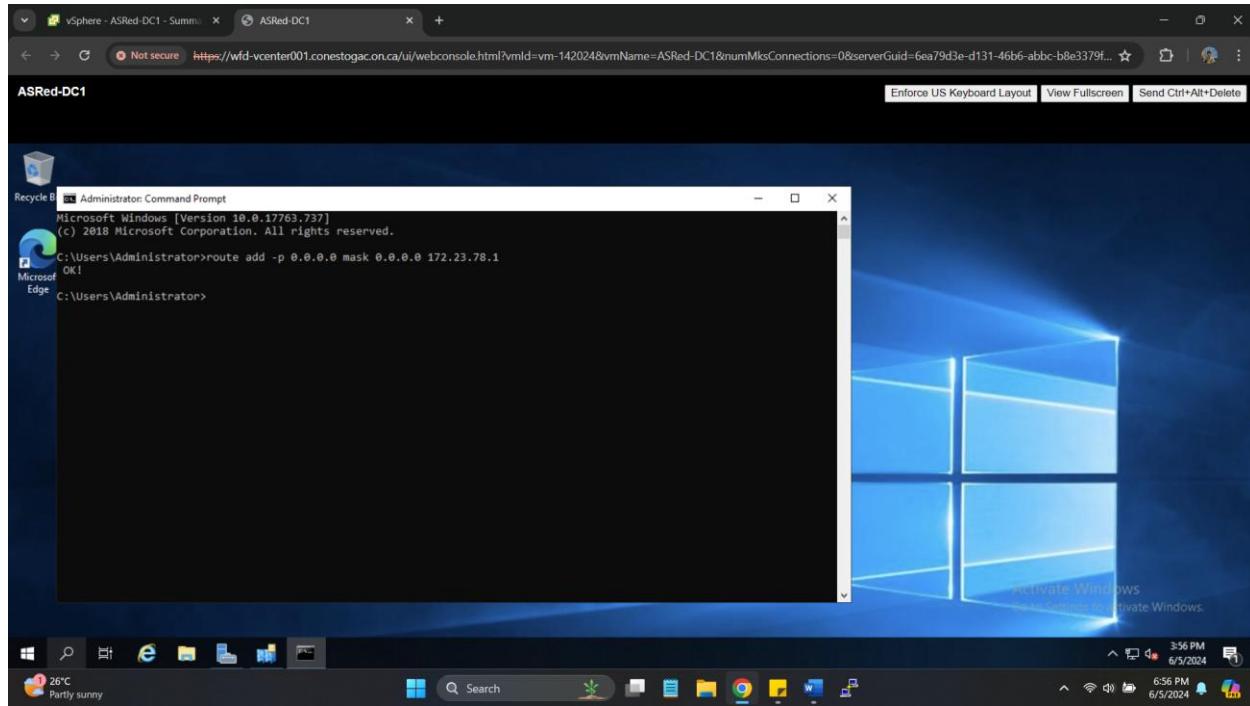
a. Screenshot(s) must prove users from Red have been granted access to the file share in Green



3. Create 2 Sites in the Red Forest.

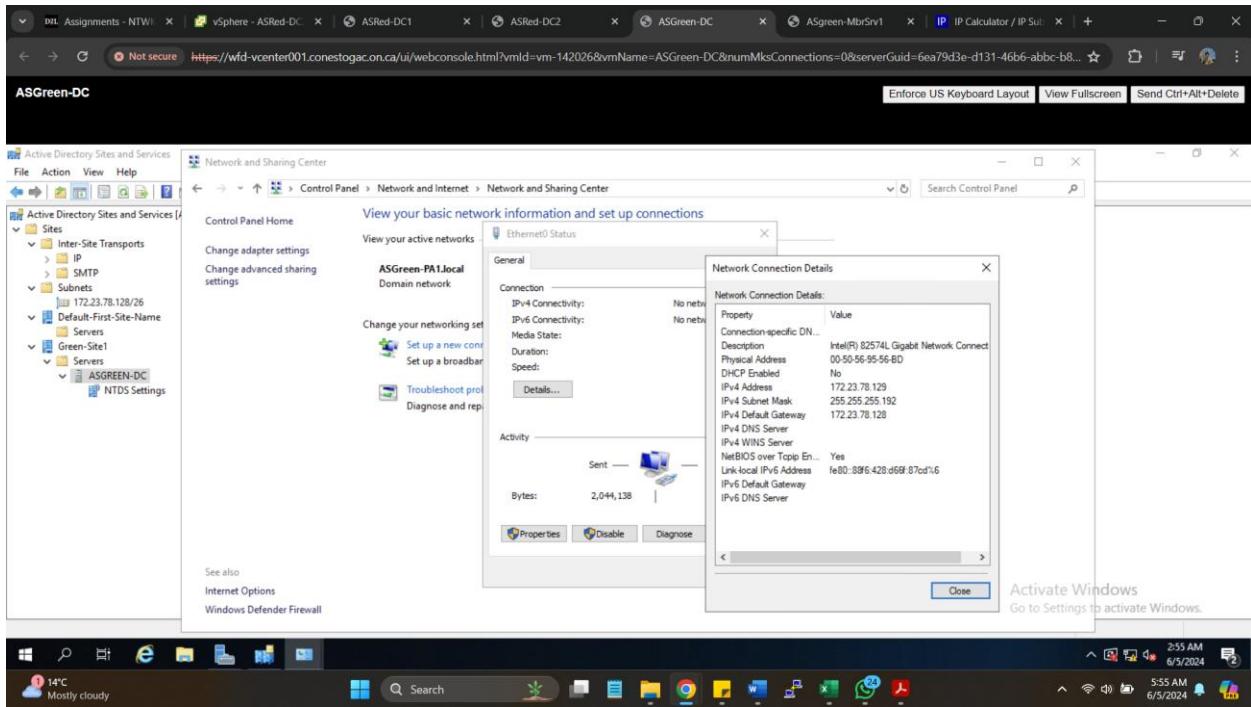
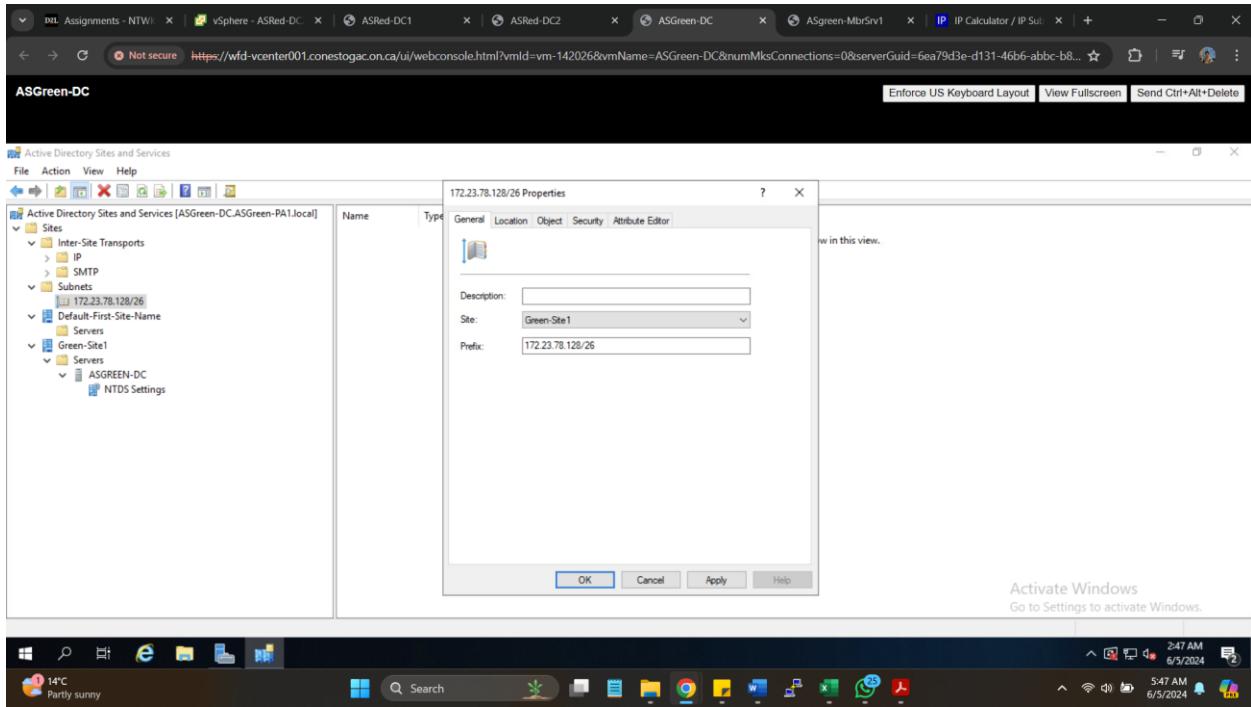
- Assign a subnet to each Site
- Assign the appropriate IP Address to each Domain Controller so that there is one Domain Controller in each Site

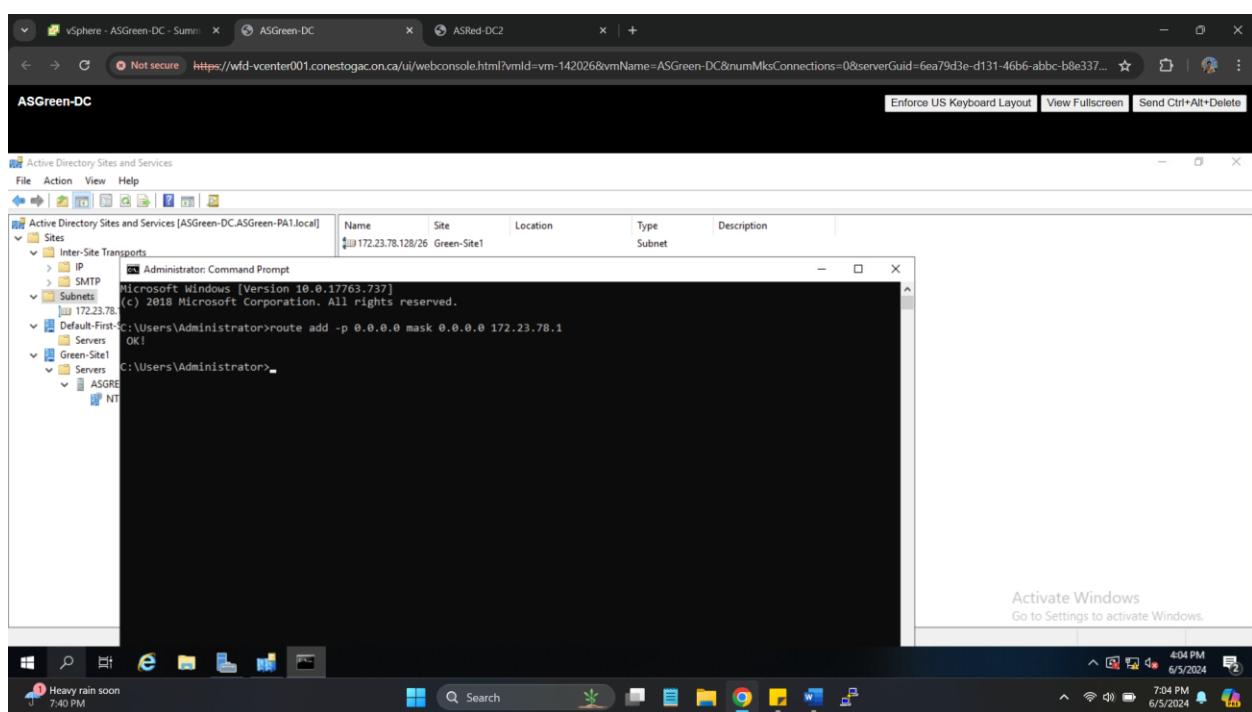
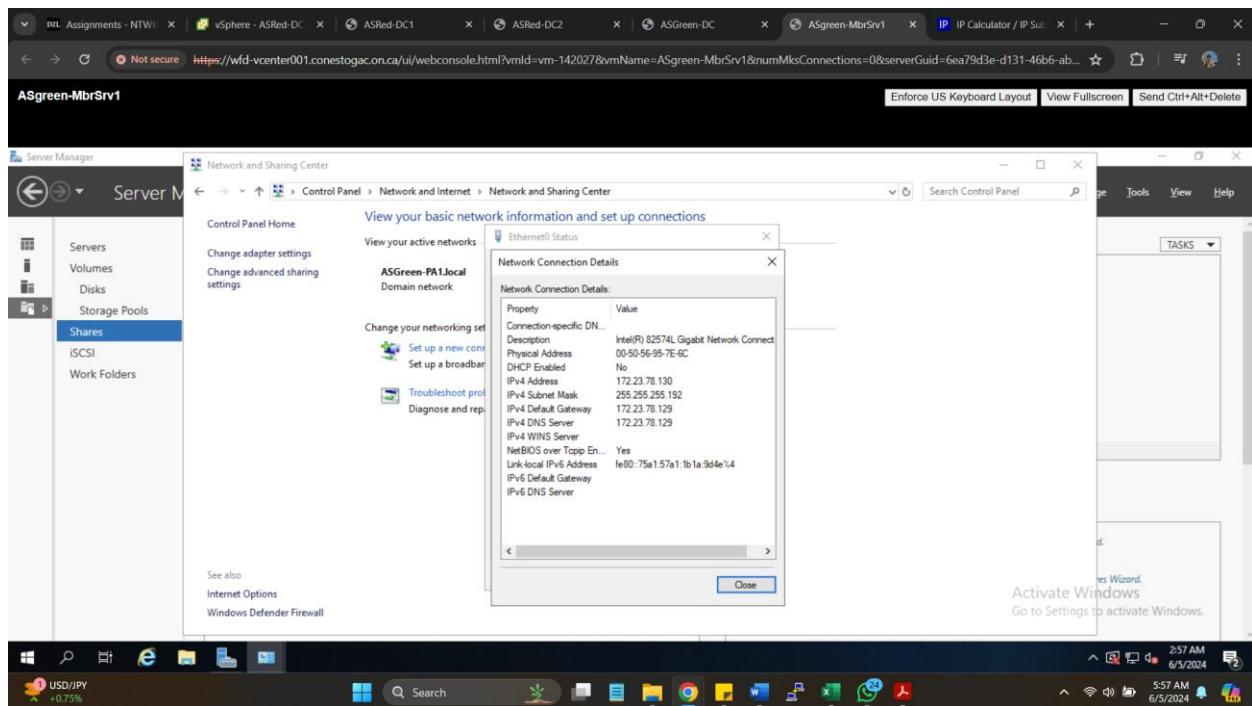


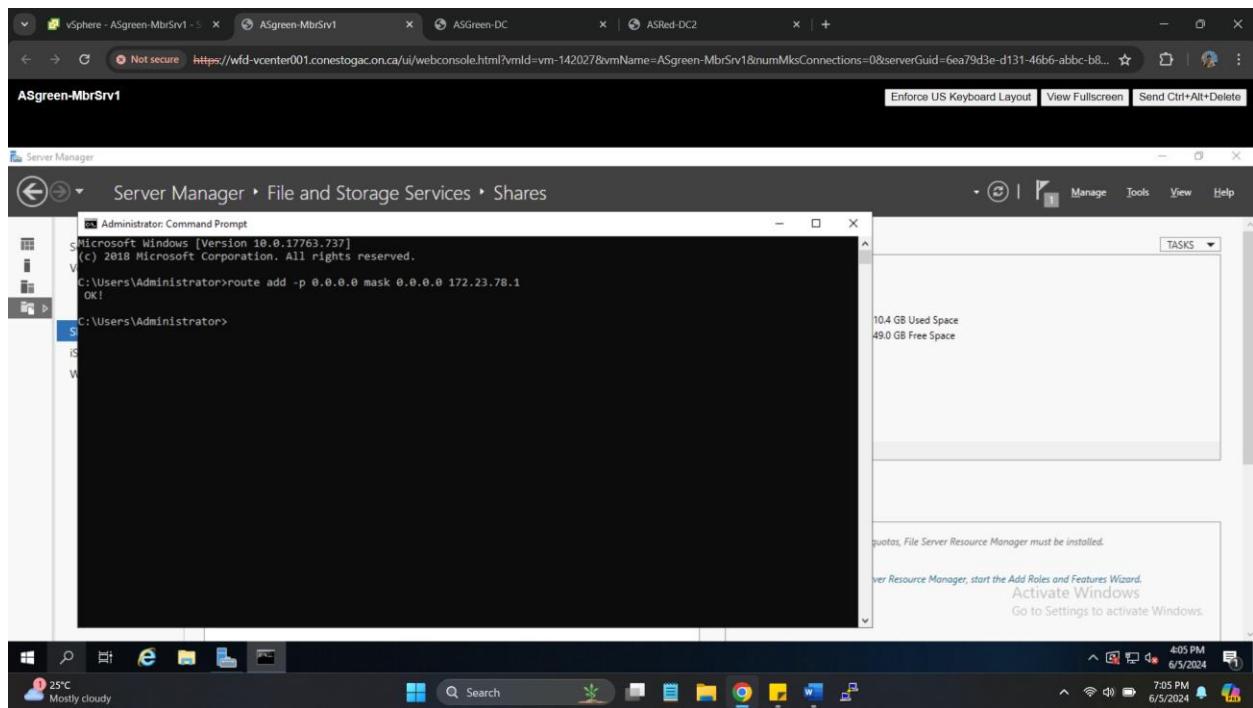


4. Create 1 Site for the Green Forest
 - a. Assign a subnet to the Site
 - b. Assign the appropriate IP Address to the Domain Controller and Member

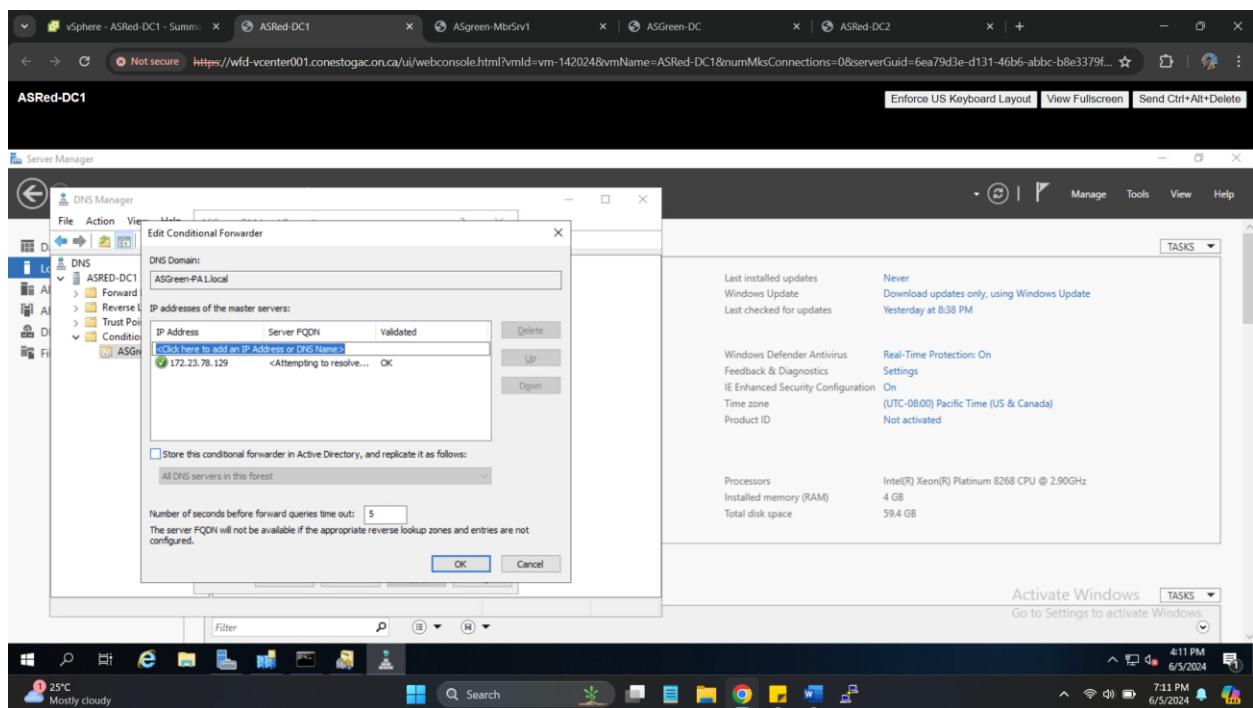
Server so that they are part of the Green Site







Trust validated on Red DC



5. Question Explain the difference between INTER-SITE and INTRA-SITE replication.

a. Explain the key differences

| Intrasite | Intersite |
|---|---|
| Traffic is uncompressed. | Traffic is compressed (to save bandwidth). |
| Replication partners notify each other when changes must be replicated (to reduce latency). | Replication partners do not notify each other (to save bandwidth). |
| Replication partners poll one another periodically. | Replication partners poll one another during scheduled intervals only. |
| RCP over IP transport only. | RCP over IP or SMTP over IP transports. |
| Replication connections can be created between any two domain controllers in the same site. | Replication connections can only be created between bridgehead servers. A bridgehead server is designated by the KCC. A bridgehead server is a domain controller that has been designated to perform all intersite replication for a particular site. |

(*Active Directory Sites / Describing Active Directory Components / InformIT*, n.d.)

Reference: “*Active Directory sites / Describing Active Directory components / InformIT*. (n.d.).

<https://www.informit.com/articles/article.aspx?p=26896&seqNum=6> ”

b. Explain the default time interval for replication for each type

Inter-Site Replication: “The default replication interval is 180 minutes, or 3 hours. The minimum interval is 15 minutes.

Consider the following criteria to determine how often replication occurs within the schedule window:

- A small interval decreases latency but increases the amount of wide area network (WAN) traffic.
 - To keep domain directory partitions up to date, low latency is preferred.”
- (Iainfoulds, 2021)

Intra-Site Replication: “By default, this interval is 15 seconds. When this interval elapses, the domain controller initiates a notification to each intra-site replication partner that it has changes that need to be propagated.

Another configurable parameter determines the number of seconds to pause between notifications. This parameter prevents simultaneous replies by the replication partners. By default, this interval is three seconds. Both of these intervals can be modified.”

(Deland-Han, 2024)

Reference:

Iainfoulds. (2021, July 29). *Determining the interval*. Microsoft Learn.

<https://learn.microsoft.com/en-us/windows-server/identity/ad-ds/plan/determining-the-interval>

Deland-Han. (2024, June 5). *Modify the default intra-site DC replication interval - Windows Server*. Microsoft Learn. <https://learn.microsoft.com/en-us/troubleshoot/windows-server/active-directory/modify-default-intra-site-dc-replication-interval>

6. Execute the required Powershell script on a Domain Controller in Red
- a. Include a screenshot of the results of the Powershell script

```
#get dc and site information
```

```
write-host "*****DC and Site Information*****"  
(get-adforest).domains | %{get-addomaincontroller -filter * -server $_} | ft -property name, domain,  
ipv4address,site
```

```

Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> (get-adforest).domains | %{get-addomaincontroller -filter * -server $_} | ft -property name, domain, ipv4address,site
name      domain      ipv4address site
...       ...
ASRED-DC1 ASRed-PA1.local 172.23.78.30 Red-Site1
ASRED-DC2 ASRed-PA1.local 172.23.78.31 Red-Site2

PS C:\Users\Administrator>

```

Activate Windows
Go to Settings to activate Windows.

```
write-host "*****Subnet Information*****"
```

```
Get-AdReplicationSubnet -filter * | select-object Name, Site | ft
```

```

Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> (get-adforest).domains | %{get-addomaincontroller -filter * -server $_} | ft -property name, domain, ipv4address,site
name      domain      ipv4address site
...       ...
ASRED-DC1 ASRed-PA1.local 172.23.78.30 Red-Site1
ASRED-DC2 ASRed-PA1.local 172.23.78.31 Red-Site2

PS C:\Users\Administrator> Get-AdReplicationSubnet -filter * | select-object Name, Site | ft
Name      Site
...       ...
172.23.78.0/26 CN=Red-Site1,CN=Sites,CN=Configuration,DC=ASRed-PA1,DC=local
172.23.78.64/26 CN=Red-Site2,CN=Sites,CN=Configuration,DC=ASRed-PA1,DC=local

PS C:\Users\Administrator>

```

Activate Windows
Go to Settings to activate Windows.

```
#replication status
```

```
write-host "*****Replication Health*****"
```

```
Get-ADReplicationPartnerMetadata -scope Forest | select-object server, partner, partition, lastreplicationattempt, lastreplicationsuccess | fl
```

The screenshot shows a Windows PowerShell window titled 'Administrator: Windows PowerShell' running on 'ASRed-DC1'. The command `Get-ADReplicationPartnerMetadata -scope Forest` is run, displaying the following output:

```
PS C:\Users\Administrator> Get-ADReplicationPartnerMetadata -scope Forest | select-object server, partner, partition, lastreplicationattempt, lastreplicationsuccess | fl
```

| server | partner | partition | lastreplicationattempt | lastreplicationsuccess |
|-----------|-----------------|---|------------------------|------------------------|
| ASRed-DC1 | ASRed-PA1.local | CN=NTDS Settings,CN=ASRED-DC2,CN=Servers,CN=Red-Site2,CN=Sites,CN=Configuration,DC=ASRed-PA1,DC=local | 6/5/2024 5:13:47 AM | 6/5/2024 5:13:47 AM |
| ASRed-DC2 | ASRed-PA1.local | CN=NTDS Settings,CN=ASRED-DC1,CN=Servers,CN=Red-Site1,CN=Sites,CN=Configuration,DC=ASRed-PA1,DC=local | 6/5/2024 5:01:39 AM | 6/5/2024 5:01:39 AM |

The PowerShell window is part of a larger vSphere interface with multiple tabs for other hosts like 'ASRed-DC2' and 'ASGreen-DC'. The taskbar at the bottom shows various icons for file explorer, browser, and system status.

```
repadmin /replsummary
```

The screenshot shows a Windows PowerShell window titled 'Administrator: Windows PowerShell' running on 'ASRed-DC1'. The command `repadmin /replsummary` is run, displaying the following output:

```
PS C:\Users\Administrator> repadmin /replsummary
```

Replication Summary Start Time: 2024-06-05 06:33:58

Beginning data collection for replication summary, this may take awhile:

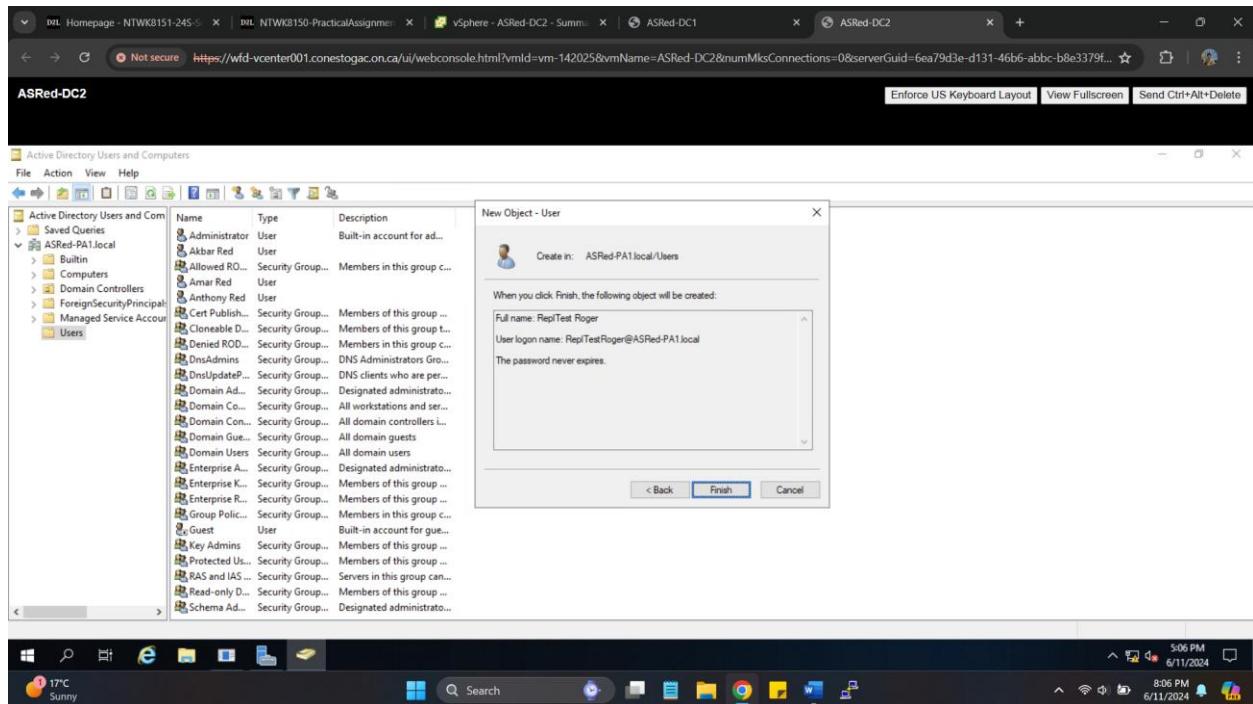
| Source DSA | largest delta | fails/total % | error |
|------------|---------------|---------------|-------|
| ASRED-DC1 | 01h:32m:19s | 0 / 5 | 0 |
| ASRED-DC2 | 01h:20m:11s | 0 / 5 | 0 |

| Destination DSA | largest delta | fails/total % | error |
|-----------------|---------------|---------------|-------|
| ASRED-DC1 | 01h:20m:11s | 0 / 5 | 0 |
| ASRED-DC2 | 01h:32m:19s | 0 / 5 | 0 |

The PowerShell window is part of a larger vSphere interface with multiple tabs for other hosts like 'ASRed-DC2' and 'ASGreen-DC'. The taskbar at the bottom shows various icons for file explorer, browser, and system status.

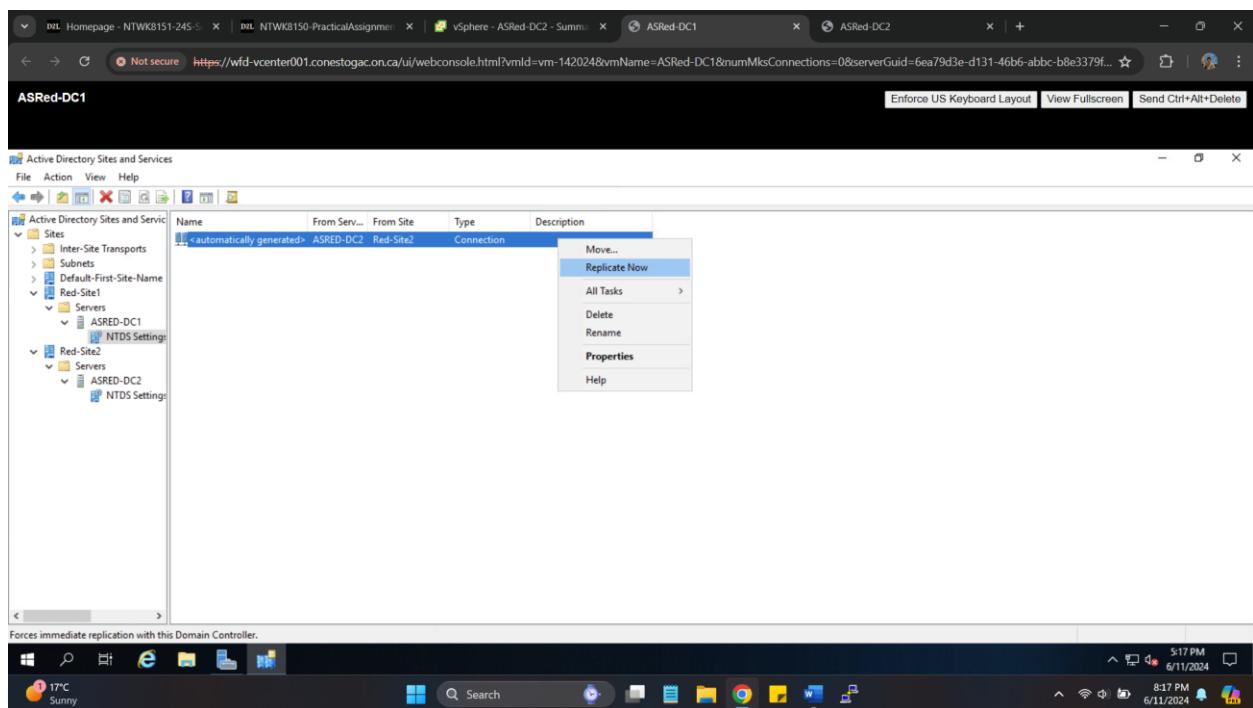
NTWK8150 – Practical Assignment 1 – Stage 3

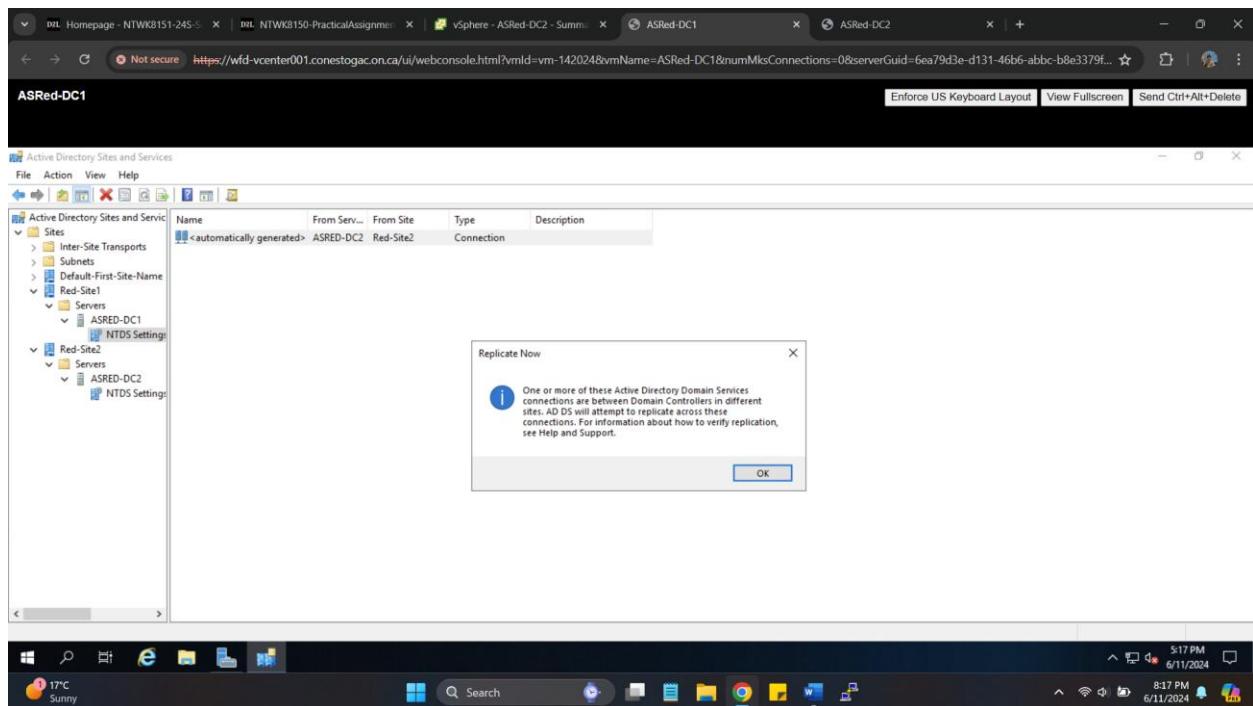
1. Create a User on Domain Controller 2 in Red Forest/Domain
 - a. Name the user ReplTestRoger



2. Force Replication of this user to Domain Controller 1 in Red Forest/Domain

- a. Use a technique of your choice to force replication of ReplTestRoger





b. Show RepITestRoger in Active Directory Users and Computers while logged on to Domain Controller 1

