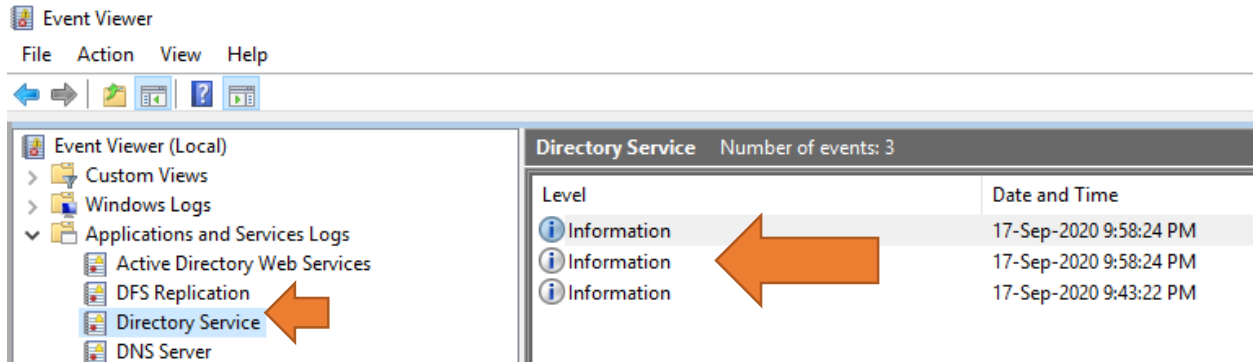# Windows Virtual Desktop WVD in Azure – Part 2

In this post, we will cover installing ADDS role on the virtual machine created in Azure. The virtual machine is **DCAZURE**. Before we proceed to Azure Portal, we will complete health check on our On Premises Domain Controller.

1. Check Event Viewer and analyze Active Directory and DNS Logs for any ERRORS.
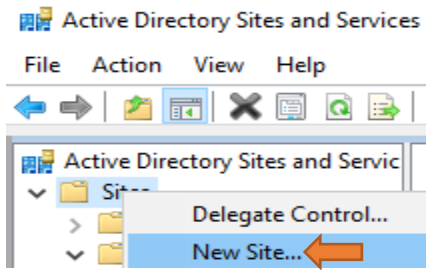

COMMANDS:

dcdiag /s:DC.RAMLAN.CA
dcdiag /s:DC.RAMLAN.CA /test:dns
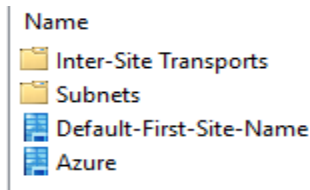
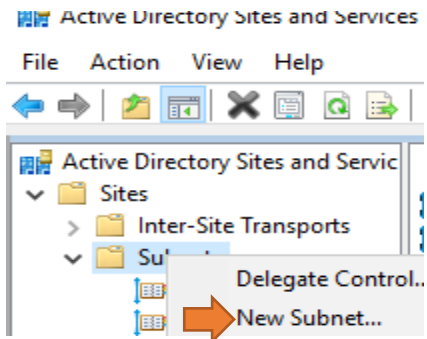Open Command Prompt as Administrator and run above.

2. Active Directory Sites and Services – We need to create New Site and New Subnet for Azure DC as detailed below. Open ADSS
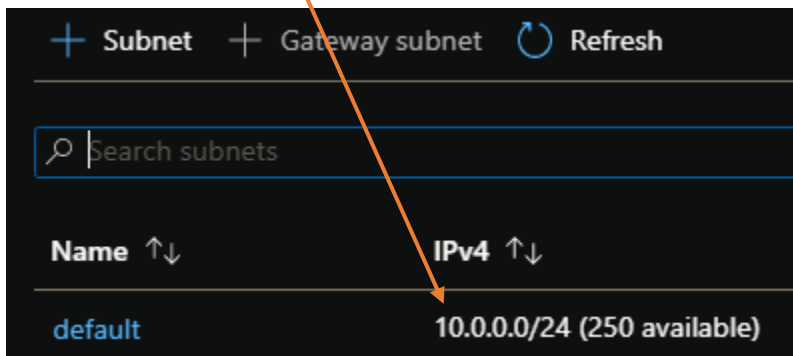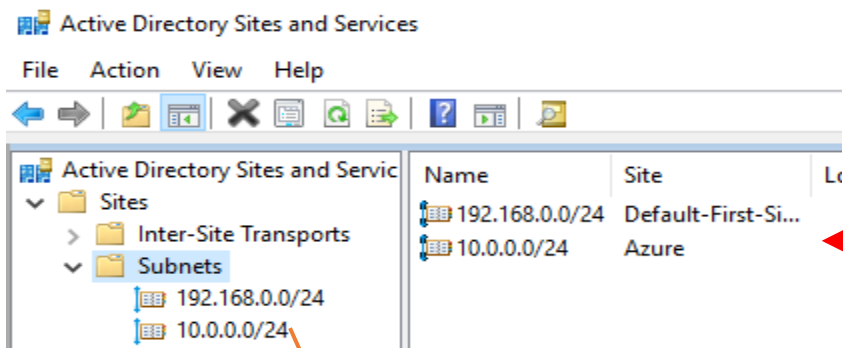

Name it as Azure and link to Default-First-Site-Name. Your Site should look like this...
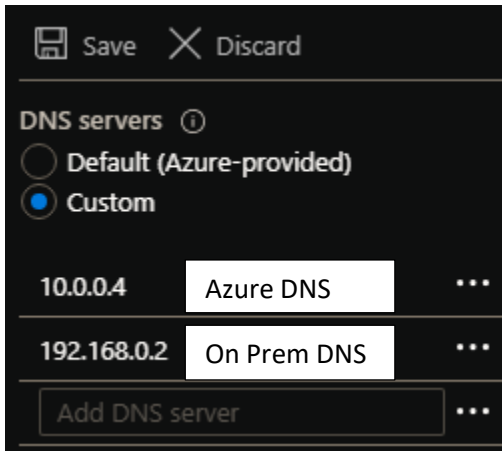

Click Subnets – New Subnet

Give the IP Range and Select Azure. Your Subnets should look like this...
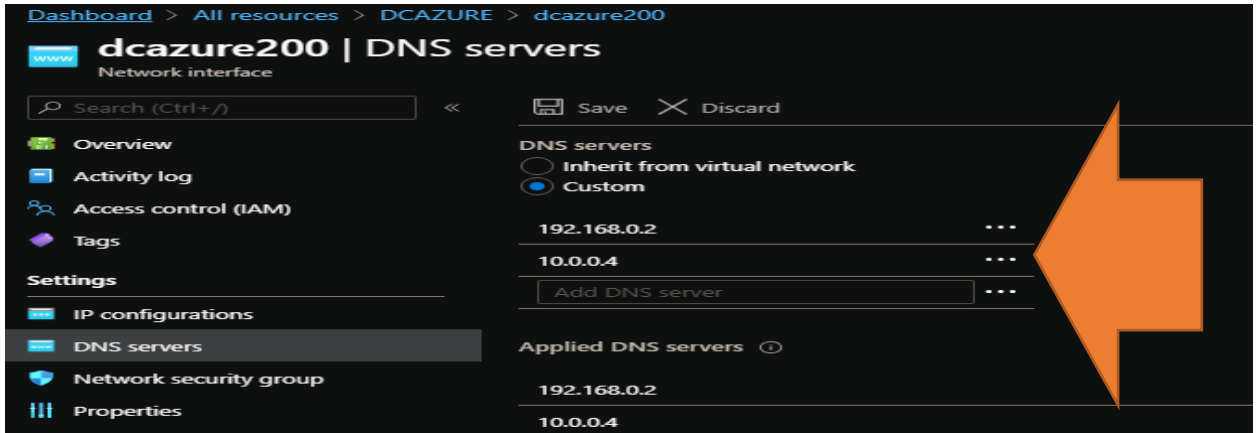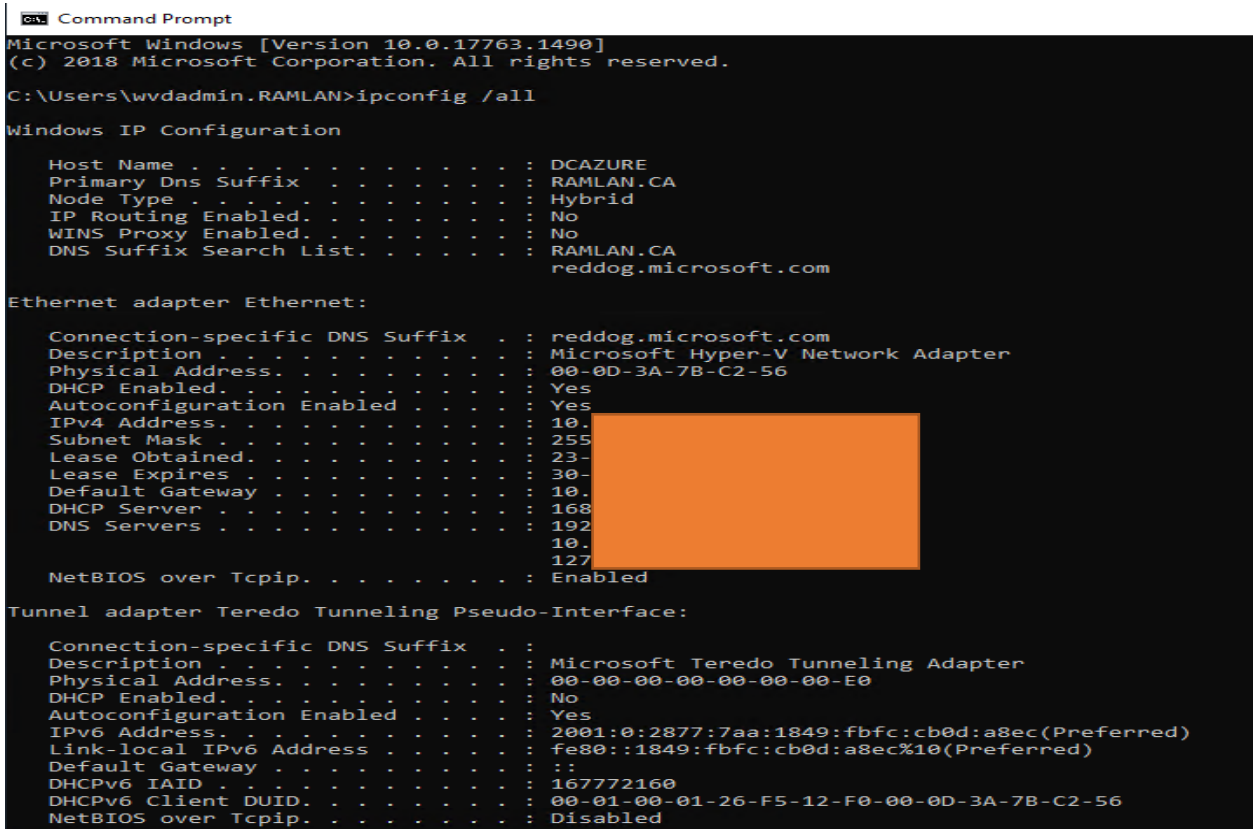

This is the subnet in Azure fyi..

3. DNS Servers – I have already configured this. Here is the screen shot

4. DCAZURE DNS Servers Configuration

5. IPCONFIG Details - DCAZURE

```
Command Prompt
Microsoft Windows [Version 10.0.17763.1490]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\wvdadmin.RAMLAN>ipconfig /all

Windows IP Configuration

    Host Name . . . . . . . . . . . . : DCAZURE
    Primary Dns Suffix  . . . . . . . : RAMLAN.CA
    Node Type . . . . . . . . . . . . : Hybrid
    IP Routing Enabled. . . . . . . . : No
    WINS Proxy Enabled. . . . . . . . : No
    DNS Suffix Search List. . . . . . : RAMLAN.CA
                                        reddog.microsoft.com

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : reddog.microsoft.com
    Description . . . . . . . . . . . : Microsoft Hyper-V Network Adapter
    Physical Address. . . . . . . . . : 00-0D-3A-7B-C2-56
    DHCP Enabled. . . . . . . . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    IPv4 Address. . . . . . . . . . . : 10.
    Subnet Mask . . . . . . . . . . . : 255
    Lease Obtained. . . . . . . . . . : 23-
    Lease Expires . . . . . . . . . . : 30-
    Default Gateway . . . . . . . . . : 10.
    DHCP Server . . . . . . . . . . . : 168
    DNS Servers . . . . . . . . . . . : 192
                                        10.
                                        127
    NetBIOS over Tcpip. . . . . . . . : Enabled

Tunnel adapter Teredo Tunneling Pseudo-Interface:

    Connection-specific DNS Suffix  . :
    Description . . . . . . . . . . . : Microsoft Teredo Tunneling Adapter
    Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
    DHCP Enabled. . . . . . . . . . . : No
    Autoconfiguration Enabled . . . . : Yes
    IPv6 Address. . . . . . . . . . . : 2001:0:2877:7aa:1849:fbfc:cb0d:a8ec(Preferred)
    Link-local IPv6 Address . . . . . : fe80::1849:fbfc:cb0d:a8ec%10(Preferred)
    Default Gateway . . . . . . . . . : ::
    DHCPv6 IAID . . . . . . . . . . . : 167772160
    DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-26-F5-12-F0-00-0D-3A-7B-C2-56
    NetBIOS over Tcpip. . . . . . . . : Disabled
```

6. IPCONFIG Details – RRAS SERVER


```
Administrator: C:\Windows\system32\cmd.exe

Microsoft Windows [Version 10.0.17763.1490]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\ADMINISTRATOR.RAMLAN>ipconfig /all

Windows IP Configuration

   Host Name . . . . . . . . . . . . : RRAS
   Primary Dns Suffix  . . . . . . . : RAMLAN.CA
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : Yes
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : RAMLAN.CA

Ethernet adapter Internal:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Hyper-V Network Adapter
   Physical Address. . . . . . . . . : 00-15-5D-75-FB-32
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   IPv4 Address. . . . . . . . . . . : 192.168.0.15(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.0.1
   DNS Servers . . . . . . . . . . . : 192.168.0.2
   NetBIOS over Tcpip. . . . . . . . : Enabled
```
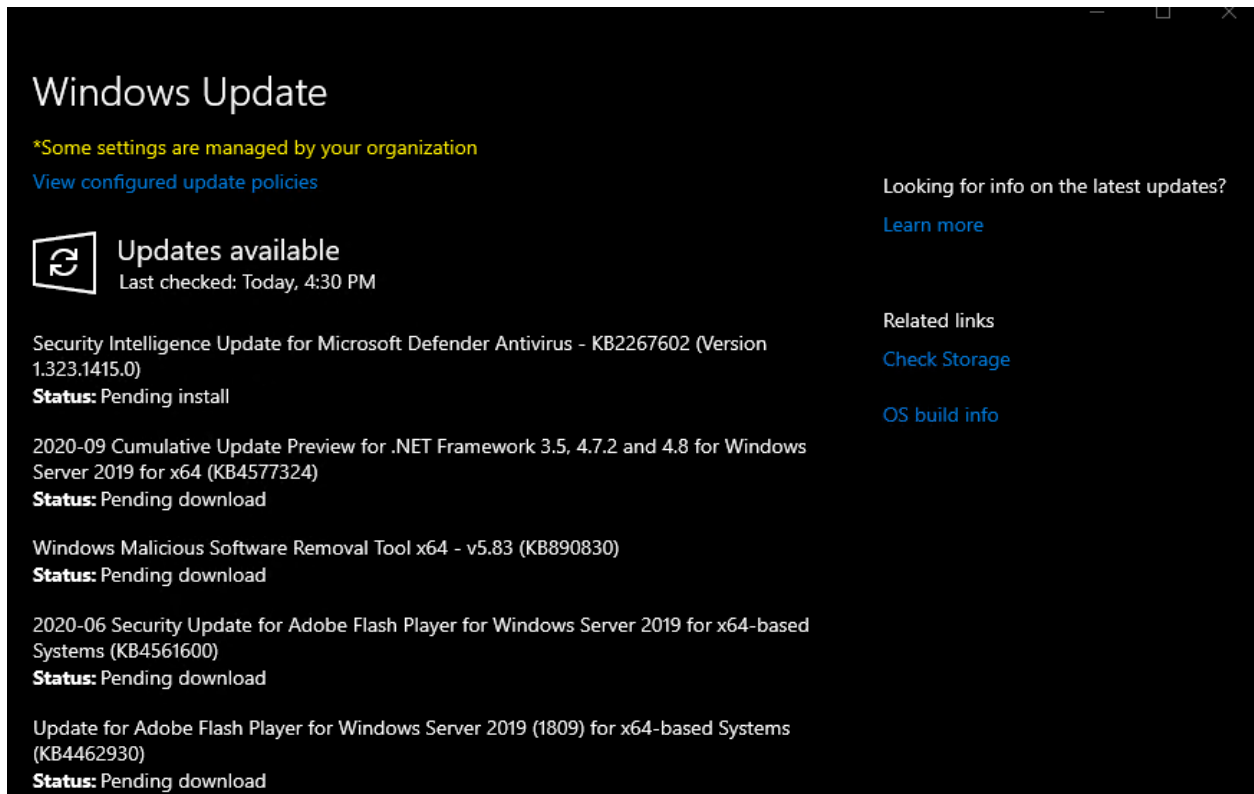
7. Perform any additional configuration

Perform any additional customizations to the OS (i.e., install updates, set correct Time Zone, launch Computer Management > Storage > Disk Management and add the available disk as "E:"
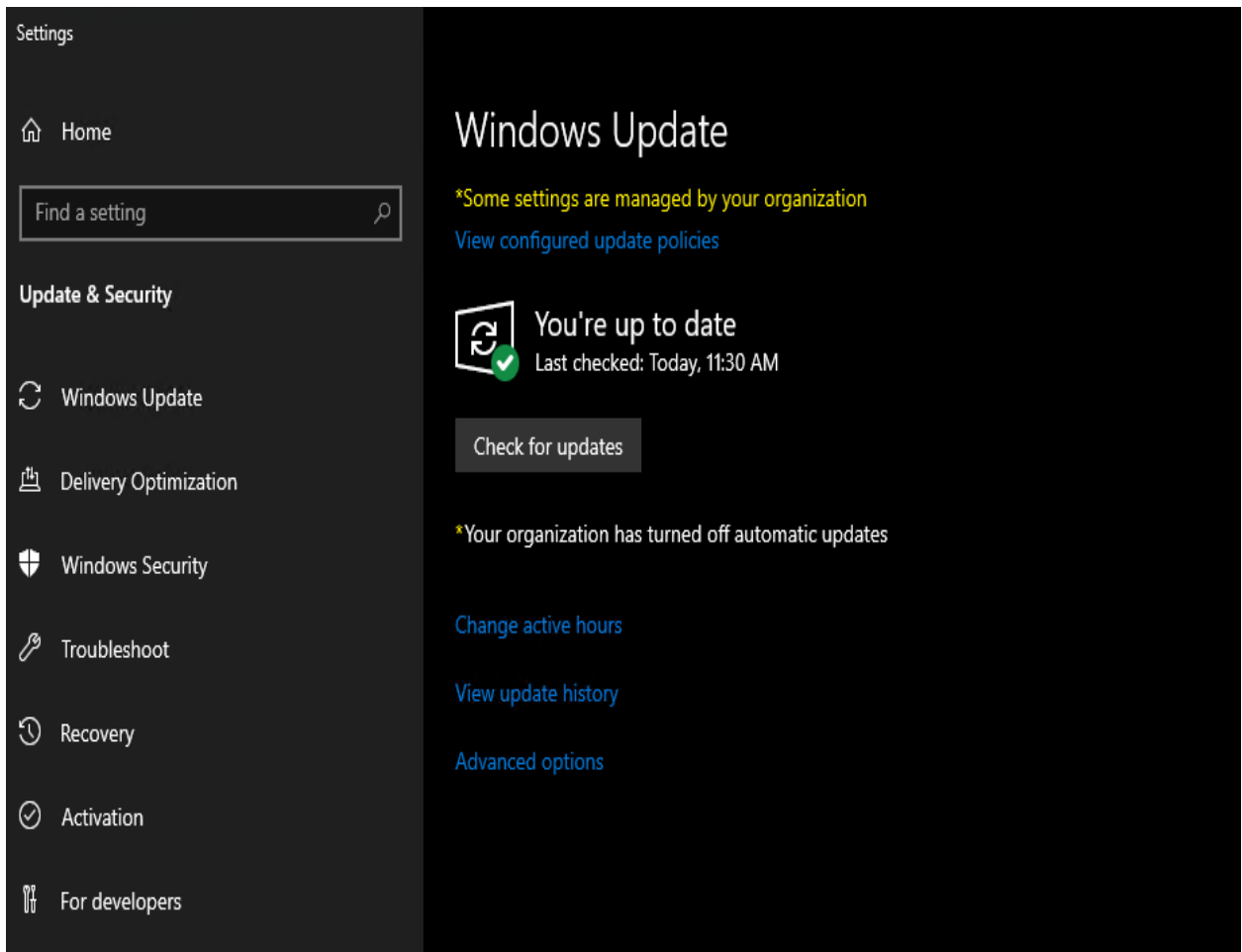
Installing the updates

Windows Update

*Some settings are managed by your organization

View configured update policies

Updates available
Last checked: Today, 4:30 PM

Security Intelligence Update for Microsoft Defender Antivirus - KB2267602 (Version 1.323.1415.0)
Status: Pending install

2020-09 Cumulative Update Preview for .NET Framework 3.5, 4.7.2 and 4.8 for Windows Server 2019 for x64 (KB4577324)
Status: Pending download

Windows Malicious Software Removal Tool x64 - v5.83 (KB890830)
Status: Pending download

2020-06 Security Update for Adobe Flash Player for Windows Server 2019 for x64-based Systems (KB4561600)
Status: Pending download

Update for Adobe Flash Player for Windows Server 2019 (1809) for x64-based Systems (KB4462930)
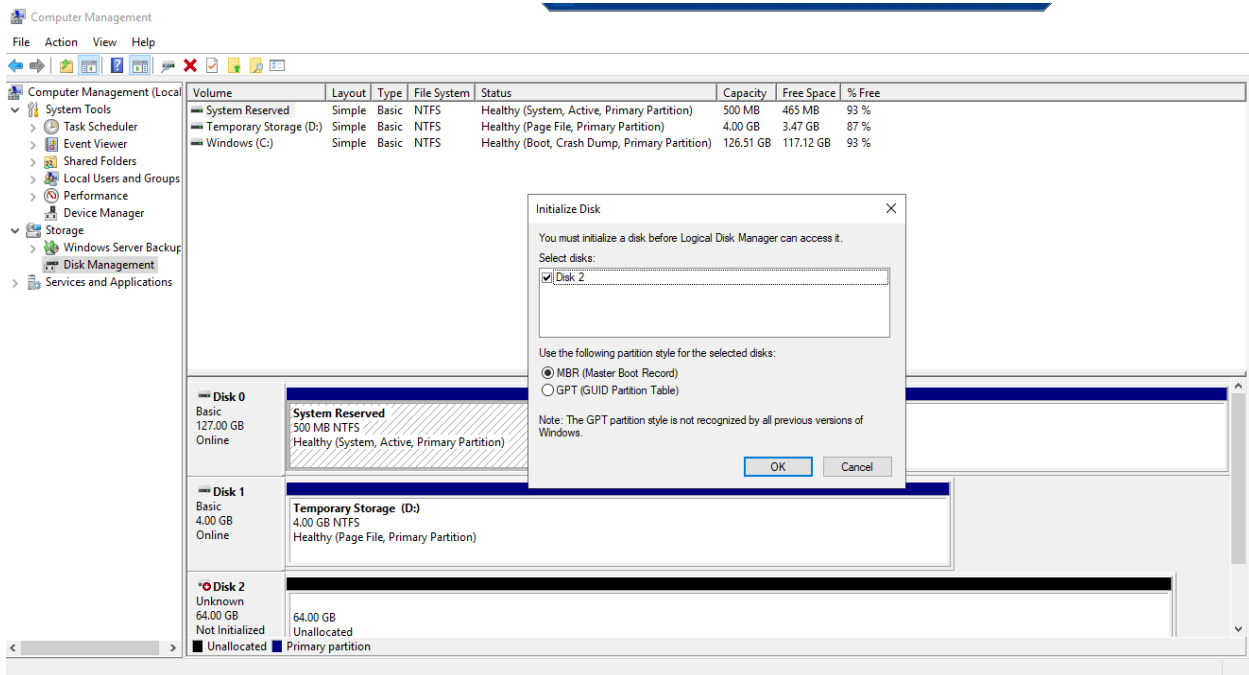Status: Pending download

Looking for info on the latest updates?

Learn more

Related links

Check Storage

OS build info

All updates done…

Open Computer Management and complete below task For Disk 2

New Simple Volume Wizard   ✕

Welcome to the New Simple Volume Wizard

This wizard helps you create a simple volume on a disk.

A simple volume can only be on a single disk.

To continue, click Next.

[< Back] [Next >] [Cancel]

New Simple Volume Wizard   ⟩

Specify Volume Size
Choose a volume size that is between the maximum and minimum sizes.

Maximum disk space in MB: 65533

Minimum disk space in MB: 8

Simple volume size in MB: 65533 [▲▼]

[< Back] [Next >] [Cancel]

New Simple Volume Wizard   ⟩

Assign Drive Letter or Path
For easier access, you can assign a drive letter or drive path to your partition.

◉ Assign the following drive letter: E ⌄

○ Mount in the following empty NTFS folder:
  [   ] [Browse...]

○ Do not assign a drive letter or drive path

[< Back] [Next >] [Cancel]

New Simple Volume Wizard

Format Partition
To store data on this partition, you must format it first.

Choose whether you want to format this volume, and if so, what settings you want to use.

○ Do not format this volume

● Format this volume with the following settings:

File system:	NTFS
Allocation unit size:	Default
Volume label:	New Volume

☑ Perform a quick format

☐ Enable file and folder compression

[< Back] [Next >] [Cancel]

Computer Management

File Action View Help

Volume	Layout	Type	File System	Status	Capacity	Free Space	% Free
AZUREDISK (E:)	Simple	Basic	NTFS	Healthy (Primary Partition)	64.00 GB	63.90 GB	100 %
System Reserved	Simple	Basic	NTFS	Healthy (System, Active, Primary Partition)	500 MB	465 MB	93 %
Temporary Storage (D:)	Simple	Basic	NTFS	Healthy (Page File, Primary Partition)	4.00 GB	3.47 GB	87 %
Windows (C:)	Simple	Basic	NTFS	Healthy (Boot, Crash Dump, Primary Partition)	126.51 GB	117.12 GB	93 %

Computer Management (Local
- System Tools
  - Task Scheduler
  - Event Viewer
  - Shared Folders
  - Local Users and Groups
  - Performance
  - Device Manager
- Storage
  - Windows Server Backup
  - Disk Management
- Services and Applications

Disk 0
Basic
127.00 GB
Online

System Reserved
500 MB NTFS
Healthy (System, Active, Primary Partition)

Windows (C:)
126.51 GB NTFS
Healthy (Boot, Crash Dump, Primary Partition)

Disk 1
Basic
4.00 GB
Online

Temporary Storage (D:)
4.00 GB NTFS
Healthy (Page File, Primary Partition)

Disk 2
Basic
64.00 GB
Online

AZUREDISK (E:)
64.00 GB NTFS
Healthy (Primary Partition)

8. ADDS Role – Install the role on DCAZURE in the Cloud. Login to Azure Portal & open RDP session

Dashboard >

Virtual machines
RAMLAN INC

+ Add ∨   🕐 Reservations ∨   ☰ Edit columns   ↻ Refresh   ⇄ Try preview | ⊘ Assign tags   ▷ Start

Subscriptions: Pay-As-You-Go

Filter by name...	All resource groups ∨	All types

1 of 1 items selected

☑	Name ↑↓	Type ↑↓	Status	Resource group ↑↓
☑	🖥 DCAZURE	Virtual machine	Stopped (deallocated)	LabVM

— ☐ ✕

| 🚩 | Manage | Tools | View | Help |

Add Roles and Features
Remove Roles and Features

Add Servers
Create Server Group

Server Manager Properties

Add Roles and Features Wizard

— ☐ ✕

Select destination server

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

Select a server or a virtual hard disk on which to install roles and features.

◉ Select a server from the server pool
◯ Select a virtual hard disk

Server Pool

Filter: [   ]

Name	IP Address	Operating System
DCAZURE	10.0.0.4	Microsoft Windows Server 2019 Datacenter

1 Computer(s) found

This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.

[< Previous] [Next >] [Install] [Cancel]

Add Roles and Features Wizard

— ☐ ✕

Select server roles

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

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

Roles

- ☐ Active Directory Certificate Services
- ☑ 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
- ☐ Network Controller
- ☐ Network Policy and Access Services
- ☐ Print and Document Services
- ☐ Remote Access
- ☐ Remote Desktop Services
- ☐ Volume Activation Services
- ☐ Web Server (IIS)
- ☐ Windows Deployment Services

Description

Active Directory Domain Services (AD DS) stores information about objects on the network and makes this information available to users and network administrators. AD DS uses domain controllers to give network users access to permitted resources anywhere on the network through a single logon process.

[< Previous] [Next >] [Install] [Cancel]

Add Roles and Features Wizard

Confirm installation selections

DESTINATION SERVER
DCAZURE

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

To install the following roles, role services, or features on selected server, click Install.

☐ Restart the destination server automatically if required

Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.

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

Export configuration settings
Specify an alternate source path

[< Previous] [Next >] [Install] [Cancel]

Add Roles and Features Wizard

Installation progress

DESTINATION SERVER
DCAZURE

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

View installation progress

ℹ Feature installation

Configuration required. Installation succeeded on DCAZURE.

Active Directory Domain Services
    Additional steps are required to make this machine a domain controller.
    Promote this server to a domain controller
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

You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details.

Export configuration settings

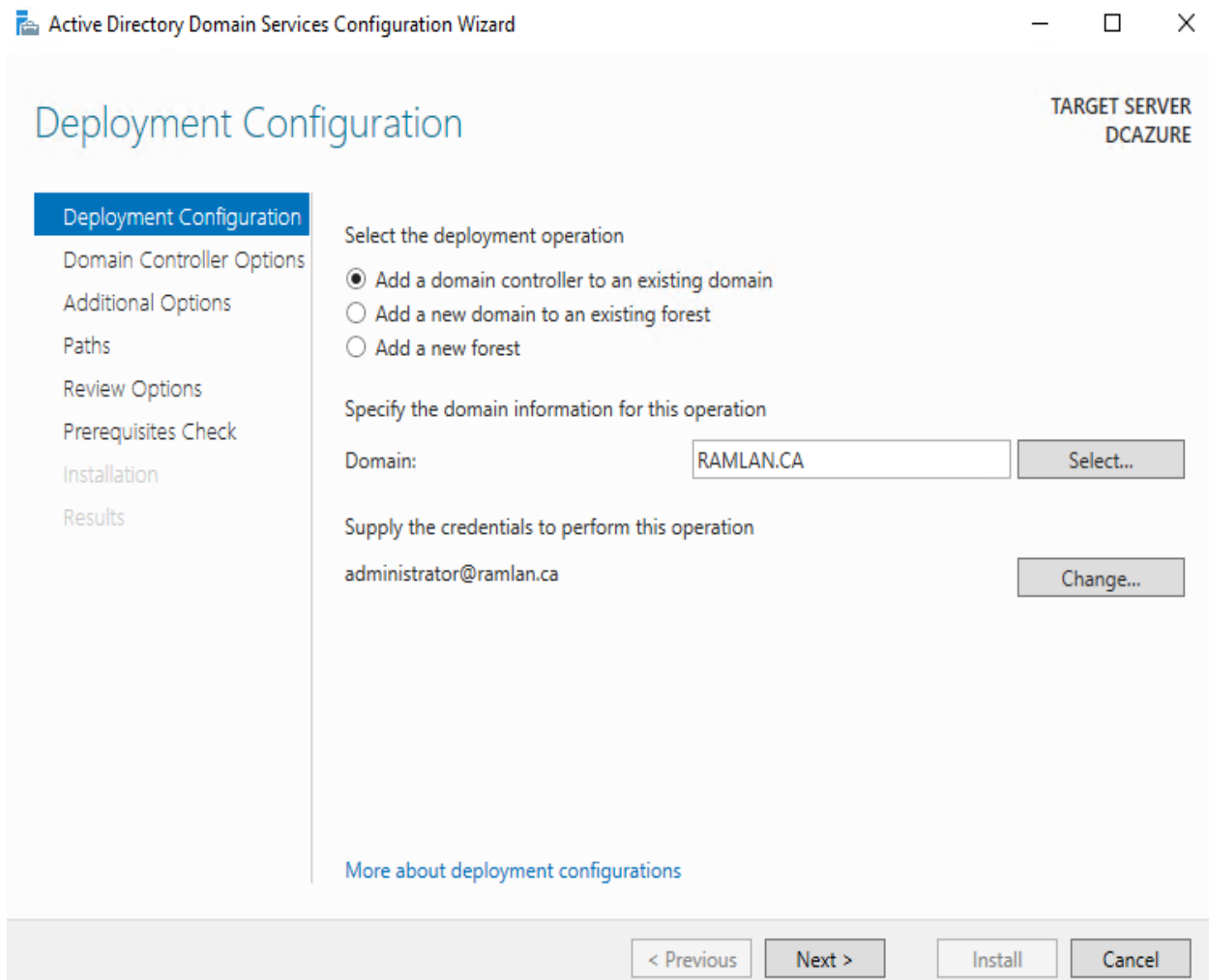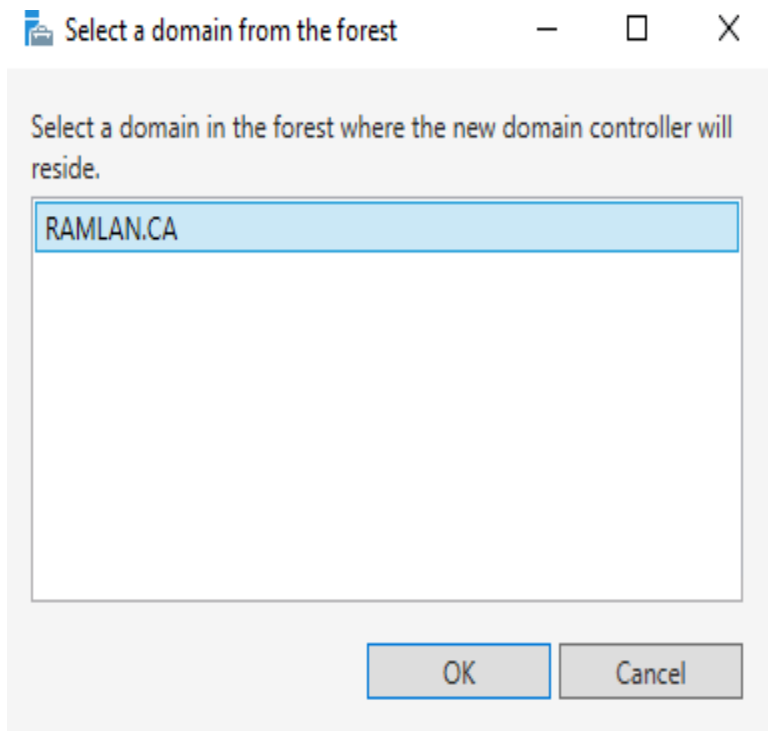[< Previous] [Next >] [Close] [Cancel]

⚠ Post-deployment Configura...

Configuration required for Active Directory Domain Services at DCAZURE

Promote this server to a domain controller

Task Details

Select a domain from the forest — □ ✕

Select a domain in the forest where the new domain controller will reside.

RAMLAN.CA

OK   Cancel

Active Directory Domain Services Configuration Wizard — □ ✕

Deployment Configuration

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

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

Domain: RAMLAN.CA   Select...

Supply the credentials to perform this operation

administrator@ramlan.ca   Change...

More about deployment configurations

< Previous   Next >   Install   Cancel

Active Directory Domain Services Configuration Wizard

Domain Controller Options

Deployment Configuration
Domain Controller Options
DNS Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results

Specify domain controller capabilities and site information

☑ Domain Name System (DNS) server
☑ Global Catalog (GC)
☐ Read only domain controller (RODC)

Site name: [Azure ▾]

Type the Directory Services Restore Mode (DSRM) password

Password: [••••••••]

Confirm password: [••••••••]

More about domain controller options

[< Previous] [Next >] [Install] [Cancel]

Active Directory Domain Services Configuration Wizard

DNS Options

⚠ A delegation for this DNS server cannot be created because the authoritative parent zone cannot be found... Show more ✕

Deployment Configuration
Domain Controller Options
DNS Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results

Specify DNS delegation options

☐ Update DNS delegation

More about DNS delegation

[< Previous] [Next >] [Install] [Cancel]

Active Directory Domain Services Configuration Wizard

Additional Options

TARGET SERVER
DCAZURE

Deployment Configuration
Domain Controller Options
    DNS Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results

Specify Install From Media (IFM) Options

☐ Install from media

Specify additional replication options

Replicate from: | DC.RAMLAN.CA   ✕ |

More about additional options

< Previous | Next > | Install | Cancel

Change the path to E Drive

Active Directory Domain Services Configuration Wizard

Paths

TARGET SERVER
DCAZURE

Deployment Configuration
Domain Controller Options
    DNS Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results

Specify the location of the AD DS database, log files, and SYSVOL

Database folder: | E:\windows\NTDS | ... |

Log files folder: | E:\windows\NTDS | ... |

SYSVOL folder: | E:\windows\SYSVOL | ... |

More about Active Directory paths

< Previous | Next > | Install | Cancel

Active Directory Domain Services Configuration Wizard

Review Options

- Deployment Configuration
- Domain Controller Options
  - DNS Options
- Additional Options
- Paths
- **Review Options**
- Prerequisites Check
- Installation
- Results

Review your selections:

Configure this server as an additional Active Directory domain controller for the domain "RAMLAN.CA".

Site Name: Azure

Additional Options:

Read-only domain controller: No

Global catalog: Yes

DNS Server: Yes

Update DNS Delegation: No

Source DC: DC.RAMLAN.CA

These settings can be exported to a Windows PowerShell script to automate additional installations

[View script]

More about installation options

[< Previous] [Next >] [Install] [Cancel]

Active Directory Domain Services Configuration Wizard

Prerequisites Check

✅ All prerequisite checks passed successfully. Click 'Install' to begin installation.   Show more   ✕

- Deployment Configuration
- Domain Controller Options
  - DNS Options
- Additional Options
- Paths
- Review Options
- **Prerequisites Check**
- Installation
- Results

Prerequisites need to be validated before Active Directory Domain Services is installed on this computer

Rerun prerequisites check

⌃ View results

⚠️ Windows Server 2019 domain controllers have a default for the security setting named "Allow cryptography algorithms compatible with Windows NT 4.0" that prevents weaker cryptography algorithms when establishing security channel sessions.

For more information about this setting, see Knowledge Base article 942564 (http://go.microsoft.com/fwlink/?LinkId=104751).

⚠️ This computer has at least one physical network adapter that does not have static IP address(es) assigned to its IP Properties. If both IPv4 and IPv6 are enabled for a network adapter, both IPv4 and IPv6 static IP addresses should be assigned to both IPv4 and IPv6 Properties of the physical network adapter. Such static IP address(es) assignment should be done to all the physical network adapters for reliable Domain Name System

⚠️ If you click Install, the server automatically reboots at the end of the promotion operation.
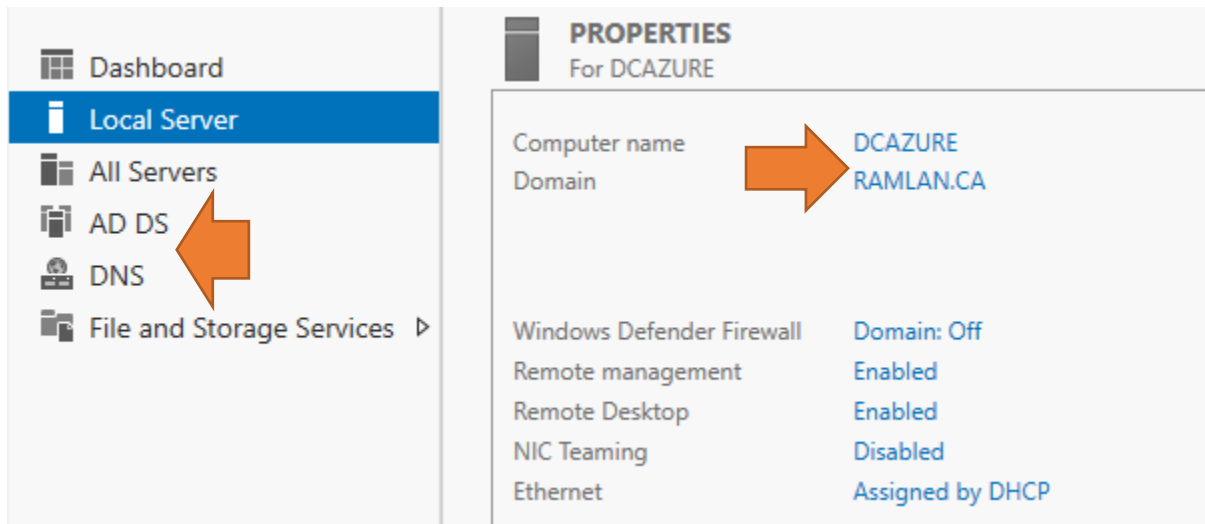
More about prerequisites

[< Previous] [Next >] [Install] [Cancel]

After the role is installed the server will restart.

We have a working DC in Azure for our domain **RAMLAN.CA**. With this we have completed installing DC in Azure.

In the next blog (Part 3), I will cover WVD deployment in cloud.

Thanks

Ram Lan
23rd Sep 2020