

# IT 236 Project Report Form

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Date:	11/12/2025
Project Phase	Implementing DNS Redundancy and Publishing Internal Web Services

## Section 1: Executive Summary

This phase of the NewVue Health Infrastructure Modernization Project focused on improving name resolution reliability and service accessibility within the newvue.local domain.

To achieve this, the DNS role was installed on NV-DC2 and configured as a secondary DNS server for redundancy. This ensures continued internal name resolution even if NV-DC1, the primary DNS server, becomes unavailable.

Additionally, a simple intranet website was deployed and hosted on NV-DC2 using Internet Information Services (IIS). DNS records were created for both the intranet (intranet.newvue.local) and Windows Admin Center (wac.newvue.local) to provide users and administrators with easy, name-based access to these internal resources.

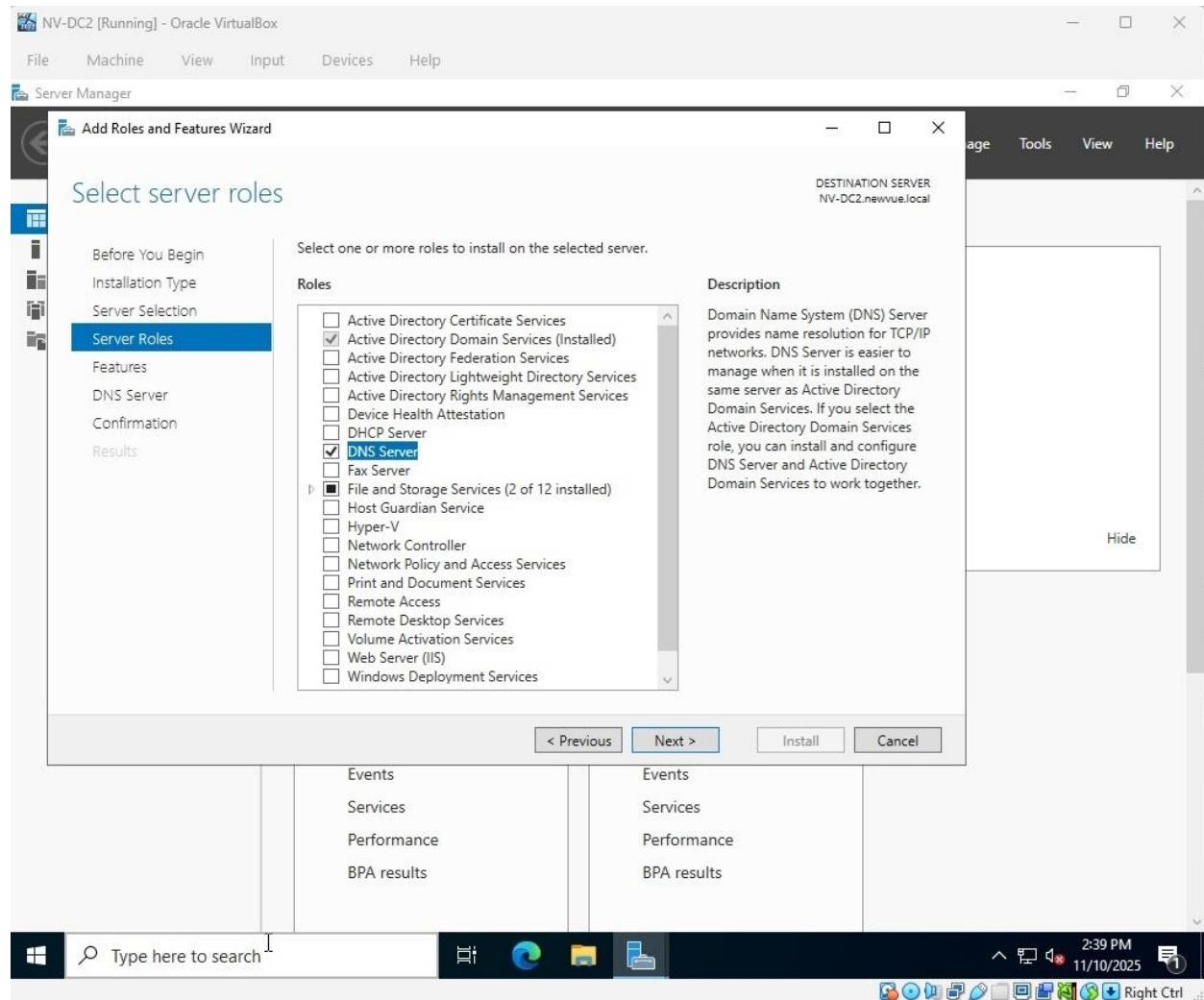
Together, these configurations enhanced service resiliency, DNS fault tolerance, and internal resource accessibility across the NewVue Health network environment.

## Section 2: Task-Configuring Secondary DNS on NV-DC2 (15 points)

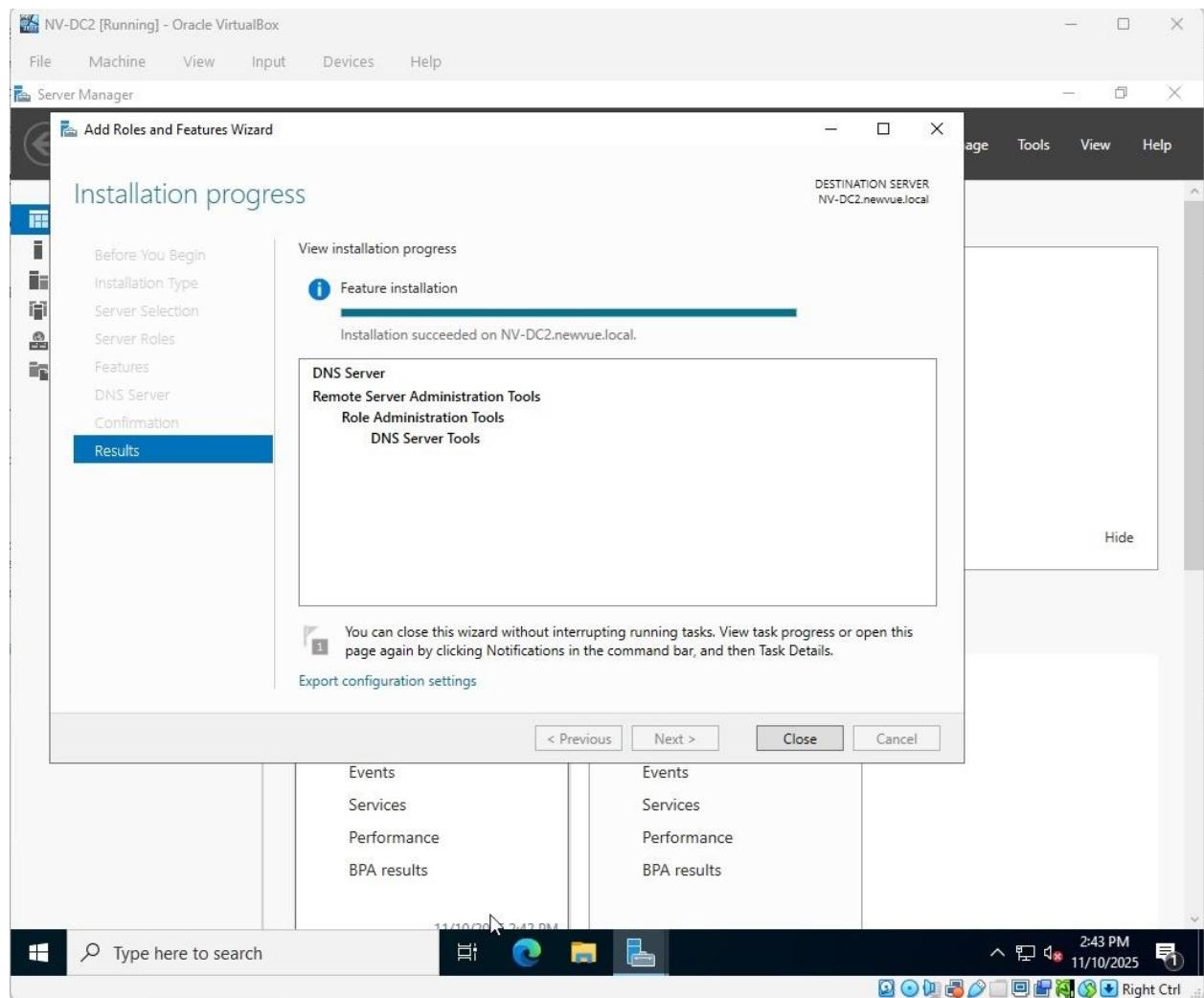
DNS Server role was installed on NV-DC2, followed by the creation of a **secondary zone** for newvue.local. The zone successfully replicated from NV-DC1, establishing redundancy for internal name resolution.

### Evidence:

- Evidence 1:** Screenshot showing DNS Server role selected before installation.



- **Evidence 2:** Screenshot showing installation completion summary.



- **Evidence 3:** Screenshot showing the replicated newvue.local zone on NV-DC2.

Note: Zone was transferred from NV-DC1 to NV-DC2 after multiple attempting of creating a secondary and primary zone in NV-DC1 and encountered an error

The screenshot shows the Windows DNS Manager interface running on a virtual machine named NV-DC2. The left pane displays a tree view of DNS zones under the 'NV-DC2' node, including 'Forward Lookup Zones' (containing '\_msdcs', '\_sites', '\_tcp', '\_udp', 'newvue.local', 'Reverse Lookup Zones', and 'Conditional Forwarders') and 'DomainDnsZones' (containing 'ForestDnsZones' and several host entries). The right pane is a table listing these records with columns for Name, Type, Data, and Timestamp. The 'newvue.local' zone is highlighted in the tree view. The taskbar at the bottom shows the search bar, Start button, and various pinned icons.

Name	Type	Data	Timestamp
(same as parent folder)	Start of Authority (SOA)	[106], nv-dc1.newvue.loca...	static
(same as parent folder)	Name Server (NS)	nv-dc1.newvue.local.	static
(same as parent folder)	Host (A)	10.0.2.15	static
(same as parent folder)	Host (A)	10.0.2.16	static
NV-CL1	Host (A)	10.0.2.18	static
nv-dc1	Host (A)	10.0.2.15	static
NV-DC2	Host (A)	10.0.2.16	static
NV-FS1	Host (A)	10.0.2.17	static

## Section 3: Task — Publishing DNS Records for Internal Web Services (20 points)

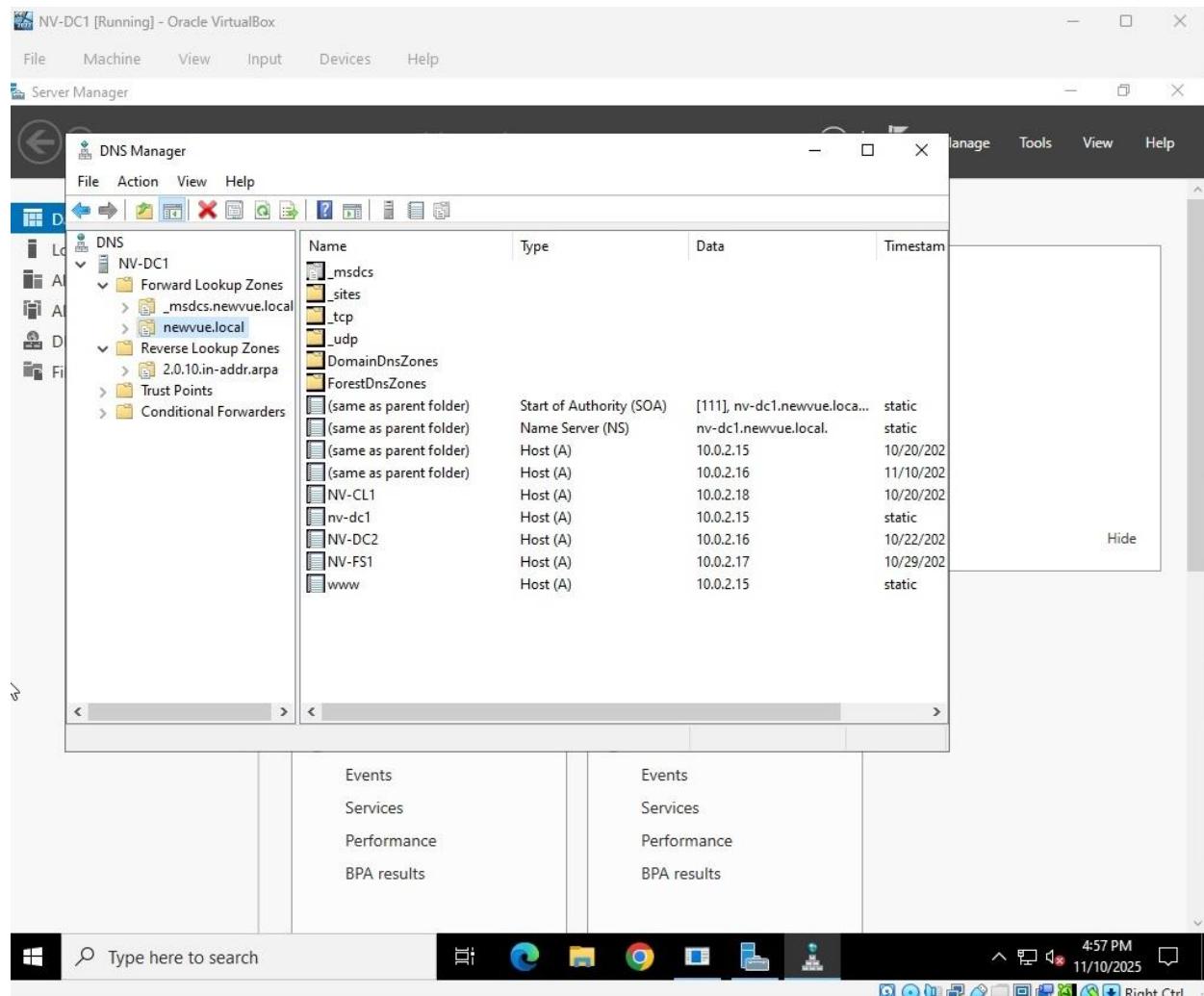
Custom A records were created on NV-DC1 for both the internal intranet (intranet.newvue.local) and Windows Admin Center (wac.newvue.local).

Verification confirmed successful name resolution across both domain controllers.

### Evidence:

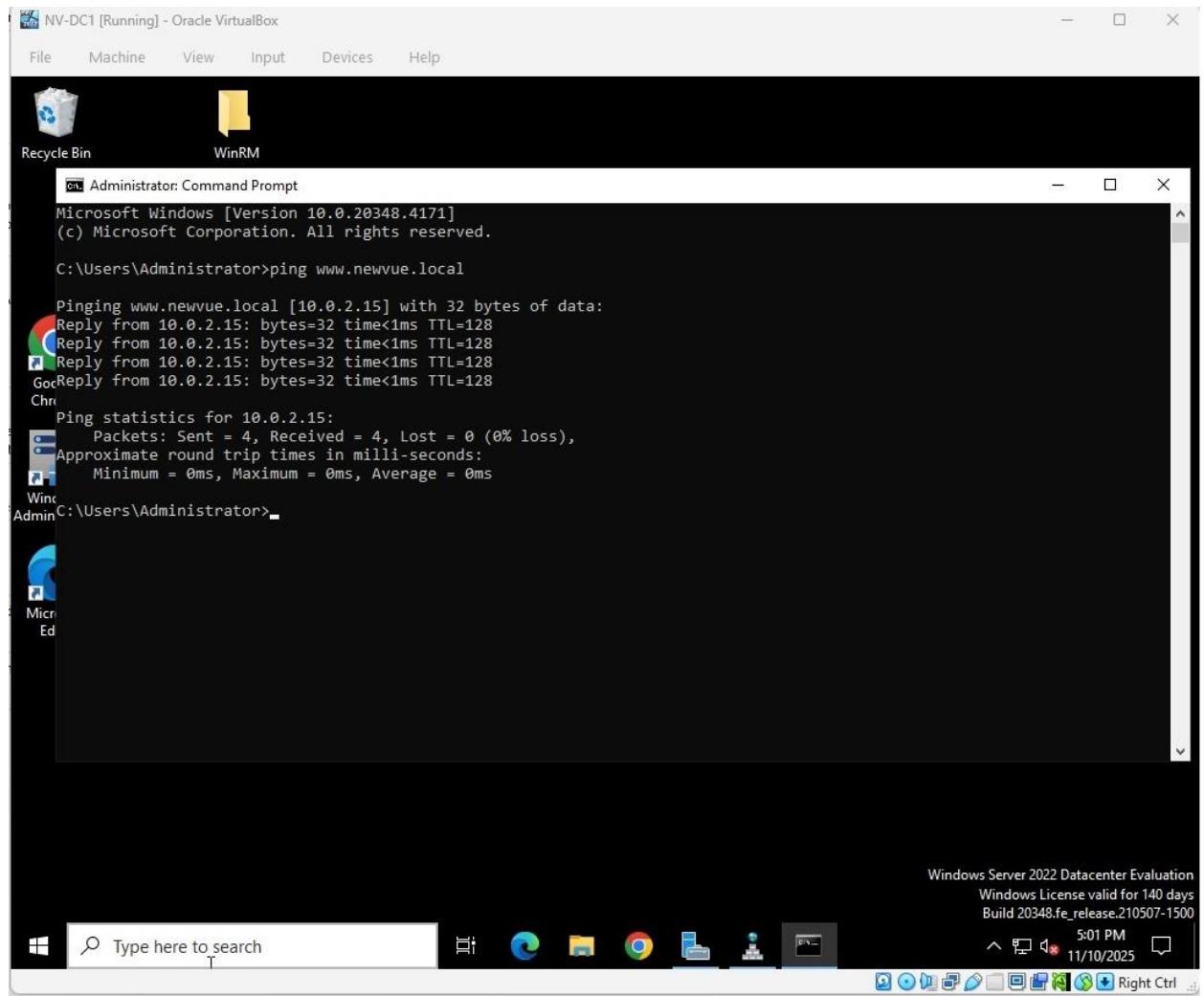
- Evidence 4:** Screenshot showing intranet A record.

**Note:** Instead of intranet, we did www



- **Evidence 5:** Screenshot showing wac A record. N/A
- **Evidence 6:** Screenshot of nslookup results for both hostnames.

**Note:** Ping [www.newvue.local](http://www.newvue.local)



```

NV-DC1 [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin WinRM
Administrator: Command Prompt
Microsoft Windows [Version 10.0.20348.4171]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping www.newvue.local

Pinging www.newvue.local [10.0.2.15] with 32 bytes of data:
Reply from 10.0.2.15: bytes=32 time<1ms TTL=128
Reply from 10.0.2.15: bytes=32 time<1ms TTL=128
Reply from 10.0.2.15: bytes=32 time<1ms TTL=128
GoReply from 10.0.2.15: bytes=32 time<1ms TTL=128
Chr
Ping statistics for 10.0.2.15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
Wind
Admin C:\Users\Administrator>

```

Windows Server 2022 Datacenter Evaluation  
Windows License valid for 140 days  
Build 20348.fe\_release.210507-1500

5:01 PM 11/10/2025 Right Ctrl

- **Evidence 7:** Screenshot showing access to both intranet and WAC pages via DNS names.

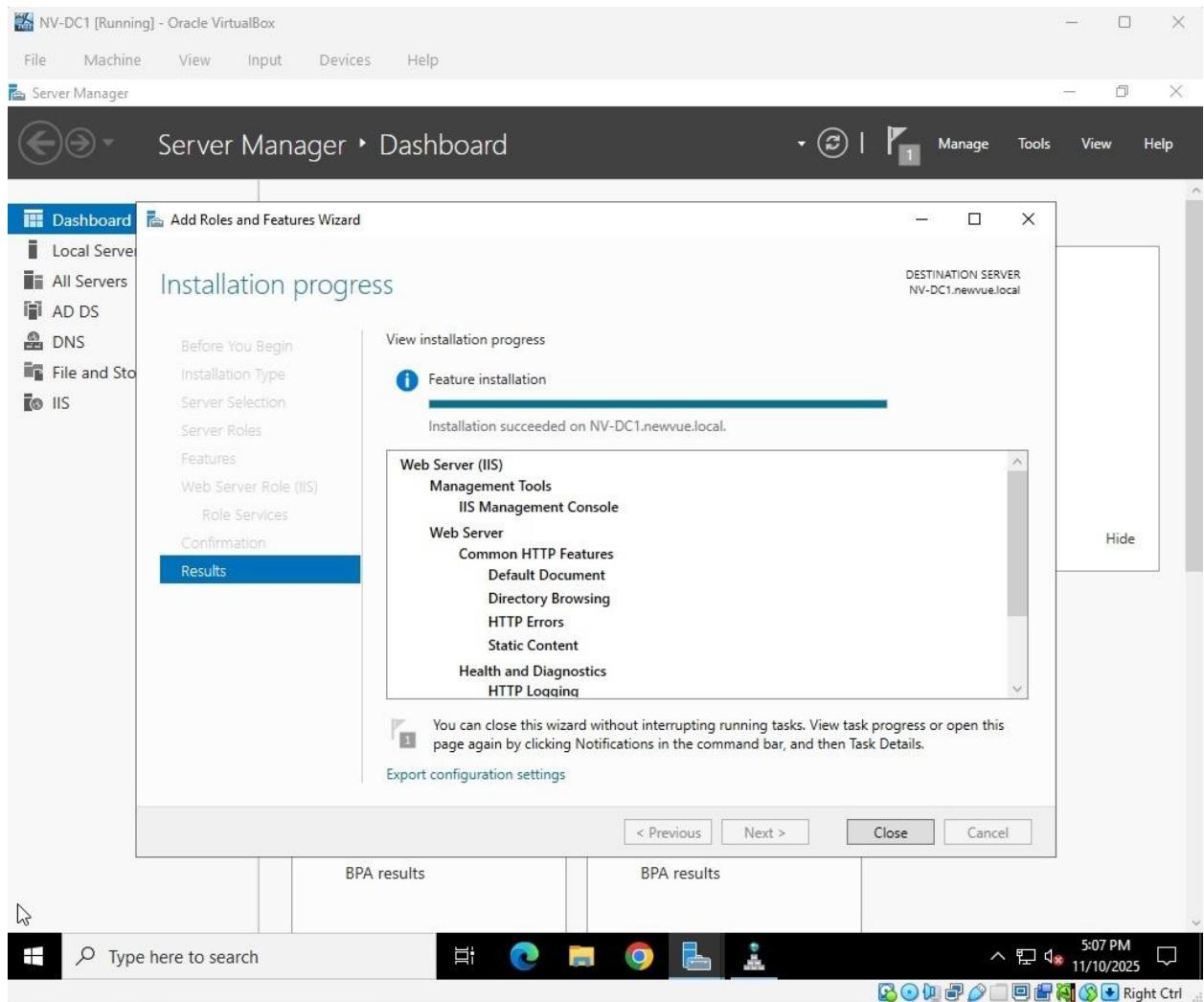
## Section 4: Task — Deploying and Hosting the Intranet Website (15 points)

IIS was installed on NV-DC2 to host the provided **NewVue Health Intranet**. The web files were extracted to C:\inetpub\wwwroot, and functionality was verified through both http://localhost and the DNS name http://intranet.newvue.local.

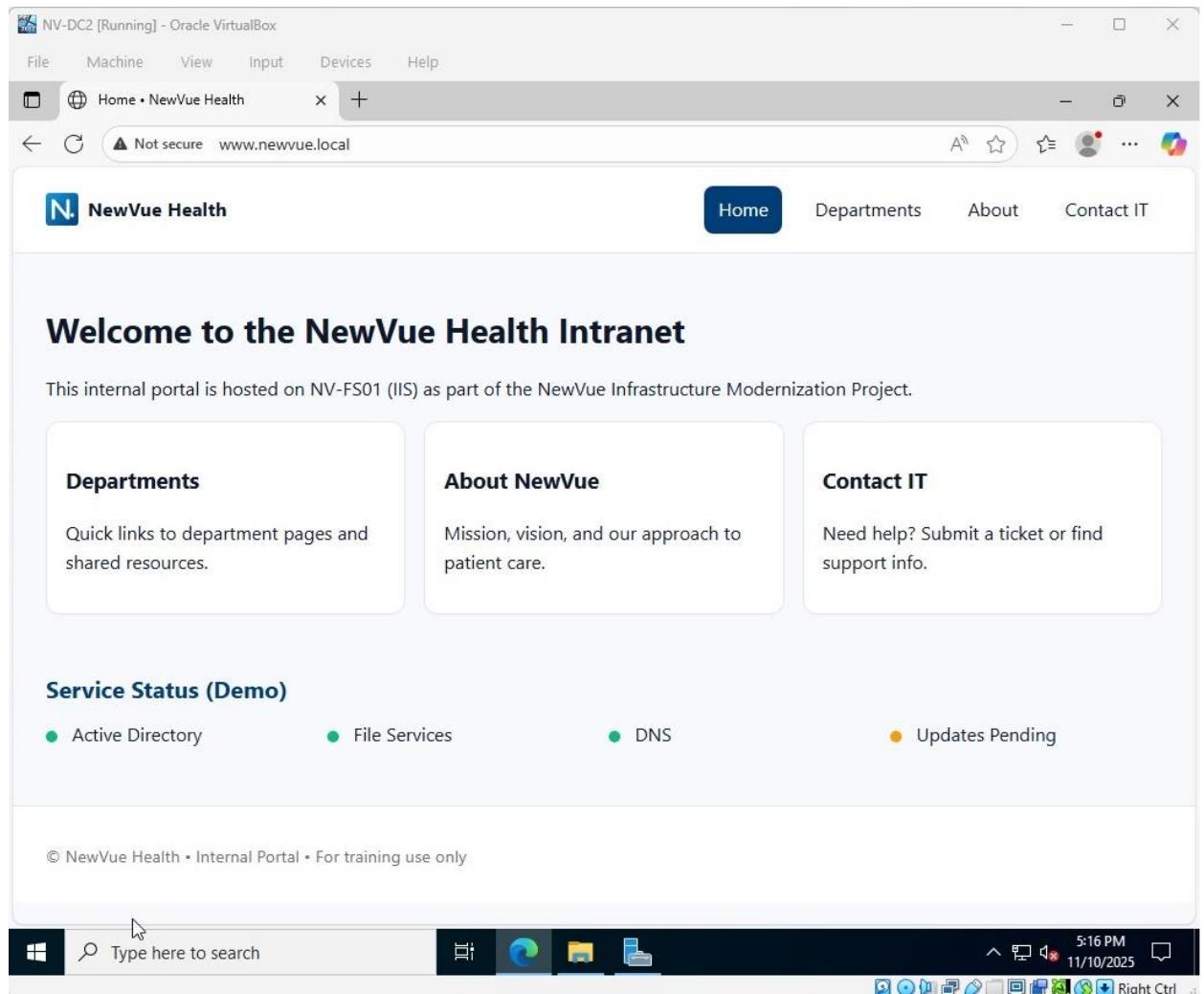
### Evidence:

- **Evidence 8:** Screenshot showing IIS installation completion summary.

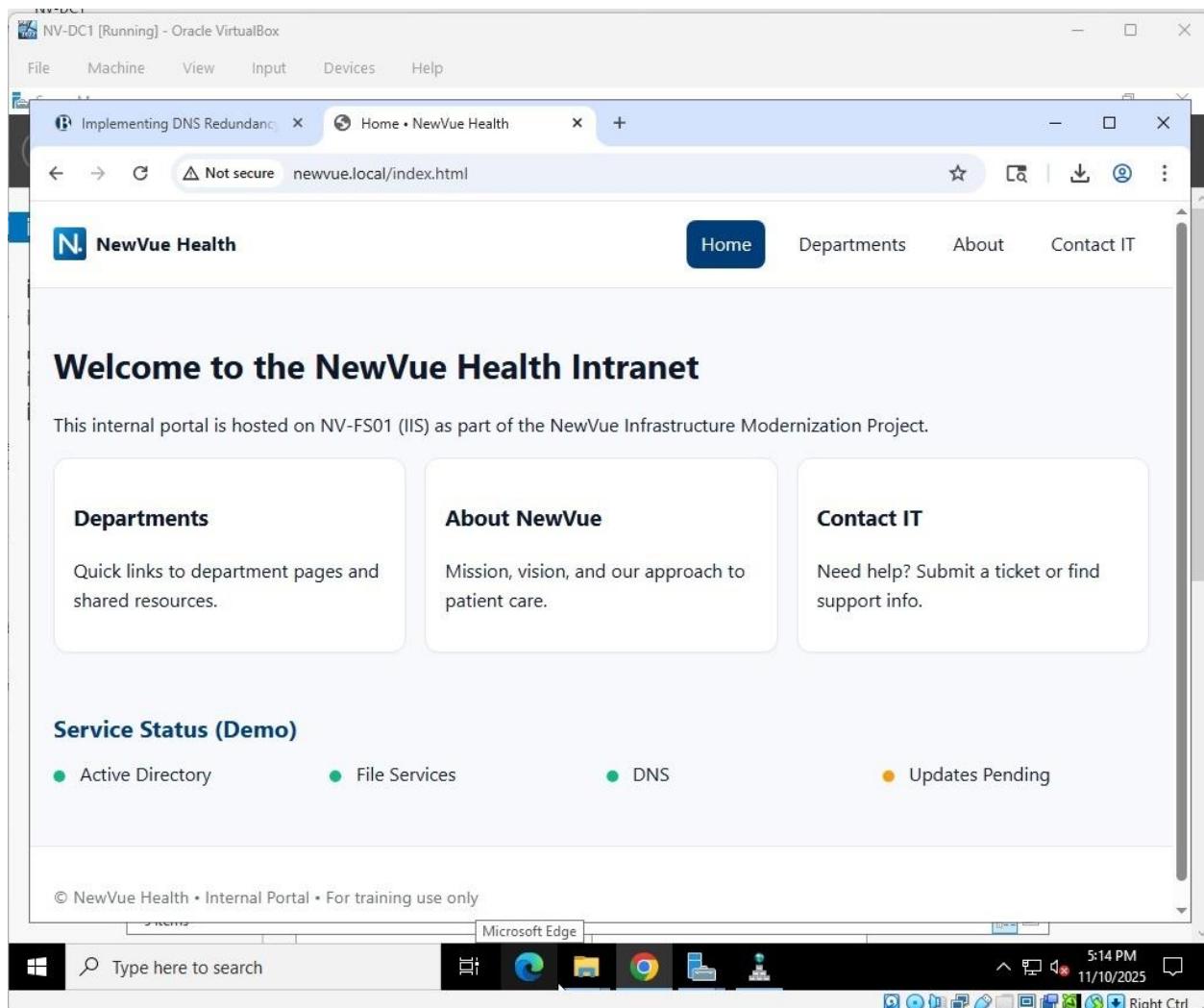
**Note:** This was done in NV-DC1



- **Evidence 9:** Screenshot of intranet homepage on NV-DC2 (via localhost).



- **Evidence 10:** Screenshot of intranet site accessed from NV-DC1 using DNS name.



## Section 5 :Task - Validating DNS Redundancy (10 points)

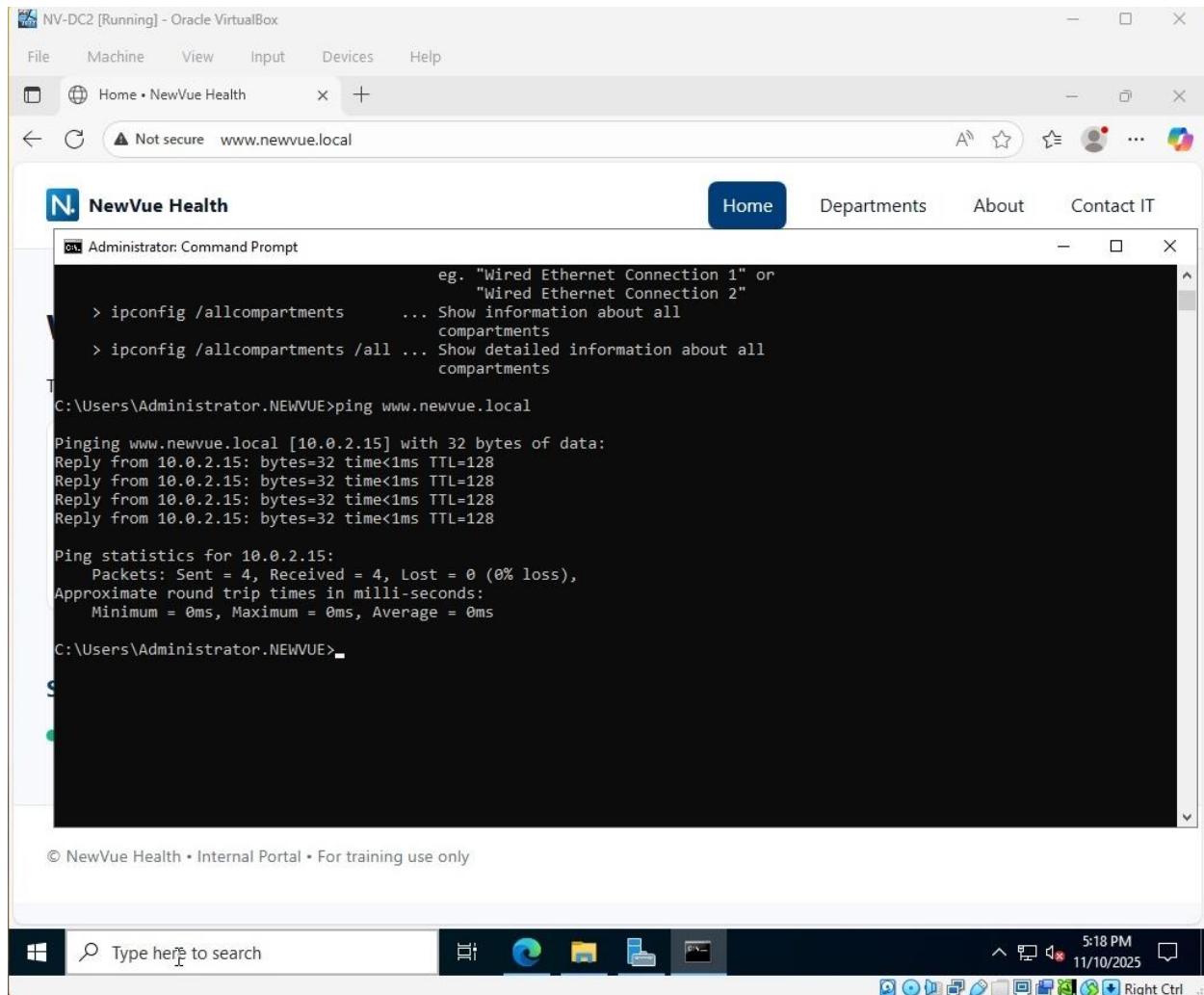
To test redundancy, NV-DC1 was temporarily taken offline. DNS name resolution tests confirmed that NV-DC2 continued resolving queries for both **intranet** and **WAC** hostnames.

### Evidence:

- **Evidence 11:** Screenshot of DNS Manager on NV-DC2 showing zone availability while NV-DC1 was offline.

Name	Type	Data	Timestamp
_msdcs	Start of Authority (SOA)	[114], nv-dc1.newvue.local.	static
_sites	Name Server (NS)	nv-dc1.newvue.local.	static
_tcp	Host (A)	10.0.2.15	static
_udp	Host (A)	10.0.2.16	static
DomainDnsZones	(same as parent folder)	Host (A)	10.0.2.18
ForestDnsZones	(same as parent folder)	Host (A)	10.0.2.15
newvue.local	Start of Authority (SOA)	[114], nv-dc1.newvue.local...	static
_msdcs	Name Server (NS)	nv-dc1.newvue.local.	static
_sites	Host (A)	10.0.2.15	static
_tcp	Host (A)	10.0.2.16	static
_udp	Host (A)	10.0.2.17	static
DomainDnsZones	(same as parent folder)	Host (A)	10.0.2.15
ForestDnsZones	(same as parent folder)	Host (A)	10.0.2.16
Reverse Lookup Zones	(same as parent folder)	Host (A)	10.0.2.17
Conditional Forwarders	(same as parent folder)	Host (A)	10.0.2.15
NV-CL1	Host (A)	10.0.2.18	static
nv-dc1	Host (A)	10.0.2.15	static
NV-DC2	Host (A)	10.0.2.16	static
NV-FS1	Host (A)	10.0.2.17	static
www	Host (A)	10.0.2.15	static

- **Evidence 12:** Screenshot of nslookup results from NV-DC2 confirming successful resolution during NV-DC1 downtime.



The screenshot shows a Windows desktop environment within Oracle VirtualBox. The taskbar at the bottom includes icons for File Explorer, Edge, File Manager, Task View, and others. The system tray shows the date and time as 11/10/2025 at 5:18 PM.

The main window is a web browser titled "Home • NewVue Health". The address bar shows "Not secure www.newvue.local". The page content displays the "NewVue Health" logo and a navigation menu with "Home", "Departments", "About", and "Contact IT". Below the menu is a command prompt window titled "Administrator: Command Prompt". The command prompt output shows the following:

```

Administrator: Command Prompt
eg. "Wired Ethernet Connection 1" or
    "Wired Ethernet Connection 2"
> ipconfig /allcompartments      ... Show information about all
                                 compartments
> ipconfig /allcompartments /all ... Show detailed information about all
                                 compartments
T
C:\Users\Administrator.NEWWUE>ping www.newvue.local

Pinging www.newvue.local [10.0.2.15] with 32 bytes of data:
Reply from 10.0.2.15: bytes=32 time<1ms TTL=128

Ping statistics for 10.0.2.15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Administrator.NEWWUE>

```

At the bottom of the browser window, there is a footer note: "© NewVue Health • Internal Portal • For training use only".