Beyond the Report:

A Comparative Analysis of Windows Server® 2025 with OEM Licensing Versus Volume Licensing

Summary

This methodology outlines the test configurations and procedures Prowess Consulting used to compare the Windows Server® 2025 installation in a Dell™ PowerEdge™ R770 server for two different licensing options: factory-installed OEM licensing and manually installed volume licensing.

Prowess Consulting engineers tested both installations in our onsite lab, measuring the number of clicks and length of time needed to deploy the PowerEdge R770 server with Windows Server 2025 installed and hotpatching enabled.

For the volume license, we performed the six actions listed below. For the OEM license, installation involved only steps four, five, and six:

1. Access BIOS and Integrated Dell™ Remote Access Controller (iDRAC) to confirm initial network settings.
2. Use iDRAC to configure a RAID 1 volume for the operating system (OS) installation.
3. Install Windows Server 2025 Datacenter Evaluation via virtually connected media.
4. Perform a final reboot to complete the Windows Server installation and configure Windows Server passwords.
5. First log in to the Windows Server environment.
6. Connect Windows Server to Microsoft Azure® Arc and enable hotpatching.

Hypothesis and Results

When considering what type of Windows Server 2025 license to purchase, we recommend that customers include the IT time and labor needed to deploy the server. Our hypothesis is that purchasing a preinstalled Windows Server 2025 OEM license from a server hardware partner such as Dell Technologies rewards customers with a much higher business value compared to purchasing a volume license that requires manual installation.

Our installation testing revealed that, compared to the volume license with manual installation, the Windows Server 2025 OEM license takes up to 62% less time and 71 fewer steps to install.[1]

Test Configuration and Installation Steps

Table 1 shows the system configurations used for testing the Windows Server 2025 installation.

Table 1 | Storage platform configuration

Component	Test System
General	
Vendor and Model	Dell™ PowerEdge™ R770
OEM Part Number	FD8WT64
BIOS Name and Version	Dell 1.2.6
Non-default BIOS Settings	Not applicable (N/A)
Operating System (OS) Name and Version	Windows Server® 2025 24H2
Date of Last OS Update	N/A
Patches Applied	N/A
Energy Efficient Policy	Balanced Performance
Processor	
Number of Processors	2
Vendor and Model	Intel® Xeon® 6760P
Processor Core/Thread Count	64 cores/128 threads
Core Base Frequency	2.20 GHz
Stepping	1
Memory	
Total System Memory	2,048 GB
Number of Modules	32
OEM Part Number	Dell N66RP
Capacity	64 GB
Technology	DDR5 SDRAM
Speed	6,400 megatransfers per second (MT/s)

Component	Test System
Storage Controller	
Controller Type	Dell™ Boot Optimized Storage Solution-N1 (BOSS-N1)
Cache Size	0 GB
Firmware Version	2.2.13.2033
RAID Type	RAID 1
Local Storage	
OEM Part Number	Dell NVM Express® (NVMe®) ISE PE9010 Gen4 RI M.2
Number of Drives	2
Drive Capacity	480 TB
Data Transfer Rate	Negotiated 8 gigatransfers per second (GT/s)
Network Adapter	
Vendor and Technology	Realtek® USB gigabit Ethernet (GbE)
Number of Ports	1 Ethernet
Driver Version	11.4.211.2022
Cooling Fans	
OEM Part Number	ASSY,FAN,60X38,SIROCCO,2U,17G
Number of Fans	6
Power Supplies	
Vendor and Model	Dell™ MHS 1500 Titanium
Number of Power Supplies	2
Wattage	1,500 W per power supply

Windows Server 2025 Manual Installation

This section covers the steps used to convert the PowerEdge R770 server from an unconfigured hardware state to a completed installation of Windows Server 2025 with hotpatching enabled.

Hardware Configuration

iDRAC is used to configure the PowerEdge R770 server hardware prior to installing Windows Server 2025.

1. Power on the system, and then wait for the boot menu to appear at the top-left of the screen.
2. Press **F2** for system setup, and then wait for the **System Setup** menu to appear.
3. Click **iDRAC settings**, and then wait for the **iDRAC settings** menu to appear.
4. Click **System summary**, scroll down to **Current iDRAC Network Settings**, and then find and copy the current iDRAC IP address.
5. Click **Back**.
6. Click **Network**.
7. Click the network adapter.
8. Scroll down to **IPV4 Settings**, and then change the setting for **Use DHCP to obtain DNS server addresses** to **Enabled**.
9. Click **Back**.
10. Click **Back**.
11. Scroll down to **User settings** and select it.
12. Click into the **Password** field, and then press **Enter**.
13. Enter a new password, and then click **OK**.
14. Confirm the new password, and then click **OK**.
15. Click **OK**.
16. Click **Finish**, and then click **Yes** on the warning box that appears.
17. Click **Finish**, and then click **Yes** on the confirmation exit warning box that appears.
18. From a system on the same network, open a web browser and navigate to the iDRAC IP address.
19. Enter the username and password, and then click **Login**.
20. Click **Storage**.
21. Click **Virtual Disks**.
22. Click **Create Virtual Disk**.
23. Select **Basic Configuration**.
    a. Enter a disk name (optional).
    b. Select **RAID 1** from the **Layout** field.
24. Click **Add to Pending**.
25. Select **At Next Reboot**.
26. Click **OK**.
27. Click the **Dashboard** option from the top menu.
28. Click the **drop-down** arrow next to **Graceful Shutdown**.
29. Select **Reset System**.
30. Click **OK** to confirm.
31. Click **OK** to acknowledge successful reboot request.
32. Wait while the system boots into the lifecycle controller to configure the drive and reboots automatically.

Windows Server Installation

The following steps are used to manually install Windows Server 2025.

1. From the previously opened browser tab, go to the iDRAC home page, and then click onto the virtual console in the lower-right corner.
2. Click **Virtual Media**.
3. Click **Connect Virtual Media**.
4. Click **Choose File**.
5. In the resulting window, select the **Windows Server 2025** ISO, and then click **Open**.
6. Click **Map Device**.
7. Click **Close**.
8. Click the **Boot** button, and then select **Virtual ISO**.
9. Click **Power,** and then select **Warm reboot**.
10. Wait for boot, and when prompted, press any key to boot from CD or DVD.
11. Press **Enter** to select **Windows Setup**.
12. Wait while files load.
13. Confirm the language to install, in addition to the time and currency format, and then click **Next**.
14. Confirm **Keyboard** and input method selection, and then click **Next**.

15. Confirm that **Install Windows Server** is selected, and then select the **Agree everything will be deleted** box.
16. Click **Next**.
17. Select **Windows Server 2025 Datacenter (Desktop Experience)**, and then click **Next**.
18. Click **Accept** to agree to the license agreement.
19. Select the disk that Windows Server 2025 will be installed on.
20. Click **Next**.
21. On the page confirming that Windows Server 2025 will be installed and data on the volume will be lost, click **Install**.
22. Wait as the Windows Server 2025 installation occurs, including automatic reboots.
23. Enter the administrator password.
24. Confirm the administrator password.
25. Click **Finish** to complete the installation.
26. Press **Ctrl+Alt+Del** to get to the login prompt.
27. Enter the password to log in to Windows Server 2025 for the first time.

Enable Hotpatching

This section contains the steps outline the process of enabling hotpatching.

1. From the freshly installed desktop environment, open a PowerShell® terminal as administrator.
2. Run the following command to enable virtualization-based security:
   ```
   Reg add "HKLM\SYSTEM\ControlSet001\Control\DeviceGuard" /v "EnableVirtualizationBasedSecurity" /t REG_
   DWORD /d 1 /f.
   ```
3. Click the Windows search window, select the **Power** button, and then choose **Reboot** to reboot the system as a planned reboot.
4. Press **Ctrl+Alt+Delete** to access the login page.
5. Enter your password, and then press **Enter**.
6. From the **Server Manager** popup, next to **Azure Arc**, click **Launch Setup**.
7. Click **Next**, and then wait while the Azure Connected Machine agent is installed.
8. Click **Configure**.
9. Click **Next**.
10. On the resulting browser page, enter the Azure account username, and then click **Next**.
11. Enter the password and click **Sign In**. If prompted, follow the two-factor authentication (2FA) steps.
12. Return to the **Azure Arc Configuration**.
13. Click **Next**.
14. Set the following options as appropriate, and then click **Next**.
    • **Azure Active Directory Tenant**
    • **Subscription**
    • **Resource Group**
    • **Azure Region**
    • **Network Connectivity**
15. Wait while the system completes the connection.
16. Click the **Here** link to open the server's Azure Arc page.
17. Scroll down and select **hot patch (preview)**.
18. Select the **I want to license this Windows Server to receive monthly hot patches** box.
19. Click **Confirm**. A popup showing "Enrollment in progress" will appear.
20. Wait while the system activates. An "Enrollment succeeded" flag will show in the top-right corner when activated.

Windows Server 2025 Preinstalled

This section outlines the steps we took to emulate an out-of-box-experience (OOBE) for a preinstalled Windows Server 2025 OEM license. No hardware configuration is required because Windows Server 2025 is factory-installed in the PowerEdge R770 server. To accurately measure a true OOBE, we measured the length of time and number of steps from the last automatic reboot that is part of the standard Windows Server installation.

1. Power on the server and let Windows Server 2025 finish the initialization process.
2. Enter the administrator password.
3. Confirm the administrator password.
4. Click **Finish** to complete the installation.

5.   Press **Ctrl+Alt+Del** to get to the login prompt.
6.   Enter your password to log in to Windows Server 2025 for the first time.

Enable Hotpatching

The steps for enabling hotpatching in the preinstalled Windows 2025 Server were the same as those used for the **manual installation**.

Windows Server 2025 Installation Test Results

This section contains test results measured as minutes and seconds (mm:ss) and number of steps required for each server deployment for each type of installation.

Manual Installation

This section summarizes the time and steps used to deploy the server with the manual installation of Windows Server 2025.

Table 2 | Hardware configuration time and steps

Step Number	Length of Time (mm:ss)	Number of Substeps
1	01:10	1
2	00:30	1
3	00:22	1
4	00:03	2
5	00:01	1
6	00:01	1
7	00:01	1
8	00:05	3
9	00:01	1
10	00:01	1
11	00:02	2
12	00:01	2
13	00:02	2
14	00:02	2
15	00:01	1
16	00:03	3
17	00:02	2
18	00:05	3
19	00:05	3
20	00:01	1
21	00:01	1
22	00:01	1
23	00:10	2
24	00:02	1
25	00:02	1
26	00:01	1

Step Number	Length of Time (mm:ss)	Number of Substeps
27	00:03	1
28	00:01	1
29	00:01	1
30	00:01	1
31	00:01	1
32	02:17	0
Totals	05:20	46

Table 3 | Manual installation time and steps

Step Number	Length of Time (mm:ss)	Number of Substeps
1	01:10	2
2	00:01	1
3	00:01	1
4	00:01	1
5	00:03	2
6	00:01	1
7	00:01	1
8	00:03	3
9	00:03	3
10	02:00	1
11	00:02	1
12	04:37	0
13	00:02	1
14	00:01	1
15	00:02	1
16	00:05	1
17	00:02	2
18	00:01	1
19	00:30	1
20	00:12	1
21	00:01	1
22	21:10	0
23	00:02	1
24	00:02	1
25	00:10	1

Step Number	Length of Time (mm:ss)	Number of Substeps
26	00:01	1
27	00:35	1
Totals	30:59	32

Table 4 | Enable hotpatching time and steps

Step Number	Length of Time (mm:ss)	Number of Substeps
1	00:05	2
2	00:45	1
3	03:10	4
4	00:02	1
5	00:02	1
6	00:01	1
7	00:54	1
8	00:09	1
9	00:01	1
10	00:10	1
11	00:30	4
12	00:01	1
13	00:01	1
14	00:25	5
15	00:15	0
16	00:10	1
17	00:03	1
18	00:01	1
19	00:01	1
20	08:47	1
Totals	15:33	30

Preinstalled

This section summarizes the time and steps used to deploy the server with preinstalled Windows Server 2025.

Table 5 | Preinstalled Windows Server® 2025 initialization time and steps

Step Number	Length of Time (mm:ss)	Number of Substeps
1	03:08	1
2	00:02	1
3	00:02	1
4	00:10	1

Step Number	Length of Time (mm:ss)	Number of Substeps
5	00:01	1
6	00:35	1
Totals	3:58	6

Table 6 | Enable hotpatching time and steps

Step Number	Length of Time (mm:ss)	Number of Substeps
1	00:05	2
2	00:45	1
3	03:10	4
4	00:02	1
5	00:02	1
6	00:01	1
7	00:54	1
8	00:09	1
9	00:01	1
10	00:10	1
11	00:30	4
12	00:01	1
13	00:01	1
14	00:25	5
15	00:15	0
16	00:10	1
17	00:03	1
18	00:01	1
19	00:01	1
20	08:47	1
Totals	15:33	30