



Configuring Dev Drive on Windows Server 2025 Planning / Implementation

Dev Drive is a new form of storage volume to improve performance for key developer workloads.

Dev Drive builds on ReFS technology to employ targeted file system optimizations and provide more control over storage volume settings and security, including trust designation, antivirus configuration, and administrative control over what filters are attached.

The Resilient File System (ReFS) is Microsoft's newest file system, designed to maximize data availability, scale efficiently to large data sets across diverse workloads, and provide data integrity with resiliency to corruption. It seeks to address an expanding set of storage scenarios and establish a foundation for future innovations. For more details about ReFS, see: Resilient File System (ReFS) overview

The Dev Drive utilizes ReFS, enabling you to initialize a storage volume specifically for development workloads, providing faster performance and customizable settings optimized for development scenarios. ReFS contains several file system specific optimizations to improve the performance of key developer scenarios.

The Dev Drive is intended for:

- · Source code repositories and project files
- Package caches
- Build output and intermediate files

With Dev Drive, you can create one or more separate volumes on your server that will improve performance for disk-bound operations, such as cloning, building, copying files, and package restore. Microsoft measured average improvements in these operations around 25%. The Dev drive has good isolation, meaning that each Dev Drive can be used for a specific software development project, allowing you to delete it at the end of development without affecting your system disk.

For more information, see the Microsoft developer blog post: Dev Drive for Performance Improvements in Visual Studio and Dev Boxes

Dev Drive is supported on all ThinkSystem servers running Windows Server 2025.

Prerequisites

Before setting up a Dev Drive, ensure that the prerequisites are met:

- Windows Server 2025 Build #10.0.26100 or later
- Recommend 16 GB memory (minimum of 8 GB)
- Minimum 50 GB free disk space
- Local administrator permissions

When updating to the latest Windows Server 2025 release, you may need an additional reboot before the Dev Drive feature becomes available. If you are working in a business enterprise environment, your security administrator will need to configure the Dev Drive security policy to enable Dev Drive.

Setting up a Dev Drive

To set up a new Dev Drive, follow the steps below.

1. Open Windows **Settings** and navigate to **System > Storage**.

← Settings		– o ×
Administrator Local Account	System	
Find a setting Q	WIN-HKMGHB9DF19 ThinkSystem SR650 V2 MB Rename	Windows Update Last checked: 2 hours ago
System		
Bluetooth & devices		
Network & internet	Display Monitors, brightness, night light, display profile	>
🥖 Personalization		
📑 Apps	Volume levels, output, input, sound devices	>
e Accounts	Natifications	
o Time & language	Alerts from apps and system, do not disturb	>
★ Accessibility	Focus	
Privacy & security	Reduce distractions	,
Windows Update	O Power Screen and sleep, power mode, energy saver	>
	Storage Storage space, drives, configuration rules	>
	- Multitasking	

Figure 1. Open Windows Settings and navigate to System > Storage

2. Navigate to **Advanced storage settings**, click on it and find **Disks & volumes** in the extension options.

← Settings		-	Ō	×
Administrator Local Account	System > Storage			<i></i>
Find a setting Q	Show more categories			
System	Storage management			
 Bluetooth & devices Network & internet 	Storage Sense Automatically free up space, delete temporary files, and manage locally available cloud content	On (>
Personalization	Cleanup recommendations Storage optimized, no action required			>
Accounts	Advanced storage settings Backup options, Storage Spaces, other disks and volumes			^
 Time & language Accessibility 	Storage used on other drives			>
Privacy & security	Where new content is saved			>
Windows Update	Storage Spaces			>
	Disks & volumes			>
	Drive optimization		(3

Figure 2. Navigate to Advanced Storage Settings, find Disks & volumes

3. Navigate to **Disks & volumes**. Select **Create Dev Drive**. Existing storage volumes cannot be converted to be a Dev Drive. The Dev Drive designation happens only at the original format time.

← Settings		- 0 ×
Administrator Local Account	System > Storage > Disks & volumes View and manage properties of your disks and volumes.	
Find a setting Q		
System	Create a virtual hard disk (VHD) Create and mount a VHD or VHDX to your system Create VHD	Attach VHD
 Bluetooth & devices Network & internet 	Create a Dev Drive Optimized performance for developer scenarios	Create Dev Drive
/ Personalization		
AppsAccounts	PX04PMB080 Disk 0 Online Healthy	Properties ^
 Time & language Accessibility Privacy & security 	(No label) FAT32 Healthy EFI system partition System volume	Properties
Windows Update	(No label) (C:) NTFS Healthy Basic data partition Boot volume	Properties
	(No label) INTES	Properties

Figure 3. Navigate to Disks & volumes. Select Create Dev Drive

- 4. You will be given three options; these are described in the headings below:
 - Create a new VHD Build volume on a new virtual hard disk.
 - Resize an existing volume Create new unallocated space to build on.
 - **Unallocated space on disk** Use the unallocated space on an existing disk. (This option will only display if you have previously set up the unallocated space in your storage.)

← Settings			- 0 ×
Administrator Local Account	Choose a Dev Drive location	nes	
Find a setting	Choose where you want your Dev Drive to be created. 50 GB is the minimum size for Dev Drives.		
System	Create new VHD Build volume on a new virtual hard disk	reate VHD	Attach VHD
Bluetooth & devices	Resize an existing volume This creates new unallocated space to build on	Dev Drives.	Create Dev Drive
Personalization	1 disk with unallocated space.		
Apps	Unallocated space on disk 1 Use the unallocated space on Disk 1 ⁹³¹ GB		Properties ^
 Accounts Time & language 			Properties
🕇 Accessibility			
Privacy & security			
Windows Update			Properties
	Next Cancel		
	(No label) NTFS		Properties

Figure 4. Choose a Dev Drive location

In the headings below:

- How to choose between using a disk partition or VHD
- Option 1: Creating a new VHD
- Option 2: Resizing an existing volume
- Option 3: Using unallocated space on disk

How to choose between using a disk partition or VHD

There are considerations when deciding whether to create a disk partition or create a new VHD to store your Dev Drive.

- Create a disk partition: Storing your Dev Drive on a disk partition will generally offer faster performance because it directly uses the physical disk without any additional layers. The trade-offs are that using a partitioned disk will be less flexible since resizing partitions can be more complex and riskier, and less portable since the partition is tied to the physical disk.
- Create a new VHD: Storing your Dev Drive in a Virtual Hard Disk (VHD) may have slightly lower performance due to the overhead of managing the virtual disk layer. The trade-offs are that VHDs offer more flexibility for dynamic resizing (if you need to manage disk space efficiently), moving, or backing up data. VHDs are also highly portable, allowing the VHD file to be transferred to another machine or backup location. However, remember that when a VHD is hosted on a fixed disk (HDD or SSD), it is not recommended to copy the VHD, move it to a different machine, and continue using it

as a Dev Drive.

Option 1: Creating a new VHD

To create a VHD, do the following

1. Select Create new VHD, click Next to set up a Dev Drive.

← Settings	Create and attach virtual hard disk		- 0 ×
Administrator	50 GB is the minimum size for a Dev Drive.	nes	
Local Account	Virtual hard disk name:		
Find a setting	<u> </u>		
	Specify the virtual hard disk location on the machine.	reate VHD	Attach VHD
System	Location:		
8 Bluetooth & devices	C:\ Browse	D. D.	Create Day Drive
Network & internet	Virtual hard disk size:	Dev Drives.	Create Dev Drive
🥖 Personalization	GB ~		
📑 Apps	Virtual hard disk format	_	
Accounts	○ VHD - Supports virtual disk up to 2040 GB in size	-	Properties ^
o Time & language	 VHDX - Supports a maximum of 64 TB and is resilient to power failure events 		Properties
🕇 Accessibility	Virtual hard disk type		
Privacy & security	 Fixed size - This virtual hard disk file is allocated to its maximum size when the virtual hard disk is created. 		
Windows Update	O Dynamically expanding (recommended) - The virtual hard disk file grows to its maximum size as data is written to the virtual hard disk.		Properties
	Create		Properties

Figure 5. Create and attach virtual hard disk

- 2. Specify the following:
 - Virtual hard disk name: Give a name to your VHD (Dev Drive).
 - Location: Assign a directory path where the Dev Drive VHD will be located on your machine. The default location is C:\, unless you are creating a Dev Drive using Dev Home, in which case the default location is %userprofile%\DevDrives. We recommend using a per-user directory path location to store your Dev Drive to avoid any unintentional sharing.
 - Virtual hard disk size: Assign the amount of disk space that will be allocated for the volume to use; the minimum size is 50
 - Virtual hard disk format:
 - VHD: Supports virtual disks up to 2040 GB in size.
 - VHDX (Recommended): Supports a maximum of 64 TB and offers more resilient protection against unexpected IO failure caused by issues like power outage. Learn more about Managing VHDs.
 - Disk type:
 - Fixed size This virtual hard disk file is allocated to the maximum size when created.
 - Dynamically expanding The virtual hard disk file grows to its maximum size as data is written to the disk. (Recommended)

Once you complete the process of selecting between these options, your Dev Drive is ready to be created.



Figure 6. An example of parameter set for creating VHD

3. Click Create, the screen shows Initialize Disk. You can choose either GPT or MBR for this disk.



Figure 7. Choose the partition style to initialize disk

4. Click Initialize. You can set the label of the new Dev Drive and format it.

Administrator Local Account	New Dev Drive		nes	
	Label			
ind a setting	Label			
System	Drive Letter		reate VHD	Attach VHD
Bluetooth & devices	D	~		
Network & internet	Size (MB)		Dev Drives.	Create Dev Drive
Personalization	51,200			
Apps	Max: 51,200 MB			Properties
Accounts	Min: 51,200 MB			
🕤 Time & language		Advanced \checkmark	Cr	reate volume 🗸
X Accessibility				
Privacy & security				Properties
Windows Update				
				Properties
	Format	Cancel		

Figure 8. Set label of new Dev Drive

5. Click **Format**. The Dev Drive completes format quickly, and it returns to the **Disk & volumes** page, where you can scroll down to find the Dev Drive you created.

← Settings		-	Ð	×
Administrator Local Account	System > Storage > Disks & volumes			
	PX04PMB080 Disk 1	Properties	_	1
Find a setting Q	Online Healthy	Toperaes		
System	(No label) FAT32	Properties		
8 Bluetooth & devices	Healthy EFI system partition			
Network & internet				
Personalization	(No label) (C:) NTFS	Properties		
Apps Apps	Healthy Basic data partition Boot volume			
Accounts				
5 Time & language	(NO IADEI) NTFS	Properties		
X Accessibility	Healthy Microsoft recovery partition			
Privacy & security	Msft Virtual Disk			
Windows Update	Disk 2 Online	Properties	^	
	SW-VD001 (D:) ReFS Healthy Basic data partition Dev Drive	Properties		

Figure 9. The Dev Drive has been created

6. Select **Properties** next to the Dev Drive storage volume that you created. In the drive's properties, you will find the options to configure the volume.

← Settings	- ō ×
Administrator Local Account	··· > Storage > Disks & volumes > SW-VD001 (D:)
Find a setting Q	Volume Data Dev Drive Label: SW-VD001
System	Drive letter: D Type: Basic data partition
8 Bluetooth & devices	File system: ReFS
Network & internet	Status: Healthy Change label Change drive letter
🥖 Personalization	
📑 Apps	Size - 50.0 GB
e Accounts	1.45 GB used 48.5 GB free
🕥 Time & language	Change size
🕇 Accessibility	To expand the volume, you first need to expand the virtual hard disk file. Learn more
Privacy & security	View usage
Windows Update	Format
	You can format or delete the volume to erase all data on it.
	Format Delete

Figure 10. The properties page of Dev Drive

7. The Dev Driver is now created and formatted by default. If you want to change the default format settings, you can click **Format** to reconfigure the Label and Allocation Unit Size.

← Settings	- 0 X
Administrator Local Account	··· > Storage > Disks & volumes > SW-VD001 (D:)
	Volume Data
Find a setting Q	Lab
System	Driv Format Volume
8 Bluetooth & devices	lyp File
Network & internet	Stat Label
/ Personalization	C Allocation Unit Size
	Siz Default (4 KB) ~
	1.45 GB free
Accounts	Perform a quick format
Time & language	
🕇 Accessibility	Format Cancel
Privacy & security	Fo
Windows Update	You can format or delete the volume to erase all data on it.
	Format Delete

Figure 11. Reformatting the Dev Drive

Option 2: Resizing an existing volume

To resize an existing volume, do the following:

1. Click Resize an existing volume, then Next to set up a Dev Drive.



Figure 12. Select Resize an existing volume

2. Choose a volume to resize, click Next



Figure 13. Choose a volume to resize

3. Choose a new size for the volume.

You will need to have at least 50 GB of unallocated space available, the minimum size needed for a Dev Drive. (In the example, this will be the last size allocated for your partition C:) Once the size is set, click **Next**.

Settings			- Ō
Administrator Local Account	Change size of (No label) (C:)	nes	
Find a setting	• Selecting the next button will resize the volume. You can also resize the volume later in the properties page.		
System	Unmovable files may limit the minimum size of a volume.	reate VHD	Attach VHD
 Bluetooth & devices Network & internet 	50 GB of unallocated disk space is the minimum size needed to create a Dev Drive. Decrease the current size to increase the unallocated disk space.	Dev Drives.	Create Dev Drive
Personalization	Current 762,289 MB Max 762,289 MB		Droportion
Accounts	Min 21,152 MB	_	
 Time & language Accessibility 	Unallocated space after resize: 741,137 MB		Properties ^
 Privacy & security Windows Update 	Back to previous step		Properties
	Next Cancel		
	NTFS Healthy		Properties

Figure 14. Change the size of partition C:

4. Format the Dev Drive on the new free space, specify the **Label** (drive name), **Drive Letter**, and **Size** The maximum size will be the amount of free space you allocated in the previous step, the minimum size for a Dev Drive is 50 GB. Click **Format**.

← Settings				- 0 ×
Administrator Local Account	New Dev Drive		nes	
	Label			1
Find a setting	Label			
📕 🔲 System	Drive Letter		reate VHD	Attach VHD
8 Bluetooth & devices	D	~		
Network & internet	Size (MB)		Dev Drives.	Create Dev Drive
🥖 Personalization	712,289			
Apps	Max: 712,289 MB			Properties 🗸 🗸
Accounts	Min: 51,200 MB			
🕥 Time & language		Advanced \checkmark		
🗎 Accessibility				Properties ^
Privacy & security			_	
Windows Update	Back to previous step		_	Properties
	Format	Cancel		
	Tomat	concer		Properties
	NTFS Healthy			rioperties

Figure 15. Set the label, drive letter and size of new Dev Drive

5. Returns to the **Disk & volumes** page, where you can scroll down to find the Dev Drive you created.

Administrator Local Account	System > Storage >	Disks & volumes
	Online	
ind a setting	Q (Unallocated)	Create volume $$
System	PX04PMB080	
Bluetooth & devices	Disk 1 Online	Properties ^
Network & internet	Healthy	
Personalization	(No label) FAT32	Properties
Apps 6	Healthy EFI system partition	
Accounts	System volume	
Time & language	(No label) (C:) NTFS	Properties
Accessibility	Healthy Basic data partition	
Privacy & security	Boot volume	
Windows Update	SW-VD002 (D:) ReFS Healthy Basic data partition Dev Drive	Properties
	(Unallocated)	Create volume 🗸

Figure 16. Check the Dev Drive you created

Option 3: Using unallocated space on disk

To create a Dev Drive using unallocated space, do the following:

- 1. To find and use unallocated space on an existing drive,
- 2. open **System > Storage > Disks & volumes**, look through the page to see whether any storage space is listed as "Unallocated".
- 3. Select **Create volume** and you will be given the choices to **Create Simple Volume** (a standard NTFS storage volume) or **Create Dev Drive**.

4. To create a Dev Drive, the steps are the same as Step 4 of Resizing an existing volume. You will need to add a Label (drive name), Drive Letter, and confirm the Size

← Settings		- 0 ×
Administrator Local Account	System > Storage > Disks & volum	nes
Find a setting Q	PX04PMB080 Disk 1 Online Healthy	Properties ^
System Bluetooth & devices Network & internet Personalization	(No label) FAT32 Healthy EFI system partition System volume	Properties
Apps Accounts Time & language	(No label) (C:) NTFS Healthy Basic data partition Boot volume	Properties
 Accessibility Privacy & security 	SW-VD002 (D:) ReFS Healthy Basic data partition Dev Drive	Properties Create Simple Volume Create Dev Drive
Windows Update	(Unallocated)	Create volume ~
	(No label) NTFS Healthy Microsoft recovery partition	Properties

Figure 17. Create Dev Drive by using unallocated space on disk

5. Format a storage volume as a Dev Drive from the command line.

As an alternative to using Windows Settings, there are two commands you can use from the command line to create a Dev Drive storage volume. Both options require that you open the command line as an Administrator. You must be a member of the Admin group to format a hard drive. These command line formatting methods may be preferred when creating multiple Dev Drives or as an admin for multiple machines.

Option 1: Using the Format command line tool from Windows CMD or PowerShell:

```
Format D: /DevDrv /Q

PS C:\Users\Administrator> Format D: /DevDrv /Q

The type of the file system is REFS.

Enter current volume label for drive D: SW-VD002

WARNING, ALL DATA ON NON-REMOVABLE DISK

DRIVE D: WILL BE LOST!

Proceed with Format (Y/N)? y

QuickFormatting 50.0 GB

Volume label (32 characters, ENTER for none)? SW-VD005

Creating file system structures.

Format complete.

50.0 GB total disk space.

50.0 GB are available.

PS C:\Users\Administrator>
```

Figure 18. Format a storage volume as a Dev Drive from the command line

Option 2: Using the Format-Volume cmdlet from PowerShell:



Figure 19. Using Format-Volume on PowerShell

Deleting a Dev Drive

You can delete a Dev Drive in the Windows Settings, as follows:

- 1. Open the Windows Settings menu,
- 2. Click **Storage**, then **Advanced Storage Settings**, then **Disks & volumes**, where you will find a list of the storage volumes on your device.
- 3. Select **Properties** next to the Dev Drive storage volume that you want to delete.
- 4. In the drive's properties, you will find the **Delete** option under the **Format** heading.

\leftarrow Settings	- 0 ×
Administrator Local Account	··· > Storage > Disks & volumes > SW-VD002 (D:)
Find a setting Q	Volume Data Dev Drive
	Label: SW-VD002
System	Drive letter: D Type: Basic data partition
8 Bluetooth & devices	File system: ReFS
Network & internet	Status: Healthy Change label Change drive letter
🥖 Personalization	
Apps	Size - 50.0 GB
Accounts	1.45 GB used 48.5 GB free
5 Time & language	Change size
🕇 Accessibility	View usage
Privacy & security	Format
Windows Update	You can format or delete the volume to erase all data on it. Format Delete
	Paths

Figure 20. Delete option on Dev Drive's properties page

5. Click **Delete**, a prompt window will pop up. Confirm the delete action by clicking **Delete volume**.

> S	Storage 🔸 Disks & v	olumes > SW-VD001 (D:)
Volume D	Data	
Label:	SW-VD001	
Drive letter:	D	
Type:	Basic data partition	
File system:	ReFS	
Status:	Healthy	
Change labe	el Change drive letter	
Size - 50.0 1.45 GB used Change size	0 GB	48.5 GB free
Are you sure volume? Thi will permane volume. You or folders us	e you want to delete this is action cannot be undone and ently delete all data on the u will not be able to recover files sing Recycle Bin. Delete volume	rtual hard disk file.
	data	on it.
Format	Delete	

Figure 21. Confirmation popup window

6. The Dev Drive is now deleted.

If the Dev Drive was created as a new VHD, the VHD will need to be deleted to reclaim the storage space used by that VHD. To accomplish this, you must detach the virtual disk so that the VHD file hosting the Dev Drive can be deleted by continuing to the following steps.

7. Open the **Disk Management**, select the **Disk** (not the Volume) of the Dev Drive. Right-click the selected **Disk** hosting the Dev Drive and, from the resulting menu, select **Detach VHD**.

T Disk Manager	nent View Help								-	0	×
(me Action		3									
Volume (C:) (Disk 1 partition (Disk 1 partition)	Layout Simple n 1) Simple n 4) Simple	Type Basic Basic Basic	File System	n Status Healthy (B Healthy (E Healthy (R	Capacity 744.42 GB 100 MB 690 MB	Free Spa 724.42 GB 100 MB 690 MB	% Free 97 % 100 % 100 %				
Disk 0 Basic 931.50 GB Online	New Spanne New Striped New Mirrore New RAID-5 Convert to D Convert to N	d Volume Volume d Volume Volume Iynamic Disk IBR Disk									
Disk 1 Basic 745.20 GB Online	Offline Detach VHD Properties Help]	3 	NTFS Boot, Page File, Cras	h Dump, Basic	Data Partition)		690 MB Healthy (Recovery	Partition)		
Disk 2 Basic 50.00 GB Online	50.00 GB Unallocated										
Unallocated	Primary partition	1									

Figure 22. Detach VHD on Disk Management

8. A pop-up window will appear, informing you that detaching a virtual hard disk will make it unavailable.

🗃 Disk Managem	ient								_	O	\times	
File Action V	/iew Help											
🗇 🄿 📰 🛛 👔) 🗊 🛛 🐖 🛃 🖾											
Volume	Layout Type	File System	Status	Capacity	Free Spa	% Free						
💻 (C:)	Simple Basic	NTFS	Healthy (B	744.42 GB	724.42 GB	97 %						
(Disk 1 partition)	n 1) Simple Basic		Healthy (E	100 MB	100 MB	100 %						
- (Disk 1 partition	n 4) Simple Basic		Healthy (R	690 MB	690 MB	100 %						
Disk 0 Basic 931.50 GB Opling	931.50 GB	Deta Deta Virtu	Detach Virtual Hard Disk X Detaching a virtual hard disk will make it unavailable until it is attached again. Virtual hard disk file location: CNVD001\VD001.vhdx									
Dick 1					ОК	Cancel						
Basic 745.20 GB Online	100 MB Healthy (EFI System Partition	(C:) 744.42 GB NTF Healthy (Boot,	B NTFS (Boot, Page File, Crash Dump, Basic Data Partition)					690 MB Healthy (Recovery Par	MB thy (Recovery Partition)			
Disk 2 Basic 50.00 GB Online	50.00 GB Unallocated											
Unallocated	Primary partition											

Figure 23. Prompt of Detach VHD

9. Click **OK**, the VHD can be deleted.

📅 Disk Manager	nent								-	ð	Х
File Action	View Help										
🗢 🌩 📰 [3 🖬 🗩 🗙 🕑 🛛	1 👂 🖭									
Volume	Layout T	Гуре	File System	Status	Capacity	Free Spa	% Free				
(C:)	Simple B	Basic	NTFS	Healthy (B	744.42 GB	724.66 GB	97 %				
- (Disk 1 partitio	n 1) Simple B	Basic		Healthy (E	100 MB	100 MB	100 %				
- (Disk 1 partitio	n 4) Simple B	Sasic		Healthy (R	090 MB	690 MB	100 %				
= Disk 0											
Basic											_
931.50 GB	931.50 GB										
Unline	Unallocated										
= Disk 1											
Basic 745 20 CP	100.140	- 1	(C:)					////			
Online	Healthy (EFI System	Partition	Healthy (Boot	Page File, Cras	h Dump, Basic Da	ta Partition)		690 N Healt	AB thy (Recovery Partition)		
				///////////////////////////////////////	///////////////////////////////////////	///////////////////////////////////////			.,,		
	Deinen er titig										
	Primary partition								1	1	

Figure 24. VHD has been deleted

References

For more information, see these resources:

- Microsoft Learn, "Set up a Dev Drive on Windows 11" https://learn.microsoft.com/en-us/windows/dev-drive/
- Microsoft Learn, "Resilient File System (ReFS) overview" https://learn.microsoft.com/en-us/windows-server/storage/refs/refs-overview
- Microsoft Learn, "How to configure Dev Drive security policy for enterprise business devices" https://learn.microsoft.com/en-us/windows/dev-drive/group-policy
- Microsoft Dev Blogs, "Dev Drive for Performance Improvements in Visual Studio and Dev Boxes" https://devblogs.microsoft.com/visualstudio/devdrive/

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