

# Windows Server 2022 Public Preview Build

In this post, I am going to test Windows Server 2022 Preview Build just to see what is new and how it compares with Windows Server 2019.

To download you have to register for Windows Insider Program. After that you can use one of the links below to download Windows Server 2022 Preview Build 20344.

<https://www.microsoft.com/en-us/software-download/windowsinsiderpreviewserver>

<https://cloudblogs.microsoft.com/windowsserver/2021/03/02/announcing-windows-server-2022-now-in-preview/>

<https://insider.windows.com/en-us/getting-started#flight>

<https://insider.windows.com> ▾

## Windows Insider Program

Join the **Windows Insider Program** for Business to explore new features, validate your apps and infrastructure before deployments, **preview Windows Server**, and help us improve **Windows** for your business. About the **Windows Insider Program** for Business.

**Developer:** Microsoft Corporation

### Get started

Surface device open in a comfortable bed. 1. Register 2 ...

### Register

To register, you must sign in with your Microsoft account or work ...

### Understand flighting

Understand flighting. Flighting is the process of running Windows ...

[More results from windows.com »](#)

### How the program works

The Windows Insider Program is a community of millions of ...

### Leave the program

If you no longer want to receive Insider preview builds, you'll ...

### Getting Started

Register with either your Azure Active Directory (AAD) work ...

↻ WZT.INFO Retweeted



**WZor** @WZorNET · Apr 28

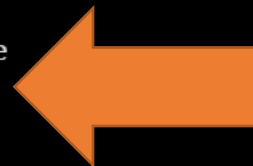
NEW #GVLK Keys for KMS activation Windows Server 2022, Ver. #21H2, #LTSC Preview Build 20344

✓ gvlkserverdatacenter=gvlkserverdatacenterCore

WX4NM-KYWYW-QJJR4-XV3QB-6VM33

✓ gvlkserverstandard=gvlkserverstandardCore

VDYBN-27WPP-V4HQT-9VMD4-VMK7H



# Windows Insider Preview Downloads

## Windows Server Insider Preview

Follow these steps to download Windows Server Insider Preview builds:

Select an entry from the dropdown below, and click Confirm. Download the image.

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## Microsoft Server Previews

Windows Server 2022 Preview ISO - Build 20344

Confirm

## Select Language

English

Confirm

## Downloads

Choose a link below to begin the download. If not sure which one to choose then refer to [FAQ](#).

## Windows Server vNext LTSC Preview - Build 20344 English

Download Now

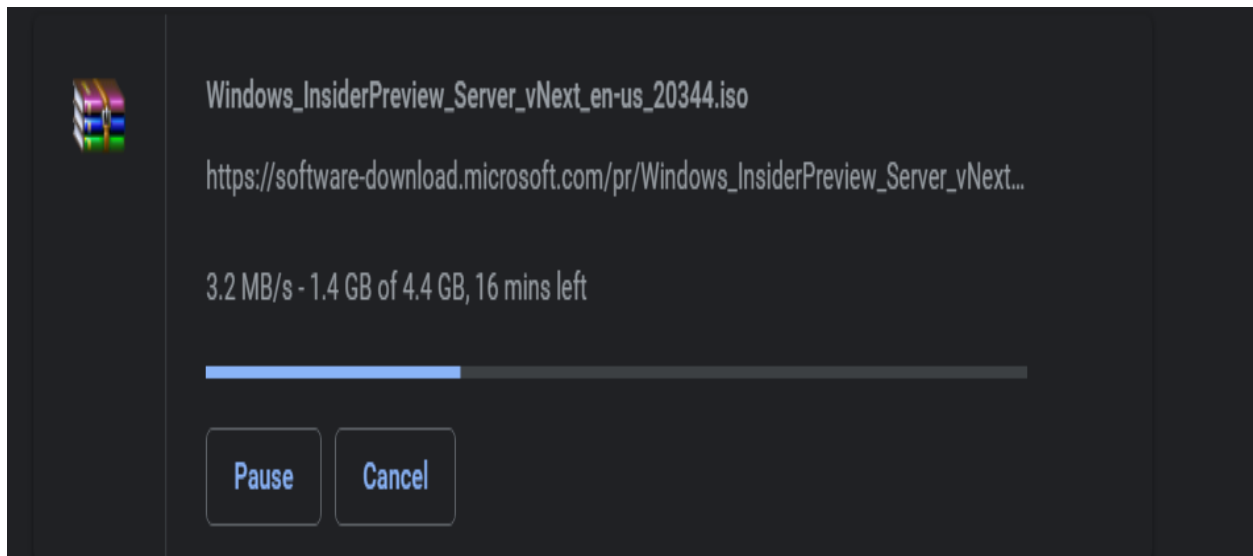
File name: Windows\_InsiderPreview\_Server\_vNext\_en-us\_20344.iso

Save as type: ISO Other File (VLC) (\*.iso)

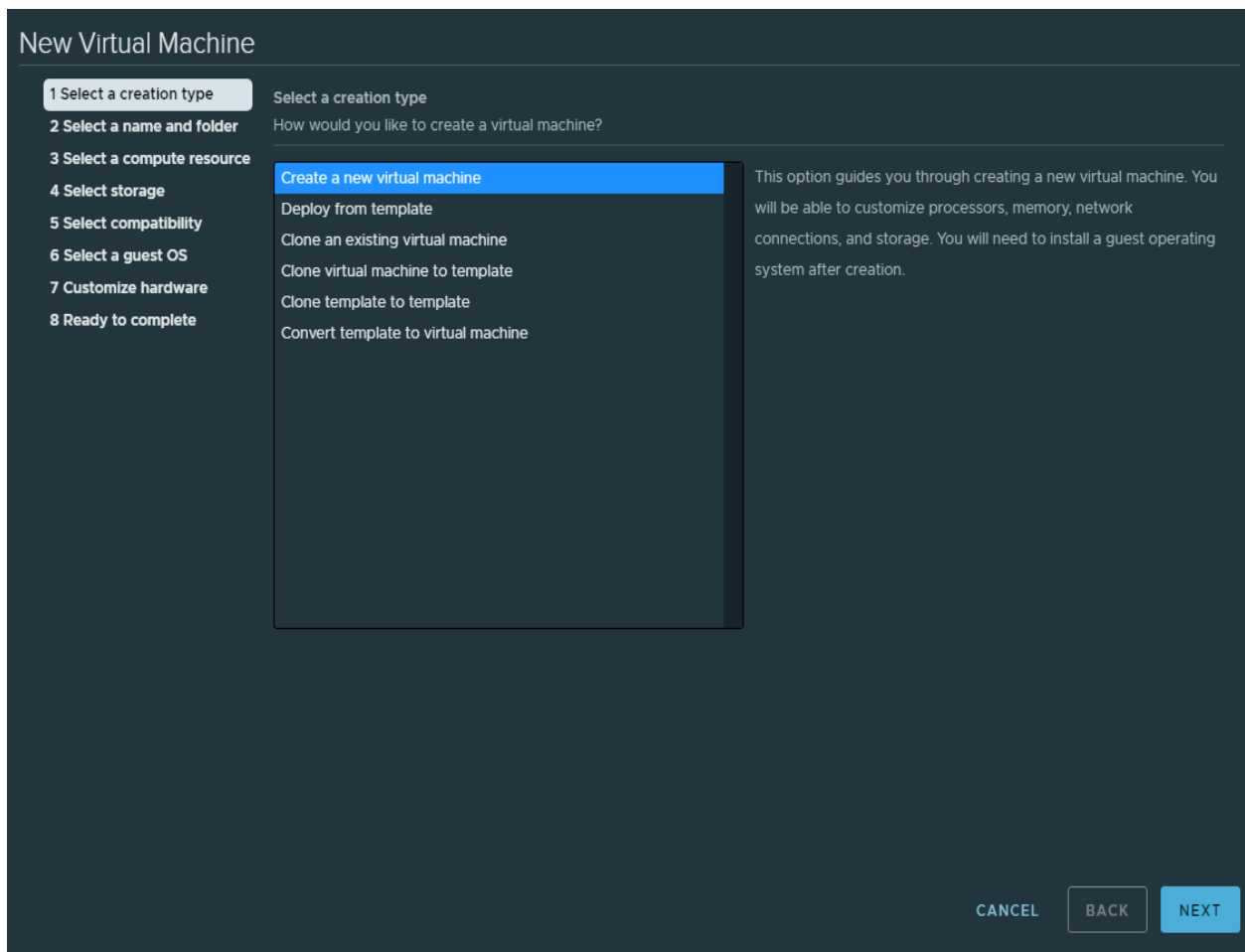
Hide Folders

Save

Cancel



Will create a virtual machine on vSphere 7.x and continue with the install and explore Server 2022.



## New Virtual Machine

✓ 1 Select a creation type

2 Select a name and folder

3 Select a compute resource

4 Select storage

5 Select compatibility

6 Select a guest OS

7 Customize hardware

8 Ready to complete

Select a name and folder

Specify a unique name and target location

Virtual machine name:

SRV2022

Select a location for the virtual machine.

✓ VC.RAMLAN.CA

✓ Toronto

> North America

CANCEL

BACK

NEXT

## New Virtual Machine

✓ 1 Select a creation type

✓ 2 Select a name and folder

3 Select a compute resource

4 Select storage

5 Select compatibility

6 Select a guest OS

7 Customize hardware

8 Ready to complete

Select a compute resource

Select the destination compute resource for this operation

✓ North America

✓ Home Lab

esx1.ramlan.ca

nesx2.ramlan.ca

Compatibility

✓ Compatibility checks succeeded.

CANCEL

BACK

NEXT

## New Virtual Machine

- ✓ 1 Select a creation type
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- 4 Select storage**
- 5 Select compatibility
- 6 Select a guest OS
- 7 Customize hardware
- 8 Ready to complete

### Select storage

Select the storage for the configuration and disk files

☐ Encrypt this virtual machine (Requires Key Management Server)

VM Storage Policy

Datastore Default

☐ Disable Storage DRS for this virtual machine

	Name	Storage Con	Capacity	Provisioned	Free	Type	Cluster
•	TorDatastoreClust...	--	2.49 TB	812.14 GB	1.69 TB		

1 item

### Compatibility

✓ Compatibility checks succeeded.

CANCEL

BACK

NEXT

## New Virtual Machine

- ✓ 1 Select a creation type
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Select storage
- 5 Select compatibility**
- 6 Select a guest OS
- 7 Customize hardware
- 8 Ready to complete

### Select compatibility

Select compatibility for this virtual machine depending on the hosts in your environment

The host or cluster supports more than one VMware virtual machine version. Select a compatibility for the virtual machine.

Compatible with: ESXi 7.0 U2 and later ⓘ

This virtual machine uses hardware version 19, which provides the best performance and latest features available in ESXi 7.0 U2.

CANCEL

BACK

NEXT

## New Virtual Machine

- ✓ 1 Select a creation type
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Select storage
- ✓ 5 Select compatibility
- 6 Select a guest OS**
- 7 Customize hardware
- 8 Ready to complete

### Select a guest OS

Choose the guest OS that will be installed on the virtual machine

Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.

Guest OS Family: Windows ▾

Guest OS Version: Microsoft Windows Server 2022 (64-bit) ▾

☐ Enable Windows Virtualization Based Security ⓘ

Compatibility: ESXi 7.0 U2 and later (VM version 19)

CANCEL

BACK

NEXT

## New Virtual Machine

- ✓ 1 Select a creation type
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Select storage
- ✓ 5 Select compatibility
- ✓ 6 Select a guest OS
- 7 Customize hardware**
- 8 Ready to complete

### Customize hardware

Configure the virtual machine hardware

#### Virtual Hardware

#### VM Options

ADD NEW DEVICE ▾

> CPU	2 ▾	ⓘ
> Memory *	8 ▾ GB ▾	
> New Hard disk *	90 GB ▾	
> New SCSI controller *	LSI Logic SAS	
> New Network *	VM Network ▾	<input checked="" type="checkbox"/> Connect...
> New CD/DVD Drive *	Datastore ISO File ▾	<input checked="" type="checkbox"/> Connect...
> New USB Controller	USB 3.1 ▾	
> Video card *	Specify custom settings ▾	
> Security Devices	Not Configured	
VMCI device		
New SATA Controller	New SATA Controller	
> Other	Additional Hardware	

CANCEL

BACK

NEXT

## New Virtual Machine

- ✓ 1 Select a creation type
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Select storage
- ✓ 5 Select compatibility
- ✓ 6 Select a guest OS
- ✓ 7 Customize hardware
- 8 Ready to complete

Ready to complete

Click Finish to start creation.

Virtual machine name	SRV2022
Folder	North America
Host	esx1.ramlan.ca
Datastore	TorDatastoreCluster [Datastore5] (Recommended) <a href="#">more recommendations</a>
Guest OS name	Microsoft Windows Server 2022 (64-bit)
Virtualization Based Security	Disabled
CPUs	2
Memory	8 GB
NICs	1
NIC 1 network	VM Network
NIC 1 type	VMXNET 3
SCSI controller 1	LSI Logic SAS
Create hard disk 1	New virtual disk
Capacity	90 GB

CANCEL

BACK

FINISH

## Guest OS

ACTIONS ▾



Powered Off

LAUNCH REMOTE CONSOLE



LAUNCH WEB CONSOLE

Power Status

Guest OS

VMware Tools

DNS Name

IP Addresses

Encryption



Power



Micro

Not running

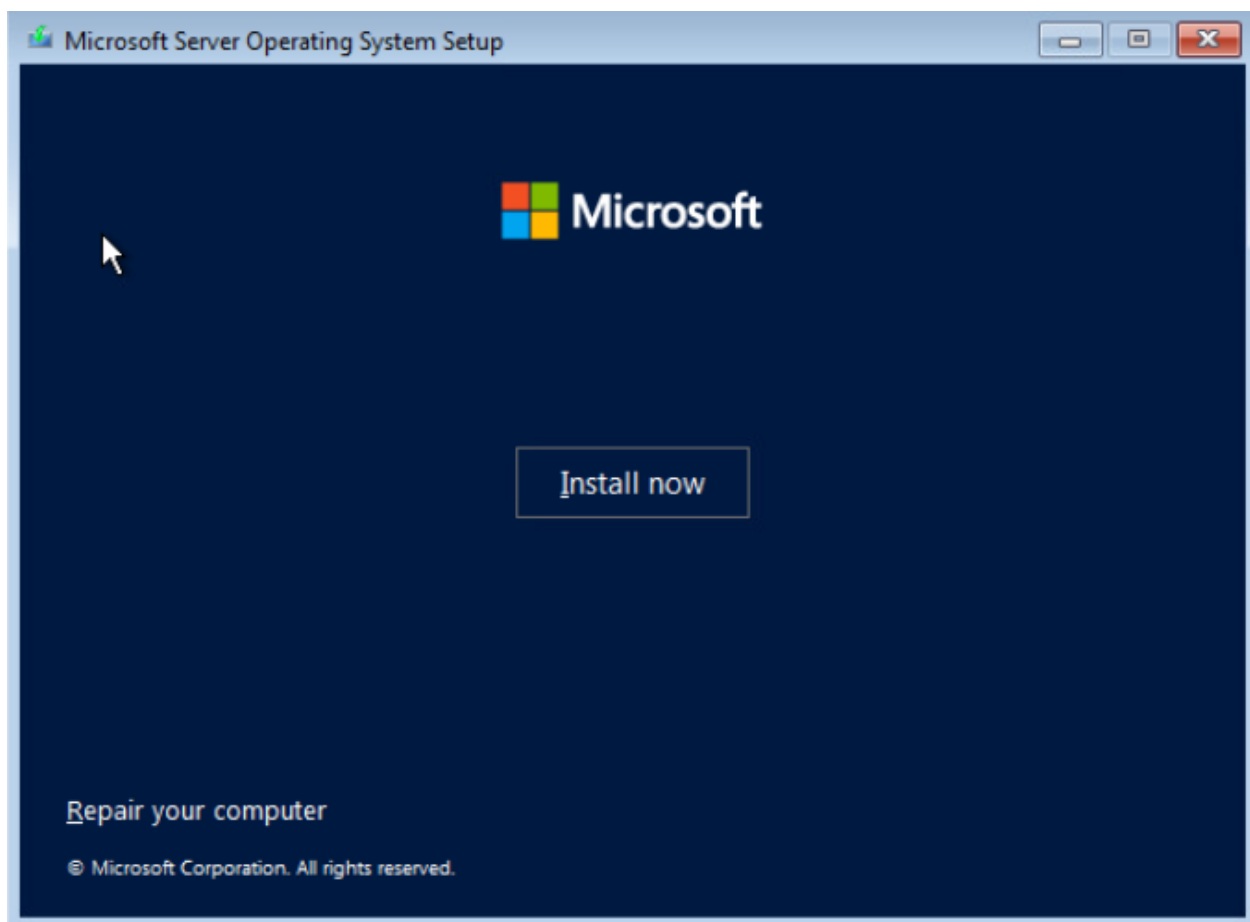
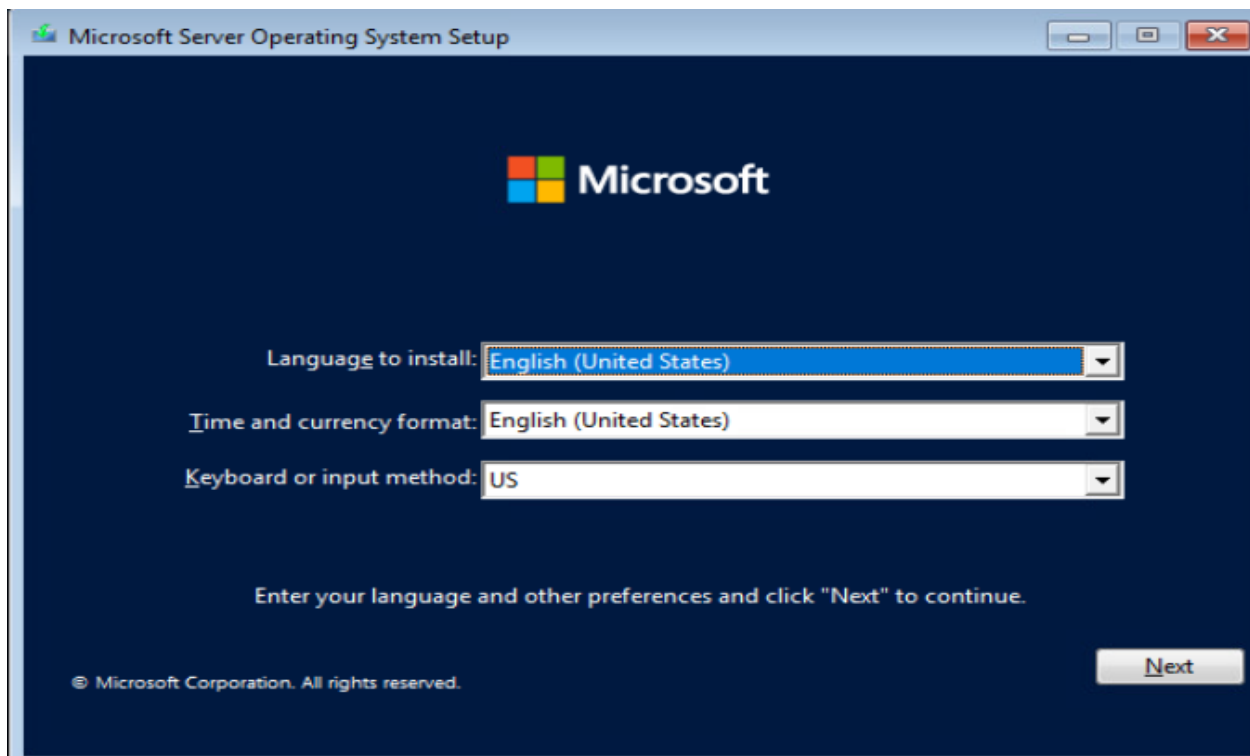
Not encrypt

- ▶ Power On ctrl + alt + B
- Power Off ctrl + alt + E
- ⏸ Suspend ctrl + alt + Z
- ↺ Reset ctrl + alt + T
- ✖ Hard stop
- Shut Down Guest OS ctrl + alt + D
- ↺ Restart Guest OS ctrl + alt + R

SRV2022

Actions

Loading files...







## Activate Microsoft Server Operating System Setup

If this is the first time you're installing Microsoft Server Operating System on this PC (or you're installing a different edition), you need to enter a valid Microsoft Server Operating System product key. Your product key should be in the confirmation email you received after buying a digital copy of Microsoft Server Operating System or on a label inside the box that Microsoft Server Operating System came in.

The product key looks like this: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

If you're reinstalling Microsoft Server Operating System, select I don't have a product key. Your copy of Microsoft Server Operating System will be automatically activated later.

WX4NM-KYWW-QJJR4-XV3QB-6VM33



[Privacy statement](#)

[I don't have a product key](#)

[Next](#)



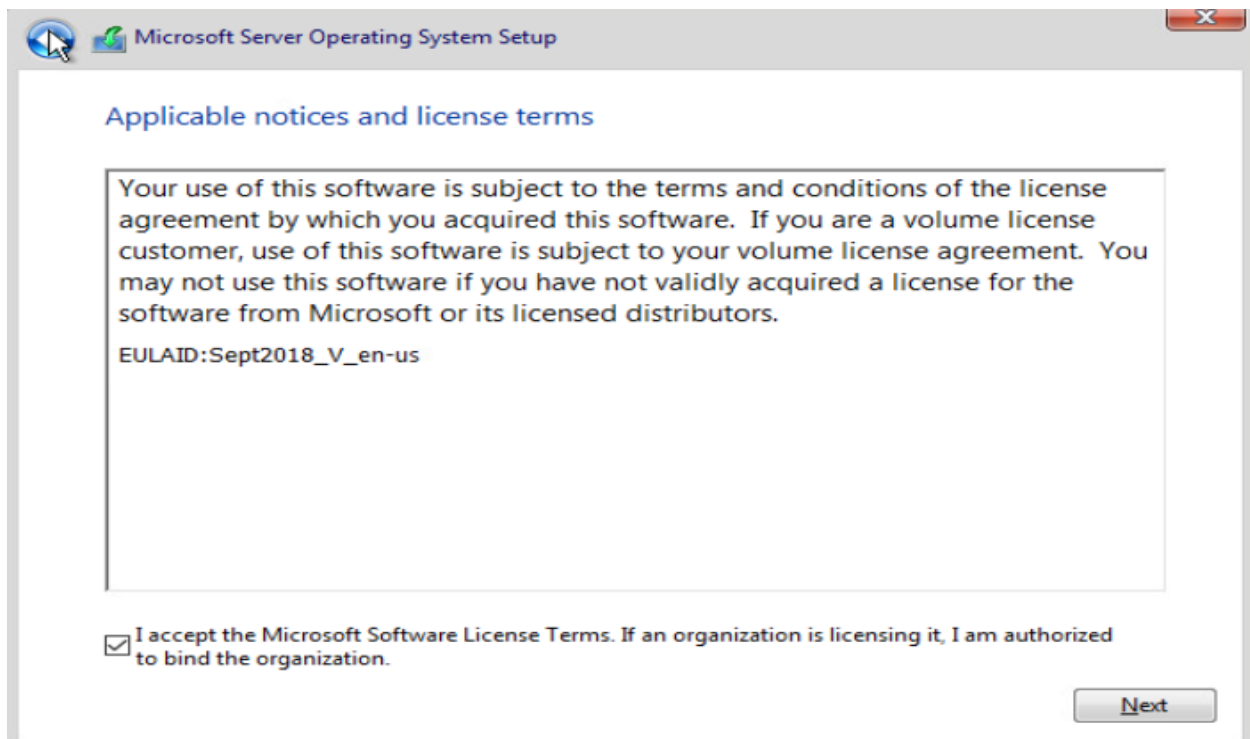
## Select the operating system you want to install

Operating system	Architecture	Date modified
Windows Server 2022 Datacenter	x64	4/25/2021
Windows Server 2022 Datacenter (Desktop Experience)	x64	4/25/2021

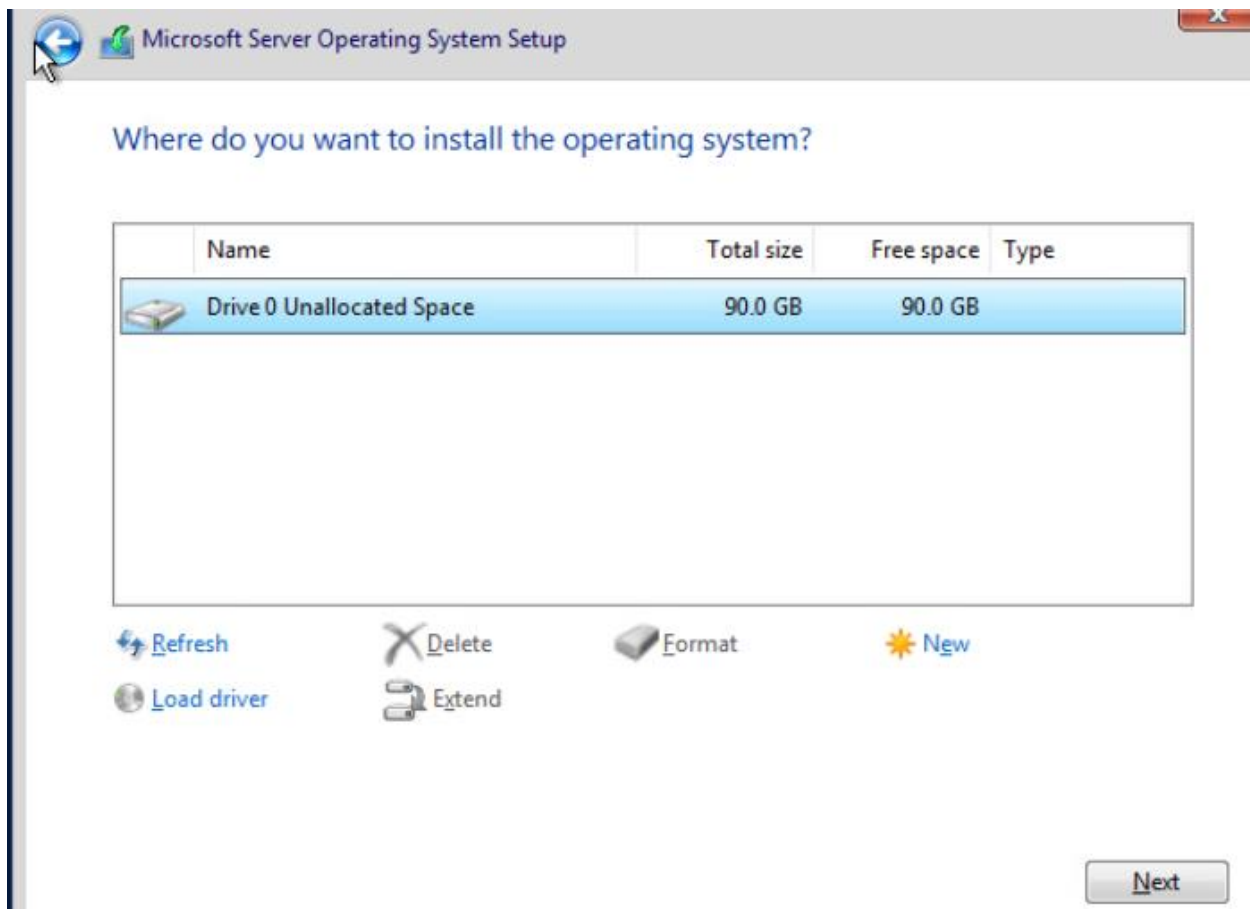
### Description:

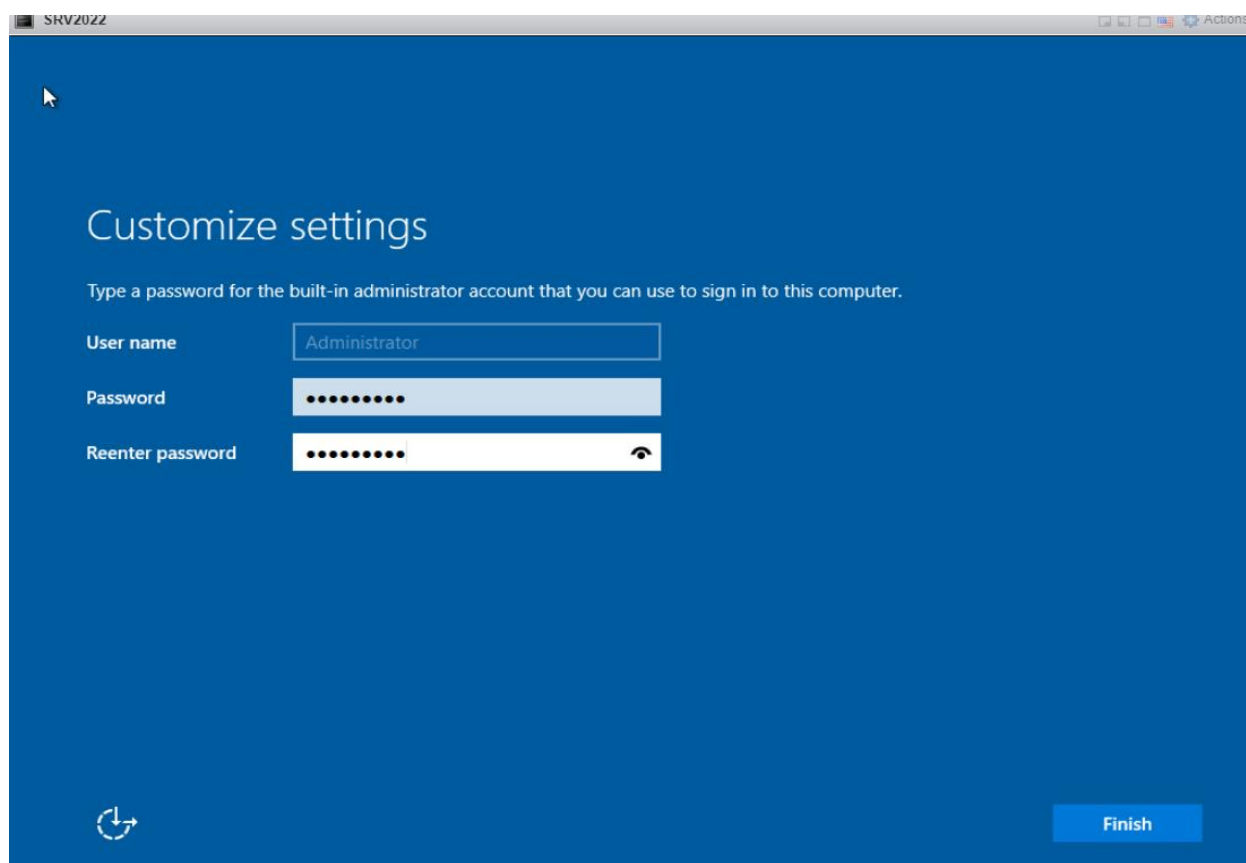
This option installs the full Windows graphical environment, consuming extra drive space. It can be useful if you want to use the Windows desktop or have an app that requires it.

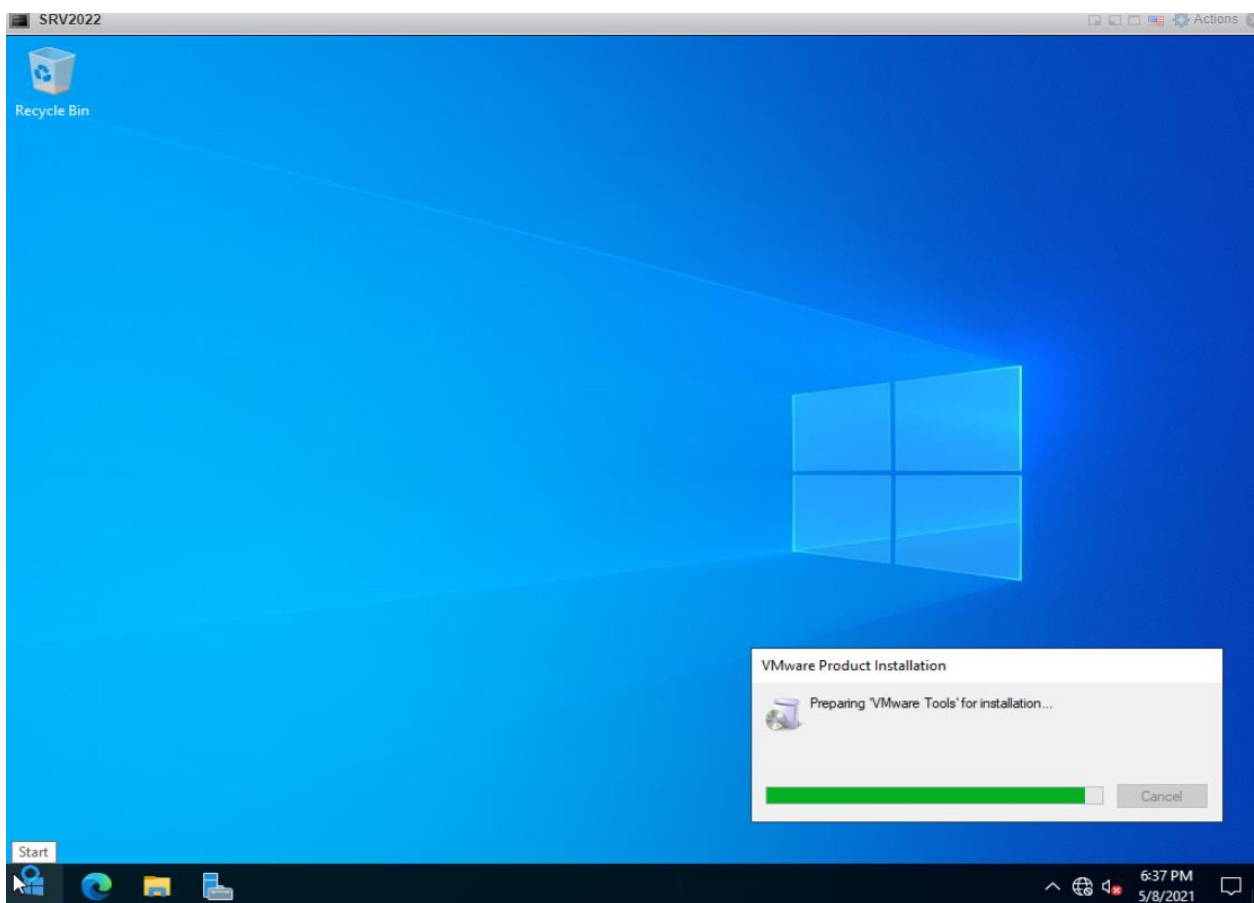
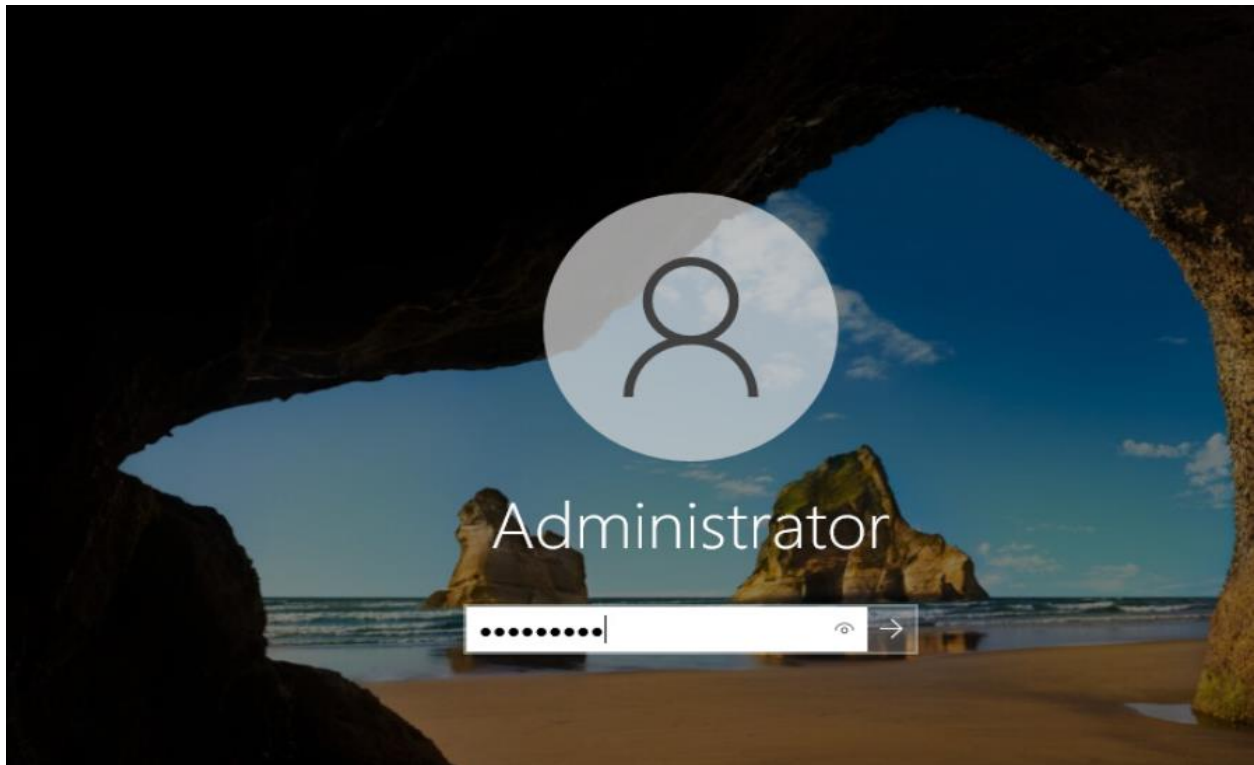
[Next](#)



Select Custom Install and not Upgrade/Update

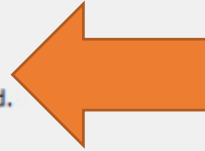






# Windows Server® 2022

Microsoft Windows Server  
Version 21H2 (OS Build 20344.1)  
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Windows User

OK

## Available Content

- **Windows Server Long-Term Servicing Channel Preview** is available in ISO format in 18 languages, and in VHDX format in English only. Pre-release keys will no longer activate this build - you may skip entering a product key and still install and use preview builds for development and testing purposes without activating.
- **Windows Server Language Pack/Core App Compatibility FoD Preview**

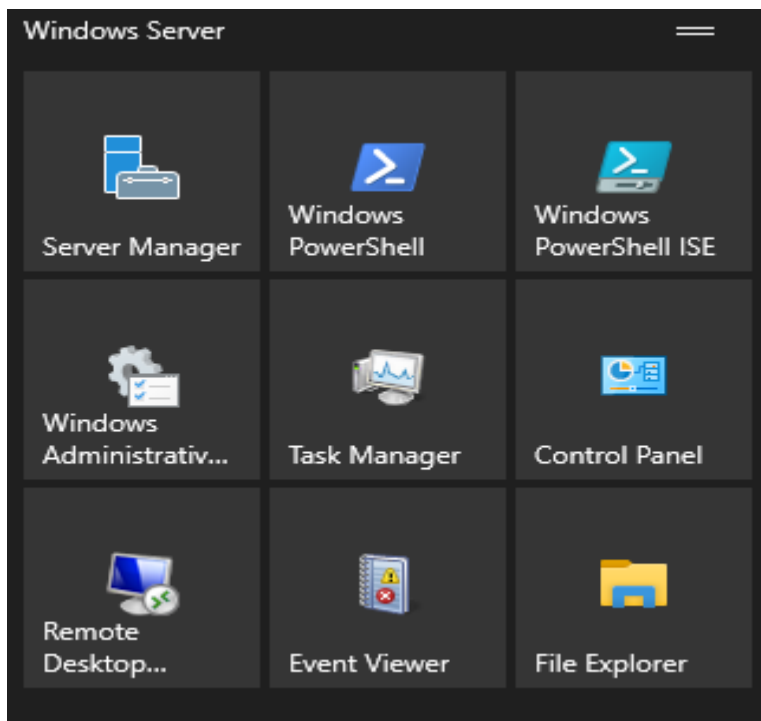


### PROPERTIES

For SRV2022

TASKS ▼

Computer name	SRV2022	Last installed updates	Never
Domain	RAMLAN.CA	Windows Update	Download updates only, using Wi
		Last checked for updates	Never
Microsoft Defender Firewall	Domain: Off	Microsoft Defender Antivirus	Real-Time Protection: On
Remote management	Enabled	Feedback & Diagnostics	Settings
Remote Desktop	Enabled	IE Enhanced Security Configuration	On
NIC Teaming	Disabled	Time zone	(UTC-05:00) Eastern Time (US & C
Ethernet0	IPv4 address assigned by DHCP, IPv6 enabled	Product ID	Not activated
Operating system version	Microsoft Windows Server 2022 Datacenter	Processors	Intel(R) Xeon(R) CPU E5-2640 0 @
Hardware information	VMware, Inc. VMware7,1	Installed memory (RAM)	8 GB
		Total disk space	89.4 GB



☒ Specify the Server Manager data refresh period (in minutes)

Setting the refresh interval too low results in very frequent refreshes, which can affect the performance of your server and network environment.

☐ Do not start Server Manager automatically at logon

## Select server roles

Before You Begin

Installation Type

Server Selection

**Server Roles**

Features

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
- ☐ Windows Server Update Services

## Select features

DESTINATION SERVER  
SRV2022.RAMLAN.CA

Before You Begin

Installation Type

Server Selection

Server Roles

Features

Confirmation

Results

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

## Features

- ☐ .NET Framework 3.5 Features
- ☒ .NET Framework 4.8 Features (2 of 7 installed)
- ☐ Background Intelligent Transfer Service (BITS)
- ☐ BitLocker Drive Encryption
- ☐ BitLocker Network Unlock
- ☐ BranchCache
- ☐ Client for NFS
- ☐ Containers
- ☐ Data Center Bridging
- ☐ Direct Play
- ☐ Enhanced Storage
- ☐ Failover Clustering
- ☐ Group Policy Management
- ☐ Host Guardian Hyper-V Support
- ☐ I/O Quality of Service
- ☐ IIS Hostable Web Core
- ☐ Internet Printing Client
- ☐ IP Address Management (IPAM) Server
- ☐ LPR Port Monitor
- ☐ Management OData IIS Extension
- ☐ Media Foundation
- ☐ Message Queuing
- ☒ Microsoft Defender Antivirus (Installed)
- ☐ Multipath I/O
- ☐ MultiPoint Connector
- ☐ Network Load Balancing
- ☐ Network Virtualization
- ☐ Peer Name Resolution Protocol
- ☐ Quality Windows Audio Video Experience
- ☐ RAS Connection Manager Administration Kit (CMA)
- ☐ Remote Assistance
- ☐ Remote Differential Compression

## Description

.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.

&lt; Previous

Next &gt;

Install

Cancel



## Select features

Before You Begin

Installation Type

Server Selection

Server Roles

Features

Confirmation

Results

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

## Features

- ☐ Remote Differential Compression
- ☐ Remote Server Administration Tools
- ☐ RPC over HTTP Proxy
- ☐ Setup and Boot Event Collection
- ☐ Simple TCP/IP Services
- ☐ SMB 1.0/CIFS File Sharing Support
- ☐ SMB Bandwidth Limit
- ☐ SMTP Server
- ☐ SNMP Service
- ☐ Software Load Balancer
- ☐ Storage Migration Service
- ☐ Storage Migration Service Proxy
- ☐ Storage Replica
- ☒ System Data Archiver (Installed)
- ☐ System Insights
- ☐ Telnet Client
- ☐ TFTP Client
- ☐ VM Shielding Tools for Fabric Management
- ☐ WebDAV Redirector
- ☐ Windows Biometric Framework
- ☐ Windows Identity Foundation 3.5
- ☐ Windows Internal Database
- ☒ Windows PowerShell (1 of 4 installed)
- ☐ Windows Process Activation Service
- ☐ Windows Search Service
- ☐ Windows Server Backup
- ☐ Windows Server Migration Tools
- ☐ Windows Standards-Based Storage Management
- ☐ Windows Subsystem for Linux
- ☐ Windows TIFF IFilter
- ☐ WinRM IIS Extension
- ☐ WINS Server
- ☐ Wireless LAN Service
- ☒ WoW64 Support (Installed)
- ☒ XPS Viewer (Installed)

## Description

.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.

&lt; Previous

Next &gt;

Install

Cancel

## Windows Update

\*Some settings are managed by your organization ([View policies](#))



## Updates available

Last checked: Today, 3:19 PM

Security Intelligence Update for Microsoft Defender Antivirus - KB2267602 (Version 1.339.232.0)

**Status:** Downloading - 0%

Windows Malicious Software Removal Tool x64 - v5.88 (KB890830)

**Status:** Downloading - 0%

2021-02 Cumulative Update for .NET Framework 3.5 and 4.8 for Windows Server Version Next for x64 (KB4601049)

**Status:** Downloading - 0%

## Windows Settings

Find a setting



**System**  
Display, sound, notifications,  
power



**Devices**  
Bluetooth, printers, mouse



**Network & Internet**  
Wi-Fi, airplane mode, VPN



**Personalization**  
Background, lock screen, colors



**Apps**  
Uninstall, defaults, optional  
features



**Accounts**  
Your accounts, email, sync,  
work, other people



**Time & Language**  
Speech, region, date



**Ease of Access**  
Narrator, magnifier, high  
contrast



**Search**  
Find my files, permissions



**Privacy**  
Location, camera, microphone



**Update & Security**  
Windows Update, recovery,  
backup

# Windows Server 2022

**PUBLIC PREVIEW**



**Advanced multi-layer security**



**Hybrid capabilities with Azure**



**Flexible application platform**

# SQL Server: Better together with Windows Server 2022

48 TB Memory

64 sockets | 2048 logical processors

Confidential computing

## Secure connectivity

Latest in network security innovation for Windows Server



Transport Layer



Secure DNS



SMB Hardening

## Windows Server 2022 Features

Windows Server 2022 has three straightforward enhancements with regard to security, portal integration and Windows Containers support on Kubernetes.

On the Kubernetes side, the Windows Container image size has been reduced, which is described as improving performance and download speeds. It's "smaller by about a gigabyte," according to Bernardo Caldas, vice president of program management at Microsoft, in [this Ignite session](#). Other Kubernetes support embellishments include:

- The ability to run "applications that depend on Azure Active Directory with group Managed Services Accounts (gMSA) without domain joining the container host."
- The ability to set policy using Calico across "hybrid Kubernetes clusters."
- Easier Kubernetes setup, including node configuration for host-process containers and IPv6 support.

Some workload stats for the new server were described. Microsoft is claiming that Windows Server 2022 can support "large-scale applications like SQL Server that require 48TB of memory and 2,048 logical cores running on 64 physical sockets."

Windows Server 2022 will have built-in security capabilities, such as using HTTPS and Transport Layer Security 1.3 by default. The Server Message Block protocol in Windows Server 2022 will use AES-256 encryption. The big news, though, is the addition of Secured-core protection.

## Secured-Core Server Protection

On the security front, a new feature in Windows Server 2022 is its "**Secured-core server**" capability, which adds security protections at the firmware level when using qualified hardware.

Secured-core server is a hardware (Trusted Platform Module 2.0) and virtualization-based security approach designed to attest that the operating system hasn't been compromised by so-called "rootkits" or "bootkits" at the bootup stage, or corrupted by tainted drivers. Such a protection scheme is already available on the client side in commercially released **Windows 10 Secured-core PCs**.

The Secured-core approach also is getting extended to Microsoft's Azure Stack HCI product, plus "Azure-certified IoT devices," Microsoft explained in [this announcement](#) by David Weston, director of enterprise and OS security at Microsoft. Secured-core protections won't just apply to Windows systems, but also will work for Linux operating systems, he added.

The release of Windows Server 2022 Secured-core server products will depend on the timing of Microsoft's chip (AMD and Intel) and original equipment manufacturer hardware partners. However, new machines are expected to arrive sometime this year, according to Caldas during the Ignite session.

"You can expect to see new Secured-core systems from Dell EMC, HP Enterprise, Lenovo and others later this year," he said.

The current Windows Admin Center release has a new "Security" tool at the preview stage that will show "the current state of Secured-core features." It also lets users enable Secured-core features, if applicable, Microsoft indicated.

## Management Portal Integration

Microsoft's management and migration solutions were part of the Windows Server 2022 news. A summary of what's new in Windows Admin Center version 2103 and the Windows Admin Center in the Azure Portal was published by Microsoft in [this Twitter post](#).

Microsoft is claiming that its "[Azure Arc](#) and [Storage Migration Service](#) are two key hybrid capabilities that work best with Windows Server 2022." Azure Arc is Microsoft's multicloud management tool that also supports server management on-premises. The Storage Migration Service permits the "seamless connectivity of file servers on-premises to file servers on Azure," as well as "low latency" data migrations to the cloud.

Also, the browser-based Windows Admin Center portal is now integrated with the Azure Portal. It's free to use and permits the management of virtual machines (based on Windows Server 2016 and newer) using that portal, per [Microsoft's documentation](#).

IT pros will get an enhanced view of virtual machine information via the Windows Admin Center integration, Microsoft's announcement promised:

*With the addition of Windows Admin Center, we have supplemented this great management experience with additional opportunities such as an enhanced view of virtual machine usage, performance monitoring, viewing of events, and much more. We expect this to reduce the need for you to remote desktop into your virtual machine for administration improving your experience as you deploy and maintain virtual machines with or without a GUI.*

Secured use of the Windows Admin Center in the Azure Portal is assured by an "integrated certificate experience," Microsoft indicated.

Microsoft is also touting [Azure Automanage](#) for Windows virtual machine management, which is an Azure Portal capability that's at the preview stage. It has a new hotpatch capability for Windows Server virtual machines "without needing to reboot," according to [an announcement](#). It now includes support for Linux virtual machines, including "CentOS, Red Hat Enterprise Linux (RHEL), Ubuntu, and SLES" distros. However, right now, the Linux management lacks the ability to use the hotpatch feature and Microsoft anti-malware, and it has a different Guest Configuration behavior.

Microsoft also this week announced a [preview of App Containerization](#), a new Azure Migrate tool for containerizing existing applications and moving them to Microsoft's Azure Kubernetes Service. The preview supports the containerization of ASP.NET applications on Windows Server and Java Web apps on Apache Tomcat on Linux machines.



## Windows Server 2022 Support and Licensing

Nothing was shared, apparently, in the Ignite announcements about the editions, support and licensing to expect when Windows Server 2022 reaches the commercial-release stage.

Typically, the LTSC designation would suggest that the Windows Server 2022 product, when released, would have 10 years of support, divided into two five-year periods (called "mainstream" and "extended" support). Ten years of support is the expectation when Windows Server 2022 LTSC gets commercially released.

Microsoft did **announce last month** that it planned to halve the traditional 10 years of support for the next Windows 10 and Office LTSC releases. However, nothing was said then about the next Windows Server LTSC product.

Editions and licensing details regarding Windows Server 2022 LTSC weren't described. Traditional licensing options are expected.

However, we do know that Microsoft's next application server products (Exchange, SharePoint, Project and Skype for Business) will have their licensing switched to being on a subscription basis. Microsoft had talked about that change **back in September** during last year's Ignite event. Those new application server products are expected to appear sometime in the second half of this year.

## Infrastructure and server roles

But with so much emphasis on hybrid and migration strategies, where does that leave the server OS? (While there is still comprehensive information available for Windows Server on [Microsoft Learn](#), there's no longer an official Microsoft certification for the server product outside Azure.)

"Windows Server is a highly versatile, multi-purpose operating system, with dozens of roles and hundreds of features, including guest rights," Vijay Kumar, director of Windows Server and Azure product marketing at Microsoft, told TechRepublic. "Windows Server includes Software-Defined Data Center (SDDC) features which customers can use for multi-purpose, for example running file services, SQL Server, or custom apps on Software-defined Storage with Storage Spaces Direct."

Azure Stack HCI is "for running virtual machines on-premises with connections to Azure hybrid services," Kumar said. It's also the way to get [Azure Kubernetes Service](#) on your own hardware -- that's still very much about infrastructure rather than being an application server or a storage server. Windows Server 2022 scales to even larger applications than previous releases, supporting up to 48 terabytes of memory, up to 64 sockets, and 2,048 logical processors. It also supports confidential computing with [Intel SGX](#) on [Ice Lake](#) CPUs.

## Secured-core, secure connectivity

Secured-core server and secure connectivity offer more layers of security from the hardware up, without much extra work. "Secured-core server builds on technologies such as Windows Defender System Guard and Virtualization-based Security to minimize risk from firmware vulnerabilities and advanced malware," Kumar said. This is the same security option that's already an option for [Windows 10 systems](#), where the operating system uses virtualisation-based security to isolate key parts of the server from malware -- including advanced kernel attacks -- by validating [Secure Boot](#) rather than trusting the firmware. This makes it a lot harder for attackers to get access to one device and then move on to compromise servers across your network.

Secured-core will need new server hardware for the firmware security protection, Kumar confirmed, but it also enables options that are already in Windows Server like [HVCI](#), which admins can also turn on from Windows Admin Center -- and even remotely -- if they see alerts about an attack.

"Other capabilities like virtualization-based security, hypervisor-based code integrity, secure boot and TPM are available on current hardware. The Windows Admin Center Security extension will report on these capabilities on current hardware and operating system platforms."

Windows Server 2022 also does more to secure network connections: [TLS 1.3](#) is enabled by default and there's DNS client support for HTTPS and SMB protocol hardening such as AES 256 encryption. Microsoft is calling that 'secured connectivity', and Kumar suggested that adoption should be straightforward for organisations. "SMB's new AES-256 encryption is completely abstracted in the SMB 3 protocol to mitigate compatibility concerns. SMB Direct also now supports encryption over RDMA networks, both with AES-128 and AES-256." As well as improving network performance by supporting compression over SMB, there's better performance with SMB encryption or signing with SMB Direct with RDMA-enabled network cards.

Microsoft's open-source implementation of the [QUIC protocol](#) that will form the basis of [HTTP/3](#) will be in Windows Server 2022. It's being used for [SMB over QUIC](#), which is a more secure replacement for [WebDAV](#) to deliver SMB access without the expense and complexity of a VPN. This uses QUIC as the transport for SMB instead of TCP/IP and RDMA, with a tunnel that secures SMB even if encryption isn't enabled. "SMB over QUIC will be available with Azure Automanage and Windows Server 2022," Kumar told TechRepublic. "It will also be supported as a client in Windows 10 and on third-party platforms like Android and others."

## Improving app modernisation with containers

Windows Admin Center isn't tied to any release of Windows Server, although v2103 did come out at the same time as the preview of Windows Server 2022, and Kumar noted that "we have packed in a number of enhancements that we anticipate admins would love to get their hands on."

That includes the Containers extension that makes it easier to package existing ASP.NET, WebDeploy, .NET and MSI server apps into containers. There are other improvements to Windows Containers (some of which SAC customers have already been getting, others that are new), Kumar said: "Smaller image size for faster download, simplified network policy implementation, containerization tools for .NET applications and improvements to group Managed Service Accounts [gMSA] for Windows Containers that allow customers to enable support for gMSA without domain joining the host." That makes it easier to run apps that depend on Active Directory (AD) without making changes to the container host machine. An AD identity protected in a secret store can be used by the unjoined host to retrieve the gMSA password, which makes it much easier to use gMSA with Kubernetes.

You can also virtualise time zones so you can run globally scalable applications without needing to consider (or have access to) the timezone of the host.

The container image is about 1GB smaller than before, so it's small to download and faster to start up. All of the scale and performance improvements to overlay network support from the SAC releases are included. IPv6 support is coming to Kubernetes on Windows, although that will need Kubernetes 1.20 for full end-to-end IPv6 support.

"HostProcess containers are enabled with similar access to the host as processes that run on the host directly," Kumar explained. "With HostProcess containers, users can package and distribute management operations and functionalities that require host access while retaining versioning and deployment methods provided by containers. This allows Windows containers to be used for a variety of device plugin, storage, and networking management scenarios in Kubernetes. HostProcess containers can be built on top of existing Windows Server 2019 (or later) base OS images, managed through the Windows container runtime, and run as any user that is available on or in the domain of the host machine."

WSL 2 has been available in insider builds of Windows Server but as an SAC rather than an LTSC feature, and it's [currently not working](#). Kumar didn't confirm whether it would be available on Server 2022, saying that it's "technically not part of Windows Server" but added that "customers using Windows Subsystem for Linux version 1 on previous versions of Windows Server can continue to use it".

For customers specifically interested in running Linux containers on Windows (known as LCOW), Kumar suggested that Azure Stack HCI will be the best option. "As we talked to customers interested in using the LCOW technology on Windows Server, it was evident that they also required a robust container orchestration experience along with supported storage and networking technology. This was one of the factors in our introduction of Azure Kubernetes Service (AKS) on Azure Stack HCI for customers wanting to run containerized Linux and Windows applications on-premises and at the edge. Secondly, .NET Core can run in Windows containers (Nano or Server Core) on AKS, AKS on Azure Stack HCI, and Windows Server 2022."



Customers using Nano Server inside containers now get a longer support lifecycle that matches the mainstream support of Windows Server 2022 (until 2026). "Nano is targeted at being the premium container runtime, this does not change," Kumar told TechRepublic.

The long support for Windows Server LTSC is why it's the version that most customers are using, Kumar explained. "We expect this as many customers use Windows Server for running business-critical applications and services. They love the fact that we support LTSC for five-plus years and we do roll up all the Semi-Annual Channel (SAC) features and capabilities into the next LTSC, such as Windows Server 2022."

These are some of the new features coming with Windows Server 2022.

**Microsoft 2021/2022 projections:**

<u>Windows 10X</u> (UPDATED: 5/7) <b><i>Delayed Indefinitely</i></b>	<u>Windows 10</u> (UPDATED: 5/7) <i>Expected release: First half of 2021 (21H1) and second half of 2021 (21H2)</i>
<u>Exchange Server vNext</u> <i>Expected release: Second half of 2021</i>	<u>SharePoint Server vNext</u> <i>Expected release: Second half of 2021</i>
<u>Skype for Business Server vNext</u> <i>Expected release: Second half of 2021</i>	<u>Project Server vNext</u> <i>Expected release: Second half of 2021</i>
<u>Office for Windows and Mac</u> (UPDATED: 4/22) <i>Expected release: Second half of 2021</i>	<u>System Center Operations Manager 'Aquila'</u> <i>Expected release: TBA</i>
<u>Cloud PC</u> (UPDATED: 4/21) <i>Expected release: Summer 2021</i>	<u>Dynamics 365 and Power Platform</u> (UPDATED: 4/6) <i>Release Wave 1: <b>Released</b></i> <i>Release Wave 2: September 2021</i>
<u>.NET 6</u> (UPDATED: 4/13) <i>Expected release: November 2021</i>	<u>Windows Server 2022</u> (ADDED: 4/30) <i>Expected release: Second half of 2021</i>

Thanks

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