# Lab - Create a Virtual Install of Server 2019 (Full) Using VirtualBox

## Overview

In this lab, students will create a virtual install of Server 2019 with GUI (Desktop Experience) using VirtualBox. This lab is designed to run on a MAC, Windows 7 64 bit, Windows 8/8.1 64 bit or Windows 10. The latest version of VirtualBox Player was used in confirming this lab as working.

The student should read the lab in its entirety before beginning the install.

## System requirements for creating a virtual install of Server 2019 using VirtualBox.

Windows Server 2019 as a 64-bit operating system. This lab is built using a 64-bit hardware system.

You can get a free copy of VirtualBox by using this link <u>Download VirtualBox</u>.

## **Begin the Lab!**

Once you've downloaded VirtualBox, you can browse to the saved download location and run the installer. In this lab, I demonstrate installing VirtualBox, Version 6.0 but regardless of the version, the installation wizard remains intuitive.

On the opening screen, click next.



On the next screen, accept the defaults and click next.

🖟 Oracle VM VirtualBox 6.0.0 Setup	>
Custom Setup	
Select the way you want features to be installed.	
Click on the icons in the tree below to change the v	vay features will be installed.
VirtualBox Application VirtualBox USB Support VirtualBox Networking	Oracle VM VirtualBox 6.0.0 application.
VirtualBox Bridger VirtualBox Host-C VirtualBox Python 2.x Su	This feature requires 162MB on your hard drive. It has 3 of 3 subfeatures selected. The
< >>	SUDTEATURES REQUIRE 76KB on your
Location: C:\Program Files\Oracle\VirtualBox\	Browse
Version 6.0.0 Disk <u>U</u> sage < E	ack <u>N</u> ext > <u>C</u> ancel

On the next screen, accept the defaults and click next.

🕼 Oracle VM VirtualBox 6.0.0 Setup	×
Custom Setup	
Select the way you want features to be installed.	
Please choose from the options below:	
Create start menu entries	
Create a shortcut on the desktop	
Create a shortcut in the Quick Launch Bar	
Register file associations	
Version 6.0.0 < <u>B</u> ack <u>N</u> ext > <u>C</u> ance	!

On the next screen, accept the warning and click Yes.



On the Ready to Install screen, click the install button.

🛃 Oracle VM VirtualBox 6.0.0 Setup		×
Ready to Install		
The Setup Wizard is ready to begin the C	ustom installation.	
Click Install to begin the installation. If yo installation settings, click Back. Click Canc	u want to review or change any of your el to exit the wizard.	T
Version 6.0.0	< <u>B</u> ack <u>I</u> nstall	<u>C</u> ancel

The installation begins.

🕼 Oracle VM VirtualBox 6.0.0 Setup		_		×
Oracle VM VirtualBox 6.0.0				
Please wait while the Setup Wizard insi take several minutes. Status:	talls Oracle VM VirtualBo	ox 6.0.0. Thi	s may	
Version 6.0.0	< <u>B</u> ack <u>N</u>	ext >	<u>C</u> ano	el

On the finish screen, click the finish button and if prompted, restart you host machine.



### Installing Server 2019 with Desktop Experience (GUI)

In this next part of the lab, we begin the process of creating a virtual machine of Server 2019.

We will first need to download an ISO image of Server 2019 Standard Edition and save it to a location on our machine.

### Download direct from Microsoft: Server 2019 ISO image

Once you have completed the download of the ISO image\_for Server 2019 standard, open VirtualBox and begin creating a virtual install of Server 2019.

#### Begin the lab!

To begin the 2019 creation process, open VirtualBox and from the upper left corner, click on Machine and from the context menu, select New.

🐧 Ora	cle	VM VirtualBox Manager			
File	Mad	chine Help			
ΠØ	٢	New	Ctrl+N	^	<u> </u>
ÖÖ	÷	Add	Ctrl+A		New Settings Discard Start
64	$\odot$	Settings	Ctrl+S		📃 General
	Ģ	Clone	Ctrl+O		Name: Server 2019 Core
	r	Move			Operating System: Other Windows (64-bit) Settings File Location: C:\Users\Expat\VirtualBox VMs\Server 2019 Core
2	×	Remove			System
	7	Group			Base Memory: 2048 MB
64 201	\$	Start	•		Boot Order: Floppy, Optical, Hard Disk Acceleration: VT-x/AMD-V, Nested Paging, PAE/NX
		Pause			

This launchs the Create Virtual Machine Wizard.

		?	$\times$
← Create Virtual	Machine		
Name and c	operating system		
Please choose a machine and sel The name you d machine.	descriptive name and destination folder for the ect the type of operating system you intend to i hoose will be used throughout VirtualBox to iden	new vi nstall o itify this	rtual n it. s
Name:	Server 2019 Full Install		
Machine Folder:	C:\Users\Expat\VirtualBox VMs		$\sim$
Type:	Microsoft Windows	•	64
Version:	Other Windows (64-bit)	-	
	Expert Mode Next	Cance	el

On the next window, accept the default of 2014 MB of RAM. Click next.



On the next screen, accept the default to create a virtual hard disk now. Click create.



Accept the default for the hard disk type as VDI. Click next.



On the next screen, accept the default for the storage on the physical hard disk to be dynamically allocated.

		ବୃ	23	
Create Virtual Hard Disk				
Storage on physical hard disk				
Please choose whether the new virtual hard disk file should grow as it is us allocated) or if it should be created at its maximum size (fixed size).	ed (d	lynam	ically	
A <b>dynamically allocated</b> hard disk file will only use space on your physic fills up (up to a maximum <b>fixed size</b> ), although it will not shrink again auto space on it is freed.	al ha: matic	ard dis cally w	k as it hen	
A <b>fixed size</b> hard disk file may take longer to create on some systems but use.	is of	ten fa	ster to	)
Oynamically allocated				
Fixed size				
Next		Car	ncel	]

On the next screen, accept the default for the file location and size of 50 GB. Click create.

	?	×
<ul> <li>Create Virtual Hard Disk</li> </ul>		
File location and size		
Please type the name of the new virtual hard disk file into the on the folder icon to select a different folder to create the file	box below in.	or click
Server 2019 Full Install		
Select the size of the virtual hard disk in megabytes. This size amount of file data that a virtual machine will be able to store	is the limit o on the hard	on the I disk.
· · · · · · · · · · · · · · · · · · ·	<b>5</b> þ	.00 GB
4.00 MB 2.00 TB		
Create	Can	icel

From the left window pane, ensure your disk for Server 2019 Full Install is highlighted and from the grey taskbar, click on the green start arrow.



From the select Start-up Disk screen, click on the folder browse button and browse to the download location for your ISO image of Server 2019. Double-click the ISO image and click the Start button.

		?	×
÷	Select start-up disk		
	Please select a virtual optical disk file or a phy drive containing a disk to start your new virtu from.	sical o al mao	ptical hine
	The disk should be suitable for starting a comp should contain the operating system you wish the virtual machine if you want to do that now be ejected from the virtual drive automatically switch the virtual machine off, but you can als yourself if needed using the Devices menu.	outer f to ins v. The v next so do f	from and stall on disk will time you this
	17763.1.180914-1434.rs5_release_SERVER_	EVAL_	- 🗔
	Start	C	Cancel

Step 9: VirtualBox begins the install.

🖆 Windows Setup	- • 💌
Windows Server* 2019	
Languag <u>e</u> to install: <mark>English (United States)</mark> Time and currency format: <mark>English (United States)</mark>	
Keyboard or input method: US	
Enter your language and other preferences and click "Next" to continue.	
© 2018 Microsoft Corporation. All rights reserved.	<u>N</u> ext

15. Click on Next to start the Windows Server 2019 installation.

Click on Install now



On the next screen, click, 'I don't have a product key' to start your 180-day evaluation of Server 2019.

🕞 💰 Windows Setup	<b>X</b>
Activate Windows	
If this is the first time you're installing Windows on this PC (or you're installing a different edition), you need to enter a valid Windows product key. Your product key should be in the confirmation email you received after buying a digital copy of Windows or on a label inside the box that Windows came in.	
The product key looks like this: XXXXX-XXXXX-XXXXX-XXXXX-XXXXXX	
If you're reinstalling Windows, select I don't have a product key. Your copy of Windows will be automatically activated later.	
Privacy statement	lext

16. Select the operating system that you wish to install. Regardless if you install the Server 2019 Datacenter or the 2016 Standard version, you want the installing package that includes the Desktop Experience. Otherwise, you end up with just the Server 2019 Core and no GUI. Datacenter can handle more RAM and CPU options, but they are identical operating systems. Students may use either for their labs.

perating system	Archited	ture Date modified
/indows Server 2019 Standard Evaluation	x64	9/15/2018
Vindows Server 2019 Standard Evaluation (I	Desktop Experien x64	9/15/2018
Vindows Server 2019 Datacenter Evaluation	х64	9/15/2018
Vindows Server 2019 Datacenter Evaluation	(Desktop Experi x64	9/15/2018
cription:		

17. Accept the license agreement.

0	🔏 Windows Setup	×
	Applicable notices and license terms	
	IMPORTANT NOTICE (followed by LICENSE TERMS)	^
	<b>Diagnostic and Usage Information.</b> Microsoft automatically collects this information over the internet, and uses it to help improve your installation, upgrade, and user experience, and the quality and security of Microsoft products and services. Consistent with these purposes, the information may be associated with your organization. Windows Server 2016 has four (4) information collection settings (Security, Basic, Enhanced, and Full), and uses the "Enhanced" setting by default. This level includes information required to: (i) run our antimalware and diagnostic and usage information usage and compatibility; and (iii) identify quality issues in the use and performance of the operating system and applications.	*
Í	☑ I_accept the license terms	
		Next

18. Select Custom Install Windows only (advanced).



19. Nothing to do here but click Next.

🕘 🔏 Wind	dows Setup					<b>_</b> >			
Where do you want to install Windows?									
	Name		Total size	Free space	Туре				
-	Drive 0 Partitio	on 1: System Reserved	549.0 MB	532.0 MB	System				
	Drive 0 Partition 2		31.5 GB	30.9 GB	Primary				
∳ <u>n</u> ef	resh	Delete	<u>F</u> ormat	<mark>∦ Ne</mark> w					
💽 Loa	d driver	Extend							
					<u>N</u> ex	t			

Server 2019 beings the file copy process. Take a break while the installation finishes.



## Windows will reboot. Be patient!

Before Server 2019 will allow you to log in, you must configure the password for the administrator account. Do try and remember your password. If you forget it, you will need to remove the machine and files from the VirtualBox Management Console and begin anew.

Customize settings								
Type a password for the built-in administrator account that you can use to sign in to this computer.								
User name	Administrator							
Password	•••••							
Reenter password	•••••	<u>ہ</u>						

From the VMWare task bar, click on VM> Send Ctrl+Alt+Delete.



Logon with your administrator password.



21. Welcome to Windows Server 2019!



Caveats

Word of warning! Do not enable automatic updates for this server! Doing so will take days, use up plenty of bandwidth and will fill up your 50 GB partition in little to no time at all.

If the partition fills up, you will need to expand it or blow out the virtual machine and start over.

Make sure you provide enough RAM for Server 2019 to remain responsive. If your install pauses or hangs or boots to slow, this is a RAM issue. Right-click on the name of your virtual machine and go into system to increase the amount of RAM.

### The Last Word

This is a virtual machine; this is not a simulator or an emulator. This is a real working install of Server 2019, and you could use this server as-is on any production network in any organization. No one would know the difference. With every Server 2019 Standard license we get two free virtual machine licenses. With Server 2019 Datacenter we unlimited virtual machines.

We could purchase a medium size server, install a commercial grade emulation package such as Citrix, VMWare or Hyper-V. We next create one physical install of Server 2019 Standard Edition and create two additional virtual servers of Server 2019 Standard edition. We've

saved a bundle on hardware, licensing, recovered server space in our already crowded server room, reduced cooling cost and reduced the organization's carbon footprint. Win, win!

Virtualization can be a great benefit to even the smallest organization, and there is probably not an easier way to learn how to install, configure and manage a real install of any Windows or Linux operating system.

End of the lab!