

### A Quick Linux VM on Windows with Vagrant

Created by Brennen Bearnes



Last updated on 2015-02-25 01:30:09 PM EST

## **Guide Contents**

Guide Contents	2
Overview	3
Install Vagrant	5
Install msysGit	10
Install VirtualBox	14
Run Bash and Fire up a New Vagrant Box	16

## Overview

In What is this "Linux", anyhow? (http://adafru.it/eBw) we mention using Vagrant as a way to quickly configure a Linux **virtual machine**, and the Raspberry Pi Kernel-o-Matic (http://adafru.it/eBx) uses Vagrant to set up a VM for cross-compiling a custom Raspberry Pi kernel.

Vagrant is a software package designed to let you easily create disposable VMs from a library of freely-downloadable images and connect to them, all with a few simple commands in a terminal. The idea is that you can continue to run your desktop OS like Mac OS X or Windows 7 or whatever, but then make a tiny new Linux computer in a window that you can connect to whenever you need to run Linux software

Unfortunately this isn't quite as seamless on Windows machines as on GNU/Linux or OS X systems, but with a few minutes of effort you should be able to do this any time you feel like it:



This is a brief guide to installing the three moving pieces needed to make this work well on a Windows machine:

- 1. Vagrant itself
- 2. VirtualBox to run virtual machines
- 3. msysGit, a Windows distribution of Git and some other Unix tools, for cloning git repositories containing Vagrant configurations and connecting to your new VM with SSH

# Install Vagrant

First, hit the Vagrant site (http://adafru.it/epl) and look for a "DOWNLOAD" button.



Click on the Windows installer link, and save the installer:



Then run the installer. Default choices should be fine.

<b>B</b>	Vagrant Setup	- 0 ×
	Welcome to the Vagran	t Setup Wizard
	The Setup Wizard will install Vagrar Next to continue or Cancel to exit	nt on your computer. Click the Setup Wizard.
	Back	ext Cancel

谬	Vagrant Setup 🗕 🗖	×			
-	End-User License Agreement Please read the following license agreement carefully	Ì			
	Vagrant core is licensed under the MIT license. This installation also contains extensions to Vagrant which are under a non-open source license. Both licenses are visible below. The MIT License This license is applicable to the core of Vagrant, and any				
	✓ I accept the terms in the License Agreement				
	Print Back Next Cance	2			

岗	Vagrant Setup	-		×
Destina Click Ne	tion Folder ext to install to the default folder or click Change to choose another.	7	1	Ľ,
Install Va	agrant to:			
C: \Hash	niCorp\Vagrant\			
Chang	je			
	Back Next		Canc	el
閿	Vagrant Setup	-		×
Installi	ing Vagrant	7	1.1	E.
Please w	ait while the Setup Wizard installs Vagrant.			
Status:	Copying new files			
		2		

设	Vagrant Setup	X		
	Completed the Vagrant Setur	) Wizard		
	Click the Finish button to exit the Setup Wizard.			
	Back Finish	Cancel		

# Install msysGit

Next, we'll install **msysGit**, which is a distribution of the git version control system (http://adafru.it/cFT). Git isn't strictly necessary for working with Vagrant, but it provides a version of the Bash shell, SSH, and other tools we'll find helpful. Later on, if you have Git installed, you can use it to keep up to date with things like the Kernel-o-Matic (http://adafru.it/epp).

#### If you already have msysGit or the Cygwin tools installed, you can likely skip this step.

Again, visit the msysGit site (http://adafru.it/eBy) and look for a "Download" button.

🖉 🕸 Git for Windows	* +				-	-	
🔄 🗟 https://maysgit.github.io		T C Q Secto	合自	4	+	ø	=
	git for windows	WING REPOSITORY MARINGLEST					*
		We bring the					
		awesome Git SCM					
		to Windows					
		Download Contribute					
			-		-		
	Tools &	Features					
L	Git for Windows focuses on offering a lightweight	, native					
	set of tools that bring the full feature set of the G	It SCM to					
	experienced Git users and novices alike.	A CENTRE AND A CONTRACT OF A C					

Run the installer. Windows will likely ask you several times if you'd like to allow the installer to run and modify your system.

•	Git Setup	- 🗆 🗙
	Welcome to the Git Se This will install Git version 1.9.5-preview: computer. It is recommended that you close all othe continuing. Click Next to continue, or Cancel to exit	tup Wizard 20141217 on your er applications before Setup.
git		
	Next	:> Cancel

For most options, the defaults should be acceptable. You may want to select "Use Git from the Windows Command Prompt", but it shouldn't make any real difference for our purposes.

٠	Git Setup – 🗆 🗙
	Adjusting your PATH environment How would you like to use Git from the command line?
	O Use Git from Git Bash only
	This is the safest choice as your PATH will not be modified at all. You will only be able to use the Git command line tools from Git Bash.
	Use Git from the Windows Command Prompt
	This option is considered safe as it only adds some minimal Git wrappers to your PATH to avoid duttering your environment with optional Unix tools. You will be able to use Git from both Git Bash and the Windows Command Prompt.
	$\bigcirc$ Use Git and optional Unix tools from the Windows Command Prompt
	Both Git and the optional Unix tools will be added to your PATH. Warning: This will override Windows tools like "find" and "sort". Only use this option if you understand the implications.
http	p://msysgit.github.io/
	< Back Next > Cancel

٠	Git Setup 🗕 🗖 🗙				
	Configuring the line ending conversions How should Git treat line endings in text files?				
	Checkout Windows-style, commit Unix-style line endings				
	Git will convert LF to CRLF when checking out text files. When committing text files, CRLF will be converted to LF. For cross-platform projects, this is the recommended setting on Windows ("core.autocrlf" is set to "true").				
	O Checkout as-is, commit Unix-style line endings				
	Git will not perform any conversion when checking out text files. When committing text files, CRLF will be converted to LF. For cross-platform projects, this is the recommended setting on Unix ("core.autocrlf" is set to "input").				
	○ Checkout as-is, commit as-is				
	Git will not perform any conversions when checking out or committing text files. Choosing this option is not recommended for cross-platform projects ("core.autocrlf" is set to "false").				
http	p://msysgit.github.io/				
	< Back Next > Cancel				

For convenience, you might want to choose "In the Quick Launch" and "On the Desktop" under "Additional icons".

٠	Git Setup	-		×
	Select Components Which components should be installed?			Ø
	Select the components you want to install; clear the components you do r install. Click Next when you are ready to continue.	not war	nt to	_
	<ul> <li>✓ Additional icons</li> <li>✓ In the Quick Launch</li> <li>✓ On the Desktop</li> </ul>		^	
	<ul> <li>✓ Windows Explorer integration</li> <li>○ Simple context menu (Registry based)</li> <li>○ Git Bash Here</li> <li>○ Git GUI Here</li> </ul>	1.1	1B	
	<ul> <li>Advanced context menu (git-cheetah plugin)</li> <li>Associate .git* configuration files with the default text editor</li> <li>Associate .sh files to be run with Bash</li> </ul>	1.1	4B ↓	
bttr	Current selection requires at least 100.5 MB of disk space.			
rice)	< Back Next >		Can	cel

# Install VirtualBox

Lastly, we need VirtualBox to actually *run* the virtual machine we're going to configure. Head to virtualbox.org (http://adafru.it/eiS) and look for the Downloads (http://adafru.it/cBK) link, then find the Windows installer.



Opening VirtualBox-4.3.22-	98236-Win.e	exe ×
You have chosen to open:		
VirtualBox-4.3.22-98236-Win.exe		
which is: Binary File (105 MB)		
from: http://dlc-cdn.sun.com		
Would you like to save this file?		
	Save File	Cancel

As with Vagrant and msysGit, run the installer, and click through options. Defaults should be fine.

過	Oracle	e VM VirtualBo	ox 4.3.22 Setup	×
	<b>E</b>	Welcome VirtualBo Wizard	to the Oracl x 4.3.22 Set	e VM up
		The Setup Wizard your computer. Cl Setup Wizard.	will install Oracle VM Virt. ick Next to continue or C	ialBox 4.3.22 on ancel to exit the
Version 4.3.22			Next >	Cancel

If all has gone well, you should be ready to start up a Vagrant box.

# Run Bash and Fire up a New Vagrant Box

First, look for the Git Bash prompt provided by msysGit. It's probably on your desktop, but if you can't find it there, have a look in the Start Menu.



This is a version of Bash, which is a standard shell on GNU/Linux systems (for shell basics, start here (http://adafru.it/eBz)). Fire it up and enter the following commands:

mkdir vagrant\_demo cd vagrant\_demo vagrant init hashicorp/precise32

•	MINGW32:/c/Users/Brennen/vagrant_demo	-	×
Brennen@SACRIF \$ mkdir vagran	ICIAL-BOX ~ t_demo		^
Brennen@SACRIF \$ cd vagrant_d	ICIAL-BOX ~		
Brennen@SACRIF \$ vagrant init A `Vagrantfile ready to `vagr the comments i `vagrantup.com	TCIAL-BOX ~/vagrant_demo hashicorp/precise32 ` has been placed in this directory. You are now ant up` your first virtual environment! Please read n the Vagrantfile as well as documentation on ` for more information on using Vagrant.		
BrennenØSACRIF \$	ICIAL-BOX ~/vagrant_demo		
			~

You should now have a folder containing a basic Vagrantfile. (There's a lot of documentation (http://adafru.it/eBA) on Vagrantfiles.)

Next, do vagrant up, which should download an image, set it up, and start a virtual machine running in VirtualBox. This will probably take a while.

\_ 🗆 🗙 ٠ MINGW32:/c/Users/Brennen/vagrant\_demo rennen@SACRIFICIAL-BOX ~/vagrant\_demo \$ vagrant up Bringing machine 'default' up with 'virtualbox' provider... ==> default: Importing base box 'hashicorp/precise32'... ==> default: Matching MAC address for NAT networking... ==> default: Checking if box 'hashicorp/precise32' is up to date... ==> default: Setting the name of the VM: vagrant\_demo\_default\_1424818456853\_2827 ==> default: Clearing any previously set network interfaces... ==> default: Preparing network interfaces based on configuration... default: Adapter 1: nat ==> default: Forwarding ports... default: 22 => 2222 (adapter 1) => default: Booting VM... => default: Waiting for machine to boot. This may take a few minutes... default: SSH address: 127.0.0.1:2222 default: SSH username: vagrant default: SSH auth method: private key default: Warning: Connection timeout. Retrying... default: default: Vagrant insecure key detected. Vagrant will automatically replace default: this with a newly generated keypair for better security. default: default: Inserting generated public key within guest... default: Removing insecure key from the guest if its present... default: Key inserted! Disconnecting and reconnecting using new SSH key... ==> default: Machine booted and ready!
==> default: Checking for guest additions in VM...
default: The guest additions on this VM do not match the installed version o default: VirtualBox! In most cases this is fine, but in rare cases it can default: prevent things such as shared folders from working properly. If you see default: shared folder errors, please make sure the quest additions within t he default: virtual machine match the version of VirtualBox you have installed on default: your host and reload your VM. default: default: Guest Additions Version: 4.2.0 default: VirtualBox Version: 4.3
==> default: Mounting shared folders... default: /vagrant => C:/Users/Brennen/vagrant\_demo rennen@SACRIFICIAL-80X ~/vagrant\_demo



There you have it: A working Linux VM. What now? Well, you can:

- Continue with the Getting Started section (http://adafru.it/epm) of the official Vagrant manual.
- Check out our ongoing series of introductory Linux tutorials:
  - What is this "Linux", anyhow? (http://adafru.it/ekt)
  - What is the Command Line? (http://adafru.it/eBz)
  - An Illustrated Shell Command Primer (http://adafru.it/ekr)
  - An Illustrated Guide to Shell Magic: Standard I/O & Redirection (http://adafru.it/ey3)
  - An Illustrated Guide to Shell Magic: Typing Less & Doing More (http://adafru.it/eBB)

Once you're done with a machine, you can remove it with vagrant destroy.

If you're interested in trying other operating systems and configurations, read the manual on boxes (http://adafru.it/eBM), then have a look at the list of available boxes from HashiCorp (http://adafru.it/eBN) - you're not limited to these, but it's a good place to start.