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### Bruce Scherzinger Northern Virginia Joomla! Users Group WINDOWS 10 LINUX VM WITH XA

### INTRO

- Your main computer uses Windows and you want a safe place to develop Joomla! sites offline
- WAMPP has some drawbacks
   + Windows file naming is not case-sensitive
  - + WAMPP is kludgey and clumsy
- Most hosting platforms are running Linux

### VIRTUAL MACHINES

- \* A virtual machine (VM) emulates a physical computer with software.
- The VM layers abstracted drivers atop your Windows hardware.
- Brands of VMs for Windows:
  - + VirtualBox free for personal use (recommended)
  - + VMWare commercial, professional use (\$)
  - + Cloud-based requires a paid service (e.g. AWS)

## ORACLE VIRTUALBOX

- × Completely free
- × Feature-packed
- × Easy to use
- × Flexible
- × Fast



- × Extremely well maintained
- × The clear choice for personal use
- <u>https://www.virtualbox.org/</u>

### **TYPICAL LINUX VM SETUP**

### × This is what we're after.

😚 Oracle VM VirtualBox Manager		- 🗆 X
<u>File Machine H</u> elp		
Tools	New Settings Discard Start	
🕰 👩 Ubuntu Mint 🛛 🖳	📃 General	Preview
Powered Off	Name: Ubuntu Mint Operating System: Ubuntu (64-bit) Settings File Location: C:\Users\basch\VirtualBox VMs\Ubuntu Mint	
	I System	
	Base Memory: 2048 MB Processors: 2 Boot Order: Optical, Hard Disk Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization	Ubuntu Mint
	📃 Display	
	Video Memory: 64 MB Graphics Controller: VMSVGA Acceleration: 3D Remote Desktop Server: Disabled Recording: Disabled	
	Storage	
	Controller: IDE IDE Primary Master: [Optical Drive] Empty Controller: SATA SATA Port 0: Ubuntu Mint.vdi (Normal, 40.00 GB)	
	խ Audio	
	Network	
	🤌 USB	
	Shared folders	
	Description	

# CREATE A NEW VM

- × 8GB RAM recommended.
- × 3GB minimum VM RAM.
- 2GB will work, but will be slow.
- Don't overallocate.

	? ×
Create Virtu	al Machine
News and as	
Name and op	erating system
Nan	ie: Ubuntu Mint
Machine Fold	er: C:\Users\basch\VirtualBox VMs 🗸
Туг	e: Linux 🔹 🚭
<u>V</u> ersio	n: Ubuntu (64-bit)
Memory size	
	3072I 🖨 MB
4 MB	8192 MB
Hard disk	
O Do not ad	ld a virtual hard disk
<u>Create a</u>	virtual hard disk now
O <u>U</u> se an e	kisting virtual hard disk file
Ubuntu I	Mint.vdi (Normal, 40.00 GB) 🔹 🗔
	Guided Mode Create Cancel

# VIRTUAL STORAGE

- × At least 20GB virtual drive.
- Use Fixed size to avoid performance issues.
- Use VDI for best results.
- This will take some time.

🕎 Create Virtual Hard Disk: Creating fixed medium storage unit 'C:\Users\ba

	? ×
Create Virtual Hard Disk	
File location	
File <u>s</u> ize	
4.00 MB	20.00 GB
Hard disk file <u>t</u> ype	Storage on physical hard disk
In VDI (VirtualBox Disk Image)	O Dynamically allocated
○ VHD (Virtual Hard Disk)	Eixed size
O VMDK (Virtual Machine Disk)	Split into files of less than 2GB
O HDD (Parallels Hard Disk)	
O QCOW (QEMU Copy-On-Write)	
O QED (QEMU enhanced disk)	
ch\VirtualBox VMs\Ubuntu Mi 🗙	Guided Mode Create Cancel

Creating fixed medium storage unit 'C:\Users\basch\VirtualBox VMs\Ubuntu Mint 2\Ubuntu Mint 2.vdi' ...

12% 🗶

57 seconds remaining

# SYSTEM SETTINGS - BOOT ORDER

- Setup boot order as shown.
- Install OS from an ISO image mounted as an optical drive.
- USB Tablet pointing device if you want to use your touch screen.

😳 Ubuntu Mint - Settings	?	×
General System		
System Motherboard Processor Acceleration		
Display Base Memory:	3072 MB	-
Storage 4MB 8192 MB		
Audio Boot Order:		
Network		
Serial Ports Chipset: PIIX3		
USB Pointing Device: USB Tablet		
Shared Folders Extended Features: Enable I/O APIC Enable EFI (special OSes only)		
User Interface I Hardware Clock in UTC Time		
OK	Cano	cel

# SYSTEM SETTINGS - PROCESSOR

- Do not allocate more than half your processor cores.
- Remember, Windows still needs to run.

🔅 Ubuntu Mint - Settii	ngs ?	×
General	System	
System	Motherboard Processor Acceleration	
Display	Processor(s):	-
Storage	1 CPU 4 CPUs	
🕩 Audio	1% 100%	Ľ
Network	Extended Features: Enable PAE/NX	
Serial Ports	Enable Nested <u>V</u> I-x/AMD-V	
🌽 USB		
Shared Folders		
User Interface		
	OK Cano	el

## SYSTEM SETTINGS - DISPLAY

- At least 64MB for video memory.
- × 3D acceleration recommended

🥵 Ubuntu Mint - Settir	ngs	?	×
E General	Display		
System	Screen Remote Display Recording		
Display	Video Memory:	64 MB	-
Storage	0 MB 128 MB	1	
🕩 Audio	1 8	1	•
Network	Scale Factor: All Monitors 🔻	100%	-
Serial Ports	Min Max Graphics Controller: VMSVGA 🔻		
DSB	Acceleration: I Enable <u>3</u> D Acceleration		
Shared Folders	Enable 2D Video Acceleration		
User Interface			
	ОК	Can	cel

### DOWNLOAD YOUR LINUX INSTALLER

- For Windows users, I recommend Linux Mint
- Based on Ubuntu with a familiar user interface
- <u>https://linuxmint.com/</u> <u>download.php</u>

Home	Do	wnload	Project	About	Links	
Linux Mint	19.1	LMDE 3	All versions	Documentation	Buy CDs	
Downlo	ad I	Linux /	Wint 19.1	Tessa		

#### Information

Our latest release is Linux Mint 19.1, codename "Tessa".



Read the documentation

Read the release notes

Choose your favorite edition below. If you're not sure which one is right for you, "Cinnamon 64-bit edition" is the most popular.

#### **Download links**

Cinnamon	<u>32-bit</u>	<u>64-pit</u>	An edition featuring the Cinnamon desktop			
MATE	<u>32-bit</u>	<u>64-bit</u>	An edition featuring the MATE desktop			
Xfce	<u>32-bit</u>	64-bit	An edition featuring the Xfce desktop			

### ADD YOUR OS INSTALL IMAGE MEDIUM

- First boot of the VM you will boot from the ISO image file downloaded earlier.
- Add an optical drive and browse to the ISO file.



< Search By

	Settings				? X		
General	Storage						
System	Storage Devices	A	Attributes				
Display	Controller: IDE	ଜ୍ନତ	<u>N</u> ame: IDE				
Storage	Empty	Adds opti	cal drive. PIIX4		•		
Audio	Controller: SATA		⊻ Use	e Host I/O Cache			
Audio	obunta Mint, var						
Network							
Serial Ports							
DSB							
Shared Fold	lers						
User Interfa	ce						
		è 🍲 🖾 📄					
		💱 Please choose a virtual opti	cal disk file				
		$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ $\square$ $\rightarrow$ This	PC → Desktop →		ڻ ~		
11111		Organize 🔻 New folder				<b>∎</b> :	- III
	? ×	📌 Quick access	Name	e nuxmint-19.1-cinnamon-64bit.iso i	3/25/2019 9:04 PM	Disc Image File	1.927.648
e i		Desktop  Drapbox  OneDrive  Bruce Scherzinger  This PC  D Chiefer			Δ.		
^ V	/irtual Size	Desktop					
		Dad's Old Phone					
		Downloads     Music					
	>	E Pictures					
	Q	PlayOn: GATEWAY	~				

### INITIAL VM BOOT – OS INSTALL

- Click Start. Install OS. Similar to Windows.
- After install, VB will prompt to eject ISO media, which it will do automatically.
- VM should reboot and you can log in.
- Full screen experience recommended.



 $\times$ 



VirtualBox - Information

The virtual machine window will be now switched to full-screen mode. You can go back to windowed mode at any time by pressing Host+F.

Note that the *Host* key is currently defined as **Right Ctrl**.

Note that the main menu bar is hidden in full-screen mode. You can access it by pressing **Host+Home**.

Cancel

Do not show this message again

Switch

### INSTALL XAMPP

- XAMPP significantly simplifies getting you setup to host a Joomla! website versus installing the piece parts individually.
- <u>https://vitux.com/how-to-install-xampp-on-your-ubuntu-18-04-lts-system/</u>
- x <u>https://www.apachefriends.org/index.html</u>
- This has not been done in advance and will be demonstrated live.

### XAMPP Apache + MariaDB + PHP + Perl

## SOME NOTES

× XAMPP must be manually launched each time you want to use it. It does not come with a boot-up install script. See next slide.

### Step 6: Launch XAMPP through the Terminal

In order to launch XAMPP through your Ubuntu Terminal, enter the following command as root:

\$ sudo /opt/lampp/lampp start

File Edit View Search Terminal Help sana@linux:~\$ sudo /opt/lampp/lampp start Starting XAMPP for Linux 7.2.10-0... XAMPP: Starting Apache...already running. XAMPP: Starting MySQL...already running. XAMPP: Starting ProFTPD...already running.

This output shows that XAMPP is started and already running. Please note that you need to manually start

XAMPP each time you restart your system.

 XAMPP has its own updater. Updates are not maintained by the Ubuntu Update Manager.

### **AUTOSTARTING XAMPP AT BOOT**

Newer versions of Ubuntu use system.d to manage services. To determine this, type the following command in a terminal window:

+ file /sbin/init

- If this says the following, your version uses system.d instead of init.d for starting services:
   +/sbin/init: symbolic link to /lib/systemd/systemd
- This site explains the basic Autostart on Boot configuration file:
  - + <u>https://wiki.archlinux.org/index.php/XAMPP</u>

### AUTOSTARTING XAMPP AT BOOT (CONT.)

- x Create a text file (elevated privs required):
   /etc/systemd/system/xampp.service
- × That contains this:

[Unit] Description=XAMPP

[Service]
ExecStart=/opt/lampp/xampp
startExecStop=/opt/lampp/xampp
stopType=forking

```
[Install]
WantedBy=multi-user.target
```

- Then, at a terminal window, enable the service (or reboot): sudo systemctl enable xampp
- Start and stop the service thusly: sudo systemctl stop xampp sudo systemctl start xampp