



Install KVM, QEMU and Virt Manager on Arch Linux / Manjaro

By Josphat Mutai - October 28, 2021

Here is the Complete guide on how to install KVM, QEMU and Virt Manager on Arch Linux and Manjaro. KVM is one of the most used Virtualization software in Linux World. In fact, most cloud providers use KVM as their Hypervisor of choice. Big projects including Openstack use KVM as default Virtualization tool.

In this tutorial, we'll install KVM on Arch Linux and set Kernel modules required to automatically load at boot. We'll also install a guest machine running CentOS 7.

Our previous tutorials on KVM include:

- [Create and Configure Bridge Networking For KVM in Linux](#)
- [How To Clone and Use KVM Virtual Machine in Linux](#)
- [How to extend/increase KVM Virtual Machine \(VM\) disk size](#)

Step 1: Install KVM packages

First step is installing all packages needed to run KVM:

```
sudo pacman -Syy
sudo reboot
sudo pacman -S archlinux-keyring
sudo pacman -S qemu virt-manager virt-viewer dnsmasq vde2 bridge-ut
```

Also install *ebtables* and *iptables* packages:

```
sudo pacman -S ebttables iptables
```

Step 2: Install libguestfs on Arch Linux / Manjaro

libguestfs is a set of tools used to access and modify virtual machine (VM) disk images. You can use this for:

- viewing and editing files inside guests
- scripting changes to VMs
- monitoring disk used/free statistics
- creating guests
- P2V
- V2V
- performing backup e.t.c

```
sudo pacman -S libguestfs
```

Step 3: Start KVM libvirt service

Once the installation is done, start and enable libvirtd service to start at boot:

```
sudo systemctl enable libvirtd.service
sudo systemctl start libvirtd.service
```

Status show it's running:

```
$ systemctl status libvirtd.service
● libvirtd.service - Virtualization daemon
   Loaded: loaded (/usr/lib/systemd/system/libvirtd.service; enabled; vendor
   Active: active (running) since Thu 2019-04-18 20:55:34 EAT; 11h ago
     Docs: man:libvirtd(8)
           https://libvirt.org
   Main PID: 646 (libvirtd)
      Tasks: 26 (limit: 32768)
     Memory: 74.0M
        CPU: 0.000 CPU(s) @ 2.4GHz
       CGroup: /system.slice/libvirtd.service
               ├─ 646 /usr/bin/libvirtd
               ├─ 754 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dns/
               ├─ 755 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dns/
               ├─ 777 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dns/
```

Recent Posts



[How to install Sentry in Debian 11 / Debian 10](#)

Modified date: December 21, 2021



[The Future is Fun: Top Entertainment Apps for 2022 and Beyond](#)

Modified date: December 17, 2021



[Backup your Application Settings on macOS/Linux using markup](#)

Modified date: December 17, 2021



[Battery life concern? These tablets last up to +10 hours](#)

Modified date: December 16, 2021



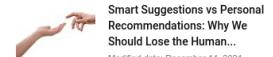
[Install Snapd and Use snap on Kali Linux 2021.x](#)

Modified date: December 15, 2021



[5 Important Initial Steps When Starting a Tech Company](#)

Modified date: December 15, 2021



[Smart Suggestions vs Personal Recommendations: Why We Should Lose the Human...](#)

Modified date: December 14, 2021



[How To Setup WireGuard VPN on Amazon Linux 2](#)

Modified date: December 12, 2021

Electronics



[10 Best Wireless Earbuds to buy 2021](#)

Modified date: March 3, 2021



[10 Best Noise Cancelling Headphones to buy 2021](#)

Modified date: August 9, 2021



[5 Best Laptops for Productivity in 2021](#)

Modified date: November 24, 2021



[Best Gaming Desktop Computers to buy in 2021](#)

Modified date: March 3, 2021



[Top 10 Affordable Gaming Laptops for 2021](#)

Modified date: January 11, 2021



[10 Best Video Editing Laptops for Creators 2021](#)

Modified date: March 3, 2021



[Best Latest Laptops with Intel 10th Gen CPU](#)

Modified date: June 22, 2021



[Top 5 Gaming Phones for 2021](#)

Modified date: March 3, 2021



[Top 10 Best Laptops for Programmers 2021](#)

Modified date: May 22, 2021



[5 Best Laptops For Design Students 2021](#)

Modified date: September 10, 2021

Books



[Fundamental Concepts for Web Development](#)

Modified date: October 25, 2021



[Best sports betting books](#)

```

└─ 778 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq.conf
└─25924 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq.conf
└─25925 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq.conf
└─25959 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq.conf
└─25960 /usr/bin/dnsmasq --conf-file=/var/lib/libvirt/dnsmasq.conf

```

Step 4: Enable normal user account to use KVM

Since we want to use our standard Linux user account to manage KVM, let's configure KVM to allow this.

Open the file `/etc/libvirt/libvirtd.conf` for editing.

```

sudo pacman -S vim
sudo vim /etc/libvirt/libvirtd.conf

```

Set the UNIX domain socket group ownership to libvirt, (around line 85)

```
unix_sock_group = "libvirt"
```

Set the UNIX socket permissions for the R/W socket (around line 102)

```
unix_sock_rw_perms = "0770"
```

Add your user account to libvirt group.

```

sudo usermod -a -G libvirt $(whoami)
newgrp libvirt

```

Restart libvirt daemon.

```
sudo systemctl restart libvirtd.service
```

Step 5: Enable Nested Virtualization (Optional)

Nested Virtualization feature enables you to run Virtual Machines inside a VM. Enable Nested virtualization for kvm_intel by enabling kernel module as shown.

```

sudo modprobe -r kvm_intel
sudo modprobe kvm_intel nested=1

```

To make this configuration persistent, run:

```
echo "options kvm-intel nested=1" | sudo tee /etc/modprobe.d/kvm-intel.conf
```

Confirm that Nested Virtualization is set to Yes:

```

$ systool -m kvm_intel -v | grep nested
    nested          = "Y"
    nested_early_check = "N"
$ cat /sys/module/kvm_intel/parameters/nested
Y

```

Step 6: Using KVM on Arch Linux / Manjaro

You have successfully installed KVM, QEMU and Virt Manager on Arch Linux and Manjaro. You are now good to go. You can install a Linux or Windows OS Virtual Machine and build your study labs.



Here are our few guides to get you started

- [Using Vagrant with Libvirt on Linux](#).
- [How to Provision VMs on KVM with Terraform](#)
- [How to Create CentOS / Fedora / RHEL VM Templates on KVM](#)
- [RHEL and CentOS Kickstart on KVM Automated Installation With virt-install](#)

Other interesting guides.

- [How to mount VM virtual disk on KVM hypervisor](#)



Modified date: November 13, 2021



Best Kubernetes Study books for 2021

Modified date: March 3, 2021



Top Books To Help You Master Web Scraping in 2021

Modified date: September 8, 2021



Best Linux Bash Scripting Books for 2021

Modified date: March 3, 2021



Best Microsoft SQL Server Books for 2021

Modified date: March 3, 2021



Best Books To Learn Ruby Programming in 2021

Modified date: February 23, 2021



Best Books To Learn C# and .NET Programming in 2021

Modified date: February 17, 2021



Best Go Programming Books for Beginners and Experts 2021

Modified date: June 30, 2021



Best books for Learning OpenStack Cloud Platform 2021

Modified date: March 3, 2021



SSH Mastery – Best Book to Master OpenSSH, PuTTY, Tunnels

Modified date: September 15, 2021



Top books to prepare for CRISC certification exam in 2021

Modified date: March 3, 2021



Best Books To Learn Spring Boot Development in 2021

Modified date: April 23, 2021



Which Programming Language to Learn in 2021? Top 4 Choices

Modified date: October 6, 2021



Top Best Android Programming Books 2021

Modified date: December 23, 2020



Best Books To Master Web Design in 2021

Modified date: December 1, 2021



Best Books To Learn Magento e-commerce Development in 2021

Modified date: November 11, 2021



Best CCNA Security (210-260) Certification Study Books

Modified date: November 12, 2021



Best Penetration Testing Books for 2021

Modified date: December 23, 2020



Best Books to learn Web Development – PHP HTML, CSS, JavaScript...

Modified date: March 12, 2021



Best Books To Learn Tomcat/JBoss/Lettuce web servers in 2021

Modified date: June 24, 2021



Best Books To Learn CSS & CSS3 in 2021

Modified date: January 21, 2021



Best Linux Kernel Programming Books in 2021

Modified date: January 26, 2021



Best Apache and Nginx reference Books for 2021

Modified date: May 17, 2021



Best Books To Learn MATLAB Programming in 2021

Modified date: February 20, 2021



Best Books To Learn Kafka & Apache Spark in 2021

Modified date: June 17, 2021



Top Certified Information Security Manager (CISM) study books

Modified date: December 23, 2020



Best Books To Learn and Master FreeBSD

Modified date: December 23, 2020

Your support is our everlasting motivation,
that cup of coffee is what keeps us going!

As we continue to grow, we would wish to reach and impact more people who visit and take advantage of the guides we have on our blog. This is a big task for us and we are so far extremely grateful for the kind people who have shown amazing support for our work over the time we have been online.

Thank You for your support as we work to give you the best of guides and articles. Click below to buy us a coffee.



TAGS kvm qemu

Previous article

Access Denied for user ..FATAL ERROR: Upgrade failed while upgrading from mariadb 5.5 on CentOS 7

Next article

Create and Use Network Bridge on Arch LinuxManjaro



Josphat Mutai

<https://computingforgeeks.com/>

Founder of Computingforgeeks. Expertise in Virtualization, Cloud, Linux/UNIX Administration, Automation, Storage Systems, Containers, Server Clustering e.t.c.

in

RELATED ARTICLES MORE FROM AUTHOR

Cloud
Run Debian 11 (Bullseye) on OpenStack / KVM

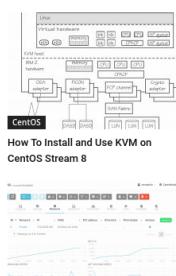


CentOS
Install WebVirtCloud KVM Management on CentOS 8 / Stream 8



Cloud
Creating Ubuntu & Debian Virtual Machines on OpenNebula

How To
Generate Rocky Linux 8 Qcow2 Image for OpenStack / KVM / Qemu



How To Install and Use KVM on CentOS Stream 8



Cloud
Create CentOS|Ubuntu|Debian VM Templates on OpenNebula

How To
How To Use Open vSwitch Bridge on KVM Virtual Machines



Cheats
Virsh commands cheatsheet to manage KVM guest virtual machines

8 COMMENTS

James September 21, 2021 At 6:26 pm

thanks for the guide — very helpful
— i just wanted to note that it refers to using yaourt — which is no longer available
I chose to use yay after a google search — but thought you might want to update the instructions to your current preference.

Reply

Josphat Mutai October 27, 2021 At 1:49 am

Thanks we updated the article.

Reply



Mathieu October 23, 2021 At 5:50 am

[http://repo.archlinux.fr/\\$arch](http://repo.archlinux.fr/$arch) does not appear to exist any more

Reply



anon October 23, 2021 At 8:44 pm

libguestfs seems to have been moved from aur to the community repository, there is no need to access aur for this install as far as I can tell

Reply



anon October 23, 2021 At 8:48 pm

also, viewing libvifd status does not require root, the sudo should be removed.



Modified date: May 28, 2020



Best Books To Learn Operating Systems in 2021

Modified date: March 9, 2021



Best Books To Learn Haskell Programming in 2021

Modified date: March 6, 2021

Reply

 **Josphat Mutai** October 27, 2021 At 11:17 pm
True. Thank you.

Reply



DonLapeno October 24, 2021 At 11:45 pm

How do we install KVM and not use QEMU? I want the full kernel level performance and manage my VM's via something other than QEMU due to the potential performance hit of the layer 2 HyperVisor that is QEMU

Reply



Josphat Mutai October 27, 2021 At 1:50 am
Hey,

The entire article is on installation and using KVM with Virt Manager. Just follow through and should be good.

Reply

LEAVE A REPLY

Comment:

Name:^{*}

Email:^{*}

Website:

Save my name, email, and website in this browser for the next time I comment.

Post Comment

FEATURED POSTS



Install Kubernetes Cluster on Rocky Linux 8 with Kubeadm & CRI-O

Modified date: November 13, 2021



Run Ubuntu Virtual Machines on Linux and macOS using Multipass

Modified date: September 14, 2021



How To Deploy OpenShift Container Platform 4.8 on KVM

Modified date: December 22, 2021



Cheap & Affordable Laptops Compatible With Windows 11

Modified date: August 6, 2021



How To Deploy EKS Cluster on AWS using Terraform

Modified date: August 4, 2021



Create bootable USB drive for ISO/WIM/IMG/HDX/EFI files using Ventyo

Modified date: July 29, 2021



Manage SELinux Status, Context, Ports and Booleans Using Ansible

Modified date: July 28, 2021



Setup Prometheus and Grafana on Kubernetes using prometheus-operator

Modified date: October 23, 2021



Generate Rocky Linux 8 QCOW2 Image for OpenStack / KVM / ...

Modified date: September 17, 2021

HOT PICKS



How to install Sentry in Debian 11 / Debian 10

Modified date: December 21, 2021



The Future is Fun: Top Entertainment Apps for 2022 and Beyond

Modified date: December 17, 2021



Backup your Application Settings on macOS/Linux using markup

Modified date: December 17, 2021



Battery life concern? These tablets last up to +10 hours

Modified date: December 16, 2021



Install Snappy and Use snap on Kali Linux 2021.x

Modified date: December 15, 2021



5 Important Initial Steps When Starting a Tech Company

Modified date: December 15, 2021



Smart Suggestions vs Personal Recommendations: Why We Should Lose the Human...

Modified date: December 14, 2021



How To Setup WireGuard VPN on Amazon Linux 2

Modified date: December 12, 2021



Best Books To Learn VMware ESXi Virtualization in 2021

Modified date: December 10, 2021

POPULAR CATEGORY

How To

2000

Linux Tutorials

1595

Ubuntu

475

CentOS

431

Tech

269

Debian

265

Tips & Tricks

230

Dev

228

News

202

Books

 **Best Books To Learn iOS Programming in 2021**

Modified date: October 22, 2021

 **Best Books To Learn Scala Programming in 2021**

Modified date: March 4, 2021

 **Best Online Marketing Books To Read in 2021**

Modified date: April 19, 2021

 **Best Microsoft SQL Server Books for 2021**

Modified date: March 3, 2021

 **Best Books To Learn MySQL / MariaDB Databases in 2021**

Modified date: July 6, 2021

ABOUT US



Computing

for

Geeks

ComputingforGeeks is a technology blog covering Linux/Windows/Unix server configurations, networking, Software development, Cloud computing, VoIP systems, Security systems, Virtualization, Engineering and Latest updates in Technology trends.

Contact us: computingforgeeks@gmail.com

FOLLOW US



