How to Use KVM

Firmware Version 8.3.0

Edge Computing Support List

Model	Architectures	Processor	Processor *	Memory	Memory *	Internal Storage Size	Internal storage			External storage via USB port ^		
							Application	Docker *	KVM#	Application	Docker *	KVM#
SDX Pro	X86	8 Cores @ 2.2GHz	4 Cores @ 2.2GHz	8GB	4GB	500GB /1TB /2TB	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE
Balance 2500 EC	X86	8 Cores @ 3.3Ghz	4 Cores @ 3.3GHz	16GB	8GB	1TB	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE
EPX with Expansion Module (EXM-LCDT)	X86	4 Cores @ 2.1Ghz	2 Cores @ 2.1Ghz	16GB	8GB	1TB	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE
MAX HD2/4 MBX with MediaFast	X86	4 Cores @1.6Ghz	2 Cores @1.6Ghz	8GB	4GB	120GB / 500GB	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE
MAX BR2 Pro	ARM 64	4 Cores @ 1.8Ghz	2 Cores @ 1.8Ghz	2GB	1GB	8GB	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE
MAX Transit Duo Pro	ARM 64	4 Cores @ 1.8Ghz	2 Cores @ 1.8Ghz	2GB	1GB	8GB	TRUE	TRUE	FALSE		N/A	
SDX	X86	4 Cores @ 2.2GHz	2 Cores @ 2.2GHz	4GB	2GB					FALSE	TRUE	FALSE
MAX MBX Mini	X86	4 Cores @1.5GHz	2 Cores @1.5GHz	4GB	2GB					FALSE	TRUE	FALSE
MAX HD2/4 MBX	X86	2 Cores @ 1.3GHz	1 Cores @ 1.3GHz	4GB	2GB					FALSE	TRUE	FALSE
PDX	X86	4 Cores @1.6Ghz	2 Cores @1.6Ghz	8GB	4GB					FALSE	TRUE	FALSE
Balance 310X	X86	2 Cores @ 1.3GHz	1 Cores @ 1.3GHz	4GB	2GB					FALSE	TRUE	FALSE
Balance 380X	X86	2 Cores @ 1.5GHz	1 Cores @ 1.5GHz	4GB	2GB	N/A		N/A		FALSE	TRUE	FALSE
Balance 580X	X86	2 Cores @ 1.5GHz	1 Cores @ 1.5GHz	4GB	2GB					FALSE	TRUE	FALSE
Balance 310 5G	X86	2 Cores @ 1.5GHz	1 Cores @ 1.5GHz	4GB	2GB					FALSE	TRUE	FALSE
Balance 310 Fiber 5G	X86	2 Cores @ 1.5GHz	1 Cores @ 1.5GHz	4GB	2GB					FALSE	TRUE	FALSE
Balance 710	X86	2 Cores @ 3.5GHz	1 Cores @ 3.5GHz	2GB	1GB					FALSE	TRUE	FALSE
Balance 1350	X86	2 Cores @ 3.5GHz	1 Cores @ 3.5GHz	4GB	2GB					FALSE	TRUE	FALSE
Balance 2500	X86	4 Cores @ 3.5GHz	2 Cores @ 3.5GHz	8GB	4GB					FALSE	TRUE	FALSE

* Maximum resource allocation is limited to half of the device's processor count and memory for docker use. This value cannot be adjusted.
# Avoid over-allocating the processor and memory to the KVM as this may impact the overall performance of the router.
^ Available in firmware 8.3.2

What is KVM
Kernel-Based Virtual Machine

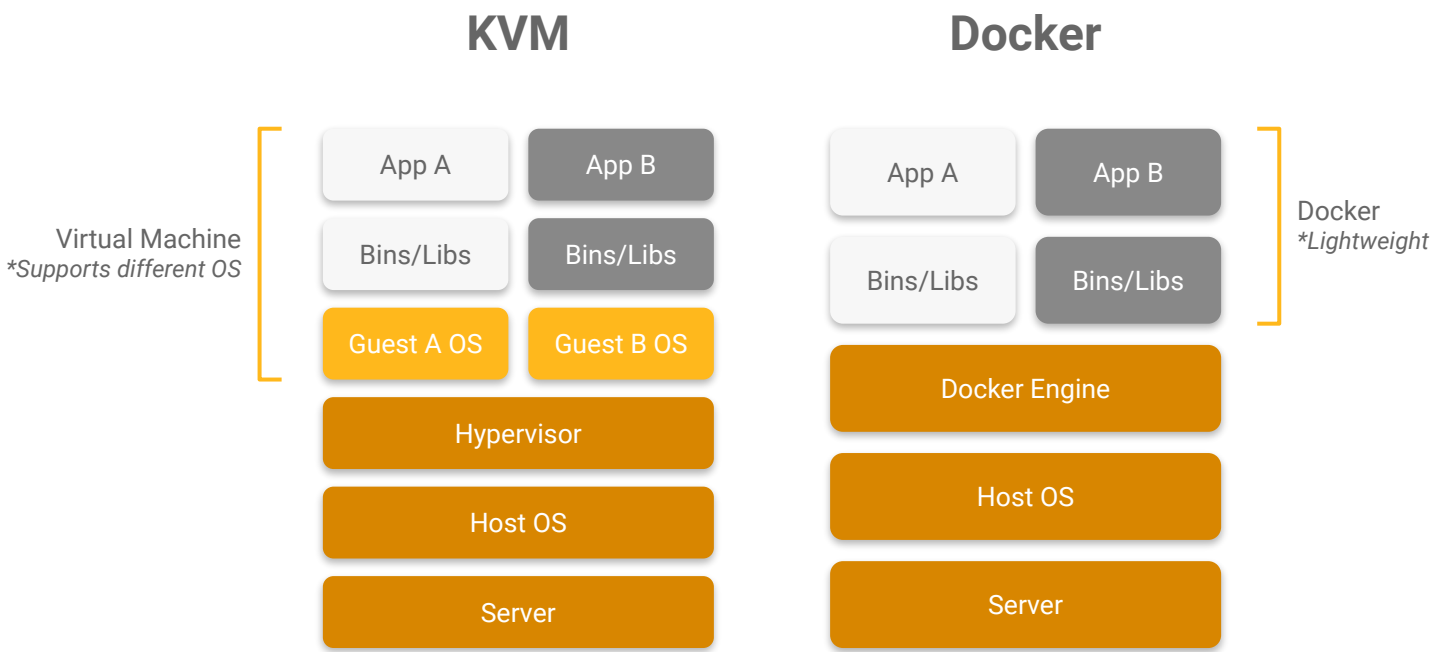
KVM is a **software feature** or a Linux operating system component that provides native support for virtual machines on Linux.

It **shares hardware resources** like CPU, network bandwidth, and memory with physical machines.

It allows developers to scale computing infrastructure for **different operating systems** without investing in new hardware and allows large numbers of virtual machines to be deployed easily in cloud environments.

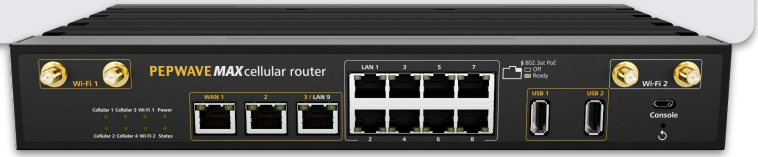
peplink

KVM vs Docker



Demo Unit Information

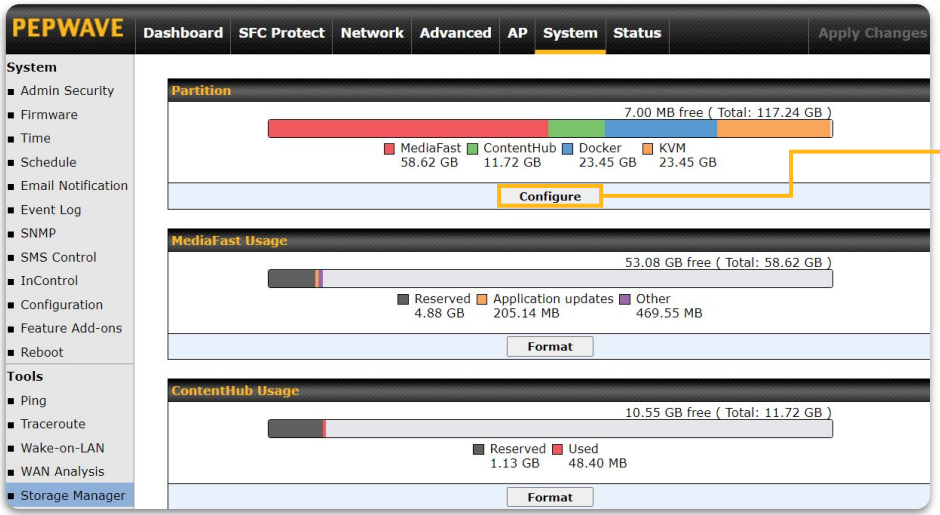
System Information	
Device Name	MBX-2C57
Model	Pepwave MAX HD4 MBX with MediaFast
Product Code	MAX-HD4-MBX-MFA-LTEA-K
Hardware Revision	3
Serial Number	2938-5147-2C57
Firmware	8.3.0 build 5551
SpeedFusion VPN Version	9.2.0

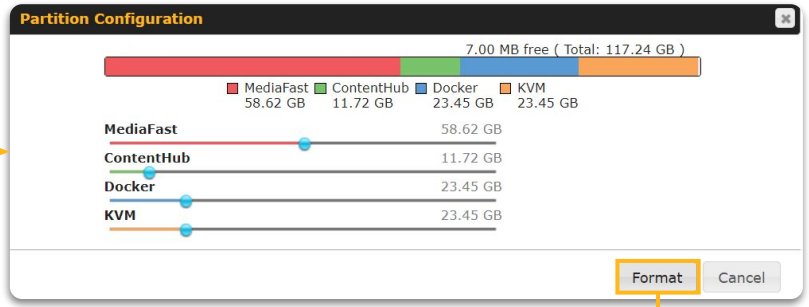


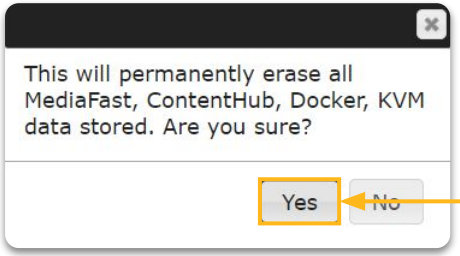
KVM Preparation

Plan the disk space for KVM

System → Tools → Storage Manager





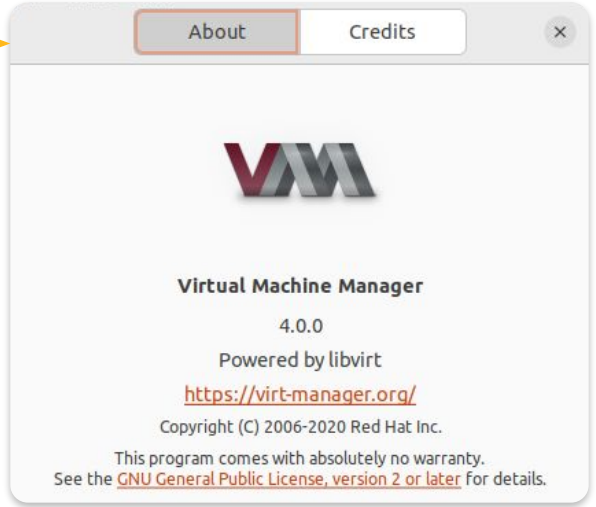


KVM Preparation
Virtual Machine Manager

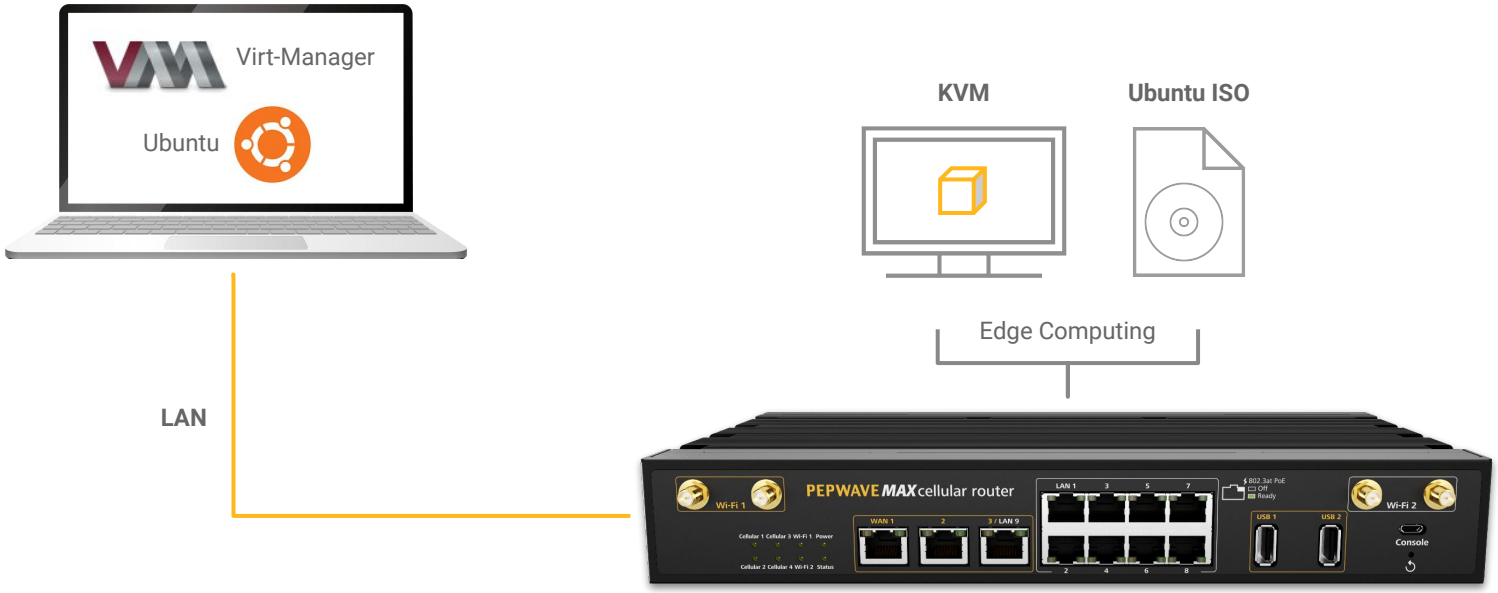
Virtual Manager

For ubuntu user:

- To install, virt-manager via terminal, enter: [sudo apt install virt-manager]
- Follow the instructions to install



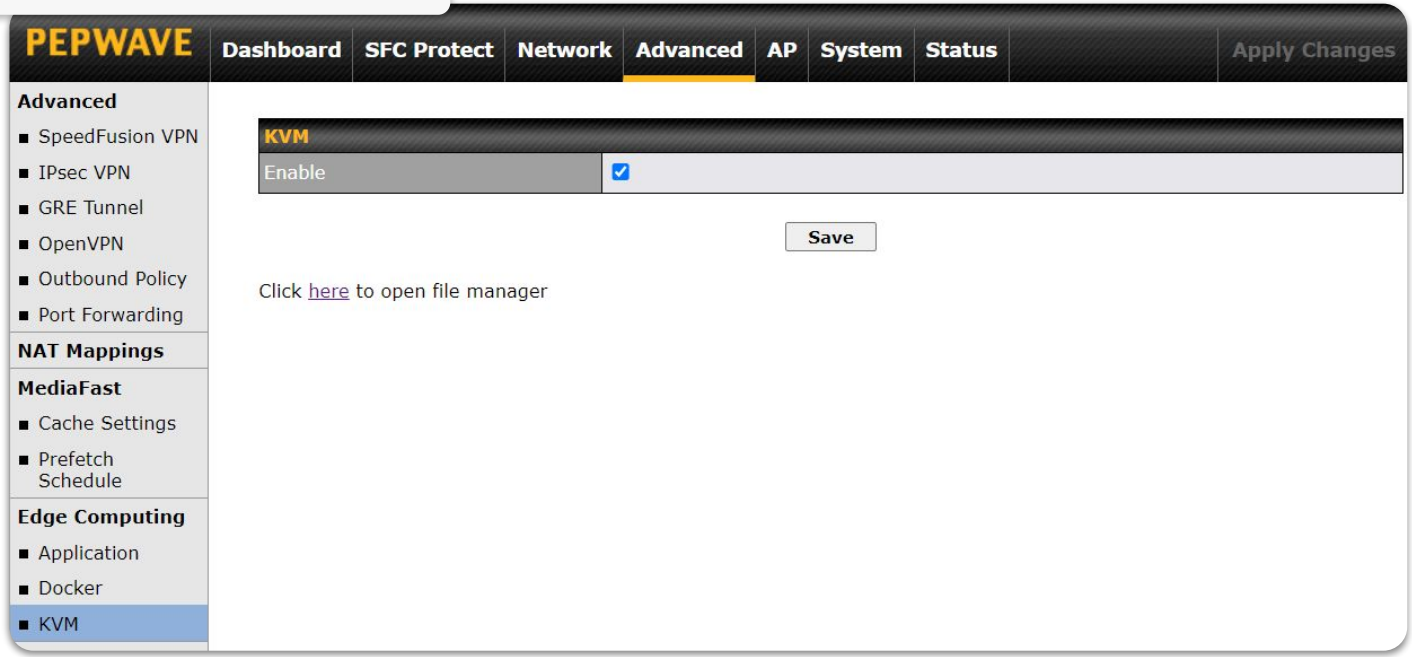
KVM Demo Setup



KVM Installation

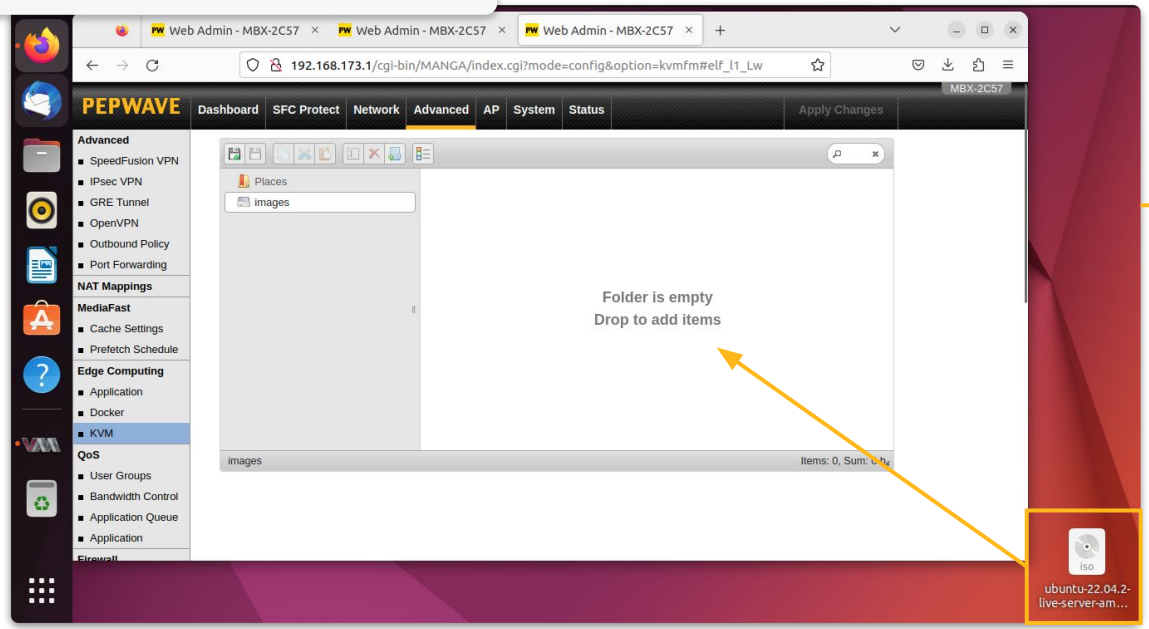
Advanced → Edge Computing → KVM

To install the system locally, we need to upload the ISO file to the MBX first

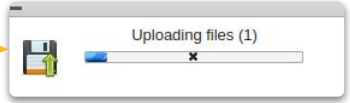


KVM Installation

Advanced → Edge Computing → KVM



Uploading

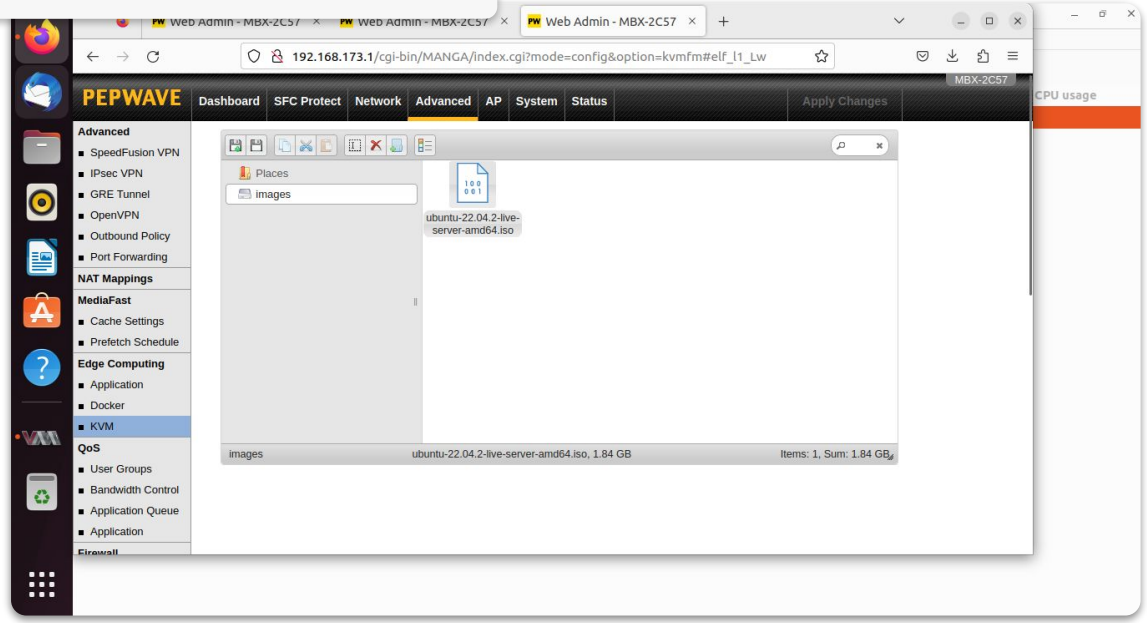


Drag the ISO to file manager

KVM Installation

Advanced → Edge Computing → KVM

Upload completed

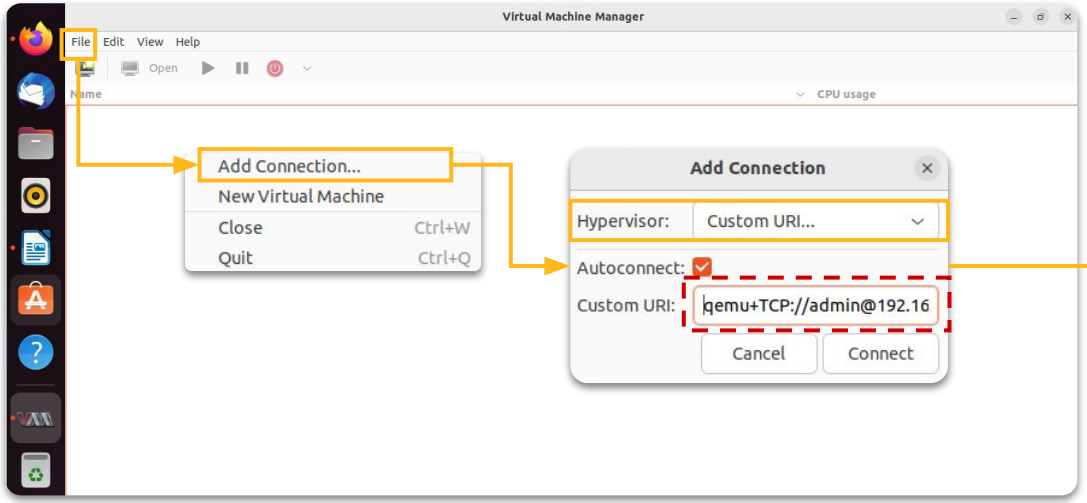


KVM Installation

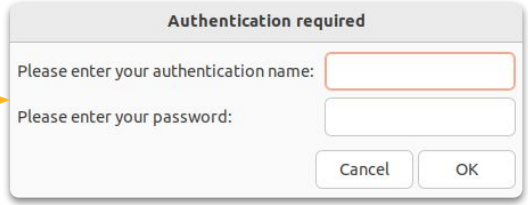
Virtual Machine Manager → Add Connection

[qemu+TCP://admin@**device's IP address**/system]

- In this case, qemu+TCP://admin@192.168.137.1/system

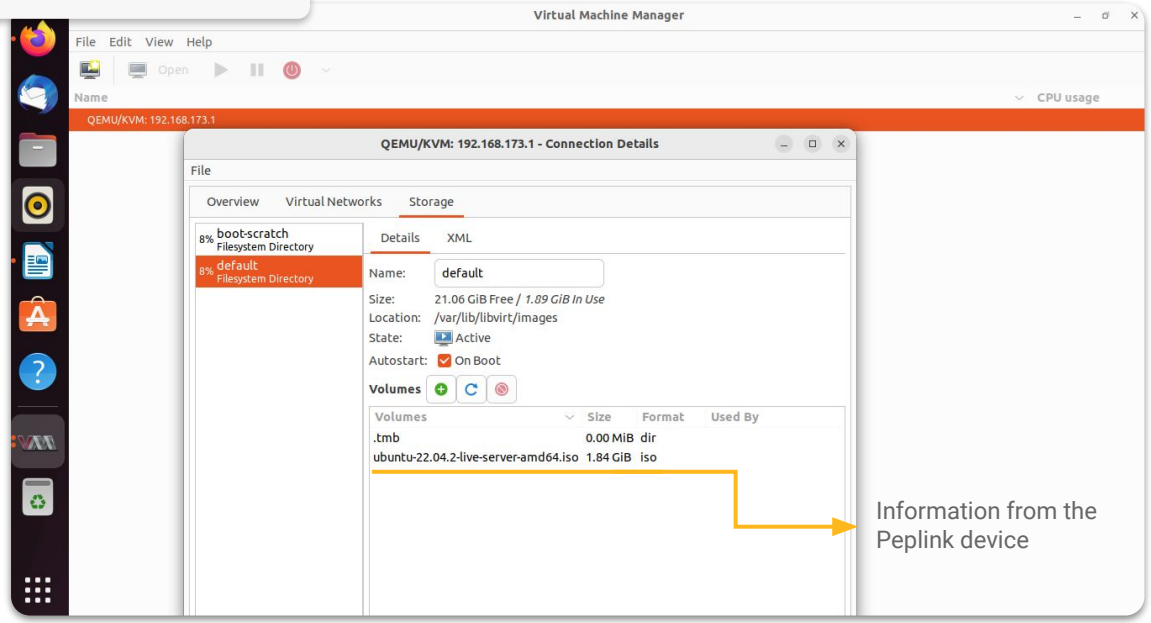


Use the Peplink device's login information



KVM Installation

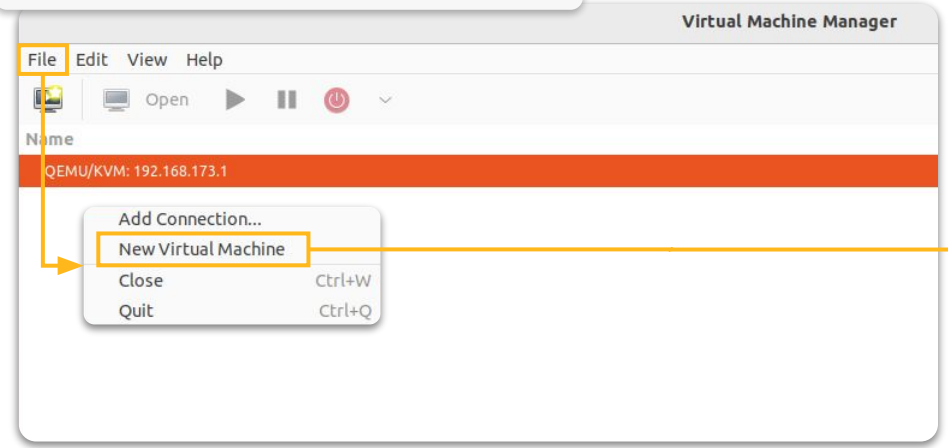
Virtual Machine Manager

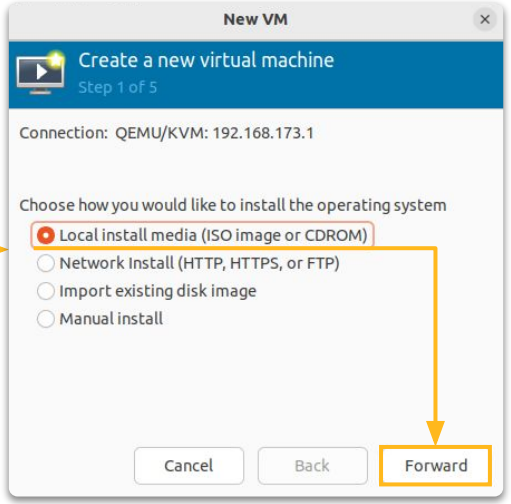


Information from the Peplink device

KVM Installation

Virtual Machine Manager → New Virtual Machine

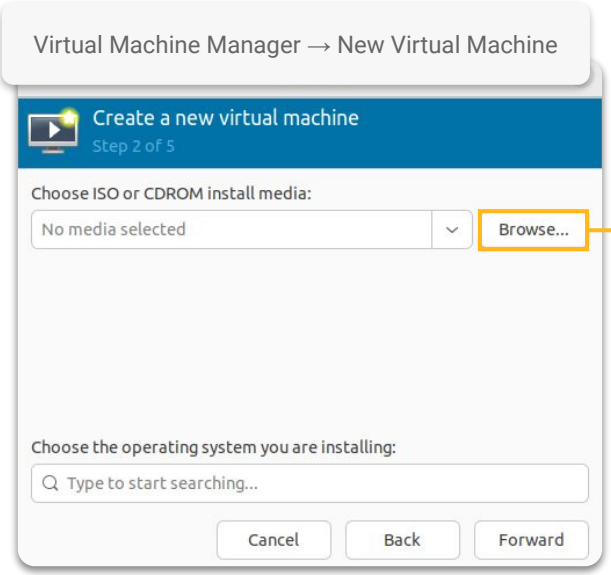


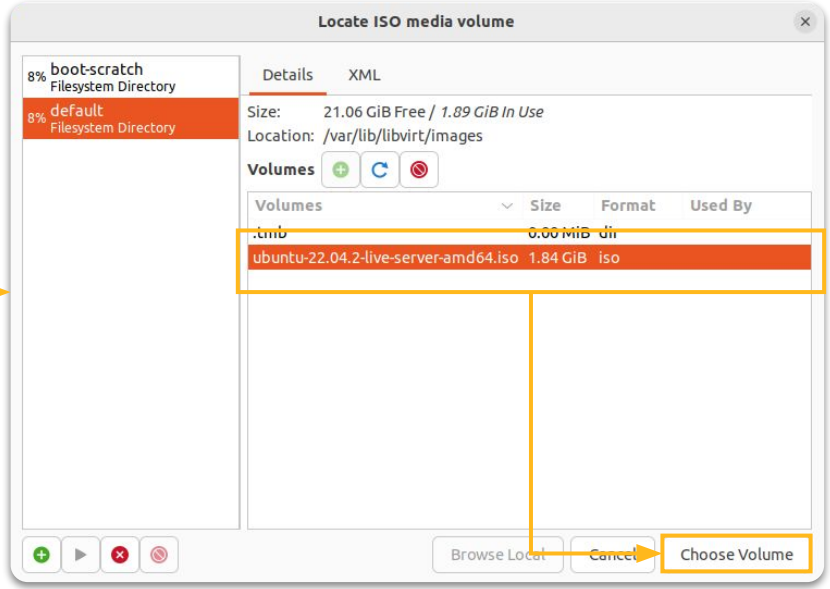


*Because we uploaded the ISO file to the MBX

KVM Installation

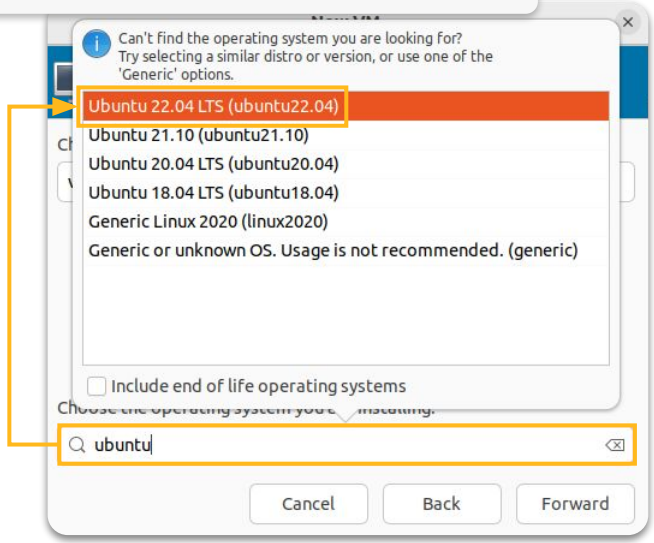
Virtual Machine Manager → New Virtual Machine

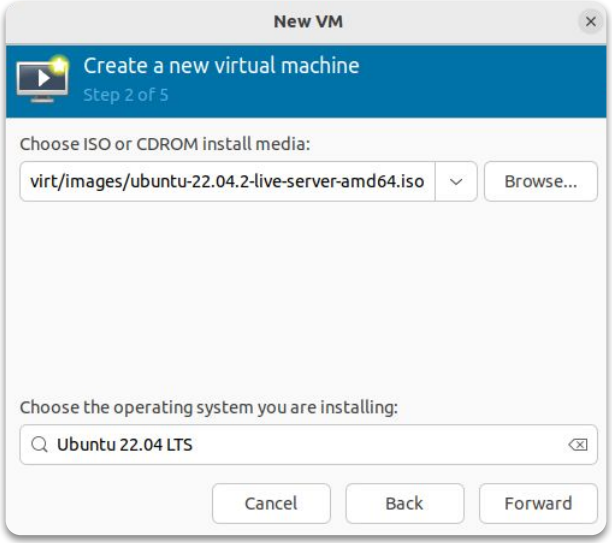




KVM Installation

Virtual Machine Manager → New Virtual Machine

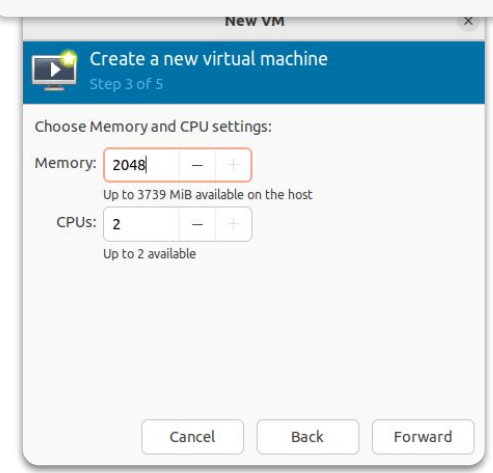


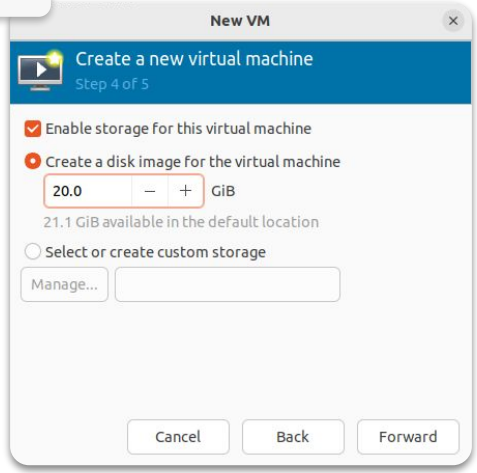


*Some ISO contain different versions so it would be good to point out a specific version

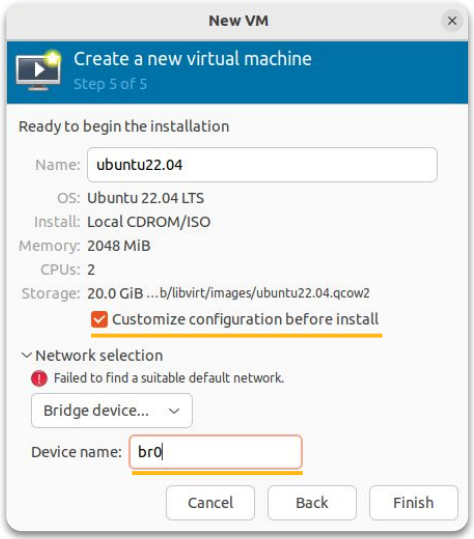
KVM Installation

Virtual Machine Manager → New Virtual Machine





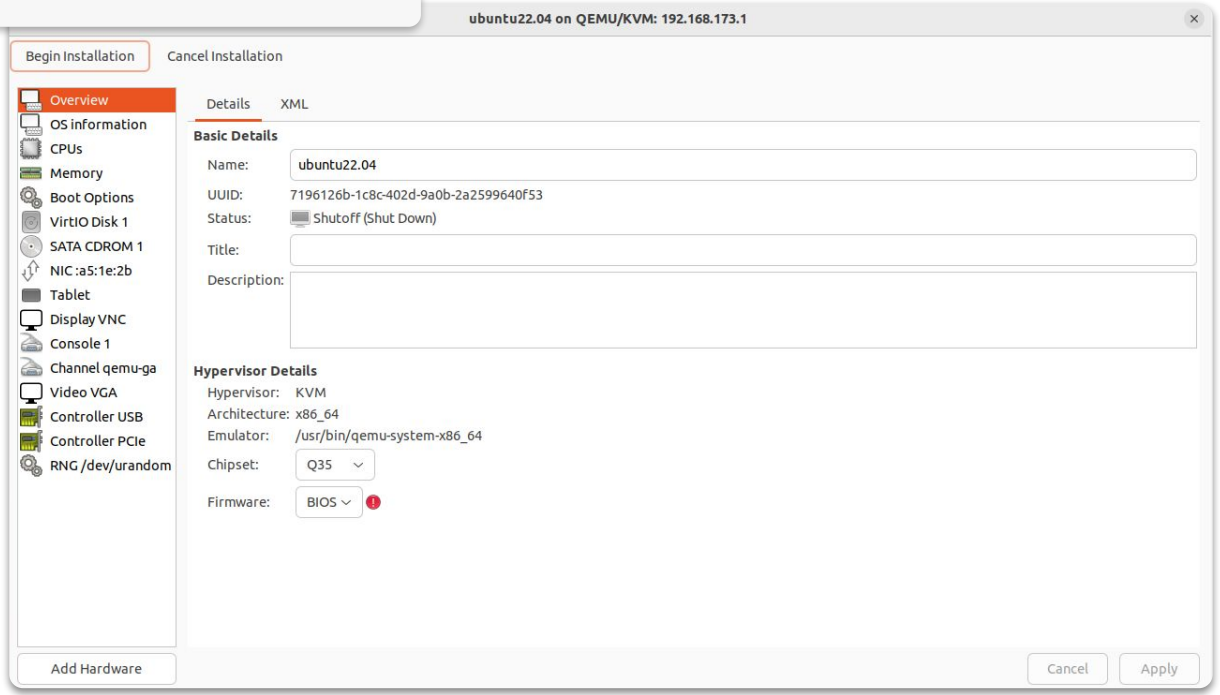
*CPU, memory, and disk space resources might vary with different Peplink models (hardware)



*It's a must to tick the configuration and make sure the hypervisor network is on bridge mode and points to **br0** (Ethernet switch)

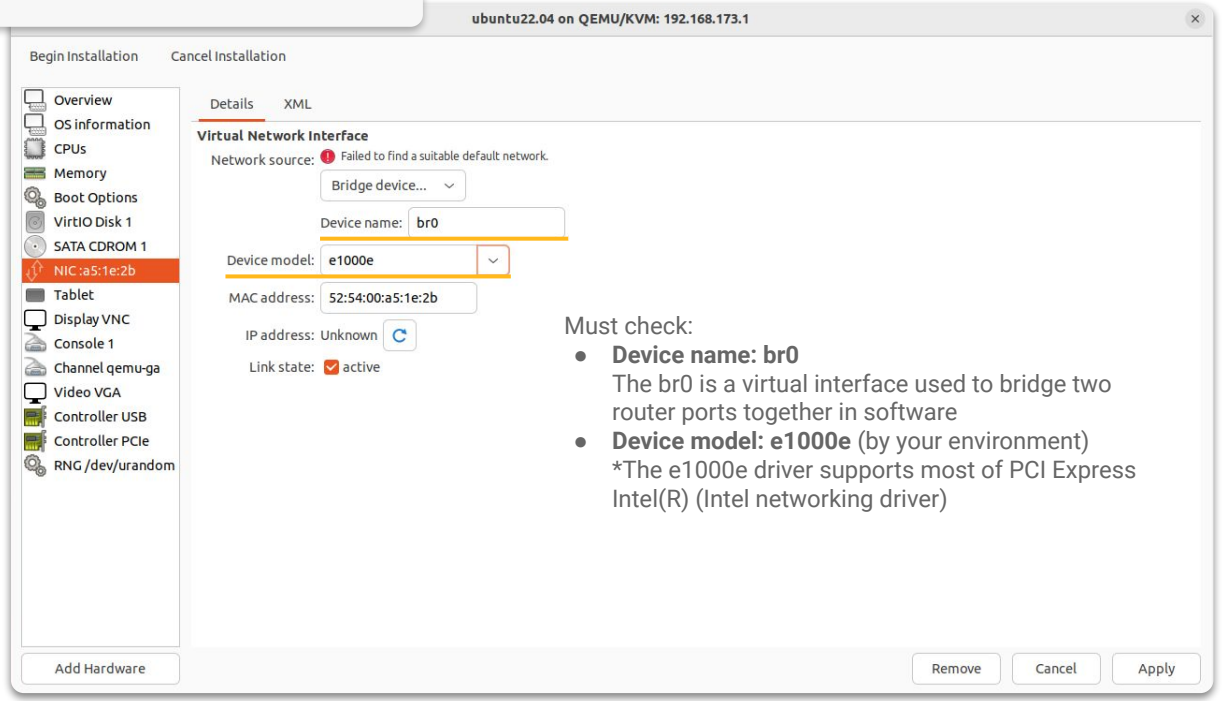
KVM Installation

Virtual Machine Manager → New Virtual Machine



KVM Installation

Virtual Machine Manager → New Virtual Machine

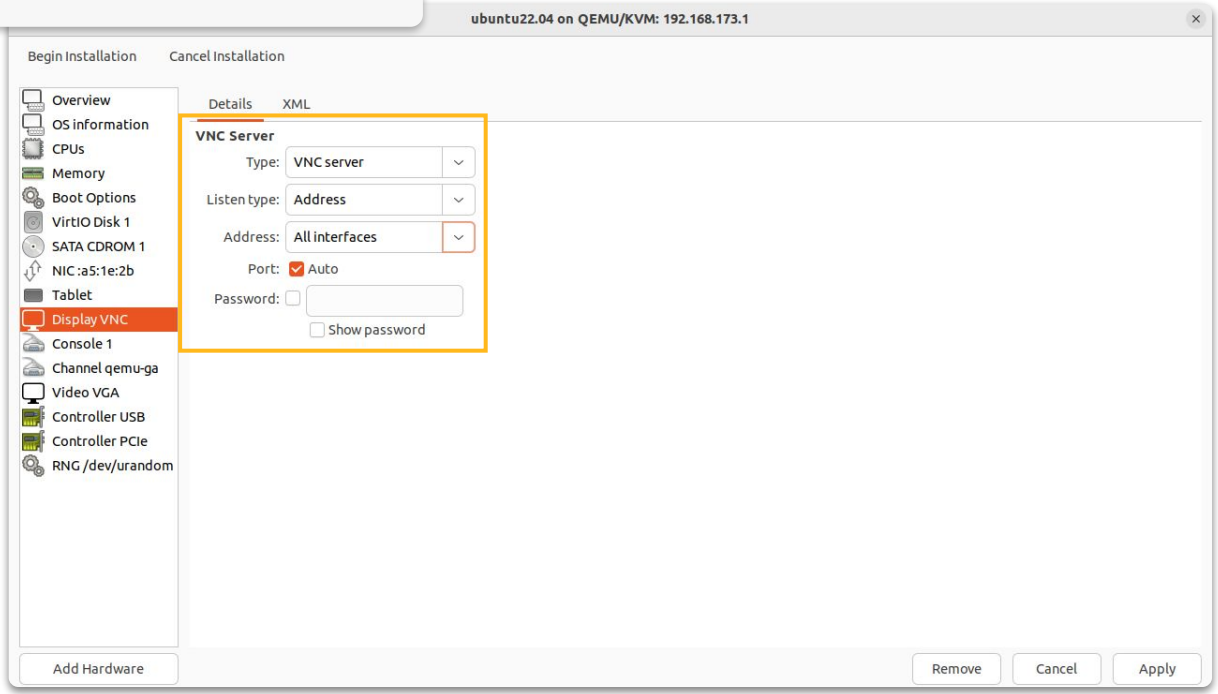


Must check:

- **Device name: br0**
  The br0 is a virtual interface used to bridge two router ports together in software
- **Device model: e1000e** (by your environment)
  *The e1000e driver supports most of PCI Express Intel(R) (Intel networking driver)

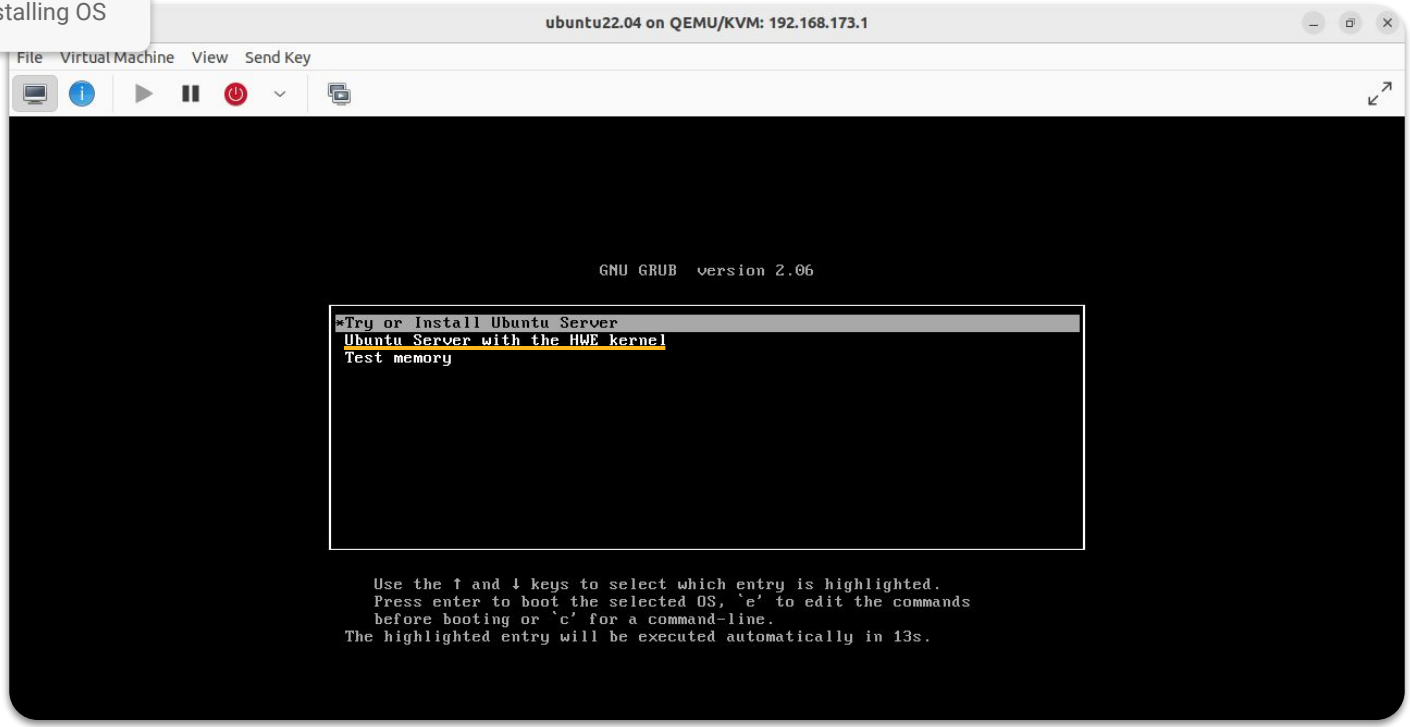
KVM Installation

Virtual Machine Manager → New Virtual Machine



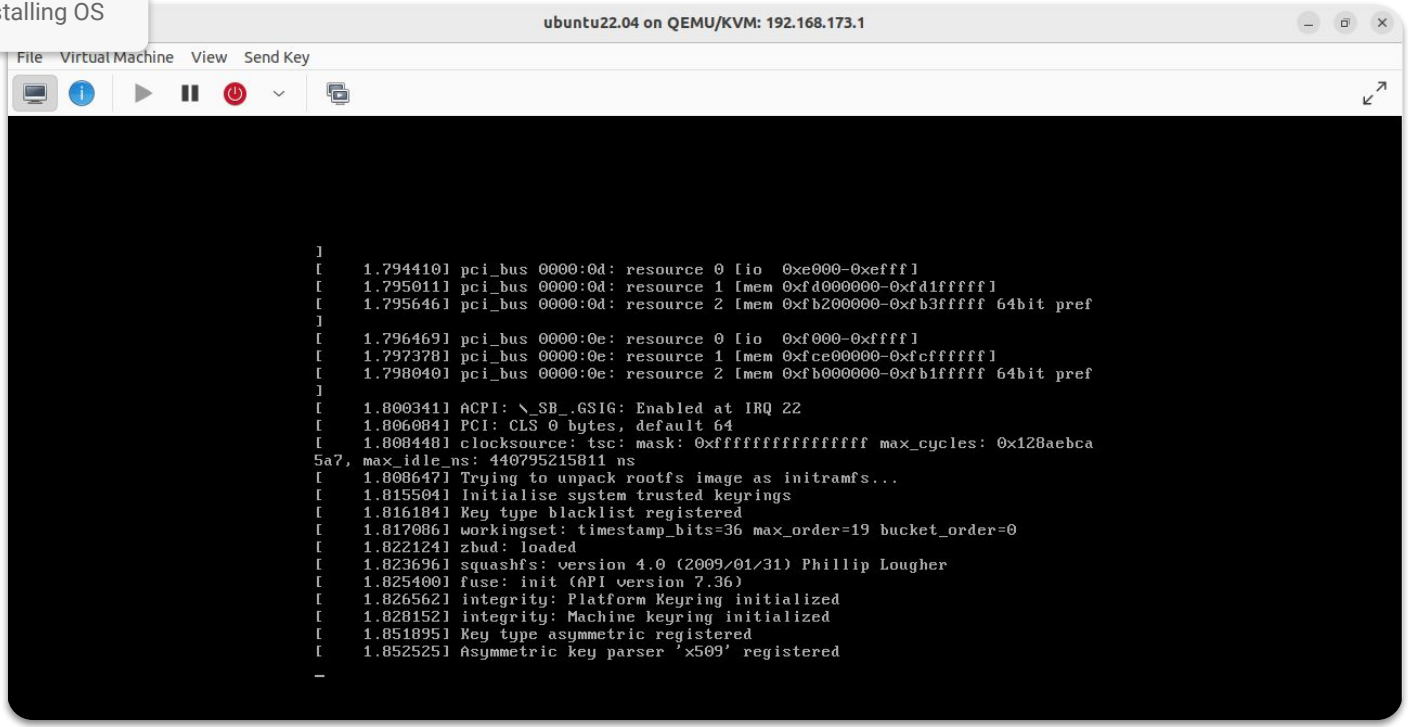
KVM Installation

Installing OS



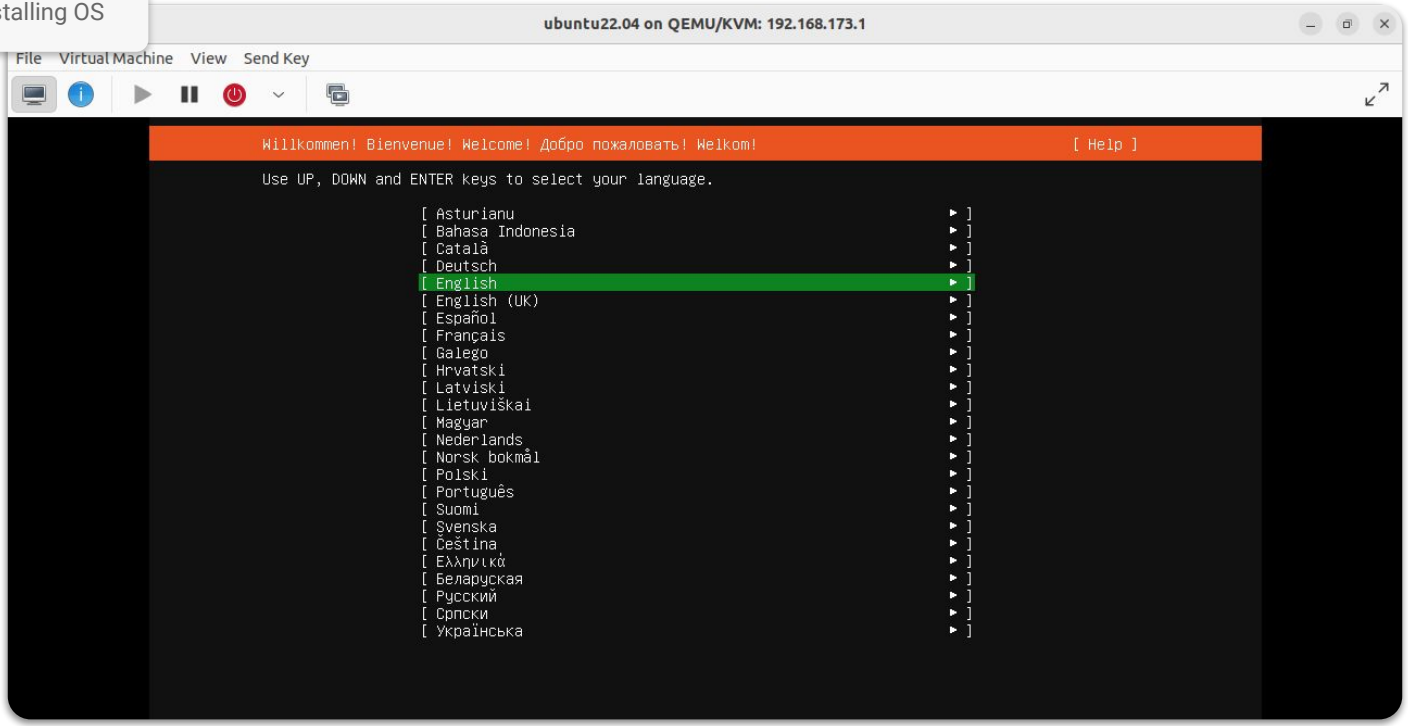
KVM Installation

Installing OS



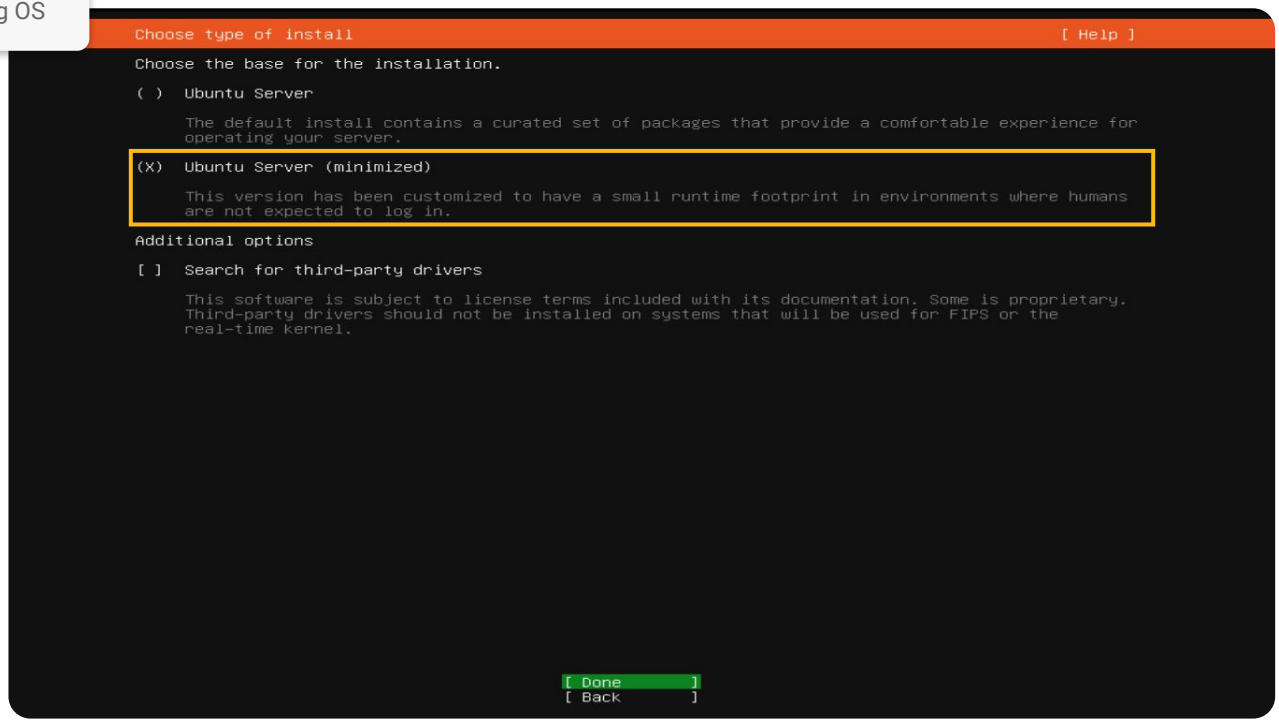
KVM Installation

Installing OS



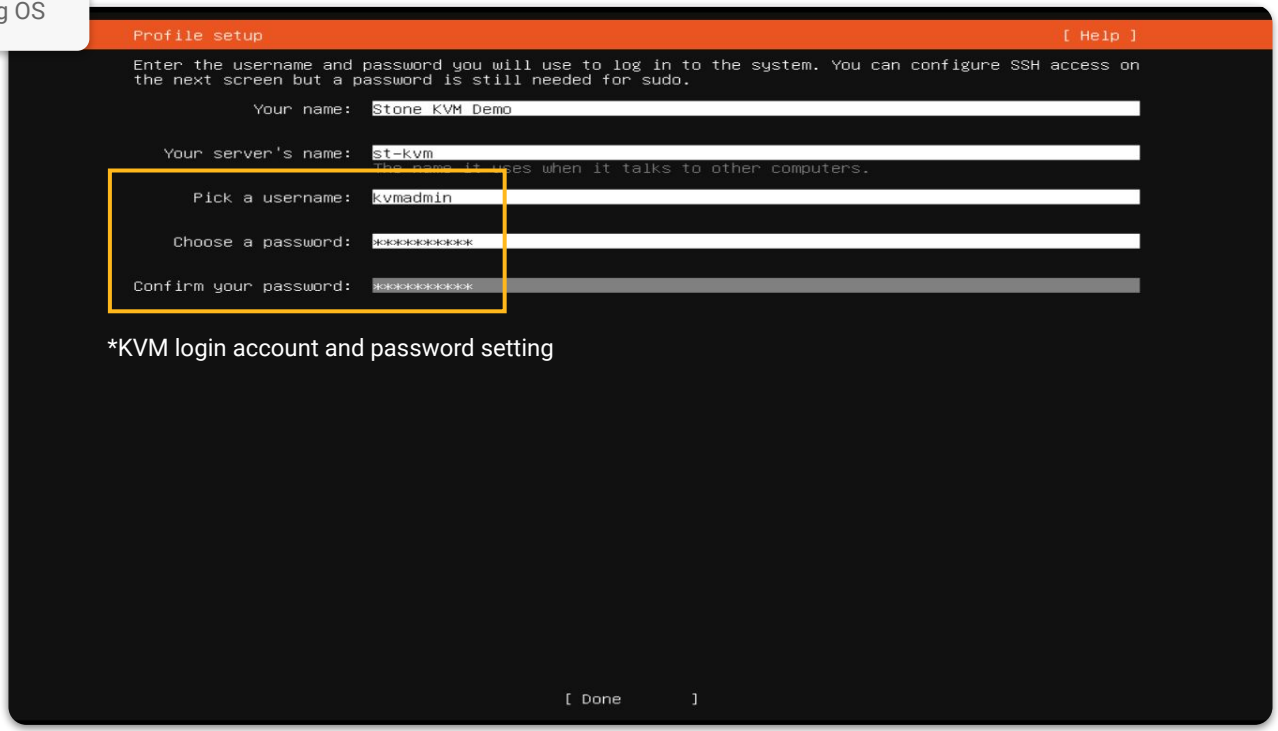
KVM Installation

Installing OS



KVM Installation

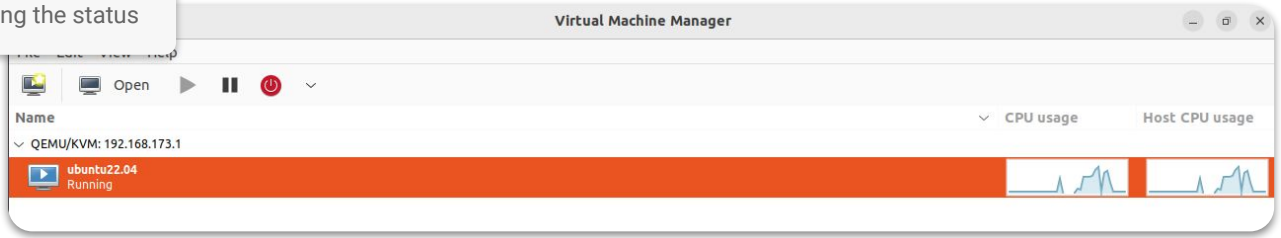
Installing OS

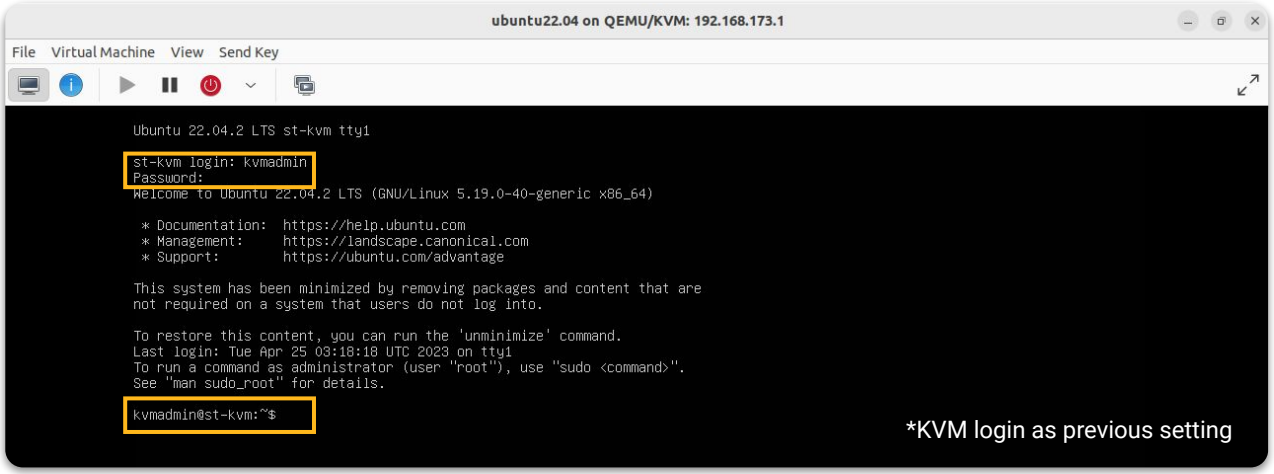


*KVM login account and password setting

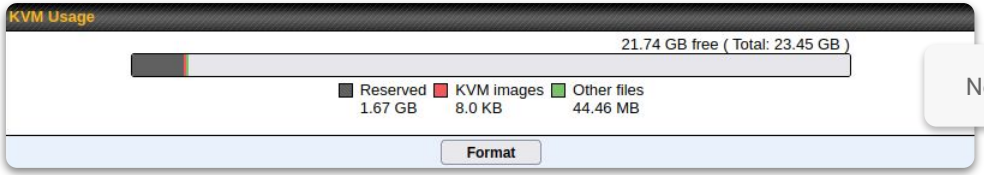
Virtual Machine Manager

Monitoring the status

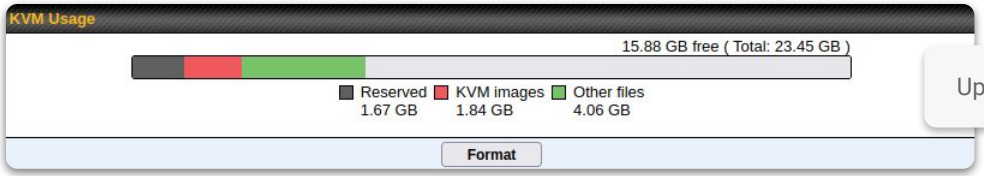




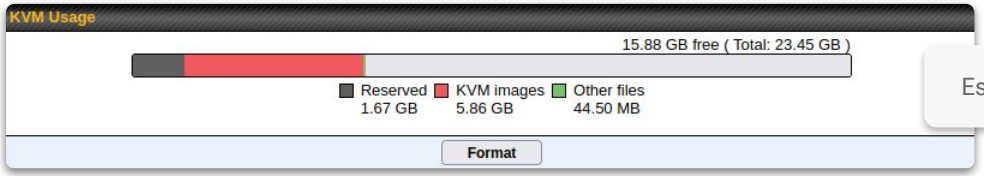
KVM Usage



No uploads



Upload the ubuntu ISO file (1.84 GB)



Established KVM