

# **OpenGnsys VDI user manual**

Soleta Networks <https://opengnsys.soleta.eu>

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## Prerequisites

- Install OpenGnSys Enterprise from https://opengnsys.soleta.eu/download
- Enable Virtualization Technology in your BIOS.
- Host CPU must support IOMMU (Intel VT-d or AMD-Vi)

Advanced Processor Configurat	ion	Item Specific Help
CPU Mismatch Detection:	[Enabled]	When enabled, a VMM
Core Multi-Processing:	[Enabled]	(Virtual Machine
Processor Power Management:	[Disabled]	Monitor) can utilize
Intel(R) Virtualization Technology	[Enabled]	the additional hardwar
Execute Disable Bit:	[Enabled]	capabilities provided by Vanderpool
Adjacent Cache Line Prefetch:	[Disabled]	Technology.
Hardware Prefetch:	[Disabled]	
Direct Cache Access	[Disabled]	If this option is changed, a Power Off-O sequence will be
Set Max Ext CPUID = 3	[Disabled]	applied on the next boot.
71 Info î↓ Select Item -/+ C	hange Values	F9 Setup Defaults

Figure 1: Activate virtualization

## **Install OpenGnsys VDI**

- Download the latest OpenGnSys VDI image.
- Create a bootable USB from the image file.

In Linux, you can use *dd*.

# dd bs=4M if=path/to/ogvdi.iso of=/dev/sdx status=progress oflag=sync

In Windows, you can use *Rufus* (https://rufus.ie/).

Now, you are ready to boot your computer from your USB stick.

Once you are in the Boot menu, please select Graphical Install or Install.



Figure 2: Boot menu



The installation is based on the Debian installer. Please do not skip this user manual if you are familiar with it, there is a few caveats ahead when installing OpenGnsys VDI.

[!!] Sel	ect a language				
Choose the language to be used for the installation process. The selected language will also be the default language for the installed system.					
Language:					
C Albanian Arabic Asturian Basque Belarusian Bosnian Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch Esperanto Estonian Finnish French Galician Georgian German	- No localization * - Shqip - Ф.Ф. - Asturianu - Euskara - Беларуская - Воsanski - Български - Саtalà - 中文(简体) - 中文(繁體) - Hrvatski - Čeština - Dansk - Nederlands - Esperanto - Eesti - Suomi - Français - Galego - јэбюзущо - Deutsch				
<go back=""></go>					
ahl moves: /Spacel selects: /Enterl activate					

Figure 3: Set language

	[!!] Select your location				
The selected location will be used to set your time zone and also for example to help select the system locale. Normally this should be the country where you live.					
Listed are locations for: Europe. Use the <go back=""> option to select a different continent or region if your location is not listed.</go>					
Country, territory or area:					
	Moldova  Monaco Montenegro Netherlands Norway Poland Portugal Romania Russian Federation San Marino Serbia Slovakia Slovakia Slovakia Slovania Spain Svalbard and Jan Mayen Switzerland Ukraine United Kingdom Åland Islands				
<go back=""></go>					
<tab> moves; <space> selects; &lt;</space></tab>	Enter> activates buttons				
Figure 4: Set location					

There is no locale defi You can now select your The locale that will be Country to base default	ned for the combination preference from the used is listed in the locale settings on: Antigua and Barbuda Australia Botswana Canada Hong Kong India Ireland Israel New Zealand Nigeria Philippines Seychelles Singapore South Africa United Kingdom United States Zambia	a - en_AG - en_AG - en_AU.UTF-8 - en_BW.UTF-8 - en_BW.UTF-8 - en_CA.UTF-8 - en_IN - en_IE.UTF-8 - en_IL - en_IL - en_IL - en_SC.UTF-8 - en_SC.UT
<go back=""></go>	Zimbubuc	

Figure 5: Set locale

[!!] Configure the keyboa	rd —
Keymap to use:	
<pre>Reymap to use: Persian Philippines Polish Portuguese Punjabi Romanian Russian Serbian (Cyrillic) Sindhi Sinhala Slovak Slovenian Spanish Swedish Swiss French Swiss German Tajik Tamil Telugu Thai Tibetan Turkish (F layout) Ukrainian Uyghur Vietnamese <go back=""></go></pre>	
<tab> moves; <space> selects; <enter> activates buttons</enter></space></tab>	

Figure 6: Set keyboard

[!] Configure the network	
Please enter the hostname for this system.	
The hostname is a single word that identifies your system to the network. know what your hostname should be, consult your network administrator. If up your own home network, you can make something up here. Hostname:	If you don't you are setting
ogydi	
<go back=""></go>	<continue></continue>
and a second contract of the second sec	

Figure 7: Set hostname

[!] The domain name is the part of your is often something that ends in .co network, you can make something up, your computers. Domain name:	Configure the network Internet address to the right of your host name. It m, .net, .edu, or .org. If you are setting up a home but make sure you use the same domain name on all
<go back=""></go>	<continue></continue>
<tab> moves; <space> selects; <enter> ac</enter></space></tab>	tivates buttons
Figure 8: Set domain	

[!!] Set up users and passwords			
You need to set a password for 'root', the system administrative account. A malicious or unqualified user with root access can have disastrous results, so you should take care t choose a root password that is not easy to guess. It should not be a word found in dictionaries, or a word that could be easily associated with you.			
A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.			
The root user should not have an empty password. If you leave this empty, the root account will be disabled and the system's initial user account will be given the power t become root using the "sudo" command.			
Note that you will not be able to see the password as you type it.			
Root password:			
opengnsys			
[*] Show Password in Clear			
<go back=""> <continue></continue></go>			

Figure 9: Set root pass

	[!!] Set up use	rs and passwords	
A user account will non–administrative a	be created for you to us ctivities.	e instead of the root	account for
Please enter the rea default origin for e the user's real name	l name of this user. Thi mails sent by this user . Your full name is a re	s information will be as well as any program asonable choice.	used for instance as n which displays or uses
Full name for the ne	w user:		
opendacue			
<go back=""></go>			<continue></continue>

Figure 10: Set full name



**Make sure username is** *opengnsys*, otherwise *OpenGnSys VDI* will not work! (do not mistake username with full name)

Select a username for th username should start w of numbers and more low Username for your accoun	[!!] Set up users and he new account. Your first r ith a lower-case letter, wh er-case letters.	passwords name is a reasonable choice ich can be followed by any d	. The combination
opengnsys <go back=""></go>		<c.< td=""><td>ontinue&gt;</td></c.<>	ontinue>
b> moves; <space> selects</space>	; <enter> activates buttons</enter>		

Figure 11: Create the opengnsys user

	[!!] Set up users and passwords	
A good password will conta changed at regular interva Choose a password for the r	n a mixture of letters, numbers an s. new user:	d punctuation and should be
opengnsys		
[*] Show Password in Clear		
<go back=""></go>		<continue></continue>
ab> moves; <space> selects; &lt;{</space>	nter> activates buttons	

Figure 12: Set the password for your opengnsys user

[!] Configure the clock
If the desired time zone is not listed, then please go back to the step "Choose language" and select a country that uses the desired time zone (the country where you live or are located).
Select a location in your time zone:
M <mark>adrid</mark> Ceuta Canary Islands
<go back=""></go>
Tab> moves; <space> selects; <enter> activates buttons</enter></space>

*Figure 13: Set your time zone* 

[!!] Partition disks
If you choose guided partitioning for an entire disk, you will next be asked which disk should be used.
Partitioning method:
Guided – use entire disk Guided – use entire disk and set up LVM Guided – use entire disk and set up encrypted LVM Manual
<go back=""></go>
ab> moves: <space> selects: <enter> activates buttons</enter></space>

Figure 14: Select manual partitioning method



OpenGnsys VDI must be installed in one single partition for your root (/) filesystem.

You are editing pa the Ext4 journalin	rtition #1 of Virtual c g file system. All data	Partition disks lisk 1 (vda). This partition is formatted with a in it WILL BE DESTROYED!
Partition settings	: Use as: Format the partition: Mount point: Mount options: Label: Reserved blocks: Typical usage: Bootable flag: Resize the partition ( Erase data on this par Delete the partition	Ext4 journaling file system yes, format it / defaults none 5% standard off currently 21.5 GB) tition
<go back=""></go>		

Figure 15: Create one single partition for OpenGnsys VDI

[!!] Partition disks This is an overview of your currently configured partitions and mount points. Select a partition to modify its settings (file system, mount point, etc.), a free space to create partitions or a device to initialize its partition table
Guided partitioning Configure software RAID Configure the Logical Volume Manager Configure encrypted volumes Configure iSCSI volumes
Virtual disk 1 (vda) – 21.5 GB Virtio Block Device #1 primary 21.5 GB F ext4 / Undo changes to partitions
<pre>Go Back&gt;</pre>

Figure 16: Exit from the partitioning tool

[!!] Partition disks	
You have not selected any partitions for use as swap space. Enab recommended so that the system can make better use of the availa so that it behaves better when physical memory is scarce. You ma problems if you do not have enough physical memory.	ling swap space is ble physical memory, and y experience installation
If you do not go back to the partitioning menu and assign a swap installation will continue without swap space.	partition, the
Do you want to return to the partitioning menu?	
<go back=""></go>	<yes> <no></no></yes>

Figure 17: Write partition changes to disk

If you continue, the changes listed below will be written to th	e disks. Otherwise, you
will be able to make further changes manually.	
WARNING: This will destroy all data on any partitions you have partitions that are going to be formatted.	removed as well as on the
The following partitions are going to be formatted: partition #1 of Virtual disk 1 (vda) as ext4	
Write the changes to disks?	
(Yes)	<no></no>

Figure 18: Select your mirror for updates

	[!] Configure the package manager
	A network mirror can be used to supplement the software that is included on the CD–ROM. This may also make newer versions of software available.
	Use a network mirror? <go back=""> </go>
<tab></tab>	moves; <space> selects; <enter> activates buttons</enter></space>

Figure 19: Select your mirror for updates (2)

be aware that nearby countries, or even your own, may not be the best choice. Debian archive mirror country:
Debian archive mirror country:
Norway       *         Philippines       *         Poland       Poland         Portugal       Romania         Russian Federation       Réunion         Serbia       Singapore         Slovakia       Slovakia         Slovakia       Slovenia         Sweden       Switzerland         Taiwan       Thailand         Turkey       Ukraine         United Kingdom       United States         Uruguay       Vietnam
<go back=""></go>

Figure 20: Select your mirror location

Please select a Debian a if you do not know which Usually, deb.debian.org Debian archive mirror:	<pre>rchive mirror. You should use a mirror in your country or region mirror has the best Internet connection to you. is a good choice.  ftp.es.debian.org ulises.hostalia.com deb.debian.org debian-archive.trafficmanager.net softlibre.unizar.es debian.grn.cat ftp.udc.es ftp.cia.es ftp.caliu.cat debian.redimadrid.es debian.uvigo.es mirror.librelabucm.org</pre>
<go back=""></go>	

Figure 21: Select your mirror

	[!] Configure the package manager			
	If you need to use a HTTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blank. The proxy information should be given in the standard form of "http://[[user][:pass]@]host[:port]/". HTTP proxy information (blank for none):			
	<go back=""> <continue></continue></go>			
1				

*Figure 22: Set your HTTP proxy (leave it blank if your desktop does not require a proxy)* 

It seems that it should be s hard drive. Warning: If th your computer temporarily un Install the GR	[!] Install the GRUB boot loader on a hard disk this new installation is the only operating system on this compu safe to install the GRUB boot loader to the master boot record of he installer failed to detect another operating system that is pr , modifying the master boot record will make that operating syste nbootable, though GRUB can be manually configured later to boot i RUB boot loader to the master boot record?	ter. If so, your first esent on m t.
n) moves: (Space	a) selects: (Enter) activates huttons	

Figure 23: Install the grub bootloader

You need to make the on a bootable device record of your first drive, or to another	newly installed system bootable, . The usual way to do this is to i hard drive. If you prefer, you ca drive, or even to a floppy.	by installing the GRUB boot loader nstall GRUB on the master boot n install GRUB elsewhere on the
Device for boot load	er installation:	
	Enter device manually /dev/vda	
<go back=""></go>		

Figure 24: Select the device to install grub

Ļ	[!!] Finish the installation
	Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media, so that you boot into the new system rather than restarting the installation.
	<go back=""> <a>Continue&gt;</a></go>
(Tah)	moves: <space> selects: <enter> activates buttons</enter></space>

Figure 25: Finish you OpenGnsys VDI installation!



Extract your USB stick! If you boot again into the installer, remove the USB stick and reboot again.

After rebooting, OpenGnSys VDI OS will launch the *boot manager*.

## **Configuring OpenGnSys VDI**

The *boot manager* provides a control panel with four possible actions:

- *Configure* that allows you to specify *ogserver* IP address and VFIO options so you can passthrough wifi or audio devices to the guest machine.
- Install OS that allows you to install the guest desktop OS.
- *Power off* to shut down your desktop computer.
- *Reboot* to reboot your desktop computer.

↓ Welcome to cloneer manager	penG	powered by Soleta networks	
Install OS	Reboot	Power off	Configure
No OS detected Please, click "Install OS" and so	elect ISO file with the OS ima	age	8 0.05   Thu 28 May 2020 12:48:47 PM CEST

Figure 26: The OpenGnSys VDI boot manager.

#### **Configuring ogServer**



Any possible occurence of the term "ogAdmServer" in screenshots refers to the ogServer

🗌 Welcome to cloneer manager	
□ Configuration	des Conver
IP OGA	amserver
196.168.56	.10
Write	Cancel
WINC	Cancer
1 2	0.07 0.02 0.00   Thu 28 May 2020 01:12:43 PM CEST

Figure 27: Config Set the IP address of your ogAdmServer

#### **Configuring device passthrough**

PCI device passthrough is enabled with the Linux vfio module. OpenGnsys VDI requires host cpu to support IOMMU (Intel VT-d / AMD-Vi). Device passthrough is set via checkboxes in the configure pop up window.

This configuration persists in the ogclient.json file:

```
...
"vfio": [
"wifi",
"audio"
]
...
```

This section is written automatically via the opengnsys VDI configure window.

Configuration	IP ogAdmServer 192.168.56.10
-VFIO	
🗆 Wifi	☐ Audio
Write	Cancel

*Figure 28: Device passthrough checkboxes. Disabled by default. Admin must check only those devices present in the host machine.* 

### Configuring your desktop network

OpenGnsys VDI gets network configuration via DHCP by default.

#### **Configuring VNC**

VNC remote access to guest desktop is enabled by default, if you want to disable VNC or change the VNC password, you have to edit ogclient.json.



SSH is enabled by default in opengnsysVDI. We recommend perfoming any administration task with an ssh connection.



If not familiar, you can press "WIN + 2" to change the workspace and "WIN + ENTER" to open a terminal in the host machine.

/opt/opengnsys/ogclient/cfg/ogclient.json

```
...
"vnc": {
    "activate": true,
    "pass": "ogvnc"
...
```

# Installing Ubuntu Linux as your virtualized desktop OS

You will need to transfer an Ubuntu iso file to the opengnsysVDI machine.



If you are using ssh, you can copy it remotely using  ${\sf scp}$ 

If you want to use a flash drive you will need to follow these steps:

- Copy your iso image to the USB flashdrive. The USB must be formatted with ext4.
- Insert the USB in the computer with OpenGnsys VDI.
- Mount your USB.



Press "WIN + 2" to change the workspace and "WIN + ENTER" to open a terminal.

\$ lsblk # List block devices and its mountpoints # mount /dev/sdb1 /mnt

The example above assumes /dev/sdb1 is your USB stick.

Now, press the Install OS button to install your virtualized desktop OS.



Figure 29: The Install OS buttom

Go to the /mnt folder that contains the iso images.

🗌 Open 🔤					
Directory:	/	-			
<ul> <li>bin</li> <li>boot</li> <li>dev</li> <li>etc</li> <li>home</li> <li>lib</li> </ul>	<ul> <li>lib32</li> <li>opt</li> <li>lib64</li> <li>proc</li> <li>libx32</li> <li>root</li> <li>lost+found</li> <li>run</li> <li>media</li> <li>sbin</li> <li>mnt</li> <li>srv</li> </ul>	i sys tmp usr var			
File name: Open					
Files of type:	Iso files (*.iso)	<u> </u>			

Figure 30: Select the /mnt folder

Go to your virtualized desktop OS installer.

🗌 Open 🗌		
<u>D</u> irectory:	/mnt	-
lost+fo	und	
ubuntu-	20.04-desktop-amd64.iso	
4		Þ
File <u>n</u> am	e: ubuntu-20.04-desktop-amd64.iso	<u>O</u> pen
Files of <u>t</u> yp	e: Iso files (*.iso)	<u>C</u> ancel

Figure 31: Select your iso file.

*OpenGnsys VDI* launches a virtual machine using your selected iso file to start the installation of Ubuntu Linux.

	Install	8
Welcome English Español		
Esperanco Euskara Français Gaeilge Galego Hrvatski Íslenska Italiano Kurdî	Try Ubuntu Install Ubuntu	
Latviski Lietuviškai Magyar Nederlands No localization (UTF-8)	You can try Ubuntu without making any changes to your computer, directly from this CD. Or if you're ready, you can install Ubuntu alongside (or instead of) your current operating system. This shouldn't take too long.	
Figure 32: Initial Ubu	intu installation menu	
You h	nave to install your desktop OS in one single partition.	

Install	8
Installation type	
<ul> <li>This computer currently has no detected operating systems. What would you like to do?</li> <li>Erase disk and install Ubuntu Warning: This will delete all your programs, documents, photos, music, and any other files in all operating syste Advanced features None selected</li> <li>Something else You can create or resize partitions yourself, or choose multiple partitions for Ubuntu.</li> </ul>	ns.
Qu	it Back Continue
$\bullet \bullet \bullet \bullet \circ \circ$	

Figure 33: Make sure you install your virtualized desktop OS in one single partition

Create partition				
Size:	15751 – + MB			
Type for the new partition:	O Primary			
	OLogical			
Location for the new partition:	Beginning of this space			
	End of this space			
Use as:	Ext4 journaling file system 🔹			
Mount point:	/			
	Cancel OK			

Figure 34: Use the full disk and select ext4 for the root filesystem

Install		8
Installation type		
vda1 (ext4) 15.7 GB		
Device Type Mount point Format? Size Used System		
/dev/vda		
/dev/vda1 ext4 / S 15749 MB unknown		
+ – Change	New Partition Table	Revert
Device for boot loader installation:		
/dev/vda Virtio Block Device (15.8 GB)		-
	Ouit Back In	stall Now
$\bullet \bullet \bullet \bullet \bullet \circ \circ$		

*Figure 35: Partition overview* 

Once you finish installing your virtualized desktop OS, after rebooting, your virtualized desktop OS will be launched.



Figure 36: Ubuntu is now ready to use

# Installing Windows as your virtualized desktop OS

The *Windows* installation slightly differs from the *Windows* installation on the bare metal desktop computer.



You must install Windows in only one partition.

When you reach the partition setup, you will see no disk. **Don't panic!** You need to install the drivers for VirtIO disks.

Name		Total size	Free space	Туре
<b>∳</b> ∱ <u>R</u> efresh	Delete	Eormat	<mark>∦ N<u>e</u>w</mark>	
Load driver	Extend			

Figure 37: Windows partitioning showing no disks available

*OpenGnsys VDI* already provides a virtual floppy disk with these drivers. You only have to click on *load drivers* and select them. Now you have to press **OK**.

Load driver	X
To install the device driver for your drive, insert the installation media containing the driver files, and then click OK.	ne
Note: The installation media can be a CD, DVD, or USB flash drive.	
	_
<u>B</u> rowse OK Cance	e <b>l</b>

Figure 38: Windows load the virtualization drivers from Windows

Select the correct driver for your Windows version.

🚱 💰 Windows Setup	X
Select the driver to install	
Red Hat VirtIO SCSI controller (A:\amd64\Win10\viostor.inf)	_
Red Hat VirtIO SCSI controller (A:\amd64\Win7\viostor.inf)	
Red Hat VirtIO SCSI controller (A:\amd64\Win8.1\viostor.inf)	
Red Hat VirtIO SCSI controller (A:\amd64\Win8\viostor.inf)	
Hide drivers that aren't compatible with this computer's hardware.	
Br <u>o</u> wse <u>R</u> escan	<u>N</u> ext

*Figure 39: Select the VirtIO SCSI controller to enable your virtual disk* 

Once the driver is installed, the virtual disk to be used for the installation becomes available.

Name			Total size	Free space	Туре
	Drive 0 Unallo	cated Space	11.8 GB	11.8 GB	
L Defre		*Delete	Earmat	M Now	

*Figure 40: Virtual disk is now available for the Windows installation* 

Now you can proceed with your usual Windows installation.

### **Contact us**

If you have any question or you would like to report a problem, please contact us at opengnsys@soleta.eu.