## Współczesne systemy komputerowe Instalacja Debian GNU/Linux

## Konfiguracja maszyny wirtualnej

- Zaznacz maszynę wirtualną, wciśnij przycisk VirtualBox Manager ⇒ Settings z paska narzędzi lub wybierz z menu VirtualBox Manager ⇒ Machine | Settings...
- W panelu wybierz *Storage*, w *Storage Tree* zaznacz ikonę CD/DVD, na panelu **Attributes** kliknij ikonę CD/DVD i wzbierz z menu **Choose a virtual CD/DVD disk file...**
- Zamontuj obraz płyty z systemem operacyjnym (debian-#.#.#-{i386, amd64}-DVD-1.iso)

Ø Deb	oian - Settings			S X
	General	Storage		
	System	Storage Tree	Attributes	
	Display	Controller: IDE	Optical <u>D</u> rive:	IDE Secondary Master 🔻 🧿
$\square$	Storage	<ul> <li>debian-9.2.0-i386-DVD-1.iso</li> <li>Controller: SATA</li> </ul>	Information	Live CD/DVD
	Audio	Debian.vdi	Type:	Image
₽	Network		Location:	D:\ISO\debian-9.2.0-i386-DVD-1.isc
	Serial Ports		Attached to:	Debian
	USB			
	Shared Folders			
	User Interface			
		E 🗖 🕹		
				OK Cancel

## Uruchomienie maszyny wirtualnej z płyty instalacyjnej

- Sprawdź kolejność przeszukiwania urządzeń startowych: zaznacz maszynę wirtualną, wciśnij przycisk
   VirtualBox Manager ⇒ Settings z paska narzędzi lub wybierz z menu VirtualBox Manager ⇒ Machine
   Settings..., następnie w panelu wybierz System i na zakładce Motherboard ustaw kolejność
   przeszukiwania urządzeń startowych Boot Order, na pierwszym miejscu powinno być: CD/DVD-ROM
- Uruchom wirtualną maszynę, wciśnij przycisk VirtualBox Manager ⇔ Start na pasku narzędzi lub wybierz z menu VirtualBox Manager ⇔ Machine | Start
- Po uruchomieniu komputera, wybierz **Graphical install** z menu rozruchowego GRUB'a i wciśnij [ENTER]

Debian GNU/Linux installer boot Graphical install	manu	
Install Advanced options Help	>	
Install with speech synthesis		
		$\bigcirc$

• Wybierz język instalatora i systemu operacyjnego: English

	debian 9
Select a language	
Choose the language default language for t Language:	to be used for the installation process. The selected language will also be the he installed system.
Chinese (Simplified)	- 中文 <b>(</b> 简体 <b>)</b>
Chinese (Traditional)	- 中文(繁體)
Croatian	- Hrvatski
Czech	- Čeština
Danish	- Dansk
Dutch	- Nederlands
Dzongkha	四 通 通 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一 一
English	- English
Esperanto	- Esperanto
Estonian	- Eesti
Finnish	- Suomi
French	- Français
Galician	- Galego
Georgian	- ქართული
German	- Deutsch
Greek	- Ελληνικά
Screenshot	Go Back Continue

• Wybierz lokalizację: other i następnie Europe

debian 9
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.
This is a shortlist of locations based on the language you selected. Choose "other" if your location is not listed.
Country, territory or area:
Hong Kong
India
Ireland
Israel
New Zealand
Nigeria
Philippines
Singapore
South Africa
United Kingdom
United States
Zambia
Zimbabwe
other
Screenshot Go Back Continue

debian 9
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.
Select the continent or region to which your location belongs. Continent or region:
Africa
Antarctica
Asia
Atlantic Ocean
Caribbean
Central America
Europe
Indian Ocean
North America
Oceania
South America
other
Screenshot Go Back Continue

• I w końcu Poland

debian 9
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>
Macedonia, kepublic oi
Malta
Moldova
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Romania
Russian Federation
San Marino San Marino
Serbia
Slovakia
Slovenia
Screenshot Go Back Continue

• Wybierz polski układ klawiatury (Keymap to use: Polish)

	deb	ian 9		
Configure the keyboard				
Keymap to use:				
Platayalan				<u>^</u>
Nepali				
Northern Sami				
Norwegian				
Persian				
Philippines				
Polish	2			
Portuguese				
Punjabi				
Romanian				
Russian				
Serbian (Cyrillic)				
Sindhi				
Sinhala				
Slovak				
Slovenian				
Spanish				
Swedish				-
L				
Screenshot			Go Back	Continue

• Uzupełnij nazwę komputera Hostname na unikalną w obrębie grupy laboratoryjnej

debian 9
Configure the network
Please enter the hostname for this system. The hostname is a single word that identifies your system to the network. If you don't know what your hostname should be, consult your network administrator. If you are setting up your own home network, you can make something up here. <i>Hostname:</i>
debian
*
Screenshot Go Back Continue

• Uzupełnij domenę komputera **Domain name** na tu.kielce.pl (na screnie jest nazwa abyss)

debian 9
Configure the network
The domain name is the part of your Internet address to the right of your host name. It is often something that ends in .com, .net, .edu, or .org. If you are setting up a home network, you can make something up, but make sure you use the same domain name on all your computers. Domain name:
abyss
<b>k</b>
Screenshot Go Back Continue

• Ustaw hasło dla konta root Root password i powtórz hasło Re-enter password to verify

debian 9					
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 to 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 to become root using the "sudo" command.					
Note that you will not be able to see the password as you type it. Root password:					
Show Password in Clear					
Please enter the same root password again to verify that you have typed it correctly. Re-enter password to verify:					
Show Password in Clear					
▶					
Screenshot Go Back Continue					

• Podaj pełną nazwę użytkownika (imię, imię i nazwisko, etc.) *Full name for the new user* 

		debia	in 9		
Set up users and pass A user account will be Please enter the real	words created for you to use name of this user. This	e instead of the root	t account for non- used for instance	administrativ as default c	ve activities. prigin for
emails sent by this us name is a reasonable Full name for the new u Foo Bar	er as well as any prog choice. <i>ser:</i>	ram which displays	or uses the user's	s real name.	Your full
	*				
Screenshot				Go Back	Continue

• Podaj nazwę konta użytkownika Username for your account

Set up users and passwords Select a username for the new account. Your first name is a reasonable choice. The username should	
start with a lower-case letter, which can be followed by any combination of numbers and more lower- case letters. Username for your account:	
r.	
Screenshot Go Back Continu	e

• Ustaw i zapamiętaj hasło użytkownika

debian 9
Set up users and passwords
A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals. Choose a password for the new user:
Show Password in Clear
Please enter the same user password again to verify you have typed it correctly. Re-enter password to verify:
•••••••
Show Password in Clear
*
Screenshot Go Back Continue

• Użyj ręcznego sposobu tworzenia partycji Preparing method: Manual

debian 9	
Partition disks The installer can guide you through partitioning a disk (using different standard schemes) or, if you prefer, you can do it manually. With guided partitioning you will still have a chance later to review and customise the results.	
Partitioning method: Guided - use entire disk Guided - use entire disk and set up LVM Guided - use entire disk and set up encrypted LVM	
Manual	
Screenshot Go Back Continu	e

• Wybierz dysk twardy (wirtualny dysk maszyny, ostrożnie podczas instalacji na maszynie fizycznej)

debian 9
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 iSCSI volumes
SCSI3 (0, 0, 0) (sda) - 10.7 GB ATA VBOX HARDDISK
Undo changes to partitions Finish partitioning and write changes to disk
Screenshot Help Go Back Continue

• Utwórz nową tablicę partycji dla dysku (operacja nieodwracalna)

debian 9	
Partition disks	
You have selected an entire device to partition. If you proceed with creating a new partition table on the device, then all current partitions will be removed.	
Note that you will be able to undo this operation later if you wish. Create new empty partition table on this device?	
○ No	
● Yes	
Screenshot Go Back Continue	J

• Zaznacz wolny obszar dysku

debian 9
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 ▼ SCSI3 (0,0,0) (sda) - 10.7 GB ATA VBOX HARDDISK
> pri/log 10.7 GB FREE SPACE Undo changes to partitions Finish partitioning and write changes to disk
Screenshot Help Go Back Continue

• Utwórz nową partycję

	debian 9		
Partition disks			
How to use this free space:			
Create a new partition Automatically partition the free space Show Cylinder/Head/Sector information			
Screenshot Help		Go Back	Continue

• Wpisz wielkość partycji (1GB mniejszą niż dysk)

debian 9
Partition disks
The maximum size for this partition is 10.7 GB. Hint: "max" can be used as a shortcut to specify the maximum size, or enter a percentage (e.g. "20%") to use that percentage of the maximum size. <i>New partition size:</i>
9.7 GB
Screenshot Go Back Continue

• Ustaw partycję jako podstawową Primary

	debian 9		
Partition disks			
Type for the new partition:			
Primary			
Logical			
Screenshot		Go Back	Continue

• Wybierz lokalizację partycji na dysku Beginning

debian 9		
Partition disks		
Please choose whether you want the new partition to be created at the begin available space. Location for the new partition:	nning or at the end of the	
Beginning		
End		
Screenshot	Go Back Continue	e

• Jeśli punkt montowania *Mount point* jest inny niż / (ukośnik, slash), zmień jego ustawienia

			-		
artition disks					
You are editing par Partition settings:	tition #1 of S(	SI3 (0,0,0) (sda). No existing	file system was dete	cted in this p	artition.
Use as:	Ext4 journali	ıg file system			
Mount point:	/home				
Mount options:	defaults	•			
Label:	none				
Reserved blocks:	5%				
Typical usage:	standard				
Bootable flag:	off				
Delete the partitio	n				
Done setting up th	e partition				
Screenshot I	lelp			Go Back	Continue

• I ustaw na / - the root file system

	debian 9	
Partition disks		
Mount point for this partition:		
/ - the root file system /boot - static files of the boot loader /home - user home directories /tmp - temporary files /usr - static data /var - variable data /srv - data for services provided by this system /opt - add-on application software packages /usr/local - local hierarchy Enter manually Do not mount it		
Screenshot	Go Back	Continue

- Sprawdź system plików partycji, w oknie powinna znajdować się informacja *Use as:* Ext4 journaling system (domyślna wartość)
- Zaakceptuj ustawienia: Done setting up the partition

1	debian 9
Partition disks	
You are editing par Partition settings:	rtition #1 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.
Use as:	Ext4 journaling file system
Mount point:	1
Mount options:	defaults
Label:	none k
Reserved blocks:	5%
Typical usage:	standard
Bootable flag:	off
Delete the partitio	on and a second s
Done setting up th	ne partition
Screenshot	Help Go Back Continue

• Wybierz pozostałe wolne miejsce dysku

1.1					de	bian	9		
Partition d	isks								
This is an o (file system	vervie , mou	w of your cu nt point, etc	rrently confi .), a free spa	igured partitic ace to create	ons and m partitions	ount points s, or a devic	: Select a pai e to initialize	rtition to modify its partition tab	its settings le.
Guided Configu Configu Configu Configu	parti ire so ire th ire en ire iS 0, 0, 0)	tioning ftware RAI e Logical V crypted vo CSI volume (sda) - 10. <sup>-</sup>	D olume Man Ilumes s 7 GB ATA VB	ager BOX HARDDIS	ж	,			
>	#1	primary pri/log	9.7 GB 1.0 GB	FREE	SPACE	7	•		
Undo cl Finish p	nange oartiti	es to partit oning and	ions write chan	ıges to disk			Ŕ		
Screensho	t	Help						Go Back	Continue

• Utwórz nową partycję (partycja wymiany)

	debian 9		
Partition disks			
How to use this free space:			
Create a new partition Automatically partition the free space Show Cylinder/Head/Sector information			
Screenshot Help	[	Go Back	Continue

• Ustaw wielkość partycji (powinno być ok. 1GB)

debian 9	
Partition disks	
The maximum size for this partition is 1.0 GB. Hint: "max" can be used as a shortcut to specify the maximum size, or enter a percentage (e.g. "20%") to use that percentage of the maximum size. <i>New partition size:</i>	
[1.0 GB	
*	
Screenshot Go Back Continue	

• Ustaw partycję jako podstawową Primary

	debian 9	
Partition disks		
Type for the new partition:		
Primary Logical		
Screenshot		Go Back Continue

• Domyślnie system będzie ustawiony na **Ext4** 

	debian 9
Partition disks	
You are editing par Partition settings:	rtition #2 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.
Use as:	Ext4 journaling file system
	•
Mount point:	/home
Mount options:	defaults
Label:	none
Reserved blocks:	5%
Typical usage:	standard
Bootable flag:	off
Delete the partitio Done setting up th	on ne partition
Screenshot	Help Go Back Continue

• Zmień system plików na swap area

Ċ	lebian 9	
Partition disks		
How to use this partition:		
Ext4 journaling file system Ext3 journaling file system Ext2 file system btrfs journaling file system JFS journaling file system XFS journaling file system FAT16 file system FAT32 file system		
swap area		
physical volume for encryption * physical volume for RAID physical volume for LVM do not use the partition		
Screenshot Help	Go Back	Continue

• Zaakceptuj ustawienia drugiej partycji

	debian 9
Partition disks	
You are editing Partition settings	partition #2 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.
Use as:	swap area
Bootable flag:	off
Delete the part	ition
Done setting u	p the partition
	<b>`</b>
Screenshot	Help Go Back Continue

• Zapisz zmiany na dysku Finish partitioning and write changes to disk

debian 9
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 ✓ SCSI3 (0,0,0) (sda) - 10.7 GB ATA VBOX HARDDISK > #1 primary 9.7 GB f ext4 / > #2 primary 1.0 GB f swap swap
Undo changes to partitions
Finish partitioning and write changes to disk
Screenshot         Help         Go Back         Continue

• Zapisz nową tabelę partycji na dysk

debian 9
Partition disks
If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually.
The partition tables of the following devices are changed: SCSI3 (0,0,0) (sda)
The following partitions are going to be formatted: partition #1 of SCS13 (0,0,0) (sda) as ext4 partition #2 of SCS13 (0,0,0) (sda) as swap Write the changes to disks?
○ No
• Yes
Screenshot Continue

• Instalator zainstaluje podstawowe składniki systemu operacyjnego

debian 9	
Install the base system	
Installing the base system	
Retrieving gpgv	
*	

• Nie wyraź zgody na skanowanie dodatkowych płyt instalacyjnych, oprogramowanie będzie instalowane z repozytoriów internetowych

debian 9
Configure the package manager
Your installation CD or DVD has been scanned; its label is:
Debian GNU/Linux 9.2.0_Stretch Official i386 DVD Binary-1 20171007-13:33
You now have the option to scan additional CDs or DVDs for use by the package manager (apt). Normally these should be from the same set as the installation CD/DVD. If you do not have any additional CDs or DVDs available, this step can just be skipped.
If you wish to scan another CD or DVD, please insert it now. Scan another CD or DVD?
○ Yes
Screenshot Go Back Continue

• Skonfiguruj internetowe repozytorium pakietów instalacyjnych

debian 9
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. You are installing from a DVD. Even though the DVD contains a large selection of packages, some may be missing. If you have a reasonably good Internet connection, use of a mirror is suggested if you plan to install a graphical desktop environment. Use a network mirror? No Yes
Screenshot Go Back Continue

• Wybierz polską lokalizację

debian 9	
Configure the package manager	
The goal is to find a mirror of the Debian archive that is close to you on the network be aware that nearby countries, or even your own, may not be the best choice. Debian archive mirror country:	
[Malaysia	7
Mexico	1
Moldova	
Netherlands	
New Caledonia	
New Zealand	
Norway	
Philippines	
Poland	
Portugal	
Romania	Ш
Russian Federation	
Réunion	
Serbia	
Singapore	
Slovakia	
Slovenia	1
Screenshot Go Back Continue	

• Wybierz serwer

debian 9
Configure the package manager
Please select a Debian archive mirror. You should use a mirror in your country or region if you do not know which mirror has the best Internet connection to you. Usually, ftp. <your code="" country="">.debian.org is a good choice. Debian archive mirror:</your>
ftp.pl.debian.org         ftp.agh.edu.pl         deb.debian.org         debian-archive.trafficmanager.net         ftp.man.poznan.pl         ftp.icm.edu.pl         debian.inhost.pro
Screenshot Go Back Continue

• Sieć lokalna pracuje bez proxy serwera

	debian 9
Configure the package manager	
If you need to use a HTTP proxy Otherwise, leave this blank.	o access the outside world, enter the proxy information here.
The proxy information should be HTTP proxy information (blank for n	given in the standard form of "http://[[user][:pass]@]host[:port]/". ne):
	*
Screenshot	Go Back Continue

• Odmów uczestniczenia w programie zbierającym statystyki użycia pakietów oprogramowania



• Dodatkowo zainstaluj środowisko graficzne GNOME

debian 9
Software selection
At the moment, only the core of the system is installed. To tune the system to your needs, you can choose to install one or more of the following predefined collections of software. Choose software to install:
✓ Debian desktop environment
<ul> <li>✓ GNOME</li> <li>… Xfce</li> <li>… KDE</li> <li>… Cinnamon</li> <li>… MATE</li> <li>… LXDE</li> <li>web server</li> <li>✓ print server</li> <li>SSH server</li> <li>✓ SSH server</li> <li>✓ standard system utilities</li> </ul>
Screenshot Go Back Continue

• Zainstaluj loader systemu GRUB

debian 9
Install the GRUB boot loader on a hard disk
It seems that this new installation is the only operating system on this computer. If so, it should be safe to install the GRUB boot loader to the master boot record of your first hard drive.
Warning: If the installer failed to detect another operating system that is present on your computer, modifying the master boot record will make that operating system temporarily unbootable, though GRUB can be manually configured later to boot it. Install the GRUB boot loader to the master boot record?
○ No
• Yes
Screenshot Go Back Continue

• W przypadku instalacji na maszynie wirtualnej loader powinien być w **MBR** dysku

debian 9					
Install the GRUB boot loader on a hard disk					
You need to make the newly installed system bootable, by installing the GRUB b device. The usual way to do this is to install GRUB on the master boot record of you prefer, you can install GRUB elsewhere on the drive, or to another drive, or Device for boot loader installation:	ooot loader or your first har even to a flop	ı a bootable d drive. If py.			
Enter device manually					
/dev/sda (ata-VBOX_HARDDISK_VBbef7e363-a786b3c0)					
Screenshot	Go Back	Continue			

• Instalacja systemu operacyjnego zakończyła się



• Po restarcie komputer wirtualny uruchomi się z ekranem wyboru systemu operacyjnego



• System operacyjny **Debian GNU/Linux** jest gotowy do pracy

## Poprawki postinstalacyjne

• Zaloguj się do systemu, używając wcześniej zdefiniowanego użytkownika





• Uruchom terminal tekstowy: wciśnij przycisk **Activities** w lewym górnym rogu i następnie wpisz terminal w polu wyszukiwania i kliknij na ikonę **Terminal** 





• Zmień użytkownika na **root** poleceniem **su** - (między **su** a znakiem - jest odstęp)

Activities 🔈 T	Terminal 🔻		Wed 13:16		A 🐠 🕃 🔻
		f	oo@debian: ~	×	
	File Edit View Search foo@debian:~\$	I			

• Podaj zdefiniowane podczas instalacji hasło użytkownika root

Activities 🔈 Ter	rminal → Wed 13:16	<b>↓</b> (0) 😫 🕶
	foo@debian: ~ ×	
	File Edit View Search Terminal Help	
	foo@debian:~\$ su - Password: root@debian:~# ■	
	Ī	

 Sprawdź, czy plik /etc/systemd/system.conf zawiera wpis #DefaultTimeoutStartSec=90 i #DefaultTimeoutStopSec=90

```
root@debian:~# cat /etc/systemd/system.conf | grep Timeout
#DefaultTimeoutStartSec=90s
#DefaultTimeoutStopSec=90s
```

• Usuń komentarz z tej linii (znak #) i zmień na wartości na 10s, użyj edytora nano

```
root@debian:~# nano /etc/systemd/system.conf
```

- Po zakończonej edycji zapisz zmiany kombinacją klawiszy [CTRL 0] i zamknij edytor [CTRL X]
- Sprawdź, czy plik konfiguracyjny /etc/gdm3/daemon.conf zawiera wpis związany z protokołem systemu okien

```
root@debian:~# cat /etc/gdm3/daemon.conf | grep Wayland
#WaylandEnable=false
```

• Usuń komentarz z tej linii, użyj polecenia

```
root@debian:~# nano /etc/gdm3/daemon.conf
```

 Sprawdź, czy plik konfiguracyjny repozytoriów /etc/apt/sources.list zawiera wpisy związane z płytą instalacyjną

```
root@debian:~# cat /etc/apt/sources.list | grep cdrom
deb cdrom:[Debian GNU/Linux 9.2.0 _ Stretch_ - Official i386 DVD Binary-1 20171007-
13:33]/ stretch main
```

• Usuń wpisy dotyczące płyty instalacyjnej, użyj polecenia

```
root@debian:~# nano /etc/apt/sources.list
```

- Zapisz zmiany i zamknij edytor
- Wyloguj się z konta root poleceniem logout lub za pomocą kombinacji klawiszy [CTRL X]