

Tech Encyclopedia

Knowledge is ammunition

Techencyclopedia in Debian 10, Linux ⓘ April 21, 2020June 30, 2020 ☰ 2,614 Words

Debian 10 Manual Partition for /boot, /swap, root, /home, /tmp, /srv, /var, /var/mail, /var/log



KEEP IN MIND

- Debian 10 (Buster) is used for this tutorial and configured using manual partition option in virtual environment using VMware workstation.
- Sizes of the partitions can be different according to the requirement of the organization or user.
- Advantages of manual partition include smooth backup and restore process, ability to maintain specially allocated partitions for different section for storage etc.
- It is recommended to create a Standard /boot partition to keep the boot files and Linux Kernel separately as the system will might errors when booting from LVM partition. Or it can be a personnel preference since latest version supports the boot in LVM. (Read more at: <https://askubuntu.com>






















[/questions/76095/what-is-the-use-of-boot-lvm-based-in-partitioning](https://askubuntu.com/questions/76095/what-is-the-use-of-boot-lvm-based-in-partitioning) (<https://askubuntu.com/questions/76095/what-is-the-use-of-boot-lvm-based-in-partitioning>))

- Logical Volume Manager is used to create partitions for
 - /swap
 - / (root)
 - /home
 - /srv (For FTP servers a /srv partition is recommended)
 - /tmp
 - /var (For web or mail servers it is recommended to create a separate /var partition)
 - /var/log
 - /var/mail

Debian production release history

Refer the production release at <https://wiki.debian.org/DebianReleases> (<https://wiki.debian.org/DebianReleases>)

Production Releases

Version	Code name	Release date	End of life date	EOL LTS	EOL ELTS
12	Bookworm				
11	Bullseye				
10	Buster	 2019-07-06	~2022		
9	Stretch	 2017-06-17	~2020	~2022	
8	Jessie	 2015-04-25	 2018-06-17	~2020-06-30	
7	Wheezy	 2013-05-04	 2016-04-25	 2018-05-31	~2019-12-31
6.0	Squeeze	 2011-02-06	 2014-05-31	 2016-02-29	
5.0	Lenny	 2009-02-14	 2012-02-06		
4.0	Etch	 2007-04-08	 2010-02-15		
3.1	Sarge	 2005-06-06	 2008-03-31		
3.0	Woody	 2002-07-19	 2006-06-30		
2.2	Potato	 2000-08-15	2003-06-30		
2.1	Slink	 1999-03-09	 2000-09-30	2000-10-30	
2.0	Hamm	 1998-07-24	-		
1.3	Bo	 1997-07-02	-		
1.2	Rex	 1996-12-12	-		
1.1	Buzz	 1996-06-17	-		
0.93R6		 1995-10-26	-		
0.93R5		 ~1995-03-01	-		
0.91		~1994-01-01	-		

Why manual partition?

At a bare minimum, GNU/Linux needs one partition for itself. You can have a single partition containing the entire operating system, applications, and your personal files. Most people feel that a separate swap partition is also a necessity, although it's not strictly true. "Swap" is scratch space for an operating system, which allows the system to use disk storage as "virtual memory". By putting swap on a separate partition, Linux can make much more efficient use of it. It is possible to force Linux to use a

regular file as swap, but it is not recommended.

Reason 01

Most people choose to give GNU/Linux more than the minimum number of partitions, however. There are two reasons you might want to break up the file system into a number of smaller partitions. The first is for safety. If something happens to corrupt the file system, generally only one partition is affected. Thus, you only have to replace (from the backups you've been carefully keeping) a portion of your system. At a bare minimum, you should consider creating what is commonly called a "root partition". This contains the most essential components of the system. If any other partitions get corrupted, you can still boot into GNU/Linux to fix the system. This can save you the trouble of having to reinstall the system from scratch.

Reason 02

The second reason is generally more important in a business setting, but it really depends on your use of the machine. For example, a mail server getting spammed with e-mail can easily fill a partition. If you made `/var/mail` a separate partition on the mail server, most of the system will remain working even if you get spammed.

Drawback

The only real drawback to using more partitions is that it is often difficult to know in advance what your needs will be. If you make a partition too small then you will either have to reinstall the system or you will be constantly moving things around to make room in the undersized partition. On the other hand, if you make the partition too big, you will be wasting space that could be used elsewhere. Disk space is cheap nowadays, but why throw your money away?

More at [Deciding on Debian Partitions and Sizes: <https://www.debian.org/releases/jessie/amd64/apcs01.html.en> (<https://www.debian.org/releases/jessie/amd64/apcs01.html.en>)]

Download Debian 10

For this tutorial version 10.3.0 for 'amd64' architecture is chosen. (Download the amd64 for 64 bit or i386 for 32 bit systems).

Download links (the links can change time to time)

<https://www.debian.org/distrib/> (<https://www.debian.org/distrib/>)

Small installation image (netinst image)

This can be downloaded quickly and should be recorded onto a removable disk. To use this, you will need a machine with an Internet connection.

debian-10.3.0-amd64-netinst.iso – size (335 mb)

<https://www.debian.org/distrib/netinst> (<https://www.debian.org/distrib/netinst>)

Larger complete installation image

This contains more packages, making it easier to install machines without an Internet connection. You can download DVD images using torrent

debian-10.3.0-amd64-DVD-1.iso.torrent – size (3.69 GB)

debian-10.3.0-amd64-DVD-2.iso.torrent – size (4.36 GB)

debian-10.3.0-amd64-DVD-3.iso.torrent – size (4.34 GB)

<https://cdimage.debian.org/debian-cd/current/amd64/bt-dvd/> (<https://cdimage.debian.org/debian-cd/current/amd64/bt-dvd/>)

Directories in Linux

This is the list of directories, you can find in Linux and please note that in this tutorial, partitions are created for only the selected ones.

Directory	Content
bin	Essential command binaries
boot	Static files of the boot loader
dev	Device files
etc	Host-specific system configuration
home	User home directories
lib	Essential shared libraries and kernel modules
media	Contains mount points for replaceable media
mnt	Mount point for mounting a file system temporarily
proc	Virtual directory for system information
root	Home directory for the root user
run	Run-time variable data
sbin	Essential system binaries
sys	Virtual directory for system information
tmp	Temporary files
usr	Secondary hierarchy
var	Variable data
srv	Data for services provided by the system
opt	Add-on application software packages

More at: <https://www.debian.org/releases/stable/amd64/apcs02.en.html> (<https://www.debian.org/releases/stable/amd64/apcs02.en.html>)

TUTORIAL

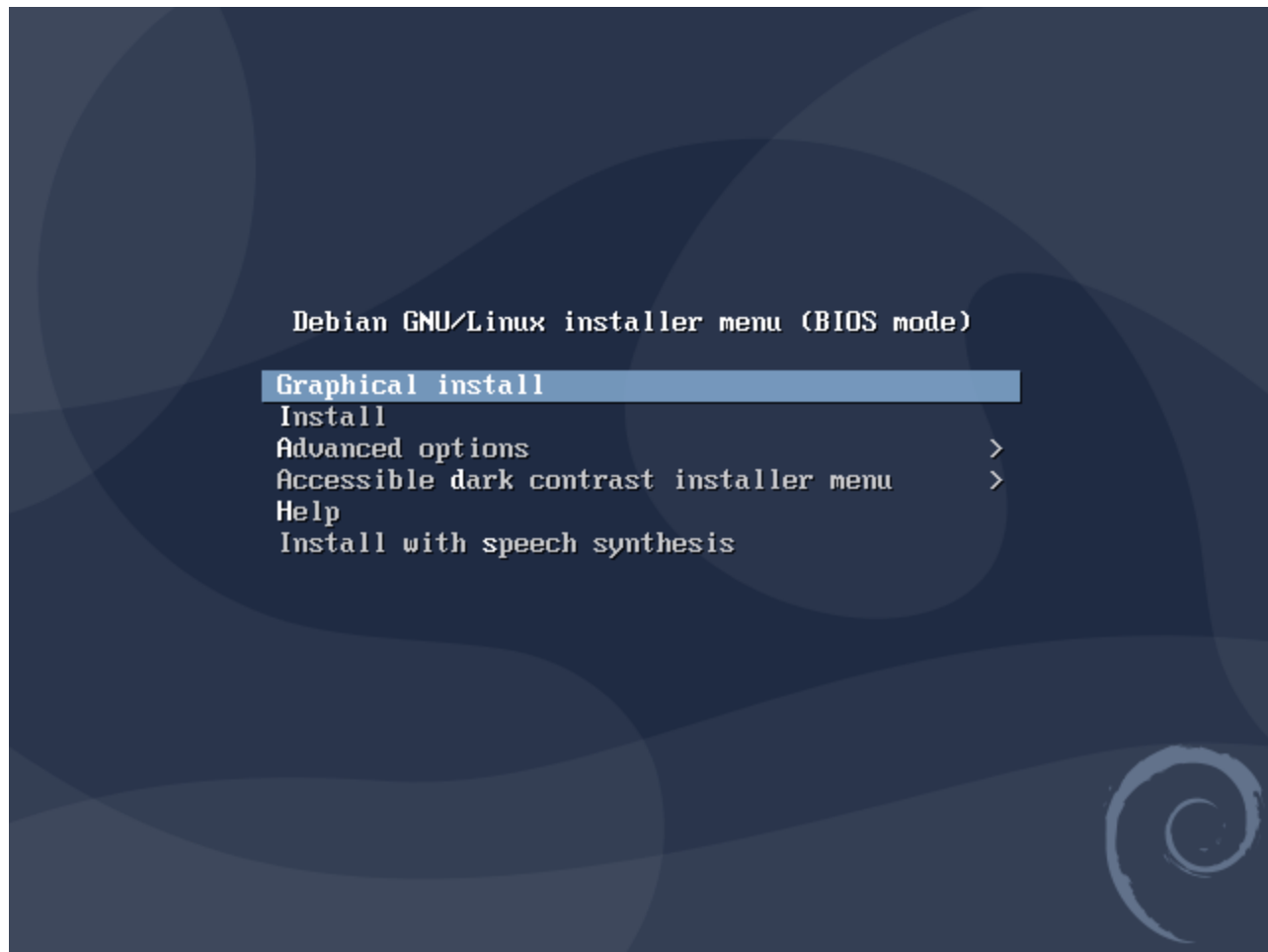
The tutorial is divided into 7 sections

1. Install Debian graphical install
2. Create manual partition
3. Create standard boot partition
4. Configure Logical Volume Manager (LVM)
5. Create logical volumes for the rest of the directories

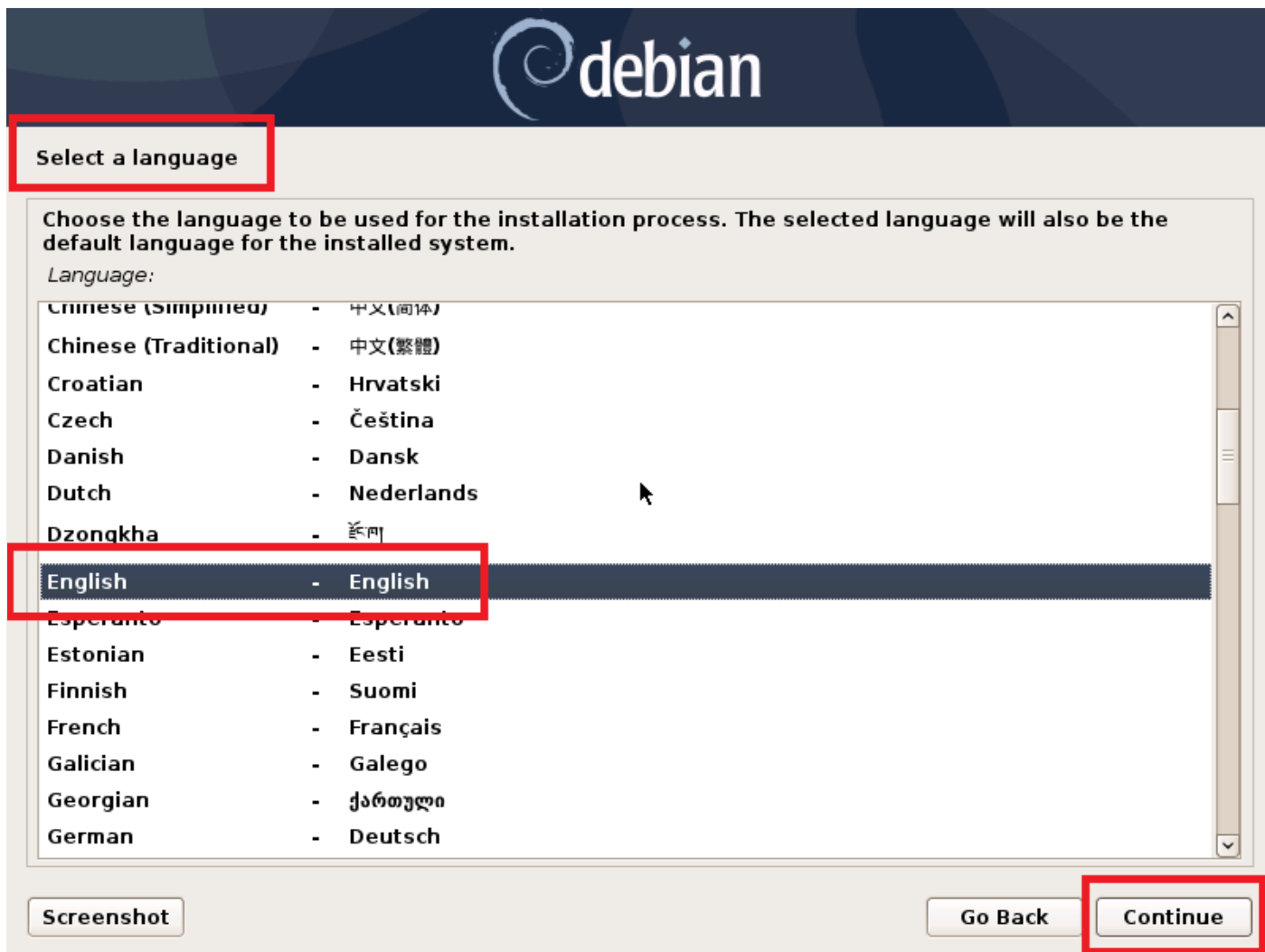
6. Configure the partitions
7. Finalize installation

01 Install Debian graphical install

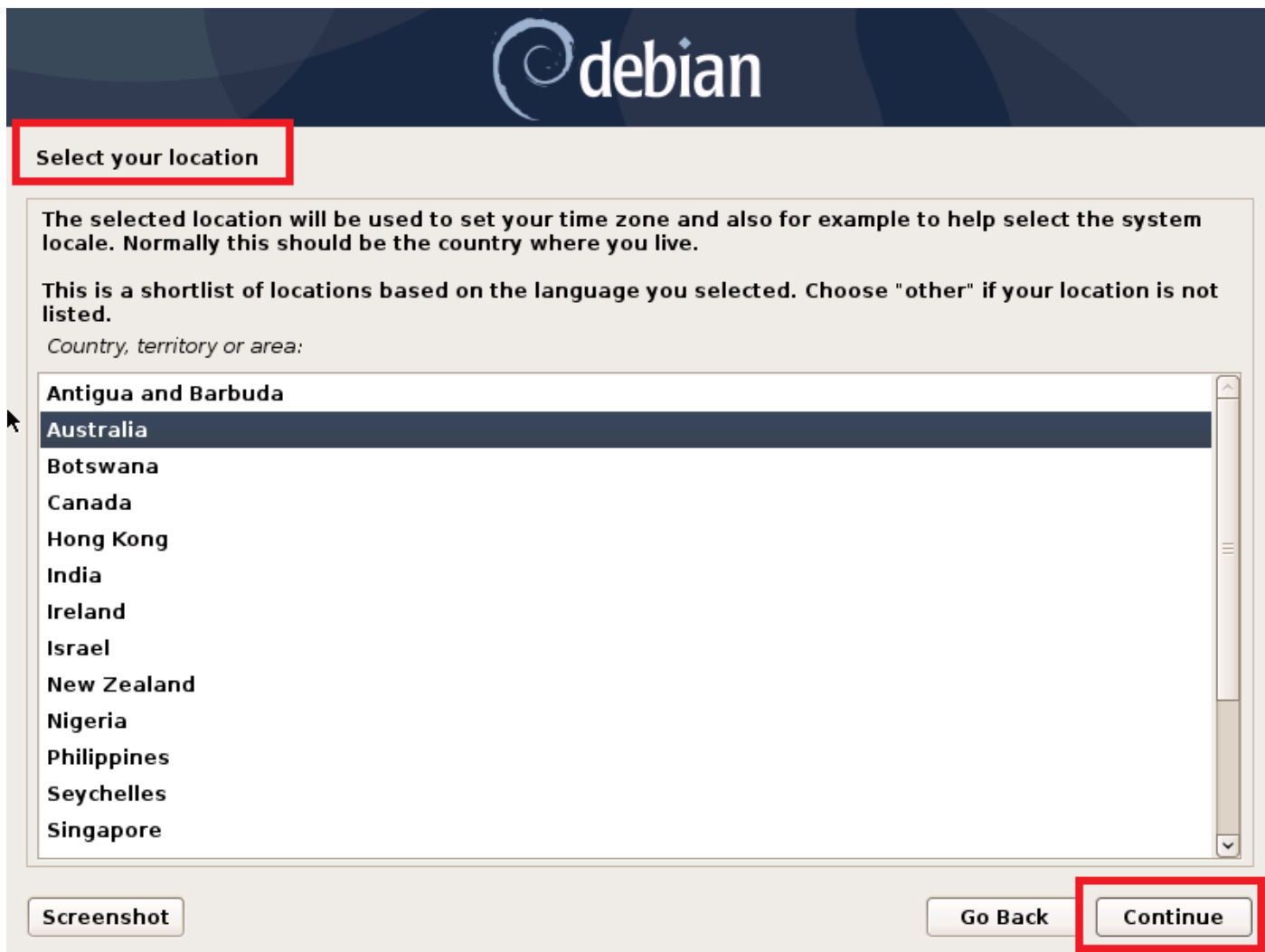
In this case, Graphical Install is selected



Select the desired language



Select the location



The Debian installer's 'Select your location' screen. At the top is the Debian logo. Below it, the title 'Select your location' is highlighted with a red box. The main text explains that the location is used for time zone and locale settings. A shortlist of locations is provided, with 'Australia' selected and highlighted. At the bottom, there are three buttons: 'Screenshot', 'Go Back', and 'Continue', with the 'Continue' button highlighted by a red box.

Select your location

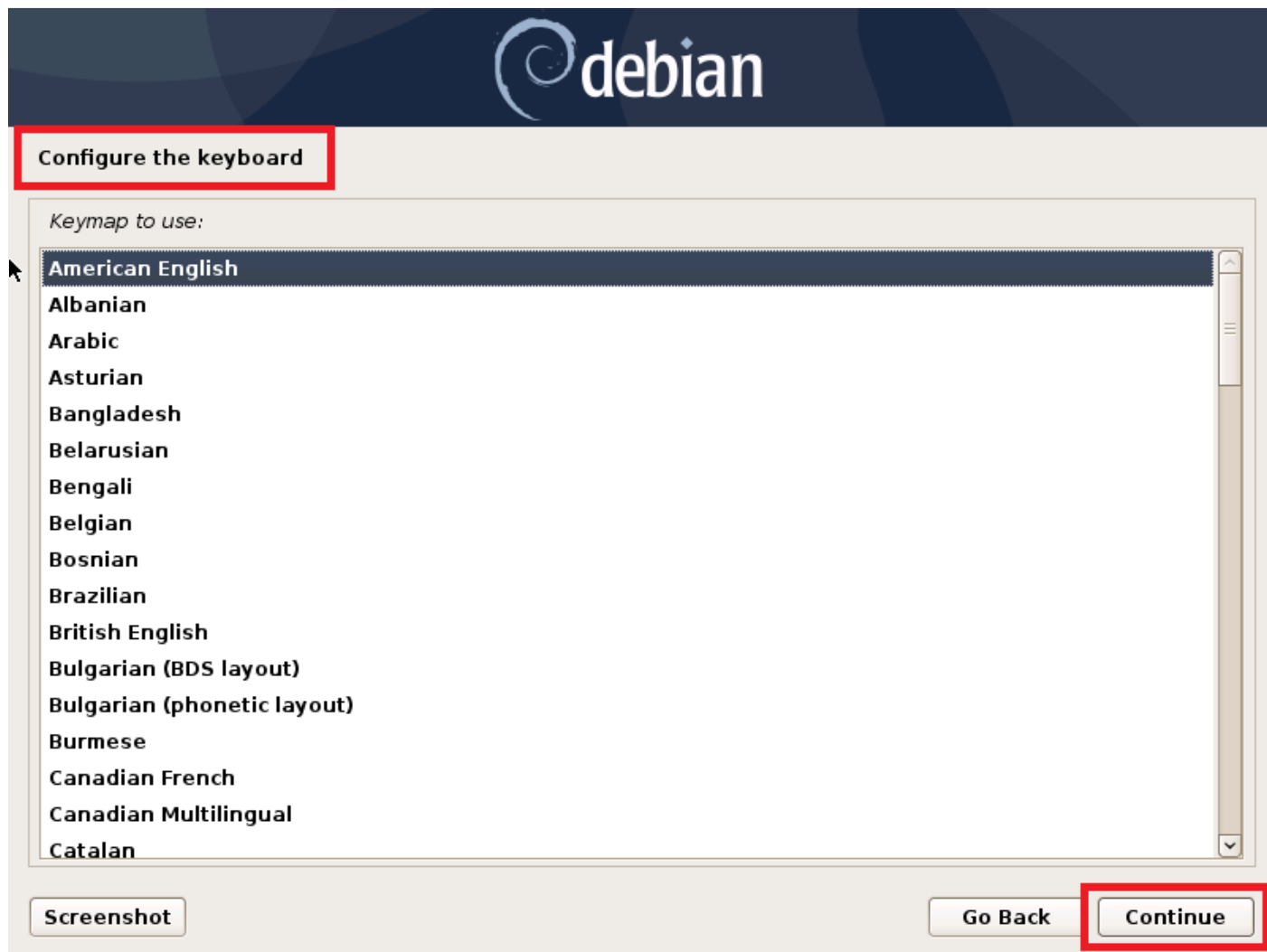
The selected location will be used to set your time zone and also for example to help select the system locale. Normally this should be the country where you live.

This is a shortlist of locations based on the language you selected. Choose "other" if your location is not listed.

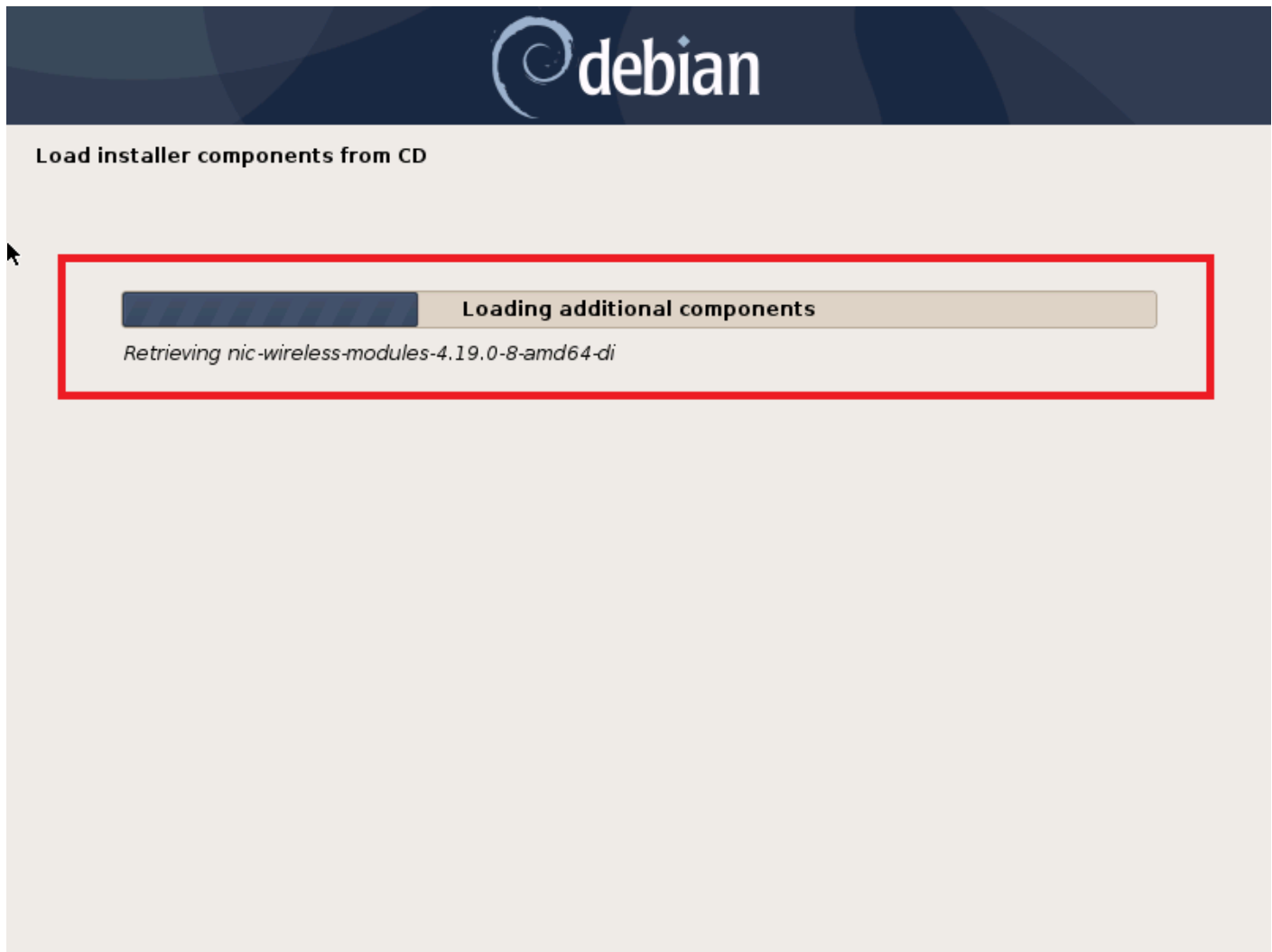
Country, territory or area:

- Antigua and Barbuda
- Australia**
- Botswana
- Canada
- Hong Kong
- India
- Ireland
- Israel
- New Zealand
- Nigeria
- Philippines
- Seychelles
- Singapore

Provide the desired keyboard option



wait until the 'installer components' load



Give the 'Hostname' for the system



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.

Hostname:

Screenshot

Go Back Continue

Provide the 'Domain name' (you can keep it blank if the system is used as a normal desktop system)



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:

Screenshot

Go Back Continue

Give a strong password for the root account



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

Provide a name for the user who is going to use this system for non-administrative tasks



Set up users and passwords

A user account will be created for you to use instead of the root account for non-administrative activities.

Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.

Full name for the new user:


waruna

Screenshot

Go Back

Continue

Provide a username for the new 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:

Screenshot

Go Back Continue

Provide a strong password for the created new user



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:

●●●●●●●●

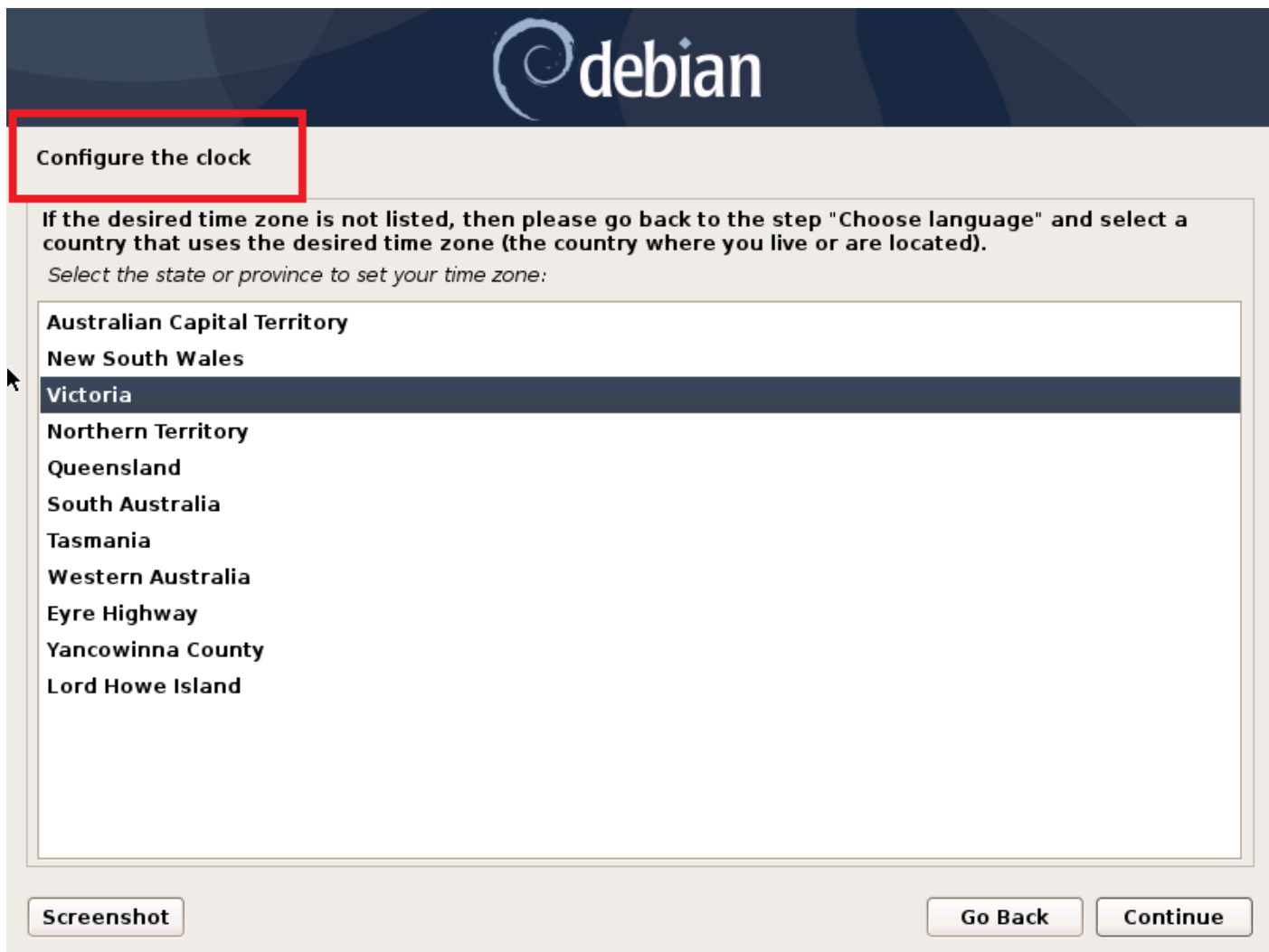
☐ Show Password in Clear

Screenshot

Go Back

Continue

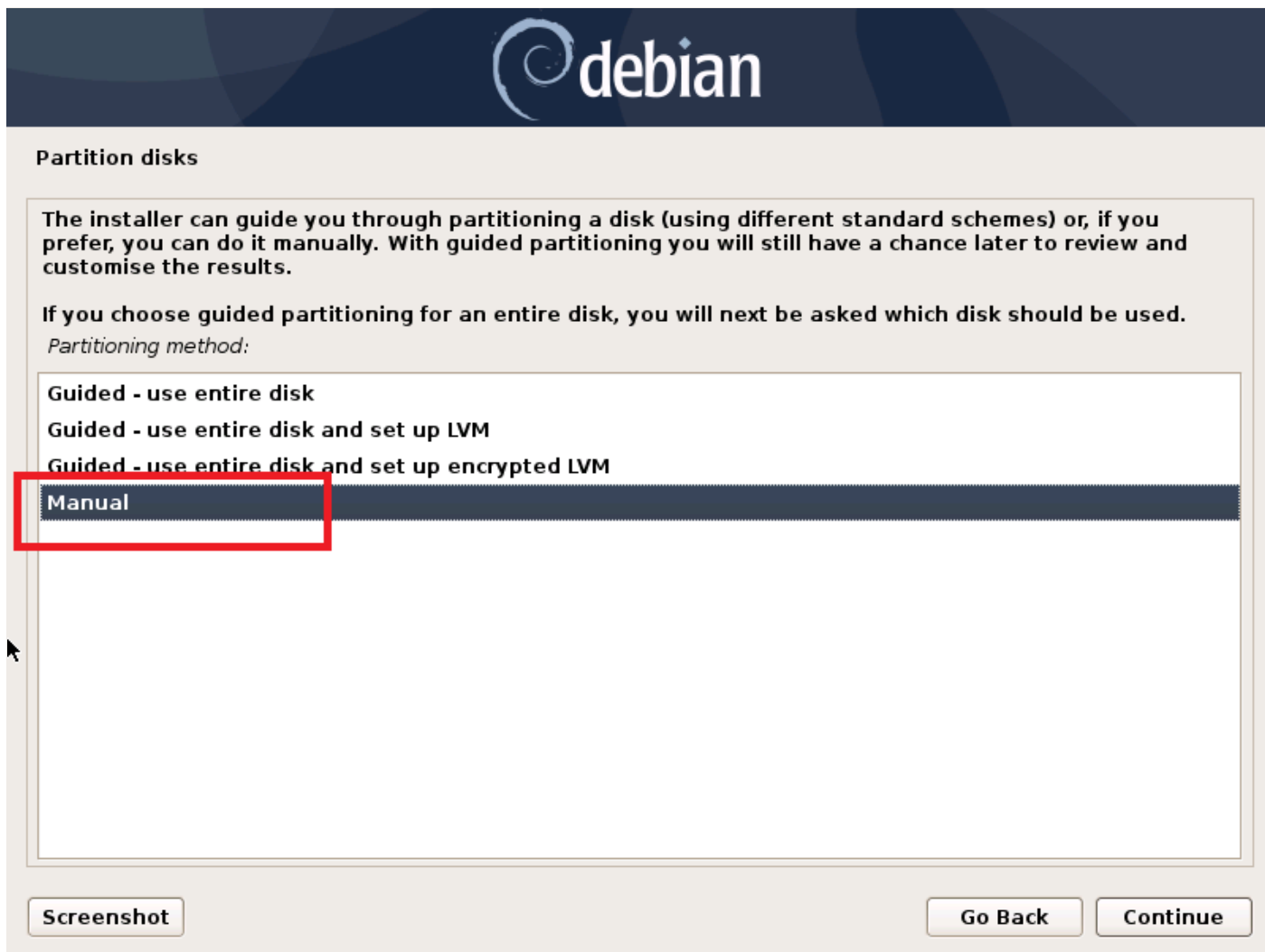
Configure the clock (You should have chosen the correct language earlier to make the time zone to be listed)

The image shows a screenshot of the Debian installer's 'Configure the clock' step. At the top, the Debian logo is visible. The title 'Configure the clock' is highlighted with a red rectangle. Below the title, there is instructional text: '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 the state or province to set your time zone:'. A list of Australian states and territories is displayed, with 'Victoria' selected and highlighted in dark blue. The list includes: Australian Capital Territory, New South Wales, Victoria, Northern Territory, Queensland, South Australia, Tasmania, Western Australia, Eyre Highway, Yancowinna County, and Lord Howe Island. At the bottom, there are three buttons: 'Screenshot', 'Go Back', and 'Continue'.

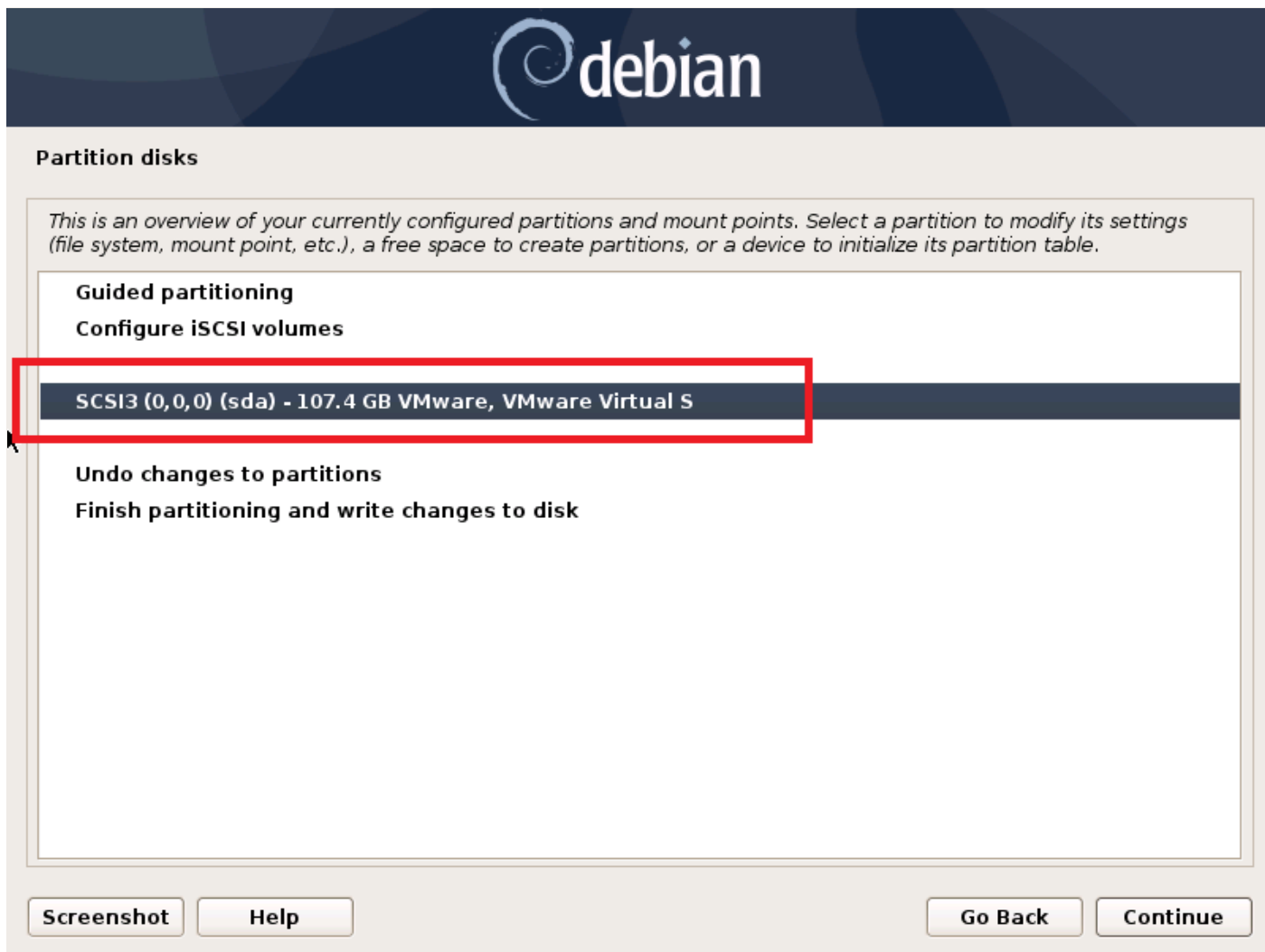
Press continue to proceed to the next step which is creating partitions

02 Create manual partition

In this tutorial manual partition option is chosen



Select the hard disk (In this case, hard disk was created using VMware workstation)



Click 'Yes' to proceed



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?

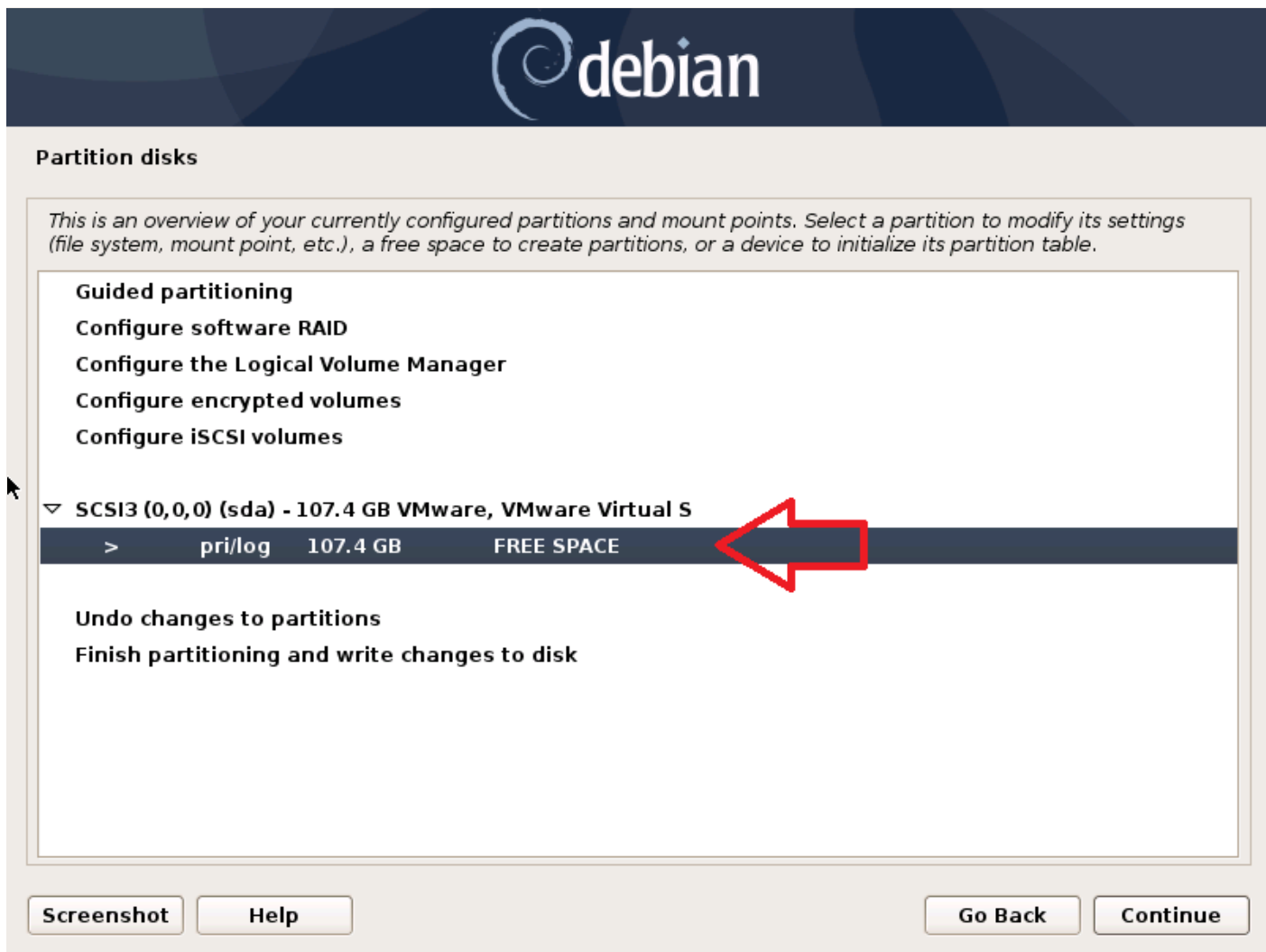
☐ No

☒ Yes

Screenshot

Go Back **Continue**

Select the free space to continue

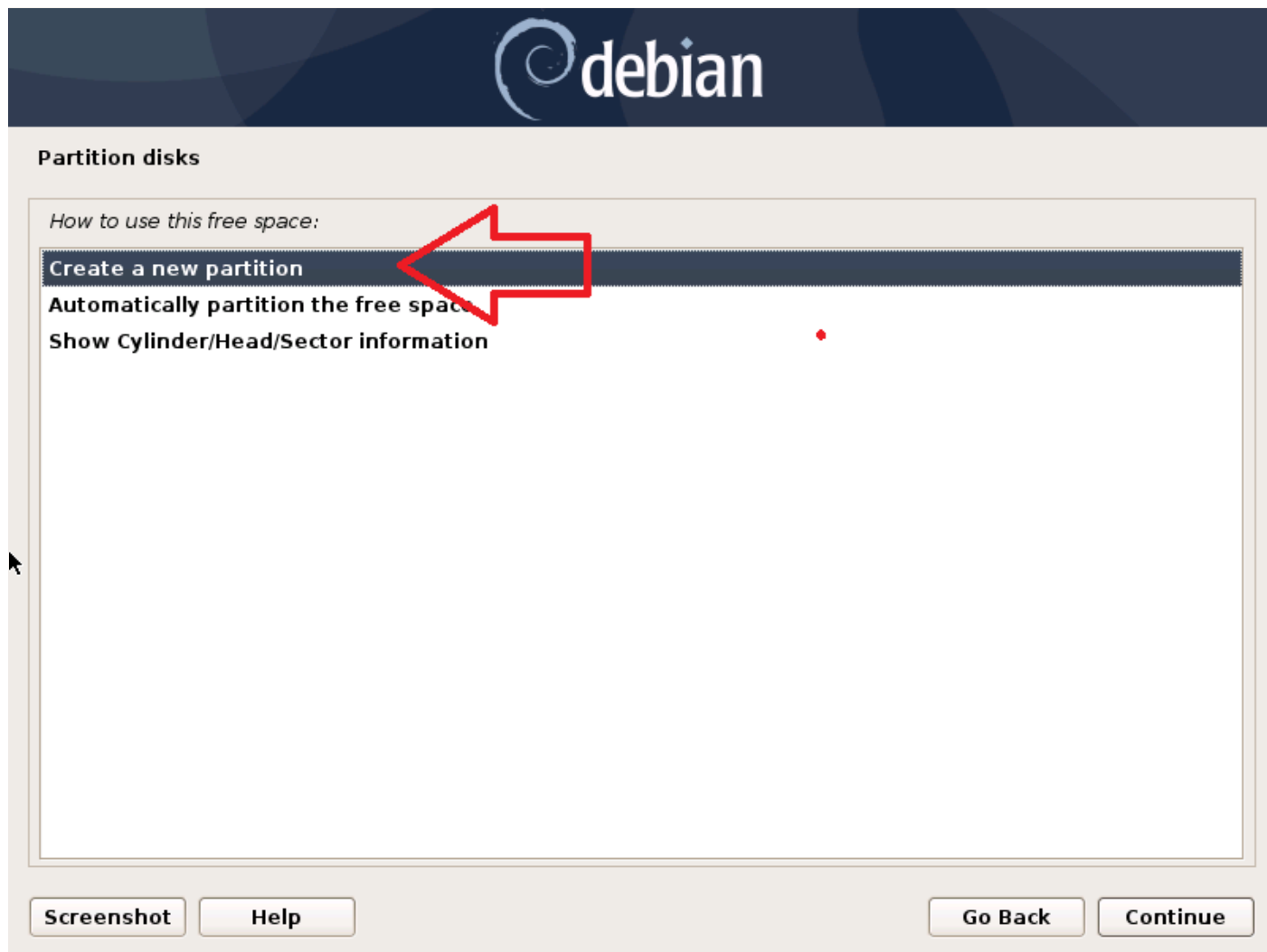


3.0 Create standard boot partition

As The First Partition Create a Standard boot partition

- *Size of the partiton: 1 GB*
- *Type for the new partition: primary*
- *Location of the new partition: beginning*
- *use as: Ext4 journaling file system*
- *Mount point: /boot*
- *label: boot*
- *bootable flag: on*

Select the option to create a new partition



Provide the disk space required (1 GB is enough for boot partition)



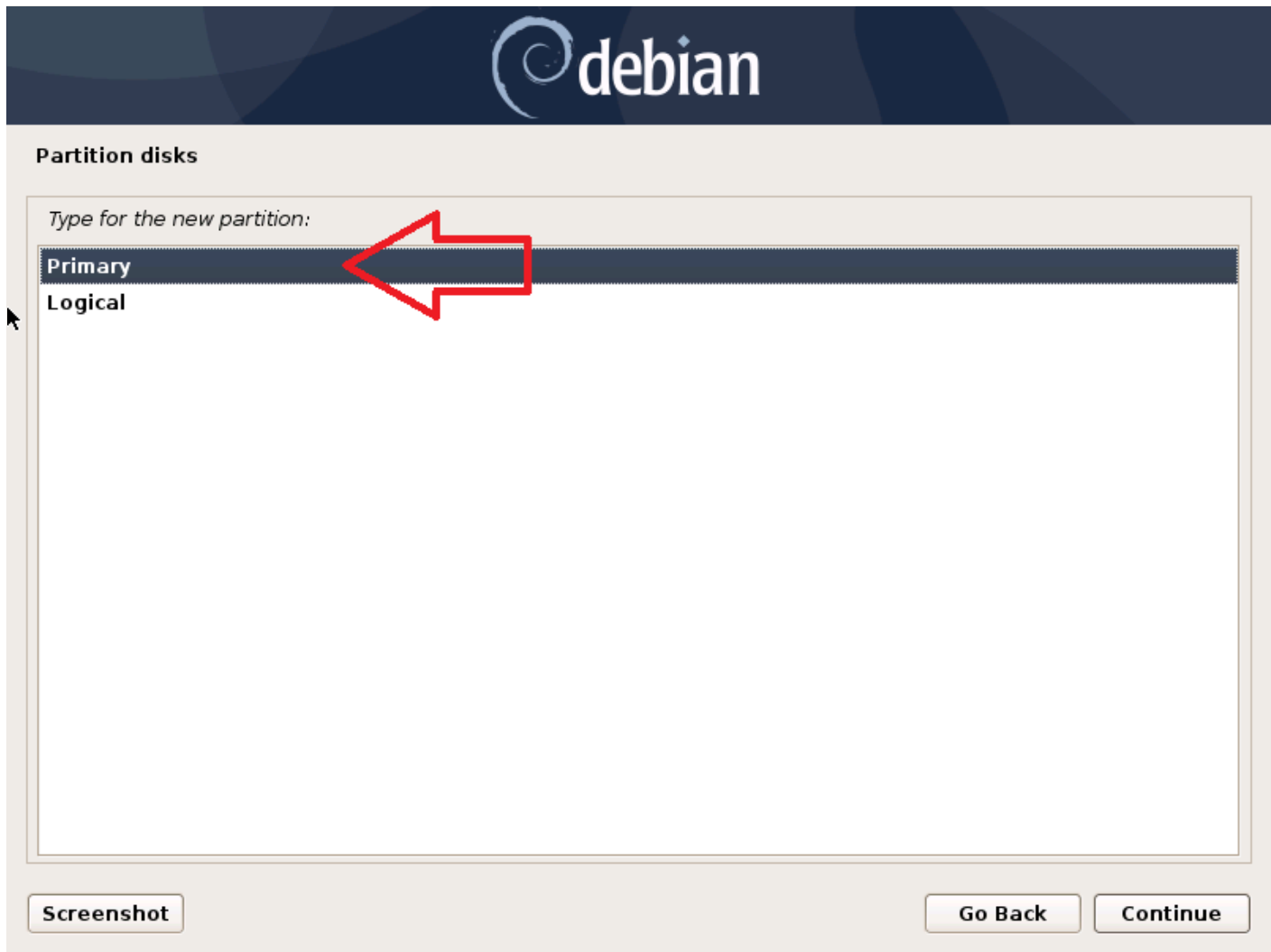
Partition disks

The maximum size for this partition is 107.4 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.

New partition size:

Select primary as the type for boot partition



Create the boot partition at the beginning of the free space



Partition disks

Please choose whether you want the new partition to be created at the beginning or at the end of the available space.

Location for the new partition:

Beginning

End

Screenshot

Go Back


Continue

In the partition settings you can select the Mount point,

Click on 'Mount point' to select the mount point as /boot

25 of 83

21/4/22, 09:59



Partition disks

You are editing partition #1 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.

Partition settings:

Use as:	Ext4 journaling file system
Mount point:	/
Mount options:	defaults
Label:	none
Reserved blocks:	5%
Typical usage:	standard
Bootable flag:	off

Delete the partition

Done setting up the partition

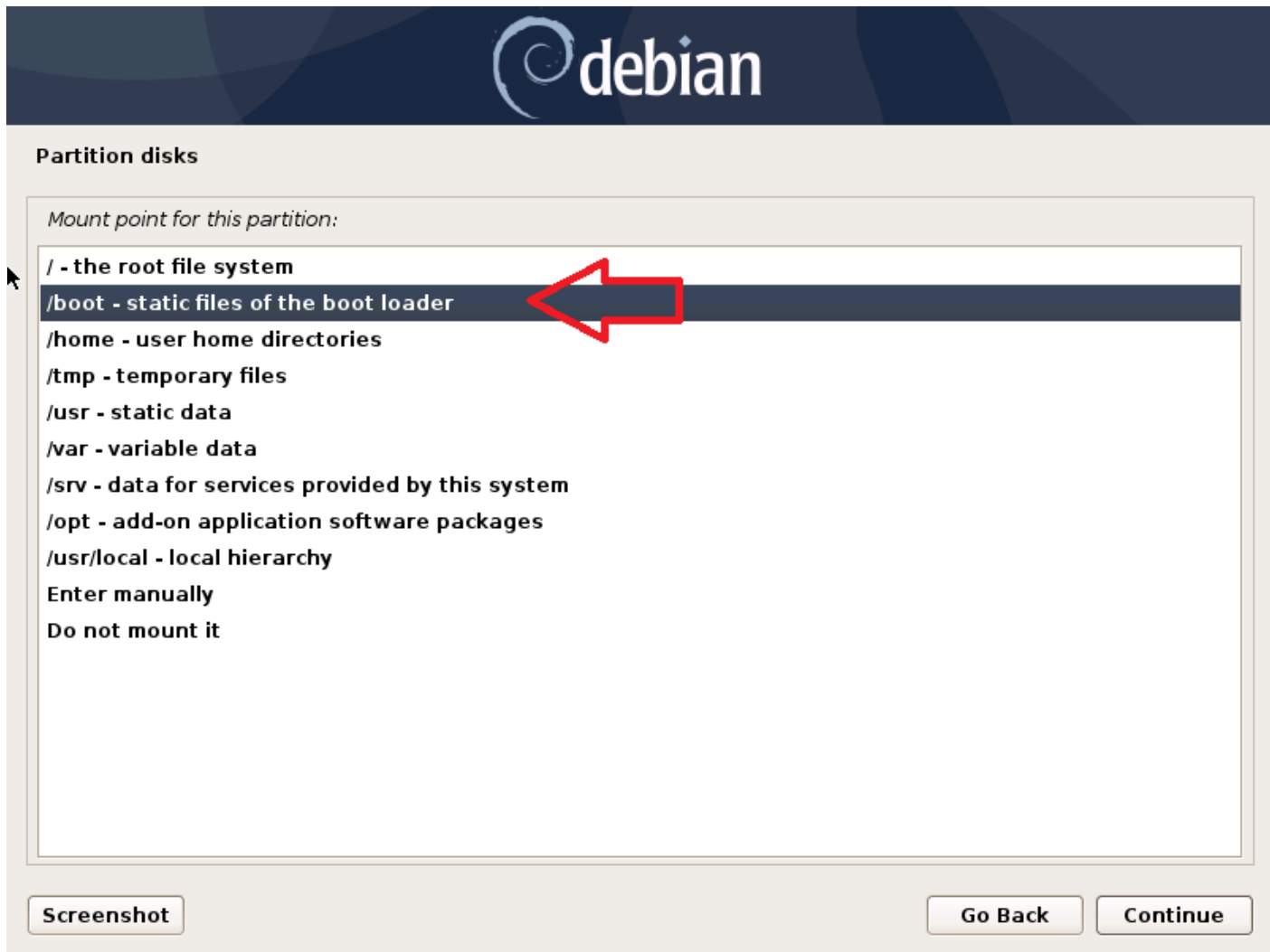
Screenshot

Help


Go Back

Continue

‘/boot’ is selected as the mount point



Click on the 'Label' to give the label as 'boot'



Partition disks

You are editing partition #1 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.

Partition settings:

Use as:	Ext4 journaling file system
Mount point:	/boot
Mount options:	defaults
Label:	none
Reserved blocks:	5%
Typical usage:	standard
Bootable flag:	off

Delete the partition

Done setting up the partition

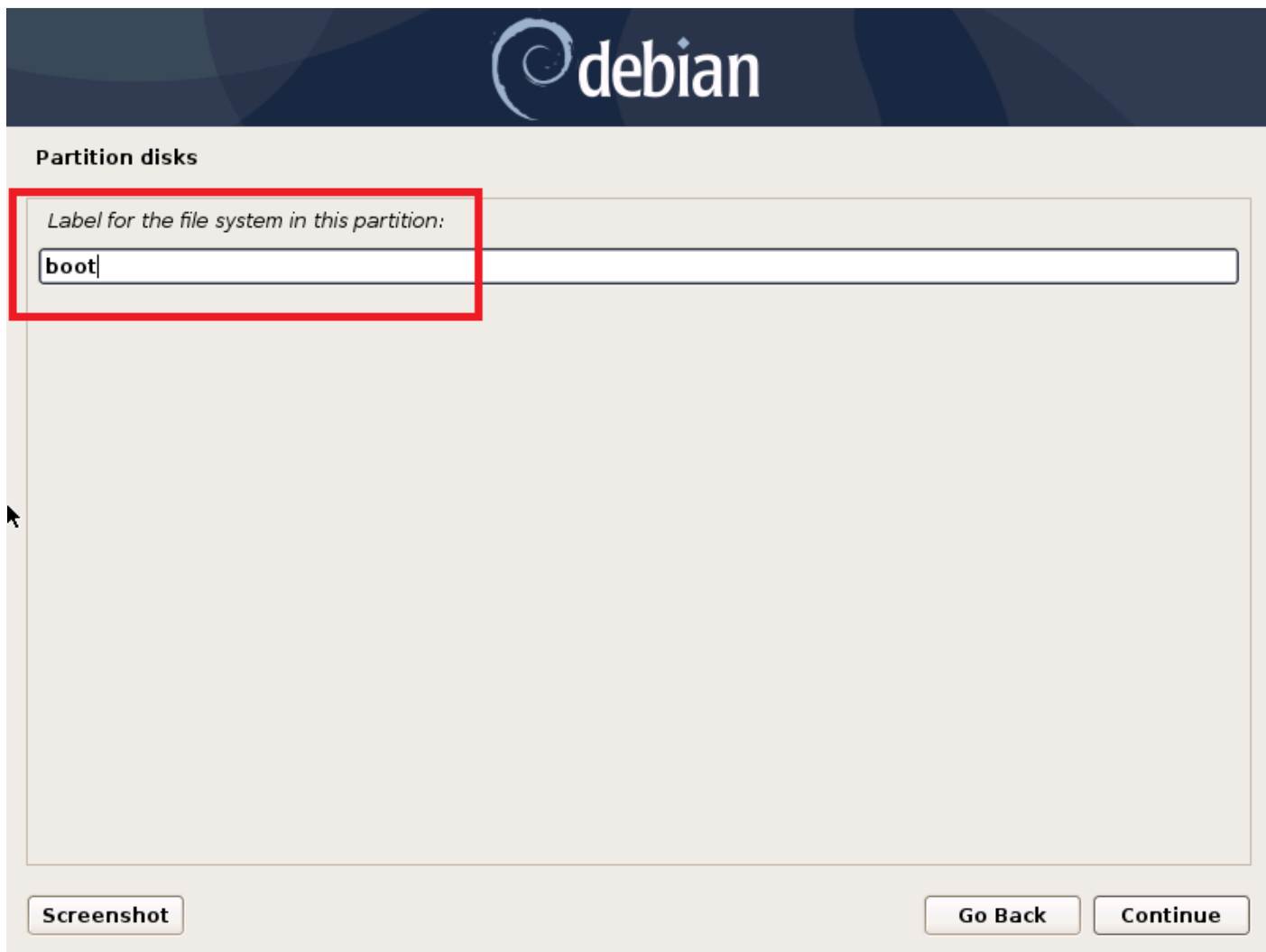
Screenshot

Help

Go Back

Continue

Provide 'boot' as the label



The image shows a screenshot of the Debian installer's 'Partition disks' screen. At the top, the Debian logo is visible. Below it, the title 'Partition disks' is displayed. A red rectangular box highlights the input field for the file system label. The label 'boot' is entered in this field. Below the input field is a large empty area for additional configuration. At the bottom of the screen, there are three buttons: 'Screenshot', 'Go Back', and 'Continue'.

Partition disks

Label for the file system in this partition:

boot

Screenshot Go Back Continue

Select the file system as Ext4 (In this scenario Ext4 is selected by default)

What is Ext4?

The ext4 journaling file system or fourth extended file system is a journaling file system for Linux, developed as the successor to ext3. Furthermore, ext4 is the default file system for many Linux distributions including Debian and Ubuntu. –wiki



Partition disks

You are editing partition #1 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.

Partition settings:

Use as: Ext4 journaling file system

Mount point: /boot
Mount options: defaults
Label: boot
Reserved blocks: 5%
Typical usage: standard
Bootable flag: off

Delete the partition

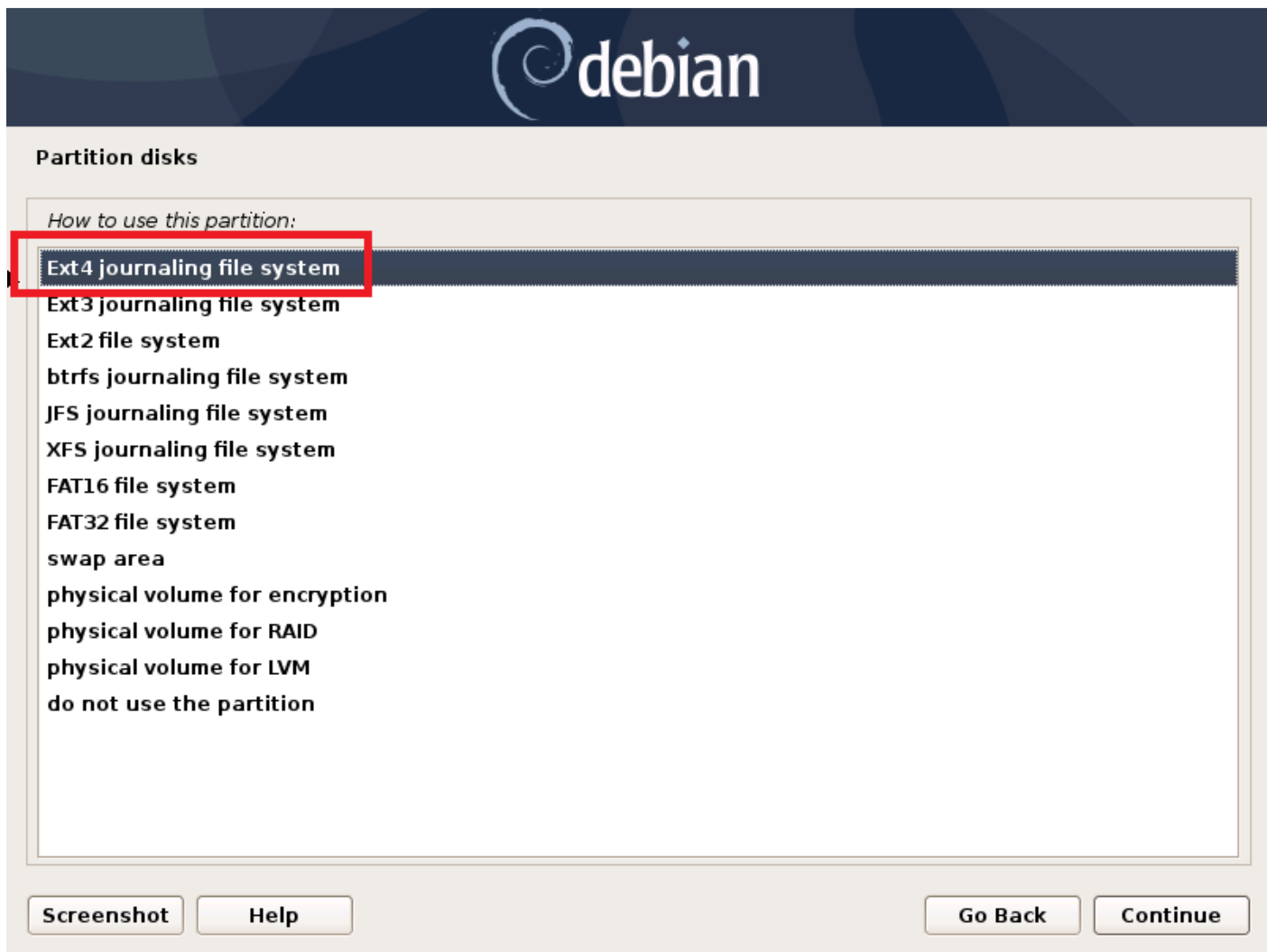
Done setting up the partition

Screenshot


Help

Go Back

Continue



Review the settings and finish configuring



Partition disks

You are editing partition #1 of SCSI3 (0,0,0) (sda). No existing file system was detected in this partition.

Partition settings:

Use as:	Ext4 journaling file system
Mount point:	/boot
Mount options:	defaults
Label:	boot
Reserved blocks:	5%
Typical usage:	standard
Bootable flag:	on

Delete the partition

Done setting up the partition

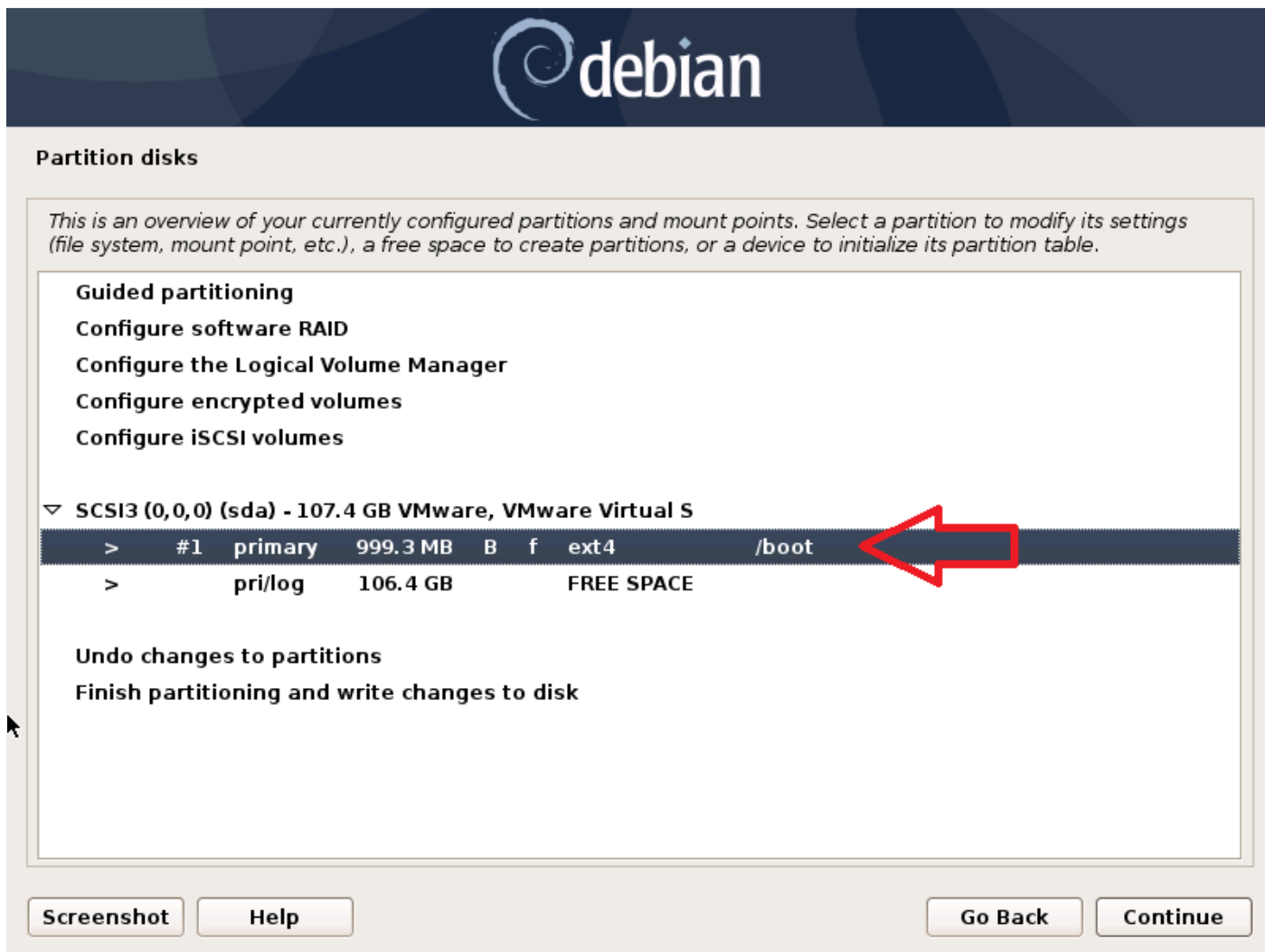
Screenshot

Help

Go Back

Continue

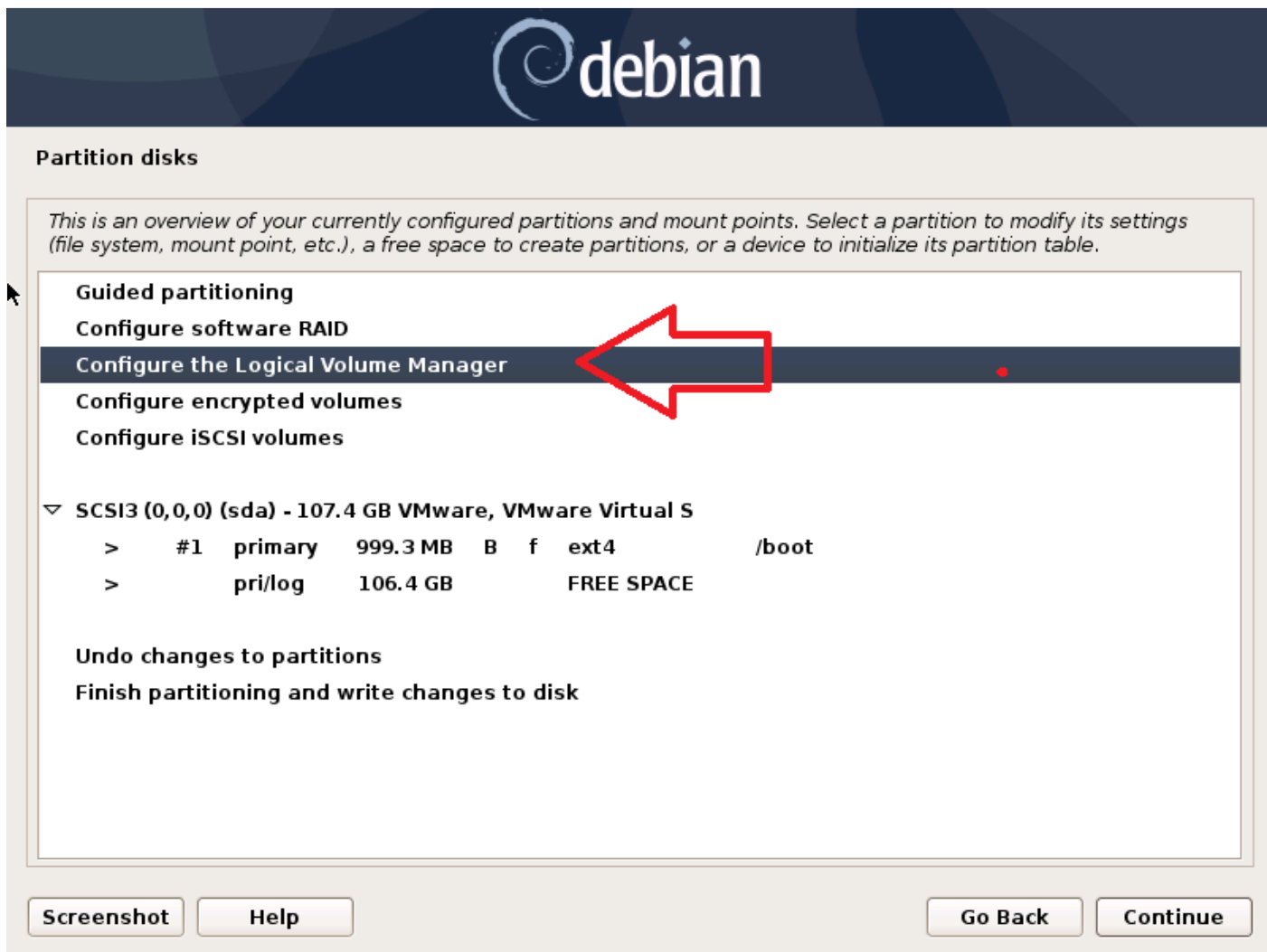
Note that freshly configured /boot partition is available in the list



4.0 Configure Logical Volume Manager (LVM)

- Firstly create a LVM physical volume
- Then create other partitions as LVM logical volumes within the LVM physical volume

Select the option from the menu to configure the LVM



Click 'yes' to proceed



Partition disks

Before the Logical Volume Manager can be configured, the current partitioning scheme has to be written to disk. These changes cannot be undone.

After the Logical Volume Manager is configured, no additional changes to the partitioning scheme of disks containing physical volumes are allowed during the installation. Please decide if you are satisfied with the current partitioning scheme before continuing.

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 SCSI3 (0,0,0) (sda) as ext4

Write the changes to disks and configure LVM?

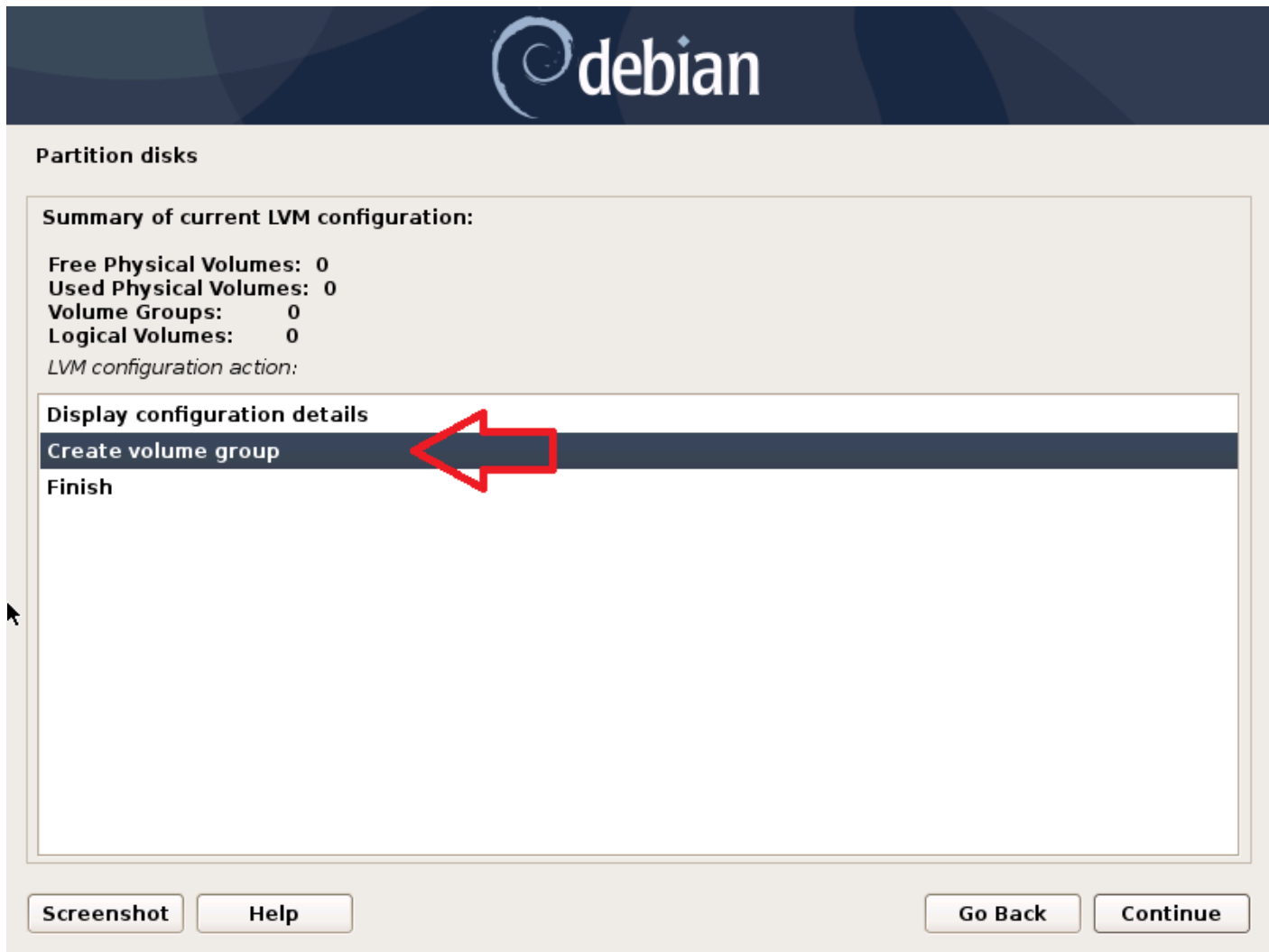
☐ No

☒ Yes


Screenshot

Continue

Create a logical volume group



Provide a name to the Volume Group



Partition disks

Please enter the name you would like to use for the new volume group.

Volume group name:


LVMGroup

Screenshot

Go Back

Continue

Choose the free space for the new volume group



Partition disks

Please select the devices for the new volume group.

You can select one or more devices.

Devices for the new volume group:

<input type="checkbox"/>	/dev/sda1	(999MB; ext4)
<input checked="" type="checkbox"/>	/dev/sda free #1	(106373MB; FREE SPACE)

Screenshot

Go BackContinue

Select 'Yes' to proceed



5.0 Create logical volumes for rest of the directories

In this tutorial logical volumes are created for following directories only for reference / educational purposes. Additionally, you can create more separate partitions based on the requirement of the organization and personnel preferences.

- /swap
- / – (root)
- /home
- /srv (For FTP servers a /srv partition is recommended)
- /tmp
- /var (For web or mail servers it is recommended to create a separate /var partition)
- /var/log
- /var/mail

Swap Space

There are two basic types of memory in a typical computer. The first type, random access memory (RAM), is used to store data and programs while they are being actively used by the computer. Swap space is the second type of memory in modern Linux systems. The primary function of swap space is to substitute disk space for RAM memory when real RAM fills up and more space is needed.

There's no one hard-and-fast rule that will tell you how much paging or swap space you need. The answer depends on what you do with your computer and how much memory you use. For example, if you have 8 GB of memory but you never ever used more than those 8 GB, you could get by with no swap space at all — it's likely you would need more than 8 GB eventually, of course. On the other hand, you might have a computer with 64 GB of memory, but it might regularly work with 100 GB data sets — you'd probably want at least the 64 GB swap space just to be safe. So a computer with 8 GB of RAM might need no page file and a computer with 64 GB of RAM might need a huge page file. It all depends on what the computer is doing. [More at: <https://www.howtogeek.com/196238/how-big-should-your-page-file-or-swap-partition-be/>] (<https://www.howtogeek.com/196238/how-big-should-your-page-file-or-swap-partition-be/>)

The root (/) directory

Primary hierarchy root and root directory of the entire file system hierarchy.

The root directory is the directory on Unix-like operating systems that contains all other directories and files on the system and which is designated by a forward slash (/). Size is 5 –6GB for a workstation or a server installation.

The /home Directory

A home directory, also called a login directory, is a subdirectory of /home that serves as the repository for a user's personal files, directories and programs. It is also the directory that a user is first in after logging into the system.

The name of a user's home directory is by default the same as that of the user. Thus, for example, a user with a user name of william would have a home directory also named william, and that directory would have an absolute pathname of /home/william.

The only account that will by default have its home directory in a location other than /home is the root (i.e., administrative) user, whose home directory by default is /root, another standard sub-directory of the root directory.

A common strategy for large installations is to place /home on its own partition (i.e., a logically independent section) of a hard disk drive (HDD) or even on a separate HDD. This is because users' home directories usually contain the most important data on a system, and having them on a partition or disk separate from other parts of the system can make it easier to back them up and thereby reduce the chances of loss of data.

The /srv Directory

Site-specific data served by this system, such as data and scripts for web servers, data offered by FTP servers, and repositories for version control systems.

The /tmp Directory

Temporary data created by programs will most likely go in this directory. 40–100MB should usually be

enough. Some applications — including archive manipulators, CD/DVD authoring tools, and multimedia software — may use /tmp to temporarily store image files. If you plan to use such applications, you should adjust the space available in /tmp accordingly.

The /var Directory

/var is a standard sub-directory of the root directory in Linux and other Unix-like operating systems that contains files to which the system writes data during the course of its operation.

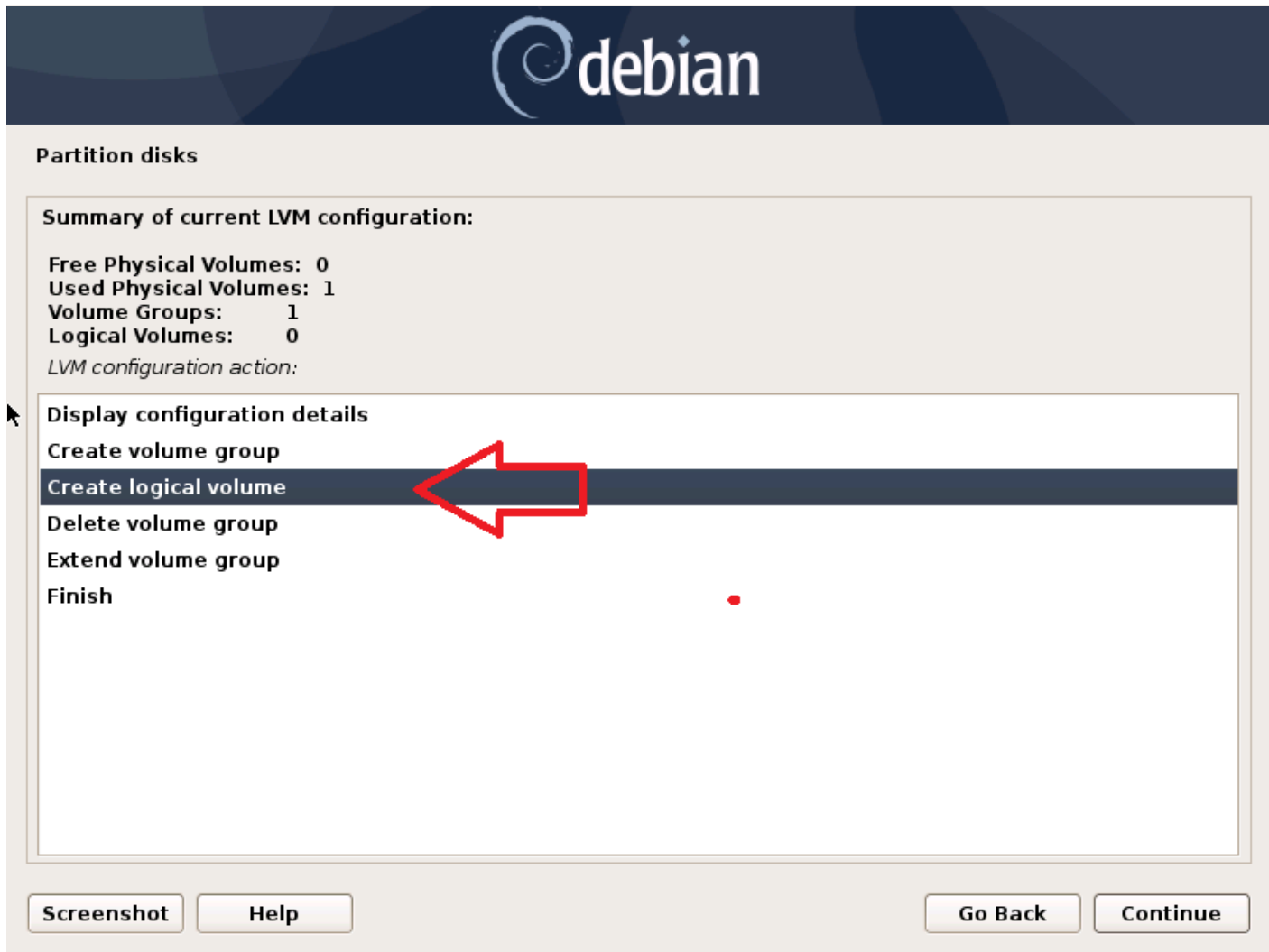
Among the various sub-directories within **/var** are..

- **/var/cache** (contains cached data from application programs),
- **/var/games** (contains variable data relating to games in /usr),
- **/var/lib** (contains dynamic data libraries and files),
- **/var/lock** (contains lock files created by programs to indicate that they are using a particular file or device),
- **/var/log** (contains log files),
- **/var/run** (contains PIDs and other system information that is valid until the system is booted again) and
- **/var/spool** (contains mail, news and printer queues).
- **/var/mail** (A mail server getting spammed with e-mail can easily fill a partition. If you made /var/mail a separate partition on the mail server, most of the system will remain working even if you get spammed).

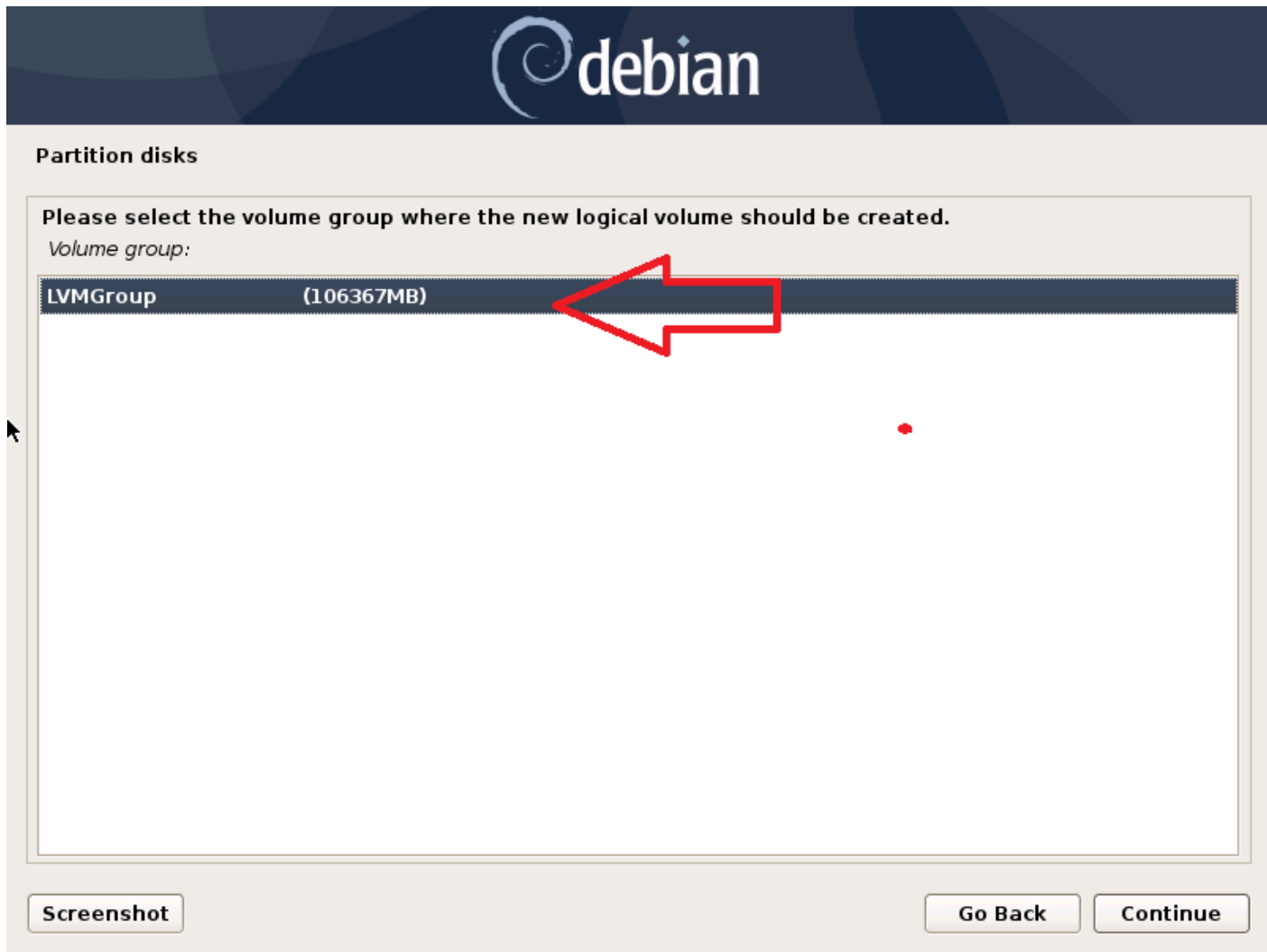
[More at: <http://www.linfo.org/var> (<http://www.linfo.org/var>)]

Firstly, swap partition is created

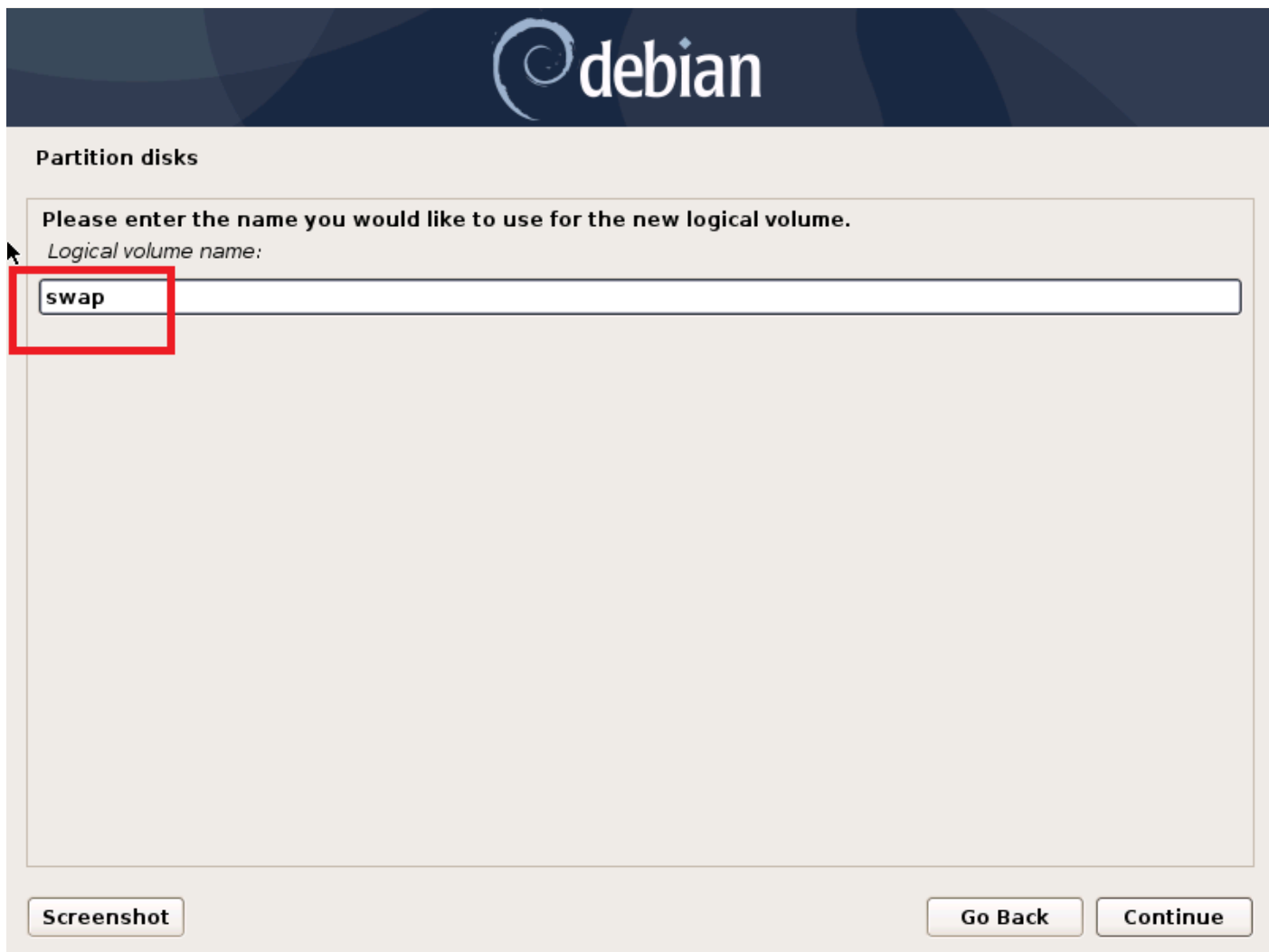
Create a volume for the swap space



Choose the previously created Logical Volume Group



Give the name as swap

The image shows a screenshot of the 'Partition disks' screen in the Debian installer. At the top, the Debian logo is visible. Below it, the title 'Partition disks' is displayed. The main area contains a text prompt: 'Please enter the name you would like to use for the new logical volume.' followed by 'Logical volume name:'. A text input field contains the word 'swap', which is highlighted by a red rectangular box. At the bottom of the screen, there are three buttons: 'Screenshot', 'Go Back', and 'Continue'.

Provide the size for the swap partition

How to decide the swap partition size

- Size of the LVM logical volume partition: 2.5 GB [since the system RAM is 2 GB, $2\text{ GB} + 500\text{ mb}$]
- use as: swap area

You can calculate the capacity according to the system RAM. If the system RAM is less than 2 GB it can be multiplied by 2, if the system RAM is more than 2 GB, you can add 500 mb to the system RAM. However, this can be different based on the requirement.

EX -:

system RAM is 250 mb \rightarrow Desired Capacity is 500 mb [$250\text{ mb} * 2$]

system RAM is 3 GB \rightarrow Desired Capacity is 3.5 GB [$3\text{ GB} + 500\text{ mb}$]

Another guide that explains the swap partition size: <https://opensource.com/article/18/9/swap-space-linux-systems> (<https://opensource.com/article/18/9/swap-space-linux-systems>)

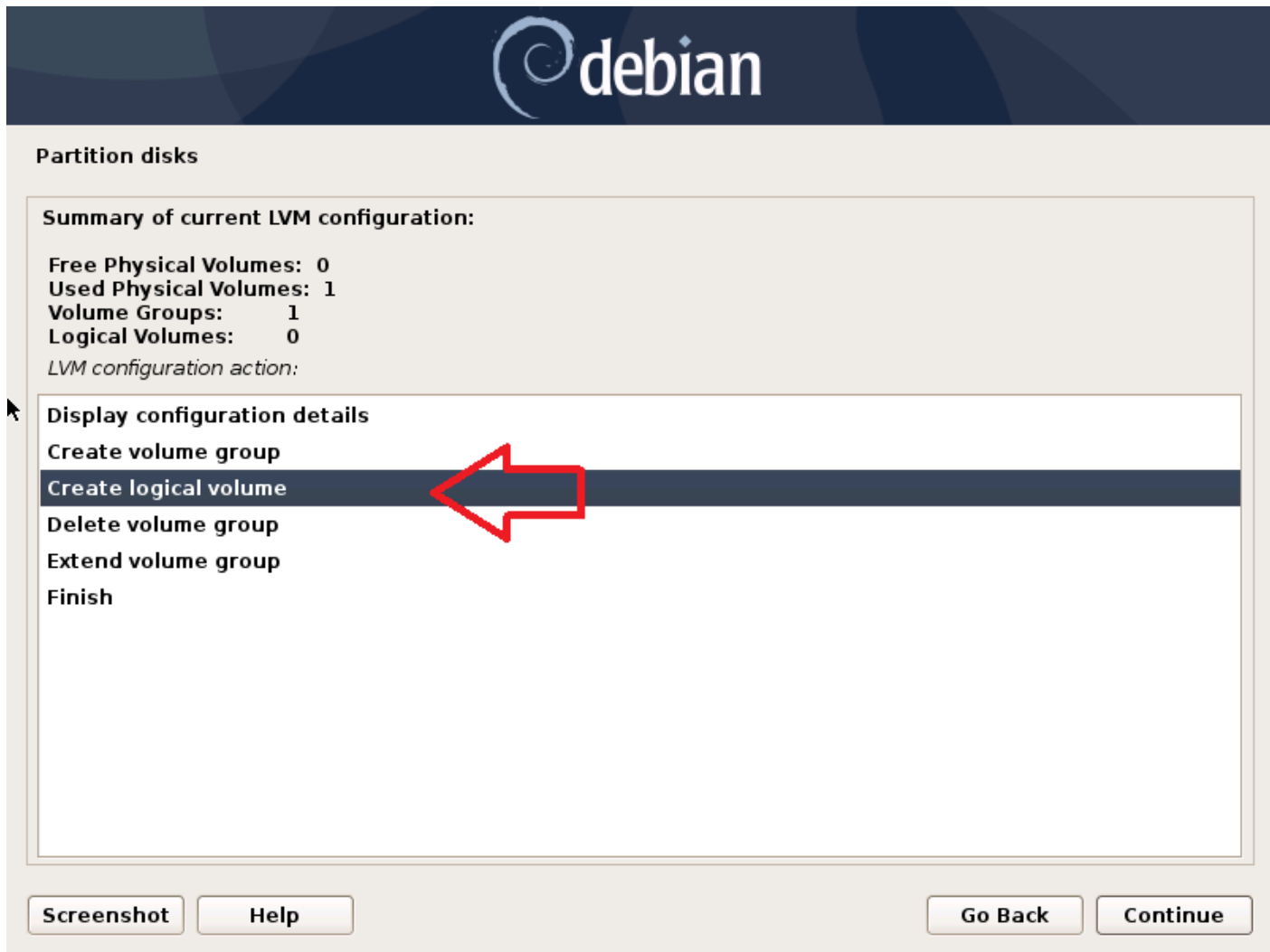


Partition disks

Please enter the size of the new logical volume. The size may be entered in the following formats: 10K (Kilobytes), 10M (Megabytes), 10G (Gigabytes), 10T (Terabytes). The default unit is Megabytes.

Logical volume size:

Keep creating the rest of the partitions in LVM



Altogether, 8 partitions are created (Again, it needs to be reminded that the partitions and sizes varies according to the requirement of the servers or workstations)




6.0 Configure the partitions

Firstly, configure the swap space

Select swap logical volume



In the partition settings, change the file system to 'swap area' (this is the only change you have to make)



Partition disks

You are editing partition #1 of LVM VG LVMGroup, LV swap. No existing file system was detected in this partition.

Partition settings:

Use as: do not use

Erase data on this partition

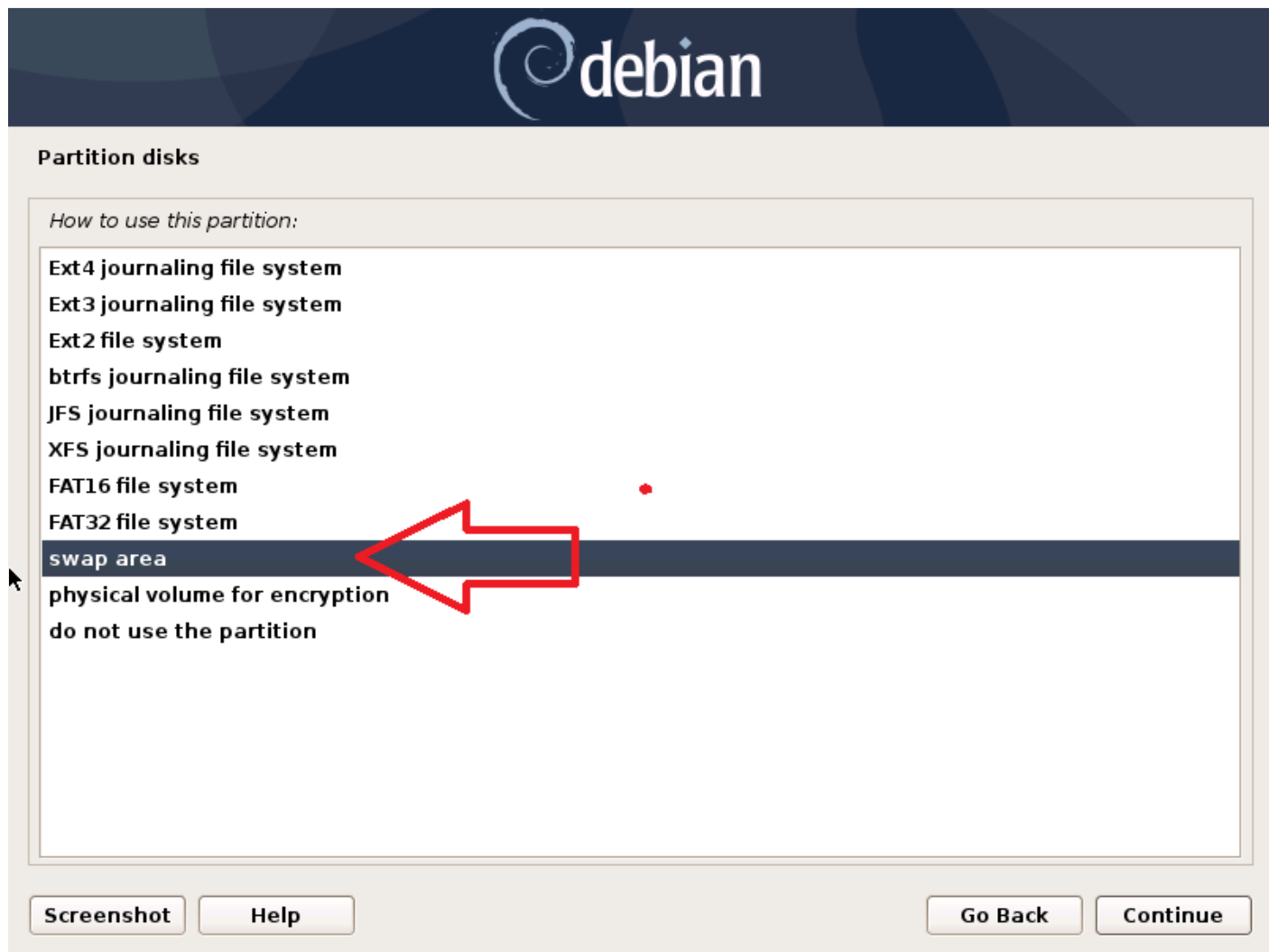
Done setting up the partition

Screenshot

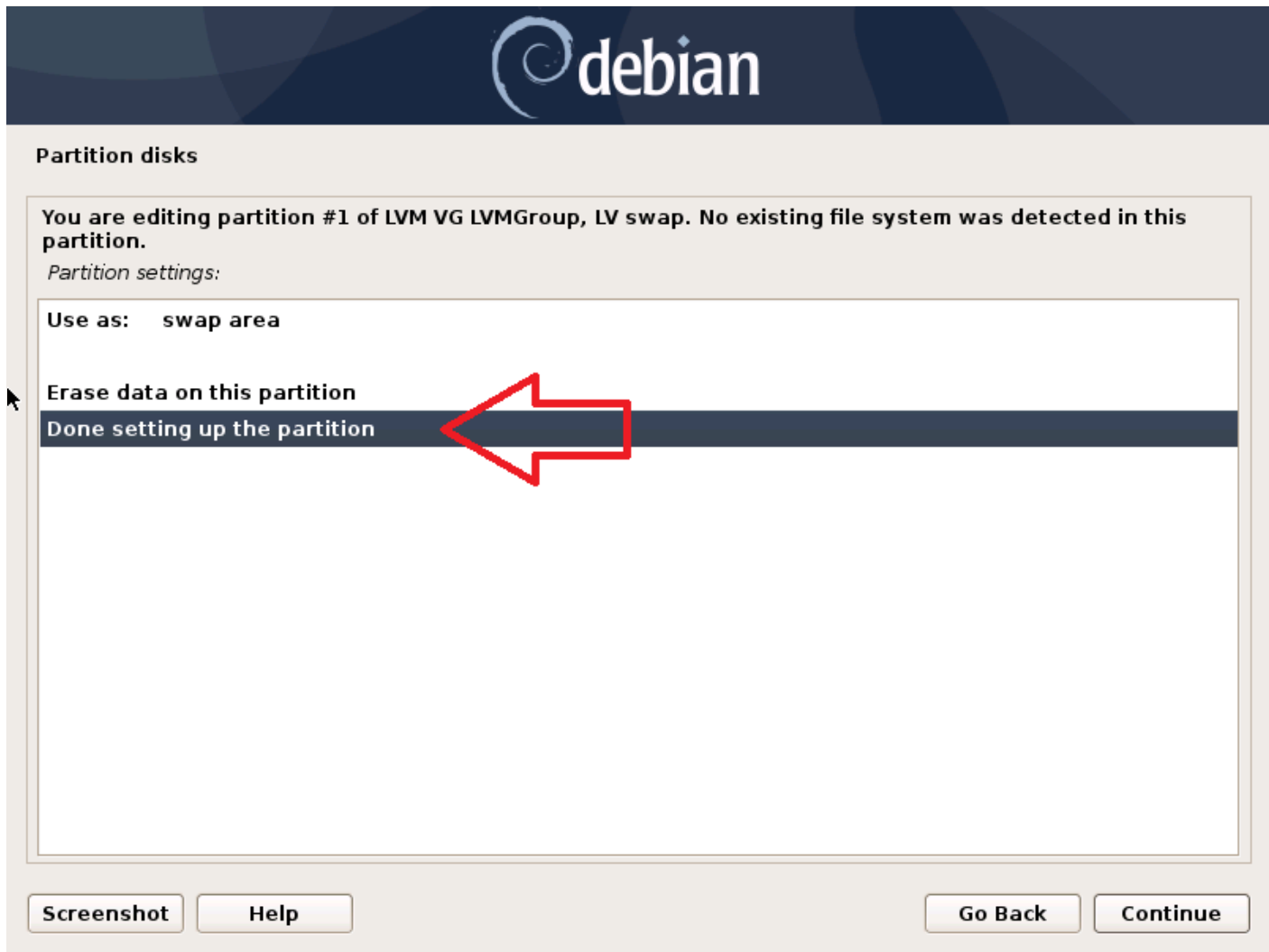
Help

Go Back

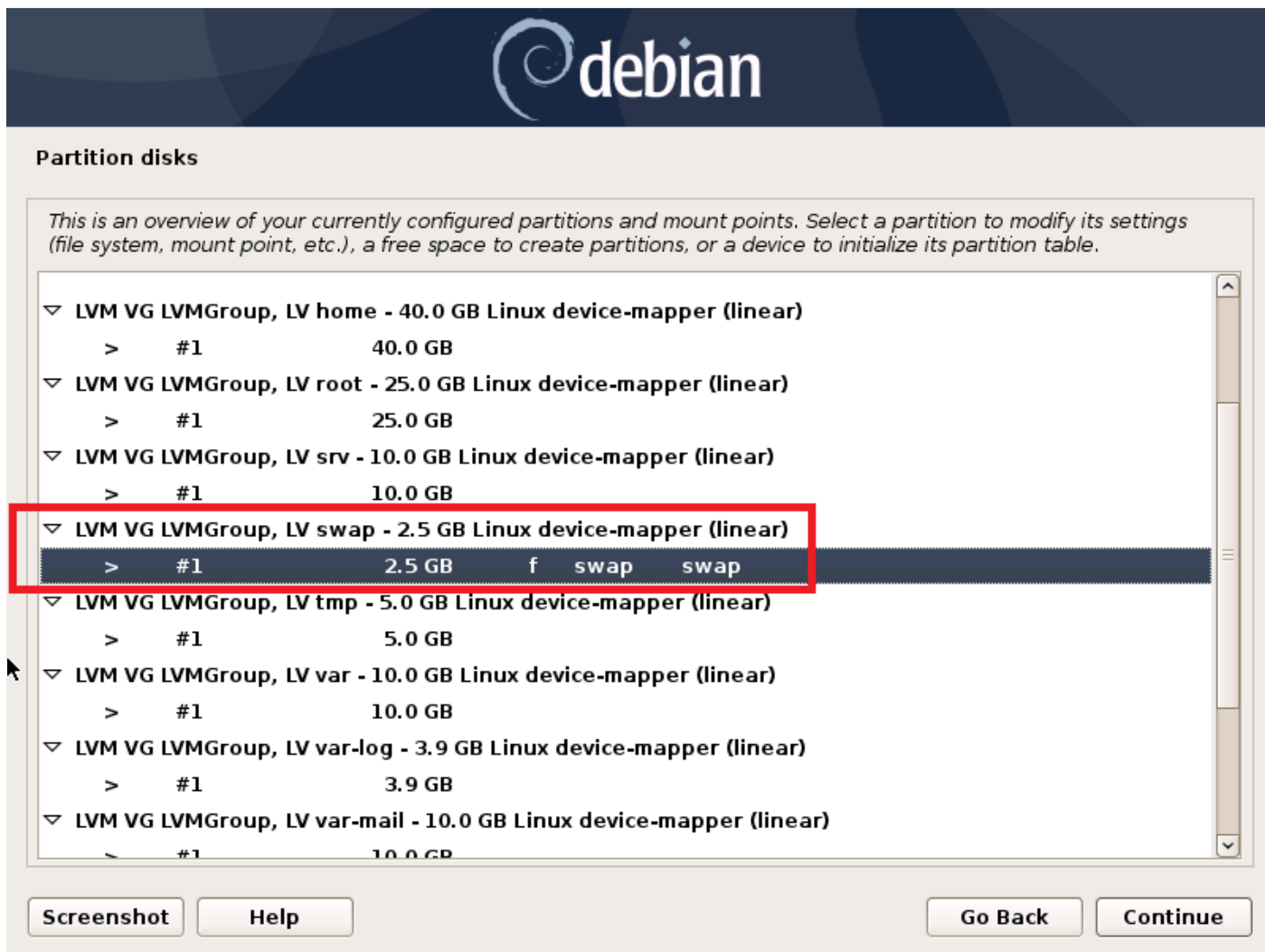
Continue



Complete the configuration



Notice how the changes are taken into effect



Configure the /home logical volume settings

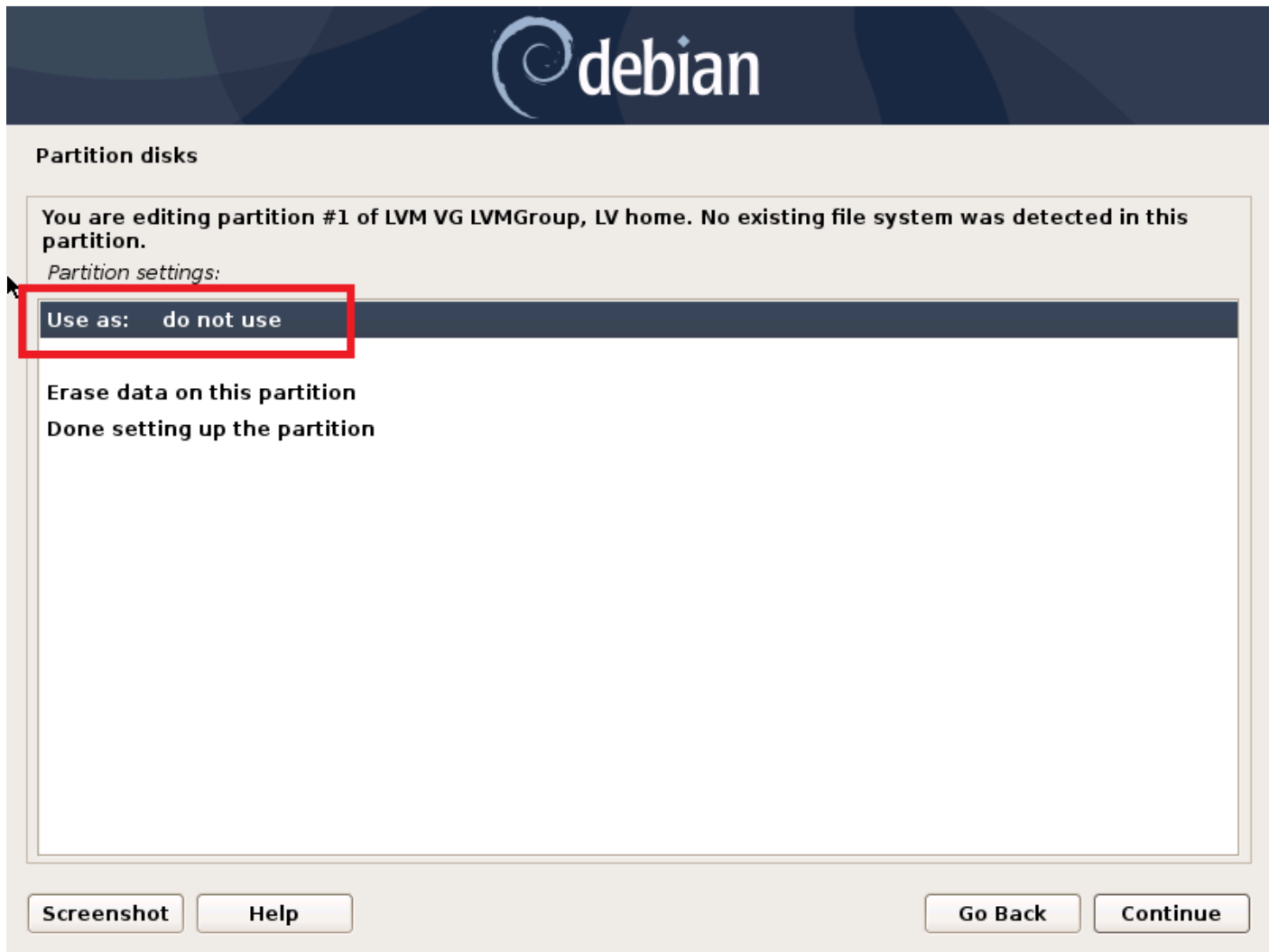
/home partition

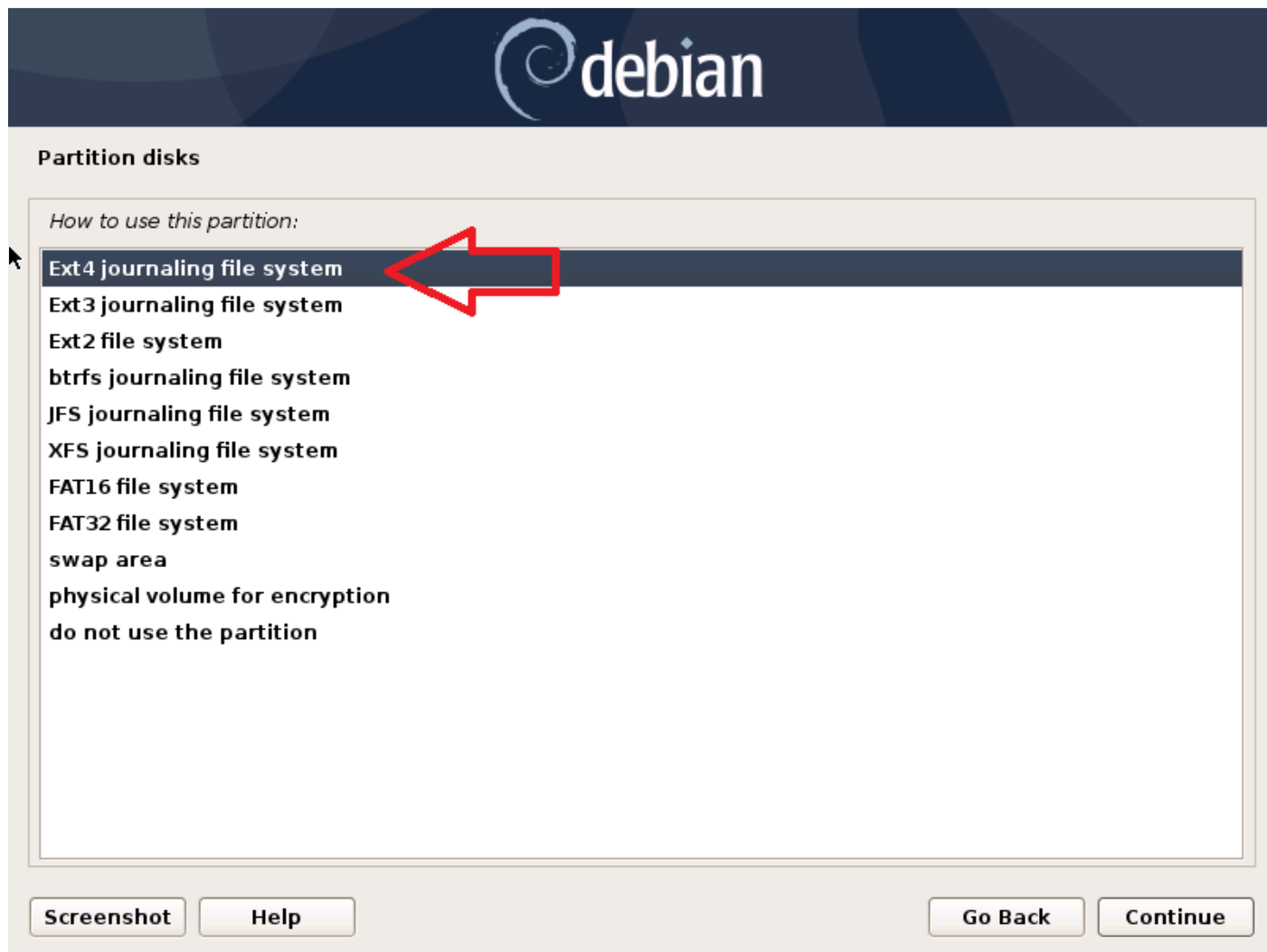
- use as: Ext4 journaling file system
- Mount point: /home
- label: home

Select the previously created home volume




Change the file system to Ext4 journaling file system





Change the mount point to /home



Partition disks

You are editing partition #1 of LVM VG LVMGroup, LV home. No existing file system was detected in this partition.

Partition settings:

Use as:	Ext4 journaling file system
Mount point:	none
Mount options:	defaults
Label:	none
Reserved blocks:	5%
Typical usage:	standard

Erase data on this partition

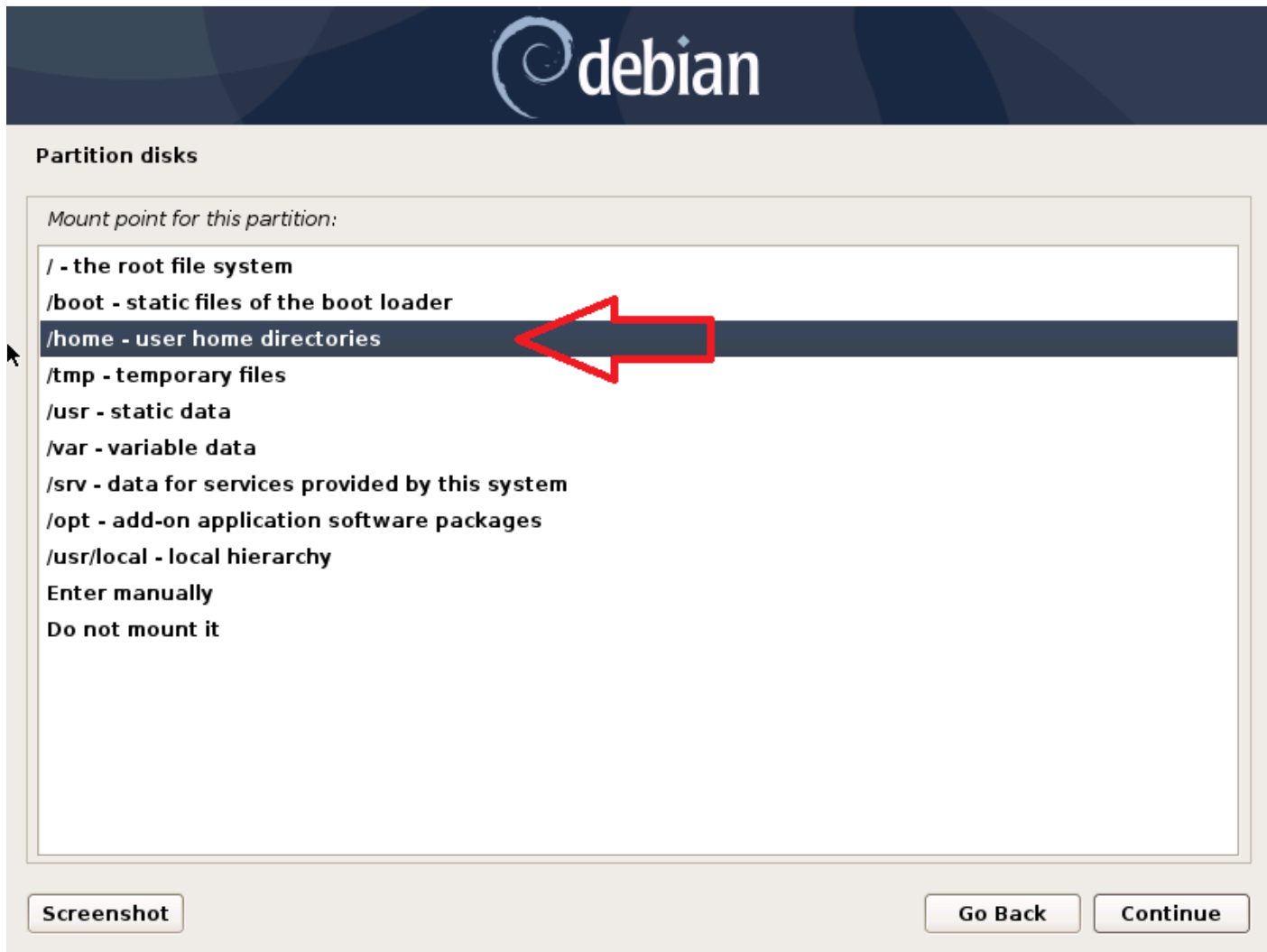
Done setting up the partition

Screenshot

Help

Go Back

Continue



Label the volume as 'home'



Partition disks

You are editing partition #1 of LVM VG LVMGroup, LV home. No existing file system was detected in this partition.

Partition settings:

Use as: Ext4 journaling file system

Mount point: /home

Mount options: defaults

Label: none

Reserved blocks: 5%

Typical usage: standard

Erase data on this partition

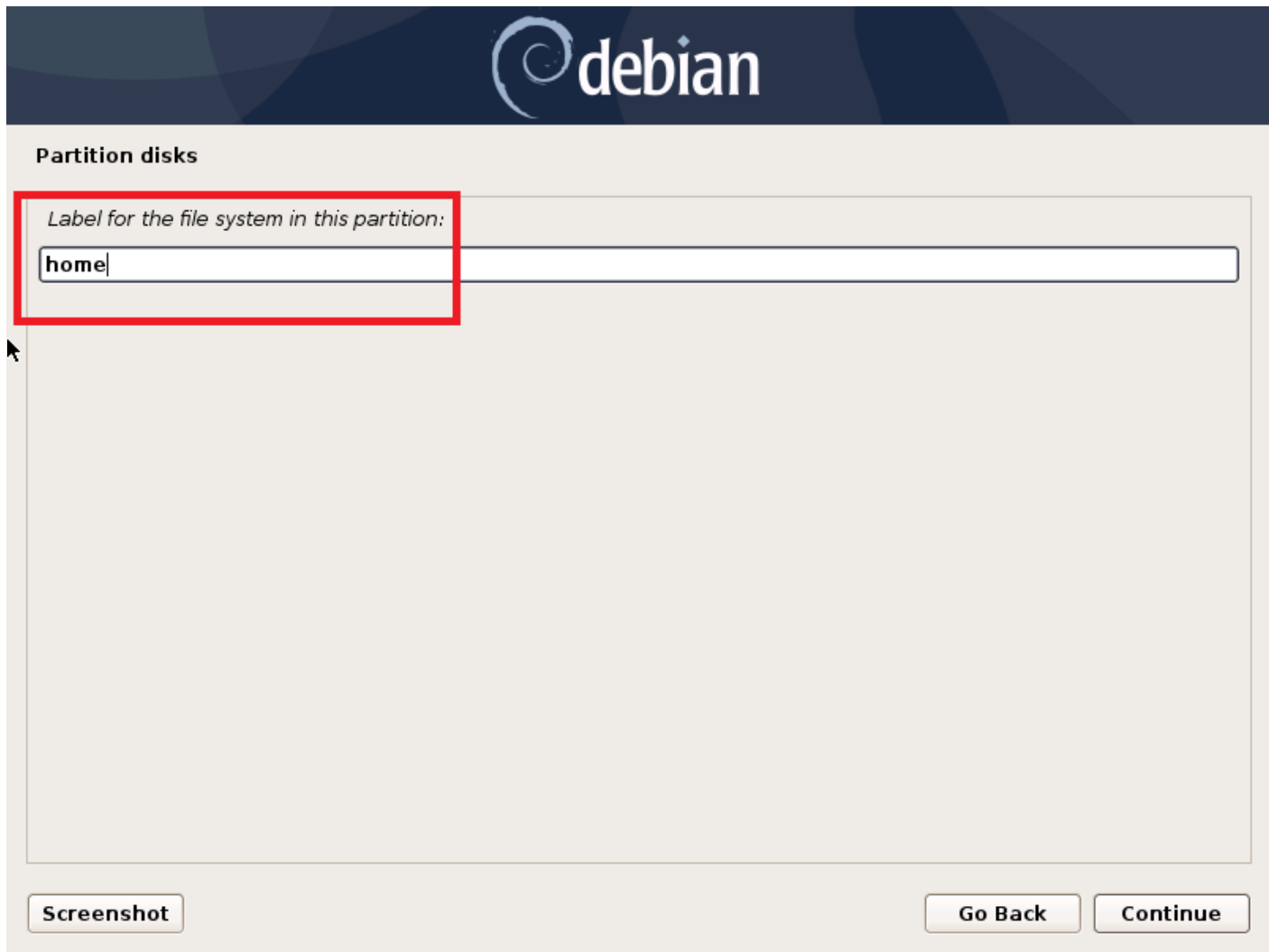
Done setting up the partition

Screenshot

Help

Go Back

Continue



The image shows a screenshot of the 'Partition disks' screen in the Debian installer. At the top, there is a dark blue header with the Debian logo and the word 'debian' in white. Below the header, the title 'Partition disks' is displayed. The main area contains a label 'Label for the file system in this partition:' followed by a text input field. The input field contains the text 'home'. A red rectangular box highlights the input field and the label. At the bottom of the screen, there are three buttons: 'Screenshot', 'Go Back', and 'Continue'.


Partition disks

Label for the file system in this partition:

home

Screenshot Go Back Continue

Complete the /home partition settings



Partition disks

You are editing partition #1 of LVM VG LVMGroup, LV home. No existing file system was detected in this partition.

Partition settings:

Use as:	Ext4 journaling file system
Mount point:	/home
Mount options:	defaults
Label:	home
Reserved blocks:	5%
Typical usage:	standard

Erase data on this partition

Done setting up the partition

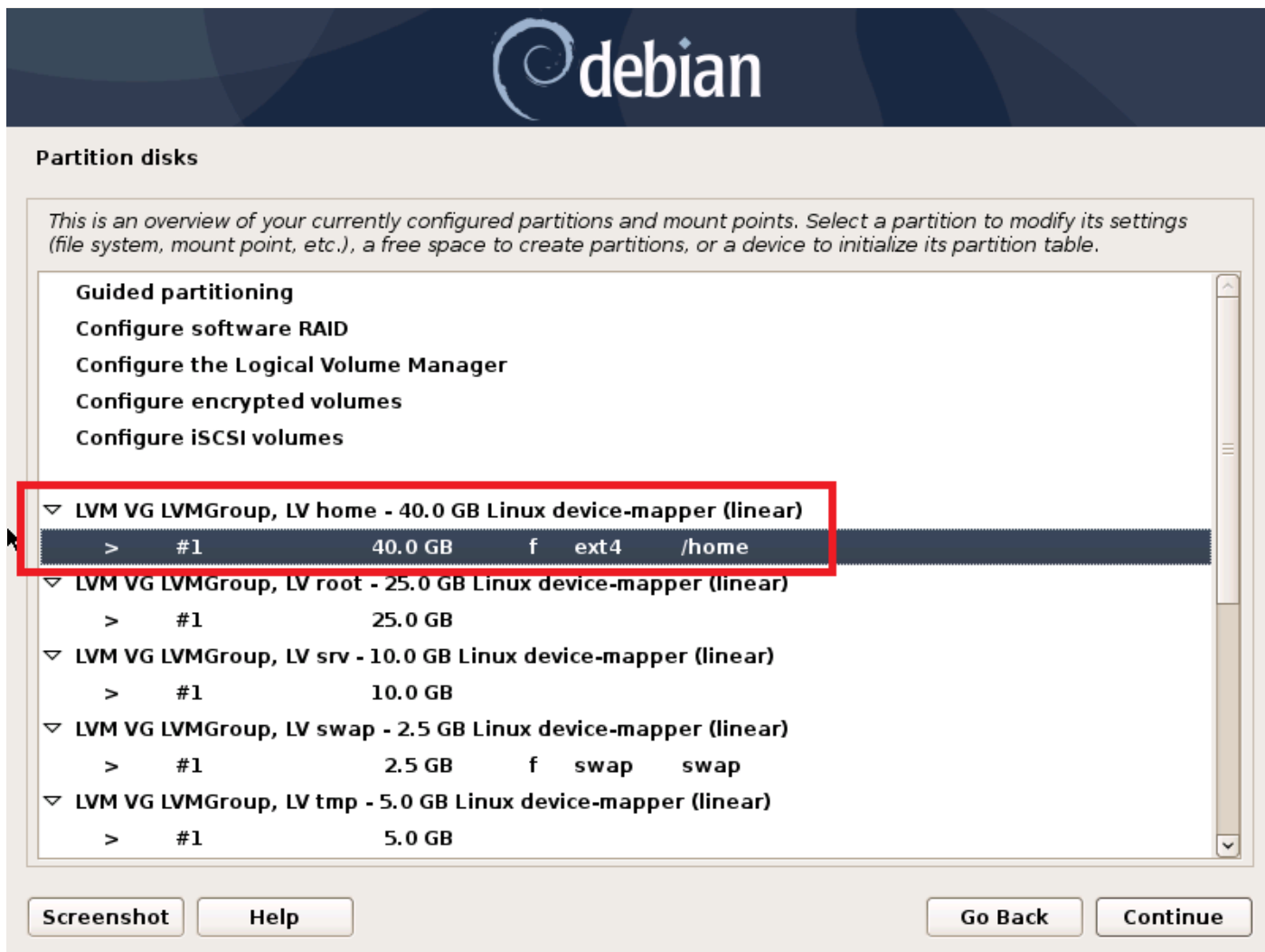
Screenshot

Help

Go Back

Continue

Notice the changes made to the /home logical volume



Configure the rest of the volumes as well with following partitions settings

Root partition

- use as: Ext4 journaling file system
- Mount point: /
- label: root

/srv partition

- use as: Ext4 journaling file system
- Mount point: /srv
- label: srv

/tmp partition

- use as: Ext4 journaling file system
- Mount point: /tmp
- label: tmp

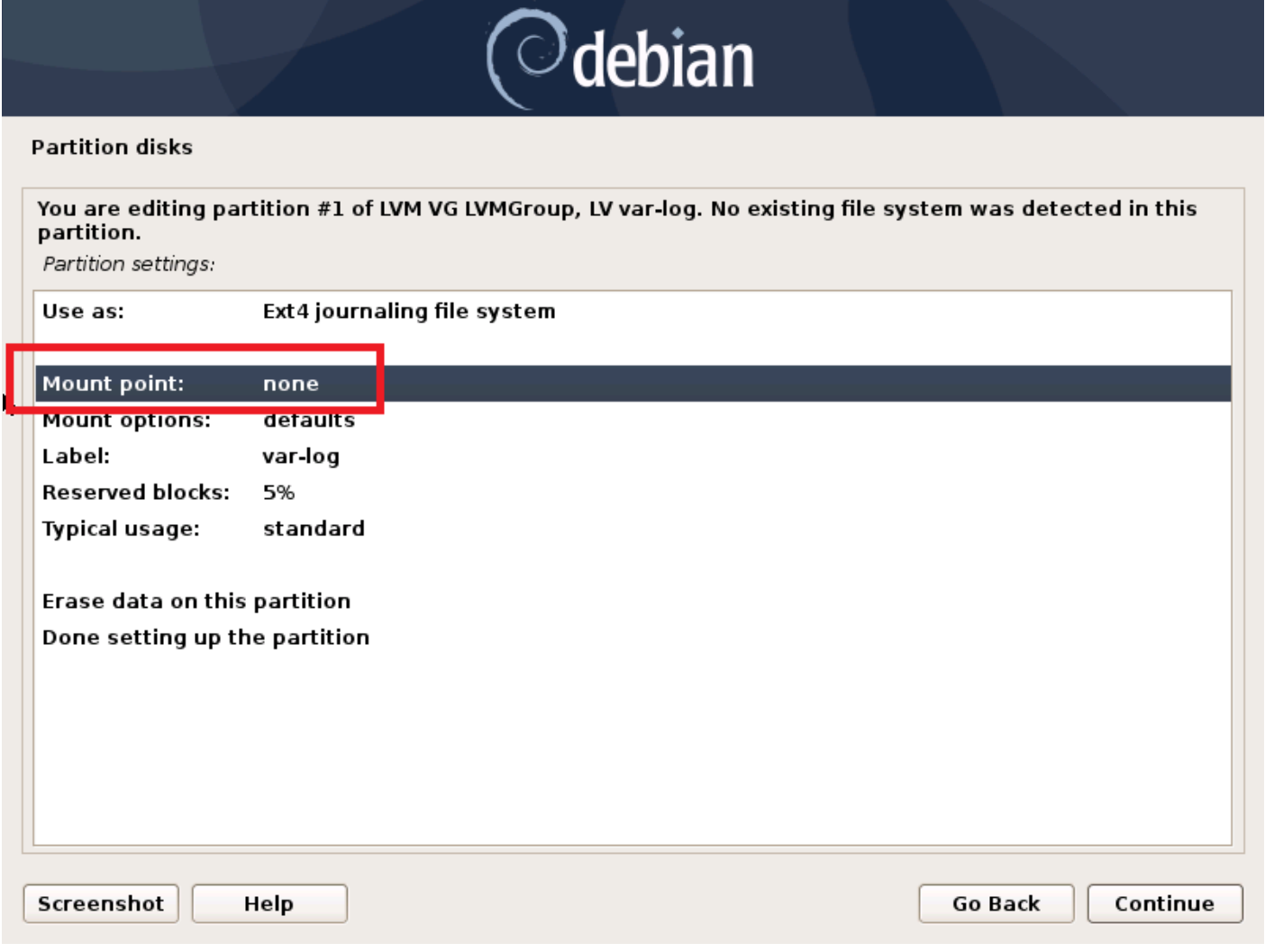
/var partition

- use as: Ext4 journaling file system
- Mount point: /var
- label: var

/var/log

- use as: Ext4 journaling file system
- Mount point: /var/log
- label: var-log

To create /var/log directory you have to provide the mount point manually



The image shows the 'Partition disks' screen from the Debian installer. At the top is the Debian logo. Below it, the title 'Partition disks' is displayed. A message states: 'You are editing partition #1 of LVM VG LVMGroup, LV var-log. No existing file system was detected in this partition.' Below this, the 'Partition settings:' section contains a table of configuration options. The 'Mount point:' option, which is set to 'none', is highlighted with a red rectangular box. At the bottom of the settings area are the options 'Erase data on this partition' and 'Done setting up the partition'. The footer of the window contains four buttons: 'Screenshot', 'Help', 'Go Back', and 'Continue'.

Partition settings:	
Use as:	Ext4 journaling file system
Mount point:	none
Mount options:	defaults
Label:	var-log
Reserved blocks:	5%
Typical usage:	standard

Erase data on this partition
Done setting up the partition

Screenshot Help Go Back Continue



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




Partition disks

Mount point for this partition:

`/var/log`

Screenshot

Go Back **Continue**



Partition disks

You are editing partition #1 of LVM VG LVMGroup, LV var-log. No existing file system was detected in this partition.

Partition settings:

Use as:	Ext4 journaling file system
Mount point:	/var/log
Mount options:	defaults
Label:	var-log
Reserved blocks:	5%
Typical usage:	standard

Erase data on this partition

Done setting up the partition

Screenshot Help Go Back Continue

/var/mail

- use as: Ext4 journaling file system
- Mount point: /var/mail
- label: var-mail

After finishing the configuration review the settings and finish partitioning

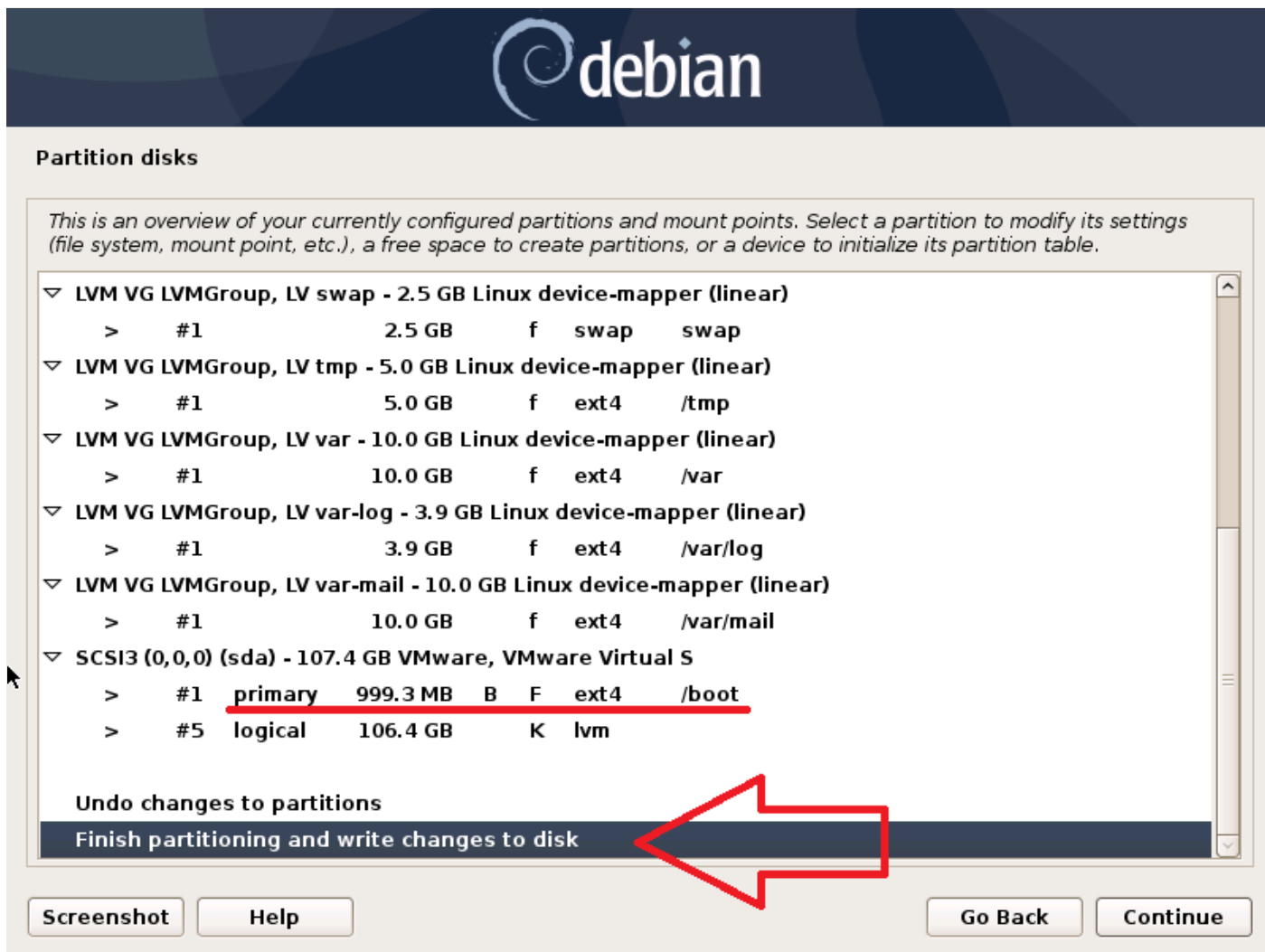


Partition disks


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.

▽	LVM VG LVMGroup, LV home - 40.0 GB Linux device-mapper (linear)
>	#1 40.0 GB f ext4 /home
▽	LVM VG LVMGroup, LV root - 25.0 GB Linux device-mapper (linear)
>	#1 25.0 GB f ext4 /
▽	LVM VG LVMGroup, LV srv - 10.0 GB Linux device-mapper (linear)
>	#1 10.0 GB f ext4 /srv
▽	LVM VG LVMGroup, LV swap - 2.5 GB Linux device-mapper (linear)
>	#1 2.5 GB f swap swap
▽	LVM VG LVMGroup, LV tmp - 5.0 GB Linux device-mapper (linear)
>	#1 5.0 GB f ext4 /tmp
▽	LVM VG LVMGroup, LV var - 10.0 GB Linux device-mapper (linear)
>	#1 10.0 GB f ext4 /var
▽	LVM VG LVMGroup, LV var-log - 3.9 GB Linux device-mapper (linear)
>	#1 3.9 GB f ext4 /var/log
▽	LVM VG LVMGroup, LV var-mail - 10.0 GB Linux device-mapper (linear)
>	#1 10.0 GB f ext4 /var/mail

[Screenshot](#)[Help](#)[Go Back](#)[Continue](#)



click 'Yes' to accept the changes and write to the disk



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:

- LVM VG LVMGroup, LV home
- LVM VG LVMGroup, LV root
- LVM VG LVMGroup, LV srv
- LVM VG LVMGroup, LV swap
- LVM VG LVMGroup, LV tmp
- LVM VG LVMGroup, LV var
- LVM VG LVMGroup, LV var-log
- LVM VG LVMGroup, LV var-mail

The following partitions are going to be formatted:

- LVM VG LVMGroup, LV home as ext4
- LVM VG LVMGroup, LV root as ext4
- LVM VG LVMGroup, LV srv as ext4
- LVM VG LVMGroup, LV swap as swap
- LVM VG LVMGroup, LV tmp as ext4
- LVM VG LVMGroup, LV var as ext4
- LVM VG LVMGroup, LV var-log as ext4
- LVM VG LVMGroup, LV var-mail as ext4

Write the changes to disks?

☐ No

☒ Yes

Screenshot

Continue

07 Finalize installation

Tick 'yes' to scan additional CD/DVD images for installation (I selected 'No' since I do not wish to install further from CD/ DVD)



Configure the package manager

Your installation CD or DVD has been scanned; its label is:

Debian GNU/Linux 10.3.0_Buster_ - Official amd64 NETINST 20200208-12:07

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?

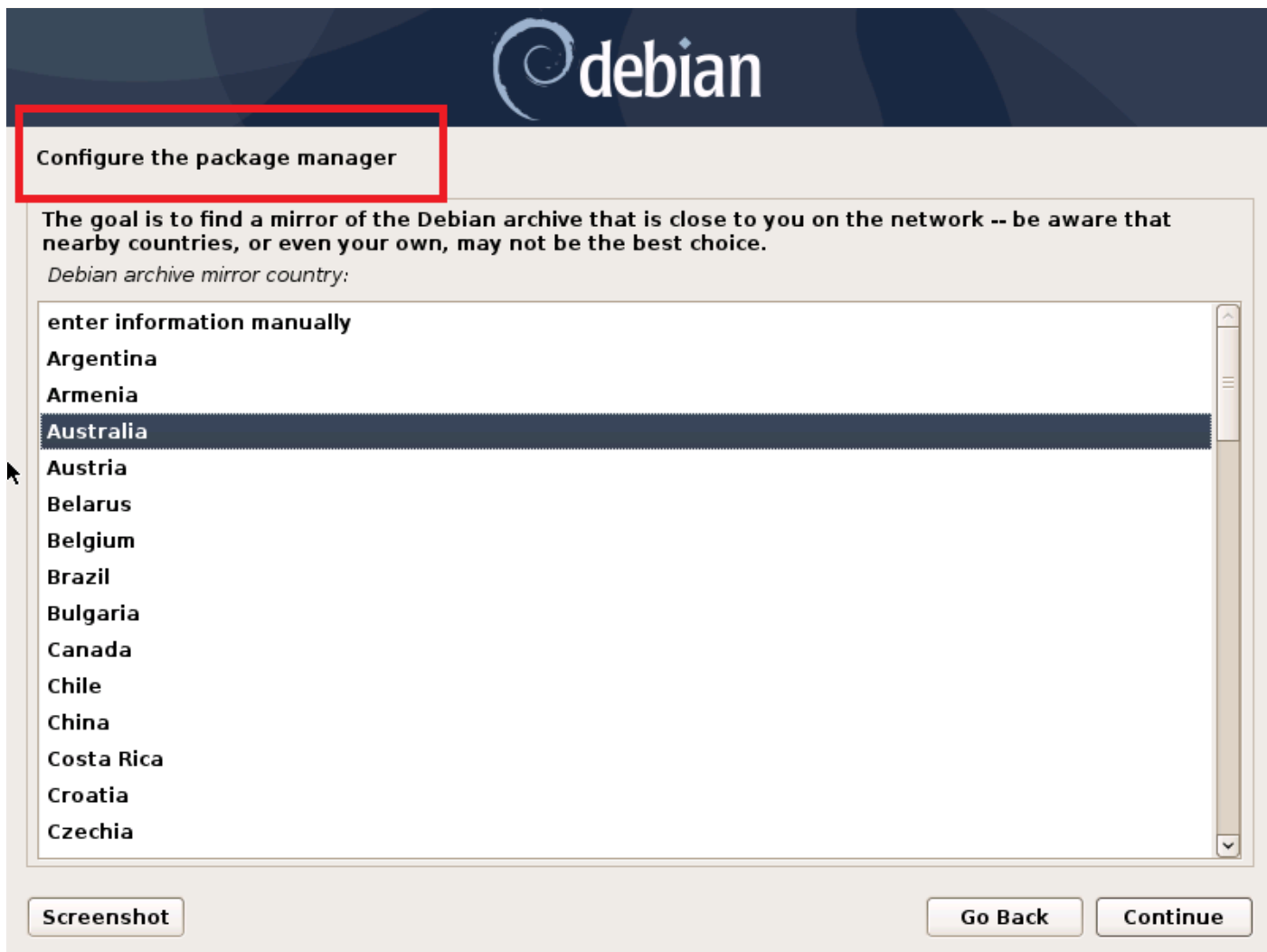
☒ No

☐ Yes

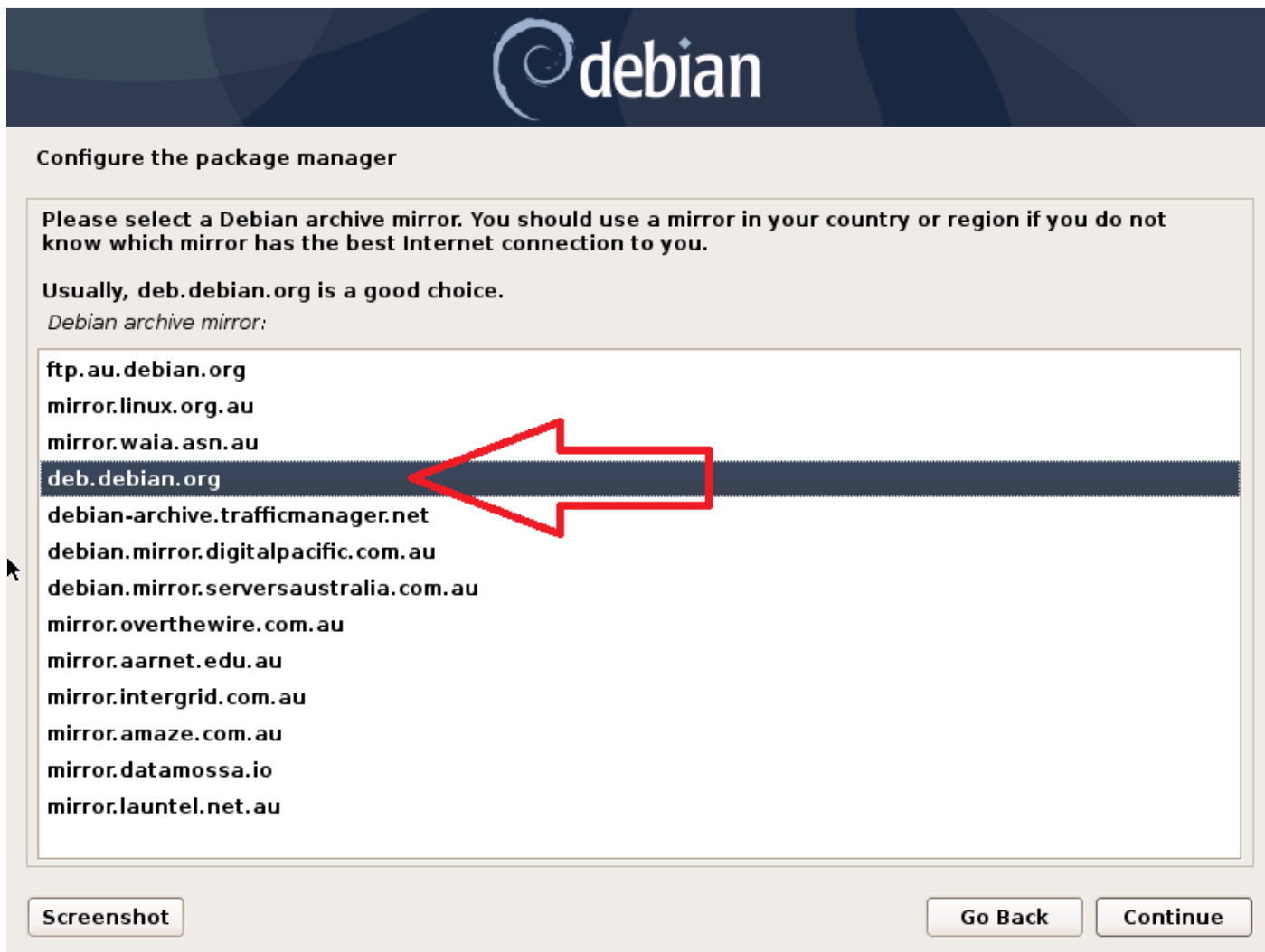
Screenshot

Go BackContinue

Configure the network mirror by selecting the Debian mirror country



Select the Debian mirror archive mirror (in this scenario, default option is kept as it is)



Include the proxy details if needed or keep it blank



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.

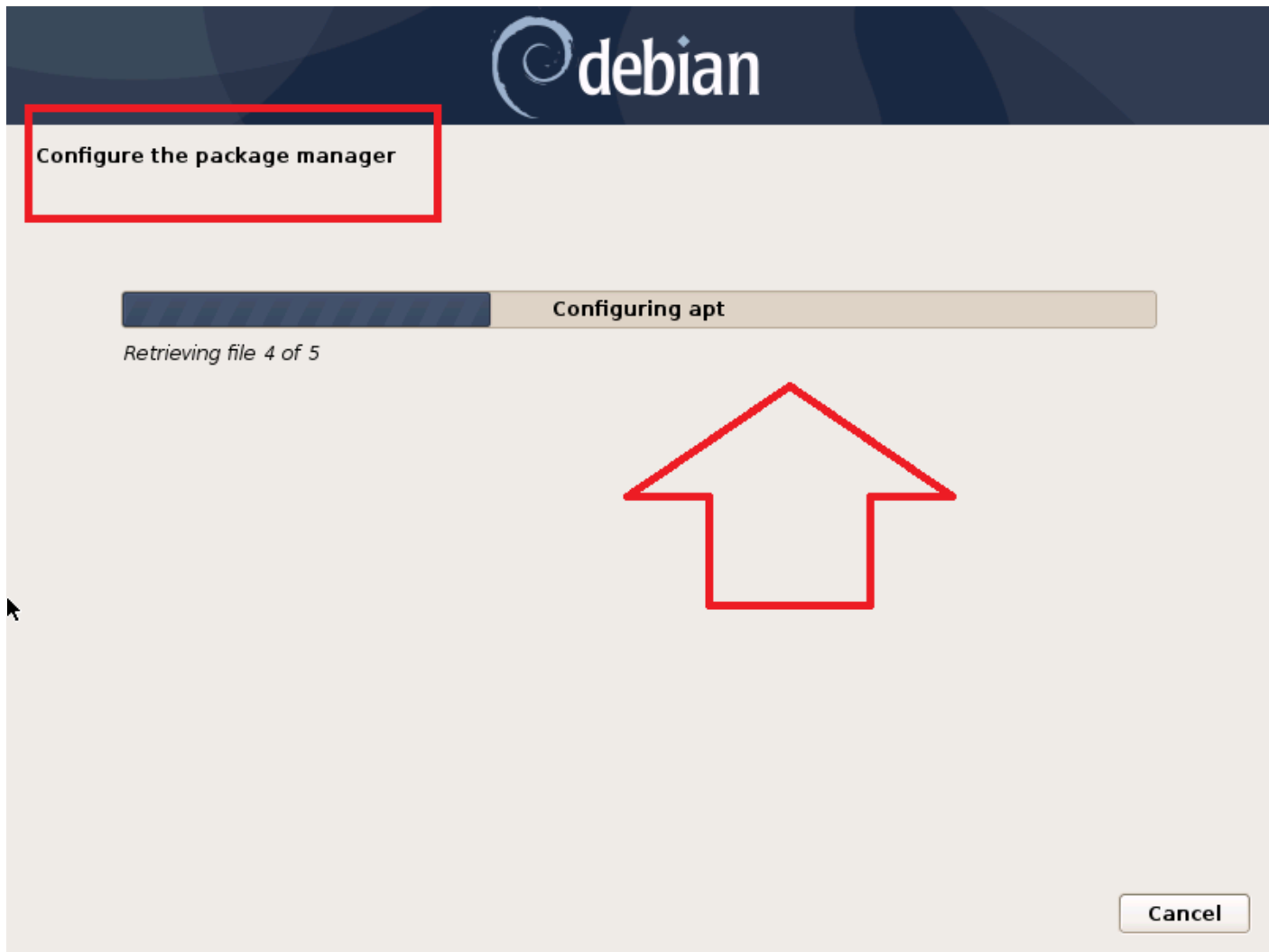
The proxy information should be given in the standard form of "http://[[user][:pass]@]host[:port]/" .
HTTP proxy information (blank for none):




Screenshot

Go BackContinue

Let the package manager configure its settings



Configure the popularity-contest to participate in the package survey



Configuring popularity-contest

The system may anonymously supply the distribution developers with statistics about the most used packages on this system. This information influences decisions such as which packages should go on the first distribution CD.

If you choose to participate, the automatic submission script will run once every week, sending statistics to the distribution developers. The collected statistics can be viewed on <https://popcon.debian.org/>.

This choice can be later modified by running "dpkg-reconfigure popularity-contest".

Participate in the package usage survey?

☒ No

☐ Yes

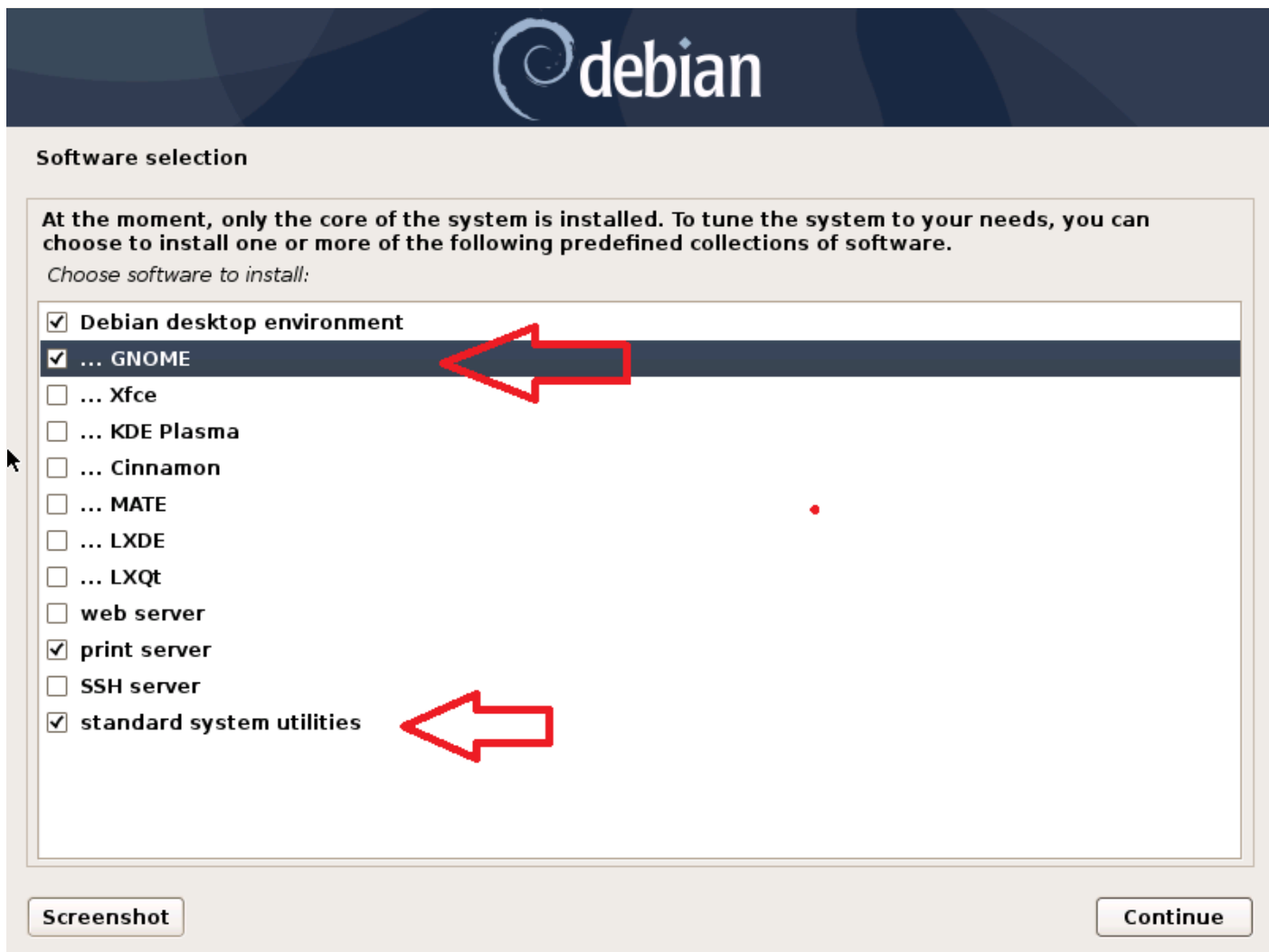
[Screenshot](#) [Continue](#)

Software selection

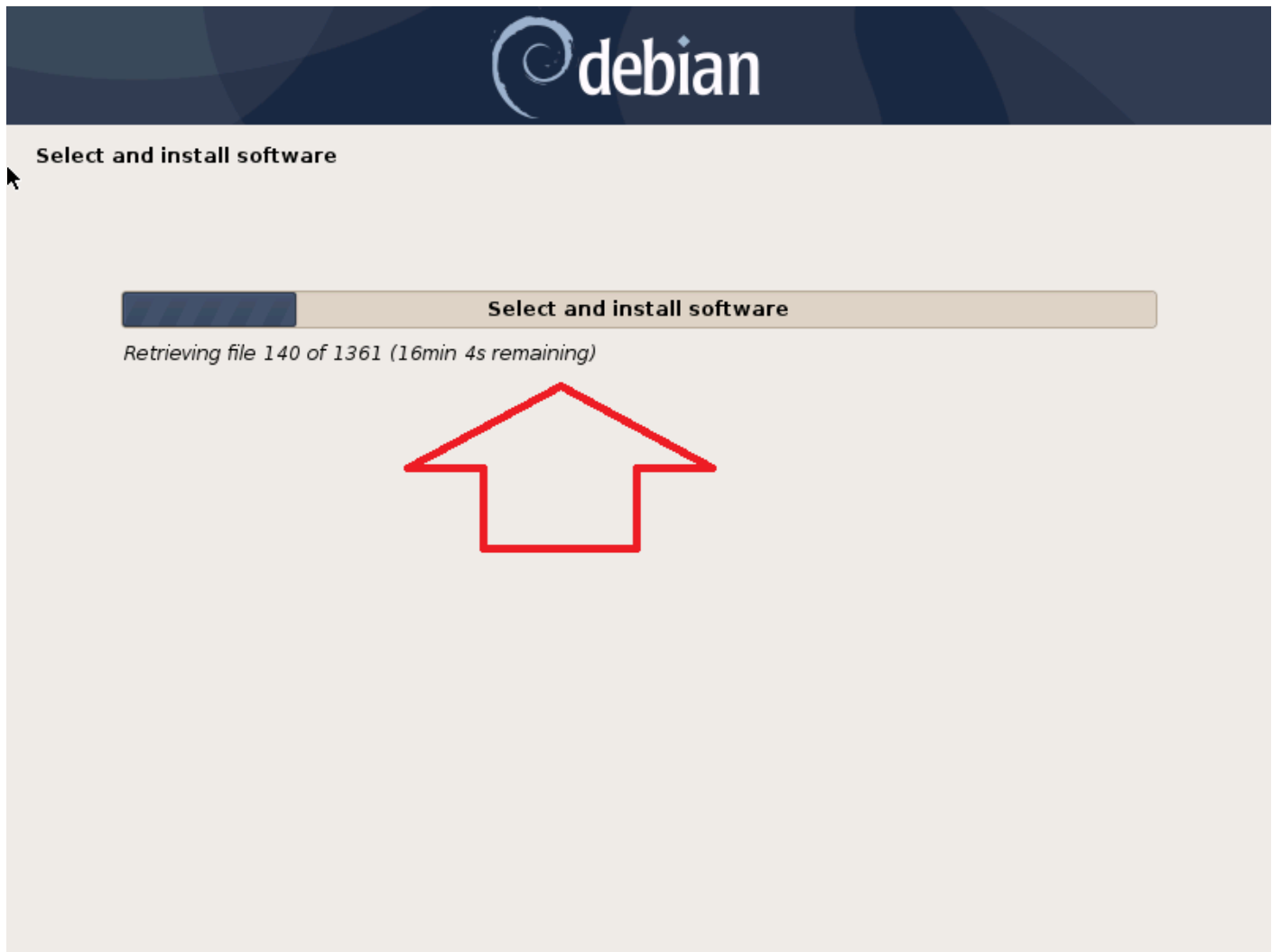
For this Debian system, Gnome desktop environment and standard system utilities are installed.

If you want to install Debian Minimal server, you can un-tick the Debian desktop environment.

Read the following article to choose the best desktop environment for you: <https://itsfoss.com/best-linux-desktop-environments/> (<https://itsfoss.com/best-linux-desktop-environments/>)



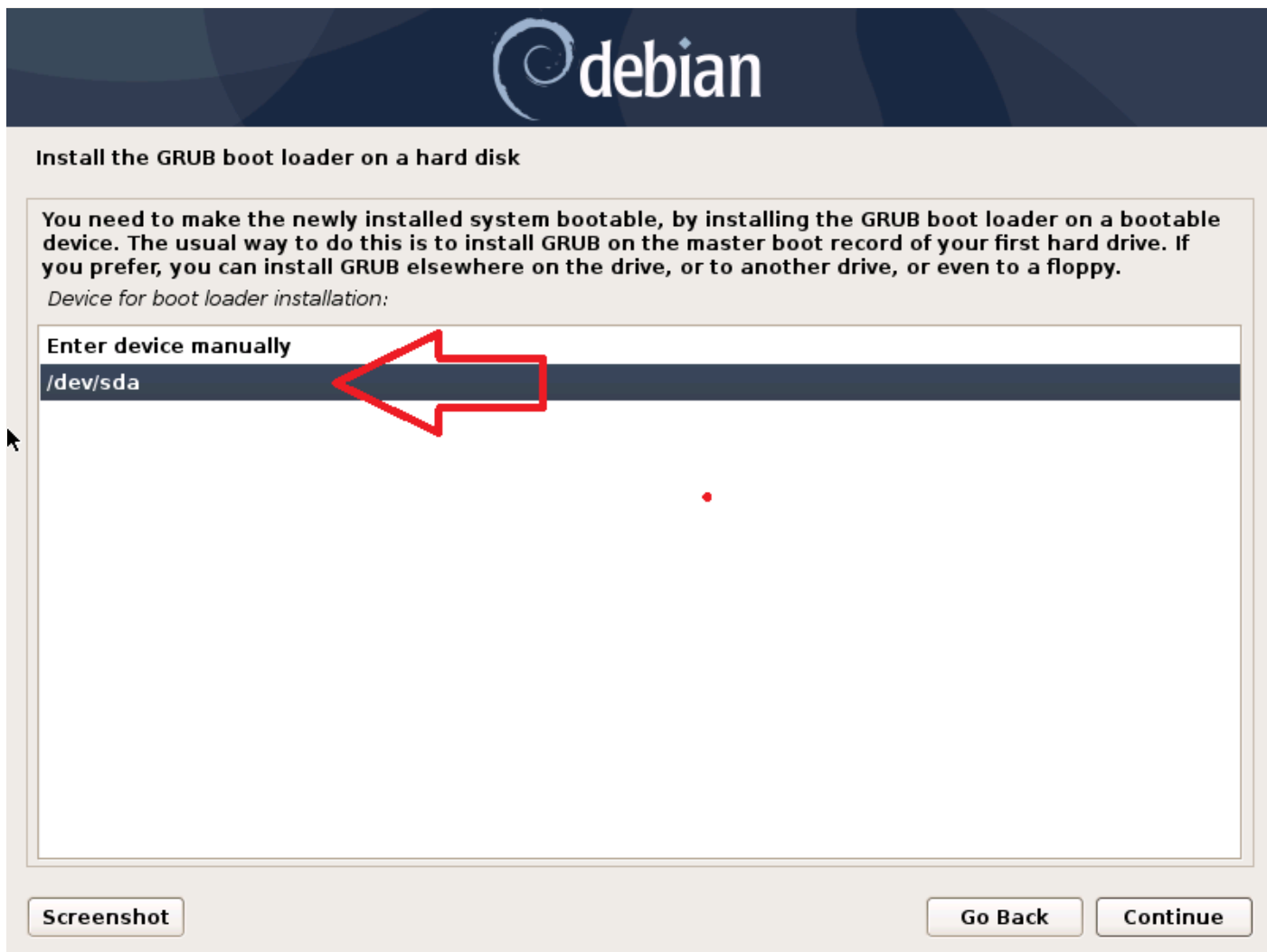
Let the installation finish



Select 'Yes' to install the GRUB boot loader to the master boot record



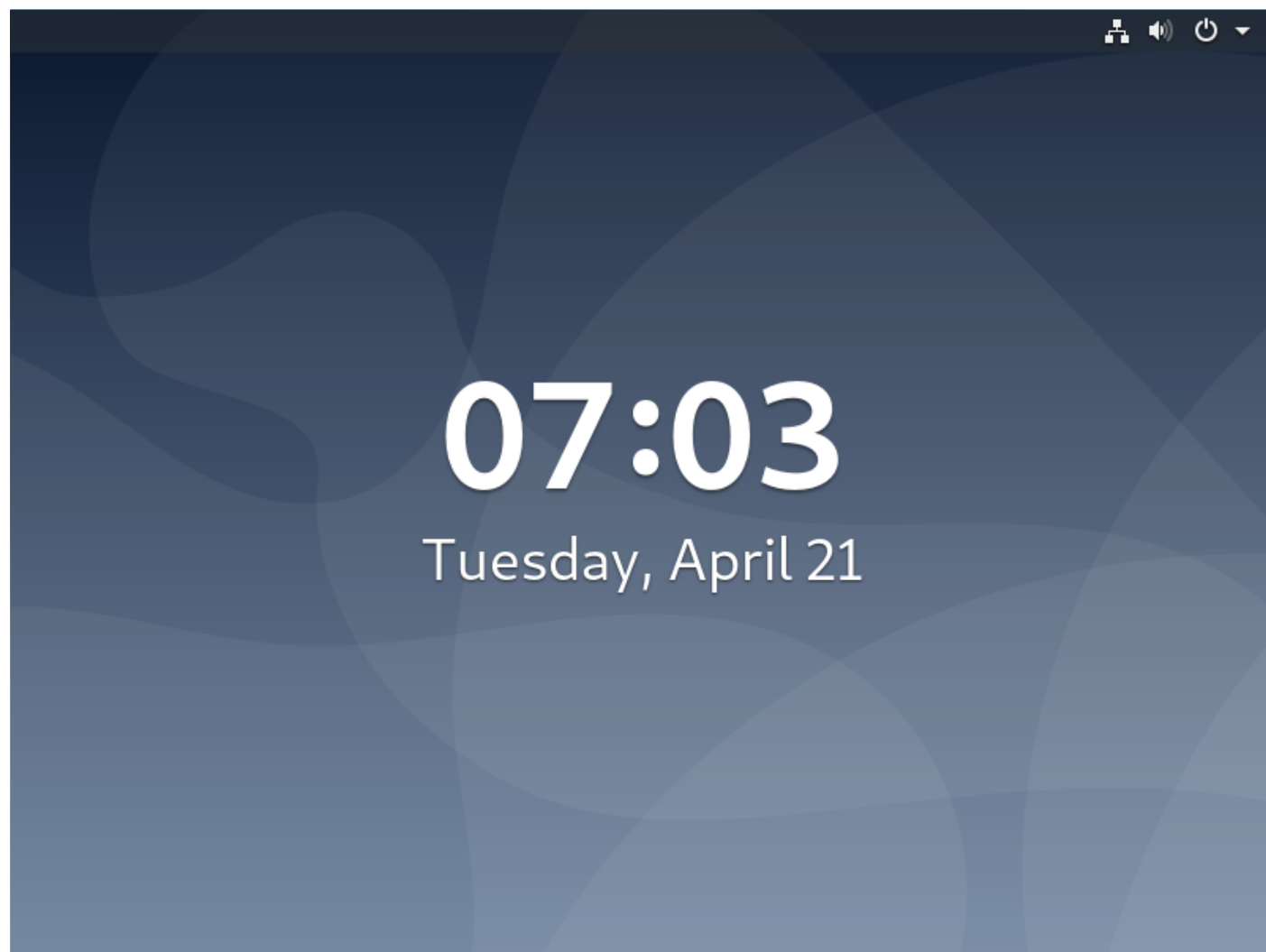
Keep the boot loader installation location as it is

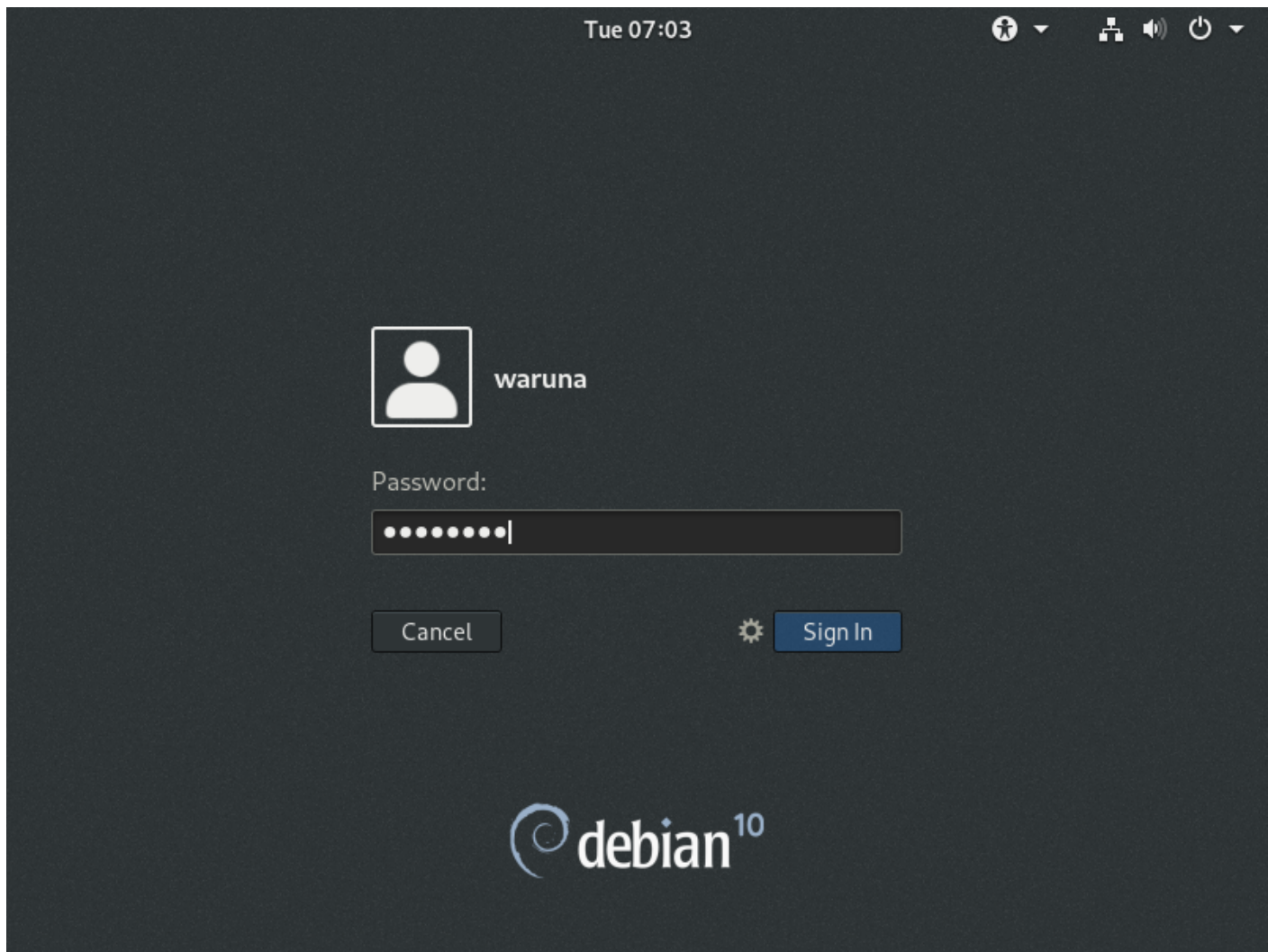


Click 'continue' to finish the installation and boot into the new system



Login to the new system using the password you have provided for the user created earlier



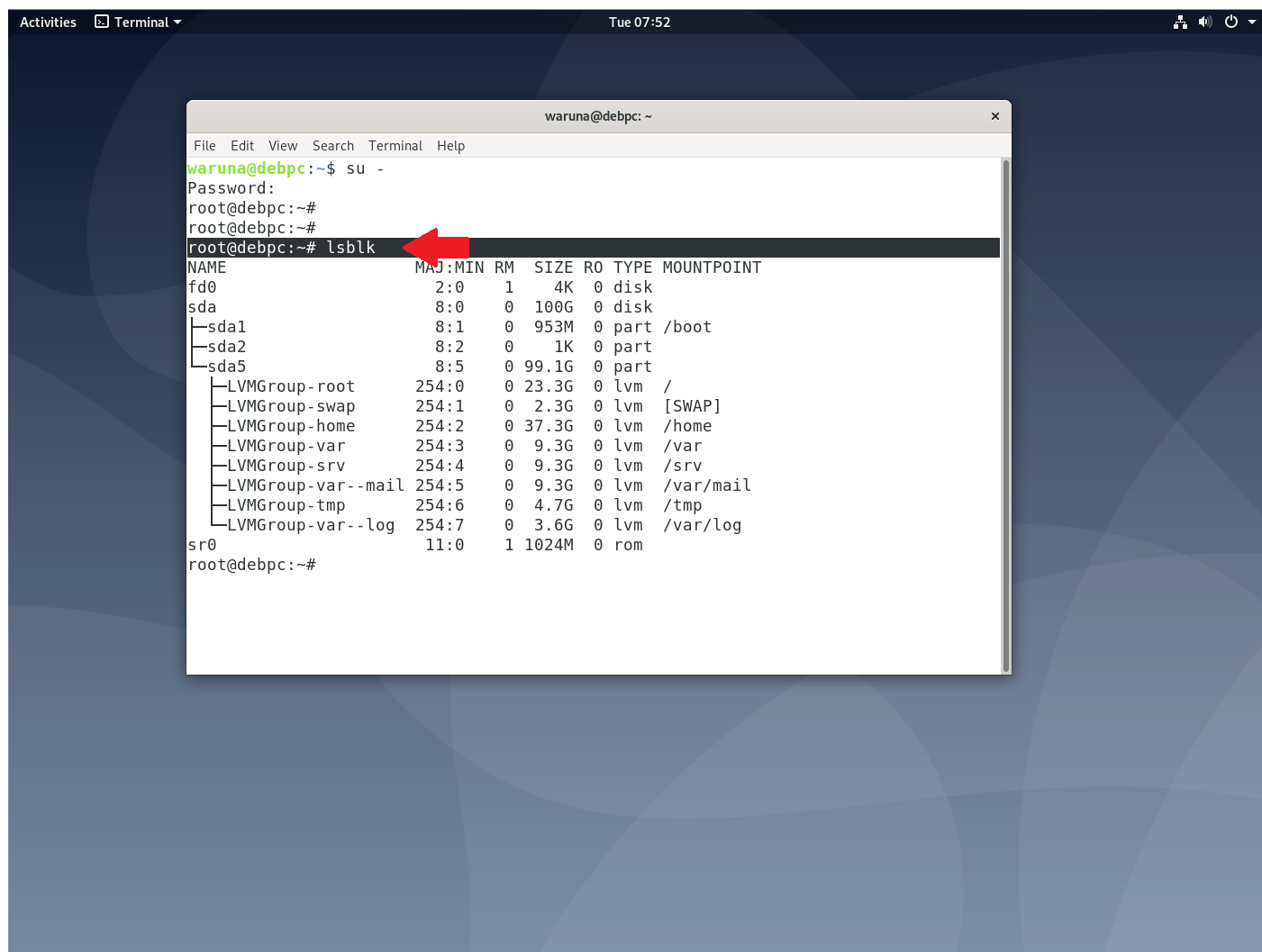


Go to the terminal and switch to root user to check the partition table using the lsblk command

```
waruna@debpc: ~$ su -
```

```
Password: *****
```

```
root@debpc:~# lsblk
```



The image shows a terminal window titled 'waruna@debpc: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The user 'waruna' has executed 'su -' and entered the password. The prompt is now 'root@debpc:~#'. The user has entered 'lsblk', and the output is displayed as a table. A red arrow points to the 'lsblk' command line.

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINT
fd0	2:0	1	4K	0	disk	
sda	8:0	0	100G	0	disk	
└─sda1	8:1	0	953M	0	part	/boot
└─sda2	8:2	0	1K	0	part	
└─sda5	8:5	0	99.1G	0	part	
└─LVMGroup-root	254:0	0	23.3G	0	lvm	/
└─LVMGroup-swap	254:1	0	2.3G	0	lvm	[SWAP]
└─LVMGroup-home	254:2	0	37.3G	0	lvm	/home
└─LVMGroup-var	254:3	0	9.3G	0	lvm	/var
└─LVMGroup-srv	254:4	0	9.3G	0	lvm	/srv
└─LVMGroup-var--mail	254:5	0	9.3G	0	lvm	/var/mail
└─LVMGroup-tmp	254:6	0	4.7G	0	lvm	/tmp
└─LVMGroup-var--log	254:7	0	3.6G	0	lvm	/var/log
sr0	11:0	1	1024M	0	rom	

3 thoughts on “Debian 10 Manual Partition for /boot, /swap, root, /home, /tmp, /srv, /var, /var/mail, /var/log”

Pingback: [How To Install CentOS 7 by manually Creating LVM Linux Partitions – Tech Encyclopedia](#)

Pingback: [How to Configure Apache Web Server in Debian 8 – Tech Encyclopedia](#)

Pingback: [How To Install Debian 8 by Manually Creating LVM Linux Partitions – Tech Encyclopedia](#)

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Menu