

# Debian 9 “Stretch” Linux Setup Guide

For ThinkPad P1

Lenovo™



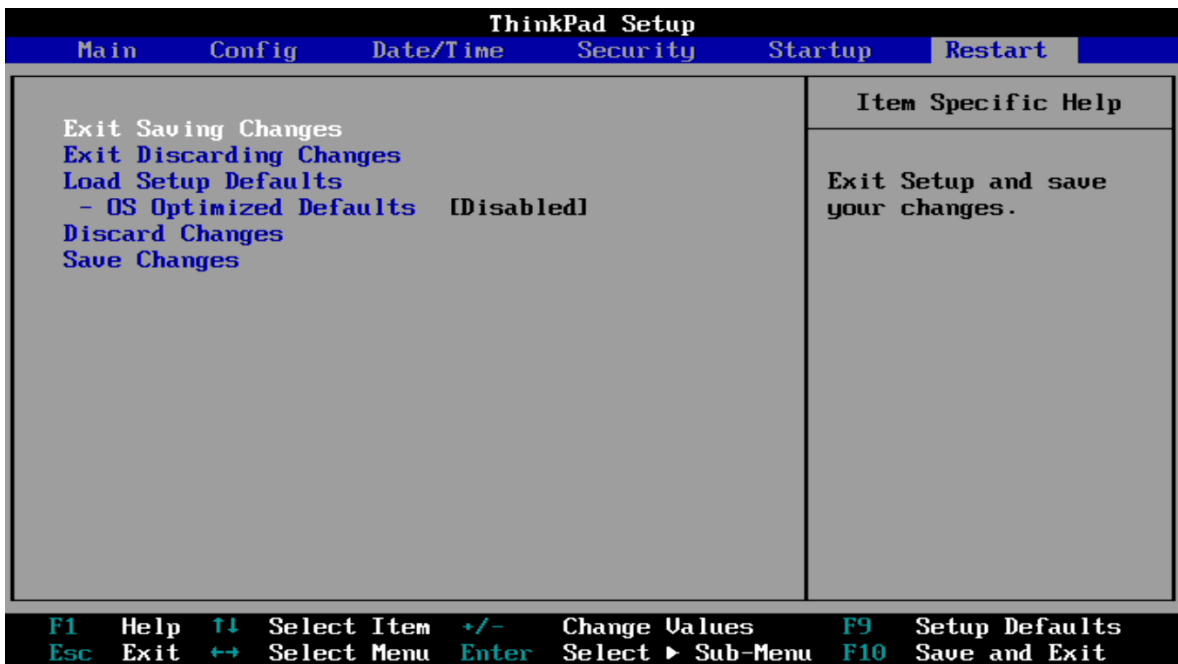
## Section 1 – BIOS Setup and Pre-Installation Steps

The first step before installing Linux is to make sure the system BIOS is setup correctly.

- Boot into BIOS by pressing the function F1 key at the “Lenovo” splash screen.



- Tab over to the ‘Restart’ menu tab, and set “OS Optimized Defaults” to “Disabled”.



- Tab over to the “Startup” menu tab and make sure the following parameters are set accordingly.

\*\*\***Note:** Pressing F9 will allow “UEFI/Legacy Boot” to be selectable; otherwise, it will be an unchangeable setting to “UEFI only”.

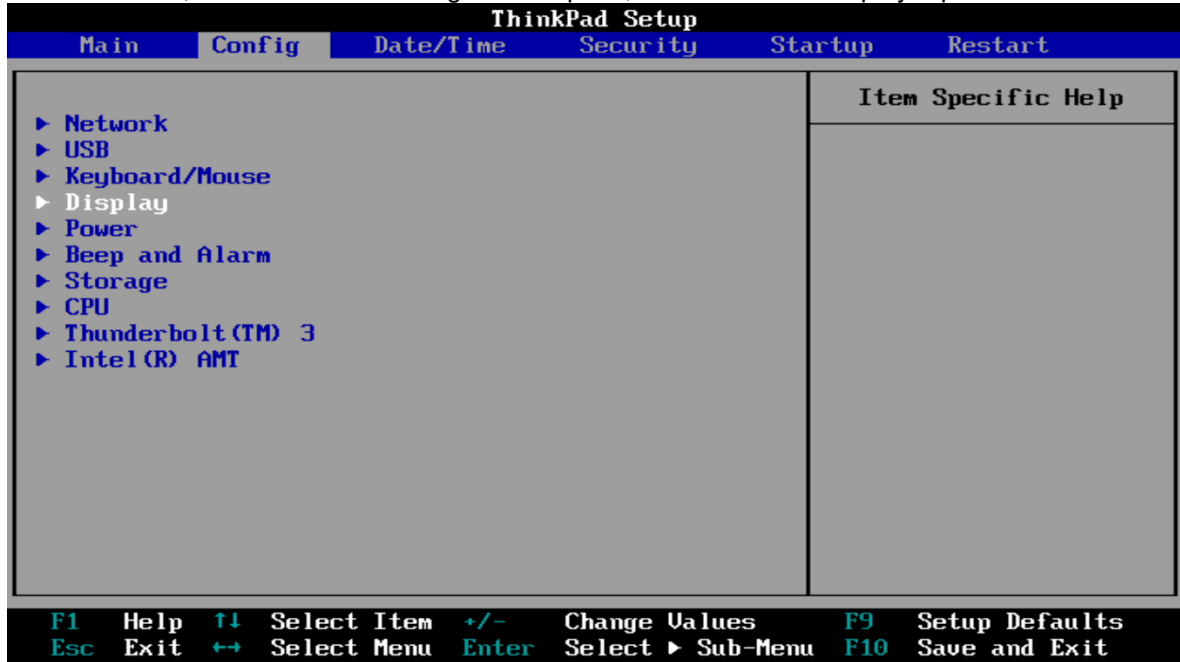
ThinkPad Setup					
Main	Config	Date/Time	Security	Startup	Restart
▶ Boot Network Boot [PCI LAN] UEFI/Legacy Boot [Both] - UEFI/Legacy Boot Priority [UEFI First] - CSM Support [Yes] Boot Mode [Quick] Option key Display [Enabled] Boot device List F12 Option [Enabled] Boot Order Lock [Disabled]					Item Specific Help
F1	Help	↑↓	Select Item	+/-	Change Values
Esc	Exit	↔	Select Menu	Enter	Select ▶ Sub-Menu
F9	Setup Defaults				
F10	Save and Exit				

\*\*\***Note:** Pressing F9 after setting “OS Optimized Defaults” to “Disabled” will also disable “Secure Boot” under the “Security” menu tab -> “Secure Boot” menu.

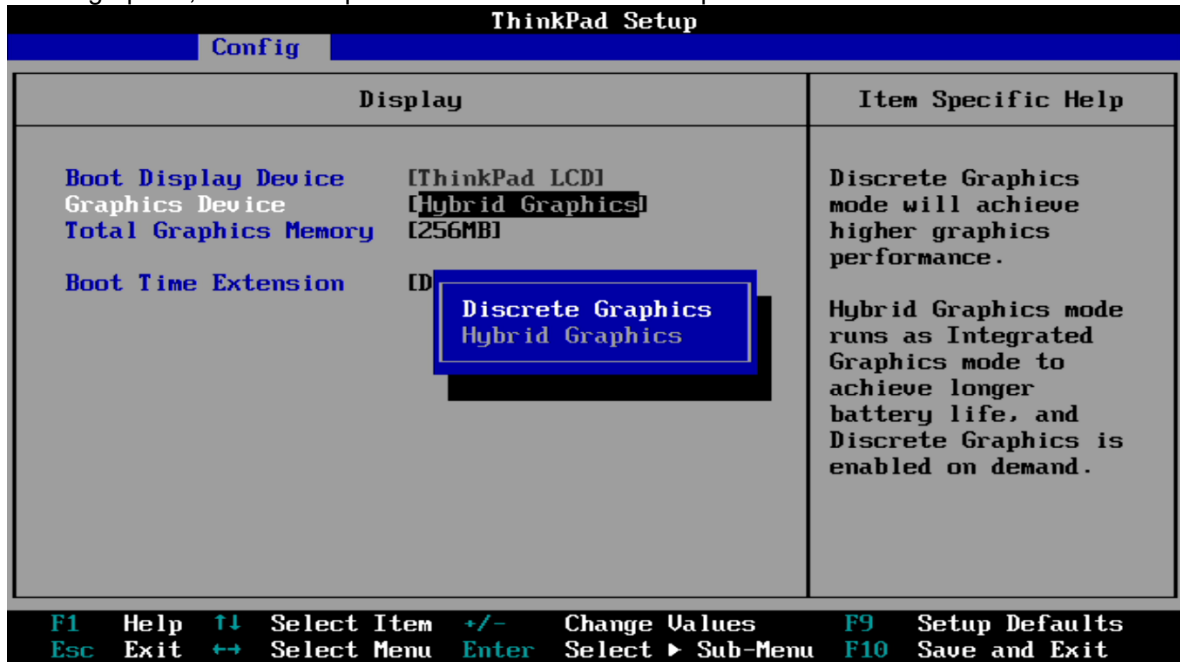
## Section 2 – Discrete vs Hybrid Graphics

The Thinkpad P1 offers both Nvidia and Intel graphics. To run exclusively Nvidia graphics, use the discrete graphics mode.

- Boot into BIOS, tab over to the “Config” menu option, and select the “Display” option.



- By default, the “Graphics Device” is likely set to “Hybrid Graphics”. To run exclusively Nvidia graphics, set the “Graphics Device” to “Discrete Graphics”.



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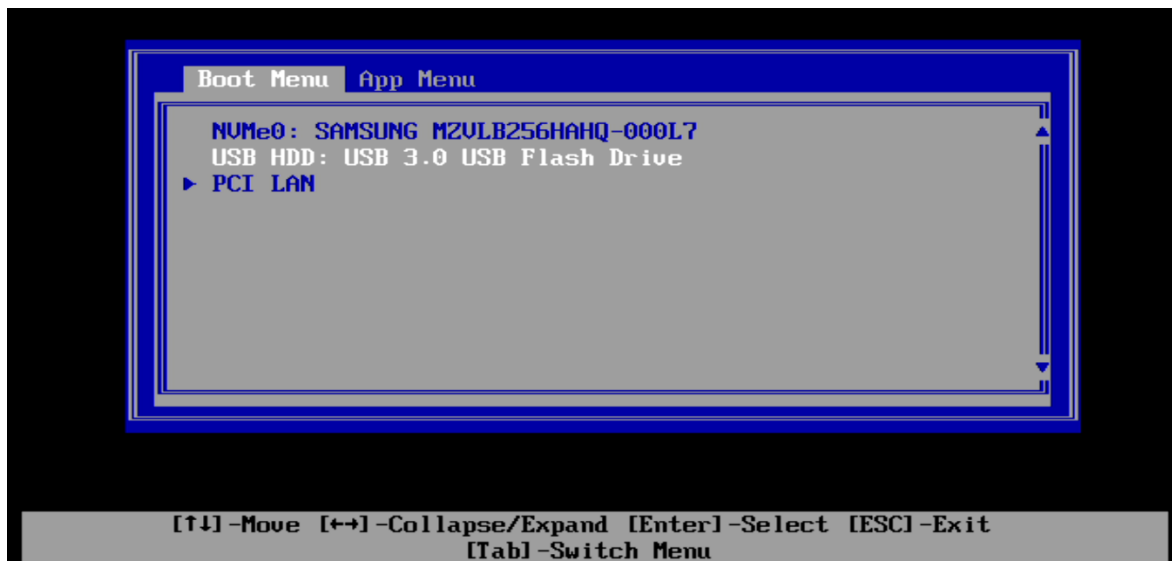
## Section 3 – Installing Debian 9 “Stretch” Linux

Please refer to the following instructions and screenshots on how to install Debian 9 “Stretch” on the Lenovo Thinkpad P1.

- Insert the Debian 9 installation media (either through USB or CD/DVD).
- Power on the system and press the F12 function key whenever the following Lenovo splash screen appears:



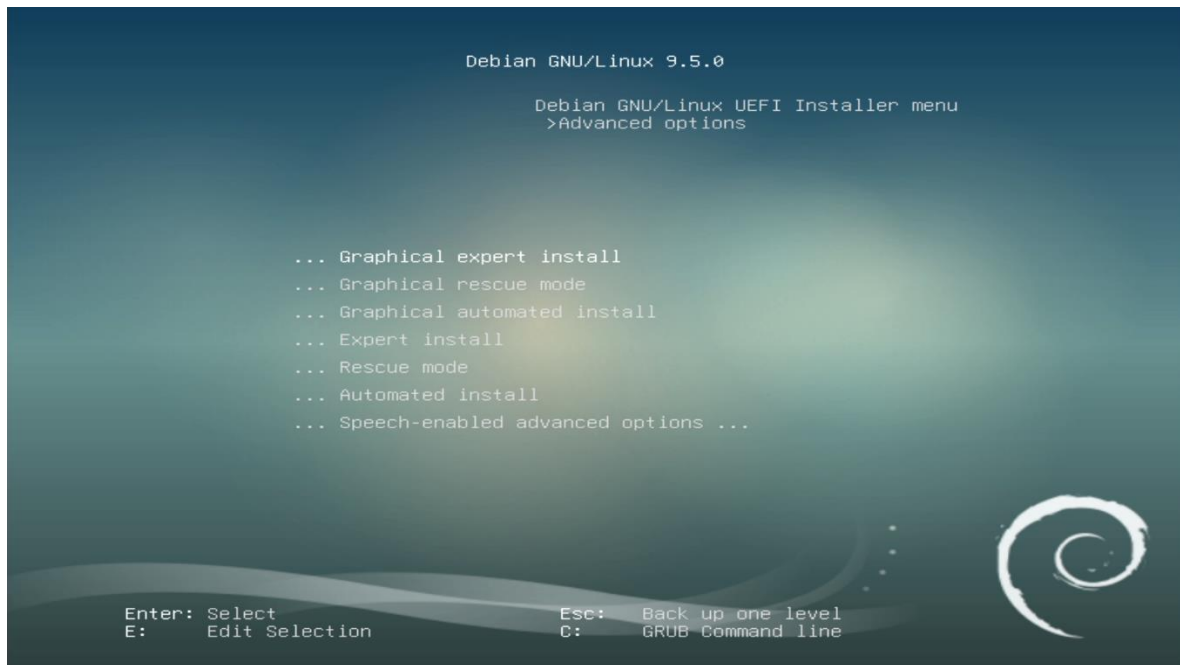
- Select the Linux bootable installation media from the F12 boot menu list.



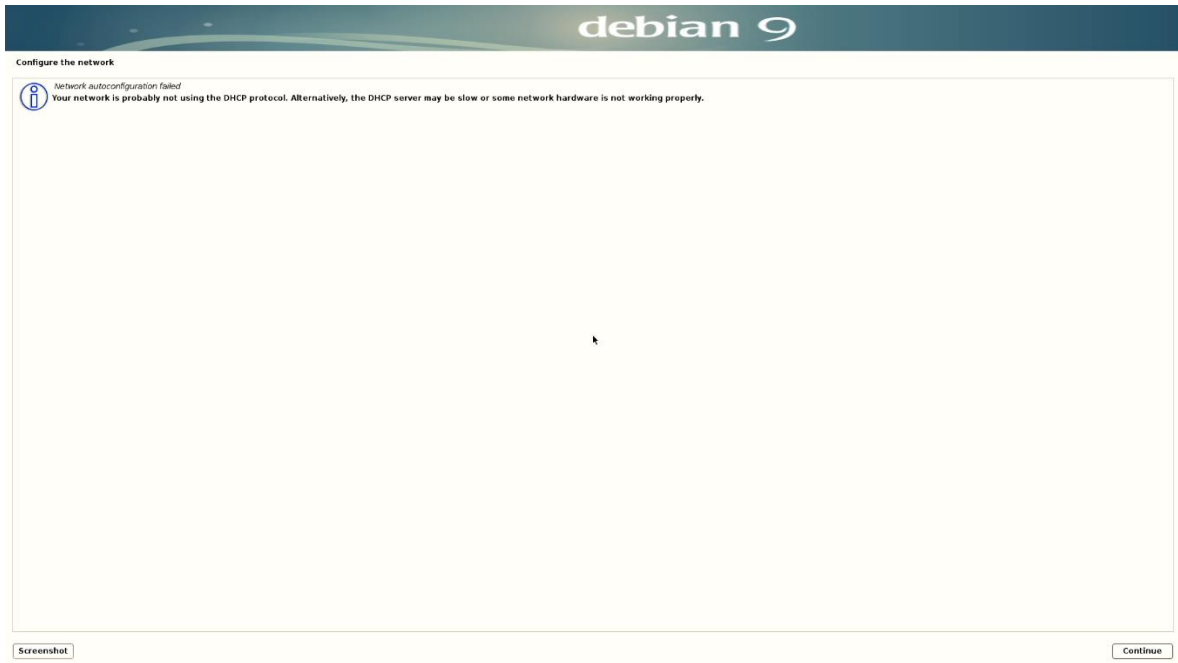
- Select “Advanced options...”



- Select “... Graphical automated install”.



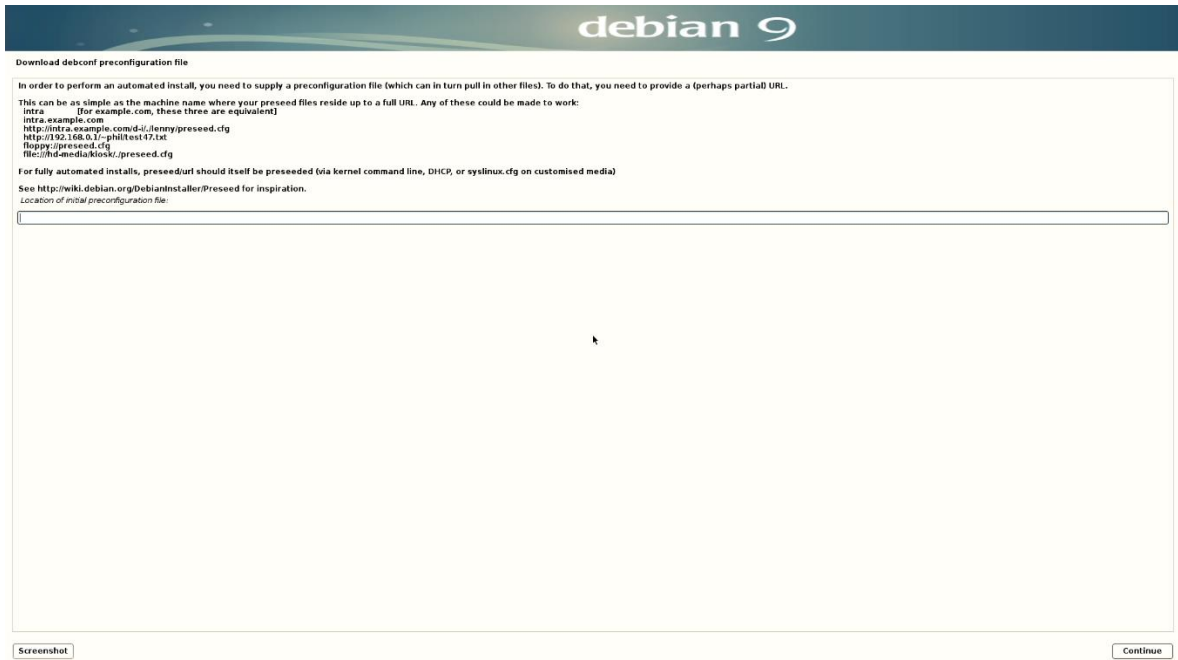
- If the “Network autoconfiguration failed” message displays, select “Continue”.



- Select “Do not configure the network at this time”.



- Select “Continue”.



- Select a language.





- Select your location.



- Configure the keyboard.



- Set up a root password.



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

- Set up a user account and password.



debian 9

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:

Screenshot

Go Back Continue

- Set up a username.



The screenshot shows the 'debian 9' logo at the top. Below it, the section is titled 'Set up users and passwords'. The instructions read: '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.' Below this, there is a text input field with the label 'Username for your account:' and a 'Show' button to its right. At the bottom of the form, there are 'Screenshot', 'Go Back', and 'Continue' buttons.

- Set up a password for the username created above.



The screenshot shows the 'debian 9' logo at the top. Below it, the section is titled 'Set up users and passwords'. The instructions read: 'A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.' Below this, there is a text input field with the label 'Choose a password for the new user:' and a 'Show Password in Clear' checkbox to its right. Below the first field, the instructions read: 'Please enter the same user password again to verify you have typed it correctly.' Below this, there is a second text input field with the label 'Re-enter password to verify:' and a 'Show Password in Clear' checkbox to its right. At the bottom of the form, there are 'Screenshot', 'Go Back', and 'Continue' buttons.

- Choose how to partition the disk.



- Select the disk to partition.



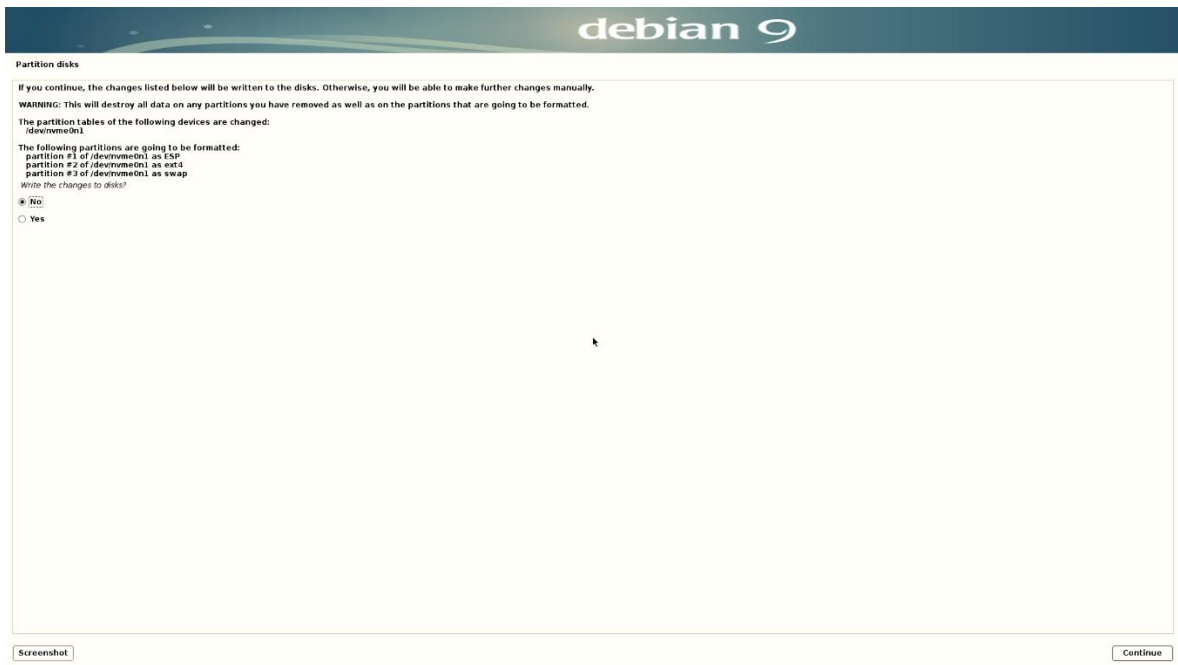
- Confirm whether to remove existing logical volume data.



- Confirm disk partitions.



- Confirm to write changes to the disk(s).



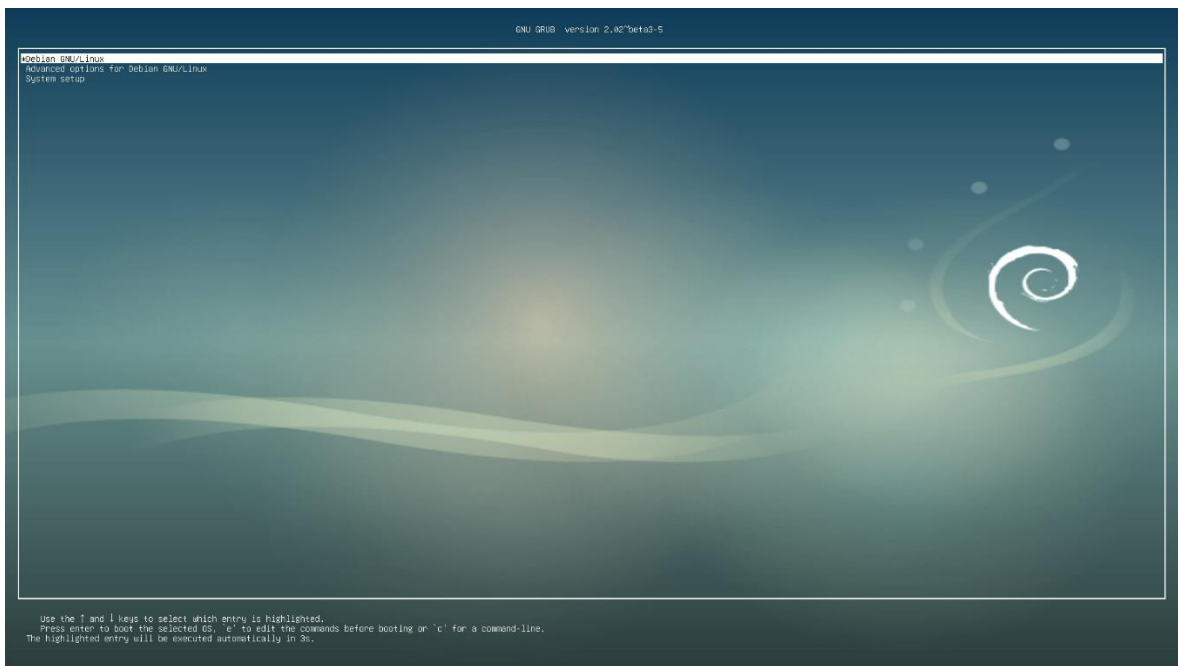
- Let the installer start the installation.



- Select “Continue” at the “Installation complete” screen to reboot the system.



- At the grub boot menu screen, press “e” to edit the boot parameters.



- Add “acpi=off” at the end of the boot parameter line, then press F10 to boot.

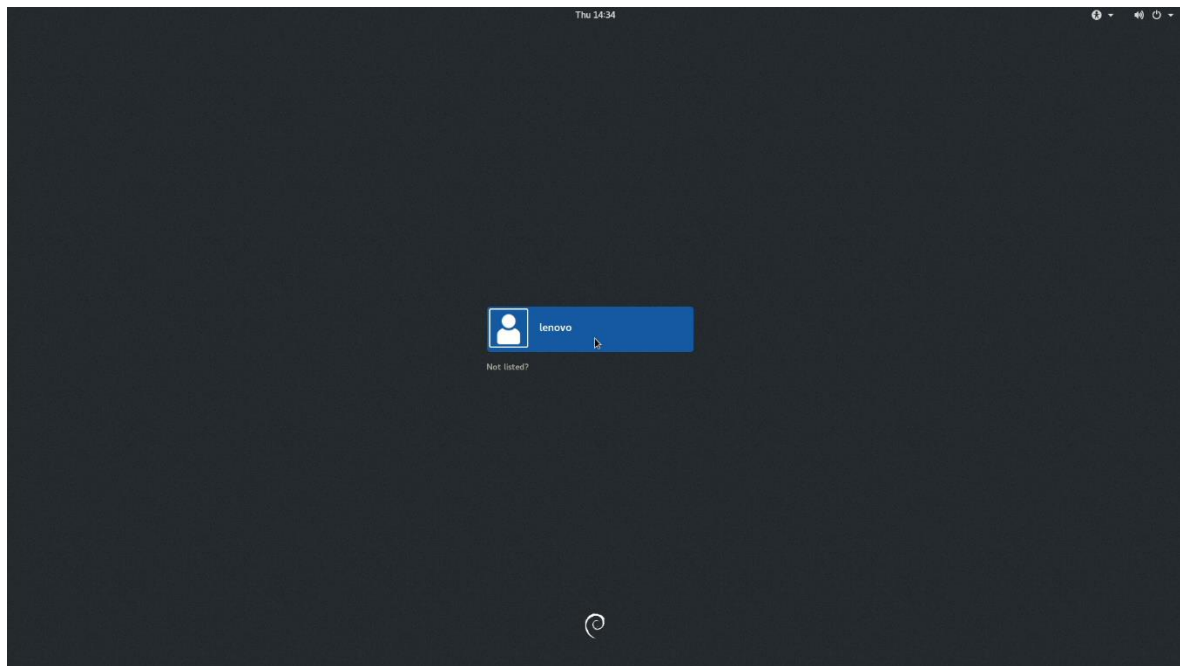
```
GNU GRUB version 2.02~beta3-5

setparams 'debian GNU/Linux'

insd (hd0)
insmod gzio
if [ x${shub_platform} = xxen ]; then insmod xzlib; insmod lzopio; fi
insmod part_gpt
insmod ext2
if [ x${feature_platform_search_hint} = x0 ]; then
  search --no-floppy --fs-uuid --set=root c7f9050b-e997-44b3-b42f-bab99f2a7be
else
  search --no-floppy --fs-uuid --set=root c7f9050b-e997-44b3-b42f-bab99f2a7be
fi
echo      Loading Linux 4.9.0-7-amd64 ...
linux    /boot/vmlinuz-4.9.0-7-amd64 root=UUID=c7f9050b-e997-44b3-b42f-bab99f2a7be ro quiet acpi=off
echo      Loading initial ramdisk ...
initrd   /boot/initrd.img-4.9.0-7-amd64

Minimum Emacs-like screen editing is supported. TAB lists completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a command-line or ESC to discard edits and return to the GRUB menu.
```

- Log in to the Debian desktop screen by using the user credentials created above.





- Debian desktop screen.



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## Section 4 – Updating the Source List to use the Debian Repositories

Use the Debian repositories to download quick driver and/or software package releases.

Here's an example of what an `/etc/apt/sources.list` might look like:

### **Step 1:**

- Edit the following `'/etc/apt/sources.list'` and add the following lines:

```
deb http://deb.debian.org/debian stretch main
deb-src http://deb.debian.org/debian stretch main
deb http://deb.debian.org/debian stretch-updates main
deb-src http://deb.debian.org/debian stretch-updates main
deb http://security.debian.org/ stretch/updates main
deb-src http://security.debian.org/ stretch/updates main
```

```
deb http://deb.debian.org/debian stretch main contrib non-free
deb-src http://deb.debian.org/debian stretch main contrib non-free
deb http://deb.debian.org/debian stretch-updates main contrib non-free
deb-src http://deb.debian.org/debian stretch-updates main contrib non-free
deb http://security.debian.org/ stretch/updates main contrib non-free
deb-src http://security.debian.org/ stretch/updates main contrib non-free
```

### **Step 2:**

- Run the following command: `'apt-get update'`

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## Section 5 – Installing the Nvidia Graphics Driver

The proprietary Nvidia driver will not work properly on Pascal-based GPU's within Linux; therefore, use the Linux Nouveau driver.