Debian 9 "Stretch" Linux Setup Guide

For ThinkPad P1



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".

				Thin	kPad Set	tup		
Main	Con	ıfig	Date/	Time	Secur	ity Sta	artup 👘	Restart
Main Exit Sa Exit Di Load Se - OS O Discard Save Ch	ving C scardi tup De ptimiz Chang anges	fig ng Chan faults ed Defa es	<u>ges</u> ults	Time [Disabl	Secur:	ity Sta	Iter Iter Exit	Restart m Specific Help Setup and save changes.
F1 Hel Esc Exi	p †↓ t ↔	Select Select	Item Menu	+/- Enter	Change Select	Values ► Sub-Menu	F9 F10	Setup Defaults Save and Exit

• Tab over to the "Startup" menu tab and make sure the following parameters are set accordingly.

***<u>Note</u>: Pressing F9 will allow "UEFI/Legacy Boot" to be selectable; otherwise, it will be an unchangeable setting to "UEFI only".

			Thinkl	Pad Set	Հաթ		
Main	Config	Date/Ti	ime	Securi	lty St	artup	Restart
▶ Boot						Ite	m Specific Help
Network	Boot		[PCI	Lanj			
UEFI/Leg - UEFI/ - CSM S	acy Boot Legacy Boo upport	t Priorit <u>u</u>	[Bot] UEF] [Yes]	n] [First	:]		
Boot Mod	е		[Qu i c	:k]			
Option k	ey Display		[Enal	oled]			
Boot dev	ice List F	12 Option	[Enal	oled]			
Boot Ord	er Lock		Disa	abled]			
F1 Help Esc Exit	†↓ Sele ←→ Sele	ct Item 🚽 ct Menu 🛛	+/- (Enter S	Change Select	Values ► Sub-Men	F9 u F10	Setup Defaults Save and Exit

***<u>Note</u>: 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.

		ThinkPad Se	tup		
Main Confi	ig Date/	'Time Secur	ity Star	tup Re:	start
 Network USB Keyboard/Mouse Display Power Beep and Alarm Storage CPU Thunderbolt(TM) Intel(R) AMT 	3			Item Spea	cific Help
F1 Help ↑↓ S Esc Exit ↔ S	Select Item Select Menu	+/- Change Enter Select	Values ► Sub-Menu	F9 Setur F10 Save	p Defaults and Exit

• By default, the "Graphics Device" is likely set to "Hybrid Graphics". To run exclusively Nvidia graphics, set the "Graphics Device" to "Discrete Graphics".

IninkPad Setup	
Config	
Display	Item Specific Help
Boot Display Device Graphics Device Total Graphics MemoryIThinkPad LCDI Lybrid GraphicsBoot Time ExtensionIDDiscrete Graphics Hybrid Graphics	Discrete Graphics mode will achieve higher graphics performance. Hybrid Graphics mode runs as Integrated Graphics mode to achieve longer battery life, and Discrete Graphics is enabled on demand.
F1 Help ↑↓ Select Item +/- Change Values Esc Exit ↔ Select Menu Enter Select ▶ Sub-Menu	F9 Setup Defaults F10 Save and Exit

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.



Lenovo

• Select "Advanced options..."



• Select "... Graphical automated install".

Debian GNU/Linux 9.5.0	
Debian GNU/Linux UEFI Installer menu ≻Advanced options	
Graphical expert install	
Graphical rescue mode	
Speech-enabled advanced options	
	\bigcirc
Enter: Select Esc: Back up one level E: Edit Selection C: GRUB Command line	

• If the "Network autoconfiguration failed" message displays, select "Continue".



Lenovo

• Select "Do not configure the network at this time".

debian 9	
Configure the network	
From here you can choose to retry DHCP network autoconfiguration (which may succeed if your DHCP server takes a long time to respond) or to configure the network manually. Some DHCP servers require a DHCP hostname to be sent by the client, so you can also choose to retry DHCP network autoconfiguration with a hostname that you provide. Network configureton method.	
Retry network autoconfiguration	
Retry network autocomputation with a DHCP hostname Configure network manually	
Do not configure the network at this time	4
t t	
Screenshot Go Back Continue	

• Select "Continue".



• Select a language.

		debian 9	
Select a language			
Choose the language	to b	be used for the installation process. The selected language will also be the default language for the installed system.	
Albanian		f bala	
Ambaric		- andb	_
Arabic			
Asturian	-	Asturianu	
Bangla	-	- 4m	
Basque	-	- Euskara	
Belarusian	-	- Беларуская	
Bosnian	-	- Bosanski	
Bulgarian	-	- Български	
Burmese	-	- Géner	-
Catalan	-	- Català	
Chinese (Simplified)	-	- 中文(简件)	
Chinese (Traditional)	-	- 中文(都勝)	
Croatian	-	- Hrvatski	
Czech	-	- Čeština	
Danish		- Dansk	
Dutch	-	- Nederlands	
Dzongkha	-	- ¥ŋ	
English	-	- English	
Esperanto	-	- Esperanto	
Estonian	-	- Eesti	
Finnish	-	Suomi	
French	-	- Hangais	
Georgian		- Garego	
German		garranggan Deutsch	
Greek		- Ελληνικά	
Gujarati		- and	
Hebrew	-	עבית -	
Hindi	-	• (k+4)	
Hungarian	-	- Magyar	
Icelandic	-	- Íslenska	
Indonesian	-	- Bahasa Indonesia	
Irish	-	- Gaelige	
Italian	-	- Italiano	
Japanese	-	- B##	
Kannada	-	- siga	~
Screenshot		Go Back Cont	linue

• Select your location.

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 shortfist of locations based on the language you selected. Choose "other" if your location is not listed. <i>Country lemitry or area</i> :	
Antigua and Barbuda Australia Botswana Canada	
Hong Kong India Veland Veral Kera Zaland	
Nigeria Philippinis Singapore South Africa	
United Kingdom United States	
Zambawe Zambawe other	
Screenshot	Go Back Continue

• Configure the keyboard.

	debian 9		
Configure the keyboard			
Keymap to use:			
American English			<u>~</u>
Albanian			
Arabic			
Asturian			
Bangladesh			
Belarusian			
Bengali			
Belgian			
Bosnian			
Brazilian			=
British English			
Bulgarian (BDS layout)			
Builgarian (phonetic layout)			
Burnese Constent for the formation			
Canadian French			
Cataloga Polytonigua			
Catalan			
Croatian	•		
Czech			
Danish			
Dutch			
Dvorak			
Dzongkha			
Esperanto			
Estonian			
Ethiopian			
Finnish			
French			
Georgian			
German			
Greek			
Gujarati			
Gurmukhi			
Hebrew			
Hindi			
Hungarian			
relation of the second s			
			~
Screenshot		Go Back	Continue

Lenovo

• Set up a root password.

debian 9
ant 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 ditionaries, or a word have a word have the assily 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. Roct password:
Show Password in Clear
viease enter the same root password again to verny that you have types it correctly. Reenter password to verify:
Show Password in Clear
•
Secondard
uu sate

• Set up a user account and password.

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. <i>Cold name be the new cont</i> :	
•	
Screenshot	o Back Continue

• Set up a username.

debian 9	
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.	
×	
Screenshot	Go Back Continue

• Set up a password for the username created above.

	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:		
C Share Descripted in State]
□ show rassworu in Lear Please enter the same user password again to verify you have typed it correctly. <i>Re-enter password to verify</i> :		
Show Password in Clear		
	k u	
Screenshot		Go Back Continue

Choose how to partition the disk. ٠



Select the disk to partition. •



Confirm whether to remove existing logical volume data. ٠



Confirm disk partitions. ٠

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 IAAD Configure software IAAD Configure sortpited volumes Configure sortpited volumes		
▽ /devirwneon1 - 256.1 G8 Unknown		
> 1.0 M8 FRE SPACE		
> #2 238.80B f ext1 /		
> #3 16.7 GB f swap swap > 335.4 kB FREESPACE		
▼ 5CSI (a) 0,0 (sda) - 15.5 GB ADATA USB Hash Drive		
> #1 primary 15-508 8 Tat32		
Undo changes to partitions I finish cartillogina and write changes to disk I finish cartillogina and write changes to disk		
k.		
Screenshot Help	Go Back	Continue

Confirm to write changes to the disk(s). ٠



Let the installer start the installation. •

	debian 9	
Install the base system		
Landarian March 7	installing the base system	
validaving liberilos		

• 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.



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



• Debian desktop screen.



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'

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.