Ubuntu 20.04 Linux Setup Guide

For ThinkStation P360 Tower, Tiny, Ultra



Table of Contents

Section 1 – BIOS Configuration	3
Section 2 – Installing Ubuntu Linux 20.04 LTS	6
Section 3 – Installing the Nvidia Graphics Driver	14
Revision History	

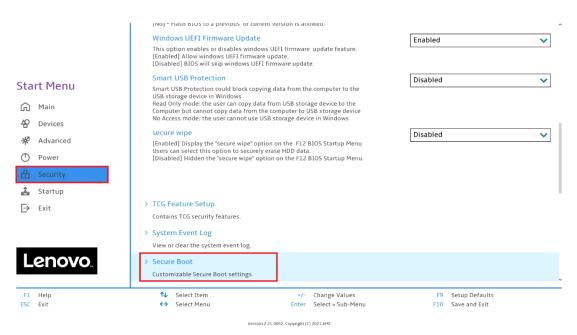
Section 1 – BIOS Configuration

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 Security tab and select "Secure Boot".



• Check whether Secure Boot is disabled. If found enabled, disable it.

	\leftarrow
	Secure Boot
Start Menu	System Mode Deployed Mode
에 Main 슈 Devices	Secure Boot Enabled [Enabled] Enables Secure Boot, BIOS will prevent un-authorised OS be loaded. Enabled [Disabled] Disables Secure Boot. Disabled
 Advanced Power Security 	> Restore Factory Keys Restore Factory Keys will put secure boot into factory defaults.
 ▲ Startup → Exit 	 > Reset Platform to Setup Mode Reset to setup mode will move secure boot to setup mode. > Exit Deployed Mode Transition between Deployment and User Mode.
Lenovo	> Key Management Enables users to modify Secure Boot Policy variables.
F1 Help ESC Exit	↑↓ Select Item +/- Change Values F9 Setup Defaults ←> Select Menu Enter Select > Sub-Menu F10 Save and Exit
	Version 2.21.0052. Copyright (C) 2022 AMI

• Save changes by pressing an F10 function key.

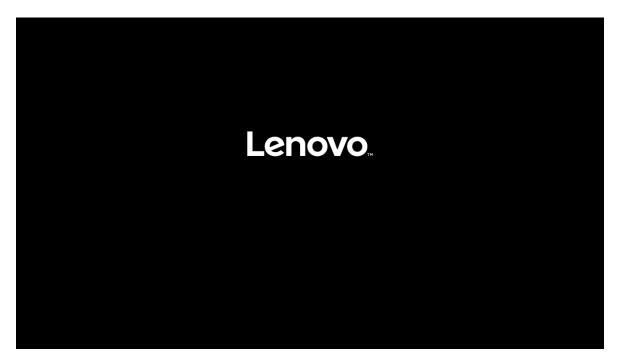
	Secure Boot			
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Lenovo

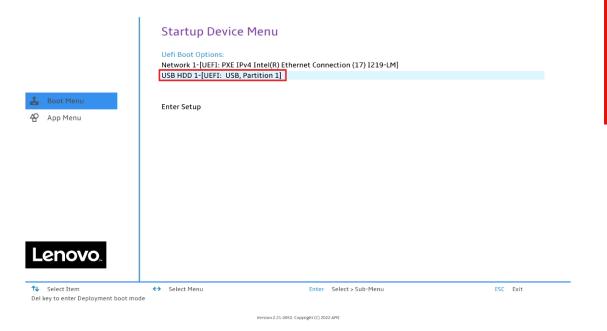
Section 2 – Installing Ubuntu Linux 20.04 LTS

Please refer to the following instructions and screenshots on how to install Ubuntu 20.04 LTS on the Lenovo ThinkStation P360.

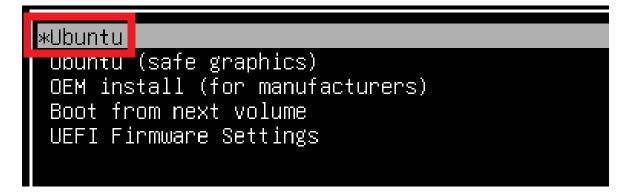
- Insert the Ubuntu 20.04 LTS installation media (either through USB or CD/DVD)
- Power on the system and press the F12 function key whenever the following Lenovo splash screen appears.



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



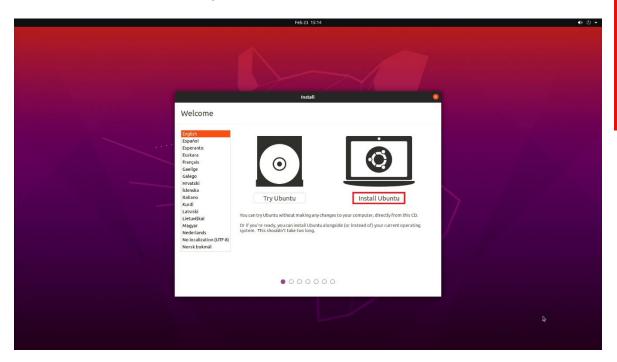
• Select "Ubuntu" from the GRUB boot menu and press enter.



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• Select the "Install Ubuntu" option on the welcome screen.



• Select the appropriate keyboard layout and language and press "Continue".

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	bose your keyboard layout: glish (Australian) glish (Cameroon) glish (porta) glish (po	English (US) - English (US) -	English (Colema English (Dvorak English (Dvorak English (Dvorak English (Dvorak English (Norak English (Norma English (US, alt. English (US, eur	:) ;, alt. intl.) ;, intl., with dead ;, ieft-handed) osh) m) (intl.) oon S) L, with dead keys		>	
	ipe here to test your keyboard Detect Keyboard Layout						
		••00000	Quit	Back	Continue		

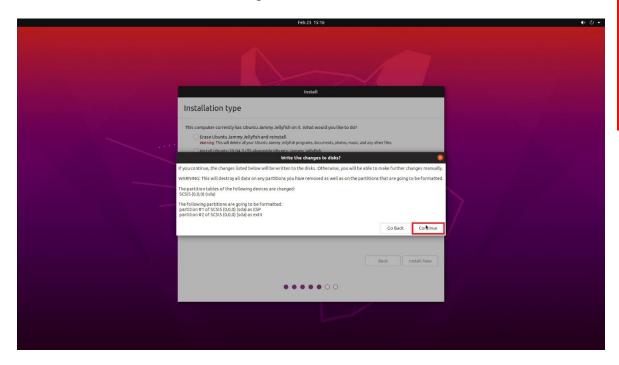
• Select "Normal Installation" and press "Continue". <u>Optional</u>: "Install third-party software..."

Feb 23 15/14	•) U 🗸
Install Official Control of Contr	
what apps would you like to install to start with? Image: Start installation We brown, utilities, afficia there, similar, and media players. Minimal installation We brown and back utilities: Ober options Download updates while installing Ubundu This set there after installation We brown and back utilities: Ober options This set there after installation With the installation of the installing Ubundu This set there after installation This set there after installation This set there after installation This set there are installed of the update and will installation after and additional media formats. This settleare is subject to locene terms included with its documentation. Some is proprietary.	
Quit Back Continue	

• Choose the installation type. For simplicity, this guide was done using "Erase disk and install Ubuntu"

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Installation type	
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• Select "Continue" to confirm changes will be made to the disk.



• Choose the appropriate geographical location and select "Continue".



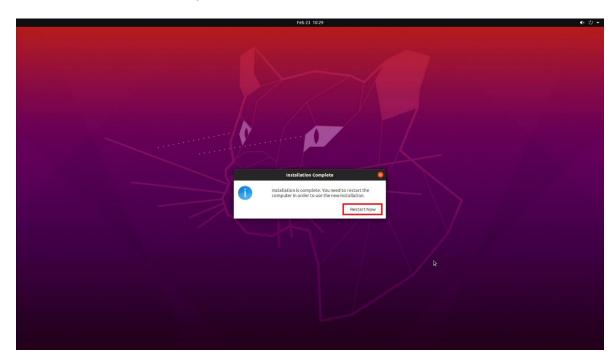
• Fill out the appropriate information and select "Continue".

	Feb 23 10:16	 ● U +
Wh	Install ho are you?	
	Your name: Your computer's name: The name & was when it tails to other computers. Pick a username: Choose a password: Confirm your password: Confirm your password: On it automatically	
	•••••	

• Ubuntu installation progress bar will be shown.

Feb 23 10:17	• 🖱 🗕
Intell	
Welcome to Ubuntu	
Fatt and full of new features, the latest version of Ubuntu makes computing easier than ever, Here are just a few cool new things to look out for	
Almost finished copying files Skip	

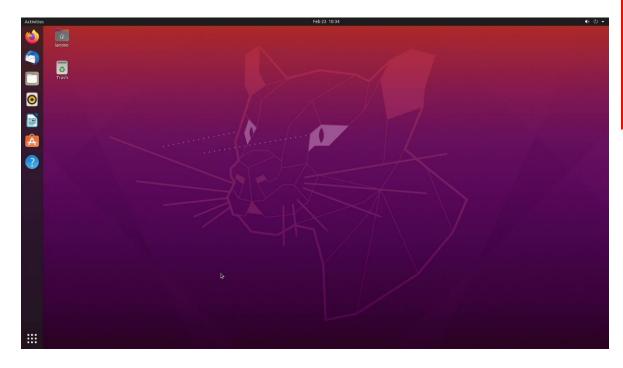
• Once the installation completes, select "Restart now".



• Remove the installation media and press enter.



• User will land on the Ubuntu Desktop Screen.



Section 3 – Installing the Nvidia Graphics Driver

To get optimal performance out of the Nvidia GPU, it is a good idea to install the Nvidia graphics driver.

• To make sure the Nvidia GPU is working, open the terminal and write the command nvidia -smi.

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	Terminal •	See "an sudo_root" for details. menyou is more innov & Product:-5 med Feb 23 16:36:20 2022 WIDIA-SNI 466.91.03 Driver GPU Name Persistence-M GPU Name Persistence-M 0 Tobb	Version: 469.91.03 CUDA Version: 11.2 Bus-1d Disp.A Volatile Uncorr. ECC Memory-Usage Grunull Compute M. MEG M. 000000000:01:00.0 On N/A 1 215MLB / 3993MLB 1% Default N/A 1 Process name GPU Memory Usage G /usr/llb/horg/korg S9MLB G /usr/llb/horg/korg S9MLB	Q = - 0 8	

In case Nvidia GPU is not native, follow the steps below to install the GPU driver:

• Open Software & Updates.



• Click on Additional Drivers

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		i Using NVDIDA driver metapackage from média driver-460 (proprietary, tested) O Using X.Org X.Server – Nouveau display driver from :server:korg video nouveau (open source)	
		No proprietary drivers are in use. Revert Apply Changes	
		A proprietary driver has private code that Ubortu developers can't review or improve. Security and other updates are dependent on the driver vendor.	

• Select the driver you would like to install and click Apply Changes

Activities	🚯 Software & Updates 👻	Feb 23 10:41	å • U •
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Â		Software & Updates	
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		Using XVIIDIA driver metapackage from midia-driver-460 (proprietary, tested) Using XXIrg X server – Nouveau display driver from xserver xorg video nouveau (open source)	
		No proprietary drivers are in use.	
		Close	

• If the system will prompt to restart, click Restart.

In case if need to install a proprietary Nvidia driver outside of the upstream kernel releases please follow the next steps:

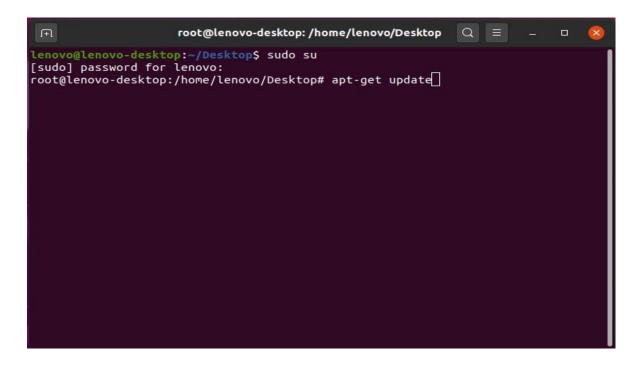
- Download the latest Nvidia graphics driver for the appropriate Nvidia GPU from <u>www.nvidia.com/download</u>
- To get the Nvidia driver running, we will need to blacklist the nouveau driver. Follow the steps below:
 - Log in as root: sudo su
 - Open blacklist.conf file: gedit /etc/modprobe.d/blacklist.conf
 - Blacklist nouveau driver by writing: blacklist nouveau

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<pre>invoilLenovo-desktop://besktops.sudo_su sudo] password for Verovo: ootblenovo-desktop:/home/lenovo/Desktop# gedit /etc/nodprobe.d/blacklist.conf 21 # sod_intel8x0m can interfere with sod_intel8x0m, 22 blacklist sod_intel8x0m 24 25 # conflicts with dvb driver (which is better for handling this device) 26 blacklist sod_mac 27 28 # replaced by p54pci 28 blacklist prism54 38 34 # most apps now use garmin usb driver directly (Ubuntu: #114565) 35 blacklist garmingps 36 37 # replaced by asus-laptop (Ubuntu: #184721) 38 blacklist asus acpi 39 40 # low-quality, just noise when being used for sound playback, causes 41 # ugly and loud noise, getting on everyone's nerves; this should be done by a 43 # nice puiseadio bing (Ubuntu: #2046969) 42 blacklist sod_prize 43 # usequi and loud noise, getting on everyone's nerves; this should be done by a 43 # nice puiseadio bing (Ubuntu: #277010) 45 blacklist prism5 45 # continues to build and is installable for the few cases where its 33 # renity neglet.</pre>		root@lenovo-desktop:/home/lenovo/Desktop 🔍 = 🗕 🗆 🗙	
	enovo@lenovo-de sudo] password	rsktop:~/Desktop\$ sudo su for lenovo:	<pre>19 blacklist eth1394 20 21 # snd intel&x0m can interfere with snd_intel&x0, doesn't seem to support much 22 # hardware on its own (Ubuntu bug #2011, #6010) 23 blacklist snd_intel&x0m 24 25 # Conflicts with dvb driver (which is better for handling this device) 26 blacklist snd_aw2 27 28 # replaced by p54pc1 29 blacklist prism54 30 31 # replaced by b43 and ssb. 32 blacklist bcm43xx 33 34 # most apps now use garmin usb driver directly (Ubuntu: #114565) 35 blacklist asus acpl 39 40 # low-quality, just noise when being used for sound playback, causes 41 # hangs at desktop session start (Ubuntu: #246969) 42 blacklist snd_pcsp 43 44 # ugly and loud noise, getting on everyone's nerves; this should be done by a 45 # nice uplesaudio bing (Ubuntu: #77010) 46 blacklist presplexed 47 48 # EDAC driver for amd76x clashes with the agp driver preventing the aperture 49 # from being initialised (Ubuntu: #29759). Blacklist so that the driver 59 # continues to build and is installable for the few cases where its 50 # continues to build and is installable for the few cases where its 50 # continues to build and is installable for the few cases where its 50 # continues to build and is installable for the few cases where its 50 # continues to build and is installable for the few cases 50 # continues to build and is installable for the few cases 51 # hangs at desktop session start (Dbuntu: #7791) 52 # continues to build and is installable for the few cases 53 # # # DAC driver for amd76x clashes with the agp driver preventing the aperture 53 # continues to build and is installable for the few cases 53 # continues to build and is installable for the few cases 54 # content for amd76x clashes with the few cases 54 # content for amd76x clashes with the few cases 55 # continues to build and is installable for the few cases 55 # continues to build and is installable for the few cases 55 # continues to build and is installable for the few cases 55 # continues to build and is installable for the few cases 55 # continues to build and is ins</pre>
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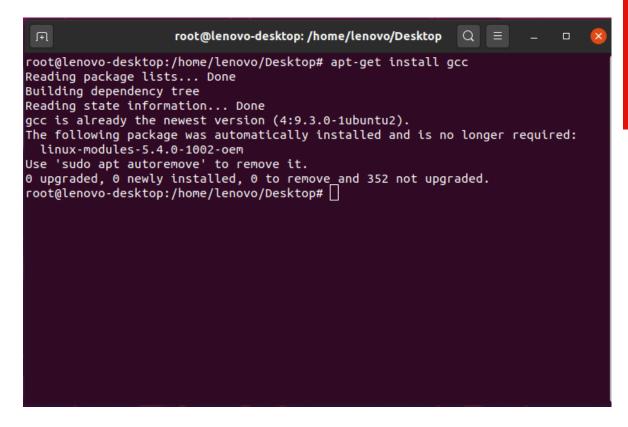
• Run the command: update-initramfs -u



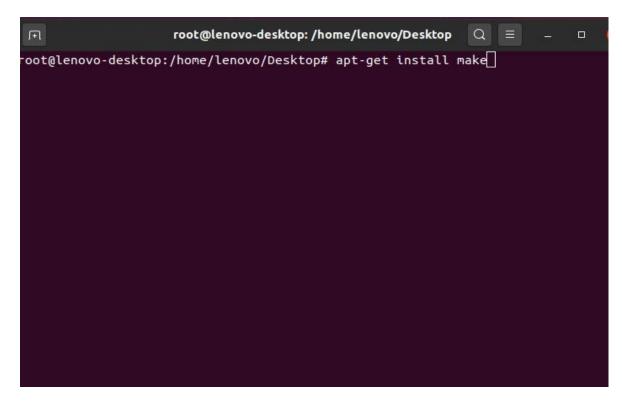
- Reboot the system: reboot
 - Once your system reboots, open a terminal window and:
 - Log in as root: sudo su
 - Run the command: apt-get update



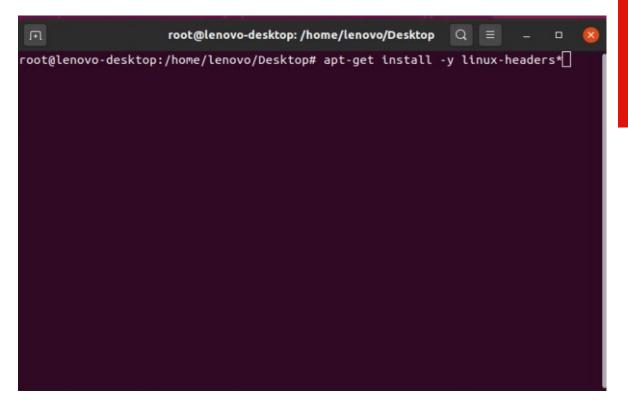
• Install gcc: apt-get install gcc



• Install make: apt-get install make



• Install linux-headers: apt-get install -y linux-headers*



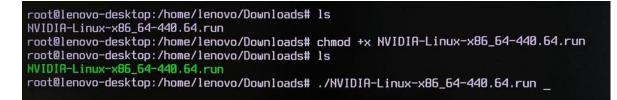
• Stop x-windows by using the command: init 3



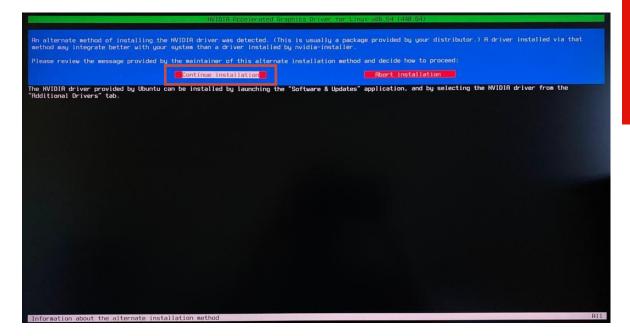
• Log in as root and redirect to the directory where the Nvidia driver is located.



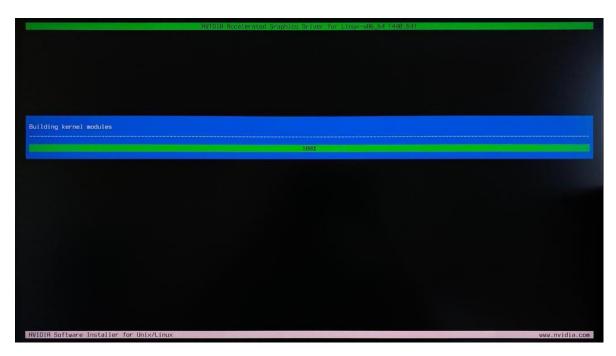
 Make the Nvidia installer an executable by the command- chmod +x NVIDIA-Linux-x86-64-* And run the Nvidia driver by- ./NVIDIA-Linuxx86_64-430.50.run



• Select Continue installation.



• Wait until the kernel modules are completely built.



• Select Yes for installing 32-bit compatibility libraries.

Install NVIDIR's 32-bit compatibility libraries?	
NVIDIA Software Installer for Unix/Linux	www.nyidia.com

• Wait until the installation is complete.

	NVIDIA Accelerated Graphics Oriver for Linux-x86_64 (448.64)
Installing 'NVIDIA Accelerated Graphics Driver	- for Linux−x86_64' (440.64);
Executing: `/usr/sbin/depmod -a ` (this may ta	ake a moment) 99%

• Select Yes to run nvidia-xconfig utility to automatically update your X configuration file.

	NVIDIA Accelerated Graphics Drive	F for Linux-x86_64 (448.64)	
			the second advances once assessment
ould you like to run the nvidia-xconf ? Any pre-existing X configuration f	ig utility to automatically update your X o ile will be backed up.	configuration file so that the NVIDIA X driver will	be used when you restar
	Ves		

• Select OK once the X configuration file gets updated successfully.

NAIDIH HC	celerated Graphics Driver for Linux-x86_64 (440,64)
ur V configuration file has been successfully undated	Installation of the NVIDIA Accelerated Graphics Driver for Linux-x86_64 (version: 440.64) is no
nplete.	

• Execute the following command to verify the Nvidia driver is loaded: nvidiasmi

NVID	IA-SMI	440.3	1	Driver	Version	440.	31	CL	JDA Versio	on: 10.2	
GPU Fan									Volatile GPU-Util		
	Quadr 49C						00.0 Off 3908MiB		0×	Defa	N∕A ault
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• Reboot the system.

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Revision History

Version	Date	Author	Changes/Updates
1.1	7/12/2022	Aleksandr Panteleev	Added support for P360 Ultra
1.0	5/17/2022	Aleksandr Panteleev	Initial launch release