# User Guide



IdeaPad 3/IdeaPad 3i/IdeaPad Slim 3/IdeaPad Slim 3i Series

#### Read this first

Before using this documentation and the product it supports, ensure that you read and understand the following:

- Generic Safety and Compliance Notices
- Safety and Warranty Guide
- Setup Guide

### Third Edition (April 2025)

### © Copyright Lenovo 2023, 2025.

LIMITED AND RESTRICTED RIGHTS NOTICE: If data or software is delivered pursuant to a General Services Administration "GSA" contract, use, reproduction, or disclosure is subject to restrictions set forth in Contract No. GS-35F-05925.

# **Contents**

About this guide	. iii	Set hard disk password	18
		Change or remove hard disk password	19
Chapter 1. Meet your computer	. 1		
Front	. 1	Chapter 4. Help and support	
Base	. 2	Frequently asked questions	
Left	. 4	How do I partition my storage drive	21
Right	. 5	What should I do if my computer stops	
Bottom	. 6	responding	21
Features and specifications	. 7	What should I do if I spill liquid on the	- 4
Statement on USB transfer rate		computer	21
Operating environment	. 9	Where can I get the latest device drivers and UEFI/BIOS	21
Avoid constant body contact with specific hot		Why does my screen brightness change	ا ک
sections	. 9	constantly	21
0		Why does my computer start automatically	
Chapter 2. Get started with your		when I open the lid	21
computer		Self-help resources	22
Work with Windows		What is a CRU?	23
Windows help information	12	CRUs for your product model	23
Lenovo Vantage, Lenovo PC Manager or Lenovo	40	Call Lenovo	
Smart Engine	12	Before you contact Lenovo	
The Novo Button menu		Lenovo Customer Support Center	
Open the Novo Button menu	12	Purchase additional services	
Interact with your computer	13		_
Hotkeys	13	Chapter 5. PC and accessibility	25
The FnLock switch	13	Accessibility features of the PC hardware	25
Numeric keypad	14	USB connectors for connecting assistive	
Chapter 2. Evalere veur commuter	45	technology devices	25
Chapter 3. Explore your computer		Keyboard accessibility	25
Manage power		Biometric devices	26
Check the battery status		Accessibility features of Windows 11	26
Charge the battery		Configuring accessibility features in the	
Set power button behavior		Settings app	
A power plan		Narrator	27
Set performance mode *		Adjusting text sizes, applying a high-contrast	
Change settings in UEFI/BIOS setup utility	16	theme, and using Magnifier	
What is UEFI/BIOS setup utility	16	Sticky Keys	
Open the UEFI/BIOS setup utility	16	Accessible user documentation	28
Select boot devices	16	Accessibility features of user	0.0
Change hotkey mode	17	documentation	
Set passwords in UEFI/BIOS setup utility	17	Testing documentation accessibility	29
Password types	17	Appendix A. Function descriptions	
Set administrator password	17	for Lenovo hotkeys	21
Change or remove administrator password	18	ioi Ecilovo liotreys	JI
Set user password	18	Appendix B. Notices and	
Enable power-on password	18	trademarks	33

# **About this guide**

• This guide applies to Lenovo product model(s) listed below. Illustrations in this guide may look slightly different from your product model.

Model name	Machine type (MT)
IdeaPad 3 14ABA7	82RM
IdeaPad 3 15ABA7	82RN
IdeaPad 3 17ABA7	82RQ
IdeaPad 3 14IAU7	82RJ
IdeaPad 3 14IAU7 D1	
IdeaPad 3 14IAU7 D2	
IdeaPad 3 14IAU7 D3	
IdeaPad 3 14IAU7 U4	
IdeaPad 3 14IAU7 U5	
IdeaPad 3 14IAU7 U6	
IdeaPad 3 15IAU7	82RK, 82T7
IdeaPad 3 15IAU7 D1	82RK
IdeaPad 3 15IAU7 D2	
IdeaPad 3 15IAU7 D3	
IdeaPad 3 15IAU7 U4	
IdeaPad 3 15IAU7 U5	
IdeaPad 3 15IAU7 U6	
IdeaPad 3 17IAU7	82RL
IdeaPad 3 17IRU7	82X9

- For further compliance information, refer to the *Generic Safety and Compliance Notices* at <a href="https://pcsupport.lenovo.com/docs/generic\_notices">https://pcsupport.lenovo.com/docs/generic\_notices</a>.
- This guide may contain information about accessories, features, and software that are not available on all models.
- This guide contains instructions that are based on the Windows operating system. These instructions are not applicable if you install and use other operating systems.
- Microsoft® makes periodic feature changes to the Windows® operating system through Windows Update. As a result, the operating system related instructions may become outdated. Refer to Microsoft resources for the latest information.
- The content of the guide is subject to change without notice. To obtain the latest version, go to <a href="https://support.lenovo.com">https://support.lenovo.com</a>.

# **Chapter 1. Meet your computer**

# Front



Item	<b>Controls &amp; Connectors</b>	Description
1	Microphones	Capture or record sound and voice.
2	Camera	Capture still and moving images for taking photos, recording videos, and video chatting.
3	Camera cover	Cover or uncover the camera.  Note: The camera cover helps you better protect your privacy.
4	Camera light	If the light is on, the camera is in use.
5	Screen	Display text, graphics and videos.
6	Wireless antennas	Send and receive radio waves for the built-in wireless LAN (local area network) and Bluetooth module.  Notes:
		<ul> <li>The antennas are not visible from the outside of the computer.</li> </ul>
		<ul> <li>If the location of the antennas is close to the user's body (&lt; 20 cm), you can find the Specific Absorption Rate (SAR) values in the Setup Guide that comes with your computer.</li> </ul>

## **Base**

### 14-inch models:



Item	Controls & Connectors	Description
1	Power light/Fingerprint reader light*	The light shows power status of the computer and the status of fingerprint reader.
2	Power button/Fingerprint reader*	<ul> <li>Press the button to turn on the computer or put the computer into sleep mode.</li> <li>Enroll and read your fingerprint for user authentication.</li> </ul>
3	Keyboard	Enter characters and interact with programs.  Note: The keyboard also includes hotkeys and function keys for changing settings and performing tasks quickly.
4	Touchpad	Perform finger touch and all the functions of a traditional mouse.  Note: The touchpad also supports multi-touch function.

<sup>\*</sup> for selected models

### 15-inch and 17-inch models:



Item	Controls & Connectors	Description
1	Power button/Fingerprint reader*	Press the button to turn on the computer or put the computer into sleep mode.
		<ul> <li>Enroll and read your fingerprint for user authentication.</li> </ul>
2	Power light/Fingerprint reader light*	The light shows power status of the computer and the status of fingerprint reader.
3	Keyboard	Enter characters and interact with programs.  Note: The keyboard also includes hotkeys and function keys for changing settings and performing tasks quickly.
4	Numeric keypad	To enable or disable the numeric keypad, press the Num Lock key.  Note: If the Num Lock key light is on, the numeric keypad is in use.
5	Touchpad	Perform finger touch and all the functions of a traditional mouse.  Note: The touchpad also supports multi-touch function.

<sup>\*</sup> for selected models

# Left



Item	Controls & Connectors	Description
1	Power connector	Connect to power with the included power cord and ac power adapter.
2	Charging light	Indicate whether the computer is connected to ac power.
		<ul> <li>Solid white: connected to ac power; battery capacity 91%–100%</li> </ul>
		<ul> <li>Solid amber: connected to ac power; battery capacity 1%–90%</li> </ul>
		<ul> <li>Off: not connected to ac power</li> </ul>
3	USB (3.2 Gen 1) Type-A connector	Connect to a USB-compatible device, such as a USB keyboard, a USB mouse, a USB storage device, or a USB printer.
4	HDMI <sup>™</sup> connector	Connect to a compatible digital audio device or video monitor, such as an HDTV.
5	Multi-purpose USB Type-C® connector	This multi-purpose connector can be used to connect:
		<ul> <li>devices that utilize the USB data transfer technology, and</li> </ul>
		display devices
		<b>Note:</b> When connecting display devices, you need to use appropriate cables and adapters (if needed) according to the connection capabilities of the display device.
		This connector also supports USB Power Delivery.
6	Combo audio jack	Connect headphones or headsets with a 3.5 mm (0.14 inch), 4-pole plug.  Note: This jack does not support standalone external microphones. If you use headsets, choose one with a single plug.

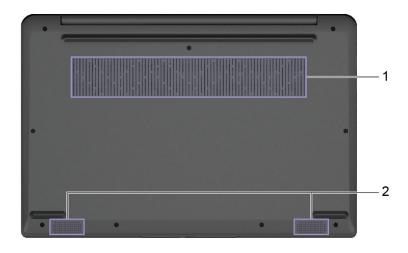
# Right



Item	Controls & Connectors	Description
1	Power light	On: the computer is turned on.
		<ul> <li>Blinking: the computer is in sleep mode.</li> </ul>
		<ul> <li>Off: the computer is turned off or in hibernation mode.</li> </ul>
2	Novo button hole	Press the Novo button to open the <b>Novo Button</b> menu. From the menu, you can choose to open the UEFI/BIOS setup utility, the Boot menu, or the Windows startup options screen.
3	SD card slot	Insert an SD card or a MultiMediaCard (MMC) into the slot for data transfer or storage.
4	USB 2.0 port	Connect a USB-compatible device, such as a USB keyboard, a USB mouse, a USB storage device, or a USB printer.

# **Bottom**

### 14-inch models:



Item	Controls & Connectors	Description
1	Ventilation slots (inlet)	Dissipate internal heat. <b>Note:</b> Do not block the ventilation slots. Otherwise, the computer might overheat.
2	Speakers	Produce sound.

### 15-inch and 17-inch models:



Item	Controls & Connectors	Description
1	Ventilation slots (inlet)	Dissipate internal heat.  Note: Do not block the ventilation slots. Otherwise, the computer might overheat.
2	Speakers	Produce sound.

# **Features and specifications**

Specifications	Descriptions
Dimensions	Width
	<ul><li>14-inch models: 324.2 mm (12.76 inches)</li></ul>
	- 15-inch models: 359.2 mm (14.14 inches)
	- 17-inch models: 399 mm (15.71 inches)
	• Depth
	- 14-inch models: 215.7 mm (8.49 inches)
	- 15-inch models: 236.5 mm (9.31 inches)
	- 17-inch models: 274 mm (10.79 inches)
	Thickness: 19.9 mm (0.78 inches)
ac power adapter	This wiese. To be thin (en e menes)
ac power adapter	<ul> <li>Input: 100 V ac-240 V ac, 50 Hz-60 Hz</li> </ul>
	• Output: 20 V dc, 3.25 A
	Power: 65 W
	<b>Note:</b> The battery capacity is the typical or average capacity as measured in a specific test environment. Capacities measured in other environments may differ but are no lower than the rated capacity (see product label).
Battery pack	Capacity: 38 Wh
	Number of cells: 2
	Capacity: 45 Wh
	Number of cells: 3
Microprocessor	To view the microprocessor information of your computer, type system information in the Windows search box and then press Enter.
Memory	Type: On-board memory module and Double data rate 4 (DDR4) small outline dual in-line memory module (SODIMM)
	Number of slots: 1
Storage device	Type
	- Solid-state drive (SSD)
	- Hard disk drive (HDD)
	Form factor
	- SSD: M.2 (2242/2280)
	- HDD: 2.5-inch (7 mm)
	• Bus
	<ul><li>SSD: PCI Express</li><li>HDD: Serial ATA</li></ul>
	- TIDD, GEHALATA

Specifications	Descriptions
Screen	<ul> <li>Size</li> <li>355.6 mm (14 inches)</li> <li>381 mm (15 inches)</li> <li>431.8 mm (17 inches)</li> <li>Display resolution</li> <li>1920 x 1080 pixels</li> </ul>
Keyboard	<ul> <li>Function keys</li> <li>Hotkeys</li> <li>Numeric keypad*</li> <li>Keyboard backlight*</li> </ul>
Connectors and slots	<ul> <li>Power connector</li> <li>Combo audio jack</li> <li>USB (3.2 Gen 1) Type-A connector <ul> <li>Provide power output up to 5 V and 0.9 A</li> </ul> </li> <li>USB 2.0 connector <ul> <li>Provide power output up to 5 V and 0.5 A</li> </ul> </li> <li>Multi-purpose USB Type-C connector <ul> <li>Supports SuperSpeed USB 5 Gbps</li> </ul> </li> <li>Supports DisplayPort Alt Mode (DisplayPort 1.2 compliant: supports 3840 × 2160 @ 60 Hz)</li> <li>ac mode: Power output up to 15 W (5 V, 3 A)</li> <li>dc mode: <ul> <li>Power output up to 5 V and 1.5 A with 38 W battery</li> <li>Power output up to 5 V and 3 A with 45 W battery</li> </ul> </li> <li>Supports USB Power Delivery</li> </ul> <li>HDMI connector <ul> <li>Supports maximum output resolution of 3840 × 2160 @ 30 Hz (HDMI 1.4b)</li> </ul> </li> <li>SD card slot</li>
Security features	<ul> <li>Fingerprint reader*</li> <li>UEFI/BIOS passwords <ul> <li>Administrator password</li> <li>User password</li> <li>Master hard disk password</li> <li>User hard disk password</li> </ul> </li> </ul>
Wireless features	Bluetooth and Wi-Fi combo adapter

<sup>\*</sup> for selected models

### Statement on USB transfer rate

Depending on many factors such as the processing capability of the host and peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and will be slower than the data rate listed below for each corresponding device.

USB device	Data rate (Gbit/s)
USB 3.2 Gen 1	5

### **Operating environment**

### Maximum altitude (without pressurization)

3048 m (10 000 ft)

#### **Temperature**

At altitudes up to 2438 m (8000 ft)

- Operating: 5°C to 35°C (41°F to 95°F)

Storage: 5°C to 43°C (41°F to 109°F)

At altitudes above 2438 m (8000 ft)

- Maximum temperature when operating under the unpressurized condition: 31.3°C (88°F)

**Note:** When you charge the battery, its temperature must be no lower than 10°C (50°F).

#### Relative humidity

Operating: 8% to 95% at wet-bulb temperature 23°C (73°F)

Storage: 5% to 95% at wet-bulb temperature 27°C (81°F)

## Avoid constant body contact with specific hot sections

#### **CAUTION:**

When the computer is operating, it should be placed on a hard and flat surface with its bottom area not in contact with user's bare skin. Under normal operating conditions, the temperature of the bottom surface will remain within an acceptable range as defined in *IEC* 62368-1, but such temperatures can still be high enough to cause discomfort or harm to the user if directly touched for over one minute at a time. As such, it is recommended that users avoid prolonged direct contact with the bottom of the computer.

# Chapter 2. Get started with your computer

## **Work with Windows**

The following table contains Windows frequently used settings. You can learn the basics and start working with Windows right away.

To configure settings, type the corresponding keywords in the Windows search box and select the best match. Follow the on-screen instructions to customize settings.

Table 1. Basic settings

Functions	Descriptions	Search by keywords
Control Panel	View or change Windows settings, including hardware and software setup and configuration.	Control Panel
Connect to Wi-Fi networks	For models with a wireless LAN module, you can connect your computer to a Wi-Fi® network. Click the network icon in the Windows notification area, and then select a network for connection.  Note: The wireless LAN module on your computer may support different standards. For some countries or regions, use of 802.11ax may be disabled according to local regulations.	Wi-Fi
Airplane mode	Airplane mode is a convenient setting to turn all wireless communications of your computer on and off. You may need to turn it on when boarding an airplane.	Airplane mode
Night light mode	Night light is a switch in Windows that you can turn on and off. When it is turned on, your screen shows warmer colors and the amount of emitted blue light is reduced. Enabling night light reduces the chances of developing eye fatigue or eye strain.  Note: For more guidance on reducing eye fatigue or eye strain, go to <a href="https://www.lenovo.com/us/en/compliance/visual-fatigue">https://www.lenovo.com/us/en/compliance/visual-fatigue</a> .	Night light
Adjust color temperature	If night light mode is turned on, you can adjust the color temperature of the screen.  Note: Selected Lenovo computers are low blue light certified using night light mode and color temperature settings available in the pre-installed operating system. These computers are tested with night light turned on and color temperature set to 48 or greater.	Night light
Windows Updates	Microsoft periodically releases feature and security updates to the Windows operating system. Updates that are applicable to your Windows version are downloaded automatically when your computer is connected to the Internet. When updates are downloaded, you are prompted to restart the computer to install these updates. You can also manually check if there are available updates for the installed version of Windows.  Attention: Only use Windows Update to download and install updates. Updates downloaded from other sources may include security risks.	Windows Updates

Table 2. Optional settings

Functions	Descriptions	Search by keywords
Enroll your fingerprint	For models with a fingerprint reader, you can enroll your fingerprint for Windows sign-in.	Sign-in options

### Windows help information

If the on-screen instructions cannot solve your problem, refer to the following to get the online Windows help information.

- Type Get Help or Tips in the Windows search box and then press Enter. When the app opens, type the problem description and select the matched result.
- · Visit Microsoft support Web site: https://support.microsoft.com. Enter what you are looking for in the search box and get search results.

### Lenovo Vantage, Lenovo PC Manager or Lenovo Smart Engine

They are all apps developed by Lenovo. Using any one of them, you can:

- · View product information and system status
- · Manage and change device settings
- · Check for and perform system update

Note: This feature is only available on Lenovo Vantage. In Lenovo PC Manager, you can check for and perform driver update.

Depending on the country or region in which your computer is purchased, one of the apps may be preinstalled on your computer. To open it, type its name in the Windows Search box and select the matched result. If neither of the apps is pre-installed, you may install one on your own. Lenovo Vantage is available for download free of charge from the Microsoft Store.

Note: App features are subject to change with updates and specific features may not be available on all Lenovo products.

#### The Novo Button menu

The Novo Button menu can be displayed before the operating system starts. From the menu, you can choose to

- Open the BIOS/UEFI setup utility
- Open the boot device selection menu
- Open the Windows startup options screen

Note: From the Windows startup options screen, you can then choose to

Start your computer using a recovery drive

Reset your computer

Open advanced options screen

## Open the Novo Button menu

For Lenovo computers with a Novo button, you can press the button to open the Novo Button menu.

- Step 1. Turn off the computer.
- Step 2. Open the LCD screen and press the Novo button.

### Interact with your computer

### **Hotkeys**

Look at the top row of the keyboard of your Lenovo computer and you'll find keys with printed icons. These keys are called hotkeys and they provide shortcuts to functions that you'll use frequently. The function that each hotkey provides is denoted by the icon printed on the key.

Hotkeys share keys with function keys (F1–F12) and other keys. Depending on the FnLock setting, you use hotkey functions by pressing the key directly or in combination with the Fn key.

**Note:** The FnLock switch does not apply to hotkeys not found in the first row of the keyboard. To use these hotkeys, always hold down the Fn key while pressing the key.



Figure 1. Location of the Fn key

#### **Related topics**

Appendix A "Function descriptions for Lenovo hotkeys" on page 31

#### The FnLock switch

The FnLock is an electronic switch that affects how you use hotkey functions. To turn it on and off, press Fn + Esc.

**Note:** The Esc key is in the upper left corner of the keyboard. It has an LED that indicates the status of the FnLock switch.



Figure 2. Locations of the FnLock key and the Fn key

A Lenovo keyboard usually contains hotkeys in the top row. These hotkeys share keys with the function keys (F1-F12) and other keys. For these dual-function keys, the icons or characters denoting the primary functions are printed on top of the icons and characters denoting the secondary functions.

- A: an icon or character denoting the primary function
- B: an icon or character denoting the secondary function



Figure 3. The layout of a dual-function key

Table 3. FnLock and dual-function keys

FnLock (Esc) <b>LED</b>	FnLock status	Pressing the hotkey alone	Pressing the hotkey while holding down the Fn key
Off	Disabled	Primary function	Secondary function
On	Enabled	Secondary function	Primary function

# **Numeric keypad**

Some Lenovo computers includes a dedicated numeric keypad on the far right of the keyboard. The keypad is used for entering numbers and operators quickly.

Press the **NumLock** key to enable or disable the numeric keypad.

# Chapter 3. Explore your computer

### Manage power

Use the information in this section to achieve the best balance between performance and power efficiency.

### Check the battery status

The battery status icon or is in the Windows notification area. You can check the battery status, view the current power plan, and access battery settings quickly.

Click the battery status icon to display the percentage of battery power remaining and change the power mode. A warning message is displayed when the battery is low.

### Charge the battery

When the remaining battery power is low, charge your battery by connecting your computer to ac power.

The battery is fully charged in about two to four hours. The actual charging time depends on the battery capacity, the physical environment, and whether you are using the computer.

Battery charging is also affected by its temperature. The recommended temperature range for charging the battery is between 10°C (50°F) and 35°C (95°F).

#### Note:

You can check the battery temperature in Lenovo Vantage or Lenovo PC Manager.

To maximize the life of the battery, once the battery is fully charged, it must discharge to 94% or lower before it will be allowed to recharge again.

To extend your battery's lifespan, the battery may optimize its full charge capacity based on your usage. After prolonged periods of limited use, full battery capacity may not be available until you discharge to as low as 20% and recharge completely. For more information, refer to the power section of Lenovo Vantage.

# Set power button behavior

By default, pressing the power button puts the computer to sleep mode. However, you can change the power button behavior in Windows Control Panel.

- Step 1. Type Control Panel in the Windows search box and then press Enter. Open the control panel and view by large or small icons.
- Step 2. Select the power options and then click choose what the power button does.

# A power plan

A power plan is a collection of power-saving settings made available by an operating system. With a power plan, you can set idle time-outs for different hardware components to enter a low-power state. The default power plan and some of its idle time-out settings are listed below for computer models pre-installed with Windows.

The listed settings are active when the computer is connected to an electrical outlet. If your computer includes a built-in battery pack, a different collection of time-out settings is set to take effect when the computer is operating on battery power.

- Default power plan: Balanced
- Turn off the display: after 5 minutes
- Put the computer to sleep: after 5 minutes

Note: To wake the computer from the sleep state, press the power button or any key on the keyboard.

### Change or customize a power plan

This operation is applicable to computers with pre-installed Windows.

- Step 1. Type power plan in the Windows search box and then press Enter.
- Step 2. Customize a power plan of your preference.

### Set performance mode \*

Your computer can work in different performance modes. The performance and power consumption of the computer vary in different performance modes. Press **Fn** + **Q** to cycle through different performance modes.

### Change settings in UEFI/BIOS setup utility

This section introduces what is UEFI/BIOS and the operations you can perform in its setup utility.

### What is UEFI/BIOS setup utility

UEFI/BIOS is the first program that runs when a computer starts. UEFI/BIOS initializes hardware components and loads the operating system and other programs. Your computer may include a setup program (setup utility) with which you can change certain UEFI/BIOS settings.

## Open the UEFI/BIOS setup utility

- Step 1. Turn on or restart the computer.
- Step 2. When the Lenovo logo appears on the screen, press F2 repeatedly.

**Note:** For computers with hotkey mode enabled, press Fn + F2.

#### Select boot devices

Normally, the computer starts to a boot manager loaded from the secondary storage device of the computer. Occasionally, you may need to start the computer to a program or boot manager loaded from another device or a network location. After the system firmware initializes all devices, you can press an interruption key to display the boot menu and select a desired boot device.

- Step 1. Turn on or restart the computer.
- Step 2. Press F12.
- Step 3. From the boot device menu, select a boot device to start the computer.

You can make a permanent change on boot devices in the UEFI/BIOS setup utility. Select the **Boot** menu; in the **EFI** section, select the desired boot device and move it to the top of the device list. Save changes and exit the setup utility for the change to take effect.

<sup>\*</sup> for selected models

### Change hotkey mode

- Step 1. Open the UEFI/BIOS setup utility.
- Step 2. Select **Configuration** → **Hotkey Mode** and press Enter.
- Step 3. Change the setting to **Disabled** or **Enabled**.
- Step 4. Select Exit → Exit Saving Changes.

### Set passwords in UEFI/BIOS setup utility

This section introduces the types of passwords that you can set in the UEFI (Unified Extensible Firmware Interface) or BIOS (Basic Input/Output System) setup utility.

### Password types

You can set various types of passwords in the UEFI/BIOS setup utility.

Password type	Pre-requisite	Usage
Administrator password	No	You must enter it to start the setup utility.
User password	The administrator password must be set.	You can use the user password to start the setup utility.
Master hard disk password	No	You must enter it to start the operating system.
User hard disk password	The master hard disk password must be set.	You can use the user hard disk password to start the operating system.

#### Notes:

- All passwords set in the setup utility consist of alphanumeric characters only.
- If you start the setup utility using the user password, you can only change a few settings.

# Set administrator password

You set the administrator password to prevent unauthorized access to the UEFI/BIOS setup utility.

Attention: If you forget the administrator password, a Lenovo authorized service personnel cannot reset your password. You must take your computer to a Lenovo authorized service personnel to have the system board replaced. Proof of purchase is required and a fee will be charged for parts and service.

- Step 1. Open the UEFI/BIOS setup utility.
- Step 2. Select **Security** → **Set Administrator Password** and press Enter.
- Step 3. Enter a password string that contains only letters and numbers and then press Enter
- Step 4. Enter the password again and press Enter.
- Step 5. Select Exit → Exit Saving Changes.

Next time you start the computer, you must enter the administrator password to open the setup utility. If Power on Password is enabled, you must enter the administrator password or the user password to start the computer.

### Change or remove administrator password

Only the administrator can change or remove the administrator password.

- Step 1. Open the UEFI/BIOS setup utility using the administrator password.
- Step 2. Select **Security** → **Set Administrator Password** and press Enter.
- Step 3. Enter the current password.
- Step 4. In the **Enter New Password** text box, enter the new password.
- Step 5. In the Confirm New Password text box, enter the new password again.

Note: If you want to remove the password, press Enter in both text boxes without entering any character.

Step 6. Select Exit → Exit Saving Changes.

If you remove the administrator password, the user password is also removed.

### Set user password

You must set the administrator password before you can set the user password.

The administrator of the setup utility might need to set a user password for use by others.

- Step 1. Open the UEFI/BIOS setup utility using the administrator password.
- Step 2. Select Security → Set User Password and press Enter.
- Step 3. Enter a password string that contains only letters and numbers and then press Enter. The user password must be different from the administrator password.
- Step 4. Enter the password again and press Enter.
- Step 5. Select Exit → Exit Saving Changes.

## **Enable power-on password**

If the administrator password has been set, you can enable power-on password to enforce greater security.

- Step 1. Open the UEFI/BIOS setup utility.
- Step 2. Select **Security** → **Power on Password** and press Enter.

**Note:** The administrator password must be set in advance.

- Step 3. Change the setting to **Enabled**.
- Step 4. Select Exit → Exit Saving Changes.

If power-on password is enabled, a prompt appears on the screen every time you turn on the computer. You must enter the administrator or user password to start the computer.

# Set hard disk password

You can set a hard disk password in the setup utility to prevent unauthorized access to your data.

Attention: Be extremely careful when setting a hard disk password. If you forget the hard disk password, a Lenovo authorized service personnel cannot reset your password or recover data from the hard disk. You must take your computer to a Lenovo authorized service personnel to have the hard disk drive replaced. Proof of purchase is required and a fee will be charged for parts and service.

- Step 1. Open the UEFI/BIOS setup utility.
- Step 2. Select **Security** → **Set Hard Disk Password** and press Enter.

**Note:** If you start the setup utility using the user password, you cannot set hard disk password.

Step 3. Follow on-screen instructions to set both master and user passwords.

**Note:** The master and user hard disk passwords must be set at the same time.

Step 4. Select Exit → Exit Saving Changes.

If the hard disk password is set, you must provide the correct password to start the operating system.

### Change or remove hard disk password

- Step 1. Open the UEFI/BIOS setup utility.
- Step 2. Select Security.
- Step 3. Change or remove the hard disk password.

To change or remove master password, select Change Master Password and press Enter.

**Note:** If you remove the master hard disk password, the user hard disk password is also removed.

To change user password, select **Change User Password** and press Enter.

Note: The user hard disk password cannot be removed separately.

Step 4. Select Exit → Exit Saving Changes.

# Chapter 4. Help and support

### Frequently asked questions

### How do I partition my storage drive

Refer to https://support.lenovo.com/solutions/ht503851.

### What should I do if my computer stops responding

Press and hold the power button until the computer turns off. Then restart the computer.

### What should I do if I spill liquid on the computer

1. Carefully unplug the ac power adapter and turn off the computer immediately. The more quickly you stop the current from passing through the computer the more likely you will reduce damage from short circuits.

**Attention:** Although you might lose some data or work by turning off the computer immediately, leaving the computer on might make your computer unusable.

2. Wait until you are certain that all the liquid is dry before turning on your computer.

#### **CAUTION:**

Do not try to drain out the liquid by turning over the computer. If your computer has keyboard drainage holes on the bottom, the liquid will be drained out through the holes.

## Where can I get the latest device drivers and UEFI/BIOS

- Lenovo Vantage or Lenovo PC Manager
- Lenovo Support Web site at https://support.lenovo.com

# Why does my screen brightness change constantly

Your computer may include an ambient light sensor and the adaptive brightness feature is enabled. The light sensor can detect the intensity of the surrounding light. Using data provided by the sensor, the operating system can dynamically adjust the screen brightness.

The adaptive brightness feature of the operating system can be disabled. For Windows operating systems, adaptive brightness settings are usually found in **Settings**  $\rightarrow$  **System**  $\rightarrow$  **Display**.

# Why does my computer start automatically when I open the lid

Your computer may have Flip to Start enabled. Many Lenovo notebook computers include a sensor that can detect the angle at which the lid is opened. When you open the lid, the sensor can detect this behavior. If Flip to Start is enabled, the computer will respond by starting up automatically.

If you don't like this feature, you can disable it. Flip to Start can be enabled and disabled in:

- Lenovo Vantage, Lenovo PC Manager or Lenovo Smart Engine
- Firmware Setup Utility

# **Self-help resources**

Use the following self-help resources to learn more about the computer and troubleshoot problems.

Resources	How to access?
Troubleshooting and frequently asked questions	<ul><li>https://www.lenovo.com/tips</li><li>https://forums.lenovo.com</li></ul>
Accessibility information	https://www.lenovo.com/accessibility
Reset or restore Windows	<ul> <li>Use Lenovo recovery options.</li> <li>Go to <a href="https://support.lenovo.com/">https://support.lenovo.com/</a></li> <li>HowToCreateLenovoRecovery.</li> <li>Follow the on-screen instructions.</li> <li>Use Windows recovery options.</li> <li>Go to <a href="https://pcsupport.lenovo.com">https://pcsupport.lenovo.com</a>.</li> <li>Detect your computer or manually select your computer model.</li> <li>Click Diagnostics → Operating System Diagnostics and then follow the on-screen instructions.</li> </ul>
Use Lenovo Vantage or Lenovo PC Manager to:  Download and install the latest drivers and firmware.  Configure hardware settings  Diagnose computer hardware problems.  Check the computer warranty status.	Use Windows Search.
Product documentation:  • Generic Safety and Compliance Notices  • Safety and Warranty Guide	<ol> <li>Go to <a href="https://support.lenovo.com">https://support.lenovo.com</a>.</li> <li>Detect your computer or select computer model</li> </ol>
<ul><li>Setup Guide</li><li>This User Guide</li><li>Regulatory Notice</li></ul>	manually.  3. Select <b>Documentation</b> and filter out the documentation you want.
Lenovo Support Web site with the latest support information of the following:  Drivers and software  Diagnostic solutions  Product and service warranty  Product and parts details  Knowledge base and frequently asked questions	Visit https://support.lenovo.com
Windows help information	<ul> <li>Use Get Help or Tips.</li> <li>Use Windows Search or the Cortana® personal assistant.</li> <li>Go to Microsoft support Web site: <a href="https://support.microsoft.com">https://support.microsoft.com</a>.</li> </ul>

### What is a CRU?

Customer replaceable units (CRUs) are parts that can be upgraded or replaced by the customer. A Lenovo computer may contain the following types of CRUs:

Self-service CRU Parts that can be installed or replaced easily by

customer themselves or by trained service

technicians at an additional cost.

Optional-service CRU Parts that can be installed or replaced by customers

with a greater skill level. Trained service technicians can also provide service to install or replace the parts under the type of warranty designated for the

customer's machine.

If you intend to install a CRU, Lenovo will ship the CRU to you. You might be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you might be charged for the replacement CRU if Lenovo does not receive the defective CRU within thirty (30) days of your receipt of the replacement CRU. For full details, see the Lenovo Limited Warranty at https://www.lenovo.com/warranty/llw\_02.

### CRUs for your product model

The table below lists the CRUs and CRU types that are defined for your product model.

Part	Self-service CRU	Optional-service CRU
Power cord	X	
ac power adapter	Х	

#### Notes:

 CRU replacement instruction is provided in one or more of the following publications and are available from Lenovo at any time upon your request.

the product *User Guide* 

the printed publications that came with the product

 Replacement of any parts not listed above, including the built-in rechargeable battery, should be done by a qualified repair technician or by ensuring that you carefully follow all instructions provided by Lenovo. You can also find Lenovo-authorized repair facilities by going to https://support.lenovo.com/partnerlocator for more information.

#### Call Lenovo

If you have tried to correct the problem yourself and still need help, you can call Lenovo Customer Support Center.

# Before you contact Lenovo

Record product information and problem details before you contact Lenovo.

Product information	Problem symptoms and details	
Product name	What is the problem? Is it continuous or intermittent?	
<ul> <li>Machine type and serial number</li> </ul>	<ul> <li>Any error message or error code?</li> </ul>	
	<ul><li>What operating system are you using? Which version?</li></ul>	
	<ul> <li>Which software applications were running at the time of the problem?</li> </ul>	
	Can the problem be reproduced? If so, how?	

Note: The product name and serial number can usually be found on the bottom of the computer, either printed on a label or etched on the cover.

### **Lenovo Customer Support Center**

During the warranty period, you can call Lenovo Customer Support Center for help.

#### **Telephone numbers**

For a list of the Lenovo Support phone numbers for your country or region, go to https://pcsupport.lenovo.com/supportphonelist.

Note: Phone numbers are subject to change without notice. If the number for your country or region is not provided, contact your Lenovo reseller or Lenovo marketing representative.

#### Services available during the warranty period

- Problem determination Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- Lenovo hardware repair If the problem is determined to be caused by Lenovo hardware under warranty, trained service personnel are available to provide the applicable level of service.
- Engineering change management Occasionally, there might be changes that are required after a product has been sold. Lenovo or your reseller, if authorized by Lenovo, will make selected Engineering Changes (ECs) that apply to your hardware available.

#### Services not covered

- Replacement or use of parts not manufactured for or by Lenovo or nonwarranted parts
- Identification of software problem sources
- Configuration of UEFI/BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of programs

For the terms and conditions of the Lenovo Limited Warranty that apply to your Lenovo hardware product, see "Warranty information" in the Safety and Warranty Guide that comes with your computer.

### Purchase additional services

During and after the warranty period, you can purchase additional services from Lenovo at https://pcsupport.lenovo.com/warrantyupgrade.

Service availability and service name might vary by country or region.

# Chapter 5. PC and accessibility

PCs are powerful general-purpose computing devices that many individuals rely on for accessing information, connecting with friends, pursuing education, conducting research, and completing work tasks. This reliance extends to individuals with vision, hearing, cognitive, or mobility impairments, as well as to those whose abilities may decline due to illness or aging.

This chapter explores the accessibility features available on your Lenovo PC, including both hardware components and those offered by the pre-installed operating system. By gaining a comprehensive understanding of the available accessibility features and how to activate and configure them, you can enhance your PC's usability for individuals with disabilities.

### Accessibility features of the PC hardware

Lenovo PCs are designed with accessibility in mind. Throughout the design process, special considerations are prioritized for individuals with disabilities and best industry practices are implemented in hardware design.

### USB connectors for connecting assistive technology devices

Several types of assistive technology devices are available on the market that can be connected to a PC to enhance its accessibility. For example, a refreshable braille display is an assistive technology device that enables individuals who are both deaf and blind to use a PC. When connected to a PC, a refreshable braille display can work in conjunction with a compatible screen reader to provide tactile output in braille characters. Blind individuals who have been trained to read braille can run their fingers over the display to comprehend the information presented on the PC.

Many assistive technology devices utilize USB technology for connectivity. Most Lenovo PCs are equipped with at least one USB connector that adheres to the relevant USB specifications and is backward compatible. A Lenovo PC may feature a USB Standard-A connector, a USB Type-C connector, or both. If the plug type of the assistive technology device does not match the USB connector on your PC, you can easily purchase and use a USB adapter to resolve the issue.

# **Keyboard accessibility**

The keyboard serves as the primary input device for many PC users. Lenovo keyboards, whether integrated or supplied separately with the PC, are designed and manufactured with accessibility in mind. This section highlights the accessibility features of Lenovo keyboards that benefit all users, including those with disabilities.

#### keyboard layout

The alphabetic keys on a Lenovo keyboard are arranged in a QWERTY layout, which is standard for input devices featuring alphabetic keys. The F and J keys have bumps that make them tactilely distinguishable from other keys. This feature serves as an orientation aid for skilled typists, allowing them to rest their index fingers without looking at the keys. Some Lenovo keyboards include a separate numeric keypad. The numeric keys are organized in four rows and three columns, arranging in ascending order from left to right and bottom to top. Additionally, the 5 key features a bump to make it tactilely distinguishable.

#### Standard modifier keys

Lenovo keyboards are equipped with standard modifier keys for PCs, including:

the alt key

the ctrl key the shift key the Windows logo key

These keys are extensively used as the modifier key for shortcuts by the operating system and other applications.

#### The tab key

The tab key is located in the leftmost column of the keyboard. For operating systems, applications, and web documents that are designed with accessibility in mind, users can press the tab key and alt + tab (in reverse order) to cycle through the interactive elements.

#### **Hotkeys**

Many Lenovo keyboards feature hotkeys in the top row, offering convenient access to frequently used settings.

#### The fn key and the fnlock

The fn key is a Lenovo-defined modifier key. It can be used with the top-row dual-function keys to switch their functionalities. It can also be used with several other keys to access Lenovo defined settings.

The fnlock is a switch that can be turned on and off by pressing fn + esc. Instead of holding down the fn key to switch the functionality of dual-functionkeys, you can turn on fnlock. This feature allows users to access both hotkey and function key functionalities without the need to press two keys simultaneously.

#### Keyboard backlight

Many Lenovo keyboards are equipped with backlights to help you use the keyboard in dark lighting conditions. The backlights can be controlled by pressing fn + Space.

### **Biometric devices**

Some Lenovo PCs are equipped with biometric devices that facilitate easy and secure identity authentication. If your PC includes an IR LED and an IR camera, you can enable facial recognition in Windows 11. Additionally, you can use your fingerprint for authentication on PCs with a fingerprint reader. Biometric identity authentication can be particularly beneficial for users who find it difficult typing passwords.

Note: When biometric devices are used for device authentication, they are not the only available method for this purpose. If biometric authentication fails, you can use a password or PIN to sign in to Windows.

## Accessibility features of Windows 11

An operating system is a crucial piece of software installed on a PC. It plays a vital role in the PC's basic functionality by providing a user interface, various tools for system management, and a foundation upon which additional specialized applications can be installed.

Microsoft's Windows 11 is a modern operating system that comes preinstalled on many Lenovo PCs. It offers a rich set of accessibility features designed for individuals with diverse disabilities. This section outlines the accessibility features available in Windows 11, explains how to activate them, and discusses the benefits they provide.

Notes: The following accessibility features of Windows have been tested and confirmed to deliver their essential functionalities on Lenovo PCs that come pre-installed with Windows 11.

Narrator

Magnifier

### Configuring accessibility features in the Settings app

Windows 11 provides a centralized location within the Settings app for activating and configuring all accessibility features. You can access this section by selecting Start → Settings → Accessibility. Additionally, the keyboard shortcut Windows logo key + U provides quick access to this interface.

### **Narrator**

Narrator is Windows 11's built-in screen-reading application. It can read screen content aloud to users and also accept input from the keyboard, enabling individuals with visual impairments to navigate effectively within Windows 11, use applications, and browse the web.

#### **Start and stop Narrator**

You can start and stop Narrator by selecting the toggle button for Narrator in the centralized Accessibility section of the Settings app. Additionally, the keyboard shortcut Windows logo key + ctrl + enter provides quick access to both the start and stop functions.

### **Customize Narrator**

Narrator offers a variety of controls that allow you to customize it to suit your preferences. For example, you can install additional text-to-speech voices and select your preferred voice for Narrator. You also have the option to adjust the verbosity level to choose the type of content to be read. All Narrator settings are conveniently located in the centralized Accessibility section of the Settings app. Additionally, the keyboard shortcut Windows logo key + ctrl + N offers quick access to these settings.

### Adjusting text sizes, applying a high-contrast theme, and using Magnifier

For individuals who find it difficult to see text clearly on the screen, Windows offers the options of adjusting text sizes, applying a high-contrast theme, and using Magnifier.

#### **Adjust text sizes**

If you find the text on the screen is too small to read, you can scale up the size of text displayed by Windows and other applications.

- Step 1. Select Start → Settings → Accessibility → Text size.
- Step 2. Use the slider and the preview pane to select a size that fits your need and then select **Apply**.

#### Apply a high-contrast theme

For individuals with low vision, Windows 11 offers contrast themes that enhance text readability by using a background color that sharply contrasts with the text.

- Step 1. Select Start → Settings → Accessibility → Contrast themes.
- Step 2. In the dropdown list for **Contrast themes**, select one option and then select **Apply**.

To exit a contrast theme, select **None** from the dropdown list. The keyboard shortcut for turning on and off contrast theme is left alt + left shift + prt sc.

### **Enable Magnifier**

You can enable Windows 11 Magnifier to enlarge specific areas or the entire screen, making text and images easier to see.

Step 1. Select Start → Settings → Accessibility → Magnifier.

Step 2. Select the toggle to enable or disable Magnifier.

The keyboard shortcuts for enabling and disabling Magnifier are Windows logo key + Plus sign (+) and Windows logo key + esc, respectively. When Magnifier is enabled, you can use Windows logo key + plus sign (+) and minus sign (-) to zoom in and zoom out.

### Sticky Keys

Microsoft Windows offers numerous keyboard shortcuts that require users to hold down a modifier key (such as shift, ctrl, alt, or the Windows logo key) before pressing one or more additional keys. While these shortcuts provide significant convenience for many users, they can pose accessibility challenges for individuals who have difficulty holding down multiple keys at the same time.

Sticky Keys is an accessibility feature in Windows that, when enabled, allows users to press keys in sequence to activate shortcut functions. For example, instead of holding down the ctrl key and the C key simultaneously, users can press each key individually to copy text to the clipboard.

To enable Sticky Keys, press the shift key five times in guick succession. When the confirmation dialog box appears, select Yes to disable Sticky Keys, press the shift key five times again and choose No when prompted.

#### Accessible user documentation

Documentation containing instructions for the use of the product, including its accessibility features, is available in accessible formats (such as HTML and PDF) on the Lenovo Support Website. When creating documentation, a series of industry standards and best practices are followed to ensure that the content is useful to as broad an audience as possible. Additionally, automated testing tools are employed to identify issues that may hinder the accessibility of information. These issues are addressed to the extent permitted by commonly available technologies.

# Accessibility features of user documentation

By adhering to industry standards and best practices, Lenovo documentation offers numerous features that facilitate the perception and understanding of the content. Additionally, several of these features are specifically designed to ensure that users of assistive technology devices can access information comparable to that available to those who do not rely on such devices.

#### Perceivable content

Text content is presented using popular and easy-to-read fonts. Text colors are in high contrast with the background. Non-text elements, such as graphics and videos that convey important information, are accompanied by alternative text descriptions. Users with visual impairments can utilize screen readers to access information comparable to that available to sighted users.

#### Understandable content

The documentation is presented visually in a well-structured and simple layout. It also includes hidden tags or other markup information that store the content's structure, which can be utilized programmatically by assistive technologies to convey this structure to users.

#### Operable content

Documentation includes industry-standard tags for sectioning and interactive elements, such as titles, headings, various structural components, links, buttons, and input fields. Screen reader users can utilize standard modifier keys on the keyboard to effectively navigate and interact with the documentation.

### **Testing documentation accessibility**

Before being officially released, Lenovo documentation undergoes testing with automated tools to evaluate its accessibility. HTML documents are assessed for compliance with the success criteria outlined in the Web Content Accessibility Guidelines (WCAG), a widely accepted set of standards designed to enhance web document accessibility. PDF documents are evaluated for accessibility using the accessibility checker in Adobe Acrobat for the same purpose. Automated testing tools help identify elements within a document that may present challenges when rendered by screen readers and other assistive technology devices. Accessibility issues identified by these automated tools are subsequently analyzed manually and corrected as needed.

# Appendix A. Function descriptions for Lenovo hotkeys

Hotkey functions are denoted by the icons printed on the keys. The following table describes the functions for all Lenovo hotkeys. The keyboard of your Lenovo computer should only support a subset of the listed hotkeys.

Table 4. Hotkey icons and denoted functions

Hotkey icon	Function description
×	Mutes/Unmutes sound.
₫+	Increases volume.
₫-	Decreases volume.
×	Enables/Disables the microphone.
<b>;</b> ;;+	Increases screen brightness.
<b>☆</b> -	Decreases screen brightness.
	Selects and sets up display devices.
<b>+</b>	Enables/Disables airplane mode. (Windows operating systems)
兹	Displays the Lenovo Smart Key quick launch panel.
<b>X</b>	Enables/Disables the touchpad.
	Displays all open apps as thumbnails. (Windows operating systems)
	Opens the Calculator app. (Windows operating systems)
₽,	Opens the Snipping tool. (Windows operating systems)
¢	Opens the Settings app. (Windows operating systems)
Δ	Locks the screen. (Windows operating systems)
	Opens the clipboard history. (Windows operating systems)
(	Puts the computer to sleep.
≣	Opens the context menu of the current active app.
(de	Opens an associated voice app, voice service, or Microsoft Cortana.
<u> </u>	Adjusts the keyboard backlight.
₩+	Increases the brightness of the keyboard backlight.
<u> </u>	Decreases the brightness of the keyboard backlight.
8	Answers an incoming Microsoft Teams call.
8	Rejects an incoming Microsoft Teams call.
•	Accesses Lenovo Support resources.
<b>≻/II</b>	Starts/Pauses audio or video playback.
	Stops audio or video playback.

Table 4. Hotkey icons and denoted functions (continued)

Hotkey icon	Function description
<b>I44</b>	Plays the previous audio or video in the playlist.
<b>▶</b>	Plays the next audio or video in the playlist.
0	Switches the computer's active operation mode.
1	Blurs the background for videoconferencing.
₫,	Switches the computer's active audio mode.
*	Turns on/off night light mode. (Windows operating systems)

**Note:** Hotkey functions may change if the associated app or the Windows operating system is updated.

# Appendix B. Notices and trademarks

#### **Notices**

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

Lenovo may have patents or pending patent programs covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc. 8001 Development Drive Morrisville, NC 27560 U.S.A.

Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

Changes are made periodically to the information herein; these changes will be incorporated in new editions of the publication. To provide better service, Lenovo reserves the right to improve and/or modify the products and software programs described in the manuals included with your computer, and the content of the manual, at any time without additional notice.

The software interface and function and hardware configuration described in the manuals included with your computer might not match exactly the actual configuration of the computer that you purchase. For the configuration of the product, refer to the related contract (if any) or product packing list, or consult the distributor for the product sales. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This document is copyrighted by Lenovo and is not covered by any open source license, including any Linux agreement(s) which may accompany software included with this product. Lenovo may update this document at any time without notice.

For the latest information or any questions or comments, contact or visit the Lenovo Web site:

#### https://support.lenovo.com

#### **Trademarks**

Lenovo, the Lenovo logo, and IdeaPad are trademarks of Lenovo. Microsoft and Windows are trademarks of the Microsoft group of companies. DisplayPort is a trademark of the Video Electronics Standards Association. The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries. Wi-Fi is a registered trademark of Wi-Fi Alliance. USB Type-C is a registered trademark of USB Implementers Forum. All other trademarks are the property of their respective owners.