ThinkPad X1 Tablet Gen 3

User Guide

Lenovo

Welcome

Before using your computer and this *User Guide*, be sure to read the *Safety and Warranty Guide* and *Setup Guide* that come with your computer.

Lenovo® makes constant improvement on the documentation of your computer, including this *User Guide*. To get all the latest documents, go to:

http://www.lenovo.com/support

Note: Your computer might look slightly different from illustrations in this user guide.

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Important safety information

Note: Read the important safety information first.

Read this first

This information can help you safely use your notebook computer. Follow and retain all information included with your computer. The information in this document does not alter the terms of your purchase agreement or the Limited Warranty. For more information, see "Warranty Information" in the *Safety and Warranty Guide* that comes with your computer.

Customer safety is important. Our products are developed to be safe and effective. However, personal computers are electronic devices. Power cords, power adapters, and other features can create potential safety risks that can result in physical injury or property damage, especially if misused. To reduce these risks, follow the instructions included with your product, observe all warnings on the product and in the operating instructions, and review the information included in this document carefully. By carefully following the information contained in this document and provided with your product, you can help protect yourself from hazards and create a safer computer work environment.

Note: This information includes references to power adapters and batteries. In addition to notebook computers, some products (such as speakers and monitors) ship with external power adapters. If you have such a product, this information applies to your product. In addition, computer products contain a coin-sized internal battery that provides power to the system clock even when the computer is unplugged, so the battery safety information applies to all computer products.

Conditions that require immediate action

Products can become damaged due to misuse or neglect. Some product damage is serious enough that the product should not be used again until it has been inspected and, if necessary, repaired by an authorized servicer.

As with any electronic device, pay close attention to the product when it is turned on. On very rare occasions, you might notice an odor or see a puff of smoke or sparks vent from your product. Or you might hear sounds like popping, cracking, or hissing. These conditions might merely mean that an internal electronic component has failed in a safe and controlled manner. Or, they might indicate a potential safety issue. However, do not take risks or attempt to diagnose the situation yourself. Contact the Customer Support Center for further guidance. For a list of Service and Support phone numbers, see the following Web site:

http://www.lenovo.com/support/phone

Frequently inspect your computer and its components for damage or wear or signs of danger. If you have any question about the condition of a component, do not use the product. Contact the Customer Support Center or the product manufacturer for instructions on how to inspect the product and have it repaired, if necessary.

In the unlikely event that you notice any of the following conditions, or if you have any safety concerns with your product, stop using the product and unplug it from the power source and telecommunication lines until you can speak to the Customer Support Center for further guidance.

- Power cords, plugs, power adapters, extension cords, surge protectors, or power supplies that are cracked, broken, or damaged.
- Signs of overheating, smoke, sparks, or fire.

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- Damage to a battery (such as cracks, dents, or creases), discharge from a battery, or a buildup of foreign substances on the battery.
- A cracking, hissing, or popping sound, or strong odor that comes from the product.
- Signs that liquid has been spilled or an object has fallen onto the computer product, the power cord, or power adapter.
- The computer product, power cord, or power adapter has been exposed to water.
- The product has been dropped or damaged in any way.
- The product does not operate normally when you follow the operating instructions.

Note: If you notice these conditions with a product (such as an extension cord) that is not manufactured for or by Lenovo®, stop using that product until you can contact the product manufacturer for further instructions, or until you get a suitable replacement.

Service and upgrades

Do not attempt to service a product yourself unless instructed to do so by the Customer Support Center or your documentation. Only use a Service Provider who is approved to repair your particular product.

Note: Some computer parts can be upgraded or replaced by the customer. Upgrades typically are referred to as options. Replacement parts approved for customer installation are referred to as Customer Replaceable Units, or CRUs. Lenovo provides documentation with instructions when it is appropriate for customers to install options or replace CRUs. You must closely follow all instructions when installing or replacing parts. The Off state of a power indicator does not necessarily mean that voltage levels inside a product are zero. Before you remove the covers from a product equipped with a power cord, always make sure that the power is turned off and that the product is unplugged from any power source. If you have any questions or concerns, contact the Customer Support Center.

Although there are no moving parts in your computer after the power cord has been disconnected, the following warnings are required for your safety.

CAUTION:
Hazardous moving parts. Keep fingers and other body parts away.

CAUTION:

Before you open the computer cover, turn off the computer and wait several minutes until the computer is cool.

Power cords and power adapters

DANGER

Use only the power cords and power adapters supplied by the product manufacturer.

The power cords shall be safety approved. For Germany, it shall be H03VV-F, 3G, 0.75 mm^2, or better. For other countries, the suitable types shall be used accordingly.

Never wrap a power cord around a power adapter or other object. Doing so can stress the cord in ways that can cause the cord to fray, crack, or crimp. This can present a safety hazard.

Always route power cords so that they will not be walked on, tripped over, or pinched by objects.

Protect power cords and power adapters from liquids. For instance, do not leave your power cord or power adapter near sinks, tubs, toilets, or on floors that are cleaned with liquid cleansers. Liquids can cause a short circuit, particularly if the power cord or power adapter has been stressed by misuse. Liquids also can cause gradual corrosion of power cord terminals and/or the connector terminals on a power adapter, which can eventually result in overheating.

Ensure that all power cord connectors are securely and completely plugged into receptacles.

Do not use any power adapter that shows corrosion at the ac input pins or shows signs of overheating (such as deformed plastic) at the ac input pins or anywhere on the power adapter.

Do not use any power cords where the electrical contacts on either end show signs of corrosion or overheating or where the power cord appears to have been damaged in any way.

To prevent possible overheating, do not cover the power adapter with clothing or other objects when the power adapter is plugged into an electrical outlet.

Extension cords and related devices

Ensure that extension cords, surge protectors, uninterruptible power supplies, and power strips that you use are rated to handle the electrical requirements of the product. Never overload these devices. If power strips are used, the load should not exceed the power strip input rating. Consult an electrician for more information if you have questions about power loads, power requirements, and input ratings.

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Plugs and outlets

DANGER

If a receptacle (power outlet) that you intend to use with your computer equipment appears to be damaged or corroded, do not use the outlet until it is replaced by a qualified electrician.

Do not bend or modify the plug. If the plug is damaged, contact the manufacturer to obtain a replacement.

Do not share an electrical outlet with other home or commercial appliances that draw large amounts of electricity; otherwise, unstable voltage might damage your computer, data, or attached devices.

Some products are equipped with a three-pronged plug. This plug fits only into a grounded electrical outlet. This is a safety feature. Do not defeat this safety feature by trying to insert it into a non-grounded outlet. If you cannot insert the plug into the outlet, contact an electrician for an approved outlet adapter or to replace the outlet with one that enables this safety feature. Never overload an electrical outlet. The overall system load should not exceed 80 percent of the branch circuit rating. Consult an electrician for more information if you have questions about power loads and branch circuit ratings.

Be sure that the power outlet you are using is properly wired, easily accessible, and located close to the equipment. Do not fully extend power cords in a way that will stress the cords.

Be sure that the power outlet provides the correct voltage and current for the product you are installing.

Carefully connect and disconnect the equipment from the electrical outlet.

Power supply statement

DANGER

Never remove the cover on a power supply or any part that has the following label attached.

Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

External devices

CAUTION:
Do not connect or disconnect any external device cables other than Universal Serial Bus (USB) and 1394 cables while the computer power is on; otherwise, you might damage your computer. To avoid possible damage to attached devices, wait at least five seconds after the computer is shut down to disconnect external devices.

General battery notice

DANGER

Batteries supplied by Lenovo for use with your product have been tested for compatibility and should only be replaced with approved parts. A battery other than the one specified by Lenovo, or a disassembled or modified battery is not covered by the warranty.

Battery abuse or mishandling can cause overheat, liquid leakage, or an explosion. To avoid possible injury, do the following:

- **Do not open, dissemble, or service any battery.**
- **Do not crush or puncture the battery.**
- **Do not short-circuit the battery, or expose it to water or other liquids.**
- **Keep the battery away from children.**
- **Keep the battery away from fire.**

Stop using the battery if it is damaged, or if you notice any discharge or the buildup of foreign materials on the battery leads.

Store the rechargeable batteries or products containing the rechargeable batteries at room temperature, charged to approximately 30 to 50% of capacity. We recommend that the batteries be charged about once per year to prevent overdischarge.

Do not put the battery in trash that is disposed of in landfills. When disposing of the battery, comply with local ordinances or regulations.

Notice for built-in rechargeable battery

DANGER

Do not attempt to remove or replace the built-in rechargeable battery. Replacement of the battery must be done by a Lenovo-authorized repair facility or technician.

Only recharge the battery strictly according to instructions included in the product documentation.

The Lenovo-authorized repair facilities or technicians recycle Lenovo batteries according to local laws and regulations.

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Notice for non-rechargeable coin-cell battery

DANGER

Do not attempt to replace the non-rechargeable coin-cell battery. Replacement of the battery must be done by a Lenovo-authorized repair facility or technician.

The Lenovo-authorized repair facilities or technicians recycle Lenovo batteries according to local laws and regulations.

The following statement applies to users in the state of California, U.S.A.

California Perchlorate Information:

Products containing manganese dioxide lithium coin-cell batteries may contain perchlorate.

Perchlorate Material - special handling may apply, See http://www.dtsc.ca.gov/hazardouswaste/perchlorate

Heat and product ventilation

DANGER

Computers, ac power adapters, and many accessories can generate heat when turned on and when batteries are charging. Notebook computers can generate a significant amount of heat due to their compact size. Always follow these basic precautions:

- **When your computer is turned on or the battery is charging, the base, the palm rest, and some other parts may become hot. Avoid keeping your hands, your lap, or any other part of your body in contact with a hot section of the computer for any extended length of time. When you use the keyboard, avoid keeping your palms on the palm rest for a prolonged period of time. Your computer generates some heat during normal operation. The amount of heat depends on the amount of system activity and the battery charge level. Extended contact with your body, even through clothing, could cause discomfort or even a skin burn. Periodically take breaks from using the keyboard by lifting your hands from the palm rest; and be careful not to use the keyboard for any extended length of time.**
- **Do not operate your computer or charge the battery near flammable materials or in explosive environments.**
- **Ventilation slots, fans and/or heat sinks are provided with the product for safety, comfort, and reliable operation. These features might inadvertently become blocked by placing the product on a bed, sofa, carpet, or other flexible surface. Never block, cover, or disable these features.**
- **When the ac power adapter is connected to an electrical outlet and your computer, it generates heat. Do not place the adapter in contact with any part of your body while using it. Never use the ac power adapter to warm your body. Extended contact with your body, even through clothing, may cause a skin burn.**

For your safety, always follow these basic precautions with your computer:

- **Keep the cover closed whenever the computer is plugged in.**
- **Regularly inspect the outside of the computer for dust accumulation.**
- **Remove dust from vents and any perforations in the bezel. More frequent cleanings might be required for computers in dusty or high-traffic areas.**
- **Do not restrict or block any ventilation openings.**
- **Do not operate your computer inside furniture, as this might increase the risk of overheating.**
- **Airflow temperatures into the computer should not exceed 35°C (95°F).**

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Electrical current safety information

DANGER

Electric current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- **Do not use your computer during a lightning storm.**
- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **Whenever possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, battery, and all the cables before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Do not use your computer until all internal parts enclosures are fastened into place. Never use the computer when internal parts and circuits are exposed.**

DANGER

Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To connect:

1. **Turn everything OFF.**
2. **First, attach all cables to devices.**
3. **Attach signal cables to connectors.**
4. **Attach power cords to outlets.**
5. **Turn devices ON.**

To disconnect:

1. **Turn everything OFF.**
2. **First, remove power cords from outlets.**
3. **Remove signal cables from connectors.**
4. **Remove all cables from devices.**

The power cord must be disconnected from the wall outlet or receptacle before installing all other electrical cables connected to the computer.

The power cord may be reconnected to the wall outlet or receptacle only after all other electrical cables have been connected to the computer.

DANGER

During electrical storms, do not perform any replacement and do not connect the telephone cable to or disconnect it from the telephone outlet on the wall.

Liquid crystal display (LCD) notice

CAUTION:
The liquid crystal display (LCD) is made of glass, and rough handling or dropping the computer can cause the LCD to break. If the LCD breaks and the internal fluid gets into your eyes or on your hands, immediately wash the affected areas with water for at least 15 minutes; if any symptoms are present after washing, get medical care.

Note: For products with mercury-containing fluorescent lamps (for example, non-LED), the fluorescent lamp in the liquid crystal display (LCD) contains mercury; dispose of according to local, state, or federal laws.

Using headphones or earphones

CAUTION:
Excessive sound pressure from earphones and headphones can cause hearing loss. Adjustment of the equalizer to maximum increases the earphone and headphone output voltage and the sound pressure level. Therefore, to protect your hearing, adjust the equalizer to an appropriate level.

Excessive use of headphones or earphones for a long period of time at high volume can be dangerous if the output of the headphone or earphone connectors do not comply with specifications of EN 50332-2. The headphone output connector of your computer complies with EN 50332-2 Sub clause 7. This specification limits the computer's maximum wide band true RMS output voltage to 150 mV. To help protect against hearing loss, ensure that the headphones or earphones you use also comply with EN 50332-2 (Clause 7 limits) for a wide band characteristic voltage of 75 mV. Using headphones that do not comply with EN 50332-2 can be dangerous due to excessive sound pressure levels.

If your Lenovo computer came with headphones or earphones in the package, as a set, the combination of the headphones or earphones and the computer already complies with the specifications of EN 50332-1. If different headphones or earphones are used, ensure that they comply with EN 50332-1 (Clause 6.5 Limitation Values). Using headphones that do not comply with EN 50332-1 can be dangerous due to excessive sound pressure levels.

Choking hazard notice

CHOKING HAZARD – Product contains small parts.

Keep away from children under three years.

Plastic bag notice

DANGER

Plastic bags can be dangerous. Keep plastic bags away from babies and children to avoid danger of suffocation.

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Glass parts notice

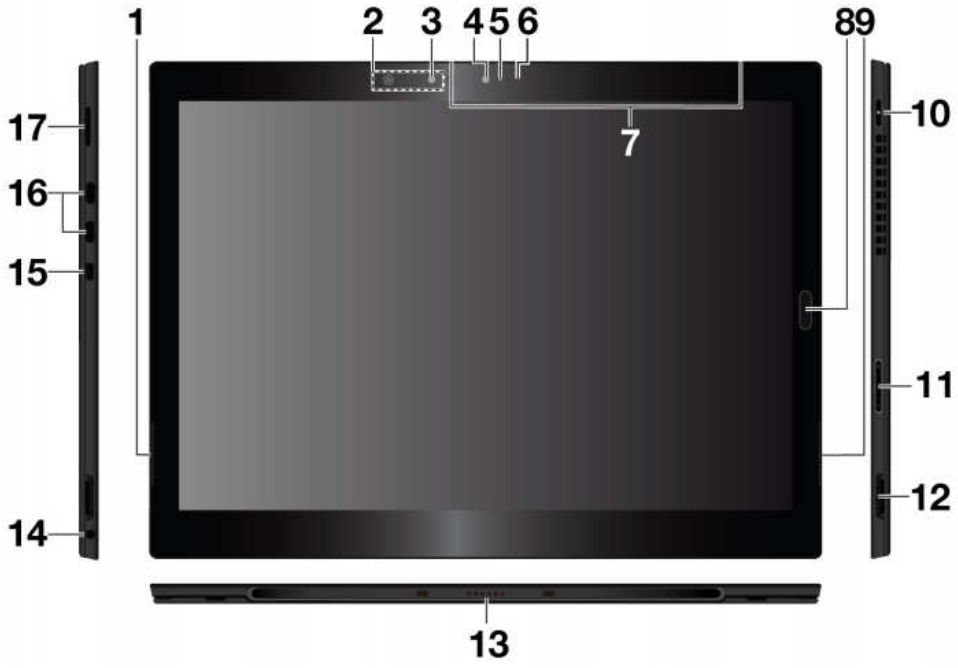
CAUTION:
Some parts of your product may be made of glass. This glass could break if the product is dropped on a hard surface or receives a substantial impact. If glass breaks, do not touch or attempt to remove it. Stop using your product until the glass is replaced by trained service personnel.

Chapter 1. Meeting your 2-in-1 detachable computer

Get an overview of the computer, such as the connectors, indicators, features, specifications, and operating environment.

Note: Your computer might look slightly different from the illustrations in this chapter.

Connectors and indicators



Note: The connectors and indicators shown with an asterisk (*) are available on some models.

1 Left stereo speaker: The stereo speaker provides an immersive music and movie playback experience.

2 NFC touchpoint *: Near field communication (NFC) enables you to transfer data from one device to another by touching them or putting them close together. See “Using NFC devices” on page 14.

3 Infrared camera *: The infrared camera provides a personal and secure way for you to sign in to your computer with face authentication. After setting the infrared camera for face authentication, you can unlock your computer by scanning your face instead of using a password. For more information, see “Using the cameras” on page 19.

4 Front camera and **5 Camera-status indicator**: Use the 2-megapixel front-facing camera to take photos and make videos.

6 Ambient light sensor: Detect the amount of light in the environment and adjust the backlight of the display accordingly.

7 Microphones: Use the microphones to make calls and recordings.

8 Fingerprint reader: Use the fingerprint reader to log in to your computer by swiping your fingerprints instead of entering the password. See “Using the fingerprint reader” on page 18.

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9 Right stereo speaker: The stereo speaker provides an immersive music and movie playback experience.

10 Power button: Press the power button to turn on your computer. You can also use the power button to put it to sleep and wake it.

11 Volume-control buttons: Use these buttons to turn up or turn down the volume of the computer.

12 Pen holder slot: Insert the pen holder into the pen holder slot.

13 Pogo interface connector: Use this connector to attach to a supported keyboard.

14 Audio connector: Connect headphones or a headset to listen to the sound from the computer.

15 Mini security-lock slot: To protect your computer from theft, lock your computer to a desk, table, or other fixtures through a security cable lock designed to fit the mini security-lock slot on your computer.

Note: The slot supports cable locks that conform to the Kensington MiniSaver® lock standards using Cleat™ locking technology. Do not attempt to use other types of cable locks that use a rotating T-bar™ locking mechanism. You are responsible for evaluating, selecting, and implementing the locking device and security feature. Lenovo makes no comments, judgments, or warranties about the function, quality, or performance of the locking device and security feature. Cable locks for your product are available from Lenovo at https://www.lenovoquickpick.com/.

16 USB-C™ connectors (Thunderbolt™ 3 compatible): Use the USB-C connectors to charge your computer and connect to a compatible device to transfer information. The USB-C connectors on your computer support both the USB Type-C™ standard and the Thunderbolt 3 technology. Lenovo provides various USB-C accessories to help you expand your computer functionality. For more information, go to:

http://www.lenovo.com/essentials

Note: When the battery power is below 10%, the USB-C accessories connected to the USB-C connector might not work correctly.

17 Nano-SIM-card and microSD card slot: Use the microSD card (sold separately) to transfer or store files. See “Using a microSD card” on page 16. Use the nano Subscriber Identity Module (SIM) card * to connect to a mobile broadband network. See “Connecting to a wireless network” on page 9.

1 Emergency-reset hole: If your computer stops responding, remove the ac power adapter first, and then insert a straightened paper clip into the emergency-reset hole to reset the computer.

2 and **3 System-status indicators**: The indicator in the ThinkPad logo and the indicator in the power button show the system status of the computer.

- **Blinks three times**: The computer is initially connected to a power source.
- **On**: The computer is on and in use.
- **Off**: The computer is off or in sleep mode.

4 Kickstand: See “Using the kickstand” on page 7.

5 Rear camera: Use the 8-megapixel, high-resolution, rear-facing camera to take photos and make videos.

Features and specifications

Size

- Width: 304.1 mm (11.97 inches)
- Depth: 226 mm (8.90 inches)
- Thickness
  - Without the optional thin keyboard: 8.9 mm (0.35 inches)
  - With the optional thin keyboard: 14.4 mm (0.57 inches)

Note: The features shown with an asterisk (*) are available on some models.

Microprocessor and memory

To view the microprocessor and memory information, open the Start menu and tap **Settings → System → About**.

Display

- Size: 330.2 mm (13 inches)
- Screen resolution: 3000 x 2000 pixels
- Automatic brightness control (ambient light sensor)
- Anti-fingerprint and In-Plane Switching (IPS) technology
- Multi-touch technology

Cameras

- Front camera, 2 megapixels
- Infrared camera *
- Rear camera, 8 megapixels without flash

Connectors and slots

- Combo audio connector
- Two USB-C connectors (Thunderbolt 3 compatible)
- Pogo interface connector (for ThinkPad X1 Tablet Gen 3 Thin Keyboard)
- microSD card and Nano SIM card slot
- Pen holder slot
- Mini security-lock slot

Security features

- Fingerprint reader
- Password
- Mini security-lock slot
- Trusted Platform Module (TPM) *

Wireless features

- Bluetooth 4.1
- Global Positioning System (GPS) *
- Near field communication (NFC) *
- Wireless local area network (WLAN)
- Wireless wide area network (WWAN) *

Power source (ac power adapter)

- Sine-wave input at 50 Hz to 60 Hz
- Input rating of the ac power adapter: 100 V ac to 240 V ac
- 42 Wh Li-ion battery

Operating environment

Maximum altitude without pressurization

5000 m (16 404 ft)

Temperature

- At altitudes up to 2438 m (8000 ft)

  Operating: 5.0°C to 35.0°C (41°F to 95°F)

  Storage: 5.0°C to 43.0°C (41°F to 109°F)
- At altitudes above 2438 m (8000 ft)

  Maximum temperature when operating under unpressurized conditions: 31.3°C (88°F)

Relative humidity

- Operating: 8% to 95%
- Storage: 5% to 95%

If possible, place your computer in a dry, well-ventilated area without direct exposure to sunshine. Do not use or store your computer in dusty, dirty areas, or extremely hot or cold areas.

Customer Replaceable Units

Customer Replaceable Units (CRUs) are parts that can be upgraded or replaced by the customer. ThinkPad computers contain the following types of CRUs:

- **Self-service CRUs:** Refer to parts that can be installed or replaced easily by customer themselves or by trained service technicians at an additional cost.
- **Optional-service CRUs:** Refer to 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 on installing the CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. 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. See your Lenovo Limited Warranty documentation at http://www.lenovo.com/warranty/llw_02 for full details.

For the CRU information of your computer, refer to the following list.

Self-service CRUs

- Lenovo USB-C 45W AC Adapter and Power Cord *
- Lenovo USB-C 65W AC Adapter and Power Cord *

Note: The CRUs shown with an asterisk (*) are available on some models.

Depending on the model, your computer might come with some optional accessories. The optional accessories are all self-service CRUs.

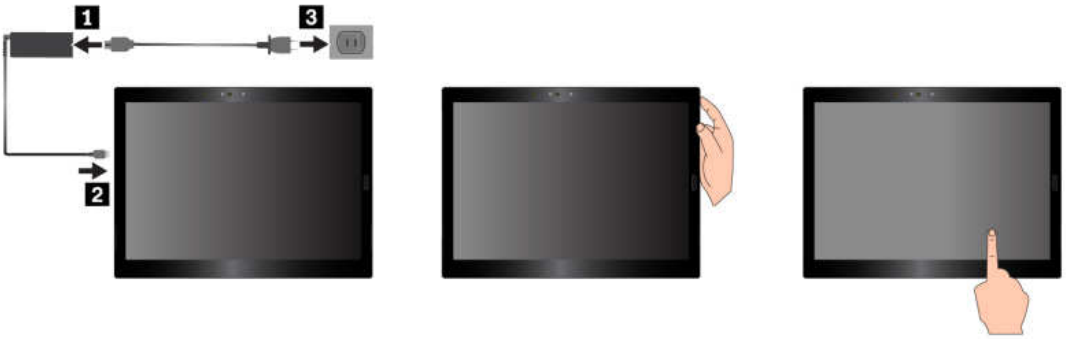
Chapter 2. Getting Started

Learn the basics to get started with your computer. Follow the instructions to set up your computer, use the multi-touch screen, connect to a network, and put your computer into proper power modes.

Setting up your computer

When you use the computer for the first time, do the following to complete the initial setup:

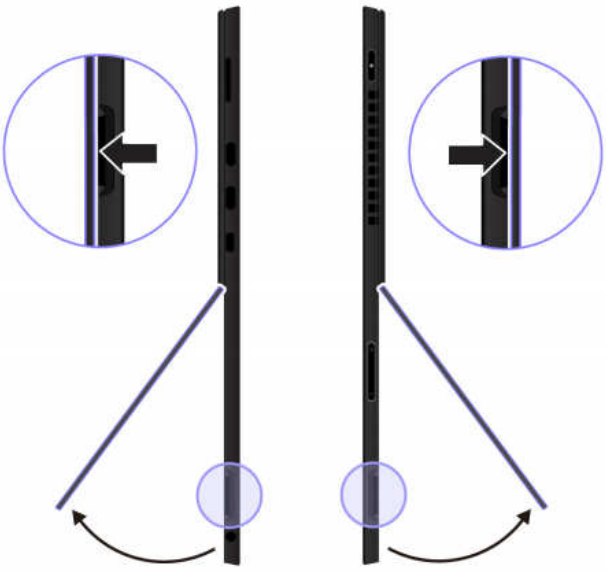
1. Connect your computer to ac power.
2. Press the power button to turn on the computer.
3. Follow the instructions on the screen to complete the initial setup.



Note: If you have an optional pen, keyboard, or dock, refer to Chapter 4 “Accessories” on page 25 for information about attaching and using these accessories.

Using the kickstand

Your computer has a built-in kickstand. Pivot the kickstand from pits on both sides of the computer as shown to the open position.



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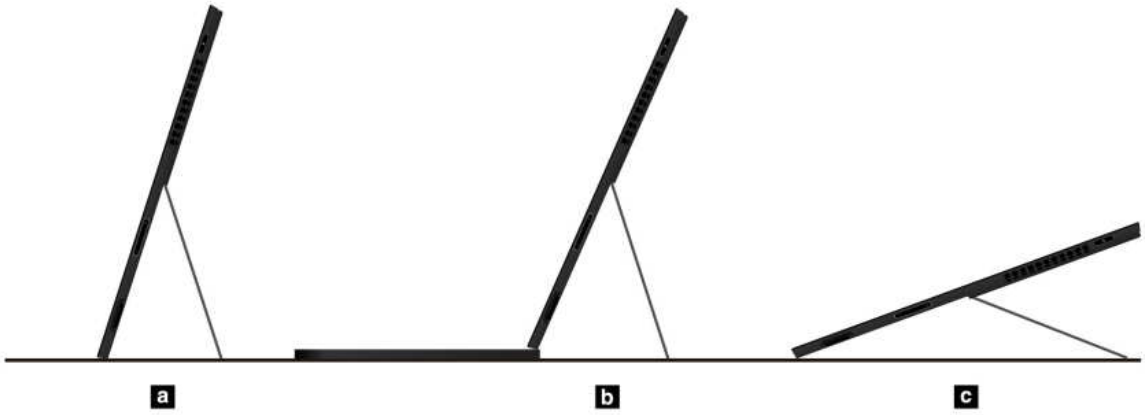
With the kickstand open, you can use the computer in the following modes.

- a Stand mode without ThinkPad X1 Tablet Gen 3 Thin Keyboard attached
- b Stand mode with ThinkPad X1 Tablet Gen 3 Thin Keyboard attached
- c Stylus mode



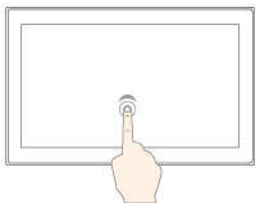
The kickstand is multi-positional. You can adjust the kickstand to various angles for your most comfortable using experience.

Using the multi-touch screen

Use the touch gestures to interact with your computer.

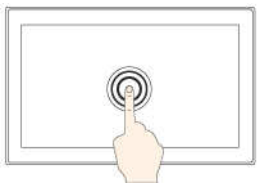
This section introduces only the most frequently used gestures. For a whole list of supported gestures, refer to the Windows® help information. See “Getting help about the Windows operating system” on page 21.

Note: Some gestures are supported only on certain apps.



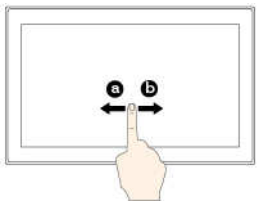
Tap

Tap on the screen to open, select, or activate the item you tap.



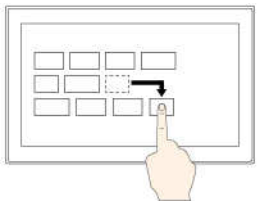
Tap and hold

Tap and hold on the screen to open a menu with multiple options.



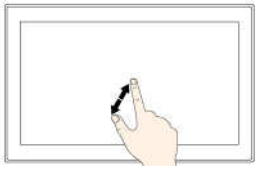
Slide

Slide leftward or rightward on the screen to scroll through items, such as lists, pages, and photos.



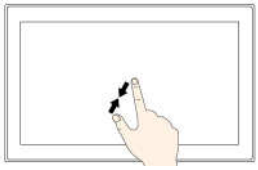
Drag

Drag an item to the desired location to move an object.



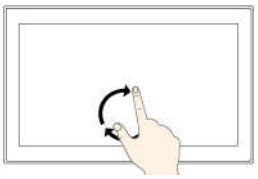
Zoom in

Put two fingers on the screen and move them farther apart to zoom in.



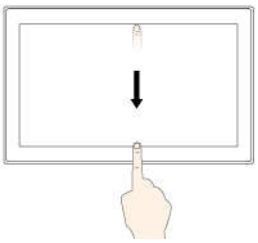
Zoom out

Put two fingers on the screen and move them closer together to zoom out.



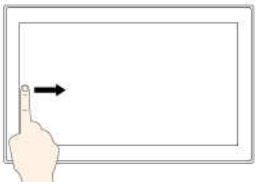
Rotate

Put two or more fingers on an item, and then rotate your fingers clockwise or counterclockwise.



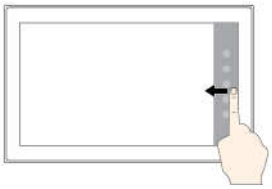
Swipe in from the top edge to the bottom edge

Close the current full-screened app.



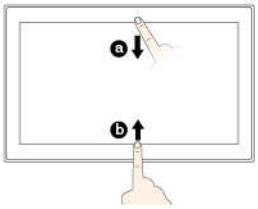
Swipe in from the left edge

View all your open apps in task view.



Swipe in from the right edge

Open the action center.



Swipe in shortly from the top or bottom edge

- From the top: Show the hidden title bar in full-screened apps.
- From the bottom: Show the taskbar in full-screened apps.

Tips on using the multi-touch screen

- The multi-touch screen is a glass panel covered with a plastic film. Do not apply pressure or place any metallic object on the screen that might damage the touch panel or cause it to malfunction.
- Do not use fingernails, gloved fingers, or inanimate objects other than an approved ThinkPad Pen Pro for input on the screen.

Tips on cleaning the multi-touch screen

- Turn off the computer before cleaning the multi-touch screen.
- Use a dry, soft, and lint-free cloth or a piece of absorbent cotton to remove fingerprints or dust from the multi-touch screen. Do not apply solvents to the cloth.
- Gently wipe the screen using a top-down motion. Do not apply any pressure on the screen.

Connecting to a wireless network

Connect your computer to the Internet or other wireless networks so that you can browse on your computer and share information.

Your computer supports the following wireless networks:

- **Wi-Fi® network**

The Wi-Fi feature provides network access at distances of up to 100 meters (328 feet) depending on the Wi-Fi router and your surroundings. Your computer is installed with a wireless-LAN card to support the Wi-Fi connection. The quality of the Wi-Fi signal is affected by the number of connected devices, the infrastructure, and the objects through which the signal is transmitted.

- **Mobile broadband network** (supported by some models)

  The mobile broadband feature enables you to connect to the Internet from any location where cellular service is available. Mobile broadband connections use 3G, 4G, or LTE cellular and mobile networks, just as phones do. Mobile broadband connection is supported only on computer models with a wireless-WAN card installed.

  A nano-SIM card or an external mobile broadband device is required to connect to a mobile broadband network.

Your computer also supports Bluetooth and NFC wireless communications. For more information, see “Using NFC devices” on page 14 and “Using Bluetooth devices” on page 14.

To join a wireless network:

1. Tap the wireless-network icon in the Windows notification area. A list of available wireless networks is displayed.

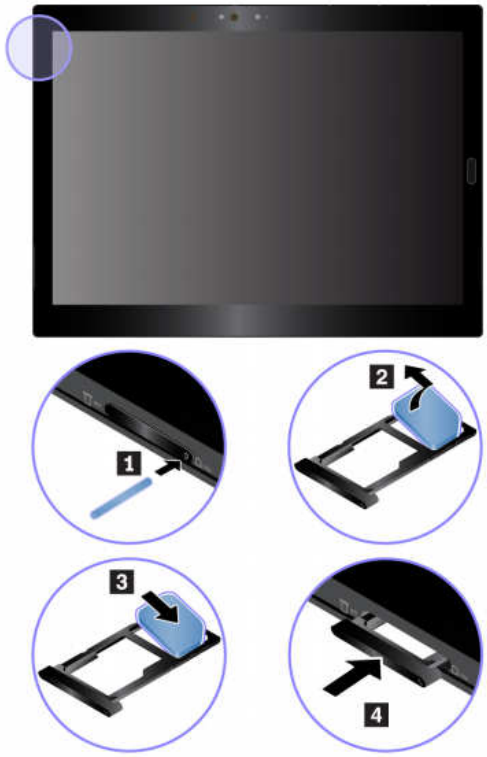
   Note: If the **Airplane mode** control is on, or the **Wi-Fi** control or **Mobile broadband** control is off, the list might not be displayed. Tap the corresponding control to display the list.
2. Tap a network to join it. For secured networks, enter the valid password when prompted.

To replace or install a nano-SIM card:

The nano-SIM-card and microSD card slot is on the left side of the computer. Before you start, turn off the computer.

1. Insert a straightened paper clip into the hole in the tray 1. The tray ejects. Then, slide the tray out of the computer. If a nano-SIM card is installed, gently take the nano-SIM card out of the tray 2.

2. Install a new nano-SIM card into the tray with the metal contacts facing downward 3. Insert the tray into the nano-SIM-card and microSD card slot until you hear a click 4. Ensure that the new nano-SIM card is installed in correct orientation.



Connecting to a wired network

You might need to use a wired network connection through an Ethernet cable when downloading large files. Depending on the model, your computer might come with a ThinkPad USB C Ethernet Adapter. Use this adapter to connect your computer to a wired network. You can also purchase it from:

http://www.lenovo.com/essentials

To connect to a wired network:

1. Connect the ThinkPad USB C Ethernet Adapter to one of the USB-C connectors (Thunderbolt 3 compatible) on your computer.
2. Connect an Ethernet cable into the ThinkPad USB C Ethernet Adapter.
3. Tap the wired network icon in the Windows notification area, and enter the user name and password if needed.

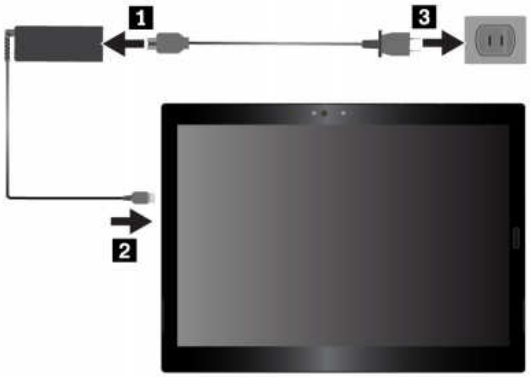
Charging the computer

Attention: Use only Lenovo-approved ac power adapters. Unauthorized ac power adapters could severely damage the computer.

To charge your computer:

1. Connect the power cord to the ac power adapter.
2. Connect the ac power adapter to one of the USB-C connectors (Thunderbolt 3 compatible) on your computer.

3. Connect the power cord to a proper electric outlet.



Power button and power settings

If you will not use the computer for a period of time, put the computer into sleep mode or turn off the computer to save power. You also can adjust the power settings to achieve the best balance between performance and power saving.

Putting your computer into sleep mode and waking up your computer

If you are not going to use the computer for just a few minutes, put your computer into sleep mode to lock it and save power.

To put your computer into sleep mode, open the Start menu, then tap **Power → Sleep**.

To wake up your computer from sleep mode, press the power button.

Turning off and turning on your computer

If you are not going to use the computer for long periods, turn off your computer to save power.

To turn off your computer, open the Start menu, then tap **Power → Shut down**.

To turn on your computer, press and hold the power button.

Adjusting the power settings

To achieve the best balance between performance and power saving, adjust your power settings.

To adjust power settings, do the following:

1. Go to Control Panel. For information about accessing Control Panel, see “Accessing computer settings” on page 21.
2. Tap **System and Security → Power Options**.
3. Follow the instructions on the screen.

Chapter 3. Using your computer

Learn the skills to make the best use of your computer such as using Lenovo apps, connecting an NFC device, and using the fingerprint reader.

Registering your computer

To register your computer with Lenovo, do one of the following:

- Use Lenovo Companion. For information about accessing Lenovo Companion, see “Discovering Lenovo apps” on page 13.
- Go to http://www.lenovo.com/register and follow the instructions on the screen.

Discovering Lenovo apps

Lenovo provides some apps to help you work more easily and securely. Preinstalled Lenovo apps are subject to change. To explore more Lenovo apps, go to http://www.lenovo.com/support.

Lenovo Companion	Your computer’s best features and capabilities should be easy to access and understand. With Lenovo Companion, they are. Use Lenovo Companion to do the following: • Optimize your computer performance, monitor your computer health, and manage updates. • Access your user guide, check warranty status, and view accessories customized for your computer. • Read how-to articles, explore Lenovo forums, and stay up-to-date on technology news with articles and blogs from trusted sources. • Configure hardware settings. • Create and manage your Lenovo ID. This app is filled with exclusive Lenovo content to help you learn more about what you can do with your Lenovo computer.

To access Lenovo apps:

1. Open the Start menu.
2. Tap a Lenovo app to open it.
3. If the app you want to use is not displayed, try searching for it in the search box.

Using an external display

Connect your computer to an external display to share a presentation or work with multiple applications.

Supported external displays

Your computer supports the following external displays:

- Only one Thunderbolt 3 external display (5120 x 2280 pixels / 60 Hz) connected to the USB-C connector
- Up to two USB-C or Thunderbolt 3 external displays (up to 4096 x 2304 pixels / 60 Hz) connected to the USB-C connectors

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For more information about the external display, see the manuals that come with it.

Connecting to a wireless display

To connect to a wireless display, do the following:

1. Open the Start menu.
2. Tap **Settings → Devices → Connected devices → Add a device**.
3. Follow the instructions on the screen.

Connecting to a wired display

Your computer has two USB-C connectors (Thunderbolt 3 compatible). You can connect the computer to a VGA-compatible or HDMI-compatible external display through one of the following adapters:

- Lenovo USB C to HDMI plus Power Adapter
- Lenovo USB C to VGA plus Power Adapter

If your computer does not come with these adapters, you can purchase them from the Lenovo Web site at:

http://www.lenovo.com/essentials

Choosing a display mode

You can display your desktop and apps on the computer, the external display, or both.

To choose how to display the video output, do the following:

1. Open the Start menu.
2. Tap **Settings → System → Display**.
3. Follow the instructions on the screen to select a presentation scheme.

Using Bluetooth devices

Bluetooth is a short-range wireless communications technology. Use Bluetooth to establish a wireless connection between your computer and another Bluetooth-enabled device within a distance of about 10 m (32.8 ft).

To pair your computer with a Bluetooth device:

1. Turn on the Bluetooth device and make it discoverable. For more information, see the document that comes with the Bluetooth device.
2. Open the Start menu, then tap **Settings → Devices → Bluetooth**. Then tap the Bluetooth control to turn it on. A list of available Bluetooth devices is displayed.
3. Select the target Bluetooth device and tap **Pair**.

Using NFC devices

Depending on the model, your computer might come with the NFC feature. NFC is a high-frequency and short-range wireless communications technology. By using the NFC feature, you can establish radio communications between your computer and another NFC-enabled device over a distance no more than a few centimeters. Some Lenovo apps are using the NFC feature.

This section provides the basic instructions on paring your computer with an NFC device. For more information about data transfer, refer to the documentation of the NFC device.

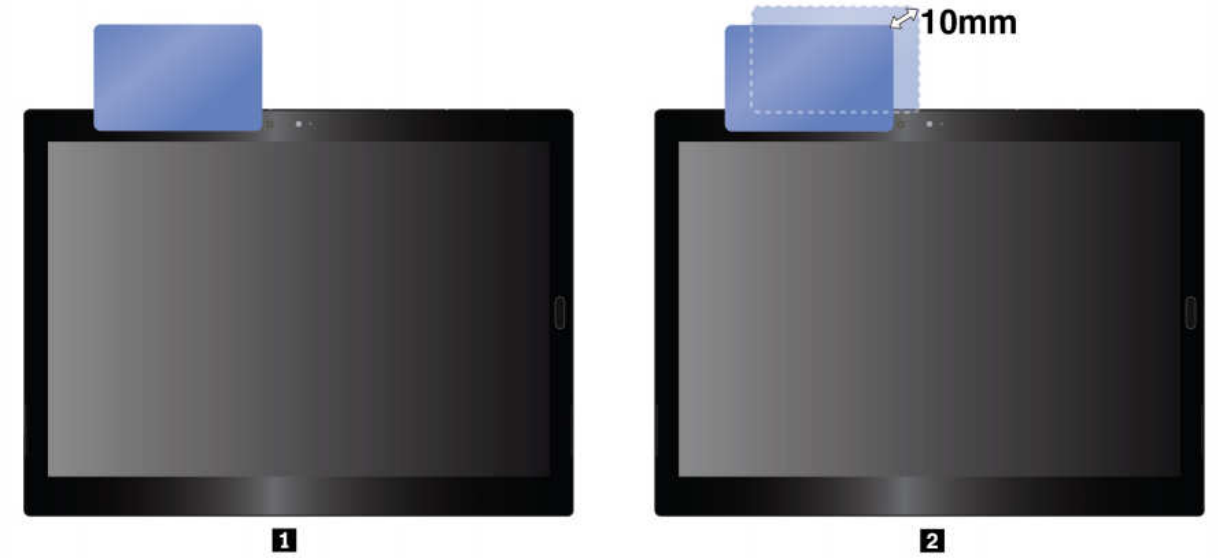
Attention:

- Before handling the NFC card, touch a metal table or a grounded metal object. Otherwise the card might get damaged by the static electricity from your body.
- During the data transfer, do not put your computer or NFC-enabled smartphone into sleep mode; otherwise, your data could get damaged.

To pair your computer with an NFC card:

Before you start, ensure that the card is in NFC Data Exchange Format (NDEF), otherwise the card cannot be detected.

1. Tap the card on the NFC touchpoint as shown.
2. Slowly move the card in the upright direction within a 10 mm (0.39 inches) distance. Then hold the card for seconds until you are prompted that the card has been successfully detected.



To pair your computer with an NFC-enabled smartphone:

Before you start, ensure that the smartphone screen is facing upward.

1. Tap the smartphone on the NFC touchpoint as shown.
2. Slowly move the smartphone in the upright direction within a 10 mm (0.39 inches) distance. Then hold the smartphone for seconds until you are prompted that the smartphone has been successfully detected.

Enabling the NFC feature

In case that the NFC feature of your computer is disabled, do the following to enable the NFC feature:

1. Open the Start menu .
2. Tap **Settings → Network & Internet → Airplane mode**.
3. Tap the **NFC** control to turn it on.

If you still cannot enable the NFC feature, check the **NFC** setting in the ThinkPad Tablet Setup app by doing the following:

1. Open the ThinkPad Tablet Setup app. See “ThinkPad Tablet Setup app” on page 43.
2. Tap **Security → I/O Port Access**.
3. Set the **NFC** option to **On**.

Using a microSD card

Your computer has a nano-SIM-card and microSD card slot on the left side of the computer. The slot supports the following types of Secure Digital (SD) cards:

- Secure Digital eXtended-Capacity (SDXC) card
- Secure Digital (SD) card
- Secure Digital High-Capacity (SDHC) card

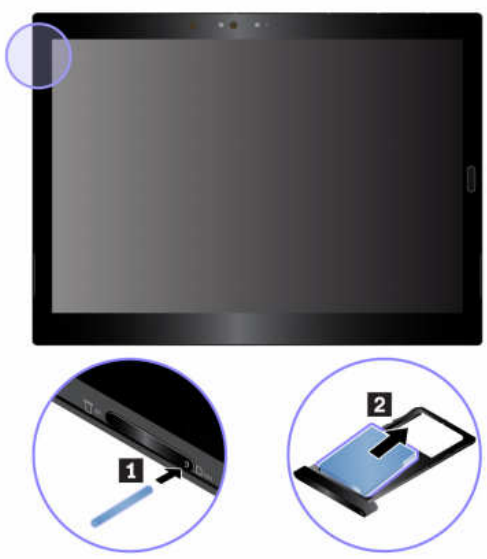
This section provides the basic instructions on installing and removing the microSD card. For more information about data transfer, refer to the documentation of the microSD card.

Attention:

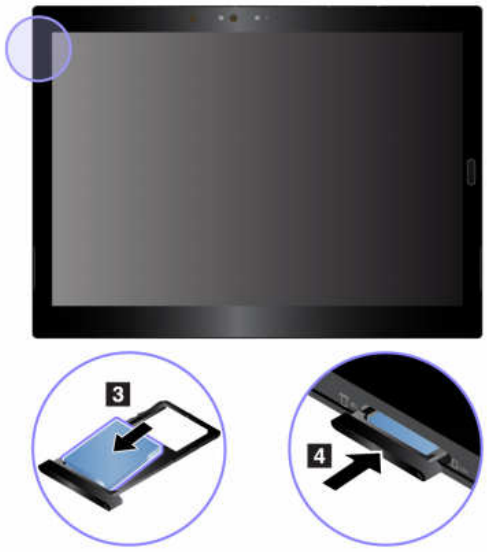
- Before handling the microSD card, touch a metal table or a grounded metal object. Otherwise the card might get damaged by the static electricity from your body.
- During the data transfer, do not put your computer into sleep mode; otherwise, your data could get damaged.

To replace or install a microSD card:

1. Insert a straightened paper clip into the hole in the tray 1. The tray ejects. Then, slide the tray out of the computer. If a microSD card is installed, gently take the microSD card out of the tray 2.



2. Install a new microSD card into the tray with the metal contacts facing downward 3. Insert the tray into the nano-SIM-card and microSD card slot until you hear a click 4. Ensure that the new microSD card is installed in correct orientation.



Using the fingerprint reader

With fingerprint authentication, you can log in to your computer by swiping your fingerprints instead of entering the password.

Enrolling your fingerprints

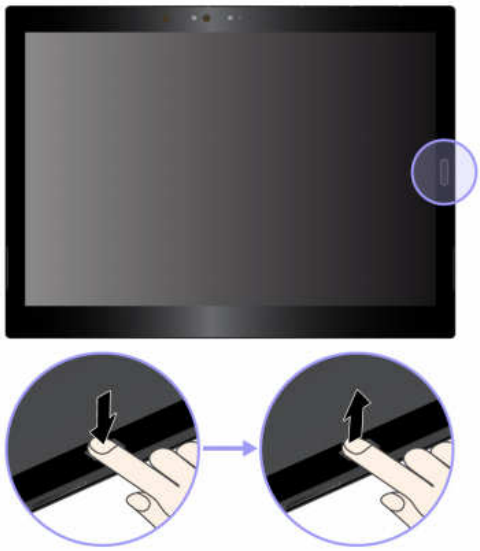
To enable fingerprint authentication, enroll your fingerprints first by doing the following:

Note: It is recommended that you enroll more than one fingerprint in case of any injuries to your fingers.

1. Open the Start menu, then tap **Settings → Accounts → Sign-in options**.
2. Follow the instructions on the screen to enroll your fingerprint.

When you scan your finger over the fingerprint reader, note the following:

1. Tap the fingerprint reader with the top joint of your finger and hold your finger there for one or two seconds with a little pressure.
2. Lift your finger to complete one scan.



Tips on using the fingerprint reader

- The following actions could damage the fingerprint reader or cause it to malfunction:
  - Scratching the surface of the reader with a hard and pointed object
  - Scraping the surface of the reader with your fingernail or anything hard
  - Using or touching the reader with a dirty finger
- You might not be able to register or authenticate your fingerprints in the following situations:
  - Your finger is wrinkled.
  - Your finger is rough, dry, or injured.
  - Your finger is stained with dirt, mud, or oil.
  - Your finger is wet.
  - You used a finger that had not been enrolled.

  To resolve the problem, try the following:

- Clean or wipe your hands to remove any excess dirt or moisture from the fingers.
- Enroll and use a different finger for authentication.

- If you notice any of the following conditions, gently clean the surface of the reader with a dry, soft, and lint-free cloth:
  - The surface of the reader is dirty or stained.
  - The surface of the reader is wet.
  - The reader often fails to enroll or authenticate your fingerprint.

Using the cameras

Your computer might be equipped with three cameras, a front camera, a rear camera, and an infrared camera.

Using the conventional camera

You can use the conventional camera to take pictures and record videos. To start the camera, open the Start menu, and tap **Camera**. When the camera starts, the green camera-in-use indicator turns on.

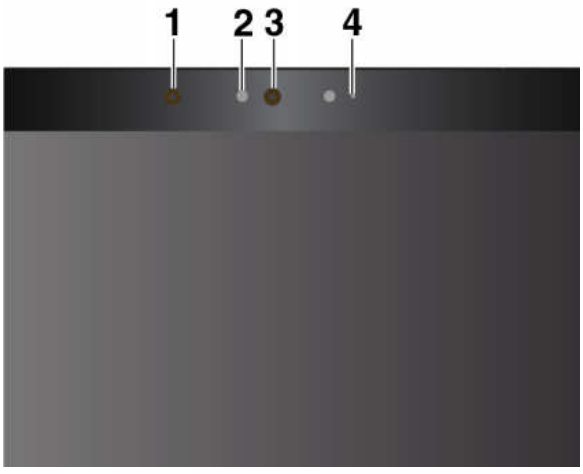
You can configure the camera settings to meet your needs, such as adjusting the video output quality. To configure the camera settings, do one of the following:

- Open the **Camera** app, and click the settings icon in the upper-right corner. Follow the instructions on the screen to configure the camera settings.
- Open the Start menu and tap **Lenovo Companion** → **Hardware Settings** → **Display, Camera & Audio/ Media**. Locate the **Camera** section and then follow the instructions on the screen to configure the camera settings.

Using the infrared camera

The infrared camera provides a personal and secure way for you to sign in to your computer with face authentication. After setting the infrared camera for face authentication, you can unlock your computer by scanning your face instead of using a password.

The infrared camera has the following components:



1 3 Infrared light-emitting diode (LED)

The infrared LED emits infrared light. Normally the infrared light is invisible to the naked eyes.

2 Infrared camera lens

The infrared camera lens is used for creating the facial image of a user.

4 Camera indicator

When the camera indicator is on, the infrared camera is in the recognition mode.

To set the infrared camera for face authentication, do the following:

1. Open the Start menu and tap **Settings → Accounts → Sign-in options**.
2. Scroll down to the **Password** section and click **Add** to create a password.
3. Follow the instructions on the screen to create a Personal Identification Number (PIN).
4. Locate the **Windows Hello** section and click **Set up** under **Face** and then click **Get Started**.
5. Enter the PIN you have set earlier. The camera preview starts.
6. Follow the instructions on the screen to complete the setup.
7. Tap **Improve Recognition** to improve the image so that **Windows Hello** can recognize you in different light conditions or when your appearance changes.

To use the infrared camera to unlock your computer, do the following:

1. On the Windows lock screen, select the smiling face icon from the sign-in options.
2. Follow the instructions on the screen and ensure that you are centered and looking directly at the camera. When the program recognizes your face, it automatically unlocks the screen and signs you in to the Windows operating system.

Using passwords

You can set a supervisor password to prevent your computer from unauthorized use.

The supervisor password protects the system information stored in the ThinkPad Tablet Setup app. If only a supervisor password is set, a password prompt is displayed when you try to start the ThinkPad Tablet Setup app. Unauthorized users cannot change most of the system configuration options in the ThinkPad Tablet Setup app without the password.

The system administrator can set the same supervisor password on many computers to make administration easier. It is recommended that you record your password and store it in a safe place. If you forget your supervisor password, Lenovo cannot reset your password. You must take your computer to a Lenovo reseller or a Lenovo marketing representative to have the system board replaced. Proof of purchase is required, and a fee will be charged for parts and service.

To set, change, or remove a password:

Note: Before you start, print these instructions and the instructions on “ThinkPad Tablet Setup app” on page 43. You also can screen-capture the instructions and send the pictures to your smartphone or computer so that you can view the instructions during operation.

1. Save all open files, and exit all apps.
2. Open the ThinkPad Tablet Setup app. See “ThinkPad Tablet Setup app” on page 43.
3. Tap **Security → Password**.
4. Tap **Enter** next to the supervisor password item and follow the instructions on the screen.
5. Save configuration changes and exit.

Accessing computer settings

Personalize your computer by changing the system and device settings so that you can get the best use of your computer.

To access quick settings:

- Open the action center . The key settings are displayed at the bottom.

To access Control Panel:

- Tap and hold on the taskbar, and then tap **Control Panel** from the pop-up menu.
- Open the Start menu , then tap **Windows System → Control Panel**.

Getting help about the Windows operating system

Your computer is preinstalled with the Window operating system. To get help about this operating system, read the following instructions.

To get quick help:

- Open the Start menu , then tap **Get Started**.

To get comprehensive help content:

- Search whatever you want to know in the Search box on the taskbar, or ask Cortana® personal assistant.

  Note: Cortana is your personal assistant for Windows. Cortana is available in some countries or regions.

Using your computer more comfortably

With the help of all the conveniences and powerful features of your computer, you can carry your computer all day long at many places. Therefore it is important that you remain attentive to good posture, good lighting, and proper seating to achieve greater comfort with your computer.

Active sitting and rest breaks: The longer you sit and work with your computer, the more important it is to observe your working posture. Make minor voluntary postural changes and take frequent, short breaks when you use the computer for a long time. Your computer is a light and mobile system; remember that it can easily be repositioned to accommodate many posture modifications you might wish to make.

Work area setup options: Familiarize yourself with all of your office furniture so that you know how to adjust your work surface, seat, and other work tools to accommodate your preferences for comfort. If your work area is not in an office setting, be sure to take special note of employing active sitting and utilizing work breaks. There are many ThinkPad product solutions available to help you modify and expand your computer to best suit your needs. Explore your options for docking solutions and external products that can provide the adjustability and features you want. To view some of these options, go to:

http://www.lenovo.com/essentials

Traveling with your computer

The following tips help you travel more comfortably and securely with your computer.

Tips on anti-theft and anti-damage

- While it is safe to allow your computer to go through the x ray machines at airport security stations, it is important to keep your eyes on the computer at all times to prevent theft.
- Put your computer in a protective case when not in use to prevent damage or scratching.

Tips on airline traveling

- Be careful about the seat in front of you on the airplane. Place your computer in a safe position so that it does not get caught when the person in front of you leans back.
- If you want to use the wireless service, check with the airline for any restrictions before boarding the airplane.
- If there are restrictions on the use of computers with wireless features on an airplane, enable the Airplane mode. So that all wireless connections are disabled. To enable the Airplane mode, do the following:
  1. Tap the wireless-network icon on the taskbar.
  2. Tap the **Airplane mode** control to disable all wireless connections.

Taking care of your computer

Handle your computer with care so that you can enjoy this product for a long time.

Cleaning your computer

To clean your computer, unplug all cables and turn off the computer by pressing and holding the power button for a few seconds. Then wipe the computer screen with a soft, lint-free, and dry cloth to clear stains and smudges.

Do not use screen cleaners, household cleaners, aerosol sprays, solvents, alcohol, ammonia, or abrasives to clean your computer.

Protecting the screen with a replaceable film

You can purchase a replaceable film to protect the screen from scratching and extend the life of your computer. To use a replaceable film, clean the screen first and then apply the replaceable film on the screen.

Storing the computer for extended periods

If you are not going to use your computer for an extended period of time, remove the nano-SIM card from your computer. Pack your computer with a protective case and store it in a well-ventilated and dry area without direct exposure to sunshine.

Prevent your computer and adapter from getting wet

Do not immerse your computer in water or leave it in a location where it can get saturated with water or other liquids.

Protect the cables from being damaged

Applying strong force to cables may damage or break them. Route communication lines, or the cables of an ac power adapter, a mouse, a keyboard, a printer, or any other electronic device, so that they cannot be walked on, tripped over, pinched by your computer or other objects, or in any way subjected to treatment that could interfere with the operation of your computer.

Carry your computer carefully

Use a quality carrying case that provides adequate cushioning and protection. Do not pack your computer in a tightly packed suitcase or bag. Before putting your computer in a carrying case, make sure that the computer is off or in sleep mode. Do not put a computer in a carrying case while it is on.

Handle your computer with care

Do not drop, bend, puncture, insert foreign objects into, or place heavy objects on your computer. Sensitive components inside might get damaged.

Take care when using your computer in a motor vehicle or on a bicycle

Always prioritize your safety and the safety of others. Follow the law. Local laws and regulations might govern how you can use mobile electronic devices, such as your computer, while you drive a motor vehicle or ride a bicycle.

Protect your data and software

Do not delete unknown files or change the name of files or directories that were not created by you; otherwise, your computer software might fail to work.

Be aware that accessing network resources can leave your computer vulnerable to viruses, hackers, spyware, and other malicious activities that might damage your computer, software, or data. It is your responsibility to ensure that you have adequate protection in the form of firewalls, antivirus software, and anti-spyware software and keep this software up to date.

Keep electrical appliances such as an electric fan, radio, high-powered speakers, air conditioner, and microwave oven away from your computer. The strong magnetic fields generated by these appliances can damage the screen and the data on the computer.

Chapter 4. Accessories

The following accessories are designed to enhance your experience with the computer:
- ThinkPad X1 Tablet Gen 3 Thin Keyboard
- Lenovo Active Pen and pen holder
- Lenovo Pen Pro and pen holder
- ThinkPad USB-C Dock

Finding ThinkPad options

Depending on the model, your computer might not come with certain accessories. You can purchase the accessories from the Lenovo Web site at:

http://www.lenovo.com/essentials

ThinkPad X1 Tablet Gen 3 Thin Keyboard

Depending on the model, your computer might come with a ThinkPad X1 Tablet Gen 3 Thin Keyboard (referred to as Thin Keyboard). Attach the keyboard to your computer so that you can transform your computer into a portable notebook computer.

Overview

Note: Depending on the model, the Thin Keyboard might look different from the illustrations in this topic.

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ThinkPad X1 Tablet Gen 3 Thin Keyboard overview

1 Pogo cover with guide pins: The pogo cover with guide pins enables you to attach the keyboard to your computer magnetically.

2 TrackPoint® pointing device: The TrackPoint pointing device enables you to perform all the functions of a traditional mouse, such as pointing, clicking, and scrolling.

3 Trackpad: The trackpad is a pointer-positioning device that enables you to point, select, and scroll, like you do with a traditional mouse. You also can use the trackpad to perform basic touch gestures.

4 Special keys: The special keys provide quick access to certain apps and functions such as adjusting the speaker volume.

Attaching the Thin Keyboard to your computer

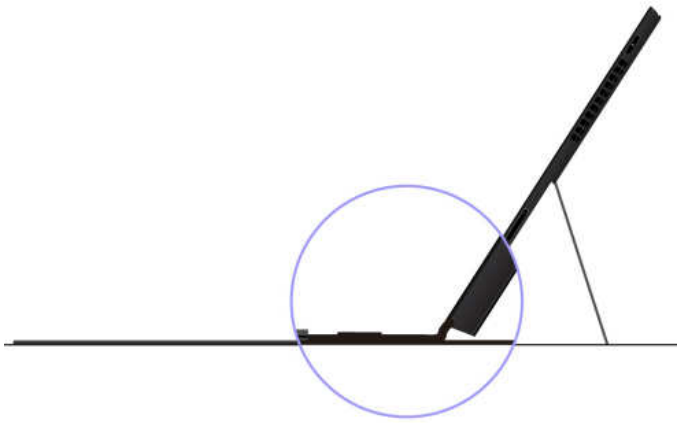
The Thin Keyboard magnetically attaches to your computer as shown by bringing the two close together. When the Thin Keyboard gets close enough, it aligns and snaps into place. You can easily remove the Thin Keyboard by pulling it away.

Using the Thin Keyboard

With the Thin Keyboard attached to your computer, you can use the Thin Keyboard in the following modes.

Lay-flat mode

Keep the Thin Keyboard laid flat on the table surface as shown.



Tilt mode

Fold the living hinge as shown. The magnetic bars on the living hinge attach to the computer automatically. The angle between the Thin Keyboard and the table surface is about 6.5 degrees to 7.0 degrees.

Cover mode

Close the Thin Keyboard as shown to put the computer into sleep mode and protect the touch screen. To wake up the computer from sleep mode, open the Thin Keyboard and do any of the following:

- Press the power button

- Press the Fn key

Using the special keys

Your Thin Keyboard has several special keys to help you work more easily and effectively. Press a special key to control the associated function.

ThinkPad X1 Tablet Gen 3 Thin Keyboard

- Fn + Esc FnLock Switch the key function between the standard F1–F12 function and the special function printed as an icon on each key. When the Fn Lock indicator is off, you can use the default function. You can change the default function in the Keyboard Properties window by doing the following:
  1. Go to Control Panel, then change the view of Control Panel from Category to Large icons or Small icons.
  2. Click **Lenovo - Keyboard Manager** and the Keyboard Manager window is displayed.
  3. Select the options of your preference.
- F1 Mute or unmute the speakers. When the speakers are muted, the indicator on the key is on.

  If you mute the sound and turn off your computer, the sound remains muted when you turn on your computer again. To turn on the sound, press the volume-down key F2 or the volume-up key F3.
- F2 Decrease the speaker volume.
- F3 Increase the speaker volume.
- F4 Mute or unmute the microphones. When the microphones are muted, the indicator on the key is on.
- F5 Darken the computer display.
- F6 Brighten the computer display.
- F7 Manage external displays.
- F8 Enable or disable wireless features.
- F9 Open the Settings window.
- F10 Enable or disable the built-in Bluetooth features.

- Open a keyboard setting page.
- Invoke the function defined by yourself.

  To define or change the action for the F12 key, do the following:

  1. Open Lenovo Companion. See “Discovering Lenovo apps” on page 13.
  2. Click **Hardware Settings** and then click the input icon .
  3. Locate the **Keyboard: User-defined Key** section and follow the instructions on the screen to complete the setting.

  On the **Input** page, you can also define different functions for the key combinations with F12, such as Shift +F12, Alt+F12, or Ctrl+F12.
- Open the Snipping Tool program.

Key combinations

- **Fn+Spacebar:** If your Thin Keyboard supports keyboard backlight, press Fn+Spacebar to switch between the different keyboard backlight status (off, low, or high).
- **Fn+B:** This key combination has the same function as the Break key on a conventional keyboard.
- **Fn+K:** This key combination has the same function as the ScrLK key on the conventional keyboard.
- **Fn+P:** This key combination has the same function as the Pause key on the conventional keyboard.
- **Fn+S:** This key combination has the same function as the SysRq key on the conventional keyboard.
- **Fn+End** This key combination has the same function as the Insert key on the conventional keyboard.
- **Fn+4**: Press Fn+4 to put the computer into sleep mode. To wake up the computer, press the Fn key or the power button.
- **Fn+Left arrow key**: This key combination has the same function as the Home key.
- **Fn+Right arrow key**: This key combination has the same function as the End key.

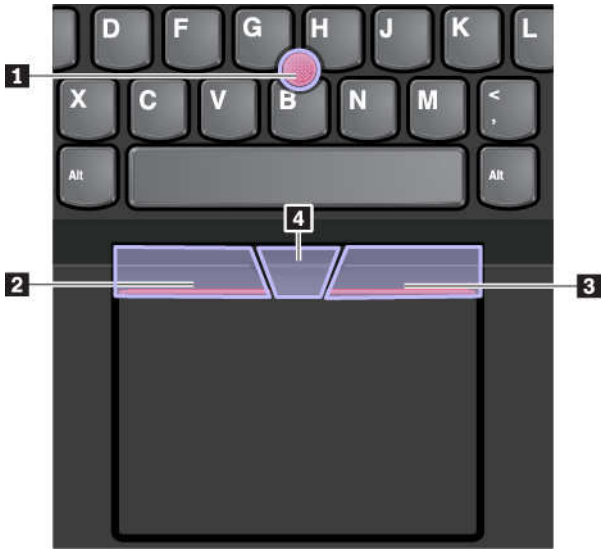
Using the TrackPoint pointing device

The TrackPoint pointing device enables you to perform all the functions of a traditional mouse, such as pointing, clicking, and scrolling.

Note: Your TrackPoint pointing device and the trackpad might look different from the illustration in this topic.

The TrackPoint pointing device consists of the following four components:

1 Pointing stick
2 Left-click button (primary-click button)
3 Right-click button (secondary-click button)
4 Scroll bar



To use the TrackPoint pointing device, refer to the following instructions:

Note: Place your hands in the typing position and use your index finger or middle finger to apply pressure to the pointing-stick nonslip cap. Use either thumb to press the left-click button or right-click button.

- **Point**

  Use the pointing stick 1 to move the pointer on the screen. To use the pointing stick, apply pressure to the pointing-stick nonslip cap in any direction parallel to the keyboard. The pointer moves accordingly but the pointing stick itself does not move. The speed at which the pointer moves depends on the amount of pressure you apply to the pointing stick.
- **Left-click**

  Press the left-click button 2 to select or open an item.
- **Right-click**

  Press the right-click button 3 to display a shortcut menu.
- **Scroll**

  Press and hold the scroll bar 4 while applying pressure to the pointing stick in the vertical or horizontal direction. Then you can scroll through the document, Web site, or apps.

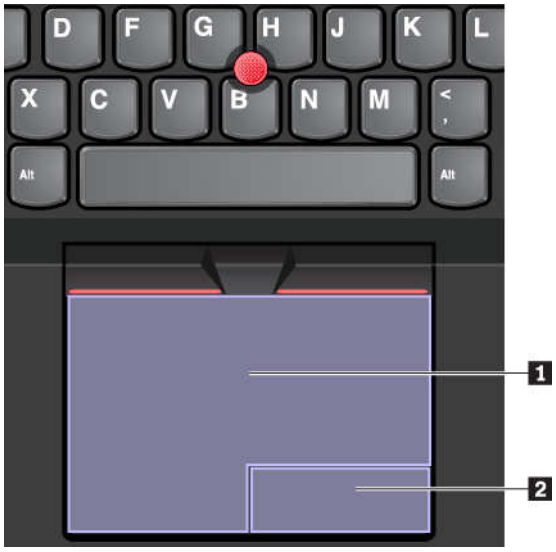
Using the trackpad

The entire trackpad surface is sensitive to finger touch and movement. You can use the trackpad to perform all the pointing, clicking, and scrolling functions of a traditional mouse.

If the trackpad surface is stained with oil, turn off the computer first. Then gently wipe the trackpad surface with a soft and lint-free cloth moistened with lukewarm water or computer cleaner.

The trackpad can be divided into two zones:

1 Left-click zone (primary-click zone)
2 Right-click zone (secondary-click zone)



To use the trackpad, refer to the following instructions:

- **Point**

  Slide one finger across the surface of the trackpad to move the pointer accordingly.
- **Left-click**

  Press the left-click zone 1 to select or open an item. You also can tap anywhere on the surface of the trackpad with one finger to perform the left-click action.
- **Right-click**

  Press the right-click zone 2 to display a shortcut menu. You also can tap anywhere on the surface of the trackpad with two fingers to perform the right-click action.
- **Scroll**

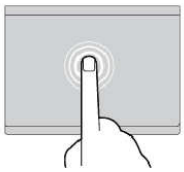
  Put two fingers on the trackpad and move them in the vertical or horizontal direction. This action enables you to scroll through the document, Web site, or apps. Ensure that you position your two fingers slightly apart from each other.

Using the trackpad touch gestures

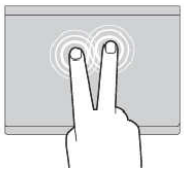
This topic introduces some frequently used touch gestures such as tapping, dragging, and scrolling. For more gestures, see the help information system of the ThinkPad pointing device.

Notes:

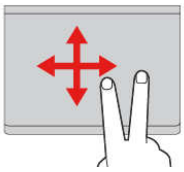
- When using two or more fingers, ensure that you position your fingers slightly apart.
- Some gestures are not available if the last action was done from the TrackPoint pointing device.
- Some gestures are only available when you are using certain apps.



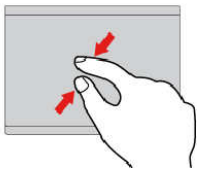
Tap
Tap anywhere on the trackpad with one finger to select or open an item.



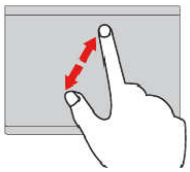
Two-finger tap
Tap anywhere on the trackpad with two fingers to display a shortcut menu.



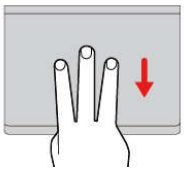
Two-finger scroll
Put two fingers on the trackpad and move them in the vertical or horizontal direction. This action enables you to scroll through the document, Web site, or apps.



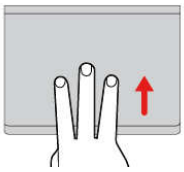
Two-finger zoom out
Put two fingers on the trackpad and move them closer together to zoom out.



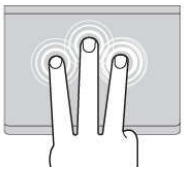
Two-finger zoom in
Put two fingers on the trackpad and move them farther apart to zoom in.



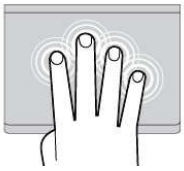
Three-finger swipe down
Put three fingers on the trackpad and move them down to show the desktop.



Three-finger swipe up
Put three fingers on the trackpad and move them up to open the task view to see all your open windows.



Three-finger tap
Tap anywhere on the trackpad with three fingers to open the Cortana personal assistant.



Four-finger tap
Tap anywhere on the trackpad with four fingers to open the action center.

Customizing the ThinkPad pointing device

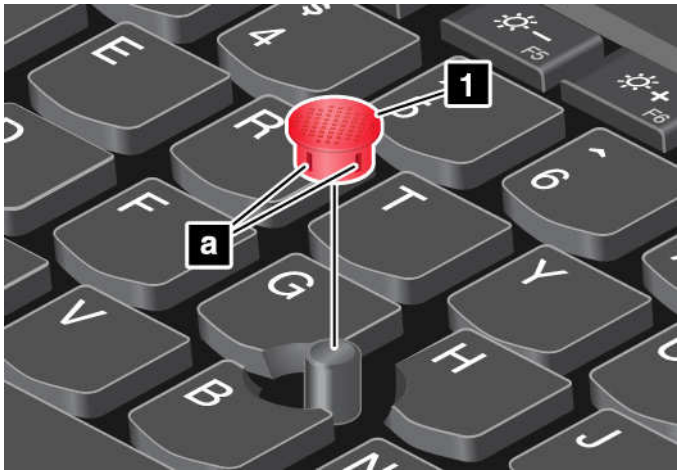
You can customize the ThinkPad pointing device so you can use it more comfortably and efficiently. For example, you can choose to enable the TrackPoint pointing device, the trackpad, or both. You also can disable or enable the touch gestures.

To customize the ThinkPad pointing device, do the following:

1. Go to Control Panel.
2. View Control Panel by Large icons or Small icons. Click **Mouse**. The Mouse Properties window is displayed.
3. In the Mouse Properties window, follow the instructions on the screen to complete the customization.

Replacing the cap of the pointing stick

The cap 1 on the end of the pointing stick is removable. After you use the cap for a period of time, you might consider replacing the cap with a new one. Ensure that you use a cap with grooves a as shown in the following illustration.



To get a new cap, contact Lenovo. For information about contacting Lenovo, see “Lenovo Customer Support Center” on page 65.

Lenovo Active Pen and pen holder

Depending on the model, your computer might come with a Lenovo Active Pen (referred to as the pen in this section) and pen holder. The pen enables you to write and draw in a nature manner. The pen holder helps you find a place on the computer to store the pen.

This section introduces the basic use of the pen and the pen holders. For more information, refer to the documentation of the pen.

Notes:

- The pen is not waterproof. Take care not to drop the pen in water.
- The pen contains pressure sensors. Do not push the tip of the pen for an extended period of time. Do not make the pen subject to shock or vibration.

Pen overview

1 End cap: Unscrew the end cap to install or replace a battery.

2 Top barrel button: To right-click, hold the top barrel button and tap the screen in supported applications.

3 Bottom barrel button: To erase texts or drawings, hold the bottom barrel button to erase the object in supported applications.

Notes:

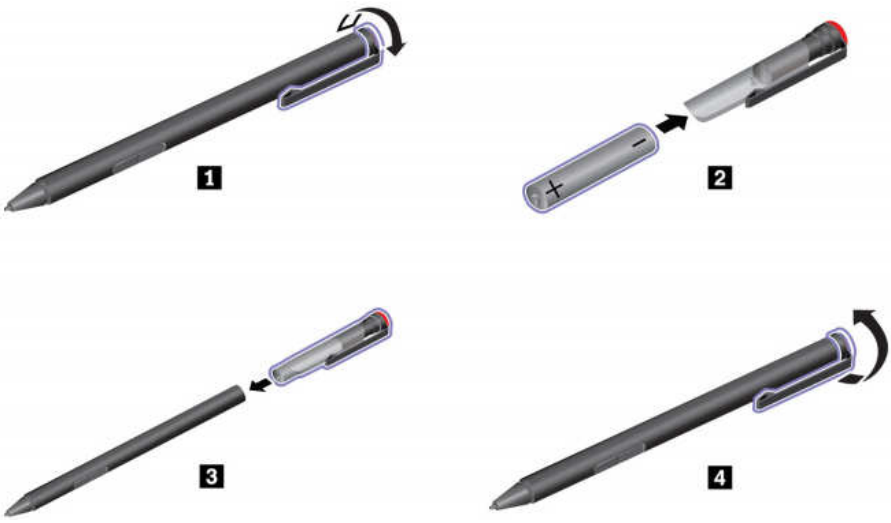
- The default function of each barrel button might vary in different apps.
- To customize the barrel button functions, use the Wacom Pen application. If the Wacom Pen application is not installed on your computer, download and install the latest WinTab driver from http://www.lenovo.com/support.

4 Pen tip: To click, tap on the screen with the tip. To double-click, tap twice.

Installing a battery to power the pen

Depending on the model, your pen might not be installed with a battery. To install an AAAA alkaline battery, do the following:

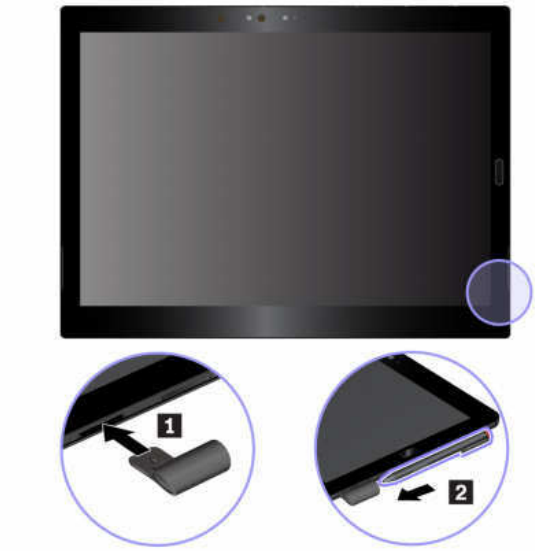
1. Unscrew the end cap.
2. Insert an AAAA alkaline battery into the battery compartment.
3. Reinstall the end cap.
4. Tighten the end cap.



Using the pen holder to store the pen

Your computer might come with a pen holder. Use the pen holder to store the pen on your computer by doing the following:

1. Insert the pen holder into the pen holder slot on your computer.
2. Insert the pen into the pen holder horizontally as shown.



Lenovo Pen Pro and pen holder

Depending on the model, your computer might come with a Lenovo Pen Pro (referred to as the pen in this section) and pen holder. The pen enables you to write and draw in a natural manner. The pen holder helps you store the pen on the computer. This section introduces the basic use of the pen and the pen holders. For more information, refer to the documentation of the pen.

Notes:

- Depending on the model, the pen might look slightly different from the illustrations in this topic.
- The color of the pen might vary by country or region of delivery.
- The pen is not waterproof. Do not drop the pen in water.
- The pen contains pressure sensors. Do not push the tip of the pen for an extended period of time. Do not subject the pen to shock or vibration.

Pen overview

1 **Top pen button**: Hold the top pen button for more than three seconds to enable Bluetooth pairing on the pen.

2 **Bluetooth LED**: The LED indicator flashes in green when you enable Bluetooth pairing on the pen.

3 **USB-C connector**: To charge the pen, connect the Lenovo USB-C 45W AC Adapter and Power Cord to the USB-C connector on the pen.

4 **Top barrel button**: To right-click, hold the top barrel button and tap the screen in supported applications.

5 **Bottom barrel button**: To erase texts or drawings, hold the bottom barrel button to erase the object in supported applications.

Notes:

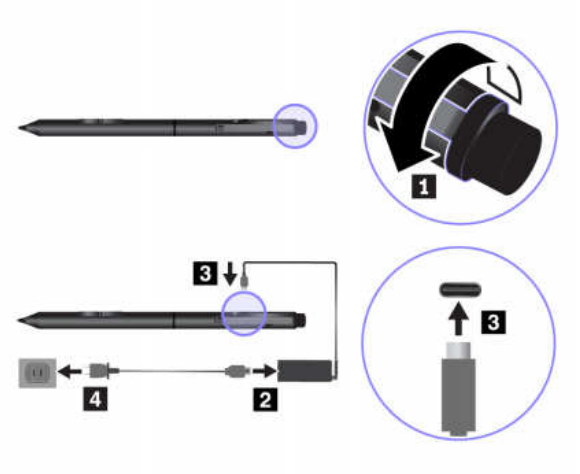
- The default function of each barrel button might vary in different apps.
- To customize the barrel button functions, use the Wacom Pen application. If the Wacom Pen application is not installed on your computer, download and install the latest WinTab driver from http://www.lenovo.com/support.

6 **Pen tip**: To click, tap on the screen with the tip. To double-click, tap twice.

Charging the pen

To charge the pen, do the following:

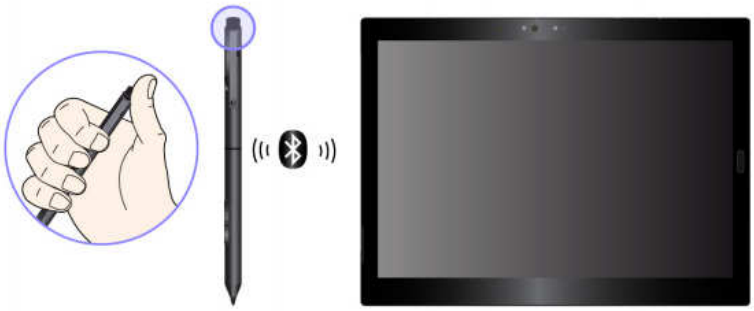
1. Rotate the pen clip to expose the USB-C connector.
2. Connect the power cord to the ac power adapter.
3. Connect the ac power adapter to the USB-C connector on your pen.
4. Connect the power cord to a proper electric outlet.



Pairing the pen

To pair the pen with your computer, do the following:

1. Enable Bluetooth pairing on the pen by pressing and holding the top pen button for more than three seconds until the LED indicator flashes in green.
2. Enable Bluetooth pairing on your computer to discover and pair the pen. See “Using Bluetooth devices” on page 14. The pen is discoverable as Lenovo Pen Pro.



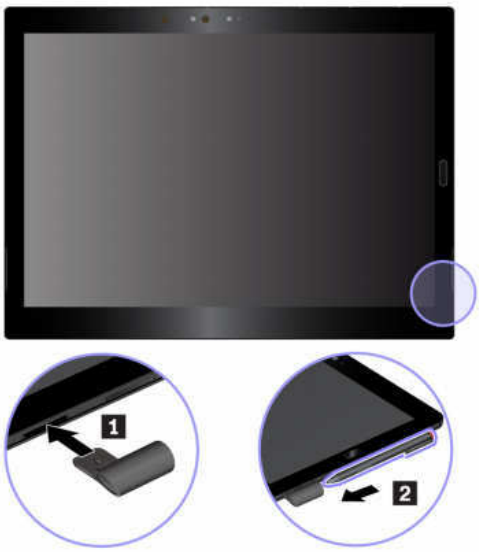
After pairing, press or double-press the top pen button to access more functions. To customize the top pen button functions, use the Wacom Pen application or open the Start menu and tap **Settings → Devices → Pen & Windows Ink → Pen shortcuts**.

Using the pen holder to store the pen

Your computer might come with a pen holder. Use the pen holder to store the pen on your computer by doing the following:

1. Insert the pen holder into the pen holder slot on your computer.
2. Insert the pen into the pen holder horizontally as shown.

   Note: To avoid reducing the battery life, ensure that the barrel buttons are not pressed when the pen is in the pen holder.

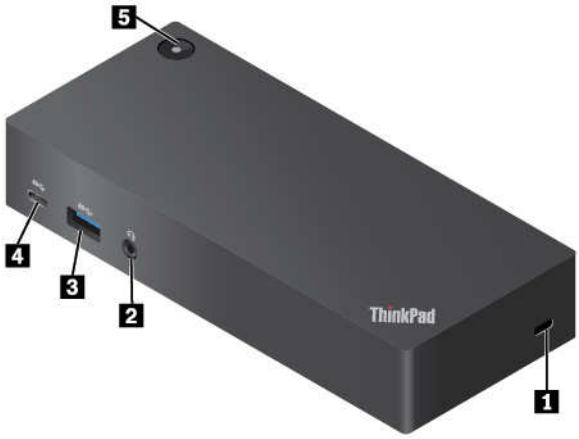


ThinkPad USB-C Dock

The ThinkPad USB-C Dock provides quick and easy connections between your computer and computer accessories.

This section introduces the basic use of the dock. For more information, refer to the documentation of the dock.

ThinkPad USB-C Dock overview



1 **Security-lock slot**: To protect your dock from theft, lock the dock to a desk, table, or other non-permanent fixture. Purchase a security cable lock that fits this security-lock slot.

2 **Audio connector**: Connect headphones or a headset with a 3.5-mm (0.14-inch), 4-pole plug.

3 **USB 3.0 connector**: Connect USB-compatible devices, such as a USB keyboard, a USB mouse, a USB storage device, or a USB printer. For optimal data transfer, connect a USB 3.0 device to a USB 3.0 connector instead of a USB 2.0 connector.

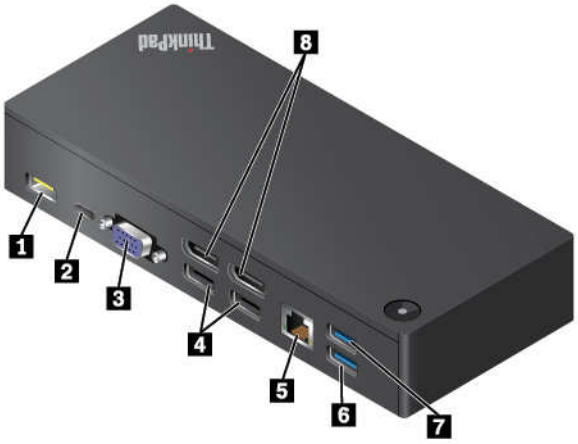
4 **USB-C connector**: Connect USB-C compatible devices for data transfer only, such as a USB-C storage device.

5 **Power button with indicator**: The power button works differently in the following situations:

- When you connect the dock only to ac power but not the computer, press this power button to turn on or turn off the dock.
- When you connect the dock to both ac power and the computer, this button has the same function as the computer power button.

The indicator in the power button shows the dock status and computer status:

- **Off**: The dock is off, the computer is off, or the computer is in hibernation mode.
- **White**: The computer is on.
- **White and blinks slowly**: The computer is in sleep mode.
- **Amber**: The dock is on.



1 **ac power connector**: Connect the ac power adapter.

2 **Lenovo USB-C connector**: Connect the Lenovo USB-C cable to the computer.

3 **VGA connector**: Connect a VGA-compatible video device.

4 **USB 2.0 connectors**: Connect USB-compatible devices, such as a USB keyboard, a USB mouse, a USB storage device, or a USB printer.

5 **Ethernet connector**: Connect the dock to an Ethernet LAN with an Ethernet cable.

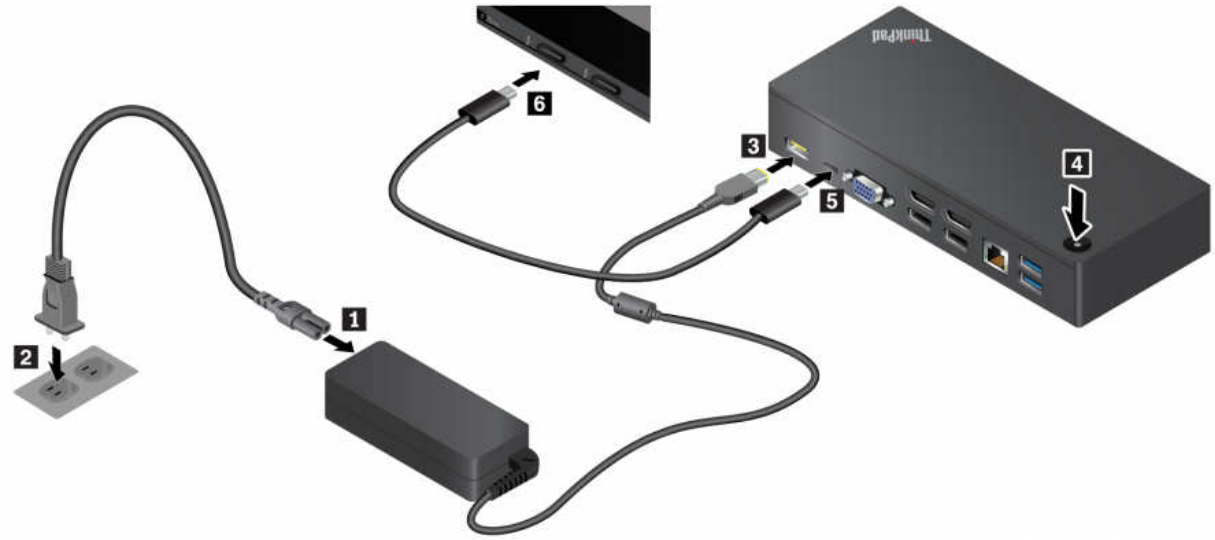
6 **USB 3.0 connector**: Connect USB-compatible devices, such as a USB keyboard, a USB mouse, a USB storage device, or a USB printer. For optimal data transfer, connect a USB 3.0 device to a USB 3.0 connector instead of a USB 2.0 connector.

7 Always On USB connector (USB 3.0): Connect USB-compatible devices or charge some mobile digital devices and smartphones.

8 DisplayPort® connectors: Connect a high-performance monitor, a direct-drive monitor, or other devices that use a DisplayPort connector.

Setting up the ThinkPad USB-C Dock

To set up the ThinkPad USB-C Dock, do the following:



1. Connect the power cord to the ac power adapter 1.
2. Connect the power cord to an electrical outlet 2.
3. Connect the ac power adapter to the power connector of the dock 3.
4. Press the power button to turn on the dock 4.
5. Connect one end of the Lenovo USB-C cable to the dock 5.
6. Connect the other end of the Lenovo USB-C cable to the computer 6.

Before you use the dock with the computer, download and install the latest dock driver at:

http://www.lenovo.com/support/docks

Chapter 5. Advanced configuration

This chapter provides information about the advanced configuration and features.

Installing device drivers

The device drivers are available at http://www.lenovo.com/ThinkPadDrivers. Choose your computer product name to view all the device drivers for your computer.

Attention: Always go to http://www.lenovo.com/ThinkPadDrivers for the latest device drivers. Do not download them from the Windows Update Web site.

ThinkPad Tablet Setup app

The ThinkPad Tablet Setup app enables you to view and configure various setup parameters. The default configurations are already optimized for you. Incorrect change of the configurations might cause unexpected results.

Opening the ThinkPad Tablet Setup app

To open the ThinkPad Tablet Setup app, do the following:

Note: If you are required to enter the supervisor password during the process, enter the correct password. If you skip the password prompt, you still can open the ThinkPad Tablet Setup app but you cannot change the configurations.

1. Restart the computer.
2. Tap around “Press Enter or touch here” until the ThinkPad Tablet Setup app starts.

ThinkPad Tablet Setup menus

The ThinkPad Tablet Setup app includes the following menus:

Note: The menus are subject to change without notice. Depending on the model, the default value might vary.

- **Main menu**: View the system information and set the date and time for your computer.
- **Config menu**: View and change the configurations of your computer.
- **Security menu**: Set the supervisor password and configure other security features of your computer.
- **Startup menu**: Change the computer startup settings.
- **Restart menu**: Choose an option for exiting the ThinkPad Tablet Setup app and restarting the system.

On each menu, tap the default value to show selectable options and tap a desired option to select it. Follow the instructions on the screen to configure the settings. After you change the settings, tap **Restart**, and then tap your desired option to restart the computer.

Main menu

When you enter the ThinkPad Tablet Setup app, you first see the **Main** menu as follows:

Note: The BIOS menu items might change without notice. Depending on the model, the default value might vary.

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System Information

- **UEFI BIOS Version**
- **UEFI BIOS Date (Year-Month-Date)**
- **Embedded Controller Version**
- **ME Firmware Version**
- **Machine Type Model**
- **System-unit serial number**
- **System board serial number**
- **Asset Tag**
- **CPU Type**
- **CPU Speed**
- **Installed Memory**
- **UUID**
- **MAC Address (Internal LAN)**
- **Preinstalled OS License**
- **UEFI Secure Boot**
- **OA3 ID**

System Date

System Time

Config menu

Note: The BIOS menu items might change without notice. Depending on the model, the default value might vary.

Network

- **Wake On LAN from Dock**

  Values: **On**, Off

  Description: Enable or disable the Wake On LAN from Dock feature when the ThinkPad USB-C Dock or ThinkPad Thunderbolt 3 Dock is attached.

  Note: The Wake on LAN from Dock feature does not work when your computer is in Modern Standby mode. It only works when your computer is shutdown or in hibernate mode.

- **UEFI IPv4 Network Stack**

  Values: **On**, Off

  Description: Enable or disable Internet Protocol Version 4 (IPv4) network stack for UEFI environment. This menu is displayed only in **UEFI Only** boot mode or **Both** boot mode with **UEFI first**.

- **UEFI IPv6 Network Stack**

  Values: **On**, Off

  Description: Enable or disable Internet Protocol Version 6 (IPv6) network stack for UEFI environment. This menu is displayed only in **UEFI Only** boot mode or **Both** boot mode with **UEFI first**.

- **UEFI PXE Boot Priority**

  Values: **IPv4 First**, IPv6 First

Description: Select network stack priority for UEFI PXE boot. This menu is displayed only in **UEFI Only** boot mode or **Both** boot mode with **UEFI first**, when IPv6 and IPv4 stacks are both enabled.

- **MAC Address Pass Through**

  Values: **Disabled**, Enabled

  Description: Enable or disable the MAC Address Pass Through function when a dock is attached. If you select **Enabled**, the dock Ethernet will use the same MAC address as the internal Ethernet LAN. If you select **Disabled**, the dock Ethernet uses its own MAC address.

Keyboard/Mouse

- **Enumerate Keyboard**

  Values: **Off**, On

  Description: Enable or disable the USB keyboard in preboot environment if fast startup is enabled. If you select **Off**, the USB keyboard will not work in preboot environment. If you select **On**, the USB Keyboard works in preboot environment.

- **On Screen Keyboard**

  Values: **On**, Off

  Description: Enable or disable On Screen Keyboard in preboot environment. If you select **Off**, On Screen Keyboard is disabled. If you select **On**, On Screen Keyboard is enabled.

- **Tablet volume buttons are used for**

  Values: **Audio volume control**, Display brightness control

  Description: If you select **Audio volume control**, the volume buttons are used to control the audio volume. If you select **Display brightness control**, the volume buttons are used to control the display brightness.

Display

- **Boot Display Device**

  Values: **ThinkPad LCD**, External Display

  Description: Select the display device that you want to activate at boot time. **External Display** refers to an external display attached to the USB Type-C connector or HDMI connector on your ThinkPad computer. If multiple displays are attached, the boot screen appears on the first recognized one.

- **Total Graphics Memory**

  Values: **256 MB**, 512 MB

  Description: Allocate the total memory which Intel internal graphics shares.

  Note: 512 MB is selectable only when Thunderbolt (TM) 3 Security Level is set to Display Port and USB.

- **Boot Time Extension**

  Values: **Disabled**, 1 second, 2 seconds, 3 seconds, 5 seconds, 10 seconds

  Description: During the boot process, the computer might not detect the external monitors that need more time to get ready. Select how long you want to extend the boot process.

Power

- **Power On with AC Attach**

  Values: **Off**, On

  Description: Enable or disable a feature that turns on the computer when the ac power adapter is attached.

- **Disable Built-in Battery**

Values: Yes, No

Description: Temporary disable the built-in battery for servicing the system. After selecting this item, the system will be automatically powered off, then ready to be serviced.

Note: The built-in battery will be automatically enabled when the ac power adapter is reconnected.

Beep and Alarm

- **Password Beep**

  Values: **Off**, On

  Description: Enable or disable a beep when the computer is waiting for a power-on, hard disk, or supervisor password. Different beeps remind you that the password you entered is right or wrong.

Thunderbolt(TM) 3

- **Security level**

  Values: No Security, **User Authorization**, Secure Connect, Display Port and USB

  Description: Select the security level:

  - No Security: Allow Thunderbolt devices to be connected automatically.
  - User Authorization: Allow Thunderbolt devices to be connected after user authorization.
  - Secure Connect: Allow Thunderbolt devices to be connected with a saved key that has been approved by the user.
  - Display Port and USB: Allow only DisplayPort-compatible devices and USB devices to be connected. Thunderbolt devices are not allowed to be connected.

- **Support in Pre Boot Environment:**

  - **Thunderbolt(TM) device**

    Values: **Off**, On

    Description: Enable or disable pre-OS support for Thunderbolt devices attached to the Thunderbolt 3 port. To use a device in the pre-boot environment, authorize it in the operating system or set the **Security level** to **No Security**. To boot from a device, configure it by selecting **Startup → Boot**.

  - **USB device**

    Values: **On**, Off

    Description: Enable or disable pre-OS support for USB devices attached to the Thunderbolt 3 port. To boot from a device, configure it by selecting **Startup → Boot**.

Debug Port

Values: **Off**, On

Description: If you select **On**, the audio connector for headphones or headset is used as a serial debug port and the default function of this connector does not work. Do not connect headphones or a headset to the computer.

Note: You need the Audio-Serial Debug Cable to connect the computer and other systems.

Intel AMT

- **Intel (R) AMT Control**

  Values: Disabled, **Enabled**, Permanently Disabled

Description: If you select **Enabled**, Intel AMT (Active Management Technology) is configured and additional setup items are provided in MEBx (Management Engine BIOS Extension) Setup. If you select **Permanently Disabled**, you can never enable it again. Be cautious when you make the selection.

Note: You can enter the MEBx Setup menu by pressing Ctrl+P in the Startup Interrupt Menu window. To display the Startup Interrupt Menu window, press Enter during the power-on self-test (POST).

- **USB Key Provisioning**

  Values: **Off**, On

  Description: This option enables or disables USB key provisioning.

- **CIRA Timeout**

  Values: 0–255

  Description: Set the timeout option for the CIRA connection to be established. Selectable values are from 0 to 255. If you select **0**, use 60 seconds as the default timeout value. If you select **255**, the waiting time for establishing a connection is unlimited.

  Note: The default value is 60 seconds.

- **Console Type**

  Values: VT100, **VT100+**, VT-UTF8, PC ANSI

  Description: Select the console type for AMT. This console type must match the Intel AMT remote console.

Security menu

Note: The BIOS menu items might change without notice. Depending on the model, the default value might vary.

Password

- **Supervisor Password**

  Values: **Off**, On

  Descriptions: Set a supervisor password to prevent unauthorized users from changing the startup sequence, network-related settings, and system date and time. For more information, see “Using passwords” on page 20.

- **Lock UEFI BIOS Settings**

  Values: **Off**, On

  Descriptions: Enable this option to prevent unauthorized users from changing any settings in ThinkPad Setup. To use this function, a supervisor password is required.

- **Password at Unattended Boot**

  Values: **On**, Off

  Descriptions: When this option is enabled, a password prompt is displayed when the computer is turned on or resumed from hibernation mode by an unattended event such as a Wake on LAN attempt. To prevent unauthorized access, set the user authentication on the operating system.

- **Password at Restart**

  Values: **Off**, On

  Descriptions: When this option is enabled, a password prompt is displayed when you restart the computer. To prevent unauthorized access, set the user authentication on the operating system.

- **Password at Boot Device List**

  Values: **Off**, On

Descriptions: If you enable this option, the supervisor password is required when you try to enter the **Boot** menu by repeatedly pressing F12. To use this function, a supervisor password must be set.

- **Password Count Exceeded Error**

  Values: **On**, Off

  Descriptions: Enable this option to display the POST 0199 error message when you enter a wrong supervisor password more than three times.

- **Set Minimum Length**

  Values: **Disabled**, x characters (4 ≤ x ≤ 12)

  Descriptions: Specify a minimum length for power-on passwords and hard disk passwords. If a supervisor password is set, you cannot change the minimum length until you log in as a supervisor.

- **Power-On Password**

  Values: **Disabled**, Enabled

  Descriptions: Set a power-on password to protect the computer from unauthorized access. For more information, see “Using passwords” on page 20.

- **Hard Disk1 Password**

  Values: **Disabled**, Enabled

  Descriptions: Set a hard disk password to prevent unauthorized users from accessing data on the internal storage drive. For more information, see “Using passwords” on page 20.

Security Chip

- **Security Chip Type**

  Values: **TPM 2.0**

  Descriptions: You can use a discrete TPM chip with TPM 2.0 mode.

- **Security Chip** (for TPM 2.0)

  Values: **On**, Off

  Descriptions: Enable or disable the security chip.

- **Security Reporting Options**
  - **SMBIOS Reporting**

    Values: **On**, Off

    Descriptions: When enabled, changes to corresponding UEFI BIOS data are logged in a location, (PCR1, defined in the TCG standards), which other authorized programs can monitor, read and analyze.

- **Clear Security Chip**

  Descriptions: Use this option to clear the encryption key. It will not be possible to access already-encrypted data after these keys are cleared.

- **Intel (R) TXT Feature**

  Values: **Disabled**, Enabled

  Descriptions: Enable or disable the Intel Trusted Execution Technology.

- **Physical Presence for Clear**

  Values: **Off**, On

  Descriptions: If this option is enabled, a confirmation message is displayed when you clear the security chip.

UEFI BIOS Update Option

- **Flash BIOS Updating by End-Users**

Values: **On**, Off

Descriptions: When this option is enabled, all users can update the UEFI BIOS. If you disable this option, only the person who knows the supervisor password can update the UEFI BIOS.

- **Secure RollBack Prevention**

  Values: **On**, Off

  Descriptions: When this option is disabled, you can flash the UEFI BIOS to earlier version.

- **Windows UEFI Firmware Update**

  Values: **On**, Off

  Descriptions: Enable or disable the Windows UEFI Firmware Update feature. Select **On** to allow Windows UEFI Firmware Update. If you select Off, BIOS will skip Windows UEFI Firmware Update.

Memory Protection

- **Execution Prevention**

  Values: **On**, Off

  Descriptions: Some computer viruses and worms cause memory buffers to overflow. By enabling this option, you can protect your computer against attacks from such viruses and worms. If the option is enabled but you find that a program does not run properly, disable this option first and then reset the settings.

Virtualization

- **Intel(R) Virtualization Technology**

  Values: **On**, Off

  Descriptions: If this option is enabled, a Virtual Machine Monitor (VMM) can utilize the additional hardware capabilities provided by Intel Virtualization Technology.

- **Intel(R) VT-d Feature**

  Values: **On**, Off

  Descriptions: Intel VT-d stands for Intel Virtualization Technology for Directed I/O. When enabled, a VMM can utilize the platform infrastructure for I/O virtualization.

I/O Port Access

Descriptions: Use this submenu to enable or disable the following hardware features:

- Wireless LAN
- Wireless WAN
- Bluetooth
- USB Port
- Memory Card Slot
- Integrated Camera
- Microphone
- Fingerprint Reader
- Thunderbolt(TM) 3
- NFC Device

Anti-Theft

- **Computrace Module Activation**

Values: Disabled, **Enabled**, Permanently Disabled

Descriptions: Enable the UEFI BIOS interface to activate the computrace module. Computrace is an optional monitoring service from Absolute Software. If you select **Permanently Disabled**, you cannot enable this setting again.

Secure Boot

- **Secure Boot**

  Values: **Enabled**, Disabled

  Descriptions: Enable this option to prevent unauthorized operating systems from loading when you turn on the computer.

- **Platform Mode**

  Values: Setup Mode, **User Mode**

  Descriptions: Specify the system operating mode.

- **Secure Boot Mode**

  Values: **Standard Mode**, Custom Mode

  Descriptions: Specify the **Secure Boot mode** .

- **Reset to Setup Mode**

  Descriptions: Use this option to clear the current platform key and reset **Platform Mode** to **Setup Mode**. You can install your own platform key and customize the Secure Boot signature databases in **Setup Mode**. **Secure Boot Mode** will be set to **Custom Mode**.

- **Restore Factory Keys**

  Descriptions: Use this option to restore all keys and certificates in **Secure Boot** databases to the factory defaults.

- **Clear All Secure Boot Keys**

  Descriptions: Use this option to clear all keys and certificates in **Secure Boot** databases and install your own keys and certificates.

Intel (R) SGX

- **Intel (R) SGX Control**

  Values: Disabled, Enabled, **Software Controlled**

  Descriptions: Enable or disable the Intel Software Guard Extensions (SGX) function. If you select **Software Controlled**, SGX will be controlled by SGX application for UEFI boot operating system.

- **Change Owner EPOCH**

  Descriptions: Change Owner EPOCH to a random value. Use this option to clear SGX user data.

Device Guard

- **Device Guard**

  Values: **Disabled**, Enabled

  Descriptions: This option is used to support Microsoft Device Guard.

  When this option is enabled, Intel Virtualization Technology, Intel VT-d Feature, and Secure Boot are automatically enabled. Boot order is not selectable. To complete the configuration of Device Guard, you have to set a supervisor password.

  When this option is disabled, the setup options are configurable and you can choose any boot options to start the computer.

Startup menu

Note: The BIOS menu items might change without notice. Depending on the model, the default value might vary.

Startup Options

- **Option Key Display**

  Values: **On**, Off

  Descriptions: If you disable this option, the “To interrupt normal startup, press Enter.” message will not be displayed during the POST.

- **Boot Device List F12 Option**

  Values: **On**, Off

  Descriptions: If you enable this option, you can open the Boot Menu window by continuously pressing F12 when the computer is powered on.

- **Boot Order Lock**

  Values: **Off**, On

  Descriptions: Enable this option to lock the boot device priority order.

Edit Boot Order

- USB CD

  Values: **On**, Off

- USB FDD

  Values: **On**, Off

- NVMe0

  Values: **On**, Off

- ATA HDD0

  Values: **On**, Off

- USB HDD

  Values: **On**, Off

- Network Adapter

  Values: **On**, Off

- Other CD

  Values: **Off**, On

- Other HDD

  Values: **Off**, On

Descriptions: Change the boot order by dragging and dropping the icon.

Restart menu

Note: The BIOS menu items might change without notice. Depending on the model, the default value might vary.

- **Exit Saving Changes**

  Descriptions: Save the changes and restart the computer.

- **Exit Discarding Changes**

Descriptions: Discard the changes and restart the computer.

- **Load Setup Defaults**

  Descriptions: Restore to the factory default settings.
- **Discard Changes**

  Descriptions: Discard the changes.
- **Save Changes**

  Descriptions: Save the changes.

Updating the UEFI BIOS

The Unified Extensible Firmware Interface basic input/output system (UEFI BIOS) is a part of the system programs that make up the basic layer of software built into your computer. The UEFI BIOS translates the instructions from other software layers.

You can update the UEFI BIOS and the ThinkPad Tablet Setup app by starting your computer with a flash update application running in the Windows environment.

When you add software, hardware, or a device driver, you can consider updating your UEFI BIOS for the new addition to work correctly.

To update your UEFI BIOS, go to http://www.lenovo.com/ThinkPadDrivers.

System management

This section is intended primarily for network administrators.

The computer is designed for manageability, so that you can redirect more of your resources to meet your business objectives better. This manageability enables you to operate client computers remotely in the same way as you operate your own computer, such as turning on a client computer, formatting the hard disk drive, and installing software.

Once the computer is configured and operational, you can manage it by use of software and manageability features already integrated into the client system and the network.

The following content introduces some system management features.

Desktop Management Interface

The system UEFI BIOS of your computer supports an interface called System Management BIOS Reference Specification (SMBIOS) V2.6.1. The SMBIOS provides information about the hardware components of your system. It is the responsibility of the BIOS to supply this database with information about itself and the devices on the system board. This specification documents the standards for getting access to this BIOS information.

Asset ID EEPROM

The Asset ID Electrically Erasable Programmable Read-Only Memory (EEPROM) contains information about the system, including its configuration and the serial numbers of key components. It also includes a number of blank fields in which you can record information about the end users in your network.

Preboot eXecution Environment

The Preboot eXecution Environment (PXE) technology makes the computer more manageable by enabling the computer to start from a server. For example, with the appropriate LAN card, your computer can be started from the PXE server.

Note: The Remote Initial Program Load (RIPL or RPL) function cannot be used with your computer.

Chapter 6. Accessibility

Lenovo helps users with disabilities to access information and technology easily.

Some accessibility tools are available in the Windows operating system, and others can be purchased from third-party providers.

This section gives a brief introduction to the available accessibility tools. For details about how to use the accessibility tools, refer to the Windows help information. See “Getting help about the Windows operating system” on page 21.

On-screen notification

On-screen notification helps hearing-impaired people be aware of the status of their computer. On-screen notification replaces sounds with visual cues or text captions to indicate that activity is happening on the computer. As a result, system alerts are noticeable even when they are not heard. For example, when you select one object, the object is highlighted.

To use on-screen notification, open Control Panel. For information about accessing the Control Panel, see “Accessing computer settings” on page 21. Then tap **Ease of Access → Ease of Access Center**, and then tap **Use text or visual alternative for sounds**.

Audio notification

Audio notification helps visually impaired people or people with weak sight be aware of the status of their computer.

To use audio notification, open Control Panel. For information about accessing the Control Panel, see “Accessing computer settings” on page 21. Then tap **Ease of Access → Ease of Access Center → Use the without a display**, and then select **Turn on Audio Description**.

Narrator

Narrator is a screen reader that reads text on the screen aloud and describes events like error messages.

To open Narrator, type `Narrator` in the search box.

Screen-reader technologies

Screen-reader technologies are primarily focused on software program interfaces, help information systems, and various online documents. For additional information about screen readers, see the following:

- Using the Portable Document Format (PDF) files with screen readers:
  https://www.adobe.com/accessibility.html?promoid=DJGVE
- Using the JAWS screen reader:
  http://www.freedomscientific.com/Products/Blindness/JAWS
- Using the NVDA screen reader:
  https://www.nvaccess.org/

Speech recognition

Speech Recognition enables you to control your computer by voice.

Using only your voice, you can open apps, open menus, tap buttons and other objects on the screen, dictate text into documents, and write and send e-mails.

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To open Speech Recognition, type `Speech Recognition` into the search box.

Customizable text size

Depending on your preference, you can change only the text size instead of changing the size of everything on the desktop.

To change the text size, open Control Panel. For information about accessing the Control Panel, see “Accessing computer settings” on page 21. Then tap **Appearances and Personalization → Display**, go to **Change only the text size**, and set a text size that meets your needs.

Magnifier

Your computer is equipped with the Microsoft® Magnifier to help visually impaired people use the computer more comfortably. Magnifier is a useful utility that enlarges part or all of your screen so that you can see the words and images better. Magnifier is part of the Ease of Access Center.

To open Magnifier, type `Magnifier` into the search box.

Zoom

You can use the zoom feature to enlarge or reduce the size of text, pictures, maps, or other objects.

- Zoom in: Move two fingers farther apart on the touch screen to enlarge the size of text, pictures, maps, or other objects.
- Zoom out: Move two fingers closer together on the touch screen to reduce the size of text, pictures, maps, or other objects.

Adjustable screen resolution

You can make your documents easier to read by adjusting the screen resolution of your computer. To adjust the screen resolution, tap and hold anywhere on the desktop, tap **Screen resolution** or **Display settings**, and then follow the instructions on the screen to adjust the settings as you prefer.

Note: Setting too low of a resolution might prevent some items from fitting on the screen.

Documentation in accessible formats

Lenovo provides electronic documentation in accessible formats, such as properly tagged PDF files or HyperText Markup Language (HTML) files. Lenovo electronic documentation is developed to ensure that visually impaired users can read the documentation through a screen reader. Each image in the documentation also includes adequate alternative text to explain the image so that visually impaired users can understand the image when they use a screen reader.

On-Screen Keyboard

On-Screen Keyboard displays a visual keyboard with all the standard keys.

To open On-Screen Keyboard, type `On-Screen Keyboard` into the search box.

Industry-standard connectors

Your computer provides industry-standard connectors that enable you to connect external devices if needed.

Personalized keyboard

If you attach the computer to the Thin Keyboard, you can do the following to make the keyboard easier to use.

- Adjust your keyboard settings by doing the following:

1. Go to Control Panel. For information about accessing the Control Panel, see “Accessing computer settings” on page 21
2. Tap **Ease of Access → Ease of Access Center → Make the keyboard easier to use**.

- Change the settings of the Fn key and function keys by doing the following:
  1. Go to Control Panel. For information about accessing the Control Panel, see “Accessing computer settings” on page 21. Change the view of Control Panel from Category to Large icons or Small icons.
  2. Tap **Keyboard**. In the Keyboard Properties window, tap the **Fn and function keys** tab.
  3. Select the options of your preference.

Chapter 7. Troubleshooting

If your computer encounters a problem, find a solution here.

Frequently asked questions

The problems and solutions described in this section are meant only as a guide. They are not definitive problem-solving techniques. If a problem persists, you can get support from Lenovo. For more information, see “Lenovo Customer Support Center” on page 65.

Attention: When you observe a problem, stop operation immediately, because taking further action might result in data loss or damage.

Internet problem

Failed to establish a wireless WAN connection or a mobile broadband connection?

Ensure that:

- Your computer is not in Airplane mode.
- The nano-SIM card is valid and workable if you are using a mobile network (3G or 4G).
- You are within the network service range and the signal strength is good.
- If a USB-C type device is attached to your computer, the USB-C type device might influence the wireless WAN connection. Detach the USB-C type device from your computer to resolve the problem.

Battery problem

Failed to charge the computer?

Check if the ac power adapter is connected correctly. If the computer feels too hot to the touch, wait for a while to let it cool to room temperature. After the computer cools, if the battery still cannot be charged, have the computer serviced.

System problem

Failed to power on?

Connect your computer to an ac power outlet to see if the drained battery caused the problem.

If the problem persists, insert a needle or a straightened paper clip into the emergency-reset hole. To locate the emergency-reset hole, see “Connectors and indicators” on page 1. After resetting your computer, try to turn it on again.

Failed to turn the computer off by pressing and holding the power button?

Press and hold the power button for 10 seconds or more. If you still cannot turn off the computer, insert a needle or a straightened paper clip into the emergency-reset hole to reset your computer. To locate the emergency-reset hole, see “Connectors and indicators” on page 1. If you still encounter the same problem, reset the computer to the factory default settings. See “Resetting your computer” on page 62.

Audio problem

Poor audio quality or no sound output?

Ensure that:

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- The speaker is not covered.
- The speaker mute function is disabled.
- If you are using a headset, unplug it, then plug it in again.
- The volume is not turned to the lowest level.

Failed to play a song, video, or other media file?

Ensure that the media file is not corrupted.

External device connection problem

Failed to detect an external display?

Tap and hold (right-click) anywhere on the desktop, then tap **Screen resolution/Display settings → Detect**.

Failed to locate Bluetooth devices?

Ensure that:

- Your computer Bluetooth is switched on.
- The Bluetooth feature is activated on the device to which you want to connect.
- Your computer and the Bluetooth device are within the maximum Bluetooth signal range (10 m, 32.8 feet).

Screen problem

Slow or improper responding from the multi-touch screen?

1. Ensure that your hands are clean and dry when touching the screen.
2. Restart your computer to try again.

Blank screen when the computer is operating?

Disable any system timers, such as the liquid crystal display (LCD) turn-off timer or the blank timer, by doing the following:

1. Go to Control Panel. For information about accessing the Control Panel, see “Accessing computer settings” on page 21.
2. Tap **System and Security → Power Options → Balanced**.
3. Follow the instructions on the screen.

White pointer on a blank screen after power-on?

1. Turn off the computer, and then turn it on again.
2. If you still see only the pointer on the screen, use the recovery solutions to restore the system to the factory state.

Blank screen when the computer is on?

Your screen saver or power management might have been enabled. Do either of the following:

- Tap the computer screen to exit the screen saver.
- Press the power button to resume from sleep mode.

Error messages

When the following error messages are displayed on the screen, take the corresponding solutions.

- **Message**: 0177: Bad SVP data, stop POST task.

  Solution: Checksum of the supervisor password in the EEPROM is not correct. The system board must be replaced. Have the computer serviced.
- **Message**: 0183: Bad CRC of Security Settings in EFI Variable. Enter ThinkPad Setup.

  Solution: Checksum of the Security settings in the EFI Variable is not correct. Enter ThinkPad Setup to check security settings. Press F10, and then press Enter to restart the system. If your computer still has a problem, have the computer serviced.
- **Message**: 0187: EAIA data access error

  Solution: The access to EEPROM is failed. Have the computer serviced.
- **Message**: 0188: Invalid RFID Serialization Information Area

  Solution: The EEPROM checksum is not correct (block # 0 and 1). The system board must be replaced, and the box serial number needs to be reinstalled. Have the computer serviced.
- **Message**: 0189: Invalid RFID configuration information area

  Solution: The EEPROM checksum is not correct (block # 4 and 5). The system board must be replaced, and the UUID must be reinstalled. Have the computer serviced.
- **Message**: 0190: Critical low-battery error

  Solution: The computer turned off, because the battery is low. Connect the ac power adapter to the computer and charge the battery.
- **Message**: 0191: System Security - Invalid remote change requested

  Solution: The system configuration change has failed. Confirm the operation and try again. To clear the error, enter ThinkPad Setup.
- **Message**: 0199: System Security - Security password retry count exceeded.

  Solution: This message is displayed if you enter a wrong supervisor password more than three times. Confirm the supervisor password and try again. To clear the error, enter ThinkPad Setup.
- **Message**: 0270: Real-Time Clock Error

  Solution: System Real-Time Clock is not functional. Have the computer serviced.
- **Message**: 0271: Check Date and Time settings

  Solution: Neither the date nor the time is set in the computer. Set the date and time in ThinkPad Setup.
- **Message**: 1802: Unauthorized network card is plugged in - Power off and remove the network card.

  Solution: The wireless network card is not supported on this computer. Remove it.
- **Message**: 1820: More than one external fingerprint reader is attached.

  Solution: Power off and remove all but the reader that you set up within your main operating system.
- **Message**: 2101: Detection error on SSD1 (M.2)

  Solution: The M.2 solid-sate drive device is not working. Have the M.2 solid-sate drive device serviced.
- **Message**: 2111: Read error on SSD1 (M.2)

  Solution: The M.2 solid-sate drive device is not working. Have the M.2 solid-sate drive device serviced.
- **Message**: 2200: Machine Type and Serial Number are invalid.

  Solution: Machine Type and Serial Number are invalid. Have the computer serviced.
- **Message**: 2201: Machine UUID is invalid.

Solution: Machine UUID is invalid. Have the computer serviced.

- **Message**: Fan error

  Solution: Cooling fan has failed. Shut down the computer immediately and have the computer serviced.

- **Message**: Thermal sensing error

  Solution: The thermal sensor has a problem. Shut down the computer immediately and have the computer serviced.

- **Message**: Bottom Cover Tamper Detection Error

  Solution: The Bottom Cover Tamper Switch is not working. Have the computer serviced.

- **Message**: Error: The non-volatile system UEFI variable storage is nearly full.

  Note: This error indicates that the operating system or applications cannot create, modify, or delete data in the non-volatile system UEFI variable storage due to insufficient storage space after the POST. The non-volatile system UEFI variable storage is used by the UEFI BIOS and by the operating system or applications. This error occurs when the operating system or applications store large amounts of data in the variable storage. All data needed for the POST, such as BIOS setup settings, chipset or platform configuration data, are stored in a separate UEFI variable storage.

  Solution: Enter ThinkPad Setup after the error message is displayed. A dialog asks the user for confirmation to clean up the storage. If the user selects **Yes**, all data that were created by the operating system or applications are deleted except global variables defined by the Unified Extensible Firmware Interface Specification. If the user selects **No**, all data is kept, but the operating system or applications will not be able to create, modify, or delete data in the storage.

  If this error happens at a service center, Lenovo-authorized service personnel will clean up the non-volatile system UEFI variable storage using the above solution.

Lenovo Companion

Use Lenovo Companion to troubleshoot and resolve computer problems. The app combines diagnostic tests, system information collection, security status, and support information, along with hints and tips for maximum system performance.

For information about accessing Lenovo Companion, see “Discovering Lenovo apps” on page 13.

You also can download the Lenovo Companion app at:

https://shop.lenovo.com/us/en/accessories/software/apps/lenovo-apps/companion/

For additional information, refer to the help system of Lenovo Companion.

Windows recovery apps

The Windows recovery apps enable you to reset your computer or use advanced startup options.

It is recommended that you create a recovery USB drive as early as possible. Store the recovery USB drive as a backup or replacement for the Windows recovery apps. For more information, see “Creating and using a recovery USB drive” on page 63.

Resetting your computer

If your computer does not perform well, you might consider resetting your computer. In the resetting process, you can choose to keep your files or remove them, and then reinstall the Windows operating system.

To refresh your computer, do the following:

Note: The graphical user interface (GUI) items of the operating system might change without notice.

1. Open the Start menu. Tap **Settings** → **Update & Security** → **Recovery**.
2. In the **Reset this PC** section, tap **Get started**.
3. Follow the instructions on the screen to refresh your computer.

Using advanced startup options

With advanced startup options, you can change the firmware settings of the computer, change the startup settings of the Windows operating system, start the computer from an external device, or restore the Windows operating system from a system image.

To use advanced startup options, do the following:

Note: The GUI items of the operating system might change without notice.

1. Open the Start menu. Tap **Settings** → **Update & Security** → **Recovery**.
2. In the **Advanced startup** section, tap **Restart now** → **Troubleshoot** → **Advanced options**.
3. Select a desired startup option, then follow the instructions on the screen.

Recovering your operating system if the Windows 10 operating system fails to start

Pseudo topic: Topic id "UsingTheRecoveryUtility-9C95CADBSystemIfTheW-5C21D51D" not found in topic "x-wc://file=t0000574809.xml#UsingTheRecoveryUtility-9C95CADBSystemIfTheW-5C21D51D" for "Main Map", element "topicref" at line 86

Creating and using a recovery USB drive

You can create a recovery USB drive as a backup for the Windows recovery apps. With the recovery USB drive, you can troubleshoot and fix the problems even if the preinstalled Windows recovery apps are damaged.

Creating a recovery USB drive

The USB drive that you use to create the recovery USB drive must be at least 16 GB of storage. The actual USB capacity that is required depends on the size of the recovery image.

Attention: The creation process deletes anything stored on the USB drive. To avoid data loss, make a backup copy of all the data that you want to keep.

To create a recovery USB drive, do the following:

1. Ensure that your computer is connected to ac power.
2. Connect a proper USB drive (at least 16 GB of storage).
3. Type `recovery` in the search box on the taskbar. Then tap **Create a recovery drive**.
4. Tap **Yes** in the User Account Control window to allow the Recovery Media Creator app to start.
5. In the Recovery Drive window, follow the on-screen instructions to create a recovery USB drive.

Using the recovery USB drive

If you cannot start your computer, refer to “Frequently asked questions” on page 59. If you still cannot start your computer, use the recovery USB drive to recover your computer.

To use a recovery USB drive, do the following:

1. Ensure that your computer is connected to ac power.
2. Connect the recovery USB drive to the computer.
3. Open the ThinkPad Tablet Setup app. See “ThinkPad Tablet Setup app” on page 43.
4. Tap **Startup**. In the **Boot** submenu, drag the recovery drive to the first place to select it as the boot device.
5. Save configuration changes and restart the computer.
6. Select a corresponding recovery solution according to your situation. Then follow the instructions on the screen to complete the process.

Lenovo factory recovery USB key

Lenovo factory recovery USB key enables you to reset your computer to the factory default settings.

To obtain a Lenovo factory recovery USB key, contact Lenovo Customer Support Center. Shipping and handling fees apply. For information about contacting Lenovo Customer Support Center, see “Lenovo Customer Support Center” on page 65.

Note: The Lenovo factory recovery USB key might not support certain operating systems. Contact Lenovo Customer Support Center for more information.

To use the Lenovo factory recovery USB key, do the following:

1. Ensure that your computer is connected to ac power.
2. Turn off the computer, wait approximately five seconds, and then connect the Lenovo factory recovery USB key to your computer.
3. Open the ThinkPad Tablet Setup app. See “ThinkPad Tablet Setup app” on page 43.
4. Tap **Startup**. On the **Boot** submenu, drag **USB CD/DVD** or **USB HDD** to the top to make it the first startup device.
5. Tap **Save**, and then tap **Yes** to save your configuration.
6. Tap **Restart** and follow the on-screen instructions to restart the computer. After the computer restarts, the recovery app runs automatically.
7. Follow the on-screen instructions to reset your computer to the factory default settings.

Lenovo Support Web site

Technical support information is available on the Lenovo Support Web site at http://www.lenovo.com/support.

This Web site is updated with the latest support information:

- Drivers and software
- Diagnostic solutions
- Product and service warranty
- Guides and manuals
- Lenovo user forums

Lenovo Customer Support Center

In most cases, you can solve your computer problems by referring to the error message solutions, running diagnostic apps, or consulting the Lenovo Web site. If you still encounter computer problems after the self-troubleshoot, contact Lenovo Customer Support Center.

If possible, be near your computer when you make the call.

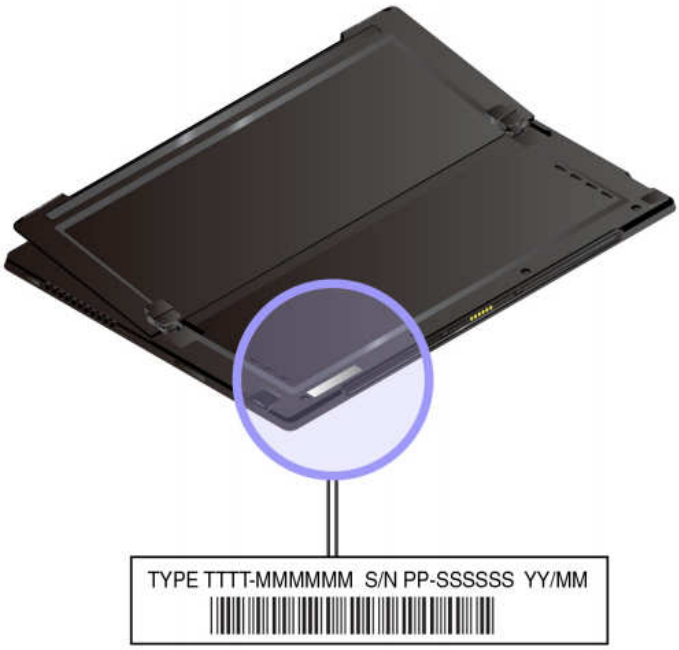
Before calling Lenovo

Before you contact Lenovo, do the following preparations for a quick service:

- Registering your computer

  Register your computer with Lenovo so that you can get prompt support. For more information, see “Registering your computer” on page 13.
- Installing system updates

  Installing the latest drivers or software might resolve the problems. To download the latest drivers or software, go to http://www.lenovo.com/support.
- Getting the proof of purchase
- Recording the machine type and serial number



- Recording the problem details
  - What is the problem? Is it continuous or intermittent?
  - Is there an error message? What is the error code, if any?
  - What operating system are you using? Which version?
  - Which software programs were running at the time of the problem?
  - Can the problem be reproduced? If so, how?

Lenovo Support phone numbers

To get the Lenovo Support phone numbers for your country or region, do one of the following:

- Refer to the *Safety, Warranty, and Setup Guide* that comes with your computer.
- Go to http://www.lenovo.com/support/phone.

If the numbers for your country or region are 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 your computer has a hardware problem and deciding what action is necessary to fix the problem.
- Lenovo hardware repair - If the problem is 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.

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

Services not covered by warranty terms

- Replacement or use of parts not manufactured for or by Lenovo or non-warranted parts
- Identification of software problem sources
- Configuration of the 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 apps

Purchasing additional services

During and after the warranty period, you can purchase additional services, such as:

- Support for Lenovo and non-Lenovo hardware, operating systems, and apps
- Network setup and configuration services
- Upgraded or extended hardware repair services and custom installations services

Note: Services might vary by country or region.

For more information about additional services, go to:

http://www.lenovo.com/essentials

Appendix A. Regulatory information

This appendix provides regulatory information. The latest compliance information is available at http://www.lenovo.com/compliance.

Certification-related information

The following table contains information about the machine types (if there are), product name, and compliance ID.

Product name	Compliance ID	Machine types
ThinkPad X1 Tablet Gen 3	TP00089A	20KJ and 20KK
ThinkPad X1 Tablet Gen 3 Thin Keyboard	TP00089K1	N/A

Labels for the Windows operating system

Depending on your geographic location, the date when your computer was manufactured, and the version of Windows 10 that is preinstalled, your computer might have a Genuine Microsoft label affixed to its cover. Go to https://www.microsoft.com/en-us/howtotell/Hardware.aspx for illustrations of the various types of Genuine Microsoft labels.

- In the People's Republic of China, the Genuine Microsoft label is required on all computer models preinstalled with any version of Windows 10.
- In other countries and regions, the Genuine Microsoft label is required only on computer models licensed for Windows 10 Pro.

The absence of a Genuine Microsoft label does not indicate that the preinstalled Windows version is not genuine. For details on how to tell whether your preinstalled Windows product is genuine, refer to the information provided by Microsoft at https://www.microsoft.com/en-us/howtotell/default.aspx.

The Product ID is recorded in the product firmware. Whenever a Windows 10 product is installed, the installation program checks the product firmware for a valid, matching Product ID to complete the activation.

In some cases, an earlier Windows version might be preinstalled under the terms of the Windows 10 Pro license downgrade rights.

Wireless-related information

Wireless interoperability

The wireless LAN card is interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CCK), and/or Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

- The 802.11b/g Standard, 802.11a/b/g, 802.11n, or 802.11ac on Wireless LANs, as defined and approved by the Institute of Electrical and Electronics Engineers.
- The Wireless Fidelity (Wi-Fi) certification as defined by the Wi-Fi Alliance®.

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Your Bluetooth card supports Windows 10 in-box Bluetooth profiles. Some computer models might be equipped with a Bluetooth card compliant with the Bluetooth Specification version 4.2 or 5.0 as defined by the Bluetooth Special Interest Group SIG. However, the Windows operating system might limit the support only on the Bluetooth Specification version 4.1.

Usage environment and your health

This computer contains integrated wireless cards that operate within the guidelines identified by radio frequency (RF) safety standards and recommendations; therefore, Lenovo believes this product is safe for use by consumers. These standards and recommendations reflect the consensus of the worldwide scientific community, and result from deliberations of panels and committees of scientists, who continually review and interpret the extensive research literature.

Refer to the *Regulatory Notice* to obtain detailed information related to the Specific Absorption Rate (SAR) for your computer. To locate the *Regulatory Notice*, see “Wireless-radio compliance information” on page 69.

In some situations or environments, the use of wireless devices might be restricted by the proprietor of a building or responsible representatives of an organization. For example, these situations and areas might include the following:

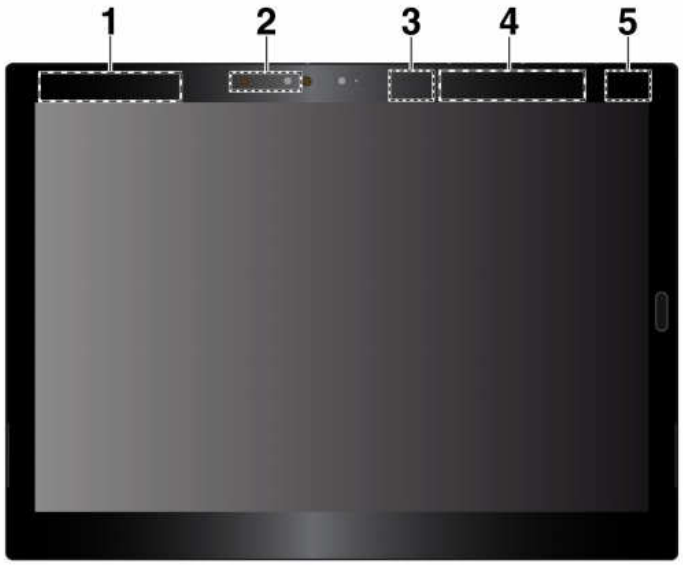
- On board of airplanes, in hospitals or near petrol stations, blasting areas (with electro-explosive devices), medical implants or body-worn electronic medical devices, such as pace makers.
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies to the use of wireless devices in a specific area (such as an airport or hospital), you are encouraged to ask for authorization to use a wireless device prior to turning on the computer.

Locating the UltraConnect wireless antennas

Your computer features an integrated UltraConnect™ wireless antenna system built into the display for optimal reception, which enables you to establish wireless communications wherever you are.

The following illustration shows the location of each built-in wireless antenna.



1 Wireless-WAN antenna (main) *
2 NFC antenna *
3 Wireless-LAN antenna (auxiliary)
4 Wireless-WAN antenna (auxiliary) *
5 Wireless-LAN antenna (main)

Note: The items shown with an asterisk (*) are available on some models.

Wireless-radio compliance information

Computer models equipped with wireless communications comply with the radio frequency and safety standards of any country/region where it has been approved for wireless use.

Brazil wireless-radio compliance information

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

This equipment is a secondary type device, that is, it is not protected against harmful interference, even if the interference is caused by a device of the same type, and it also cannot cause any interference to primary type devices.

Mexico wireless-radio compliance information

Advertencia: En Mexico la operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Locating the FCC ID or IC Certification information

You can find the Federal Communications Commission ID (FCC ID) or Industry Canada (IC) Certification information on your computer.

Note: Your computer might look slightly different from the following illustration.

Reading the Regulatory Notice

For more information about wireless-radio compliance information, refer to the *Regulatory Notice* shipped with the computer. If your computer is not shipped with *Regulatory Notice*, find the document at:

http://www.lenovo.com/support

TCO certification

To obtain the TCO certification information for your computer, go to:

http://www.lenovo.com/tco-cert

Export classification notice

Pseudo topic: Topic id "ExportClassificationNotice-E7707E37E7707E37" not found in topic "x-wc://file=t0000574853.xml#ExportClassificationNotice-E7707E37E7707E37" for "Main Map", element "topicref" at line 101

Electronic emission notices

Federal Communications Commission Declaration of Conformity

The following information refers to the ThinkPad X1 tablet Gen 3, machine types: 20KJ and 20KK.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Lenovo is not responsible for any radio or television interference caused by using other than specified or recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:
Lenovo (United States) Incorporated
1009 Think Place - Building One
Morrisville, NC 27560
Phone Number: 919-294-5900

Industry Canada Class B emission compliance statement

CAN ICES-3(B)/NMB-3(B)

European Union conformity

EU Contact: Lenovo, Einsteinova 21, 851 01 Bratislava, Slovakia

EMC Directive Statement: This product is in conformity with the protection requirements of EU Council EMC Directive 2014/30/EU on the approximation of the laws of the Member States relating to electromagnetic compatibility.

This product has been tested and found to comply with the limits for Class B equipment according to European Standards harmonized in the Directives in compliance. The Class B requirements for equipment are intended to offer adequate protection to broadcast services within residential environments.

Radio Equipment Directive Statement: This product is in conformity with all the requirements and essential norms that apply to EU Council Radio Equipment Directive 2014/53/EU on the approximation of the laws of the Member States relating to radio equipment. The full text of the system EU declaration of conformity and the EU wireless module declarations are available at the following Internet addresses:

- For notebook computers: http://www.lenovo.com/eu-doc-notebooks
- For tablets: http://www.lenovo.com/eu-doc-tablets

Lenovo cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the installation of option cards from other manufacturers. This product has been tested and found to comply with the limits for Class B equipment according to European Standards harmonized in the Directives in compliance. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

German Class B compliance statement

Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse B EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der Klasse B der Norm gemäß Richtlinie.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der Lenovo empfohlene Kabel angeschlossen werden. Lenovo übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der Lenovo verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der Lenovo gesteckt/eingebaut werden.

Deutschland:

Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Betriebsmitteln

Dieses Produkt entspricht dem „Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln“ EMVG (früher „Gesetz über die elektromagnetische Verträglichkeit von Geräten“). Dies ist die Umsetzung der EMV EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln, EMVG vom 20. Juli 2007 (früher Gesetz über die elektromagnetische Verträglichkeit von Geräten), bzw. der EMV EU Richtlinie 2014/30/EU, für Geräte der Klasse B.

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraf 5 des EMVG ist die Lenovo (Deutschland) GmbH, Meitnerstr. 9, D-70563 Stuttgart.

Informationen in Hinsicht EMVG Paragraf 4 Abs. (1) 4:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55032 Klasse B.

Japan VCCI Class B compliance statement

この装置は、クラスB情報技術装置です。この装置は家庭環境で使用する事を目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱書に従って正しい取り扱いをして下さい。

VCCI-B

Japan compliance statement for products which connect to the power mains with rated current less than or equal to 20 A per phase

日本の定格電流が 20A/相 以下の機器に対する高調波電流規制
高調波電流規格 JIS C 61000-3-2 適合品

Japan notice for ac power cord

The ac power cord shipped with your product can be used only for this specific product. Do not use the ac power cord for other devices.

本製品およびオプションに電源コード・セットが付属する場合は、
それぞれ専用のものになっていますので他の電気機器には使用し
ないでください。

Lenovo product service information for Taiwan

委製商/進口商名稱: 荷蘭商聯想股份有限公司台灣分公司
進口商地址: 台北市內湖區堤頂大道2段89號5樓
進口商電話: 0800-000-702 (代表號)

Eurasian compliance mark

EAC

Brazil audio notice

Ouvir sons com mais de 85 decibéis por longos períodos pode provocar danos ao sistema auditivo.

Appendix B. WEEE and recycling statements

This chapter provides environmental information about Lenovo products.

General recycling information

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products. For information about recycling Lenovo products, go to:

http://www.lenovo.com/recycling

The latest environmental information about our products is available at:

http://www.lenovo.com/ecodeclaration

Important WEEE information

The WEEE marking on Lenovo products applies to countries with WEEE and e-waste regulations (for example, the European WEEE Directive, India E-Waste Management Rules). Appliances are labeled in accordance with local regulations concerning waste electrical and electronic equipment (WEEE). These regulations determine the framework for the return and recycling of used appliances as applicable within each geography. This label is applied to various products to indicate that the product is not to be thrown away, but rather put in the established collection systems for reclaiming these end of life products.

Users of electrical and electronic equipment (EEE) with the WEEE marking must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to them for the return, recycle, and recovery of WEEE and to minimize any potential effects of EEE on the environment and human health due to the presence of hazardous substances. Lenovo electrical and electronic equipment (EEE) may contain parts and components, which at end-of-life might qualify as hazardous waste.

EEE and waste electrical and electronic equipment (WEEE) can be delivered free of charge to the place of sale or any distributor that sells electrical and electronic equipment of the same nature and function as the used EEE or WEEE.

For additional WEEE information, go to:

http://www.lenovo.com/recycling

WEEE information for Hungary

Lenovo, as a producer, bears the cost incurred in connection with the fulfillment of Lenovo's obligations under Hungary Law No. 197/2014 (VIII.1.) subsections (1)-(5) of section 12.

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Japan recycling statements

Collecting and recycling a disused Lenovo computer or monitor

If you are a company employee and need to dispose of a Lenovo computer or monitor that is the property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. Computers and monitors are categorized as industrial waste and should be properly disposed of by an industrial waste disposal contractor certified by a local government. In accordance with the Law for Promotion of Effective Utilization of Resources, Lenovo Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers and monitors. For details, visit the Lenovo Web site at:

http://www.lenovo.com/recycling/japan

Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-used computers and monitors by the manufacturer was begun on October 1, 2003. This service is provided free of charge for home-used computers sold after October 1, 2003. For details, go to:

http://www.lenovo.com/recycling/japan

Disposing of Lenovo computer components

Some Lenovo computer products sold in Japan may have components that contain heavy metals or other environmental sensitive substances. To properly dispose of disused components, such as a printed circuit board or drive, use the methods described above for collecting and recycling a disused computer or monitor.

Disposing of disused lithium batteries from Lenovo computers

A button-shaped lithium battery is installed inside your Lenovo computer to provide power to the computer clock while the computer is off or disconnected from the main power source. If you need to replace it with a new one, contact your place of purchase or contact Lenovo for service. If you need to dispose of a disused lithium battery, insulate it with vinyl tape, contact your place of purchase or an industrial-waste-disposal operator, and follow their instructions.

Disposal of a lithium battery must comply with local ordinances and regulations.

Disposing of a disused battery from Lenovo notebook computers

Your Lenovo notebook computer has a lithium ion battery or a nickel metal hydride battery. If you are a company employee who uses a Lenovo notebook computer and need to dispose of a battery, contact the proper person in Lenovo sales, service, or marketing, and follow that person's instructions. You also can refer to the instructions at:

https://www.lenovo.com/jp/ja/environment/recycle/battery/

If you use a Lenovo notebook computer at home and need to dispose of a battery, you must comply with local ordinances and regulations. You also can refer to the instructions at:

https://www.lenovo.com/jp/ja/environment/recycle/battery/

Recycling information for Brazil

Declarações de Reciclagem no Brasil

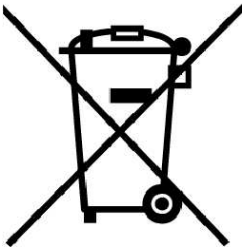
Descarte de um Produto Lenovo Fora de Uso

Equipamentos elétricos e eletrônicos não devem ser descartados em lixo comum, mas enviados à pontos de coleta, autorizados pelo fabricante do produto para que sejam encaminhados e processados por empresas especializadas no manuseio de resíduos industriais, devidamente certificadas pelos orgãos ambientais, de acordo com a legislação local.

A Lenovo possui um canal específico para auxiliá-lo no descarte desses produtos. Caso você possua um produto Lenovo em situação de descarte, ligue para o nosso SAC ou encaminhe um e-mail para: reciclar@lenovo.com, informando o modelo, número de série e cidade, a fim de enviarmos as instruções para o correto descarte do seu produto Lenovo.

Battery recycling information for the European Union

EU



Notice: This mark applies only to countries within the European Union (EU).

Batteries or packaging for batteries are labeled in accordance with European Directive 2006/66/EC concerning batteries and accumulators and waste batteries and accumulators. The Directive determines the framework for the return and recycling of used batteries and accumulators as applicable throughout the European Union. This label is applied to various batteries to indicate that the battery is not to be thrown away, but rather reclaimed upon end of life per this Directive.

In accordance with the European Directive 2006/66/EC, batteries and accumulators are labeled to indicate that they are to be collected separately and recycled at end of life. The label on the battery may also include a chemical symbol for the metal concerned in the battery (Pb for lead, Hg for mercury, and Cd for cadmium). Users of batteries and accumulators must not dispose of batteries and accumulators as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and treatment of batteries and accumulators. Customer participation is important to minimize any potential effects of batteries and accumulators on the environment and human health due to the potential presence of hazardous substances.

Before placing electrical and electronic equipment (EEE) in the waste collection stream or in waste collection facilities, the end user of equipment containing batteries and/or accumulators must remove those batteries and accumulators for separate collection.

Disposing of lithium batteries and battery packs from Lenovo products

A coin-cell type lithium battery might be installed inside your Lenovo product. You can find details about the battery in the product documentation. If the battery needs to be replaced, contact your place of purchase or contact Lenovo for service. If you need to dispose of a lithium battery, insulate it with vinyl tape, contact your place of purchase or a waste-disposal operator, and follow their instructions.

Disposing of battery packs from Lenovo products

Your Lenovo device might contain a lithium-ion battery pack or a nickel metal hydride battery pack. You can find details on the battery pack in the product documentation. If you need to dispose of a battery pack, insulate it with vinyl tape, contact Lenovo sales, service, or your place of purchase, or a waste-disposal

operator, and follow their instructions. You also can refer to the instructions provided in the user guide for your product.

For proper collection and treatment, go to:

http://www.lenovo.com/lenovo/environment

Battery recycling information for Taiwan

Battery recycling information for the United States and Canada

US & Canada Only

Recycling information for China

《废弃电器电子产品回收处理管理条例》提示性说明

联想鼓励拥有联想品牌产品的用户当不再需要此类产品时，遵守国家废弃电器电子产品回收处理相关法律法规，将其交给当地具有国家认可的回收处理资质的厂商进行回收处理。更多回收服务信息，请点击进入http://support.lenovo.com.cn/activity/551.htm

Appendix C. Restriction of Hazardous Substances (RoHS) Directive

The latest environmental information about Lenovo products is available at:

http://www.lenovo.com/ecodeclaration

European Union RoHS

This Lenovo product, with included parts (cables, cords, and so on) meets the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS recast" or "RoHS 2").

For more information about Lenovo worldwide compliance on RoHS, go to:

http://www.lenovo.com/rohs-communication

Turkish RoHS

The Lenovo product meets the requirements of the Republic of Turkey Directive on the Restriction of the Use of Certain Hazardous Substances in Waste Electrical and Electronic Equipment (WEEE).

Türkiye AEEE Yönetmeliğine Uygunluk Beyanı

Bu Lenovo ürünü, T.C. Çevre ve Orman Bakanlığı'nın "Atık Elektrik ve Elektronik Eşyalarda Bazı Zararlı Maddelerin Kullanımının Sınırlandırılmasına Dair Yönetmelik (AEEE)" direktiflerine uygundur.

AEEE Yönetmeliğine Uygundur.

Ukraine RoHS

Цим підтверджуємо, що продукція Леново відповідає вимогам нормативних актів України, які обмежують вміст небезпечних речовин

India RoHS

RoHS compliant as per E-Waste (Management) Rules.

China RoHS

The information in the following table is applicable for products manufactured on or after January 1, 2015 for sale in the People's Republic of China.

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产品中有害物质的名称及含量

部件名称	铅（Pb）	汞（Hg）	镉（Cd）	六价铬（Cr（VI））	多溴联苯（PBB）	多溴二苯醚（PBDE）
印刷电路板组件	X	O	O	O	O	O
硬盘	X	O	O	O	O	O
光驱	X	O	O	O	O	O
LCD 面板（LED 背光源）	X	O	O	O	O	O
键盘	X	O	O	O	O	O
内存	X	O	O	O	O	O
电池	X	O	O	O	O	O
电源适配器	X	O	O	O	O	O
底壳、顶盖和扬声器	X	O	O	O	O	O

注：
本表依据SJ/T 11364的规定编制。

O：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572标准规定的限量要求以下。

X：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 标准规定的限量要求。标有“X”的部件，皆因全球技术发展水平限制而无法实现有害物质的替代。印刷电路板组件包括印刷电路板（PCB）及其组件、集成电路（IC）和连接器。某些型号的产品可能不包含上表中的某些部件，请以实际购买机型为准。

图示：

在中华人民共和国境内销售的电子信息产品上将印有“环保使用期限”（EPuP）符号。圆圈中的数字代表产品的正常环保使用期限。

Taiwan RoHS

單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板組件	–	○	○	○	○	○
硬碟機	–	○	○	○	○	○
光碟機	–	○	○	○	○	○
LCD面板（LED背光源）	–	○	○	○	○	○
鍵盤	–	○	○	○	○	○
記憶體	–	○	○	○	○	○
電源供應器	–	○	○	○	○	○
底殼、頂蓋和喇叭	–	○	○	○	○	○

備考1. 〝超出0.1 wt %〞及〝超出0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note 1：“Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考2. 〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2：“○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考3. 〝－〞係指該項限用物質為排除項目。

Note 3：The “–” indicates that the restricted substance corresponds to the exemption.

Appendix D. ENERGY STAR model information

ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy aimed at saving money and protecting the environment through energy efficient products and practices.

Lenovo is proud to offer our customers products with the ENERGY STAR qualified designation. You might find an ENERGY STAR mark affixed on the or displayed on the power settings interface. Lenovo computers of the following machine types, if carry an ENERGY STAR mark, have been designed and tested to conform to the ENERGY STAR program requirements for computers.

20KJ and 20KK

By using ENERGY STAR qualified products and taking advantage of the power-management features of the computer, you can help reduce the consumption of electricity. Reduced electrical consumption can contribute to potential financial savings, a cleaner environment, and the reduction of greenhouse gas emissions.

For more information about ENERGY STAR, go to:

https://www.energystar.gov

Lenovo encourages you to make efficient use of energy an integral part of your day-to-day operations. To help in this endeavor, Lenovo has preset the following power-management features to take effect when the computer has been inactive for a specified length of time:

Power plan: Balanced (settings when plugged into ac power)

Put the computer to sleep: After 10 minutes

To awaken the computer from sleep mode, do any of the following:

- Press the power button
- Tap or swipe across the trackpad
- Press a trackpad button
- Press any key other than F1 through F12

For more information about these settings, refer to the Windows help information. See “Getting help about the Windows operating system” on page 21.

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To obtain the most up-to-date documentation for your computer, go to:

http://www.lenovo.com/support

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