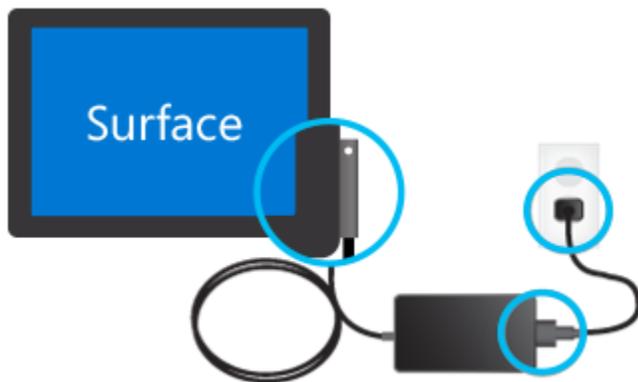


Surface turns off when the power supply is disconnected

Check and Clean Power Supply Connections

We strongly recommend that you use only the genuine Microsoft or Microsoft-licensed power supply that came with your Surface or was purchased separately to charge the battery. You can purchase Microsoft-licensed power supplies from the [Microsoft Store](#).

To check your connections, disconnect the cable from your Surface, the plug from the wall, and the cable from the Surface power supply. Check each connection point for debris or damage.



To clean your connections, follow the below steps:

Step 1: Disconnect the power supply from your Surface and the power source it is connected to.

Step 2: Clean the pins on the connector with a pencil eraser. Rub the eraser back and forth across the pins.

Step 3: Wet a cotton swab in rubbing alcohol. Clean the pins on the long, narrow part of the charger that you plug into your Surface. Rub the cotton swab back and forth across the pins. After you are done cleaning the connector pins, make sure that the pins are dry, and then reattach the power supply to Surface and the power source.

Step 4: Reconnect the power supply to the Surface, the cable to the power supply, and the plug to the power source. Make sure all connections are secure and tight.

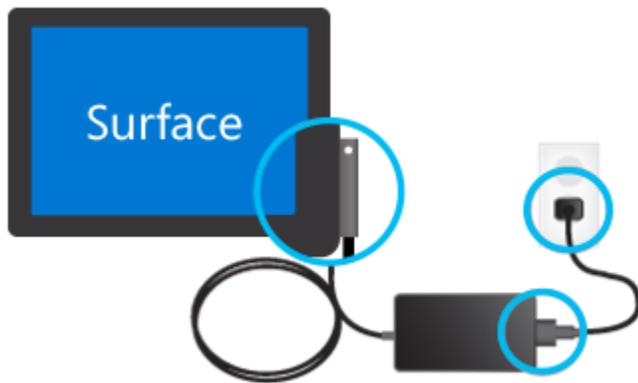
For Surface Book, we recommend detaching the clipboard from the keyboard, then follow the above steps to check and clean the keyboard pins as well. If the connection is dirty, or loose, the Surface Book may not charge correctly.

If your power supply is damaged, it should be replaced. You can view available options for replacing your power supply by going to [Device service and repairs](#), or by visiting the [Microsoft Store](#)

A red "X" appears over the battery icon in the system tray, or the battery icon is missing

We strongly recommend that you use only the genuine Microsoft or Microsoft-licensed power supply that came with your Surface or was purchased separately to charge the battery. You can purchase Microsoft-licensed power supplies from the [Microsoft Store](#).

To check your connections, disconnect the cable from your Surface, the plug from the wall, and the cable from the Surface power supply. Check each connection point for debris or damage.



To clean your connections, follow the below steps:

Step 1: Disconnect the power supply from your Surface and the power source it is connected to.

Step 2: Clean the pins on the connector with a pencil eraser. Rub the eraser back and forth across the pins.

Step 3: Wet a cotton swab in rubbing alcohol. Clean the pins on the long, narrow part of the charger that you plug into your Surface. Rub the cotton swab back and forth across the pins. After you are done cleaning the connector pins, make sure that the pins are dry, and then reattach the power supply to Surface and the power source.

Step 4: Reconnect the power supply to the Surface, the cable to the power supply, and the plug to the power source. Make sure all connections are secure and tight.

For Surface Book, we recommend detaching the clipboard from the keyboard, then follow the above steps to check and clean the keyboard pins as well. If the connection is dirty, or loose, the Surface Book may not charge correctly.

Maximize your Surface battery life

Your Surface uses an internal lithium-ion battery. The amount of time your battery lasts will vary depending on the kinds of things you do with your Surface. This article will help you learn more about how to get the most out of your Surface battery.

Making your battery last

Choose a power mode for the best battery life and performance

On some Surface models you can select a power mode, which affects how much battery life and the performance you can get from your Surface.

To switch to a different power mode, select the battery icon in the Windows taskbar. If you want to save power to write an email or finish a movie, move the slider to a lower setting, like **Recommended** or **Battery saver**. Or, if you need better performance for playing a game or using a Windows Mixed Reality headset, move the slider to a higher setting like **Best performance**.

General battery tips and tricks

For ways to save battery power, see [Battery saving tips for your PC](#).

Get the latest Windows and Surface updates

Installing the latest updates will help keep your Surface performing at its best. To see how, go to [Install Surface and Windows updates](#).

Power & sleep settings

To get to these settings, type **power & sleep** into the search box on the taskbar. For more information on Windows Power & Sleep Settings, see [How to adjust power and sleep settings](#).

Want more?

Follow these tips to extend the lifetime of your battery:

- **Keep it cool.** Surface is designed to work between 32°F and 95°F (or 0°C to 35°C). Lithium-ion batteries are sensitive to high temperatures, so keep your Surface out of the sun and don't leave it in a hot car.
- **Once a month, recharge when it's 10% or lower.** You can recharge the battery whenever you want. But, However, it's best to let the battery run to below 10% at least once per month before you recharge it.

Windows doesn't start on Surface

Applies to: Surface DevicesSurface

If Windows doesn't start correctly when you turn on your Surface, here are solutions for some of the more common screens that might appear.

[Get help for Surface running Windows 8.1.](#)

Note

Some products might not be available in your country or region.

- [Before you begin](#)
- [Which screen do you see?](#)
- [Windows still doesn't start](#)

Before you begin

Leave your Surface plugged in to the power supply included with the device, **then remove all accessories**. This includes the Type Cover, accessories, adapters, external monitor, and microSD card. If you're using a docking station, remove your Surface from it.

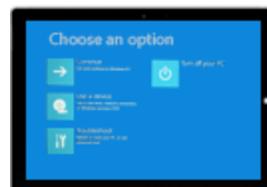
Before trying these solutions, make sure that you've checked your connections as described in [Surface battery won't charge](#).

If Windows starts but then freezes or stops responding: See [Windows stops responding on Surface](#).

If your Surface stops responding while installing updates: See [Trouble installing Surface and Windows updates?](#)

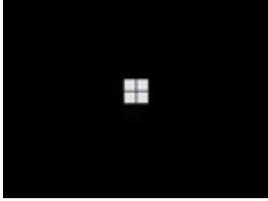
Which screen do you see?

If your Surface is turned on but Windows doesn't start up correctly, you may see one of the screens below. Select the one that matches your problem and follow the steps to troubleshoot.



[Choose an option screen](#)

[Black, blue, other-dark-colored, or backlit screen](#)



[Microsoft or Surface logo screen](#)



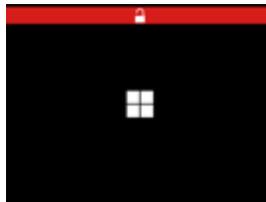
[Large thermometer icon](#)



[Automatic Repair screen](#)



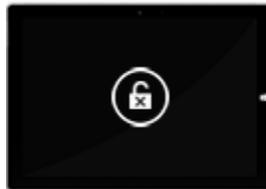
[Large battery icon](#)



[Firmware interface \(UEFI\) configuration screen](#)



[Red screen or Red bar with Microsoft or Surface logo](#)



[American Megatrends TPM security options screen](#)

[Large padlock icon](#)

[Hide All](#)

[Black, blue, other-dark-colored, or backlit screen](#)

What you see

- A blank black, blue, or other dark-colored screen, with no Surface logo.
- The screen may appear to be backlit, or it might be backlit just around the edges.
- The screen may be blank or may show **Getting devices ready** or a spinning circle.
- Your Surface is turned on, but it's not responding.

Note

If your Surface won't turn on at all when you press the power button, go to [Surface won't turn on or wake from sleep](#).

If your Surface is turned on and you see this screen, try the solutions below, in order.

Solution 1: Wait while updates are installing

Sometimes the Surface screen remains dark while Surface updates are installing. Large updates may take up to 20 minutes, so you may need to wait while they install.

For info on troubleshooting installing updates, see [Trouble installing Surface and Windows updates?](#)

If the Surface screen remains dark, try **Solution 2**.

Solution 2: Force a shut down and restart

To find out how to force your Surface to shut down and restart, see [Force a shut down and restart your Surface](#).

Solution 3: Reset your Surface using a USB recovery drive

Start your Surface by using a USB recovery drive. Insert the USB recovery drive into the USB port on your Surface, and then press and hold the volume-down button while you press and release the power button.

When the Surface logo appears, release the volume-down button. For more info, see [Creating and using a USB recovery drive](#).

[Microsoft or Surface logo screen](#)

What you see

- The Microsoft or Surface logo remains on a black screen and Windows doesn't start.
- **Getting devices ready** or a spinning circle may also appear on the screen below the logo.

If you see this, try the solutions below, in order.

Solution 1: Wait while updates are installing

Sometimes the logo stays on the screen while Surface updates are installing.

Large updates may take up to 20 minutes, so you may need to wait while they install.

For info on troubleshooting installing updates, see [Trouble installing Surface and Windows updates?](#)

If the logo continues to appear, try **Solution 2**.

Solution 2: Force a shut down and restart

To find out how to force your Surface to shut down and restart, see [Force a shut down and restart your Surface](#).

If Windows starts after you force shut down and restart: Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).

If Windows doesn't start: Go to **Solution 3**.

Solution 3: Reset your Surface using a USB recovery drive

Start your Surface by using a USB recovery drive. Insert the USB recovery drive into the USB port on your Surface, and then press and hold the volume-down button while you press and release the power button.

When the Surface logo appears, release the volume-down button. For more info, see [Creating and using a USB recovery drive](#).

[Automatic Repair screen](#)

What you see

- A black screen that says **Preparing Automatic Repair** and then **Diagnosing your PC**.
- You may then see a blue **Automatic Repair** or **Recovery** screen.

If Automatic Repair starts when you turn on your Surface, follow the steps below.

If your Surface freezes at the Automatic Repair screen or shortly after you select an option, try resetting your Surface. To learn more, see [Solution 5: Reset your Surface](#).

Solution 1: Restart your Surface

- On the **Automatic Repair** screen, select **Restart**.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Go to **Solution 2**.

Solution 2: Continue to Windows

1. On the **Automatic Repair** screen, select **Advanced options**.
2. On the **Choose an option** screen, select **Continue** to exit the options screen and continue to Windows.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Go to **Solution 3**.

Solution 3: Repair your Surface

1. If the **Automatic Repair** screen appears again, select **Advanced options**.
2. On the **Choose an option** screen, select **Troubleshoot**.
3. Select **Advanced options > Startup Repair** and follow the on-screen instructions. Windows will try to find and fix the problem.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Go to **Solution 4**.

Solution 4: Perform a System Restore

A system restore will restore your Surface to an earlier point in time when Windows was working correctly.

Notes

- Performing a system restore doesn't change your personal files, but it might remove recently installed apps and drivers.
- Make sure you have access to product keys and installation files for all desktop apps (for example, Microsoft Office) that you may have installed after the point in time to which you're restoring Surface.

Here's how to do a system restore on your Surface:

1. On the **Choose an option** screen, select **Troubleshoot > Advanced options**.
2. Select **System Restore** and follow the on-screen instructions.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Go to **Solution 5**.

Solution 5: Reset your Surface

A reset does the following:

- Reinstalls Windows and the apps that came installed on your Surface
- Removes all your personal settings
- Removes all apps that you installed
- Provides the following options for keeping or removing your personal files or restoring factory settings:

- **Keep my files:** Removes apps and settings but keeps your personal files.
- **Remove everything:** Removes all your personal files, apps, and settings.
- Make sure that you have access to the product keys and installation files for any desktop apps (for example, Microsoft Office) that you plan to reinstall after the reset. This includes desktop apps you installed from websites or USB drives.

Here's how to reset your Surface:

1. On the **Choose an option** screen, select **Troubleshoot**.
2. Select **Reset this PC** and follow the on-screen instructions.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** If the Automatic Repair screen appears again, your Surface needs service. Go to [Send my Surface in for service](#).

[Firmware interface \(UEFI\) configuration screen](#)

What you see

- A black screen with configuration options like **Trusted Platform Module** and **Secure Boot Control**.

This is the Unified Extensible Firmware Interface screen (UEFI, formerly known as the BIOS). If you see this screen when you turn on your Surface, don't make any configuration changes. Instead, try **Solution 1**.

Solution 1: Force restart

To find out how to force your Surface to shut down and restart, see [Force a shut down and restart your Surface](#).

If Windows starts after you force a shut down and restart: Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).

If Windows doesn't start: Go to **Solution 2**.

Solution 2: Reset your Surface using a USB recovery drive

Start your Surface by using a USB recovery drive. Insert the USB recovery drive into the USB port on your Surface, and then press and hold the volume-down button while you press and release the power button. When the Surface logo appears, release the volume-down button. For more info, see [Creating and using a USB recovery drive](#).

[Choose an option screen](#)

What you see

- A blue **Choose an option** screen with options like **Use a device** and **Troubleshoot**.

If you see this screen, go to **Solution 1**.

Solution 1: Continue to Windows

- Select **Continue** to exit the options screen and continue to Windows.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Continue to **Solution 2**.

Solution 2: Repair your Surface

1. On the **Choose an option** screen, select **Troubleshoot**.
2. Select **Advanced Options > Startup Repair** and follow the on-screen instructions. Windows will try to find and fix the problem.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Go to **Solution 3**.

Solution 3: Perform a System Restore

When you perform a system restore, Windows will restore your Surface to an earlier point in time when Windows was working correctly.

Notes

- System Restore doesn't change your personal files, but it might remove recently installed apps and drivers.
- Make sure you have access to product keys and installation files for all desktop apps (for example, Microsoft Office) that you may have installed after the point to which you're restoring your Surface.

Here's how to do a system restore on your Surface:

1. On the **Choose an option** screen, select **Troubleshoot > Advanced options**.
2. Select **System Restore** and follow the on-screen instructions.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** Go to **Solution 4**.

Solution 4: Reset your Surface

A reset does the following:

- Reinstalls Windows and the apps that came installed on your Surface
- Removes all your personal settings
- Removes all apps that you installed
- Provides options for keeping or removing your personal files or restoring factory settings:
 - **Keep my files:** Removes apps and settings but keeps your personal files.
 - **Remove everything:** Removes all your personal files, apps, and settings.
- Make sure that you have access to the product keys and installation files for any desktop apps (for example, Microsoft Office) that you plan to reinstall after the reset. This includes desktop apps you installed from websites or USB drives.

Here's how to reset your Surface:

1. On the **Choose an option screen**, select **Troubleshoot** > **Reset this PC** and follow the on-screen instructions.
2. If **Choose an option** appears again, choose **Continue**.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** If the **Choose an option** screen appears again, your Surface needs service. Go to [Send my Surface in for service](#).

[American Megatrends TPM security options screen](#)

What you see

- A black screen with American Megatrends at the top.
- The screen contains configuration options for the Trusted Platform Module (TPM) settings.

This screen may appear after a recovery or reset of your Surface. It tells you that a TPM configuration change was requested.

Important

You'll need a keyboard to complete this solution. If you don't have a Surface Typing Cover or another USB keyboard available, [contact us](#).

If you see the American Megatrends TPM screen on your Surface, do the following:

- Press F12. (If you're using a Surface Typing Cover, press Fn+F12.)
This will keep your current TPM settings, and your Surface will continue to Windows.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** If the American Megatrends TPM screen appears again, [contact us](#).

[Large thermometer icon](#)

What you see

- A black screen with a large thermometer icon, and your Surface shuts down immediately.

When the thermometer icon appears, it means your Surface is too hot. This device is rated as a commercial product for operation at +32°F (+0°C) to +95°F (+35°C).

Here's what to do to resolve this:

1. Turn your Surface off and let it cool down.
2. Keep your Surface turned off for about five minutes and move it to a cooler place.

To reduce heat related concerns, follow the guidelines published at [Safety and regulatory information](#).

If the thermometer icon continues to appear, [contact us](#).

[Large battery icon](#)

What you see

- A black screen with a large battery icon, and your Surface shuts down immediately.

When the battery icon appears, it means the battery is critically low. If you haven't done so already, plug in the power supply and charge your Surface.

If you already have the power supply plugged in, the problem may be with the power supply or battery. Here are some solutions to try.

Solution 1: Change the power connector orientation where possible

Important

Don't try this solution on Surface 3. The micro USB power connector on Surface 3 plugs into the micro USB charging port with the power cord extending downward only.

If your Surface isn't charging even when the power connector light is on, try this:

1. Remove the power connector from your Surface, turn it over, and plug it back in. Make sure the connection is secure and the power connector light is on.
2. Wait 10 minutes and turn on your Surface.

If your Surface still won't turn on, go to **Solution 2**.

Solution 2: Force a shut down and restart

To find out how to force your Surface to shut down and restart, see [Force a shut down and restart your Surface](#).

If Windows starts: The battery is probably very low and needs to charge for a while. When the battery has at least a 40 percent charge, install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).

If Windows doesn't start: Your Surface needs service. Go to [Send my Surface in for service](#).

[Red screen or red bar with Microsoft or Surface logo](#)

What you see

- A red screen with the Surface logo on a black background.

A red screen means you may need to change some settings in the UEFI (Unified Extensible Firmware Interface).

Note

Windows might prompt you for your BitLocker recovery key. If you don't have it, you can retrieve it by going to windows.microsoft.com/recoverykey and signing in with the same Microsoft account you use on your Surface.

To change settings in the UEFI:

1. Go to **Start**, search for **Manage BitLocker** and select it from the list of results.
2. Select **Suspend protection** and select **Yes** to confirm.
3. Go to **Start** > **Settings** > **Update & Security** > **Recovery**. In **Advance startup**, select **Restart now**.
4. From the **Choose an option** screen, select **Troubleshoot** > **Advanced options** > **UEFI Firmware Settings** > **Restart**.

The UEFI screen will display within a few seconds.

5. Verify the following settings:
 - **Trusted Platform Module (TPM)** should be enabled.
 - **Secure Boot Control** should be enabled.
6. Select **Exit** > **Restart now** and, if prompted, select **Yes** to save the configuration and reset.

If you continue to see the red screen when you turn your Surface on, your Surface needs service. Go to [Send my Surface in for service](#).

[Large padlock icon](#)

What you see

- A black screen with a large white padlock icon with an X on it.

The padlock icon indicates that there's a certificate error or a certificate is corrupted.

To resolve this, force your Surface to shut down and then turn it back on. Here's how:

1. Press and hold the power button on your Surface for 30 seconds and then release it.

Note

If the screen flashes, continue to hold down the power button for the full 30 seconds.

2. Press and release the power button on your Surface to turn it back on.
 - **If Windows starts:** Install the latest Surface and Windows updates to help prevent future problems. For more info, see [Install Surface and Windows updates](#).
 - **If Windows doesn't start:** If forcing your Surface to restart doesn't fix the problem, your Surface needs service. Go to [Send my Surface in for service](#).

[Windows still doesn't start](#)

If you've tried everything and you're still having issues, go to [Device service and repairs](#) to start a service request.

Surface won't turn on or wake from sleep

Applies to: Surface DevicesSurface

Note

Some Surface products might not be available in your country or region.

If your Surface turns on, but Windows freezes or slows down, see [Windows stops responding on Surface](#).

If your Surface won't turn on, won't wake up, or shows a black screen with no Surface logo, try the following solutions.

Before you begin

Disconnect any unnecessary peripherals or accessories, such as USB drives, SD cards, USB keyboards, and external displays. If you're using a Surface Dock or docking station, disconnect from the docking station and use the power supply that came in the box with your Surface.

USB peripherals and storage devices can sometimes affect a device's ability to turn on. If your Surface turns on after you remove the accessory, that accessory could be the problem. Restart your Surface again to make sure.

Solution 1: Connect the power supply

Connect the power supply to your Surface and plug it in. If the LED doesn't light up or if it flashes, the power supply might be the problem. For help, see [Surface battery won't charge](#).

If the battery charge is low, you may see a battery icon on the screen when you press the power button. Charge your Surface for 10 to 15 minutes to make sure that the battery has enough power to start Surface and Windows.

After the power supply is connected and you make sure that it's working, press the power button to turn on your Surface. If your Surface turns on, but you still can't start Windows, see [Windows doesn't start on Surface](#).

Solution 2: Try waking your Surface with hotkeys

You might be able to wake your Surface by using a special keyboard shortcut that refreshes the Surface display driver. This solution may resolve your issue if Windows is on but the Surface display is not responding, and the display needs to be restarted.

- If you have a keyboard connected, simultaneously press **Windows logo key +Ctrl+Shift+B**.
- If you're in tablet mode, simultaneously press the volume-up and volume-down buttons three times in quick succession (within two seconds).

If that works, you'll hear a short beep while Windows tries to refresh the screen. If you don't hear a beep, try the shortcut again

If your Surface still won't turn on, try **Solution 3**.

Solution 3: Force a shut down and restart

For details, see [Force a shut down and restart your Surface](#).

Video: Force a shut down and restart your Surface

What to do if your Surface power supply or charger doesn't work

If the LED light on your Surface charger is blinking, flashing, off, or on (but your Surface still isn't charging), here's what to do:

- **Check cables:** Unplug and disconnect all the cables (including the two parts of the charger, power strips, and USB accessories). Clean everything with a soft cloth, and check for any damage. (Be sure to replace damaged cables.)
- **Plug it in the other way:** Flip the charger 180 degrees, and check to see if the LED light comes on and if your Surface starts charging again.
- **Try a different power source:** Plug the charger into another outlet, surge protector, or power strip.
- **Still having issues?** To replace your power supply, go to [Device Service and Repair](#) to start a replacement order.
- If you're interested in purchasing a replacement, or upgrading your power supply, see [Microsoft Surface power supplies at the Microsoft Store](#).
- Surface power supplies are designed to work with Surface. We strongly recommend only using a genuine Microsoft or Microsoft-licensed power supply, one that either came with your Surface or was purchased separately, to charge the battery.