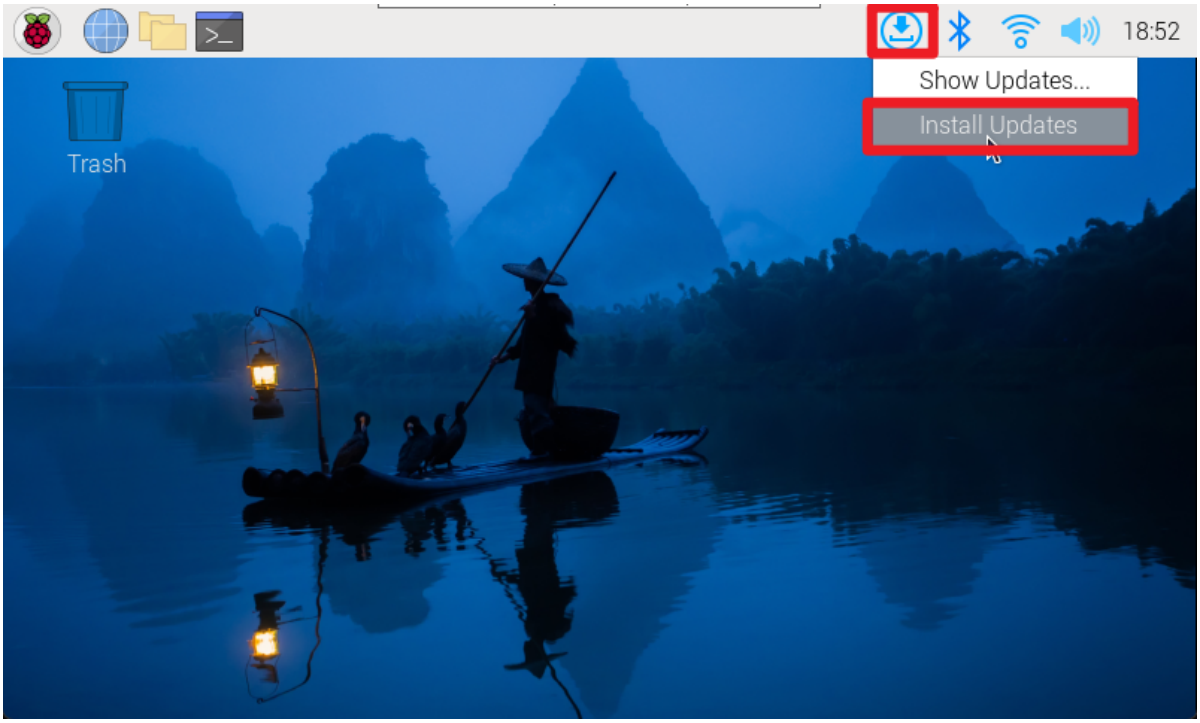
Update and upgrade operating system

Keeping the Raspberry Pi up to date can improve the security of the system, but it is not recommended for developers to update randomly!

Graphical interface

Generally, the Raspberry Pi system update prompt will be displayed in the upper right corner of the desktop. You can click the corresponding option to update!



Use APT

Tools for managing software installation, upgrades and removals.

```
The software source of Raspberry Pi is saved in the sources.list file, and the
path is located at /etc/apt/sources.list. Do not modify this file unless
necessary.
```

Update software list

```
sudo apt update
```

Update software to the latest version

```
sudo apt full-upgrade
```

Search software

Command: apt-cache search <package_name>

Function: Used to search for specific packages in the package repository.

Example: Search the package management system for packages related to "locomotive"

```
apt-cache search locomotive
```

View software information

Command: apt-cache show <package_name>

Function: Used to display detailed information of a specific software package.

Example: Display details for a package named "sl"

```
apt-cache show sl
```

install software

Command: sudo apt install <package_name>

Function: Used to install specific software packages with administrator privileges.

Example: Use administrator rights (sudo) to install software named "tree"

```
sudo apt install tree
```

Command: sudo apt install <package_name> -y

Function: Automatically confirm the installation of specific software packages with administrator privileges.

Example: Installing a package named "tree" with automatic confirmation (-y) with administrator privileges

```
sudo apt install tree -y
```

Uninstall software

Command: sudo apt remove <package_name>

Function: Used to remove specific software packages with administrator privileges.

Example: Uninstalling a package named "tree" with administrator privileges.

```
sudo apt remove tree
```

Command: sudo apt purge <package_name>

Function: Used to completely clear specific software packages, including configuration files and useless dependencies, with administrator privileges.

Example: Completely clear the package named "tree" with administrator privileges, including configuration files and useless dependencies.

```
sudo apt purge tree
```

Use rpi-update

Used to update startup files and firmware on the Raspberry Pi to provide support for new hardware, features, or fixes.

```
If you need to use this method to upgrade the firmware, it is recommended to back up the current system first, because running this command may cause the system to fail to start normally.
```

Upgrade firmware

rpi-update needs to be run as root; you will need to reboot after the update is complete.

```
sudo rpi-update
sudo reboot
```

Roll back to stable version

If the firmware upgrade still does not work properly, you can use the following command to reinstall the stable version of the firmware.

```
sudo apt-get update
sudo apt install --reinstall raspi-firmware
```

Turn off automatic updates

Prevent the system from updating the kernel and bootloader:

```
sudo apt-mark hold raspberrypi-kernel
sudo apt-mark hold raspberrypi-bootloader
```

```
pi@raspberrypi:~ $ sudo apt-mark hold raspberrypi-kernel
raspberrypi-kernel set on hold.
pi@raspberrypi:~ $ sudo apt-mark hold raspberrypi-bootloader
raspberrypi-bootloader set on hold.
```