# Power Suite v2.0.20

# User Manual

## Contents

# Installation

## Requirement

- Ubuntu 20.04, 22.04 or 24.04 for Intel x86_64
- Minimum hard disk space requirement is 64GB
- The application supports a minimum resolution of 1024 x 768 to ensure all interface elements and functionalities are displayed properly.

## Install

**Step1.** Download Power Suite 2.0 installer “Advantech_Power_Suite_2.0.20.(build)_Ubuntu_x86.tar.gz”and put it into your device.

NOTE: The code of (build) has to change to the actual build number of your installer for below steps.

**Step2.** Open a Terminal from Ubuntu applications and change to the path of the installer file “Advantech_Power_Suite_2.0.20.(build)_Ubuntu_x86.tar.gz”

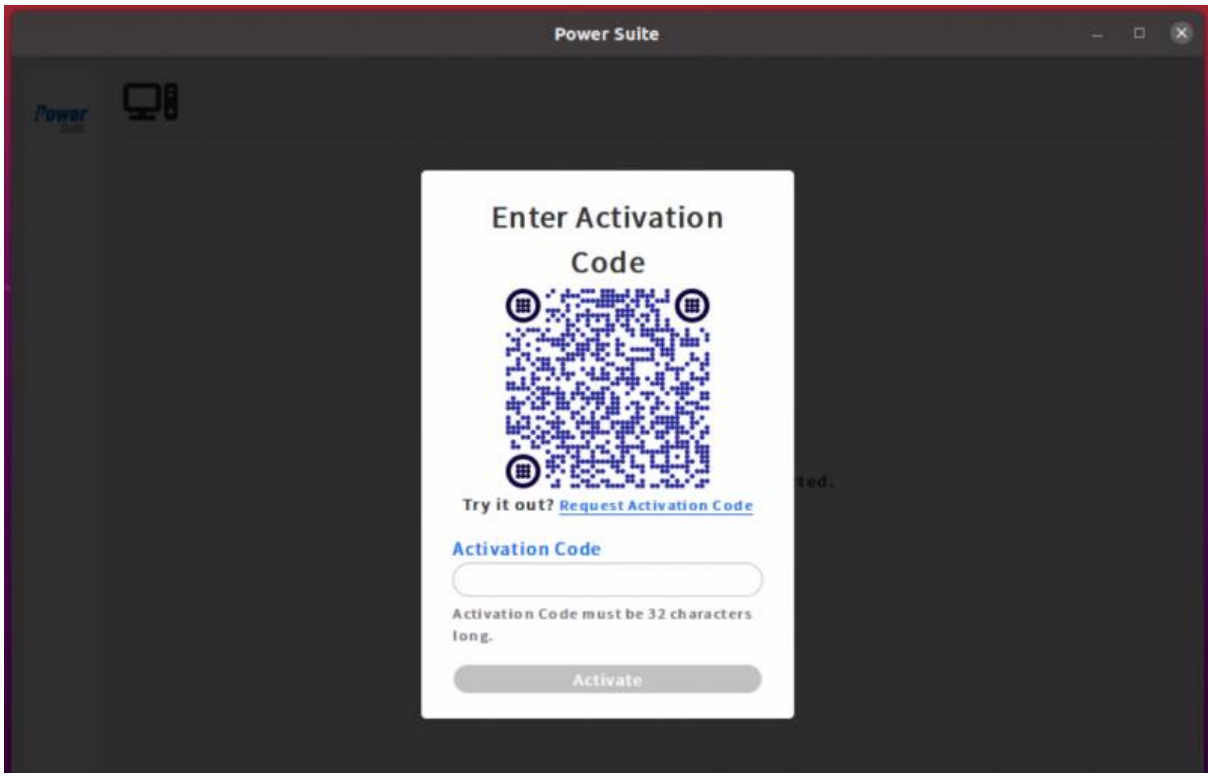
**Step3.** Run below command to install PowerSuite 2.0.20:

```
$ tar zxvf Advantech_Power_Suite_2.0.20.(build)_Ubuntu_x86.tar.gz
$ chmod +x Advantech_Power_Suite_Ubuntu_x86.run
$ ./Advantech_Power_Suite_Ubuntu_x86.run
```

**Step4.** After the installation is complete, please restart your computer.

## Activation Code

When opening the Power_Suite for the first time, if the system verifies that the device is not an Advantech device, you will be asked to apply for an activation code by QR code or URL, after entering the activation code, you can use it normally.




## Uninstall

**Step1.** Open a Terminal from Ubuntu applications.

**Step2.** Run below command to uninstall PowerSuite 2.0:

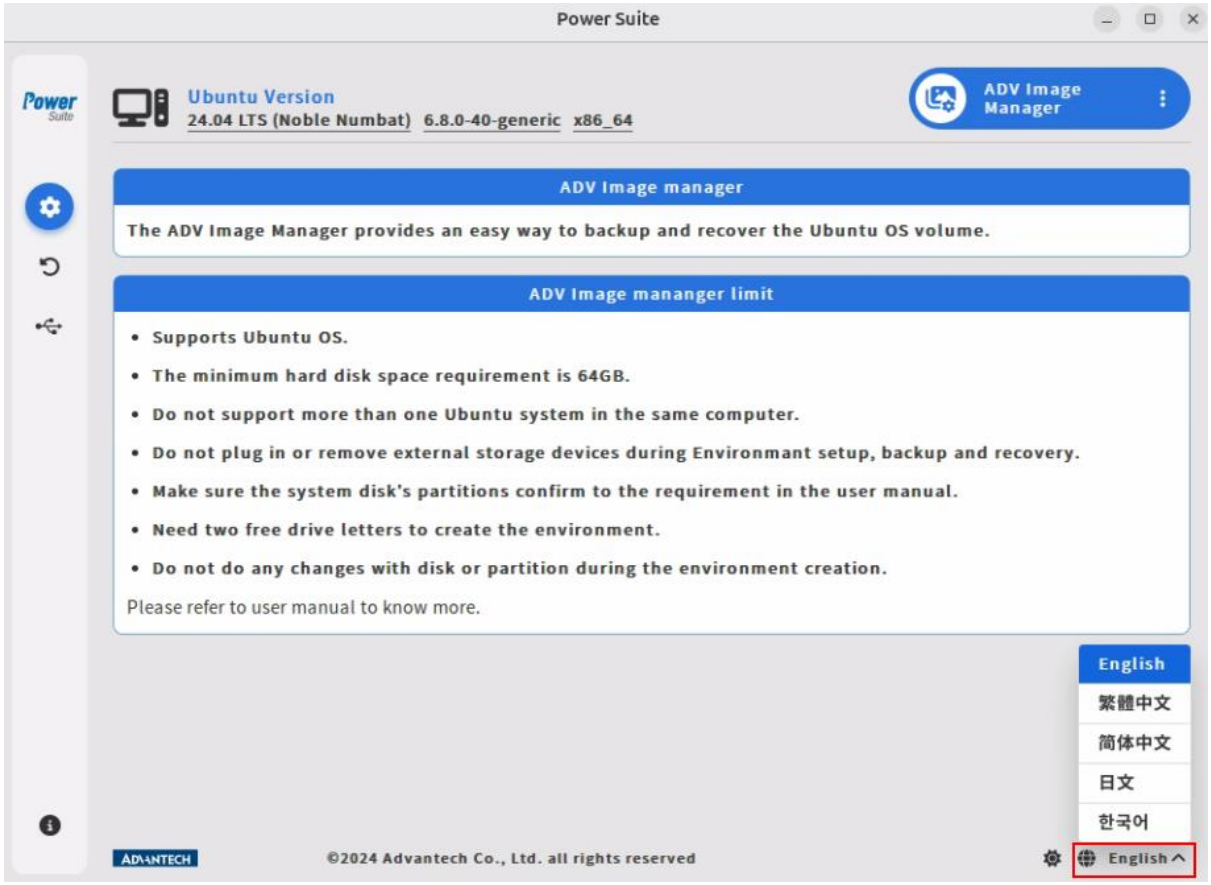
```
$ cd /usr/local/power_suite
```

```
$ ./powersuite_uninstall.sh
```

# Common

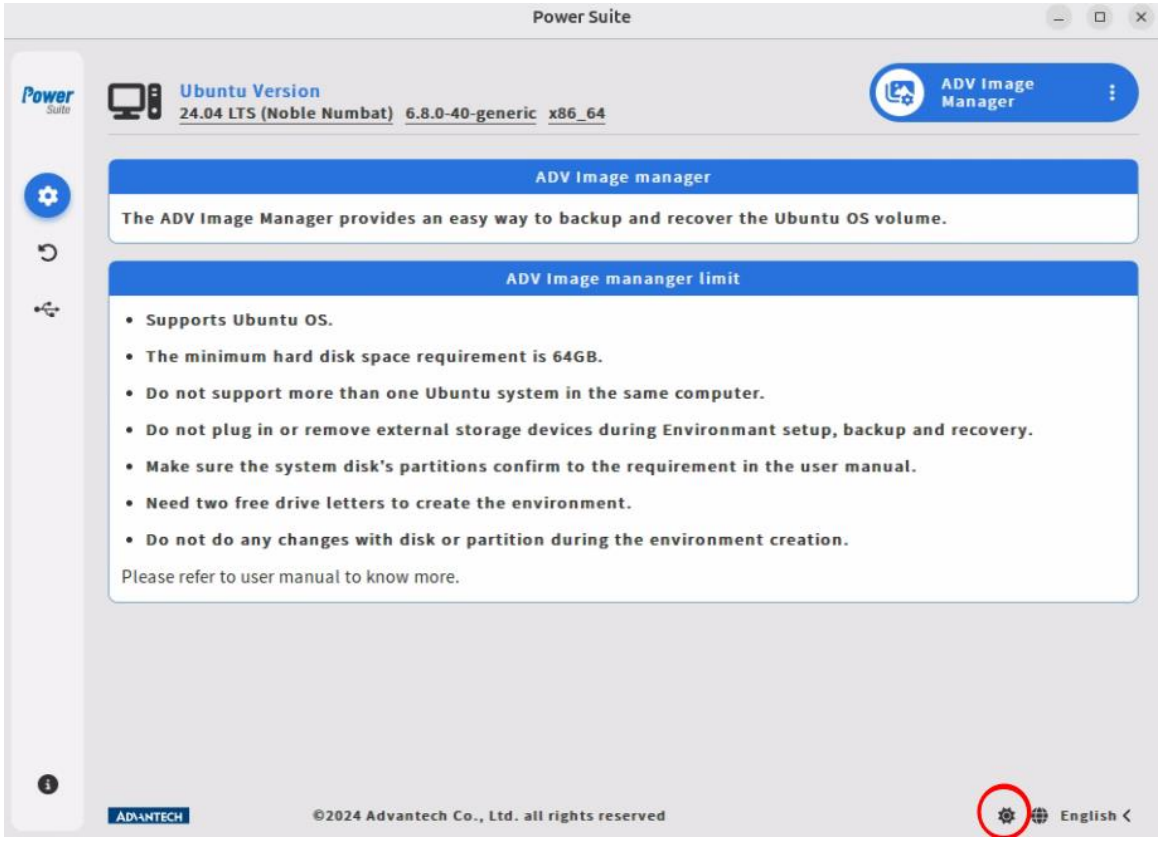
# Language

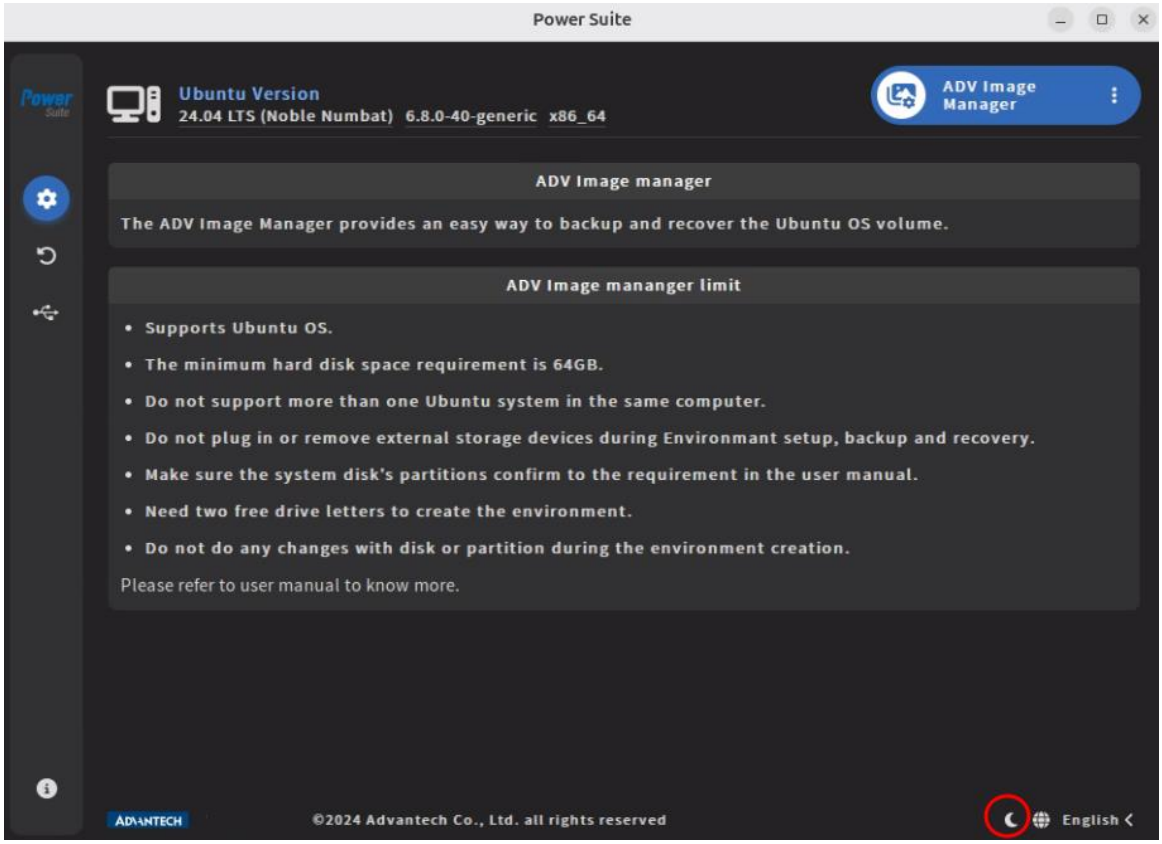
It can switch the Language through the button in the lower right corner.



# Dark mode

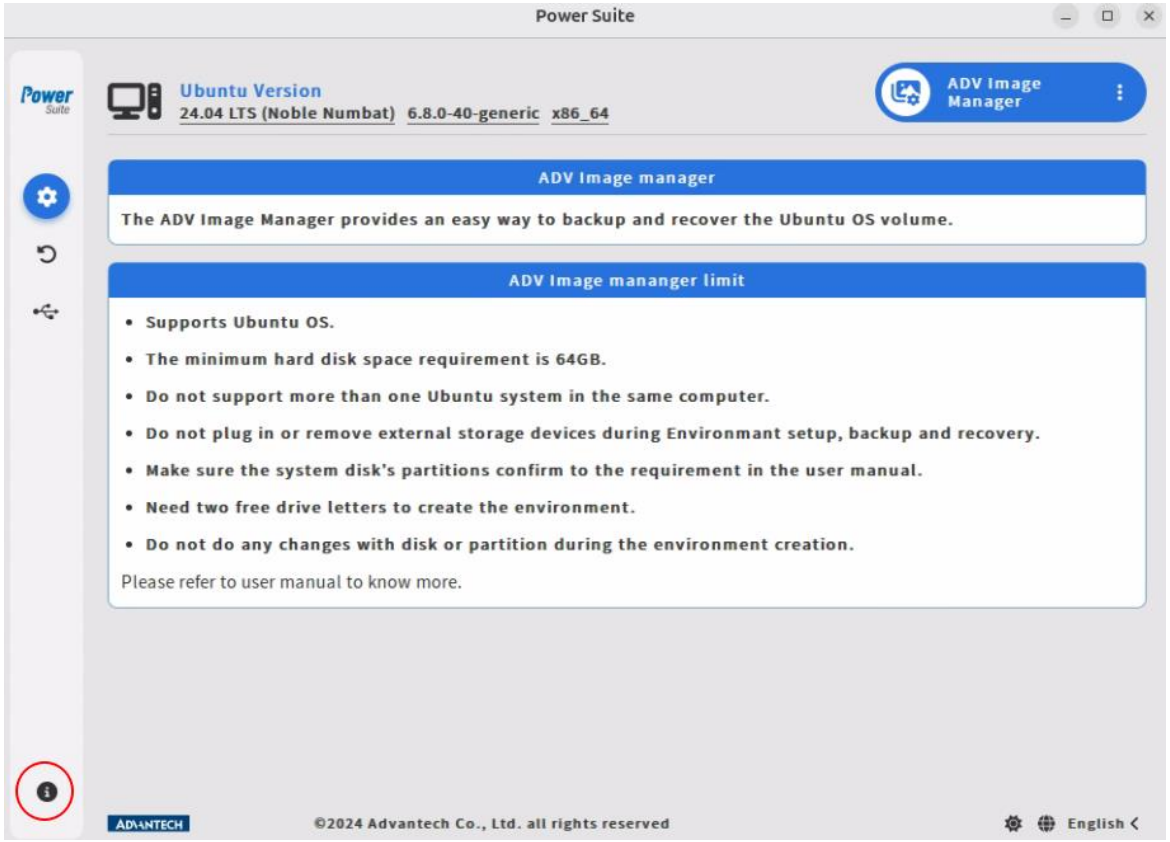
It can switch to Dark mode through the button in the lower right corner.

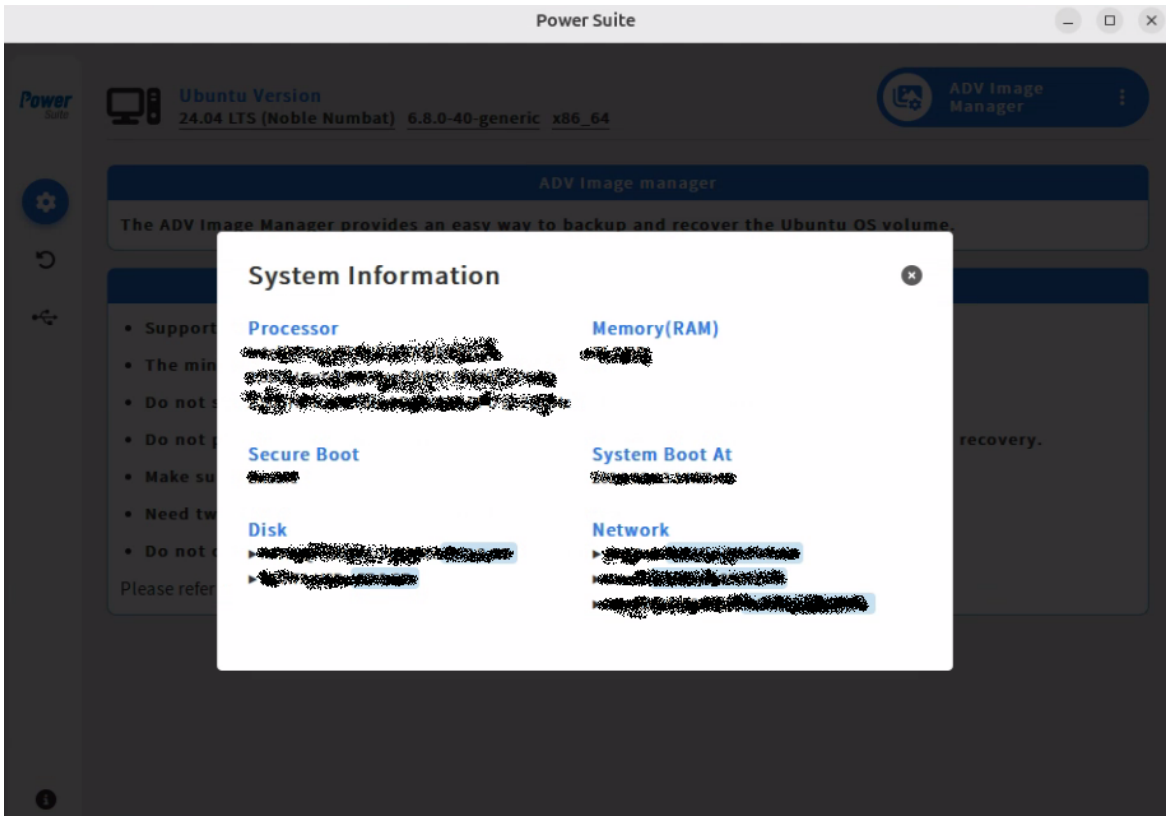


# System Info

System information can be viewed from the lower left corner.



# Image Manager

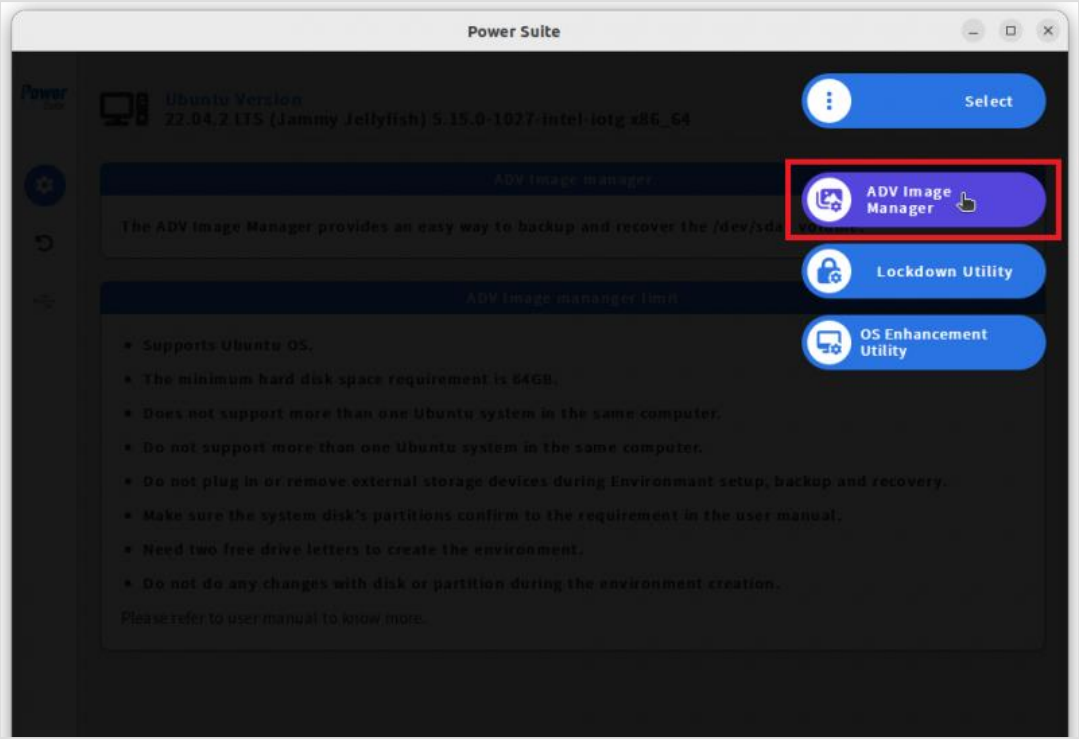
# Environment Settings

ADV Image Manager need to create the a partition at the system disk to store the backup image, there are some limitations require user attention and compliance:

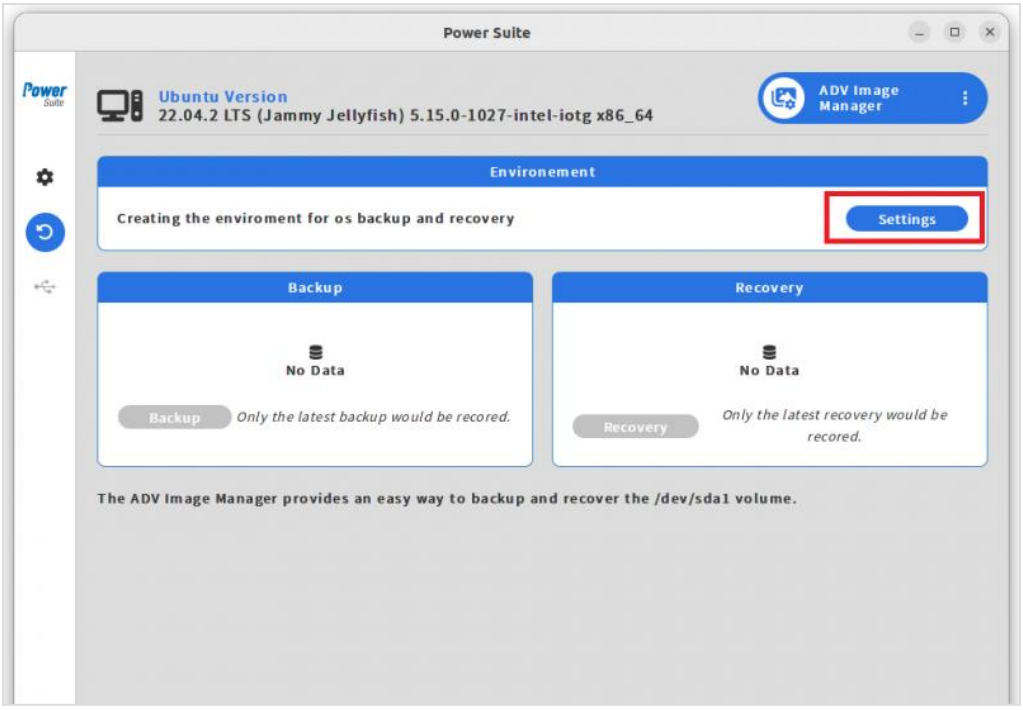
- The minimum hard disk space requirement is 64GB.
- Must **disable** Secure boot (in BIOS).
- Does not support more than one Ubuntu system in the same computer.
- Do not plug in or remove external storage devices during Environment setup, backup and recovery.
- Do not do any changes with disk or partition during the environment creation.

To start the partition creation, please follow below steps.

**Step1.** Select the “ADV Image Manager” page.

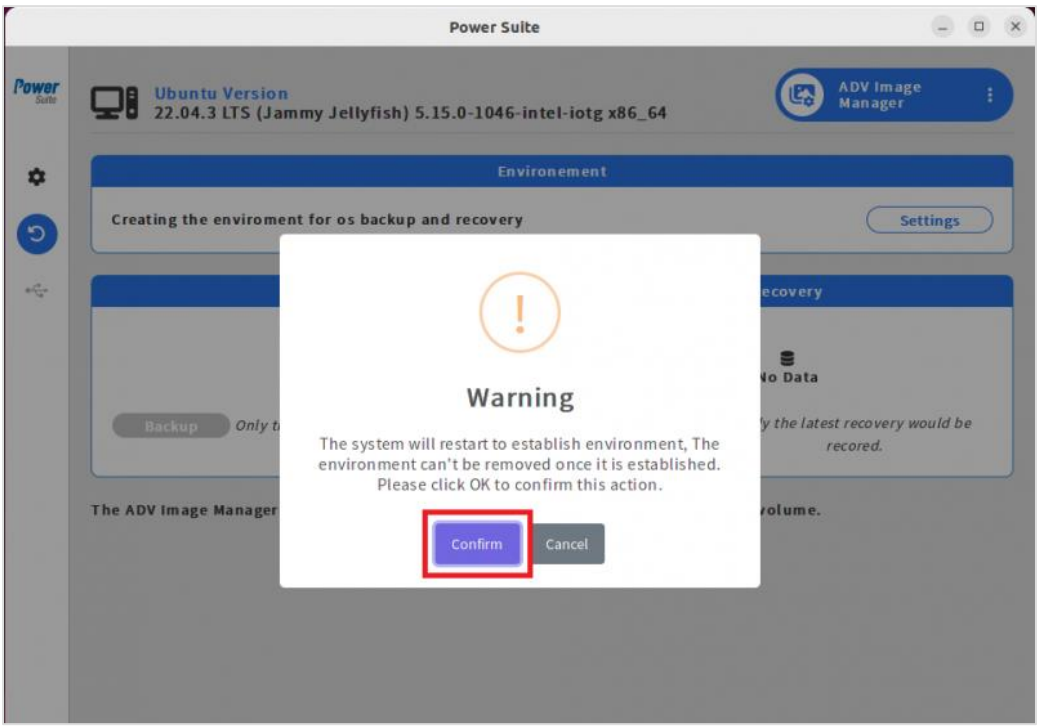


**Step2.** In the Environment area, press “Settings” to setup environment.




**NOTE:** The system will restart to establish the environment, The environment can't be removed once it is established.

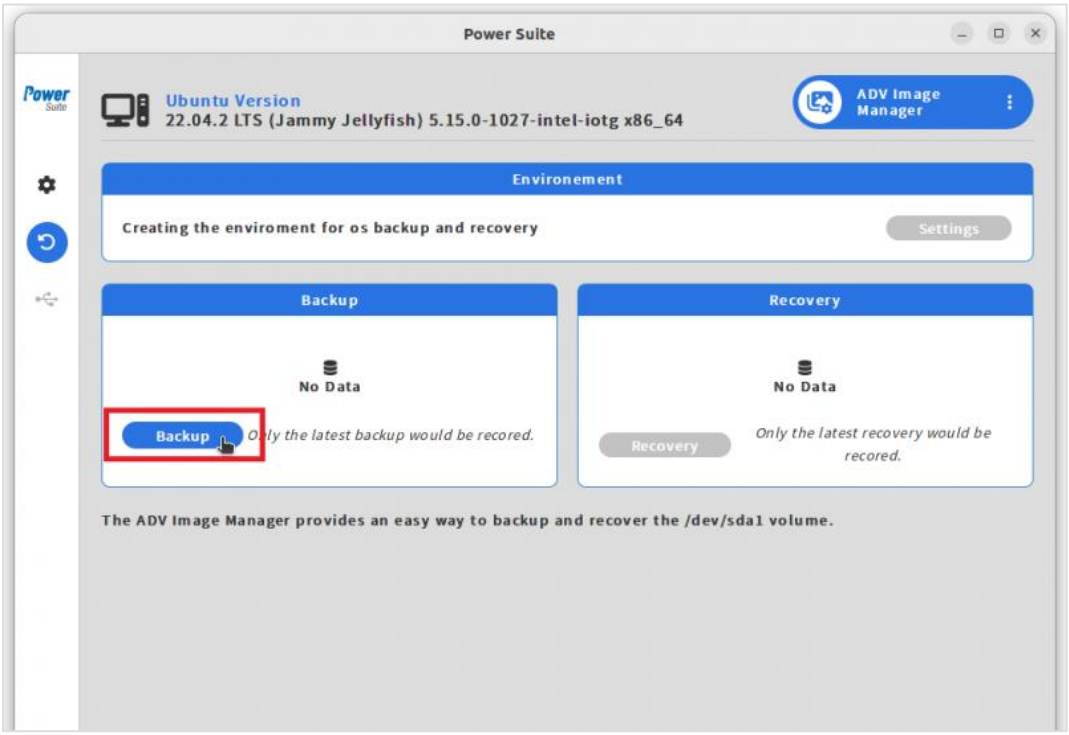
**Step3.** Press “Confirm” to close the warning message and continue creating the environment.



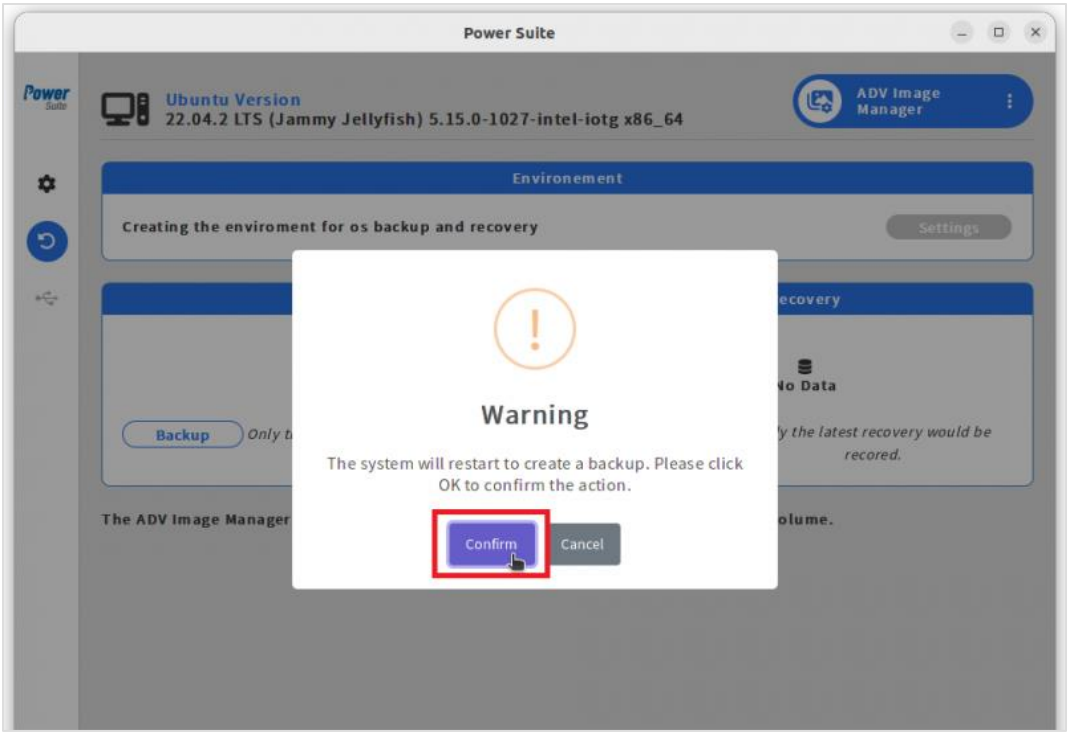

**NOTE:** When the environment is created successfully, The button Settings will be hidden.

# Backup

**Step1.** Click the “Backup” button to do system backup.

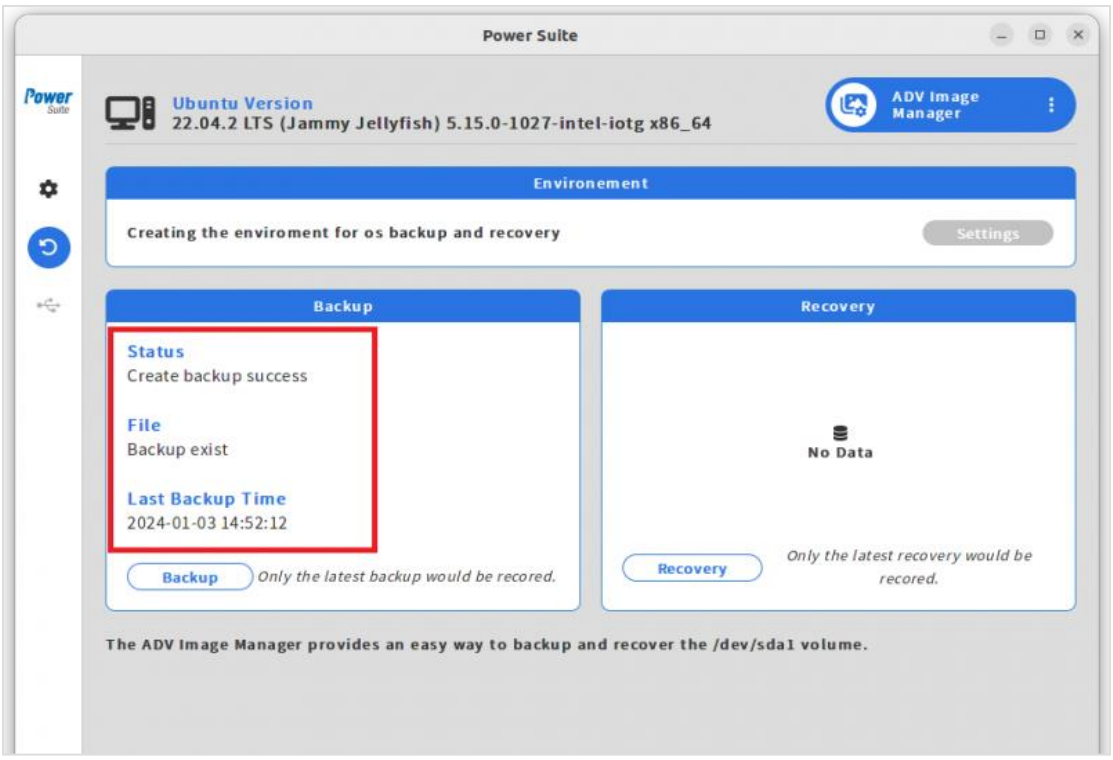



**Step2.** Press “Confirm” to do system backup, the system will restart to backup mode and start backup.



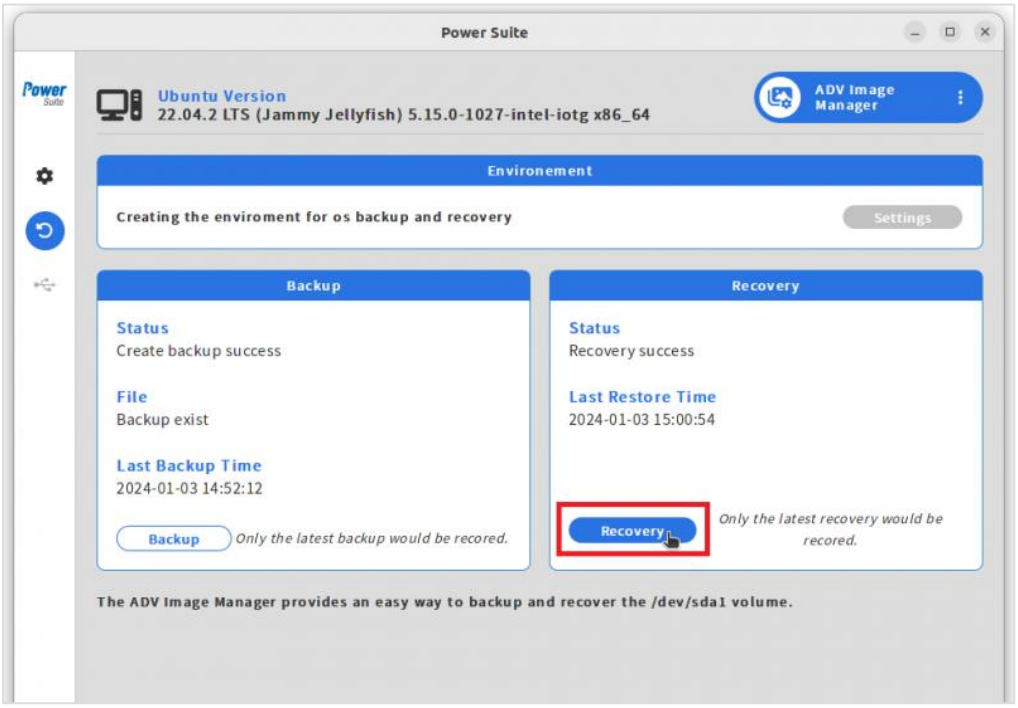

**NOTE:** Please don’t close the ADV Image Manager after the backup starts.

**Step3.** Verify the backup status and timestamp after backup completed.

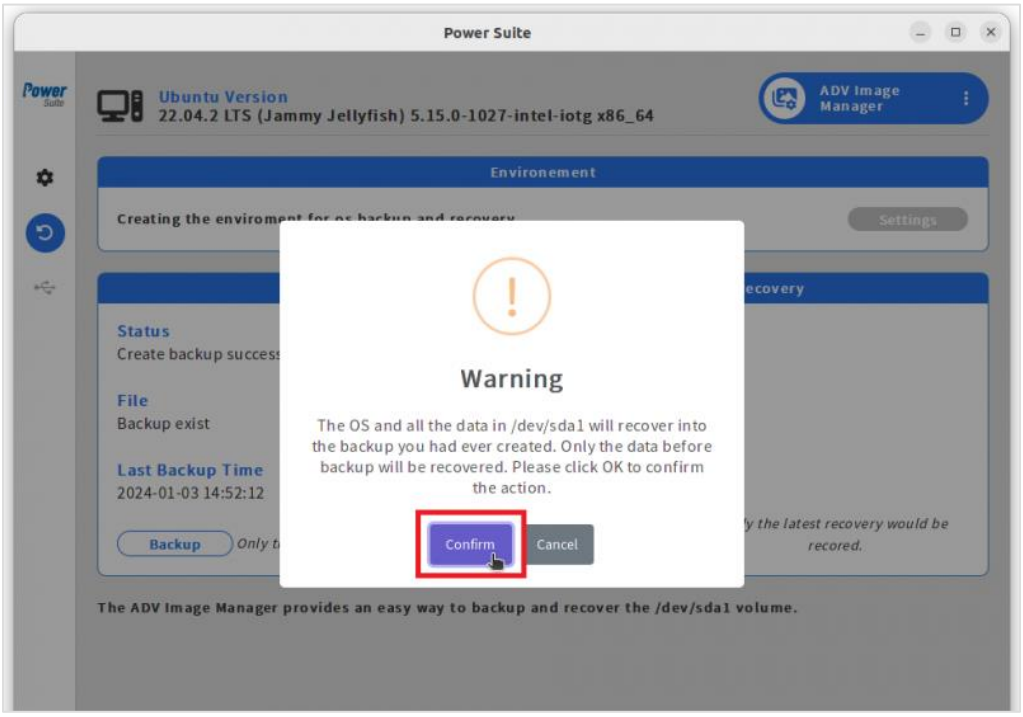


# Recovery

**Step1.** Click the “Recovery” button to do system recovery.

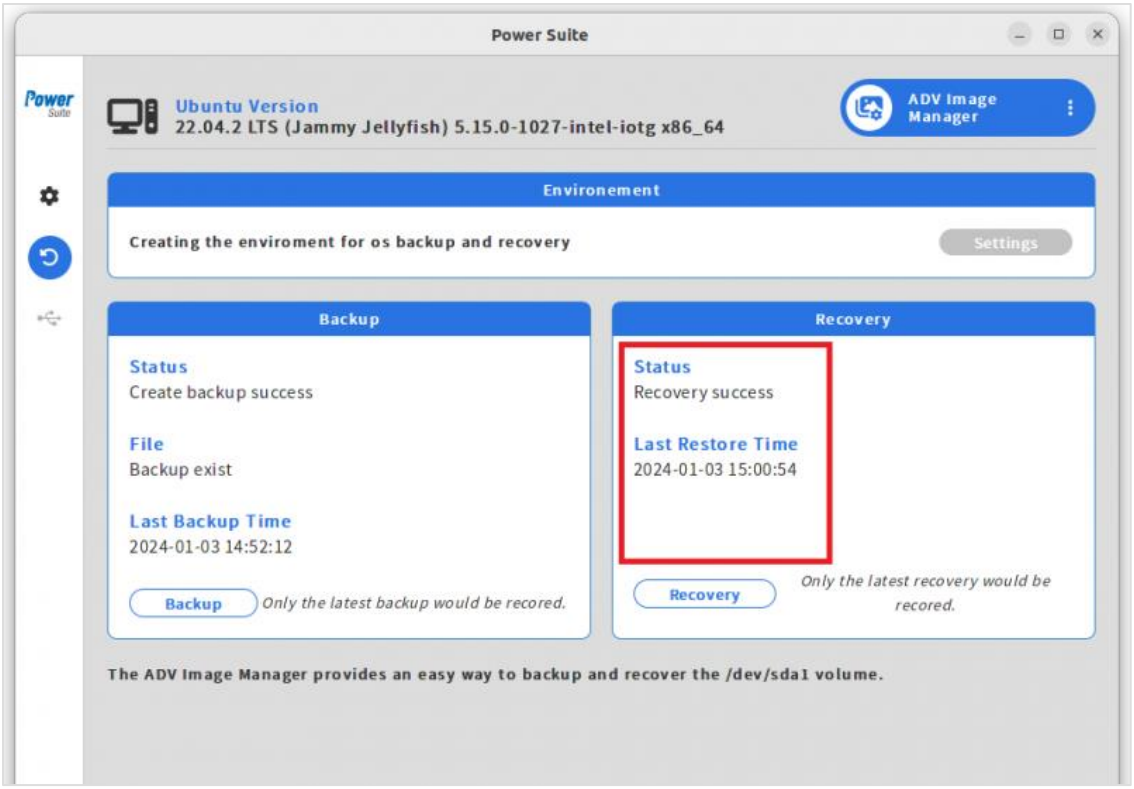



**Step2**. Press “Confirm” to do system Recovery, the system will restart to Recovery mode and start Recovery.




**NOTE:** Please don’t close the ADV Image Manager after the Recovery starts.

**Step3.** Verify the Recovery status and Recovery timestamp.



# Image Deployer

## Brief

Image Deploy is a function helps user make a rescue USB flash drive (with backup image), user can select rescue image from internal image (hidden disk partition), or external image (system path).

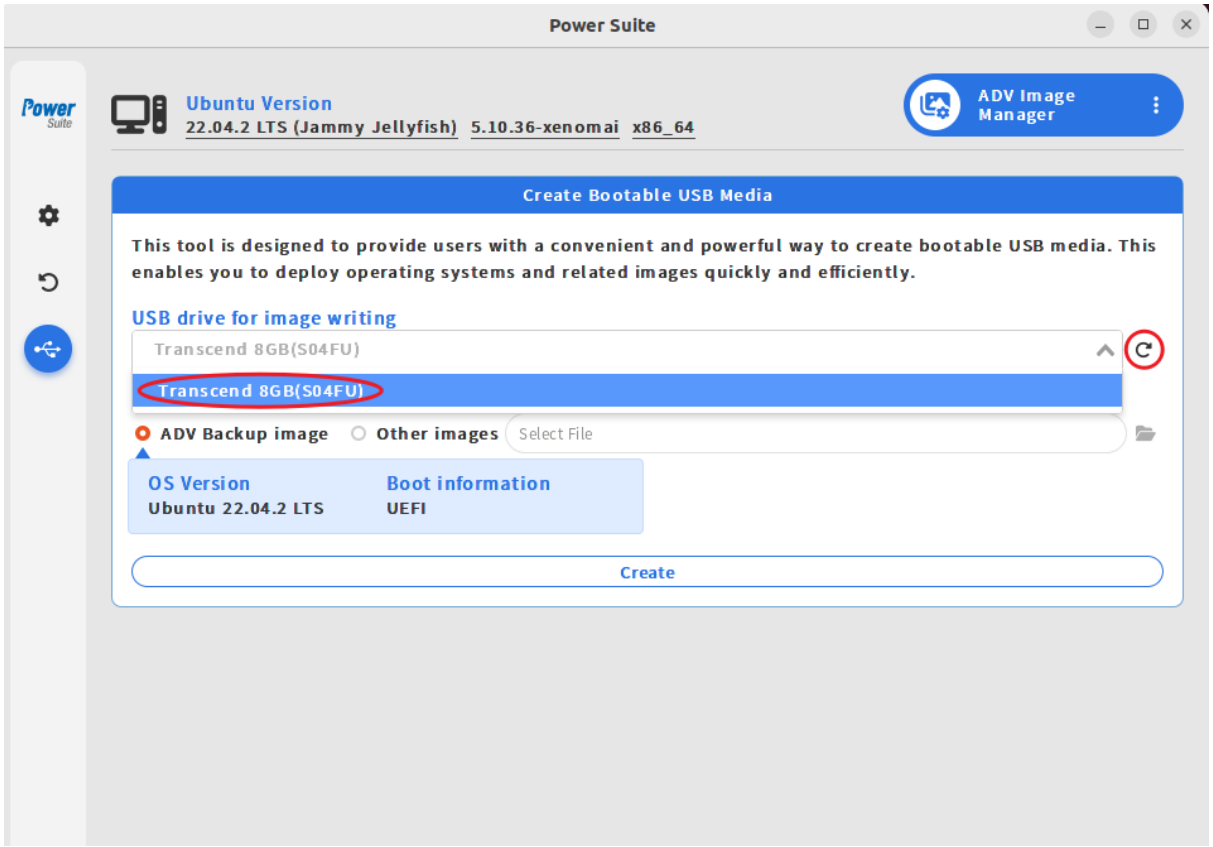
## Limitation

- USB size suggests equal to system used size.
- USB Deploy Rescue only Ubuntu system partition.
- Make USB Image Deployer Duration

Copy ~10G images with 3.0 usb, need 5~10 minutes.

## Steps

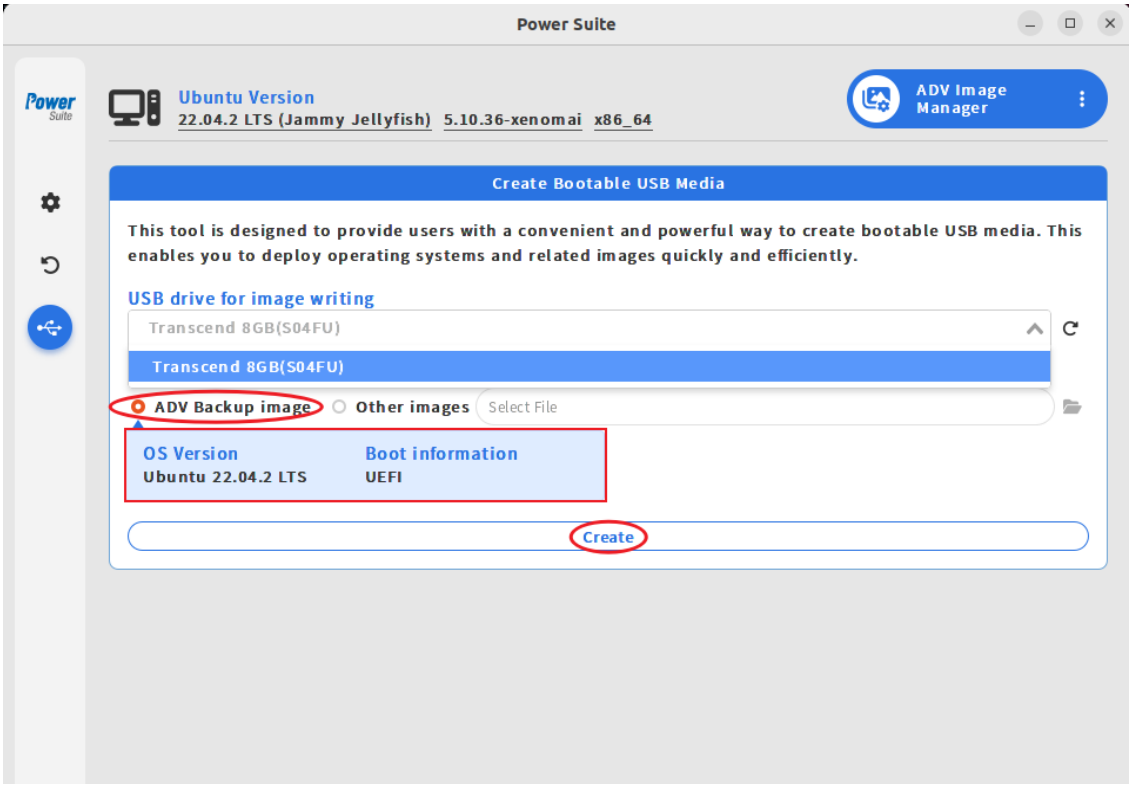
1. Select USB



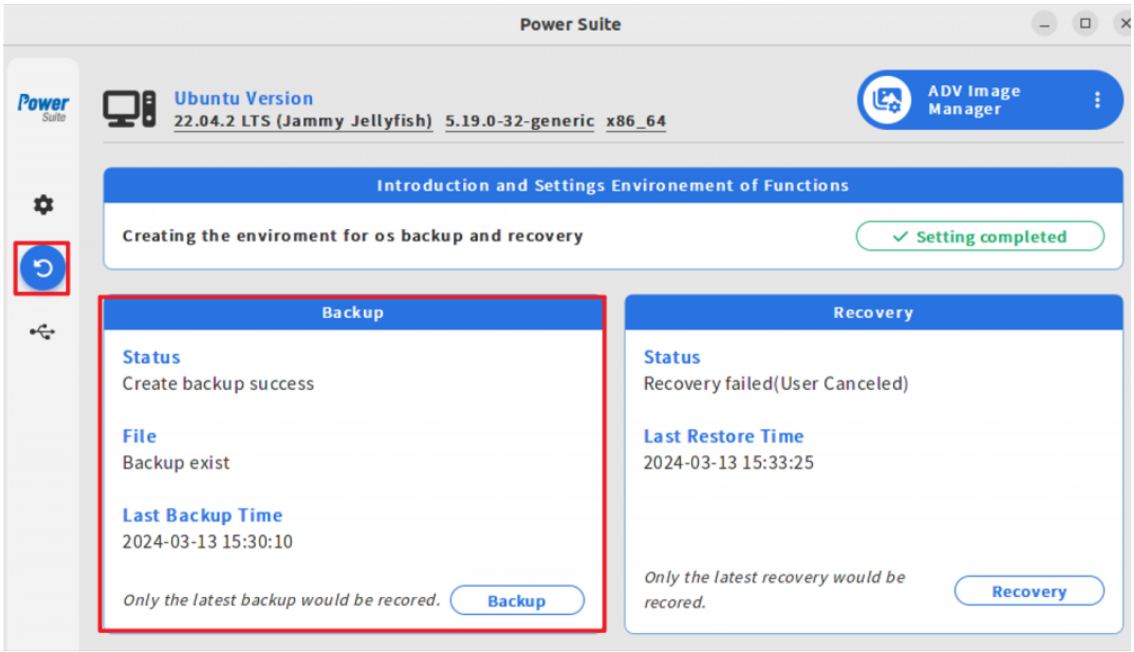

**2. Select image** (internal or external)

- **Internal**

If successful, it will see an image version.

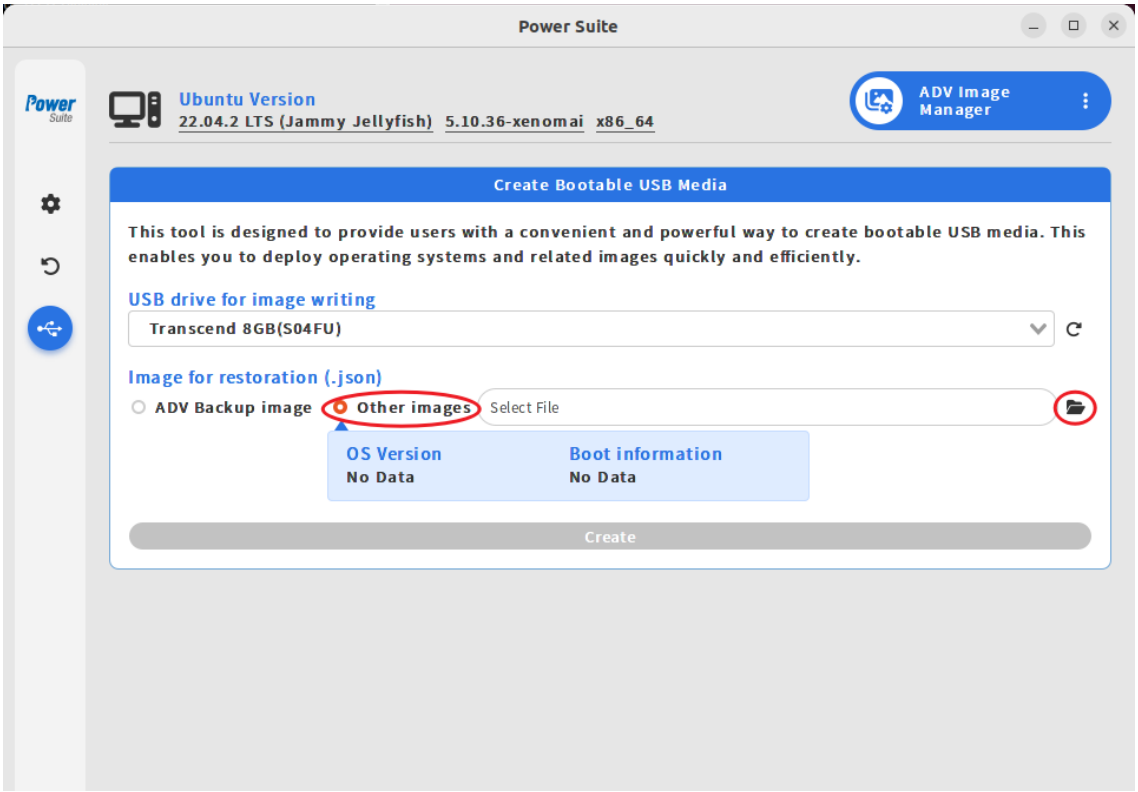



**Note:** Switch to backup subpage and check is system already backup or not



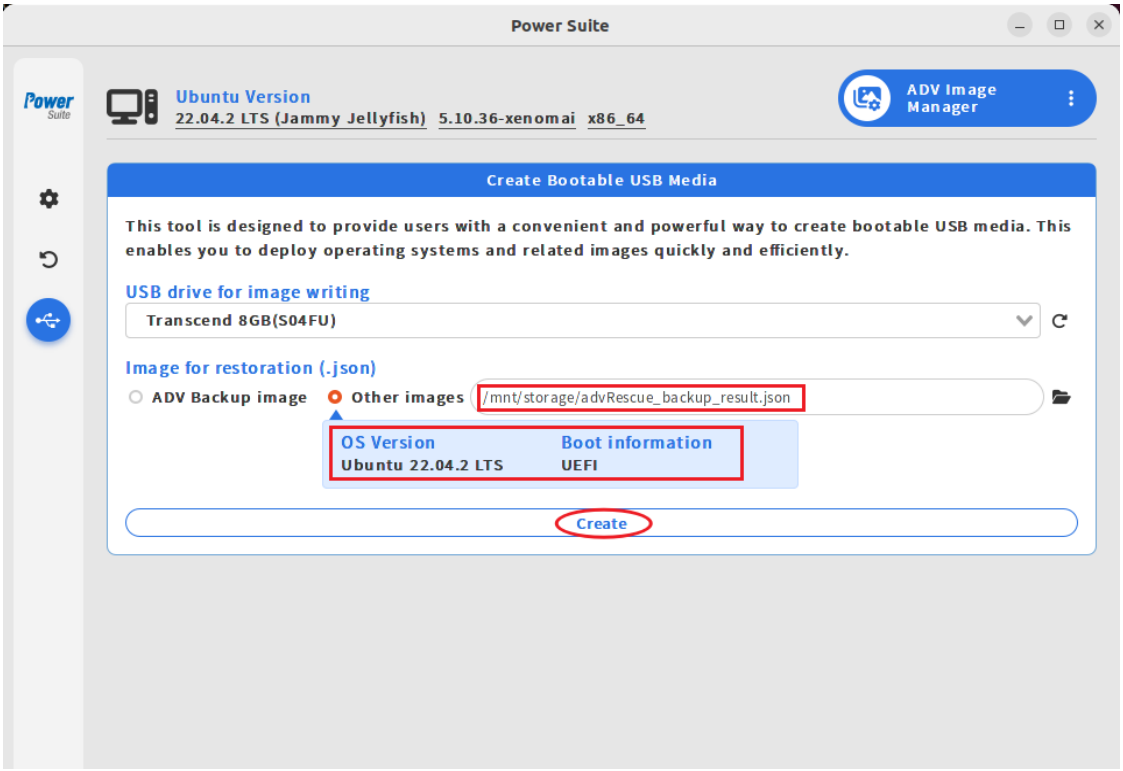
- **External**

**Select "Other image" and Click Select File**




**Select recovery image description file(*.json)**


**If successful, you will see the path like the following.**




3. Finally, click "Create" to Start Making usb Image Deployer

# OS Enhancement Utility

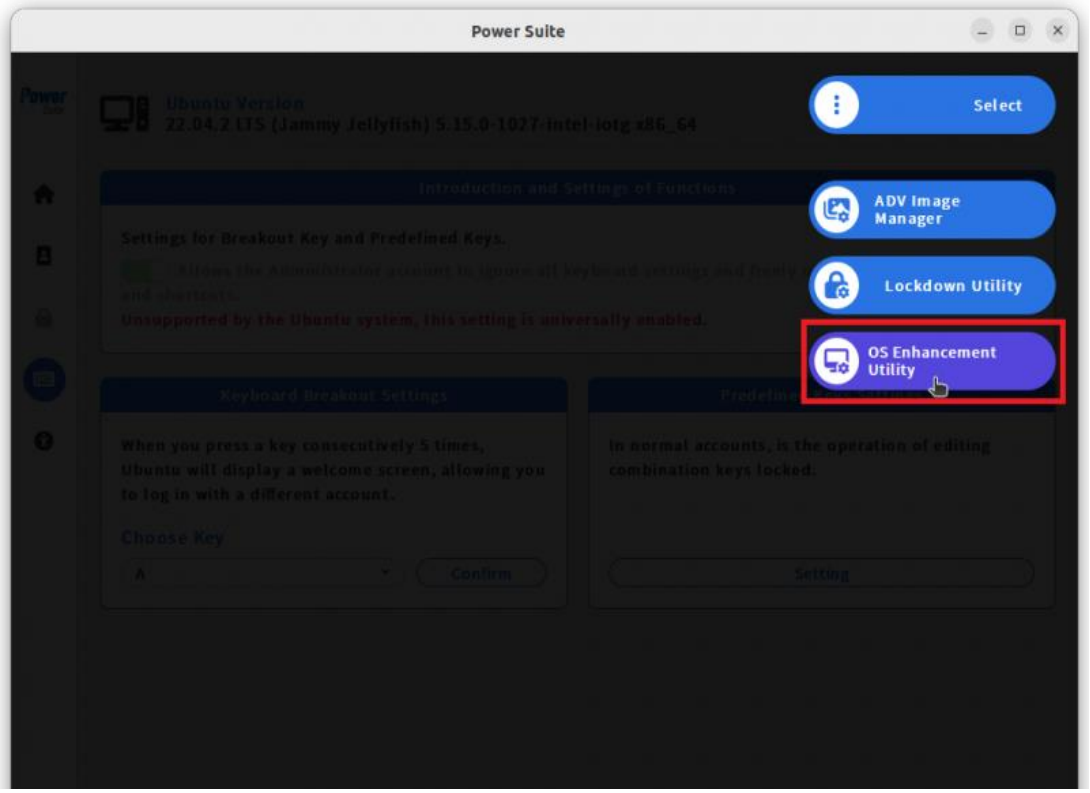
# Notification

## Brief

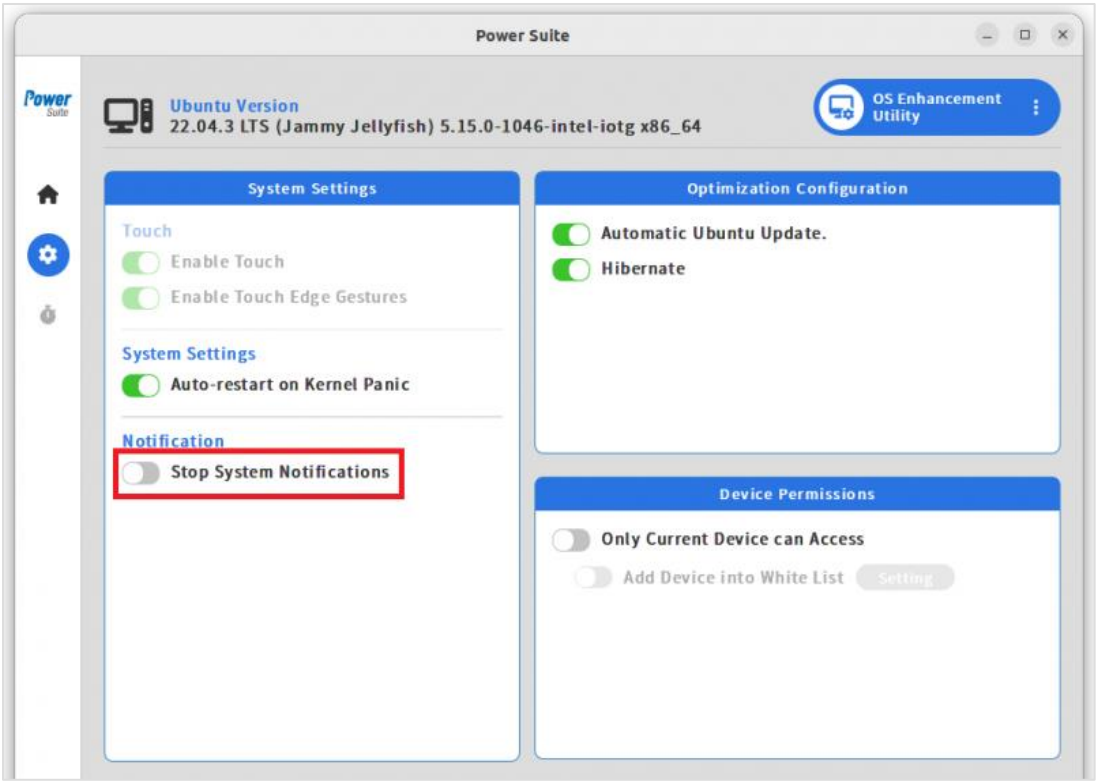
You can toggle the system notification feature of Ubuntu ON/OFF by clicking the "Stop System Notifications" button.

## Steps

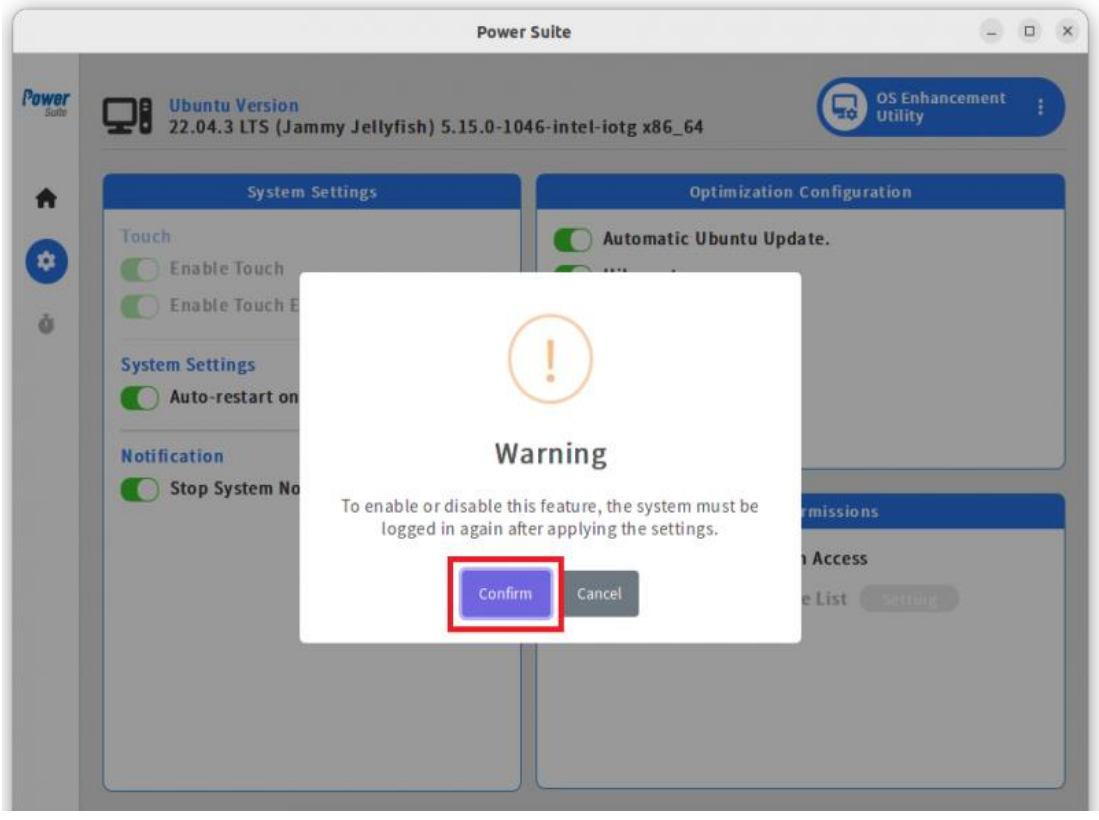
**Step1.** Select the “OS Enhancement Utility” page.



**Step2.** Click on "Stop System Notification" switch button.

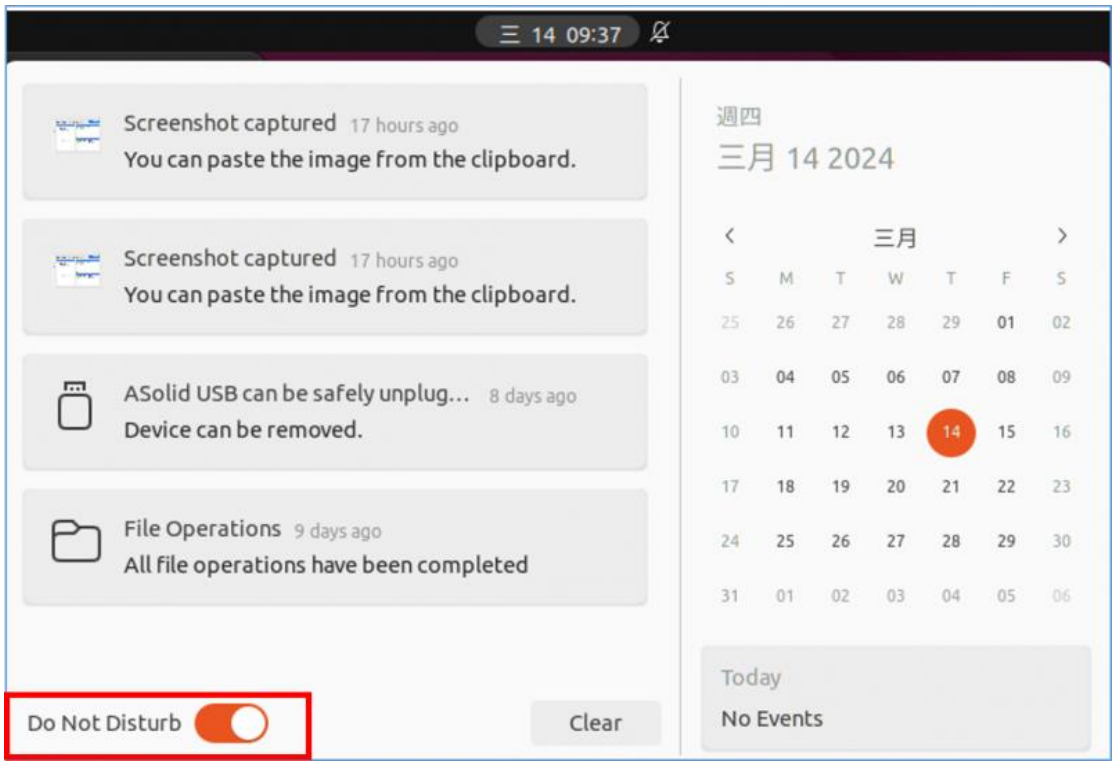



**Step3.** Click on "Confirm" to change the settings.



## Result

Checking the message notification bar at the top of the Ubuntu desktop, you will find that "Do Not Disturb" has been turned on.



# Ubuntu Update

## Brief

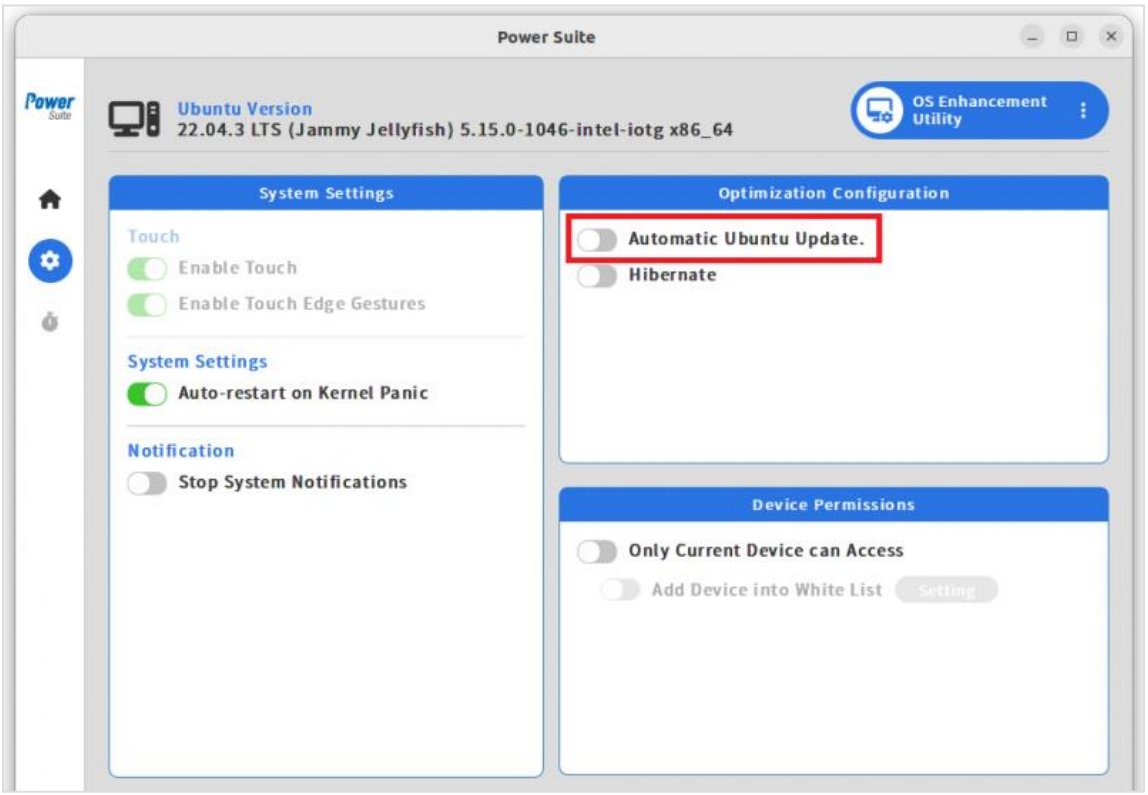
You can toggle the "Automatic Ubuntu Update" to disable automatic updates and update notifications in Ubuntu ; or enable automatic updates and update notifications.

## Note

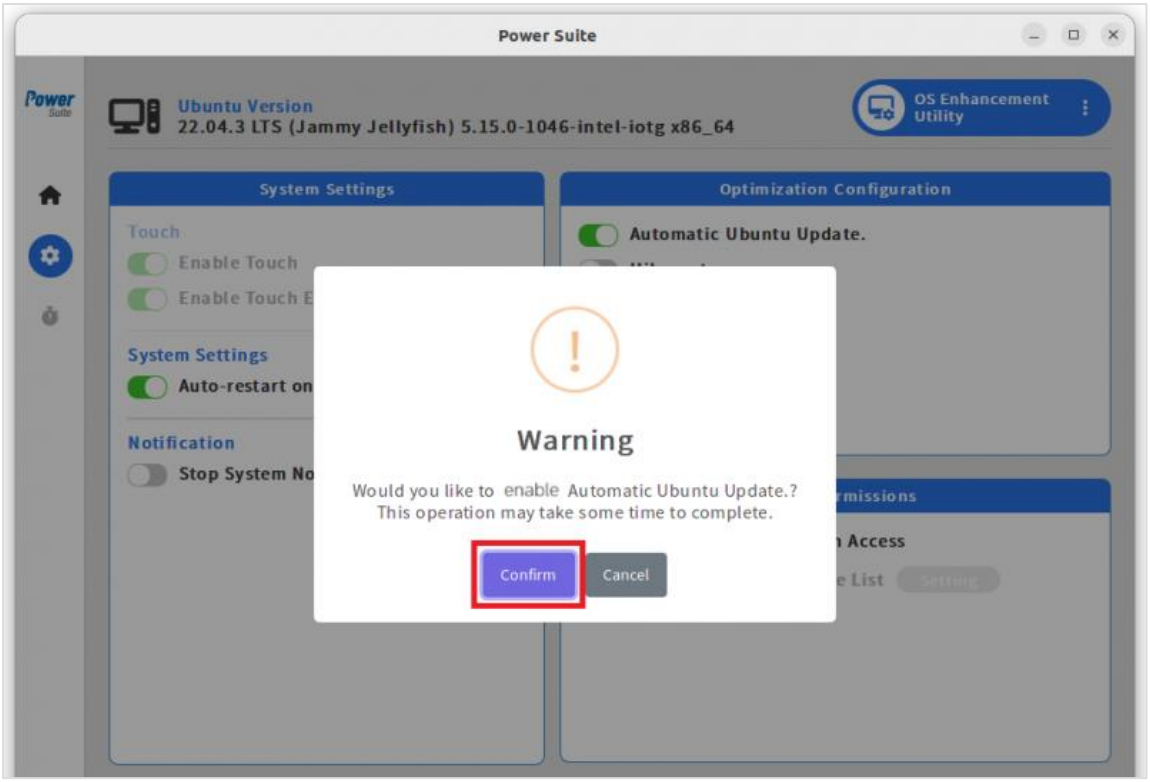
- Disable "Automatic Ubuntu Update" will also disable Ubuntu **Security Update** and **Others Update**(including disable updates for **Snap** packages).

## Steps

**Step1.** Click on "Automatic Ubuntu Update" switch button.

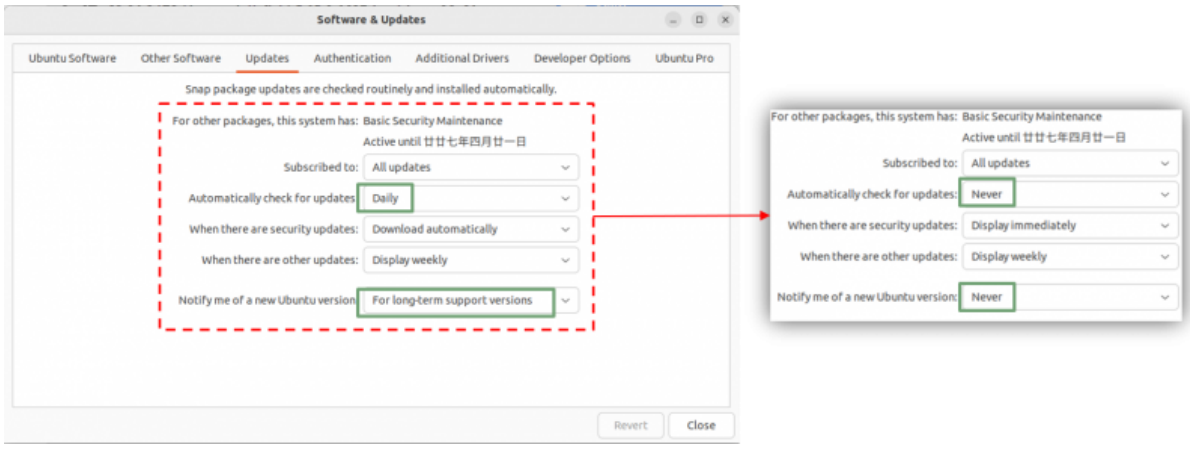


**Step2.** Click on "Confirm" to change the settings.

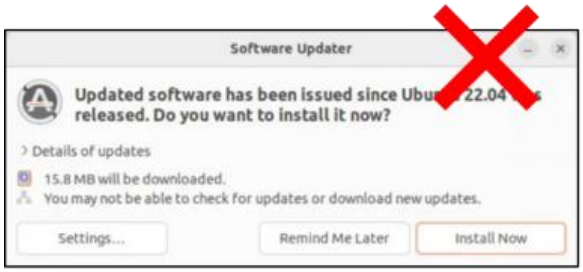


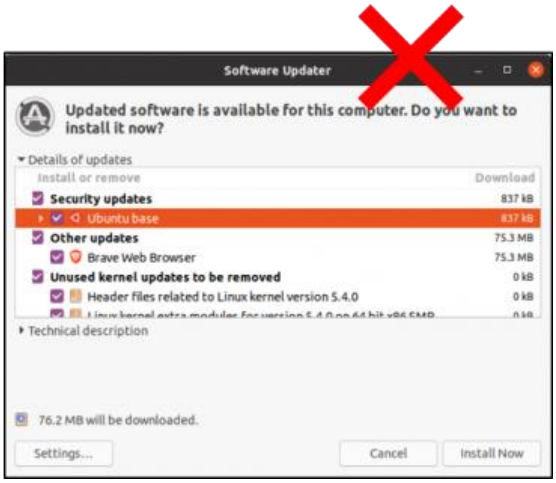

## Result

1.You can go to the "Software & Updates" page in Ubuntu to see the changes in the options "Automatically check for updates" and "Notify me of a new Ubuntu version".




2.Update notification pop-ups will be closed.


Software Updater
Updated software has been issued since Ubu 22.04
released. Do you want to install it now?
Details of updates
15.8 MB will be downloaded.
You may not be able to check for updates or download new updates.
Settings...
Remind Me Later
Install Now


Software Updater
Updated software is available for this computer. Do you want to install it now?
Details of updates
Install or remove
Download
Security updates
837 kB
Ubuntu base
837 kB
Other updates
75.3 MB
Brave Web Browser
75.3 MB
Unused kernel updates to be removed
0 kB
Header files related to Linux kernel version 5.4.0
0 kB
Technical description
76.2 MB will be downloaded.
Settings...
Cancel
Install Now

# Hibernate

## Brief

Enabling hibernate button will provide your device with the hibernate functionality.

## Note

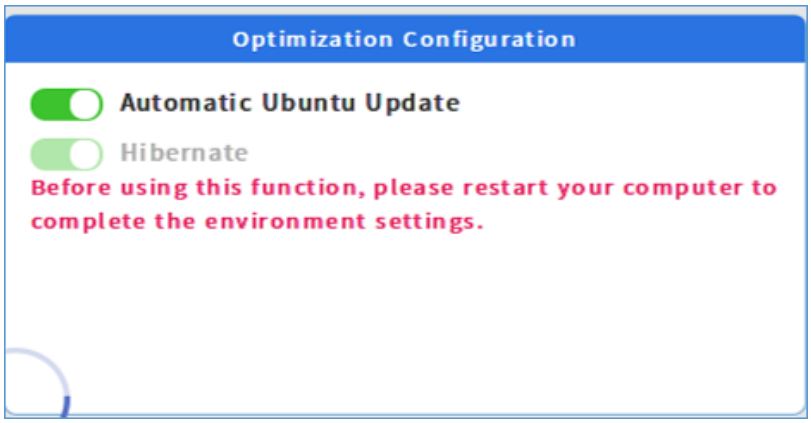
**1.Disk space limitation:**

- Since Ubuntu does not support system hibernation, enabling the hibernate feature will first allocate swap space on your hard drive larger than the size of your memory. Therefore, you need to have sufficient disk space available.
- If not considering the need to simultaneously enable the "backup & recovery" and "Disk Protection" functions, the remaining available **disk space should be at least 5GB larger than the memory size.**

**2.Execution time:**

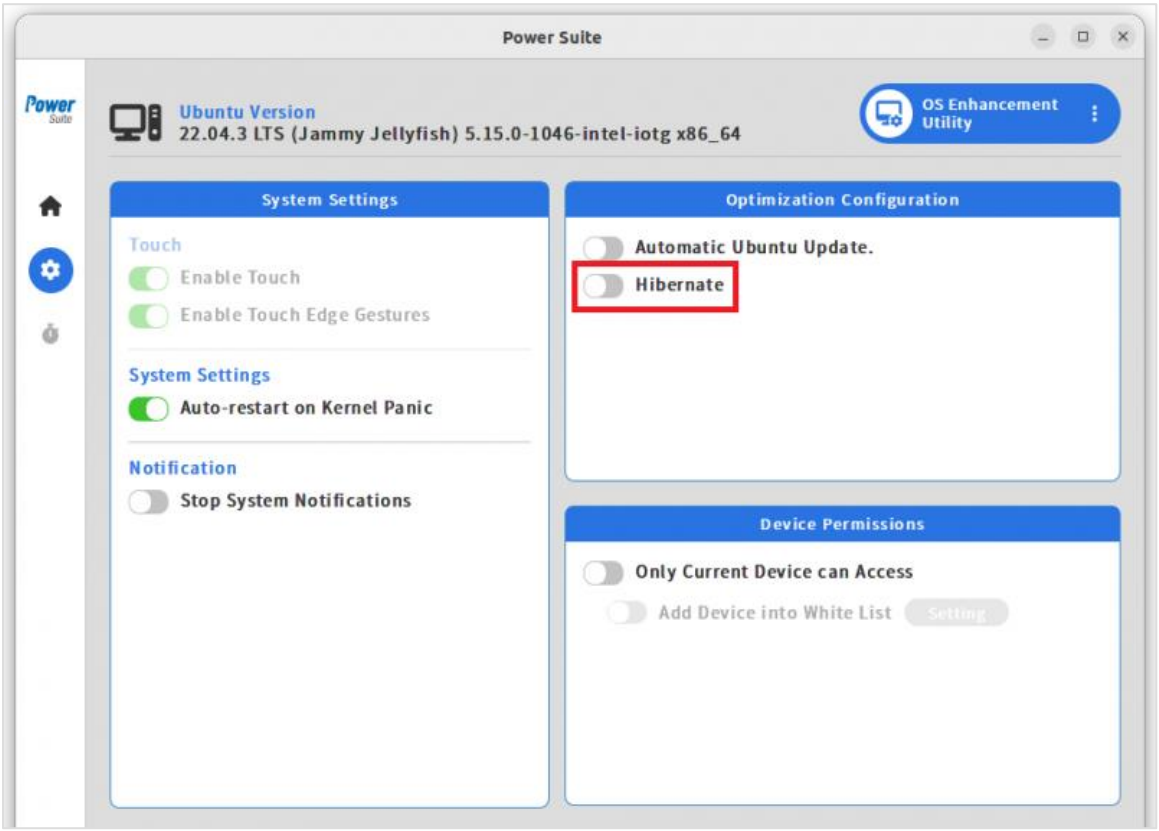
- Configuring this swap space will take approximately 5 to 6 minutes and may vary depending on the size of your device's memory. If swap configuration has been previously performed, it will not be repeated.

If entering the Power Suite OS Enhancement for the first time, the device needs to be restarted before enabling hibernate.



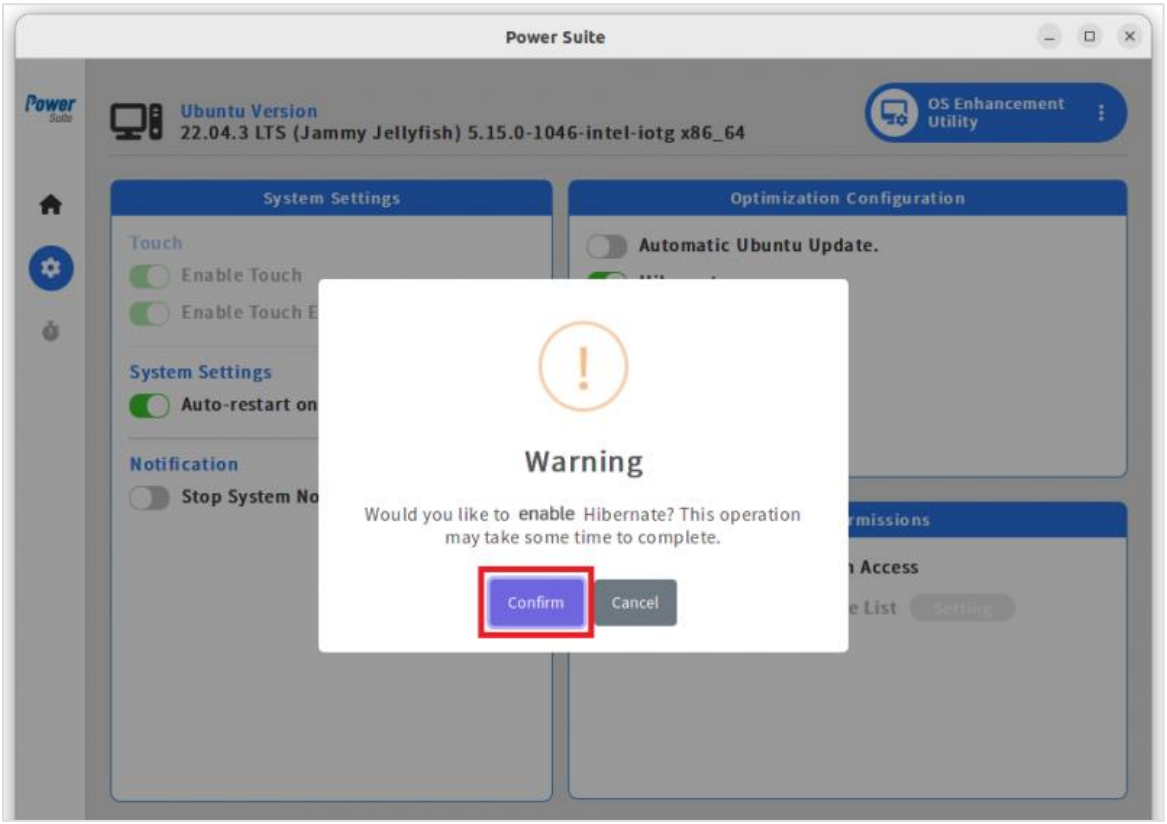
## Steps

**Step1.** Click on "Hibernate" to disable or enable Hibernate feature.

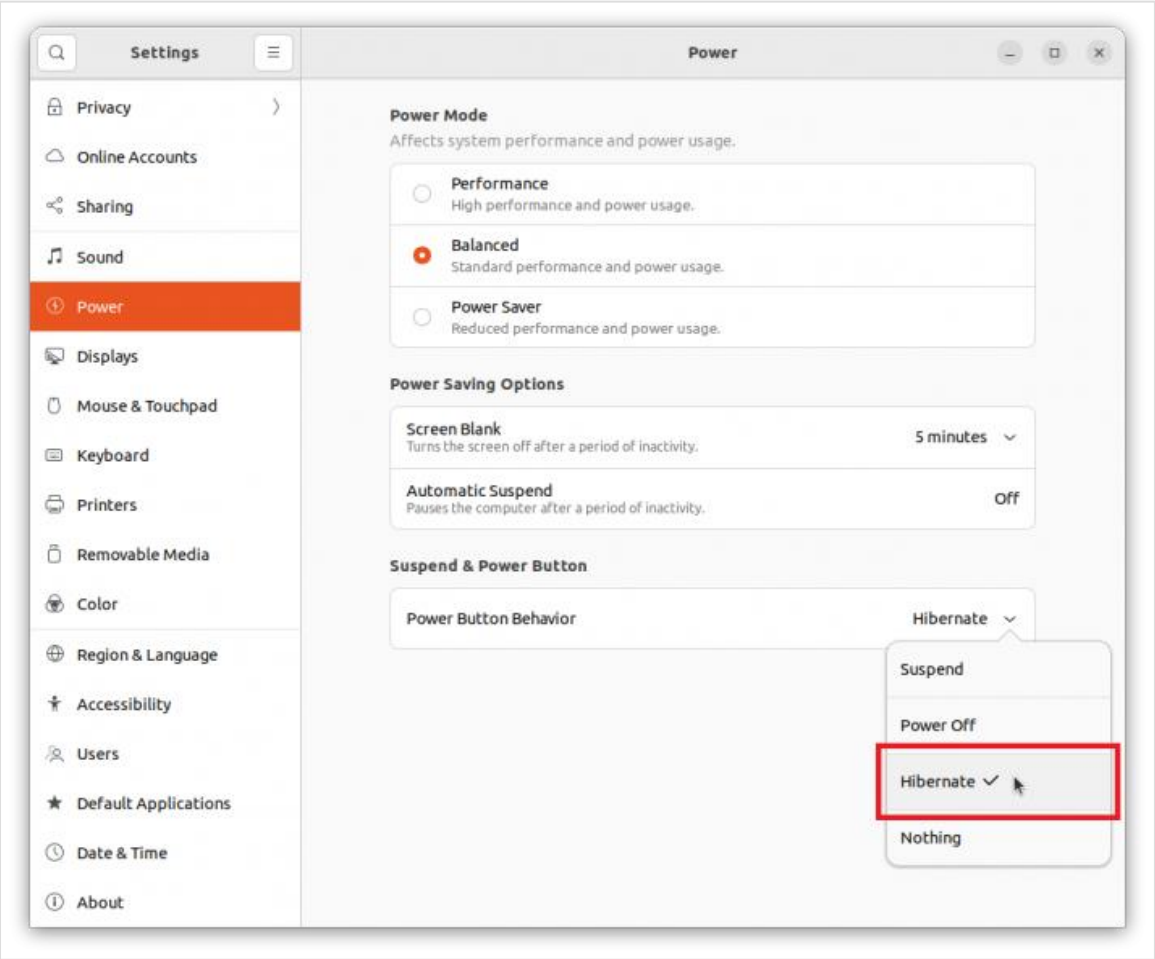


**Step2.** Click on "Confirm" to disable or enable Hibernate.

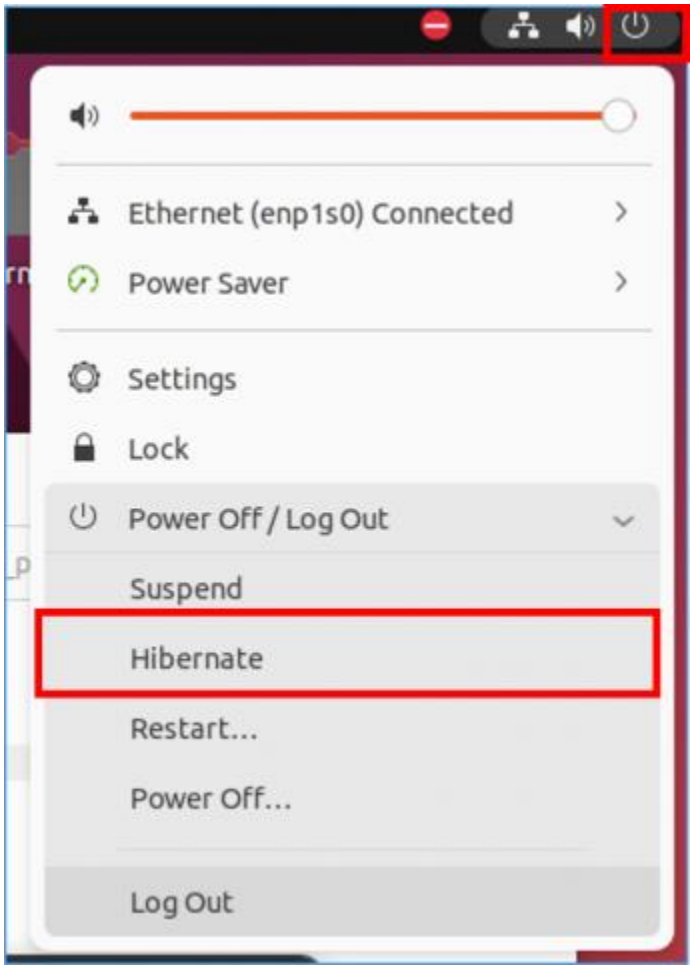
**NOTE: The first time you use this Hibernate feature, the system will perform necessary configurations. Once completed, it will automatically reboot. Before using this feature, make sure all your data has been saved.**



**Step3-1**. In the Ubuntu's Settings, set the "Power Button Behavior" to "Hibernate". Then you can press the Advantech IPC's Power Button to enter Hibernate mode.




**Step3-2**. Alternatively, click on the power off option at the top right corner of the Ubuntu screen, and select "Hibernate" to enter hibernate mode.



# Device Control

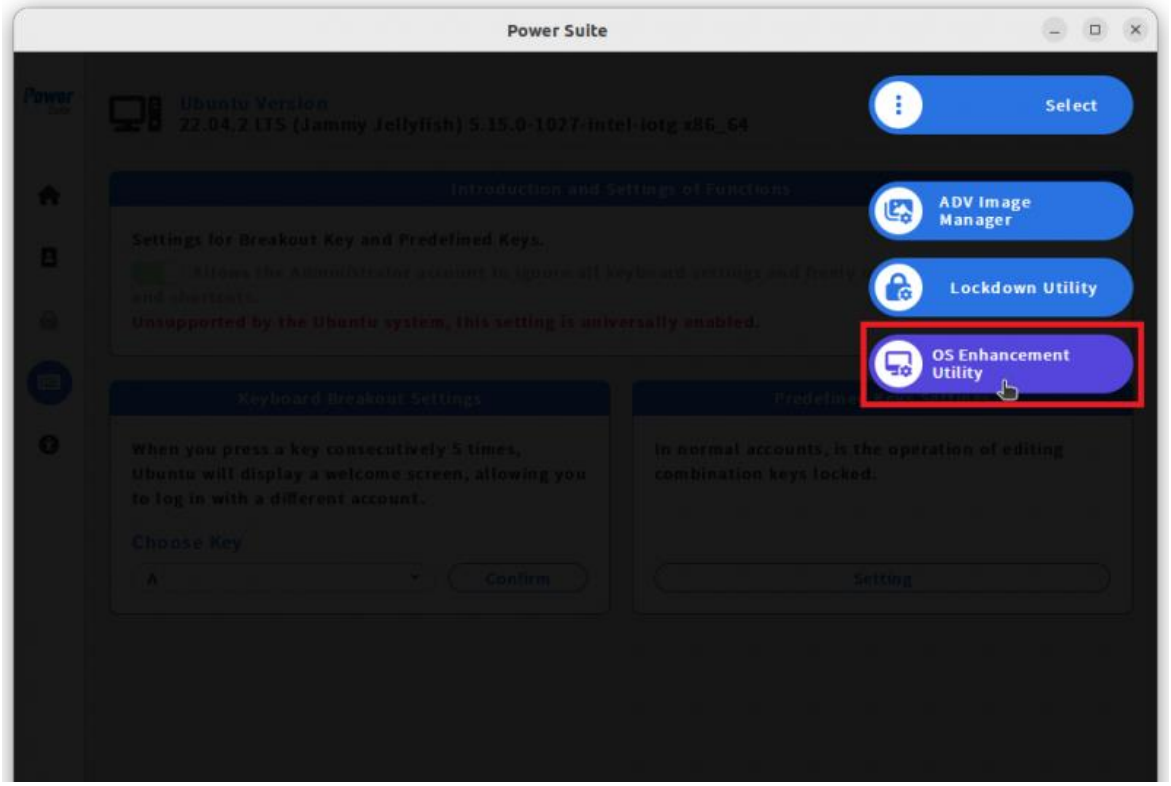
## Block All USB Storage Devices

### Brief

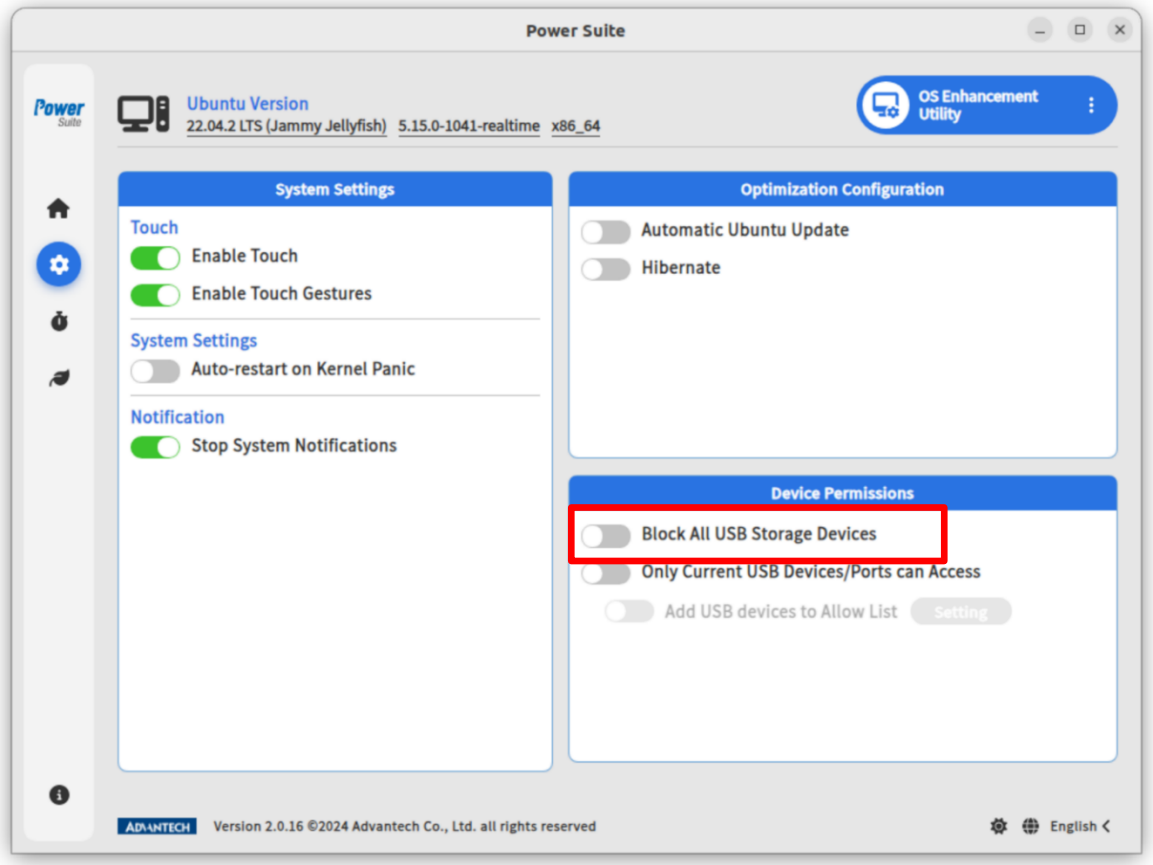
All USB storage device will be disabled.

### Steps

**Step1.** Select the “OS Enhancement Utility” page.



**Step2.** Click on "Block All USB Devices" switch button.




## Result

All USB devices you insert into USB port will be disabled.

# Only Current Device Can Access

## Brief

**Device permissions** are divided into two functions:

**1. Only current device can access:**

- This means only USB devices currently plugged into the machine can be used. If you try to plug in a new USB device (not the current USB device), it will be disabled.
- The current device is only allowed to be used in the USB port where the "only current device can access" function is enabled. **If the device is plugged into a different USB port, it will not be granted access.**

**2. Add Device into whitelist:**

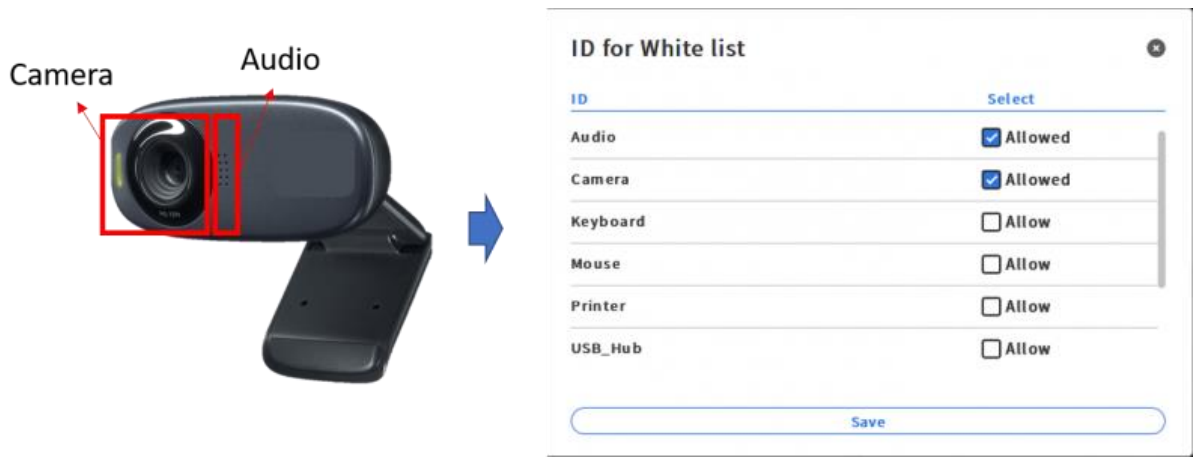
- After enabling "Only current device can access," you can click on the "Add Device into whitelist" function. Check the USB device types you want to use and add them to the whitelist, allowing the use of those USB device types.

**White List:**

**Whitelist** categories include: Audio, Camera, Keyboard, Mouse, Printer, USB_Hub, USB_storge, and wireless_Keyboard_Mouse.

## Note

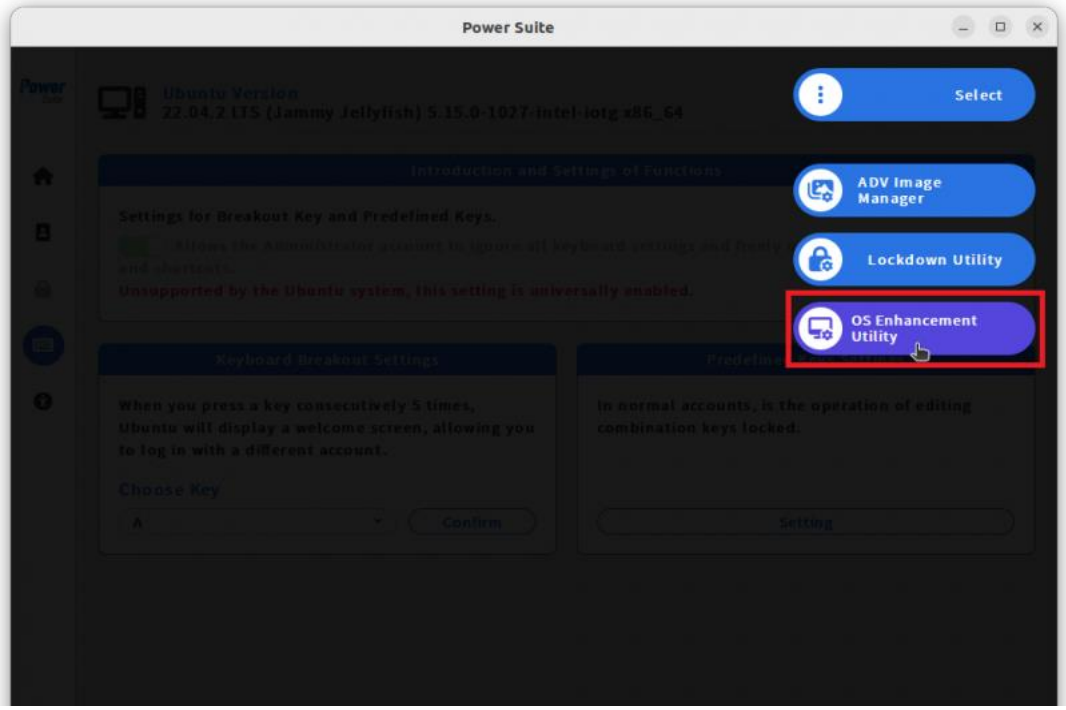
1. If you want to allow wireless mouse&keyboard combinations, please open the "wireless_Keyboard_Mouse" option in the whitelist.
2. For Multi-Types USB devices, please open all whitelist options that include that type.
    - **EX :** If audio devices include cameras, or cameras include speakers or microphones, please open both the "Audio" and "Camera" options.



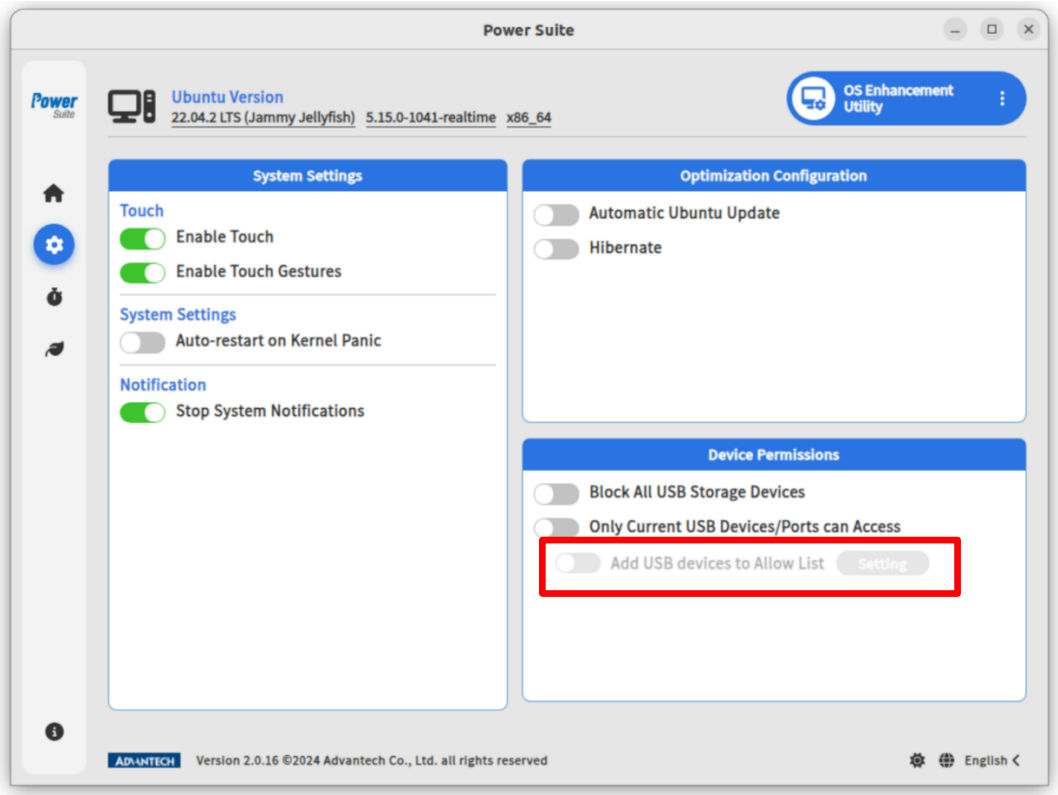
3. If devices on the USB Hub need to be used, please open both the USB_Hub and the device type options.

## Steps

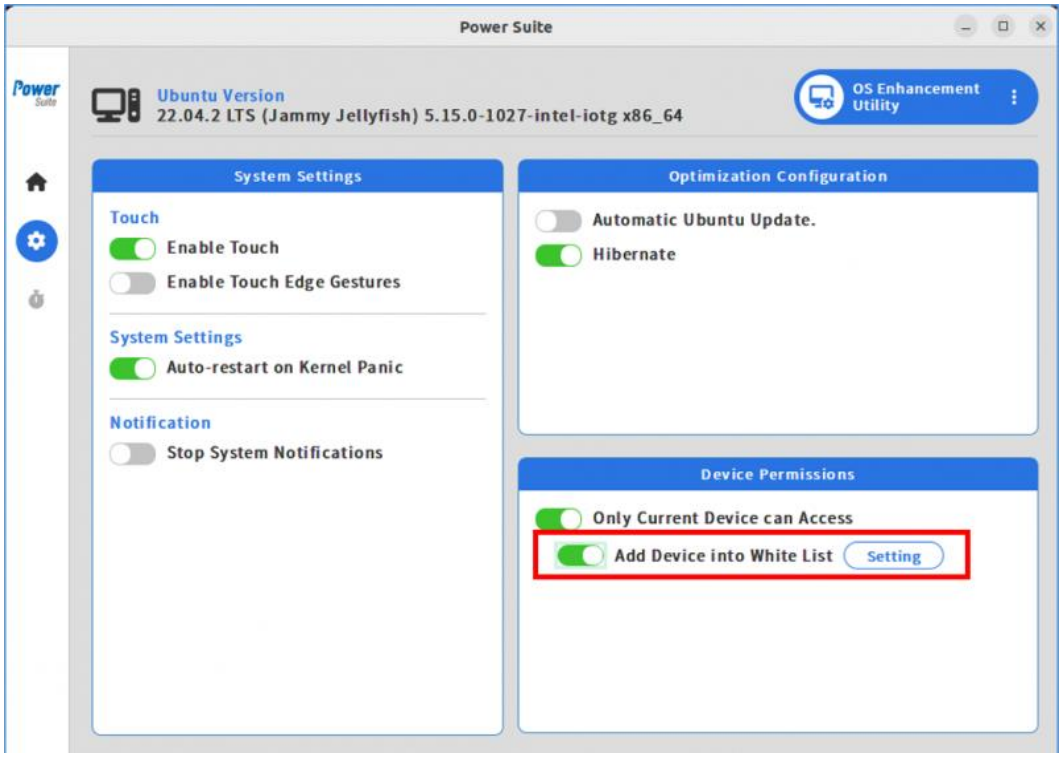
**Step1.** Select the “OS Enhancement Utility” page.



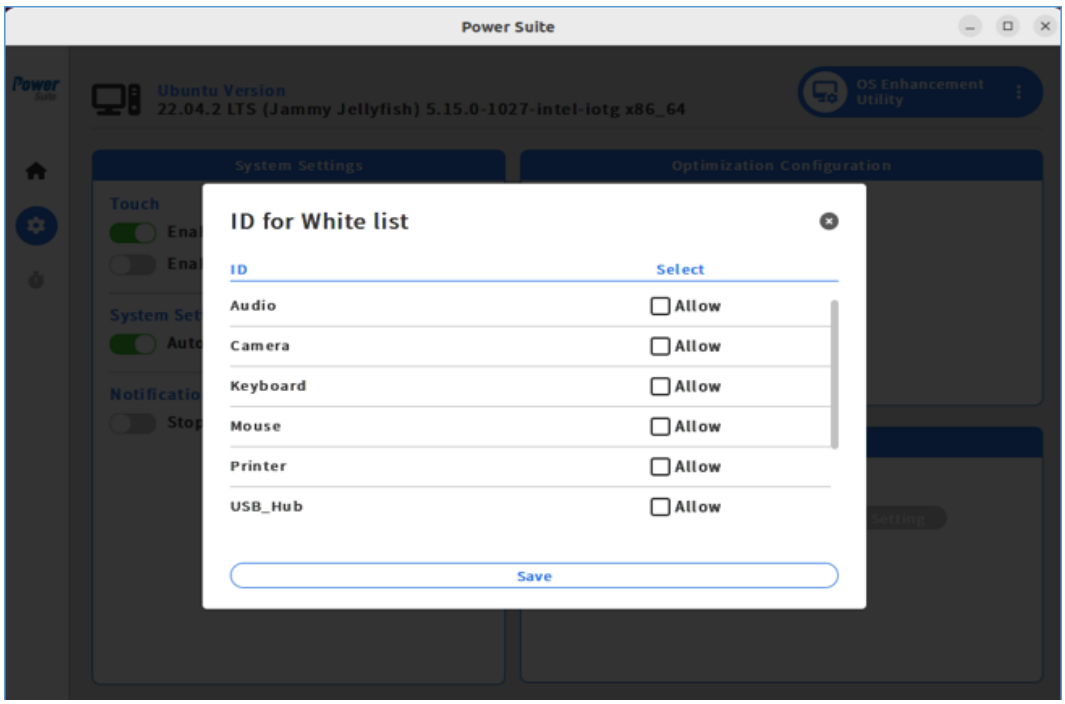

**Step2.** Click on "Only Current Device can Access" switch button.




**Step3.** Click on "Add Device into whitelist" switch button and click the "setting" button.

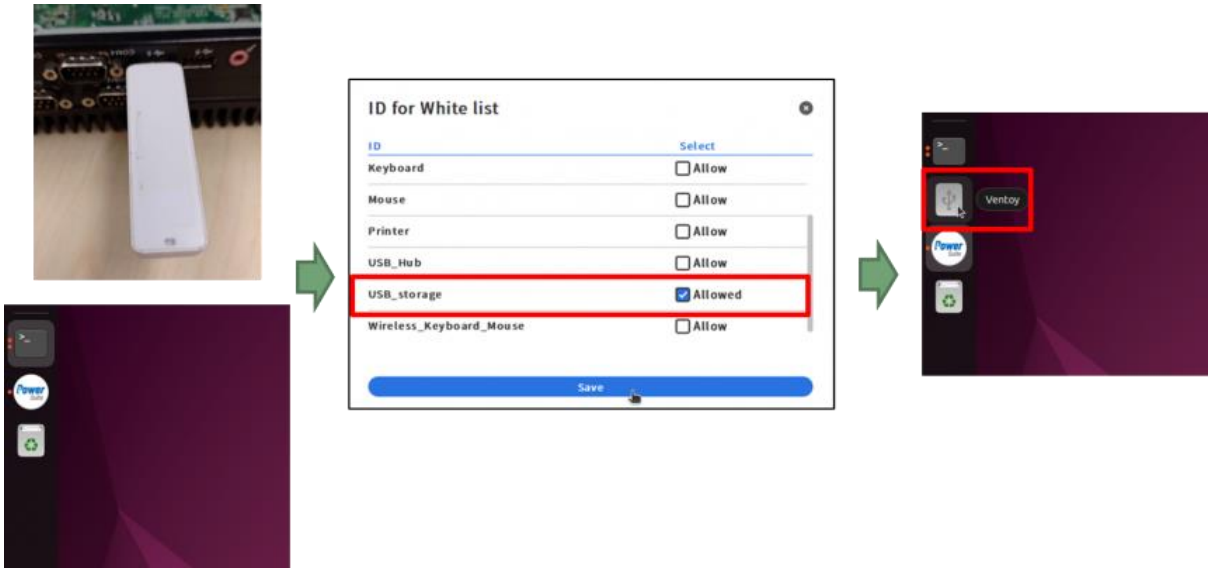



**Step4.** Select the device types you want to add to the whitelist, and click "Save" button.



## Result

Assuming the "only current device can access" feature is enabled and there are no USB drives connected to the machine, you will not see any response when inserting a USB drive. Next, adding the "USB_Storage" option to the whitelist and pressing save, you will then see the system recognizing the USB drive.



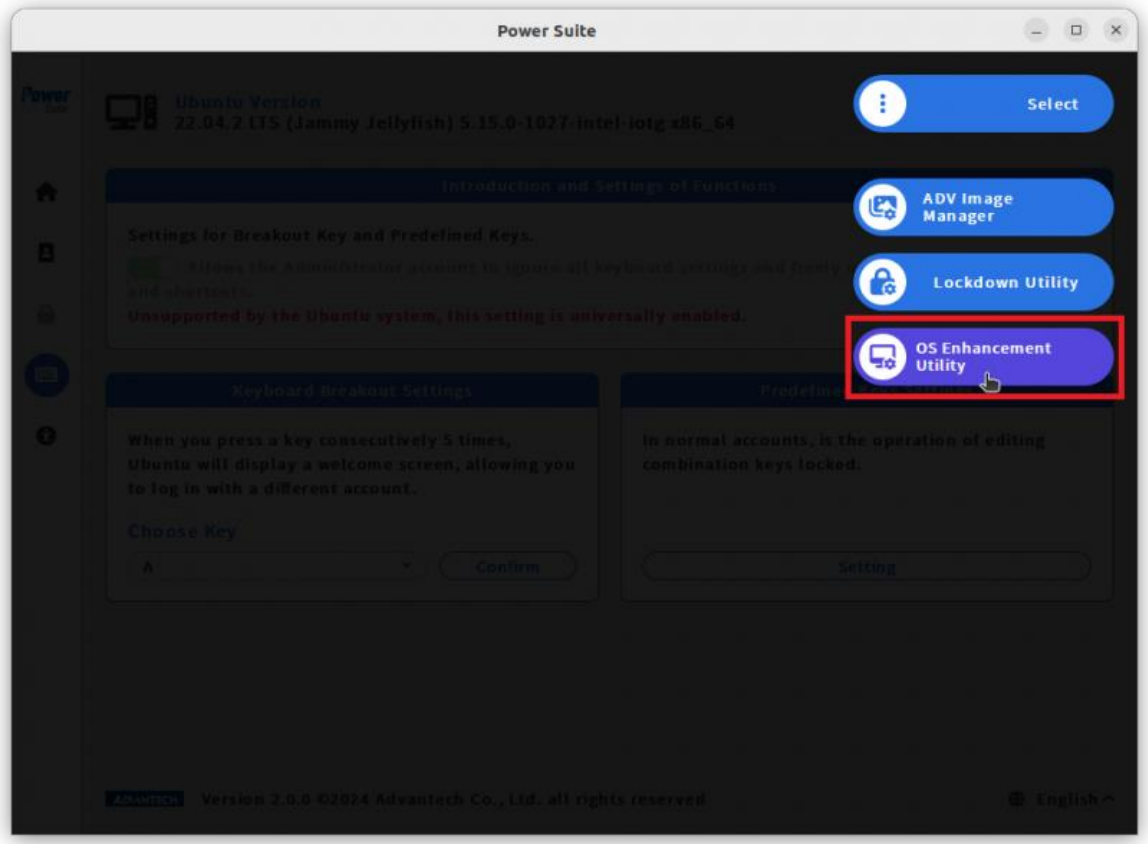
# Kernel Panic Reboot

## Brief

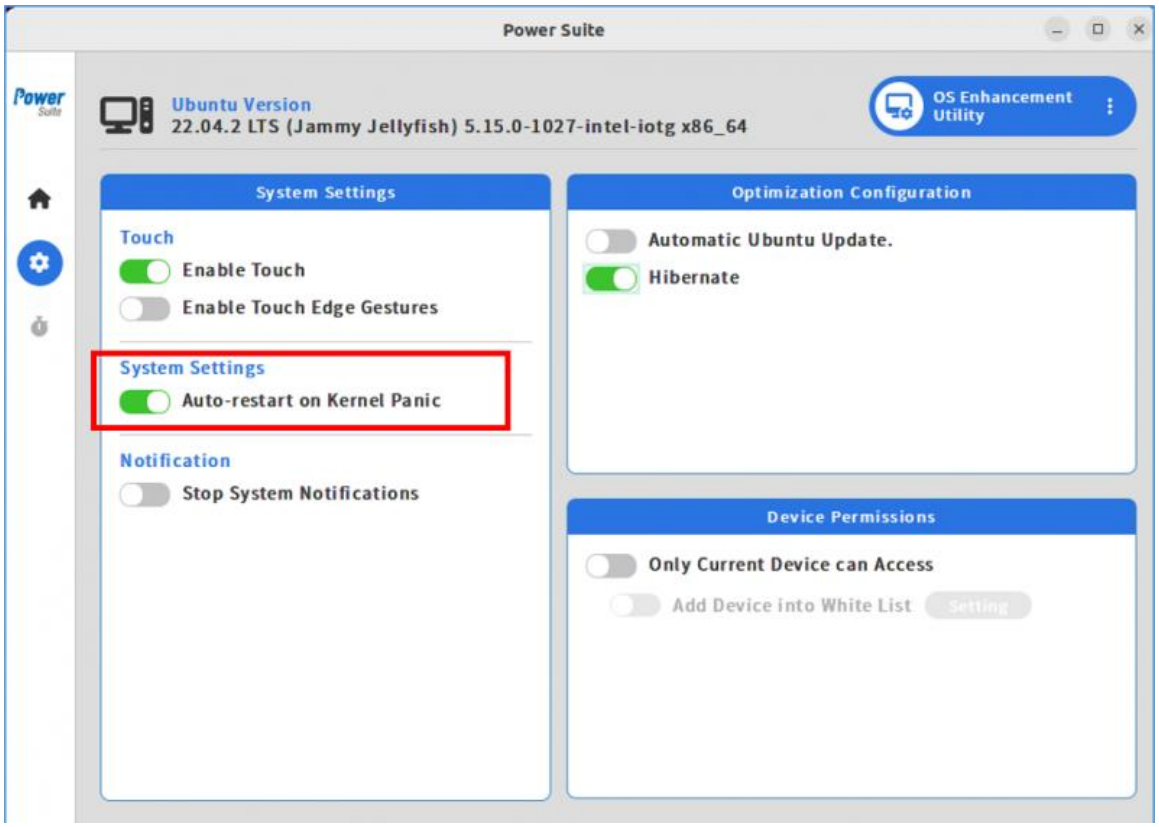
When enabled the Auto-restart on Kernel Panic feature, Ubuntu system will automatically reboot when encountering a kernel panic to prevent the screen from freezing.

## Steps

**Step1.** Select the “OS Enhancement Utility” page.



**Step2.** Click on "Auto-restart on Kernel Panic" to enable this feature.




**Step3.** Then please restart the system to apply the settings.

## Result

The next time your Ubuntu system encounters a kernel panic, it will automatically reboot for you.

# Touch Control

## Brief

**Touch control** has two functions:

**1. Enable touch:**

- Turn on "Enable touch" to allow the touch function of the touch screen; or turn off "Enable touch" to disable the touch function of the touch screen.

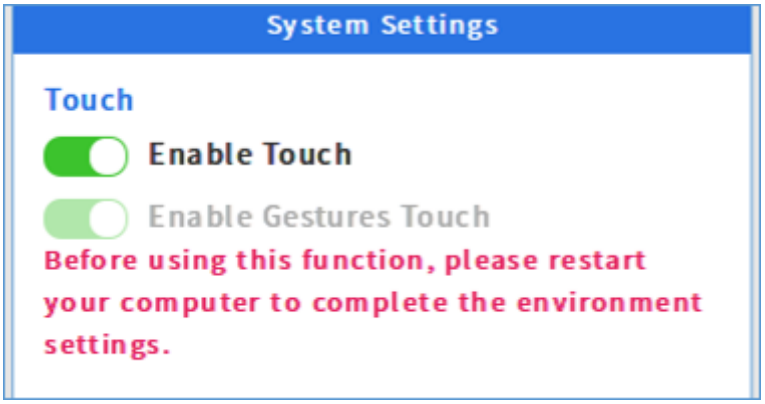
**2. Enable Gestures Touch:**

- After turning on "Enable touch," you can also turn on "Enable Gestures Touch" to allow the use of touch gestures (including **edge triggering** and **multi-touch three or more gesture** functions); or turn off "Enable Gestures Touch" to disable touch gesture functionality.

| | |
|---|---|
| Open the Activities Overview and Applications View |  |
| Switch Workspace |  |
| Bring up the on-screen keyboard<br>(***If the on-screen keyboard is enabled***) |  |

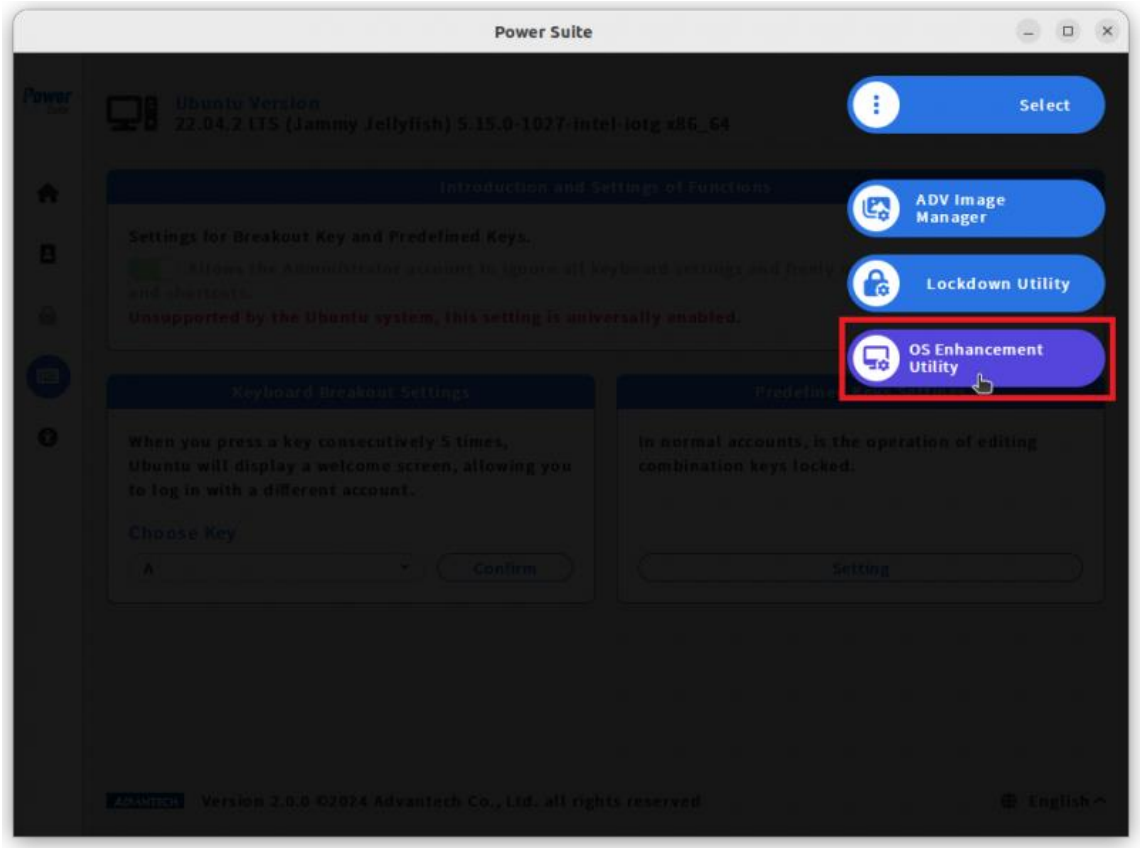
## Note

- The default status is "touch enabled" and "gestures enabled," even if you have not connected any touch screen devices.
- When using this feature for the first time (without having used any touch screen devices before), the "Enable touch" function cannot be turned off.
- When "Enable Touch" function is turned off, the "Enable Gestures Touch" functionality will be disabled synchronously.
- If entering the Power Suite OS Enhancement for the first time, the device needs to be restarted before enabling "Enable Gestures Touch" function.

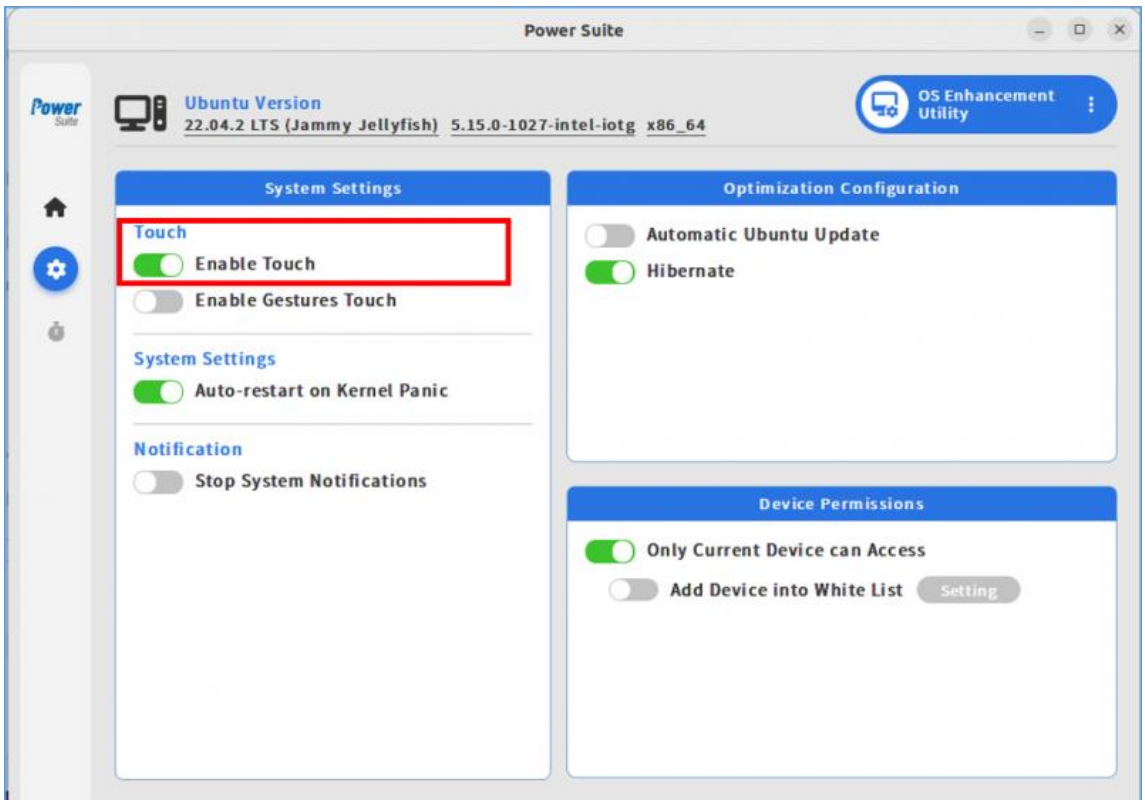


## Steps

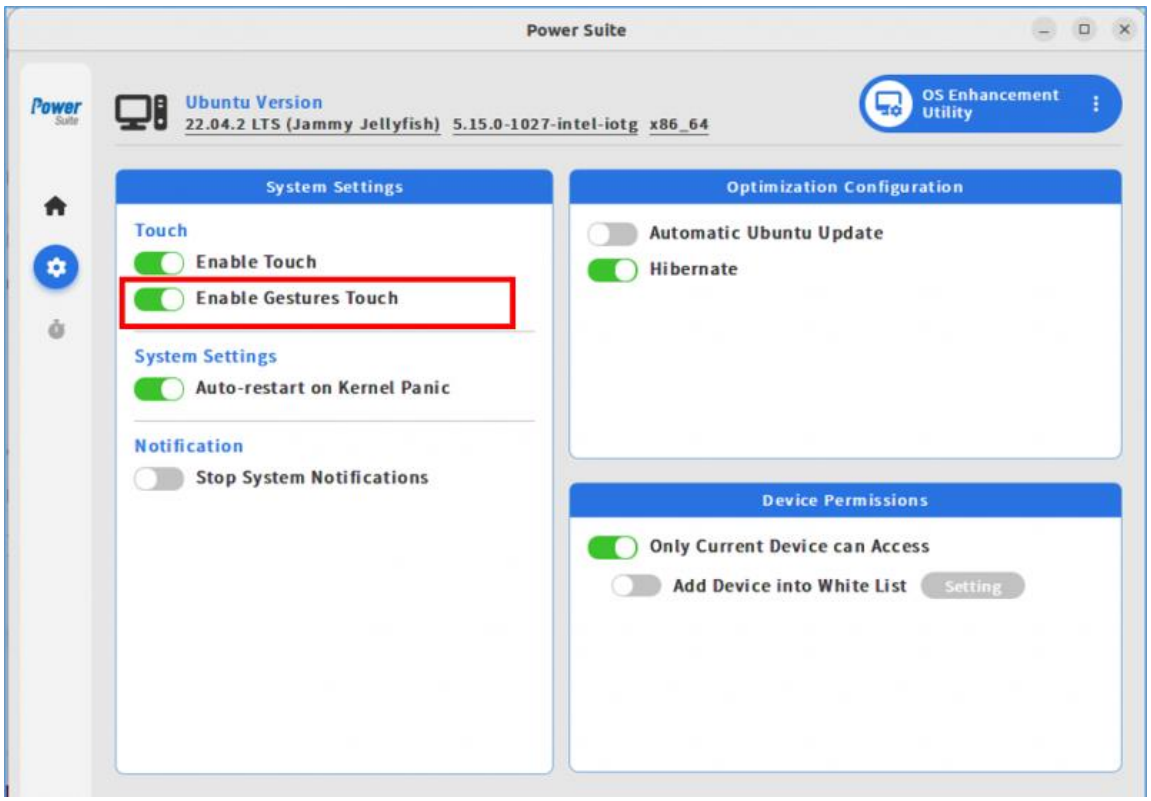
**Step1.** Select the “OS Enhancement Utility” page.




**Step2.** Click on "Enable Touch" to disable or enable Touch feature.



**Step3.** Click on "Enable Gestures Touch" to disable or enable  Gestures Touch feature.



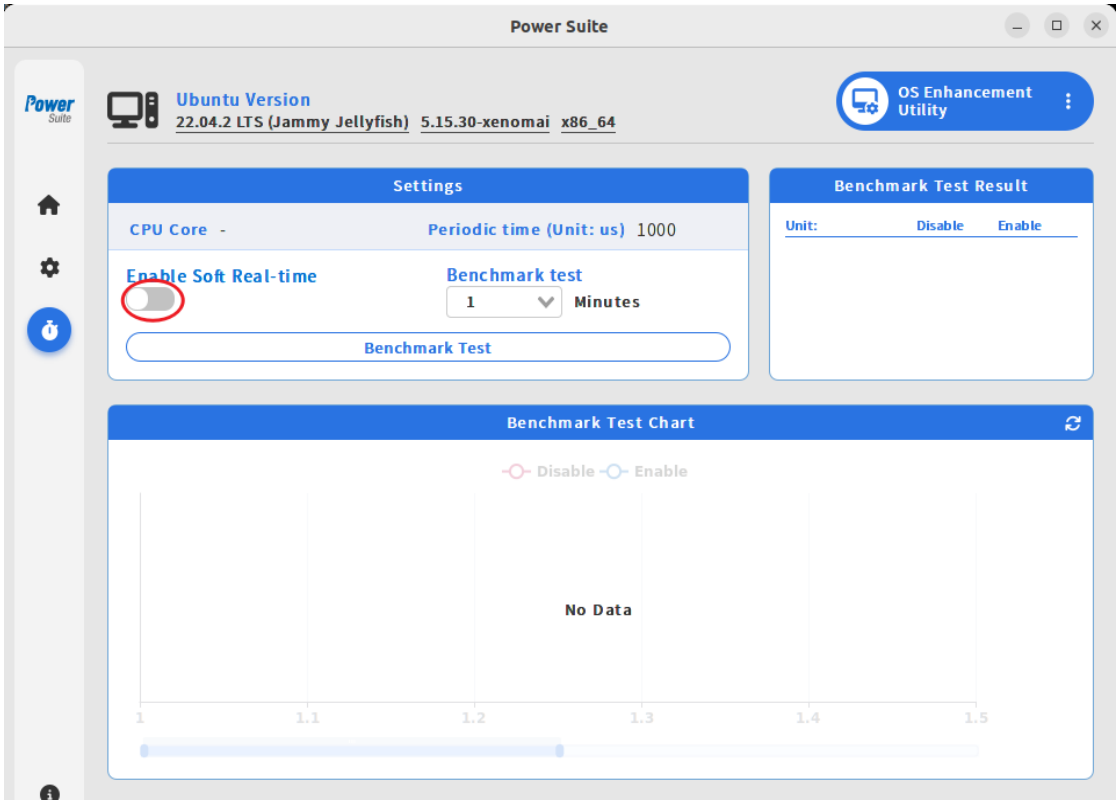
# Enable/Disable Soft Real-time

## Brief

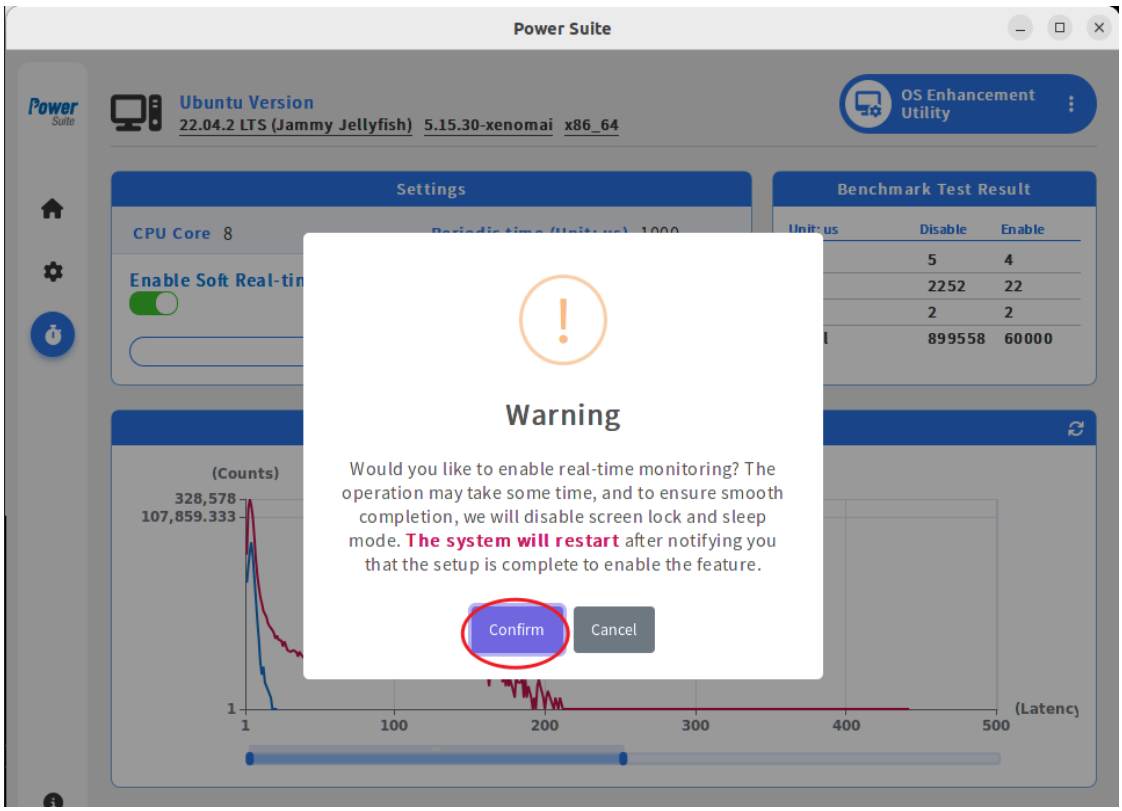
You can switch the Operating System between Real-time OS and Standard OS.

## Steps

**Step1.** Click “Enable Soft Real-time”



**Step2.** Click on "Confirm" to install Real-time and reboot to enable real-time OS.




## Result

After Reboot System, You are now in Real-time OS; And you can run a benchmark test.

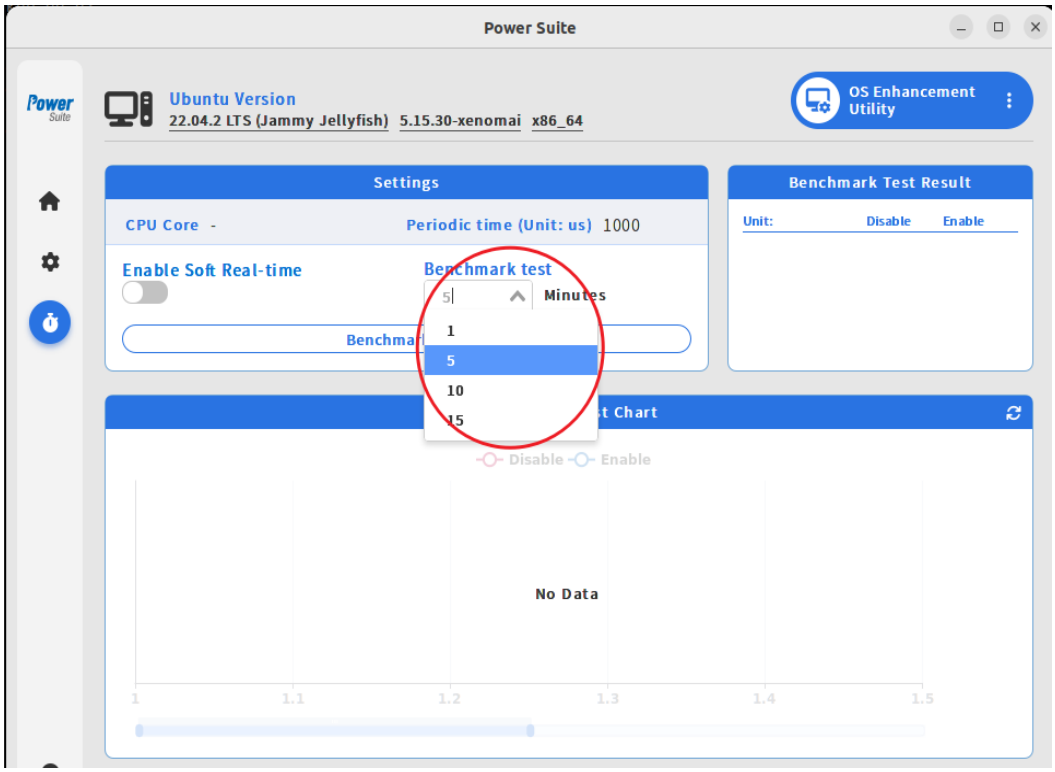
# Soft Real-time Benchmark Test

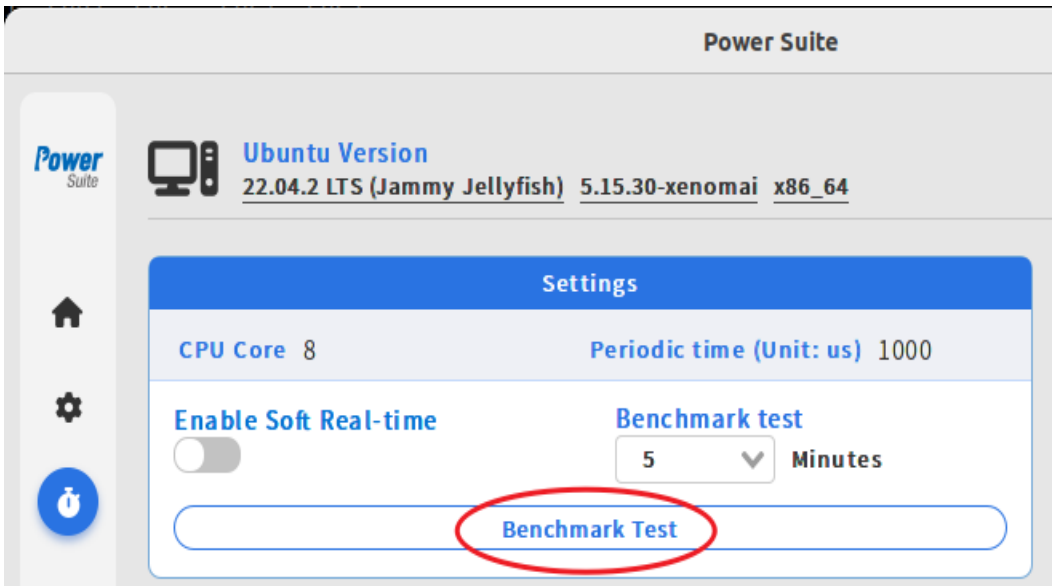
## Brief

Run real-time benchmark Test

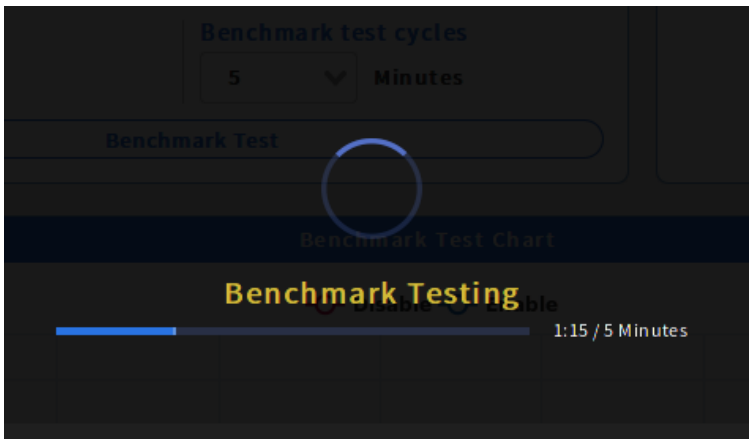
## Steps

**Step1.** Select Test total minutes(1/5/10/15 Mins), and Click the “Benchmark Test” button.



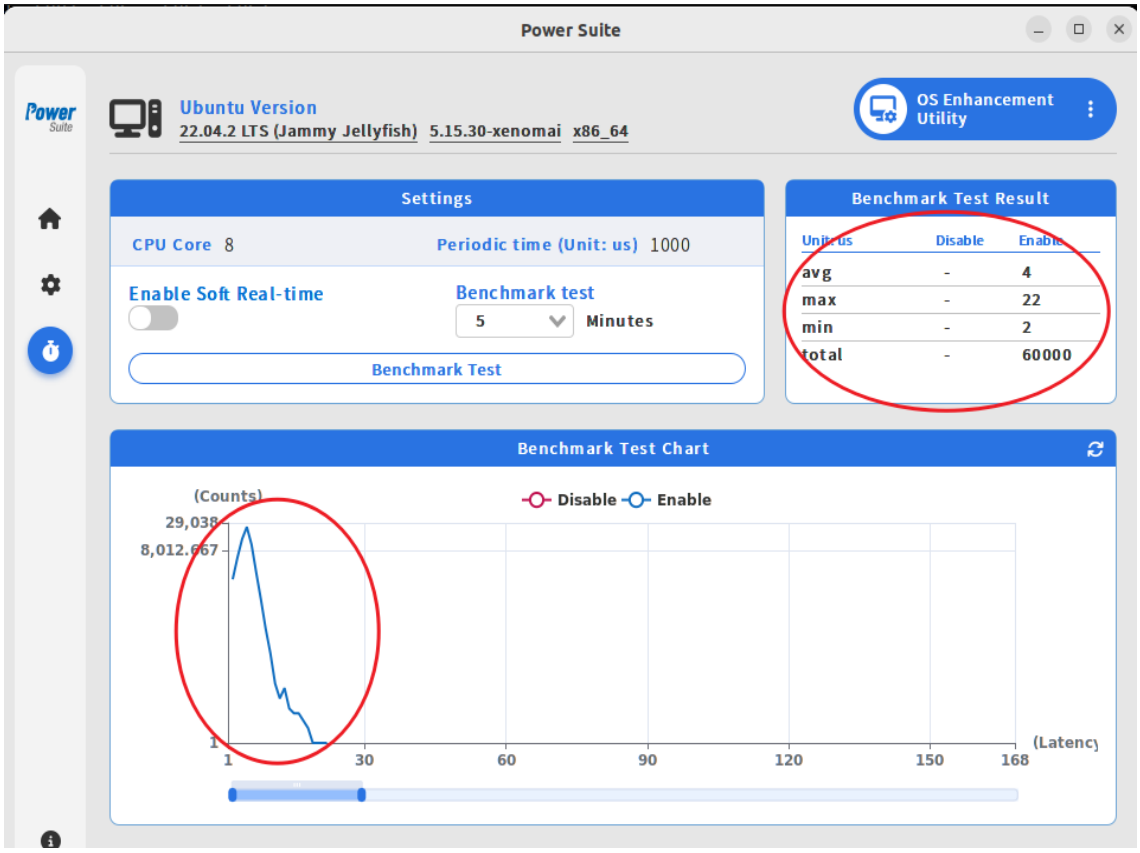



**Step2.** Waiting benchmark testing finished.




## Result

When the Benchmark Test finished, the page will auto load result to chart and statistics.



## Note

Similarly, you can run benchmark test in "none real-time OS", you will see another statistics and chart.

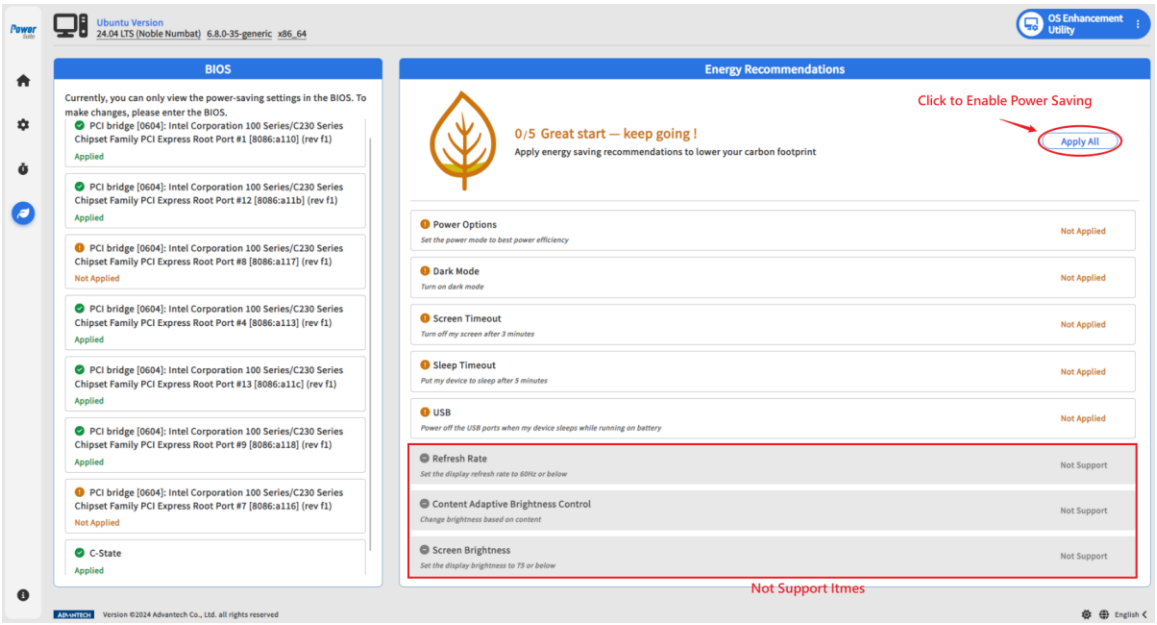
# Energy Saving

## Brief

Enable/Disable Energy Saving Function

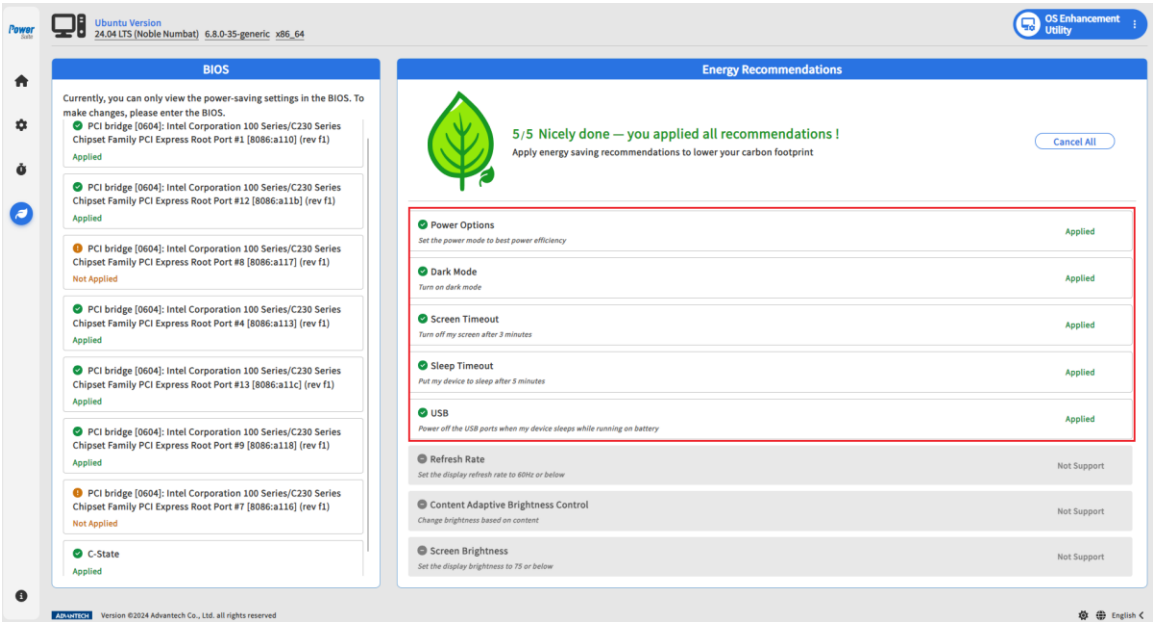
## Enable Steps

**Step1.** Click “Apply All” to Enable System Energy Saving Items



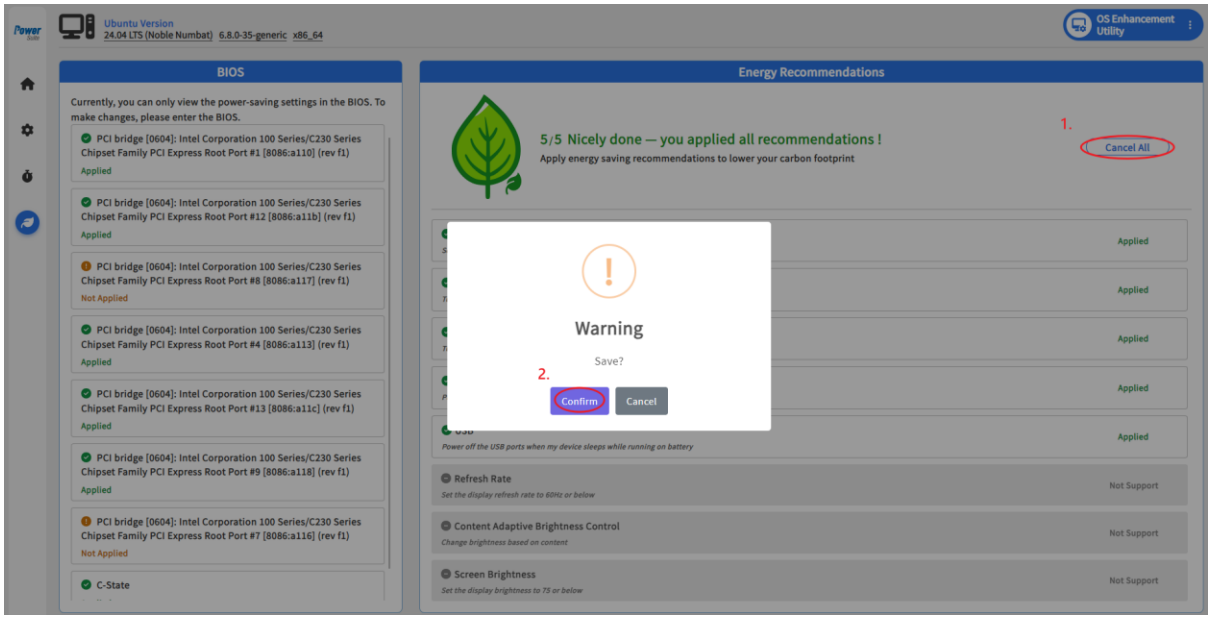

## Result

If successful, you will see all support items applied!



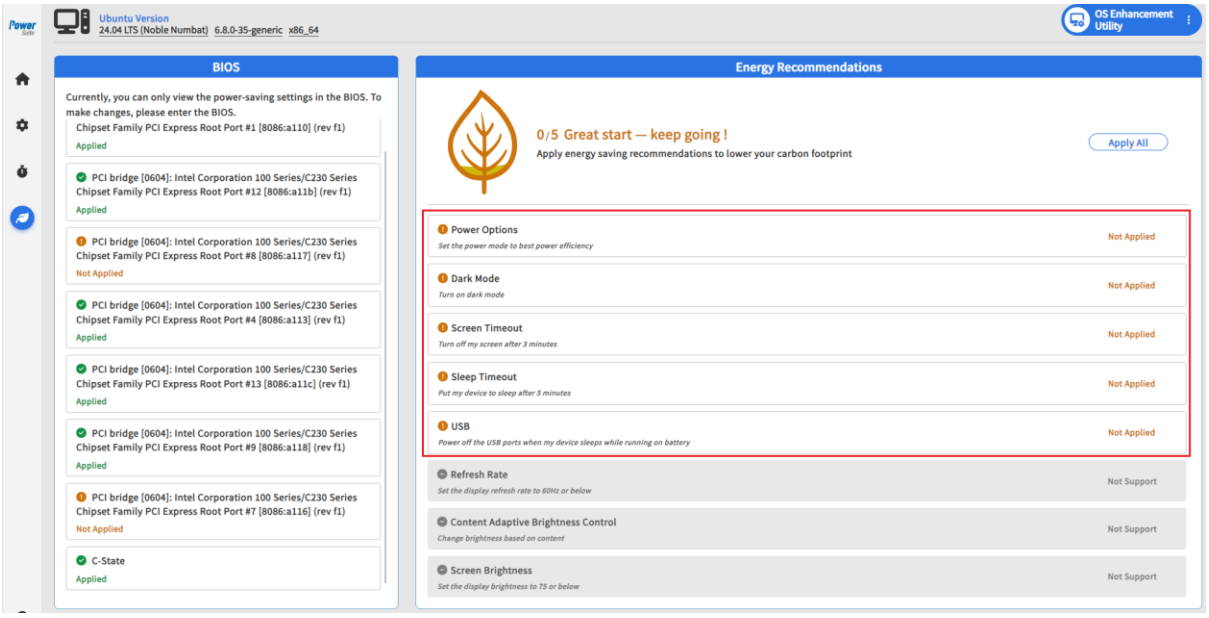
## Disable Steps

**Step1.** Similarly, you can click again to disable energy saving.




## Result

If success, you will see all settings be restore



## Note

1. To Enable/Disable C-state and PCI devices energy saving function needs to enter the BIOS menu.
2. Some PCI devices “may not” be found in the BIOS menu.

# Lockdown Utility

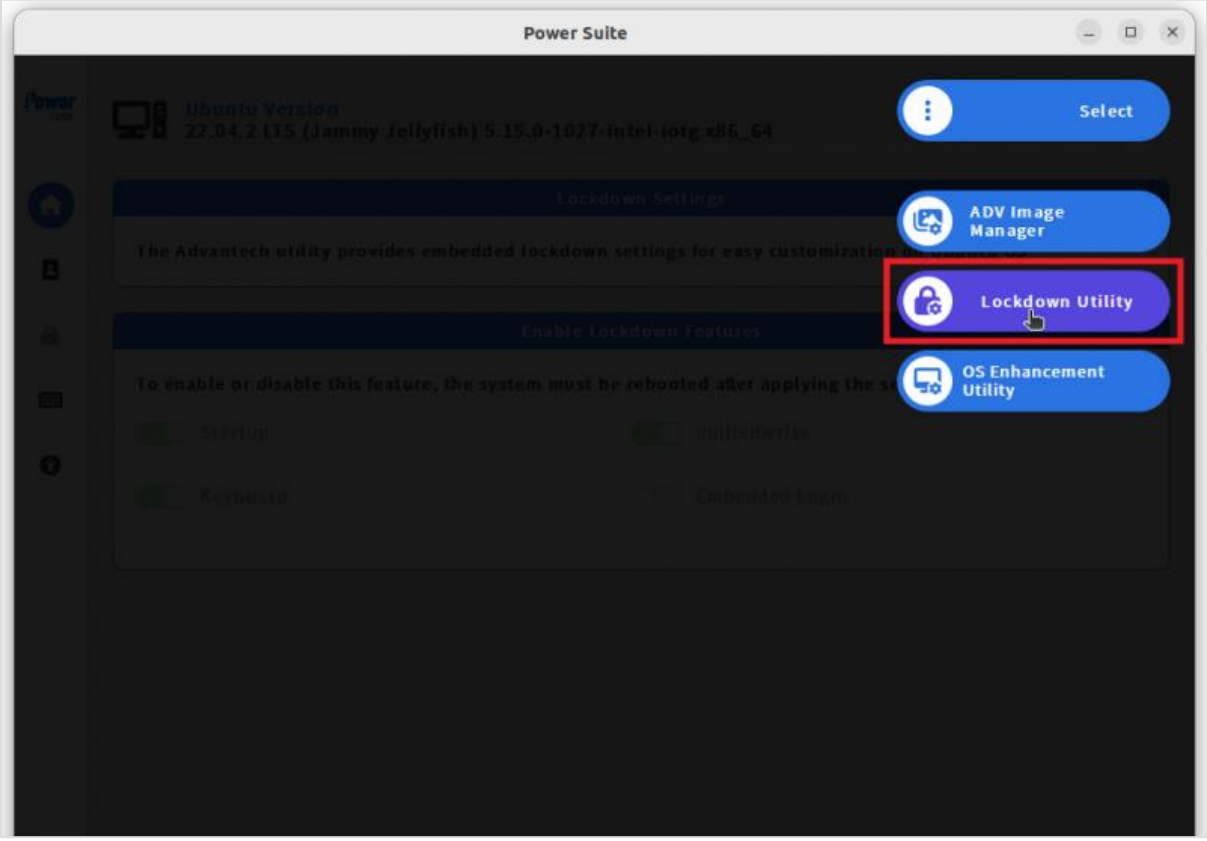
# Automatic Logon

## Brief

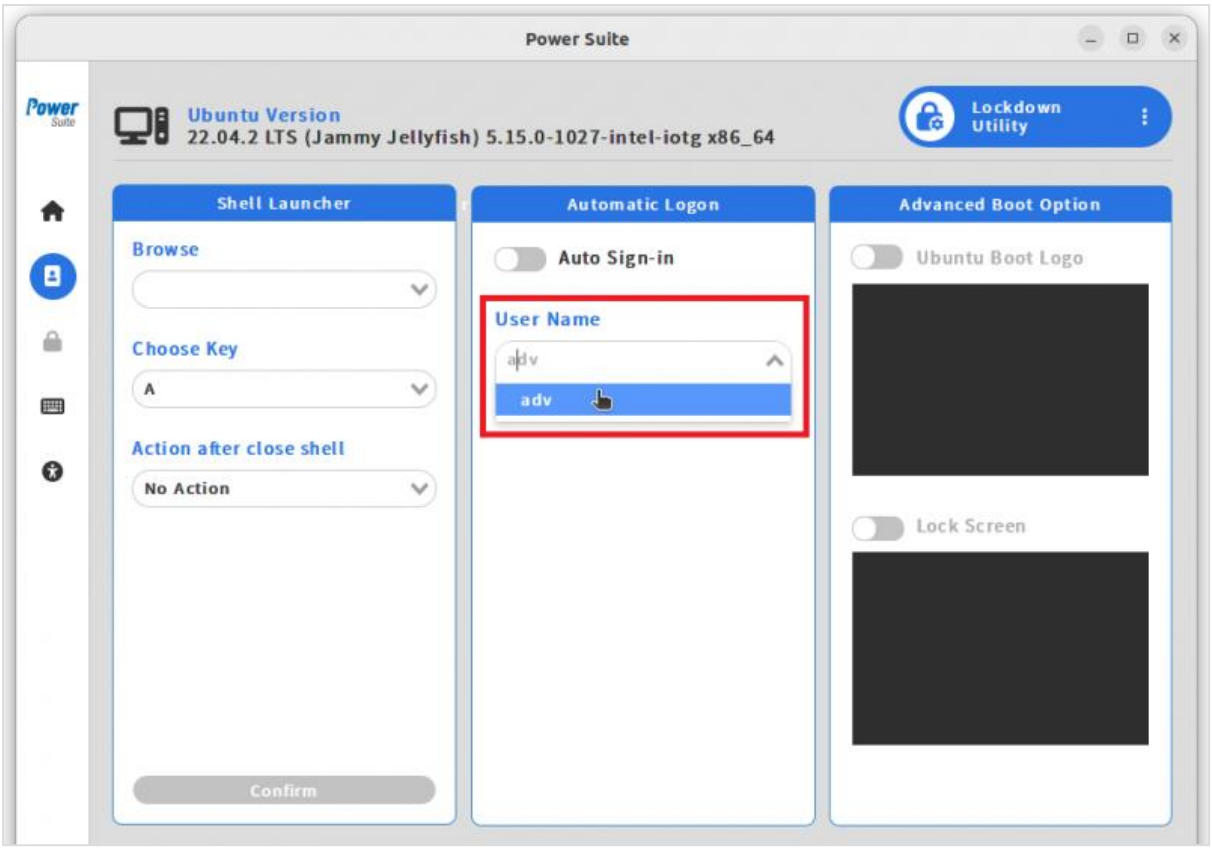
Enabling this function to automatically logon with specific user when system boot up.

## Steps

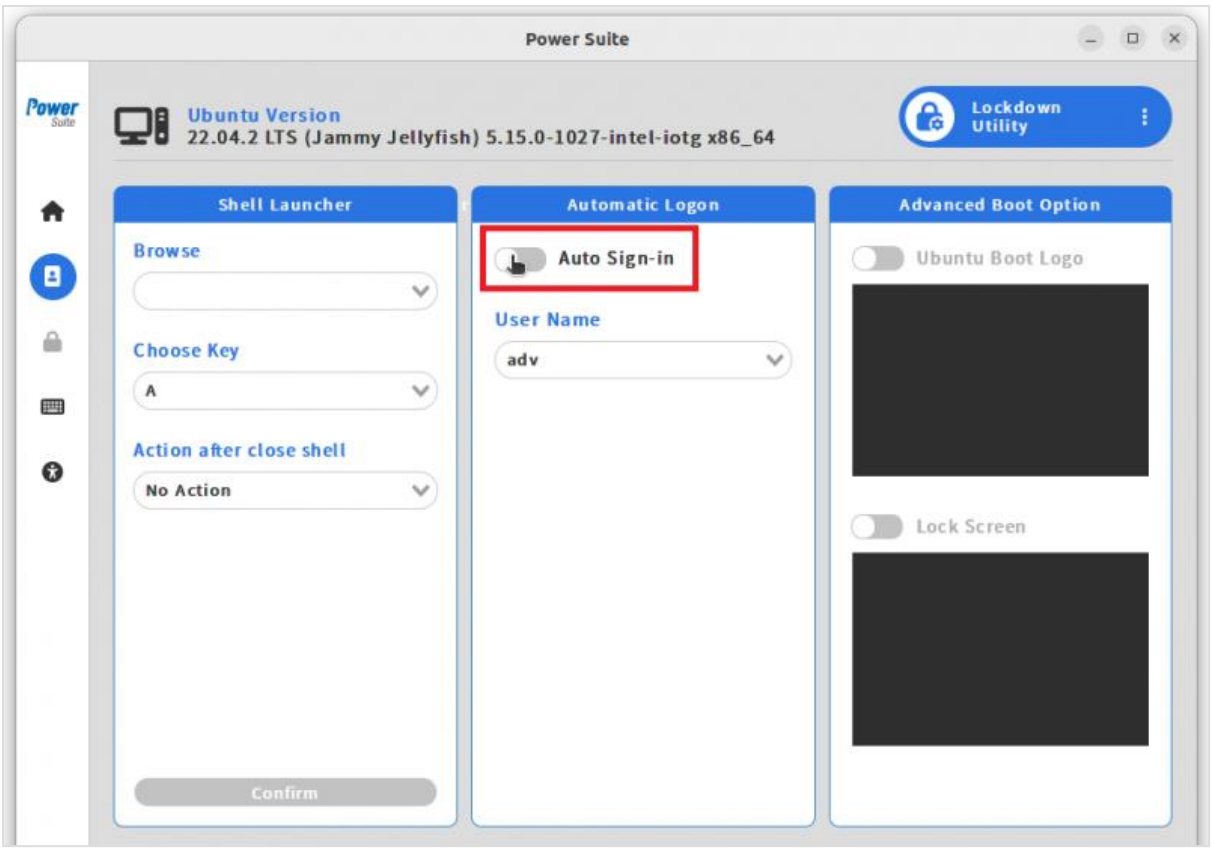
**Step1.** Select the “Lockdown Utility” page.



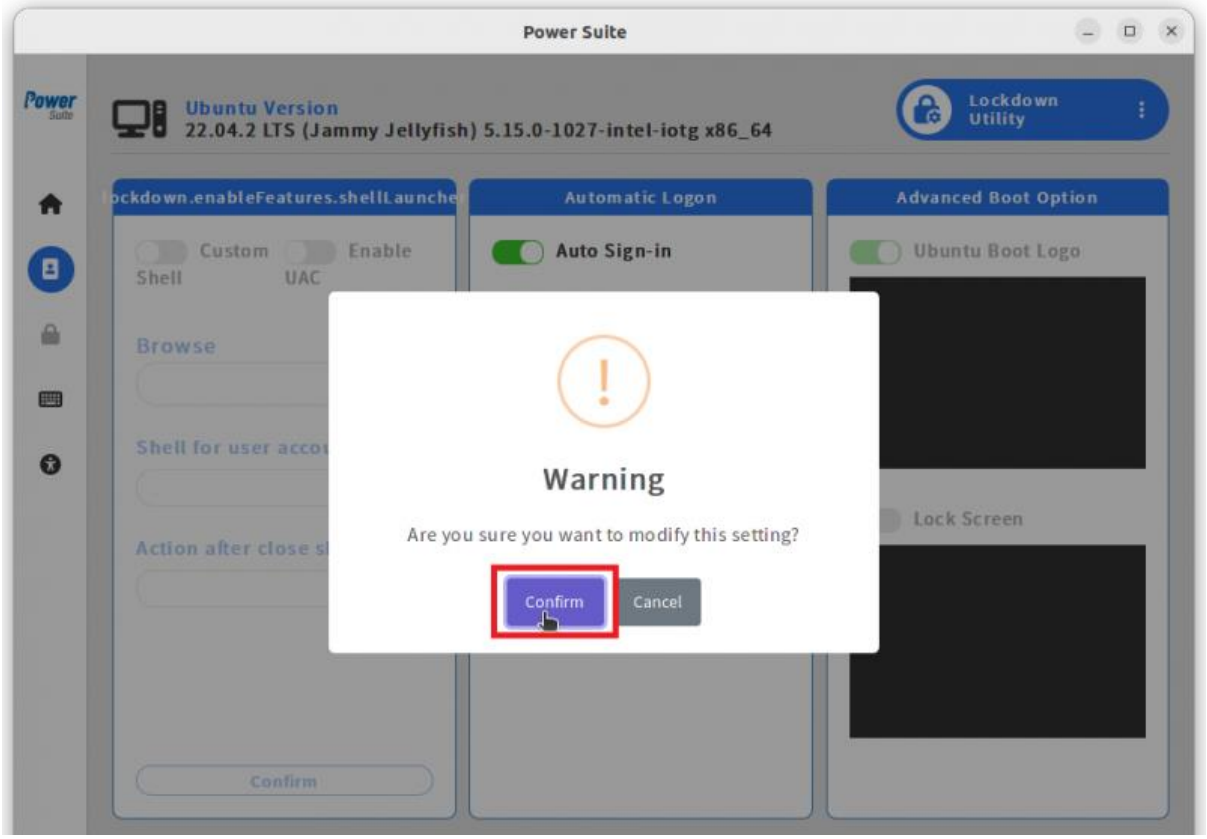

**Step2.** From Automatic Logon area, choose a user from drop down menu.




**Step3.** Click on "Auto Sign-in" to enable automatic login feature.



**Step4.** Click on "Confirm" to modify the setting.




## Result

Next time the system is rebooted, Ubuntu will automatically sign-in with the specific user account.

# Keyboard Filter

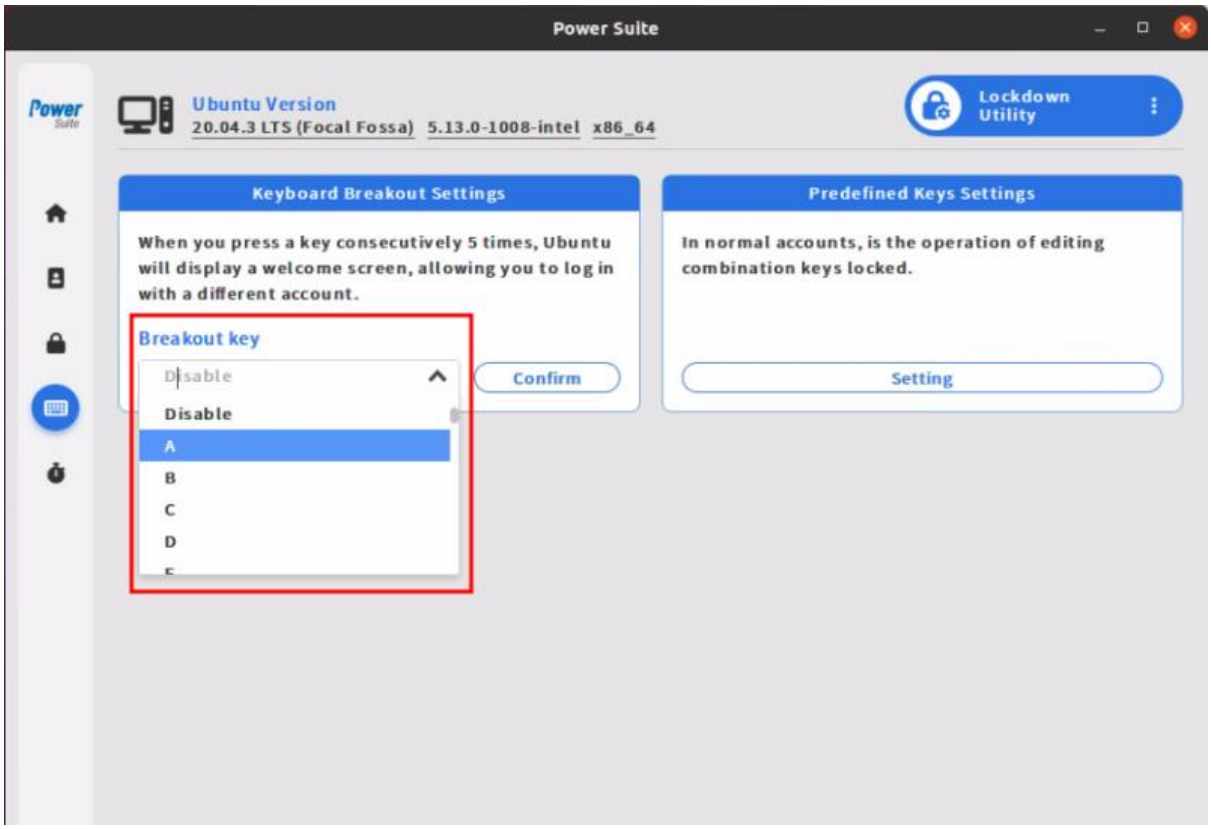
## Keyboard Breakout Settings

### Brief

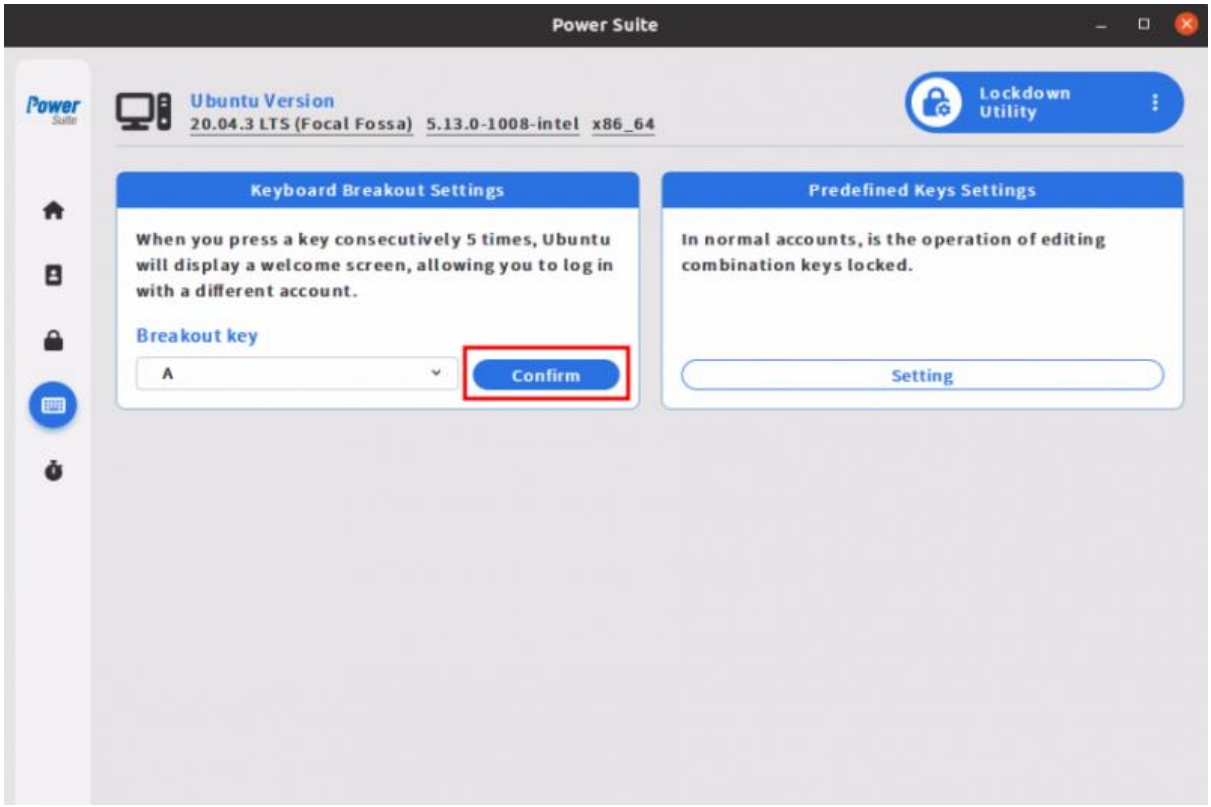
You can configure a breakout key sequence to switch out a locked down account by specifying a key code. When you press the Breakout Key 5 times consecutively, System presents the Logon screen so that you can sign in to a different account.

### Steps

**Step1.** Choose a Key from drop down menu.




**Step2.** Click on "Confirm" button to save the setting.




### Result

Press Breakout Key 5 times consecutively, the system presents Logon screen on Ubuntu desktop.

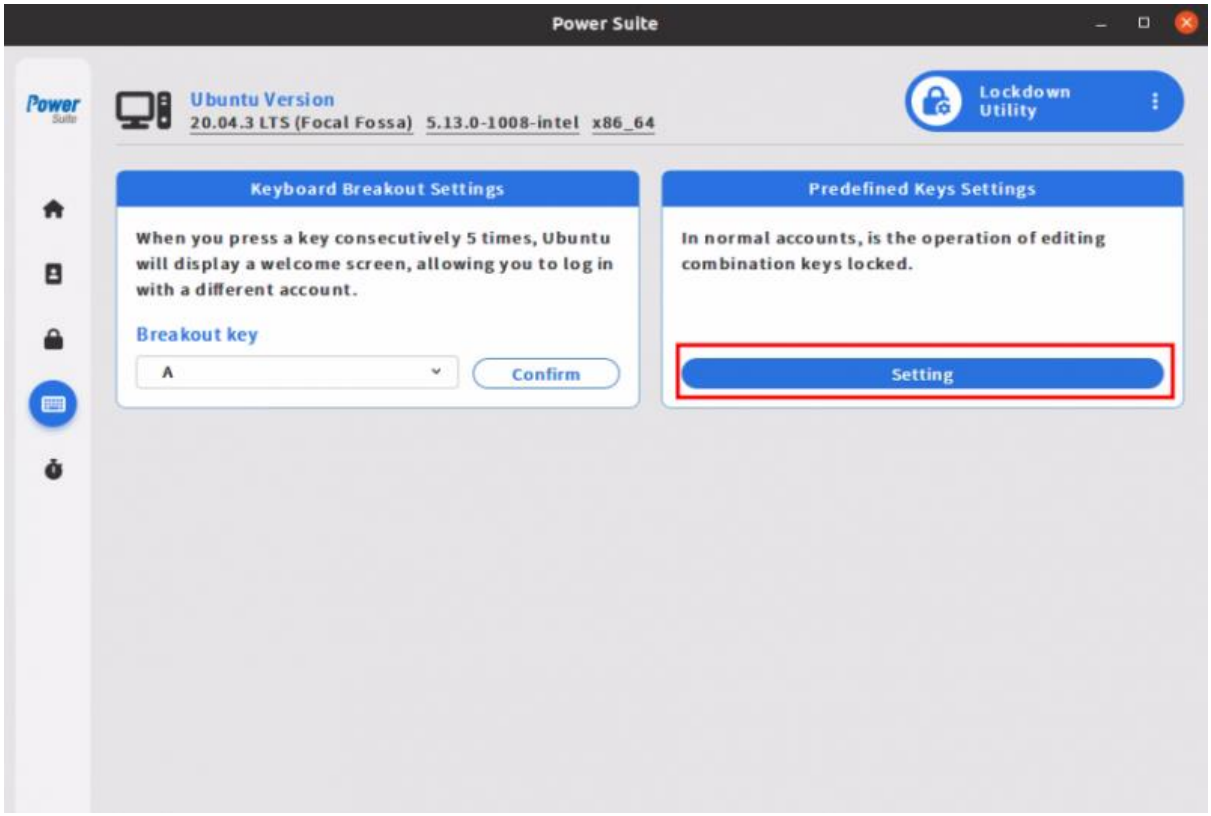
## Predefined Keys Settings

### Brief

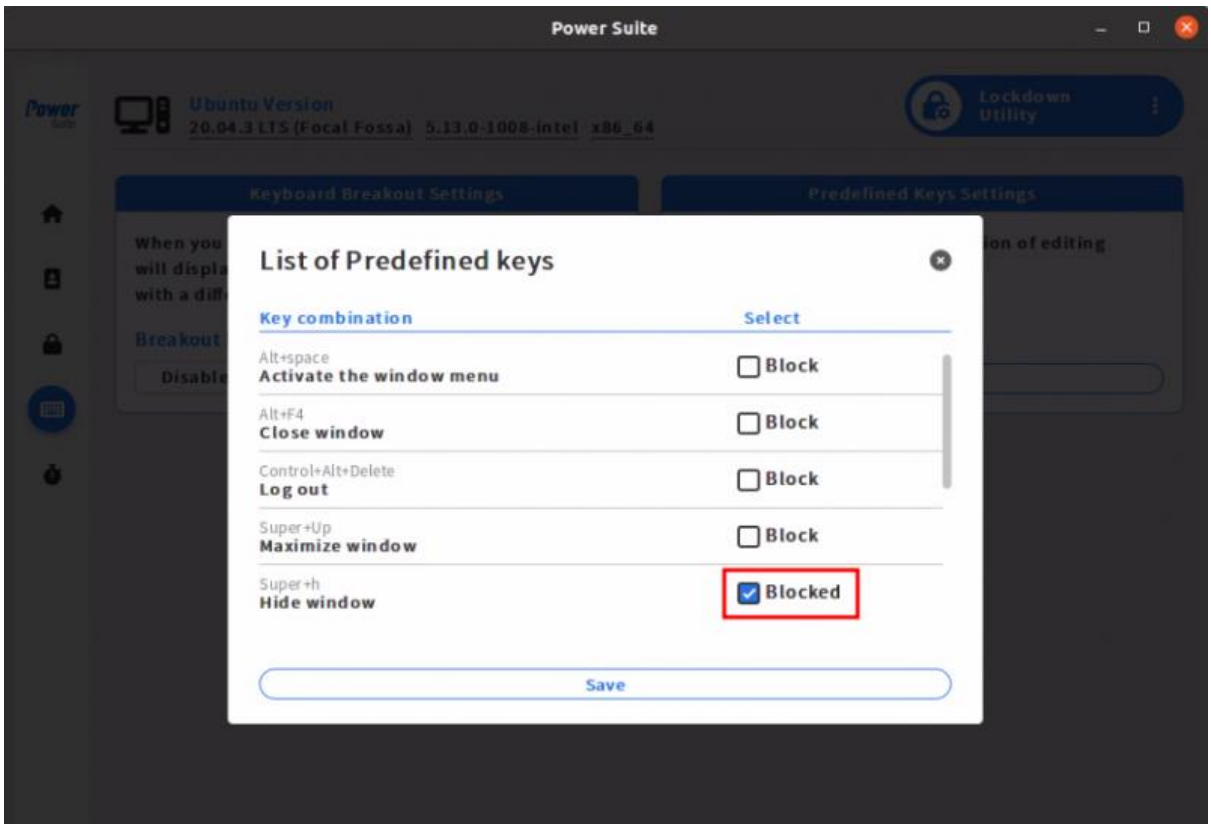
The feature of Predefined Keys Settings is to block selected combination keys to avoid unallowed actions.

### Steps

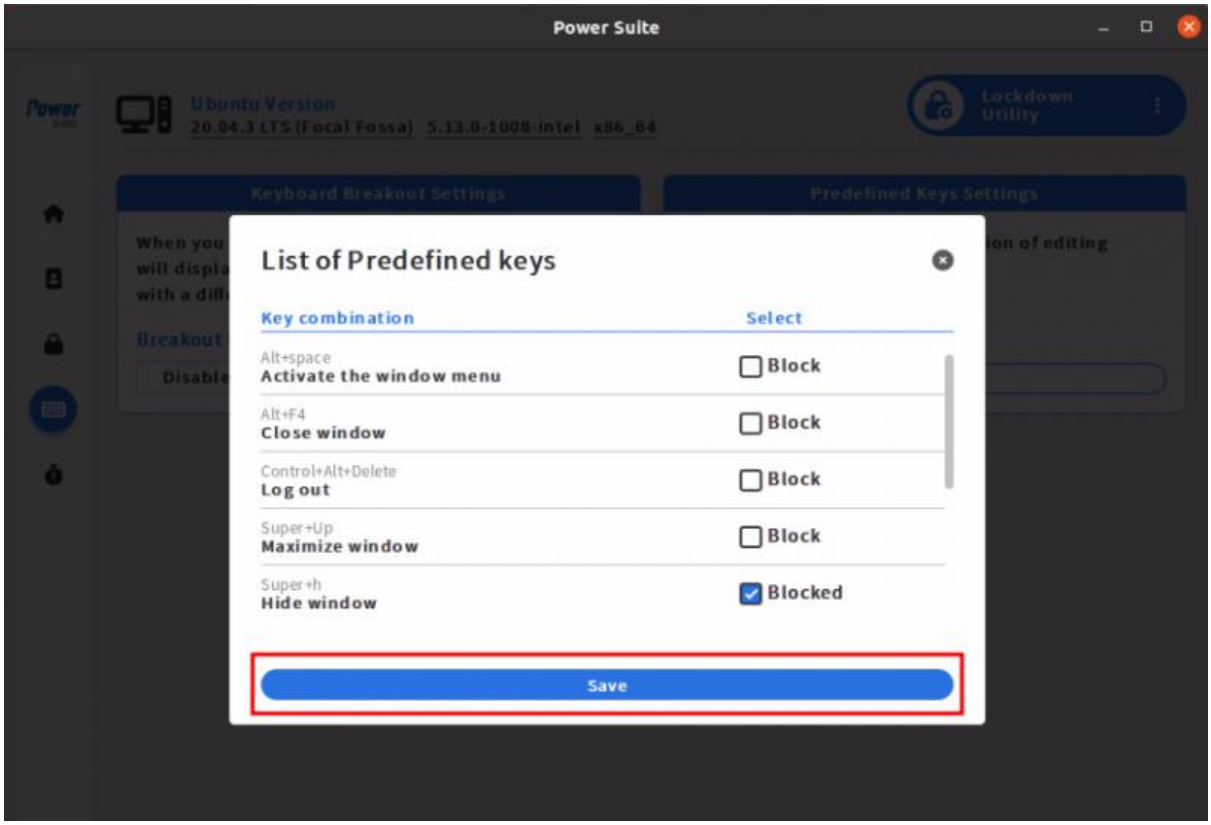
**Step1.** From "Predefined Keys Settings" function, click on "Setting" button.




**Step2.** Check the selected combination key to block the function.



**Step3.** Click on "Save" button to save the setting.




## Result

No function after pressing selected combination keys.

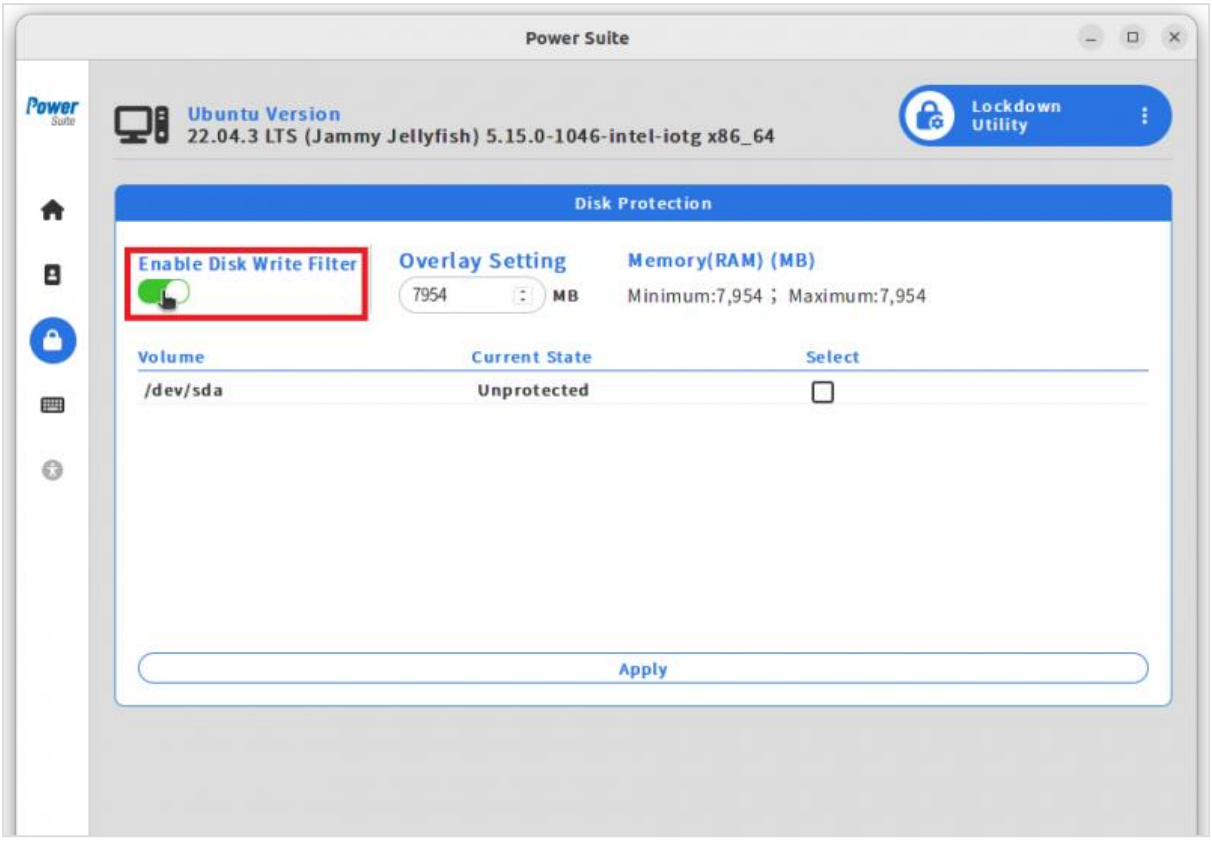
# Disk Protection

## Brief

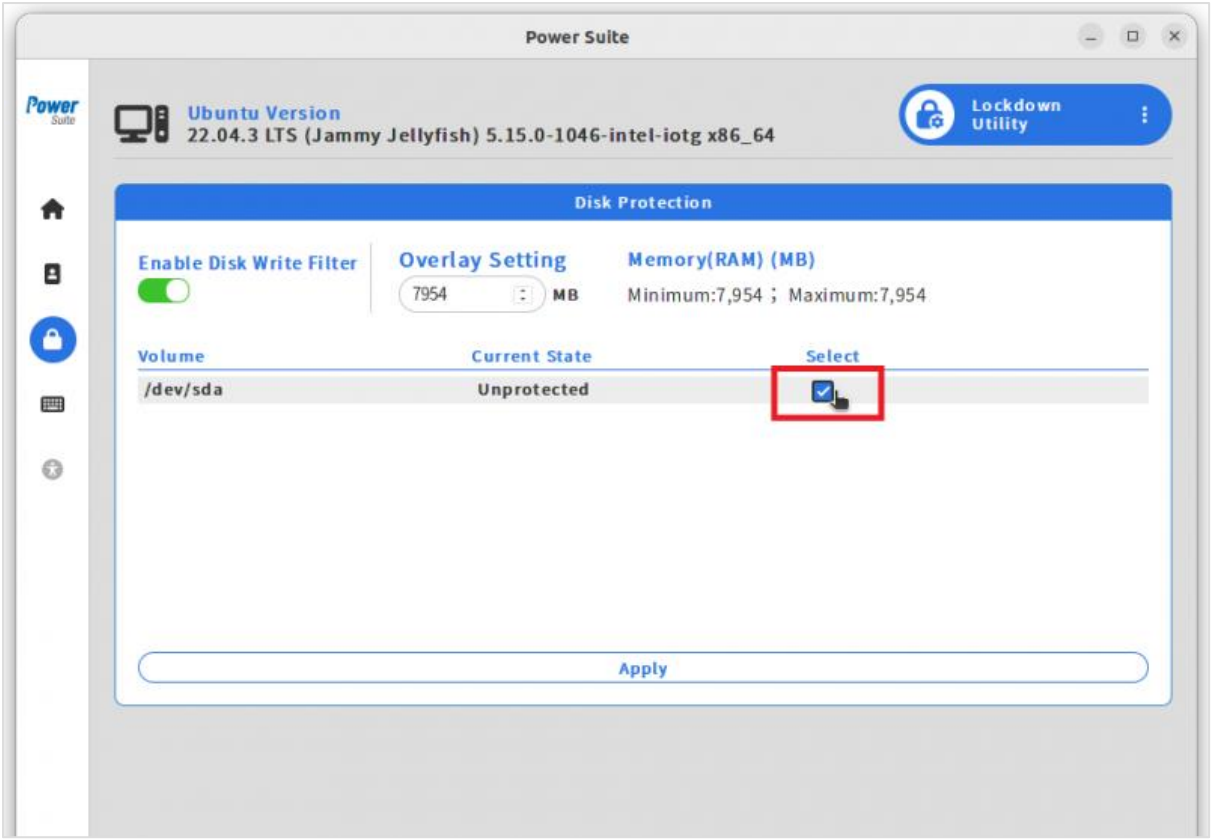
Enabling this function to make a read-only root file system. This prevents any changes to the root file system that could alter system behavior and allows for a simple reboot to restore the system to its original state.

## Steps

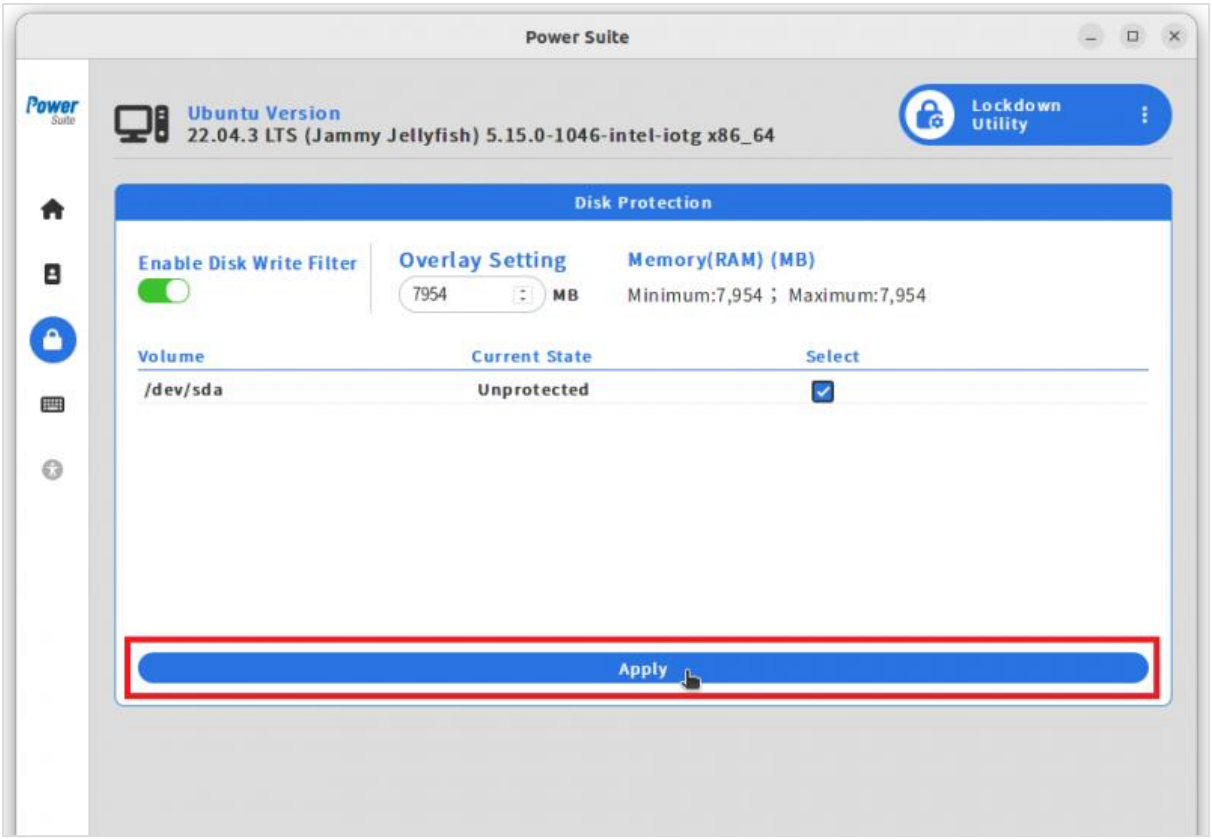
**Step1.** Click on "Enable Disk Write Filter"



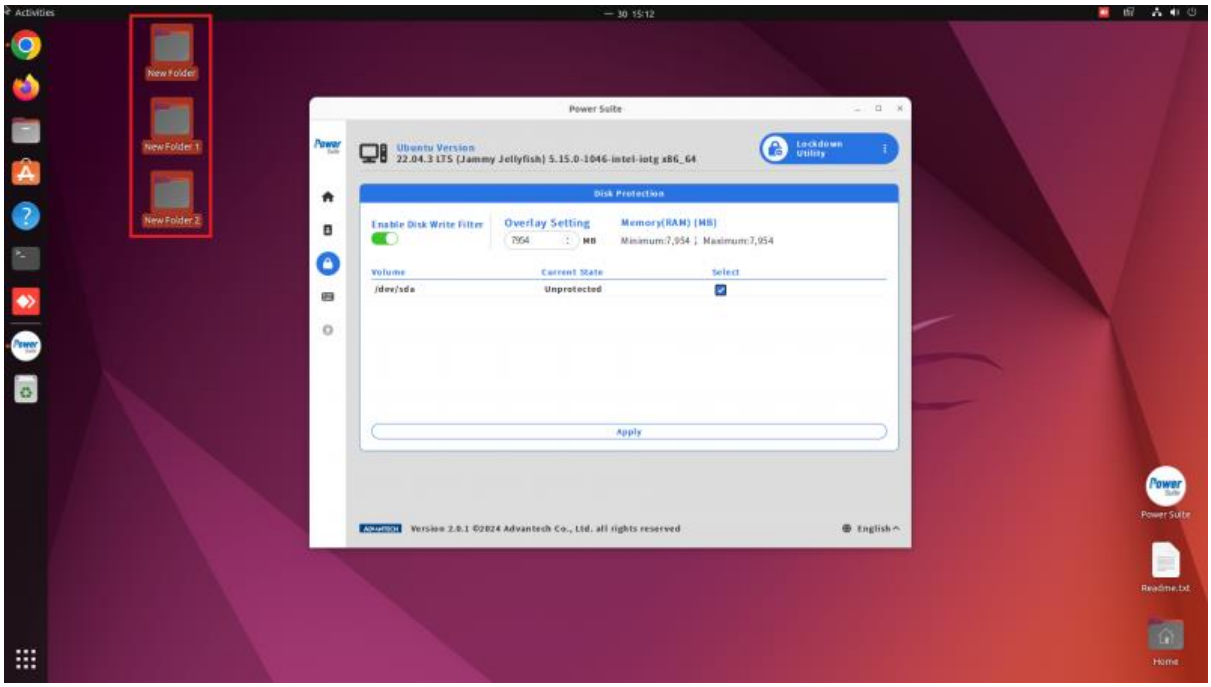

**Step2.** Select target volume to protect, for Ubuntu only /dev/sda can be selected.




**Step3.** Click on "Apply" button to modify the settings.



**Step4.** To test the function, try to add some new folders to the desktop.




**Step5.** Reboot Ubuntu.

## Result

The system restore to its original state and the folders you added in **Step4** are disappeared.

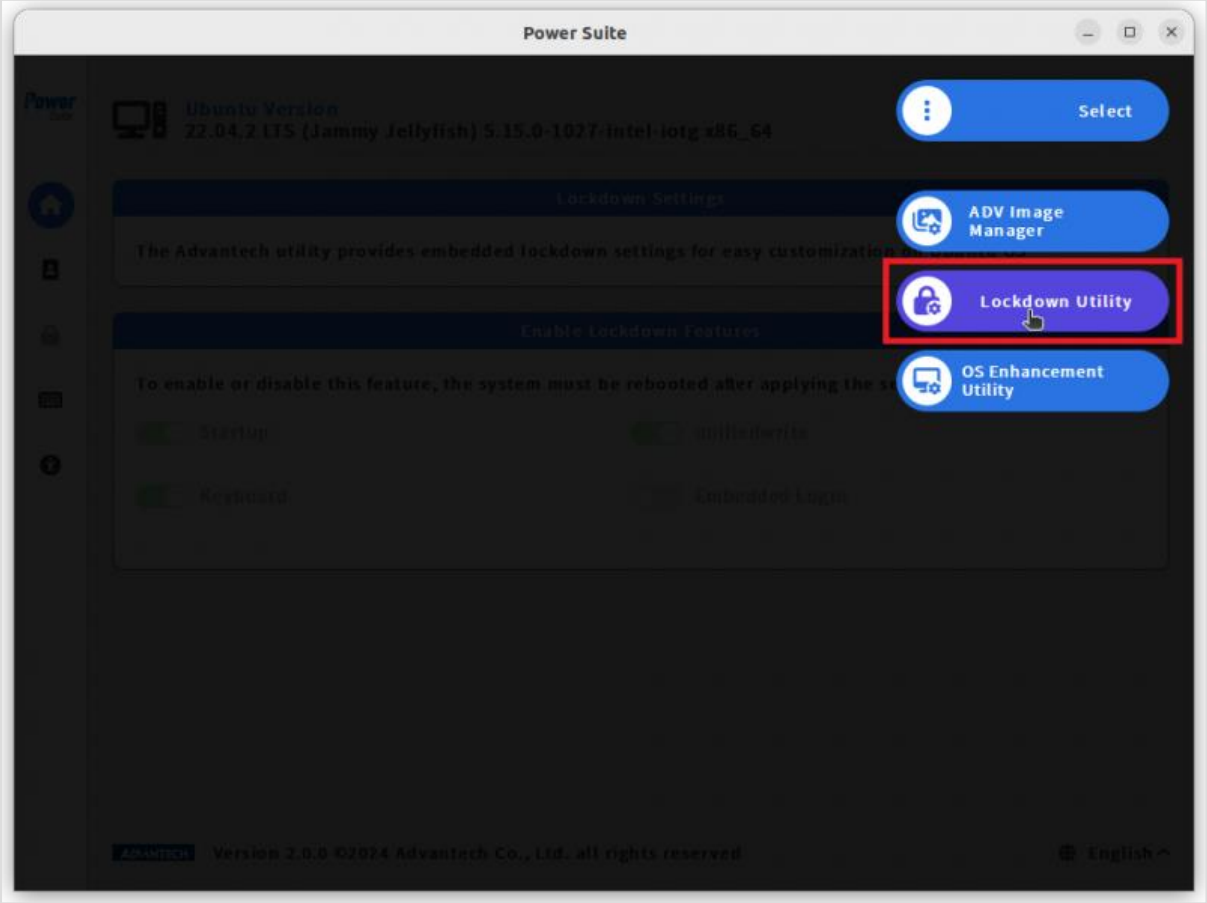
# Advanced Shutdown Option

## Brief

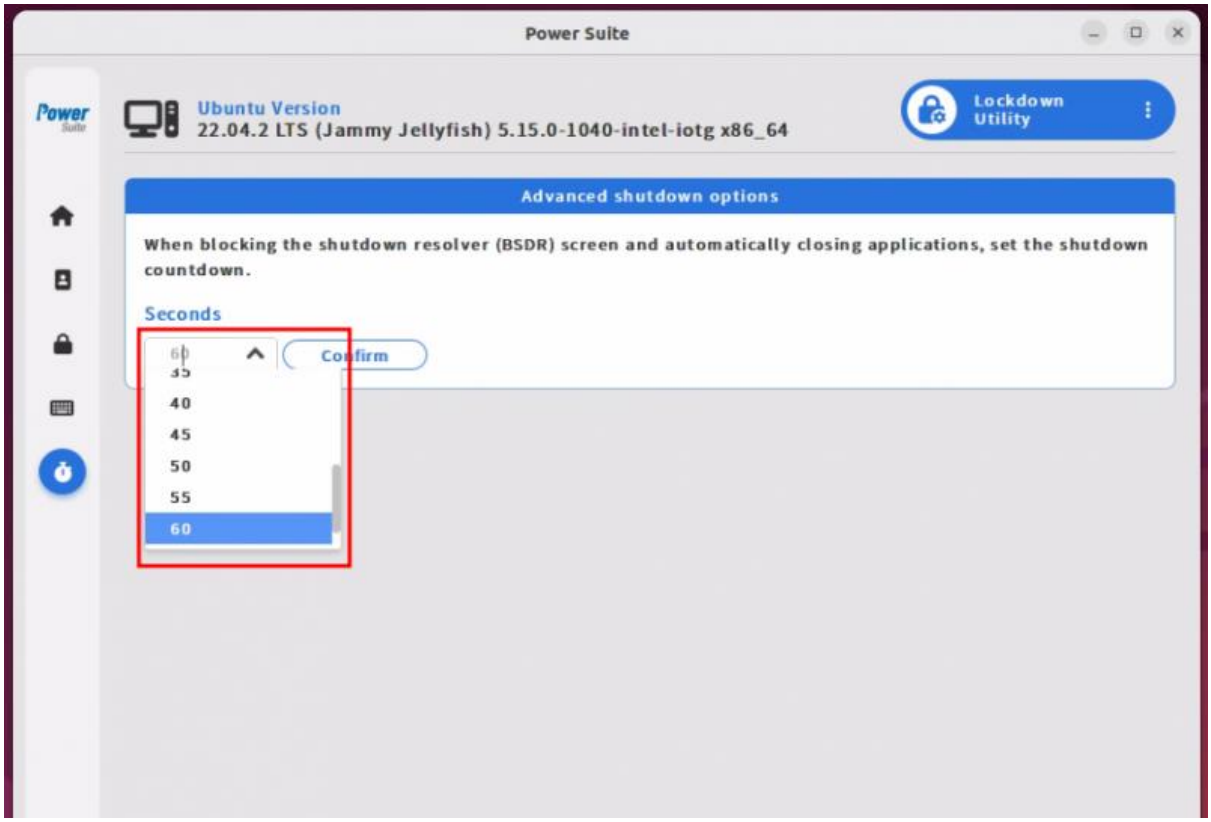
The purpose of this function is to modify the countdown seconds after pressing the power off button.

## Steps

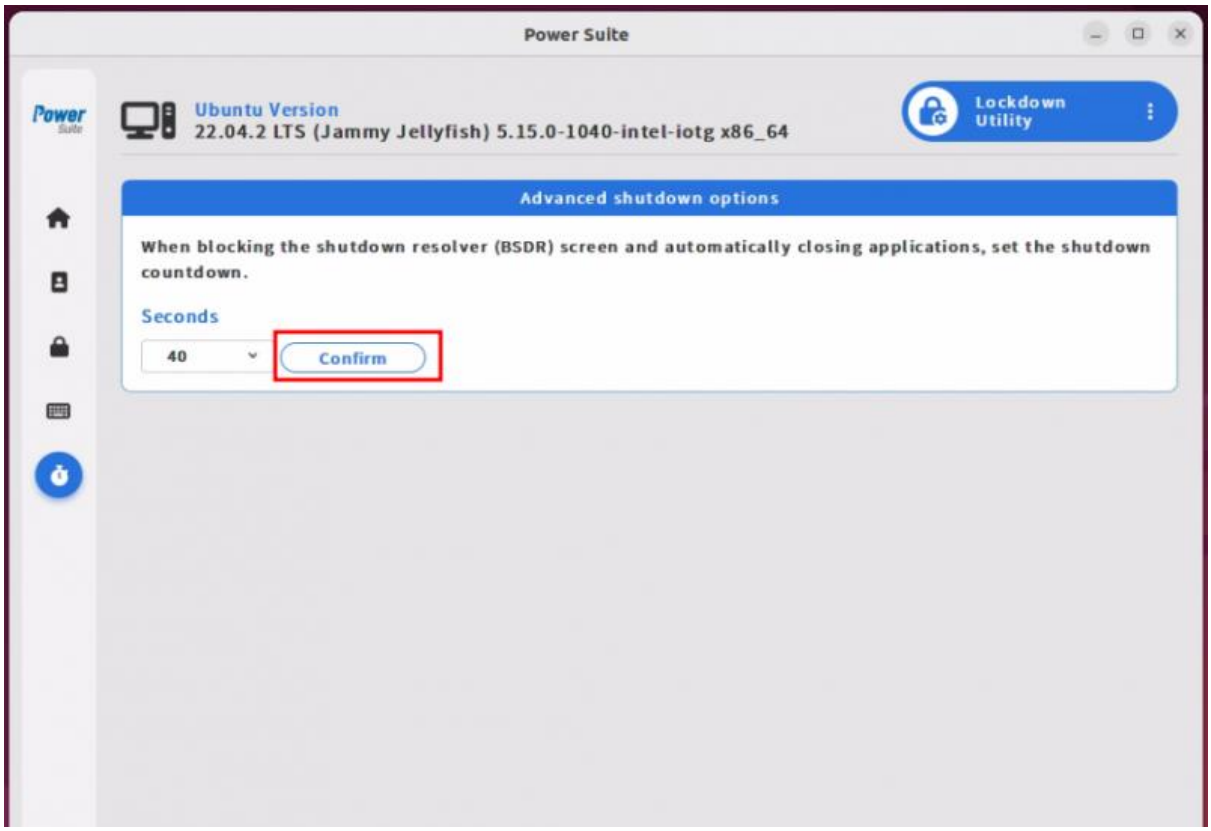
**Step1.** Select the “Lockdown Utility” page.




**Step2.** Set shutdown countdown seconds(5s~60s).

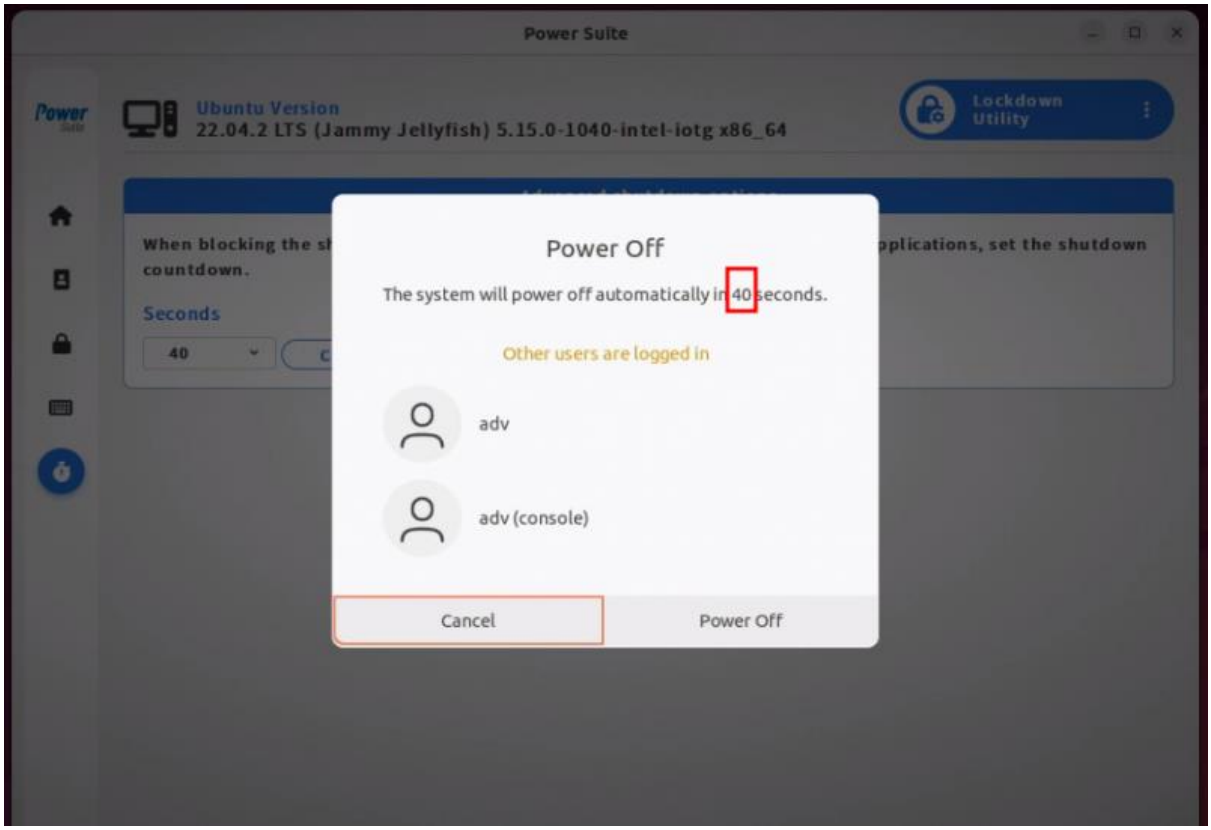



**Step3.** Click on "Confirm" to modify the setting.



## Result

The countdown seconds after pressing the power off button will be modified.



# Shell Launcher

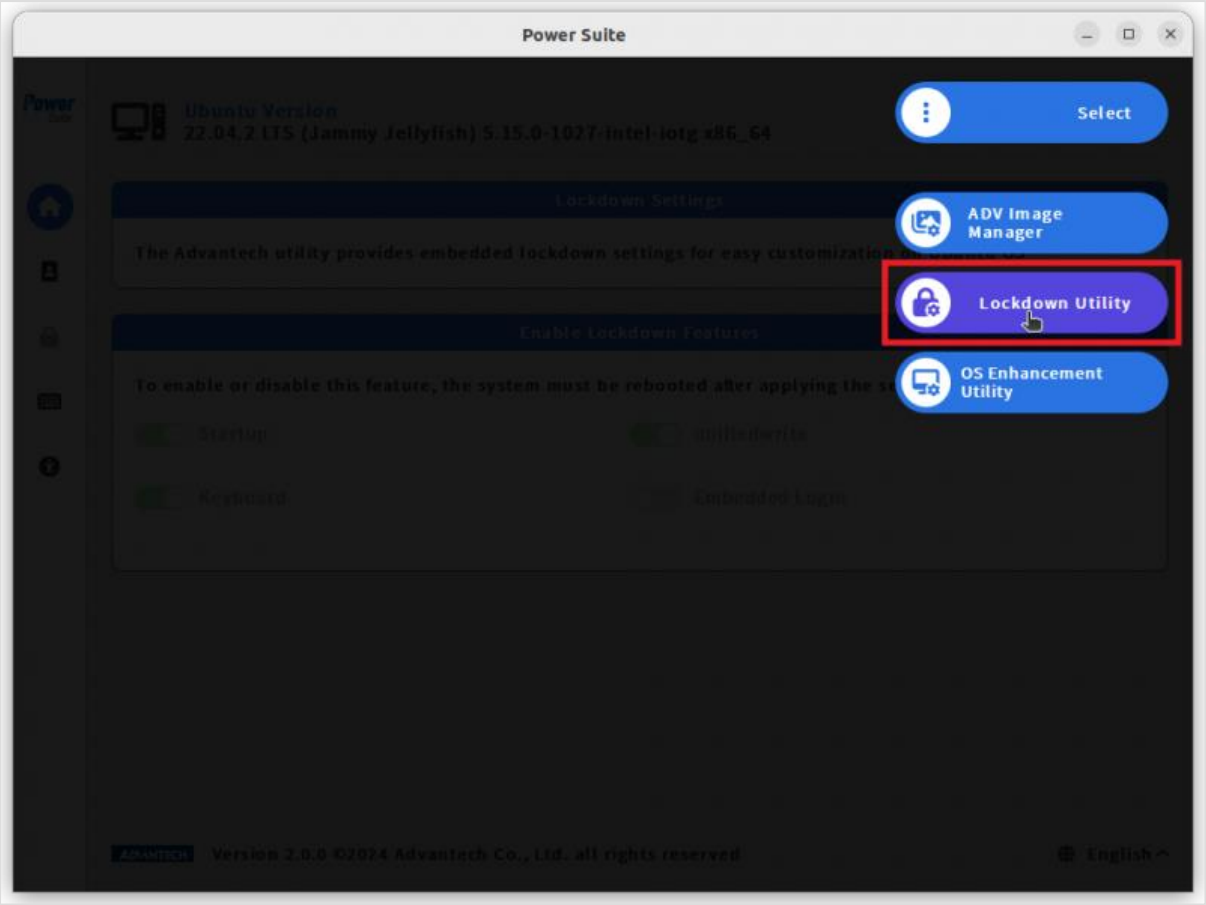
## Brief

The purpose of this function is to automatically run an application on power on.

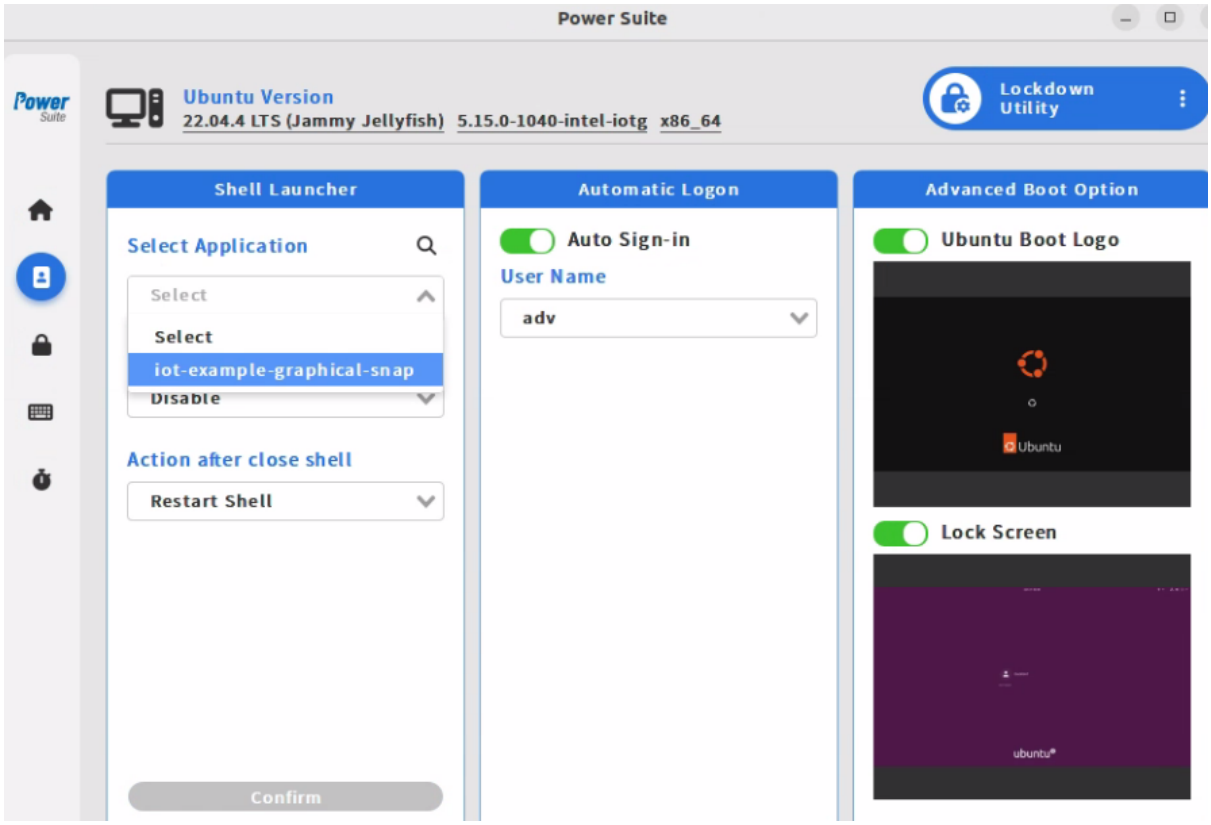
"Shell Launcher" only supports snap's application currently, how to create a snap installation package that supports this feature, you can refer to Ubuntu Frame docs.

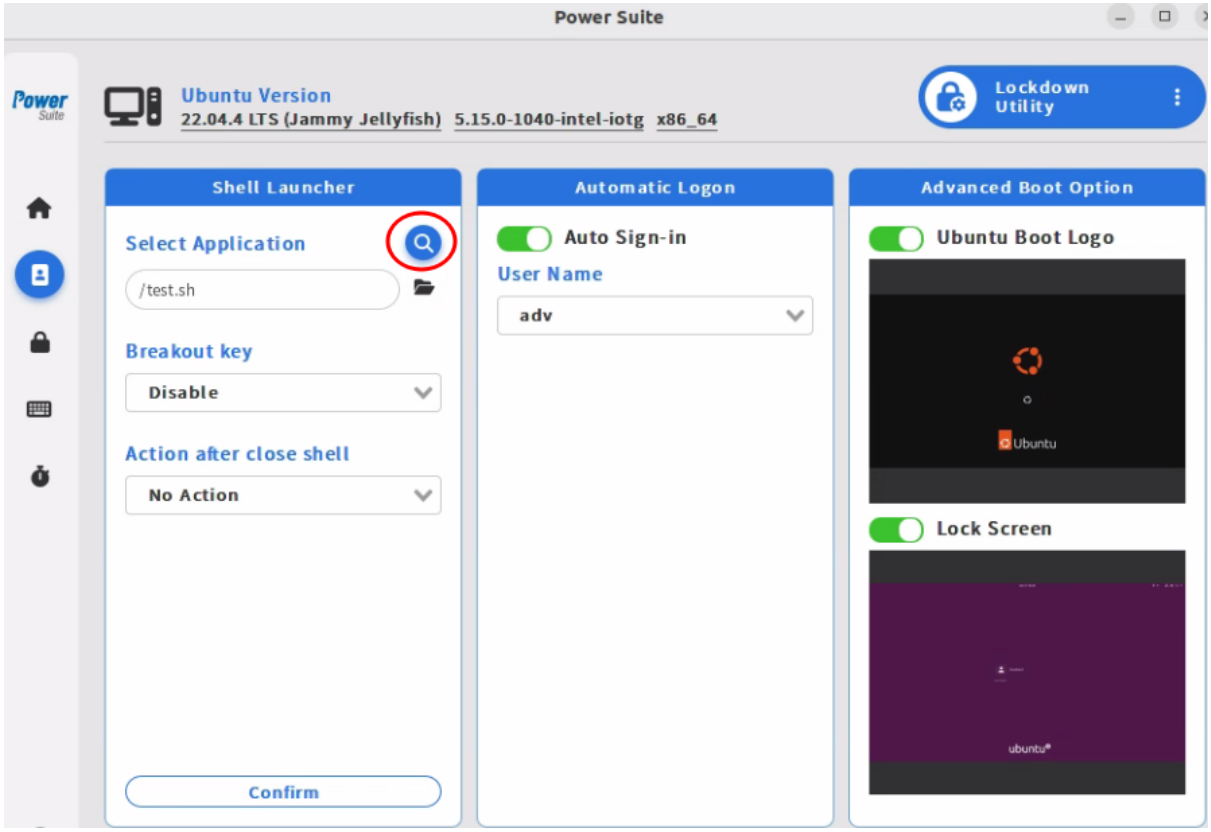
## Steps

**Step1.** Select the “Lockdown Utility” page.




**Step2.** From "Shell Launcher" area, choose a snap application or an executable file.

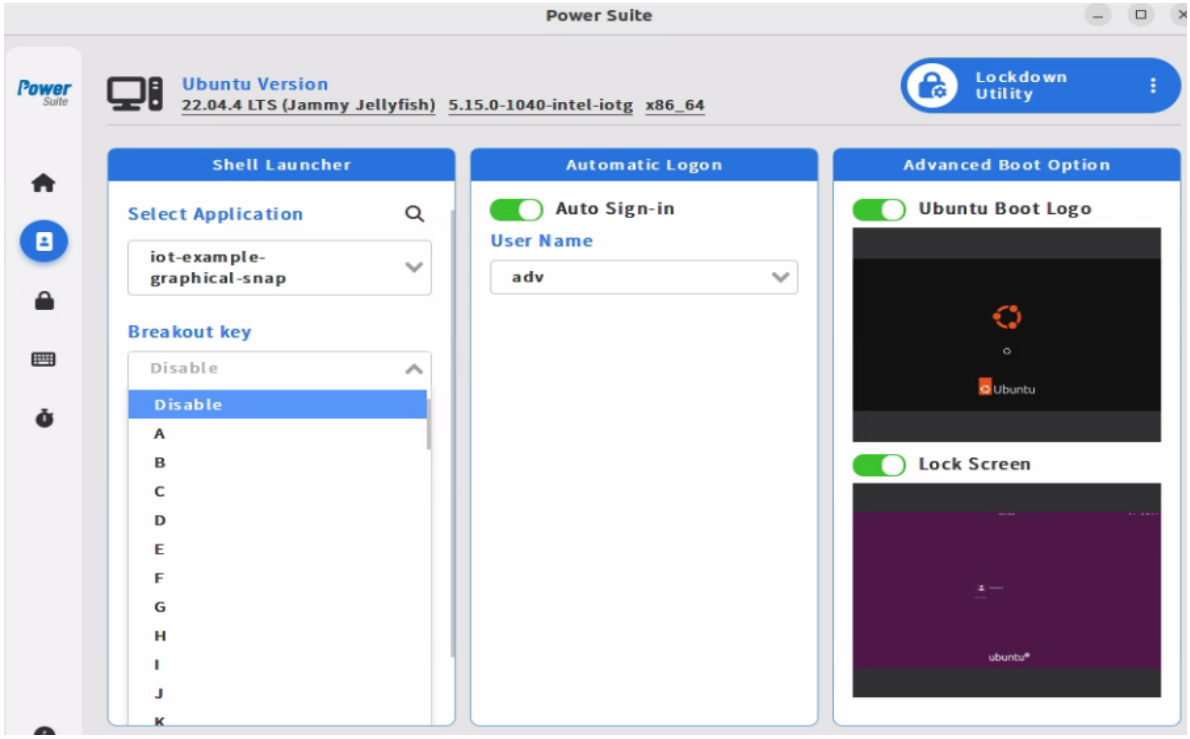

Power Suite
Ubuntu Version
22.04.4 LTS (Jammy Jellyfish) 5.15.0-1040-intel-iotg x86_64
Lockdown Utility
Shell Launcher
Select Application
Select
Select
iot-example-graphical-snap
Disable
Action after close shell
Restart Shell
Confirm
Automatic Logon
Auto Sign-in
User Name
adv
Advanced Boot Option
Ubuntu Boot Logo
Lock Screen


Power Suite
Ubuntu Version
22.04.4 LTS (Jammy Jellyfish) 5.15.0-1040-intel-iotg x86_64
Lockdown Utility
Shell Launcher
Select Application
/test.sh
Breakout key
Disable
Action after close shell
No Action
Confirm
Automatic Logon
Auto Sign-in
User Name
adv
Advanced Boot Option
Ubuntu Boot Logo
Lock Screen

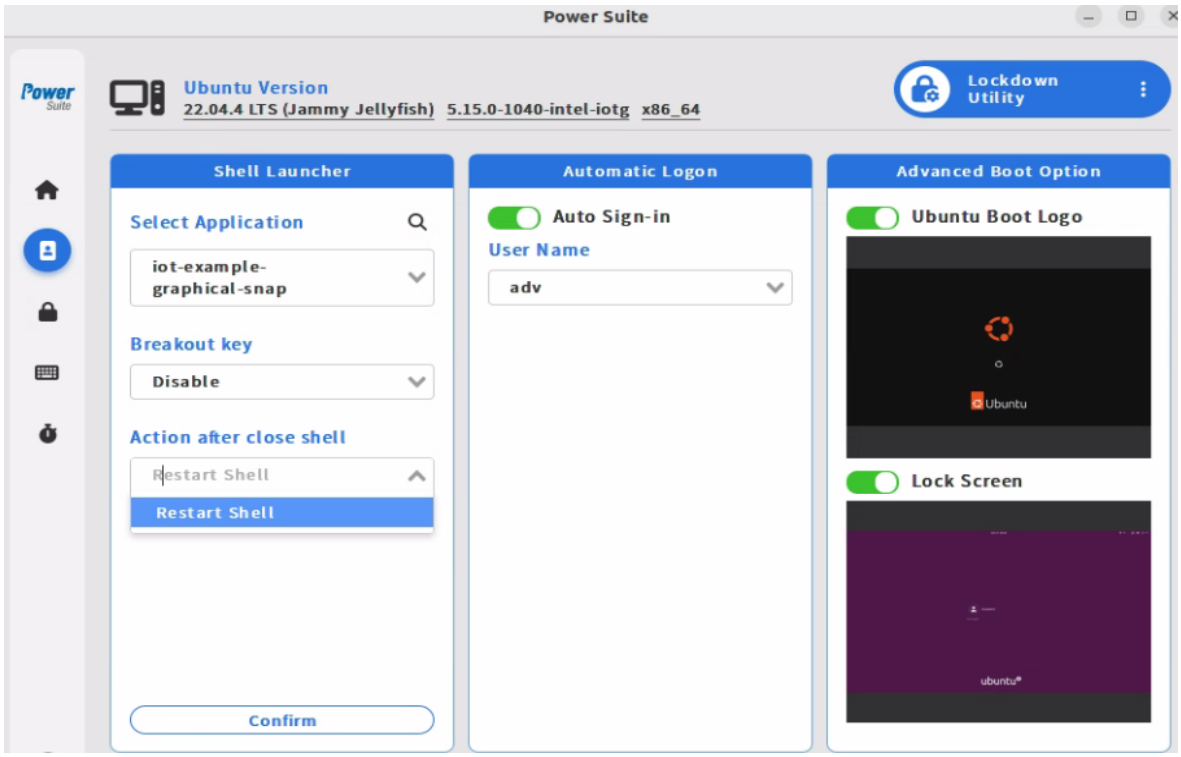
**Step3.** Choose "breakout key" from drop down menu.

The "breakout key" is designed to escape shell launcher mode after pressing the key 5 times.

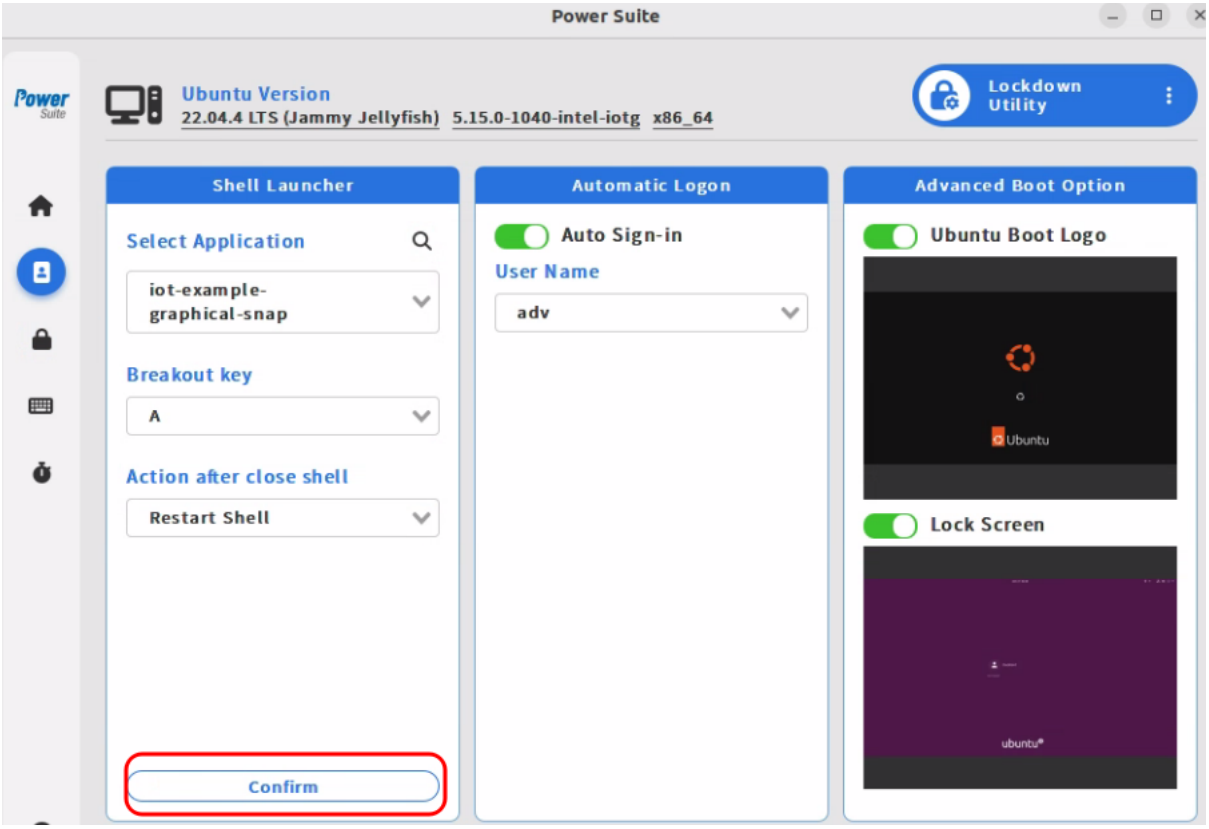
Note: If you don't want to set the 'break_out key', you can also use remote SSH to exit Shell Launcher mode, FAQ: How to escape shell_launcher mode without using breakout key




**Step4.** Choose "action after close shell" from drop down menu.



**Step5.** Click on "Confirm" to modify the setting.




## Result

The selected application will automatically execute after restarting.

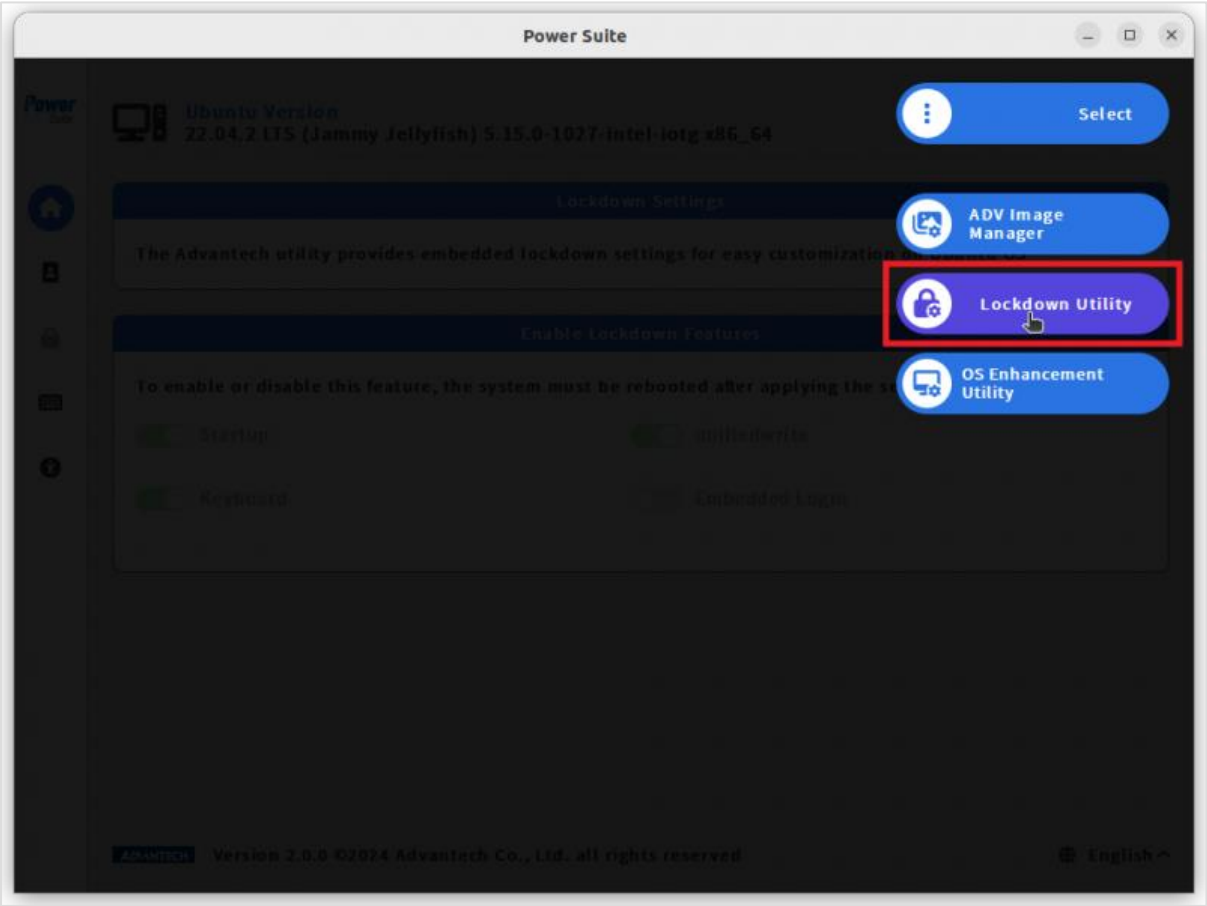
# Advanced Boot Option

## Brief

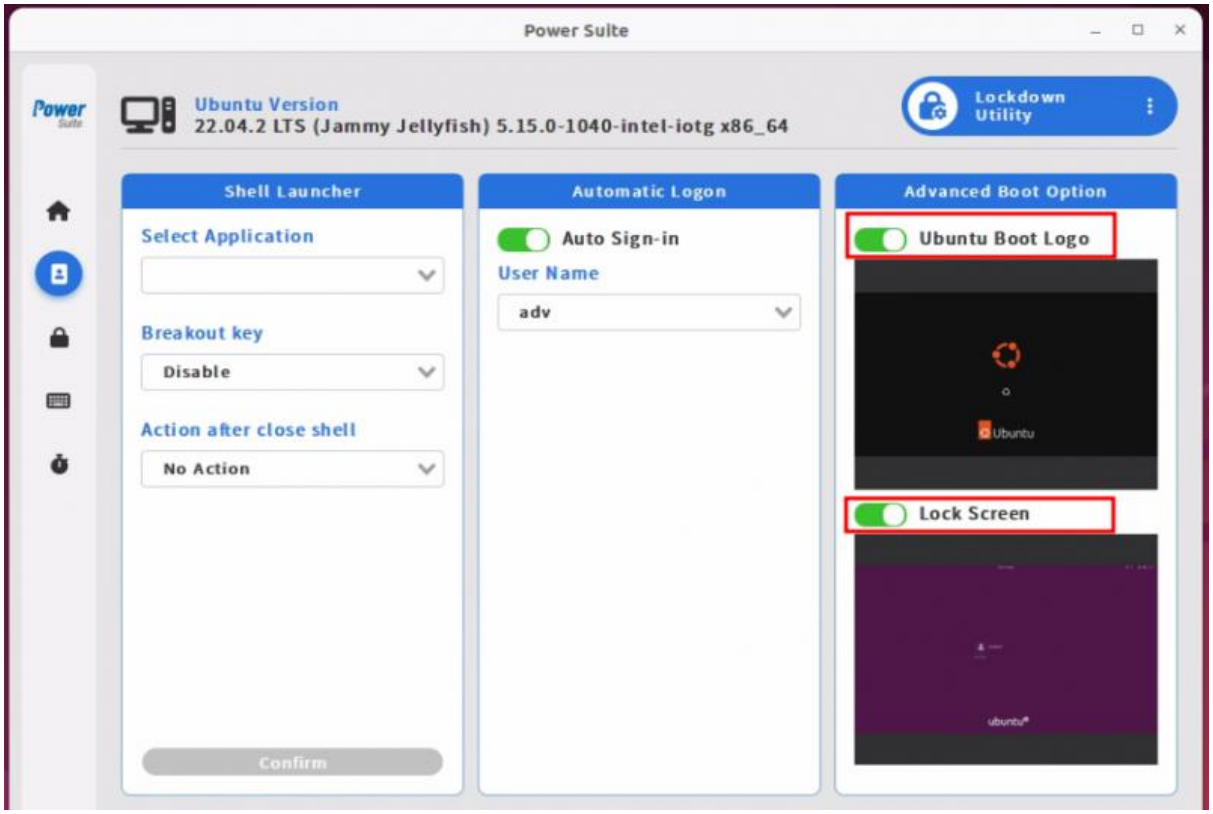
The purpose of this function is to remove the Ubuntu logo that appears when turning on and off the computer and locking the screen.

## Steps

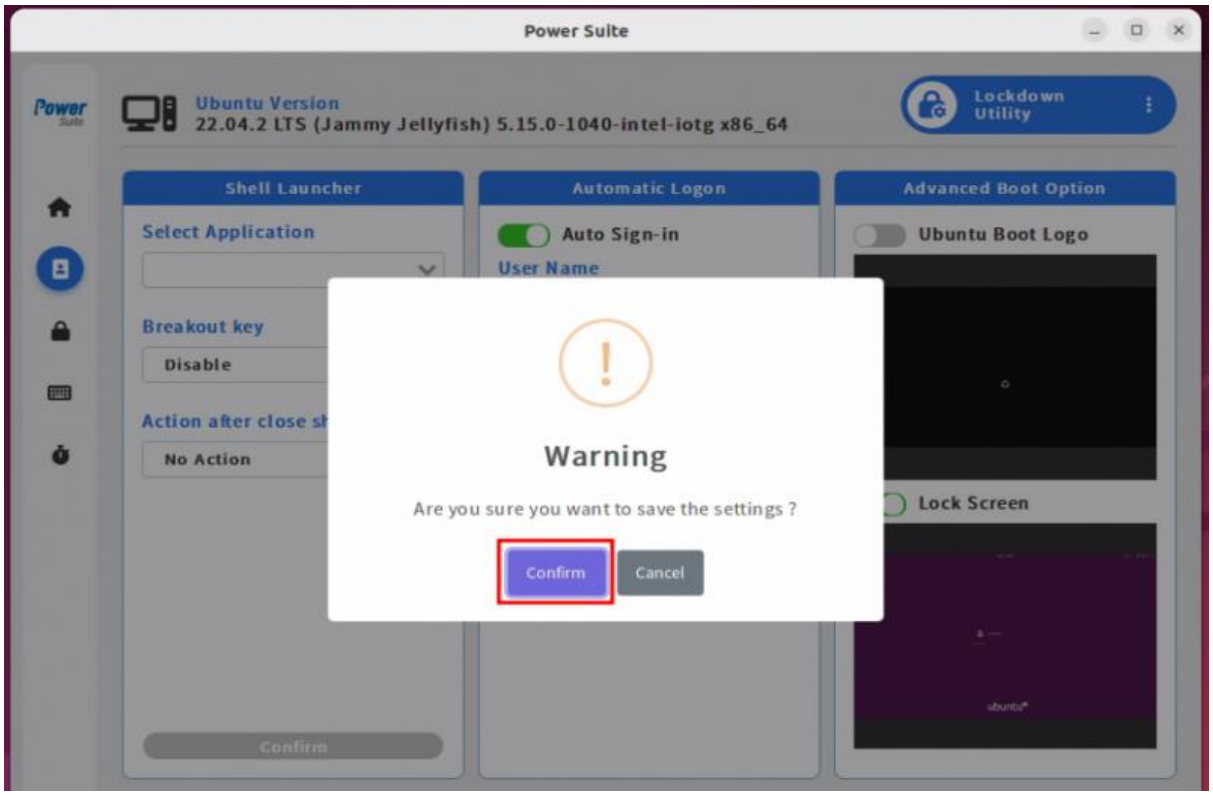
**Step1.** Select the “Lockdown Utility” page.




**Step2.** From "Advanced Boot Option" area, click "Ubuntu Boot Logo" or "Lock Screen"




**Step3.** Click on "Confirm" to modify the setting.




## Result

The next time you reboot or enter the lock screen, you will no longer see the Ubuntu logo.

# Security Diagnosis

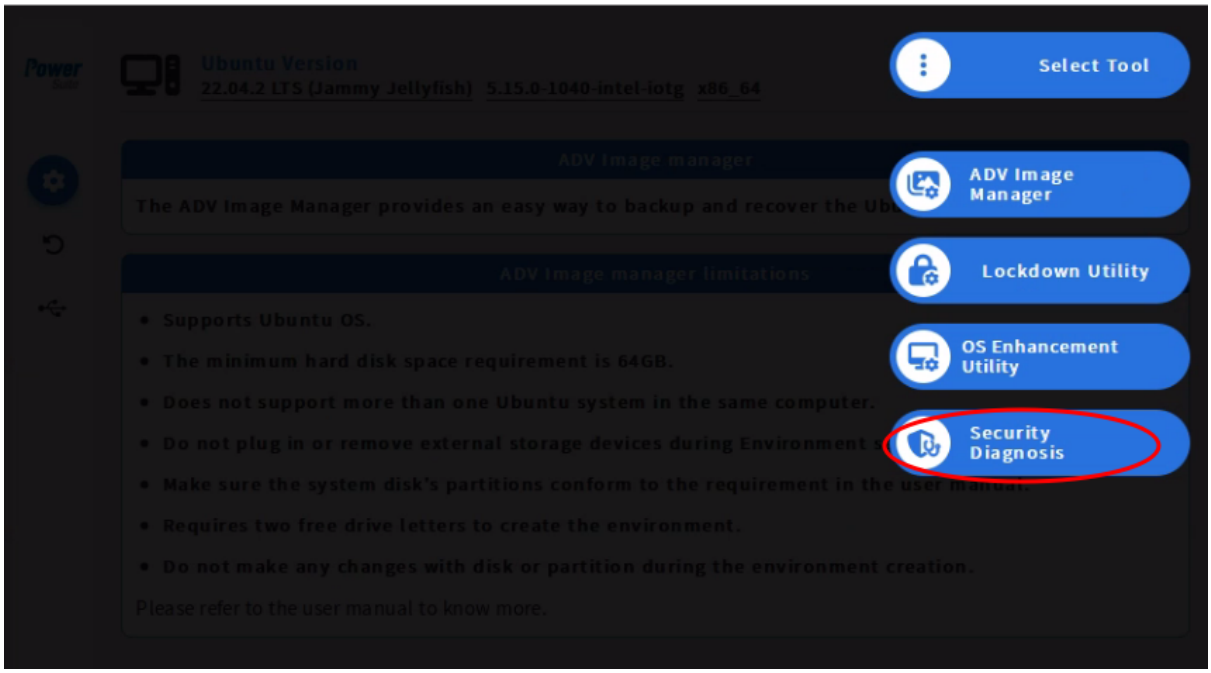
# Security

## Brief

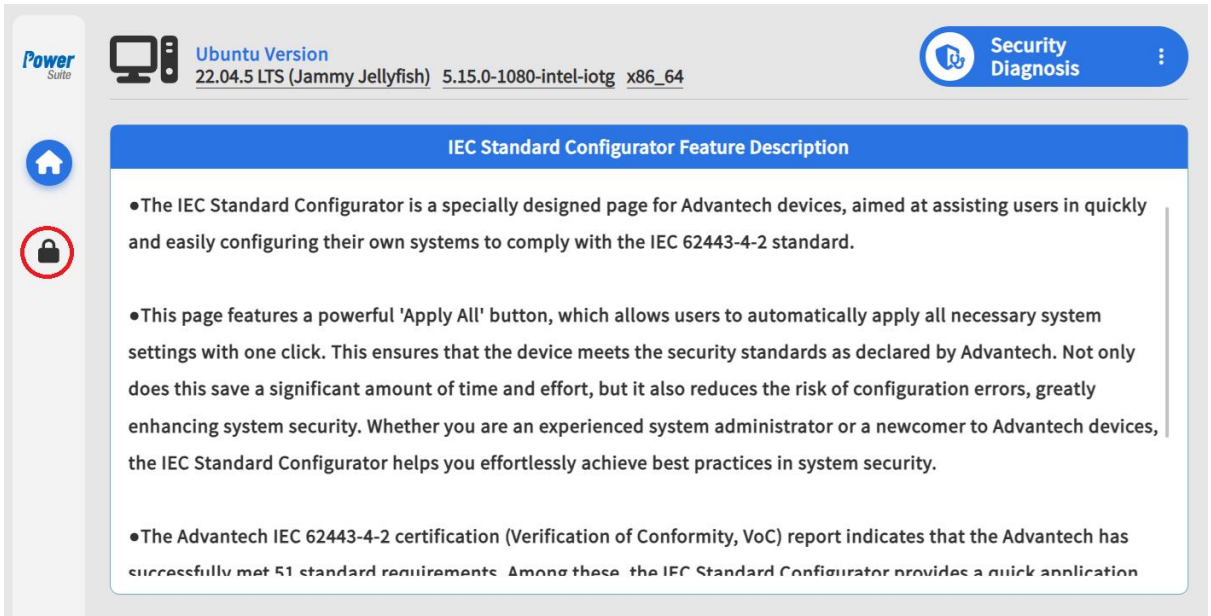
Enabling this function to automatically apply IEC-62443 security basic settings.

## Steps

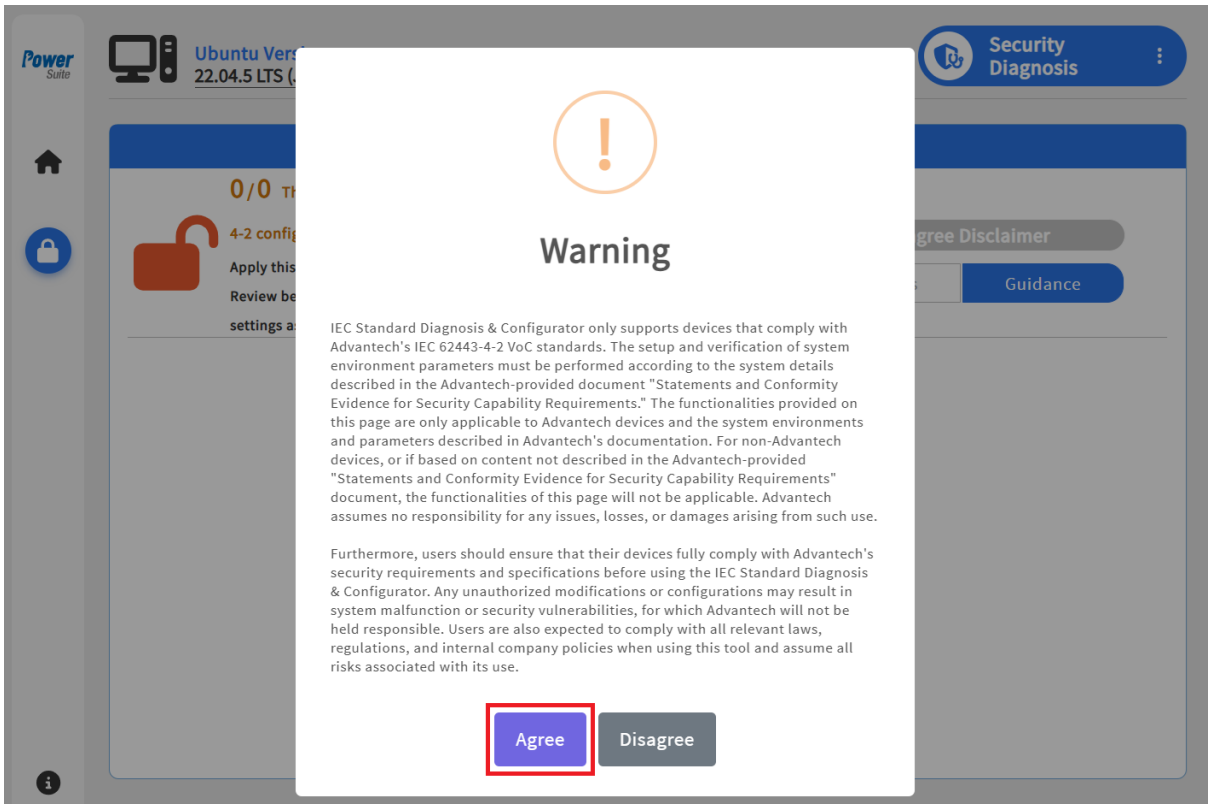
**Step1.** Select the “Security Diagnosis” page.



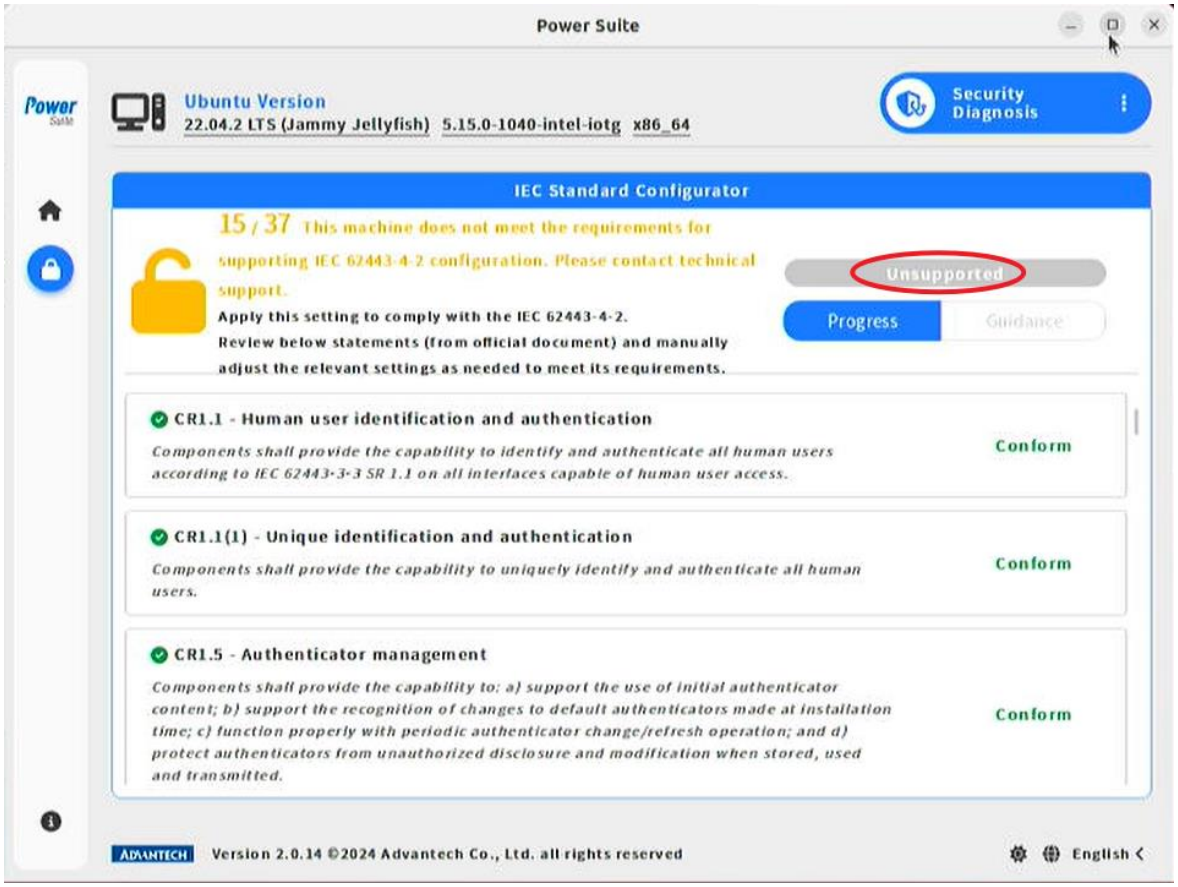

**Step2.** Select the “IEC Standard Configure” icon, enter setup page.



**Step3.** You will be prompted to read the disclaimer message, after reading the message, click "Agree" to accept the disclaimer and it will show IEC 62443 compliance checking status on the screen, if you click "Disagree" that mean you do not accept the disclaimer and it will not show any IEC 62443 compliance status on the screen.




**Step4.** After accepting the agreement, the system will automatically redirect to the Security page and perform a system scan based on IEC-62443 requirements.




However, this security feature requires additional permissions. For full security function service, please contact Advantech.