

Troubleshooting

Content

1. Hang issue

2. Battery drains and overheat





Hang issue

1.1 Definition and symptom

Definition

Hanging is about animation drop frame, pause when clicking certain key, icon, or sliding widget.

Symptom

Slow reaction

- Slow Reaction While App Initiates/Stops/Runs
- Slow Screen-on While Pressing Power Key

Run unsmoothly

- System Runs unsmoothly
- Hang in App running (hang in sliding)
- Stuck in App running (stuck in launcher)
- White screen for a long time/ black screen for a short time



Slow Internet Speed

Crash and Reboot

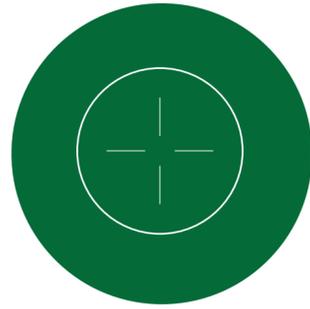
ANR

App stops running



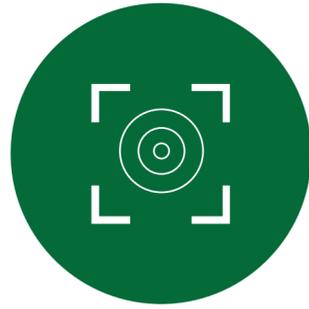
Hang issue

1.2 Cause



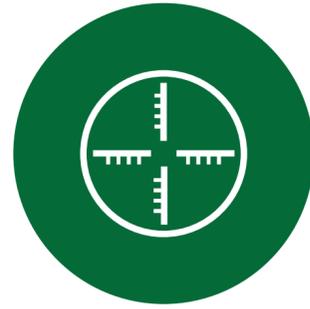
3rd Part Abnormality

Third part application or service abnormality causes CPU excessively used



ANR

Hanging will occur some time before application not responding.
ANR:
Application Not Responding



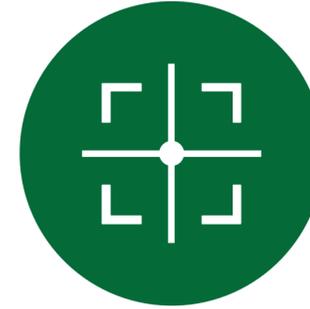
ROOT

After the phone is rooted, system files will be altered and the application may not apply for resources.



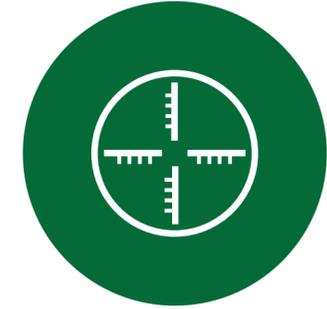
Low Memory

Running memory was largely occupied by apps, resulting to small capacity and thus the system keeps recovering memory and occupying CPU.



Under locking

Excess temperature causes low CPU frequency and nuclear number, insufficient resource.



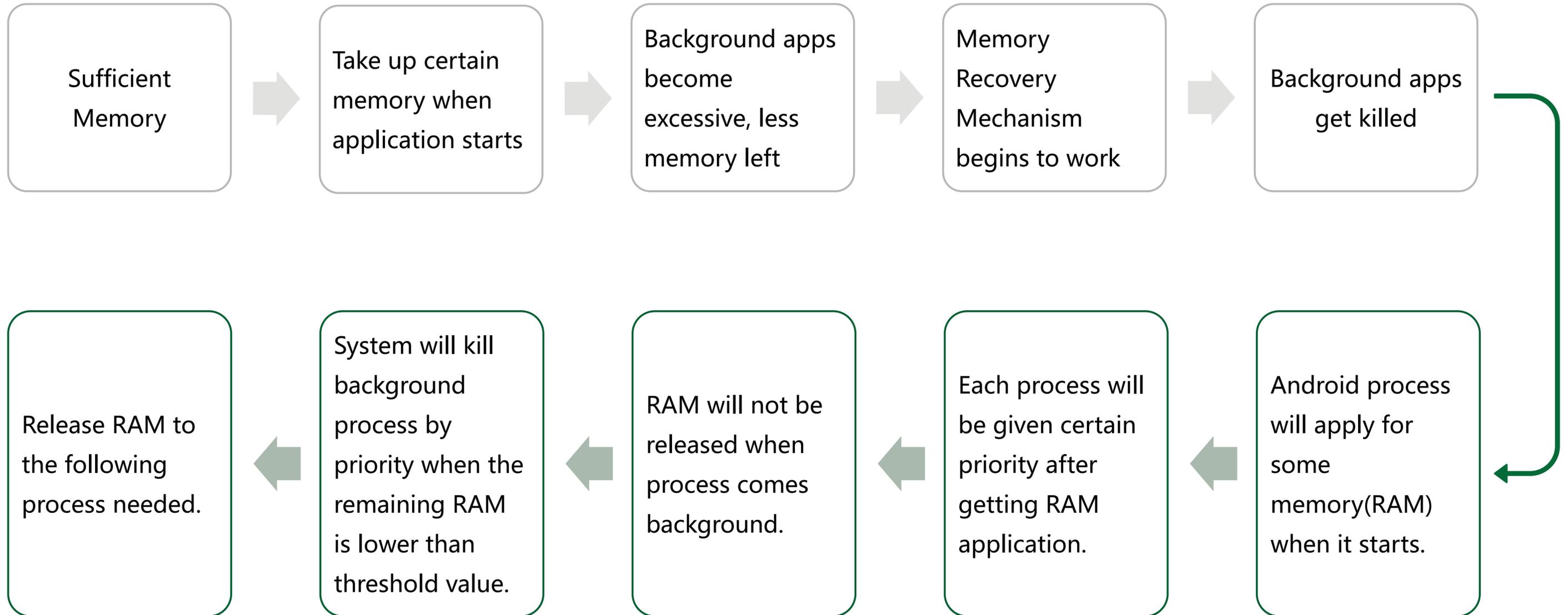
System Abnormality

System application or service become abnormal which leads to high occupation of CPU.



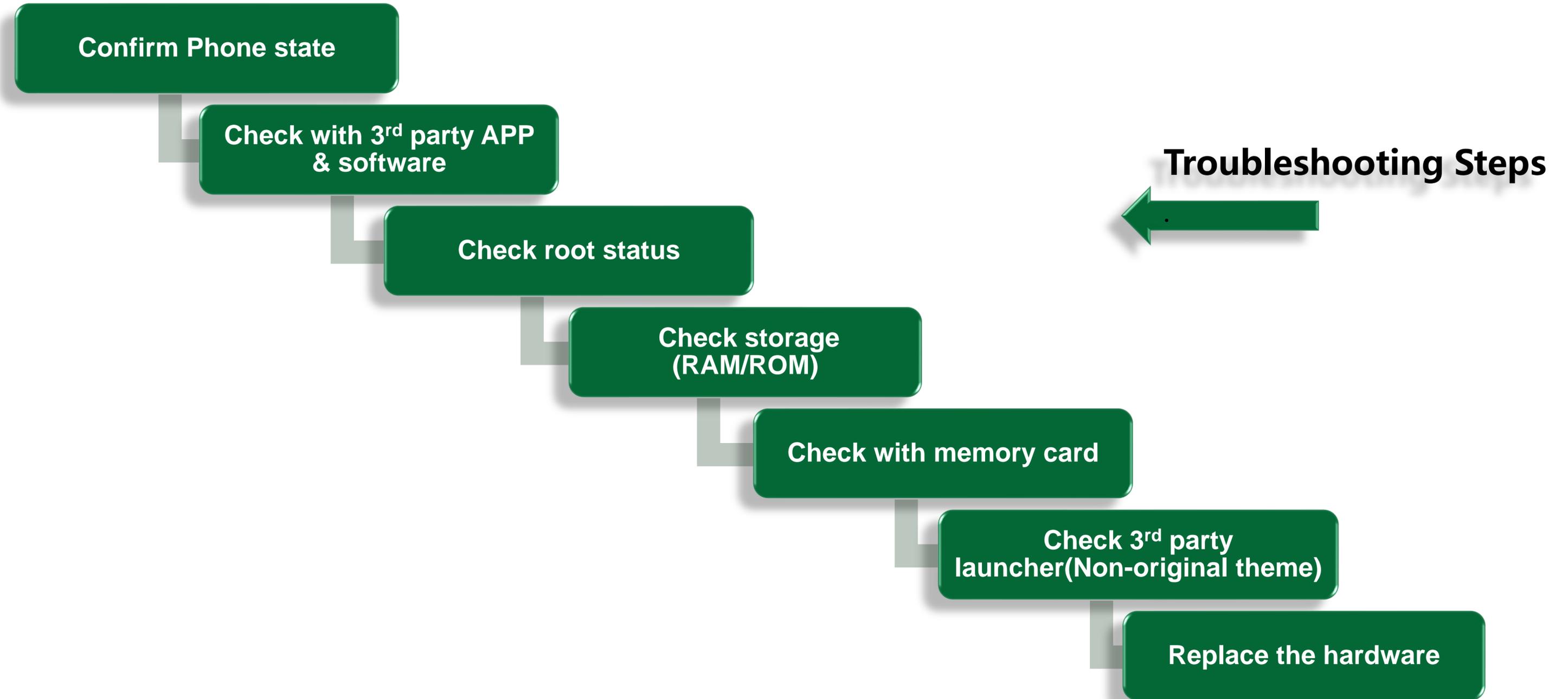
Hang issue

1.3 Android Memory Management Mechanism



Hang issue

1.4 Troubleshooting steps



2. Battery drains and overheat





Battery drains and overheat

2.1 Cause for battery drains

Criteria



A1: In the state of being **standby**, more than **2% per hour** power consumption can be determined as abnormal;
--> mostly applied in **SCREEN OFF and STANBY** mode.

A2: Comparison test: use the same model (good sample), and set the same setting conditions (the default time unit: hour), if the power difference between the test sample and user machine is more than **5%**, it can be judged to be abnormal consumption.
--> mostly applied in **OPERATION** mode.

* Note:

1. The standby **conditions** in criteria A1 are: no background APPs, GPS/WIFI/BT/GPRS/low power mode off.



Common Causes

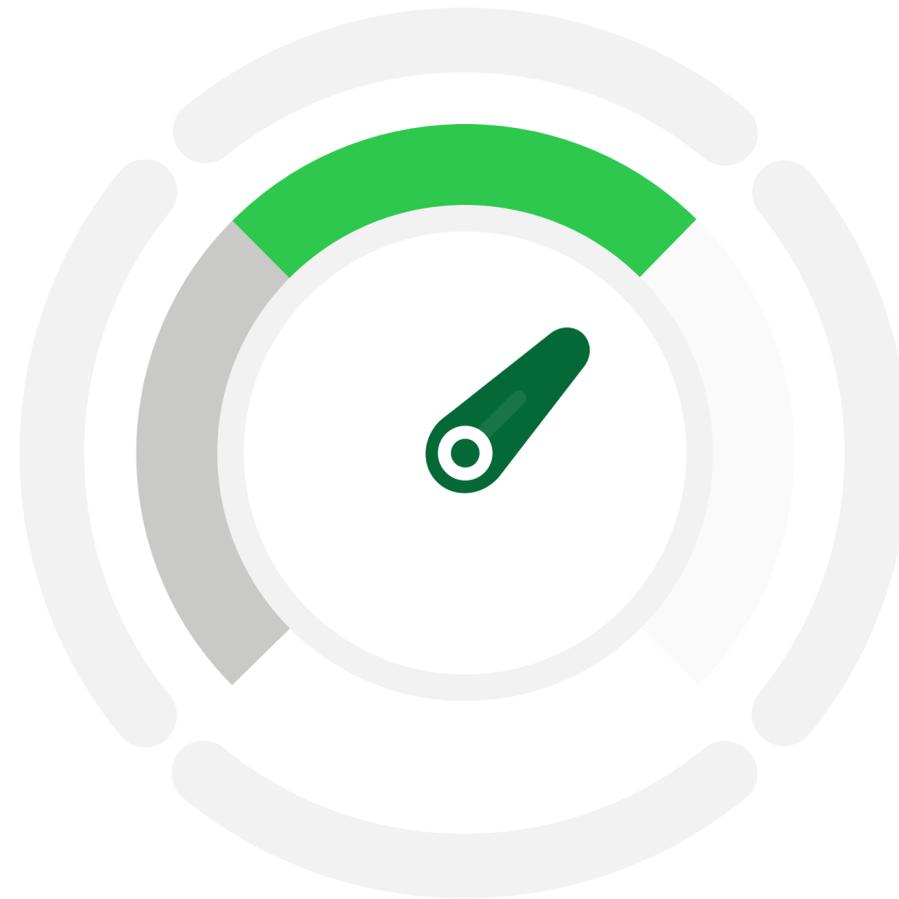
1. Battery capacity limitation; high hardware configuration; battery aging (Capacity will averagely reduce 12% with the condition of charging and discharging 300 times.)
2. Large working current (Such as long-time reading books, playing games and watching video.)
3. Phone cannot sleep when screen is off and standby (The third application fault causes CPU keeps running and never sleep.)
4. Hardware problem (Mainboard electric leakage)
5. Users do not have good habits (cellular network is on for long time, too many background apps)
6. Power consumed by screen (ex: adjust the screen brightness to highest level, screen timeout period too long)
7. Others (hotspot, sunshine directly etc.)



Battery drains and overheat

2.2 Cause for battery drains

However,
in irregular working
condition, system
software can cause
power consumption
fault too.



Screen off misoperation

like turn on the screen, camera,
flash light and music carelessly



Poor network signal

By compared with the good condition,
the power consumption of standby and
call will relatively increase.



Poor Wi-Fi signal

Wi-Fi signal connection is poor, often
disconnected again

Battery drains and overheat

2.3 Phone overheat

Standard

The heat of the smartphone is closely related with how to use and what's the status of the device, such as playing video. Different degree the CPU is being used can definitely cause different heat produced by smartphone. Simple example like playing games in room temperature and exposed in the hot sun will not have the same heat results.

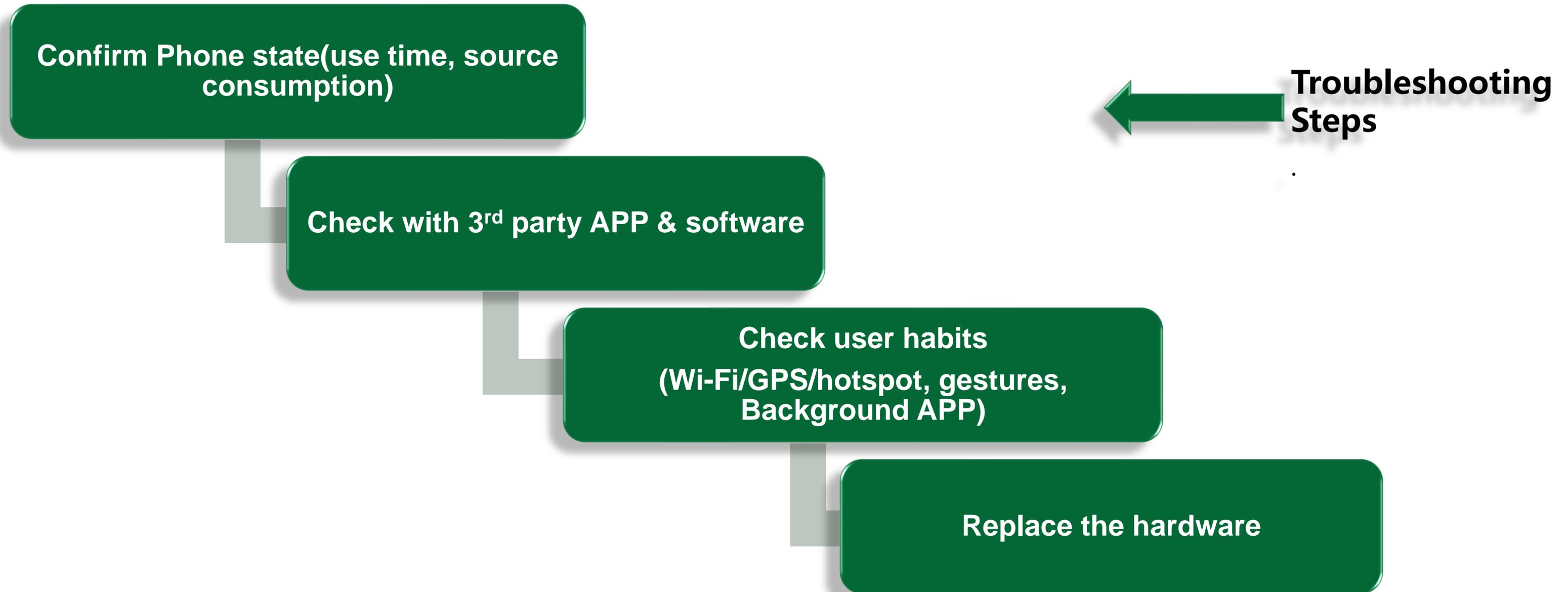


Why phone gets heated

The working principle of the processor of smartphone and computer is the same. When the processor is in operation state, it will generate heat. The computer can be mounted cooling fan, and heat can be discharged in a timely manner; but big-screen smart phone chip is within a compact space, it is impossible to discharge heat like computer, and can only rely on shell. So when phone is being used, the heat will be discharged by the shell and felt by users

Battery drains and overheat

2.4 Troubleshooting steps



THANKS