

Figure - Bug #111923

Bug # 111192 (CLOSED): 【Figure】【EVT3】【EE】【启动时间1分6秒】【Performance】

Starting com.android.server.BatteryService 耗费 4400ms

2022-09-13 17:52 - CD SYSTEM-龚元祝

Status:	CLOSED	Start date:	2022-09-13
Priority:	Normal	Due date:	
Assignee:	移动测试一组_CDTS 刘强	% Done:	0%
Category:	SYSTEM	Estimated time:	0.00 hour
Target version:			
Need_Info:	--	Found Version:	所有版本
Resolution:	FIXED	Degraded:	--
Severity:	Major	Verified Version:	DB 20220923
Reproducibility:	Every time	Fixed Version:	
Test Type:	IT	Root cause:	The device has no battery. The healthd service will retry

Description

开机启动阶段Starting com.android.server.BatteryService 耗费 4400ms。

行 6340: 01-01 14:55:04.715 1526 1526 I SystemServerTiming: StartBatteryService

行 6341: 01-01 14:55:04.715 1526 1526 I SystemServiceManager: Starting com.android.server.BatteryService

耗时4400ms

行 8422: 01-01 14:55:09.115 1526 1526 I BatteryService: health: Waited 0ms and received the update.

行 8423: 01-01 14:55:09.115 1526 1526 W SystemServiceManager: Service com.android.server.BatteryService took 4400 ms in onStart

行 8424: 01-01 14:55:09.115 1526 1526 I SystemServerTiming: StartUsageService

History

#1 - 2022-09-13 17:54 - CD SYSTEM-龚元祝

- File I0913.txt added

行 2910: 01-01 14:55:01.293 669 669 I boot_progress_start: 10802

行 2972: 01-01 14:55:01.654 669 669 I boot_progress_preload_start: 11163

行 4600: 01-01 14:55:02.805 669 669 I boot_progress_preload_end: 12314

行 5569: 01-01 14:55:03.256 1526 1526 I boot_progress_system_run: 12766

行 6016: 01-01 14:55:04.158 1526 1526 I boot_progress_pms_start: 13667

行 6192: 01-01 14:55:04.233 1526 1526 I boot_progress_pms_system_scan_start: 13743

行 6214: 01-01 14:55:04.609 1526 1526 I boot_progress_pms_data_scan_start: 14119

行 6223: 01-01 14:55:04.613 1526 1526 I boot_progress_pms_scan_end: 14122

行 6233: 01-01 14:55:04.671 1526 1526 I boot_progress_pms_ready: 14181

行 9464: 09-09 16:55:18.519 1526 1526 I boot_progress_ams_ready: 19216

行 12220: 09-09 16:55:19.288 1526 1598 I boot_progress_enable_screen: 19985

#2 - 2022-09-13 18:08 - CD FW-王伟

- Assignee changed from CD FW-王伟 to CD- FW-石豪

#3 - 2022-09-14 00:49 - CD- FW-石豪

热启动

01-01 13:22:26.470 1071 1071 I SystemServerTiming: StartBatteryService

01-01 13:22:26.470 1071 1071 I SystemServiceManager: Starting com.android.server.BatteryService

01-01 13:22:26.636 1071 1071 I HealthServiceWrapper: health: HealthServiceWrapper listening to instance default

01-01 13:22:26.644 1071 1071 W SystemServiceManager: Service com.android.server.BatteryService took 173 ms in onStart

断电启动

01-01 00:01:08.302 1074 1074 I SystemServerTiming: StartBatteryService
01-01 00:01:08.302 1074 1074 I SystemServiceManager: Starting com.android.server.BatteryService
01-01 00:01:09.531 1074 1074 I HealthServiceWrapper: health: HealthServiceWrapper listening to instance default
01-01 00:01:09.531 1074 1074 I BatteryService: health: Waited 0ms and received the update.
01-01 00:01:09.532 1074 1074 W SystemServiceManager: Service com.android.server.BatteryService took 1228 ms in onStart
01-01 00:01:09.532 1074 1074 D SystemServerTiming: StartBatteryService took to complete: 1230ms

本地自测，热启动耗时较小，断电启动耗时较长，主要耗时在BatteryService的registerHealthCallback方法。具体耗时还需加入日志调试

#4 - 2022-09-14 11:32 - CD- FW-石豪

热启动

01-01 00:35:58.889 1080 1080 I SystemServerTiming: StartBatteryService
01-01 00:35:58.889 1080 1080 I SystemServiceManager: Starting com.android.server.BatteryService
01-01 00:35:58.890 1080 1080 I BatteryService: health: Waited new HealthServiceWrapper: 0ms
01-01 00:35:58.890 1080 1080 I BatteryService: health: Waited new HealthHalCallback: 0ms
01-01 00:35:58.893 1080 1080 I HealthServiceWrapper: health: Waited HealthInitGetService_: 2ms
01-01 00:35:58.968 1080 1080 I HealthServiceWrapper: health: Waited mCallback.onRegistration: 75ms
01-01 00:35:58.972 1080 1080 I HealthServiceWrapper: health: Waited registerForNotifications: 4ms
01-01 00:35:58.972 1080 1080 I HealthServiceWrapper: health: HealthServiceWrapper listening to instance default
01-01 00:35:58.972 1080 1080 I BatteryService: health: Waited mHealthServiceWrapper.init: 81ms
01-01 00:35:58.972 1080 1080 I BatteryService: health: Waited 0ms and received the update.
01-01 00:35:58.974 1080 1080 W SystemServiceManager: Service com.android.server.BatteryService took 84 ms in onStart
01-01 00:35:58.974 1080 1080 D SystemServerTiming: StartBatteryService took to complete: 86ms

冷启动

01-01 00:01:08.855 1047 1047 I SystemServerTiming: StartBatteryService
01-01 00:01:08.855 1047 1047 I SystemServiceManager: Starting com.android.server.BatteryService
01-01 00:01:08.858 1047 1047 I BatteryService: health: Waited new HealthServiceWrapper: 1ms
01-01 00:01:08.858 1047 1047 I BatteryService: health: Waited new HealthHalCallback: 0ms
01-01 00:01:09.985 1047 1047 I HealthServiceWrapper: health: Waited HealthInitGetService_: 1127ms
01-01 00:01:10.022 1047 1047 I HealthServiceWrapper: health: Waited mCallback.onRegistration: 36ms
01-01 00:01:10.028 1047 1047 I HealthServiceWrapper: health: Waited registerForNotifications: 6ms
01-01 00:01:10.028 1047 1047 I HealthServiceWrapper: health: HealthServiceWrapper listening to instance default
01-01 00:01:10.028 1047 1047 I BatteryService: health: Waited mHealthServiceWrapper.init: 1170ms
01-01 00:01:10.028 1047 1047 I BatteryService: health: Waited 0ms and received the update.
01-01 00:01:10.032 1047 1047 W SystemServiceManager: Service com.android.server.BatteryService took 1175 ms in onStart
01-01 00:01:10.032 1047 1047 D SystemServerTiming: StartBatteryService took to complete: 1177ms

多次测试，定位到主要耗时在HealthInitGetService 1127ms

```
for (String name : sAllInstances) {
    traceBegin("HealthInitGetService_" + name);
    long testWait1 = SystemClock.uptimeMillis();
    try {
        newService = healthSupplier.get(name);
    } catch (NoSuchElementException ex) {
        /* ignored, handled below */
    } finally {
        traceEnd();
    }
}
```

```
}
```

```
interface IHealthSupplier {  
    default IHealth get(String name) throws NoSuchElementException, RemoteException {  
        return IHealth.getService(name, true /* retry */);  
    }  
}
```

代码中的服务名调试时打印出来是：default

IHealth.getService 第二参数的意思重试直到获取服务，来自HAL层 android.hardware.health.V2_0.IHealth，因此需要HAL层的同事帮忙分析IHealth为何起来的比较慢

#5 - 2022-09-14 11:56 - CD- FW-石豪

- Category changed from CD-FW to SYSTEM

- Assignee changed from CD- FW-石豪 to CD SYSTEM-龚元祝

#6 - 2022-09-15 16:58 - CD SYSTEM-龚元祝

已提高通case：06208590

转team

case:06210352

#7 - 2022-09-19 13:44 - CD SYSTEM-龚元祝

general/platform/vendor/qcom-opensource/healthd-ext/+149363/1/healthimpl.cpp

```
namespace {  
void qti_healthd_board_init(struct healthd_config *){  
    int fd;  
    unsigned char retries = 75;  
    int ret = 0;  
    unsigned char buf;  
  
    retry:  
        if (!retries) {  
            ALOGE;  
            return;  
        }  
        fd = open("/sys/class/power_supply/battery/capacity", 0440);  
        if (fd >= 0) {  
            ALOGI("opened battery/capacity after %d retries\n", 75 - retries);  
            while (retries) {  
                ret = read(fd, &buf, 1);  
                if (ret >= 0) {  
                    ALOGI("Read Batt Capacity after %d retries ret : %d\n", 75 - retries, ret);  
                    close(fd);  
                    return;  
                }  
            }  
            retries--;  
            usleep(100000);  
        }  
        ALOGE("Failed to read Battery Capacity ret=%d\n", ret);
```

```

        close(fd);
        return;
    }
    retries--;
    usleep(100000);
    goto retry;
}
} //anonymous namespace

```

由于qti_healthd_board_init无法获取电池容量节点，导致retry了75次，耗费7.5s。

后面启动的android.hardware.health service因此被delay 4.4s，同时StartBatteryService也就delay了4.4s。

本项目没有电池，所以修改retry次数为10次，以免造成StartBatteryService的延时。

以下为提交的修改连接：

<https://dev.thundercomm.com/gerrit/c/general/platform/vendor/qcom-opensource/healthd-ext/+149363>

VB：

http://10.0.76.24:8080/job/VerifyBuild_for_IOT_6490/1312/

验证结果：

```

01-01 08:02:15.290 671 671 | boot_progress_start: 8019
01-01 08:02:15.761 671 671 | boot_progress_preload_start: 8490
01-01 08:02:16.599 671 671 | boot_progress_preload_end: 9328
01-01 08:02:16.821 1505 1505 | boot_progress_system_run: 9550
01-01 08:02:18.123 1505 1505 | boot_progress_pms_start: 10852
01-01 08:02:18.212 1505 1505 | boot_progress_pms_system_scan_start: 10941
01-01 08:02:18.601 1505 1505 | boot_progress_pms_data_scan_start: 11330
01-01 08:02:18.605 1505 1505 | boot_progress_pms_scan_end: 11334
01-01 08:02:18.663 1505 1505 | boot_progress_pms_ready: 11391
--耗时721ms
09-16 18:18:38.579 1505 1505 | boot_progress_ams_ready: 12112
09-16 18:18:39.251 1505 1632 | boot_progress_enable_screen: 12785

```

#8 - 2022-09-22 18:12 - CD SYSTEM-龚元祝

- Assignee changed from CD SYSTEM-龚元祝 to CDTS_TEST 王成
- Resolution changed from -- to FIXED
- Verified Version set to DB 20220923
- Root cause set to The device has no battery. The healthd service will retry 75 times for getting battery capacity node. It will cost 7500ms.

#9 - 2022-09-22 18:17 - CD SYSTEM-龚元祝

- Status changed from New to RESOLVED

#10 - 2022-10-18 14:11 - CDTS_TEST 王成

- Assignee changed from CDTS_TEST 王成 to SZTS_TEST 邹涛

验证下问题

#11 - 2023-01-10 11:23 - CDTS_TEST 王成

- Assignee changed from SZTS_TEST 邹涛 to 移动测试一组_CDTS 刘强

#12 - 2023-01-29 17:13 - 移动测试一组_CDTS 刘强

- Status changed from RESOLVED to VERIFIED

测试版本：FlatBuild_HH_VX1_MCE_FSE.M.R.user.01.00.0069.X101

热启动：

Boot_progress_pms_ready:9875

Boot_progress_ams_ready:10844

969ms

冷启动：

Boot_progress_pms_ready:9751

Boot_progress_ams_ready:10937

1186ms

均小于4400ms，因此验证通过

#13 - 2023-01-29 17:13 - 移动测试一组_CDTS 刘强

- Status changed from VERIFIED to CLOSED

Files

l0913.txt	3.85 MB	2022-09-13	CD SYSTEM-龚元祝
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