

ylog handbook

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abbreviation	Description
ylog	your log



Revision	Author	Date	Brief
1.0	Luther Ge	2016/02/14	Initial Draft
1.1	Yanli Chen	2016/03/02	Add ylog use help
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1.2e	Yue Zhao	2016/03/29	Translate to English
1.3	Yanli Chen	2016/04/01	Add modem/wcn log speed statistics
1.3e	Yue Zhao	2016/04/03	Translate to English

1. design architecture

ylog (your log) is customizable background resident service, which is used for log collection, intelligent analysis and behaviour statistic,etc.

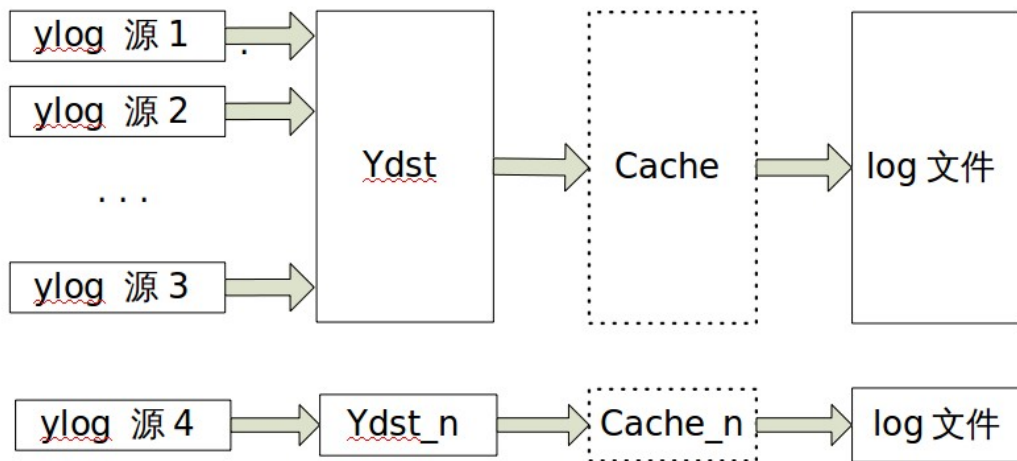
1.1 structure design

ylog service is designed for three parts : ylog source, ydst and cache.

ylog source : input data source.

ydst : data output.

cache : cache output data.



1.1.1 ylog source

ylog source focuses on describing input-data, such as input type, token and restart time.

Currently four input types are supported, which are common file, socket, popen and inotify monitor.

ylog source reference form :

```

{
    .name = "android_main",
    .type = FILE_POPEN,
    .file = "logcat -v threadtime -b main",
    .ydst=&ydst[OS_YDST_TYPE_ANDROID+OS_YDST_TYPE_BASE],
    .mode=YLOG_READ_MODE_BLOCK | YLOG_READ_LEN_MIGHT_ZERO | \
        YLOG_READ_MODE_BLOCK_RESTART_ALWAYS,
    .restart_period = 2000,
    .fp_array = NULL,
    .id_token = "A0",
    .id_token_len = 2,
    .id_token_filename = "main.log",
},
  
```

1.1.2 ydst

ydst concentrates on output-data that comes from ylog source. ydst is designed for dividing up data and controlling numbers of segments. When there is a large dataflow, much data loss caused by disk transient efficiency occurred. Under this occasion, ydst can be attached to cache for alleviating big data and high throughput.

ydst reference form:

```
[OS_YDST_TYPE_ANDROID] = {  
    .file = "android/",  
    .file_name = "android.log",  
    .max_segment = 30,  
    .max_segment_size = 50*1024*1024,  
    .cache = &os_cacheline[OS_YDST_TYPE_ANDROID],  
}
```

1.1.3 cache

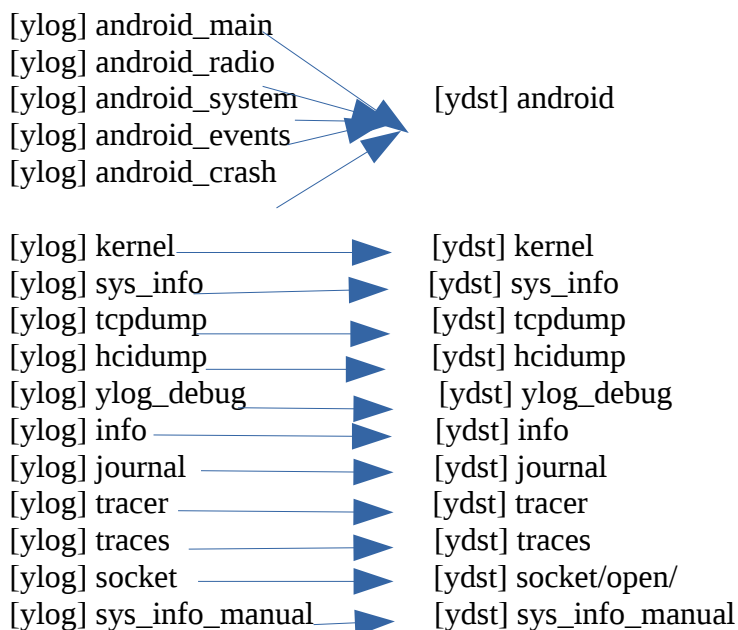
cache focuses on how to cache output-data from ydst, and write them into disk storage at the appropriate time. cache has an attribute named Timeout, which can ensure that output-data can be written to disk as soon as possible. Timeout is used to define an action, where if it doesn't run out of cache line within Timeout, the data in cache line will be flushed to disk with force.

```
[OS_YDST_TYPE_ANDROID] = {  
    .size = 512 * 1024,  
    .num = 4,  
    .timeout = 1000, /* ms */  
    .debuglevel = CACHELINE_DEBUG_CRITICAL,  
}
```

2. ylog module

ylog is a user-space service application started by init.rc, and its default startup behavior after the boot can be aided controlled by attribute value of `persist.ylog.enabled`. ylog not only supports multiple ylog source parallel inputting, but multiple ydst parallel outputting. It can assign ydst output, set ydst whether attached to cache, define restart time interval, make up whether overwrite when reach the limit of segments numbers, which is based on data structure of ylog source.

2.1 corresponding list between ylog source and ydst



2.2 ylog source

1. Android

It covers five types log , including android_main, android_radio, android_system, android_events, android_crash, which output into a common ydst. Meanwhile, in order to improve disk efficiency, the ydst is attached to a 1M-sized cache by default.

2. kernel

It collects kernel log, and kernel ydst is attached to a 1M-sized cache by default.

3. sys_info

It collects some system-related log in regular time(two minutes). The included specific information is listed as follows.

```

/proc/slabinfo
/proc/buddyinfo
/proc/zoneinfo
/proc/vmstat
/proc/vmallocinfo
/proc/pagetypeinfo
/sys/module/lowmemorykiller/parameters/adj

```

```
/sys/module/lowmemorykiller/parameters/minfree  
/proc/wakelocks  
/d/wakeup_sources  
/sys/class/backlight/sprd_backlight/brightness  
/sys/kernel/debug/binder/failed_transaction_log  
/sys/kernel/debug/binder/transaction_log  
/sys/kernel/debug/binder/transactions  
/sys/kernel/debug/binder/stats  
/sys/kernel/debug/binder/state  
/sys/kernel/debug/sprd_debug/cpu/cpu_usage
```

4. tcpdump

It collects ap cap log, and tcpdump ydst is attached to a 1M-sized cache by default.

5. hcidump

It collects hci bt log, and hcidump ydst is attached to a 1M-sized cache by default.

6. ylog_debug

It collects debugging information related with log, includes log rate, space usage, running status, etc, usually takes statistics once every 20 minutes.

```
/system/bin/ylog_cli ylog  
/system/bin/ylog_cli speed  
/system/bin/ylog_cli space  
getprop ylog.killed
```

7. info

It collects system-related static information, which is captured only once when ylog starts.

```
/proc/cmdline  
/proc/version  
/proc/meminfo  
/proc/mounts
```

```
/proc/partitions
/proc/diskstats
/proc/modules
/proc/cpuinfo
/default.prop
/data/ylog/ylog.conf
ls -l /
ls -l /dev/block/platform/*/by-name/
ls -l /dev/
getprop
cat /*.rc
all the thread pid and tid of ylog
```

8. journal

It's designed for monitoring ylog running status, monitor switch, and log file deletion, etc.

```
at /data/ylog/ylog_journal_file
[01-01 08:06:35.701] ylog.start success - up time: 00:06:37, idle time: 00:05:05, sleep time: 00:01:50
[01-01 08:06:55.249] ylog.start success - up time: 00:00:05, idle time: 00:00:10, sleep time: 00:00:00
[01-01 08:07:47.919] ylog hcidump start
[01-01 08:18:02.044] ylog.start success - up time: 00:00:04, idle time: 00:00:09, sleep time: 00:00:00
[01-01 08:22:02.191] ylog.start success - up time: 00:03:17, idle time: 00:04:41, sleep time: 00:00:00
[01-01 08:22:13.044] ylog.start success - up time: 00:00:04, idle time: 00:00:09, sleep time: 00:00:00
[01-01 08:28:35.088] ylog hcidump start
[01-01 08:29:31.449] clear last_ylog /storage/BE60-0FE5/ylog/last_ylog
[01-01 08:29:31.976] clear all ylog and reboot /storage/BE60-0FE5/ylog/ylog
[01-01 08:29:31.978] clear all ylog /storage/BE60-0FE5/ylog/ylog
[01-01 08:29:31.988] ylog.stop with signal 15, Terminated, sdcard is online
[01-01 08:29:32.100] ylog.start success - up time: 00:07:23, idle time: 00:08:52, sleep time: 00:00:00
[01-01 08:32:11.281] ylog hcidump start
[01-01 08:37:24.808] ylog.start success - up time: 00:15:16, idle time: 00:16:49, sleep time: 00:00:00
[01-01 08:38:24.745] ylog.start success - up time: 00:16:16, idle time: 00:17:51, sleep time: 00:00:00
[01-01 08:53:12.028] clear last_ylog /storage/BE60-0FE5/ylog/last_ylog
[01-01 08:53:14.542] clear all ylog /storage/BE60-0FE5/ylog/ylog
[01-01 08:53:51.364] clear last_ylog /storage/BE60-0FE5/ylog/last_ylog
[01-01 08:53:51.582] clear all ylog and reboot /storage/BE60-0FE5/ylog/ylog
```

9. tracer

It can make data slice storage read from /d/tracing/trace_pipe, which allows to add debug information, and adjust quota values for time critical drive modules, such as usb.

10. traces

It collects tombstones in the case of native crash, and stack trace in the case of anr.



11. socket

It opens ylog socket to receive dataflow from evaluation software called ylog_benchmark, which can search software and system bottleneck.

12. sys_info_manual

It can trigger ylog to capture the execution results of "busybox netstat -ap" and "ps -t" manually.

2.3 ylog attribute list

1.the following attribute values indicate running status of all kinds of log.

```
[ylog.svc.android_crash]: [running]
[ylog.svc.android_events]: [running]
[ylog.svc.android_main]: [running]
[ylog.svc.android_radio]: [running]
[ylog.svc.android_system]: [running]
[ylog.svc.kernel]: [running]
[ylog.svc.tcpdump]: [stopped]
[ylog.svc.hcidump]: [stopped]
[ylog.svc.info]: [stopped]
[ylog.svc.journal]: [running]
[ylog.svc.socket]: [running]
[ylog.svc.sys_info]: [running]
[ylog.svc.sys_info_manual]: [stopped]
[ylog.svc.tracer]: [running]
[ylog.svc.traces]: [running]
[ylog.svc.ylog_debug]: [running]
```

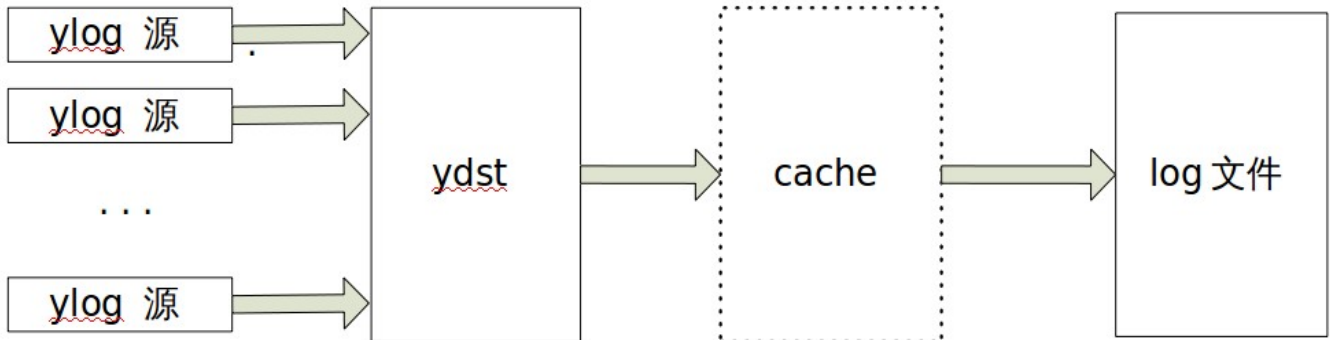
2.ylog service master switch control

[persist.ylog.enabled]: [1]

3. TF card unloaded numbers

[ylog.killed]: [0]

2.4 ylog function



1. For purpose of easy to post-maintenance, it abstracts three data model, including ylog ydst and cache.
2. cache is used for alleviating disk pressure under normal circumstances, and log loss with high data throughput.
3. Keyword filter can retrieve received data, and trigger corresponding action response, which executes shell or other operations to collect much more information, thus to help localize the source of problem. It can make ylog more smart for real-time performance and acquisition for environment.
4. The upper limit for log files is distributed by actual free space, realizing dynamic adjustment of quota values.

```

I ylog : ydst <sys_info/> resize_segment from:
I ylog : quota 200.00M -> 4.62G
I ylog : max_segment_size 50.00M -> 50.00M (50.00M)
I ylog : max_segment 1 -> 8 (5)
I ylog : max_size 50.00M -> 400.00M (250.00M)
I ylog : shrinked_segments=0/1
I ylog : [02-18 11:54:05.909] ylog<critical> All ydst has finished resize: quota 200.00M -> 4.62G
I ylog : [02-18 11:54:05.909] ylog<info> create /storage/32DB-1D43/ylog/ylog/kernel/analyzer.py
I ylog : [02-18 11:54:05.914] ylog<info> create /storage/32DB-1D43/ylog/ylog/sys_info/analyzer.py
I ylog : [02-18 11:54:05.960] ylog<info> create /storage/32DB-1D43/ylog/ylog/android/analyzer.py
I ylog : [02-18 11:54:05.964] ylog<info> create /storage/32DB-1D43/ylog/ylog/sys_info/analyzer.py
I ylog : [02-18 11:54:05.969] ylog<info> create /storage/32DB-1D43/ylog/ylog/android/analyzer.py
I ylog : [02-18 11:54:05.973] ylog<info> create /storage/32DB-1D43/ylog/ylog/android/analyzer.py
I ylog : [02-18 11:54:05.979] ylog<info> create /storage/32DB-1D43/ylog/ylog/android/analyzer.py
I ylog : [02-18 11:54:05.985] ylog<info> create /storage/32DB-1D43/ylog/ylog/android/analyzer.py
I ylog : [02-18 11:54:06.013] ylog<critical> All ydst resize done
I ylog : [02-18 11:54:06.023] ylog<info> 1.69% ydst socket/open/ size 80.00M
I ylog : [02-18 11:54:06.023] ylog<info> 0.75% ydst ylog_debug size 35.45M
I ylog : [02-18 11:54:06.023] ylog<info> 0.75% ydst info size 35.45M
I ylog : [02-18 11:54:06.023] ylog<info> 0.75% ydst ylog_journal_file size 35.45M
I ylog : [02-18 11:54:06.023] ylog<info> 58.11% ydst android/ size 2.69G
I ylog : [02-18 11:54:06.024] ylog<info> 17.96% ydst kernel/ size 850.00M
I ylog : [02-18 11:54:06.024] ylog<info> 1.06% ydst tracer/ size 50.00M
I ylog : [02-18 11:54:06.024] ylog<info> 2.96% ydst tcpdump/ size 140.00M
I ylog : [02-18 11:54:06.024] ylog<info> 7.18% ydst traces/ size 340.00M
I ylog : [02-18 11:54:06.027] ylog<info> 8.45% ydst sys_info/ size 400.00M
I ylog : [02-18 11:54:06.027] ylog<info> All ydst total size 4.61G, quota new 4.62G
  
```

5. ylog process can be monitored, and journal is stored into /data/ylog/ylog_journal_file permanently for aided analysis of system behavior.

```
root@sp7731g_1h10:/storage/32DB-1043/ylog/ylog/android # cat /data/ylog/ylog_journal_file
[02-17 22:43:34.685] ylog.start success - up time: 00:02:09, idle time: 00:02:14, sleep time: 00:00:00
[02-18 11:53:34.080] ylog.stop with signal 15, Terminated, sdcard is offline
[02-18 11:53:34.344] ylog.start success - up time: 13:12:09, idle time: 12:25:04, sleep time: 00:01:16
[02-18 13:07:34.825] ylog.start success - up time: 00:00:07, idle time: 00:00:18, sleep time: 00:00:00
```

6. ylog_cli speed can look up the highest ten throughput information since the system started: the productive rate of log.

```
Transferred 3.72G Has run 00 day 01:15:01 avg_speed=867.17K/s
01. [02-18 14:06:58.600] ~ [02-18 14:06:59.600] 00 day 00:59:25 ago 20.02M/s
02. [02-18 14:08:01.618] ~ [02-18 14:08:02.618] 00 day 01:00:28 ago 20.02M/s
03. [02-18 14:06:10.585] ~ [02-18 14:06:11.585] 00 day 00:58:37 ago 20.01M/s
04. [02-18 14:08:10.620] ~ [02-18 14:08:11.620] 00 day 01:00:37 ago 20.01M/s
05. [02-18 14:06:09.585] ~ [02-18 14:06:10.585] 00 day 00:58:36 ago 20.01M/s
06. [02-18 14:05:44.579] ~ [02-18 14:05:45.579] 00 day 00:58:11 ago 20.01M/s
07. [02-18 14:06:41.593] ~ [02-18 14:06:42.593] 00 day 00:59:08 ago 20.01M/s
08. [02-18 14:07:59.617] ~ [02-18 14:08:00.617] 00 day 01:00:26 ago 20.01M/s
09. [02-18 14:05:58.582] ~ [02-18 14:05:59.582] 00 day 00:58:25 ago 20.01M/s
10. [02-18 14:06:03.583] ~ [02-18 14:06:04.584] 00 day 00:58:30 ago 20.01M/s
```

7. Built-in analyzer.py provides for off-line data processing.

8. Multiple data can be output into one ydst, which ensure that log time-stamp are included in the same time form.

9. ylog_cli kernel can capture kernel log in real time, and simultaneous operation of four independent ylog_cli are supported.

```
130|root@sp9830a_5h10_volte:/system/bin # ylog_cli kernel
[01-01 11:45:07.143] <4>[13346.955291] c0 sensor id:0, rawdata:0x320, temp:33582
[01-01 11:45:07.143] <6>[13347.647766] c0 cpufreq_scx35: --xing-- set 1350000 khz for cpu0
[01-01 11:45:07.213] <6>[13347.647827] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 925000 = 900000 +25000uV(trim 0x8)
[01-01 11:45:07.213] <6>[13347.647918] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 950000 = 900000 +50000uV(trim 0x10)
[01-01 11:45:07.213] <6>[13347.647979] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 975000 = 900000 +75000uV(trim 0x18)
[01-01 11:45:07.213] <6>[13347.648040] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 1000000 = 1000000 +0uV(trim 0x0)
[01-01 11:45:07.213] <6>[13347.649932] c0 cpufreq_scx35: chip id is 96300000
[01-01 11:45:07.213] <6>[13347.649932] c0 cpufreq_scx35: 768000 --> 1350000, real=1350000, index=1
[01-01 11:45:07.213] <6>[13347.649963] c0 cpufreq_sprdemand: !! we gonna plugin cpu1 !!
[01-01 11:45:07.214] <4>[13347.651306] c1 CPU1: Booted secondary processor
[01-01 11:45:07.214] <6>[13347.717681] c0 cpufreq_scx35: --xing-- set 768000 khz for cpu0
[01-01 11:45:07.263] <6>[13347.717773] c0 cpufreq_scx35: chip id is 96300000
[01-01 11:45:07.263] <6>[13347.717834] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 975000 = 900000 +75000uV(trim 0x18)
[01-01 11:45:07.263] <6>[13347.717895] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 950000 = 900000 +50000uV(trim 0x10)
[01-01 11:45:07.263] <6>[13347.717956] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 925000 = 900000 +25000uV(trim 0x8)
[01-01 11:45:07.263] <6>[13347.718017] c0 regu: @@@dcdc_set_voltage: regu 0xec542138 (vddarm) 900000 = 900000 +0uV(trim 0x0)
[01-01 11:45:07.263] <6>[13347.718078] c0 cpufreq_scx35: 1350000 --> 768000, real=768000, index=3
[01-01 11:45:07.264] <6>[13347.767700] c0 cpufreq_sprdemand: !! we gonna unplug cpu1 !!
```

10. It can judge whether log reaches the ceiling by checking the numbers of segments, whether log overwriting has occurred.

```
A1[ylog_segment=0/1,50.00M] 2016.02.18 13:07:37 -00d00:00:02/2174ms 0.00B/50.00M 0.00B/s
A102-18 13:07:33.370 185 185 I vold : Vold 3.0 (the awakening) firing up
A102-18 13:07:33.375 185 185 V vold : Detected support for: ext4 vfat
A102-18 13:07:33.669 185 197 V vold : /system/bin/sgdisk
A102-18 13:07:33.669 185 197 V vold : --android-dump
A302-18 13:07:31.050 171 171 I auditd : type=1403 audit(0.0:2): policy loaded auid=4294967295 ses=
A102-18 13:07:33.670 185 197 V vold : /dev/block/vold/disk:179,128
A102-18 13:07:33.845 185 197 V vold : DISK gpt 3BEB08F8-4CDD-4037-8283-5F54ADDA76B8
A302-18 13:07:31.050 171 171 I auditd : type=1404 audit(0.0:3): enforcing=1 old_enforcing=0 auid=4
A202-18 13:07:34.480 295 295 I use-Rlog/RLOG-RILD: [
A202-18 13:07:34.550 295 295 D use-Rlog/RLOG-RILD: [1] Rild: rilArgv[1]=-n,rilArgv[2]=1,ModemType=w
A302-18 13:07:31.430 1 1 I auditd : type=1400 audit(0.0:4): avc: denied { create } for comm="i
A202-18 13:07:34.550 295 295 D use-Rlog/RLOG-RILD: [1] rild connect w modem, current is rild1
A302-18 13:07:31.430 1 1 I auditd : type=1400 audit(0.0:5): avc: denied { create } for comm="i
A302-18 13:07:31.430 1 1 I auditd : type=1400 audit(0.0:6): avc: denied { create } for comm="i
A202-18 13:07:34.550 295 295 D use-Rlog/RLOG-RILD: [1] RIL enter multi sim card mode!
```

11. sys_info performs system information statistics collection operations, and data will be slice storage.

12. ylog_cli benchmark can evaluate upper limit of read-write rate by disks and ylog.

```
root@sp9830a_5h10_volte:/system/bin # ylog_cli benchmark
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 9.28M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 5.77M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 4.96M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 5.38M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 3.85M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 3.95M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 4.81M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 3.96M/s
cmd_benchmark -> /storage/90D5-BAE2/ylog/ylog/socket/open/000 speed 5.33M/s
```

13. It can make data slice storage read from /d/tracing/trace_pipe, which allows adding debug information, and adjust quota values for time critical drive modules, such as usb.

3. ylog_cli command line

Help information of ylog_cli command line can be obtained by “adb shell ylog_cli”.

3.1 overview of ylog_cli command line

```
=== [ ylog server supported commands ] ===
kernel      -- read kernel log
-c          -- execute shell command, ex. ylog_cli -c ls / or ylog_cli -c top
flush       -- flush all the data back to disk
loglevel    -- 0:error, 1:critical, 2:warn, 3:info, 4:debug
speed       -- max speed since ylog start
ylog        -- list all existing ylog, also can start or stop it, ex.
               ylog_cli ylog                - show each ylog short description
               ylog_cli ylog kernel          - show ylog kernel detailed description
               ylog_cli ylog all             - show each ylog detailed description
               ylog_cli ylog all stop        - turn off all running ylog
               ylog_cli ylog all start       - turn on the previous all running ylog
               ylog_cli ylog kernel stop     - turn off the kernel ylog
               ylog_cli ylog kernel start    - turn on the kernel ylog
               ylog_cli ylog kernel get started - get the running status of kernel ylog
               ylog_cli ylog kernel timestamp 1 - 1 with timestamp, 0 without
               ylog_cli ylog kernel bypass 1 - 1 just read, not store to disk or cache, 0 store
               ylog_cli ylog kernel ydst max_segment 5 - adjust ydst segments to 5
               ylog_cli ylog kernel ydst max_segment_size 20 - adjust ydst each segment size to 20M
               ylog_cli ylog kernel ydst segment_size 5 20 - adjust ydst segments to 5, size to 20M
               ylog_cli ylog kernel cache bypass 1 - data in the cache, 1 dropped, 0 save to disk
               ylog_cli ylog kernel cache timeout 500 - cacheline timeout to 500ms
               ylog_cli ylog kernel cache debuglevel 0x03 - bit0: INFO, bit1: CRITICAL, bit7: DATA
cpath       -- change log path, named 'ylog' will be created under it, ex. ylog_cli cpath /sdcard/
quota       -- give a new quota for the ylog (unit is 'M') 500M ex. ylog_cli quota 500
rylog       -- last_ylog, remove the last_ylog folder
ryloga      -- all ylog, remove the last_ylog folder and also all the current saved ylog
rylogr      -- all ylog and restart, remove last_ylog and ylog folder, then restart ylog service
space       -- check ylog root folder and last_ylog the size of taking up
freespace   -- check ylog root folder free size left now
isignal     -- 1:ignore signal, 0:process signal(default)
benchmark   -- while (1) write data to ylog/socket/open/ without timestamp
benchmarkt  -- while (1) write data to ylog/socket/open/ with timestamp
test        -- test from android
rootdir     -- get the log disk root dir
cpath_last  -- get the last_ylog path
history_n   -- set keep_historical_folder_numbers
setprop     -- set property, ex. ylog_cli setprop persist.ylog.enabled 1
```

3.2 explanation of ylog_cli command line

ylog_cli connects to ylog process through sockets, and support multi-class command lines, which are queries, switches, settings, deleting, etc.

3.2.1 query class

1. Look up the top ten read/write rate since ylog boot.

```
Transferred 7.08M Has run 00 day 00:24:41 avg_speed=4.89K/s
01. [01-01 08:00:10.818] ~ [01-01 08:00:11.818] 00 day 00:00:09 ago 359.87K/s
02. [01-01 08:00:19.838] ~ [01-01 08:00:20.847] 00 day 00:00:18 ago 261.90K/s
03. [01-01 08:00:18.838] ~ [01-01 08:00:19.838] 00 day 00:00:17 ago 201.25K/s
04. [01-01 08:24:24.362] ~ [01-01 08:24:25.363] 00 day 00:24:23 ago 182.42K/s
05. [01-01 08:04:39.867] ~ [01-01 08:04:40.868] 00 day 00:04:38 ago 182.17K/s
06. [01-01 08:16:43.176] ~ [01-01 08:16:44.176] 00 day 00:16:41 ago 180.07K/s
07. [01-01 08:02:39.823] ~ [01-01 08:02:40.823] 00 day 00:02:38 ago 180.04K/s
08. [01-01 08:18:43.227] ~ [01-01 08:18:44.227] 00 day 00:18:41 ago 178.38K/s
09. [01-01 08:12:42.063] ~ [01-01 08:12:43.063] 00 day 00:12:40 ago 177.89K/s
10. [01-01 08:08:40.959] ~ [01-01 08:08:41.959] 00 day 00:08:39 ago 177.69K/s
```

2. Look up all kinds of log information, such as switch status, upper limit of segments and single segment's size, log-transfer counter.

Command format: adb shell ylog_cli ylog

Response format: No

Root: display the current log storage path.

Quota : the upper limit of log storage space.

Running: show running time of ylog.

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~/bug/547540/547540 (2)/#648/external_storage/2012-01-01-08-36-16$ adb shell ylog_cli ylog
root = /data/ylog/ylog quota = 200.00M, running 00 day 04:41:50 ylog running time
- log categories - log running status - segment max num x segment max size
benchmark_socket -> running -> socket/open/000 (1x10.00M/10.00M, 5.00%) -> cache.socket/open/(2x512.00K) [0.00B/0.00B]
socket -> running -> socket/open/000 (1x10.00M/10.00M, 5.00%) -> cache.socket/open/(2x512.00K) [0.00B/0.00B]
ylog_debug -> running -> ylog_debug (1x1.42M/1.42M, 0.71%) [55.70K/55.70K]
info -> stop -> info (1x1.42M/1.42M, 0.71%) [0.00B/0.00B]
journal -> running -> ylog_journal_file (1x1.42M/1.42M, 0.71%) [374.00B/374.00B]
kernel -> running -> kernel/000 (1x50.00M/50.00M, 25.00%) -> cache.kernel/(2x512.00K) [6.62M/6.62M]
android_main -> running -> android/000 (1x50.00M/50.00M, 25.00%) -> cache.android/(4x512.00K) [1.48M/5.07M]
android_system -> running -> android/000 (1x50.00M/50.00M, 25.00%) -> cache.android/(4x512.00K) [125.36K/5.07M]
android_radio -> running -> android/000 (1x50.00M/50.00M, 25.00%) -> cache.android/(4x512.00K) [3.45M/5.07M]
android_events -> running -> android/000 (1x50.00M/50.00M, 25.00%) -> cache.android/(4x512.00K) [19.20K/5.07M]
android_crash -> running -> android/000 (1x50.00M/50.00M, 25.00%) -> cache.android/(4x512.00K) [0.00B/5.07M]
tcpdump -> stop -> tcpdump/000 (1x50.00M/50.00M, 25.00%) -> cache.tcpdump/(2x512.00K) [0.00B/0.00B]
hcidump -> stop -> hcidump/000 (1x50.00M/50.00M, 25.00%) -> cache.hcidump/(2x512.00K) [0.00B/0.00B]
traces -> running -> traces/000 (1x20.00M/20.00M, 10.00%) [0.00B/0.00B]
sys_info -> running -> sys_info/000 (1x50.00M/50.00M, 25.00%) [6.42M/6.42M]
sys_info_manual -> stop -> sys_info/000 (1x50.00M/50.00M, 25.00%) [0.00B/6.42M]
tracer -> running -> tracer/000 (1x10.00M/10.00M, 5.00%) -> cache.tracer/(2x512.00K) [4.37K/4.37K]
cp_5mode -> running -> cp/5mode/000 (1x10.00M/10.00M, 5.00%) -> cache.cp/5mode/(8x512.00K) [23.26M/23.26M]
cp_wcn -> running -> cp/wcn/000 (1x10.00M/10.00M, 5.00%) -> cache.cp/wcn/(2x512.00K) [7.06M/7.06M]
```

3. Look up switch status of a single log, the same as ylog.svc.xxx

Command format : ylog_cli ylog xxx get started

Response format : No

Opened state : 1\n

Closed state : 0\n

Note: xxx can be android_main, android_system, android_radio, android_events, android_crash, tcpdump, hcidump, kernel.

4. Look up log storage path

Command format: adb shell ylog_cli cpath

Response format: No

Without TF card: /data/ylog/ylog Note : Internal storage can't support saving history log.

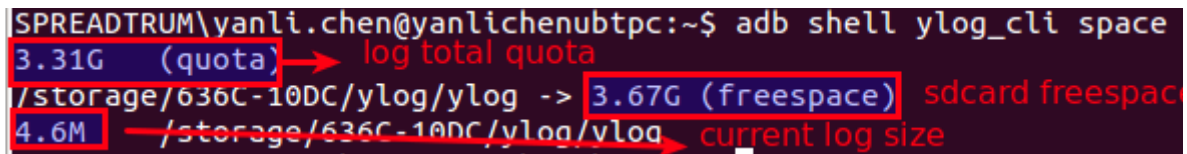
With TF card: /storage/BE60-0FE5/ylog/ylog

/storage/BE60-0FE5/ylog/last_ylog

5. Look up memory space of log

Command format: adb shell ylog_cli space

Response format: No



SPREADTRUM\yanli.chen@yanlichenubtpc:~\$ adb shell ylog_cli space
3.31G (quota) → log total quota
/storage/636C-10DC/ylog/ylog -> 3.67G (freespace) sdcard freespace
4.6M → /storage/636C-10DC/ylog/vlog → current log size

6. Look up free space of disk that log resides on

Command format: adb shell ylog_cli freespace

Response format: /storage/BE60-0FE5/ylog/ylog -> 7.32G

7. Look up disk path that log resides on

Command format: adb shell ylog_cli rootdir

Response format: /storage/BE60-0FE5

8. Look up history log times

Command format: adb shell ylog_cli history_n

Response format: 5\n keep five history log by default

9. Look up relevant information of single ylog source

Command format: adb shell ylog_cli ylog xxx

```
root@sp9830a_5h10_volte:/ # ylog_cli ylog android_main
-----
root = /storage/BE60-0FE5/ylog/ylog, quota = 6.58G, running 00 day 00:15:47
-----
[ android_main ] = running {
    .loglevel = 3
    .file = logcat -v threadtime -b main
    .restart_period = 2000
    .timestamp = 0
    .bypass = 0
    .mode = 194
    .ydst = 764.78K/2.33M {
        .file = /storage/BE60-0FE5/ylog/ylog/android/000
        .max_segment = 80
        .max_segment_size = 50.00M
        .cache= {
            .size = 512.00K
            .num = 4
            .bypass = 0
            .timeout = 1000ms
            .debuglevel = 0x02
        }
    }
}
```

Response format: Output information, including input types of ylog source, storage path, cache size, ect.

Note: [xxx](#) can be [android_main](#), [android_system](#), [android_radio](#), [android_events](#), [android_crash](#), [tcpdump](#), [hcidump](#), [kernel](#).

10. Look up all the relevant log information

Command format: `adb shell ylog_cli ylog all`

Response format: Output all log information, including input types, storage path, cache size, ect.

3.2.2 switch class

1. Main switch settings of ylog

Command format:

start ylog: `adb shell setprop persist.ylog.enabled 1 -----> persist.ylog.enabled 1`

stop ylog: `adb shell setprop persist.ylog.enabled 0 -----> persist.ylog.enabled 0`

2. All switch uniform settings of log

Command format: adb shell ylog_cli ylog all start/stop

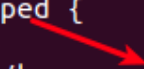
Response format: Output all log information, including switch status, storage path, cache size, ect.

3. Switch settings of single log

Command format: adb shell ylog_cli ylog **xxx** start/stop

Response format: output data structure information of the log

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~$ adb shell ylog_cli ylog kernel stop
-----
root = /storage/636C-10DC/ylog/ylog quota = 3.31G, running 00 day 01:08:25
-----
[ kernel ] = stopped {
  .loglevel = 3
  .file = /proc/kmsg
  .restart_period = 1000
  .timestamp = 1
  .bypass = 0
  .mode = 194
  .ydst = 1.06M/1.06M {
    .file = /storage/636C-10DC/ylog/ylog/kernel/000
    .max_segment = 12
    .max_segment_size = 50.00M
    .cache= {
      .size = 512.00K
      .num = 2
      .bypass = 0
      .timeout = 1000ms
      .debuglevel = 0x02
    }
  }
}
```



3.2.3 setting class

1. Setting up maximum values of log segments

Command format: adb shell ylog_cli ylog **xxx** ydst max_segment n

Response format: output data structure information of the log

2. Setting up individual log file size, unit: M

Command format: adb shell ylog_cli ylog **xxx** ydst max_segment_size 20

Response format: output data structure information of the log

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~$ adb shell ylog_cli ylog kernel ydst max_segment 3
-----
root = /storage/636C-10DC/ylog/ylog, quota = 1.44G, running 00 day 00:05:31
-----
[ kernel ] = running {
  .loglevel = 3
  .file = /proc/kmsg
  .restart_period = 300
  .timestamp = 1
  .bypass = 0
  .mode = 194
  .ydst = 1.24M/1.24M {
    .file = /storage/636C-10DC/ylog/ylog/kernel/000
    .max_segment = 3
    .max_segment_size = 50.00M
    .cache= {
      .size = 512.00K
      .num = 2
      .bypass = 0
      .timeout = 1000ms
      .debuglevel = 0x02
    }
  }
}
```

→ change the max_segment to 3

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~$ adb shell ylog_cli ylog kernel ydst max_segment_size 20
-----
root = /storage/636C-10DC/ylog/ylog, quota = 1.44G, running 00 day 00:08:31
-----
[ kernel ] = running {
  .loglevel = 3
  .file = /proc/kmsg
  .restart_period = 300
  .timestamp = 1
  .bypass = 0
  .mode = 194
  .ydst = 1.62M/1.62M {
    .file = /storage/636C-10DC/ylog/ylog/kernel/000
    .max segment = 3
    .max_segment_size = 20.00M
    .cache= {
      .size = 512.00K
      .num = 2
      .bypass = 0
      .timeout = 1000ms
      .debuglevel = 0x02
    }
  }
}
```

→ change max_segment size to 20M

3. Setting up maximum of log segments, upper limit for log size

Command format: adb shell ylog_cli ylog xxx ydst segment_size 5 20

Response format: output data structure information of the log

4. Setting up whether print time stamps during real kernel log printing by ylog_cli.

Command format : adb shell ylog_cli ylog kernel timestamp 1/0 (yes/no)

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~$ adb shell ylog_cli ylog kernel ydst segment_size 5 20
-----
root = /storage/636C-10DC/ylog/ylog, quota = 1.44G, running 00 day 00:11:12
-----
[ kernel ] = running {
  .loglevel = 3
  .file = /proc/kmsg
  .restart_period = 300
  .timestamp = 1
  .bypass = 0
  .mode = 194
  .ydst = 1.92M/1.92M {
    .file = /storage/636C-10DC/ylog/ylog/kernel/000
    .max_segment = 5
    .max_segment_size = 20.00M
    .cache= {
      .size = 512.00K
      .num = 2
      .bypass = 0
      .timeout = 1000ms
      .debuglevel = 0x02
    }
  }
}
SPREADTRUM\yanli.chen@yanlichenubtpc:~$
```

→ change max_segment to 5 and max_segment_size to 20 at the same time

Response format: real printing of kernel log on terminal

```
<3>[10723.297851] c0
<6>[10727.170501] c0 alarm set by [h
<4>[10727.170745] c0 _sprdchg_timer_
<12>[10727.171997] c0 healthd: batte
<6>[10727.172149] c0 sprdbat: sprdba
<6>[10727.172180] c0 sprdbat: chg_lo
<6>[10727.172332] c0 sprdbat: chg_lo
<4>[10727.411804] c0 sensor id:0, ra
<4>[10727.411865] c0 sensor id:0, ra
<6>[10727.527801] c0 sprdbat: sprdba
<6>[10727.527893] c0 sprdbat: sprdba
<6>[10727.527954] c0 sprdfgu: sprdfg
<6>[10727.527984] c0 sprdfgu: sprdfg
<6>[10727.527984] c0 sprdfgu: sprdfg
<6>[10727.528045] c0 sprdbat: fg_u_ca
<6>[10727.528167] c0 sprdbat: bat_lo
<6>[10728.052398] c0 mdbg_proc->writ
<6>[10728.052429] c0 mdbg start wake
<3>[10728.052459] c0 [SDIOTRAN]set_m
<3>[10728.052459] c0
<3>[10728.055206] c0 [SDIOTRAN]marli
<3>[10728.055206] c0
<3>[10728.055236] c0 [SDIOTRAN]marli
<3>[10728.055236] c0
<3>[10728.055267] c0 [SDIOTRAN]marli
<3>[10728.055267] c0
<3>[10728.055267] c0 [SDIOTRAN]set m
root@sp9830a_5h10_volte:/ # ylog_cli kernel
[01-01 11:02:11.969] <6>[10908.007965] c0 sprdb
[01-01 11:02:11.970] <6>[10908.007995] c0 sprdf
[01-01 11:02:11.970] <6>[10908.008026] c0 sprdf
[01-01 11:02:11.970] <6>[10908.008056] c0 sprdf
[01-01 11:02:11.970] <6>[10908.008087] c0 sprdb
[01-01 11:02:11.970] <6>[10908.008209] c0 sprdb
[01-01 11:02:11.970] <6>[10911.790252] c0 mdbg_
[01-01 11:02:12.069] <6>[10911.790283] c0 mdbg_
[01-01 11:02:12.070] <3>[10911.790313] c0 [SDIO
[01-01 11:02:12.070] <3>[10911.790313] c0
[01-01 11:02:12.070] <3>[10911.793212] c0 [SDIO
[01-01 11:02:12.070] <3>[10911.793212] c0
[01-01 11:02:12.070] <3>[10911.793243] c0 [SDIO
[01-01 11:02:12.070] <3>[10911.793243] c0
[01-01 11:02:12.070] <3>[10911.793273] c0 [SDIO
[01-01 11:02:12.070] <3>[10911.793273] c0
[01-01 11:02:12.070] <3>[10911.793304] c0 [SDIO
[01-01 11:02:12.070] <3>[10911.793304] c0
[01-01 11:02:12.070] <3>[10911.793365] c0 [SDIO
[01-01 11:02:12.070] <3>[10911.793365] c0
[01-01 11:02:12.071] <6>[10911.893676] c0 irq_d
[01-01 11:02:12.292] <6>[10911.893676] c0 irq_d
[01-01 11:02:12.292] <6>[10912.098907] c0 [SPRD
[01-01 11:02:12.292] <6>[10912.098968] c0 [SPRD
[01-01 11:02:12.292] <6>[10912.098999] c0 [SPRD
[01-01 11:02:12.292] <6>[10912.098999] c0 [SPRD
```

5. Setting up whether writing log back to disk

Command format : adb shell ylog_cli ylog **xxx** bypass 1/0 (yes/no)

Response format: output data structure information of the log

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~$ adb shell ylog_cli ylog kernel cache bypass 0
-----
root = /storage/636C-10DC/ylog/ylog, quota = 1.44G, running 00 day 00:14:40
-----
[ kernel ] = running {
  .loglevel = 3
  .file = /proc/kmsg
  .restart_period = 300
  .timestamp = 1
  .bypass = 0
  .mode = 194
  .ydst = 2.32M/2.32M {
    .file = /storage/636C-10DC/ylog/ylog/kernel/000
    .max_segment = 5
    .max_segment_size = 20.00M
    .cache= {
      .size = 512.00K
      .num = 2
      .bypass = 0
      .timeout = 1000ms
      .debuglevel = 0x02
    }
  }
}
```

no write back to disk

6. Setting up cache timeout

Command format : adb shell ylog_cli ylog **xxx** cache timeout 500

Response format: output data structure information of the log

7. Setting up number of history log

Command format : adb shell ylog_cli history_n N

Response format: N\n

3.2.4 delete class

1. Deleting last_ylog only

Command format: adb shell rylog

Response format: done\n

2. Deleting folders of ylog, last_ylog

Command format: adb shell ryloga

Response format: done\n



3. Deleting folders of ylog, last_ylog, and restart ylog

Command format: adb shell rylogr

Response format: done\n

3.2.5 other class

1. Get real-time kernel log

Command format: adb shell ylog_cli kernel

Response format: print kernel log in real time

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~/whale2/vendor/sprd/proprieties-source/ylog$ adb shell date
Sun Jan  1 08:46:04 CST 2012
SPREADTRUM\yanli.chen@yanlichenubtpc:~/whale2/vendor/sprd/proprieties-source/ylog$ adb shell ylog_cli kernel
[01-01 08:46:07.340] <4>[ 2746.664031] c0 sensor id:0, rawdata:0x31a, temp:31223
[01-01 08:46:07.340] <4>[ 2748.082366] c0 _sprdchg_timer_interrupt
[01-01 08:46:07.350] <6>[ 2748.082489] c0 sprdbat: sprdbat_charge_works-start
[01-01 08:46:07.351] <4>[ 2748.082519] c0 sprdchg_get_chg_cur rawdata * 50+300=450
[01-01 08:46:07.351] <6>[ 2748.082550] c0 sprdbat: enter sprdbat_auto_switch_cur avg_cur=89,chg_cur=450
[01-01 08:46:07.351] <6>[ 2748.082580] c0 sprdbat: chg_end_vol_l:0x105e
[01-01 08:46:07.351] <3>[ 2748.083496] c0 chg_current warning....isense:4169....vbat:4183
```

2. Flush cache to disk

Command format: adb shell ylog_cli flush

Response format: None

3. benchmark for evaluating disk read-write rate

a. benchmark test without time stamps.

Command format : adb shell benchmark

Response format: None

```
root@sp9830a_5h10_volte:/storage/BE60-0FE5/ylog # ylog_cli benchmark
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 4.40M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 4.18M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 5.77M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 5.03M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 5.14M/s
```

b. benchmark test with time stamps.

Command format : adb shell benchmarkt

Response format: None

```
shell@sp7731g_1h10:/ $ ylog_cli at at
Try to stop engpc:
getprop | grep init.svc.engpc | cut -d '.' -f 3 | cut -d ']' -f 0
or
stop engpcclientt; stop engpcclientlte; stop engpcclientw; stop engpcclienttl; stop engpcclientlf
pcclientlte; stop engpcclientw; stop engpcclienttl; stop engpcclientlf
shell@sp7731g_1h10:/ $ ylog_cli at at+armlog=1
OK
```

engpc通道打开状态，可通过命令行关闭

关闭engpc，at命令发送成功，返回命令执行结果

4. use ylog_cli command to save kernel log

Command format: adb shell ylog_cli print2kernel + log content

eg, adb shell ylog_cli print2kernel test

Check whether log is written to “/dev/kmsg” successfully, use the command as follows, adb shell cat /dev/kmsg |grep print2

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~/6.0/device/sprd$ adb shell ylog_cli print2kernel test
SPREADTRUM\yanli.chen@yanlichenubtpc:~/6.0/device/sprd$ adb shell cat /dev/kmsg |grep print2
12,4549,312735198,-;print2kernel test
```

5. use ylog_cli command to save android log

command format: adb shell ylog_cli print2android + log content

eg, adb shell ylog_cli print2android test

Check whether log is saved successfully, use the command as follows, adb logcat |grep print2

```
130|root@sp9830a_5h10_volte:/storage/BE60-0FE5/ylog # ylog_cli benchmarkt
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 1.71M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 1.77M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 2.18M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 1.99M/s
cmd_benchmark -> /storage/BE60-0FE5/ylog/ylog/socket/open/000 speed 1.65M/s
```

3.2.6 modem/wcn log rate statistic

```
cp_5mode modem log -> running -> cp/5mode/000 (1x10.00M/10.00M, 5.00%) -> cache.cp/5mode/(8x512.00K) [76.49M/76.49M]
cp_wcn wcn log -> running -> cp/wcn/000 (1x10.00M/10.00M, 5.00%) -> cache.cp/wcn/(2x512.00K) [18.88M/18.88M]
```

The rate of modem/wcn log can be counted by ylog, then the corresponding log is stored in folder of cp.

modem log get by ylog is stored in the cache sizeof 8*512*1024, and the log will be written to disk until timeout or cache runs out of the space. Theoretically, modem log stored by ylog can not be lost, in the case that modem log rate can't exceed 4M/s.

1. modem log rate statistic

Various log can be counted by command, which is “adb shell ylog_cli speed”. modem log shows in the following,


```
[ylog] cp_5mode modem log -> 20.44% 36.70M → log total log speed top 5
01. [04-01 11:04:32.379] ~ [04-01 11:04:33.380] 00 day 17:19:38 ago 1024.00K/s
02. [04-01 11:04:34.381] ~ [04-01 11:04:35.381] 00 day 17:19:40 ago 1024.00K/s
03. [04-01 11:04:35.381] ~ [04-01 11:04:36.382] 00 day 17:19:41 ago 1024.00K/s
04. [04-01 11:04:37.383] ~ [04-01 11:04:38.383] 00 day 17:19:43 ago 1024.00K/s
05. [04-01 11:04:39.385] ~ [04-01 11:04:40.385] 00 day 17:19:45 ago 1024.00K/s
```

2. wcn log rate statisc

Various log can be counted by command, which is “adb shell ylog_cli speed”. wcn log shows in the following,

```
[ylog] cp_wcn wcn log -> 3.20% 838.00K → log total log speed top 5
01. [04-01 11:52:39.726] ~ [04-01 11:52:40.735] 00 day 00:02:16 ago 17.82K/s
02. [01-01 08:05:49.509] ~ [01-01 08:05:50.509] 00 day 00:01:55 ago 17.00K/s
03. [04-01 11:52:57.743] ~ [04-01 11:52:58.743] 00 day 00:02:34 ago 16.00K/s
04. [04-01 11:55:57.838] ~ [04-01 11:55:58.838] 00 day 00:05:35 ago 16.00K/s
05. [01-01 08:06:08.533] ~ [01-01 08:06:09.533] 00 day 00:02:14 ago 15.00K/s
```

3 . ylog can send AT command

Command format: adb shell ylog_cli at at

Response format:

a. engpc channel is open

Try to stop engpc:

```
getprop | grep init.svc.engpc | cut -d '.' -f 3 | cut -d ']' -f 0
```

or

```
stop engpcclientt; stop engpcclientlte; stop engpcclienttw; stop engpcclienttl; stop
engpcclientlf
pcclientlte; stop engpcclienttw; stop engpcclienttl; stop engpcclientlf
```

Command to close engpc channel:

```
adb shell getprop | grep init.svc.engpc | cut -d '.' -f 3 | cut -d ']' -f 0 or
adb shell stop engpcclientt; stop engpcclientlte; stop engpcclienttw; stop engpcclienttl; stop
engpcclientlf pcclientlte; stop engpcclienttw; stop engpcclienttl; stop engpcclientlf
```

b. engpc channel is closed

Return value of AT command

```
SPREADTRUM\yanli.chen@yanlichenubtpc:~/Downloads$ adb shell ylog_cli print2android xxxxxxxxx
SPREADTRUM\yanli.chen@yanlichenubtpc:~/Downloads$ adb logcat |grep print2
03-29 17:24:06.707 410 519 W YLOG : [03-29 17:24:06.707] ylog<debug> command is: print2android xxxxxxxxx
03-29 17:24:06.707 410 519 W YLOG : [03-29 17:24:06.707] ylog<warn> print2android xxxxxxxxx
stop engpcclienttt; stop engpcclientlte; stop engpcclientw; stop engpcclientttl; stop engpcclientlf
pcclientlte; stop engpcclientw; stop engpcclientttl; stop engpcclientlf <
shell@sp7731g_1h10:/ $ ylog_cli at at+armlog=1
OK
```

关闭engpc, at命令发送成功, 返回命令执行结果

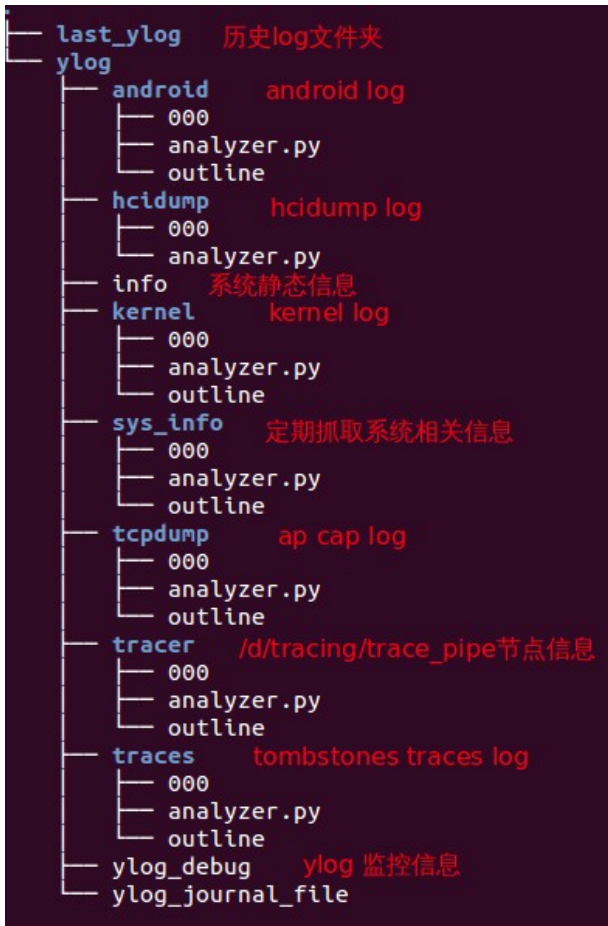
4. log analysis methods and techniques.

4.1 ylog directory structure

In the case of no TF card, ylog is stored in data partition with default quota value of 200M, and keep this log only. Once TF card mounts successfully, quota values will be set as 90% free space of TF card, which calculated by ylog. The free space can be dynamically assigned to each ydst. Meanwhile, log stored in data partition will be moved to TF card, and subsequent log will be stored in append mode. In the condition of a disk-out-of space, ylog can try run smaller to free space for following log. In the another way, ylog can modify disk quotas to set segments numbers or size dynamically.

Under the condition that TF card mounts normally and main switch of ylog can't restart, ylog can save last system log into folder named last_ylog, and rename ylog to ylog1. Meanwhile, the last system log will be renamed to ylog2, and so on. The default history log keeps up to 5 times, this number can be set by command, adb shell ylog_cli history_n N.

ylog directory structure stored in TF card is described as following.



000 is current log file, and when its size reaches the upper limit of single file size, ylog can flip it to 001. At the same time, 000 is created to continue saving log. Obvious, the smaller of file name, the newer log is. When log files reach rollover limit, there are two options, one is saving original log , the other is deleting oldest log for free space, these all depend on the property of ydst.

Analyzer.py is used for parsing log files off line, and support multiple platforms, windows/MAC/linux, etc.

Outline files record log time periods and total time used for filling log. In analyzing problems, the corresponding log segments can be addressed according to point time the problem occurred, where outline files can help to open.

The detailed steps as follows.

```
vim outline
```

1. place the cursor on 002
2. input gf
3. open file named 002 directly



```
002 - 2012.01.01 08:00:06 ~ 2012.01.01 14:47:00 [00 06:46:54]
001 - 2012.01.01 14:47:00 ~ 2012.01.01 14:48:31 [00 00:01:31]
000 - 2012.01.01 14:48:31 ~
```

Log information is described as following.

0 stands for files named 000, 54 is the maximum of segments.

50.00M means the maximum data size of each segment.

```
A0[ylog_segment=0/54,50.00M] 2016.02.18 14:58:27 -00d00:00:01/1551ms 0.00B/2.64G 0.00B/s
A002-18 14:40:19.312 2038 2303 E SimContactProxy: iccAasUri:content://icc/aas/subId/1
A202-18 14:39:50.800 262 888 D TelephonyManager: /proc/cmdline=loglevel=1 console=tty
d_base=9fe2e000 mem_cs=1, mem_cs0_sz=20000000 sysdump_magic=85500000 androidboot.seri
A002-18 14:40:19.316 2038 2303 E SimContactProxy: iccSneUri:content://icc/sne/subId/1
A202-18 14:39:54.037 231 1248 D use-Rlog/RLOG-RILC_ATCI: > AT Command 'AT+VGR=6'. phon
A002-18 14:40:19.316 2038 2303 E SimContactProxy: iccSdnUri:content://icc/sdn/subId/1
A102-18 14:39:43.475 184 184 I vold : Vold 3.0 (the awakening) firing up
A202-18 14:39:54.039 305 396 I chatty : uid=1001(radio) /system/bin/rild_sp expire 3
A002-18 14:40:19.362 2815 2815 W System : ClassLoader referenced unknown path: /system
A002-18 14:40:19.400 2038 2134 D ContactDirectoryManager: Found com.android.exchange.di
```

4.2 ylog files analysis off line

analyzer.py contains token mapping information

```
'A0': 'main.log',
'A1': 'system.log',
'A2': 'radio.log',
'A3': 'events.log',
'A4': 'crash.log',
```

After pulling ylog to the local, the parsed log can be obtained by executing command “python analyzer.py” in corresponding folder. Analysis supports log resolution and combination, and it can be customized. In addition, it supports for specified segments analysis. For instance, 000 and 001 log can be parsed separately by command that “python analyzer.py 000 001”.



```
SPREADTRUM\yanli.chen@yanlichenubtpc:~/tmp/ylog/android/test$ python analyzer.py 000 001
SPREADTRUM\yanli.chen@yanlichenubtpc:~/tmp/ylog/android/test$ ll
total 7424
drwxr-xr-x 2 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 4096 Mar  5 19:23 ./
drwxr-xr-x 3 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 4096 Mar  5 19:23 ../
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 352737 Mar  5 19:23 000
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 1048691 Mar  5 19:23 001
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 1048623 Mar  5 19:23 002
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 3735193 Mar  5 19:23 003
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 1993 Mar  5 19:23 analyzer.py
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 0 Mar  5 19:24 crash.log
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 18474 Mar  5 19:24 events.log
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 901479 Mar  5 19:24 main.log
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 214 Mar  5 19:23 outline
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 351560 Mar  5 19:24 radio.log
-rw-r--r-- 1 SPREADTRUM\yanli.chen SPREADTRUM\domain^users 107691 Mar  5 19:24 system.log
```

Log parsed directory is shown as follows.

```
├─ android
│   ├── 000
│   ├── analyzer.py
│   ├── crash.log
│   ├── events.log
│   ├── main.log
│   ├── outline
│   ├── radio.log
│   └── system.log
├─ hcidump
│   ├── 000
│   ├── analyzer.py
│   └── hcidump.log
├─ info
├─ kernel
│   ├── 000
│   ├── analyzer.py
│   ├── kernel.log
│   └── outline
├─ sys_info
│   ├── 000
│   ├── analyzer.py
│   ├── outline
│   └── sys_info.log
├─ tcpdump
│   ├── 000
│   ├── analyzer.py
│   ├── outline
│   └── tcpdump.log
├─ tracer
│   ├── 000
│   ├── analyzer.py
│   ├── outline
│   └── tracer.log
├─ traces
│   ├── 000
│   ├── analyzer.py
│   ├── outline
│   └── traces.log
├─ ylog_debug
└─ ylog_journal_file
```



4.3 analytical method of native crash and anr log

1. native crash

a. enter /ylog/ylog/traches, run “python analyzer.py”.

vim traces.log, search “ylog tombstones”.

eg. ylog_tombstones 001 [cat /data/tombstones/tombstone_00] [01-02 02:14:16.785]

time stamp : [01-02 02:14:16.785] presents the time occurred native crash.

b. enter android directory, then vim outline. You can find the segments occurred native crash at that time point.

eg. “01-02 02:14:16.785” is located in the following period, the corresponding log segment is 015.

015 - 2012.01.02 02:12:36 ~ 2012.01.02 02:40:37 [00 00:28:01]

c. obtain log, such as main, system, events, radio, crash contained in this log segment.

command : python analyzer.py 015.

generation: crash.log events.log main.log radio.log system.log

d. open corresponding xxx.log, then problems can be analyzed.

2. anr

a. enter /ylog/ylog/traces, run “python analyzer.py”.

vim traces.log, search “ylog traces”.

eg. ylog_traces 001 [cat /data/anr/traces.txt] [01-02 04:07:43.903]

Time stamp : [01-02 04:07:43.903] presents the time occurred anr.

b. enter android directory, vim outline. You can find the segments occurred anr at that time point.

eg. “01-02 04:07:43.903” is located in the following period, the corresponding log segment is 011.

011 - 2012.01.02 04:04:04 ~ 2012.01.02 04:29:18 [00 00:25:14]

c. obtain log, such as main, system, events, radio, crash contained in this log segment.

command: python analyzer.py 011.

generation: crash.log events.log main.log radio.log system.log

d. open corresponding xxx.log, then problems can be analyzed.

3. log analysis related with system status (system-related log can be collected every 2 minitus)



Method One:

enter "ylog/ylog/sys_info", run "python analyzer.py",

generation: sys_info.log (the total log collected by all the test processing)

Method Two:

- a. get time point occurred problems.
- b. enter "ylog/ylog/sys_info", vim outline, you can find the segments occurred and at that time point.
- c. vim the corresponding log segment, analyze the system status about time occurred problems.