

Android is NOT just 'Java on Linux'

Reusing your existing software on Android

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Let's talk about inside of Android.



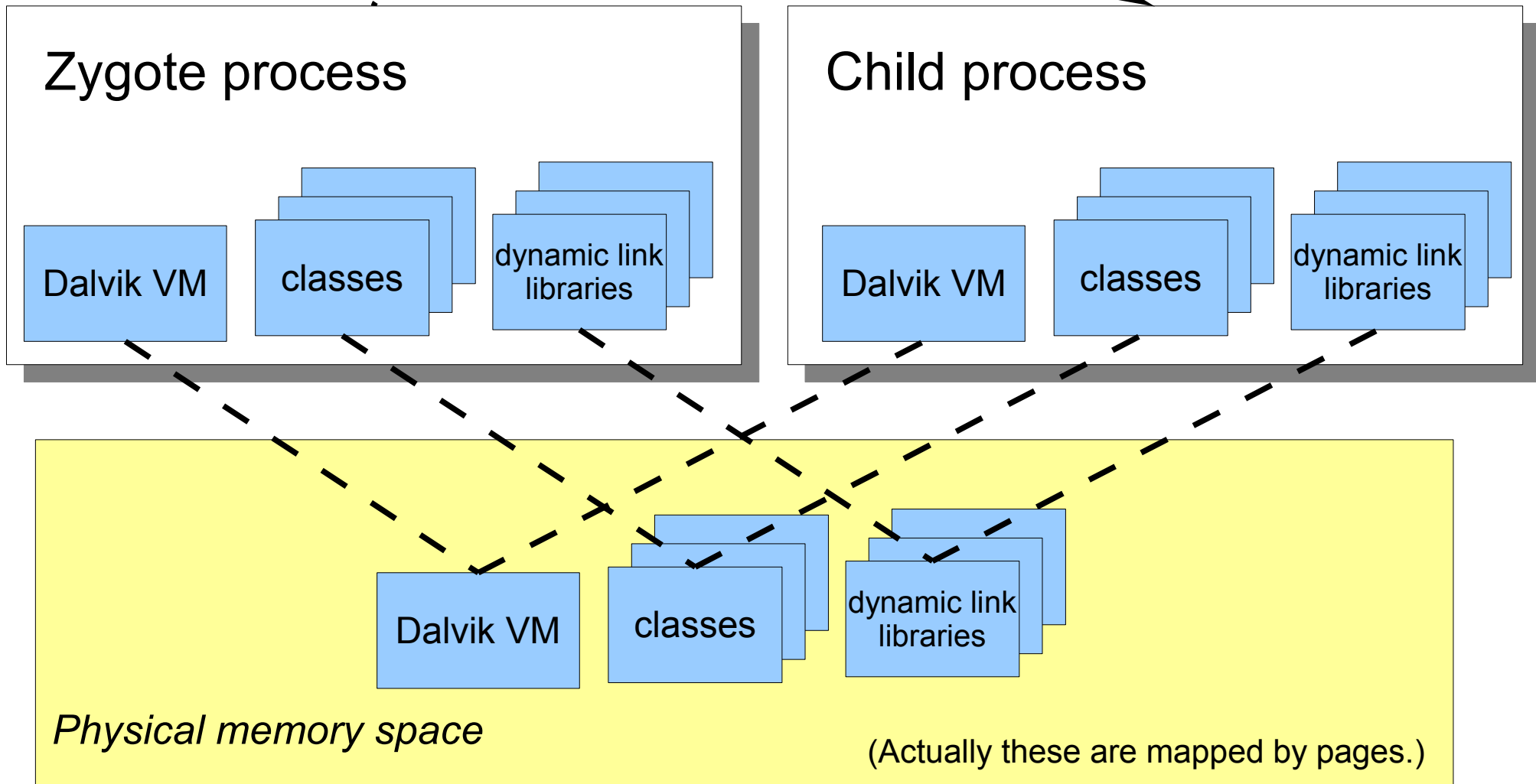
<http://www.kmckk.co.jp/eng/kzma9/>
http://www.kmckk.co.jp/eng/jet_index.html

Android is NOT just 'Java on Linux'

- Android uses Linux kernel. Only kernel.
 - User land is totally different from usual Linux system.
- Android applications are written in Java language.
 - Class libraries are similar to Java SE but not equal.
- Dalvik VM eats only dex code
 - need to translate from Java byte code in advance

Zygote

fork



Why reuse?

- Don't discard all your existing software resource.
- But don't think all your software resource is reusable.
- What is your strength?
- Select wisely

Result of ps command

```
user@arm-lucid:~$ ps ax
  PID TTY          STAT TIME   COMMAND
    1 ?           SLs   0:01   /sbin/init
    2 ?           S<    0:00   [kthreadd]
    3 ?           S<    0:00   [migration/0]
    4 ?           S<    0:00   [ksoftirqd/0]
    5 ?           S<    0:00   [watchdog/0]
    6 ?           S<    0:00   [migration/1]
    7 ?           S<    0:00   [ksoftirqd/1]
    8 ?           S<    0:00   [watchdog/1]
    9 ?           S<    0:00   [migration/2]
   10 ?          S<    0:00   [ksoftirqd/2]
   11 ?          S<    0:00   [watchdog/2]
   12 ?          S<    0:00   [migration/3]
   13 ?          S<    0:00   [ksoftirqd/3]
   14 ?          S<    0:00   [watchdog/3]
   15 ?          S<    0:00   [events/0]
   16 ?          S<    0:00   [events/1]
   17 ?          S<    0:00   [events/2]
   18 ?          S<    0:00   [events/3]
   19 ?          S<    0:00   [work_on_cpu/0]
   20 ?          S<    0:00   [work_on_cpu/1]
   21 ?          S<    0:00   [work_on_cpu/2]
   22 ?          S<    0:00   [work_on_cpu/3]
   23 ?          S<    0:00   [khelper]
   24 ?          S<    0:00   [suspend]
   25 ?          S<    0:00   [kblockd/0]
   26 ?          S<    0:00   [kblockd/1]
   27 ?          S<    0:00   [kblockd/2]
   28 ?          S<    0:00   [kblockd/3]
   29 ?          S<    0:00   [ksuspend_usbd]
   30 ?          S<    0:00   [khubd]
   31 ?          S<    0:00   [kmmcd]
   32 ?          S    0:00   [pdflush]
   33 ?          S    0:00   [pdflush]
   34 ?          S<    0:00   [kswapd0]
   35 ?          S<    0:00   [aio/0]
   36 ?          S<    0:00   [aio/1]
   37 ?          S<    0:00   [aio/2]
   38 ?          S<    0:00   [aio/3]
   39 ?          S<    0:00   [nfsiod]
   40 ?          S<    0:01   [rpciod/0]
   41 ?          S<    0:00   [rpciod/1]
   42 ?          S<    0:00   [rpciod/2]
   43 ?          S<    0:00   [rpciod/3]
 2297 ?          SL    0:00   upstart-udev-bridge --daemon
 2300 ?          SLl   0:00   rsyslogd -c4
 2301 ?          S<Ls  0:00   udevd --daemon
 2378 ?          SLs   0:00   /usr/sbin/sshd
 2417 tty4       SLs+  0:00   /sbin/getty -8 38400 tty4
 2418 tty5       SLs+  0:00   /sbin/getty -8 38400 tty5
 2421 tty2       SLs+  0:00   /sbin/getty -8 38400 tty2
 2422 tty3       SLs+  0:00   /sbin/getty -8 38400 tty3
 2424 tty6       SLs+  0:00   /sbin/getty -8 38400 tty6
 2428 ?         SLs   0:00   cron
 2454 tty1       SLs+  0:00   /sbin/getty -8 38400 tty1
 2470 ?         SLs   0:00   sshd: user [priv]
 2483 ?         SL    0:00   sshd: user@pts/0
 2484 pts/0       SLs   0:00   -bash
 2497 ?         SLs   0:00   sshd: user [priv]
 2511 ?         SL    0:00   sshd: user@pts/1
 2512 pts/1       SLs   0:00   -bash
 2520 pts/0       SL+   0:00   /init
 2551 ?         S<L   0:00   udevd --daemon
 2552 ?         S<L   0:00   udevd --daemon
 2596 ?         SLs   0:00   /system/bin/sh
 2597 pts/0       SL    0:00   /system/bin/servicemanager
 2598 pts/0       SL    0:00   /system/bin/debuggerd
 2599 pts/0       SLl   0:00   /system/bin/rild
 2600 pts/0       SL    0:05   zygote /bin/app_process -Xzygote /system/bin
--zygote --start-s
 2601 pts/0       SLl   0:00   /system/bin/mediaserver
 2602 pts/0       SL    0:00   /system/bin/dbus-daemon --system --nofork
 2603 pts/0       SL    0:00   /system/bin/installld
 2604 pts/0       SL    0:00   /system/bin/keystore /data/misc/keystore
 2605 pts/0       SLl   0:00   /sbin/adbd
 2613 pts/0       SLl   0:08   system_server
 2668 pts/0       SLl   0:00   com.android.inputmethod.latin
 2671 pts/0       SLl   0:00   com.android.phone
 2672 pts/0       SLl   0:01   com.android.launcher
 2673 pts/0       SLl   0:00   com.android.settings
 2701 pts/0       SLl   0:00   android.process.acore
 2728 pts/0       SLl   0:00   com.android.bluetooth
 2735 pts/0       SLl   0:00   com.android.mms
 2744 pts/0       SLl   0:00   android.process.media
 2764 pts/0       SLl   0:00   com.android.providers.calendar
 2776 pts/0       SLl   0:00   com.android.deskclock
 2786 pts/0       SLl   0:00   com.android.email
 2796 pts/0       SLl   0:00   com.android.quicksearchbox
 2807 pts/0       SLl   0:00   com.android.protips
 2814 pts/0       SLl   0:00   com.android.music
 2821 pts/0       SLl   0:00   com.cooliris.media
 2831 pts/1       RL+   0:00   ps ax
user@arm-lucid:~$
```

Init of Ubuntu

Init of Android

Processes of Android