Process Management In Android

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1) Philosophy: In this week was studied in “Process management in Android”. Android process management is varies with linux process management in some few areas. This report gives overview of android process management.

2) Summary: This report gives over view on android application fundamentals and process life cycles.
   - Application is a combination of components. The components are Activity, services, Broadcast Drivers, Content Providers
   - Android components life cycles and purpose of activity stack.
   - Android process life cycle.

3) Observations: I had found many interesting issues on process management. Some of the observations are given below.
   - Each application has it’s own process
   - Each application has it’s own VM(virtual machine), to provide isolation from other process.
   - By default all the components run in same thread(main thread). If not developer explicitly creates a new thread.
   - All the activities in a system are placed in activity stack. Whenever a new activity starts, i.e placed on top of stack. Whenever user press back button, activity on the top of stack would be removed.

4) Positive points:
   - All the components of applications have their own life cycles. State of the process depends upon the components states.
   - Explanation about components of application given below:
     - Activity is a single visual user interface(UI) on the screen
     - Services is a component which runs on background, but it is visible user
     - Content Providers provides a shared data for different applications.
     - Broadcast Receiver sends broadcast announcements system-wide
   - Android processes have five states. They are Foreground, visible, server process, background, empty process. More details about these process states are given in presentation.

5) Negative points:
   - No clearly division of process states based upon the components states.
   - Too much of over head for maintaining states of processes.

6) Problem/s identified:
   - Necessity of tuning minfree thresholds of low memory killer
   - Dynamically adjusting oom_adj values of a process.
   - Linear search implements in OOM.

7) References: