

Viewing RAM Usage Data (procstats)

The **procstats** tool is used to analyze application memory usage over time (versus at a particular snapshot in time, like **meminfo**). Its state dump displays statistics about every application’s runtime, proportional set size (PSS) and unique set size (USS).

Input

To get application memory usage stats for the last three hours, in human-readable form, run the following command:

```
$ adb shell dumpsys procstats --hours 3
```

Output

As can be seen in the example below, percentages display what percentage of time the application was running, while the numbers following show PSS and USS as minPSS-avgPSS-maxPSS/minUSS-avgUSS-maxUSS over samples.

```
AGGREGATED OVER LAST 3 HOURS:
* com.android.systemui / u0a20 / v22:
    TOTAL: 100% (109MB-126MB-159MB/108MB-125MB-157MB over 18)
    Persistent: 100% (109MB-126MB-159MB/108MB-125MB-157MB over 18)
* com.android.nfc / 1027 / v22:
    TOTAL: 100% (17MB-17MB-17MB/16MB-16MB-16MB over 18)
    Persistent: 100% (17MB-17MB-17MB/16MB-16MB-16MB over 18)
* android.process.acore / u0a4 / v22:
    TOTAL: 100% (14MB-15MB-15MB/14MB-14MB-14MB over 20)
    Imp Fg: 100% (14MB-15MB-15MB/14MB-14MB-14MB over 20)
* com.google.android.inputmethod.latin / u0a56 / v21483:
    TOTAL: 100% (57MB-59MB-59MB/56MB-58MB-58MB over 19)
    Imp Fg: 100% (57MB-59MB-59MB/56MB-58MB-58MB over 19)
* com.redbend.vdmc / 1001 / v1:
    TOTAL: 100% (9.5MB-9.6MB-9.7MB/8.8MB-8.9MB-9.0MB over 18)
    Persistent: 100% (9.5MB-9.6MB-9.7MB/8.8MB-8.9MB-9.0MB over 18)
* com.android.phone / 1001 / v22:
    TOTAL: 100% (19MB-22MB-27MB/18MB-21MB-26MB over 18)
    Persistent: 100% (19MB-22MB-27MB/18MB-21MB-26MB over 18)
* com.google.android.gms.persistent / u0a8 / v7319438:
    TOTAL: 100% (32MB-35MB-40MB/30MB-33MB-37MB over 19)
    Imp Fg: 100% (32MB-35MB-40MB/30MB-33MB-37MB over 19)
* com.android.bluetooth / 1002 / v22:
    TOTAL: 100% (9.3MB-9.7MB-10MB/8.5MB-8.9MB-9.2MB over 19)
    Imp Fg: 100% (9.3MB-9.7MB-10MB/8.5MB-8.9MB-9.2MB over 19)
* com.google.android.googlequicksearchbox:interactor / u0a22 / v300404573:
    TOTAL: 100% (3.4MB-3.5MB-3.6MB/2.8MB-2.8MB-2.8MB over 19)
    Imp Fg: 100% (3.4MB-3.5MB-3.6MB/2.8MB-2.8MB-2.8MB over 19)
* com.google.process.gapps / u0a8 / v7306438:
    TOTAL: 100% (23MB-24MB-28MB/21MB-22MB-26MB over 19)
    Imp Fg: 100% (23MB-24MB-28MB/21MB-22MB-26MB over 19)
* com.vito.lux / u0a84 / v237:
    TOTAL: 100% (32MB-48MB-83MB/31MB-47MB-82MB over 134)
    Imp Fg: 100% (32MB-48MB-83MB/31MB-47MB-82MB over 134)
    Service: 0.05%
* system / 1000 / v22:
    TOTAL: 100% (79MB-85MB-102MB/78MB-83MB-100MB over 18)
    Persistent: 100% (79MB-85MB-102MB/78MB-83MB-100MB over 18)
* com.rhapsody / u0a83 / v125:
    TOTAL: 100% (7.9MB-12MB-19MB/6.9MB-11MB-17MB over 15)
    Service: 100% (7.9MB-12MB-19MB/6.9MB-11MB-17MB over 15)
    Service Rs: 0.04%
* com.qualcomm.qcrilmsgtunnel / 1001 / v22:
    TOTAL: 100% (2.5MB-2.6MB-2.7MB/1.7MB-1.8MB-1.9MB over 15)
    Service: 100% (2.5MB-2.6MB-2.7MB/1.7MB-1.8MB-1.9MB over 15)
    Service Rs: 0.13%
* com.amazon.kindle / u0a82 / v1143472216:
    TOTAL: 100% (44MB-54MB-77MB/43MB-52MB-74MB over 17)
    Service: 100% (44MB-54MB-77MB/43MB-52MB-74MB over 17)
```

```
Service Rs: 0.04%
* com.outplaylab.VideoDiet2 / u0a93 / v21:
  TOTAL: 100% (2.8MB-3.1MB-4.0MB/2.0MB-2.2MB-3.0MB over 15)
  Service: 100% (2.8MB-3.1MB-4.0MB/2.0MB-2.2MB-3.0MB over 15)
  Service Rs: 0.03%
* android.process.media / u0a6 / v800:
  TOTAL: 99% (4.6MB-5.9MB-8.1MB/3.4MB-4.7MB-6.7MB over 25)
  Imp Fg: 0.02%
  Service: 99% (4.6MB-5.9MB-8.1MB/3.4MB-4.7MB-6.7MB over 25)
  Service Rs: 0.02%
  (Cached): 0.94%
* kr.sira.sound / u0a108 / v41:
  TOTAL: 77% (117MB-191MB-219MB/111MB-187MB-213MB over 68)
  Top: 77% (117MB-191MB-219MB/111MB-187MB-213MB over 68)
  (Last Act): 18% (58MB-127MB-161MB/53MB-123MB-158MB over 3)
  (Cached): 0.06%
* com.google.android.gms / u0a8 / v7319438:
  TOTAL: 37% (41MB-45MB-57MB/38MB-42MB-53MB over 23)
  Top: 13% (41MB-46MB-57MB/39MB-42MB-53MB over 16)
  Imp Fg: 13% (41MB-44MB-47MB/39MB-41MB-44MB over 5)
  Imp Bg: 0.38%
  Service: 11% (42MB-42MB-42MB/38MB-38MB-38MB over 2)
  Receiver: 0.03%
  (Last Act): 2.0% (38MB-38MB-38MB/36MB-36MB-36MB over 1)
  (Cached): 61% (39MB-40MB-43MB/37MB-37MB-40MB over 28)
* com.google.android.googlequicksearchbox / u0a22 / v300404573:
  TOTAL: 22% (129MB-153MB-162MB/125MB-149MB-156MB over 20)
  Top: 22% (129MB-153MB-162MB/125MB-149MB-156MB over 20)
  Imp Bg: 0.04%
  Receiver: 0.01%
  (Home): 78% (75MB-84MB-122MB/74MB-82MB-117MB over 12)
* com.google.android.apps.thehub / u0a102 / v12:
  TOTAL: 21% (6.4MB-7.6MB-8.7MB/4.8MB-6.0MB-7.2MB over 2)
  Service: 21% (6.4MB-7.6MB-8.7MB/4.8MB-6.0MB-7.2MB over 2)
* com.google.android.talk / u0a54 / v22314462:
  TOTAL: 9.3%
  Top: 0.04%
  Service: 9.3%
  Receiver: 0.01%
  (Last Act): 3.9% (69MB-70MB-71MB/67MB-68MB-69MB over 6)
  (Cached): 87% (42MB-53MB-77MB/40MB-51MB-74MB over 137)
* com.google.android.apps.plus / u0a67 / v413836278:
  TOTAL: 8.2% (9.6MB-12MB-18MB/8.1MB-11MB-16MB over 3)
  Imp Bg: 0.10%
  Service: 8.0% (9.6MB-12MB-18MB/8.1MB-11MB-16MB over 3)
  Receiver: 0.05%
  (Cached): 59% (7.8MB-19MB-33MB/6.8MB-18MB-31MB over 22)
* com.android.providers.calendar / u0a2 / v22:
  TOTAL: 3.5% (7.3MB-7.7MB-8.0MB/5.9MB-6.5MB-6.9MB over 10)
  Imp Bg: 0.32%
  Service: 3.2% (7.3MB-7.7MB-8.0MB/5.9MB-6.5MB-6.9MB over 10)
  Receiver: 0.01%
  (Cached): 69% (4.7MB-6.6MB-7.8MB/3.5MB-5.5MB-6.7MB over 23)
* com.amazon.mShop.android / u0a104 / v5030102:
  TOTAL: 2.7% (25MB-40MB-47MB/24MB-37MB-43MB over 6)
  Service: 2.6% (25MB-40MB-47MB/24MB-37MB-43MB over 6)
  Receiver: 0.15%
  (Cached): 97% (25MB-33MB-48MB/24MB-31MB-44MB over 46)
* com.google.android.gm / u0a70 / v51001620:
  TOTAL: 2.2% (209MB-209MB-209MB/203MB-203MB-203MB over 1)
  Top: 0.48% (209MB-209MB-209MB/203MB-203MB-203MB over 1)
  Imp Bg: 0.70%
  Service: 1.0%
  Receiver: 0.01%
  (Last Act): 0.02%
  (Cached): 94% (25MB-67MB-116MB/23MB-63MB-109MB over 61)
* com.google.android.googlequicksearchbox:search / u0a22 / v300404573:
  TOTAL: 2.1% (66MB-66MB-66MB/63MB-63MB-63MB over 1)
  Top: 1.4% (66MB-66MB-66MB/63MB-63MB-63MB over 1)
  Imp Fg: 0.01%
  Service: 0.66%
  Receiver: 0.02%
```

```
(Cached): 98% (52MB-59MB-79MB/50MB-56MB-77MB over 56)
* com.google.android.calendar / u0a31 / v2015030452:
  TOTAL: 1.4%
  Imp Bg: 0.33%
  Service: 1.1%
  Receiver: 0.02%
  (Cached): 80% (7.4MB-12MB-17MB/5.8MB-9.8MB-14MB over 18)
* com.android.vending / u0a16 / v80341100:
  TOTAL: 1.3% (88MB-154MB-220MB/85MB-151MB-217MB over 2)
  Top: 1.3% (88MB-154MB-220MB/85MB-151MB-217MB over 2)
  Service: 0.06%
  Receiver: 0.02%
  (Last Act): 4.4% (46MB-68MB-89MB/45MB-66MB-87MB over 2)
  (Cached): 11% (15MB-74MB-133MB/13MB-72MB-131MB over 2)
* com.google.android.apps.photos / u0a65 / v5616:
  TOTAL: 0.94%
  Service: 0.90%
  Receiver: 0.04%
  (Cached): 80% (9.2MB-12MB-17MB/7.5MB-11MB-15MB over 20)
* com.amazon.avod.thirdpartyclient / u0a107 / v451210:
  TOTAL: 0.52%
  Service: 0.49%
  Receiver: 0.03%
  (Cached): 97% (14MB-24MB-34MB/13MB-22MB-31MB over 40)
* com.google.android.gms.wearable / u0a8 / v7319438:
  TOTAL: 0.51%
  Imp Fg: 0.47%
  Service: 0.04%
  (Cached): 65% (4.7MB-6.5MB-8.2MB/3.6MB-4.2MB-5.4MB over 10)
* com.amazon.mShop.android.shopping / u0a103 / v5040011:
  TOTAL: 0.50%
  Service: 0.37%
  Receiver: 0.13%
  (Cached): 77% (13MB-17MB-21MB/11MB-15MB-19MB over 15)
* com.google.android.gms:car / u0a8 / v7319438:
  TOTAL: 0.49% (7.1MB-7.1MB-7.1MB/4.3MB-4.3MB-4.3MB over 1)
  Top: 0.05%
  Imp Fg: 0.39% (7.1MB-7.1MB-7.1MB/4.3MB-4.3MB-4.3MB over 1)
  Service: 0.05%
  (Cached): 0.60% (6.6MB-6.6MB-6.6MB/3.6MB-3.6MB-3.6MB over 1)
* com.amazon.mp3 / u0a92 / v4033010:
  TOTAL: 0.46%
  Service: 0.43%
  Receiver: 0.03%
  (Cached): 84% (12MB-16MB-23MB/9.7MB-14MB-21MB over 25)
* com.android.chrome:privileged_process1 / u0a34 / v2272096:
  TOTAL: 0.43%
  Service: 0.04%
  Service Rs: 0.39%
  (Cached): 100% (2.9MB-4.0MB-4.9MB/1.7MB-2.9MB-3.9MB over 18)
* com.google.android.dialer / u0a10 / v20100:
  TOTAL: 0.39% (93MB-93MB-93MB/89MB-89MB-89MB over 1)
  Top: 0.23% (93MB-93MB-93MB/89MB-89MB-89MB over 1)
  Imp Fg: 0.16%
  (Cached): 16% (5.0MB-31MB-57MB/4.1MB-29MB-54MB over 2)
* com.google.android.apps.maps / u0a58 / v906101124:
  TOTAL: 0.38%
  Service: 0.33%
  Receiver: 0.05%
  (Cached): 69% (8.7MB-15MB-18MB/7.2MB-14MB-17MB over 8)
* com.google.android.youtube / u0a80 / v101451214:
  TOTAL: 0.26%
  Service: 0.26%
  (Cached): 36% (15MB-22MB-29MB/13MB-19MB-27MB over 5)
* com.google.android.apps.fitness / u0a45 / v2015109100:
  TOTAL: 0.26%
  Service: 0.23%
  Receiver: 0.02%
  (Cached): 82% (3.9MB-6.4MB-9.2MB/2.8MB-5.3MB-7.9MB over 19)
* com.google.android.apps.enterprise.dmagent / u0a37 / v630:
  TOTAL: 0.06%
  Service: 0.06%
```

```
Receiver: 0.01%
(Cached): 2.2% (6.5MB-7.4MB-8.2MB/4.8MB-5.8MB-6.8MB over 2)
* com.audible.application / u0a95 / v3068:
  TOTAL: 0.06%
  Receiver: 0.06%
  (Cached): 34% (14MB-16MB-19MB/11MB-14MB-17MB over 7)
* com.android.defcontainer / u0a5 / v22:
  TOTAL: 0.06%
  Imp Fg: 0.06%
  (Cached): 0.12%
* com.google.android.music:main / u0a60 / v1847:
  TOTAL: 0.04%
  Top: 0.01%
  Service: 0.02%
  Receiver: 0.01%
  (Cached): 9.8% (10MB-12MB-14MB/8.3MB-9.6MB-11MB over 2)
* com.google.android.apps.magazines / u0a61 / v2015040100:
  TOTAL: 0.03%
  Top: 0.02%
  Receiver: 0.01%
  (Cached): 8.7% (12MB-14MB-16MB/9.7MB-11MB-13MB over 2)
* com.google.android.videos / u0a77 / v37191:
  TOTAL: 0.03%
  Imp Fg: 0.01%
  Service: 0.02%
  (Cached): 1.3% (11MB-12MB-13MB/9.1MB-10MB-12MB over 2)
* com.google.android.apps.books / u0a28 / v30336:
  TOTAL: 0.03%
  Imp Fg: 0.01%
  Service: 0.02%
  (Cached): 1.3% (7.9MB-9.6MB-11MB/6.3MB-8.0MB-9.7MB over 2)
* com.google.android.keep / u0a71 / v3115:
  TOTAL: 0.02%
  Service: 0.01%
  Receiver: 0.01%
  (Cached): 11% (6.3MB-8.7MB-9.6MB/5.1MB-7.4MB-8.3MB over 4)
* com.android.chrome / u0a34 / v2272096:
  TOTAL: 0.02%
  Service: 0.01%
  Receiver: 0.02%
  (Cached): 90% (5.1MB-70MB-96MB/3.4MB-66MB-92MB over 15)
* com.google.android.apps.gcs / u0a94 / v14:
  TOTAL: 0.02%
  Service: 0.02%
  (Cached): 17% (5.8MB-5.9MB-6.0MB/4.6MB-4.7MB-4.8MB over 2)
* com.android.chrome:privileged_process0 / u0a34 / v2272096:
  TOTAL: 0.02%
  Service: 0.01%
  Receiver: 0.01%
  (Cached): 73% (162MB-163MB-164MB/157MB-157MB-157MB over 13)
* com.android.chrome:sandboxed_process12 / u0a34 / v2272096:
  TOTAL: 0.02%
  Service: 0.01%
  Receiver: 0.01%
  (Cached): 73% (48MB-49MB-51MB/46MB-47MB-50MB over 13)
* com.google.android.apps.docs / u0a40 / v51410735:
  TOTAL: 0.01%
  Receiver: 0.01%
  (Cached): 0.45% (10MB-10MB-10MB/9.3MB-9.3MB-9.3MB over 1)
* com.google.android.deskclock / u0a38 / v303:
  TOTAL: 0.01%
  Receiver: 0.01%
  (Cached): 82% (2.5MB-3.3MB-4.3MB/1.7MB-2.3MB-3.2MB over 13)
* com.google.android.gm.exchange / u0a69 / v500065:
  TOTAL: 0.01%
  Imp Bg: 0.01%
  (Cached): 27% (3.3MB-3.7MB-3.9MB/2.2MB-2.7MB-2.9MB over 6)
* com.android.cellbroadcastreceiver / u0a3 / v22:
  TOTAL: 0.01%
  Service: 0.01%
  (Cached): 1.1% (3.5MB-3.5MB-3.5MB/2.5MB-2.5MB-2.5MB over 1)
* com.coulombtech / u0a106 / v26:
```

```

    TOTAL: 0.01%
    Receiver: 0.01%
    (Cached): 21% (4.9MB-5.0MB-5.2MB/3.8MB-3.9MB-4.1MB over 2)
* com.softcoil.mms / u0a86 / v32:
    TOTAL: 0.01%
    (Cached): 0.25%
* com.udemy.android / u0a91 / v38:
    TOTAL: 0.01%
    Receiver: 0.01%
    (Cached): 0.75% (9.8MB-9.8MB-9.8MB/8.5MB-8.5MB-8.5MB over 1)
* com.qualcomm.timeservice / u0a76 / v22:
    (Cached): 16% (2.3MB-2.4MB-2.4MB/1.6MB-1.6MB-1.6MB over 4)
* com.lge.SprintHiddenMenu / 1000 / v22:
    (Cached): 0.16%
* com.android.chrome:sandboxed_process13 / u0a34 / v2272096:
    (Cached): 0.01%
* com.google.android.partnersetup / u0a13 / v22:
    (Cached): 0.14%
* com.android.musicfx / u0a15 / v10400:
    (Cached): 0.41% (2.5MB-2.5MB-2.5MB/1.6MB-1.6MB-1.6MB over 1)
* com.android.chrome:sandboxed_process9 / u0a34 / v2272096:
    (Cached): 30% (34MB-34MB-34MB/32MB-32MB-32MB over 9)
* com.android.chrome:sandboxed_process11 / u0a34 / v2272096:
    (Cached): 7.2% (56MB-56MB-56MB/54MB-54MB-54MB over 3)
```

Run time Stats:

```

SOff/Norm: +32m52s226ms
SON /Norm: +2h10m8s364ms
  Mod : +17s930ms
  TOTAL: +2h43m18s520ms
```

Memory usage:

```

Kernel : 265MB (38 samples)
Native : 73MB (38 samples)
Persist: 262MB (90 samples)
Top    : 190MB (325 samples)
ImpFg  : 204MB (569 samples)
ImpBg  : 754KB (345 samples)
Service: 93MB (1912 samples)
Receivr: 227KB (1169 samples)
Home   : 66MB (12 samples)
LastAct: 30MB (255 samples)
CchAct : 220MB (450 samples)
CchCAct: 193MB (71 samples)
CchEmty: 182MB (652 samples)
Cached : 58MB (38 samples)
Free   : 60MB (38 samples)
TOTAL  : 1.9GB
ServRst: 50KB (278 samples)
```

```

    Start time: 2015-04-08 13:44:18
    Total elapsed time: +2h43m18s521ms (partial) libart.so
```

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