

## Supplementary materials for

Khalid ALSUBHI, Zuhaib IMTIAZ, Ayesha RAANA, M. Usman ASHRAF, Babur HAYAT, 2020. MEACC: an energy-efficient framework for smart devices using cloud computing systems. *Front Inform Technol Electron Eng*, 21(6):917-930. <https://doi.org/10.1631/FITEE.1900198>

Files of different sizes are executed on three different mobile devices to compute the execution time by reading the inputted file and determining the total number of words in the file. After completing the file read, the execution time to complete this task is displayed on the dashboard (Figs. S1–S3).



Fig. S1 Total execution time on mobile device D1 (Galaxy Grand Prime)

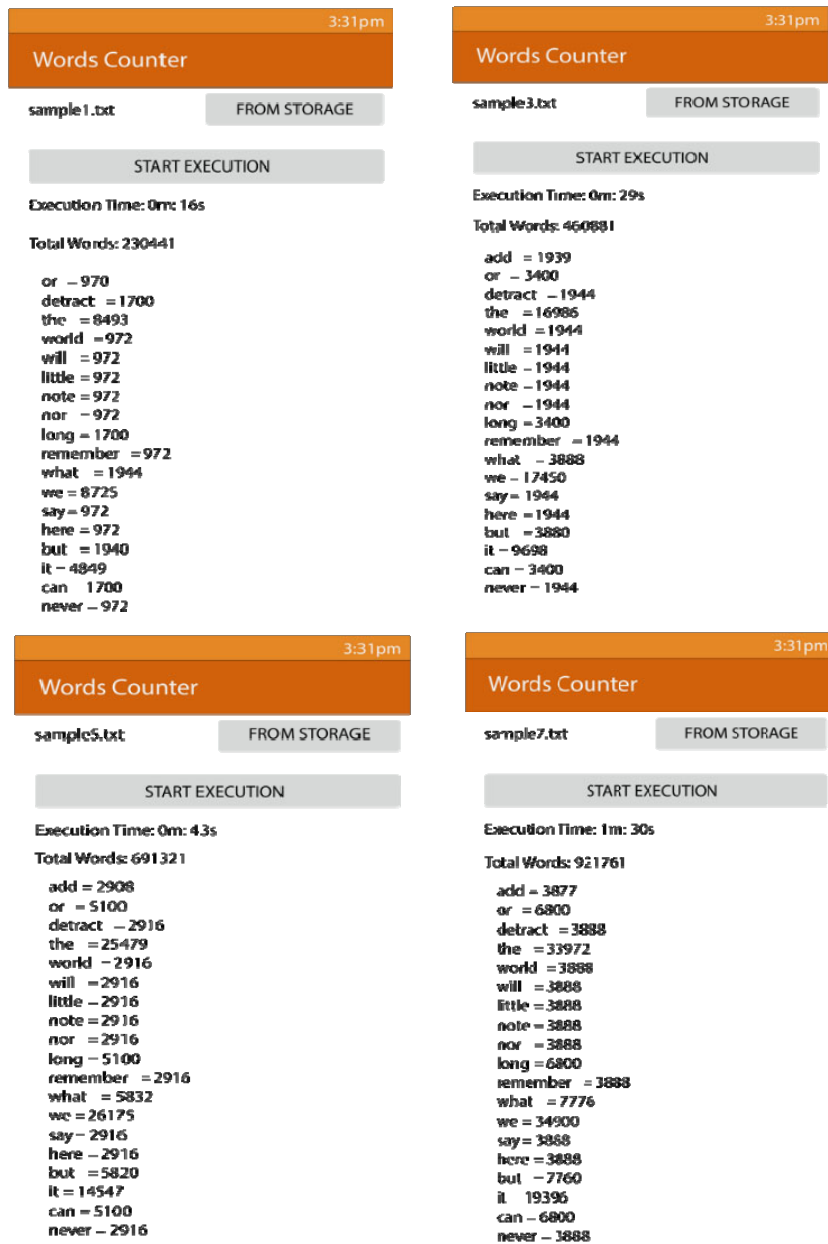


Fig. S2 Total execution time on mobile device D2 (Google Pixel 2)



Fig. S3 Total execution time on mobile device D3 (Google Pixel 3)

To compute the execution time on the cloud side, files of the same size are run on the cloud simulator to calculate the time taken by each file to complete its execution remotely (Table S1).

**Table S1 Total cloud execution costs (Hadoop simulator)**

Hadoop job job\_201709010755\_0004 on history viewer

User: zuha

JobName: wordcount

JobConf: hdfs://localhost:54310/app/hadoop/tmp/mapred/staging/zuhaibimtiazh/.staging/job\_201709010755\_0004/job.xml

Job-ACLs: All users are allowed

Submitted at: 1-Sep-2017 08:03:06(0sec)

Launched at: 1-Sep-2017 08:03:21 (15sec)

Status: Success

Failure info: Analyse this job

Kind	Total tasks (successful+failed+killed)	Successful tasks	Failed tasks	Killed tasks	Start time	Finish time
Setup	1	1	0	0	1-Sep-2017 08:03:07	1-Sep-2017 08:03:08 (1 s)
Map	1	1	0	0	1-Sep-2017 08:03:08	1-Sep-2017 08:03:10 (2 s)
Reduce	1	1	0	0	1-Sep-2017 08:03:10	1-Sep-2017 08:03:20 (9 s)
Cleanup	1	1	0	0	1-Sep-2017 08:03:20	1-Sep-2017 08:03:21 (1 s)

	Counter	Map	Reduce	Total
Job counters	Launched reduce tasks	0	0	1
	SLOTS_MILLIS_MAPS	0	0	4894
	Total time spent by all reduces waiting after reserving slots (ms)	0	0	0
	Total time spent by all maps waiting after reserving slots (ms)	0	0	0
	Launch map tasks	0	0	1
	Data-local map tasks	0	0	1
	SLOTS_MILLIS_REDUCE	0	0	9178
File output format counters	Bytes written	0	1609	1609
	FILE_BYTES_READ	0	2 551 107	2 551 107

Files of different sizes are executed on three different mobile devices to compute the resources consumed (battery and CPU consumption, which are currently available in the device) by the mobile device for each file (Figs. S4–S6).

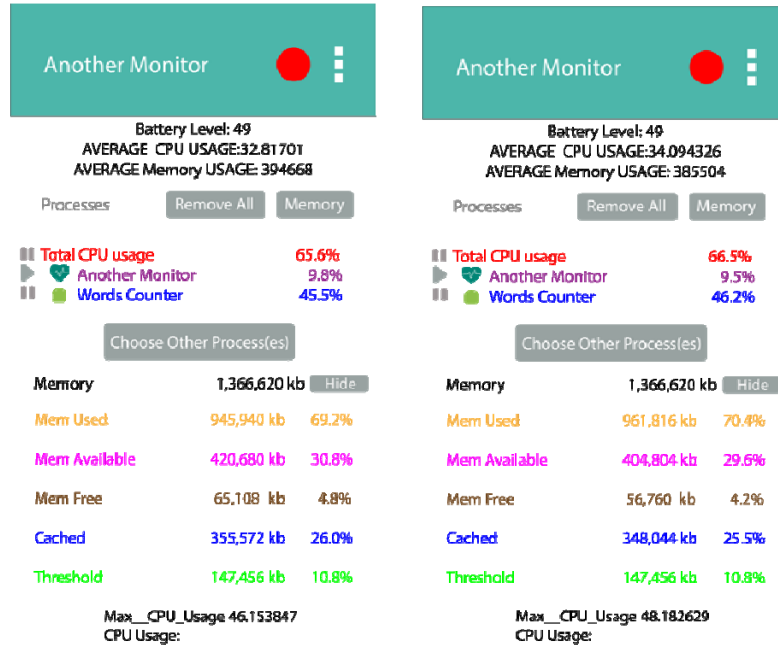


Fig. S4 Resource consumption on mobile device D1 (Galaxy Grand Prime)

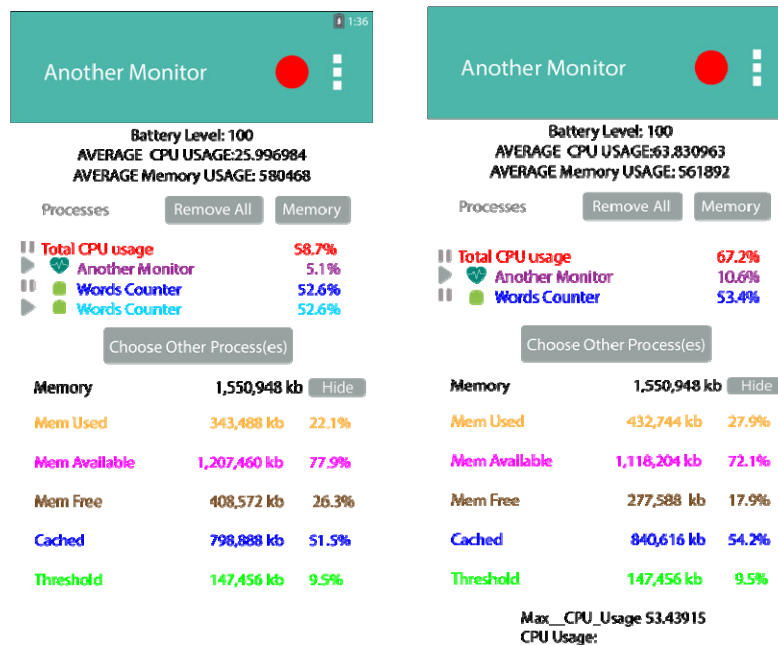


Fig. S5 Resource consumption on mobile device D2 (Google Pixel 2)

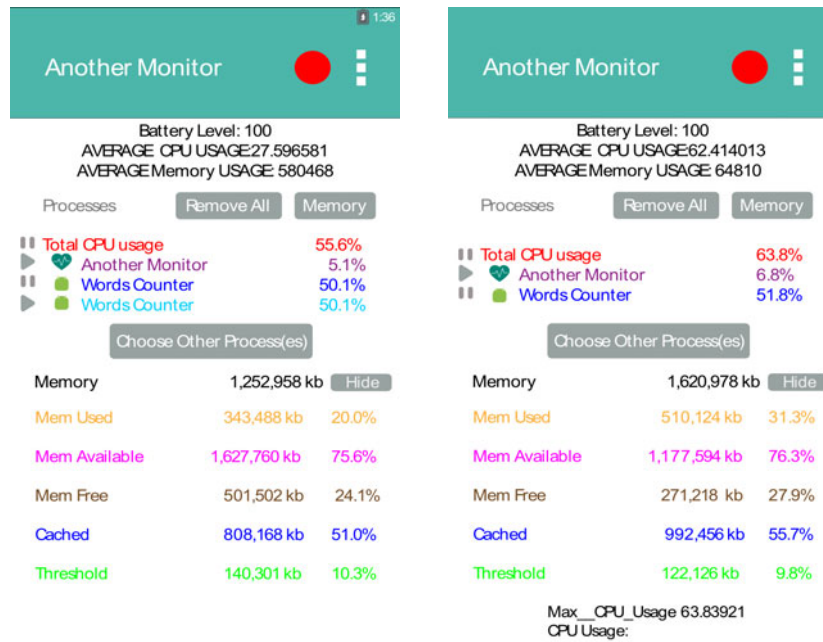


Fig. S6 Resource consumption on mobile device D3 (Google Pixel 3)