

Usage of the measurement script and wrapper application for YouTube Simulation

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1 Quickstart

To start a run with minimal settings, the following settings have to be adapted in the `default.config` file:

Listing 1: Quickstart Configuration

```
devices=[Your],[devices],[as],[a],[list]
measurement_site=[Your measurement site name]
interface=[Your network interface (eth0)]
```

The following command will start the measurement:

```
sudo python3 Phone_enhanced.py
```

There are a number of cases where you have to make some more detailed adjustments. These are:

- You are using a Nexus 6P
- Your device displays issues when the adb server is restarted
- The default sockets are not available
- Your Phone discharges completely while performing the measurements

In those cases, please refer to the respective sections of this document.

2 Testbed Setup

TODO

3 Configuration File

Listing 2 is the content of the default configuration file, deployed as `default.config`.

Listing 2: Default Configuration

```
[GENERAL]
devices=HT69V0203566
measurement_site=Wuerzburg
schedule_directory=Scenarios
video_list=videos.txt

[POWER]
battery_threshold=30
sleep_time=20
alternate_phones=false

[NETWORK]
interface=eth0
command_socket=25519
data_socket=25506
```

The following section will go over each line in detail.

3.1 devices

Comma-separated list of the adb ID's for each phone used in the measurement.

Type: String

3.2 measurement_site

Name of the measurement site the configuration file is located at (i.e. *Paris*, *Wuerzburg*). This will be the prefix for most parts of the output directory structure as well as all output files.

Type: String

3.3 schedule_directory

Directory containing scenario files for the measurements. These will be applied in alphabetical order.

Type: String

3.4 `video_list`

File containing the videos to be used in the measurement. Each line should contain exactly one video ID, and nothing else.

Type: String

3.5 `battery_threshold`

Percentage value of the battery charge at which the script should rotate to the next phone, or delay the start of the next video, should only one phone be in use. Setting this too low may cause the measurement to interrupt.

Type: Integer

3.6 `sleep_time`

Number of minutes the start of the next video should be delayed during low battery state, when only one device is in use.

Type: Integer

3.7 `alternate_phones`

Set this to `true` if you want to switch to the next phone after each video, instead of using the battery threshold.

Type: Boolean

3.8 `interface`

Interface that connects the PC to the network. Used in the `tcpdump` command when recording the traffic to the device.

Type: String

3.9 `command_socket`

Port to be used for the control connection to the wrapper. Should this port be unavailable for some reason, change this.

Type: Integer

3.10 data_socket

See `command_socket`.

Type: Integer

At the current time, most values are NOT checked for legality, i.e. port numbers >65535, or directory names containing illegal characters. Therefore the user has to take care himself that these values are within sensible parameters.

4 Parameters

To control and fine tune the behaviour of the script, a range of parameters can be added for each launch. All of these parameters are optional, and have default values.

Listing 3: Available parameters

```
--config CONFIG_FILE, -c CONFIG_FILE
-i ITERATIONS, --iterations ITERATIONS
-li LAST_ITERATION, --last-iteration LAST_ITERATION
--nexus
--grepable-log, -gl
--no-wrapper, -nw
--no-reboot, -nr
--logfile, -l LOGFILE
-vv
-v
-q
-qq
-qqq
```

4.1 --config, -c

Relative path to the configuration file to be used. See section 3 for more information on its structure and contents.

Default: `default.config`

4.2 --iterations, -i

Number of times each video/scenario combination should be performed. Iterations are enumerated and labelled in the output files.

Default: 1

4.3 `--last-iteration, -li`

Number of the iteration to start with. Useful for resuming interrupted measurement sessions.

Default: 1

4.4 `--nexus`

Needs to be added when measurement is performed with a Nexus P6. This switch enables an additional command after unlocking the phone, to make sure the lockscreen is passed.

4.5 `--grepable-log, -gl`

Adds an additional logfile, that contains all relevant events that occur during measurement in an easily grepable format.

4.6 `--no-wrapper, -nw`

Disables the automatic start of the wrapper app. The wrapper then has to be started manually. Used for debugging.

4.7 `--no-reboot, -nr`

Some computer/phone combinations seem to create issues when repeatedly rebooting the adb server, evident in the device being shown as offline. This switch disables the restart and circumvents this issue.

4.8 `--logfile, -l`

Enables file output for the operations log and specifies the path to the file. Without this, the log is only printed to stdout.

4.9 `-vv, -v, -q, -qq, -qqq`

Changes verbosity of the logging output, from most verbose to most quiet.

Parameter	Level
<code>-vv</code>	Verbose
<code>-v</code>	Debug
None	Info
<code>-q</code>	Warning
<code>-qq</code>	Error
<code>-qqq</code>	Critical

5 Schedule Files

TODO