tuptime

Christian Külker

2024-03-11

Contents

1 Introduction

Tuptime is a software tool designed for reporting both historical and statistical real-time operating data of a system, maintaining this information across restarts. It offers a similar functionality to the 'uptime' command, but provides a more comprehensive output. The tool summarizes both uptime and downtime.

Tuptime operates without requiring daemon processes. It executes only during system startup and shutdown processes initiated by the init manager. To address unexpected shutdowns, such as power failures, the tool includes a cron job and a timer unit that periodically update the records. System administrators can configure the update interval based on their specific system requirements.

The tool is developed in Python, utilizing commonly used modules and aiming for minimal dependency, rapid execution, and ease of understanding and modification for specific use cases.

Data is stored in a SQLite database, allowing access and utilization by other software. The database specifications are detailed in tuptime-manual.txt. Tuptime offers the functionality to output data in various formats, including seconds, epoch time, and CSV, facilitating integration with other commands.

Tuptime's primary function is to track system startups and shutdowns, presenting this information in a user-friendly format. It does not include features like email alerts for milestones or limitations on record history. The tool is also designed to avoid incorrect logging of false startups, a common issue in scenarios like NTP adjustments, virtualized environments, high-load servers, or clock resynchronization after suspend and resume cycles.

2   Installation

To install use this command

```
aptitude install tupdime
```

Package files

```
 1  /usr/share/doc/tuptime/tuptime-manual.txt.gz
 2  /etc/cron.d/tuptime
 3  /usr/share/doc/tuptime/changelog.gz
 4  /usr/bin/tuptime
 5  /usr/share/man/man1/tuptime.1.gz
 6  /usr/share/doc/tuptime/copyright
 7  /usr/share/doc/tuptime
 8  /lib/systemd/system/tuptime-sync.service
 9  /lib/systemd/system/tuptime.service
10  /etc/init.d/tuptime
11  /lib/systemd/system/tuptime-sync.timer
```

3   Usage

Example 1: Default Output

Command to display default output:

```
# Without data
System startups:        1  since  01:08:12 PM 03/11/2024
System shutdowns:       0 ok  +  0 bad
System life:            21m 54s

Longest uptime:         21m 54s  from  01:08:12 PM 03/11/2024
Average uptime:         21m 54s
System uptime:          100.0%  =  21m 54s

Longest downtime:       0s
Average downtime:       0s
System downtime:        0.0%  =  0s

Current uptime:         21m 54s  since  01:08:12 PM 03/11/2024
```

This output is right after installation, so basically it shows no data.

```
# With one reboot
System startups:        2  since  01:08:12 PM 03/11/2024
System shutdowns:       1 ok  +  0 bad
System life:            1h 11m 42s

Longest uptime:         1h 10m 12s  from  01:08:12 PM 03/11/2024
Average uptime:         35m 36s
System uptime:          99.33%  =  1h 11m 13s

Longest downtime:       29s  from  02:18:24 PM 03/11/2024
Average downtime:       29s
System downtime:        0.67%  =  29s

Current uptime:         1m 1s  since  02:18:53 PM 03/11/2024
```

Example 2: Tabular Output

Command to display output in table format:

```
1  # Without data
2  tuptime -t
3  No.             Startup T.   Uptime   Shutdown T.   End   Downtime
4
5    1   01:08:12 PM 03/11/2024   23m 57s
6
7  # With 1 reboot
```

```
 8   tuptime -t
 9     1    01:08:12 PM 03/11/2024    1h 10m 12s    02:18:24 PM 03/11/2024    OK
             29s
10     2    02:18:53 PM 03/11/2024         2m 5s
```

Example 3: List Output

Command to display output in list format:

```
# Without data
tuptime -l
Startup:  1  at  01:08:12 PM 03/11/2024
Uptime:   24m 3s

# With one reboot
Startup:  1  at  01:08:12 PM 03/11/2024
Uptime:   1h 10m 12s
Shutdown: OK  at  02:18:24 PM 03/11/2024
Downtime: 29s

Startup:  2  at  02:18:53 PM 03/11/2024
Uptime:   2m 36s
```

Example 4: Including Kernel Information

Command to include kernel information in the output:

```
# Without data
tuptime -k
System startups:    1  since  01:08:12 PM 03/11/2024
System shutdowns:   0 ok  +  0 bad
System life:        24m 7s
System kernels:     1

Longest uptime:      24m 7s  from  01:08:12 PM 03/11/2024
     ...kernel:       Linux-6.1.0-18-amd64-x86_64-with-glibc2.36
Average uptime:      24m 7s
System uptime:       100.0%  =  24m 7s

Longest downtime:     0s
     ...kernel:       None
Average downtime:     0s
System downtime:      0.0%  =  0s

Current uptime:       24m 7s  since  01:08:12 PM 03/11/2024
```

```
   ...kernel:       Linux-6.1.0-18-amd64-x86_64-with-glibc2.36
```

Example 5: CSV Format Report

Command to output report in CSV format:

```
# Without data
tuptime --csv
INFO:Version = 5.2.2
INFO:Arguments = {'at': None, 'bootid': False, 'csv': True, 'dtm_format':
↪   \
'%X %x', 'dec': 2, 'exclude': None, 'decp': None, 'db_file': \
'/var/lib/tuptime/tuptime.db', 'endst': 0, 'invert': False, 'kernel':
↪   False, \
'list': False, 'update': True, 'order': False, 'power': False,
↪   'percentile': \
None, 'quiet': False, 'reverse': False, 'seconds': True, 'since': None, \
'table': False, 'tat': None, 'ts': None, 'tu': None, 'until': None, \
'verbose': True, 'silent': False}
INFO:System = Linux
INFO:Python = 3.11.2
INFO:Current locale = ('en_US', 'UTF-8')
INFO:Sys values = {'bootid': '24446bec-781b-4803-8b5d-712ae0b943a2', \
'btime': 1710158892, 'uptime': 3799, 'rntime': 3799, 'slptime': 0, \
'offbtime': None, 'downtime': None, 'kernel': \
'Linux-6.1.0-18-amd64-x86_64-with-glibc2.36'}
INFO:Execution user = 0
INFO:DB file exists = /var/lib/tuptime/tuptime.db
INFO:Getting DB connection
DEBUG:BEGIN deferred
DEBUG:PRAGMA user_version
INFO:DB user_version: 5
DEBUG:select rowid, bootid, btime, uptime, endst from tuptime where \
rowid = (select max(rowid) from tuptime)
INFO:Last DB values = {'rowid': 1, 'bootid': \
'24446bec-781b-4803-8b5d-712ae0b943a2', 'btime': 1710158892, 'uptime':
↪   3710, \
'endst': 0, 'buptime': 1710162602}
INFO:System restarted = False from bootid
INFO:Drift over btime = 0
DEBUG:update tuptime set uptime =3799, rntime =3799, slptime =0, endst =0,
↪   \
kernel ='Linux-6.1.0-18-amd64-x86_64-with-glibc2.36' where rowid =1
```

```
DEBUG:COMMIT
INFO:DB info = update ok
DEBUG:select rowid as startup, * from tuptime
INFO:Refresh last row values = {'startup': 1, 'bootid': \
'24446bec-781b-4803-8b5d-712ae0b943a2', 'btime': 1710158892, 'uptime':
↪   3799, \
'rntime': 3799, 'slptime': 0, 'offbtime': None, 'endst': 0, 'downtime':
↪   None, \
'kernel': 'Linux-6.1.0-18-amd64-x86_64-with-glibc2.36'}
"System startups","1","since","1710158892"
"System shutdowns","0","ok","+","0","bad"
"System life","3799"
"Longest uptime","3799","from","1710158892"
"Average uptime","3799"
"System uptime","100.0%","=","3799"
"Longest downtime","0"
"Average downtime","0"
"System downtime","0.0%","=","0"
"Current uptime","3799","since","1710158892"
```

Example 6: Seconds and Epoch Time Format

Change default human readable date-time/time-stamp style and print times in seconds and date-times in epoch.

```
# Without data
tuptime -s
System startups:      1  since  1710158892
System shutdowns:     0 ok  +  0 bad
System life:          4030

Longest uptime:       4030  from  1710158892
Average uptime:       4030
System uptime:        100.0%  =  4030

Longest downtime:      0
Average downtime:      0
System downtime:       0.0%  =  0

Current uptime:       4030  since  1710158892
```

Example 7: Custom Date-Time/Timestamp Format

Change the date-time/time-stamp format. By default the output use the configured sys-

tem locales.

```
# Without data
tuptime -d '%H:%M:%S %m-%d-%Y'
System startups:      1  since  13:08:12 03-11-2024
System shutdowns:     0 ok  +  0 bad
System life:          1h 8m 53s

Longest uptime:       1h 8m 53s  from  13:08:12 03-11-2024
Average uptime:       1h 8m 53s
System uptime:        100.0%  =  1h 8m 53s

Longest downtime:     0s
Average downtime:     0s
System downtime:      0.0%  =  0s

Current uptime:       1h 8m 53s  since  13:08:12 03-11-2024
```

Example 8: Reporting Since a Past Point in Time

Command to report since a specified past time in epoch seconds:

```
# Without data
tuptime --tsince -31557600
System startups:      1  since  08:17:42 AM 03/12/2023
System shutdowns:     0 ok  +  0 bad
System life:          1h 9m 30s

Longest uptime:       1h 9m 30s  from  01:08:12 PM 03/11/2024
Average uptime:       1h 9m 30s
System uptime:        100.0%  =  1h 9m 30s

Longest downtime:     0s
Average downtime:     0s
System downtime:      0.0%  =  0s

Current uptime:       1h 9m 30s  since  01:08:12 PM 03/11/2024
```

4   Links

- Source https://github.com/rfmoz/tuptime

5   Alternatives

- journalctl –list-boots
- downtimed
- lastwake
- uptimed

6   History

Version	Date	Notes
0.1.0	2024-03-11	Initial release

7   Disclaimer of Warranty

THERE IS NO WARRANTY FOR THIS INFORMATION, DOCUMENTS AND PROGRAMS, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE INFORMATION, DOCUMENT OR THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE INFORMATION, DOCUMENTS AND PROGRAMS IS WITH YOU. SHOULD THE INFORMATION, DOCUMENTS OR PROGRAMS PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

8   Limitation of Liability

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE INFORMATION, DOCUMENTS OR PROGRAMS AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE INFORMATION, DOCUMENTS OR PROGRAMS (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE INFORMATION, DOCUMENTS OR PROGRAMS TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.