

## NAME

mrtimfix - fix Oracle Database bugs in timing values

## SYNOPSIS

```
mrtimfix [ --all ] [ --dbcalls ] [ --help or -? ] [ --initrc ] [ --license ] [ --listrc ] [ --man ] [ --oscalls ] [
--pef ] [ --pic ] [ --rc=file ] [ --rpc ] [ --show=n ] [ --stderr ] [ --stdout ] [ --summary ] [ --sys ] [
--syscalls ] [ --verify ] [ --verbose=level ] [ --version ] [ --waits ] [ file ]
```

## DESCRIPTION

**mrtimfix** copies Oracle extended SQL trace data from the named *file* (or the standard input if the *file* argument is omitted) to standard output, converting Oracle time and duration values (*tim*, *e*, and *ela* values) to real microsecond values for the options specified on the command line. If you specify no options, then **mrtimfix** copies its input to STDOUT. If it finds any evidence of time-related bugs in the trace data, then it will exit with a value of 1; otherwise it will exit with a value of 0.

On some Oracle Database ports, the Oracle kernel computes the timing values that it writes into its trace files by converting nanosecond timer information into microseconds by executing a `ns>>10` operation (a 10-bit shift right of the nanosecond value). This is a computationally inexpensive way to approximate dividing by 1,000, but the fact is, it isn't dividing by 1,000; it's dividing by 1,024. On the ports where Oracle does this, the reported times and durations are contracted by a factor of 2.4%. It's not a big problem in many cases, because in most circumstances, you're more concerned about relative times and durations than you are about actual times and durations. But in some circumstances, the error matters. For example, if you have a tool that converts times expressed in microseconds since the Unix Epoch (1970-01-01T00:00:00.000000Z) into human-readable form, you won't be able to use such a tool upon Oracle *tim* values until you scale them first by 2.4%. For example:

```

                                Actual time (T): 2011-02-04T12:00:00.000000Z
      T in microseconds since Unix Epoch: 1296820800000000
Oracle tim value generated at time T (tim): 1266426562500000
      Time at tim microseconds past Epoch: 2010-02-17T17:09:22.500000Z
                                tim * 1.024: 1296820800000000
```

Even more important is Oracle bug 7522002, introduced in 11gR1, in which apparently some Oracle kernel developers decided to convert nanosecond time values into microseconds for WAIT lines using `ms=ns/1,000`, but continued to convert nanosecond time values into microseconds for PARSE, EXEC, and FETCH lines using `ms=ns>>10`. The result is trace files in which the *tim* values for WAIT lines appear in a more recent era than the *tim* values for PARSE, EXEC, and FETCH lines. This bug makes trace files incomprehensible to any person or software tool that pays attention to clock times of reported calls. You can repair the damage caused by this bug using the following **mrtimfix** command:

```
mrtimfix --dbcalls ora_1492.trc
```

The tool processes uncompressed streams and can automatically uncompress files compressed properly with **gzip**, **bzip2**, or **zip**.

## OPTIONS

### --all

Fix all *tim*, *e*, and *ela* values in the file. Shorthand for **--pef --pic --rpc --sys**.

### --dbcalls

Fix only the *tim* and *e* values on database call lines. Shorthand for **--pef --pic --rpc**.

### --help or -?

Display usage information and exit.

### --initrc

Use **--noinitrc** to prevent **mrtimfix** from opening the default rc files in your home directory or current working directory (see *ENVIRONMENT*). The default value is **--initrc**. Use **--noinitrc** if you don't want to run the default rc files.

**--license**

Display license content and exit.

**--listrc**

List rc filenames and exit. The default value is **--nolistrc**.

**--man**

Display the manual page and exit.

**--oscalls**

**--oscalls** is a synonym for **--sys**.

**--pef**

Fix *tim* and *e* values on lines beginning with PARSE, EXEC, FETCH, CLOSE, UNMAP, SORT UNMAP, etc. Default value is **--nopef**.

**--pic**

Fix *tim* values on PARSING IN CURSOR lines. Default value is **--nopic**.

**--rc=file**

Process command line options listed in *file*. For details about how rcfiles are processed, see the **mrskew** manual page.

**--rpc**

Fix *e* values on RPC lines. Default value is **--norpc**.

**--show=n**

Show only the first *n* occurrences of each type of warning. The default is **--show=5**. Use **--show=0** to show all warnings.

**--stderr**

Warn about *tim* values that emit out of order to STDERR. Such warnings indicate that your **mrtimfix** output isn't going to be usable. The default is **--stderr**. Use **--nostderr** to suppress.

**--stdout**

Write regular standard output to STDOUT. Default value is **--stdout**. Use **--nostdout** to suppress.

**--summary**

Write a warning summary to STDERR. Default value is **--summary**. Use **--nosummary** to suppress.

**--sys**

Fix *tim* and *ela* values on WAIT lines. Default value is **--nosys**.

**--syscalls**

**--syscalls** is a synonym for **--sys**.

**--verify**

Show warnings only (STDERR), without generating output to STDOUT. Shorthand for **--stderr** **--nostdout**.

**--verbose=level**

Print more or less information about option values. The default value is **--verbose=0**, which means to print nothing. To print options values, use **--verbose** or **--verbose=1**.

**--version**

Display the program version number and exit.

**--waits**

**--waits** is a synonym for **--sys**.

## .RC FILES

A .rc file allows you to change the default behavior of a Method R Tools program. For example:

```
$ cat ~/.mrtimfix.rc
--verify
```

See the **mrskew** manual page for details.

## EXAMPLES

The following command will tell you (on STDERR) whether the *tim* values in a trace file are in the right order:

```
mrtimfix --verify ora_1492.trc
```

The following command will scale time and duration values in a trace files by a factor of 1.024, except for those times and durations on WAIT lines. In other words, it will undo the errors introduced by Oracle bug 7522002:

```
mrtimfix --dbcalls ora_1492.trc > ora_1492-fix.trc
```

This command will scale all time and duration values in a trace file by a factor of 1.024 (which should be unnecessary in Oracle versions 11.2 and beyond):

```
mrtimfix --all ora_1492.trc > ora_1492-fix.trc
```

## DIAGNOSTICS

Exit status is 0 on successful completion, and >0 if an error or warning occurs.

tim not changing (requires Oracle Database patch)

Oracle Database bugs like 7561762 can cause erroneous tim values to be emitted into the trace data, resulting in dbcall duration values of **e=0**. Unfortunately, this is an unfixable problem, short of installing an Oracle Database patch.

tim values out of order (possibly fixable with mrtimfix)

Oracle Database bug 7522002 is fixable with the **mrtimfix** command shown in *EXAMPLES*.

## ENVIRONMENT

### .mrtimfix.rc

By default, **mrtimfix** will execute the options listed in the following files, in the following order, before the options you actually list on your command line:

```
~/.mrtimfix.rc
./mrtimfix.rc
```

If you do not wish to execute the options in these files, then specify **--noinitrc** on the command line.

**MRTTOOLS\_RCPATH**

See the **mrskew** manual page for details.

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**SUPPORT**

mrtimfix version 8.0.5.0

Contact <support@method-r.com> at Method R Corporation for support, or visit  
<<http://method-r.com>> for more information.

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