

# GFIX - Firebird Administration

GFIX is Firebird's command line tool for administration issues like data repair, sweeping, etc.

## General Syntax

```
gfix [options] -user <username> -password <password> <database> [options]
```

## Database Shutdown

When a database has been shut down, only SYSDBA and the database owner are able to connect to the database in order to perform administrative tasks.

## Options

|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -at[tach]<br><seconds>                                                             | Used with the -shut option. Waits <seconds> seconds for all current connections to end. If after <seconds> seconds there are still connections open, the shutdown will be cancelled and return an error.                                                                                                                                                                                                                                                                                                                                      |
| -f[orce]<br><seconds>                                                              | Used with the -shut option. Waits <seconds> seconds for all connections and transactions to end. After this time, all connections and transactions are cancelled and the database is shut down. Use with caution.                                                                                                                                                                                                                                                                                                                             |
| -o[nline]                                                                          | If a -shut operation is pending, it is cancelled. Otherwise, takes a database back online                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| -sh[ut]                                                                            | Shut down database. Must be used together with -attach, -force or -tran                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| -shut {normal   multi   single   full}<br>-online {normal   multi   single   full} | Firebird 2.0 and later: New shutdown modes:<br>NORMAL: Database is active and online<br>MULTI: Only connection from SYSDBA and the Database Owner will be allowed (compatible mode with Firebird 1.0/1.5)<br>SINGLE: Only one SYSDBA connection will be allowed<br>FULL: Exclusive shutdown: Database is completely offline, no connections will be allowed (it is now possible to access the database file safely on a file basis, e.g. for backups)<br>Use -shut to "go down" the scale of shutting down and -online to "go up" that scale. |
| -tr[an]<br><seconds>                                                               | Used with the -shut option. Waits <seconds> seconds for all running transactions to end. If after <seconds> seconds there are still running transactions, the shutdown will be cancelled.                                                                                                                                                                                                                                                                                                                                                     |

## Examples

*Shut down database, wait 60 seconds until all connections are closed*

```
gfix -user SYSDBA -password "masterkey" dbserver:/db/mydb.fdb -shut -attach 60
```

Note that GFIX will terminate with an error if there are still connections open after 60 seconds.

*Shut down database, force shutdown after 60 seconds*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -shut -force 60
```

*Shut down database, force shutdown NOW*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -shut -force 0
```

*Put database online again*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -online
```

## Examples for Firebird 2.0

*Shut down database to single user mode*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -shut single -force 60
```

*Put database online again*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -online normal
```

*Shut down database, force shutdown NOW, allow no subsequent connections, even from SYSDBA or Owner*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -shut full -force 0
```

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## Database Repair, Sweeping

### Options

|                     |                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------|
| -f[ull]             | Use with the -v option. Checks all records and pages and releases unassigned record fragments    |
| -h[ousekeeping] 0   | Switch off automatic sweeping                                                                    |
| -h[ousekeeping] <n> | Set Sweep Interval to <n> transactions (default is 20000)                                        |
| -i[gnore]           | Ignores checksum errors during a validate or sweep                                               |
| -m[end]             | Marks corrupt records as unavailable so they are skipped on a subsequent backup                  |
| -n[o_update]        | Use with the -v option. Checks all records and pages and reports errors but does not repair them |

|             |                                                                                 |
|-------------|---------------------------------------------------------------------------------|
| -sweep      | Forces an immediate sweep                                                       |
| -v[alidate] | Check database for validity. At the same time, errors are reported and repaired |

## Examples

### *Validate Database*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -v -f
```

### *Sweep Database now*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -sweep
```

### *Set Sweep Interval to 50000 transactions*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -h 50000
```

### *Switch off Automatic Sweeping*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -h 0
```

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## Misc

## Options

|                    |                                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------|
| -b[uffers] <pages> | Default cache buffers for the database will be set to <pages> pages                                       |
| -c[ommit] <id>     | Commits limbo transaction specified by the given <id>                                                     |
| -c[ommit] all      | Commits all limbo transactions                                                                            |
| -l[ist]            | Display IDs of all limbo transactions and what would happen to each transaction if you would use -t on it |
| -mo[de] read_write | Set mode of database to read/write (default). Requires exclusive access to database (shutdown)            |
| -mo[de] read_only  | Set mode of database to read-only. Requires exclusive access to database (shutdown)                       |
| -na[ssword]        | Database password                                                                                         |

|                   |                                                                                 |
|-------------------|---------------------------------------------------------------------------------|
| <password>        |                                                                                 |
| -p[rompt]         | Use with -l. Prompts for action.                                                |
| -r[ollback] <id>  | Rolls back limbo transaction specified by the given <id>                        |
| -r[ollback] all   | Rolls back all limbo transactions                                               |
| -s[ql_dialect] 1  | Sets SQL dialect 1 for the database                                             |
| -s[ql_dialect] 3  | Sets SQL dialect 3 for the database                                             |
| -t[wo_phase] <id> | Performs automated two-phase recovery for limbo transaction with the given <id> |
| -t[wo_phase] all  | Performs automated two-phase recovery for all limbo transactions                |
| -user <name>      | Database username                                                               |
| -w[rite] sync     | Enables Forced Writes                                                           |
| -w[rite] async    | Disabled Forced Writes                                                          |
| -z                | Show GFIX and server version                                                    |

## Examples

*Set Database to Read-Only*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -shut -attach 60
```

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -shut -force 0
```

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -mode read_only
```

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -online
```

*Set Database to SQL Dialect 3*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -sql_dialect 3
```

*Enable Forced Writes*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -write sync
```

*Disable Forced Writes*

```
gfix -user SYSDBA -password masterkey dbserver:/db/mydb.fdb -write async
```

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Stefan Heymann, last change 2007-09-20

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