TIBCO Foresight® Transaction Insight®

Using TIUtilities

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Contents

Document Purpose 3
Audience 3
TIUtilities Capabilities 3
Installing TIUtilities 3
Command Line 4
Command Line Examples 8
Database Information Security 8
Avoiding Conflicts 9
TIUtility Interruptions 10
Scheduling Updates of Summary Statistics 10
Problems Starting TIUtilities 13
Return Codes and Troubleshooting 13
    Seeing Return Codes 14
    Virus Checking and TIBCO Foresight Products 14

Document Purpose

This document describes how to use **TIUtilities** with TIBCO Foresight® Transaction Insight®.

Audience

This guide is for technical staff who configure and maintain Transaction Insight®.

TIUtilities Capabilities

TIUtilities carries out any or all of these processes for Transaction Insight (TI):

- Populating summarized statistical tables.
- Creating new tasks.
- Generating filter values and automatically assigning them to partners.

Installing TIUtilities

Windows

TIUtilities.exe is installed in **TransactionInsight's <***version***> \ Environments \ <***environment***> \ Bin** directory. It is automatically installed when executing the installer

UNIX

TIUtilities is installed in Transaction Insight's **bin** directory when you extract the TI archive.

Command Line

TIUtilities runs on Windows and UNIX platforms. It requires TILicense.ini in TI's Bin directory.

Command Format

```
TIUtilities -dbtype "<oracle|odbc>" -db "<connection string>" [-e]
[-f] [-s] [-sd] [-se] [-t] [-c "<confidential identifiers file>"]
[-url "<url>"] [-smtp "<smtp server address>"] [-from "<from
address>"] [-tl <0-4>] [-td "<trace dir>"] [-tc] [-monitor <0-n>]
[-encryptini <ini filename>]
```

Use double-quotes around values containing spaces or special characters.

UNIX setup

Set up the `LIBPATH` environment variable to point to the location of Oracle Instant Client.

```
export LIBPATH:/home/oracle/instantclient_12_1
```

Set up the `FSTIUTILITIESINI` environment variable to point to TI's **bin** directory.

```
export FSTIUTILITIESINI=/home/ti/TransactionInsight/5.0/bin
```

You can do this in the profile so they are always defined, or set them in the Automator startup script or in a custom script created to run TIUtilities.

If you define LIBPATH in the Automator startup script, remember to include all directories that need it, separated by colons. This example points to the bin directories of Automator, TIBCO Foresight® Instream®, and Oracle Instant Client.

```
export LIBPATH=/home/ti/foresight/ForesightAutomator/7.1.0/bin:/home/ti/
foresight/instream/bin:/home/oracle/instantclient_12_1:$LIBPATH
```

Process Flags

If none of these are set, it is equivalent to setting -f -s -t. If one process flag is included on the command line, then include all process flags that are to run.

Suggestion: Use -se, and -t periodically during the day to update the main Statistics pages, update filters, and assign tasks. Use -f separately when the database is not very busy.

Flag	Explanation
-c	Load confidential identifiers into the database. The path and filename follow, in quotation marks.
-f	Generate dynamic partner filters (see the TI Admin Guide for details). If you have large volumes of data being processed in a time frame, consider limiting this to once or twice a day, at a time when the database is not being used heavily. See `TIUtilities.exe -ini "C:\inifiles\TIUtilities.ini" -sd` Example 3 on page 8.

Flag	Explanation
-ini	Identify TIUtilities' ini file. Example: `-ini "C:\inifiles\TIUtilities41.ini"`
-s	Update all statistical summary tables. This is equal to using –sd and –se (but not -sw), and is best avoided while heavy volumes of data are being processed.
-sd	Update the summary statistics on the Documents, Document Volumes, and Success Rate pages. If you have heavy volumes being processed, consider limiting this to a few times a day, or to times when the database is not being used heavily. See Example 2 on page 8. These options can be used along with -sd to let you update only part of the summary statistics: --sd_nonTransFilter --sd_multiTransFilter --sd_singleTransFilter Note the two dashes in front of these options. Please see Avoiding Conflicts on page 8.
-se	Update the top error counts on the Errors page. See Example 1 on page 8.
-st	Summarize transactions. Feature is deprecated.
-sw	Summarize warnings. This is necessary if you are using error page filtering. This also causes errors to be summarized (-se). -s does not automatically execute -sw. They are completely independent. **Note:** Using the –sw option for TIUtilities, the savewarnings option for Importer, and setting “IsTop10ErrorTypeSearchOn” to true in Web.config allows you to view the top 10 errors by count and filter them by type or severity via the TI Errors page in TI.
-t	Assign tasks to teams and send the team owner an e-mail. Requires: -url -smtp -from See Example 1.

Other Options:		
Option	**Explanation**	**Example**
-url	"<*url*>" to access the TI web portal. Required if you use -t.	`-url "http://KAVERTEST/TI231Demo//"`
-dbtype	**oracle** or **odbc** – the type of database used by TI. **Required**	`-dbtype odbc`

-db	"<*connection string*>" to access the database. See your database administrator for these settings.
	Required
		Example if DBType is ODBC:
		`-db "DRIVER={SQL Server};SERVER=sql_server; DATABASE=TIDEMO; UID=U234A;PWD=W3342;"`
		Example if DBType is Oracle:
		`-db "DATABASE=oracle_server:1521/or12; UID=TIDEMO;PWD=TIDEMOPASS;"`

-encryptini *ini*	Encrypts database information by modifying the ini file. *ini* specifes the location of your ini file. Please see Database Information Security on page 9.	`-encryptini C:\example\Importer.ini`
-monitor *n*	Writes a record to the TIUtilities log every *n* minutes to verify that TIUtilities is running. **Note:** When set to 0 (the default), this record is not written.	`-monitor 30`
-smtp	"<*smtp server address*>" - the SMTP server that TIUtilities will use to send email notifications. Required if you use -t.	`-smtp mail.foresightcorp.com`
-from	"<*from address*>" for mail sent by TI. Required if you use -t.	`-from "DoNotReply@ourcompany.com"`

Other Options:		
Option	**Explanation**	**Example**
-tl	A number from 0 to 4 that controls the level of trace information generated by TIUtilities: **0** – Off **1** – Errors **2** – Warnings (includes errors) **3** – Informational (includes errors and warnings) **4** – Verbose/Debug (includes errors, warnings, and informational) (default is 1)	`-tl 2`
-td	"<*trace dir*>" specifies the output directory for trace files. Do not include a trailing slash. (defaults to the current directory)	`-td "c:\logs"`
-tc	Send trace messages to the console.	
-?	Display TIUtilities help. Use without other options.	
-v[ersion]	Display the version of TIUtilities. Use without other options.	

Command Line Examples

Example 1: Updating Transmission and Error Statistics and Assigning Tasks

Windows

```
C:\TIBCO\TransactionInsight\5.0\Environments\TIDemo\bin\T
IUtilities.exe -se –t -url "http://ourcompany/TIportal" -
dbtype oracle
-db
"DATABASE=oracle_server:1521/or12;UID=TIDEMO;PWD=TIDEMOPA
SS;"
-smtp "www.ourcompany.com"
-from "doNotReply@ourcompany.com"
```

UNIX

```
/home/ti/TransactionInsight/5.0/bin/TIUtilities -se \
–t -url "http://ourcompany/TIportal" \
-dbtype oracle \
-db "DATABASE=oracle_server:1521/or12;UID=TIDEMO;PWD=TIDEMOPASS;" \
-smtp "www.ourcompany.com" \
-from "doNotReply@ourcompany.com"
```

Example 2: Updating Document Statistics

This updates the Documents, Document Volumes, and Success Rates page, and may be slow when you are processing large amounts of data.

```
TIUtilities.exe -ini "C:\inifiles\TIUtilities.ini" -sd
```

Example 3: Debugging a Problem with Filters

```
TIUtilities.exe -ini "C:\inifiles\TIUtilities.ini" –f –tl 4
–td "c:\program files\logs" -tc
```

This command generates filters (-f) and writes the maximum level of trace information (-tl 4) to a file in c:\program files\logs. It also writes trace information to the console (-tc).

Example 4: No Processing Options Included

```
TIUtilities -ini "C:\inifiles\TIUtilities.ini" –tc –tl 4
```

Since no processing flags (-f, -s, -sd, -se, -t) are included, -f, -s, and -t flags are assumed.

Example 5: UNIX script to run TIUtilities

```
export LIBPATH:/home/oracle/instantclient_12_1
export FSTIUTILITIESINI=/home/ti/foresight/TransactionInsight/5.0/bin/

/home/ti/foresight/TransactionInsight/5.0/bin/TIUtilities \
-s \
-tl 4 \
-ini "/home/ti/foresight/TransactionInsight/5.0/bin/TIUtilities.ini"
```

Database Information Security

To enhance database security, TIUtilities no longer writes database information to log files.

For additional security, you may choose to encrypt database information. To do this, run Importer with the **-encryptini** *ini* option and specify the location of your ini file.

For example:

```
TIUtilities -encryptini C:\example\TIUtilities.ini
```

This causes TIUtilities to access the specified ini file, change the line beginning with "connectstring=" to "connectstring_enc=", and encrypt the remainder of the line.

IMPORTANT: After this change connection information is machine readable only. *Ensure your database connection information is accurate before encrypting it.*

Avoiding Conflicts

It is acceptable to run multiple instances of TIUtilities simultaneously, so long as they are doing separate jobs (-f and -se could be run simultaneously, for example, but never two –sd's).

TIUtilities contains safeguards to keep you from damaging your database by such conflicts. TIUtilities will not start if one of its tasks is specified in an instance of TIUtilities that is already running.

Please check with TIBCO Foresight Technical Support to avoid conflicts.

The sample workflow that installs with TI has set up three instances of TIUtilities:

Every 5 minutes	-t -se
Every 6 hours	-f
Every 12 hours	-sd

Conflicts will result in a "process in progress" exception.

Although TIUtilities keeps the information in the database up-to-date, a desirable thing for users, running it too frequently causes degraded interface response time and perhaps reduced Importer speed. To lighten the load, discuss your TIUtilities strategy with TIBCO Foresight Support when designing your TIUtilities strategy. Be prepared to monitor and adjust it as you gain experience.

TIUtilities Interruptions

Important: Do not run TIUtilities after an abnormal termination until you have run a script that TIBCO Foresight will provide.

If TIUtilities is interrupted while it is running – by having the machine lose power or by having someone stop the program, for example.

If this happens, the log may end with no notice about what happened.

TIUtilities has multiple functions, each isolated from the others. If TIUtilities is stopped or fails during a run, any functions it has already performed will have been committed. The function it is currently working on will be undone.

The next time you run TIUtilities, after you have run the script provided by TIBCO Foresight, it will pick up where it left off.

Scheduling Updates of Summary Statistics

The TIUtilities -sd parameter has options that control what is summarized. You can control the schedule when various data is summarized by running TIUtilities with different options on different schedules.

The TIUtilities **-sd** flag updates all statistics on TI's Documents, Document Volumes, and Success Rate pages.

It has three options to let you control whether to update subsets of these statistics, including:

- summary data that has no transaction filters applied
- summary data that has one transaction filter applied
- summary data that has multiple transaction filters applied

Any of these can be updated by day, week, and/or month, giving us these 9 possible variations:

Description	Command-line parameter	Day	Week	Month
Controls whether to update summary statistics that have no transaction filters applied	--sd_nonTransFilter	1	2	3
Controls whether to update summary statistics that have one transaction filter applied	--sd_singleTransFilter	4	5	6
Controls whether to update summary statistics that have multiple transaction filters applied	--sd_multiTransFilter	7	8	9

The parameters formats are:

--sd_nonTransFilter *sss*
--sd_singleTransFilter *sss*
--sd_multiTransFilter *sss*

Where:

`--` These parameters are preceded by two dashes.

sss The parameters end with a space and then three symbols:

```
--sd_nonTransFilter sss
                    ↑↑↑
                    ①②③
```

① The first symbol specifies how to summarize statistics by day.

② The second specifies how to summarize statistics by week.

③ The third specifies how to summarize statistics by month.

Each symbol is one of these:

+ summarize data including data from this day/week/month

~ summarize data for today, this week, or this month only once when the current period is complete

- don't summarize data by day/week/month

The default is +. The symbols have no spaces between them.

So, for example, --sd_singleTransfilter +~~ running every ten minutes would mean that daily counts would be summarized every ten minutes, but that the current week and current month counts would only be summarized immediately after the current week or current month ended.

Example A

```
TIUtilities -sd --sd_nonTransFilter +--
```

The `--sd_nonTransFilter` affects summarizing of unfiltered data:

The `+` means to summarize by day including today

The first `-` means do not summarize by week

The second `-` means do not summarize by month

Since there is no `--sd_singleTransFilter` or `--sd_multiTransFilter` on the command line, they get the default of +++, meaning they are summarized for all time periods.

Example B

```
TIUtilities -sd --sd_nonTransFilter +++
--sd_multiTransFilter ~~~ --sd_singleTransFilter ~~~
```

The `--sd_nonTransFilter +++` summarizes all unfiltered data for all timeframes.

The `--sd_multiTransFilter ~~~` summarizes all data filtered by multiple transaction filters except for data that came in today (for daily statistics), this week (for weekly statistics), and this month (for monthly statistics).

The `--sd_singleTransFilter ~~~` is similar except it summarizes data filtered by a single transaction filter.

Example C

```
TIUtilities -sd --sd_nonTransFilter +++
--sd_multiTransFilter --- --sd_singleTransFilter ~~~
```

The `--sd_nonTransFilter +++` summarizes all unfiltered data for all timeframes.

The `--sd_multiTransFilter ---` does not summarize any multi-filtered data.

The `--sd_singleTransFilter ~~~` summarizes data filtered by a single transaction filter; this data will be summarized once, right after the period completes: data that came in today (for daily statistics), this week (for weekly statistics), and this month (for monthly statistics).

Restrictions

- The day symbol must be greater than or equal to the week and month symbol:

  `+` is the greatest
  `~` is next greatest
  `-` is last

Example	Right/Wrong	Reason
`--sd_multiTransFilter -~~`	Wrong	Day (-) is not equal to or greater than week and month (~)
`--sd_singleTransFilter ~~~`	Right	Day (~) is equal to week and month (~)
`--sd_nonTransFilter +~+`	Right	Day (+) is equal to or greater than week (~) and month (+)

- The --sd_multiTransFilter day option must be greater than or equal to the --sd_singleTransFilter day option.

Example	Right/Wrong	Reason
`--sd_multiTransFilter ---` `--sd_singleTransFilter +--`	Wrong	`sd_multiTransFilter day` (-) is not equal to or greater than `sd_singleTransFilter` day (+).
`--sd_multiTransFilter +--` `--sd_singleTransFilter ---`	Right	`sd_multiTransFilter day` (+) is greater than `sd_singleTransFilter` day (-).

Problems Starting TIUtilities

The error below is generated if TIUtilities is run without the C++ runtime libraries.

```
<path>\TIUtilities.exe

This application has failed to start because the application configuration is incorrect. Reinstalling the application may fix this problem.
```

If you copy TIUtilities from one machine to another without running the installer you may not have the required runtime libraries. To resolve this, use the installer to install TIUtilities on the target machine.

Return Codes and Troubleshooting

Return Code	Meaning
0	TIUtilities ran successfully.
1	TIUtilities did not run successfully because of problems with the command line parameters.
2	TIUtilities did not run successfully. You should get a specific error message explaining the problem.
3	TIUtilities did not run successfully due to an unknown error. Contact TIBCO Foresight Technical Support.

Database information	Notes
Trace files	Specified by -td command-line parameter. Default is the current directory. To send trace messages to the console, use -tc command-line parameter.
TIBCO Foresight® Studio® Workflow	The TIUtilities component has a LogFileDirectory property to specify the location of the log files. Also, look in the workflow's **Logs** directory.

Seeing Return Codes

To display return codes when you run a script, put this line similar to this in the script right after running the program:

UNIX echo "return code = " $?

Windows @echo [Return Code = %ERRORLEVEL%]

This returns something like: `[Return Code=100]`

Virus Checking and TIBCO Foresight Products

Exclude all TIBCO Foresight workflow subdirectories from virus checking.