The Database Statistics Tool

This tool helps the DBA to detect when the size limit for a storage area is approaching a physical (addressing) limit. The size limits for storage areas are extensively documented in Chapter 3, “OpenEdge RDBMS Limits” of the “OpenEdgeTM Data Management: Database Design” handbook.

The analysis done by the tool provides a conservative view of storage area usage, i.e. there is a built-in safety margin in the reporting. The margin comes from space internal to a storage area that is actually available for the case of deleted and reused record-id’s.

The purpose of this document is to describe the tool, how it is to be run, and what information can be obtained from it. Our intention is to be proactive, and to give more forward-looking information to the DBA managing a production system.

When this tool reports a problem, the next step is to run proutil –C chanalys against the database, in order to find out whether the storage area actually contains enough blocks in the free chain to allow for growth or if, instead, the storage area contains only few free blocks and is really nearing the limit; in the latter case, prompt action to address the problem must be taken as soon as possible [but describing what action should be taken is beyond the scope of this document].

It’s possible to collect data regarding the storage areas of a database in 3 distinct ways:

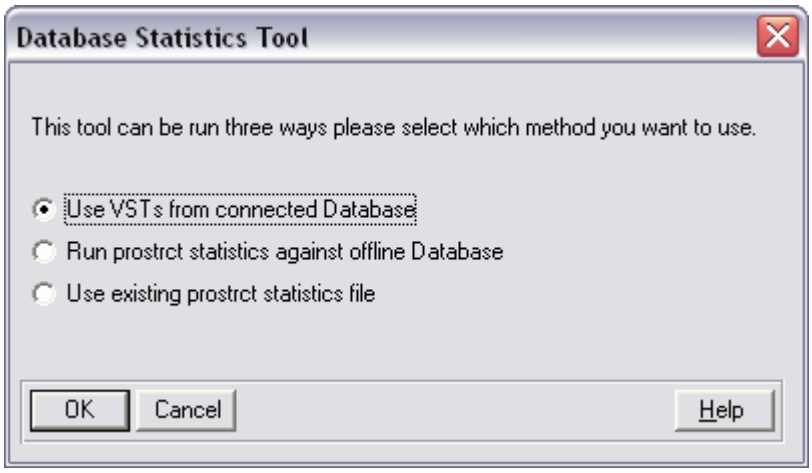
- By collecting the data from the Virtual System Tables [VSTs] of a connected database.
- **From a proenv window**, by running prostrct statistics against an offline database [thus, not against the database(s) against which the current Progress session might be connected]. *Note that prostrct statistics can only be run from a proenv window.*
- By reading a file containing the output from prostrct statistics

A threshold, expressed as a percentage of the maximum limit for a storage area, has to be specified; only areas that are above the threshold will be reported as endangered.

The tool comes in two flavours: interactive and batch. The interactive version can be run on both GUI and ChUI, while the batch version is intended for sole use via the batch commands `bpro` and `mbpro`.

Interactive version of the Tool

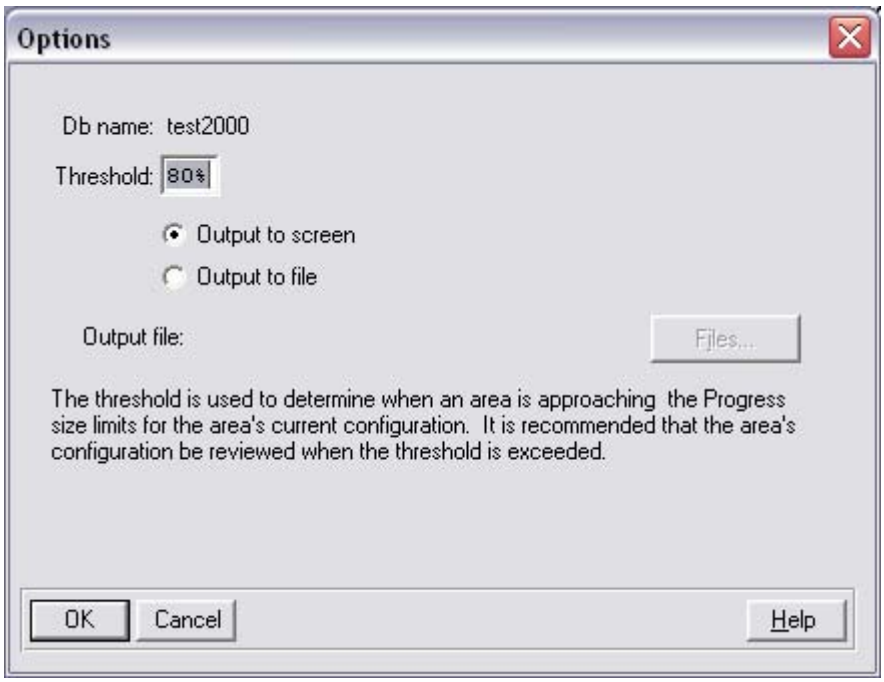
In order to launch the interactive version, just RUN statParse.p. The following dialog box will appear:



This is where the user has to choose in which way the information regarding the database will be collected. If no database is connected to the current session, the first item will be disabled. If several databases are connected, no choice is given, and the statistics are collected for the database corresponding to the DICTDB alias.

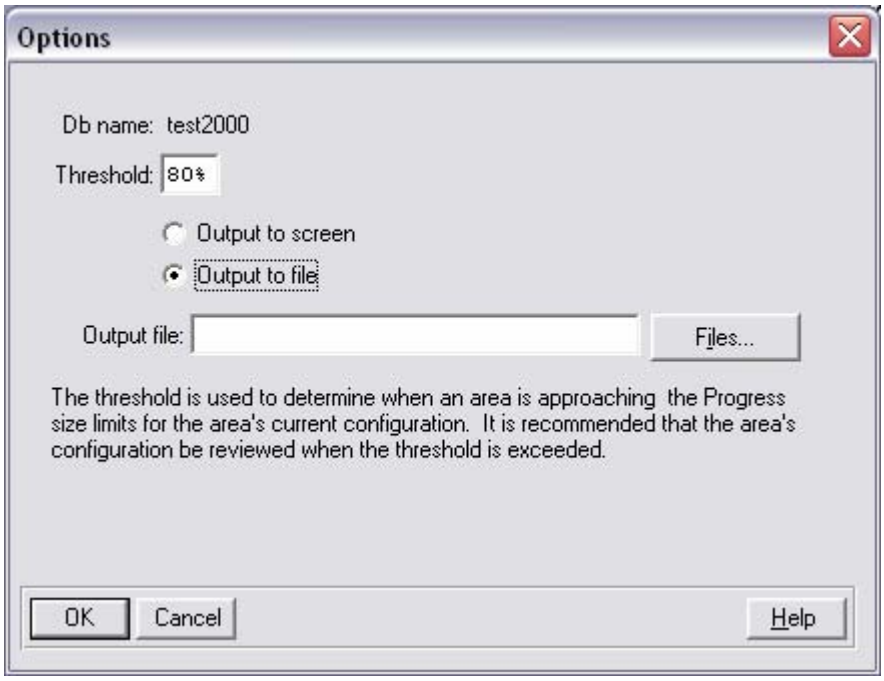
Option: Use VSTs from connected Database

In case the first option is chosen, the following dialog box appears:



The “Db name” field reports the logical database name to which the DICTDB alias points.
The “Threshold” field is for specifying the percentage of the storage area limit above which problems could be reported.

The radio set allows a choice between output to screen, in a browser, or to a file. In case the output goes to a file, the “Output file” field and the “Files” button are enabled as in the following:

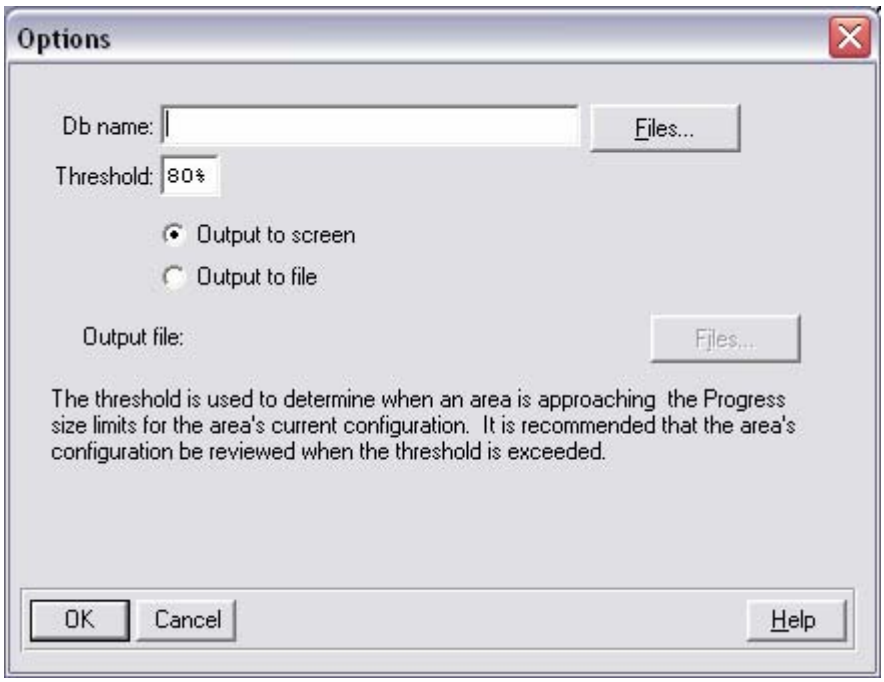


The “Files” button provides the opportunity to select the directory and file name in which the output will have to go.

By clicking on the “Ok” button, the output will go to the desired destination. The “Cancel” button will abort the report. At the moment, the “Help” button does not do anything.

Option: Run prostrct statistics against offline database

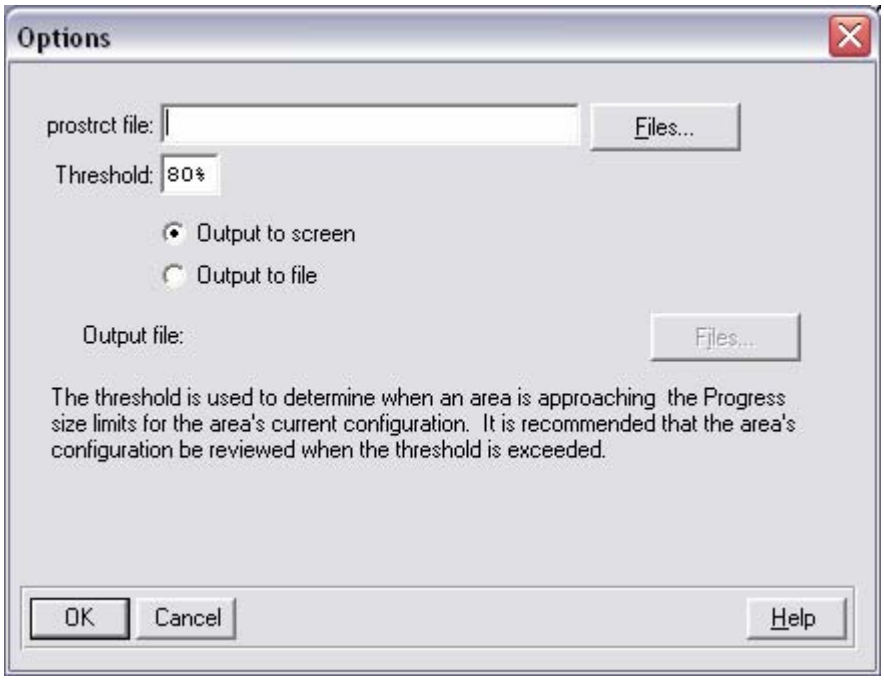
The following is the dialog box that appears once the “Use existing prostrct statistics file” has been chosen:



The “Db name” field expects the physical name of a database. The “Files” button can be selected in order to choose the database via a graphical interface.
The remainder of the form works exactly as with the previous option.

Option: Use existing prostrct statistics file

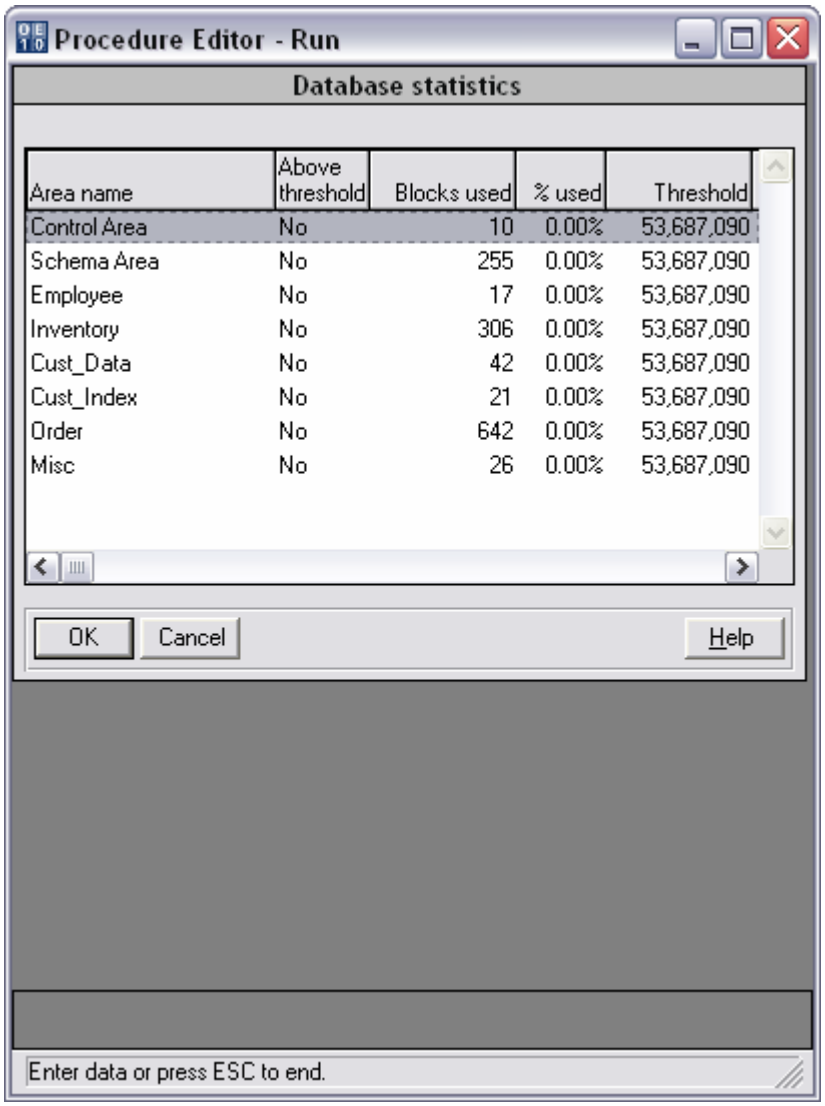
If the “existing prostrct statistics file” option has been chose, the following appears:



The “prostrct file” field accepts the name of an input file previously created by prostrct statistics. The “Files” button can be selected in order to choose such file via a graphical interface.
The remainder of the form works exactly as with the previous option.

Sample output on screen

Here is an example of the output, when directed to screen:



The “Above Threshold” column indicates immediately whether the related storage area is above the given threshold or not. More details are given for each storage area, such as the number of blocks used and the threshold (expressed in database blocks) against which the number of blocks used was compared. The browser can be scrolled horizontally and vertically. Other fields that appear by scrolling horizontally are: the Maximum number of database blocks the storage area can grow up to, and the Maximum size (in Megabytes) for the storage area and the number of Records per Block for the storage area.

Sample output to file

Following is an example produced by sending the output to a file:

```
                       Above                                                 Max area size          Area
Area name              threshold   Blocks used  % used     Threshold    Max blocks   in Megabytes R.p.b. Number
---------------------- --------- ------------- ------- ------------- ------------- -------------- ------ ------
Control Area           No                 10   0.00%    53,687,090    67,108,863        262,144     32      1
Schema Area            No                255   0.00%    53,687,090    67,108,863        262,144     32      6
Employee               No                 17   0.00%    53,687,090    67,108,863        262,144     32      7
Inventory              No                306   0.00%    53,687,090    67,108,863        262,144     32      8
Cust_Data              No                 42   0.00%    53,687,090    67,108,863        262,144     32      9
Cust_Index             No                 21   0.00%    53,687,090    67,108,863        262,144     32     10
Order                  No                642   0.00%    53,687,090    67,108,863        262,144     32     11
Misc                   No                 26   0.00%    53,687,090    67,108,863        262,144     32     12
```

The fields are the same as for the browser, and the same considerations apply.

Batch version of the Tool

The non-interactive version of the tool is intended to be used in conjunction with commands `bpro` and `mbpro` and the –param start up parameter.
The `bpro` or `mbpro` can optionally connect to one or more databases on the command line, and the content of the –param drives the action taken by the tool.

In order to start the tool, run from the command line:

```
mbpro <optionalDbName> -p statParsebatch.p -param "<parameters>"
```

The value passed via -param is expected in the following format:

```
   <Option1>=<Value1>[,<Option2>=<Value2>, ... ,<OptionN>=<ValueN>]
```

Following is a table explaining the various options:

Option	Remarks:
`MODE`	Set to: `VST` in order to collect the db stats from the VSTs of one of the connected databases. The program will fail with fatal error if no database is connected. `STATS_DB` in order to run prostrct statistics against an offline database, and then collect the stats from the output. `STATS_FILE` in order to collect the stats from the existing output of prostrct statistics.
`OUTPUT`	Set to the file name to which the output should go.
`APPEND`	Set to `TRUE` or `FALSE`; if `TRUE`, the output from the program will be appended to the file specified via the `OUTPUT` option; if `FALSE` the output file will be overwritten. The default is `FALSE`.
`THRESHOLD`	Set to the percentage [between 10 and 99] above which to signal a possible problem. If `THRESHOLD` is not specified, the default is 80.
`LDBNAME`	When `MODE=VST`, this is the *logical* name of the database from which to collect the stats. If `LDBNAME` is not specified, it defaults to `LDBNAME(1)`.
`DBPATH`	When `MODE=STATS_DB`, this is the physical name of the offline database against which prostrct statistics will be run.
`INPUT_FILE`	When `MODE=STATS_FILE`, this is the physical name of the file containing the output from prostrct statistics that the program has to parse.

Any value of <OptionN> that is not listed above, will be silently ignored. Options need not be specified in the order listed in the table above.

The output file will be in the same format as for the interactive version, and the same considerations apply.

Error checking

In case an error occurs because of invalid parameters passed via -param, the output file will not be created/written to, and a file named statParseBatch.e will be created, which will contain more details as to what went wrong.

If upon return from `bpro` or `mbpro` the file statParseBatch.e does not exist, then either the requested report was output/appended to the file specified, or `bpro/mbpro` failed to even start up due to syntax errors on the command line; assuming that there are no syntax errors on the command line, it's safe to say that if the file statParseBatch.e does not exist, then the report was completed successfully.