

## Database Maintenance using the Automation Database Utilities

Regular maintenance of the Automic database is vital to the performance of the Automic system. Without regular maintenance, tables that hold data relating to the previously ran objects will continue to grow to an unmanageable size. The time it takes to return the results of a query against these tables will increase which in turn will impact the running of other statements.

There are 2 supported methods for maintaining the database, using the Automic Utilities (Archive/Reorg/Unload) or Partitioning with ILM.

The most popular method of maintaining the database is with the Automic Utilities.

\*Configuration for ILM is dependent on the rules set up in your database environment and is something your DBA should be familiar with. More information for ILM configuration can be found:  
Administration Guide > Database > Database Maintenance > Method B – Partitioning with ILM

Depending on your record storage policy, there are 2/3 steps involved with Database Maintenance using the Automic Utilities.

- 1) **Automic .DB Archive** *(Optional)*
- 2) **Automic . DB Reorg**
- 3) **Automic . DB Unload**

The amount of days removed from the database can be configured to each Client.

For example, if Client 100 is your Test Client and you run thousands of jobs, whereas Client 500 runs your Administrative task for this instance. In the Test Client you might not need to keep more than 7 days of history, but in your Admin Client might want to keep 90 days so you can go back and view what Administrative jobs have ran in the past quarter.

With the ability to configure each Client, Maintenance steps need to be ran for each individual Client, including Client 0.

Initial parameters for DB.Archive and DB.Unload need to be configured for Client 0. By default, Clients will inherit the Archive parameters from Client 0. Parameters can be customized for each Client as well.

Parameters can be configured through the Graphical Interface.

The tables affected by the Database Maintenance are:

AH – Statistics

RH/RT – Reports

MELD –Messages

OH – Version Management and Deleted Objects

XAO – Auditing Records

## ***Performance improvement***

The archiving, reorganizing and unloading processes can take some time if huge amounts of data are involved. The following tips can help to improve performance by accelerating the above processes:

- When reorganizing, avoid using the option "Keep the last  $n$  statistics." By doing so, the utility Automic .DB Reorg does not count all statistical records of all objects but directly starts the reorganization process using the date as a basis.
- Only reorganize reports if they should be reorganized before the statistical records. If this option is not activated, the utility Automic .DB Reorg reorganizes reports together with the statistical records.
- In the utility Automic .DB Unload, specify that no REORG files should be generated. The corresponding parameter `suppress_output=` is available in the INI file section [REORG].

## Step 1 – Automic .DB Archive (Optional)

Copies Statistical Records/Reports and Messages and stores them in an Archive file which can be stored and viewed using the Archive Browser at a later date. Records are then flagged with an Archive flag to indicate they have been Archived.

\*\*If there is no need to view this info at a later date, this step can be skipped. If skipping the Archive step, change the parameter 'no\_archive\_check=1' in the INI file for the Reorg and Unload.

More information can be found:  
Administration Guide > Utilities > Automic .DB Archive

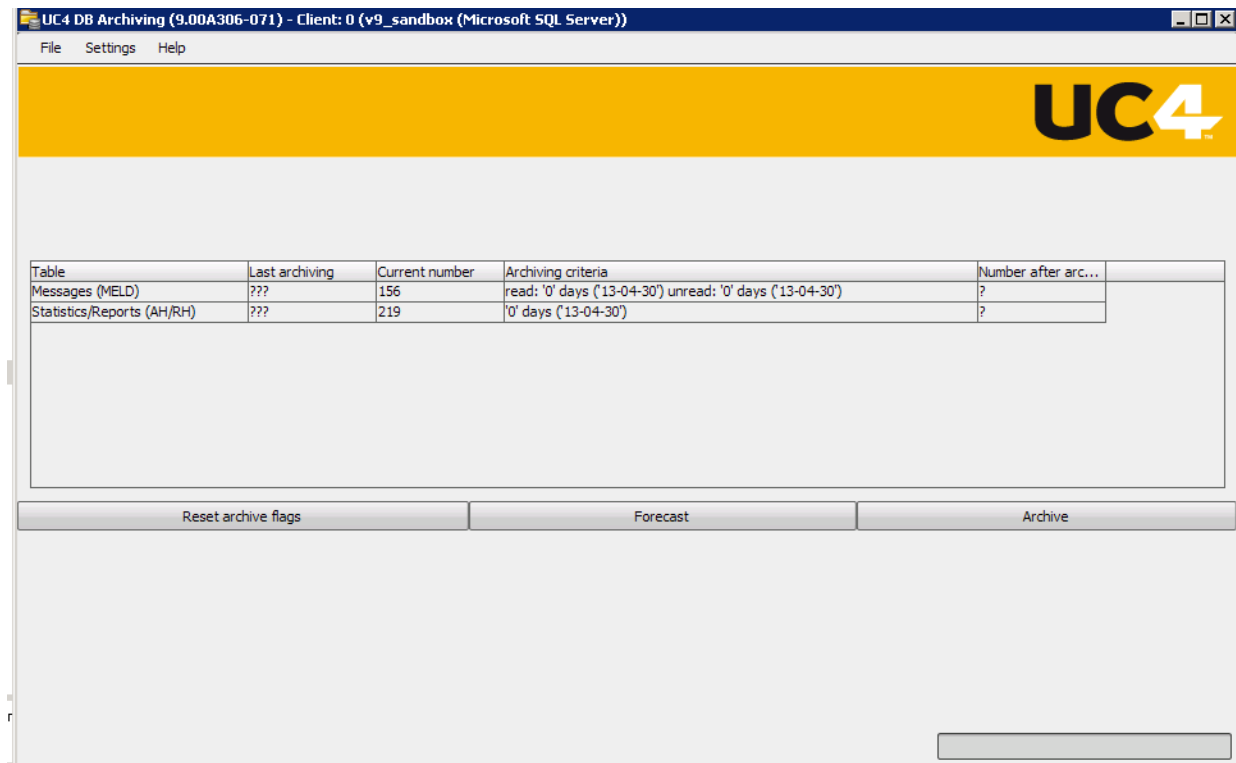
Archiving affects 4 tables:

MELD – Messages

AH – Statistics

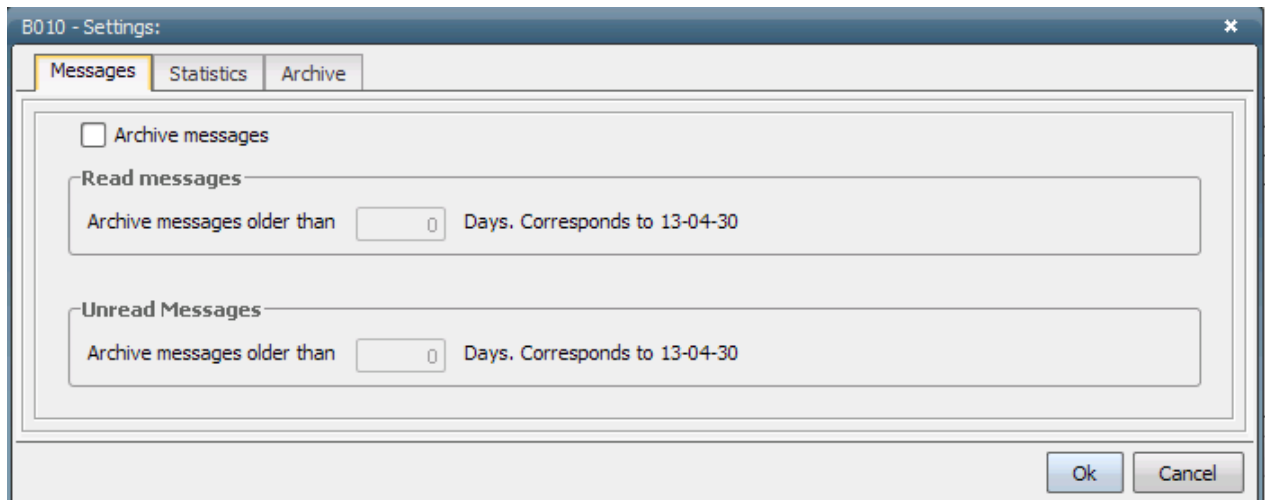
RH/RT - Reports

DB.Archive GUI:



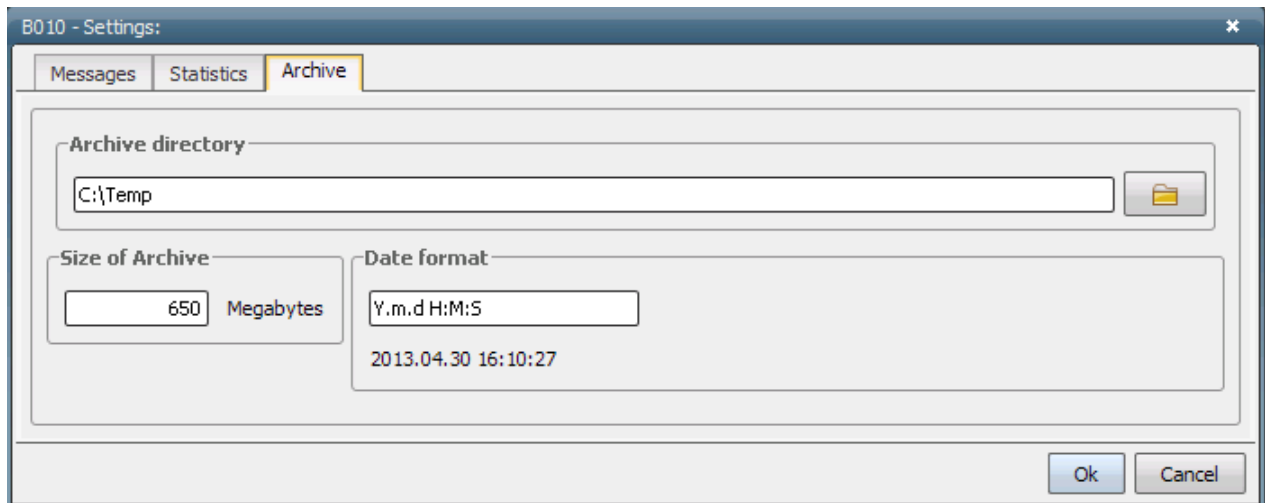
To edit parameters, select 'Settings' under the Settings menu.

Specify the number of dates to keep in the database for the Messages and Statistics Tab:

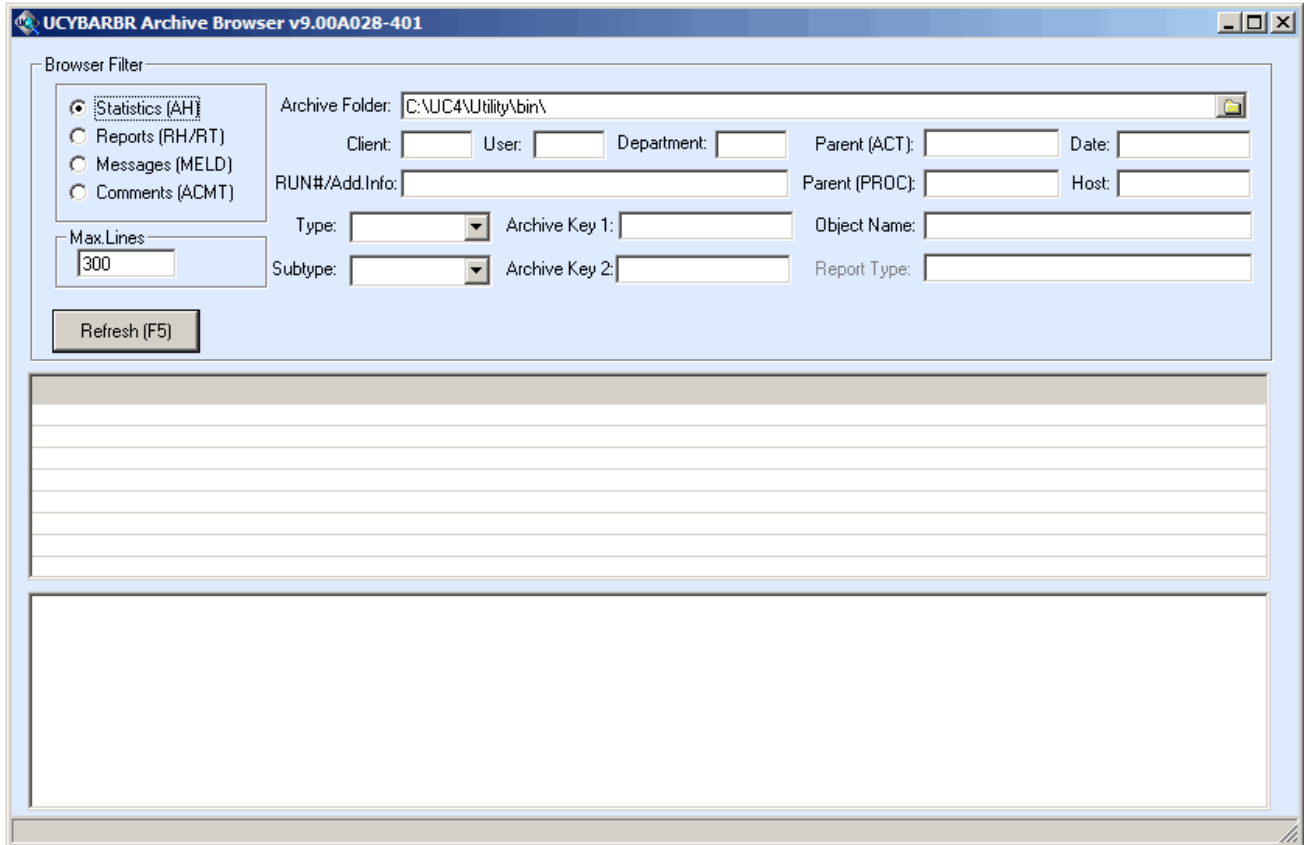


On the Archive tab, specify where the Archived files should be stored and the size for each file.

\*The location should be local to where the DB.Archive will be running.



Archived Data can be viewed using the Archive Browser UCYBARBR.EXE.



The Archive Browser contains the basic functions for analyzing Automic archive files.

You can modify this program if you require additional functions. The source code of the Archive Browser is provided on the Automic CD in the folder "CD:TOOLS\SOURCE\UCYBARBR". The Archive Browser is written in Microsoft Visual Basic.

*The Archive Browser will be adjusted to the requirements of new versions but no further development is planned.*

More information can be found:

Administration Guide > Utilities > Automic .DB Archive > Archive Browser

## Step 2 – Automic .DB Reorg

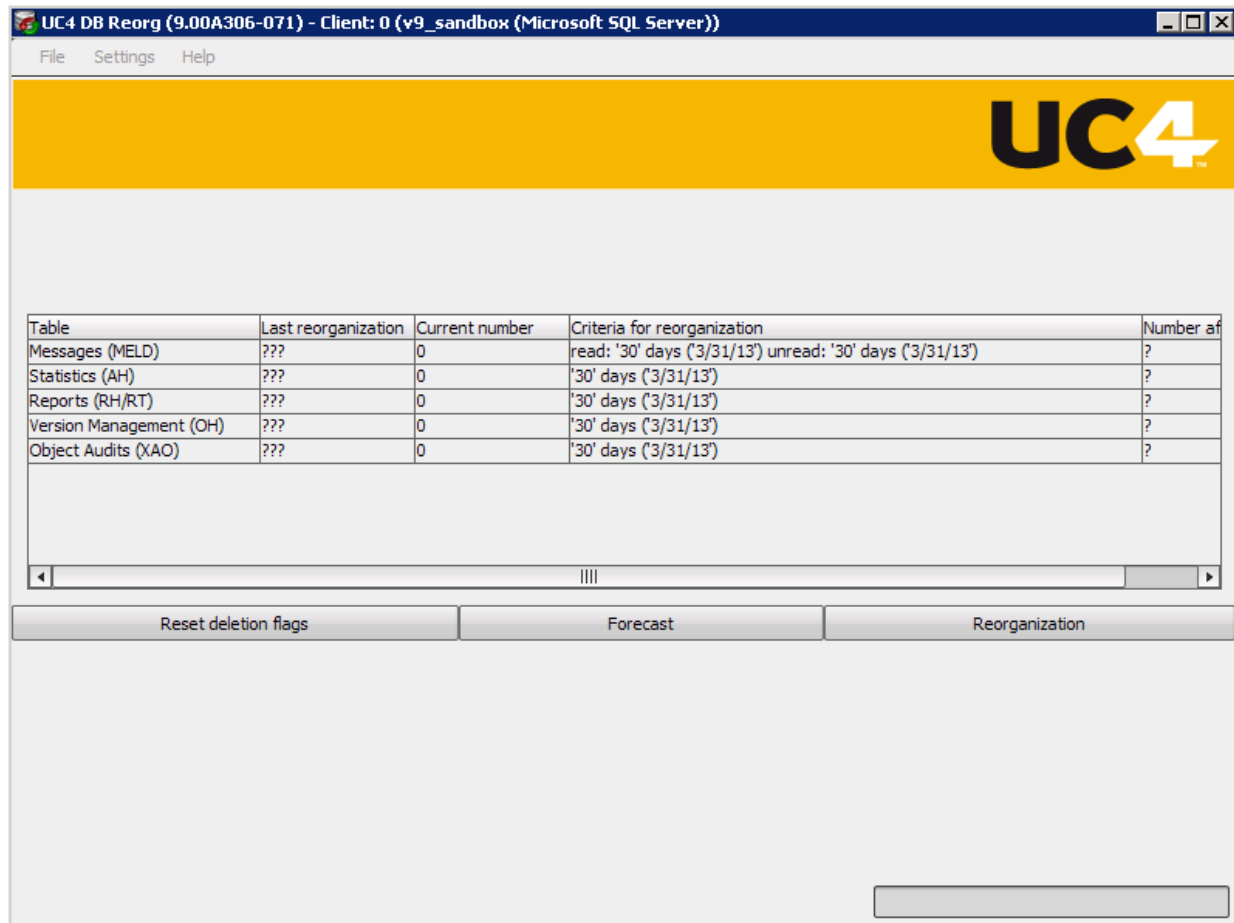
DB.Reorg marks records with a deletion flag for removal from the database through the DB.Unload Utility. This includes any objects that have been moved to the Recycle Bin.

Reorging affects the following tables:

- MELD – Messages
- AH - Statistics
- RH/RT - Reports
- OH – Version Management *(if Version Management has been enabled)*
- XAO – Auditing Records *(if Auditing has been enabled)*

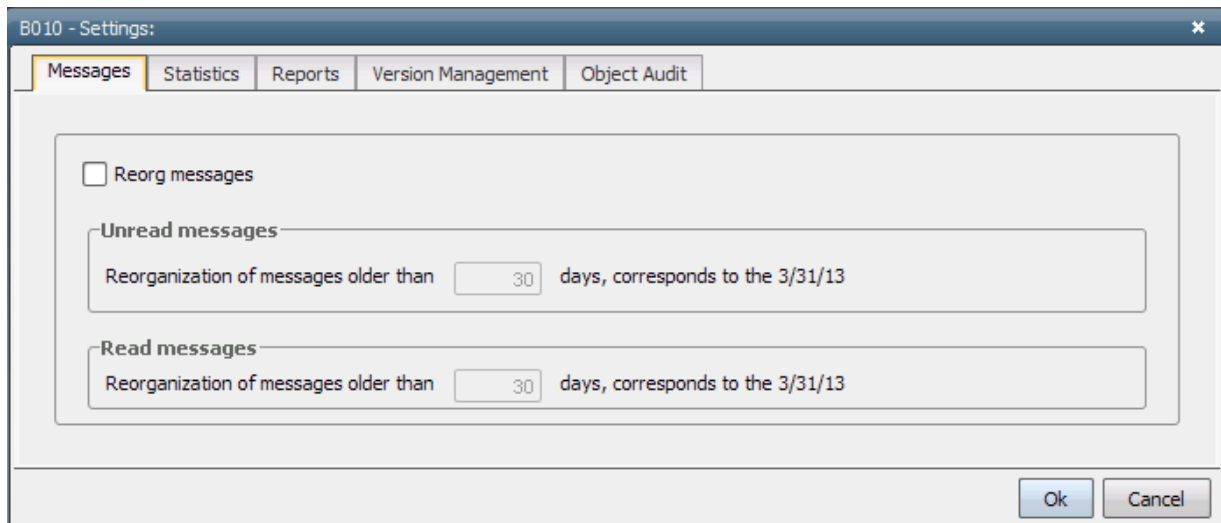
More information can be found: [Administration Guide > Utilities > Automic .DB Reorg](#)

DB.Reorg GUI:



To edit/define parameters, select 'Settings' under the Settings menu.

*\*The dates defined for DB.Reorg do not need to match. The DB.Unload will only remove records with both the DB.Archive and DB.Reorg flags set.*



## Statistics, Reports, and Version Management Tab

DB.Reorg allows you to reorganize records older than  $x$  days AND keep the last  $n$  records.

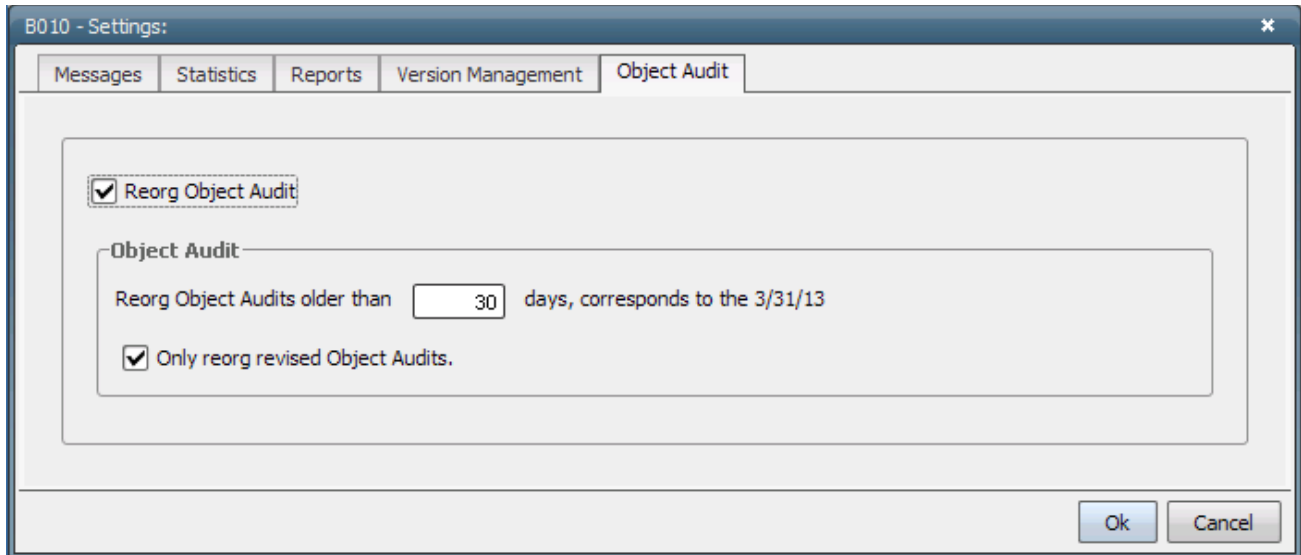
This is useful for accessing records for objects that aren't executed very often. The utility checks the number of records that lie within the reorganization period and if this number is below  $n$ , it also keeps  $n$  records that do not lie within the reorganization period.

## Object Audit Tab

When OBJECT\_AUDIT is enabled through the UC\_CLIENT\_SETTINGS variable, records are written to the XAO table.

*More information about Object Auditing can be found:  
Administration Guide > Utilities > Automic .DB Revision Reports*





### Step 3 – Automic .DB Unload

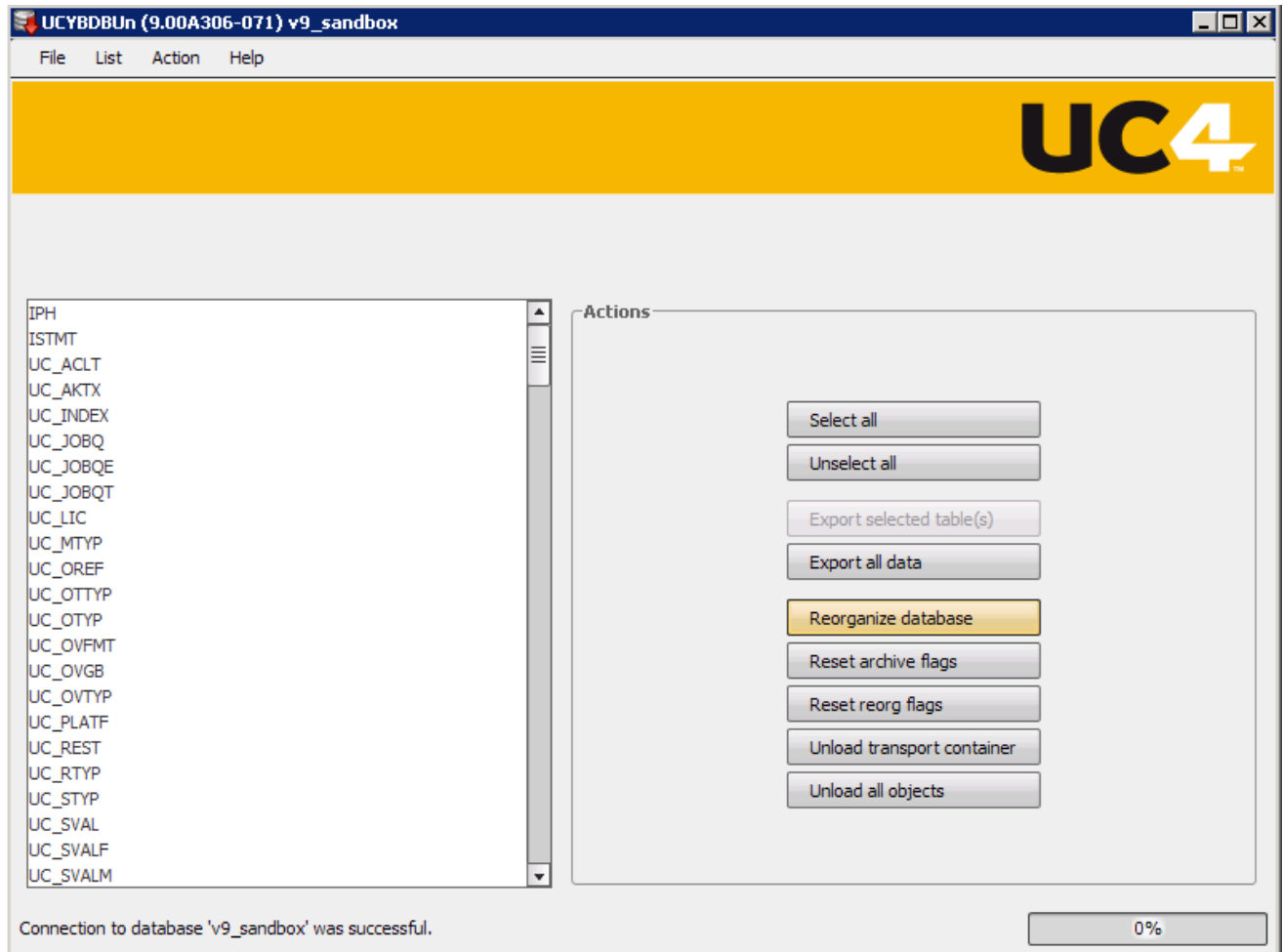
Removes the records flagged with the Archive and Reorg flags (or just Reorg if the Archiving step is ignored).

**Please be aware, once the data has been 'Unloaded' it CANNOT be restored.**

*More information can be found: Administration Guide > Utilities > Automic .DB Unload*

Unload GUI:

Select 'Reorganize database' in the DB.Unload GUI to remove the records marked for deletion.



When running the DB.Unload in Batch mode, the syntax would be:  
`ucydbun -BREORG`

The DB.Unload can also be used to reset the flags for records in one or all client, which have already been flagged by the DB.Archive or DB.Reorg.

Select all

Unselect all

Export selected table(s)

Export all data

Reorganize database

Reset archive flags

Reset reorg flags

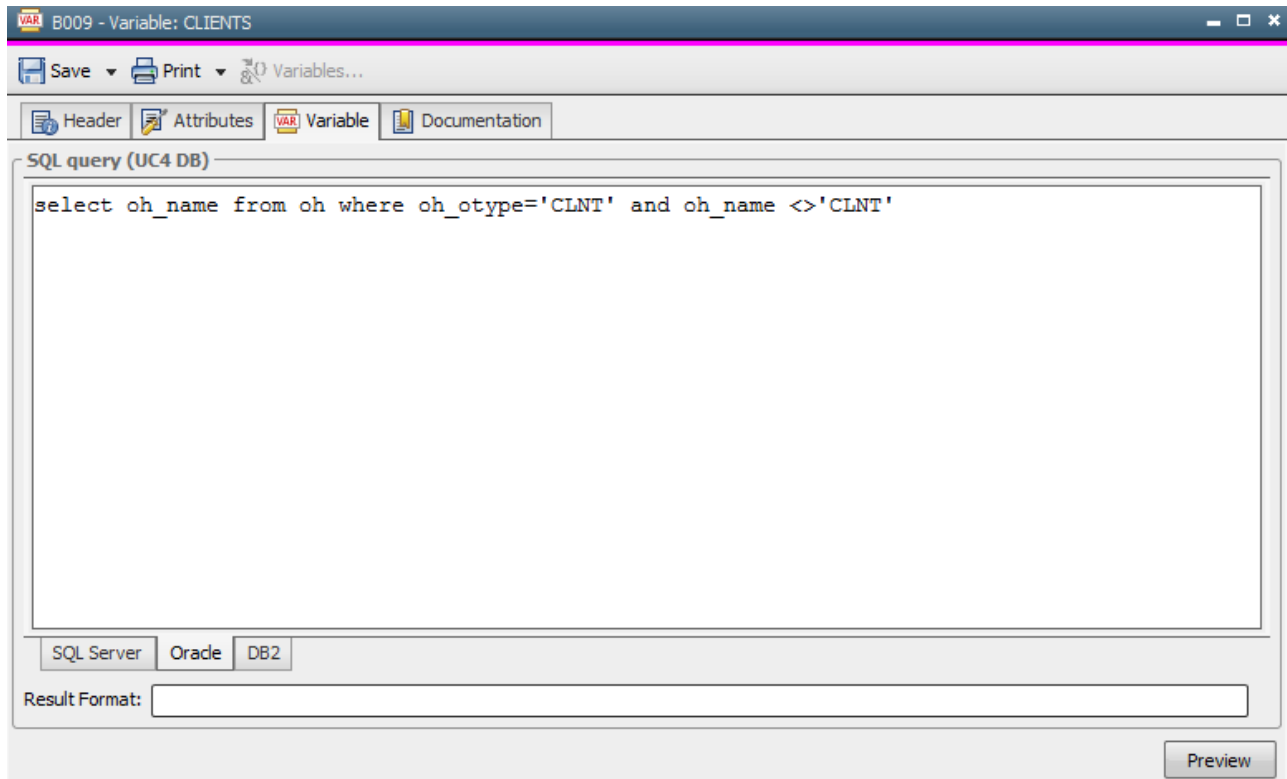
Unload transport container

Unload all objects

## Example Runbook of Automatic Maintenance:

Create a SQLI variable named 'CLIENTS'.

Add the following SQL statement to the variable:



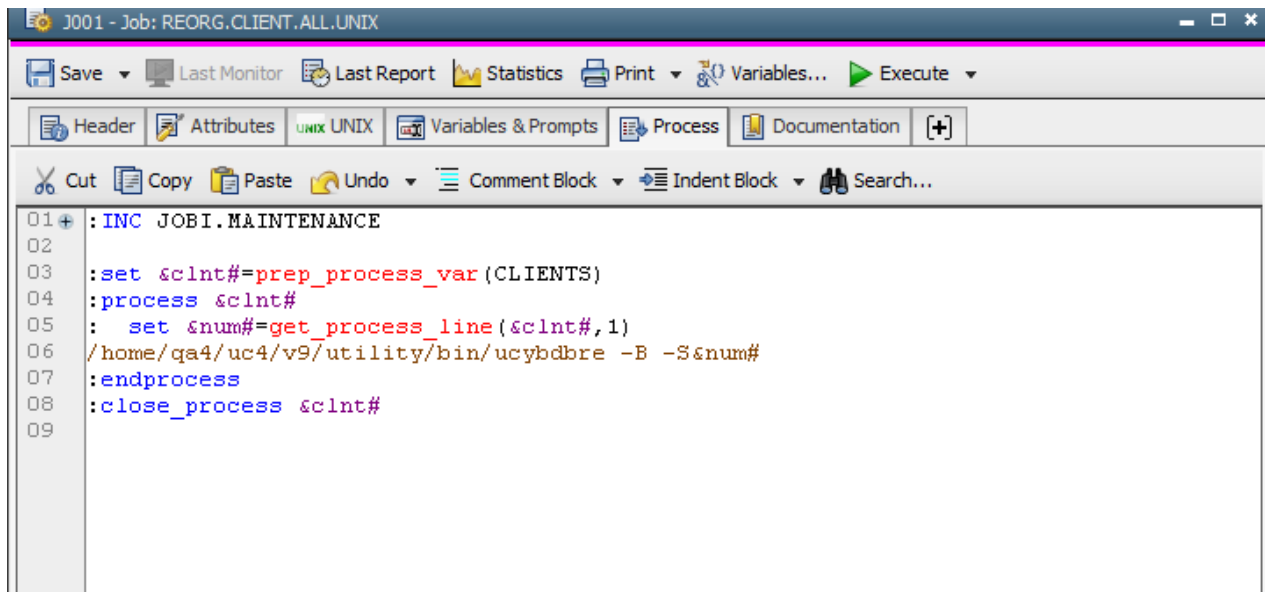
## DB.Archive

Create a Job object called 'ARCHIVE.CLIENT.ALL'.

In the Process Tab of the job add the following script depending on which OS the Job will be ran on.

For Linux:

```
:set &clnt#=prep_process_var(CLIENTS)
:process &clnt#
: set &num#=get_process_line(&clnt#,1)
<path to utility/bin/ ucybdbre ie /home/qa4/Automic
/v9/utility/bin/ucybdbre > -B -S&num#
:endprocess
```



The screenshot shows the Automic Job Editor interface. The title bar reads "J001 - Job: REORG.CLIENT.ALL.UNIX". The main window contains a code editor with the following job definition:

```
01+ :INC JOBI.MAINTENANCE
02
03 :set &clnt#=prep_process_var(CLIENTS)
04 :process &clnt#
05 : set &num#=get_process_line(&clnt#,1)
06 /home/qa4/uc4/v9/utility/bin/ucybdbre -B -S&num#
07 :endprocess
08 :close_process &clnt#
09
```

The interface includes a menu bar with options like Save, Last Monitor, Last Report, Statistics, Print, Variables..., and Execute. Below the menu bar are tabs for Header, Attributes, UNIX UNIX, Variables & Prompts, Process, and Documentation. A toolbar at the bottom of the menu bar contains icons for Cut, Copy, Paste, Undo, Comment Block, Indent Block, and Search...

For Windows:

On the 'Windows' tab, put in the path to the Utility Bin Directory.

The screenshot shows the 'WINDOWS' tab in the Automic configuration tool. The interface includes a toolbar with 'Header', 'Attributes', 'WINDOWS', 'Variables & Prompts', 'Process', and 'Documentation' tabs. Below the toolbar are four panels: 'Job report' with checkboxes for 'Database', 'File', 'On error only', and 'Is generated by script'; 'Type' with radio buttons for 'BAT', 'COM', and 'Interpreter'; 'View' with radio buttons for 'Standard', 'Minimized', and 'Maximized'; and 'Job object' with radio buttons for 'Default', 'Yes', and 'No'. Below these panels is the 'Start parameter' section, which contains a 'Working directory' field with the value 'c:\uc4\utility\bin', an empty 'Command' field, and two checkboxes: 'Log on as batch user' and 'Show job on desktop'.

On the Process Tab, the script will be similar to Linux.

```
:set &clnt#=prep_process_var(CLIENTS)
:process &clnt#
: set &num#=get_process_line(&clnt#,1)
ucybdbar -B -S&num#
:endprocess
:close_process &clnt#
```

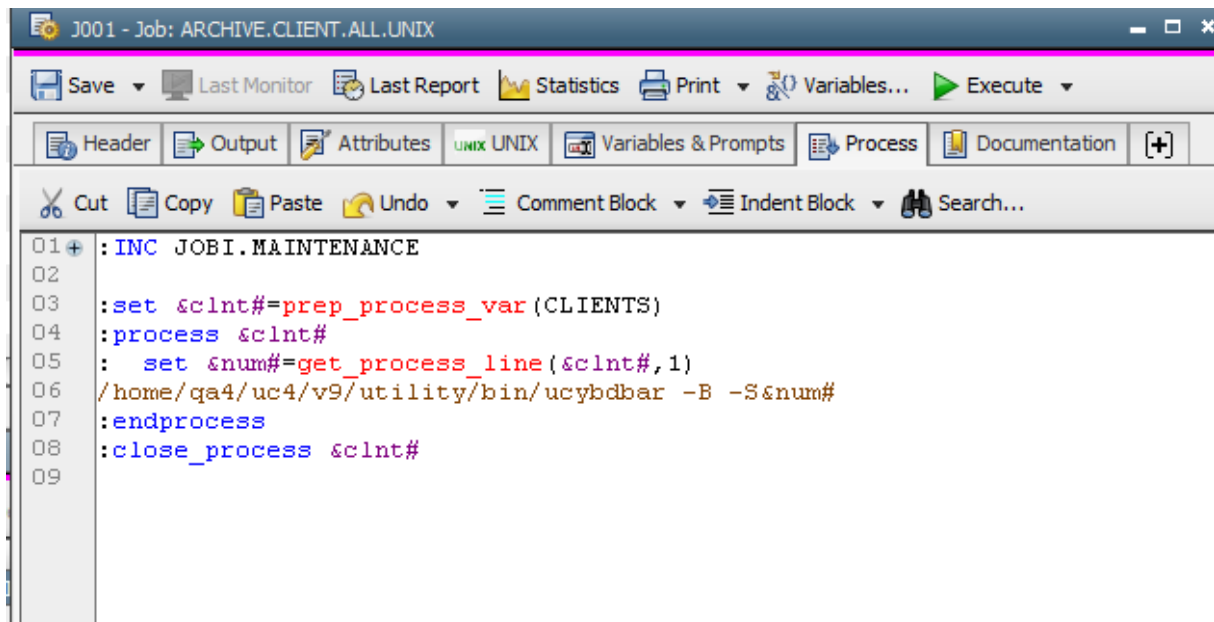
## DB.Reorg

Create a Job object called 'REORG.CLIENT.ALL'.

In the Process Tab of the job add the following script depending on which OS the Job will be ran on.

For Linux:

```
:set &clnt#=prep_process_var(CLIENTS)
:process &clnt#
: set &num#=get_process_line(&clnt#,1)
<path to utility/bin/ ucybdbre ie /home/qa4/Automic
/v9/utility/bin/ucybdbre> -B -S&num#
:endprocess
```



The screenshot shows the Automic Job Editor interface. The title bar reads 'J001 - Job: ARCHIVE.CLIENT.ALL.UNIX'. The main window contains a script editor with the following content:

```
01+ :INC JOBI.MAINTENANCE
02
03 :set &clnt#=prep_process_var (CLIENTS)
04 :process &clnt#
05 : set &num#=get_process_line (&clnt#,1)
06 /home/qa4/uc4/v9/utility/bin/ucybdbre -B -S&num#
07 :endprocess
08 :close_process &clnt#
09
```

For Windows:

On the 'Windows' tab, put in the path to the Utility Bin Directory.

The screenshot shows the 'WINDOWS' tab in the Automic configuration interface. The tab bar includes 'Header', 'Attributes', 'WINDOWS', 'Variables & Prompts', 'Process', and 'Documentation'. The main content area is divided into four sections: 'Job report', 'Type', 'View', and 'Job object'. Below these is a 'Start parameter' section with input fields for 'Working directory' and 'Command', and checkboxes for 'Log on as batch user' and 'Show job on desktop'.

Job report	Type	View	Job object
<input checked="" type="checkbox"/> Database <input checked="" type="checkbox"/> File <input checked="" type="checkbox"/> On error only <input type="checkbox"/> Is generated by script	<input checked="" type="radio"/> BAT <input type="radio"/> COM <input type="radio"/> Interpreter	<input checked="" type="radio"/> Standard <input type="radio"/> Minimized <input type="radio"/> Maximized	<input checked="" type="radio"/> Default <input type="radio"/> Yes <input type="radio"/> No

**Start parameter**

Working directory:

Command:

Log on as batch user

Show job on desktop

On the Process Tab, the script will be similar to Unix.

```
:set &clnt#=prep_process_var(CLIENTS)
:process &clnt#
: set &num#=get_process_line(&clnt#,1)
ucydbre -B -S&num#
:endprocess
:close_process &clnt#
```



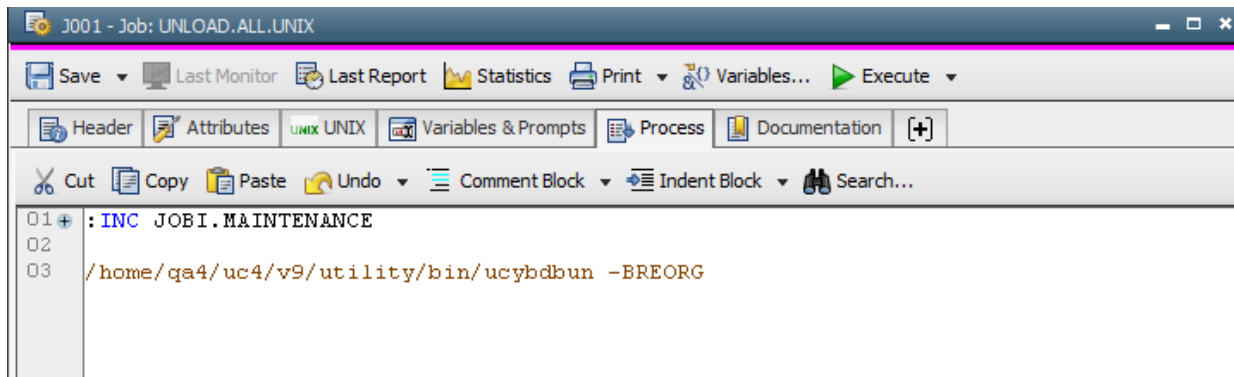
## DB.Unload

Create a Job object called 'UNLOAD.ALL'.

In the Process Tab of the job add the following script depending on which OS the Job will be ran on.

For Linux:

<path to utility/bin/ ucybdbun ie /home/qa4/Automic /v9/utility/bin/ucybdbun> - BREORG



```
J001 - Job: UNLOAD.ALL.UNIX
Save Last Monitor Last Report Statistics Print Variables... Execute
Header Attributes UNIX UNIX Variables & Prompts Process Documentation [+]
Cut Copy Paste Undo Comment Block Indent Block Search...
01+ : INC JOBI.MAINTENANCE
02
03 /home/qa4/uc4/v9/utility/bin/ucybdbun -BREORG
```

For Windows:

On the 'Windows' tab, put in the path to the Utility Bin Directory.

The screenshot shows the 'WINDOWS' tab in the Automic configuration tool. The interface is divided into several sections:

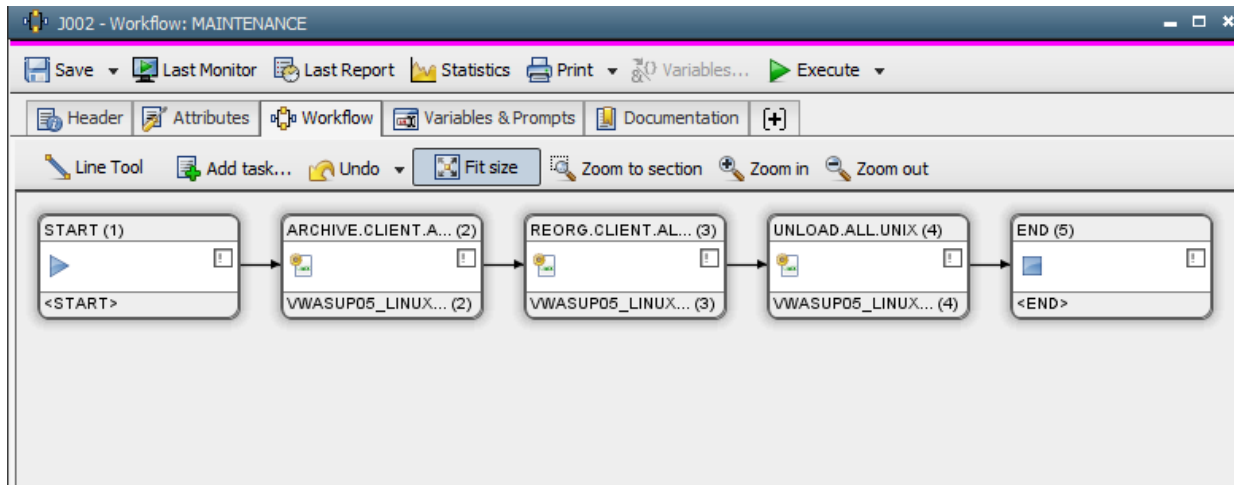
- Job report:** Contains four checked checkboxes: 'Database', 'File', 'On error only', and 'Is generated by script'.
- Type:** Contains three radio button options: 'BAT' (selected), 'COM', and 'Interpreter'.
- View:** Contains three radio button options: 'Standard' (selected), 'Minimized', and 'Maximized'.
- Job object:** Contains three radio button options: 'Default' (selected), 'Yes', and 'No'.
- Start parameter:** A section containing:
  - 'Working directory:' with a text input field containing 'c:\uc4\utility\bin'.
  - 'Command:' with an empty text input field.
  - Two unchecked checkboxes: 'Log on as batch user' and 'Show job on desktop'.

On the Process Tab, the script will be similar to Linux.

```
ucydbre -BREORG
```

## The WorkFlow

Putting it all together in a Workflow:



## Schedule

Create a Schedule Object and schedule the MAINTENANCE WorkFlow to run as often as you would like.

The screenshot shows the Automatic Schedule Editor interface. The title bar reads "J009 - Schedule: MAINTENANCE.DAILY". The menu bar includes "Save", "Last Monitor", "Last Report", "Print", "Variables...", and "Execute". The toolbar contains "Header", "Attributes", "Schedule", "Variables & Prompts", and "Documentation". Below the toolbar is a "Statistics" button and "Remove", "Copy task", "Paste task", and "Add task..." buttons. The main workspace contains a table with the following data:

Definition	Conditions	Name	Type
00/02:00		MAINTENANCE	JOBP

Activate the Schedule

And you're done.