Suprtool 5.0 for AMXW:

Change Notice

by Robelle Solutions Technology Inc.

Contents

Introducing Suprtool Version 5.0

Overview

Use Suprtool/AMXW to read, select, and sort data from Oracle, Allbase and Eloquence databases and data files with fixed-length records. Suprtool/AMXW is designed to be similar to Suprtool for MPE while providing necessary HP-UX features.

Suprlink/AMXW provides high-speed data-file linking based on a sort key. Use STExport to convert fields in a self-describing input file into an output file that can be imported into different applications.

Highlights in Suprtool 5.0

- Suprtool2 would abort with Signal 11 if the ROBSUPR variable was not set and thousands of invocations of Suprtool, thru the Suprtool2 interface. (5.0)

- Set RealMap has been added to control if Suprtool for HP-UX maps Real Numbers to Ieee. The default is to do the mapping.

- Suprtool for AMXW was using word lengths instead of byte lengths for FREADs. AMXW always returned the correct number of bytes, but Suprtool has been fixed to request the correct length. (Fixed in 5.0 Build 3)

- STExport now supports SD file items that are considered R type. It will map them to IEEE automatically. Previously STExport would fail when trying to support R type items.

- STExport now creates the variable length output files using the AMXW G-option on output. This means that variable length output files are now readable by non-AMXW utilities and files Exported to other platforms will be more readily readable.

- The $split function would abort on some systems if the $split character was the last character in the string. (4.9.06)

- The Base command would fail in the Suprtool for AMXW dynamic load version if Eloquence was not loaded on the system. (4.9.06)

- Suprtool for AMXW would not reset the filecode to zero if the input source was self-describing and the output file was prn, display or ascii. (4.9.06)

- Suprtool for AMXW had calls to it's internal timer call information disabled which made progress messages have incorrect wall time statistics. (4.9.05)

- Suprtool, STExport and Suprlink for AMXW did not properly handle duplicate filenames for permanent and temporary files. (4.9.05)

- Suprtool for AMXW, dynamic Image loading version did not properly startup in some cases, specifically when trying to detect if it could use the Fastread option or not. (4.9.05)

- Suprtool for AMXW did not support input filename(2/), where Suprtool starts to read at a particular record number until this version. (4.9.04)

- Suprtool for AMXW now supports the Numrecs command to control the size of the output file. (4.9.04)

- Suprtool for AMXW does variable substition in the same manner as the HP-UX version. Suprtool for AMXW first tries to resolve variables set on HP-UX and are available as an environment variable. Then any command that uses a "!" MPE variable, will be resolved next. (4.9.04)

- Stexport Output command would fail as the byte size was assumed to be words, incorrectly. (4.9.04)

- The latest AMXW version of Suprtool2 would interfere with some Cobol programs if they attempted to open a KSAM file. (4.9.04)

- STExport did not support temp file creation in the AMXW version. (4.9.04)

- STExport would core abort when trying to input a file did not exist. (4.9.04)

- STExport did not produce Variable length files by default as it did on MPE. (4.9.04)

- Suprtool would occasionally fail with mmap errors on HP-UX when using the Table command. (4.9.04)

- Output, erase was not working properly in STExport and Suprlink. (4.9.04)

- Files that had a size in words would not get linked properly in Suprlink and the Table file might assume an incorrect size. (4.9.04)

- Suprtool for AMXW would behave poorly with set fastread on and if the dataset it was reading had no records in it. (4.9.04)

- Suprtool for AMXW would fail with a dbstatus 17, No current record found when doing an update or delete operation with Set Fastread on and Set Lock 0. (4.9.04)

- Suprtool for AMXW would not close the currently open database when the BASE command was entered by itself. (4.9.04)

- Suprtool did not print out progress messages when run in batch in an AMXW job. This was solved by calling AMXW's print intrinsic. (4.9.04)

- Progress messages were intersperesed with List command output. (4.9.04)

- Number of records are now being printed when doing a form of a self-describing file. (4.9.04)

- Set AMXW Perfwrite ON increases performance of writing to an output file by up to 10 times. (4.9.04)

- When numrecs is > number of records read, sometimes the file is padded with blank records. (4.9.04)

- Output,erase on a file with a shorter record would write a series of nulls. (4.9.04)

- Sort with output,erase on a smaller file did not erase all records. (4.9.04)

- Suprtool now shows error when there is no room to append records, this is to be more "MPE" like. (4.9.04)

- Suprtool now can use two methods when dynamically loading Oracle, Eloquence and Image routines in the respective versions of Suprtool. (4.9.04)

- Suprtool for HP-UX now supports Item Level locking with the Set Itemlock command. (4.9.04)

- Oracle load warning messages are no longer printed by default. (4.9.04)

- The Base command on it's own did not close the current database like it did on MPE. (4.9.04)

- Suprtool would abort if an invalid password was specified in some configurations of Eloquence and if used with other Image replacement libraries. (4.9.04)

- Suprtool for HP-UX would not set the return code variable $?, if it failed with some syntax errors. (4.9.03)

- Suprtool had some debug messages were left over in the Table module. (4.9.03)

- Suprtool would have a stack overflow when the input source was an Oracle table, the if command was used and no records were selected. (4.9.03)

- Suprcall for AMXW would not build a tempfile even if the Build command was specified in the Suprtool task. (4.9.03)

- Suprcall would not always print the stdlist if the print-state was set to ER. (4.9.03)

- Suprcall now returns an error status if Suprtool run has an error, in both the AMXW version and the regular HP-UX version. (4.9.03)

- A stack overflow error would occur when sorting with two sort keys and the input source was an Oracle Table. (4.9.02)

- Suprtool would output 100 blank records when reading an empty Eloquence dataset with set fastread on. (4.9.02)

- Suprtool2 fixed to work better with certain cobol compilers and compiler options. (4.9.02)

- Command lines that were not terminated with a null are now handled correctly in Suprtool2. (4.9.02)

- Print state and execution of print of stdout now works properly in all cases in Suprtool2. (4.9.02)

- Tmpnam call would occasionally abort on Itanium due to ineffective space allocation in Suprtool2. (4.9.02)

- The Total command now supports the $file and $list options. (4.9.01)

- Output=input now writes out the sort information if the file involved is self-describing. (4.9.01)

Known Problems

If you have any questions or concerns or feedback on this or any other issue, please feel free to e-mail me at: neil@robelle.com

Compatibility

Previously, Suprtool would treat an "R" type field in an Eloquence database as an R type while the data inside Eloquence is stored and treated as IEEE therefore incorrect results would occur with coercions and arithmetic operations. Suprtool now by default maps all Real and Long fields to their respective IEEE fields. You can change Suprtool back to the previous behaviour with Set RealMap Off.

A form command will still show the fields as being "R2" or "R4", but internally Suprtool will treat as IEEE, which is how Eloquence stores and treats the numbers.

Consequently STExport will now support items in SD files that are condidered R type, however it correctly will map them to IEEE.

Suprtool/UX 5.0 is now compatible with,all versions of HP-UX 11.2x, as well as Oracle version 8 and higher.

Suprtool/UX version 4.8.02 and lower is compatible with HP-UX 9.0 and higher and Oracle 7.

CPU Serial Number (uname)

This program runs only on CPUs whose serial numbers have been encoded (the "uname" on HP-UX). If it fails to run and you get an "invalid HPSUSAN" error message, contact Robelle for assistance, via support@robelle.com or the support number at 1-800-453-8970.

Documentation

The user manual contains the full description of all the Suprtool suite of products including Dbedit, Suprlink, STExport, and Suprtool2, as well as usage tips and

commands for each. The manuals are up-to-date with all the latest changes. To see only the changes in the latest version, see the "What's New" section of the manual.

You can download our manuals and Change Notices in PDF format or HTMLHelp format (.CHM) and even order printed (hardcopy) manuals from our web site at:

http://www.robelle.com/library/manuals/.

Installation

Overview

The following instructions describe the installation process of a new Suprtool release. The new version overwrites an existing version of Suprtool on your HP-UX system.

Installation Instructions

There are typically two main types of installations. You can find the Suprtool for AMXW regular install instructions here:

http://www.robelle.com/downloads/install-amxwprod.html

You can find the Suprtool for AMXW build on your system instructions on the link below. You will need this install if you are going to require the KSAM option, Dynamic Image loading or Omnidex support, or intend to run on Itanium:

http://www.robelle.com/downloads/install-amxwbuildprod.html

Installation Assistance

If you have any questions or run into any problems, please call us. Technical support is available on weekdays from 8 a.m. to 4 p.m. Pacific time at 1.800.453.8970. Technical support can also be obtained via e-mail at: support@robelle.com If your new version of software will not run, you can page someone from technical support by calling the 1.800 number, or you can typically easily run extend with the disaster option to tide you over until business hours. Instructions for this are available at:

http://www.robelle.com/disaster/

Enhancements in Version 5.0

Introduction

Every year we provide Suprtool users with new features. The following section describes the new enhancements to Suprtool.

Set ItemLock <fieldname>

Suprtool now supports Item Level locking thru the Set ItemLock <fieldname> command. The set command must be specified after the Base and Get/Chain command has been specified.

However, some users worked around this issue by doing the following:

```
!run suprtool.pub.robelle
base order,1,;
get dline
set itemlock item-num
del
out save,link
exit
```

Item Level locking is only effective for Deletes and Updates.

Dynamic Load Warnings

When loading Oracle libraries Suprtool would report warnings on startup if it failed to load the Oracle libraries. Suprtool by default no longer prints these warnings. To check if your libraries were loaded you can run Suprtool with the –lw option:

```
./suprtool -lw
```

Set VarsubCompat On | Off

The Set VarsubCompat flag has been added to Suprtool for HP-UX to have variable substitution be more flexible. On MPE variable substitution would pass the name of the variable thru to be parsed even if the variable was not set. On HP-UX the default behaviour was to return spaces if the environment variable was not set. This is still the default behaviour, however if you set varsubcompat on, Suprtool will return the environment variable name similar to how MPE works with unresolved variables.

Dynamic Loading

In the last few versions of Suprtool we have used two different methods of dynamically loading the Oracle routines. Starting with this version of Suprtool, you can now vary how Suprtool chooses to dynamically load the routines. By default, Suprtool will use shl_load and findsym to load the Oracle and Eloquence routines.

You can force Suprtool to dlopen and dlsym if you set the environment variable ROBELLE_DYN_LOAD to any value. This does not impact the version of Suprtool that loads the Image replacement intrinsics used by the ROBELLELIB_IMAGE as this version will always use findsym.

Suprtool version 4.9.03 used dlopen in some cases and this did not always work in terms of loading the Oracle libraries. This enhancement is to provide control over the method for loading the libraries while reverting back to shl_load which works better and the new methods allows for greater flexibility.

External SD file

Suprtool for AMXW now has an option to create the external self-describing file as well as updating the "label" information that AMXW keeps track of. This was done to help some other applications work in conjunction with AMXW and Suprtool. The setting you need to use is:

```
Set AMXW Externalsd on
```

The default for this setting is off.

While the External SD is written to in this case for the other Application Suprtool for AMXW will ignore the External SD file when reading these files.

High Performance Writes

Suprtool for AMXW now has an option to do multi-record writes to the output file, which has given as much as a 10 times performance increase.

```
Set AMXW PerfWrite On
```

The default for this setting is off. AMXW version 8.05.01 Build 13 or higher is required for this to work.

Dynamic Loading Version

Suprtool for AMXW can now dynamically load any "IMAGE" library and use in Suprtool's Base, Get, Update, Delete and Put commands and in the Dbedit Module.

This version looks exactly like Suprtool, however, when started without information on where the replacement "IMAGE" library is, will fail with a suitable error message:

```
Error : ROBELLELIB_IMAGE variable must be set to a valid IMAGE library
for this version
```

In order to have Suprtool run and load a suitable library you just need to do a:

```
export ROBELLELIB_IMAGE=/name of IMAGE replacement library
```

Using the fully qualified filename of the Image replacement library that you are using. For example if you wanted to dynamically load Eloquence you would do:

```
export ROBELLELIB_IMAGE=/opt/eloquence6/lib/pa11_32/libimage3k.sl
```

Keep in mind that this is only relevant to the Image Dynamic Load version of Suprtool.

Set RealMap On | Off

Previously, Suprtool would treat an "R" type field in an Eloquence database as an R type while the data inside Eloquence is stored and treated as IEEE therefore incorrect results would occur with coercions and arithmetic operations. Suprtool now by default maps all Real and Long fields to their respective IEEE fields. You can change Suprtool back to the previous behaviour with Set RealMap Off.

A form command will still show the fields as being "R2" or "R4", but internally Suprtool will treat as IEEE, which is how Eloquence stores and treats the numbers.

Consequently STExport will now support items in SD files that are condidered R type, however it correctly will map them to IEEE.

Suprtool2

Suprtool for AMXW requires it's own version of Suprtool2 as Suprtool needs to use AMXW's intrinsics in order for it to keep track of temp files. Suprtool2 is commonly used and linked in to Cobol programs which is used to send commands to Suprtool and launch them from inside your Cobol program.

Suprtool2 uses a variable to find the Suprtool for AMXW program and example would be:

```
export ROBSUPR=/opt/robelle/bin/suprtool
```

Suprtool2 comes in two forms either as a shared library or the .o file. Linking in of this library depends on your compiler, please refer to your compilers documentation on how to link in object code or the shared library.

Symbolic Links and running Supramxw

For AMXW version 8.05.01 Build5 and greater you can install Suprtool for AMXW in a more MPE like manner, the below instructions rely on the fact that you have installed the software in the usual Robelle location of /opt/robelle/bin.

You can change the location of this installation, but the path cannot exceed 40 characters or so. You will need to create a 'group' and 'account' called PUB and ROBELLE - just like on the 3000.

You will then need to add a link to all of the suprtool object files.

There are 3 objects...supamxw, stexamxw and linkamxw.

1. Position yourself in the PUB.ROBELLE directory.

   cd $NLROOTDIR/ROBELLE/PUB

2. Make the links. Make sure that your umask is set accordingly so that others will have access to these links...with read / execute access.

   ln -s /opt/robelle/bin/supramxw suprtool
   ln -s /opt/robelle/bin/linkamxw suprlink
   ln -s /opt/robelle/bin/stexamxw stexport
   ln -s /opt/robelle/bin/supramxw SUPRTOOL
   ln -s /opt/robelle/bin/linkamxw SUPRLINK
   ln -s /opt/robelle/bin/stexamxw STEXPORT

3. Make sure that your HPPATH variable contains a refererence to PUB.ROBELLE.

   SETVAR HPPATH "!HPPATH,PUB.ROBELLE"

You will be able to run suprtool through amxw using:

 suprtool

SUPRTOOL

RUN SUPRTOOL.PUB.ROBELLE

Total $File $List

The Total command has been enhanced in version 4.9.01 to allow the $file and $list options.

```
>in file1sd
>tot int-field
>total $file file82a
>xeq
>in file82a
```

You can also send the totals to a list file for simple reports:

```
>in file1sd
>tot int-field
>list standard file file82a
>total $file $list
>xeq
```

Oracle Integers

Suprtool by default maps certain numeric fields into packed-decimal data types when they have more than one decimal place:

Precision	Decimal Places	Suprtool Data-Type
None	Any	8-byte IEEE
1-4	Zero	2-byte Integer
5-9	Zero	4-byte Integer
1-9	Non-zero	Packed-decimal
10-27	Any	Packed-decimal
28-38	Any	8-byte IEEE

The setting:

```
Set Oracle Integer on
```

changes the Suprtool format from packed-decimal to Integer based on the size of the Number:

Precision	Decimal Places	Suprtool Data-Type
1-4	Any	2-byte Integer
5-9	Any	4-byte Integer
10-27	Any	8-byte Integer

$Clean Function and Clean Command

The $Clean function in Suprtool and Clean command in STExport now have the ability to replace a character to be cleaned with null or nothing. If you set the cleanchar as being:

```
>Set Cleanchar "<null>"
```

Suprtool will remove the character specified in the clean command and effectively shift the text to the left and blank out the portion at the end.

Oracle Dynamic Load

We have further revised the Oracle Dynamic Load to do the following:

1) Attempt to load libclntsh.sl using the dynamic path feature. See man dlopen for details.

2) Manually load $ORACLE_HOME/lib32/libclntsh.sl

Suprtool now dynamically loads all of the Oracle routines that it needs at startup. This is only done if you the Oracle interface is enabled. This insures that Suprtool is using calls only for your version of Oracle and provides a more stable environment.

If Suprtool fails to load the Oracle library, you will see the message:

```
  Warning: Your oracle library could not be loaded.
```

This means that any reference to Oracle calls will not function. If you do not have the Oracle option enabled in Suprtool you will not see the errors. It also may mean you need to add the path for the Oracle libraries either to your LD_LIBRARY_PATH or SHLIB_PATH variables. Suprtool will search for the library first in LD_LIBRARY_PATH and then SHLIB_PATH.

Eloquence Dynamic Load

Previously, Suprtool would attempt to load the Eloquence libraries and report an error message if the libraries were not loaded. This is no longer the default behaviour. Suprtool will try to load the libraries function, however Suprtool will not report an error by default. To check if your libraries were loaded you can run Suprtool with the –lw option:

```
  ./suprtool -lw
```

Oracle Connections

Due to recent patches and changes in Oracle Security, older versions of Suprtool could not connect to some Oracle databases. We have therefore re-written all of the code to connect to databases to use more up to date OCI functions.

By default, Suprtool will now use this new method of connecting. This version also improves the parsing of the open command, allowing for 30 characters each for the username, password and dbname. This also allows for connection to databases on other servers.

```
  >Open Oracle username/password@dbname
```

Set Oracle OpenFix On. Set Oracle OpenFix forces Suprtool to use the olog call, when connecting to Oracle databases. This option should no longer be necessary, now that the default is to use the new connection method.

Set Oracle OpenOld On Set Oracle OpenOld forces Suprtool to use the orlon call, when connecting to Oracle databases. This should only be used if connection to Oracle 7 databases.

Table Command

The Table command is now capable of reading files greater than 4Gb.

Output=input

Suprtool now supports the Output=input command, whereby Suprtool sorts a file onto itself. [4.9]

Suprtool now writes out the sort information when using output=input and the file is self-describing. [4.9.01]

Bugs Fixed

Bugs Fixed In Suprtool 5.0

Suprtool2 for HP-UX. Suprtool2 would abort with Signal 11 if the ROBSUPR variable was not set and thousands of invocations of Suprtool, thru the Suprtool2 interface. (5.0)

Real Numbers. Suprtool for HP-UX would incorrectly treat "R" (real and long) fields as Real and Long when it should have treated and mapped them to Ieee. (5.0)

Bugs Fixed In Suprtool 4.9.06

$split bug. Suprtool for HP-UX would abort on some versions of HP-UX if the split character was the last character in the string.

Filecode. Suprtool for AMXW would not reset the filecode to zero if the input source was self-describing and the output file was prn, display or ascii.

Bugs Fixed In Suprtool 4.9.05

Progress Messages. Suprtool for AMXW had calls to it's internal timer call information disabled which made progress messages not to have correct Wall Time stats.

Duplicate filenames. Suprtool, STExport and Suprlink for AMXW did not properly handle duplicate filenames for permanent and temporary files.

Dynamic Loading. Suprtool for AMXW, dynamic Image loading version did not properly startup in some cases, specifically when trying to detect if it could use the Fastread option or not.

Bugs Fixed In Suprtool 4.9.04

Input Command. Suprtool for AMXW did not support input filename(2/), where Suprtool starts to read at a particular record number.

Numrecs Command. Suprtool for AMXW now supports the Numrecs command to control the size of the output file.

Variable Substitution. Suprtool for AMXW does variable substition in the same manner as the HP-UX version. Suprtool for AMXW first tries to resolve variables set on HP-UX and are available as an environment variable. Then any command that uses a "!" MPE variable, will be resolved next.

STExport Output. Stexport Output command would fail as the byte size was assumed to be words, incorrectly.

Suprtool2. The latest AMXW version of Suprtool2 would interfere with some Cobol programs if they attempted to open a KSAM file.

STExport Output,temp. STExport did not support temp file creation in the AMXW version.

STExport Input badfile. STExport would core abort when trying to input a file did not exist.

Table Command. Suprtool would occasionally fail with mmap errors on HP-UX.

Output ,erase. Output, erase was not working properly in STExport and Suprlink.

Binary files. Files that had a size in words would not get linked properly in Suprlink and the Table file might assume an incorrect size.

Base Command. The Base command on it's own did not close the current database like it did on MPE.

Fastread and Locking. Suprtool would fail with a dbstatus 17, no current record found when doing an update or delete operation with Set Fastread on and Set Lock 0.

Update from a Table. Update from a Table would incorrectly update some fields with spaces if the record was not found in the table.

Bugs Fixed In Suprtool 4.9.03

OS Communication. Suprtool for HP-UX would not set the return code variable $?, if it failed with some syntax errors.

Table Command. Suprtool had some debug messages were left over in the Table module.

Oracle Access. Suprtool would have a stack overflow when the input source was an Oracle table, the if command was used and no records were selected.

Suprtool2. Suprcall for AMXW would not build a tempfile even if the Build command was specified in the Suprtool task.

Suprtool2. Suprcall would not always print the stdlist if the print-state was set to ER.

Suprtool2. Suprcall now returns an error status if Suprtool run has an error, in both the AMXW version and the regular HP-UX version.

Bugs Fixed In Suprtool 4.9.02

Oracle Access. A stack overflow error would occur when sorting with two sort keys and the input source was an Oracle Table.

Set FastRead On. Suprtool would output 100 blank records when reading an empty Eloquence dataset with set fastread on.

Suprtool2. Command lines that were not terminated with a null are now handled correctly in Suprtool2.

Suprtool2. Print state and execution of print of stdout now works properly in all cases in Suprtool2.

Suprtool2. Tmpnam call would occasionally abort on Itanium due to ineffective space allocation in Suprtool2.