
Suprtool 5.4.01 for HP-UX:

Change Notice

by Robelle Solutions Technology Inc.



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Introducing Suprtool Version 5.4.01

Overview

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

Suprlink/UX 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. be imported into different applications.

Highlights in Suprtool 5.4.01

- Suprtool for HP-UX on Itanium would abort when sorting very large records.

Highlights in Suprtool 5.4

- Suprtool for HP-UX on Itanium now properly supports \$atoc and \$etoc. (Itanium Version Only)
- Suprtool would encounter problems when reading record sizes greater than 13700 bytes. (Itanium Version Only)
- Suprtool for HP-UX on Itanium would incorrectly coerce the number negative 65536 from Binary to Decimal and Decimal to Binary. (Itanium Version Only)
- Suprtool for HP-UX on Itanium would fail with an HPPAC error if the field had spaces when reading a display field.
- The Eloquence loading algorithm has been changed to make another attempt at loading the routines.
- The Output command has been enhanced to accept the new verb "else", which when invoked it will write out the records that do not qualify and write them to an external file.

- Suprtool did not properly clear the data field information from a table at the end of a task.
- Suprtool did not properly zero out a packed field target when a table entry was not found when extracting data from a table.

Highlights in Suprtool 5.3

- The Add command which adds an input file to an Oracle table now allows for the syntax of ownername.tablename.
- A Select operation on an empty table or if the select would result in zero records it would fail if Set Ifouroutput was on. This was for the Itanium version only.
- Suprtool would not properly store the number of bits to store on a bitwise operation in the if command or extract. (Itanium only)
- The chain command would not work if a data set entry length was evenly divisible by 128. (Itanium only)
- Extract to a Logical target would produce a zero result. (Itanium only)
- An extract with an arithmetic divide would not round properly if the target field was a single-integer, double-integer, quad-integer, single-logical or double-logicals. (Itanium only)
- Suprtool would fail with Stack Overflow message or simply fail when loading a table with the sorted option if the key data type was a double-integer, small integer or small logical. (Itanium only)
- An extract operation where the target was a single integer and the source was a double integer would not work properly. (Itanium only)
- Suprtool did not properly erase the output file when using out=in, dup none key on HP-UX.
- Set Oracle SpaceNull has been added to convert byte, char and date fields when Null to spaces or leave them as null. If SpaceNull is on, then spaces will be placed in the fields. If SpaceNull is off then the field will contain nulls.
- Suprtool did not properly coerce data from Packed to Quad integer when using Set Ifouroutput on and Set Oracle Integer on. (Itanium only)
- Set Oracle Passshift Off now turns off password upshift for the oneline syntax method when you are including the service name.
- The Dup None Keys Count command didn't write out an extended name if Set SDExtname On. This was an issue in the Itanium version only and was fixed in Build 2.
- STExport did not properly handle the Delimiter Tab option. Fixed in STExport (Build 2).
- The verify command could potentially corrupt the internals of STExport and cause a core abort. (Build 3)

- Suprtool buffer allocation has been changed slightly to allocate slightly more buffer space under certain conditions. (Build 4)
- Suprtool Itanium Build 4 did not have some areas enabled for Large Files. (Fixed in Build 5)
- Suprtool did not coerce properly from Packed to Quad integer when using Set Oracle Integer on and Set Ifouroutput on. It would improperly round a number up by one. This was for some numbers greater than 16 digits. (Itanium Only Fixed in Build Six)
- The Table command would not find a field in the Table file when using Set SDExtname On. (Itanium Only Fixed in Build Six)
- The Numrecs with a percentage would not calculate properly if the input source was an Oracle Table. (Itanium Only Fixed in Build Seven)
- Suprtool would be round incorrectly if doing a divide operation and the target for the result was a packed or zoned decimal field if the data was a positive value. (Fixed in Build 8)

Itanium vs PA_RISC

There are two types of machines that HP has that run HP-UX, the older machines are based on the PA_RISC chip and the new machines that use the Itanium (and Itanium 2 chips). There are also program files that are specific to each chip. PA_RISC programs can run on both PA_RISC and Itanium machines, however, Itanium programs can only run on Itanium machines.

Any program that runs on Itanium must utilize libraries that match its own program type. Therefore if a PA_RISC program runs on Itanium and looks for a library, it must find/load the PA_RISC version of the libraries that it needs and conversely an Itanium program must load the libraries specific to its type.

How to Tell what Machine I am on?

There are many ways to tell what kind of machine you are on, here are a couple:

```
uname -m
getconf MACHINE_MODEL
```

In each case the Itanium machine will typically say ia64 somewhere in the result of the above two commands. PA_RISC machines typically say "9000" somewhere in the string.

What is the Program File Type?

Since there are two types of machines there are also at least two types of program files. Suprtool is primarily either PA_RISC 1.1 or ELF-32 / IA64 which is also known as Itanium. To determine the type of program file you can use the file command:

Itanium

```
file suprtool
suprtool: ELF-32 executable object file - IA64
```

PA_RISC

```
file suprtool
suprtool:      PA-RISC1.1 executable dynamically linked -not stripped
```

The PA_RISC binary can run on both platforms but you need to have PA_RISC libraries for Eloquence or Oracle if you are using the Oracle module. An Itanium binary will not run on a PA_RISC machine and will fail with "cannot execute".

Of course we've made a provision to identify if you are running the ia version of Suprtool in the banner and verify command with the ia after the UX :

```
SUPRTOOL/UXia/Copyright Robelle Solutions Technology Inc. 1981-2009.
(Version 5.2 Internal) MON, JUN 8, 2009, 11:26 AM Type H for help.
```

PA_RISC Loading

Suprtool by default looks in the libraries in any of the directories named in SHLIB_PATH. For example to insure that Suprtool resolves the library loads you can set the SHLIB_PATH system wide in your /etc/profile file in the following manner:

```
export SHLIB_PATH=/opt/eloquence6/lib/pa11_32:/opt/oracle/lib
```

If you do not have the SHLIB_PATH variable set to a value where the libraries can be found, Suprtool will then try to load from their default names locations. For Eloquence the default location is /opt/eloquence6/lib/pa11_32.

The Oracle interface will first try to load libclntsh.so and then attempt to load libclntsh.sl from \$ORACLE_HOME/lib32/libclntsh.sl.

Itanium Loading

You can change Suprtool to pay attention to LD_LIBRARY_PATH and use dlopen to load libraries by setting the environment variable:

```
export ROBELLE_DYN_LOAD =Y.
```

It is generally advisable to use DLOPEN or the ROBELLE_DYN_LOAD option when using the Itanium version. The PA_RISC version of Suprtool can use either type of loading, the default or the dlopen method invoked with ROBELLE_DYN_LOAD.

The Itanium version will make one more attempt at loading the Eloquence libraries from hpux32/libimage3k.sl and hpux32/libeqdb.sl as most users are setting SHLIB_PATH and LD_LIBRARY_NAME pointing to the lib directory.

Running the PA_RISC version on Itanium:

You can of course run the PA_RISC version of Suprtool, however, given that the PA_RISC version requires SHLIB_PATH to point to PA_RISC libraries may go against the configuration necessary for other programs that may need SHLIB_PATH to point to Native Itanium libraries.

The solution to this is fairly simple, you can create a command file (let's say /opt/robelle/cmd/suprtool) that runs suprtool for you, of course you need to insure your path variable has /opt/robelle/cmd before /opt/robelle/bin.

You can then have the following commands in the /opt/robelle/cmd/suprtool command file:

```
export SAVED_SHLIB_PATH=$SHLIB_PATH
export SHLIB_PATH=/opt/oracle/pa_risc/lib:/opt/eloquence/lib/pa11_32
/opt/robelle/bin/suprtool $@
export SHLIB_PATH=$SAVED_SHLIB
```

Essentially all it does save the current SHLIB_PATH setting, sets it to point to PA_RISC libraries, runs suprtool and then resets the library back.

Suprtool for Itanium

Now that you know all about PA_RISC and Itanium you do need to be aware of what Suprtool for Itanium is in terms of new code and risk for potential issues. Suprtool for Itanium is completely in C code. This does not mean that it is all new C code however, the majority of the Suprtool code is still based on SPL, but is converted to C, using Allegro's SPLASH compiler.

So while the C code is new it is based on the original SPLash code, however, given differences between C and SPLash not all code can be automatically converted in some cases. We worked closely with Allegro to find ways to have the source code work and address the various issues that came up. The entire time Allegro improved the SPLash to C converter.

So while we are based on the original Suprtool we do have new code paths in the Native Itanium version and other potential issues where the C code might not work in exactly the same manner as the SPLash code.

Having said that we have tested this against our test suites, and improved and added a large number of tests to our HP-UX test suites.

Compatibility

The HP-UX and AMXW versions of AMXW no longer have Set varsubcompat on as the default. The default is now off and can be turned on with the set command or the -cv option.

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 considered R type, however it correctly will map them to IEEE.

Suprtool/UX 4.9 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.

Fastread option is now set to On for Suprtool for HP-UX. The Dynamic loading version of Suprtool the option is set to off.

Suprtool 5.2 is necessary for use with Oracle 11 and case sensitive passwords.

Itanium Compatibility

There are a couple of differences in the Itanium version of Suprtool, which you need to be aware of.

The DBEdit module is not available in the Itanium versions of Suprtool. This module is invoked by the EDIT command.

The layout for the Verify command is slightly different then the PA-RISC versions of Suprtool.

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 various formats and 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. The first and most often utilized is the Download instructions. You can find the HP-UX download install instructions here:

<http://www.robelle.com/downloads/install-sxprod.html>

Tape installation instructions can be found here:

<http://www.robelle.com/support/install/tape/sxprod.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 5.4

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 5.3.

Eloquence Loading

The algorithm for Eloquence routine loading has changed slightly on Itanium. Suprtool will attempt to load `hpux32/libimage3k.sl` and `hpux32/libeqdb.sl` on the second attempt to load the libraries. The algorithm is that Suprtool will first try to load the files individually, then `hpux32/libimage3k.sl` and then an attempt at the fully qualified filename.

Output Command

The Output command has been enhanced to accept the new verb "else", which when invoked it will write out the records that do not qualify and write them to an external file.

Consider the following task:

```
base mydb
get customers
if custno >= "50A"
out mycusts,link,else
xeq
```

Suprtool will create two files one called `mycusts` and `mycusts.else`, technically it creates four files as they are both self-describing files and have the meta information file in the ".sd" files, however the data is put in the output files. The else file gets named automatically by Suprtool. In the example above the following files would be created :

```
mycusts
mycusts.sd
mycusts.else
mycusts.else.sd
```

This works for flat files, Eloquence (via `get` and `chain`) and Oracle databases via `Select` and self-describing files. A `.else` file will not be created when using `output,num` and `output,key`. The task will still complete but a warning will be printed indicating that `,else` cannot be used with the `,num` or `key` options.

Suprtool will throw an error when using `output,else` with either the `duplicate` command or a `duplicate` option on the output command.

The ".else" file will be in the same format as the output file.

Enhancements in Version 5.3

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 5.2.10

Add Command

The Add command which allows for adding data to an Oracle table now allows for the syntax of Ownername.Tablename. The single syntax of just giving the table name will work as it always has.

SpaceNull

Suprtool has a new setting called Set Oracle SpaceNull, which when on puts spaces in any byte, Char or Date (Oracle Date) fields instead of the nulls. The default behaviour is off.

PassShift

Suprtool now has the command Set Oracle PassShift Off which turns off the default behaviour of up-shifting Oracle passwords. This is to accommodate Oracle 11 which allows case sensitive passwords. The first pass on this was to allow the syntax of:

```
open oracle suprtest suprpas
```

We now honour Set Oracle PassShift for the syntax that includes the service name:

```
open oracle suprtest/suprpas@servname
```

Bugs Fixed

Bugs Fixed In Suprtool 5.3.12

Packed Data. Suprtool for HP-UX on Itanium would incorrectly coerce the number negative 65536 from Binary to Decimal and Decimal to Binary.

Table Command. Suprtool did not properly clear the data field information from a table at the end of a task.

Extract from Table. Suprtool did not properly zero out a packed field target when an table entry was not found when extracting data from a table and the Packed field was P12 or higher.

Bugs Fixed In Suprtool 5.3

Large Files. Suprtool Itanium Build 4 did not have some modules compile to support Large Files. (Fixed in Build 5)

STexport Delimiter. STExport did not properly write a tab between fields when using Delimiter Tab. Fixed in Build 2. (Itanium only).

STexport Verify. STExport could potentially abort if the verify command was specified after the input file and output files had been specified. Fixed in Build 3. (Itanium only).

Extract. Suprtool did not properly coerce a double integer into a single integer.

Table Sorted. Suprtool would fail with a Stack Overflow or simply fail when using the Table command with the sorted option if the key value was a double integer, single integer or a single logical.

DUP and Out=in. Suprtool did not properly erase the file when using Out=in with Dup None Keys.

Set Ifouroutput and Set Oracle Integer. Suprtool did not coerce properly from Packed to Quad integer when using Set Oracle Integer on and Set Ifouroutput on. It would improperly round a number up by one. This was for some numbers greater than 16 digits. (Itanium Only Fixed in Build Six)

Table Command. Suprtools Table command would not find a field in the Table file when using Set SDExtname On. (Itanium Only Fixed in Build Six)

Numrecs Command. The Numrecs with a percentage would not calculate properly if the input source was an Oracle Table. (Itanium Only Fixed in Build Seven)

Divide and Coercion to Packed or Zoned. Suprtool would be round incorrectly if doing a divide operation and the target for the result was a packed or zoned decimal field if the data was a positive value.