Suprtool 5.5.10 for HP-UX:

Change Notice

by Robelle Solutions Technology Inc.

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Introducing Suprtool Version 5.5.10

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.

Highlights in Suprtool 5.5.10

- Suprtool, Suprlink and STExport now handle 512 fields on HP-UX and Open platforms.

- Suprtools' extract command now has three special keywords to help with extract using a range, which is designed to make your Suprtool scripts more easily maintained. Suprtool now has $all, $first and $last which respectively means all fields, the first field or the last field. Note that $first and $last may only be used in a range extract.

- $subcount has been added to keep a running count for a given sort break.

Highlights in Suprtool 5.5.04

- Suprtool would use an incorrect field definition when copying a file where the input file had a duplicate field name with different field definition, the second field would utilize the first definition.

Highlights in Suprtool 5.5.03

- Suprtool would give an incorrect result when doing an arithmetic expression with more than one set of brackets and the data involved is Packed-Decimal. (Itanium only)

Highlights in Suprtool 5.5.02

- Suprtool and STExport would incorrectly assume a positive sign for a packed-decimal field that had an invalid sign value, when converting from Decimal to Ascii. (Itanium only)

- Suprtool for AMXW did not allocate enough space to support the same number of defined fields and items as previous versions.

Highlights in Suprtool 5.5.01

- Set Ifouroutput on extracts would fail at xeq time with an "Unknown if execute phase" error in the PA_RISC version, when an alignment issue would occur in some circumstances.

Highlights in Suprtool 5.5

- Set Fastread now has a default value of off.

- STExports Escape command has been re-written.

- Suprtool for HP-UX now supports 268 fields in both an Eloquence database and SD files.

- STExport for HP-UX now supports 268 fields in an SD file.

- Suprlink for HP-UX now supports 268 fields in an SD file.

- The PA_Risc version of Suprtool, Suprlink and STExport now prints out the Build version number.

- Set Oracle Integer on and Set Ifouroutput on no longer writes out double the calculated record size when output,data is used and the input source is an Oracle table, see the compatibility section for details.

- Set Oracle DataBug On | Off has been added to mimic the incorrect behaviour of writing double the number of bytes in versions 5.1 thru 5.4 and if no extract commands were in place and either set ifouroutput or set oracle integer were on.

- The $edit function did not work properly with alpha based edit masks and if the target was greater than 32 characters.

- A NUMRECS command with a percent greater than 101 would produce a strange result if the input source was an Oracle table on the Itanium version. This is fixed in Suprtool 5.5 Build 5.

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 $atoe and $etoa. (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 an table entry was not found when extracting data from a table.

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

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

Suprtool production versions 5.1 thru 5.4.01 would incorrectly double the record size for an output,data file when either Set Ifouroutput or Set Oracle Integer were on. This has been fixed but if your script accounted for a doubled record size this may cause and issue as we no longer incorrectly write out double the bytes. If you want to have the old bug behaviour to be re-instated you can Set Oracle DataBug On. The default for this setting is off.

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-sxpre.html

Tape installation instructions can be found here:

http://www.robelle.com/support/install/tape/sxpre.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 5.5.10

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 5.5

Extract Command

Suprtool's extract command now has three new keywords, which can be used for extract range feature. You can now say extract $all, extract $first / $last on an SD file or Image/Eloquence dataset. The intention is to make your scripts more easily maintained. If you had a script that you wanted to put a sequence number at the beginning and then extract the rest of the dataset you previously had to specify the starting field and the ending field. For example if the first field in a dataset was order-no and the last field was pst-code you may have a script that looked like this.

```
base orddb
get customers
def seq-no,1,4,double
ext seq-no=$counter
ext order-no / pst-code
out newfile,link
xeq
```

If you added any fields to the beginning or end of the dataset you would have to re-write the script. Now you can write the script as being:

```
base orddb
get customers
def seq-no,1,4,double
ext seq-no=$counter
ext $all
out newfile,link
xeq
```

You can also write the script using $first / $last as your preference, but $first and $last are also useful if you need to add data into the middle of the fields you extract:

```
base orddb
get customers
def seq-no,1,4,double
ext $first / zip
ext seq-no=$counter
ext tax-code / $last
out newfile,link
xeq
```

Please note that if a self-describing file has a fieldname that is a duplicate field and one of the duplicate fields is the last field in the file, then $first / $last and $all, will only extract up to the first occurrence of the duplicate fieldname. This may seem as an issue but it is consistent with what Suprtool does currently with extract from a

range. Currently and prior to the $first / $last enhancement Suprtool would have extracted only up to the first occurrence of the field if you had a file such as this:

```
>form
File: newfile     (SD Version B.00.00)  Has linefeeds
       Entry:                    Offset
            CHAR-FIELD          X5     1
            INT-FIELD           I1     6
            DBL-FIELD           I2     8
            PACKED-FIELD        P12   12
            PACKED*-FIELD       P12   18
            QUAD-FIELD          I4    24
            ID-FIELD            I1    32
            LOGICAL-FIELD       K1    34
            DBLLOG-FIELD        K2    36
            ZONED-FIELD         Z5    40
            FILLER              X36   45
            FILLER              X36   81
     Entry Length: 116  Blocking: 1
```

Notice that FILLER is a duplicate named field, so if you entered, extract char-field / filler, Suprtool would only extract up to and including the first FILLER field. For consistency, extract $first / $last behaves the same way.

Data Items Support

Suprtool now supports 512 data items in both Eloquence datasets and SD files and Oracle fields. STExport and Suprlink have also been updated to support the increased number of data items in the SD fields that they read, but please note that other limitations still exist. [5.5.10]

$SubCount

$SubCount has been added to provide a counter that only gets reset at a given sort break.

```
In file1sd
Sort char-field
Def control-count,1,4,double
Ext $first / $last
Ext control-count=$subcount(char-field)
Out newfile,link
xeq
```

What Suprtool will do in this case is start incrementing a number starting with 1, and increase by 1 for any given char-field value. This way you can add a counter based on a sort break for a given field.

Enhancements in Version 5.5

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 5.4.

Set Oracle

Suprtool now has a command done strictly for compatibility. In Suprtool 5.1, thru to 5.4, the output record size written out will be double the actual size when the input source was an Oracle table, either Set IFourOutput was on or Set Oracle Integer was on and no extract command were used and Output,link was not used.

Set Oracle DataBug On can be turned on to write out double the calculated record size in case some customers had code that relied on the larger record size. The default however, is off. [5.4.16]

Data Items Support

Suprtool now supports 268 data items in both Eloquence datasets and SD files. STExport and Suprlink have also been updated to support the increased number of data items.

The number of data items supported has been reduced due to a heap corruption issue which cause an fwrite to the sort scratch file. [5.4.12]

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.

Bugs Fixed

Bugs Fixed In Suprtool 5.5.04

SD File Copy. Suprtool would use an incorrect field definition on a straight copy of an SD file if the input file had a duplicate field name with different byte lengths. (HP-UX only)

Bugs Fixed In Suprtool 5.5.03

Extract Command. Suprtool would give an incorrect result when doing an Arithmetic Expression that has more than one set of brackets as in: extract amt-p=(packed-field + packed-field) – (packed-field *2) (Itanium only)

Bugs Fixed In Suprtool 5.5.02

Decimal to Ascii. Suprtool and STExport would incorrectly assume a positive sign for a packed-decimal field that had an invalid sign value, when converting from Decimal to Ascii. (Itanium only)

Bugs Fixed In Suprtool 5.5.01

Ifouroutput. Set Ifouroutput on extracts would fail at xeq time with an "Unknown if execute phase" error in the PA_RISC version, when an alignment issue would occur in some circumstances.

Bugs Fixed In Suprtool 5.5

$edit function. The $edit function did not work well with alpha based edit masks and if the target was greater than 32 characters.

Output,data. Suprtool would write out double the calculated record size when set oracle integer was on or set ifouroutput was on, and output,data option was used and no extract commands were specified and the input source was an Oracle table.

List Command. The List command on Suprtool for HP-UX on PA_RISC would not print the specified headings and title for list command to a file.
Sorting. Suprtool for HP-UX on PA_RISC would abort when sorting a file with an output record size of 39 bytes and only on some machines, with fastread on.

Bugs Fixed In Suprtool 5.4.01

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

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.