
Suprtool 6.4 for HP-UX:

Change Notice

by Robelle Solutions Technology Inc.



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Introducing Suprtool Version 6.4

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 6.4

- Rport spacing and alignment has been improved for subtotal and total lines. (All Platforms)
- Rport spacing of detail lines has been improved to allow for a space after each byte field. (All Platforms)
- Suprtool has a new command called set sdinbypass on, allows the reclen, lf syntax on an input file if it is self-describing. This was done to allow some customers to not have to change scripts. (Linux Only)
- Input files with Bigendian data are converted to Little endian about three times faster in all cases. (Linux Only)
- Suprtool when running with set ffisbe on and set endianint BE on a sort operation with extract commands would see suprtool incorrectly convert the data from LE to BE twice. (Linux Only Fixed in 6.3.50 Build 6)
- Suprtool when there was an input source of an SQL table and sorting a field with an extract of fields, and set ffisbe on and set endianint, log and lsee to BE would incorrectly convert the data to Big Endian on the Input side. (Linux Only. Fixed in 6.3.50 Build 6)
- An input of a non-sd file with defines and extracts would assume for BigEndian to Little Endian as a Self-Describing File. (Linux Only. 6.3.50 Build 2)
- A subsequent Suprtool task with large key sorts would fail when the previous step was a step that accessed an Oracle database and the Oracle database was still open. (Linux Only. Suprtool 6.3.01 Build 2)
- Suprtool no longer requires that you need to extract a field from a Flat file (ffisbe on) or Self-Describing file in order for comands like if, sort, dup none keys total field, and total, to correctly convert the data from Big Endian to Little Endian. (Linux Only. 6.3.01 Build 14)

- Suprtool / Open didn't handle double logical numbers over 2 billion when converting to ascii in the list command. (Linux Only. Fixed in 6.3 Build 2)
- Sorting with certain files would not allocate enough memory space to complete the sort. (Linux Only. Fixed in 6.3 Build 5)
- An if \$lookup would not work all times with certain data fields if the data field was Big Endian. (Linux Only. Fixed in 6.3 Build 5)
- A Chain with multiple values specified in line with byte or logical field types would fail. (Linux Only)
- Output,ascii and Stexport, conversion of double integers with decimal places would incorrectly convert, numbers where the value was less than the number of decimal places. (Linux Only.)
- Output, ascii and Stexport would incorrectly handle single logical conversions for some values. (Linux Only)
- Output,ascii would incorrectly pad uneven byte output files with a null on the first record. (Build 14)
- Output,ascii of a packed field would default to outputting a sign on all fields, when the MPE and HP-UX versions would default to no sign unless negative. (Fixed in 6.3.50 Build 4)

Highlights in Suprtool 6.3

- STExport Heading fieldnames limit has been increased to 14336 bytes.
- The Suprtool suite of products has had more 2027 mitigation work done to prepare for the end of 20271231.
- Suprtool would incorrectly do a conversion on input of a file with Big Endian data if there was an extract of a constant into an integer field (Linux Only)
- Non-MPE versions of Suprtool didn't update the Item information, decimals and date like the MPE version. When an extract command wasn't entered but an Item command referenced a specific field. You can turn this on with set sditemnoext on, but the default is off to have it be compatible with all versions of Suprtool/Open and HP-UX. You can put it in your suprmgr file, to enable it globally.
- Suprtool would incorrectly think it could sort a file in memory, as opposed to using sort scratch files in an extremely rare case. (Linux)
- Suprtool / Open didn't handle double logical numbers over 2 billion when converting to ascii in the list command. (Linux Only Fixed in Build 2)

Highlights in Suprtool 6.2

- Set Pagelen Command has been added to Rport.
- The subtotal feature of Rport will now break on multiple sort levels in the Self-Describing file.

- Rport has a new command called Hide which is intended to not report on a field in an SD file.
- Rport has a new command called Comma, which will place appropriate commas in an ascii field that was converted from a numeric field.
- There is a new setting in RPORT that is called set maxlen on, which calculates the maximum size that a field can be, including commas and dollar signs.
- Suprtool/Open now defaults to /bin/bash when a users shell is not found in the user information.
- The \$eom/\$bom function wouldn't work properly when \$stddate was nested in a \$month function and the to month had 31 days.
- Sdlinux version is available for Linux to convert the .sd file for use on Linux is now available on Linux. You can now directly copy a data file and sfile from HP-UX and convert it for use on Linux.
- Two new sub-functions of \$BOM and \$EOM are now available in the \$stddate and \$month functions. The \$BOM function returns the starting day of the month and the \$EOM returns the last date of the month for a given month.
- String functions in Suprtool now have better length and bounds checking of the 4095 string limit.
- Rport a new simple report writer has been added to the Suprtool suite of products.
- Set Limits Override has been added to the Suprtool for MPE version. (6.1.01)
- The Itanium version of Suprtool would lose track of Table data information even if the table was held between two tasks.

Highlights in Suprtool 6.1

- Suprtool has a new function called \$length that will return a double integer value of the length of a byte and/or numeric field.
- The \$ROBELLE variable has been expanded to 58 characters.
- Suprtool has a new option called Set EditSignNeutral which tells the \$edit function to treat Neutral zoned and packed fields to be positive and treated as such by the \$edit function.
- Suprlink now supports 8192 bytes on both the input file and the link file.
- Suprlink now supports 16384 bytes on the output file in Suprlink
- Stexport now supports 8192 bytes on both the input file and output files.

Highlights in Suprtool 6.0

- The List command now has a NOSAMETO option to turn off the SAMETO feature.
- Set Backwardchain On, will cause the Chain command to do a backward chained read.

- STExport has a new set command called Set Excel Leadzero On which tells the Excel command to add leading zeroes to the fields specified in the Excel Preserve command.
- Suprtool has a new function available to the if/extract commands called \$inrecnum, which expects a double integer result.
- Suprtool has a new function called \$leadzeroz, which will add leading zeroes to a display field and will optionally justify the field.
- Suprtool has a four new string handling functions, specifically, \$justifyl, \$justifyr, \$leadzerob and \$respace.
- The Add command to add data to an Oracle table would fail on some tables with an abort if there were a large number of tables in the database.

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.

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 an 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 1.289.480.1060.

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.

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

All Robelle software is available via a download link which you can get to by filling out this form:

<http://www.robelle.com/forms/request-prod-release.php>

If you don't know your Account number please provide enough information for us to find you in our database.

You can find the HP-UX download install instructions here:

<http://www.robelle.com/downloads/install-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 1.289.480.1060.

Technical support can also be obtained via e-mail at: support@robelle.com If your new version of software will not run, you can call technical support by calling the support 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/>

You can download our manuals and Change Notices in various formats from:

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

Enhancements in Version 6.4

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 6.3

Rport

Rport has had the spacing re-vamped for Header, Detail, Subtotal and Total lines. The spacing has been improved to insure that fields are easier to read and align properly.

Enhancements in Version 6.3

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 6.2

Set SDItemNoExt

Non-MPE versions of Suprtool didn't update the Item information, decimals and date like the MPE version does, when an extract command wasn't entered. You can turn this off with set sditmnoext off, but the default is on to have it behave in the same manner as the MPE version.

Enhancements in Version 6.2

Introduction

Suprtool is constantly being updated with new features. The following section describes the new enhancements to Suprtool since Suprtool 6.1.10.

Rport Set Pagelen

Rport will Page Break by default at 24 lines, you can set a Page Break to any integer value greater than 10. When Rport reaches the number of lines for a page the Titles and headings are re-printed and Rport continues on printing, detail and subtotal lines.

Rport Subtotal

Rport will follow all levels of sort specified in the Self-Describing file, and will produce a subtotal line when each level break is made.

Rport Set Maxlen

Rport will by default calculate the maximum size of a field, including, commas, decimals and dollar signs. The previous version just took into account, decimals. This is on by default, you can just use the old calculation by adding set maxlen off to your rportmgr file.

Rport Comma

Rport has a new command called comma, where you can specify a fieldname or list of fieldnames to tell Rport to add commas to a given numeric field, when it is reported on and converted to ascii. The same rules will apply for a given fields subtotal and total field. This command can only be entered after the input command.

Rport Hide

Rport has a new command called Hide which when given a fieldname will remove that field from the report. The report will be adjusted accordingly and also the Hide command must be entered after the input command.

System Commands

If the user id isn't found or a shell name isn't returned the Open version of Suprtool suite of products will assume a shell of /bin/bash.

\$Month(\$stddate())

The combination of nested \$stddate within \$Month would handle months with 31 days incorrectly if the from date was a month with less than 31 days and the to month was a month with 31 days.

Rport

All versions of Suprtool, MPE, HP-UX (PA-Risc and Itanium), and Suprtool / Open have a new component called Rport, which is a simple report writer.

The code below represents one of the more complicated reports, and shows some of the attributes that you can control. Rport works off of self-describing files and is available on MPE, HP-UX (PA-Risc and Itanium) and on all Linux platforms that Suprtool/Open runs on.

The Title command divides the lines into quadrants, primarily, left, center and right and two lines are supported. The heading column option prints the Heading information specified in each column. You can also specify Heading Fieldnames, where Rport will divide the field name into each column, and you can do your own layout for each Heading Line:

head 1	Add "	CharIntege	Double	Packed	Packed*	Quad"
head 1	Add "	IdLogica	DbLog	Zoned"		
head 2	add "	Field Field	Field	Field	Field	Field"
head 2	add "	Field Field	Field Field			

The Size command tells Rport the maximum size of the column for the data. By default Rport picks the maximum size that a field will be when converted to Ascii, as shown in the following table:

Field Format	Output Size
I1, J1	6 bytes
I2, J2	11 bytes
I3, J3	16 bytes
I4, J4	20 bytes
K1	5 bytes
K2	10 bytes

E2	12 bytes
E4	23 bytes
R2	12 bytes
Zn	n+1 bytes
Pn	n bytes

The integer specified beside the fieldname is the length for the field to use for the report. If the data overflows the field will be filled with asterisks. The Subtotal and Total commands are pretty self-explanatory.

```

in file1.rporttst
title line 1 left RPNAME "SampReport"
title line 1 center RPCOMPANY "Robelle Solutions"
title line 1 right rppageno tag "Page No : "
title line 2 left rpdate tag "Date : "
title line 2 right rpruntime tag "Run Time : "
head 1 col "Char"
head 2 col "Field"
head 1 col "Integer"
head 2 col "Field"
head 1 col "Double"
head 2 col "Field"
head 1 col "Packed"
head 2 col "Field"
head 1 col "Packed*"
head 2 col "Field"
head 1 col "Quad"
head 2 col "Field"
head 1 col "Id"
head 2 col "Field"
head 1 col "Logical"
head 2 col "Field"
head 1 col "DblLog"
head 2 col "Field"
head 1 col "Zoned"
head 2 col "Field"
size int-field 8
size dbl-field 8
size packed-field 7
size packed*-field 7
size quad-field 7
size logical-field 7
size dbllog-field 7
size zoned-field 8
subtotal int-field dbl-field packed-field packed*-field quad-field id-field
subtotal logical-field dbllog-field zoned-field
total int-field dbl-field packed-field packed*-field quad-field id-field
total logical-field dbllog-field zoned-field
out REPORT01
xeq

```

The above code creates the following report. The report shows that it can handle most data types (the field names are the data types) and provides a simple layout and automatically aligns the subtotals and the total lines. The subtotalling works off the sorted field, (in this case char-field) and prints a subtotal line each time the char-field changes.

SampReport

Robelle Solutions

Page No : 1

```

Date : 20191024                      Run Time : 12:45
Char Integer Double Packed Packed* Quad Id Logical DbLog Zoned
Field Field Field Field Field Field Field Field Field Field
11111 11.11 111.11 +111.11 +111.11 111.11 1 11.11 111.11 111.11
    11.11 111.11 +111.11 +111.11 111.11 1 11.11 111.11 111.11
22222 22.22 222.22 +222.22 +222.22 222.22 1 22.22 222.22 222.22
22222 22.22 222.22 +222.22 +222.22 222.22 2 22.22 222.22 222.22
    44.44 444.44 +444.44 +444.44 444.44 3 44.44 444.44 444.44
33333 33.33 333.33 +333.33 +333.33 333.33 1 33.33 333.33 333.33
33333 33.33 333.33 +333.33 +333.33 333.33 2 33.33 333.33 333.33
33333 33.33 333.33 +333.33 +333.33 333.33 3 33.33 333.33 333.33
    99.99 999.99 +999.99 +999.99 999.99 6 99.99 999.99 999.99
44444 44.44 444.44 +444.44 +444.44 444.44 1 44.44 444.44 444.44
44444 44.44 444.44 +444.44 +444.44 444.44 2 44.44 444.44 444.44
44444 44.44 444.44 +444.44 +444.44 444.44 3 44.44 444.44 444.44
44444 44.44 444.44 +444.44 +444.44 444.44 4 44.44 444.44 444.44
    177.76 1777.76 +1777.76 +1777.76 1777.76 10 177.76 1777.76 1777.76
55555 55.55 555.55 +555.55 +555.55 555.55 1 55.55 555.55 555.55
55555 55.55 555.55 +555.55 +555.55 555.55 2 55.55 555.55 555.55
55555 55.55 555.55 +555.55 +555.55 555.55 3 55.55 555.55 555.55
55555 55.55 555.55 +555.55 +555.55 555.55 4 55.55 555.55 555.55
55555 55.55 555.55 +555.55 +555.55 555.55 5 55.55 555.55 555.55
    277.75 2777.75 +2777.75 +2777.75 2777.75 15 277.75 2777.75 2777.75
    611.05 6111.05 +6111.05 +6111.05 6111.05 35 611.05 6111.05 6111.05

```

\$BOM and \$EOM

Suprtool has two new subfunctions called \$BOM and \$EOM which are now available in the \$stddate and \$month functions. The \$bom returns the beginning of the month date, "01" and the \$eom, returns the end of the month for the given date.

For Example, the \$stddate function will return the converted curdate, with either the beginning of the month for the day or the end of the month for the given curdate.

```

in file131
item curdate,date,ddmmyyyy
ext curdate
ext curbom=$stddate(curdate,$bom)
ext cureom=$stddate(curdate,$eom)

```

You can also use \$stddate to convert a date that is already in ccyyymmdd format to the beginning of the month or the end of the month respectively.

You can also use \$bom and \$eom as part of the \$month function even if the date is not in ccyyymmdd format.

```

Item curdate,date,ddmmyyyy
ext curdate
ext curbom=$month($stddate(curdate),+6,$bom)
ext cureom=$month($stddate(curdate),+6,$eom)

```

String Function Checks

Some of the String functions in Suprtool did not have proper length checks in place to insure that the an overflow wouldn't occur for specific functions. The length for most string fields to be checked is 4095 bytes. Suprtool will now throw a more generalized error of:

```
Error: Field in function is greater than 4095 bytes
```

If a function is longer than the 4095, the field is potentially corrupted and/or truncated.

Sdlinux for Linux

SDLinux is a utility that will convert the Self-Describing information, such that Suprtool/Open can read the file. Specifically it is meant to convert the .sd file from an HP-UX system to be read on Linux natively.

Sdlinux, will change the sd version field which tells Suprtool/Open the endianness of the sd file.

SD Version	Endianness	Extended Names
B.00.00	BIG (HP-UX) LITTLE(LINUX)	NO
B.00.01	BIG (HP-UX) LITTLE(LINUX)	YES
B.00.02	BIG	NO
B.00.03	BIG	YES

The sdlinux utility has four options, -f, -r, -h and -d. Only one option can be specified at any given time:

Option	SD Version	Integer Field
-f	B.00.00 becomes B.00.02 and B.00.01 becomes B.00.03	Any integer/logical field gets flagged as BE.
-r	B.00.02 becomes B.00.00 and B.00.03 becomes B.00.01	Any integer/ logical field gets the Endianness flag turned off.
-h	B.00.02 becomes B.00.00 and B.00.03 becomes B.00.01	No effect.
-d	No effect.	Any integer/logical field gets the Endianness flag turned off.

The sdlinux utility gets run with the above options and a filename for an argument as in:

```
./sdlinux '-ffilename'  
./sdlinux '-rfilename'  
./sdlinux '-hfilename'  
./sdlinux '-dfilename'
```

The filename specified just needs to be the data file name not the sd filename. Regardless, sdlinux will figure out what to do if the .sd extension is in the filename argument.

Set Limits Override On | Off

Set Limits OverRide tells Suprtool for MPE to ignore any subsequent Set Limits TableSize command. This was added since the new MPE table size is now 2 GB and

works well without any limit. It was also added as Suprtool 4.4 and lower did not calculate the Set Limits Tablesize limit properly. So if a user had Set Limits Tablesize 25, Suprtool would allow for a table greater than that old limit, while the new version of the table would stop with "Table Full" as prescribed by the command.

Overriding the TableSize, allows for customers to set in a global suprmgr file and not have to search thru code to remove the specific command.

Enhancements in Version 6.1

\$Length

Suprtool has a new function called \$length which returns a double integer number that is the length of a given byte or numeric field. For byte type fields Suprtool starts at the right most byte position to look for any non-space character and calculates the length of the data. For numeric fields Suprtool will convert the number to display and starting on the left will search for any non-zero character to establish the length.

Below is an excerpt from the manual, that describes how it can be used:

\$LENGTH (Works on Byte-type and numeric fields)

Purpose of the \$length function is to return the length of the specified byte field as if the field has had the \$rtrim function applied or the position of the rightmost non-space character.

If Usage:

```
if $length(NAME) >= 15
```

Extract Usage:

```
Define LenField,1,4,double  
extract LenField=$length(byte-field)
```

\$ROBELLE variable

The \$ROBELLE variable on HP-UX and Open platforms has been expanded to 55 characters for the \$ROBELLE directory name when you are installing outside of /opt/robelle. You use the \$robelle variable to tell suprtool and all of the programs that come with suprtool where to find where it is installed.

Set EditSignNeutral

The \$edit function converts data from numeric to byte and applies an edit mask to format the data. Neutral data is not considered to be signed so if you have neutral

data, a positive sign will not be applied to the edit mask. With Set EditSignNeutral turned on, Suprtool will consider the Neutral data to be positive and therefore print out the “+” or “DR”, depending on the edit-mask used.

```
Set EditSignNeutral On
```

STEXPORT

STExport now supports 8196 bytes on the input, and the output file.

SUPRLINK

Suprlink now supports 8196 bytes on the input file, link file and 16384 bytes on the output file.

Enhancements in Version 6.0

\$List NOSAMETO

The List command now has a NOSAMETO option to turn off the SAMETO feature.

BackwardChain

The Set command, Backwardchain when turned on will tell the Chain command to do a Backward Chained read.

\$INRECNUM

The if / extract commands can now utilize a new function called \$INRECNUM, which allows you to use the input record number in certain tasks. For example, the task below would find record number 11.

```
In somefile
If $inrecnum=11
```

You can also, utilize the \$inrecnum function in the extract command:

```
In somefile
Def recnum,1,4,double
Ext recnum=$inrecnum
```

The \$inrecnum function was designed to find records especially in the instance where duplicate records are in a particular data source and cannot be isolated by any other means.

\$LEADZEROZ

The if / extract commands can now utilize a new function called \$LEADZEROZ, which allows you to add leading zeroes to a specific display field. This was designed specifically for the extract command and fixing up data but can be used in the if command as well.

\$NUMBER is capable of fixing up numbers, but the new \$LEADZEROZ function is more lightweight and simply adds leading zeroes, and has an option to justify right as shown below. The source data looks like this:

```

/PRINT LEADZERO
1
 2
   3
    4
     5
      6
       7
        8
         9
10
12
12345
220

```

You can format with the following:

```

>IN LEADZERO.SUPRTEST
>DEF A,1,12,DISPLAY
>EXT A=$LEADZEROZ(A,J)
>out *
>xeq
000000000001
000000000002
000000000003
000000000004
000000000005
000000000006
000000000007
000000000008
000000000009
000000000010
000000000012
000000012345
000000000220
IN=13, OUT=13. CPU-Sec=1. Wall-Sec=1.

```

The \$LEADZEROZ function cannot fix issues like commas and decimal places in a display field, this can be handled by the \$number function.

\$LEADZEROB

The if / extract commands can now utilize a new function called \$LEADZEROB, which allows you to add leading zeroes to a specific byte field. This was designed specifically for the extract command and fixing up data but can be used in the if command as well. The data looks like this:

```

/PRINT LEADZERO
1
 2
   3
    4
     5
      6
       7
        8
         9
10
12
12345
220

```

You can clean it up with the following:

```
>IN LEADZERO.SUPRTEST
>DEF A,1,12,byte
>EXT A=$LEADZEROB(A,J)
>out *
>xeq
000000000001
000000000002
000000000003
000000000004
000000000005
000000000006
000000000007
000000000008
000000000009
000000000010
000000000012
000000012345
00000000220
IN=13, OUT=13. CPU-Sec=1. Wall-Sec=1.
```

\$JUSTIFYL

The if / extract commands can now utilize a new function called \$JUSTIFYL, which allows you to left justify text to the left side of a field.

```
>in leadzero
>def b,1,12,byte
>ext b=$justifyl(b)
>out *
>xeq
1
2
3
4
5
6
7
8
9
10
12
12345
220
IN=13, OUT=13. CPU-Sec=1. Wall-Sec=1.
```

\$JUSTIFYR

The if / extract commands can now utilize a new function called \$JUSTIFYR, which allows you to right justify text to the right side of a field.

```

>in leadzero.suprtest
>def a,1,12,byte
>ext a=$justifyr(a)
>out *
>xeq
          1
          2
          3
          4
          5
          6
          7
          8
          9
         10
         12
        12345
         220
IN=13, OUT=13. CPU-Sec=1. Wall-Sec=1.

```

\$RESPACE

The if / extract commands can now utilize a new function called \$RESPACE, which allows you to fixup byte data that has multiple spaces in between text. For example your data looks like this:

```

>in respace.suprtest
>def text,1,40
>ext text
>out *
>xeq
this is a test
  this is a   test
this is a test
this      is a test
this is a test
this is a test
  please note this is a test
this is a test
this is a test
  this is a test
  this is a test
this is a test
this is a test
dummy record
this is a not test
silly record
IN=30, OUT=30. CPU-Sec=1. Wall-Sec=1.

```

It can easily be fixed up and converted to what is shown below:

```

>in respace.suptest
>ext text=$respace(text,J)
>out *
>xeg
this is a test
please note this is a test
dummy record
this is a not test
silly record
IN=30, OUT=30. CPU-Sec=1. Wall-Sec=1.

```

SDLINUX UTILITY

Suprtool now has a utility called `sdlinux`, which will help convert an HP-UX self-describing file which will have Big Endian numbers, in the Self-Describing information and in the integers in the data file.

`Sdlinux`, is a small utility that will change the `sd` version field which tells Suprtool/Open the endianness of the `sd` file.

SD Version	Endianness	Extended Names
B.00.00	BIG (HP-UX) LITTLE(LINUX)	NO
B.00.01	BIG (HP-UX) LITTLE(LINUX)	YES
B.00.02	BIG	NO
B.00.03	BIG	YES

The `sdlinux` utility has four options, `-f`, `-r`, `-h` and `-d`. Only one option can be specified at any given time:

Option	SD Version	Integer Field
<code>-f</code>	B.00.00 becomes B.00.02 and B.00.01 becomes B.00.03	Any integer/logical field gets flagged as BE.
<code>-r</code>	B.00.02 becomes B.00.00 and B.00.03 becomes B.00.01	Any integer/ logical field gets the Endianness flag turned off.
<code>-h</code>	B.00.02 becomes B.00.00 and B.00.03 becomes B.00.01	No effect.

-d	No effect.	Any integer/logical field gets the Endianness flag turned off.
----	------------	--

The `sdlinux` utility gets run with the above options and a filename for an argument as in:

```
./sdlinux '-ffilename'
./sdlinux '-rfilename'
./sdlinux '-hfilename'
./sdlinux '-dfilename'
```

The filename specified just needs to be the data file name not the `sd` filename. Regardless, `sdlinux` will figure out what to do if the `.sd` extension is in the filename argument.

Please see the following example how you can move data from HP-UX, to Linux natively without having to export to `ascii`. On HP-UX, you simply create a self-describing file as you normally would:

```
Base mydb
Get mydataset
Out outfile,link
Xeq
```

Then you can use `sdlinux` to make some quick changes to the Self-describing information, specifically the version in the header and the integers and logicals get updated with the big endian flag being turned on:

```
sdlinux 'foutfile'
```

You can then ftp the data file and the `sd` file over to your Linux box:

```
ftp linuxbox.robelle.com
user
password
put outfile outfile
put outfile.sd outfile.sd
quit
```

You can then reverse the effects of the `-f` option with the `-r` option:

```
sdlinux -routfile
```

Then on Linux you can read the `sd` file natively even though the `sd` information has big endian information and the data file can be read with bigendian integers and logicals.

```

>in outfile
>form
  File: outfile      (SD Version B.00.02)  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
Entry Length: 80  Blocking: 1
>num 3
>list
>xeg
>IN outfile (0) >OUT $NULL (0)
CHAR-FIELD      = 11111      INT-FIELD       = 1111
DBL-FIELD       = 11111      PACKED-FIELD    = +11111
PACKED*-FIELD   = +11111     QUAD-FIELD     = 11111
ID-FIELD        = 1          LOGICAL-FIELD   = 1111
DBLLOG-FIELD    = 11111     ZONED-FIELD    = 11111
FILLER          =

```

Bugs Fixed

Bugs Fixed In Suprtool 5.8.11

Add Command. The Add command would fail if a Table in an Oracle database accessible by a given username had more than 2.1 billion entries on Oracle 11 and higher.

Bugs Fixed In Suprtool 5.8.10

Banner. The opening banner at runtime would display the wrong day and day of month. This was only an issue in Suprtool 5.8.

Bugs Fixed In Suprtool 5.7.11

Set CleanChar. Set CleanChar to a single character, after a Set CleanChar “<null>” would not come into effect due to the special null flag not being reset. This was in both Suprtool and STExport.

Bugs Fixed In Suprtool 5.7

STExport/Suprlink. PA_RISC versions of Suprlink and STExport would fail when attempting to report an error on an OUTPUT file if the user specified a directory that didn't exist or the user didn't have write permission to.

Bugs Fixed In Suprtool 5.6.11

Output , Display Command. Suprtool for Itanium and Suprtool/Open would not properly convert negative, single and double integers when output/display is invoked

Quad Integer Input Parsing. Suprtool/Open would not parse a negative number into a quad integer container.