

Tools for z/OS UNIX System Services

These tools build a collection of useful functions for the z/OS UNIX System Services Environment. Especially there is included support for the OMVS shell in systems running with German or US Host Emulation Code pages. Editing of UNIX files is supported for all emulation code pages supported by **iconv** (conversion to and from IBM-1047). To get detailed information how to install the package click on [Installation](#).

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Table of Contents

Introduction	Introduction and comments to the tools contained in this package
AOBROWSE	OBROWSE USS files available in ASCII converted to a specified code page if conversion is supported by ICONV
AOEDIT	OEDIT USS files available in ASCII converted to a specified code page if conversion is supported by ICONV
GO	Get back to the ISPF/TSO session(s) while OMVS shell session(s) are kept active
GOBROWSE	OBROWSE USS files converted to the German code page
GOEDIT	OEDIT USS files converted to the German code page
OMVS	Run OMVS with a specified OMVS conversion table
PSINFO	Get information about active processes
REXX	Removed from package. (See new version at ITSO Tools instead.)
RXSHELL	Removed from package. (See new version at ITSO Tools instead.)
RXSUSH	Removed from package. (Use command <code>tso su rxshell</code> instead.)
SAOEDIT	OEDIT USS files available in ASCII converted to a specified code page if conversion is supported by ICONV in SU mode
SGOEDIT	OEDIT USS files converted to the German code page in SU mode
SOEDIT	OEDIT USS files in SU mode
SU	Run commands in ISPF/TSO foreground or TSO batch in SU mode
SUOEDIT	OEDIT USS files converted to the US code page in SU mode
SWSU	Removed from package. (Use <code>rxsudo</code> from ITSO Tools instead.)

SXOEDIT	OEDIT USS files converted to a specified code page supported by ICONV in SU mode
UOBROWSE	OBROWSE USS files converted to the US code page
UOEDIT	OEDIT USS files converted to the US code page
XOBROWSE	OBROWSE USS files converted to a specified code page supported by ICONV
XOEDIT	OEDIT USS files converted to a specified code page supported by ICONV
Hints and Tips	Additional Hints and Tips how to use these USS tools
Installation	Detailed information how to install the package

Introduction

This package includes several z/OS UNIX tools which are especially useful in the following situations:

- Editing IBM-1047 UNIX files
- Working in the OMVS Shell
- Working with UNIX System Services as a BPX.SUPERUSER

It was made available at the [z/OS UNIX tools](#) page in June 2001 for the first time. In the meantime several updates were needed to incorporate changes made within interface routines in z/OS V1.3 (when editing UNIX files). Furthermore, some new functions have been added.

All the BROWSE and EDIT tools in this package which handle code page conversion from and to the standard z/OS UNIX code page are using a temporary file in the `/tmp/` directory with all `/`-characters replaced by `\` in order to provide the impression that the user is working with the original file. Please note, that it is necessary to end an edit session in order to activate the modifications in the original file.

In this description the term **z/OS** is a synonym for both, OS/390 and z/OS. If you see **BPX.SUPERUSER** this means a superuser or a user with READ access to FACILITY profile BPX.SUPERUSER. **SU mode** serves as a short form for superuser mode, i.e. running with real and/or effective UNIX UID value set to 0. The term **IBM-1047 USS file** is a short form for a UNIX file with a contents composed in the standard z/OS UNIX code page IBM-1047 or simply 01047.

Before providing a description of the tools it is the right place to say thank you to all the customers and IBM colleagues which tested specific tools, sent suggestions for changes or enhancements. Especially I want to thank Britta Kuehn for her help in putting together

the German conversion table and Hans-Dieter Mertiens for testing it and distributing it to many customer locations.

AOBROWSE

This function allows browsing USS files available in ASCII from the OMVS shell ([aobrowse](#)) or from ISPF/TSO ([tso aobrowse](#)) according to your (country) terminal emulation used. The syntax is the same as with **obrowse**. If you omit the name of a file the "Browse Entry Panel" will be displayed.

To run AOBROWSE in SU mode have a look to [Running BROWSE Commands in SU mode](#) in topic [Hints and Tips](#).

AOEDIT

This tool allows editing USS files available in ASCII from the OMVS shell ([aoedit](#)) or from ISPF/TSO ([tso aoedit](#)) according to your (country) terminal emulation used. The syntax is the same as with **oedit**. If you omit the name of a file the "Edit Entry Panel" will be displayed.

You may use [SAOEDIT](#) to run AOEDIT in SU mode.

GO

The idea behind this function had been mentioned by Bill Schoen long ago in a UNIX forum entry. When recognizing that only a few USS users were/are aware of this simple trick to get back to ISPF from the OMVS shell environment I decided to make it a tool and name it GO like "Go to ISPF". Just enter

go

in an OMVS shell to get (back) to your ISPF/TSO environment and all active ISPF sessions while the OMVS shell session(s) are kept. Press **PF3** on the ISPF session marked with an application id of **OMVS** to return to the UNIX shell session(s).

GOBROWSE

allows to browse IBM-1047 USS files from the OMVS shell ([gobrowse](#)) or from ISPF/TSO ([tso gobrowse](#)) with the correct character display if you are using a German terminal emulation (IBM-273 or IBM-1141). The syntax is the same as with **obrowse**. If you omit the name of a file the "Browse Entry Panel" will be displayed.

To run GOBROWSE in SU mode have a look to [Running BROWSE Commands in SU mode](#) in topic [Hints and Tips](#).

GOEDIT

allows to edit IBM-1047 USS files from the OMVS shell ([goedit](#)) or from ISPF/TSO ([tso goedit](#)) with the correct character display on input and output if you are using a German terminal emulation (IBM-273 or IBM-1141). The syntax is the same as with **oedit**. If you omit the name of a file the "Edit Entry Panel" will be displayed.

You may use [SGOEDIT](#) to run GOEDIT in SU mode. To use GOEDIT for editing CRON tables have look to [Editing CRONTABs](#) in topic [Hints and Tips](#).

OMVS

allows to work in the OMVS shell with the standard z/OS USS code page IBM-1047 active while all special characters like "|", "[", "]", "{", "}" and so on are interpreted and displayed correctly on input and output if you are using a German or the US terminal emulation. You just need to use a special option to reflect the code page that you are using.

Use

```
tso %omvs g
```

If you are using IBM-273 or IBM-1141, use

```
tso %omvs u
```

if your terminal emulation is IBM-037. To get a more detailed information how to specify parameters just enter

`tso %omvs ?`

Regarding the German terminal emulation this functionality is based on the conversion table file within UNIX.LINKLIB. If you want to use a USS conversion table by default have a look to [Using specific USS conversion tables by default](#) in [Hints and Tips](#). The information given will provide the means how to use the standard OMVS command again instead of the REXX procedure!

PSINFO

allows to get information about active processes similar to USS shell or ISHELL command `ps`. The command is supported in ISPF/TSO (`tso psinfo`) and the UNIX shell environments (`psinfo`). If the user is a BPX.SUPERUSER and the command is run from a USS shell environment it is run in SU mode automatically. To get a detailed help just enter

`psinfo`

SAOEDIT

A BPX.SUPERUSER may use this command to run [AOEDIT](#) in SU mode. It is supported from ISPF/TSO (`tso saoeedit`) and the OMVS shell environment (`saoeedit`).

SGOEDIT

A BPX.SUPERUSER may use this command to run [GOEDIT](#) in SU mode. It is supported from ISPF/TSO (`tso sgoedit`) and the OMVS shell environment (`sgoeedit`).

SOEDIT

A BPX.SUPERUSER may use this command to run `OEDIT` in SU mode. It is supported from ISPF/TSO (`tso soedit`) and the OMVS shell environment (`soedit`).

SU

A BPX.SUPERUSER may use this command to run commands in SU mode from ISPF/TSO. Have a look to the following samples:

```
su oput usstools(etcssetup) '/etc/.setup'  
su rexx s chmod /etc/.setup 755
```

SUOEDIT

A BPX.SUPERUSER may use this command to run [UOEDIT](#) in SU mode. It is supported from ISPF/TSO ([tso suoedit](#)) and the OMVS shell environment ([suoedit](#)).

SXOEDIT

A BPX.SUPERUSER may use this command to run [XOEDIT](#) in SU mode. It is supported from ISPF/TSO ([tso sxoedit](#)) and the OMVS shell environment ([sxoedit](#)).

UOBROWSE

This allows browsing IBM-1047 USS files from the OMVS shell ([uobrowse](#)) or from ISPF/TSO ([tso uobrowse](#)) with the correct character display if you are using the US terminal emulation (IBM-037). The syntax is the same as with **obrowse**. If you omit the name of a file the "Browse Entry Panel" will be displayed.

To run UOBROWSE in SU mode have a look to [Running BROWSE Commands in SU mode](#) in topic [Hints and Tips](#).

UOEDIT

This allows editing IBM-1047 USS files from the OMVS shell ([uoedit](#)) or from ISPF/TSO ([tso uoedit](#)) with the correct character display on input and output if you are using the US terminal emulation (IBM-037). The syntax is the same as with **oedit**. If you omit the name of a file the "Edit Entry Panel" will be displayed.

You may use [SUOEDIT](#) to run UOEDIT in SU mode. To use UOEDIT for editing CRON tables have look to [Editing CRONTABS](#) in topic [Hints and Tips](#).

XOBROWSE

This allows browsing IBM-1047 USS files from the OMVS shell ([xobrowse](#)) or from ISPF/TSO ([tso xobrowse](#)) with your local emulation code page. The syntax is the same as with [obrowse](#). If you omit the name of a file the "Browse Entry Panel" will be displayed.

To run XOBROWSE in SU mode have a look to [Running BROWSE Commands in SU mode](#) in topic [Hints and Tips](#).

XOEDIT

This allows editing IBM-1047 USS files from the OMVS shell ([xoedit](#)) or from ISPF/TSO ([tso xoedit](#)) with your local emulation codepage. The syntax is the same as with [oedit](#). If you omit the name of a file the "Edit Entry Panel" will be displayed.

You may use [SXOEDIT](#) to run XOEDIT in SU mode. To use XOEDIT for editing CRON tables have look to [Editing CRONTABS](#) in topic [Hints and Tips](#).

Hints and Tips

Using specific USS conversion tables by default

If you want to use the German conversion table provided in library UNIX.LINKLIB by default, run the following two MVS system commands:

```
SETPROG LPA,ADD,MODNAME=(FSUMQ000),DSNAME=UNIX.LINKLIB  
SETPROG LPA,ADD,MODNAME=(BPXFX000),DSNAME=UNIX.LINKLIB
```

This will provide the following advantages:

- It is no longer necessary to use the REXX procedure OMVS if you want to use the German conversion table support and the standard OMVS command can be used instead again. The REXX is only needed if you want to run the OMVS shell together with the US terminal emulation or if you want to avoid any conversion by using the "NULL" conversion table.

- When using OCOPY, OPUT(X) or OGET(X) you can use the parameter **CONVERT(YES)** to achieve a data conversion between the German and the standard UNIX code page.

You can make use of this "default" support for the US terminal emulation as well as you have the REXX procedure available for all the other situations again. BPXFX000 is defined as an alias of BPXFX111 (the US code page conversion table) in SYS1.LINKLIB already. The only thing needed is to define FSUMQ000 as an alias of BPXFX111, too. By default FSUMQ000 points to the null character conversion table BPXFX100.

Editing CRONTABS

To be able to use all special characters as with goedit (or uoedit as well) when editing a CRONTAB file you may do one of the following.

1. Enter

```
EDITOR=goedit crontab -e
```

2. Or run

```
export EDITOR=goedit
```

followed by

```
crontab -e
```

Running BROWSE Commands in SU Mode

Running browse commands in SU mode is supported by using the SU command. See the following sample.

```
tso su gobrowse /etc/rc
```

Installation

Preparation

Get the file **USSTOOLS.UNLOAD.BIN** and put it binary to an FB80 data set in your z/OS system. See the following FTP example:

```
ftp my.zos.system
myuser
mypasswd
binary
quote site blk=3120 lrecl=80 recfm=fb
put usstools.unload.bin usstools.unload
```

Afterwards run the following command on your z/OS system:

```
receive indsn(usstools.unload)
```

Installing the Tools

Now you should be able to edit or view the PDS data set **USSTOOLS**. The first member is named **\$INSTALL**. Near the top you will find a sequence of job variables that may be customized according to your installation's naming conventions and file structure. A copy of this HTML file (ready for binary transfer to a workstation) should be available with the name specified for variable **HTMLFILE** after running the install job. What need to exist are a REXX library like **UNIX.REXX.EXEC** which should be located within the SYSPROC or SYSEXEC library chain and a UNIX path like **/usr/local/bin** which is addressable through the PATH environment variable.

If you change the name of the UNIX.LINKLIB you need to correct the **conv_parm** or **conv_ger** statement value "UNIX.LINKLIB(BPXFX273)" in the following REXX procedures accordingly:

- GOEDIT
- OMVS

Furthermore, you should edit and adopt the following settings in REXX procedure GOEDIT

```
backslash = "?"                                /* Back slash          */
...
xoedit_ux_codepg = "IBM-1047"                  /* Use iconv for       */
xoedit_ed_codepg = "IBM-273"                   /* IBM-273 <-> IBM-1047 */
aoedit_ux_codepg = "ISO8859-1"                 /* Use iconv for ISO   */
aoedit_ed_codepg = "IBM-273"                   /* ASCII <-> IBM-273   */
```

Replace the "?" by the character that represents the back slash in your local code page used and also change "IBM-273" accordingly. You may also change settings later on when the files are copied to into the target REXX Library. But then you need to modify all the following files, depending on what is needed when they are used: GOBROWSE, GOEDIT, OMVS, XOBROWSE, XOEDIT, UOBROWSE, UOEDIT, AOBROWSE, AOEDIT. If you use the US and a local terminal emulation in parallel it may be useful to

replace the back slash character in UOBROWSE and UOEDIT after installation, of course. Finally a last example; if you decide to use XOBROWSE and XOEDIT with the US emulation replace IBM-273 by IBM-037.

Assemble and Link-edit the German Conversion Table File

If you should ever need to assemble and link-edit the German conversion table file BPXFX273 again use the following LINK parameters and INCLUDE statements:

```
...  
//  PARM='LIST,REUS,RENT,NCAL,LET,MAP,AMODE=31,RMODE=ANY,AC=0'  
...  
//SYSLIN DD DATA,DLM=##  
  INCLUDE BPXFX273  
  ENTRY BPXFX273  
  ALIAS BPXFX000  
  ALIAS FSUMQ000  
  NAME BPXFX273(R)  
##
```
