

Co:Z® Co-Processing Toolkit for z/OS

# Co:Z z/OS Utilities - User's Guide

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# 1. Introduction

The Co:Z z/OS Utilities are z/OS Unix System Services commands that can be used to access a variety of z/OS artifacts and services.

These Utilities can be invoked from Unix System Services directly (interactively, or from a shell script) or used as shell commands within a *Co:Z Batch* job step. They can also be invoked remotely via the Co:Z Dataset Pipes remote services `cozclient` command.

## Features:

- Get/Put PDS(E) members to and from the z/OS Unix System Services file system
- List z/OS catalogs
- Display JES job and spool file status
- Issue WTO messages from Unix System Services
- Access z/OS and JES Symbol service
- Various Co:Z support utilities

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## 2. Installation

The Co:Z z/OS Utilities are available once the *Co:Z Toolkit for z/OS* is installed. The command executables are in the Co:Z installation bin directory.

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# Appendix A. Command Reference - Co:Z z/OS Utilities

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- [wto\(1\)](#)
- [zsym\(1\)](#)

## Name

catsearch — list z/OS catalogs

## Synopsis

```
catsearch [-l] [-t [delim_char]] [-m max_entries] [-e entry_types] [-R] filter_key
catsearch [-x] [-e entry_types] filter_key
```

## Description

This z/OS Co:Z utility command wraps the Catalog Search Interface (IGGCSI00) and provides a convenient display of information about the Datasets that match the supplied *filter\_key*.

The syntax of the *filter\_key* and additional documentation can be found in the following IBM publication: *DFSMS: Managing Catalogs - SC26-7409*.

Listing the entire catalog (*filter\_key \*\**) is dis-allowed.

## Options

-l

Requests long form information about the listed Datasets. This information includes Volume, last referred date, tracks, used, recfm, lrecl, blocksize, dsorg and Dataset name.

-t

Requests long form information about the listed Datasets in delimited format. If *delim\_char* is supplied, it is used as a delimiter, otherwise a tab character (`\t`) is used.

-m *max\_entries*

Changes the maximum number of entries that will be returned by catsearch. the default is 2000.

-e *entry\_types*

Changes the default entry type filter for catsearch. The default, if not specified, is ABCGHRU. Refer to *z/OS DFSMS Managing Catalogs: Catalog Search Interface* for more information..

-R

Turns off data set alias resolution. It is on by default.

-x

Sets the exit code based on entries found. Entries found are not listed. With this option the following are ignored: -l, -t, and -m.

The exit code is set according to the following:

- 0 - no entries found
- 1 - one entry found

- 2 - more than one entry found
- 4 or greater - IGGCSI00 error (the return code)

## Examples

1. This example shows a long listing `-l` form of a **catsearch**.

```
>catsearch -l user.coz.**
Volume Referred Ext Tracks Used Recfm Lrecl BlkSz Dsorg Dsname
WORK81 2008/09/24 1 30 ? U 0 6144 PO-E USER.COZ.LOADLIB
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.SAMPJCL
WORK84 2008/09/11 1 1 1 U 0 6144 PS USER.COZ.TEST.SEQ
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.TESTJCL
```

2. This example shows the difference between the single and double asterisk filter key symbols. A single asterisk only lists datasets within the current segment; the double asterisk will span segments.

```
>catsearch -l user.coz.*
Volume Referred Ext Tracks Used Recfm Lrecl BlkSz Dsorg Dsname
WORK81 2008/09/24 1 30 ? U 0 6144 PO-E USER.COZ.LOADLIB
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.SAMPJCL
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.TESTJCL

>catsearch -l user.coz.**
Volume Referred Ext Tracks Used Recfm Lrecl BlkSz Dsorg Dsname
WORK81 2008/09/24 1 30 ? U 0 6144 PO-E USER.COZ.LOADLIB
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.SAMPJCL
WORK84 2008/09/11 1 1 1 U 0 6144 PS USER.COZ.TEST.SEQ
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.TESTJCL
```

3. Shows the use of the `-d` switch. Note that only the partial (pseudo directory) is listed for `USER.COZ.TEST`, and that there is no accompanying detailed information. Use of this option can be helpful when dealing with large catalogs.

```
>catsearch -dl user.coz.**
Volume Referred Ext Tracks Used Recfm Lrecl BlkSz Dsorg Dsname
WORK81 2008/09/24 1 30 ? U 0 6144 PO-E USER.COZ.LOADLIB
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.SAMPJCL
USER.COZ.TEST
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.TESTJCL
```

4. Shows the use of the `-x` switch. For illustration, the example below first shows a long listing using filter key `user.coz.*`. The result contains 3 datasets. The exit code using the `-x` switch and the same filter key is 2 indicating more than one entry found. The exit code is displayed by `echo $?`.

```
>catsearch -l user.coz.*
Volume Referred Ext Tracks Used Recfm Lrecl BlkSz Dsorg Dsname
WORK81 2008/09/24 1 30 ? U 0 6144 PO-E USER.COZ.LOADLIB
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.SAMPJCL
WORK81 2008/09/24 1 15 4 FB 80 27920 PO USER.COZ.TESTJCL
```

```
>catsearch -x user.coz.*  
>echo $?  
2
```

## Name

copypds — copy a PDS(E) to another PDS(E) with member selection

## Synopsis

```
copypds [OPTION]... //source.dataset.name //target.dataset.name
copypds [OPTION]... //source.dataset.name(member_filter) //target.dataset.name
copypds -h
copypds -v
```

## Description

This z/OS Co:Z utility command makes a copy of a PDS or PDSE using the COPYGROUP operation of IBM's IEBCOPY utility. If the target PDS(E) does not exist, it will be created with allocation parameters like the source. If the target PDS(E) exists, members with the same name can be replaced or skipped, based on the options set.

`source.dataset.name` is either an MVS PDS or PDSE data set, preceded by '//'.

`target.dataset.name` may already exist. If it does, it must be a PDS or PDSE. If it does not exist, it will be allocated like `source.dataset.name`.

If `member_filter` is given, just the matching members from the source data set will be copied.

- It must follow the IEBCOPY COPYGROUP member name filter pattern syntax
- It cannot be specified if the `-M` switch is specified

In a shell you will need to quote `"//source.dataset.name(member_filter)"` since ( and ) are meta characters.

The `-M` switch can be specified multiple times, or will read from stdin if the argument is "-".

If the command fails during the IEBCOPY invocation, the IEBCOPY utility messages will be written to `stderr`. These messages will be emitted during a successful run if the logging level is set to `Info` or more verbose.

## Options

`-h`  
display this help and exit.

`-L logging-options`  
A comma-separated list of options to control logging and tracing.

M | A | C | E | W | N | I | D | T | F

Logging threshold: eMergency, Alert, Critical, Error, Warning, Notice (default), Info, Debug, Trace, Fine.

t

Prefix log messages with a system timestamp

e

Include consumed cpu time in log messages

f=filename

Messages are logged to `filename` on the server instead of `stderr`. If not fully qualified, the file is written to the user's home directory on the server.

component=M|A|C|E|W|N|I|D|T|F

Set the logging threshold for a specific component. Specify only at the request of product support personnel.

-M

custom IEBCOPY member SELECT or EXCLUDE MEMBER statement. This switch can be specified multiple times, or if the argument is a hyphen "-", the control statements will be read from `stdin`.

-r

both the source and target data set names are prefixed with MVS userid.

-R y|n|w

If `y`, replace like named members if the target data set exists. If `n`, do not replace like named members and set `RC=0` even if there was a conflict. If `w`, do not replace and set `RC=4` if there was a conflict. `-Rw` is the default.

-T

display the IEBCOPY command details without executing.

-v

display the current version and exit.

## Examples

1. This example copies all of the members of a PDSE to a new PDSE

```
$ copypds //goetze.cozexits.loadlib //goetze.myexits.loadlib
```

2. This example copies the members of a PDSE with names starting with the characters CZP to an existing PDSE.

```
$ copypds -Ry "//goetze.cozexits.loadlib(CZP*)" //goetze.myexits.loadlib
```

3. This example uses the `-T` option (test mode) that shows what the IEBCOPY invocation will look like without running the utility.

The example also shows the use of `-M-` option to read the custom member selection control statements from `stdin`.

```
$ copypds -TRy -M- //goetze.cozexits.loadlib //goetze.myexits.loadlib <<EOB
> select member=(czchk*)
> exclude member=(czchkip)
> EOB

//COPYPDS EXEC PGM=IEBCOPY,PARM='WORK=2M,RC4NOREP'
```

```
//SYSUT1 DD DSN=GOETZE.COZEXITS.LOADLIB,DISP=SHR
//SYSUT2 DD DSN=GOETZE.MYEXITS.LOADLIB,DISP=OLD
//SYSPRINT DD SYSOUT=*,DCB=(RECFM=FBA,LRECL=121)
//SYSIN DD *
COPYGROUP INDD=((SYSUT1,R)),OUTDD=SYSUT2
SELECT MEMBER=(CZCHK*)
EXCLUDE MEMBER=(CZCHKIP)

//
```

4. This example is the same as the above example replacing the `-T` option with the `-LI` option (log at the INFO level) which runs the IEBCOPY utility and displays the messages.

```
$ copypds -VRy -M- //goetze.cozexits.loadlib //goetze.myexits.loadlib <<EOB
> select member=(czchk*)
> exclude member=(czchkip)
> EOB

copypds[N]: Iebcopy: 1 IEBCOPY MESSAGES AND CONTROL STATEMENTS
copypds[N]: Iebcopy: -IEB1135I IEBCOPY FMID HDZ2230 SERVICE LEVEL UA92265 DATED 20170618 DFSMS
copypds[N]: Iebcopy: IEB1035I GOETZE *OMVSEX 12:20:54 WED 21 OCT 2020 PARM='WORK=2M'
copypds[N]: Iebcopy: - COPYGROUP INDD=((SYS00010,R)),OUTDD=SYS00011
copypds[N]: Iebcopy: SELECT MEMBER=(CZCHK*)
copypds[N]: Iebcopy: EXCLUDE MEMBER=(CZCHKIP)
copypds[N]: Iebcopy: 0IEB1013I COPYING FROM PDSE INDD=SYS00010 VOL=VPWRKC DSN=GOETZE.COZEXITS.LOADLIB
copypds[N]: Iebcopy: IEB1014I TO PDSE OUTDD=SYS00011 VOL=VPWRKB DSN=GOETZE.MYEXITS.LOADLIB
copypds[N]: Iebcopy: IGW01264I TOTAL PRIMARY NAMES: 4, FILTER PATTERN MATCHES: 2
copypds[N]: Iebcopy: IGW01552I MEMBER CZCHKCMD HAS BEEN COPIED AND REPLACED
copypds[N]: Iebcopy: IGW01552I MEMBER CZCHKPWD HAS BEEN COPIED AND REPLACED
copypds[N]: Iebcopy: IGW01550I 2 OF 2 SPECIFIED MEMBERS WERE COPIED
copypds[N]: Iebcopy: IEB147I END OF JOB - 0 WAS HIGHEST SEVERITY CODE
```

## Name

getpds — Copy PDS(E) member(s) to UNIX file(s)

## Synopsis

```
getpds [OPTION...] //dataset.name dest_dir
getpds [OPTION...] //dataset.name(member-pattern) dest_dir
getpds [OPTION...] //dataset.name(member) dest_file
getpds -h
getpds -v
```

## Description

The **getpds** command copies PDS(E) member(s) to UNIX file(s). The records for each member are converted to a stream of bytes in the UNIX file, depending on the options provided. By default, records are written as text with newline separators and trailing blanks trimmed from fixed length record formats.

`dataset.name` is either an MVS PDS or PDS/E dataset, preceded by `/'`. The name is assumed to be a fully qualified DSN, unless the `-r` option is used. Supported record formats include: RECFM=F(B), V(B), and U. RECFM=VBS is not supported, and statistics processing is not available with RECFM=U. Load modules, program objects, aliases, or other members with user TTRNs will not be copied.

If `(member-pattern)` is given, it may be either a comma separated list of up to 9 member names or wild card patterns with `'*` or `'?`.

If `(member)` is a single member name and `dest_file` (not a directory) is given, then that file name will be used as given and may be `"-"` for printing to stdout.

Otherwise, selected members will be copied to filenames `memname[.suffix]` in the destination directory, depending on `-M` member processing options.

In a shell you will need to quote `//dataset.name(member)` since `(` and `)` are meta characters. member names or patterns with the `'$'` character will need to be either escaped or enclosed in single quotes, again to avoid processing by the shell.

## Options

- `-b`  
Specifies that the data should be transferred in "binary", i.e translation is disabled. Setting this option implies: `-k -l none -p 0x00`.
- `-h`  
display help and exit.
- `-k`  
keep trailing spaces in record; default is to trim spaces for fixed records.

-K

always trim trailing spaces.

-l line-separator

nl | cr | lf | crlf | crnl

follow lines with a newline, carriage return, linefeed, or combination. The characters are taken from the target codepage. The default is nl.

rdw

precede lines with a four byte IBM-style RDW, consisting of a two byte network order (big endian) length, followed by two bytes of zeros.

l4

precede lines with a four byte network order (big endian) length of the record that follows. Note: Unlike the rdw option, this length value does **not** include the size of the length field.

mfrdw

Write a 128 byte MicroFocus standard header prior to output data. Precede each line with a network order (big endian) length. If the maximum record length is < 4095 bytes, the length field is 2 bytes. If the maximum record length is >= 4095 bytes, the length field is 4 bytes. Each line is padded with zeros to the nearest 4 byte boundary.

0xbb[bb...]

follow lines with a hex character sequence. The sequence must be between 1 and 8 bytes long.

none

no line separator

-L logging-options

A comma-separated list of options to control logging and tracing.

M | A | C | E | W | N | I | D | T | F

Logging threshold: eMergency, Alert, Critical, Error, Warning, Notice (default), Info, Debug, Trace, Fine.

t

Prefix log messages with a system timestamp

e

Include consumed cpu time in log messages

f=filename

Messages are logged to filename on the server instead of stderr. If not fully qualified, the file is written to the user's home directory on the server.

component=M|A|C|E|W|N|I|D|T|F

Set the logging threshold for a specific component. Specify only at the request of product support personnel.

-p 0xbb

pad character.

-q technique-str

Codepage conversion technique string. Used to override the default Unicode Services value of LMREC. For more information, see IBM's Unicode Services User's Guide and Reference (SA22-7649).

-r

dataset-name will be prefixed with the current z/OS userid.

-s source-codepage

The codepage name or numeric CCSID id of the input dataset. If not specified, then the default z/OS codepage for the current process is used.

-t target-codepage

The codepage name or numeric CCSID id of data written to stdout. If not specified and invoked from a remote client with a line- separator other than 'none', 'rdw' or 'mfrdw', then the default client codepage is used, otherwise the default z/OS code- page is used. Translation is disabled if source-codepage equals target-codepage.

-T STANDARD | translate\_table\_dsname

Specifies the translate table to use for text mode transfers. This option overrides the -s -t -q options if also given. If STANDARD, the translate table TCPIP.STANDARD.TCPXLBIN is used. If a dataset name is supplied, it is expected to be in the format produced by the TSO CONVXLAT command. Only single byte translations are supported. Specifically, the dataset DCB must be LRECL=256,RECFM=F and contain two translation table records. The first record is an ASCII-to-EBCDIC mapping; the second record is an EBCDIC-to-ASCII mapping. Additional comment records (starting with \* in the first column) are allowed.

-M keyword=value[ ,keyword=value... ] member processing options

A comma-separated list of keyword and value pairs for specifying member processing options.

mt[ime]=c[urrent] | m[ember]

file mtimes set to current(default) or member stats time (if present).

r[eplace]=y[es] | n[o]

if yes (default) then existing target files may be replaced.

su[ffix]=suffix

suffix added to member name to generate file names. This is ignored if a specific single member and target file (not a directory) are given on the command

st[atfile]=filename

used with the zigi product to write/update statistics for members to a file. The filename may be specified as - to print member stats to stdout.

tag=y[es]|n[o]

if 'yes', copied files are tagged as text with the target **-t codepage** (or its default) or tagged as binary if the target files contain binary data (e.g. **-b**). The default is no tagging.

upp[ercase]=y[es]|n[o]

file member names uppercased? (default=no: lower case)

up[date]=a[all]

copy all selected members (default)

up[date]=n[ewer]

only copy members with stats that are newer than target file mtime, or statsfile entry if specified. This also copies if members (or statsfile) stats are not present.

-v

display the current version and exit.

## Examples

1. This example copies all of the members of a PDS to the current directory (".")

```
$ getpds //sys1.maclib .
getpds(SYS1.MACLIB)[N]: 2015 members/2435218 records/194817440 bytes read;
                        194011101 bytes written in 1.791 seconds (103.307 MBytes/sec).
```

2. This example is the same, but **-LI(nfo)** level logging is used and file names are created with a suffix.

```
$ getpds -LI -M suffix=mac //sys1.maclib .
getpds(SYS1.MACLIB)[I]: copied ABEND -> ./abend.mac
getpds(SYS1.MACLIB)[I]: copied ACB -> ./acb.mac
getpds(SYS1.MACLIB)[I]: copied ACBVS -> ./acbvs.mac
...
getpds(SYS1.MACLIB)[I]: copied XLATE -> ./xlate.mac
getpds(SYS1.MACLIB)[I]: copied YREGS -> ./yregs.mac
getpds(SYS1.MACLIB)[N]: 2015 members/2435218 records/194817440 bytes read;
                        194011101 bytes written in 2.030 seconds (91.144 MBytes/sec).
```

3. In this example, statistics are printed (**-M st=-**) for a PDS, but no files are copied since a target directory is not given as the last argument.

```
$ getpds -M st=- //KIRK.ADMIN.JCL
ACSSSTORC 96/12/02 17/10/02 1 2 14:22:50 104 57 0 IBMUSER
ACSSSTORG 99/12/01 17/10/02 1 1 14:23:53 45 38 0 IBMUSER
ADVDVOL 20/08/31 20/08/31 1 1 09:21:12 7 7 0 IBMUSER
ALTSC 17/08/18 17/08/18 1 0 14:20:53 5 5 0 KIRK
AMATERSE 18/02/07 18/02/19 1 2 10:22:36 7 7 0 KIRK
CATEXP 17/10/04 17/10/04 1 0 09:19:51 17 17 0 IBMUSER
CATIMP 17/08/17 17/08/18 1 2 08:42:25 12 9 0 IBMUSER
CONVERTV 17/10/02 17/10/04 1 6 09:27:16 23 21 0 IBMUSER
DEFACDS 96/08/05 17/10/02 1 4 14:06:17 17 16 0 IBMUSER
DEFALIAS 17/10/04 17/10/04 1 0 10:03:23 17 17 0 IBMUSER
DEFSCDS 96/12/15 17/10/02 1 3 14:12:50 26 25 0 IBMUSER
DELETE 17/08/18 17/10/03 1 4 12:52:05 39 33 0 IBMUSER
DFDSSB 19/02/06 19/02/06 1 0 11:55:26 42 42 0 IBMUSER
DFDSSR 20/03/24 20/03/24 1 0 15:06:29 12 12 0 IBMUSER
IEHPROGM 17/10/02 17/10/02 1 5 18:20:21 75 15 0 IBMUSER
```

```

INSTALL 13/03/25 18/05/11 1 55 14:43:02 24 28 0 IBMUSER
INSTALL2 13/03/25 18/05/17 1 57 10:48:39 24 28 0 IBMUSER
MOVE 17/09/29 17/09/29 1 0 15:50:28 13 13 0 KIRK
PASSTICK 17/08/23 20/06/10 1 1 10:54:05 27 27 0 IBMUSER
RACFCSR 18/02/20 18/02/20 1 1 16:21:05 76 75 0 IBMUSER
RECAT 17/08/18 17/08/18 1 1 09:25:07 116 62 0 IBMUSER
SCRATCH 17/10/02 17/10/02 1 1 17:04:12 20 14 0 IBMUSER
SYSINFO
Z13REST 17/08/18 17/08/18 1 1 15:39:30 42 40 0 KIRK
getpds(KIRK.ADMIN.JCL)[N]: 0 members/0 records/0 bytes read; 0 bytes written in 0 milliseconds.

```

4. Here statistics are saved to a file and the members are copied. The **-M mtime=member** option is used so that files will get their mtimes from the member statistics.

```

$ getpds -LI -M st=ispf-stats,mt=m //KIRK.ADMIN.JCL .
getpds(KIRK.ADMIN.JCL)[I]: copied ACSSTORC -> ./acsstorc
getpds(KIRK.ADMIN.JCL)[I]: copied ACSSTORG -> ./acsstorg
...
getpds(KIRK.ADMIN.JCL)[I]: copied Z13REST -> ./z13rest
getpds(KIRK.ADMIN.JCL)[N]: 24 members/945 records/75600 bytes read;
                          38796 bytes written in 0.011 seconds (3444.247 KBytes/sec).

```

5. In this example we do the same, but only copy members with newer statistics than those present in the statsfile (**-M update=newer**). As you can see, only the member with no statistics is copied.

```

$ getpds -LI -M st=ispf-stats,mt=m,upd=n //KIRK.ADMIN.JCL .
getpds(KIRK.ADMIN.JCL)[I]: copied SYSINFO -> ./sysinfo
getpds(KIRK.ADMIN.JCL)[N]: 1 members/155 records/12400 bytes read;
                          7967 bytes written in 0.001 seconds (7780.273 KBytes/sec).

```

6. In this next example we do the same, but without a statistics file. The (**-M update=newer**) option will now use any existing file's mtime to determine if the member is newer. Since we have been using **-M mtime=m**, the files mtimes already match the member statistics. Again, only the member with no statistics (indeterminate age) will be copied.

```

$ getpds -LI -M mt=m,upd=n //KIRK.ADMIN.JCL .
getpds(KIRK.ADMIN.JCL)[I]: copied SYSINFO -> ./sysinfo
getpds(KIRK.ADMIN.JCL)[N]: 1 members/155 records/12400 bytes read;
                          7967 bytes written in 0.001 seconds (7780.273 KBytes/sec).

```

7. Here we use a list of member patterns and names to select a subset of members to copy. Quotes are used to prevent the shell from interpreting parentheses as shell meta characters, although these quotes are removed by the shell before invoking the command.

```

$ getpds -LI //KIRK.ADMIN.JCL '(ACS*,INS*,SYSINFO)' .
getpds(KIRK.ADMIN.JCL)[I]: copied ACSSTORC -> ./acsstorc
getpds(KIRK.ADMIN.JCL)[I]: copied ACSSTORG -> ./acsstorg
getpds(KIRK.ADMIN.JCL)[I]: copied INSTALL -> ./install
getpds(KIRK.ADMIN.JCL)[I]: copied INSTALL2 -> ./install2
getpds(KIRK.ADMIN.JCL)[I]: copied SYSINFO -> ./sysinfo
getpds(KIRK.ADMIN.JCL)[N]: 5 members/352 records/28160 bytes read;
                          14841 bytes written in 0.003 seconds (4831.055 KBytes/sec).

```

## See Also

putpds(1)

copypds(1)

fromdsn(1)

todsn(1)

## Name

jessym — command line interface to the JES Symbol Service

## Synopsis

```
jessym name
jessym [-p prefix] -s name-pattern ...
jessym [-p prefix] -x name-pattern ...
jessym [-r] -c name=value ...
jessym -u name=value ...
jessym -d name-pattern ...
```

## Description

This z/OS Co:Z utility uses the JES Symbol Service (IAZSYMBL) to extract, create, update, and delete JES system symbols. Requires z/OS 2.1 or later.

## Options

-p

Specifies a prefix to be added to JES Symbol names when using the (-s) or (-x) options.

-s

Prints the value of one or more JES Symbols whose name matches a *name-pattern*. Characters in a name pattern are automatically folded to upper case and may include \* or ? characters to match zero-or-more or exactly-one characters respectively. If no name-patterns are given, then the default is \* (all names). Each line is displayed on stdout in the form: NAME='VALUE'

-x

Prints an export command with the value of one or more JES Symbols whose name matches a *name-pattern*. Characters in a name pattern are automatically folded to upper case and may include \* or ? characters to match zero-or-more or exactly-one characters respectively. If no name-patterns are given, then the default is \* (all names). Each line is displayed on stdout in the form: export NAME='VALUE'

-r

Specifies that when defining a new symbol (with option -c) that the value of an existing symbol of the same name may be replaced.

-c

Creates one or more new symbols given arguments of the form: NAME=VALUE. Characters in the name (but not the value) are folded to uppercase automatically. If the -r is also specified, then the value of an existing symbol with the same name will be replaced. Symbols will be created at the job (address space) level.

-u

Update one or more existing symbols with a new value given arguments of the form: NAME=VALUE. Characters in the name (but not the value) are folded to uppercase automatically. The symbols must previously exist; a new symbol will not be created.

-d

Delete one or more symbols that match the given name pattern(s). Characters in a name pattern are automatically folded to upper case and may include \* or ? characters to match zero-or-more or exactly-one characters respectively.

## See Also

The **todsn** command has been enhanced for z/OS 2.1 to support passing JES symbols to jobs submitted to the internal reader.

The COZBATCH utility has been enhanced for z/OS 2.1 so that the values of all JES symbols will be automatically exported as environment variables with a prefix of JES\_.

## Examples

1. Create a new JES symbol and display it by name

```
> jessym -c A=B
> jessym A
B
```

2. Create or replace a JES symbol and display it

```
> jessym -r -c A=c
> jessym a # symbol names are automatically folded to uppercase
c
```

3. Show symbols matching a name pattern

```
> jessym -s SYS*
SYS_CORR_CURRJOB='S0000434DTLZOS01CC27C5EA.....:'
```

4. Generate export statements for all symbols

```
> jessym -x # defaults to * (all)
export SYS_CORR_CURRJOB='S0000434DTLZOS01CC27C5EA.....:'
export A='c'
```

5. Generate export statements for all symbols, using a name prefix

```
> jessym -p JES_ -x
export JES_SYS_CORR_CURRJOB='S0000434DTLZOS01CC27C5EA.....:'
export JES_A='c'
```

6. Generate export statements for all symbols, using a name prefix, and pipe these as commands into the current shell. Note that this is done automatically by the COZBATCH utility.

```
> set -o pipecurrent # this shell option required to use the current shell
> jessym -p JES_ -x | . /dev/fd0
> echo $JES_A
c
```

#### 7. Display one symbol and read its value into a shell variable

```
> set -o pipecurrent # this shell option required to use the current shell
> jessym A | read myA
> echo $myA
c
```

#### 8. Delete a symbol

```
> jessym -d A
> jessym A
JesSymbols[W]: IAZSYMBOL rc=0 RET=4 REAS=4
```

## Name

lookupccsid — return the coded character set identifier (CCSID) associated with a character set

## Synopsis

```
lookupccsid codesetName
```

## Description

This z/OS Co:Z utility is useful for determining the unicode services CCSID associated with a character set.

This program uses the `__toCcsid()` z/OS C runtime library function to determine the numeric CCSID associated with `codesetName`. If unsuccessful, 0 is returned

## Examples

```
/dovetail/coz/bin: > lookupccsid UTF-8  
1208 UTF-8  
  
/dovetail/coz/bin: > lookupccsid ISO8859-1  
819 ISO8859-1
```

## Name

lsjes — display JES job and spool file status

## Synopsis

```
lsjes [-t [delim_char]] [-o userid] [-p jobname-pattern] [-s a|i|o]
lsjes [-t [delim_char]] -i jobid ...
lsjes [-t [delim_char]] [-S] -d jobid ...
```

## Description

This z/OS Co:Z utility uses the Extended Status Subsystem Interface to query the status of jobs in the primary JES2 or JES3 subsystem.

The first form displays a list, one line per job, all jobs that match optional filter criteria. If no arguments are specified, then all jobs owned by the current userid are displayed.

The second form displays one or more specific jobs, along with their spool files.

## Options

-t

Requests output in delimited format. If `delim_char` is supplied, it is used as a delimiter, otherwise a tab character (`\t`) is used. If this option is used, then header lines are not displayed in the listing.

-o userid

Filters the job listing to include only jobs whose owner is the given z/OS userid. If this option is omitted, then jobs are filtered using the current userid.

-p jobname-pattern

Filters the job listing to include only jobs with a name matching the given pattern. Valid generic pattern characters include '\*' and '%'.

-s a|i|o

Filters the job listing to include only jobs whose status is either "ACTIVE", "INPUT", or "OUTPUT".

-i

Filters the job listing to include only the job(s) specified. One or more jobids must follow, where each jobid is 2-8 characters that starts with one of the prefixes "J/JO/JOB/T/TS/TSU/S/ST/STC/I/IN/INT" followed by a number.

-d

This option indicates the second form of the command (detail mode), in which specific jobs and their spool files are listed. One or more jobids must follow, where each jobid is 2-8 characters that starts with one of the prefixes "J/JO/JOB/T/TS/TSU/S/ST/STC/I/IN/INT" followed by a number.

-S

This option may be precede the `-d` option to indicate that the listing of spool files should also include SYSIN files, including JESJCLIN. This feature is only available on z/OS 1.10 or later.

## See Also

The `fromdsn` can be used to read the contents of a job's spool files.

## Examples

1. This example lists all jobs owned by the current userid.

```
>lsjes
Jobid      Jobname  Owner    Status   Class  Completion
TSU02611  KIRK     KIRK     OUTPUT   TSU    ABEND=622
JOB02663  KIRKJ1   KIRK     OUTPUT   A      RC=0000
JOB02662  KIRKJ1   KIRK     OUTPUT   A      RC=0000
JOB02661  KIRKJ1   KIRK     OUTPUT   A      RC=0000
JOB02660  KIRKJ1   KIRK     OUTPUT   A      RC=0000
JOB02659  KIRKJ1   KIRK     OUTPUT   A      RC=0000
JOB02462  COZOOM   KIRK     OUTPUT   A      RC=0000
JOB02460  COZOOM   KIRK     OUTPUT   A      RC=0255
```

2. As above, but with delimiters (and without a header).

```
>lsjes -t'|'
TSU02611|KIRK|KIRK|OUTPUT|TSU|ABEND=622
JOB02663|KIRKJ1|KIRK|OUTPUT|A|RC=0000
JOB02662|KIRKJ1|KIRK|OUTPUT|A|RC=0000
JOB02661|KIRKJ1|KIRK|OUTPUT|A|RC=0000
JOB02660|KIRKJ1|KIRK|OUTPUT|A|RC=0000
JOB02659|KIRKJ1|KIRK|OUTPUT|A|RC=0000
JOB02462|COZOOM|KIRK|OUTPUT|A|RC=0000
JOB02460|COZOOM|KIRK|OUTPUT|A|RC=0255
JOB02447|COZOOM|KIRK|OUTPUT|A|RC=0255
JOB02446|COZOOM|KIRK|OUTPUT|A|RC=0255
JOB02334|KIRKSLP|KIRK|OUTPUT|A|RC=0000
JOB02333|KIRKSLP|KIRK|OUTPUT|A|RC=0000
JOB02332|KIRKSLP|KIRK|OUTPUT|A|RC=0000
JOB02331|KIRKSLP|KIRK|OUTPUT|A|RC=0000
JOB02306|KIRKSLP|KIRK|OUTPUT|A|RC=0000
JOB02123|KIRKCB|KIRK|OUTPUT|B|RC=0001
JOB02070|KIRKCT|KIRK|OUTPUT|A|RC=4000
```

3. Tabbed delimiters can used with the Unix `cut` to select a field:

```
>lsjes -t| cut -f1
TSU02611
JOB02663
JOB02662
JOB02661
JOB02660
JOB02659
JOB02462
JOB02460
JOB02447
```

```
JOB02446
JOB02334
JOB02333
JOB02332
JOB02331
JOB02306
JOB02123
JOB02070
```

4. This example lists all active jobs (any owner).

```
>lsjes -o '*' -sa
Jobid   Jobname  Owner    Status   Class  Completion
STC02691 BPXAS    OMVSKERN ACTIVE    STC
STC02689 BPXAS    OMVSKERN ACTIVE    STC
STC02688 BPXAS    OMVSKERN ACTIVE    STC
...
```

5. To list all jobs using a jobname pattern (any owner).

```
>lsjes -o '*' -p 'T*'
Jobid   Jobname  Owner    Status   Class  Completion
STC02556 TCPIP    TCPIP    OUTPUT   STC    RC unknown
STC02579 TCAS     STRTASK  OUTPUT   STC    RC unknown
STC02093 TCPIP    TCPIP    OUTPUT   STC    -HELD-
STC02608 TCAS     STRTASK  ACTIVE    STC
STC02605 TN3270   TCPIP    ACTIVE    STC
STC02586 TCPIP    TCPIP    ACTIVE    STC
...
```

6. To display the status of a job and list its spool files:

```
>lsjes -d J2333
Jobid   Jobname  Owner    Status   Class  Completion
JOB02333 KIRKSLP  KIRK     OUTPUT   A      RC=0000
      Id  Stepname Procstep DDName   C Owner   Recfm Lrecl Bytes
      002 JES2          JESMSG LG H KIRK   FA     133 1313
      003 JES2          JESJCL  H KIRK   V      136 253
      004 JES2          JESYSMSG H KIRK   VA     137 823
      102 UNIX          SYSOUT  H KIRK   FBA    121 428
```

## Name

`pdsdir` — list Partitioned dataset members and their statistics, if available.

## Synopsis

```
pdsdir [-n] hlq.dataset.name
```

## Description

This z/OS Co:Z utility lists the members of the PDS `hlq.dataset.name`. If statistics are available, they are listed.

## Options

`-n`

Only member names are listed.

## Examples

1. This example shows a PDS directory listing.

```
>pdsdir user.coz.sampjcl
Name              Size  Created          Changed          ID
@@README
BPXBATCH          13  2008/04/04  2008/04/04  17:18:09  USER
BPXBATSL          16  2008/04/03  2008/04/03  10:36:52  USER
COZCFGD           65  2008/03/27  2008/05/12  14:28:54  USER
COZPROC           30  2008/03/27  2008/03/27  11:54:48  USER
DTLSPAWN          40  2008/05/05  2008/05/05  09:31:08  USER
GPGDSN            15  2008/05/05  2008/05/05  10:40:05  USER
GREPDSN
GREPSED           12  2008/05/05  2008/05/05  09:30:51  USER
OFFLDSMF
RUNCOZ            20  2008/03/27  2008/09/24  17:05:53  USER
RUNCOZ2           15  2008/05/05  2008/05/05  10:02:51  USER
RUNCOZ3            8  2008/05/05  2008/05/06  08:50:37  USER
RUNSPAWN          54  2008/05/12  2008/05/12  14:25:37  USER
RUNSPWN2          20  2008/05/12  2008/05/12  13:19:05  USER
TDIRK             18  2008/04/03  2008/04/03  10:19:20  USER
WGET2DSN
```

## Name

putpds — Copies UNIX file(s) to PDS(E) member(s)

## Synopsis

```
putpds [OPTION...] file ... //dataset.name
putpds [OPTION...] file //dataset.name(member)
putpds -h
putpds -v
```

## Description

The **putpds** command copies UNIX file(s) to PDS(E) member(s).

`dataset.name` is either an MVS PDS or PDS/E dataset, preceded by '//'. The name is assumed to be a fully qualified DSN, unless the **-r** option is used. ISPF statistics can be created for members, depending on the **-M** member processing options given. Supported record formats include: RECFM=F(B), V(B), and U.

RECFM=VBS is not supported, and statistics processing is not available with RECFM=U. Load modules, program objects, aliases, or other members with user TTRNs may not be copied.

One or more `file` names may be given; shell file globbing may be used to specify file names as wild cards. If `//dataset.name(member)` is specified, the `file` name is used as given and may be "-" for stdin. Otherwise, the given file names must be either a valid member name or in the form: `member.suffix`.

In a shell you will need to quote "`//dataset.name(member)`" since ( and ) are meta characters.

## Options

**-b**

"binary", disables translation and implies: `-l none -w flow -p 0x00` if `-b` is specified with `-l` (except `-l none`), then `-w wrap` is the default.

**-h**

display help and exit.

**-l** line-separator

`flexible | cr | lf | crlf | nl | crnl`

source lines are separated by combination of linefeed and/or carriage return characters. The default is 'flexible' which allows for any of the other patterns above. These characters are taken from the source codepage.

**rdw**

source lines are preceded with a four byte IBM-style RDW, consisting of a two byte network order (big endian) length followed by two bytes of zeros.

mfrdw

Source data is preceeded by a 128 byte MicroFocus standard header. Source lines are preceeded with a network order (big endian) length. If the maximum record length is < 4095 bytes, the length field is 2 bytes. If the maximum record length is >= 4095 bytes, the length field is 4 bytes. Each record must be padded with zeros to the nearest 4 byte boundary.

0xbb[bb. . ]

source lines are followed with a hex character sequence. The sequence must be between 1 and 8 bytes long.

none

source lines do not have separators; source lines are determined by the maximum output record length.

-L logging-options

A comma-separated list of options to control logging and tracing.

M|A|C|E|W|N|I|D|T|F

Logging threshold: eMergency, Alert, Critical, Error, Warning, Notice (default), Info, Debug, Trace, Fine.

t

Prefix log messages with a system timestamp

e

Include consumed cpu time in log messages

f=filename

Messages are logged to filename on the server instead of stderr. If not fully qualified, the file is written to the user's home directory on the server.

component=M|A|C|E|W|N|I|D|T|F

Set the logging threshold for a specific component. Specify only at the request of product support personnel.

-p 0xbb

pad character used to pad fixed-length records. The default is the target codepage space character.

-q technique-str

Codepage conversion technique string. Used to override the default Unicode Services value of LMREC. For more information, see IBM's Unicode Services User's Guide and Reference (SA22-7649).

-r

dataset-name will be prefixed with the current z/OS userid.

-s source-codepage

The codepage name or numeric CCSID id of the input data. If not specified and invoked from a remote client with a line-separator other than 'none', 'rdw' or 'mfrdw', then the default client codepage is used, otherwise the default z/OS codepage is used.

-t target-codepage

The codepage name or numeric CCSID id of output dataset. If not specified, then the default z/OS process codepage is used. Translation is disabled if source-codepage equals target-code- page.

-S D | M

For existing PDS data sets, allocate with DISP=SHR and serialize using ISPF compatible data set (D) or data set and member ENQs (M). When using "D", other users' ISPF member edit sessions will be disregarded but overhead for copying many members can be reduced especially in a sysplex.

-T STANDARD | translate\_table\_dsname

Specifies the translate table to use for text mode transfers. This option overrides the -s -t -q options if also given. If STANDARD, the translate table TCPIP.STANDARD.TCPXLBIN is used. If a dataset name is supplied, it is expected to be in the format produced by the TSO CONVXLAT command. Only single byte translations are supported. Specifically, the dataset DCB must be LRECL=256,RECFM=F and contain two translation table records. The first record is an ASCII-to-EBCDIC mapping; the second record is an EBCDIC-to-ASCII mapping. Additional comment records (starting with \* in the first column) are allowed.

-M keyword=value[ ,keyword=value . . . ] member processing options

A comma-separated list of keyword and value pairs for specifying member processing options.

r[eplace]=y[es] | n[o]

if yes (default) then existing members may be replaced.

g[enstats]=y | n

if yes, create or update member statistics for each member copied. Default is no - copied members will not have stats

st[atsfile]=filename

used with the zigi product to provide stats for members. May not be specified with **genstats=y**

u[pdate]=a[ll]

copy all named files (default)

u[pdate]=n[ewer]

with genstats, only copy files with mtime newer than member stats, also copying if either does not have stats

with statsfile, only copy only files with newer (or missing) statsfile stats

u[pdate]=o[nly]

with statsfile), only copy only files with statsfile entries

mt[ime]=c[urrent]

with genstats, set member mtime to current time (default)

with statsfile that is missing member stats, set member mtime to current time (default)

mt[ime]=f[file]

with genstats, set member stats mtime to the file's mtime, or current time if mtime is not available for the file

with statsfile that is missing member stats, set member mtime to the file's mtime, or current time if not present for the file

-v

display the current version and exit.

-w

wrap (default) | error | flow | trunc. This options determines what to do if the input line is longer than the maximum data set record length.

## Examples

1. This example first copies members of a PDS to UNIX files using **getpds**. The **putpds** is then used to copy these files to a new PDS.

```
$ getpds //kirk.admin.jcl .
getpds(KIRK.ADMIN.JCL)[N]: 24 members/945 records/75600 bytes read;
                          38796 bytes written in 0.011 seconds (3444.247 KBytes/sec).

$ putpds -x 'like(kirk.admin.jcl)' * //kirk.admin.copy.jcl
putpds(KIRK.ADMIN.COPY.JCL)[N]: 38796 bytes read; 24 members/945 records/75600 bytes written in 0.042 seconds (37.598 KBytes/sec)
```

2. Here the **getpds -M mtime=member** is used to create statistics for each member copied using the current time and line counts. The **-LI** option is used to print information messages about each member copied.

```
$ putpds -M gen=y -LI * //kirk.admin.copy.jcl
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied acsstorc -> ACSSTORC
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied acsstorg -> ACSSTORG
...
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied sysinfo -> SYSINFO
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied z13rest -> Z13REST
putpds(KIRK.ADMIN.COPY.JCL)[N]: 38796 bytes read;
                          24 members/945 records/75600 bytes written in 0.044 seconds (35.889 KBytes/sec).
```

3. In this example use the **getpds -M statsfile=** option to write a file containing the statistics for the original PDS. The **putpds** command is then used to copy members and these stats to the second PDS. Stats will be generated for any members that had no statistics, using the current time. Notice that the shell expanded "\*" to include the **ispf-stats** file, but this was skipped because it is not a valid member[.suffix] name. Finally, we use **getpds** to print the stats (no members are copied since a target directory is not specified).

```
$ getpds -M st=ispf-stats //kirk.admin.jcl .
getpds(KIRK.ADMIN.JCL)[N]: 24 members/945 records/75600 bytes read; 38796 bytes written in 0.010 seconds (3788.672 KBytes/sec).

$ putpds -LI -M st=ispf-stats * //kirk.admin.copy.jcl
putpds(KIRK.ADMIN.COPY.JCL)[I]: skipping file with unrecognized name format: "ispf-stats"
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied acsstorc -> ACSSTORC
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied acsstorg -> ACSSTORG
...
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied sysinfo -> SYSINFO
putpds(KIRK.ADMIN.COPY.JCL)[I]: copied z13rest -> Z13REST
putpds(KIRK.ADMIN.COPY.JCL)[N]: 38796 bytes read; 24 members/945 records/75600 bytes written in 0.043 seconds (36.723 KBytes/sec)

$ getpds -M st=- //kirk.admin.copy.jcl
ACSSSTORC 16/12/02 17/10/02 1 2 14:22:50 104 57 0 IBMUSER
ACSSSTORG 16/12/01 17/10/02 1 1 14:23:53 45 38 0 IBMUSER
...
```

```
SYSINFO 20/10/26 20/10/26 1 0 12:44:16 155 155 0 KIRK  
Z13REST 17/08/18 17/08/18 1 1 15:39:30 42 40 0 KIRK  
getpds(KIRK.ADMIN.COPY.JCL)[N]: 0 members/0 records/0 bytes read; 0 bytes written in 0 milliseconds.
```

## See Also

getpds(1)

copypds(1)

fromdsn(1)

todsn(1)

## Name

safauth — check the current user's authorization to a SAF (RACF) resource.

## Synopsis

```
safauth saf-class saf-entity [read | update | control | alter] [volser]
```

## Description

This z/OS Co:Z utility is a wrapper for the RACROUTE REQUEST=AUTH macro and can be used to check the current user's access to a given SAF(RACF) resource.

An exit code of zero indicates that the auth check passed; otherwise the non-zero return code from the RACROUTE macro is returned as the exit code.

RACROUTE REQUEST=AUTH requires VOLSER= for CLASS=DATASET, but it is not used for SMS managed datasets. The *volser* option is ignored if CLASS!=DATASET, but if *volser* is not specified and CLASS=DATASET, then *volser* defaults to DUMMY.

## Name

saf-ssh-agent — enable ssh client authentication via SAF/RACF Digital Certificates

## Synopsis

```
saf-ssh-agent -x [-f export_file] keyring[:label]
saf-ssh-agent -b asnl_file keyring[:label]
saf-ssh-agent -c keyring[:label] command [command_args...]
```

## Description

This z/OS Co:Z utility is similar in function to the OpenSSH **ssh-agent**, but rather than automatically authenticating the ssh client with ssh keys, it provides for authentication with SAF/RACF Digital Certificates.

*keyring[:label]* is the keyring (and optional certificate label) to use.

## Options

- x  
extract the public key from a SAF/RACF Digital Certificate in OpenSSH format.
- f export\_file  
The file to export the OpenSSH format key. If this option is omitted, the key will be written to `stdout`.
- b asnl-file  
extract the public key (in binary ASN1 format) to a file. This option is used for diagnostic purposes.
- c  
run *command* as a child process after initializing **saf-ssh-agent**. This enables *command* to authenticate with the supplied *keyring[:label]*. Generally, this option is used to run **ssh** as a child process, allowing it to take advantage of SAF RACDCERT authentication.

## Examples

1. This example shows how to extract an OpenSSH public key from a SAF/RACF Digital Certificate. In this case, the key is written to `stdout`.

```
/dovetail/coz/bin: > saf-ssh-agent -x MY-RING

ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGDVovW8HzKQYIfVqOZpEHgPLLfUkqg68fyBc
XTDUpFyQiIoKWRh1rHHa4DlQxa80lMPzr+VvyzvJrgzXI00Vp9A09yLgr4XtrkrfTY3nojT
35y3bZqZXTEfCX5atN8yaORfkXZeYl4H+ojdQK3ywHdDlqOMTS1lCj4/9w67JNTXXw== CN=
Stephen Goetze,OU=Development,O=Dovetailed Technologies,C=US
```

1. This example shows how to run ssh as a child process to execute the **who** command on the remote system

linux.com. The ssh client will authenticate via the SAF RACDCERT contained in MY-RING.

```
/dovetail/coz/bin: > saf-ssh-agent -c MY-RING ssh myid@linux.com who  
myid  tty7          2009-12-29 06:15 (:0)  
myid  pts/0          2009-12-29 11:23 (:0.0)  
myid  pts/1          2010-01-08 11:43 (:0.0)
```

## Name

showtrtab — display a translation table

## Synopsis

```
showtrtab [-L logging_options][-s source_codepage][-t target_codepage][-q technique_str]
```

## Description

This z/OS Co:Z utility command will show the translate table associated with a source and target codeset. It first attempts to use unicode services, but will fall back to `iconv()` if needed.

If a table cannot be built, the command will display error information that may be useful in determining the problem.

This utility only supports SBCS -> SBCS and SBCS -> MBCS. MBCS -> SBCS tables are not supported.

To get detailed information, the logging option `-LTranslator=T` can be used.

## Options

`-L` logging-options

A comma-separated list of options to control logging and tracing:

`M|A|C|E|W|N|I|D|T`

Logging threshold: eMergency, Alert, Critical, Error, Warning, Notice, Info (default), Debug, Trace.

`t`

Prefix log messages with a system timestamp

`e`

Include consumed cpu time in log messages

`s`

Messages are logged to SYSLOG facility instead of stderr

`logname=M|A|C|E|W|N|I|D|T`

Set a specific log name to the given threshold

`-s` source-codepage

The source codepage name. If not specified, then the default z/OS process codepage is used. At least one of `-s` or `-t` is required.

`-t` target-codepage

The target codepage name. If not specified, then the default z/OS process codepage is used. At least one of `-s` or `-t` is required.

`-q technique-str`

The Unicode Services conversion technique(s) to accept. This is a string of one or more of the following technique characters:

C

Customized Subset

E

Enforced Subset

L

Language Environment Behavior

M

Modified Language Environment Behavior

R

Roundtrip

If more than one character is specified, the first available matching technique is used - therefore the order is significant.

When falling back to `iconv()` this list is ignored

## Examples

1. This example shows a Translate table from a source code page of ISO8859-1 to a target codepage which is the current z/OS process' default

```

/dovetail/coz104/bin: > showtrtab -s ISO8859-1

00:  00 01 02 03   37 2D 2E 2F   16 05 15 0B   0C 0D 0E 0F
10:  10 11 12 13   3C 3D 32 26   18 19 3F 27   1C 1D 1E 1F
20:  40 5A 7F 7B   5B 6C 50 7D   4D 5D 5C 4E   6B 60 4B 61
30:  F0 F1 F2 F3   F4 F5 F6 F7   F8 F9 7A 5E   4C 7E 6E 6F
40:  7C C1 C2 C3   C4 C5 C6 C7   C8 C9 D1 D2   D3 D4 D5 D6
50:  D7 D8 D9 E2   E3 E4 E5 E6   E7 E8 E9 AD   E0 BD 5F 6D
60:  79 81 82 83   84 85 86 87   88 89 91 92   93 94 95 96
70:  97 98 99 A2   A3 A4 A5 A6   A7 A8 A9 C0   4F D0 A1 07
80:  20 21 22 23   24 25 06 17   28 29 2A 2B   2C 09 0A 1B
90:  30 31 1A 33   34 35 36 08   38 39 3A 3B   04 14 3E FF
A0:  41 AA 4A B1   9F B2 6A B5   BB B4 9A 8A   B0 CA AF BC
B0:  90 8F EA FA   BE A0 B6 B3   9D DA 9B 8B   B7 B8 B9 AB
C0:  64 65 62 66   63 67 9E 68   74 71 72 73   78 75 76 77
D0:  AC 69 ED EE   EB EF EC BF   80 FD FE FB   FC BA AE 59
E0:  44 45 42 46   43 47 9C 48   54 51 52 53   58 55 56 57
F0:  8C 49 CD CE   CB CF CC E1   70 DD DE DB   DC 8D 8E DF
    
```

2. This example shows a Translate table from a source code page of ISO8859-2 to a target codepage of IBM-273. Logging is activated.

```

/dovetail/coz104/bin: > showtrtab -LTranslator=T -s ISO8859-2 -t IBM-273
showtrtab[T]: Translator: -> Translator(ISO8859-2, IBM-273, LMREC)
showtrtab[T]: Translator: -> getCodePage(ISO8859-2)
showtrtab[D]: Translator: Looking for codepage substitution environment
variable: COZ_TRSUB_ISO8859-2
showtrtab[T]: Translator: <- getCodePage()
showtrtab[T]: Translator: -> getCodePage(IBM-273)
showtrtab[D]: Translator: Looking for codepage substitution environment
variable: COZ_TRSUB_IBM-273
showtrtab[T]: Translator: <- getCodePage()
showtrtab[T]: Translator: -> initialize( ISO8859-2->IBM-273, t=LMREC)
showtrtab[T]: Translator: -> getCcsid(ISO8859-2)
showtrtab[T]: Translator: <- getCcsid(912)
showtrtab[T]: Translator: -> getCcsid(IBM-273)
showtrtab[T]: Translator: <- getCcsid(273)
showtrtab[T]: Translator: -> initCunbcprn()
showtrtab[T]: Translator: <- initCunbcprn()
showtrtab[T]: Translator: <- initialize()
showtrtab[T]: Translator: <- Translator()
00: 00 01 02 03 37 2D 2E 2F 16 05 25 0B 0C 0D 0E 0F
10: 10 11 12 13 3C 3D 32 26 18 19 3F 27 1C 1D 1E 1F
20: 40 4F 7F 7B 5B 6C 50 7D 4D 5D 5C 4E 6B 60 4B 61
30: F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 7A 5E 4C 7E 6E 6F
40: B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 D1 D2 D3 D4 D5 D6
50: D7 D8 D9 E2 E3 E4 E5 E6 E7 E8 E9 63 EC FC 5F 6D
60: 79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96
70: 97 98 99 A2 A3 A4 A5 A6 A7 A8 A9 43 BB DC 59 07
80: 20 21 22 23 24 15 06 17 28 29 2A 2B 2C 09 0A 1B
90: 30 31 1A 33 34 35 36 08 38 39 3A 3B 04 14 3E FF
A0: 41 44 46 47 9F 49 52 7C BD 54 57 58 64 CA 66 67
B0: 90 69 70 72 BE 74 77 78 9D 80 8A 8B 8C 8E 8F 9A
C0: 9B 65 62 9C 4A 9E A0 68 AA 71 AB 73 AE 75 76 AF
D0: AC B0 B1 EE EB B2 E0 BF B3 B4 FE B6 5A AD B7 A1
E0: B8 45 42 B9 C0 BA BC 48 CC 51 CD 53 CF 55 56 DA
F0: DB DD DF CE CB EA 6A E1 ED EF DE FA D0 8D FB FD

```

3. Shows an attempt to build a MBCS->SBCS table, and the resulting error.

```

/dovetail/coz104/bin: > showtrtab -s UTF-8 -t IBM-1047
showtrtab[E]: TranslateException: Exception occurred during translation,
RC=4, Reason=12

```

## Name

`wto` — issue a Write To Operator (WTO) from USS.

## Synopsis

```
wto [-r ROUTCDE,...] [-d DESC,...] message
```

## Description

This z/OS Co:Z utility command issues *message* as a write to operator (WTO).

If the ROUTCDE or DESC codes are omitted, the system uses the routing code specified on the ROUTCODE keyword on the DEFAULT statement in the CONSOLxx member of SYS1.PARMLIB.

**NOTE:** The message will be prefixed by: BPXM023I (userid) unless the userid has access to "BPX.CONSOLE" in the SAF "FACILITY" class. Additionally, in order to prevent a recursive logging error, the `wto` command will fail with an error message when logging has been redirected to `/dev/console`.

Messages with embedded spaces must be quoted.

## Options

`-r ROUTCDE`

Specifies the routing code(s) for the message:

- 1 - Operator Action
- 2 - Operator Information
- 3 - Tape Pool
- 4 - Direct Access Pool
- 5 - Tape Library
- 6 - Disk Library
- 7 - Unit Record Pool
- 8 - Teleprocessing Control
- 9 - System Security
- 10 - System/Error Maintenance
- 11 - Programmer Information
- 12 - Emulation

13-128 - See *MVS Programming: Authorized Assembler Services Reference, Volume 4 (SETFRR-WTOR) - SA22-7612*

**-d DESCR**

Specifies the descriptor(s) for the message:

- 1 - System Failure (\*)
- 2 - Immediate Action Required (\*)
- 3 - Eventual Action Required (\*)
- 4 - System Status (\*)
- 5 - Immediate Command Response (\*)
- 6 - Job Status (\*)
- 7 - Task-Related
- 8 - Out-of-Line
- 9 - Operator's Request
- 10 - Not Defined
- 11 - Critical Eventual Action Required (\*)
- 12 - Important Information (\*)

(\*) Mutually exclusive

## Examples

1. This example shows a WTO, using ROUTCDE "Programmer Information" and DESCR "Important Information".

```
>wto -r 11 -d 12 "status message"
```

## Name

zsym — list system symbol values.

## Synopsis

```
zsym "&symbol"
```

## Description

This z/OS Co:Z utility lists the value of *symbol*. Note that the symbol must be preceded by an ampersand (&) and enclosed in quotes.

## Examples

1. Show various system symbol values

```
>zsym "&SYSNAME"  
S0W1  
>zsym "&SYSPLEX"  
SVSCPLEX  
>zsym "&YYMMDD"  
080925
```

---

# Appendix B. License

The Co:Z Co-Processing Toolkit for z/OS, comprised of Co:Z Launcher, Co:Z Dataset Pipes, Co:Z SFTP, Co:Z Batch, Co:Z ssh-proxyc and Co:Z Target System Toolkit (in object code form only) is distributed under the Co:Z Community License Agreement (see below). *Note:* This community license is superseded for Co:Z Toolkit Enterprise License and Support customers. All components are distributed in binary form.

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Dovetailed Technologies, LLC  
305 Willowpointe Drive  
St. Charles, MO 63304

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