z390/zVSAM

zREPRO

Automated Software Tools Corporation

Introduction

ZREPRO is used to LOAD, build alternate index(BUILDAIX) UNLOAD or
VERIFY a zVSAM dataset. The function desired is specified in the PARM
parameter

INVSAM and OUTVSAM specify a qualifier catalog name
This catalog must have a SET variable identifying its location

For INQSAM and OUTQSAM, the default RECFM is F or V depending on the
format of the zVSAM dataset. This may be overridden by adding
[RECFM=FT] or [RECFM=VT] to the end of the path name. The override
must be compatible with the format of the zVSAM dataset

A log is produced showing the statistics from the run

Sample .BAT files are provided for you to modify.
ZREPRO.BAT assembles ZREPRO.MLC which invokes ZREPROGO.BAT which has
a sample of all types of zREPRO function

An 'internal use only' program ZREPCOMP is provided to prove that a
loaded VSAM file can be unloaded identically. It's not meant for
general use

LOAD
```
SET INQSAM=drive:\path\file.txt[RECFM=FT]
SET OUTVSAM=drive:\path\catalog.vsamfile
SET catalog=drive:\path
```

The RECFM override is optional, if missing will default to F or V depending on the catalog entry. Overrides can be FT or VT

file.txt must be sorted into base key order if loading a KSDS or RRN order if loading an RRDS

The vsamfile must be defined in the named catalog

The resulting zVSAM data, index and log datasets are derived from vsamfile
eg. MYFILE02 will generate MYFILE02.DTA, MYFILE02.IDX and MYFILE02.LOG

BUILDAIX
```
SET INVSAM=drive:\path\catalog.vsamfile
SET OUTVSAM=drive:\path\catalog.vsamfile
SET catalog=drive:\path
```

The input vsamfile must be defined in the named catalog as a KSDS or ESDS
The output vsamfile must be defined in the named catalog as an AIX
Both datasets must be defined in the same catalog

The resulting zVSAM data, index and log datasets are derived from vsamfile
eg. MYAIX02 will generate MYAIX02.DTA, MYAIX02.IDX and MYAIX02.LOG

This function uses an internal sort, if storage problems occur then increase the MEM(nn) value. Also datasets SORTWKnn will be generated

UNLOAD
```
SET INVSAM=drive:\path\catalog.vsamfile
SET OUTQSAM=drive:\path\file.txt[RECFM=FT]
SET catalog=drive:\path
```

The RECFM override is optional, if missing will default to F or V depending on the catalog entry. Overrides can be FT or VT

The vsamfile must be defined in the named catalog

Care must be taken with file.txt to prevent the unloaded file destroying the original file
At present an AIX cannot be unloaded
An AIX can be unloaded by defining it as a fixed or variable-spanned KSDS

UNLOAD is useful when VSAM datasets need to be converted eg. ESDS to KSDS

VERIFY
```
SET INVSAM=drive:\path\catalog.vsamfile
SET OUTQSAM=drive:\path\file.txt[RECFM=FT]
SET catalog=drive:\path
```

The vsamfile must be defined in the named catalog

Both the Data and Index components are verified
Once 50 errors have been detected, the process is terminated

A log is produced with error and warning messages
If there are any of these then RC=15 is set

For the prefix block (Data and Index) a list of errors is logged
with offset, expected value and value found eg.
```
zREPRO VERIFY DATA PREFIX BLOCK
    00000000  FFFFFF  000000
```

For file structure errors a message is issued with additional
data eg.
```
BHDRSELF ERROR XLRA=0000000000000A00 BLOCK=0000000000000B00
```

LOG
This is a sample log showing the load, unload and comparison of a
fixed ESDS.
Message lines will vary with the type of operation being performed

```
EZ390I program = E:\Z390\ZVSAM\CODE\ZREPRO.390
EZ390I options = PARM(LOAD) NOTIME DUMP
zREPRO UTILITY V1
zREPRO QSAM TO VSAM (LOAD)
zREPRO INPUT FILE OPENED     :E:\Z390\ZVSAM\DATA\MYFILE2F.TXT
zREPRO OUTPUT DTA FILE OPENED:E:\Z390\ZVSAM\DATA\MYFILE02.DTA
zREPRO QSAM  (RECFM=FT LRECL=    50) TO VSAM (FIXED ESDS NONSPANNED)
zREPRO DATA BLKSIZE                 4096
zREPRO MAXIMUM DATA RECORDS/BLOCK    74
zREPRO DATA FREESPACE %               0%
zREPRO DATA BLOCKS                    2
zREPRO DATA SPACEMAP BLOCKS           1
zREPRO DATA FILE SIZE             16384
zREPRO TOTAL RECORDS                 96
zREPRO OUTPUT IDX FILE OPENED:E:\Z390\ZVSAM\DATA\MYFILE02.IDX
zREPRO INDEX BLKSIZE              1024
zREPRO MAX INDEX RECORDS/BLOCK     48
zREPRO INDEX FREESPACE %             0%
zREPRO ADJUSTED INDEX BLKSIZE     1008
zREPRO LOADED INDEX RECORDS/BLOCK   48
zREPRO INDEX BLOCKS (L   0)          2
zREPRO INDEX BLOCKS (L   1)          1
zREPRO INDEX SPACEMAP BLOCKS         1
zREPRO INDEX FILE SIZE            8128
zREPRO TOTAL TIME =   0:00.24
zREPRO ENDED OK

EZ390I program = E:\Z390\ZVSAM\CODE\ZREPRO.390
EZ390I options = PARM(UNLOAD) NOTIME DUMP
zREPRO UTILITY V1
zREPRO VSAM TO QSAM (UNLOAD)
zREPRO INPUT DTA FILE OPENED :E:\Z390\ZVSAM\DATA\Z390CAT2.MYFILE02
zREPRO OUTPUT FILE OPENED    :E:\Z390\ZVSAM\DATA\MYFILE2F.TXO
zREPRO VSAM  (FIXED    ESDS NONSPANNED) TO QSAM (RECFM=FT LRECL=  50)
zREPRO BASE CLUSTER RECORDS             96
zREPRO TOTAL TIME =   0:00.06
zREPRO ENDED OK
```

```
EZ390I program = E:\Z390\ZVSAM\CODE\ZREPCOMP.390
EZ390I options = NOTIME DUMP
zREPCOMP INPUT FILE OPENED  :E:\Z390\ZVSAM\DATA\MYFILE2F.TXT
zREPCOMP OUTPUT FILE OPENED :E:\Z390\ZVSAM\DATA\MYFILE2F.TXO
zREPCOMP LOAD FILE LENGTH                            1597
zREPCOMP UNLOAD FILE LENGTH                          1597
zREPCOMP COMPARE SUCCESSFUL

EZ390I program = E:\Z390\ZVSAM\CODE\ZREPRO.390
EZ390I options = PARM(VERIFY) NOTIME DUMP
zREPRO UTILITY V1
zREPRO VSAM VERIFY
zREPRO INPUT DTA FILE OPENED :E:\Z390\ZVSAM\DATA\Z390CAT2.MYFILE02
zREPRO VSAM  (FIXED    ESDS NONSPANNED)
zREPRO INPUT IDX FILE OPENED :E:\Z390\ZVSAM\DATA\Z390CAT2.MYFILE02
zREPRO VSAM  (FIXED    ESDS NONSPANNED)
zREPRO TOTAL TIME =   0:00.06
zREPRO ENDED OK
```

Error Messages

zREPRO PARM NOT LOAD, UNLOAD, BUILDAIX OR VERIFY
    Correct the PARM parameter

zREPRO VARIABLE RECORD TOO SHORT FOR BASE/AIX KEY AT RECORD NO.
nnnnnnnnnnn
    A variable record must be long enough to contain the base key
  (KSDS) or the AIX key

zREPRO SEQUENCE ERROR
---key 1---
---key 2---
    The input file has not been sorted into base key order for loading
    a KSDS

zREPRO CLUSTER NOT FOUND IN CATALOG
    The named cluster not found in the specified catalog

zREPRO AIX BUILD, INVSAM AND AIX RELATE MISMATCH
    The RELATE= parameter in the AIX definition does not match the
    cluster name specified in SET INVSAM=

zREPRO INPUT AND OUTPUT HAVE DIFFERENT RECFM
    The RECFM either default or by override conflicts with the RECFM
    of the cluster

zREPRO NO INPUT FILE
zREPRO NO OUTPUT FILE
    SET variables not correct for function

zREPRO INVALID QSAM OVERRIDE
zREPRO INVALID FIXED INPUT QSAM RECFM
zREPRO INVALID VARIABLE QSAM RECFM
    Only [RECFM=FT] or [RECFM=VT] may be specified

zREPRO QSAM INPUT FILE OPEN FAILED
zREPRO OUTPUT DATA FILE OPEN FAILED
zREPRO INPUT DATA FILE OPEN FAILED
zREPRO INDEX FILE OPEN FAILED
    See the log for the reason

```
zREPRO LRECL EXCEEDS FREESPACE
zREPRO INDEX RECORD EXCEEDS FREESPACE
    For non-spanned datasets the remaining space in an empty block is
    not large enough to fit the current record. Reduce the freespace%
    or increase the blocksize

zREPRO RRN EXCEEDS 4GB
    The RRN at the beginning of the input files exceeds 4GB

zREPRO RRN NOT IN ASCENDING SEQUENCE
    The input file must be in RRN order

zREPRO INVALID VSAM DSN FORMAT CODE=x
    Check the format of the VSAM SET= variables
    If they seem ok, send them to the author
    CODE=1  CANNOT FIND DOT SEPARATOR
    CODE=2  CATALOG NAME LENGTH ERROR
    CODE=3  INPUT CATALOG NAME NOT EQUAL TO OUTPUT
    CODE=4  CATALOG PATH MISSING
    CODE=5  CATALOG LOAD FAILED
    CODE=6  CATALOG VERSION ERROR
    CODE=7  CLUSTER EXTRACTION FAILED
    CODE=8  CLUSTER NAME LENGTH ERROR
    CODE=9  CLUSTER.SUFFIX LENGTH ERROR
    CODE=A  ERROR IN DPAT/XPAT EXTRACTION

zREPRO UNLOAD NOT VALID FOR AIX
    The UNLOAD function is not available for an AIX
    An AIX can be unloaded by defining it as a fixed or variable-
    spanned KSDS

zREPRO VERIFY WARNING:SPANNED AND NO SEGMENTS CREATED
    It's unusual for a spanned dataset not to have any records split
    into segments

zREPRO VERIFY ERROR LIMIT OF 50 REACHED
    The program is terminated after VERIFY detects 50 errors
    See above in the VERIFY section for a sample of these errors
```

Change Summary

Trademarks

IBM and VSAM are registered trademarks of International Business Machines Corporation.

Credits

Author: Melvyn Maltz
Shipping date: xxx nn, 20nn
z390 version : V1.5.06
zVSAM version: V1