Archiver

Extensions

Version 1.2.0

```
    Archiver Extension V1.2.0 – A package to provide additional
              functionality to the Archiver package.
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Summary Of Changes

V1.1.0 - A new program ARCHRST was added to reset version numbers. No other programs were changed.

V1.2.0 – A revision to ARCHCOMP to sort by member or group. Also added ability to sync Archive 1 and Archive 2.

Introduction

Welcome to Archiver Extentions. This is a group of programs designed to provide additional feature for users of Archiver. The full use of ARCHIVER is out of scope of this document. Archiver 6.1.5 is pre-installed on TK5 systems. TK5 systems include a copy of the user guide is the DOC folder. It is also can be found at cbttape.org File # 147 ARCHIVER All your non-VSAM datasets to 1 VSAM file .

Archive is a program designed for storage of almost any type of non-VSAM file. The file is stored in a VSAM KSDS (Keyed Sequential Data Set) in a compressed and encrypted format. One possible use of Archiver is for secured storage of production source code.

The collection (so far) consists of PL/I programs to:
• ARCHDIR – Produces directory listings sorted in user selected sequences
• ARCHCOMP – Compares the indecies of two Archiver clusters to highlight differences
• ARCHRST – Resets version number
• ARCHUTIL = Unloads/Loads an Archive cluster to/from files suitable for transmission

About the Archiver Dataset

The Archiver Dataset is a VSAM cluster which must be defined using IDCAMS. Below is an example of the IDCAMS statement to define an Archive.

```
DEFINE CLUSTER(NAME( your archive name ) -
RECORDSIZE(200 32000) -
FREESPACE(20 20) -
BUFFERSPACE(262144) - (note)
KEYS(49 0))
DATA(NAME( your archive name .DATA) -
CYLINDERS( primary secondary )) -
INDEX(NAME( your archive name .INDEX) -
CYLINDERS( primary secondary ))
```
Figure 1: Example IDCAMS statement to create an Archive

The recordsize is the part the programs are sensitive to. Work areas are defined with 32,000 bytes of space. The routines to access the archive also assume the maximum record size is 32,000. It is recommended that all archives use the 32000 as the maximum record size. If you reduce the max record size, the programs may also need to be adjusted to the new record size.

For more information about the Archive cluster, see the Archiver Manual section "The Archiver Dataset" for more information.

Installation

1. The Archiver Extensions is distributed as a file name Arch-Exten-V1R2M0.zip. This .zip can be downloaded to your PC and the contents extracted.

   - ArchExten-V1R2M0.xmi
   - RESTTK5.jcl – restore to a TK5 system or systems with NJE38 installed.
   - RESTOTHR.jcl – restore to a system without NJE38 installed (uses RECV370).

2. On the host MVS system, allocate the dataset userid.ARCHEXTN.XMI with a record size of 80 and blksize of 3120. If the transfer process creates the dataset, it usually defaults to an undefined format.
3. BINARY Transfer the .xmi file to the host MVS system into userid.ARCHEXTN.XMI.
4. The RESTxxxx JCL defaults the user id to HERC01 and the volume to create the datasets is TSO002. You man need to change these before you submit. Be sure to remove the TYPRUN before you submit the RESTxxxx.jcl.
5. The userid.ARCHEXTN.XMI may be deleted since it is no longer required.
6. Submit the JCL in ARCHEXTN.V1R2M0.JCL(CLEANUP) to complete the install.

The RESTxxxx job will create the following datasets:

ARCHEXTN.V1R2M0.ASM	ARCHEXTN.V1R2M0.LOADLIB
ARCHEXTN.V1R2M0.COB	ARCHEXTN.V1R2M0.MACLIB
ARCHEXTN.V1R2M0.CNTL	ARCHEXTN.V1R2M0.NCALIB
ARCHEXTN.V1R2M0.INCLLIB	ARCHEXTN.V1R2M0.PLI
ARCHEXTN.V1R2M0.LISTING	ARCHEXTN.V1R2M0.PROCLIB

This 24 bit package was tested on Z/OS. However, for it run on Z/OS, the dataset PL/I (F) runtime "SYS1.PL1LIB" must be present on the Z/OS system.

ARCHCOMP – Compare 2 Archive Indecies

This utility will compare the indecies of two Archives highlighting matching and unmatching entries. The items can be sorted by Member or Group. Optionally, it can report mismatches or a full comparison report. Below is a sample of the report. When both sides of the report are printed, the items in both Archives are present. Note only the index data is compared. No attempt is made to compare the contents.

When a side of a line is blank, there is no matching item on the other side.

```
ARCHCOMP V1.2.0          RUN DATE:JUNE 25, 2024                                                      PAGE 0001
                           ARCHIVE 1                          |                        ARCHIVE 2
GROUP        MEMBER       SUB GROUP    TYPE       VERSION      | GROUP        MEMBER       SUB GROUP    TYPE       VERSION
----------   ----------   ----------   ----------  -------     | ----------   ----------   ----------   ----------  -------
ARCHEXTN     ++DEPEND     ARCHDATA     V00001           1      | ARCHEXTN     ++DEPEND     ARCHDATA     V00001          1
ARCHEXTN     ++DEPEND     DYNALOAD     V00001           1      | ARCHEXTN     ++DEPEND     DYNALOAD     V00001          1
                                                               | ARCHEXTN     ++DEPEND     DYNWORK      V00001          1
                                                               | ARCHEXTN     ++DEPEND     EDYNAL       V00001          1
                                                               | ARCHEXTN     ++DEPEND     EMACROS      V00001          1
                                                               | ARCHEXTN     ++DEPEND     JOBABEND     V00001          1
ARCHEXTN     ++DEPEND     PLIEXTEN     V00001           1      | ARCHEXTN     ++DEPEND     PLIEXTEN     V00001          1
                                                               | ARCHEXTN     ++DEPEND     SETRC        V00001          1
ARCHEXTN     ++DEPEND     VSAMIO       V00001           1      | ARCHEXTN     ++DEPEND     VSAMIO       V00001          1
ARCHEXTN     ++SNAP       DISTRO       V00001           1      | ARCHEXTN     ++SNAP       DISTRO       V00001          1
ARCHEXTN     ++SNAP       DISTRO       V1R0M0           2      | ARCHEXTN     ++SNAP       DISTRO       V1R0M0          2
ARCHEXTN     ARCHCOMP     LOADLIB      EXEC             1      | ARCHEXTN     ARCHCOMP     LOADLIB      EXEC            1
ARCHEXTN     ARCHCOMP     LOADLIB      EXEC             2      | ARCHEXTN     ARCHCOMP     LOADLIB      EXEC            2
                                                               | ARCHEXTN     ARCHCOMP     LOADLIB      EXEC            3
ARCHEXTN     ARCHCOMP     PROCLIB      JCL              1      | ARCHEXTN     ARCHCOMP     PROCLIB      JCL             1
                                                               | ARCHEXTN     ARCHCOMP     PROCLIB      JCL             2
                                                               | ARCHEXTN     ARCHCOMP     PROCLIB      JCL             3
ARCHEXTN     ARCHCOMP     SOURCE       PLI              1      | ARCHEXTN     ARCHCOMP     SOURCE       PLI             1
ARCHEXTN     ARCHCOMP     SOURCE       PLI              2      | ARCHEXTN     ARCHCOMP     SOURCE       PLI             2
                                                               | ARCHEXTN     ARCHCOMP     SOURCE       PLI             3
```

Figure 2: Sample ARCHCOMP Report with option='group,archextn'

ARCHCOMP Usage

The PROC for running ARCHCOMP is called ARCHCOMP. It has 4 keywords with only the SOUT (sysout) having a default of '*'. Examples:

```
//S1 EXEC ARCHCOMP,ARCH1='USER1.SLIM.ARCHIVE',
//        ARCH2='HERCEL.SLIM.ARCHIVE'
//*
//S2 EXEC ARCHCOMP,ARCH1='USER1.SLIM.ARCHIVE',
//        ARCH2='HERCEL.SLIM.ARCHIVE',
//        OPTION='GROUP,SUMMARY'
//S3 EXEC ARCHCOMP,ARCH1='USER1.SLIM.ARCHIVE',
//        ARCH2='HERCEL.SLIM.ARCHIVE',
//        OPTION='GROUP,SLIM'
```

Synchronizing Archives

ARCHCOMP can be used to synchronize two Archives. A testing archive can have new or modified items copied to a production archive. For a given project, ARCHCOMP will compare the index of the production and the index of the test archive and generate ARCHIVER copy statements to copy any new versions of an item from the test archive to the production archive.

Using proc ARCHCOMP, ARCH1 is the receiving archive and ARCH2 is the sending archive. An example will best describe the process using the following sample.

```
ARCHCOMP V1.2.0          RUN DATE:JUNE 25, 2024                                                          PAGE 0001
                           ARCHIVE 1                    |                              ARCHIVE 2
GROUP        MEMBER       SUB GROUP   TYPE      VERSION  |  GROUP        MEMBER       SUB GROUP   TYPE      VERSION
----------   ----------   ----------  --------  -------  |  ----------   ----------   ----------  --------  -------
ARCHEXTN     ++DEPEND     ARCHDATA    V00001          1  |  ARCHEXTN     ++DEPEND     ARCHDATA    V00001          1
ARCHEXTN     ++DEPEND     DYNALOAD    V00001          1  |  ARCHEXTN     ++DEPEND     DYNALOAD    V00001          1
                                                         |  ARCHEXTN     ++DEPEND     DYNWORK     V00001          1
                                                         |  ARCHEXTN     ++DEPEND     EDYNAL      V00001          1
                                                         |  ARCHEXTN     ++DEPEND     EMACROS     V00001          1
                                                         |  ARCHEXTN     ++DEPEND     JOBABEND    V00001          1
ARCHEXTN     ++DEPEND     PLIEXTEN    V00001          1  |  ARCHEXTN     ++DEPEND     PLIEXTEN    V00001          1
                                                         |  ARCHEXTN     ++DEPEND     SETRC       V00001          1
ARCHEXTN     ++DEPEND     VSAMIO      V00001          1  |  ARCHEXTN     ++DEPEND     VSAMIO      V00001          1
ARCHEXTN     ++SNAP       DISTRO      V00001          1  |  ARCHEXTN     ++SNAP       DISTRO      V00001          1
ARCHEXTN     ++SNAP       DISTRO      V1R0M0          2  |  ARCHEXTN     ++SNAP       DISTRO      V1R0M0          2
ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            1  |  ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            1
ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            2  |  ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            2
                                                         |  ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            3
ARCHEXTN     ARCHCOMP     PROCLIB     JCL             1  |  ARCHEXTN     ARCHCOMP     PROCLIB     JCL             1
                                                         |  ARCHEXTN     ARCHCOMP     PROCLIB     JCL             2
                                                         |  ARCHEXTN     ARCHCOMP     PROCLIB     JCL             3
ARCHEXTN     ARCHCOMP     SOURCE      PLI             1  |  ARCHEXTN     ARCHCOMP     SOURCE      PLI             1
ARCHEXTN     ARCHCOMP     SOURCE      PLI             2  |  ARCHEXTN     ARCHCOMP     SOURCE      PLI             2
                                                         |  ARCHEXTN     ARCHCOMP     SOURCE      PLI             3
```

This above run of ARCHCOMP will generate ARCHIVER copy statements to copy any item in the right side that does not have a corresponding item in the left column. Referring to the above, third line of the right side ("ARCHEXTN ++DEPEND DYNWORK V00001   1") would be copied to ARCHIVE 1. Upon completion, both sides of the report will be the same as shown below.

```
ARCHCOMP V1.2.0          RUN DATE:JUNE 25, 2024                                                          PAGE 0001
                           ARCHIVE 1                    |                              ARCHIVE 2
GROUP        MEMBER       SUB GROUP   TYPE      VERSION  |  GROUP        MEMBER       SUB GROUP   TYPE      VERSION
----------   ----------   ----------  --------  -------  |  ----------   ----------   ----------  --------  -------
ARCHEXTN     ++DEPEND     ARCHDATA    V00001          1  |  ARCHEXTN     ++DEPEND     ARCHDATA    V00001          1
ARCHEXTN     ++DEPEND     DYNALOAD    V00001          1  |  ARCHEXTN     ++DEPEND     DYNALOAD    V00001          1
ARCHEXTN     ++DEPEND     DYNWORK     V00001          1  |  ARCHEXTN     ++DEPEND     DYNWORK     V00001          1
ARCHEXTN     ++DEPEND     EDYNAL      V00001          1  |  ARCHEXTN     ++DEPEND     EDYNAL      V00001          1
ARCHEXTN     ++DEPEND     EMACROS     V00001          1  |  ARCHEXTN     ++DEPEND     EMACROS     V00001          1
ARCHEXTN     ++DEPEND     JOBABEND    V00001          1  |  ARCHEXTN     ++DEPEND     JOBABEND    V00001          1
ARCHEXTN     ++DEPEND     PLIEXTEN    V00001          1  |  ARCHEXTN     ++DEPEND     PLIEXTEN    V00001          1
ARCHEXTN     ++DEPEND     SETRC       V00001          1  |  ARCHEXTN     ++DEPEND     SETRC       V00001          1
ARCHEXTN     ++DEPEND     VSAMIO      V00001          1  |  ARCHEXTN     ++DEPEND     VSAMIO      V00001          1
ARCHEXTN     ++SNAP       DISTRO      V00001          1  |  ARCHEXTN     ++SNAP       DISTRO      V00001          1
ARCHEXTN     ++SNAP       DISTRO      V1R0M0          2  |  ARCHEXTN     ++SNAP       DISTRO      V1R0M0          2
ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            1  |  ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            1
ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            2  |  ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            2
ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            3  |  ARCHEXTN     ARCHCOMP     LOADLIB     EXEC            3
ARCHEXTN     ARCHCOMP     PROCLIB     JCL             1  |  ARCHEXTN     ARCHCOMP     PROCLIB     JCL             1
ARCHEXTN     ARCHCOMP     PROCLIB     JCL             2  |  ARCHEXTN     ARCHCOMP     PROCLIB     JCL             2
ARCHEXTN     ARCHCOMP     PROCLIB     JCL             3  |  ARCHEXTN     ARCHCOMP     PROCLIB     JCL             3
ARCHEXTN     ARCHCOMP     SOURCE      PLI             1  |  ARCHEXTN     ARCHCOMP     SOURCE      PLI             1
ARCHEXTN     ARCHCOMP     SOURCE      PLI             2  |  ARCHEXTN     ARCHCOMP     SOURCE      PLI             2
ARCHEXTN     ARCHCOMP     SOURCE      PLI             3  |  ARCHEXTN     ARCHCOMP     SOURCE      PLI             3
```

How to Synchronize

In order to synchronize two archives, a two step process is required. Below is the actual JCL used to produce the above examples.

```
//ARCHCOMP JOB CLASS=B,MSGCLASS=A,MSGLEVEL=(1,1),
//  USER=HERCEL,PASSWORD=CUL8TR
//*
//*
//*    RUN THE ARCHCOMP
//*
//ARCHCMP1 EXEC ARCHCOMP,
//         ARCH1='HERCEL.ARCHEXTN.ARCHIVE',
//         ARCH2='HERCEL.SLIM.ARCHIVE',
//         OPTION='GROUP,ARCHEXTN'
//CNTLFL   DD DSN=&&COPY,UNIT=SYSDA,SPACE=(TRK,(20,20),RLSE),
//           DISP=(NEW,PASS)
//*
//ARCH EXEC PGM=ARCHIVER,REGION=4096K
//SYSPRINT DD SYSOUT=*
//ARCHIN   DD DSN=HERCEL.SLIM.ARCHIVE,DISP=SHR
//ARCHOUT  DD DSN=HERCEL.ARCHEXTN.ARCHIVE,DISP=SHR
//SYSIN    DD DSN=&&COPY,DISP=(OLD,DELETE)
//*
//*
//*    RUN THE ARCHCOMP
//*
//ARCHCMP2 EXEC ARCHCOMP,
//         ARCH1='HERCEL.ARCHEXTN.ARCHIVE',
//         ARCH2='HERCEL.SLIM.ARCHIVE',
//         OPTION='GROUP,ARCHEXTN'
```

Step ARCHCMP1 is run to produce the copy statements into the file defined as CNTLFL.
Step ARCH is to run to execute the copy statements generated in step ARCHCMP1.
Step ARCHCMP2 is run to verify/demonstrate what happened.

ARCHDIR – Customized Index Reports

ARCHDIR is a program to print Archiver directory reports sorted in requested order. It is assumed the ARCHIVER is installed in a system library. The LIST Archiver command prints directory reports sorted by member, group, subgroup, type and version order. ARCHDIR provides for printing the directory report sorted in any desired order. Filters can be specified and any notes associated with the members can be printed.

ARCHDIR works by running Archiver with alternate DDNAMES for SYSIN and SYSPRINT. The SYSIN file is created with the following Archiver statements by default:

```
SET VSAM1DD=ARCHIVE
LIST ITEM=(*,*,*,*),NOTES=Y
```

ARCHRPT then reads the output from Archiver selecting the appropriate lines, reformatting the lines as requested, sorting the reformatted lines and printing a report. In addition, ALIAS items are listed in their order and also listed after the items the alias refers to. Notes are printed following the item.

An Archiver index consists of 5 items – member, group, sub group, type and version. ARCHDIR lets you select the sort order of the report.

```
ARCHDIR V1.0.0                         FEBRUARY 02, 2024                                              PAGE      1

OPTIONS PASSED                         GSMTV,ITEM=(*,*,*,*),NOTE=Y

GROUP       SUBGROUP    MEMBER      TYPE        VERSION                                       DCB
----------  ----------  ----------  ----------  ----------  ------------------------------------------------------------
ARCHDATA    COPYLIB     ARCHREC     COB              1      PS    FB      80      3,120   12/04/2023 07:13:51         18
ARCHDATA    INCLLIB     ARCHDIR     PLI              1      PO    FB      80      3,120   07/17/2023 09:45:14         18
ARCHDATA    INCLLIB     ARCHREC     PLI              1      PS    FB      80        400   12/04/2023 07:13:50         24
ARCHUTIL    ARCHDATA    ++DEPEND    V00001           1      PS    FB      80         80   07/17/2023 09:45:14          1
ARCHUTIL    LOADLIB     ARCHUTIL    EXEC             1      PO    U            19,040           09/20/2023 20:01:00    60
ARCHUTIL    PLIEXTEN    ++DEPEND    V00001           1      PS    FB      80      3,120   09/20/2023 20:19:01          1
ARCHUTIL    SOURCE      ARCHDIR     PLI              1      PO    FB      80      3,120   07/17/2023 09:45:14        232
ARCHUTIL    SOURCE      ARCHRPT     PLI              1      PO    FB      80      3,120   07/17/2023 09:45:14        180
ARCHUTIL    SOURCE      ARCHUTIL    PLI              1      PS    FB      80      3,120   09/20/2023 20:01:00        205
ARCHUTIL    SYSOUT      ARCHUTIL    LISTING          1      PS    VBA    137      1,370   09/20/2023 20:01:00      1,420
ARCHUTIL    VSAMIO      ++DEPEND    V00001           1      PS    FB      80         80   07/17/2023 09:45:15          1
BANNER      BLKPRT      ++DEPEND    V00001           1      PS    FB      80      3,120   07/17/2023 09:45:04          1
BANNER      EMACROS     ++DEPEND    V00001           1      PS    FB      80      3,120   07/17/2023 09:45:04          1
BANNER      LOADLIB     BANNER      EXEC             1      PO    U            19,040           01/03/2024 13:16:47     7
BANNER      SOURCE      BANNER      ASM              1      PS    FB      80      3,120   01/03/2024 13:16:47         66
BANNER      SYSOUT      BANNER      LISTING          1      PS    VBA    137      1,370   01/03/2024 13:16:47        312
BASALO      EDYNAL      ++DEPEND    V00001           1      PS    FB      80      3,120   07/17/2023 09:45:05          1
BASALO      EMACROS     ++DEPEND    V00001           1      PS    FB      80      3,120   07/17/2023 09:45:05          1
BASALO      LOADLIB     BASALO      NCAL             1      PO    U            19,069           07/24/2023 10:47:51     6
                                                           ALIAS-BASALO      -LOADLIB     -BASALOP     -NCAL       -        1
BASALO      LOADLIB     BASALOP     NCAL             1      ALIAS FOR -BASALO    -LOADLIB   -BASALO    -NCAL       -        1
BASALO      SUBPGM      BASALO      ASM              1      PO    FB      80      3,120   07/17/2023 09:45:05        162
BASALO      SUBPGM      BASALO      ASM              2      PO    FB      80      6,320   07/20/2023 22:50:34        163
BASALO      SYSOUT      BASALO      LISTING          1      PS    VBA    137      1,370   07/24/2023 10:47:51      1,196
BASCORE     LOADLIB     BASICMON    EXEC             1      PO    U            19,069           07/24/2023 10:57:56    136
```

Figure 3: Sample ARCHDIR Default Report

Specifying what is to print is done via the EXEC statement PARM. Above is a sample report using all the defaults. To customized the report, there are 3 items that can be passed.

The first item is the order of the data to print. This item consist of 5 characters signifying the order of the columns to be printed. The first character of the column name specifies the order. In the sample, the default item is GSMTV, short for Group, Subgroup, etc

Below is a sample report where the data to print is VMGST

```
ARCHDIR V1.0.0                          FEBRUARY 02, 2024                                    PAGE     1

OPTIONS PASSED                          VMGST,ITEM=(*,*,*,*),NOTE=Y

VERSION    MEMBER     GROUP      SUBGROUP   TYPE                                DCB
-------    --------   --------   --------   --------                            ---------
      1    ++DEPEND   ARCHUTIL   ARCHDATA   V00001    PS   FB    80       80   07/17/2023 09:45:14              1
      1    ++DEPEND   ARCHUTIL   PLIEXTEN   V00001    PS   FB    80    3,120   09/20/2023 20:19:01              1
      1    ++DEPEND   ARCHUTIL   VSAMIO     V00001    PS   FB    80       80   07/17/2023 09:45:15              1
      1    ++DEPEND   BANNER     BLKPRT     V00001    PS   FB    80    3,120   07/17/2023 09:45:04              1
      1    ++DEPEND   BANNER     EMACROS    V00001    PS   FB    80    3,120   07/17/2023 09:45:04              1
      1    ++DEPEND   BASALO     EDYNAL     V00001    PS   FB    80    3,120   07/17/2023 09:45:05              1
      1    ++DEPEND   BASALO     EMACROS    V00001    PS   FB    80    3,120   07/17/2023 09:45:05              1
      1    ++DEPEND   BASICMON   BASALO     V00001    PS   FB    80       80   07/17/2023 09:45:08              1
      1    ++DEPEND   BASICMON   BASCORE    V00001    PS   FB    80       80   07/17/2023 09:45:07              1
      1    ++DEPEND   BASICMON   BASEXTEN   V00001    PS   FB    80       80   07/17/2023 09:45:07              1
      1    ++DEPEND   BASICMON   PDSACES    V00001    PS   FB    80       80   07/17/2023 09:45:07              1
      1    ++DEPEND   BASICMON   PLIEXTEN   V00001    PS   FB    80       80   07/17/2023 09:45:07              1
      1    ++DEPEND   BASIC1UP   BASALO     V00001    PS   FB    80       80   07/17/2023 09:45:08              1
      1    ++DEPEND   BASIC1UP   BASCORE    V00001    PS   FB    80       80   07/17/2023 09:45:07              1
      1    ++DEPEND   BASIC1UP   BASEXTEN   V00001    PS   FB    80       80   07/17/2023 09:45:07              1
      1    ++DEPEND   BASIC1UP   PDSACES    V00001    PS   FB    80       80   07/17/2023 09:45:07              1
```

Figure 4: Sample ARCHDIR Custom Report

The second parm to ARCHDIR is an ITEM. The general format of item is
    ITEM=(*,*,*,*)
This item is passed to ARCHIVER so ARCHDIR does no validation on it. This enables partial report to be printed. For example, you have an Archive with source code in it and you want to only print group items that start with PAY and are type COBOL. The Item to do this would be ITEM=(*,PAY*,*,COBOL,*). Please refer to the Archiver manual for further info about the ITEM

The third item NOTE is also passed to ARCHIVER so ARCHDIR does no validation on it.   Please refer to the Archiver manual for further info about NOTE.

ARCHDIR Usage

It is assumed the ARCHIVER is installed in a system library. The full use of ARCHIVER is out of scope of this document.

The JCL member ARCHRPT is a sample of the JCL to run the ARCHRPT. The reporting order is controlled by the exec statement parm. The default parm is 'MGSTV'. (Member Group Subgroup Type Version). The parm must be 5 characters and only the characters M,G,S,T,V in any order is acceptable. Addition options for the Archiver List command can be added after the sort options. For example:

    PARM='MGSTV,ITEM=(*,*,*,PL1),NOTE=Y'

This example tells ARCHRPT to sort the report in Member, Group, Subgroup, Type and Version order for only members of type PL1. Notes, if any, should be printed. See the Archiver manual for a full explanation of the options for the LIST command.

The PROC for running ARCHDIR is called ARCHDIR. It has 4 keywords with only the SOUT (sysout) having a default of '*'. Examples:

```
//S1 EXEC ARCHDIR,ARCHIVE='HERCEL.SLIM.ARCHIVE'
//S2 EXEC ARCHDIR,ARCHIVE='HERCEL.SLIM.ARCHIVE',SORT=VMGST
```

ARCHRST – Reset Version Numbers

ARCHRST adjusts version numbers. The best way to describe why this is needed is with an example. Listed below is listing from an ARCHIVE with the items related to a project. Lets assume that version 1 of all the members of the project are production. Subsequent changes result in multiple versions saved in the ARCHIVE while enhancements are being made.

```
ARCHIVER V6.1.5-- PDS/VSAM ARCHIVE MANAGEMENT SYSTEM  06/06/2024  23:36:41    PAGE        2
(C) 1999, RICHARD A. FOCHTMAN JR., WOODRIDGE, ILLINOIS

 MEMBER   -   GROUP   -   SUBGRP   -   TYPE   -    VERSION    DS   RFM    LRECL    BLKL     DATE        TIME        RECORDS

-SLIM      -SLIM      -LOADLIB   -EXEC    -        5  PO   U              19,069  03/12/2024 23:02:12        88
-SLIM      -SLIM      -LOADLIB   -EXEC    -        4  PO   U              19,069  03/12/2024 22:39:04        88
-SLIM      -SLIM      -LOADLIB   -EXEC    -        3  PO   U              19,069  03/07/2024 00:24:36        86
-SLIM      -SLIM      -LOADLIB   -EXEC    -        2  PO   U              19,069  03/07/2024 00:15:29        86
-SLIM      -SLIM      -LOADLIB   -EXEC    -        1  PO   U              19,069  02/16/2024 14:52:31        86
-SLIM      -SLIM      -SOURCE    -PLI     -        5  PS   FB       80     3,120  03/12/2024 23:02:12     1,557
-SLIM      -SLIM      -SOURCE    -PLI     -        4  PS   FB       80     3,120  03/12/2024 22:39:04     1,557
-SLIM      -SLIM      -SOURCE    -PLI     -        3  PS   FB       80     3,120  03/07/2024 00:24:36     1,543
-SLIM      -SLIM      -SOURCE    -PLI     -        2  PS   FB       80     3,120  03/07/2024 00:15:29     1,543
-SLIM      -SLIM      -SOURCE    -PLI     -        1  PS   FB       80     3,120  02/16/2024 14:52:31     1,543
-SLIM      -SLIM      -SYSOUT    -LISTING -        5  PS   VBA     137     1,370  03/12/2024 23:02:12     5,037
-SLIM      -SLIM      -SYSOUT    -LISTING -        4  PS   VBA     137     1,370  03/12/2024 22:39:04     5,037
-SLIM      -SLIM      -SYSOUT    -LISTING -        3  PS   VBA     137     1,370  03/07/2024 00:24:36     5,000
-SLIM      -SLIM      -SYSOUT    -LISTING -        2  PS   VBA     137     1,370  03/07/2024 00:15:29     5,000
-SLIM      -SLIM      -SYSOUT    -LISTING -        1  PS   VBA     137     1,370  02/16/2024 14:52:31     5,002

         LIST PROCESSING COMPLETED.
              15 TOTAL ITEMS LISTED.
```

The ARCHRST process for a given project will generate ARCHIVER control statement so the current version become the requested version. In this example, version 5 is the current test version and version 1 is the current production version. What is desired is to make version 5 the next production version. In other words, version 5 should become version 2. In order for this to happen, intermediate test versions must be deleted. In this example, version 2, 3 and 4 must be deleted and version 5 changed to version 2. Notes are added to version 5 to indicate the deletion of versions 2, 3 and 4.

ARCHRST will accomplish this. ARCHRST always assumes the most recent (highest) version is the one to reset. After execution, a LIST ITEM with NOTE=Y will appear as shown below.

```
ARCHIVER V6.1.5-- PDS/VSAM ARCHIVE MANAGEMENT SYSTEM  06/11/2024  07:00:41    PAGE        2
(C) 1999, RICHARD A. FOCHTMAN JR., WOODRIDGE, ILLINOIS

 MEMBER   -   GROUP   -   SUBGRP   -   TYPE   -    VERSION    DS   RFM    LRECL    BLKL     DATE        TIME        RECORDS

-SLIM      -SLIM      -LOADLIB   -EXEC    -        2  PO   U              19,069  03/12/2024 23:02:12        88
      1 --> -SLIM      -SLIM      -LOADLIB   -EXEC    -
      2 --> VERSION       4 DATED 3/12/2024 22:39:04        88     *DELETED*
      3 --> -SLIM      -SLIM      -LOADLIB   -EXEC    -
      4 --> VERSION       3 DATED 3/07/2024 00:24:36        86     *DELETED*
      5 --> -SLIM      -SLIM      -LOADLIB   -EXEC    -
      6 --> VERSION       2 DATED 3/07/2024 00:15:29        86     *DELETED*
-SLIM      -SLIM      -LOADLIB   -EXEC    -        1  PO   U              19,069  02/16/2024 14:52:31        86
-SLIM      -SLIM      -SOURCE    -PLI     -        2  PS   FB       80     3,120  03/12/2024 23:02:12     1,557
      1 --> -SLIM      -SLIM      -SOURCE    -PLI     -
      2 --> VERSION       4 DATED 3/12/2024 22:39:04     1,557     *DELETED*
      3 --> -SLIM      -SLIM      -SOURCE    -PLI     -
      4 --> VERSION       3 DATED 3/07/2024 00:24:36     1,543     *DELETED*
      5 --> -SLIM      -SLIM      -SOURCE    -PLI     -
      6 --> VERSION       2 DATED 3/07/2024 00:15:29     1,543     *DELETED*
-SLIM      -SLIM      -SOURCE    -PLI     -        1  PS   FB       80     3,120  02/16/2024 14:52:31     1,543
-SLIM      -SLIM      -SYSOUT    -LISTING -        2  PS   VBA     137     1,370  03/12/2024 23:02:12     5,037
      1 --> -SLIM      -SLIM      -SYSOUT    -LISTING -
      2 --> VERSION       4 DATED 3/12/2024 22:39:04     5,037     *DELETED*
      3 --> -SLIM      -SLIM      -SYSOUT    -LISTING -
      4 --> VERSION       3 DATED 3/07/2024 00:24:36     5,000     *DELETED*
      5 --> -SLIM      -SLIM      -SYSOUT    -LISTING -
      6 --> VERSION       2 DATED 3/07/2024 00:15:29     5,000     *DELETED*
-SLIM      -SLIM      -SYSOUT    -LISTING -        1  PS   VBA     137     1,370  02/16/2024 14:52:31     5,002

         LIST PROCESSING COMPLETED.
               6 TOTAL ITEMS LISTED.
```

ARCHRST is controlled by EXEC parms. Six words separated by commas must be passed.
1. Member
2. Group
3. Subgroup
4. Type
5. Desired version
6. Action – must to TEST to display what will be done. COMMIT to actually due the changes.

 The parm used for the above example is:

      PARM='SLIM,SLIM,*,*,2,COMMIT'

There is a proc set up. Here is how it is coded

```
//*
//*   RUN ARCHRST
//*
//STEP2 EXEC ARCHRST,GROUP=SLIM,MEMBER=SLIM,SUBGRP='*',TYPE='*',
//        VERSION=2,COMMIT=COMMIT,
//        ARCHIVE='HERCEL.SLIMVER.ARCHIVE'
```

It is suggested that a TEST run be executed to verify that what you want done is going to be accomplished. It is also suggested to backup the ARCHIVE before running ARCHRST

ARCHUTIL – Unload/Load Utility for Archives

ARCHUTIL produces a sequential version of an Archive that is suitable for transmission. The sequential file is essentially 80 byte card images suitable for XMIT370 or NJE38 transmission.j

```
*** EXEC CARD PARM=LOAD
ARCHIVE RECORDS READ =            1192
SHORTEST RECORD READ =              70
LONGEST RECORD READ  =           32000
```

Figure 5: Sample ARCHUTIL Report

ARCHUTIL Usage

There are two parts to ARCHUTIL – one to load an archive to a sequential file and the other to unload the sequential file to an archive[1]. There are two procs – one to unload and the other to load.

```
//S1  EXEC ARCHUTIU,                    Unload the archive
//       ARCHIN='HERCEL.SLIM.ARCHIVE',
//       SEQFL='HERCEL.ARCHEXTN.TEST',
//       SEQVOL=EVOL03
//S1  EXEC ARCHUTIL,                    Load the archive
//       ARCHOUT='HERCEL.SLIM.ARCHIVE',
//       SEQFL='HERCEL.ARCHEXTN.TEST'
```

---

1   The author of Archiver chose to use the term unload to *add data* to the archive. He also chose to use the term load to *take data* from an archive.