

User Manual

Batch Replicator Version 3.1

Batch Object Replication
and Handover System

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1 Installation

To install tool BATCH REPLICATOR in your personal TSO environment you must do the following:

1. Download the software: <https://www.legacydatasystems.com/REPLICATOR/REPWare.zip>
2. Unzip the downloaded file *REPWare.zip*
3. Transmit file *instfile.bin* to your mainframe system
4. Receive the file using
>> TSO RECEIVE INDS(INSTALL.BIN)
>> DS(REPL.INSTALL) or another name of your choice
5. Edit the received new dataset *userid.REPL.INSTALL*
6. Edit job INSTALL
7. Adjust the JCL jobcard and the dataset names according to your requirements
8. Run job INSTALL
9. If you don't want to use the *Batch Command Interface (BCI)* then change the program name and use parameters of your own download program, which is able to create standard batchloader statements. Change also member *REPL1000* in *userid.replqual.ISPSLIB*

Customize Rexx "#START" in *userid.replqual.EXEC*

```
/******  
/* customize file names below */  
/******+  
userqual= "REPL" /* your private qualifier(s) */  
eqqmlib = "SYS1.TWSZOSXX.SEQQMSG0" /* IWS installation qualifier */  
twslevel = "OPCX.SYSXX" /* IWS files qualifier */  
subsys = "OPCX" /* controller subsystem name */  
replevel= "V3R1Mnn" /* replicator version */  
/* */  
/******/  
userpref= zuser".REPL"  
instpref= userpref"."replevel
```

10. Run Rexx #START to start the JOBMAN dialog and define your filenames in option 0.

2 Datasets

In your personal TSO environment BATCH REPLICATOR requires the system files listed below. The initial names for work and output files will be specified in Option 0 – *Options and Initial Settings*.

Datsetnames	Environm.	Description
&INSTPRFX..EXEC	System	JMAN rexx modules
&INSTPRFX..ISPMLIB	System	ISPF message library
&INSTPRFX..ISPPLIB	System	ISPF panel library
&INSTPRFX..ISPSLIB	System	ISPF skeletons
&INSTPRFX..KEYS.JCL	System	JCL modification keys
&INSTPRFX.CHNG.DATA	System	Actual change definitions for data
&INSTPRFX.CHNG.JCL	System	Actual change definitions for JCL
&INSTPRFX.CHNG.OPC	System	Actual change definitions for IWS
&INSTPRFX.CHNG.SRCHARGS	System	Actual search arguments for JCL objects
&INSTPRFX.CHNG.STATUS	System	Change definitions to change the status of all downloaded applications to P (for a later reload).
&INSTPRFX.EXEC	System	JMAN REXX Module
&INSTPRFX.ISPMLIB	System	ISPF Message Library
&INSTPRFX.ISPPLIB	System	ISPF Panel Library
&INSTPRFX.ISPSLIB	System	ISPF Skeletons
&INSTPRFX.KEYS.JCL	System	JCL Modification Keys
&INSTPRFX.KEYS.OPC	System	OPC Modification Keys
&INSTPRFX.SRCH.ARGS	System	Basic Such-Argumente
&INSTPRFX.SYSIN	System	Data for technical jobs

3 Dialog and Functions

3.1 Primary Option Menu

The functions are listed in the order to process and run a complete replication process. This manual is structured in the same way.

```
WORK ----- BATCH REPLICATOR V3R1Mnn -----  
COMMAND ==>  
  
                                Batch Object Replication  
                                and Handover System  
                                System ID: SYSX  
                                Date: 16/11/10  
                                Time: 10:44  
  
    0 Options and Initial Settings  
    1 Unload IWS Environment  
    2 ...  
    3 ...  
    4 Replication Process  
    5 Edit Work files  
    6 Split Unloaded Data  
    7 Publish Replication Results  
  
    S Call SDSF
```

Figure 1 - Primary Option Menu

3.2 Options and Initial Settings

Defining the appropriate dataset qualifiers creates all necessary file names which are used by other functions and processes.

```

WORK ----- BATCH REPLICATOR V3R1Mnn-----
COMMAND ==>>

                                Batch Object Replication
                                and Handover System
                                System ID: SYSX
                                Date: 16/11/10
                                Time: 13:40

Unload filenames / work files:
Work DSN Qual.: TSOUSER.REPTEST
Applications : TSOUSER.REPTEST.UNLAD
Variable Table: TSOUSER.REPTEST.UNLTABS
Workstations : TSOUSER.REPTEST.UNLWS
Operator Instr: TSOUSER.REPTEST.UNLOI
Calendars/Per : TSOUSER.REPTEST.UNLCAL
Spec.Resources: TSOUSER.REPTEST.UNLRES
Joblibs      : TSOUSER.REPTEST.JOBS
Datalibs seq. : TSOUSER.REPTEST.DATA
Interface Log : TSOUSER.REPTEST.BIF.LOG
Interface AD  : TSOUSER.REPTEST.BIF.AD
Interface Modf: TSOUSER.REPTEST.BIF.LOG.UNIQUE
Interface Excl: TSOUSER.REPTEST.BIF.EXCLLIST
JCL Interfaces: TSOUSER.REPTEST.JCL.INTRFACE
Used JCL PROCS: TSOUSER.REPTEST.JCL.PROCS
Calld programs: TSOUSER.REPTEST.JCL.PROGRAMS

Replication files:
Outfiles Qual.: TSOUSER.REPTEST.NEW
Modified AD   : TSOUSER.REPTEST.NEW.OPC.AD
Joblibraries  : TSOUSER.REPTEST.NEW.JOBLIB
Data Libraries: TSOUSER.REPTEST.NEW.DATA
DEF GDG stmts : TSOUSER.REPTEST.NEW.DEFGDG

System files:
Logfile Prefix: TSOUSER.REPL.LOG
Archive Prefix: TSOUSER.REPL.ARC
Install Prefix: TSOUSER.REPL.V3R1M01

Miscellaneous:
SDSF call: Y
Edit Jobcontrol: Y
Jobcard:
==> //TSOUSERXY JOB (XXXX,TXX,T999999), '99999-OPCTEC',MSGCLASS=X,
==> //          NOTIFY=&SYSUID,TIME=1440
==> //*
==> //*

```

Figure 2 – Options and Initial Setting

It is possible to modify (pre-defined) dataset names of logfiles, archive and installation files. Optionally one decides to call SDSF or to edit job control before submission. A job card for all jobs which may be executed should be stated here.

3.3 Unload IWS Environment

This function is used to download the necessary data for a replication, caused by a move or copy of your scheduler environment. This data is then available for modifications in all following dialogs.

```
REPL1000 --- BATCH REPLICATOR V3R1Mnn-----  
COMMAND ==>  
  
Unload IWS Environment  
  
1 Unload Applications  
2 Unload Variable Tables (Unload JCL before)  
3 Unload Workstations  
4 Unload Calendars / Periods  
5 Unload Operator Instructions  
6 Unload Special Resources  
7 Unload Side Info - ETT-Criteria etc.  
R Retire (reload) unloaded Apps with Status P  
F List Workfiles  
  
S Call SDSF  
  
SUBSYSTEM: OPCE  
TWSQUAL. : OPCA.SYSTM  
EQQMLIB  : SYS1.TWSZOS91.SEQQMSG0
```

Figure 3 - Unload OPC Environment

The download requires the subsystem name of the active controller and the DSN qualifiers of the active IWS file environment. Also the dataset name of the IWS message library EQQMLIB!

To download variable tables it is required to download all appropriate jobs before, because this function downloads just variable tables which are used in jobs or run cycles and necessary for any resolution.

Using the RETIRE function (R) will set all downloaded applications to status 'P' (pending). This allows to reload this application into the source database to avoid any further planning in the source production.

3.3.1 Unload Applications

Specifying an application name (also generic), an owner, an authority-group and the status will select applications for download from AD (application description database)

```

REPL1100 --- BATCH REPLICATOR V3R1Mnn-----
COMMAND ==>>

                                                    Batch Object Replication
                                                    and Handover System
                                                    System ID: SYSX
                                                    Date: 16/11/12
                                                    Time: 17:43

Use one of the following fields for
OPC data selection (using standard interface TWSBCI)
Use command REF to clear the fields

Application Name: *
-      Owner: *
-      Auth.Group: *
-      Status: *

Unload AD DSName: TSOUSER.REPL.WORK.UNLAD
    
```

Figure 4 - Unload Applications

Thereafter a job is provided for edit or submission, which will run the download program. The unloaded applications will also be prepared for reload with status 'P' and stored in a second output file.

```

//TWSBCI EXEC PGM=EQQYCAIN,REGION=6M,PARM='OPCE,MSGOFF'
//EQQMLIB DD DISP=SHR,DSN=SYS1.TWSZOS91.SEQQMSG0
//ERREUR DD SYSOUT=*
//EQQMLOG DD SYSOUT=*
//EQQDUMP DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//AD DD SYSOUT=*
//BATCHL DD DSN=TSOUSER.REPL.WORK.UNLAD,
//      DISP=(,CATLG,DELETE),
//      SPACE=(CYL,(5,5),RLSE),
//      UNIT=SYSDA,
//      DCB=(RECFM=FB,LRECL=80)
//SYSIN DD *
ACTION=OPTIONS,BL=Y,BLPRT=Y,LTP=N;
ACTION=LIST,RESOURCE=ADCOM,ADID=*,TYPE=*,STATUS=*,
OWNER='*',GROUP=*.
/*
/** -----
/** FOLLOWING STEP WILL AUTOMATICALLY CHANGE
/** CHANGE UNLOADED APPS TO STATUS P (PENDING) FOR DECOMMISSIONING RELOAD
/** -----
...
    
```

Figure 5 - JCL for AD Download

3.3.2 Unload other IWS Data

All other objects can be downloaded/copied using *IDCAMS REPRO!*

3.4 Replication Process

In order to complete a replication of a batch production successfully all described activities should be performed in the predefined sequence.

Normally no one knows all components of a complex batch workflow, they will be determined from existing information. This are the job definitions in IWS applications to get all the JCL. All other information regarding data cards etc. will be determined from JCL definitions.

```
----- BATCH REPLICATOR V3R1Mnn-----  
COMMAND ==>  
  
Replication Activities:  
  
1 Unload all JCL Components  
2 Identify Batchstream Interfaces  
3 Identify JCL Interfaces, Procedures and Programs  
4 ..... (any idea for a new function?)  
5 JCL Modifications  
6 OPC Modifications  
7 DATA Modifications  
8 JOBMAN User Job Manipulation  
9 Create IDCAMS DEFINE GDG Statements  
A Create EXCLUDE LIST Batchstream Interfaces  
B Modify EXCLUDE LIST  
R Recover Previous Modifications and Search Arguments  
F List Workfiles  
L List Modification Logfiles  
  
S Call SDSF  
  
Batch Object Replication  
and Handover System  
System ID: SYSX  
Date: 16/11/19  
Time: 11:54
```

Figure 6 - Replication Process

3.4.1 Unload all JCL Components

3.4.1.1 Unload JCL

Based on previous downloaded TWS AD data all necessary jobs will be copied from all allocated job libraries. It is important to ensure that all concatenated EQQJBLIB libraries are specified here. The download program tries to copy all job defined in all workstations – this is normally not possible and therefore the job normally ends with a RC=8 (see figure 7 – Unload JCL).

3.4.1.2 Unload Control and Data Cards

Based on specified control card and data libraries all related data and members will be downloaded- (see Figure 7 - Unload Control and Data Cards).

```

----- BATCH REPLICATOR V3R1Mnn-----
COMMAND ==>>

                                Batch Object Replication
                                and Handover System
Unload JCL components based on unloaded          System ID: SYSX
OPC data: TSOUSER.REPL.WORK.UNLAD              Date: 16/11/19
Joblib1 : _____                          Time: 13:00
Joblib2 : _____
Joblib3 : _____
Joblib4 : _____
Joblib5 : _____
Joblib6 : _____
Joblib7 : _____
Joblib8 : _____

Unl.Jobs: TSOUSER.REPL.WORK.UNLJOBS_____
    
```

Figure 8 - Unload JCL

```

----- BATCH REPLICATOR V3R1Mnn-----
COMMAND ==>>

                                Batch Object Replication
                                and Handover System
Unload DATA components based on unloaded        System ID: SYSX
JCL      : TSOUSER.REPL.WORK.UNLJOBS           Date: 16/11/19
Datlib1 : _____                          Time: 13:01
Datlib2 : _____
Datlib3 : _____
Datlib4 : _____
Datlib5 : _____
Datlib6 : _____
Datlib7 : _____
Datlib8 : _____

Unl.Data: TSOUSER.REPL.WORK.UNLDATA_____
    
```

Figure 7 - Unload Control and Data Cards

3.4.2 Identify Batchstream Interfaces

Downloading parts of a batch workstream may cause breaks in predecessor dependencies, because a predecessor is not part of this application and therefore also not part of the downloaded application stock. Such a predecessor may build a real interface to another application or it is a kind of technical dependency to time nodes or something else.

To flag these links and to allow a failure free upload into the target environment these open interfaces must be identified – marked with a free definable dummy application existing in the target system. The original application definitions are documented and can be found in the description field within that predecessor definition:

```
ADDEP ACTION(ADD)
  PREADID(NIGEFU#APP)
  PREWSID(DMMY)
  PREOPNO( 100)
  DESCR('ALT:OPC06K01P,CPU1,24')
  PRECSEL(C)
  PREMAND(N)
```

Of course not all missed predecessor dependencies must be marked in this way. It is possible to specify predecessor applications, which are already available in the target system. More information about defining this EXCLUDE lists in chapter 3.4.8 Create EXCLUDE LIST Batchstream Interfaces (S. 17).

```
----- BATCH REPLICATOR V3R1Mnn-----
COMMAND ==>

                                Batch Object Replication
                                and Handover System
Identify Batchstream Interfaces (Dependencies)      System ID: SYSX
Rename the unavailable predecessors                 Date: 16/11/19
                                                    Time: 13:14

PREADID : NOTFND#DMMY#APP_
PREWSID  : DMMY
PREOPNO  : 222

Use an existing exclude list: N Y/N (create the list using 4.A)

PREADID should be an existing dummy application.
PREWSID should be a predefined dummy workstation with a specific name
(to identify the interface)
PREOPNO the operation number within that application
This application will be used as predecessor for all dependend applications.
All interface dependencies will be documented with their original names
as dependency description.

Input      : TSOUSER.REPL.WORK.UNLAD
Logfile    : TSOUSER.REPL.WORK.BIF.LOG
Logf.unique : TSOUSER.REPL.WORK.BIF.LOG.UNIQUE
Exclude list: TSOUSER.REPL.WORK.BIF.EXCLLIST
Output     : TSOUSER.REPL.WORK.BIF.AD
```

Figure 9 - Identify Batchstream Interfaces

3.4.3 Identify JCL Interfaces, Procedures and Programs

To find possible interfaces and other problematic definitions within jobcontrol, the tool gives you a set of default search arguments, which are recommended to use in case of moving an IT-production.

Sample:

An INCLUDE member is not existing in the target system or a ROUTE definition will not reach the target system. The same applies to all DEFAULT definitions. You can search for all other possible interfaces without a limit.

```

REPL4300 --- BATCH REPLICATOR V3R1Mnn----- COLUMNS 00001 00072
COMMAND ==>
                                SCROLL ==> CSR
                                Batch Object Replication
                                and Handover System
Identify JCL interfaces, procs and programs
based on previous unloaded data:
Jobs   : KWMUSER.REPL.WORK.UNLJOBS           System ID: SYSX
Data   : TSOUSER.REPL.WORK.UNLDATA         Date: 16/11/26
Other  : NULLFILE                          Time: 11:33
Other  : NULLFILE
Output: TSOUSER.REPL.WORK.JCL.INTRFACE
Output: TSOUSER.REPL.WORK.JCL.PROCS
Output: TSOUSER.REPL.WORK.JCL.PROGRAMS

Edit Job   : Y
Jobcard ==> //TSOUSERX JOB 'LOAD TEXT DATA TO MVS',
            ==> //          CLASS=A,MSGCLASS=A,NOTIFY=TSOUSER
            ==>
            ==>

Cmd   Search Argument:      Description (optional)
*****
000001 // *%OPC                OPC STATEMENTS MAY CAUSE EFFORT - DEFAULT
000002 JOBLIB                JES2 STATEMENTS MAY CAUSE PROBLEMS - INSTALL._
000003 STEPLIB                V
000004 INCLUDE                V
000005 JCLLIB                 V
000006 OUTPUT                 V
000007 XMIT                   V
000008 /*JOBPARM              V
000009 /*MESSAGE               V
000010 /*JOBPARM               V
000011 /*NETACCT               V
000012 /*NOTIFY                V
000013 /*OUTPUT                V
000014 /*PRIORITY              V
000015 /*JOBPARM               V
000016 /*ROUTE                 V
000017 /*SETUP                 V
000018 /*SIGNOFF               V
000019 /*SIGNON                 V
000020 /*XEQ                    V
000021 /*XMIT                   > END OF DEFAULTS

```

Figure 10 - Identify JCL Interfaces, Procedures and Programs

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Check the existence of procedures and programs on the target system.

Sample from TSOUSER.REPL.WORK.JCL.PROCS:

ALL USED JCL PROCEDURES WITHIN UNLOADED JOBS

AMOUNT	PROCNAME
-----	-----
1	DSNUPROC
2	ISPBATCH
25	OCLPROC
1	OPCPJV0
36	OPCV99X
4	PDFDSSN
5	PXXKEVPG
2	POPCJVP
1	PXINFO
1	SDSFREAD
10	TWSBCI
1	TWSJOBNA
1	TWSMAILX
TOTAL:	251

3.4.4 JCL Modifications

All changes that should be made in jobcontrol can be restricted to certain objects (keywords) used within that JCL.

Change instruction:

```
DSN          <SYA.OPC.PARM>                <OPCA.SYSTM.PARMLIB>
```

The values stated within the <brackets> will be replaced as specified, even it contains blank characters.

Result:

```
//* New Parmlib SYA.OPC.PARM since TWS Release 8.3
//EQQPARM DD DISP=SHR,DSN=OPCA.SYSTM.PARMLIB
```

Using the keyword DSN the changes were made in DD EQQPARM and NOT in the previous comment card. This feature prevents from unintentional changes in not affected parameters.

```
----- BATCH REPLICATOR V3R1Mnn----- COLUMNS 00001 00072
COMMAND ==>
                                SCROLL ==> CSR
                                Batch Object Replication
                                and Handover System
JCL Data Modifications
Following modifications will be done based on      Date: 16/11/25
previous unloaded JCL data                        Time: 15:12
JCL workf.: TSOUSER.REPL.WORK.UNLJOBS           Last unload: 16/11/19
JCL output: TSOUSER.REPL.OUT.JOBLIB              at: 11:51
Changefile: TSOUSER.REPL.V3R1M01.CHNG.JCL
Archive   : TSOUSER.REPL.ARC.JCL.D161125.T1512
Edit Job  : Y
Jobcard ==> //TSOUSERX JOB 'LOAD TEXT DATA TO MVS',
            ==> //          CLASS=A,MSGCLASS=A,NOTIFY=TSOUSER
            ==>
            ==>

Placeholders % allowed      Command KW = JCL Keywords      PF6 = Suppressed Panel
Cmd  Keyword  Old value      New value      Pos Len Qual
000001 GLOBAL  <OLD>          <NEW>          0 0 0
000002 DSN     <OPCA.SYSTM.SEQQMDEU> <MSG>         > 0 0 3
000003 DATA  <OLDVALUE>    <NEW>         > 1 3 0
***** ***** Bottom of Data *****
```

Figure 11 - JCL Modifications

Using a substring function in form of position and length specifications for that change is another technical feature. A DSN qualifier specification together with a DSN keyword limits the change exactly to this qualifier.

Available keywords:

GLOBAL	JES	PARM	COMMENT
JOBNAME	XMIT	DSN	COMMAND
JOBCARD	JCLLIB	DD	
ACCOUNT	SET	OUTPUT	
PROGNAME	EXEC	DATA	

Function related files:

JCL workfile:	Downloaded JCL using option 4.1
JCL output:	The output file of modified JCL
Changefile:	The file with the change instructions
Archive:	The new created archive with all modifications

3.4.5 IWS Modifications

Contrary to JCL modifications all changes in IWS are keyword related, that means it isn't possible to make global changes here.

```

----- BATCH REPLICATOR V3R1Mnn----- COLUMNS 00001 00072
COMMAND ==>
                                SCROLL ==> CSR
                                Batch Object Replication
                                and Handover System
TWS Data Modifications
Following modifications will be done based on          Date: 16/11/25
previous unloaded TWS data                            Time: 16:04
TWS workf.: TSOUSER.REPL.WORK.BIF.AD                 Last unload: 16/11/19
TWS output: TSOUSER.REPL.OUT.OPC.AD                  at: 11:51
Changefile: TSOUSER.REPL.V3R1M01.CHNG.OPC
Archive   : TSOUSER.REPL.ARC.OPC.D161125.T1604
Edit Job  : Y
Jobcard ==> //TSOUSERX JOB 'LOAD TEXT DATA TO MVS',
            ==> //          CLASS=A,MSGCLASS=A,NOTIFY=TSOUSER
            ==>
            ==>

Placeholders % allowed      Command KW = OPC Keywords      PF6 = Suppressed Panel
Cmd   Keyword   Old value          New value          Pos Len
000001 ADID     <OPCPLK02P>          <NEW>              6   3
000002 ADVALFROM <                > <                > >   ___
000003 CALENDAR_ <                > <                > >   ___
000004 DESCR     <                > <                > >   ___
000005 DLDAY     <                > <                > >   ___
000006 DLTIME    <                > <                > >   ___
000007 DURATION_ <                > <                > >   ___
000008 HIGHRC    <                > <                > >   ___
000009 IATIME    <                > <                > >   ___
000010 JOBN      <                > <                > >   ___
000011 ODESCR    <                > <                > >   ___
000012 OPNO      <                > <                > >   ___
000013 OWNER     <                > <                > >   ___
000014 PERIOD    <                > <                > >   ___
000015 PREADID   <                > <                > >   ___
000016 PREOPNO   <                > <                > >   ___
000017 PREWSID   <                > <                > >   ___
000018 RESOURCE_ <                > <                > >   ___
000019 STARTTIME <                > <                > >   ___
000020 VALFROM   <                > <                > >   ___
000021 VALTO     <                > <                > >   ___
000022 WSID      <                > <                > >   ___
000023 ...       <                > <                > >   ___
***** ***** Bottom of Data *****

```

Figure 12 - IWS Modifications

The result in this case:

```

REPL001I 00003215 _____ OLD      ADID(OPCPLK02P          ) ADVALFROM(070824)
REPL002I 00003215 00000001 NEW      ADID(OPCPLNEWP        ) ADVALFROM(070824)

```


Available keywords ...

ADID	DLTIME	ODESCR	PREOPNO	VALTO
ADVALFROM	DURATION	OPNO	PREWSID	WSID
CALENDAR	HIGHRC	OWNER	RESOURCE	...
DESCR	IATIME	PERIOD	STARTTIME	
DLDAY	JOBN	PREADID	VALFROM	

... can extended any time if new batchloader keywords become available.

Function related files:

IWS workfile	Unloaded AD files (BIF) using option 4.2
IWS output:	The output file with modified data
Changefile:	The file with the change instructions
Archive:	The new created archive with all modifications

3.4.6 DATA Modifications

All changes here are processed as global changes, i.e. keywords are not supported here. Necessary files:

Data workfile	Unloaded AD files (BIF) using option 4.2
Data output:	The output file with modified data
Changefile:	The file with the change instructions
Archive:	The new created archive with all modifications

3.4.7 Create IDCAMS DEFINE GDG Statements

Calling this function starts a job which reads the JCL source to determine all GDG files and their limits. This information is taken to create a new file which contains all necessary DEFINE GDG statements for the new batch environment. This file can then be used as input data for an IDCAMS DEFINE GDG batch run on the target system.

3.4.8 Create EXCLUDE LIST Batchstream Interfaces

All interfaces found using function *Identify Batchstream Interfaces* (S. 12) will be written into file *Exclude List* additionally.

One can select there applications as exceptions (option 4.B), which are already existing on the target system. Mostly this are technical application which normally reside on each system.

If you want to use an *EXCLUDE LIST* you must rerun the job started in Option 4.2 (*Identify Batchstream Interfaces*).

In this case the usage of exclude lists must be confirmed:

Use an existing exclude list: **Y** Y/N (create the list using 4.A)

3.4.9 Modify EXCLUDE LIST

Edit the created exclude list for modifications as described before.

3.4.10 Recover Previous Modifications and Search Arguments

Backup archived modification tables from previous actions and replications.

```
REPL4R00 --- BATCH REPLICATOR V3R1Mnn-----  
COMMAND ==>  
  
Select old modification files:  
  
1 JCL Archive  
2 IWS Archive  
3 DATA Archive  
4 USER Archive  
5 SEARCH Argument Archive  
6 Restore Original SEARCH Arguments  
  
Batch Object Replication  
and Handover System  
System ID: SYSX  
Date: 16/11/26  
Time: 11:26
```

Figure 13 - Recover Old Modifications

This is a sample of archived jobcontrol modifications to select one for further usage. This allows change reruns at any time.

```
WORK ----- BATCH REPLICATOR VNRNMNN ----- Row 1 of 5  
COMMAND ==>  
  
Archive Selection  
Select one of this previous used modifications  
Included values will be loaded into Your profile  
Allowed commands:  
S Select B Browse E Edit D Delete  
  
Cmd Name  
-----  
RG5130.REPL.ARC.JCL.D150602.T1429  
RG5130.REPL.ARC.JCL.D150602.T1710  
RG5130.REPL.ARC.JCL.D150602.T1820  
RG5130.REPL.ARC.JCL.D150610.T1523  
RG5130.REPL.ARC.JCL.D161208.T1102  
***** Bottom of data *****  
  
Batch Object Replication  
and Handover System  
System ID: E003  
Date: 16/12/08  
Time: 11:40
```

Figure 14 - Archive Selection

3.5 List/ Edit Workfiles

All work and output files of a replication process may be controlled, edited or deleted at any time – if necessary.

```

REPL5000 --- BATCH REPLICATOR V3R1Mnn----- Row 1 of 13
COMMAND ==>                                COLUMN
Workfile table                               Batch Object Replication
                                              and Handover System
                                              System ID: SYSX
                                              Date: 16/11/26
Allowed commands:                             Time: 11:52
B Browse E Edit V View D Delete

Cmd Name
-----
TSOUSER.REPL.WORK.BIF.AD
TSOUSER.REPL.WORK.BIF.EXCLLIST
TSOUSER.REPL.WORK.BIF.LOG
TSOUSER.REPL.WORK.BIF.LOG.UNIQUE
TSOUSER.REPL.WORK.JCL.INTRFACE
TSOUSER.REPL.WORK.UNLAD
TSOUSER.REPL.WORK.UNLAD.STATUSP
TSOUSER.REPL.WORK.UNLADATA
TSOUSER.REPL.WORK.UNLJOBS
TSOUSER.REPL.OUT.DATA
TSOUSER.REPL.OUT.DEFGDG
TSOUSER.REPL.OUT.JOBLIB
TSOUSER.REPL.OUT.OPC.AD
***** Bottom of data *****
    
```

Figure 15 - Workfile Table

3.6 List Modification Logfiles

All processed changes will be logged! The log files will be catalogued with a unique timestamp:

```

RG5130.REPL.LOG.JCL.D150427.T1546
RG5130.REPL.LOG.JCL.D150508.T1121
RG5130.REPL.LOG.JCL.D150526.T1803
    
```

Log record format:

```

01-08 Message-ID
10-17 Modification time
19-26 Jobname
28-35 running record number related tot he input file
37-44 running change number
46-48 Record type
50- JCL record
    
```

```

***** TSOUSER.REPL.WORK.UNLJOBS
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8-----+-----9--
REPL001I 15:05:24 EPC401K1 00000020 _____ OLD //OPCAOPC DD DSN=FB3.DRLOPC.LEER,DISP=OLD
REPL002I 15:05:24 EPC401K1 00000020 00000001 NEW //OPCAOPC DD DSN=FB3.DRLOPC.LEER,DISP=NEW
REPL001I 15:05:24 EPC401K1 00000040 _____ OLD //          DISP=(OLD,KEEP,KEEP)
REPL002I 15:05:24 EPC401K1 00000040 00000002 NEW //          DISP=(NEW,KEEP,KEEP)
REPL001I 15:05:24 EPC801K1 00000209 _____ OLD //OPCAOPC DD DSN=FB3.DRLOPC.LEER,DISP=OLD
REPL002I 15:05:24 EPC801K1 00000209 00000003 NEW //OPCAOPC DD DSN=FB3.DRLOPC.LEER,DISP=NEW
    
```

3.7 Recover Previous Modifications and Search Arguments

This function is documented under *Recover Previous Modifications and Search Arguments* (p. 18).

3.8 Split Unloaded Data

The download data stock may contain data from different source files. This function starts a job which separates the data again. Thereafter all files may be allocated and loaded at the target system.

3.9 Publish Replication Results

To facilitate the transport of the new created files to a target system, you can select this files from that list.

```

----- BATCH REPLICATOR V3R1Mnn----- Row 1 of 9
COMMAND ==>                                SCROLL ==> PAGE
                                           Batch Object Replication
                                           and Handover System
                                           System ID: SYSX
                                           Date: 16/11/26
                                           Time: 11:59

Select files for transmit
to System: SYSX and User: TSOUSER
Allowed row commands:
S Select for transmission

Edit Job   : Y
Jobcard ==> //TSOUSERX JOB 'LOAD TEXT DATA TO MVS',
           ==> //          CLASS=A,MSGCLASS=A,NOTIFY=TSOUSER
           ==>

Cmd Name
-----
S   TSOUSER.REPL.WORK.BIF.AD                *** FILE SELECTED ***
S   TSOUSER.REPL.WORK.NEW.JOBLIB            *** FILE SELECTED ***
S   TSOUSER.REPL.WORK.NEW.DEFGDG           *** FILE SELECTED ***
***** Bottom of data *****

```

Figure 16 - Publish Replication Results

This creates a transmit job:

```

//XMIT      EXEC PGM=IKJEFT01,REGION=6M
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
XMIT SYSX.TSOUSER DS('RG5130.REPTEST.BIF.AD')
XMIT SYSX.TSOUSER DS('RG5130.REPTEST.NEW.JOBLIB')
XMIT SYSX.TSOUSER DS('RG5130.REPTEST.NEW.DEFGDG')
/*

```