ChangeMan® SSM

Quick Reference

ChangeMan SSM Multiple Function Menu

0 - Options

> Lets the user specify and review both the defaults for the JOB card information and the library where JCL generated by ChangeMan SSM will be saved. (This panel must be updated the first time you access the Synchronization Functions menu.)

1 - Site Administrator

> Assign/Revoke Group Admin(s) and Set Up MLS

2 - Group Administrator

> Define Groups, Objects, and Authorize Users

C - Change Tracking

> History, Problem Determination, and Recovery

S - Detection and Synchronization

> Detect Changes and Synchronize Environments

D - Data Extraction

> Extract Changed Data in KSDS, Other VSAM, PS or DA Files and Flattened Database

U - Utilities

> Utilities and Self-Guided Demo

Change Tracking Component

Group Administrator

> Person assigned by the Site Administrator to control data set tracking. Defines tracking groups, specifies data sets to the track groups, and assigns users to the track groups.
> **Panel Access Path:** From the ChangeMan SSM Multiple Function Menu, select Option 2 - Group Administrator.

User

> Person assigned by the Group Administrator to one or more track groups.
> **Panel Access Path:** From the ChangeMan SSM Multiple Function Menu, select Option C -
> Change Tracking.

Group Administrator Menu Options

Panel Access Path: From the ChangeMan SSM Multiple Functions menu, select Option 2 - Group Administrator.

1 - Define Groups

A descriptive name (8 characters) that represents a logical collection of data sets to be defined to the Group for tracking purposes.

2 - Define Objects

Data set(s) defined to a Group (above) to initiate change tracking.

3 - Authorize Users

UserIDs having access to tracking functions for a Group(s).

A - Alternate Group Administrators

UserID(s) assigned by a Group Administrator to act in their absence.

Group Administrator Batch Commands

GRPADD=(group_name)

GRPDEL=(group_name,tso_userid)

SHOW (No Parms)

USERADD=(group_name,tso_userid,user_name)

USERDEL=(group_name,tso_userid)

Change Tracking User Menu Options (ISPF Functions)

Panel Access Path: From the ChangeMan SSM Multiple Functions menu, select Option C - Change Tracking.

1 - Capture Object Level (If RTO Not Active in System)

User-initiated data set capture of change Events, for a selected data set, since the last capture.

2 - Capture Group Level (If RTO Not Active in System)

User-initiated group capture of change Events, for all data sets defined to the group, since the last capture.

3 - Query Events

User-initiated Query of the ChangeMan SSM database for change Events in four categories—Member, Data Set, VSAM, and SMF—at an object or group level.

4 - Recall or Restore Members

User specifies PDS member(s) to be recalled or restored from the Delta Master database.

5 - Recover Entire PDS Through Batch

9 - Compare Filtered Members

Invoke comparison utility for only those members with differences.

User and Group Administrator Batch Commands

```
AUTORECALL=(y|n)

CAPTURE=(admin=__,group=__,
    inclobj=(obj_dsn,...),
    exclobj=(obj_dsn,...))

DEFINEDS=(admin=__,group=__,
    dsn=(dsn,...),generic=(__,...),
    inclvol=(volid,...),exclvol=(volid,...),
    incldsn=(dsn,...),excldsn=(dsn,...),
    type=(po,ps,da,src,load),
    delta=(y|n))

DEFINEVS=(admin=__,group=__,
    cluster=(cluster_name,...),
    generic=(__,...),
    inclvol=(volid,...),exclvol=(volid,...),
    inclclus=(cluster_name,...),
    exclclus=(cluster_name,...))

EVENTS=(admin=__,group=__,
    inclobj=(obj_name,...),
    exclobj=(obj_name,...),
    list=(y|n),
    report=(inclmem=(mem_name,...),
                exclmem=(mem_name,..),
                latest,
                from=yyyy/mm/dd_hh:mm:ss,
                to=yyyy/mm/dd_hh:mm:ss,
                for=n_number_of_days,
                select=(member=(event,...),
                (dataset=(event,...),
                (vsam=(event,...),
                smf))

MODE=(secure|quick|hyper)

RECOVER=(admin=__,group=__,
    object=obj_dsn,volser=volid,
    member=mem_name,
    newname=new_mem_name,
    datetime=yyyy/mm/dd_hh:mm,
    dd=restore_to_ddname,
    dsn=restore_to_dsn
    for=yesterday | [number of days])

VSAMOPEN=(y|n)
```

Dectection and Synchronization Component

Detection and Synchronization Menu (ISPF Functions)

Panel Access Path: From the ChangeMan SSM Multiple Functions menu, select Option S - Detection and Synchronization.

1 - Fingerprint

Generate the Fingerprint data set for a group of data sets.

2 - Review Changes

Detect changes introduced to the current environment, since the last Fingerprint generation.

3 - Package Changes

Create a basket of changes to the current environment, since it was fingerprinted.

4 - Package Data Sets

Export a group of data sets into a basket. Used to copy a new environment to a remote machine.

5 - View Basket

Lists the contents of a basket, and the type of action to be performed when the basket is applied.

6 - Apply Basket

Import the changes from a basket to a target environment.

7 - View Fingerprint

List the contents of a Fingerprint Data Set.

8 - Detect Changes

Detect the changes between two fingerprinted environments.

Detection and Synchronization Menu (ISPF Functions) (continued)

9 - Package Changes

Create a basket of changes to an environment, by comparing two Fingerprint data sets.

G - Generate Token

Generate the Fingerprint Token for a single data set or a PDS member

C - Check Synchronization

Verifies the synchronization of two data sets, or group of data sets (cataloged or un-cataloged). Allows byte-level comparison of out-of-sync members.

P - PDS Compare

Create a mem-to-mem report of two partitioned data sets.

S - Synchronize

Synchronizes two local environments in a one-step process.

A - Advanced Functions

Provides access to the advanced functions, which allow more options to be specified.

Detection and Synchronization Advanced Functions Menu (ISPF)

0 - Masking options for Change Detection

Accesses the Masking Options submenu, which allows setting the mask rules for source or text, load modules, and viewing the current masking rules in effect.

1 - Data Set Compare

This function generates the JCL to compare two partitioned data sets. This function provides multiple comparison methods and report options.

2 - Group Compare

This function generates JCL to compare two Groups of data sets, directly or through previously generated Fingerprint data sets. This function provides multiple comparison methods and report options.

3 - Volume Compare

This function generates JCL to directly compare two DASD volumes, or groups of volumes. This function provides multiple comparison methods and report options.

4 - Fingerprinting

Generates JCL to allocate and create the Fingerprint data set for an individual data set, a group of data sets, or an entire DASD volume

5 - Create Basket

Generates JCL that will use two Fingerprint data sets to identify those with different content or whose content has changed (Extract), and then copies the differences (Export), to the Change Basket data set.

6 - Import Basket

Generates JCL to apply the Change Basket to a target environment. A Reverse Basket generation (to undo the changes) is optional.

7 - Undo the Import Operation

Applies the Reverse Change Basket to undo the effects of the previous Import operation.

NOTE During online ISPF operations, all messages are written to a log data set called 'TSO_UserID.DETECT.LOG'. To browse the log, you must first exit your ChangeMan SSM ISPF session to close this file.

Detection and Synchronization Batch Commands

AUTORECALL=(y|n)

BASE=generic=(dsn=(dsn,dsn,...),
   inclvol=(volser,volser,...),
   exclvol=(volser,volser,...),
   incldsn=(dsn,dsn,...),
   excldsn=(dsn,dsn,...),
   type=(po,ps,da,src,load))
   =vol=(inclvol=(volser,volser,...),
   exclvol=(volser,volser,...),
   type=(po,ps,da,src,load),
   incldsn=(dsn,dsn,...),
   excldsn=(dsn,dsn,...))
   =dsn=(dsn1,dsn2,...)
   =save=(dsn=dsn|dd=ddname,
            incldsn=(dsn,dsn,...),
            excldsn=(dsn,dsn,...))
   =load=(dsn=dsn|dd=ddname,
            incldsn=(dsn,dsn,...),
            excldsn=(dsn,dsn,...))
   =reset

TARGET(parameters available for the BASE are available for the TARGET)

REFTARG(Fingerprints the BASE environment data sets that are contained within the TARGET environment)

SETPRINT=(sync=y|n,outsync=y|n,
   mismatch=y|n,
   multiple=y|n,single=y|n,
   dir=y|n,rejdsn=y|n,
   vtoc=y|n,vvds=y|n,detail=y|n,
    dsnsync=y|n,dsnmatch=y|n,dsnmismatch=y|n,
   dsnassociation=y|n|exceptionsonly=y))

COMPARE=composite=(inclmem=(mem,mem,...),
               exclmem=(mem,mem,...))
   =dsnbydsn=(comparex|detect|superc,
              displaytoken=(y/n),
              model=model_name)
   =memtomem=(basedsn=dsn,targdsn=dsn,
              displaytoken=(y/n),
              comparex|detect|superc),
   =dsntodsn=(token|dsname|sequence,
              displaytoken=(y/n))
   =filter=(basedsn=(dsn),
              targdsn=(dsn),
              displaytoken=(y/n),
              exclmem op(member pattern,...),
              inclmem op(member pattern,...))

ENQ=(y|n)

EXTENDEDSYNC=(yes|no)

Detection and Synchronization Batch Commands (continued)

```
EXTRACT=(all|newdsn|scrdsn,newvol=volser)
     =dsnbydsn=(model=model_name),
                   incldsn=(dsn,dsn,...),
                   excldsn=(dsn,dsn,...),
                   reject=dsn=(mem,mem,...),
                   members=(mem,mem,...))
     =nbyone=(incldsn=(dsn1,dsn2,..),
                   toname=dsn,
                   reject=(mem,mem,...),
                   members=(mem,mem,...))
EXPORT=(dd=ddname|dsn=dsn),
     incldsn=(dsn,dsn,...),
     excldsn=(dsn,dsn,...)
     comment='a string of 42 characters')
IMPORT=(basketdd=ddname|basketdsn=dsn,
     reversdd=ddname|reversdsn=dsn,
     catlg=(y/n|indirect)=(catlg1,catlg2,...),
     symbolic=&nnnnn,
     precompress=(y|n),
     model=model_name,
     incldsn=(dsn,dsn,...),
     excldsn=(dsn,dsn,...),
     newdsntovol=(*|volid),
     olddsntovol=(*|volid),
     force,
     scratch,
     reverse,
     delete,
     simulate|apply)
LIST=(base|target)=(alias|orphan|nonstd)
MASK=(csect,date,time,show),
     (acb,mfs),
     string=('value',
                   after=col,before=col,
                   lobound=col,hibound=col,
                   area=(col=col,len=number),
                   language=(jcl,cobol,assemble),
                   case=(mixed|upper))
MODEL=(name=model_name,
     transform=('string1'=>'string2'))
ONLINE=(volser,volser,...)
ORPHANCHECK=(y|n)
SMSMAP=(STORCLASS=(oldvalue,newvalue),...
     MGMTCLASS=(oldvalue,newvalue),...
     DATACLASS=(oldvalue,newvalue),...)
VIEWBASKET=BASKETDD=dd|BASKETDSN=dsn
VIEWFGP=BASE=MEMBERS=Y|N
     =TARG=MEMBERS=Y|N
VOLMAP=(VOLSER=(srcvol1,tgtvol1),
     VOLSER=(srcvo2,tgtvol2),
     VOLSER=(srcvol3,tgtvol3))
```

Data Extraction Component

Data Extraction Menu

FLAT - Flatten a File and Fingerprint

Flattens a database or library file, and optionally Fingerprints it.

FGP - Fingerprint a VSAM Cluster or Flat File and Save

Fingerprints a VSAM cluster or flat file and saves the record tokens into a Fingerprint Data Set.

COMP - Compare Fingerprints

Compares two data files, directly or represented by their Fingerprint data sets.

DATA - Compares two data files on-screen, for PS/DA and PDS members.

Uses the compare function of ChangeMan SSM to report differences between PDS members, flat files, or a PDS member and flat file.

EXP - Extract and Export

Creates a Change Basket of the changed records by comparing Fingerprint data sets or data files.

IMP - Import & Create Reverse Basket (VSAM ONLY)

Applies the changes from the Change Basket data set. (Reverse Basket generation - optional.)

UNDO - Undo the Import Operation (VSAM ONLY)

Applies the Reverse Change Basket to undo the effects of the previous Import operation.

Data Extraction Batch VSAM Commands

REGRESSIONCHECK=(y|n)

VSAMFGP=(cluster=cluster_name,
    dd=ddname|dsn=dsn,
    am=standard|fulltrack,
    recordtype=(col=_,value='_',fields=(_,_,...)),
        subtype=(col=_,value='_',fields=(_,_,...))))

VSAMCOMPARE=(basedd=ddname|basedsn=dsn,
                targdd=ddname|targdsn=dsn,
                report=(add,delete,update,all,none,equal))

VSAMEXPORT=(basedd=ddname|basedsn=dsn),
               (basketdd=ddname|basketdsn=dsn),
               (targdd=ddname|targdsn=dsn),
               report=(y|n))

VSAMIMPORT=(basketdd=(ddname|basketdsn=dsn),
               reverse,
               reversdd=(ddname|reversdsn=dsn),
               tocluster=(cluster_name),
               (apply|simulate))

Data Extraction Batch Live Data Compare Commands

DATACOMPARE=(basedd | basedsn,
    basemem,
    targdd | targdsn,
    targmem,
    report)

MLC=N [N>0 specifies number of lines required for a match: default
is 2]

Data Extraction Batch Keyed Data Compare Commands

```
KEYEDFGP=(dsn,
    volser,
    fgpdsn | fgpdd,
    recordtype,
    subtype)

KEYEDCOMPARE=(basedd | basedsn,
    targdd | targdsn,
    report)

KEYEDEXPORT=(basedd | basedsn,
    targdd | targdsn,
    basketdd | basketdsn,
    report)
```

Data Extraction Batch Positional Data Compare Commands

```
POSFGP=(dsn,
    volser,
    fgpdsn | fgpdd,
    recordtype,
    subtype)

POSCOMPARE=(basedd | basedsn,
    basefgp,
    report)

POSEXPORT=(basedd | basedsn,
    basefgp,
    basketdd | basketdsn,
    report)

MLC=N  [where N>0 specifies the number of lines required for a
match, and 2 is the default]
```

Data Extraction Batch Text Data Compare Commands

```
TEXTFGP=(dsn,
    volser,
    fgpdsn | fgpdd,
    recordtype,
    subtype)

TEXTCOMPARE=(basedd | basedsn,
    basefgp,
    report)

TEXTEXPORT=(basedd | basedsn,
    basefgp,
    basketdd | basketdsn,
    report)

MLC=N  [where N>0 specifies the number of lines required for a
match, and 2 is the default]
```

Report or Detect Parameters for ChangeMan SSM Internal Compare

The REPORT parameter works for all functions which use the internal
ChangeMan SSM compare. In the Detection and Synchronization/Data
Extraction components, the sub-parameters for the
REPORT or DETECT parameter are:

```
    . . . =(REPORT | DETECT = (sbs=y | n,
                complete=y | n,
                add,
                update,
                delete,
                equal | all | none))
```

ChangeMan SSM Command Structure

```
  COMMAND=(parameter=(subparm=(value,value,...),parameter=...))
```

ChangeMan SSM Command Comment Statement

An asterisk in column one.

Data Set, Object, and Cluster Name Wildcards

Five special characters for specifying a pattern of data sets, objects, or clusters in the INCLDSN, EXCLDSN, INCLOBJ, EXCLOBJ, INCLCLUS, or EXCLCLUS parameters:

```
* - Node  specification              ? - "Wild Card" character
                                         specification

/ - Search terminator notation       ! - String search delimiter

n - Node number indicator.
```

Member Name Wildcards

Five special characters for specifying a pattern of PDS members for enhanced patterning:

```
*, / - Search terminator             ? - "Wild Card" character
notation                                specification

! - Search string indicator

X - Hex indicator allowing specification of a hex character string in
the member name.
```

Volume Name Wildcards

```
*, / - Search terminator             ? - "Wild Card" character
notation                                specification
```

Enhanced Member Patterning Operands (OP)

When using the INCLMEM/EXCLMEM= subparameters, the greater than and less than symbols ("<", ">", respectively) may be substituted for the equal "=" sign for enhanced patterning.

ChangeMan SSM Utilities

1 - Create a Demo Environment - Create two environments LPARa and LPARb

2 - Fingerprint the Environment - Establish a representation of LPARa and LPARb

3 - Change the Environment - Make changes in the BASE environment LPARa4 - Detect Changes - Detect changes made in the base environment

5 - Resolve Changes - Synchronize base with target (LPARa => LPARb)

6 - Define a Group - Define a group for tracking LPARa DSN's

7 - Define Objects - Define data sets (Objects) to the Group

8 - Incur Change - Update the LPARa tracked data sets

9 - Recover a Member Version - Recover a prior version of the PDS member

X - Exit - Exit this Demo

ChangeMan SSM Demo Menu

1 - Convert to 4K - Convert a PDS or Change Basket for transfer

2 - FTP to a Remote Host - Transfer FGP, 4K Basket, or Unloaded PDS

3 - Convert from 4K - Convert received 4K file back to source

4 - Snapshot - Gather DASD/DSN information; VTOC and VVDS level

5 - Snapshot Comparison - Report matches/mismatches between two Snap files

6 - Convert VSAM Basket - Edit a VSAM Change Basket for partial apply

7 - Redundancy Detection - Report redundant (by content) data sets/members

D - Demo - Detect+Resolve Mainframe guided tutorial

X - Exit - Exit the Utilities Menu