

# DFSMS:Intermediate NaviQuest – Streamlining SMS Work

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# Goal of this Presentation / Agenda

- Provide an overall sense of what NaviQuest can do
- Show you how to get into NaviQuest
- Demonstrate the use of several functions
- Instill confidence that you could use the rest of them



# Overview

“DFSMS NaviQuest is a data and storage management tool for implementing, testing, and verifying the SMS environment”

- A suite of tools based around SMS
- Can be run from ISMF and Batch
- Helps simplify some of the more arduous SMS tasks
  - Testing ACS
  - Creating reports
  - Bulk-updating SMS configuration

# What can it do?

- ACS Testcase Generation and Post-processing
  - Generate ACS test cases from your data
  - Build and manage libraries of test cases
  - Exception reporting during ACS testing
- Reporting
  - Build reports about data sets, disk volumes, tape volumes
  - Build commands and jobs from ISMF reports
- Batch Storage Admin
  - Do many ISMF commands in batch
  - Save and recall ISMF queries
  - FILTLIST copy command to keep filters the same across ACS routines

## When it gets powerful:

- Test your ACS
  - All in batch – one job to submit
  - Finding problems is quick
- Update SMS
  - Keep FILTLISTS the same between all ACS routines
  - Batch tools to update SMS constructs
  - Batch jobs to add volumes to SG
- Generate commands against huge lists of data sets

# Finding NaviQuest

## ISMF PRIMARY OPTION MENU - z/OS DFSMS V1 R13

- 0 ISMF Profile - Specify ISMF User Profile
  - 1 Data Set - Perform Functions Against Data Sets
  - 2 Volume - Perform Functions Against Volumes
  - 3 Management Class - Specify Data Set Backup and Migration Criteria
  - 4 Data Class - Specify Data Set Allocation Parameters
  - 5 Storage Class - Specify Data Set Performance and Availability
  - 6 Storage Group - Specify Volume Names and Free Space Thresholds
  - 7 Automatic Class Selection - Specify ACS Routines and Test Criteria
  - 8 Control Data Set - Specify System Names and Default Criteria
  - 9 Storage Group - Specify Data Set Recovery Parameters
  - 10 Library Management - Specify Library and Drive Configurations
  - 11 Enhanced ACS Management - Perform Enhanced Test/Configuration Management**
  - C Data Collection - Process Data Collection Function
  - G Report Generation - Create Storage Management Reports
  - L List - Perform Functions Against Saved ISMF Lists
  - P Copy Pool - Specify Pool Storage Groups for Copies
  - R Removable Media Manager - Perform Functions Against Removable Media
  - X Exit - Terminate ISMF
- Use HELP Command for Help; Use END Command or X to Exit.

# What it looks like

```
.  Panel  Help  .  
.  _____  .  
.      ENHANCED ACS MANAGEMENT - NaviQuest PRIMARY OPTION MENU  .  
.  .  
.  Select one of the following options and press Enter:  .  
.  .  
.  1  Test Case Generation  .  
.  2  ACS Test Listings Comparison  .  
.  3  Enhanced ACS Test Listing  .  
.  4  Test Case Update with Test Results  .  
.  5  SMS Report Generation  .  
.  6  Model Commands Generation  .  
.  7  Batch Testing/Configuration Management  .  
.  X  Exit  .  
.  .  
.  .  
.  .  
.  .  
.  .  
.  .  
.  .  
.  .  
.  Use HELP Command for Help; Use END Command to Exit.  .
```

# Using NaviQuest

- Most functions have an ISMF panel
- There is a panel to provide JCL for batch
  - Option 7 – Just alter the SYSTSIN DD commands
- You'll need several data sets, so prepare:
  - ACS library – PDS for ACS
  - Testcase library and results data set(s) – PDS holding test cases
  - Exception listing and library – two files, one flat, one PDS
  - ISPTABL – PDS with LRECL=80, FB



Deep Breath.  
Now we'll dive into the details.



## Demonstrations and Details:

- **Using COPYFILT**
- Building ACS Testcases and running them
  - Then doing it in batch
- Generating a volume report (in batch)
- Using model command generation
- Adding a set of volumes to a Storage Group

# COPYFILT

- Simply copies your FILTLISTS
- From one member (FILTLIST)
- To all ACS members
  
- Uses comments lines to denote top and bottom of section:
  - Start: `/* * * * * * * * * * * * * * */`  
 `_ _ _ _ _ _ _ _ _ _ _ _ _ _ _`
  - End: `/** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **`  
 `_ _ _ _ _ _ _ _ _ _ _ _ _ _ _`
  - Put in all of your ACS and FILTLIST member
  
- Type COPYFILT while in ISPF Edit

# COPYFILT Example

- Update FILTLIST to look like:

```

/*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*/
FILTLIST RLS      INCLUDE('RLS')
FILTLIST RLS64   INCLUDE('RLS64')
FILTLIST SMS     INCLUDE('SMS')
FILTLIST NONSMS INCLUDE('SMSN')
/**_**_**_**_**_**_**_**_**_**_**_**_**_**_**_**/
  
```

- Update all ACS with the comment headers

```

PROC STORCLAS
/*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*/
/**_**_**_**_**_**_**_**_**_**_**_**_**_**_**_**/
SELECT(&DSN(2))
  
```

# COPYFILT Example

- Issue COPYFILT command

```
.   File Edit Edit_Settings Menu Utilities Compilers Test Help
.
.  EDIT      NEAL.SMS.ACS(FILTLIST) - 01.08                               ACS FILTLISTS UPDATED
.  ***** Top of Data *****
.  -Warning- The UNDO command is not available until you change
.  your edit profile using the command RECOVERY ON.
.  000001 /*_*_*_*_*_*_*_*_*_*_*_*_*_*/
.  000002 FILTLIST RLS      INCLUDE('RLS')
.  000003 FILTLIST RLS64  INCLUDE('RLS64')
.  000004 FILTLIST SMS    INCLUDE('SMS')
.  000005 FILTLIST NONSMS INCLUDE('SMSN')
.  000006 /**_*_*_*_*_*_*_*_*_*_*_*_*/
.  ***** Bottom of Data *****
.
.
.  Command ==> COPYFILT_                                         Scroll ==> HALF
.  F1=Help   F2=Split   F3=Exit   F5=Rfind   F6=Rchange F7=Up   F8=Down
.  F9=Swap   F10=Left  F11=Right F12=Cancel
```

# COPYFILT Example

```

Panel Help
-----
COPY FILTLISTS ENTRY PANEL

To copy FILTLISTS, specify the following information and press Enter:

Member Containing FILTLISTS . . . . FILTLIST
Data Class ACS Routine Name . . . . DC
Storage Class ACS Routine Name . . SC
Management Class ACS Routine Name MC
Storage Group ACS Routine Name . . SG

Change Log Entry . . Updated 8/8/13

```

Use HELP Command

```

'*****'
'* ACS DATACLAS MEMBER DC UPDATED RC = 0 * '
'* ACS STORCLAS MEMBER SC UPDATED RC = 0 * '
'* ACS MGMTCLAS MEMBER MC UPDATED RC = 0 * '
'* ACS STORGRP MEMBER SG UPDATED RC = 0 * '
'*****'
***

```

# COPYFILT Example - Result

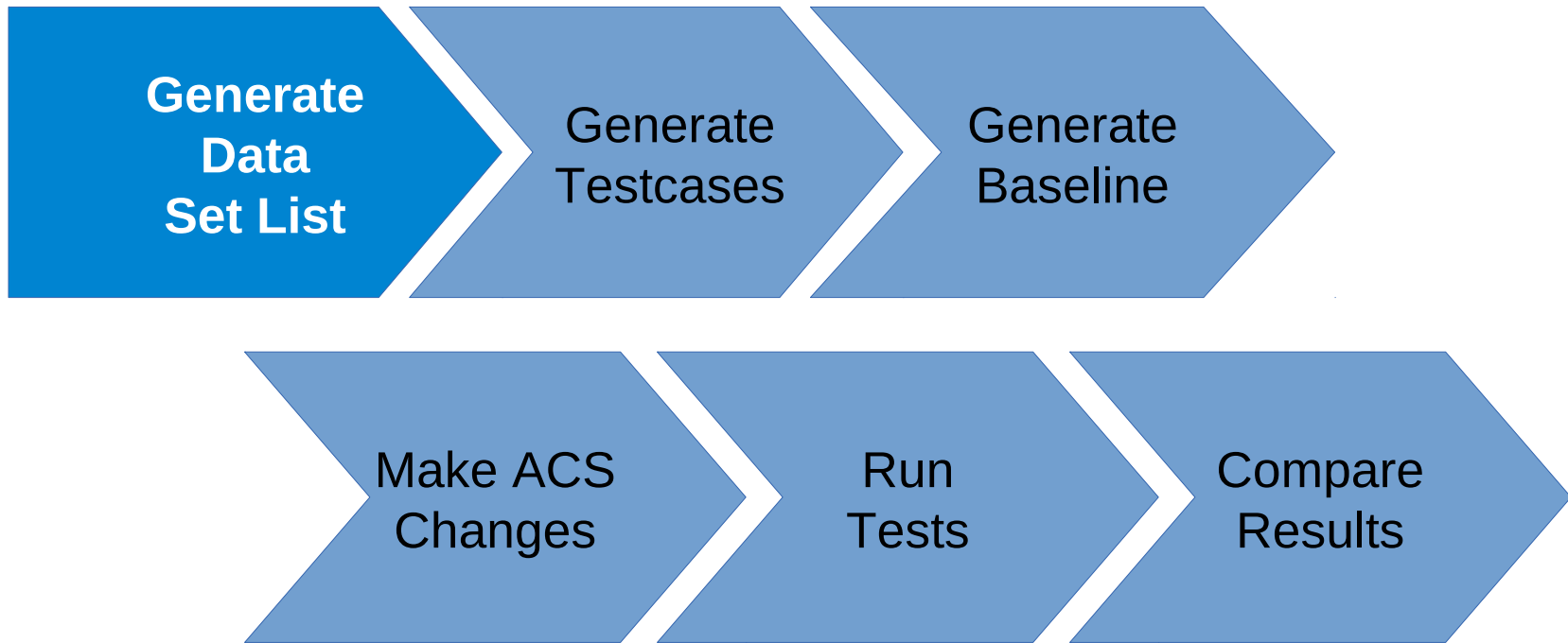
```
.  Menu  Utilities  Compilers  Help
.
.  BROWSE      NEAL.SMS.ACS(SC) - 01.20                      Line 00000000 Col 001 080
.  ***** Top of Data *****
.  PROC STORCLAS                                             00010001
.  /* UPDATED : USER2 - UPDATE 8/8/13 */                   00020020
.  /*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*/ 00020120
.  FILTLIST RLS      INCLUDE('RLS')                          00020220
.  FILTLIST RLS64    INCLUDE('RLS64')                        00020320
.  FILTLIST SMS      INCLUDE('SMS')                          00020420
.  FILTLIST NONSMS   INCLUDE('SMSN')                         00020520
.  /**_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*_*/ 00020620
.  SELECT(&DSN(2))                                           00020714
.    WHEN(&RLS) SET &STORCLAS = 'RLS'                       00020817
.    WHEN(&SMS) SET &STORCLAS = 'SMS'                       00021017
.    OTHERWISE SET &STORCLAS = ''                           00030012
.    END                                                      00030116
.  WRITE 'STORCLAS='&STORCLAS                               00031005
.  END                                                         00040003
.  ***** Bottom of Data *****
.
```

## Demonstrations and Details:

- ~~Using COPYFILT~~
- **Building ACS Testcases and running them**
  - Then doing it in batch
- Generating a volume report (in batch)
- Using model command generation
- Adding a set of volumes to a Storage Group



# ACS Testing - Process



# ACS Testing – Generating a Data Set List

- Generate a data set list and save it
  - **ISMF – easy to use**
  - DCOLLECT – faster than ISMF, good for batch
  - SMF – ACS exit, good for temporary data (see ACSTST)
  - VMA – good only for tape data
- Use NaviQuest to generate test cases
- Generate 'Baseline'

# ACS Testing - Generate Data Set List

```

.          ISMF PRIMARY OPTION MENU - z/OS DFSMS V1 R13          .
.
.  0  ISMF Profile          - Specify ISMF User Profile          .
.  1  Data Set              - Perform Functions Against Data Sets .
.  2  Volume                - Perform Functions Against Volumes .
.  3  Management Class      - Specify Data Set Backup and Migration Criteria .
.

```

```

.  Panel Defaults Utilities Scroll Help
.  -----
.          DATA SET SELECTION ENTRY PANEL                      Page 1 of 5
.
.  For a Data Set List, Select Source of Generated List . . 2 (1 or 2)
.
.  1  Generate from a Saved List          Query Name To
.      List Name . . _____          Save or Retrieve _____
.
.  2  Generate a new list from criteria below
.      Data Set Name . . . 'NB.**'
.      Enter "/" to select option          Generate Exclusive list
.      Specify Source of the new list . . 2 (1 - VTDC, 2 - Catalog)
.      1 Generate list from VTDC
.          Volume Serial Number . . . _____ (fully or partially specified)
.          Storage Group Name . . . _____ (fully specified)
.      2 Generate list from Catalog
.          Catalog Name . . . _____
.          Volume Serial Number . . . _____ (fully or partially specified)
.          Acquire Data from Volume . . . . . Y (Y or N)
.          Acquire Data if DFSMSHsm Migrated . . Y (Y or N)
.  Use ENTER to Perform Selection; Use DOWN Command to View next Selection Panel;
.  Use HELP Command for Help; Use END Command to Exit.
.

```

# ACS Testing – Generate DS List

Panel List Dataset Utilities Scroll Help

Enter Line Operators below:

DATA SET LIST  
Entries 1-8 of 8  
Data Columns 4-6 of 42

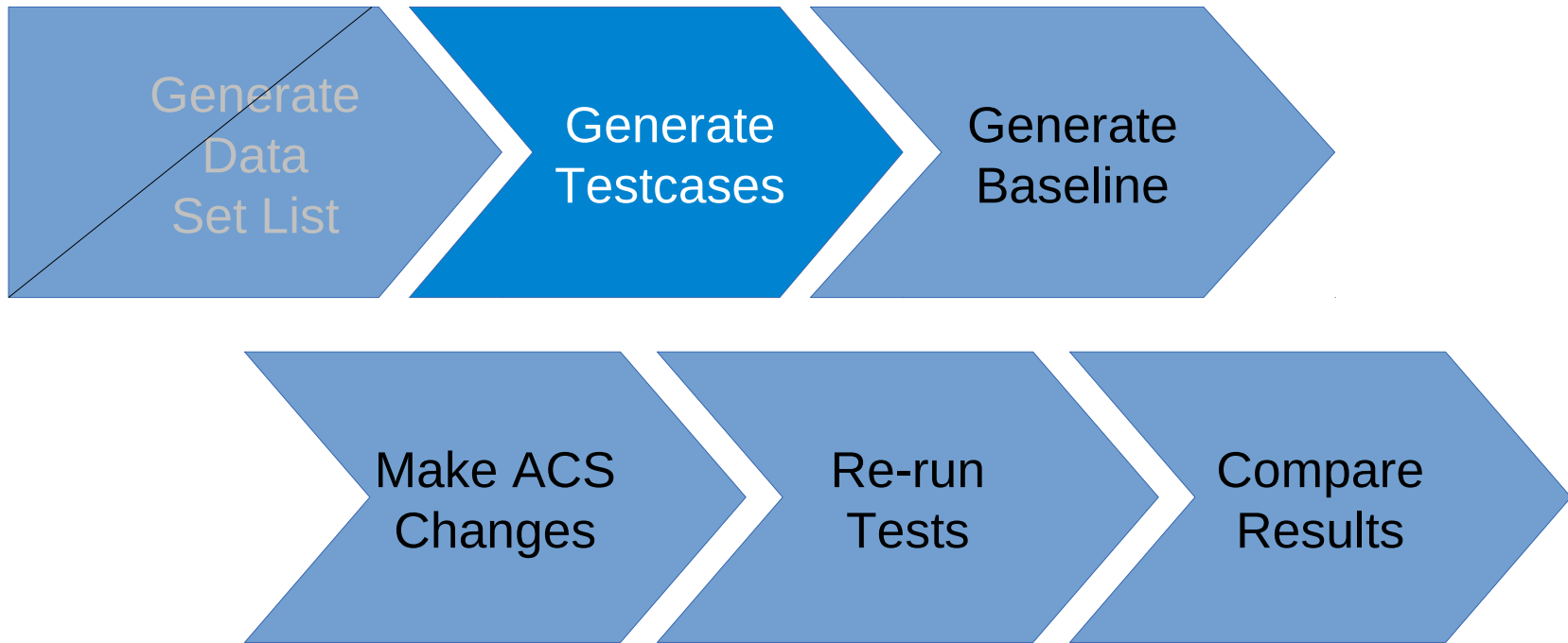
LINE OPERATOR	DATA SET NAME	ALLOC USED	% NOT USED	COMPRESSED FORMAT
---(1)---	-----(2)-----	---(4)---	-(5)-	---(6)---
	NB.RLS.TEST1			
	NB.RLS.TEST1.DATA	810K	0	---
	NB.RLS.TEST1.INDEX	1K	96	---
	NB.SMS.TESTA	55K	93	NO
	NB.SMS.TESTB	55K	93	NO
	NB.SMS.TESTOUT	55K	99	NO
	NB.SMSN.TEST1	55K	93	---
	NB.SMSN.TEST2	55K	93	---
		BOTTOM OF DATA		

Command ==> SAVE NBFILS \_

Scroll ==> HALF

\* Note: you can see and edit your saved lists from ISMF Option L (LISTS)

# ACS Testing - Process



# ACS Testing – Generate Testcases

- ISMF 11.1.1 – NaviQuest generate

```
. 9 Aggregate Group - Specify Data Set Recovery Parameters .  
. 10 Library Management - Specify Library and Drive Configurations .  
. 11 Enhanced ACS Management - Perform Enhanced Test/Configuration Management .  
. C Data Collection - Process Data Collection Function .  
. G Report Generation - Create Storage Management Reports .
```

```
. ENHANCED ACS MANAGEMENT - NaviQuest PRIMARY OPTION MENU  
. Select one of the following options and press Enter:  
. 1 Test Case Generation  
. 2 ACS Test Listings Comparison  
. 3 Enhanced ACS Test Listing  
. 4 Test Case Update with Test Results  
. 5 SMS Report Generation  
. 6 Model Commands Generation  
. 7 Batch Testing/Configuration Management  
. X Exit
```

```
. TEST CASE GENERATION SELECTION MENU  
. Select the input data to be used and press Enter:  
. 1 Saved ISMF List  
. 2 DCOLLECT Data  
. 3 SMF Data  
. 4 VMA Extract Data
```

# ACS Testing – Generate Testcases

```

Panel  Help
-----
TEST CASE GENERATION FROM SAVED ISMF LIST                               Top of data

To generate test cases, specify the following information and press Enter:
Saved ISMF List . . . . . NBFILES (Data set list)
Member Name Prefix . . . . . NB (1 to 4 alpha characters)
Test Case PDS . . . . . 'NEAL.SMS.ACSTST'
Replace Existing Prefix . . . . . N (Y or N)
ACS Test Case Variables:
Applic . . . . . CICSJOB
Def_dataclas . . . . . _____
Def_storclas . . . . . _____
Group . . . . . _____
Label . . . . . _____
Pgm . . . . . _____
Retpd . . . . . _____
DD . . . . . _____
Def_mgmtclas . . . . . _____
Filenum . . . . . _____
Job . . . . . _____
Libname . . . . . _____
Storgrp . . . . . _____
Sysplex . . . . . _____
More: +

Use DOWN Command to Scroll Forward; Use UP Command to Scroll Backward;
Use HELP Command for Help; Use END Command to Exit.

```

\* there is a special prefix – NEVR – for data sets that should never be managed

# ACS Testing – Generating Testcases

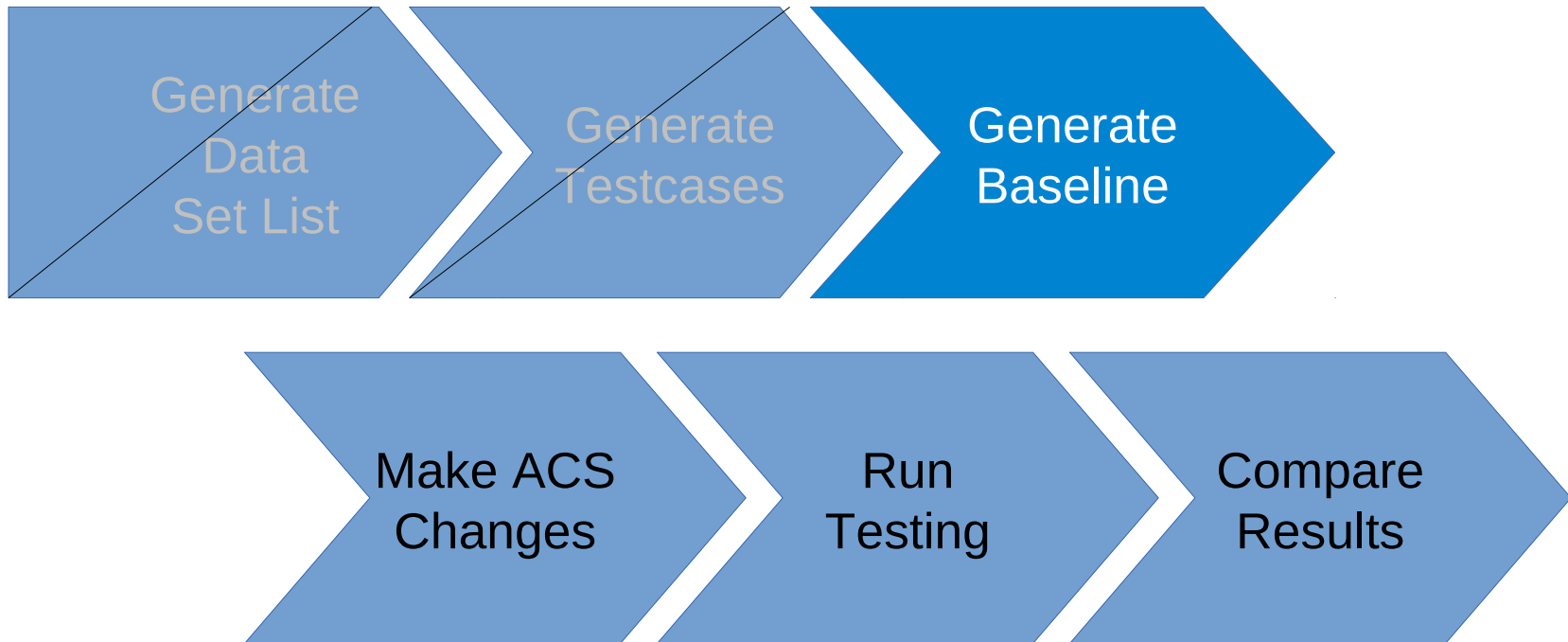
```

.   Menu  Functions  Utilities  Help
.   -----
.   BROWSE      NEAL.SMS.ACSTST      Row 00001 of 00007
.   Name        Prompt          Size    Created      Changed      ID
.   . NB1
.   . NB2
.   . NB3
.   . NB4
.   . NB5
.   . NB6
.   . NB7
.   **End**
.
.
.   Command ==>
.   F1=Help      F2=Split  F3=Exit  F5=Rfind  F7=Up      F8=Down  F9=Swap
.   F10=Left     F11=Right F12=Cancel
.
.   Menu  Utilities  Compilers  Help
.   -----
.   BROWSE      NEAL.SMS.ACSTST(NB1)      Line 00000000 Col 001 080
.   ***** Top of Data *****
.   DESCRIPTION1:
.   TEST CASE CREATED 2013/08/09 AT 13:11 BY USER2
.   DSN: NB.RLS.TEST1.DATA
.   DSTYPE: PERM
.   ACSENVIR: ALLOC
.   MAXSIZE: 13280
.   DSORG: VS
.   SIZE: 830
.   NVOL: 1
.   VOL: 01
.   XP0403
.   APPLIC: CICSJOB
.   UNIT: 3390
.   ***** Bottom of Data *****

```



# ACS Testing - Process



# ACS Testing – Generate Baseline

- Simply run the tests and save the output
- ISMF 7.4.3 (ACS routines, Test ACS Routines, Test)

```
. Panel Utilities Help
.
.                                TEST ACS ROUTINES
.
. To Perform ACS Testing, Specify:
.
. CDS Name . . . . . 'NEAL.SMS.SCDS'
.                               (1 to 44 Character Data Set Name or 'Active')
. ACS Test Library . . 'NEAL.SMS.ACSTST'
. ACS Test Member . . NB*_____ (fully or partially specified or * for all
.                               members)
. Listing Data Set . . 'NEAL.SMS.BASELINE'
.                               (1 to 44 Character Data Set Name or Blank)
.
. Select which ACS Routines to Test:
.
. DC ==> Y (Y/N)  SC ==> Y (Y/N)  MC ==> Y (Y/N)  SG ==> Y (Y/N)
```

# ACS Testing – Generate Baseline

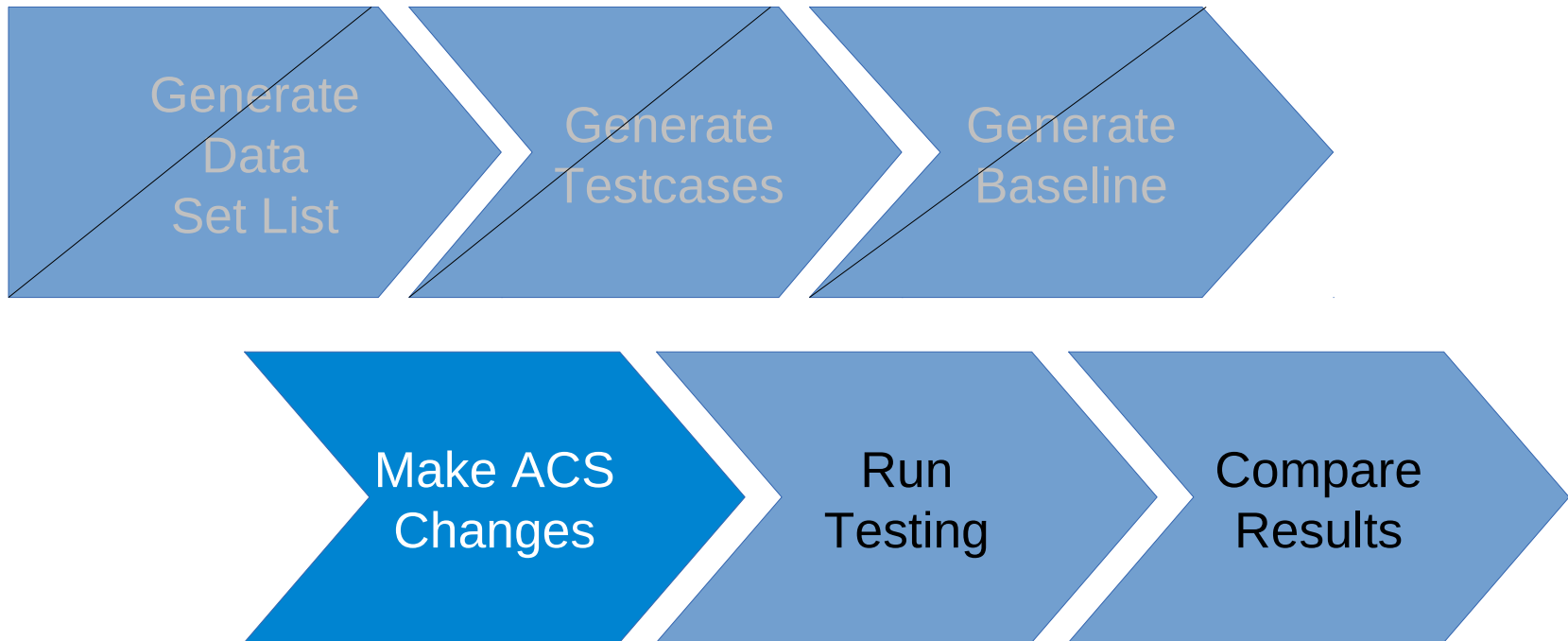
```
BROWSE      NEAL.SMS.BASELINE
***** Top of Data *****
                ACS TESTING RESULTS
```

```
CDS NAME      : NEAL.SMS.SCDS
ACS ROUTINE TYPES: DC SC MC SG
ACS TEST LIBRARY : NEAL.SMS.ACSTST
```

```
ACS TEST
MEMBER      EXIT CODE  RESULTS
-----
DESCRIPTION: TEST CASE CREATED 2013/08/09 AT 13:11 BY USER2
EXPECTED RESULT:
NB1
  MSG : DATACLAS=RLS      0  DC = RLS
      MSG : STORCLAS=RLS   0  SC = RLS
                                0  MC = NULL VALUE ASSIGNED
                                0  SG = SG1

DESCRIPTION: TEST CASE CREATED 2013/08/09 AT 13:11 BY USER2
EXPECTED RESULT:
NB2
  MSG : DATACLAS=RLS      0  DC = RLS
      MSG : STORCLAS=RLS   0  SC = RLS
                                0  MC = NULL VALUE ASSIGNED
                                0  SG = SG1
```

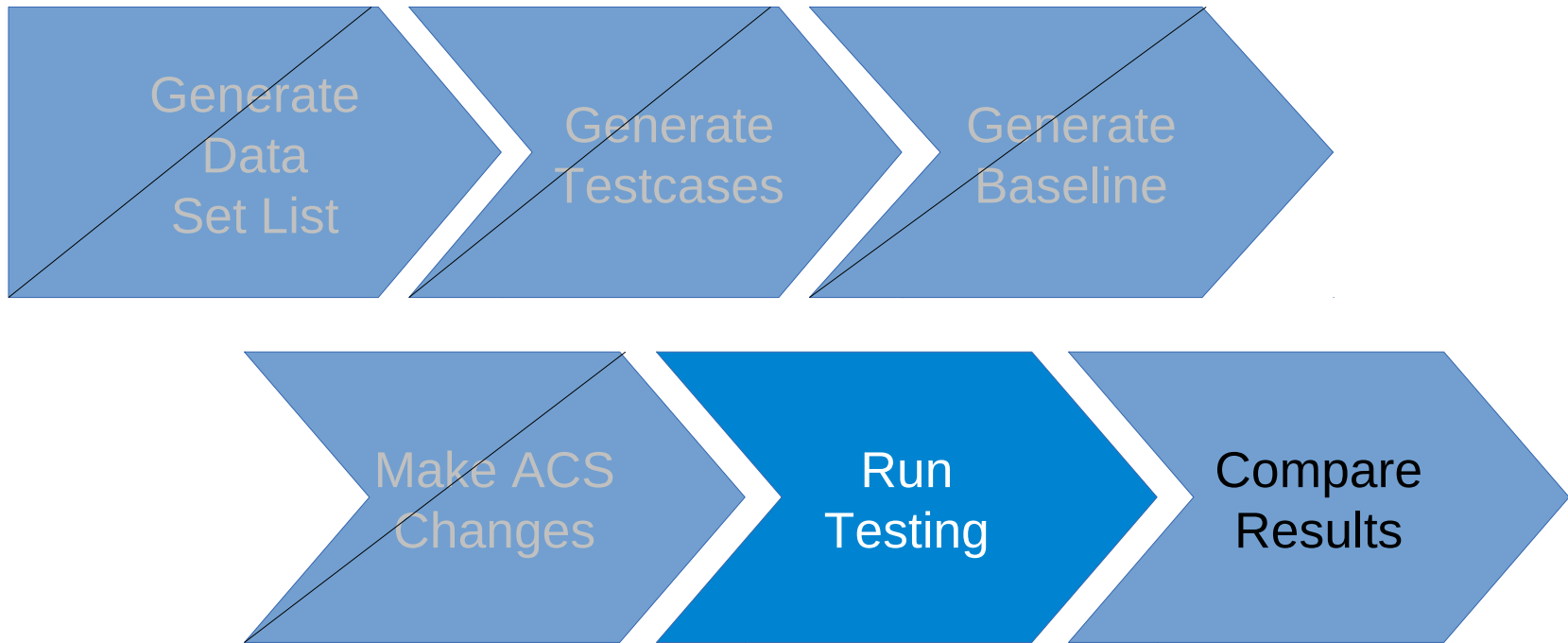
# ACS Testing - Process



# Make Changes to ACS

- Make changes to your ACS
- Recommended that you make changes in a COPY
- Or keep a backup
  
- Remember to translate and validate!
  - ISMF 7.2 and 3
  - Can translate into a testing SCDS if you prefer

# ACS Testing - Process



# ACS Testing – Run tests

- Done in the same way as building baseline:
- ISMF 7.4
- Save to a new listing DS

```

.-----
.                                TEST ACS ROUTINES
.-----
. To Perform ACS Testing, Specify:
.
.   CDS Name . . . . . 'NEAL.SMS.SCDS'
.                                (1 to 44 Character Data Set Name or 'Active')
.   ACS Test Library . . 'NEAL.SMS.ACSTST'
.   ACS Test Member . . NB* (fully or partially specified or * for all
.                                members)
.   Listing Data Set . . 'NEAL.SMS.NEWCFG'
.                                (1 to 44 Character Data Set Name or Blank)
.
. Select which ACS Routines to Test:
.
.   DC ==> Y (Y/N)  SC ==> Y (Y/N)  MC ==> Y (Y/N)  SG ==> Y (Y/N)
.
.
. Use ENTER to Perform Verification and Testing;
. Use HELP Command for Help; Use END Command to Exit.
.-----

```

# ACS Testing – Run Tests Again

```
BROWSE      NEAL.SMS.NEWCFG
***** Top of Data *****
                        ACS TESTING RESULTS
```

```
CDS NAME           : NEAL.SMS.SCDS
ACS ROUTINE TYPES: DC SC MC SG
ACS TEST LIBRARY  : NEAL.SMS.ACSTST
```

```
ACS TEST
MEMBER           EXIT CODE   RESULTS
-----
```

```
DESCRIPTION: TEST CASE CREATED 2013/08/09 AT 13:11 BY USER2
EXPECTED RESULT:
```

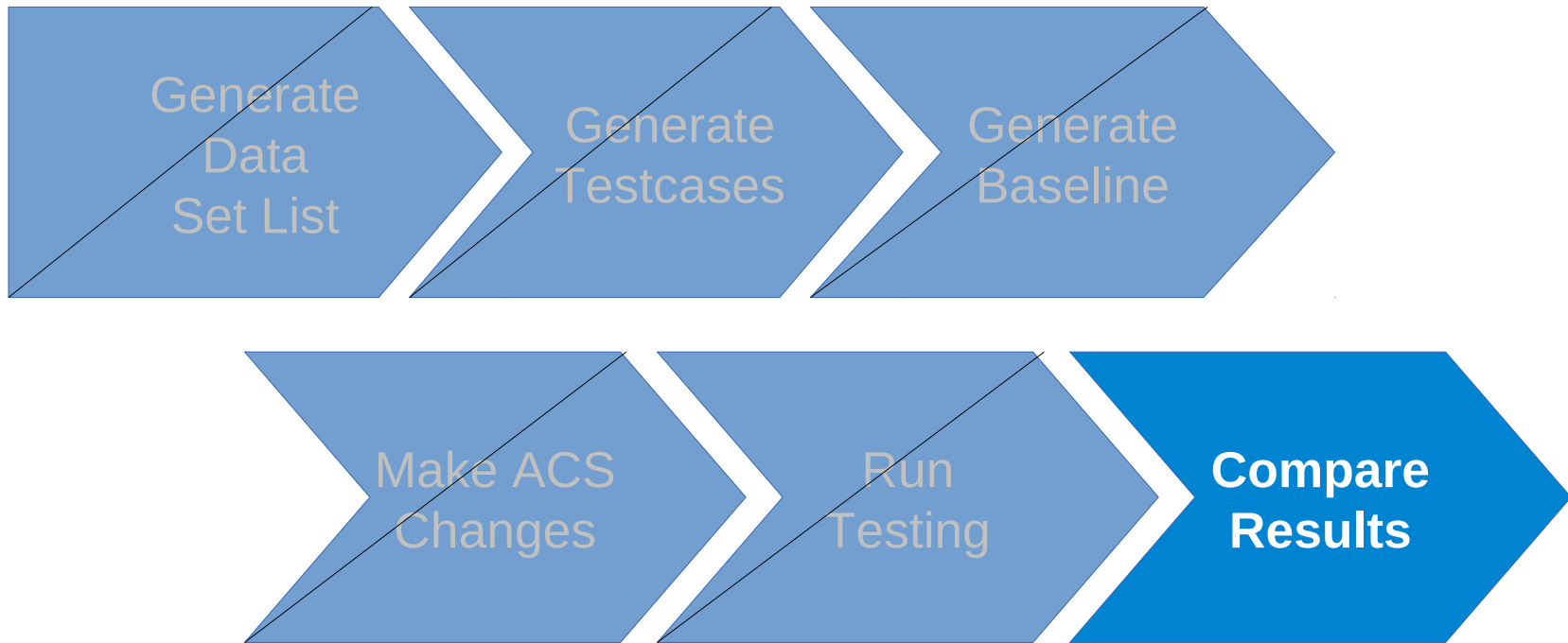
```
NB1
  MSG : DATACLAS=RLS           0  DC = RLS
  MSG : STORCLAS=SMS           0  SC = SMS
                                   0  MC = NULL VALUE ASSIGNED
                                   0  SG = SG1
```

```
DESCRIPTION: TEST CASE CREATED 2013/08/09 AT 13:11 BY USER2
EXPECTED RESULT:
```

```
NB2
  MSG : DATACLAS=RLS           0  DC = RLS
  MSG : STORCLAS=SMS           0  SC = SMS
                                   0  MC = NULL VALUE ASSIGNED
                                   0  SG = SG1
```



# ACS Testing - Process



# ACS Testing – Compare Results

- ISMF Option 11.2  
(NaviQuest ACS Testing Listing Comparison)

```

.                               ACS TEST LISTINGS COMPARISON ENTRY PANEL                               .
.
.  To compare ACS listings, specify the following information and press Enter:
.  Input Data Sets:
.    Base ACS Test Listing (Before latest ACS routine changes)
.    ===> 'NEAL.SMS.BASELINE'
.    _____
.    New ACS Test Listing (After latest ACS routine changes)
.    ===> 'NEAL.SMS.NEWCFG'
.    _____
.  Reference Data Set for Compare:
.    Test Case PDS (Test source for listings above)
.    ===> 'NEAL.SMS.ACSTST'
.    _____
.
.  Output Data Sets:
.    Comparison Results Data Set (Summary of exception test cases)
.    ===> 'NEAL.SMS.EXPT'
.    _____
.    Replace Contents if DSN Exists . . Y (Y or N)
.    Exception Test Case PDS (Contents of exception test cases)
.    ===> 'NEAL.SMS.EXPTC'
.    _____
.    Replace Contents if DSN Exists . . Y (Y or N)
.
.  Use HELP Command for Help; Use END Command to Exit.
.

```

# ACS Testing – Compare Results

```
BROWSE      NEAL.SMS.EXPT
***** Top of Data *****
                ACS TEST LISTINGS COMPARISON REPORT
```

```
Base ACS listing   : NEAL.SMS.BASELINE
New ACS listing    : NEAL.SMS.NEWCFG
Testcase dataset   : NEAL.SMS.ACSTST
Exception dataset  : NEAL.SMS.EXPTC
```

TESTCASE MEMBER : NB1

```

                * * * * E X C E P T I O N * * * *
                RC DATACLAS      RC STORCLAS      RC MGMTCLAS      RC STORGRP
                -----
BASE          0 RLS              0 RLS              0 NULL            0 SG1
NEW           0 RLS              0 SMS              0 NULL            0 SG1

```

```
DSN: NB.RLS.TEST1.DATA
SIZE: 830
VOL: XP0403
UNIT: 3390
```

TESTCASE MEMBER : NB2

```

                * * * * E X C E P T I O N * * * *
                RC DATACLAS      RC STORCLAS      RC MGMTCLAS      RC STORGRP
                -----
BASE          0 RLS              0 RLS              0 NULL            0 SG1
NEW           0 RLS              0 SMS              0 NULL            0 SG1

```

```
DSN: NB.RLS.TEST1.INDEX
SIZE: 55
VOL: XP0403
UNIT: 3390
```

# ACS Testing - Summary

- Build test cases from data set lists
- Develop a suite of test cases (different prefixes)
- Run the entire suite on any changes – verify results
  
- ISMF 11.4 – Update test cases with new expected results
  - Updates test cases so that they know what to expect

Now for Batch

# NaviQuest Batch

- Same functions, different interface
- Plenty of sample JCL exists – start there
  - Update the JOBCARD
  - Update everything after the SYSTSIN DD \*
- Controlled by parameters of format PARM(VALUE)
  - Well-documented in JCL Comments
  - Also documented in *DFSMSdfp Storage Administration*
- CLISTS and JCL stored in SYS1.SACBCNTL
  - EXEC ACBJBAOB
  - Specific CLIST called via ISPSTART CMD(cmd name)

# ACS Testing in Batch

- ISMF 11.7 Gives Sample JCL for batch processing
- ACS Testing is in 11.7.3 – Configuration Changes Batch

```

:                                     CONFIGURATION CHANGES BATCH SAMPLES SELECTION MENU                                     :
:                                                                              :
: Select an option by typing '/' or enter Data Set to Edit and press Enter:  :
:                                                                              :
:                                                                              More:  -  :
:                                                                              :
: Validate SCDS                                                                :
: - Test ACS Routines                                                            :
: - Generate Enhanced ACS Test Listing                                          :
: - Compare ACS Test Listings                                                    :
: - Update Test Cases with Test Results                                          :
: - Delete Management Class                                                      :
: - Delete Data Class                                                            :
: - Delete Storage Class                                                         :
: - Delete Storage Group                                                         :
: - Delete Copy Pool                                                             :
: - Delete Aggregate Group                                                       :
: - Delete Tape Library                                                           :
:                                                                              :
: Data Set to Edit . . _____                                               :
:                                                                              :
: Use HELP Command for Help; Use END Command to Exit.                          :

```

# ACS Testing in Batch - Testing

```

000041 //*****
000042 //*
000043 //* TEST STEP
000044 //*
000045 //* SCDS - NAME OF SCDS THAT CONTAINS THE TRANSLATED, @D1C*
000046 //* VALIDATED ACS ROUTINES TO BE TESTED (INPUT)
000047 //* TESTBED - PDS CONTAINING TEST CASES THAT THE ACS ROUTINES
000048 //* SHOULD BE TESTED FOR (INPUT)
000049 //* MEMBER - MEMBERS TO BE TESTED IN TESTBED (INPUT)
000050 //* DC,SC,MC,SG - ROUTINES TO BE TESTED Y OR N (INPUT)
000051 //* LISTNAME - TEST LISTING (OUTPUT)
000052 //*
000053 //*****
000054 //*****
000055 //TESTACS EXEC ACBJBAOB,
000056 // PLIB1='SYS1.DGTPLIB',
000057 // TABL2=userid.TEST.ISPTABL
000058 //SYSTSIN DD *
000059 PROFILE PREFIX(IBMUSER)
000060 DEL NEW.TESTLIST
000061 ISPSTART CMD(ACBQBAIA +
000062 SCDS(MYSCDS) +
000063 TESTBED(TESTCASE.LIBRARY) MEMBER(*) +
000064 LISTNAME(NEW.TESTLIST) +
000065 DC(Y) SC(Y) MC(Y) SG(Y)) +
000066 NEWAPPL(DGT) BATSCRW(132) BATSCRD(27) BREDIMAX(3) BDISPMAX(99999999)
000067 /*

```



# ACS Testing in Batch - Testing

```

000041 //*****
000042 //*
000043 //* TEST STEP
000044 //*
000045 //* SCDS - NAME OF SCDS THAT CONTAINS THE TRANSLATED, @D1C*
000046 //* VALIDATED ACS ROUTINES TO BE TESTED (INPUT)
000047 //* TESTBED - PDS CONTAINING TEST CASES THAT THE ACS ROUTINES
000048 //* SHOULD BE TESTED FOR (INPUT)
000049 //* MEMBER - MEMBERS TO BE TESTED IN TESTBED (INPUT)
000050 //* DC,SC,MC,SG - ROUTINES TO BE TESTED Y OR N (INPUT)
000051 //* LISTNAME - TEST LISTING (OUTPUT)
000052 //*
000053 //*****
000054 //*****
000055 //TESTACS EXEC ACBJBAOB,
000056 // PLIB1='SYS1.DGTPLIB',
000057 // TABL2=NEAL.SMS.ISPTABL
000058 //SYSTSIN DD *
000059 PROFILE PREFIX(USER2)
000060 DEL 'NEAL.SMS.NEW.TESTLIST'
000061 ISPSTART CMD(ACBQBAIA +
000062 SCDS('NEAL.SMS.SCDS') +
000063 TESTBED('NEAL.SMS.ACSTST') MEMBER(*) +
000064 LISTNAME('NEAL.SMS.NEW.TESTLIST') +
000065 DC(Y) SC(Y) MC(Y) SG(Y)) +
000066 NEWAPPL(DGT) BATSCRW(132) BATSCRD(27) BREDIMAX(3) BDISPMAX(99999999)
000067 /*

```

TABL2 must be allocated  
It is a standard ISPF table.

PDS Dataset  
RECFM=FB  
LRECL=80  
DSORG=PO (PDS)



# ACS Testing in Batch - Results

```
-----
SDSF OUTPUT DISPLAY NAVIQ      JOB00023  DSID   104 LINE 3      COLUMNS 02- 133
COMMAND INPUT ==>              SCROLL ==>
READY
DEL 'NEAL.SMS.NEW.TESTLIST'
ENTRY NEAL.SMS.NEW.TESTLIST NOT FOUND+
** VSAM CATALOG RETURN CODE IS 8 - REASON CODE IS IGG0CLEG-42
** ENTRY NEAL.SMS.NEW.TESTLIST NOT DELETED
LASTCC=8
READY
ISPSTART CMD(ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*) LISTNAME('NEAL.SMS.NEW.TESTLIST') DC(Y) SC(Y) MC(Y)
SG(Y)) NEWAPPL(DGT) BATSCRW(132) BATSCRD(27) BREDIMAX(3) BDISPMAX(99999999)
Library containing test cases was: 'NEAL.SMS.ACSTST'
Members tested were: *
SCDS tested against was: 'NEAL.SMS.SCDS'
Output listing for test was: 'NEAL.SMS.NEW.TESTLIST'
Value of Command was: ISPSTART CMD(ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*) LISTNAME('NEAL.SMS.NEW.TESTL
IST') DC(Y) SC(Y) MC(Y) SG(Y)) NEWAPPL(DGT)
USER2.NAVIQ.JOB00023.D0000105.? was preallocated (no free was done).
READY
END
```

```
*** ISPF transaction log ***                               Userid: USER2      Date: 13/08/09   Page: 1
14:40  Start of ISPF Log - - - Session # 1 -----
14:40  TSO      - Command - - ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*)
14:40          LISTNAME('NEAL.SMS.NEW.TESTLIST') DC(Y) SC(Y) MC(Y) SG(Y)
14:40  TSO      - Command - - ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*)
14:40          LISTNAME('NEAL.SMS.NEW.TESTLIST') DC(Y) SC(Y) MC(Y) SG(Y)
14:40  TSO      - Command - - ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*)
14:40          LISTNAME('NEAL.SMS.NEW.TESTLIST') DC(Y) SC(Y) MC(Y) SG(Y)
14:40  TSO      - Command - - ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*)
14:40          LISTNAME('NEAL.SMS.NEW.TESTLIST') DC(Y) SC(Y) MC(Y) SG(Y)
14:40  TSO      - Command - - ACBQBAIA SCDS('NEAL.SMS.SCDS') TESTBED('NEAL.SMS.ACSTST') MEMBER(*)
14:40          LISTNAME('NEAL.SMS.NEW.TESTLIST') DC(Y) SC(Y) MC(Y) SG(Y)
14:40  End of ISPF Log - - - Session # 1 -----
                                ACS TESTING RESULTS                                TIME 14:40:10 DATE 08/09/2013 PAGE 0001
```

```
CDS NAME      : NEAL.SMS.SCDS
ACS ROUTINE TYPES: DC SC MC SG
ACS TEST LIBRARY : NEAL.SMS.ACSTST
```

```
ACS TEST
MEMBER      EXIT CODE  RESULTS
```

```
-----
DESCRIPTION: TEST CASE CREATED 2013/08/09 AT 13:11 BY USER2
EXPECTED RESULT:
```

```
NB1
MSG : DATACLAS=RLS      0  DC = RLS
      DATACLAS=SMS      0  SC = SMS
```

# ACS Testing in Batch – Compare job

```

//*****
//*
//* SAMPLE JCL TO COMPARE ACS TEST LISTINGS IN BATCH
//*
//* INSTRUCTIONS BEFORE SUBMITTING:
//*
//*   CHANGE JOBCARD
//*   CHANGE PREFIX
//*   CHANGE PARAMETERS
//*
//* PARAMETERS:
//*
//*   BASELIST - BASE ACS TEST LISTING (INPUT)
//*   NEWLIST  - NEW ACS TEST LISTING (INPUT)
//*   TESTBED  - TEST CASE PDS (REFERENCE INPUT)
//*   RSLTDSN  - COMPARISON RESULTS DATA SET (OUTPUT)
//*   XCPTPDS  - EXCEPTION TEST CASE PDS (OUTPUT)
//*   XCPSPACE - SPACE values of Except DS (Optional) 3a@WA32832*
//*             Values: (Primary Tracks,Secondary Tracks,Directory Blocks) *
//*             which are positional and optional. Defaults: (3,1,20). *
//*
//* NOTE: If you receive message IEC217I B14-0C on your exception *
//*       data set, you need to increase your data set size by using *
//*       the XCSPACE parameter (specially the directory blocks)
//*
//*****

```

```

//CMRSTEP EXEC ACBJBAOB,
//          PLIB1=SYS1.DGTPLIB,
//          TABL2=userid.TEST.ISPTABL
//SYSTSIN DD *
PROFILE PREFIX(IBMUSER)
DEL COMPARE.LISTING
DEL TESTCASE.EXCP
ISPSTART CMD(%ACBQBAC1 +
BASELIST(BASE.TESTLIST) +
NEWLIST(NEW.TESTLIST) +
TESTBED(TESTCASE.LIBRARY) +
RSLTDSN(COMPARE.LISTING) +
XCPTPDS(TESTCASE.EXCP) +
XCPSPACE(5,3,30)) +
BATSCRW(132) BATSCRD(27) BREDIMAX(3)
BDISPMAX(99999999)
/*

```

# ACS Testing – Compare Results

```

BROWSE      NEAL.SMS.EXPT
***** Top of Data *****
                ACS TEST LISTINGS COMPARISON REPORT
  
```

```

Base ACS listing   : NEAL.SMS.BASELINE
New ACS listing    : NEAL.SMS.NEWCFG
Testcase dataset   : NEAL.SMS.ACSTST
Exception dataset  : NEAL.SMS.EXPTC
  
```

TESTCASE MEMBER : NB1

```

                * * * * E X C E P T I O N * * * *
                RC DATACLAS      RC STORCLAS      RC MGMTCLAS      RC STORGRP
                -----
BASE           0 RLS              0 RLS           0 NULL           0 SG1
NEW            0 RLS              0 SMS           0 NULL           0 SG1
  
```

```

DSN: NB.RLS.TEST1.DATA
SIZE: 830
VDL: XP0403
UNIT: 3390
  
```

TESTCASE MEMBER : NB2

```

                * * * * E X C E P T I O N * * * *
                RC DATACLAS      RC STORCLAS      RC MGMTCLAS      RC STORGRP
                -----
BASE           0 RLS              0 RLS           0 NULL           0 SG1
NEW            0 RLS              0 SMS           0 NULL           0 SG1
  
```

```

DSN: NB.RLS.TEST1.INDEX
SIZE: 55
VDL: XP0403
UNIT: 3390
  
```

# ACS Batch Summary

- Sample JCL is in ISMF 11.7 or SYS1.SACBCNTL
- Change the necessary parameters
- Submit
  
- Get work done.



## Demonstrations and Details:

- ~~Using COPYFILT~~
- ~~Building ACS Testcases and running them~~
  - ~~Then doing it in batch~~
- **Generating a volume report**
- Using model command generation
- Adding a set of volumes to a Storage Group

# Volume Report

- ISMF 11.5 – SMS Report Generation

```

.          DASD VOLUME REPORT FROM SAVED ISMF LIST   Invalid DSN - qualifier  .
.
.  To generate report, specify the following information and press Enter:      .
.  Saved ISMF List . . . . . NBVOL_____ (DASD Volume List)                  .
.  Data Set to Hold Report                                                    .
.  ==> 'NB.SMS.VOLREPT'_____                                                .
.  Replace Contents if DSN Exists . . Y_ (Y or N)  Page Length   60          .
.                                               Totals . . . . Y_ (Y or N)      .
.
.  Specify fields in numeric order (max width of report is 133 characters):  .
.                                     Length                                     Length .
.                                     More:                                     +   .
.
.  Volume Serial . . . . 1_ (7)      Free VIRs . . . . . ___ (9)          .
.  Free Space . . . . . 3_ (10)     Device Type . . . . . ___ (8)          .
.  % Free . . . . . 4_ (6)         Dev Number . . . . . 2_ (7)          .
.  Alloc Space . . . . . ___ (10)   Shr DASD . . . . . ___ (8)          .
.  Frag Index . . . . . ___ (8)     Use ATTR . . . . . ___ (8)          .
.  Largest Extent . . . . ___ (10)  RD Cache Status . . . . ___ (9)      .
.
.  Use DOWN Command to Scroll Forward; Use UP Command to Scroll Backward;    .
.  Use HELP Command for Help; Use END Command to Exit.                       .

```

# Volume Report - Results

BROWSE NEAL.SMS.DASDVOL.REPT

\*\*\*\*\* Top of Data \*\*\*\*\*

## STATUS OF VOLUMES

VOLSER DEVNUM FREESPC %FREE

```

-----
APPLPK 0D28    514957K    22
CATLV2 0F50    231138K     8
DFPLIB 083E    71881K      3
DFPTL1 083B    604988K    22
DFPTL2 083C    7194K       0
DFPTL3 083D    292284K    11
DTBASE 0815    8117616K   30
DUMPDS 0823    1330331K    5
DUMPD1 08C2    5108503K   19
HSMLIB 0828    1107K       3
LIBTST 0280    1735934K   75
MVSDLB 0802    1046624K   13
MVSRES 0801    2504173K   30
MVSSMP 0806    92964K      3
MVSZFS 080F    906015K    22
NBPACK 0F61    41336K     100
  
```

```

*****
***          V O L U M E   S P A C E   I N F O          ***
*****
  
```

```

***  TOTAL ALLOC SPACE...KB=160864072  MB=157093  GB=153
***  TOTAL FREE SPACE ...KB=35381789  MB=34552  GB=33
  
```



# Volume Report – via Batch

- ISMF 11.7.1. “Generate DASD Volume Report”

- JCL:

```
//GENREP EXEC ACBJBAOB,  
//          PLIB1=SYS1.DGTPLIB,  
//          TABL2=SYS1.SMP.OTABLES  
//ISPFDD DD DSN=NEAL.SMS.DASDVOL.REPT,DISP=OLD  
//SYSTSIN DD *  
PROFILE PREFIX(USER2)  
ISPSTART CMD(ACBQVAR1 NBVOL SORT(VOLSER)) +  
NEWAPPL(DGT) BATSCRW(132) BATSCRD(27) BREDIMAX(3) BDISPMAX(99999999)  
/*  
//SYSIN DD *  
VOLSER  
DEVNUM  
FREESPC  
%FREE  
TITLE=STATUS OF VOLUMES  
TOTALS  
/*
```

# Volume Report - Results

BROWSE NEAL.SMS.DASDVOL.REPT

\*\*\*\*\* Top of Data \*\*\*\*\*

## STATUS OF VOLUMES

VOLSER DEVNUM FREESPC %FREE

```
-----
APPLPK 0D28 514957K 22
CATLV2 0F50 231138K 8
DFPLIB 083E 71881K 3
DFPTL1 083B 604988K 22
DFPTL2 083C 7194K 0
DFPTL3 083D 292284K 11
DTBASE 0815 8117616K 30
DUMPDS 0823 1330331K 5
DUMPD1 08C2 5108503K 19
HSMLIB 0828 1107K 3
LIBTST 0280 1735934K 75
MVSDLB 0802 1046624K 13
MVSRES 0801 2504173K 30
MVSSMP 0806 92964K 3
MVSZFS 080F 906015K 22
NBPACK 0F61 41336K 100
```

\*\*\*\*\*  
\*\* VOLUME SPACE INFO \*\*  
\*\*\*\*\*

\*\*\* TOTAL ALLOC SPACE...KB=160864072 MB=157093 GB=153  
\*\*\* TOTAL FREE SPACE ...KB=35381789 MB=34552 GB=33

# Reporting Summary

- Use saved lists to generate reports about space usage
  - Data set reports
  - DASD Volume reports
  - TAPE Volume reports
  - DFSMS Configuration Reports
- Track FREESPACE on a daily basis
- Watch storage groups for high fragmentation
- Etc.

## Demonstrations and Details:

- ~~Using COPYFILT~~
- ~~Building ACS Testcases and running them~~
  - ~~Then doing it in batch~~
- ~~Generating a volume report (in batch)~~
- **Using model command generation**
- Add a set of volumes to a Storage Group

# Model Command Generation

- Generates a command based on a template for each item in a saved list
- Use any command:
  - / to denotes the Data set
  - @ to denotes VOLSER
- Great for
  - Commands that do not accept wildcards
  - Very specific lists of data sets

# Model Command Generation

- ISMF 11.6 – we'll use the ISMF list again (option 1)

```

.      MODEL COMMANDS GENERATION FROM SAVED ISMF LIST ENTRY PANEL
.
.  To generate model commands, specify the following information and press Enter:
.
.  Saved ISMF List . . . NBFILES  (Data Set List or DASD Volume List)
.
.  Model Command for Generation
.  ==> ALTER / NEWNAME(/.BAK)
.
.
.
.
.
.
.
.
.
.
.
.  Note: Available substitutions in the Model Command for Generation field
.  are '/' for Data Set Name and '@' for Volume Serial.
.

```

# Model Command Generation

```
EDIT          USER2.M3.MODELCMD
***** Top of Data *
-Warning- The UNDO command is not available until you change
          your edit profile using the command RECOVERY ON.
000001 ALTER NB.RLS.TEST1 NEWNAME(NB.RLS.TEST1.BAK)
000002 ALTER NB.RLS.TEST1.DATA NEWNAME(NB.RLS.TEST1.DATA.BAK)
000003 ALTER NB.RLS.TEST1.INDEX NEWNAME(NB.RLS.TEST1.INDEX.BAK)
000004 ALTER NB.SMS.TESTA NEWNAME(NB.SMS.TESTA.BAK)
000005 ALTER NB.SMS.TESTB NEWNAME(NB.SMS.TESTB.BAK)
000006 ALTER NB.SMS.TESTOUT NEWNAME(NB.SMS.TESTOUT.BAK)
000007 ALTER NB.SMSN.TEST1 NEWNAME(NB.SMSN.TEST1.BAK)
000008 ALTER NB.SMSN.TEST2 NEWNAME(NB.SMSN.TEST2.BAK)
***** Bottom of Data
```

- Have JCL import this as SYSIN,  
and you have a dynamic rename job

## Demonstrations and Details:

- ~~Using COPYFILT~~
- ~~Building ACS Testcases and running them~~
  - ~~Then doing it in batch~~
- ~~Generating a volume report (in batch)~~
- ~~Using model command generation~~
- **Add a set of volumes to Storage Group**



# Adding a volume to a SG - Batch

- Sample in “Change Storage Group Volume Status” - ACBQBAI9
- 3 DD : VOLADD, VOLDEL, VOLALT:

```
//ADVVOL1 EXEC ACBJBAOB,
//          PLIB1='SYS1.DGTPLIB',
//          TABL2=USER2.TEST.ISPTABL
//SYSUDUMP DD  SYSOUT=*
//TEMPFILE DD  DSN=&&VOLADDS,DISP=(NEW,KEEP),
//  SPACE=(TRK,(1,1)),LRECL=300,RECFM=F,BLKSIZE=300
//SYSTSIN  DD  *
PROFILE PREFIX(IBMUSER)
ISPSTART CMD(ACBQBAI9) +
BATSCRW(132) BATSCRD(27) BREDIMAX(3) BDISPMAX(99999999)
/*
//VOLADD  DD  *
UPDHLVLSCDS()
SCDS(MYCDS) VOL(SMS900) SG(PRIMARY) STATUS(ENABLE)
SCDS(MYCDS) VOL(SMS901) SG(PRIMARY) STATUS(DISALL,+
ENABLE,,DISNEW,,NOTCON,DISALL,ENABLE,QUIALL)
SCDS(MYCDS) VOL(SMS902) SG(PRIMARY) STATUS(ENABLE)
```

## Demonstrations and Details:

- ~~Using COPYFILT~~
- ~~Building ACS Testcases and running them~~
  - ~~Then doing it in batch~~
- ~~Generating a volume report (in batch)~~
- ~~Using model command generation~~
- ~~Adding a set of volumes to a Storage Group~~

## Want More?

- You could code REXX to generate JCL for you to:
  - Add a volume based on input
  - Define new data classes
  - Run custom volume reports
- One job for ACS translate / validate / test
- Run daily reports to watch certain data sets

# Summary

- NaviQuest is a suite of tools to do SMS tasks
- Accessible via ISMF Option 11
- Batch JCL available through ISMF or SYS1.SACBCNTL
- Can be very powerful and useful



## For More Information:

- Manuals:
  - *DFSMSdfp Storage Administration (SC26-7402)*
    - Chapter 22 – Using NaviQuest
  - *DFSMS Using the Interactive Storage Management Facility (SC26-7411)*
- Redbooks
  - *Maintaining Your SMS Environment (SG24-5484)*
  - *NaviQuest Demonstration and Hands-On Usage Guide (SG24-4720)*

# DFSMS:Intermediate NaviQuest – Streamlining SMS Work

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August 14, 2013  
Session# 14157



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# REFERENCE SLIDES

# ISPSTART parms

- BATSCRD - Screen depth
- BATSCRW - Screen width
- BDISPMAX - Maximum number of panel displays for a session
  - BDISPMAX represents the total number of panel display calls.
  - This value is coded to avoid loops.
- BREDISPMAX - Maximum number of times the same panel can be displayed
  - The job will terminate if this limit is reached. This value is coded to avoid loops.