



# SHARE in Seattle

Session 17012



## The Benefits of using FATSCOPY for EMC DLM tape migration

**Speakers:**

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**....., Walgreens Experience**



SHARE is an independent volunteer-run information technology association that provides **education, professional networking and industry influence.**





# FATSCOPY™

## Tape Migration to EMC DLM

*Learn what's new in the  
FATSCOPY DLM Migration Tool Kit  
from INNOVATION DATA PROCESSING*



SHARE is an independent volunteer-run information technology association that provides education, professional networking and industry influence.





# Agenda

## FATSCOPY and EMC DLm Migration

- Executive Summary...
- EMC DLm Overview...
- FATSCOPY Overview...
- FATSCOPY EMC DLm Migration...
- Customer Experience...

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)





# Executive Summary



## FATSCOPY™ ...

The ONLY Tape Migration  
Tool Kit you will ever need!

Brings balance  
to DLm tape migration

*And now...*

*INNOVATION and EMC DPAD  
make it even easier for you to order an  
EMC Professional Services  
DLm Migration Engagement  
using FATSCOPY with a single signature agreement*

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# EMC Disk Library for Mainframe

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# Typical Mainframe Tape Workloads



Backup



Space Mgmt



Data Archive



Work Tape

dumps  
 – Fixed size volumes  
 – 3, 9, 27, and 54 GB  
 • z/OS leading backup applications  
 – FDR—Innovation Data Processing  
 – DSS—IBM  
 • DB2 Image Copies

• IBM's HSM  
 • z/OS leading backup applications (DMS/OS)  
 • Migrates data to different storage classes  
 • Meant to conserve DASD usage  
 • Can use significant CPU cycles

• Fixed content data  
 – Check images, etc.  
 • z/OS leading archive applications  
 – ASG-ViewDirect  
 – IBM ImagePlus

• Short retention—temporary datasets  
 • High read/write requirements  
 • z/OS leading applications  
 – Transaction support  
 • Transaction support  
 • SMF data files  
 • Large sequential files

**All With Different Reference Patterns**



# Typical Mainframe Tape Solution

Backup

Space  
Mgmt

IBM z/OS mainframe



Data  
Archive

Work  
Tape



Physical tape



Virtual tape



Deduplication

**You would need two or three different tape platforms  
(and code bases) to satisfy the needs of all workloads**

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# EMC Mainframe Tape Solution



IBM z/OS mainframe



Virtual tape



EMC DLm8100



Deduplicat.



**EMC satisfies the needs of all tape workloads in a single, manageable solution**

Complete your session evaluations online at [www.SHARE.org/Seattle2015](http://www.SHARE.org/Seattle2015)





# Why go virtual for mainframe tape?

## Eliminate physical tape media

- DLM scalability enables customers to go completely “tapeless”
- Risk mitigation to avoid litigation and public embarrassment due to lost or stolen media

## Consistent performance

- Single tier of storage eliminates the need to de-stage and re-stage tape volumes to and from tape
- Instant tape mounts coupled with high-speed locate for disk-like response time regardless of the age of the tape dataset



# Why DLM for mainframe tape?

## Breakthrough disaster recovery

- Read / Write Point-In-Time copies enable fully destructive disaster recovery testing without compromising production replication

## Superior availability

- Microcode updates and corrective maintenance activities are performed concurrently without the need to interrupt tape operations

## Integrated data de-duplication capability

- Inline data de-duplication improves storage efficiencies and reduces data replication bandwidth requirements





*Questions ?*

# FATSCOPY™ Overview...

## The ONLY DLM Tape Migration Tool Kit you will ever need!



Move  
Multiple  
Cartridge Tapes  
- or -  
Virtual  
Tape Volumes  
- to -  
DLM  
w/or w/o  
deduplication

FATSCOPY  
with IMAGE Copy  
and  
Integrated Support for  
ASG Zara,  
CA1, CA-TLMS, and  
IBM DFSMSrmm  
makes  
migration to an EMC DLM  
Simple to plan,  
Easy to do,  
and  
Fast to complete.

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# FATSCOPY: A Record of Continual Improvements based on direct feedback from Customers and VARs... like EMC Professional Services

## **Summary of Modifications – Version 4.9 Level 29 (Jan 2015)**

- Adds support for the ASG-Zara (*Automated Tape Management System*)
  - IMAGE Copy DLM migration now supports CA 1, CA-TLMS, IBM-RMM and ZARA.
- Adds “Guided Path” ISPF Panels to make FATSCOPY even easier to use.

## **Summary of Modifications – Version 4.9 Level 28 (Q4 2013)**

- Adds IMAGE Copy support for CA-TLMS ... further simplifies migration to DLM
- New consolidated log simplifies auditing a migration...
  - z/OS system logger allows multiple FATSCOPY jobs to concurrently write to a single log

## **Summary of Modifications – Version 4.9 Level 27 (Q1 2013)**

- Adds IMAGE Copy support for RMM and CA 1... simplifies migration to DLM
- New parameter simplifies specifying range of volumes when copying all datasets on a volume

## **Summary of Modifications – Version 4.9 Level 26 (Q1 2012)**

- New options keep FATSCOPY running even when RMM housekeeping is running
- RESTART for a FATSCOPY migration after an ABEND or operator CANCEL
- Copy the physical backend volumes in a tape-backed VTS

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# Types of FATSCOPY Copies

## Physical Volume Copy – fastest & most efficient

- **IMAGECOPY**

Copies entire input tape volume & its VOLSER to an output tape volume.

## Logical Dataset Copy – powerful & most flexible

- **ALLDSN**

Copies all datasets on input volume to an output tape with a new VOLSER.

- **CATDSN**

Copies selected cataloged datasets to an output tape with a new VOLSER.

# Physical Volume Copy – fastest & most efficient –

*Easiest fastest & most efficient way to migrate to an EMC DLM  
- Employs a unique DLM facility to recognize a VOLSER change*

- **IMAGECOPY**

- Selecting volumes from CA 1, CA-TLMS, IBM-RMM or ZARA...
  - Using fully-qualified volume serial numbers or ranges.
- Copies entire input tape volume & its VOLSER to new volume
  - Producing an exact block-for-block copy of the input volume.
- Invokes DLM facility to recognize the VOLSER change.
- Updates CA 1, CA-TLMS, IBM-RMM or ZARA & z/OS TCDB
  - Ensuring z/OS can mount the migrated volumes.
- Especially useful for copying tapes created by applications with an external data base that records relative block & VOLSER, like OAM, Mobius and UPSTREAM.
  - Avoids significant time needed to update those external data bases.

# Logical Dataset Copy – powerful & most flexible –

*Powerful, flexible and easy way to select and stack datasets on new higher-capacity tape or on new types of tape media.*

- **ALLDSN**

- Selecting volumes from CA 1, CA-TLMS, IBM-RMM or ZARA...
  - Using fully-qualified volume serial numbers or ranges.
- Copies all the datasets from one, or more input volumes, to an output tape volume with a new VOLSER.
- Updates CA 1, CA-TLMS, IBM-RMM or ZARA, z/OS TCDB & Catalog
  - Ensuring z/OS can find the migrated datasets.

- **CATDSN**

- Selecting datasets from z/OS catalog...
  - Using fully-qualified cataloged data set names or masks
- Copies the selected datasets from one or more input volumes to an output tape volume with a new VOLSER.
- Updates CA 1, CA-TLMS, IBM-RMM or ZARA, z/OS TCDB & Catalog
  - Ensuring z/OS can find the migrated datasets.



# FATSCOPY Includes... FDREPORT a Migration Planning Tool

*Easily query the RMM or CA 1 tape management data base  
using a broad range of powerful selection parameters.*

Create reports to determine which volumes you need to copy...

**FDREPORT is available at no charge  
to FATSCOPY customers for duration of a migration**

# Use FDREPORT to Plan your FATSCOPY Migration to a DLM

Find out how many of your tapes are...

- Active
- In scratch status
- Controlled by an External Data Manager (OAM, Mobius and UPSTREAM)

Generate reports from a CA 1 or IBM-RMM tape management data base...

- List Volumes Not In Scratch Status
- List “Active” Volumes & their Data Sets... i.e. Not Expired (In Volser Order)
- Total Number of Volumes - In Scratch Status... - Not In Scratch Status
- Approx Size of all “Active” Data Sets i.e. Not Expired & Not Scratch
- Approx Size of all expired datasets on volumes not in Scratch Status

Create a portable extract from the tape management data base

- Work remotely... can generate reports on any system

Generate scratch volume lists as input to the DLM scratch utility and release disk space backing the logical tape volumes that are in scratch status.

# Always Easy to Use

# Fast and Efficient

Specify volumes for DLM IMAGECOPY migration:

- Tape volume serial numbers or ranges

As well as

# Powerful and Flexible

Select data sets to be copied by specifying:

- Fully-qualified or masked cataloged data set names
- Tape volume serial numbers or ranges

Then filter the volumes and data sets to be copied based on:

- creation date
- expiration date
- creating job name
- dataset size
- last used program
- creating program
- And more...

# New

## FATSCOPY Guided Path makes it even easier to manage a DLm migration

```
----- FATSCOPY SELECTION MENU -----  
===>   
  
G. Guided Path to build Batch Job by tape Volume  
1. Select ALL datasets by tape Volume Range  
2. Select ALL datasets by tape Volume List  
3. Select/Exclude Cataloged datasets  
  
Note: Innovation recommends the use of option G rather than  
options 1, 2, or 3 . New functions will be added only to  
option G.  
  
R. Review Results of Simulation(s)  
A. View Audit Report  
J. Set up FATSCOPY JCL parameters  
Q. Query TMS - Tape Management Id: RMM
```

Guided Path  
leads you  
through  
Selection  
Criteria

## Guided Path steps you through the process... of building a batch job by asking you questions about the task you want to accomplish:

```
----- FATSCOPY Guided Path for Building Batch Jobs -----  
==>   
  
----> Selection by VOLSER or Range of VOLSERs <----  
  
1 - Build a new Simulation job  
2 ← Build a new Simulation job, and save the results for a  
   future Copy job  
3 - Build a new Copy job  
4 - Build a Copy job using the selection results saved by  
   a previous Simulation  
5 - Build a Copy job to restart a previous Copy job that  
   was interrupted (by STOP, CANCEL, or ABEND)  
  
Enter a value, then Press Enter to continue
```

Use SIMULATION  
to validate the  
migration plan  
and  
save the output

# Plan to save the results of the Simulation...

```

V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                     CAN for previous  EXIT to exit

          -----> DSNTABLE Data Set <-----

A DSNTABLE data set is used to save the results of a simulation. This
data set is used by a subsequent RESTART job to copy the data sets
without re-specifying the search criteria used by this simulation.

Auto-generate a DSNTABLE data set name? (YES or NO) ..... YES

  If NO, Name of data set: _____

DSNTABLE Data set disposition (NEW or SHR) ..... SHR

If NEW, specify

  Disk unit (such as SYSALLDA) ..... SYSALLDA
  Space allocation units (TRK or CYL) ..... TRK
  Primary allocation amount ..... 5
  Secondary allocation amount ..... 2

  Make any needed changes, then press Enter or PF3 to continue
  
```

# Chose a Range of Volumes to Migrate

```
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>>                                     CAN for previous EXIT to exit
```

```
----> Selection by VOLSER or range of VOLSERS <----
```

```
option ==> 2 ← 1 - Select an individual volume
              2 - Select a RANGE of consecutive volumes
              3 - select ALL logical volumes from a physical volume
                  on a TAPE-BACKED virtual tape system (IBM TS7740 or
                  STK VSM)
```

Selection by  
Volume Range

```
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>>>                                     CAN for previous EXIT t
```

```
----> Selection of Volume Range by VOLSER <----
```

```
Volume to be copied: a10000
Number of consecutive logical VOLSERS: 100__ (1-32767)
Exclude any volumes from this range? NO (Yes/No)
```

```
Enter a volume serial and number of volumes
Then press Enter or PF3 to continue
```

Define  
Volume Range

# Use Global Default Options to make individual job set up simpler

```

V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                     CAN for previous  EXIT to exit

      -----> Optional Entries <-----

Do you want to APPEND data sets onto an existing
(non-scratch) tape? ..... NO      (Yes/No)

Copy tape management data from input to output? .... YES      (Yes/No)

IMAGE copy? ..... yes      (Yes/No)

Copy expiration date from input to output? ..... YES      (Yes/No)
If NO, specify explicit output expiration date _____ (yyyy.ddd)
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                     CAN for previous  EXIT to exit

      -----> Optional Entries <-----

Do you have ABR files? ..... yes (Yes/No)
Do you want to RENAME all the output files? ..... NO (Yes/No)
If YES, new index name or mask: _____

Do you want to REBLOCK all the output files? ..... NO (Yes/No)
If YES, new block size ..... _____ (4-262144)
largest block size to reblock.. _____ (4-262144, optional)

Do you want to specify an SMS storage class for the output
volumes? ..... NO (Yes/No)

If a data set has user labels, should those labels be copied? YES (Yes/No)

Make any needed changes, then press Enter or PF3 to continue
  
```

Let Global Default Options Make IMAGECOPY Set Up Easy



# IMAGECOPY

## “Options” include Volume Exclusion

```
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                CAN for previous EXIT to exit
-> Optional limits for Volume Range starting with A10000 <-
You can limit the selection from an individual volume or volume
range on the next panel by any combination of:
- File sequence number
- Expiration date
- Creation date
- Days since creation
- Data set size
- Creating job name
- Volume location or Outcode
Do you want to limit selection of data sets from these volumes
by any of these parameters?
==> 1 1 - Do not limit selection by these values
```

Default takes all...  
Excluding volumes  
is an option

```
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                CAN for previous EXIT to exit
-----> Optional Selection Limits that Apply to ALL Volumes in this Job <-----
Copy data sets that are expired? ..... YES (Yes/No)
Copy multivolume sets? ..... YES (Yes/No/Only)
Copy OFFSITE volumes? ..... NO (Yes/No/Only)
IMAGE copy?
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                CAN for previous EXIT to exit
```

```
Exclude data: -----> Miscellaneous Optional Input Parameters <-----
Exclude data: Select ABR Archive and Application Backup datasets? yes (Yes/No)
Exclude data: ABR prefix used to identify ABR datasets ..... FDRABR
Exclude data: Select HSM ML2 data sets? ..... yes (Yes/No)
Make any needed changes, then press Enter or PF3 to continue
Mask used to identify HSM Backup data sets: _____
Mask used to identify HSM Migration data sets: _____
Use specified device for all input tape mounts .... _____ (esoteric or
(leave blank to allow mount on default drive) specific)
Make any needed changes, then press Enter or PF3 to continue
```

# Save Different Simulation Results

```

V4.9.29  JAT0.ISP05990.SPFTEMP1.CNTL ----- Columns 001 072
COMMAND==>                               Scroll==> CSR
SUB Submit Job      CAN Return to previous panel      END Exit to menu
***** ***** Top of Data *****
000001 //ABCM      JOB (T), 'PANEL JOB', REGION=0M
000002 //*
000003 //*      ***  FATSCOPY "GUIDED PATH" CHECKPT JOB      ***
000004 //*      GENERATED ON 02/18/15 AT 14:09:42
000005 //*
000006 //FATSCOPY EXEC PGM=FATSCOPY, REGION=0M
000007 //STEPLIB  DD DSN=FATSYS.JAT4929.LOAD, DISP=SHR
000008 //DSNTABLE DD DSN=JAT0.FATSCOPY.DSNTABLE.D2015049.T1356,
000009 //          DISP=(,CATLG,CATLG), UNIT=SYSALLDA,
000010 //          SPACE=(TRK, (5,2), RLSE)
000011 //SELRPT   DD SYSOUT=*
000012 //COPYRPT DD SYSOUT=*
000013 //TAPESUMM DD SYSOUT=*
000014 //SYSPRINT DD SYSOUT=*
000015 //ERRORRPT DD SYSOUT=*
000016 //SYSABEND DD SYSOUT=*
000017 //SYSIN    DD *
000018 SIM CHECKPT, ABRARC=YES, HSMML2=YES, OFFSITE=YES
000019 SELECT ALLDSN, VOL=A10000, NUMVOLS=100
000020 /*
***** ***** Bottom of Data *****
  
```

Save different selection criteria results

# Use FATSCOPY Simulation Results to Verify the Tape Migration Plan

```
V4.9.28 ----- FATSCOPY - "ALLDSN" VOLUMES LIST -----
COMMAND ==>

      Volume          Volume          Volume
    Ser#  Dsn's      Ser#  Dsn's      Ser#  Dsn's
  001186 00010      001120 00001      001121 00001
  ***** Bottom of data *****
```

SIMULATION Shows which VOLUMES ... ("in a pull list") will be selected for migration

...

```
V4.9.xx ----- FATSCOPY - "ALLDSN" SIMULATION REPORT ----- Row 1 to 12 of 12
COMMAND ==>

Data Set Name
JMK.LABELED.FATS.FILE1
JMK.LABELED.FATS.FILE2
JMK.LABELED.FATS.FILE3
JMK.LABELED.FATS.FILE4
JMK.LABELED.FATS.FILE5
JMK.LABELED.FATS.FILE6
JMK.LABELED.FATS.FILE7
JMK.LABELED.FATS.FILE8
JMK.LABELED.FATS.FILE9
JMK.LABELED.FATS.FILE10
JMK.CPK.TEST.BACKUP
JMK.CPK.TEST.BACKUP
***** Bottom of data *****
```

and which datasets will be selected for copying

FSeq	ExpDate	VolSer	VSeq	Group
1	2015106	001186	1	1
2	2015106	001186	1	1
3	2015106	001186	1	1
4	2015106	001186	1	1
5	2015106	001186	1	1
6	2011106	001186	1	1
7	2015106	001186	1	1
8	2015106	001186	1	1
9	2011106	001186	1	1
10	2015106	001186	1	1
1	2020365	001120	1	2
1	2020365	001121	2	2

# Build the actual migration job using the FATSCOPY Simulation Criteria

```

V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
OPTION ==> 4
-----> Selection by VOLSER or Range of VOLSERs <-----

1 - Build a new simulation job
2 - Build a new simulation job, and save the results for use in a
   future Copy job
3 - Build a new Copy job
4 - Build a Copy job using the selection results saved by
   a previous simulation
5 - Build a Copy job to restart a previous Copy job that
   STOP, CANCEL, or ABEND)

COMMAND ==>          CAN previous  EXIT exit

Enter the name of the DSNTABLE data set used
by the previous simulation or interrupted
copy job:
JAT0.FATSCOPY.DSNTABLE.D2015049.T1356

Enter the data set name,
then press Enter or PF3 to continue
    
```

Build the  
FATSCOPY  
Migration Job

Using the  
Simulation Criteria  
that you chose

## Manage the FATSCOPY DLM Migration

```
====>
S. Submit Copy
E. Edit JCL
B. Browse Statements/Operands
C. Change COPY Default Operands
G. Override "GLOBAL" Operands
A. Create Audit Records
END End Task                CANce1 Return
```

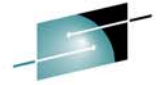
Using ISPF panels create FATSCOPY JCL and submit FATSCOPY jobs

Consider...

Create & Submit one large FATSCOPY job, with a CHECKPOINT DSNTABLE DD...

- STOP the job with a console command at the end of daily processing or whenever..
- Pick up where you left off, the next day or whenever, using the RESTART keyword

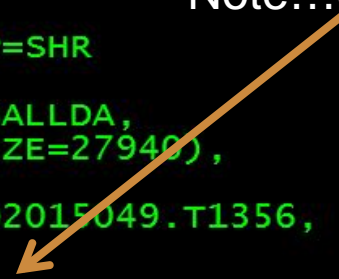
# Submit the DLm Migration Job



```

V4.9.29  JAT0.ISP05990.SPFTEMP1.CNTL ----- Columns 001 072
COMMAND===>                               Scroll==> CSR
SUB Submit Job      CAN Return to previous panel  END Exit to menu
***** ***** Top of Data *****
000001 //ABCM      JOB (T), 'PANEL JOB', REGION=0M
000002 // *
000003 // *      ***  FATSCOPY "GUIDED PATH" RESTART JOB  ***
000004 // *      GENERATED ON 02/18/15 AT 14:16:05
000005 // *
000006 //FATSCOPY EXEC PGM=FATSCOPY, REGION=0M
000007 //STEPLIB DD DSN=FATSYS.JAT4929.LOAD, DISP=SHR
000008 //AUDIT DD DSN=JAT.AUDIT.DSN,
000009 //          DISP=(,CATLG,CATLG), UNIT=SYSALLDA,
000010 //          DCB=(RECFM=FB, LRECL=80, BLKSIZE=27940),
000011 //          SPACE=(TRK, (10, 5), RLSE)
000012 //DSNTABLE DD DSN=JAT0.FATSCOPY.DSNTABLE.D2015049.T1356,
000013 //          DISP=(SHR, DELETE, KEEP)
000014 //TAPEOUT DD DSN=DUMMY1,
000015 //          DISP=(NEW, KEEP), UNIT=(DLM10MA, , DEFER),
000016 //          VOL=(, , 255)
000017 //SELRPT DD SYSOUT=*
000018 //COPYRPT DD SYSOUT=*
000019 //TAPESUMM DD SYSOUT=*
000020 //SYSPRINT DD SYSOUT=*
000021 //ERRORRPT DD SYSOUT=*
000022 //SYSABEND DD SYSOUT=*
000023 //SYSIN DD *
000024 COPY IMAGE
000025 RESTART
000026 /*
***** ***** Bottom of Data *****
  
```

Note...going to a DLm



Create the FATSCOPY job...  
with the Guide Path Panels  
Verify the migration criteria with a Simulation  
Submit a "RESTART" job using that same criteria

# Validate the Migration using FATSCOPY Audit Tools

**Audit Reports...** Plan to have FATSCOPY write audit records for an overall summary report with optional detail

```

V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                     CAN for previous EXIT to exit

-----> optional Entries <-----

If you specify an optional AUDIT data set, FATSCOPY will write statistics
to that data set for all the data sets it copies. The Audit data set can
be used to generate reports about all the data sets copied.

Use an AUDIT data set? ..... YES (Yes/No)

Make a
V4.9.29 ----- FATSCOPY Guided Path for Building Batch Jobs -----
COMMAND ==>                                     CAN for previous EXIT to exit

-----> AUDIT Data Set <-----

Audit file name .. JAT.AUDIT.DSN

Type of audit file: select one value

1  1 - New sequential data set (DISP=NEW)

    Disk unit (such as SYSALLDA) ..... SYSALLDA
    Allocation units (TRK or CYL) ..... TRK
    Primary allocation amount ..... 10
    Secondary allocation amount ..... 5

2  2 - Existing sequential data set (DISP=MOD)

3  3 - System Logger log stream

Make any needed changes, then press Enter or PF3 to continue
  
```

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# Audit Reports... Let You Verify What You Actually Did...

FATSCOPY writes audit records, to a sequential file or the system logger file, to show an overall summary and list information for each data set copied

```

JOBNAME=JATPAN      STEPNAME=FATSCOPY      FATAUDIT DETAIL REPORT
RUN DATE= 201303   RUN TIME= 145653   CPUID=CPUC

----- INPUT INFORMATION -----
DATA SET NAME      VOLSER  FSEQ  VSQ  M/V  EXPDATE  CAT  SCRDATE  VOLSER  FSEQ  VSQ  EXPDATE  CAT  TMS  RC  REAS
NEW NAME           BLOCKS                BYTES                BLOCKS                BYTES
-----
JAT.EE.FATS.FILE1  CCR009  2     1    1  NO   2019001  YES    E10037  2     1    2013304  NO   YES  0000
JAT.EE.FATS.FILE2  CCR009  2     2    1  NO   2019002  YES    E10037  2     2    2013304  NO   YES  0000
JAT.EE.FATS.FILE3  CCR009  2     3    1  NO   2019003  YES    E10037  2     3    2013304  NO   YES  0000
JAT.EE.FATS.FILE4  CCR009  2     4    1  NO   2019004  YES    E10037  2     4    2013304  NO   YES  0000
JAT.EE.FATS.FILE5  CCR009  2     5    1  NO   2019005  YES    E10037  2     5    2013304  NO   YES  0000
JAT.EE.FATS.FILE6  CCR009  2     6    1  NO   2019006  YES    E10037  2     6    2013304  NO   YES  0000
JAT.EE.FATS.FILE7  CCR009  2     7    1  NO   2019007  YES    E10037  2     7    2013304  NO   YES  0000
JAT.EE.FATS.FILE8  CCR009  0     8    1  NO   2019008  YES    E10037  0     8    2013304  NO   YES  0000
JAT.EE.FATS.FILE9  CCR009  2     9    1  NO   2019009  YES    E10037  2     9    2013304  NO   YES  0000
JAT.EE.FATS.FILE10 CCR009  2    10    1  NO   2019010  YES    E10037  2    10    2013304  NO   YES  0000
-----
      FORMAT AND PRINT FATSCOPY AUDIT REPORT  VER 4.9.28  -- INNOVATION DATA PROCESSING  11/12/2013  PAGE 54

FATAUDIT SUMMARY REPORT
TOTAL INPUT VOLUMES - 53
TOTAL OUTPUT VOLUMES - 50
TOTAL BYTES READ - 9550256056
TOTAL BYTES WRITTEN - 9550256056
TOTAL BLOCKS READ - 1463991
TOTAL BLOCKS WRITTEN - 1463991
TOTAL FILES COPIED - 486
TOTAL FAILED COPIES - 0
TOTAL JOBS EXECUTED - 46
***** Bottom of Data *****

```



## During the Migration....

### Examine, Verify, Recover and Repair with...

#### FATAR a powerful companion utility to...

- **Examine...** tape formats, labels and specific record fields
- **Verify...** questionable content or missing data
- **Recover...** copy & correct tapes found to have data checks
- **Repair...** copy a tape
  - applying user-specified modifications
  - drop data blocks that cause errors

A customer who used FATAR...  
to recover data from damaged SMF log tapes wrote...

“It was very important to have a full month’s worth of SMF data available to feed into the IBM Sub-Capacity Reporting Tool. Without that data, we could have ended up paying at least \$2500 more for November’s IBM software monthly maintenance charges.”

## After the Migration.... Erase corporate and customer data left on old tapes Use the companion utility FATS/ERASE to...

- **Securely...** erase all company confidential & personal customer data from z/OS tapes before they leave a site or before internal re-use.
- **Quickly...** erase individual 3480 tapes in under 2 minutes, 3490Es under 4 minutes and 10GB 3590s in under 20 minutes, erasing as many tapes concurrently as there are available tape drives.
- **Safely... always** erase “residual data” on any tape leaving your control, without destroying the current data on the tape.
  - “residual data” is unrelated to the most currently written data on a tape. It is data written during a previous use which is now beyond the current “end of tape marker”. It may be of a sensitive nature and should always be deleted before a tape is allowed to leave a site.



## FATSCOPY™ ...

# The ONLY DLM Tape Migration Tool kit you'll ever need!

- FATSCOPY Tape Migration to EMC DLM from...  
IBM 3480, 3490, 3590, TS1120/1130/1140, TS7700, MF-VTSM  
STK/ORACLE T10000A/B/C,VSM... CA-VTAPE.
- Fast and Efficient block by block physical IMAGECOPY to same VOLSER.
- Integrates with ASG-Zara, CA 1, CA-TLMS & IBM DFSMSrmm .
- Plan RMM and CA 1 DLM migrations with FDREPORT.
- SIMULATE to Verify what FATSCOPY will be migrating.
- AUDIT to create a record of what FATSCOPY did migrate.
- FATAR to recover damaged tapes and tapes with data checks.
- FATS/ERASE to securely and quickly erase tapes before disposal.





*Questions ?*

## Successful FATSCOPY Migrations to EMC DLm

### Under CA 1 Tape Management

- Large US retail pharmacy chain
- Large UK retailer
- Large UK bank migrating 1.3 PB of data from IBM 7740 & STK SL8500

### Under CA-TLMS Tape Management

- Large US electronic & mechanical products manufacturer
- Large US brokerage firm migrating 1 PB from STK VSM, 9840 & CA-VTAPE

### Under IBM DFSMSrmm Tape Management

- Large US grocery and foodservice supply chain provider

### Under ASG Zara Tape Management

- Large US financial holding company



*Walgreens* AT THE CORNER OF **HAPPY** & **HEALTHY**

**User experience**  
**Gloria L. Kelber**  
**Enterprise Systems Storage Management**

## Who is Walgreens?

- The **Walgreen Company (Walgreens)** is the largest drug retailing chain in the US.
- Founded in Chicago, in 1901, as of 2014, Walgreens had 8,206 drugstores.
- Walgreens services more than 8,000,000 (8 million) customers daily.
- Fortune magazine ranks Walgreens 37th overall in revenue among U.S. Companies.

## Who is Walgreens?

- Walgreens offers customers multichannel access to cost-effective pharmacy, health and wellness services and advice.
- In the 1920s, a time when retailers were seeing the beginnings of the Great Depression and alcohol was illegal as a result of Prohibition, Walgreens which sold prescription whiskey was growing.
- Today, Walgreens is taking its products and services to the four corners of the earth as part of the Retail Pharmacy USA division of Walgreens Boots Alliance, Inc., the first global pharmacy-led, health and wellbeing enterprise in the world.



## Who is Walgreens?

- Walgreens runs a z114-PO2 with 4 LPARs and CA-1 tape management.

## What problems did Walgreens face?

- A need to refresh & consolidate multiple kinds of Tape Storage technology.
- Had 2 different CA-1 TMC's controlling approximately 450,000 tape volumes.
- Desire to accomplish the tape technology refresh...
  - in the shortest period of time
  - without having to call on Business Application Units...
  - using a single LPAR with dedicated tape units
  - Replicate the DLM tape volumes to a secondary site for business continuance

## Why did these problems exist?

Walgreens had... three different incompatible types of tape technology

- 90,000 3490 tapes...
  - 80,000 3590 tapes...
  - 230,000 VTS tapes...
  - 50,000 NL z/VM tapes...
- 
- External applications data bases containing meta data about tapes they create.
    - ASG VIEW DIRECT (Mobius ) maintains its own external tape data base...
- 
- Need for a better business continuance solution

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

## How did Walgreens come to consider FATSCOPY?

- Walgreens was familiar with the reliability and speed of INNOVATION solutions
- FATSCOPY...
  - Proved to be fast, reliable and extremely easy to use.
  - Supports CA-1 & z/OS BTLS (Basic Tape Library Sys) without need for DFsms.
  - Has accompanying tools to help estimate the migration effort.

## How did Walgreens come to consider FATSCOPY?

- Has simulation tools to help validate the migration will work the way you want.
- Is recognized by ASG for its ability to make exact IMAGE copies of Mobius tapes.
  - Eliminates the need to externally update View Direct (Mobius) tape data base.

## What benefits did Walgreens come to realize?

- Biggest benefit of FATSCOPY is the ability to migrate all tapes with a single tool...
  - 90,000 3490 tapes have all been copied
  - 80,000 3590 tapes have all been copied
  - VTL tapes are currently being migrated...
- SIMULATION ensured multi-volume datasets were copied together and in sequence.
- IMAGECOPY made exact IMAGE copies of ASG Direct View Mobius tapes
  - No need to engage Business Application teams & negotiate for data base reorgs.
  - Saves aggravation and helps complete the migration in minimal time.

# What benefits did Walgreens come to realize?



- “Successfully processed our first Disaster Recovery test, using the DLm...”
- “Using the DLm for Disaster Recovery/Business Continuity saves both time & money, no need to store or ship physical tapes that may be lost or damaged in transit, since we replicate to an offsite DLm, the information is readily available and we were able to bring up our 4 Production LPARs in a very short period of time.”



*Questions ?*



# FATSCOPY Resources

Use these links to download the current FATSCOPY product documentation from the INNOVATION DATA PROCESSING web site.

- [FATS, FATAR, FATSCOPY User Manual](#)  
[http://www.fdr.com/Manuals\\_CurrentVersion/FATSCOPY\\_V49L29\\_January\\_5\\_2015.pdf](http://www.fdr.com/Manuals_CurrentVersion/FATSCOPY_V49L29_January_5_2015.pdf)
- [FATSCOPY How-To-Build-A-Job Guide](#)  
[http://www.fdr.com/Manuals\\_CurrentVersion/FATSCOPY\\_How-To-Guide\\_V49L29\\_January\\_5\\_2015.pdf](http://www.fdr.com/Manuals_CurrentVersion/FATSCOPY_How-To-Guide_V49L29_January_5_2015.pdf)
- [FATSCOPY Quick Start Guide](#)  
[http://www.fdr.com/Manuals\\_CurrentVersion/FATSCOPY\\_Quick\\_Start\\_Guide\\_V49L29\\_January\\_5\\_2015.pdf](http://www.fdr.com/Manuals_CurrentVersion/FATSCOPY_Quick_Start_Guide_V49L29_January_5_2015.pdf)
- [FATSCOPY Concepts & Facilities Guide](#)
- [FATSCOPY Product Demo](#)

And the most important resource: US!  
FATSCOPY support promptly provided by the product developers.



*Thank you!*