



COMPUTER CREDIT, INC.



**THE
INTEGRATED
COLLECTION
STRATEGY.**

**BSI Opti-Tape at CCI
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BSI OPTI-TAPE™ at CCI



COMPUTER CREDIT, INC.



BSI OPTI-TAPE

- Virtual tape using VSAM ESDS datasets
- Virtual tape drives (3422, 3480 or 3490E*)
- Works with *most* tape managers
- Robotic silo if used with tape manager
- Automation exits provided
- Supports standard and unlabeled tapes
- New feature! remote tape server on Linux





Why we needed it...

- Unattended DB2/VSE table reorgs
- Unattended VSAM dataset reorgs
- FTP upload to temporary tape
- Minimize impact on operations when testing programs using tape
 - Keeps the operator happy :-)





What it gave us...

- Ability to schedule DB2/VSE table reorgs without an operator or “real” tape
- Ability to schedule VSAM dataset reorgs without an operator or “real” tape
- Faster processing for above tasks
 - VSAM access faster than “real” tape
 - LOAD/REWIND/UNLOAD is instantaneous
- Easier to view/debug files





Installation...

- Install in any VSE sub-library
 - Requires about 1,700 library blocks
- Define virtual tape devices to VSE
 - ADD 580:583,3422
- Define a large*, dedicated VSAM catalog
 - Our catalog: two full 3390-2 volumes
 - Easy to add space later





Installation (con't)...

- Define model ESDS
 - Determines default attributes for all virtual tape datasets
 - Large CI and record size (block)
- Add entries to standard labels
- Copy OT phases to IJSYSRS for job exits
- Allocate partition (fixed or dynamic, min 4MB)
- Customize startup and shutdown



Define Catalog, Space and Model...

```
// EXEC IDCAMS,SIZE=AUTO
/* define the user catalog */
DEFINE UCAT      -
      ( NAME (OPTI.TAPE.USER.CATALOG) -
        CYL (1) -
        VOL (DSK704)      )
/* define vsam space in cat dedicated to each volume */
DEFINE SPACE (VOL (DSK704) DEDICATE) -
CAT      (OPTI.TAPE.USER.CATALOG)
DEFINE SPACE (VOL (DSK705) DEDICATE) -
CAT      (OPTI.TAPE.USER.CATALOG)
/*
// DLBL IJSYSUC, 'OPTI.TAPE.USER.CATALOG', ,VSAM
// EXEC IDCAMS,SIZE=IDCAMS
DELETE (OPTI.TAPE.MODEL.ESDS) CL PURGE
DEFINE CLUSTER -
  (NAME (OPTI.TAPE.MODEL.ESDS) -
   VOLUMES (DSK704 DSK705) OWNER (OPTITAPE) -
   SPEED -
   CISZ (32768) RECSZ (32761 32761) RECORDS (40 20) -
   NOALLOCATION NONINDEXED SHR (1)) -
  DATA (NAME (OPTI.TAPE.MODEL.ESDS.DATA)) -
  CAT (OPTI.TAPE.USER.CATALOG)
/*
```



Add Standard Labels...

```
/. OPTITAPE required labels  
// DLBL BSOTCAT, 'OPTI.TAPE.USER.CATALOG', 1999/366, VSAM  
// DLBL BSOTDSN, 'OPTI.TAPE.USER.CATALOG', 1999/366, VSAM, CAT=BSOTCAT
```



Customize startup JCL...

```
// LIBDEF *,SEARCH=(VENDLIB.OPTITAPE)
// EXEC BSOTMAIN,SIZE=BSOTMAIN
*      OPTI-TAPE STARTUP COMMANDS
COMPANY COMPUTER CREDIT INC.
LICENSE OPTI-TAPE ** ***** *****
*
DASD 3390
BUFSP 780
ALLOC 25 25
*
COMPRESS 0
MANAGER NONE
CAPACITY 200
SPACE
QUERY *
POOL * 000000 999999
EOJRUN ENABLE
*
OPTI-TAPE ENABLE
*
. . . . .
```

Customize startup JCL (con't)

```
. . . . .  
ATTACH 0583  
ATTACH 0582  
ATTACH 0581  
ATTACH 0580  
*  
READY 0580  
READY 0581  
READY 0582  
READY 0583  
*  
/* End of startup commands  
*  
OPTI-TAPE DISABLE  
SPACE  
QUERY *  
/* End of shutdown commands  
/&
```



Console output from startup...

```
T1 0045 // JOB OPTITAPE
        DATE 12/16/2003, CLOCK 05/57/53
T1 0045 * OPTITAPE SUBMITTED 12/16/2003 AT 05:55:52 BY LT01/MNR
T1 0045 BSOT000I INITIATED  BSOTMAIN Ver 2.2X 01/09/03 17.04      EP=00700078
T1 0045 BSOT002I OPTI-TAPE VERSION 2.2X
T1 0045 BSOT003I COPYRIGHT (C) 1997-2003 BARNARD SOFTWARE, INC.
T1 0045 BSOT071I IDCAMS PHASES LOADED      27 SIZE  212K BYTES
T1 0045 BSOT004I CB=OTLA A=0071D000 L=00000638
T1 0045 BSOT004I CB=OTGA A=0038B9D0 L=00000290
T1 0045 BSOT004I CB=COMR A=003D74F0 L=00000108
T1 0045 BSOT019I VSE 6.50 MODE 31-BIT
T1 0045 BSOT036I BSOTCAT OPTI.TAPE.USER.CATALOG
T1 0045 BSOT004I CB=OTVL A=00A5F080 L=00001000
T1 0132 BSOT000I INITIATED  BSOTXCMD Ver 2.2X 10/17/02 13.46      EP=00A61000
T1 0132 BSOT027I LICENSED TO COMPUTER CREDIT INC.
T1 0132 BSOT066I COMPRESSION DISABLED LEVEL      0
T1 0132 BSOT048I TAPE MANAGER: NONE
T1 0132 BSOT053I VIRTUAL TAPE VOLUME CAPACITY    200M
T1 0045 BSOT031I INITIALIZATION COMPLETE
T1 0132 BSOT059I TAPE SPACE  33358 USED    4470      13% FREE  28888      86%
T1 0132 BSOT062I POOL *   BEGIN=000000 END=999999
T1 0132 BSOT072I END-OF-JOB TAPE RUN: ENABLE
T1 0132 BSOT014I BSOTSVC0 LOADED A=13E73BD0 L=00010430
T1 0132 BSOT018I SUPSVC00 LOCATED A=0001A576
T1 0132 BSOT018I IJBPATCH LOCATED A=0000728E
```

.

Console output from startup (con't)

```
. . . . .
T1 0132 BSOT021I VER 0000728E 000000000000000000000000
T1 0132 BSOT021I REP 0000728E 05F058F0F0060CEF93E73BD0
T1 0132 BSOT021I VER 0001A5C4 5A2008EC582020009520047B
T1 0132 BSOT021I REP 0001A5C4 58700200457700009520047B
T1 0132 BSOT000I INITIATED BSOTSVCO Ver 2.2X 06/19/02 11.48 EP=93E73BD0
T1 0132 BSOT028I OPTI-TAPE ENABLED
T1 0133 BSOT000I INITIATED BSOTTSRV Ver 2.2X 06/24/02 18.54 EP=00A7C000
T1 0133 BSOT023I 0583 ATTACHED (TASK ID 0085)
T1 0133 BSOT004I CB=OTTD A=009A3000 L=00010834
T1 0134 BSOT000I INITIATED BSOTTSRV Ver 2.2X 06/24/02 18.54 EP=00A81400
T1 0134 BSOT023I 0582 ATTACHED (TASK ID 0086)
T1 0134 BSOT004I CB=OTTD A=00981000 L=00010834
T1 0135 BSOT000I INITIATED BSOTTSRV Ver 2.2X 06/24/02 18.54 EP=00AAC000
T1 0135 BSOT023I 0581 ATTACHED (TASK ID 0087)
T1 0135 BSOT004I CB=OTTD A=0095F000 L=00010834
T1 0136 BSOT000I INITIATED BSOTTSRV Ver 2.2X 06/24/02 18.54 EP=00AD7000
T1 0136 BSOT023I 0580 ATTACHED (TASK ID 0088)
T1 0136 BSOT004I CB=OTTD A=0093D000 L=00010834
```



12/16/2003 Static 12 Dynamic 008 Page_I0s 21 06:09:45

X	Pty	Id	Jobname	Stepname	Procname	Alloc	Size	Cputime	Duration	Siocount
1	F1		POWERCCI	POWERCCI	\$1JCLCCI	12M	1260K	00:12:49	20:46:45	126119
2	F3		VTAMSTR	ISTINCVT	-	15M	232K	00:00:31	20:45:35	2380
3	V1		FTPSRVR	BSTTFTPS	-	30M	184K	00:00:00	01:59:37	189
4	I1		TCPIP	BSTTINET	-	30M	36K	00:13:54	20:45:35	292242
5	S1		DB2PROD	ARISQLDS	-	32M	1532K	02:35:15	20:45:15	2819108
6	FB		SECSERV	BSTPSTS	\$BJCLCCI	512K	256K	00:00:01	20:46:46	610
7	E1		TN3270E	BSTTVNET	TN3270E	30M	244K	00:01:40	20:45:17	1881
8	F2		PRODCICS	DFHSIP	-	50M	4K	00:01:01	02:09:22	58861
9	P1		PHOENIX	PHNXSCP	-	16M	48K	00:00:05	01:27:20	3099
10	D1		VSE2PDF	TEIPINIT	-	40M	40K	00:00:00	01:59:35	215
11	FA		MBXMAIN	STMAIN	-	6M	512K	00:00:40	19:37:33	70835
12	Q1		DB2TEST	ARISQLDS	-	32M	1532K	00:31:26	20:43:56	385367
13	F6		TESTCICS	DFHSIP	-	50M	4K	00:00:44	02:08:11	66801
14	T1		OPTITAPE	BSOTMAIN	-	8M	108K	00:00:00	00:11:51	968

Page 001 of 001 7 Bwd 8 Fwd 15 Reset S Select C Cancel I I/O L LUB F B XXX

Attn

Clear

PF1

PF3

PF5

PF6

PF7

PF8

PF10

PF11

PF13

S2

Ready (1)

192.168.1.11

TN3270

06:13:06 Tue Dec 16

NUM

00:16:01

03,005

Status after startup...

volume 58

AR	0015	CUU	CODE	DEV.-TYP	VOLID	USAGE	SHARED	STATUS	CAPACITY
AR	0015	580	53D3	3422-B1		UNUSED			
AR	0015	581	53D3	3422-B1		UNUSED			
AR	0015	582	53D3	3422-B1		UNUSED			
AR	0015	583	53D3	3422-B1	000001	UNUSED			

msg optitape,d=status

AR	0015	1I40I	READY						
T1	0045	BSOT010I	STATUS						
T1	0132	BSOT045I	UNIT	DEVICE	VOLSER	DATASET		STATUS	
T1	0132	BSOT046I	0583	3422				OTSL.V000001.S0001.DBS	
T1	0132	BSOT046I	0582	3422				AVAILABLE	
T1	0132	BSOT046I	0581	3422				AVAILABLE	
T1	0132	BSOT046I	0580	3422				AVAILABLE	
T1	0132	BSOT011I	COMMAND	PROCESSING	COMPLETE				

Sample batch job

```
* $$ JOB JNM=REOCMS20,CLASS=J
* $$ LST DISP=H,CLASS=B
// JOB REOCMS20          UNLOAD/RELOAD DBSPACE CMS20
/. UNLOAD
// TLBL DBSP,'DBSP.CMS20'
// ASSGN SYS005,OPTITAPE
* unload CMS20 to tape...
// LIBDEF PROC,SEARCH=PRD2.DB2730
// EXEC PROC=SETDB,DB=PROD      <-- PROD OR TEST
// EXEC ARIDBS,SIZE=AUTO
  SET ISOL(CS);
  CONNECT SQLDBA      IDENTIFIED BY SQLDBAPW ;
  SET AUTOCOMMIT(ON);
  LOCK DBSPACE PUBLIC.CMS20 IN EXCLUSIVE MODE;
  UNLOAD DBSPACE (PUBLIC.CMS20)
    OUTFILE (DBSP BLKSZ(24720) PDEV(TAPE) );
/*
// MTC RUN,SYS005
/*
. . . . .
```



Sample batch job (con't)...

```
. . . . .  
/. DBSPACE  
// LIBDEF PROC,SEARCH=PRD2.DB2730  
// EXEC PROC=SETDB,DB=PROD      <-- PROD OR TEST  
// LIBDEF SOURCE,SEARCH=CCILIB.SQLWORK  
* drop/re-acquire the dbspace...  
// EXEC ARIDBS,SIZE=AUTO  
  SET ISOL(CS);  
  CONNECT SQLDBA  IDENTIFIED BY SQLDBAPW ;  
  SET AUTOCOMMIT(ON);  
  DROP DBSPACE "PUBLIC".CMS20;  
  ACQUIRE PUBLIC DBSPACE NAMED CMS20  
    (PAGES=1024,STORPOOL=4);  
/*  
/. CREATE  
// LIBDEF PROC,SEARCH=PRD2.DB2730  
// EXEC PROC=SETDB,DB=PROD      <-- PROD OR TEST  
// LIBDEF SOURCE,SEARCH=CCILIB.SQLWORK  
* create the table in the dbspace...  
// EXEC ARIDBS,SIZE=AUTO  
READ MEMBER DFNCMS20  
/*  
. . . . .
```



Sample batch job (con't)...

```
. . . . .  
/. RELOAD  
// TLBL DBSP,'DBSP.CMS20'  
// ASSGN SYS004,OPTITAPE  
* reload CMS20 from the tape...  
// LIBDEF PROC,SEARCH=PRD2.DB2730  
// EXEC PROC=SETDB,DB=PROD      <-- PROD OR TEST  
// EXEC ARIDBS,SIZE=AUTO  
   SET ISOL(CS);  
   SET AUTOCOMMIT(ON);  
   SET UPDATE STATISTICS(OFF);  
   CONNECT SQLDBA IDENTIFIED BY SQLDBAPW ;  
   LOCK DBSPACE PUBLIC.CMS20 IN EXCLUSIVE MODE;  
   RELOAD DBSPACE (PUBLIC.CMS20) PURGE COMMITCOUNT(100)  
       INFILE (DBSP BLKSZ(24720) PDEV(TAPE) NOREWIND );  
/*  
// MTC RUN,SYS004  
/&  
* $$ EOJ
```



Console output from sample job...

```
F4 0004 // JOB REOCMS20      UNLOAD/RELOAD DBSPACE CMS20
        DATE 12/16/2003, CLOCK 06/52/05
F4 0004 BSOT054I SYS005 HAS BEEN ASSIGNED TO 583
F4 0004 * unload CMS20 to tape...

T1 0133 BSOT038I ALLOCATING NEW OTSL.V000001.S0001.DBSP.CMS20
T1 0133 BSOT055I 0583 SVC=      32 CCW=      41 GET=      10 PUT=      3 IO=      4
T1 0133 BSOT056I 0583 TBR=     400 TBW=   41741 RATE   42141/SEC

F4 0004 * drop/re-acquire the dbspace...
F4 0004 * create the table in the dbspace...
F4 0004 BSOT054I SYS004 HAS BEEN ASSIGNED TO 582
F4 0004 * reload CMS20 from the tape...

T1 0134 BSOT038I ALLOCATING OLD OTSL.V000001.S0001.DBSP.CMS20
T1 0134 BSOT055I 0582 SVC=      27 CCW=      30 GET=       9 PUT=      0 IO=      2
T1 0134 BSOT056I 0582 TBR=   41821 TBW=          0 RATE   41821/SEC

F4 0004 EOJ REOCMS20  MAX.RETURN CODE=0000
        DATE 12/16/2003, CLOCK 06/52/18, DURATION   00/00/13
```

The ESDS dataset generated...

DITTO/ESA for VSE

SCS - Catalog Services

Line 12 of 23

Catalog ID OPTI.TAPE.USER.CATALOG

Object ALL

--- Data Set Name --- sorted by NAME	---	Entry	Prim	M	Created	Expires
1...5...10...15...20...25...30...35...40....		type	volume	V	YYYY.DDD	YYYY.DDD
OTSL.V000001.S0001.DBSP.CMS20		ESDS			2003.350	
T972C1A4.VSAMDSET.DFD03350.TBA7A7E7.T972C1A4		DATA	DSK704		2003.350	

--- Data Set Name --- sorted by NAME	---	Shr	Ext	-----	Kilobytes-----	
1...5...10...15...20...25...30...35...40....		opt	nbr	Hi-Alloc	Hi-Used	Free-Spc
OTSL.V000001.S0001.DBSP.CMS20						
T972C1A4.VSAMDSET.DFD03350.TBA7A7E7.T972C1		1,3	1	25740	52	25688



What OPTI-TAPE did under the covers...

IDCAMS SYSTEM SERVICES

TIME: 06:52:10

```
DELETE (OTSL.V000001.S0001.DBSP.CMS20          ) -
CLUSTER PURGE                                  -
CATALOG(OPTI.TAPE.USER.CATALOG                 )
IDC3012I ENTRY OTSL.V000001.S0001.DBSP.CMS20 NOT FOUND
IDC3009I ** VSAM CATALOG RETURN CODE IS 8 - REASON CODE IS IGG0CLCG-6
IDC0551I ** ENTRY OTSL.V000001.S0001.DBSP.CMS20 NOT DELETED
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 8

SET LASTCC=0

SET MAXCC=0

DEFINE CLUSTER                                  -
  (NAME (OTSL.V000001.S0001.DBSP.CMS20        ) -
  CISZ (26624  )                                -
  RECSZ (26617 26617  )                        -
  RECORDS (00985 00985  )                      -
  SUBAL MODEL (OPTI.TAPE.MODEL.ESDS           -
  OPTI.TAPE.USER.CATALOG                      )) -
  CATALOG (OPTI.TAPE.USER.CATALOG             )
IDC0512I NAME GENERATED-(D) T972C1A4.VSAMDSET.DFD03350.TBA7A7E7.T972C1A4
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 0
```





OPTI-TAPE utilities...

- Batch tape mount
- Batch server command
- Tape capacity
- Catalog service
- Silo purge
- Purge by dataset age (REXX proc)
- Import/Export/Deport
- Remote tape server - Linux





Remote tape server on Linux

- OPTI-TAPE/VSE communicates w/server program on Linux server via TCP/IP
- Creates virtual tapes in Linux disk area
- The remote virtual tapes are extension of the OPTI-TAPE catalog in VSE
- Excellent means to create remote backups for Disaster Recovery
- Not yet in use -- but soon (I hope)!



Query showing remote tapes...

```
msg optitape,d=query *
AR 0015 1I40I  READY
F7 0007 BSOT010I QUERY *
F7 0109 BSOT065I STATUS      VIRTUAL TAPE FILE NAME
F7 0109 BSOT064I             OTNL.TT233
F7 0109 BSOT064I             OTNL.TT232
F7 0109 BSOT064I             OTNL.TT231
F7 0109 BSOT064I             OTNL.TT230
F7 0109 BSOT064I             OTNL.TT229
F7 0109 BSOT064I             OTNL.TT228
F7 0109 BSOT064I             OTNL.TT227
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.SMB001
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.BSI002
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.V26WK2
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.V26PAG
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.BSI001
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.SYSWK1
F7 0109 BSOT064I REMOTE      OTSL.V000001.S0001.VOLUME.DOSRES
F7 0109 BSOT064I REMOTE      OTSL.V000002.S0001.ITP2.FILE
F7 0109 BSOT064I REMOTE      OTSL.V000003.S0001.ITP3.FILE
F7 0109 BSOT064I REMOTE      OTSL.V000004.S0001.ITP4.FILE
F7 0109 BSOT011I COMMAND PROCESSING COMPLETE
```



Linux startup...

```
./bsottrsrv -d nnn -p nnn -w directory
```

The `-d` command line parameter is used to set the debug level. Debug level 0 is the default.

The `-p` command line parameter is used to set the listen port. 1806 is the default.

The `-w` command line parameter is used to set the tape directory. The default is the same directory as the BSOTTSRV program was executed from.

The BSOTTSRV program can be GUNZIPed and stored in a Linux directory. I have tested this application using the Linux 2.4 kernel.



Sample job using remote tape...

```
/*  
// SETPARM TAPEFIL='IP'  
// SETPARM TSRV='IP'  
/*  
// ASSGN SYS000,OPTITAPE  
/*  
// TLBL TAPEFIL,'ITP2.FILE',,2  
// EXEC BSOTITP2,SIZE=BSOTITP2  
/*  
// MTC RUN,SYS000  
/*  
// TLBL TAPEFIL,'ITP2.FILE',,2  
// EXEC BSOTRTP2,SIZE=BSOTRTP2  
/*
```





In Summary...

- Easy to use
- Very efficient
- Uses very little CPU
- Don't even know it's there
- Stable! No maintenance for several years
- A DBA's best friend!





For More Information...

- OPTI-TAPE product page:
 - <http://www.bsiopti.com/tape.html>
- OPTI-TAPE fact sheet:
 - <http://www.bsiopti.com/otinfo.html>
- Or contact me:
 - mrosinger@cciws.com
 - 1-336-761-1524



COMPUTER CREDIT, INC.



Flex-ES™

FakeTape usage at CCI



COMPUTER CREDIT, INC.



Flex-ES FakeTape

- Virtual tape files on Unix disk space
 - Local (internal) disk
 - Remote (file system on other server)
- Virtual tape drives defined as 3420, 3422, 3430, 3480, 3490 or 3490E
 - ADD 560:563,3422
- Full set of stand alone utilities
- Only uses disk space it needs (minimum for tape marks and labels)





Flex-ES FakeTape (con't)

- Useful for...
 - Fast scratch tapes
 - Backups (Fake to disk then archive to physical media)
 - Exchange with other Flex-ES systems
 - Any app where physical tape media not necessary
- Very fast!
- Limited automation - but getting better!





My experience with FakeTape...

- Emergency LIBR stand alone IPL tape for DR
 - Copied to CD with other important files
- POFFLOAD of large queue entries for support
- Used *scsitfake* utility during DR test - saved the DR test from being a *disaster!*



Job to create standalone util tape...

```
* $$ JOB JNM=SABKUP,CLASS=J,DISP=D
* $$ LST CLASS=B,DISP=H
// JOB SABKUP    CREATE LIBR STAND-ALONE UTIL TO FAKETAPE ON UNIX
// ON $RC>0 GOTO ERROR
// LIBDEF *,SEARCH=(VENDLIB.IPTOOLS,VENDLIB.IPCONFIG)
// OPTION LOG,PARTDUMP,NOSYSDUMP,SADUMP=1
// LIBDEF PHASE,SEARCH=VENDLIB.IPTOOLS
// LIBDEF SOURCE,SEARCH=(VENDLIB.IPCONFIG,VENDLIB.IPTOOLS)
// EXEC BSTTREXC,SIZE=BSTTREXC
ID 00
OPEN mfunix
USER *****
PASS *****
CODE faketape/StandAloneUtilTape
EXEC MountSAUtilTape
QUIT
/*
// EXEC LIBR,SIZE=256K
    BACKUP RESTORE=STANDALONE,TAPE=560
/*
// MTC RUN,560
// GOTO END
/. ERROR
// PAUSE <<< Error in job - check SYSLST >>>
/. END
/&
* $$ EOJ
```

Unix script executed...

```
#  
# script to be executed from VSE by the BSI Remote Execution Client  
# mount a FakeTape on drive 560 then verify the mount  
#  
echo 'mount 560 /faketape/StandAloneUtilTape' |  
    /usr/flexes/bin/flexescli localhost prodvse  
  
echo 'd devstate 560' | /usr/flexes/bin/flexescli localhost prodvse
```



Job output...

```
// EXEC BSTTREXC,SIZE=BSTTREXC
04-Nov-2003 08:39:00 25 BSTT000I INITIATED BSTTREXC Ver 2.31 06/27/03 17.47
04-Nov-2003 08:39:00 25 BSTT003I COPYRIGHT (C) 1998-2003 BARNARD SOFTWARE, INC.
04-Nov-2003 08:39:00 25 BSTT002I TCP/IP-TOOLS BUILD 2.32
04-Nov-2003 08:39:00 25 BSTT004I CB=TTLA A=00642000 L=000013FC
04-Nov-2003 08:39:00 25 BSTT019I VSE 6.50 MODE 31-BIT
04-Nov-2003 08:39:09 89 BSTT000I INITIATED BSTTXRXC Ver 2.31 06/27/03 17.45
04-Nov-2003 08:39:09 89 BSTT020I CPU NATIVE ID=012764 MODEL=7490 PART=F4
04-Nov-2003 08:39:09 89 BSTT027I LICENSED TO COMPUTER CREDIT, INC.
04-Nov-2003 08:39:09 89 BSTT028I TCP/IP-TOOLS ENABLED
04-Nov-2003 08:39:09 89 BSTT045I TCP/IP ID SET TO 00
04-Nov-2003 08:39:09 89 BSTT015I CONNECTING TO 192. 168. 1. 10 PORT 512
04-Nov-2003 08:39:09 89 BSTT018I PORT 512 OPENED RC= 4
04-Nov-2003 08:39:09 89 BSTT018I PORT 512 OPENED RC= 0
04-Nov-2003 08:39:09 89 BSTT010I USER flexes
04-Nov-2003 08:39:09 89 BSTT010I PASS
04-Nov-2003 08:39:09 89 BSTT010I CODE faketape/StandAloneUtilTape
04-Nov-2003 08:39:09 89 BSTT010I EXEC MountSAUtilTape
```

```
Filename: /faketape/StandAloneUtilTape State: OPEN, READY, READ-WRITE, BEGINNING-
OF-TAPE
```

```
04-Nov-2003 08:39:10 89 BSTT018I PORT 512 CLOSED RC= 0
04-Nov-2003 08:39:10 89 BSTT001I TERMINATED BSTTXRXC
04-Nov-2003 08:39:10 25 BSTT001I TERMINATED BSTTREXC
```

```
1S55I LAST RETURN CODE WAS 0000
```

```
. . . . .
```



Job output (con't)...

.
// EXEC LIBR,SIZE=256K

BACKUP RESTORE=STANDALONE,TAPE=560

L084I BACKUP OF STAND-ALONE PROGRAMS IS IN PROGRESS

L075I BACKUP COMPLETE

L113I RETURN CODE OF BACKUP IS 0

1S55I LAST RETURN CODE WAS 0000

// MTC RUN,560

EOJ SABKUP MAX.RETURN CODE=0000

\$ ls -l

total 25854

-rw-rw-r--	1 flexes	flexes	4542969	Nov 4 08:39	StandAloneUtilTape
-rw-r--r--	1 root	sys	468	May 30 2003	cci.000347084a7c.key
-rw-r--r--	1 root	sys	468	May 30 2003	cci.6.2.9.key
-rw-r--r--	1 root	sys	3860480	May 30 2003	flexes.5.9.7.tar
-rw-r--r--	1 root	sys	4823040	May 30 2003	flexes.6.2.9.tar



Automation with FakeTape

- Two methods that I am aware of...
 - Remote execution client (VSE) executes shell script (Unix)
 - BSI's BSIMOUNT utility (VSE)
 - Only with Flex-ES 6.1.15 or higher
 - Must have `devopt 'allowmountccws'` specified
- Others?



BSIMOUNT example...

```
* $$ JOB JNM=BSIMOUNT,CLASS=X,DISP=D
* $$ LST CLASS=Z,DISP=H
// JOB BSIMOUNT      USAGE EXAMPLES FOR BSIMOUNT W/FLEX-ES FAKETAPE
// OPTION LOG
/* *****
/* RETURN CODES:
/* 4 - NO FILE MOUNTED (QUERY)
/* 8 - ERROR (ANY FUNCTION)
/* *****
* BSIMOUNT using the MOUNT function
// LIBDEF PHASE,SEARCH=VENDLIB.BSIMISC
// ASSGN SYS000,560
// EXEC BSIMOUNT,SIZE=BSIMOUNT,PARM='/faketape/testtape.dat'
/*
// PAUSE CHECK 560...
* BSIMOUNT using the QUERY function
// LIBDEF PHASE,SEARCH=VENDLIB.BSIMISC
// ASSGN SYS000,560
// EXEC BSIMOUNT,SIZE=BSIMOUNT
// PAUSE CHECK 560...
/*
* BSIMOUNT using the DISMOUNT function
// LIBDEF PHASE,SEARCH=VENDLIB.BSIMISC
// ASSGN SYS000,560
// EXEC BSIMOUNT,SIZE=BSIMOUNT,PARM='OFFLINE'
/*
/&
* $$ EOJ
```



BSIMOUNT output...

```
X1 0055 // JOB BSIMOUNT      USAGE EXAMPLES FOR BSIMOUNT W/FLEX-ES FAKETAPE
      DATE 01/13/2004, CLOCK 09/36/51
X1 0055 * VNDR:BSIMISC.BSIMOUNT RUN ON 01/13/2004 AT 09:36:50 BY LT06/MNR
X1 0055 * BSIMOUNT using the MOUNT function
X1 0055 BSUT000I INITIATED  BSIMOUNT Ver 1.04 04/25/02 09.10      EP=00680078
X1 0055 BSUT002I P/390 AND FLEX-ES VIRTUAL TAPE MOUNT AND QUERY
X1 0055 BSUT003I COPYRIGHT (C) 1996-2002 BARNARD SOFTWARE, INC.
X1 0055 BSUT004I MOUNT: /faketape/testtape.dat
X1 0055 BSUT001I TERMINATED BSIMOUNT
X1-0055 // PAUSE CHECK 560...
```

```
flexes> d devstate 560
```

```
Filename: /faketape/testtape.dat State: OPEN, READY, READ-WRITE, BEGINNING-OF-TAPE
Options: allowmountccws,scsitimeout=420,createmode=664
```



BSIMOUNT output (con't)...

```
X1 0055 * BSIMOUNT using the DISMOUNT function
X1 0055 BSUT000I INITIATED BSIMOUNT Ver 1.04 04/25/02 09.10 EP=00680078
X1 0055 BSUT002I P/390 AND FLEX-ES VIRTUAL TAPE MOUNT AND QUERY
X1 0055 BSUT003I COPYRIGHT (C) 1996-2002 BARNARD SOFTWARE, INC.
X1 0055 BSUT004I MOUNT: OFFLINE
X1 0055 BSUT001I TERMINATED BSIMOUNT
X1 0055 EOJ BSIMOUNT MAX.RETURN CODE=0000
      DATE 01/13/2004, CLOCK 09/37/38, DURATION 00/00/46
```

```
flexes> d devstate 560
```

```
Filename: OFFLINE State: NOT OPEN, NOT READY
```

```
Options: allowmountccws,scsitimeout=420,createmode=664
```



For More Information...

- Fundamental Software home page:
 - <http://www.funsoft.com/>
- Flex-ES documentation online:
 - <http://support.funsoft.com/flexman/index.html>
- Or contact me:
 - mrosinger@cciws.com
 - 1-800-942-2995



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And on that note...

The problem is at your end...

One of Microsoft's finest technicians was drafted and sent to boot camp. At the rifle range, he was given some instruction, a rifle, and bullets. He fired several shots at the target. The report came from the target area that all his shots had completely missed the target.

The technician looked at his rifle, and then at the target. He looked at the rifle again, and then at the target again. He put his finger over the end of the rifle barrel and squeezed the trigger with his other hand. The end of his finger was blown off, whereupon he yelled toward the target area, "It's leaving here just fine, the trouble must be at your end!"