

Benefits of Unifying Enterprise Storage, Management and Replication for Mainframe DASD, Virtual Tape, and Open Systems Data

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Test link: www.SHARE.org

During this session, customer use cases will cover experiences implementing solutions that unify enterprise, modular, and cloud storage which share the same remote replication software for all solutions.

This approach can offer the ultimate strategy for enterprise-wide data protection, business continuity, and disaster recovery.

Data Transformation Challenges

- Metadata
- Packed Decimal Conversion
- EBCDIC-to-ASCII
- CRLF Terminators
- Size of the Data
- Data Security



Microsoft®
Server



Traditional Data Archival

- Short-term Storage
 - DASD
 - Virtual Tape
- Long-term Storage
 - Virtual/Physical Tape
- Security Challenges
 - Protecting Data at Rest
 - Mainframe DLP



Storage Alternatives

- Short-term Storage
 - SAN
 - High speed access
 - Transparent to users
 - Lower Storage Costs

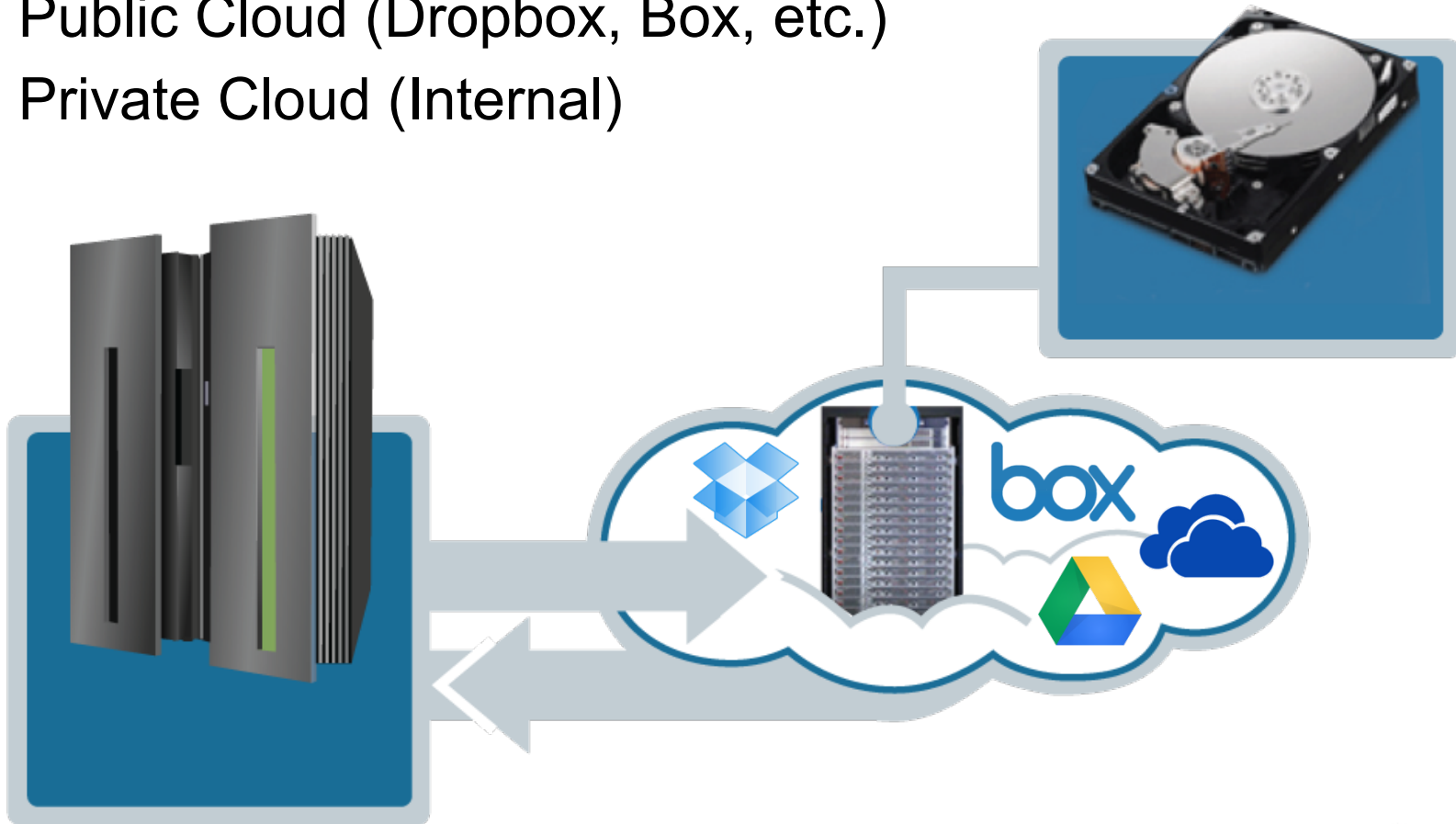


- Long-term Storage
 - NAS
 - Advanced file server
 - Low cost to implement
 - Interoperable



Cloud Storage Alternatives

- Public Cloud (Dropbox, Box, etc.)
- Private Cloud (Internal)

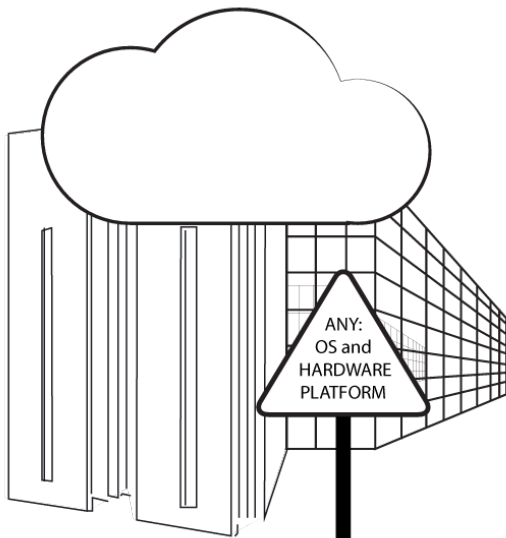


Benefits of Open System & Cloud Storage

- Reduced storage expense
 - SAN/NAS devices cheaper than traditional DASD
 - Reduce data center facility expenses (i.e. electric, space)
 - Remove dependency on out dated hardware
- Easily accessible from multiple operating environments
 - Mainframe, zBX, Power, Distributed and mobile devices
- Flexible file exchange
 - Ease of sharing files internally and externally
- Efficiency for your network
 - Centralized data repository
 - Provides quick access and can minimize network traffic

File Sync & Sharing from z/OS ...

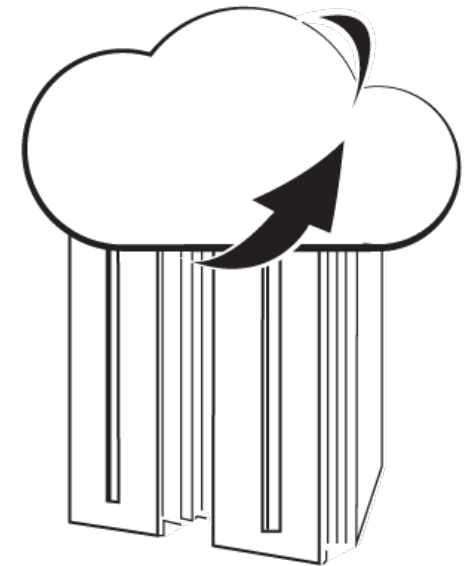
A thought experiment



Cross Platform

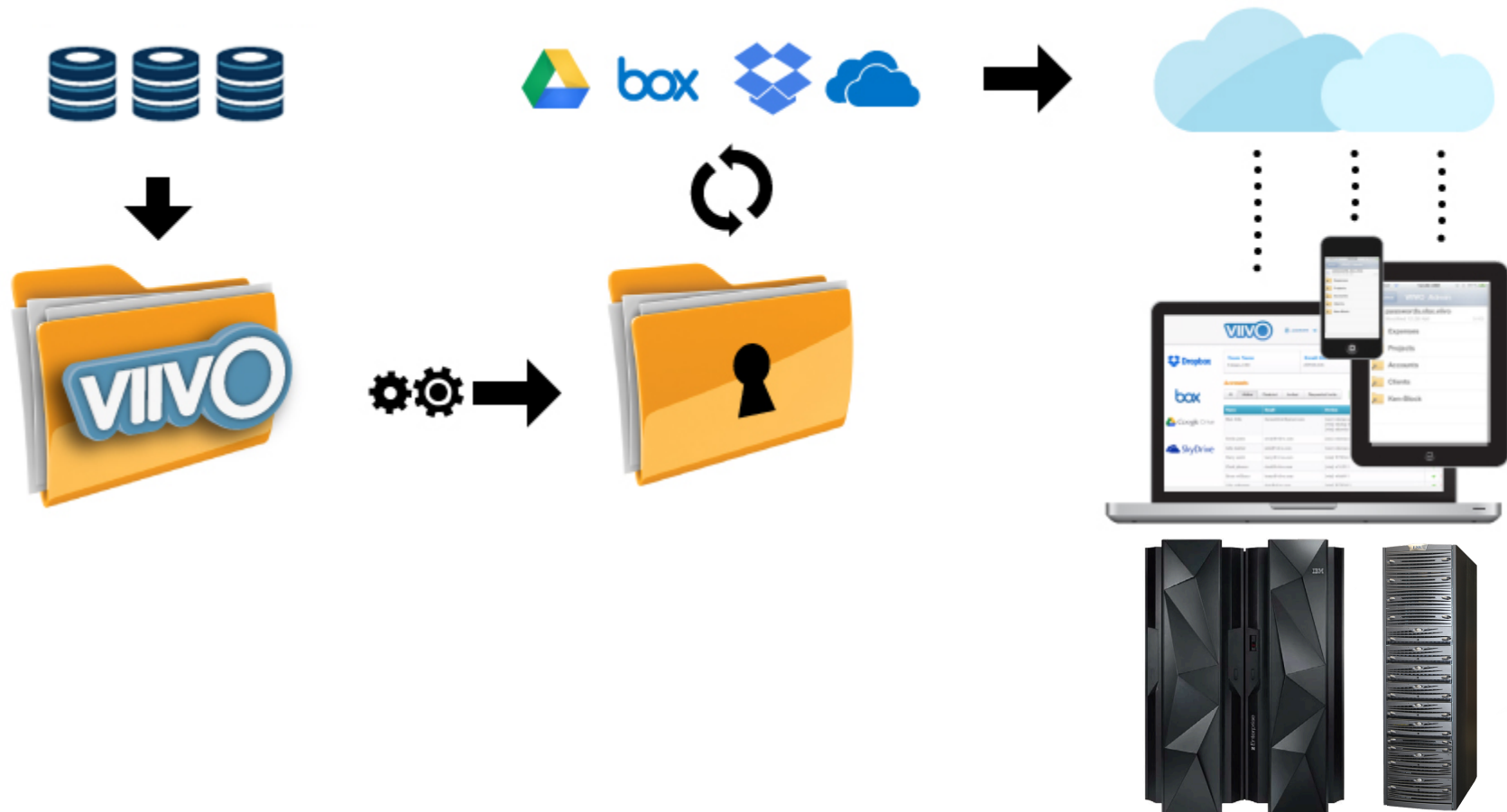


Flexibility



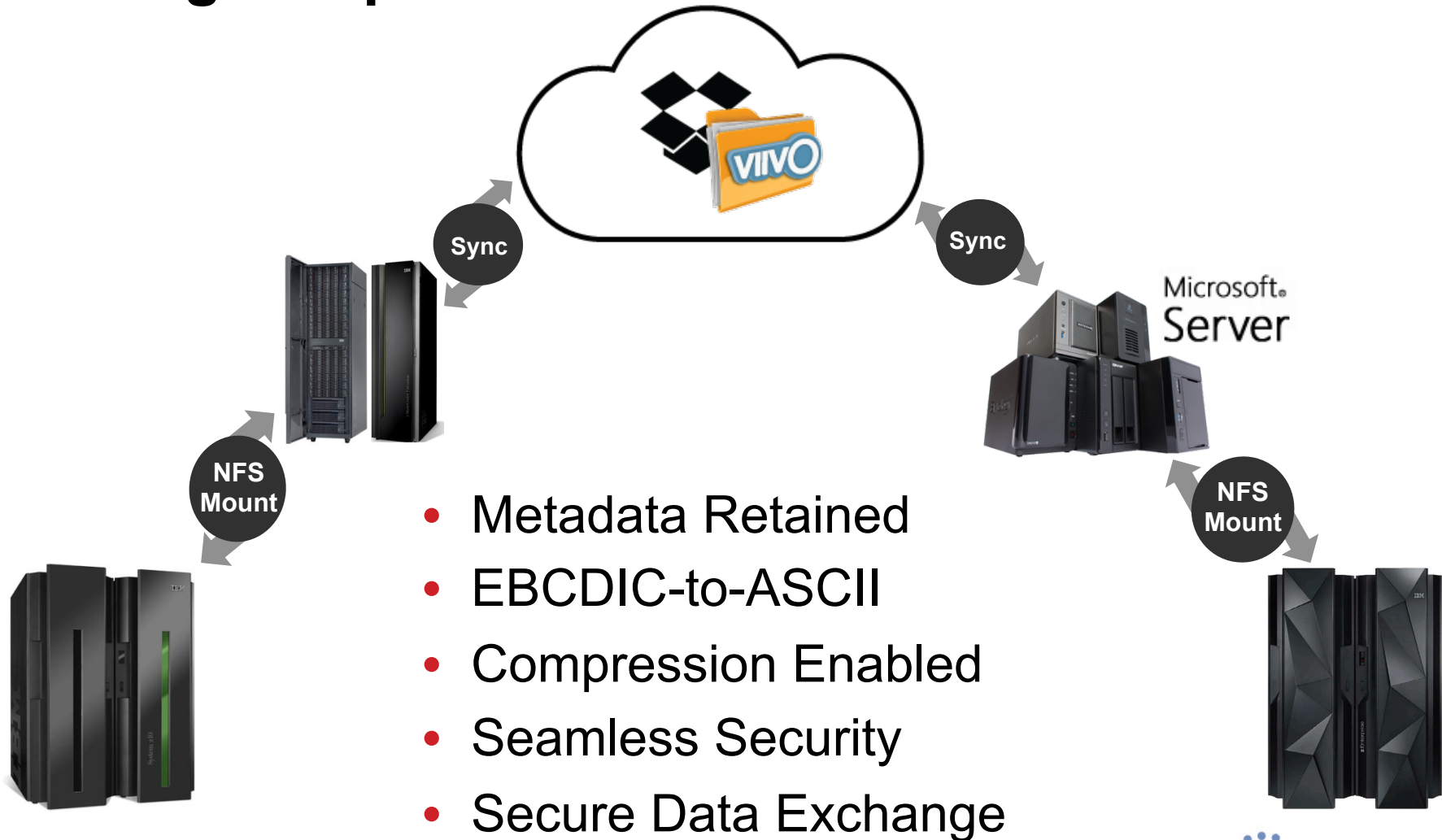
Portability

File Sync & Sharing with z/OS ... A thought experiment



File Sync & Sharing from z/OS ...

A thought experiment



File Sync & Sharing from z/OS ...

A thought experiment



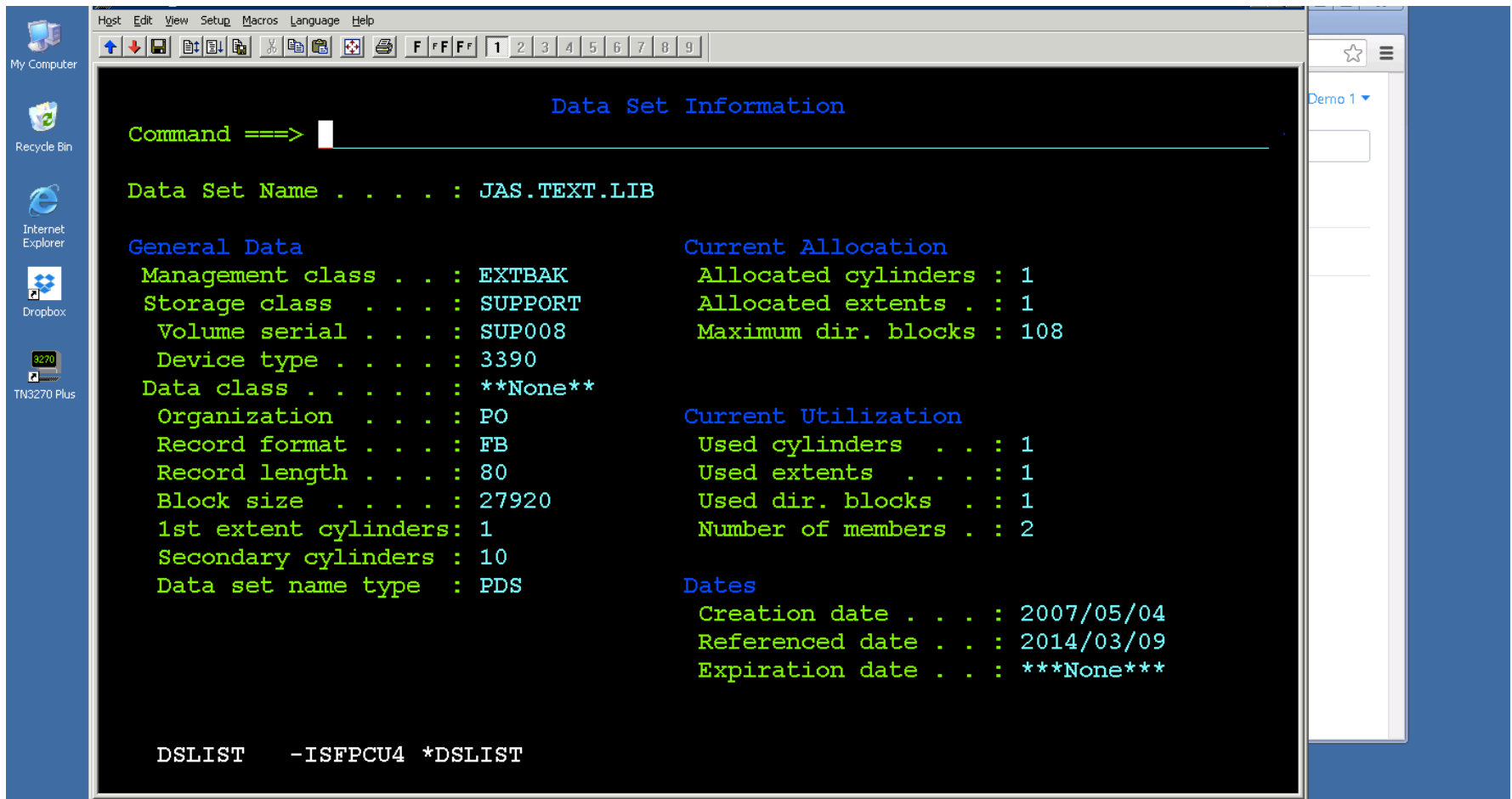
- DEMO



Summary

- Interoperability across Enterprise platforms
 - EBCDIC-to-ASCII data translation
 - Short term and Long term storage options
- Metadata Archive
 - Allows z/OS datasets to be stored on alternative platforms/ storage and still retain original DCB attributes
 - Easy restoration of long term archived data
- Encrypted data at rest *and* in motion
 - Address industry security regulations and compliance
 - Data is secured before, during and after being transferred to and from public storage alternatives

Demo 1 – LPAR PKW2



Command ==>

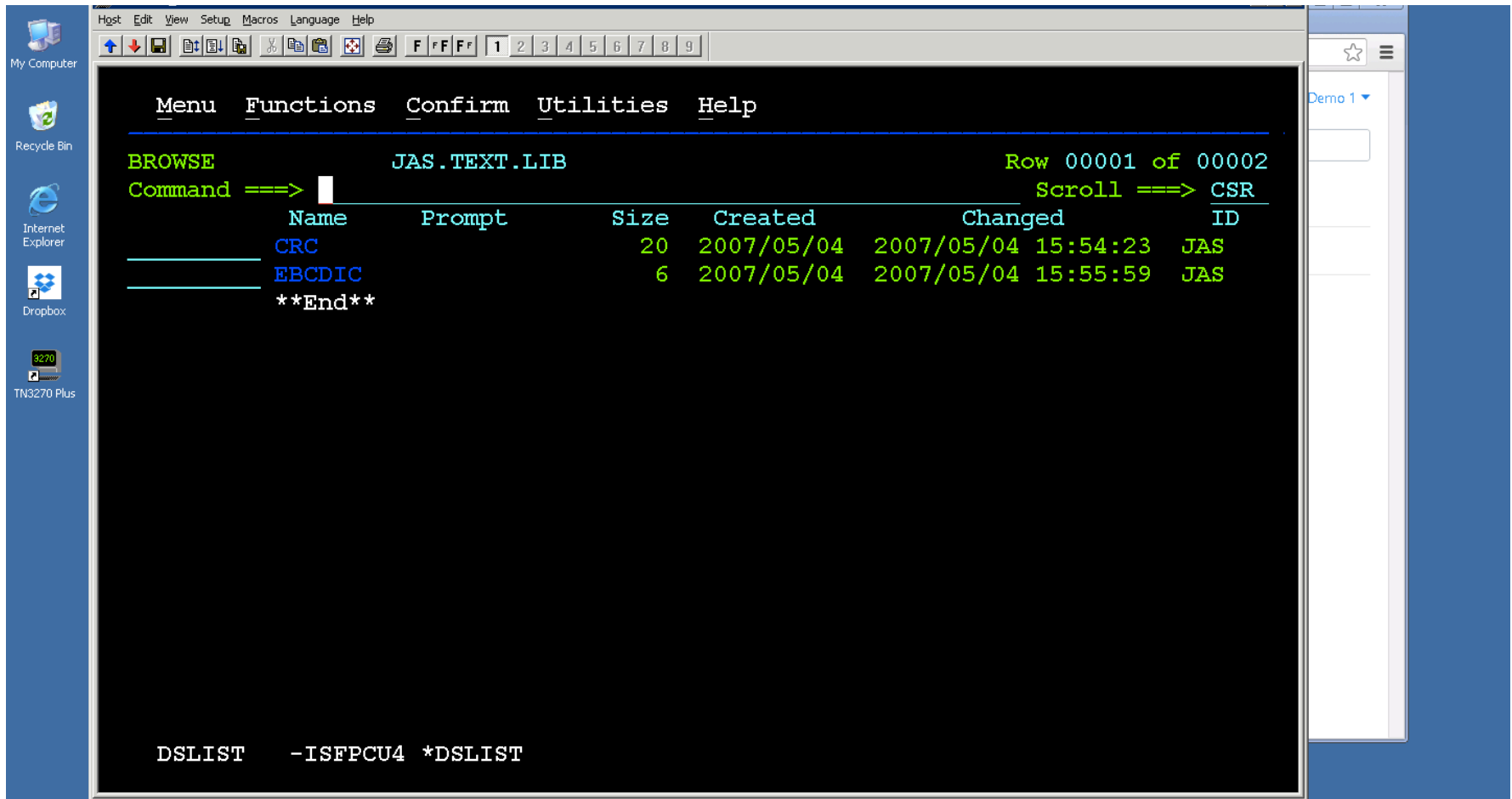
Data Set Name : JAS.TEXT.LIB

General Data

Management class . . . : EXTBAK	Current Allocation
Storage class : SUPPORT	Allocated cylinders : 1
Volume serial : SUP008	Allocated extents . : 1
Device type : 3390	Maximum dir. blocks : 108
Data class : **None**	
Organization : PO	Current Utilization
Record format : FB	Used cylinders . . . : 1
Record length : 80	Used extents . . . : 1
Block size : 27920	Used dir. blocks . : 1
1st extent cylinders: 1	Number of members . : 2
Secondary cylinders : 10	
Data set name type : PDS	Dates
	Creation date . . . : 2007/05/04
	Referenced date . . : 2014/03/09
	Expiration date . . : ***None***

DSLST -ISFPCU4 *DSLST

Demo 1 – PKW2

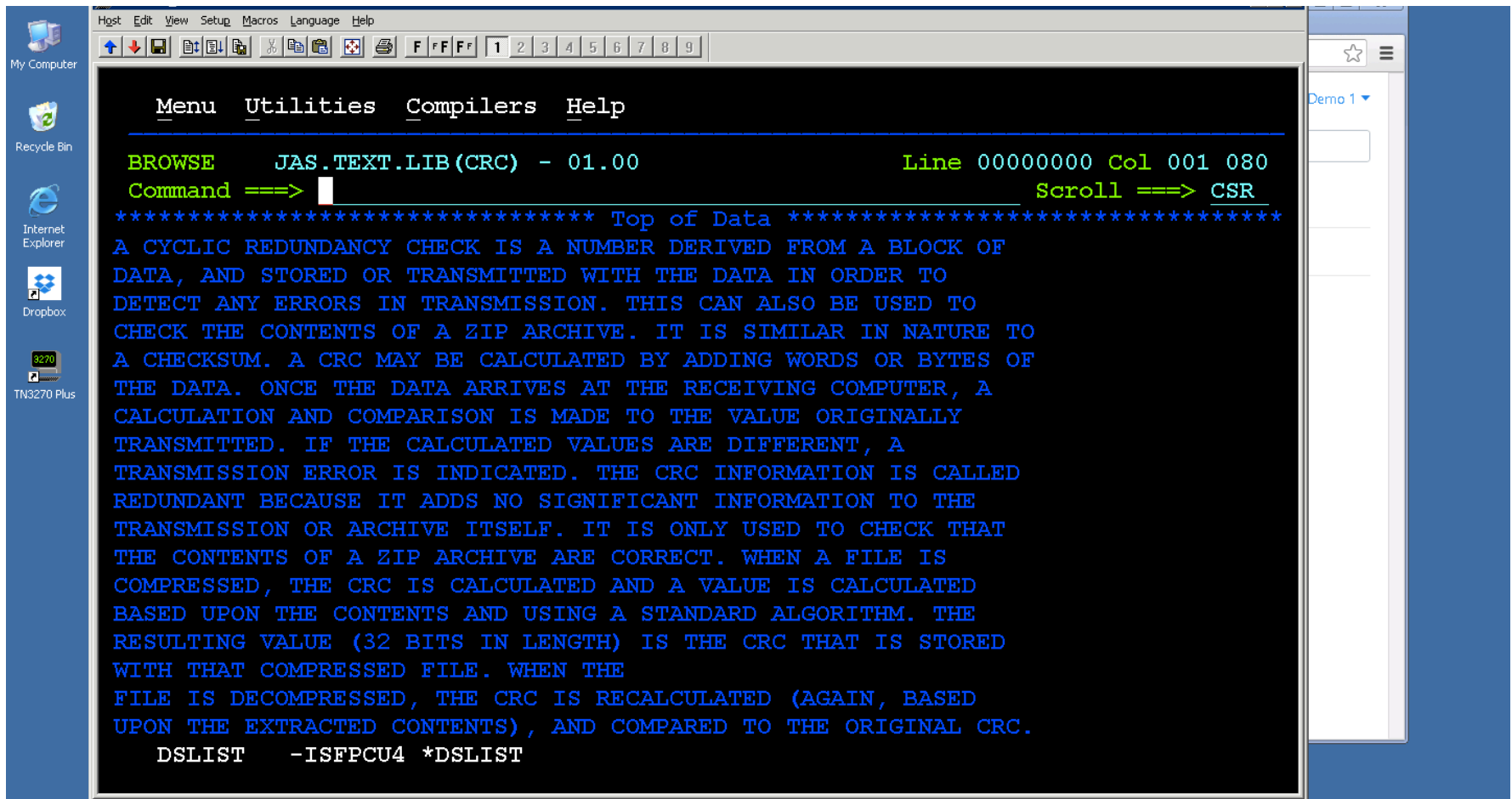


The screenshot shows a TN3270 Plus terminal window with a menu bar (Menu, Functions, Confirm, Utilities, Help) and a command line. The command 'BROWSE JAS.TEXT.LIB' has been entered. The terminal displays a table of data with columns: Name, Prompt, Size, Created, Changed, and CSR ID. The table contains two rows of data: CRC (Size 20, Created 2007/05/04 15:54:23, Changed 2007/05/04 15:54:23, CSR ID JAS) and EB CDIC (Size 6, Created 2007/05/04 15:55:59, Changed 2007/05/04 15:55:59, CSR ID JAS). The terminal also shows the command 'DSLIST -ISFPCU4 *DSLIST' at the bottom.

Name	Prompt	Size	Created	Changed	CSR ID
CRC		20	2007/05/04 15:54:23	2007/05/04 15:54:23	JAS
EB CDIC		6	2007/05/04 15:55:59	2007/05/04 15:55:59	JAS

DSLIST -ISFPCU4 *DSLIST

Demo 1 – PKW2



```

Hgst Edit View Setup Macros Language Help
[Icons] F F F F 1 2 3 4 5 6 7 8 9

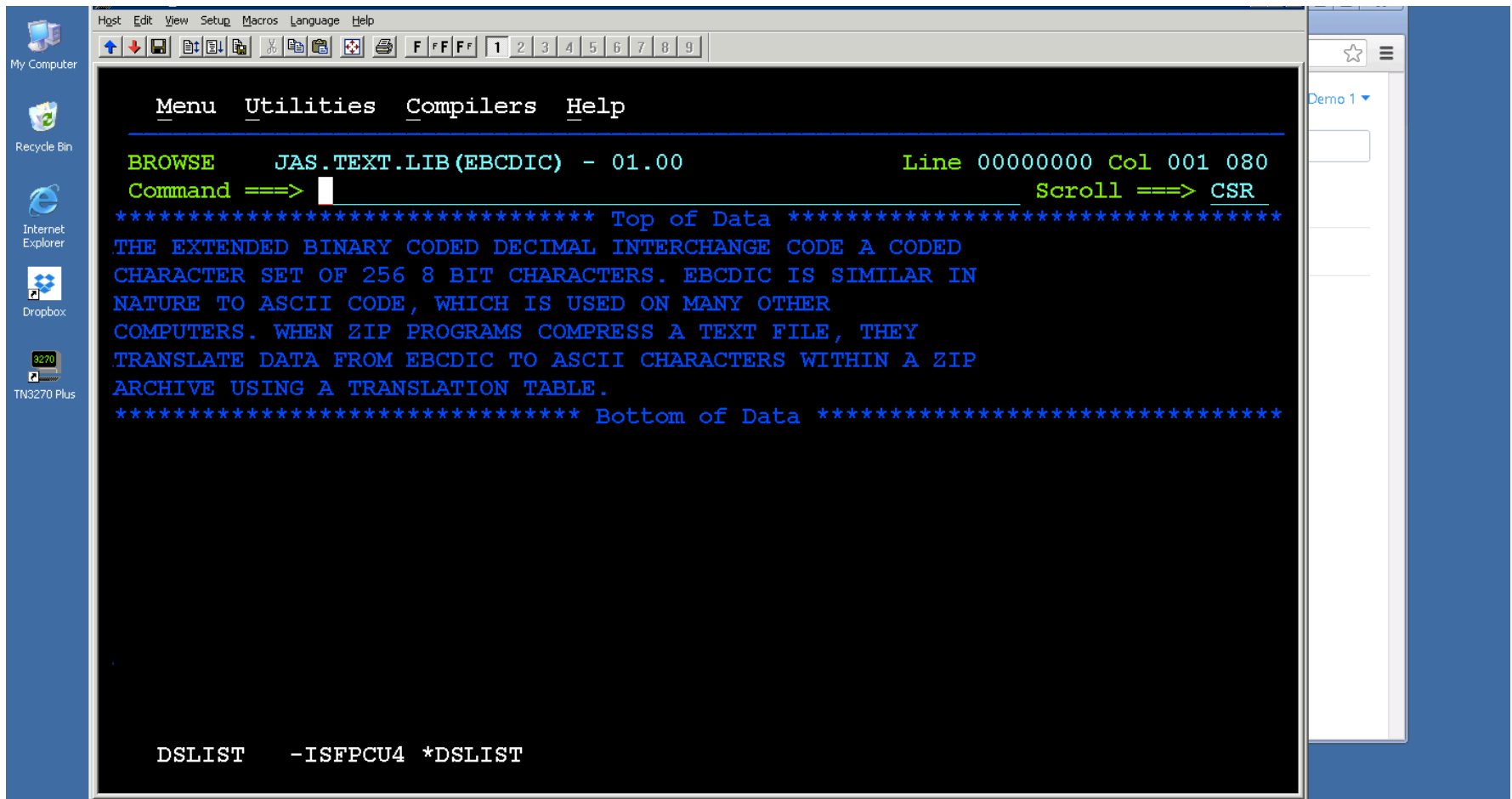
Menu Utilities Compilers Help

BROWSE      JAS.TEXT.LIB(CRC) - 01.00           Line 00000000 Col 001 080
Command ==> [ ]                               Scroll ==> CSR

***** Top of Data *****
A CYCLIC REDUNDANCY CHECK IS A NUMBER DERIVED FROM A BLOCK OF
DATA, AND STORED OR TRANSMITTED WITH THE DATA IN ORDER TO
DETECT ANY ERRORS IN TRANSMISSION. THIS CAN ALSO BE USED TO
CHECK THE CONTENTS OF A ZIP ARCHIVE. IT IS SIMILAR IN NATURE TO
A CHECKSUM. A CRC MAY BE CALCULATED BY ADDING WORDS OR BYTES OF
THE DATA. ONCE THE DATA ARRIVES AT THE RECEIVING COMPUTER, A
CALCULATION AND COMPARISON IS MADE TO THE VALUE ORIGINALLY
TRANSMITTED. IF THE CALCULATED VALUES ARE DIFFERENT, A
TRANSMISSION ERROR IS INDICATED. THE CRC INFORMATION IS CALLED
REDUNDANT BECAUSE IT ADDS NO SIGNIFICANT INFORMATION TO THE
TRANSMISSION OR ARCHIVE ITSELF. IT IS ONLY USED TO CHECK THAT
THE CONTENTS OF A ZIP ARCHIVE ARE CORRECT. WHEN A FILE IS
COMPRESSED, THE CRC IS CALCULATED AND A VALUE IS CALCULATED
BASED UPON THE CONTENTS AND USING A STANDARD ALGORITHM. THE
RESULTING VALUE (32 BITS IN LENGTH) IS THE CRC THAT IS STORED
WITH THAT COMPRESSED FILE. WHEN THE
FILE IS DECOMPRESSED, THE CRC IS RECALCULATED (AGAIN, BASED
UPON THE EXTRACTED CONTENTS), AND COMPARED TO THE ORIGINAL CRC.

DSLIST      -ISFPCU4 *DSLIST
  
```


Demo 1 – LPAR PKW2



The screenshot shows a mainframe terminal window with a blue background. The window has a menu bar at the top with options: Menu, Utilities, Compilers, Help. Below the menu bar is a toolbar with various icons. The main display area shows the following text:

```
BROWSE      JAS.TEXT.LIB(EBCDIC) - 01.00          Line 00000000 Col 001 080
Command ==>                       Scroll ==> CSR
***** Top of Data *****
THE EXTENDED BINARY CODED DECIMAL INTERCHANGE CODE A CODED
CHARACTER SET OF 256 8 BIT CHARACTERS. EBCDIC IS SIMILAR IN
NATURE TO ASCII CODE, WHICH IS USED ON MANY OTHER
COMPUTERS. WHEN ZIP PROGRAMS COMPRESS A TEXT FILE, THEY
TRANSLATE DATA FROM EBCDIC TO ASCII CHARACTERS WITHIN A ZIP
ARCHIVE USING A TRANSLATION TABLE.
***** Bottom of Data *****

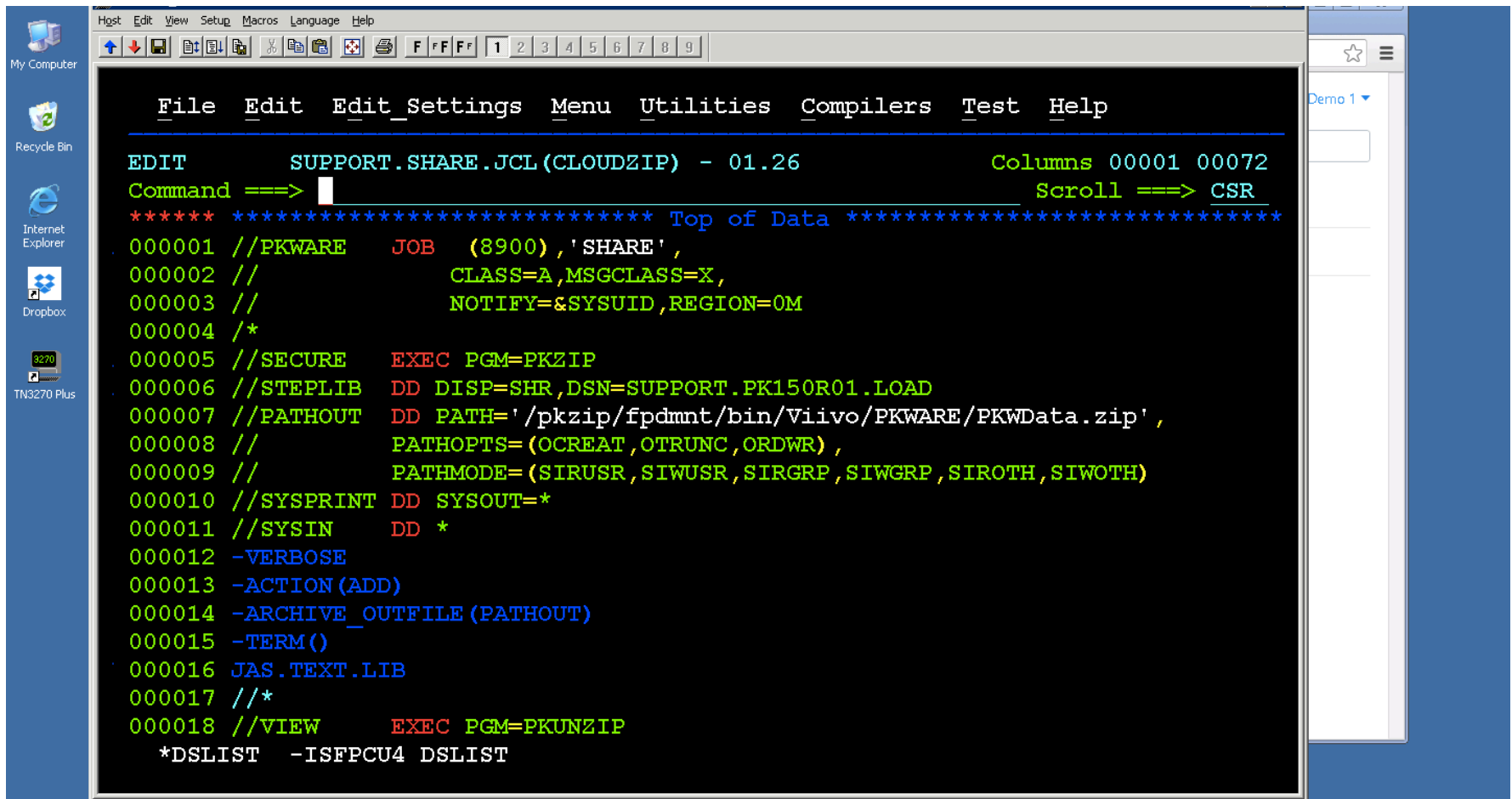
DSLISL      -ISFPCU4 *DSLISL
```

On the left side of the window, there is a vertical toolbar with icons for 'My Computer', 'Recycle Bin', 'Internet Explorer', 'Dropbox', and 'TN3270 Plus'. On the right side, there is a sidebar with a 'Demo 1' dropdown menu and a search bar.

Library compressed under z/OS and written to an NFS mount

```
//SECURE      EXEC PGM=PKZIP
//STEPLIB      DD DISP=SHR,DSN=SUPPORT.PK150R01.LOAD
//PATHOUT      DD PATH='/pkzip/fpdmnt/bin/Viivo/PKWARE/PKWData.zip',
//              PATHOPTS=(OCREAT,OTRUNC,ORDWR),
//              PATHMODE=(SIRUSR,SIWUSR,SIRGRP,SIWGRP,SIROTH,SIWOTH)
//SYSPRINT DD SYSOUT=*
//SYSIN        DD *
-VERBOSE
-ACTION(ADD)
-ARCHIVE_OUTFILE(PATHOUT)
JAS.TEXT.LIB
//
```

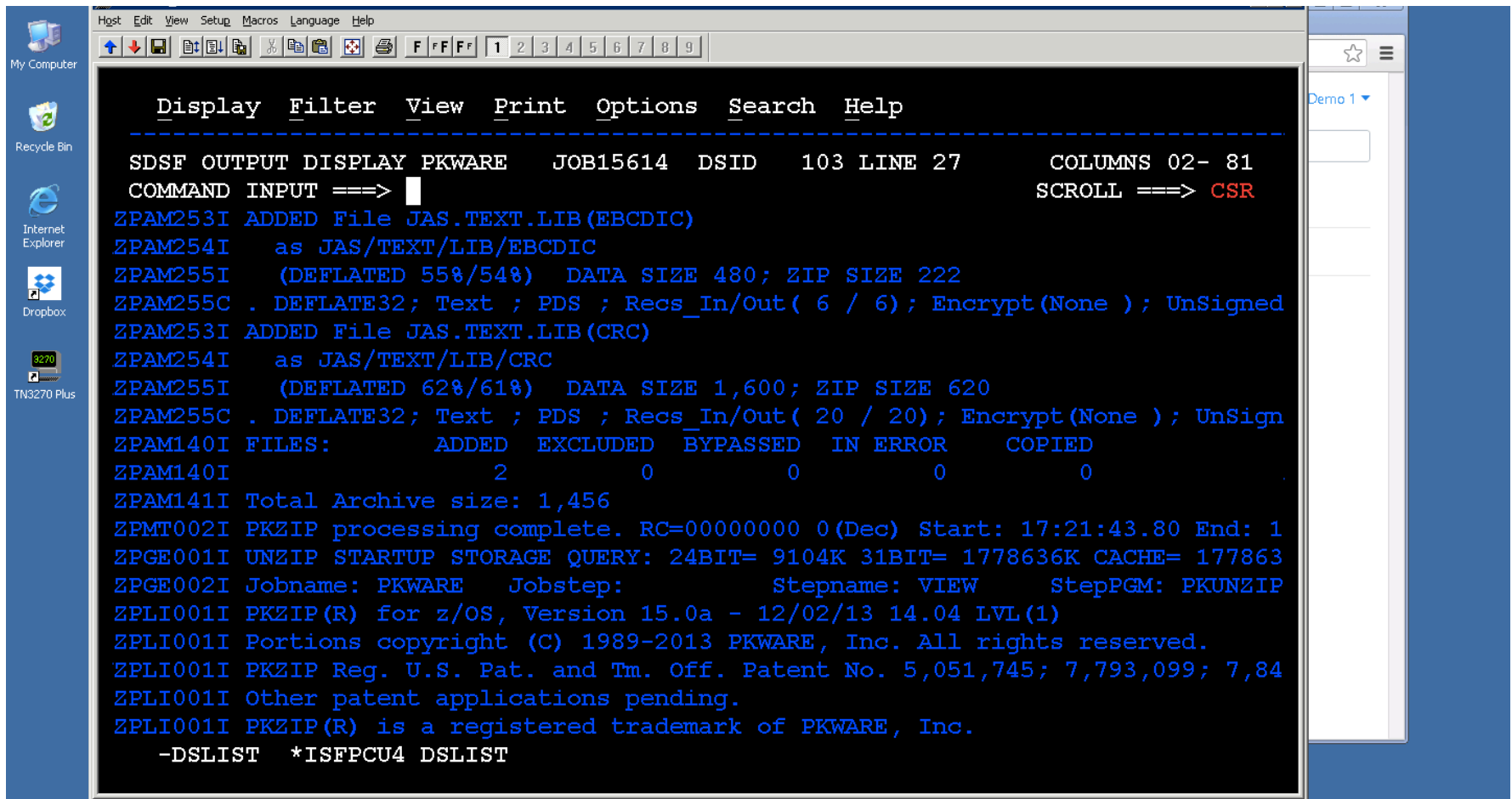
Demo 1 – LPAR PKW2



```

EDIT      SUPPORT.SHARE.JCL(CLOUDZIP) - 01.26          Columns 00001 00072
Command ==>                                     Scroll ==> CSR
***** Top of Data *****
000001 //PKWARE      JOB  (8900), 'SHARE',
000002 //              CLASS=A,MSGCLASS=X,
000003 //              NOTIFY=&SYSUID,REGION=0M
000004 /*
000005 //SECURE      EXEC PGM=PKZIP
000006 //STEPLIB    DD DISP=SHR,DSN=SUPPORT.PK150R01.LOAD
000007 //PATHOUT    DD PATH='/pkzip/fpdmnt/bin/Viivo/PKWARE/PKWData.zip',
000008 //              PATHOPTS=(OCREAT,OTRUNC,ORDWR),
000009 //              PATHMODE=(SIRUSR,SIWUSR,SIRGRP,SIWGRP,SIROTH,SIWOTH)
000010 //SYSPRINT DD SYSOUT=*
000011 //SYSIN      DD *
000012 -VERBOSE
000013 -ACTION(ADD)
000014 -ARCHIVE_OUTFILE(PATHOUT)
000015 -TERM()
000016 JAS.TEXT.LIB
000017 /*
000018 //VIEW      EXEC PGM=PKUNZIP
          *DSLIST -ISFPCU4 DSLIST
  
```

Demo 1 – LPAR PKW2



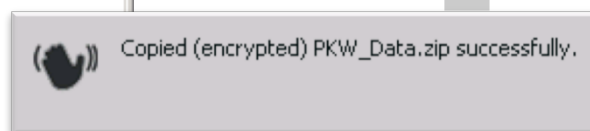
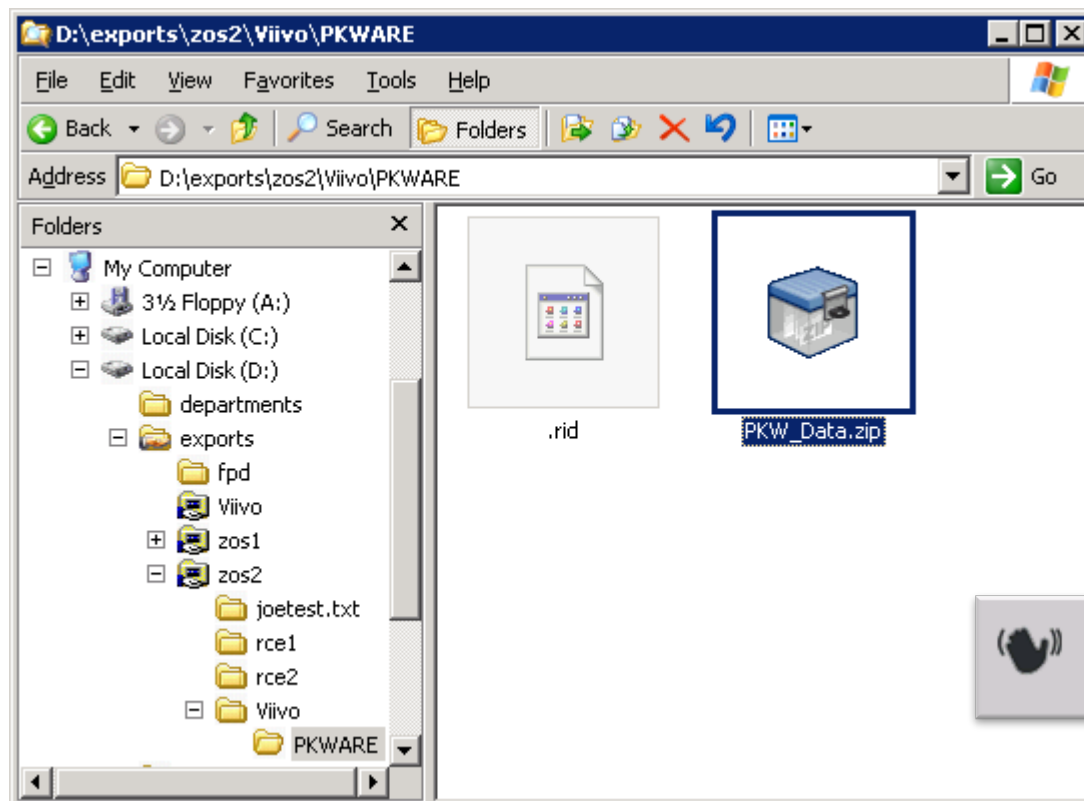
```

Display Filter View Print Options Search Help
-----
SDSF OUTPUT DISPLAY PKWARE      JOB15614  DSID   103 LINE 27      COLUMNS 02- 81
COMMAND INPUT ==>
ZPAM253I ADDED File JAS.TEXT.LIB(EBCDIC)
ZPAM254I   as JAS/TEXT/LIB/EBCDIC
ZPAM255I   (DEFLATED 558/548)  DATA SIZE 480; ZIP SIZE 222
ZPAM255C . DEFLATE32; Text ; PDS ; Recs_In/Out( 6 / 6); Encrypt(None ); Unsigned
ZPAM253I ADDED File JAS.TEXT.LIB(CRC)
ZPAM254I   as JAS/TEXT/LIB/CRC
ZPAM255I   (DEFLATED 628/618)  DATA SIZE 1,600; ZIP SIZE 620
ZPAM255C . DEFLATE32; Text ; PDS ; Recs_In/Out( 20 / 20); Encrypt(None ); UnSign
ZPAM140I FILES:      ADDED  EXCLUDED  BYPASSED  IN ERROR    COPIED
ZPAM140I              2          0          0          0          0
ZPAM141I Total Archive size: 1,456
ZPMT002I PKZIP processing complete. RC=00000000 0(Dec) Start: 17:21:43.80 End: 1
ZPGE001I UNZIP STARTUP STORAGE QUERY: 24BIT= 9104K 31BIT= 1778636K CACHE= 177863
ZPGE002I Jobname: PKWARE   Jobstep:          Stepname: VIEW      StepPGM: PKUNZIP
ZPLI001I PKZIP(R) for z/OS, Version 15.0a - 12/02/13 14.04 LVL(1)
ZPLI001I Portions copyright (C) 1989-2013 PKWARE, Inc. All rights reserved.
ZPLI001I PKZIP Reg. U.S. Pat. and Tm. Off. Patent No. 5,051,745; 7,793,099; 7,84
ZPLI001I Other patent applications pending.
ZPLI001I PKZIP(R) is a registered trademark of PKWARE, Inc.
-DSLIST *ISFPCU4 DSLIST
  
```

DCB Attributes of z/OS Library Retained throughout the lifecycle of the archive

```
ZPAM001I Filename: JAS/TEXT/LIB/CRC
ZPAM002I File type:          TEXT
ZPAM003I Date/Time:         10-MAR-2014 08:55:04
ZPAM004I Compression Method: Deflate- Super Fast
ZPAM005I Compressed Size:   622
ZPAM006I Uncompressed Size: 1,641
ZPAM007I 32-bit CRC:        91F4C7C0      LHDR Offset: 0
ZPAM008I Created by:        PKZIP for z/OS 15.0.1  zArch:8  MemLarge
ZPAM009I Needed to extract: ZipSpec      2.0
ZPAM301I File Type:         NONVSAM  PDS
ZPAM302I File PDS Directory Blocks: 108
ZPAM303I File Record Format: FB
ZPAM304I File Allocation Type: CYL
ZPAM305I File Primary Space Allocated: 1
ZPAM306I File Secondary Space Allocated: 10
ZPAM307I File Record Size: 80
ZPAM308I File Block Size: 27920
ZPAM309I File Volume(s) Used: SUP008
ZPAM310I File Creation Date: 2007/05/04
ZPAM311I File Referenced Date: 2014/03/10
ZPAM053I Total Cylinders allocated to original file: 1
ZPAM319I SMS Management Class:  EXTBAK
ZPAM319I SMS Storage Class:    SUPPORT
ZPAM312C -SIZE -CREATED-- -----CHANGED----- ---ID-- -INIT VV.MM
ZPAM312C   6 2007/05/04 2007/05/04 15:55:59 JAS           6 01.00
ZPAM313I PDS member TTRKZC: 00021600000F
```

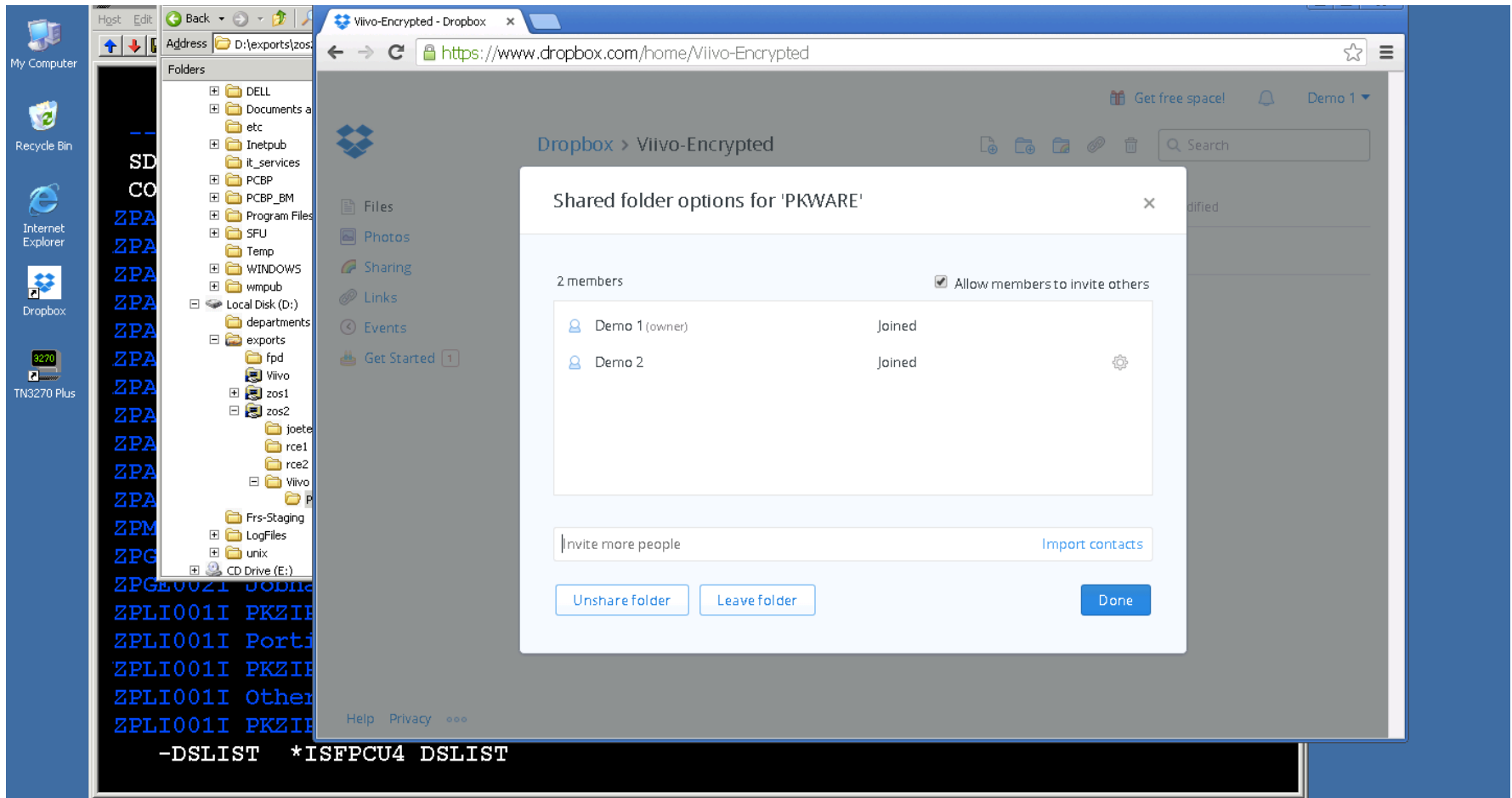
Archive stored on NFS mount, is encrypted and syncs to your cloud storage provider







Dropbox



Viivo-Encrypted - Dropbox

Address: <https://www.dropbox.com/home/Viivo-Encrypted>

Dropbox > Viivo-Encrypted

Shared folder options for 'PKWARE'

2 members ☒ Allow members to invite others

Demo 1 (owner)	Joined	
Demo 2	Joined	⚙️

Invite more people [Import contacts](#)

[Unshare folder](#) [Leave folder](#) [Done](#)

Help Privacy

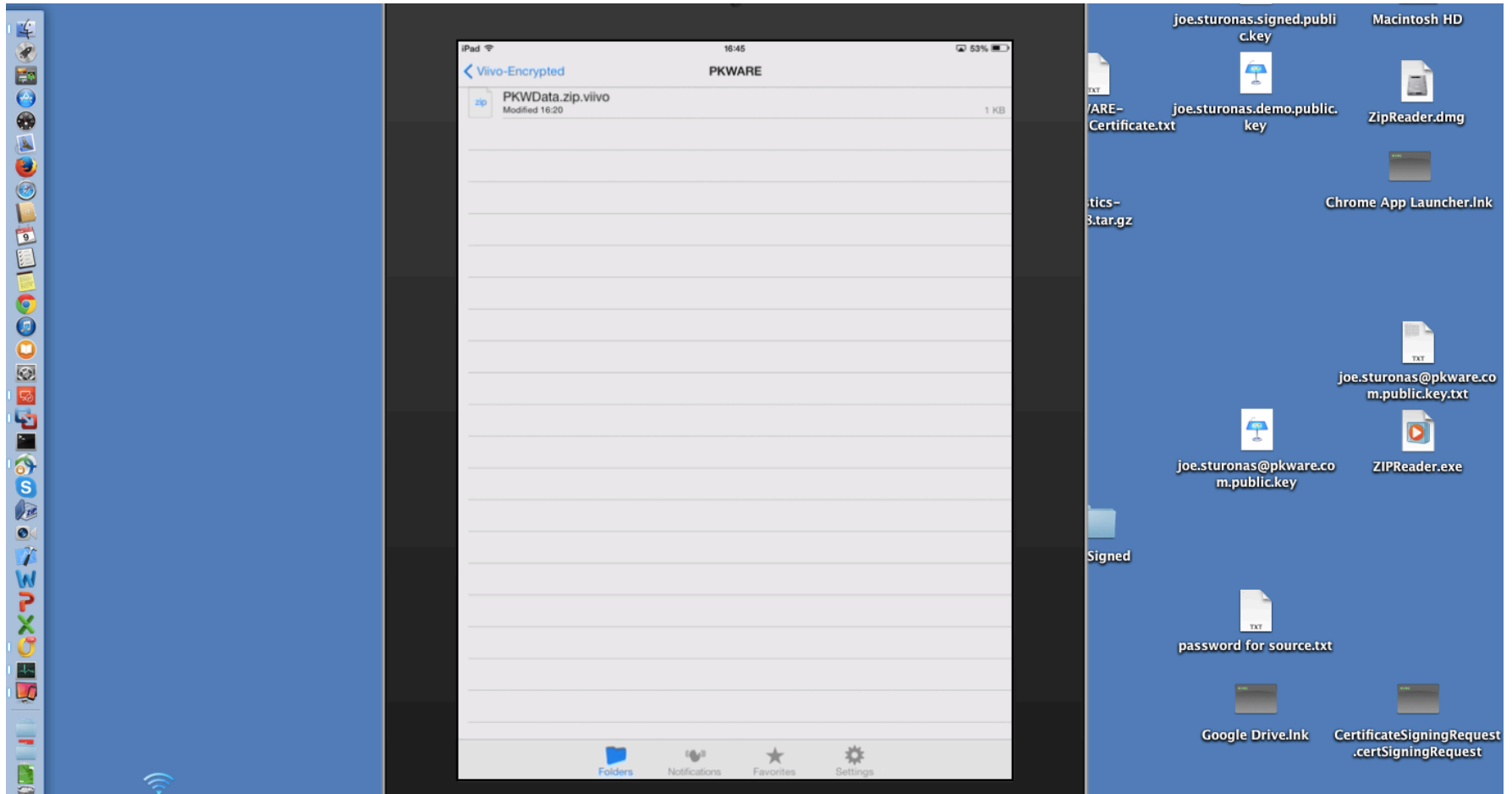
-DSL1ST *ISFPCU4 DSL1ST



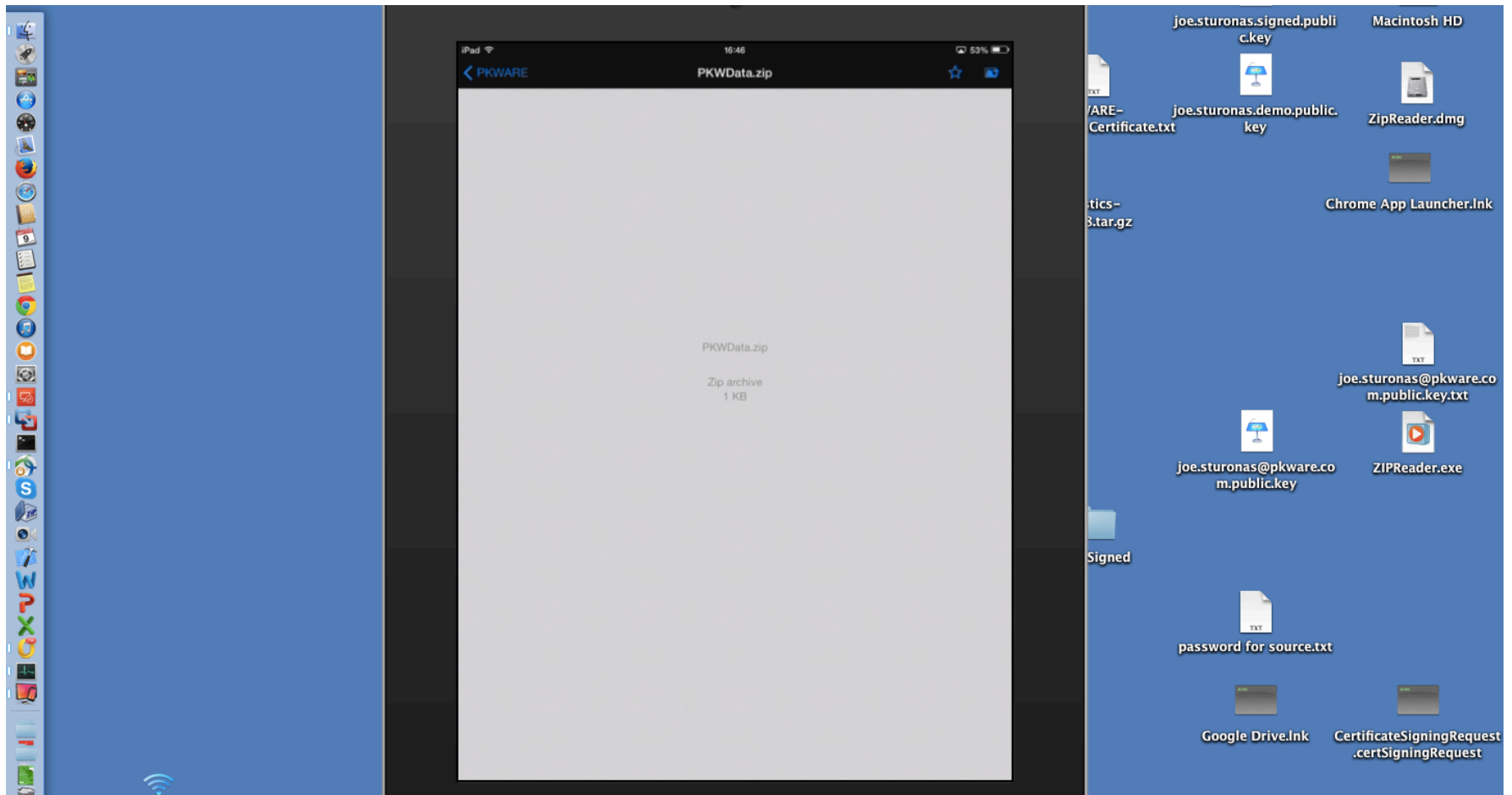
Mobile



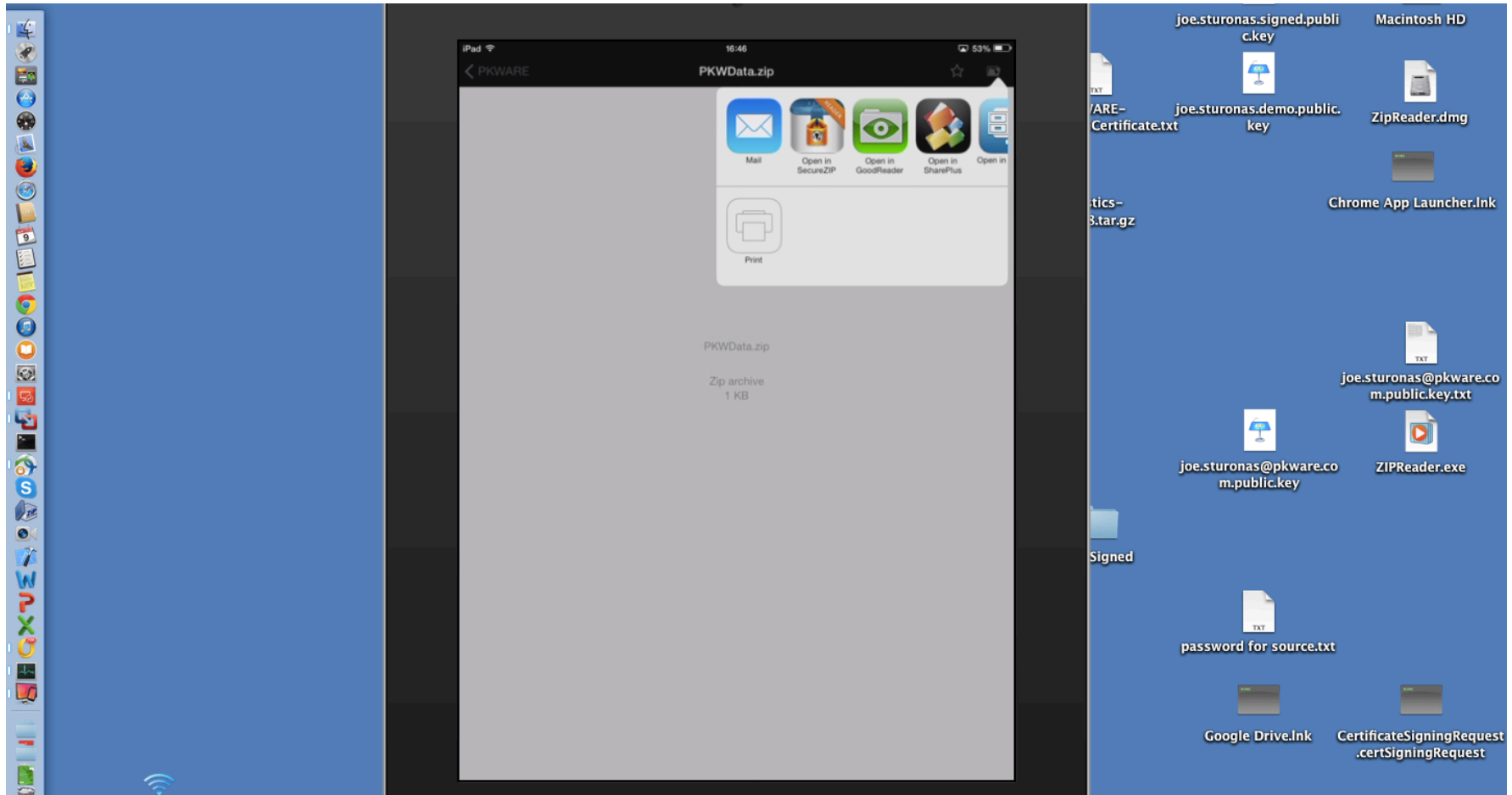
Mobile



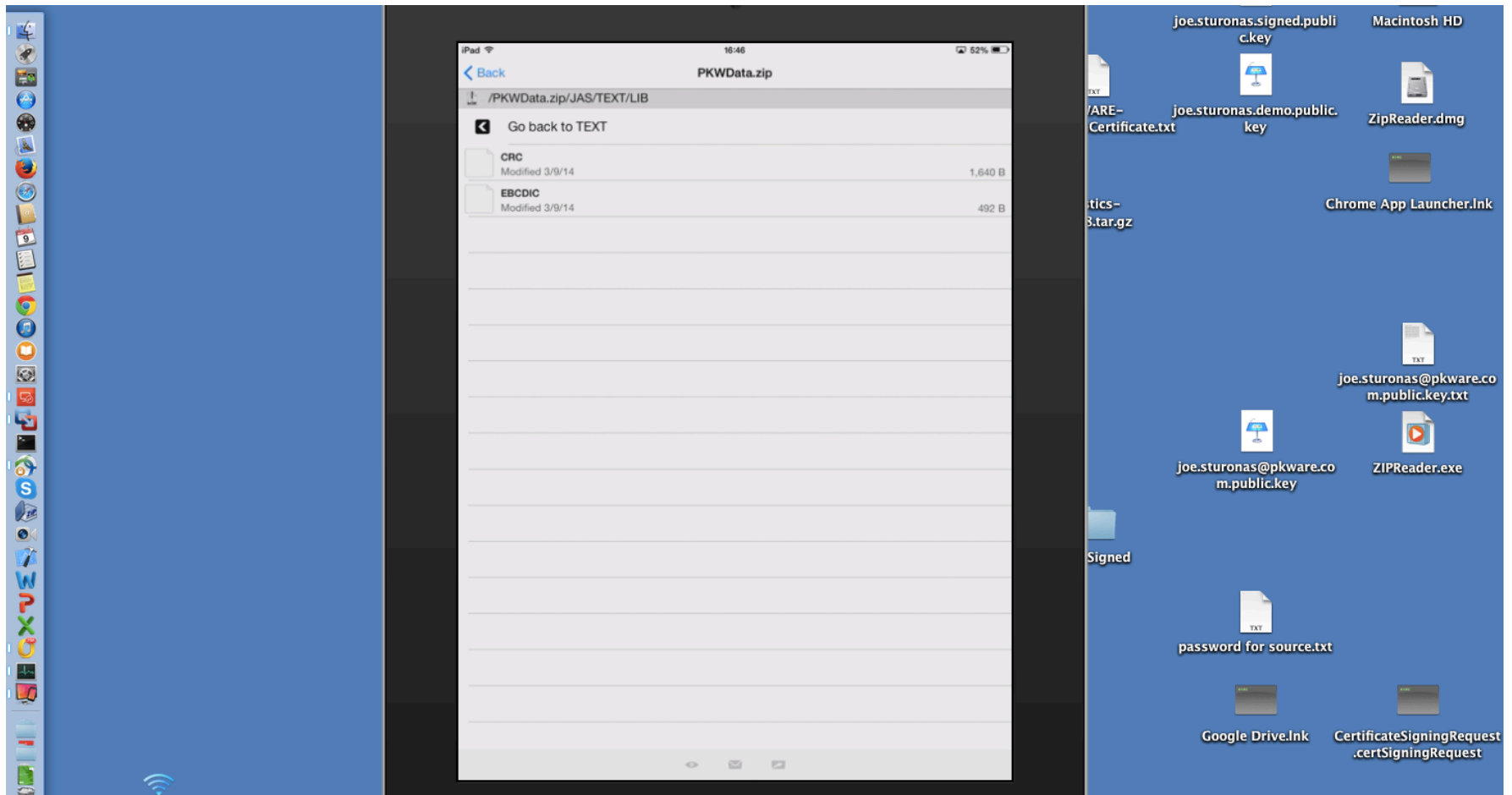
Mobile



Mobile

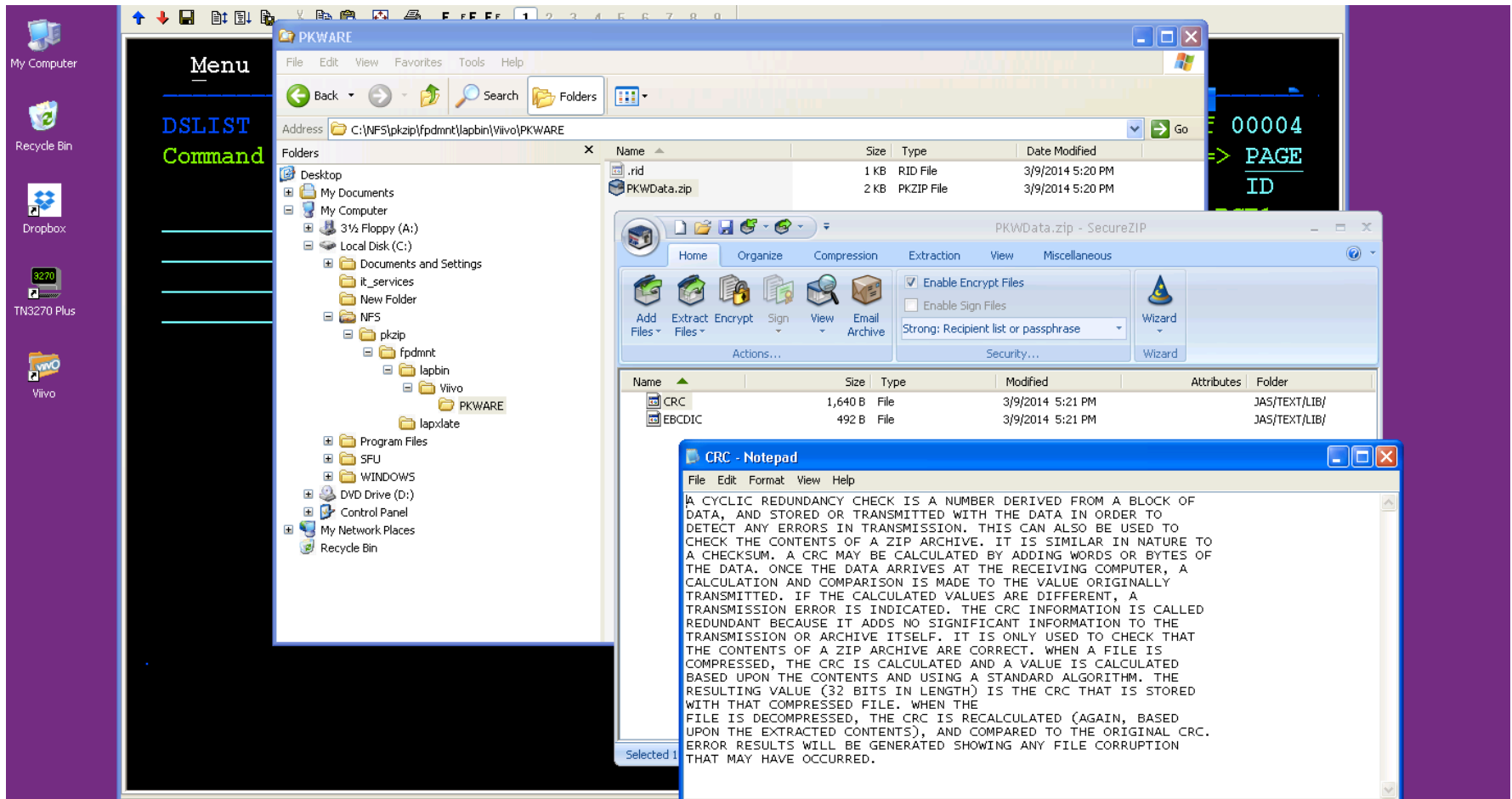


Mobile





Demo 2



The screenshot shows a Windows XP desktop environment. On the left is a purple sidebar with icons for 'My Computer', 'Recycle Bin', 'Dropbox', 'TN3270 Plus', and 'Viivo'. The main desktop area has a black background with a 'Menu' and 'DSLISIT Command' text. A file explorer window titled 'PKWARE' is open, showing the address 'C:\NFS\pkzip\fpdmnt\lapbin\Viivo\PKWARE'. It lists two files: '.rid' (1 KB, RID File) and 'PKWData.zip' (2 KB, PKZIP File). A 'PKWData.zip - SecureZIP' window is also open, showing options to 'Enable Encrypt Files' and 'Enable Sign Files'. A 'CRC - Notepad' window is open in the foreground, displaying text about CRC (Cyclic Redundancy Check).

PKWData.zip - SecureZIP

Name	Size	Type	Modified	Attributes	Folder
CRC	1,640 B	File	3/9/2014 5:21 PM		JAS/TEXT/LIB/
EBDCDIC	492 B	File	3/9/2014 5:21 PM		JAS/TEXT/LIB/

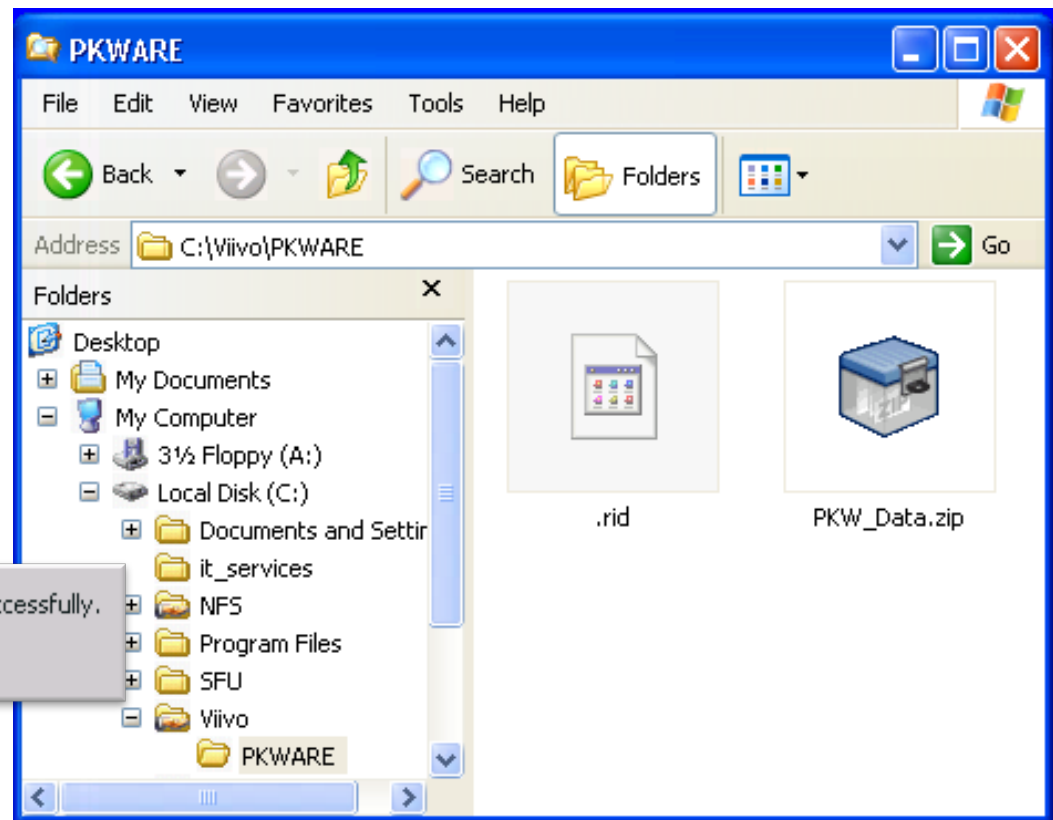
CRC - Notepad

A CYCLIC REDUNDANCY CHECK IS A NUMBER DERIVED FROM A BLOCK OF DATA, AND STORED OR TRANSMITTED WITH THE DATA IN ORDER TO DETECT ANY ERRORS IN TRANSMISSION. THIS CAN ALSO BE USED TO CHECK THE CONTENTS OF A ZIP ARCHIVE. IT IS SIMILAR IN NATURE TO A CHECKSUM. A CRC MAY BE CALCULATED BY ADDING WORDS OR BYTES OF THE DATA. ONCE THE DATA ARRIVES AT THE RECEIVING COMPUTER, A CALCULATION AND COMPARISON IS MADE TO THE VALUE ORIGINALLY TRANSMITTED. IF THE CALCULATED VALUES ARE DIFFERENT, A TRANSMISSION ERROR IS INDICATED. THE CRC INFORMATION IS CALLED REDUNDANT BECAUSE IT ADDS NO SIGNIFICANT INFORMATION TO THE TRANSMISSION OR ARCHIVE ITSELF. IT IS ONLY USED TO CHECK THAT THE CONTENTS OF A ZIP ARCHIVE ARE CORRECT. WHEN A FILE IS COMPRESSED, THE CRC IS CALCULATED AND A VALUE IS CALCULATED BASED UPON THE CONTENTS AND USING A STANDARD ALGORITHM. THE RESULTING VALUE (32 BITS IN LENGTH) IS THE CRC THAT IS STORED WITH THAT COMPRESSED FILE. WHEN THE FILE IS DECOMPRESSED, THE CRC IS RECALCULATED (AGAIN, BASED UPON THE EXTRACTED CONTENTS), AND COMPARED TO THE ORIGINAL CRC. ERROR RESULTS WILL BE GENERATED SHOWING ANY FILE CORRUPTION THAT MAY HAVE OCCURRED.

Archive stored on NFS mount, is decrypted and syncs to Partner's cloud storage



Copied (decrypted) PKW_Data.zip.viivo successfully.

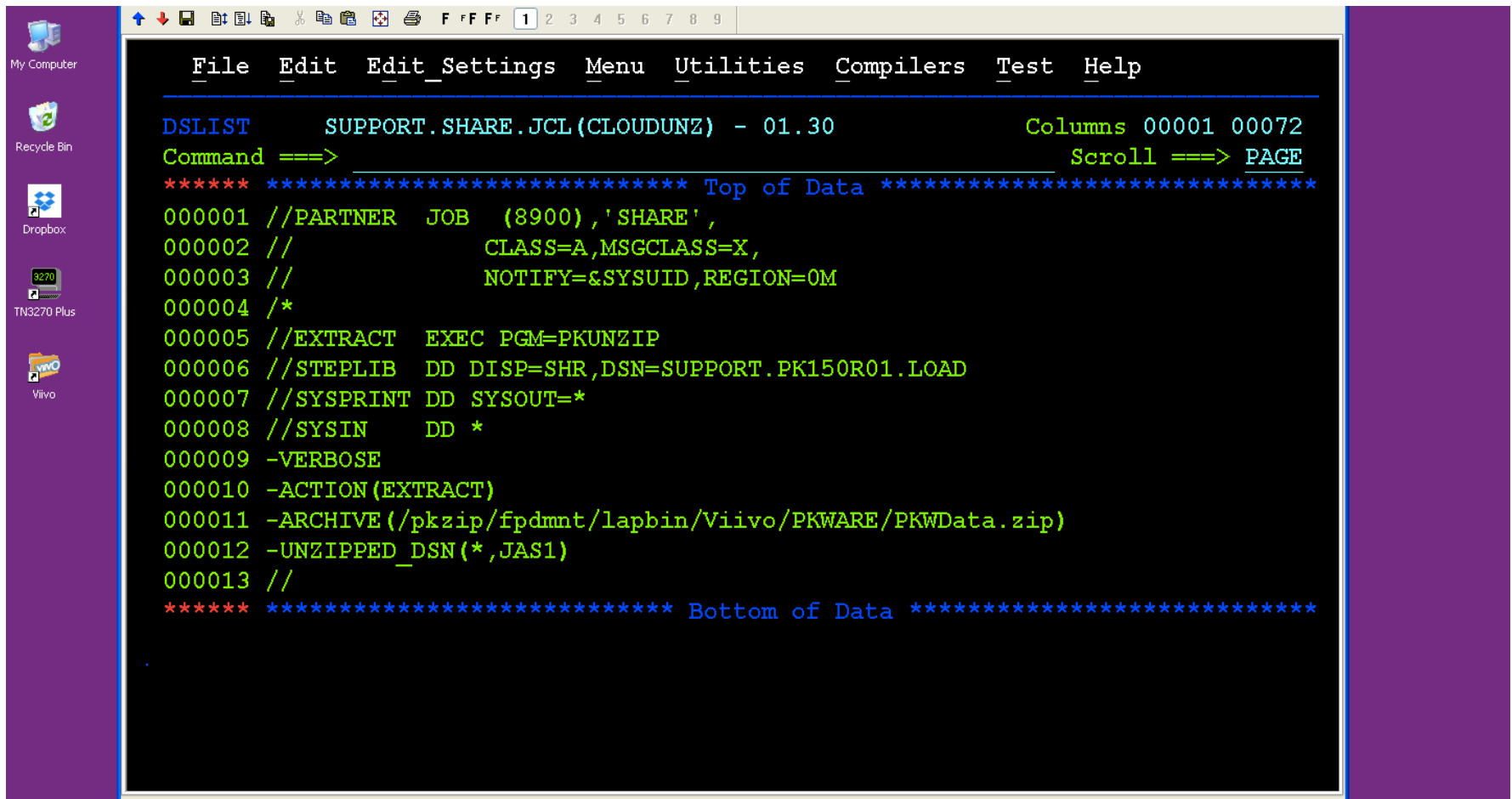


Archive read directly from the Partner's NFS mount and Library decompressed

```
//EXTRACT EXEC PGM=PKUNZIP  
//STEPLIB DD DISP=SHR,DSN=SUPPORT.PK150R01.LOAD  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD *  
-VERBOSE  
-ACTION(EXTRACT)  
-ARCHIVE(/pkzip/fpdmnt/lapbin/Viivo/PKWARE/PKWData.zip)  
-UNZIPPED_DSN(*,JAS1)  
//
```

Change HLQs during
decompression to support
Partner's environment

Demo 2 – LPAR PKW8

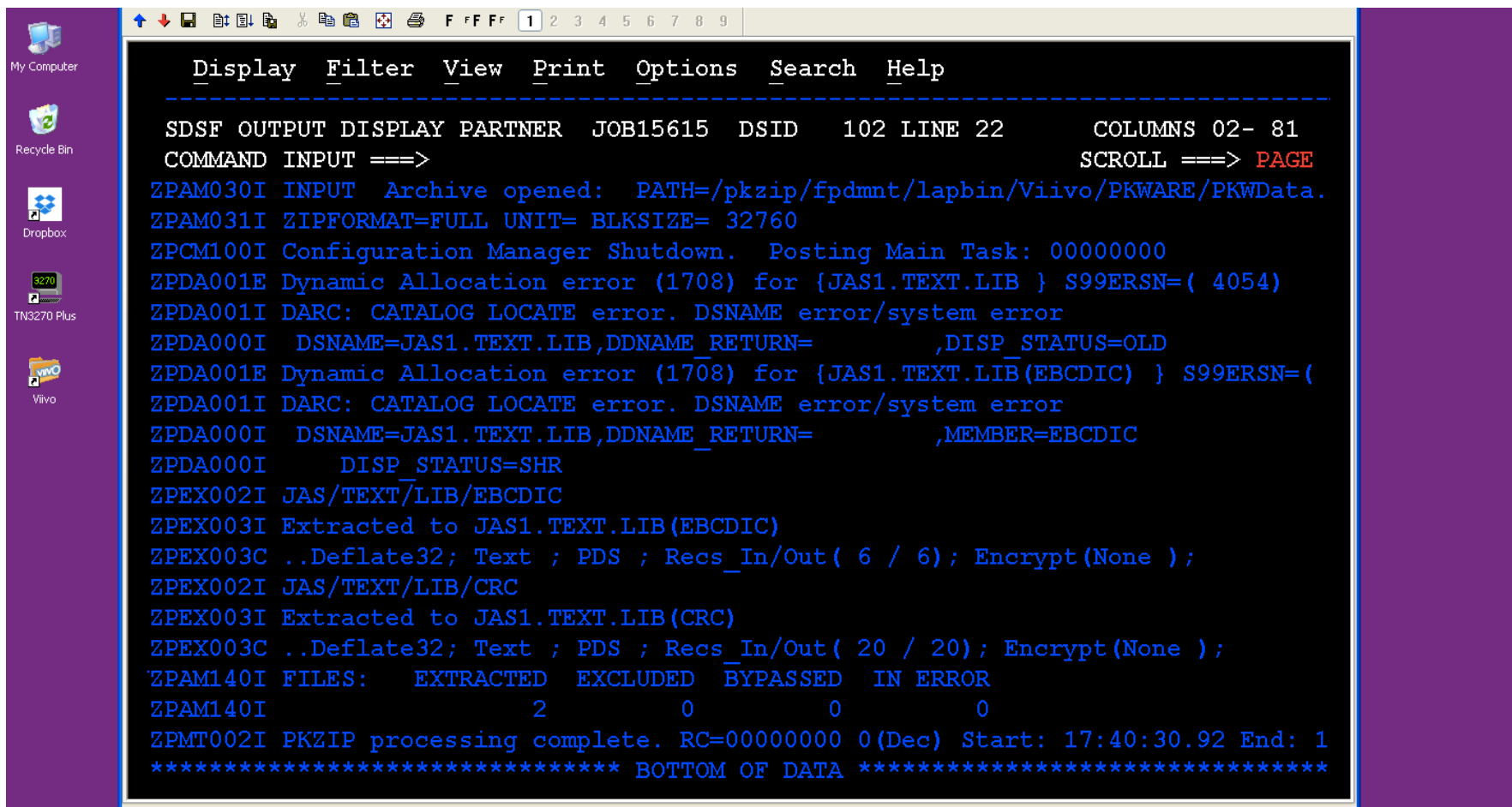


```

File Edit Edit_Settings Menu Utilities Compilers Test Help
DSLIST      SUPPORT.SHARE.JCL(CLOUDUNZ) - 01.30          Columns 00001 00072
Command ==>                                           Scroll ==> PAGE
***** ***** Top of Data *****
000001 //PARTNER  JOB  (8900),'SHARE',
000002 //                CLASS=A,MSGCLASS=X,
000003 //                NOTIFY=&SYSUID,REGION=OM
000004 /*
000005 //EXTRACT  EXEC PGM=PKUNZIP
000006 //STEPLIB  DD DISP=SHR,DSN=SUPPORT.PK150R01.LOAD
000007 //SYSPRINT DD SYSOUT=*
000008 //SYSIN    DD *
000009 -VERBOSE
000010 -ACTION(EXTRACT)
000011 -ARCHIVE (/pkzip/fpdmnt/lapbin/Viivo/PKWARE/PKWData.zip)
000012 -UNZIPPED_DSN(*,JAS1)
000013 //
***** ***** Bottom of Data *****

```

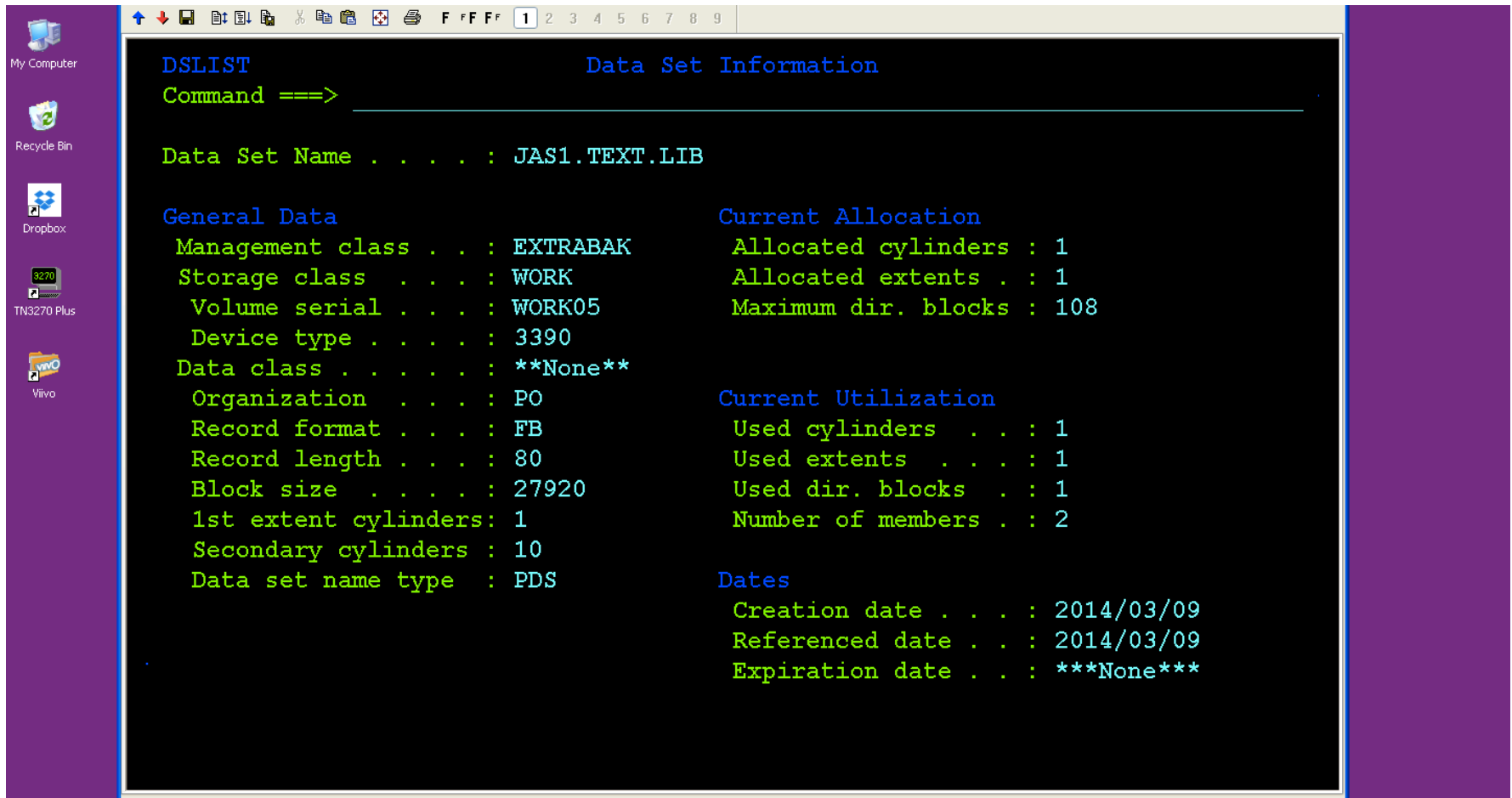
Demo 2 – LPAR PKW8



```

Display Filter View Print Options Search Help
-----
SDSF OUTPUT DISPLAY PARTNER JOB15615 DSID 102 LINE 22 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> PAGE
ZPAM030I INPUT Archive opened: PATH=/pkzip/fpdmnt/lapbin/Viivo/PKWARE/PKWData.
ZPAM031I ZIPFORMAT=FULL UNIT= BLKSIZE= 32760
ZPCM100I Configuration Manager Shutdown. Posting Main Task: 00000000
ZPDA001E Dynamic Allocation error (1708) for {JAS1.TEXT.LIB } S99ERSN=( 4054)
ZPDA001I DARC: CATALOG LOCATE error. DSNAME error/system error
ZPDA000I DSNAME=JAS1.TEXT.LIB,DDNAME_RETURN= ,DISP_STATUS=OLD
ZPDA001E Dynamic Allocation error (1708) for {JAS1.TEXT.LIB(EBCDIC) } S99ERSN=(
ZPDA001I DARC: CATALOG LOCATE error. DSNAME error/system error
ZPDA000I DSNAME=JAS1.TEXT.LIB,DDNAME_RETURN= ,MEMBER=EBCDIC
ZPDA000I DISP_STATUS=SHR
ZPEX002I JAS/TEXT/LIB/EBCDIC
ZPEX003I Extracted to JAS1.TEXT.LIB(EBCDIC)
ZPEX003C ..Deflate32; Text ; PDS ; Recs_In/Out( 6 / 6); Encrypt(None );
ZPEX002I JAS/TEXT/LIB/CRC
ZPEX003I Extracted to JAS1.TEXT.LIB(CRC)
ZPEX003C ..Deflate32; Text ; PDS ; Recs_In/Out( 20 / 20); Encrypt(None );
ZPAM140I FILES: EXTRACTED EXCLUDED BYPASSED IN ERROR
ZPAM140I 2 0 0 0
ZPMT002I PKZIP processing complete. RC=00000000 0(Dec) Start: 17:40:30.92 End: 1
***** BOTTOM OF DATA *****
  
```


Demo 2 – LPAR PKW8



```

DSNLIST                                     Data Set Information
Command ==>

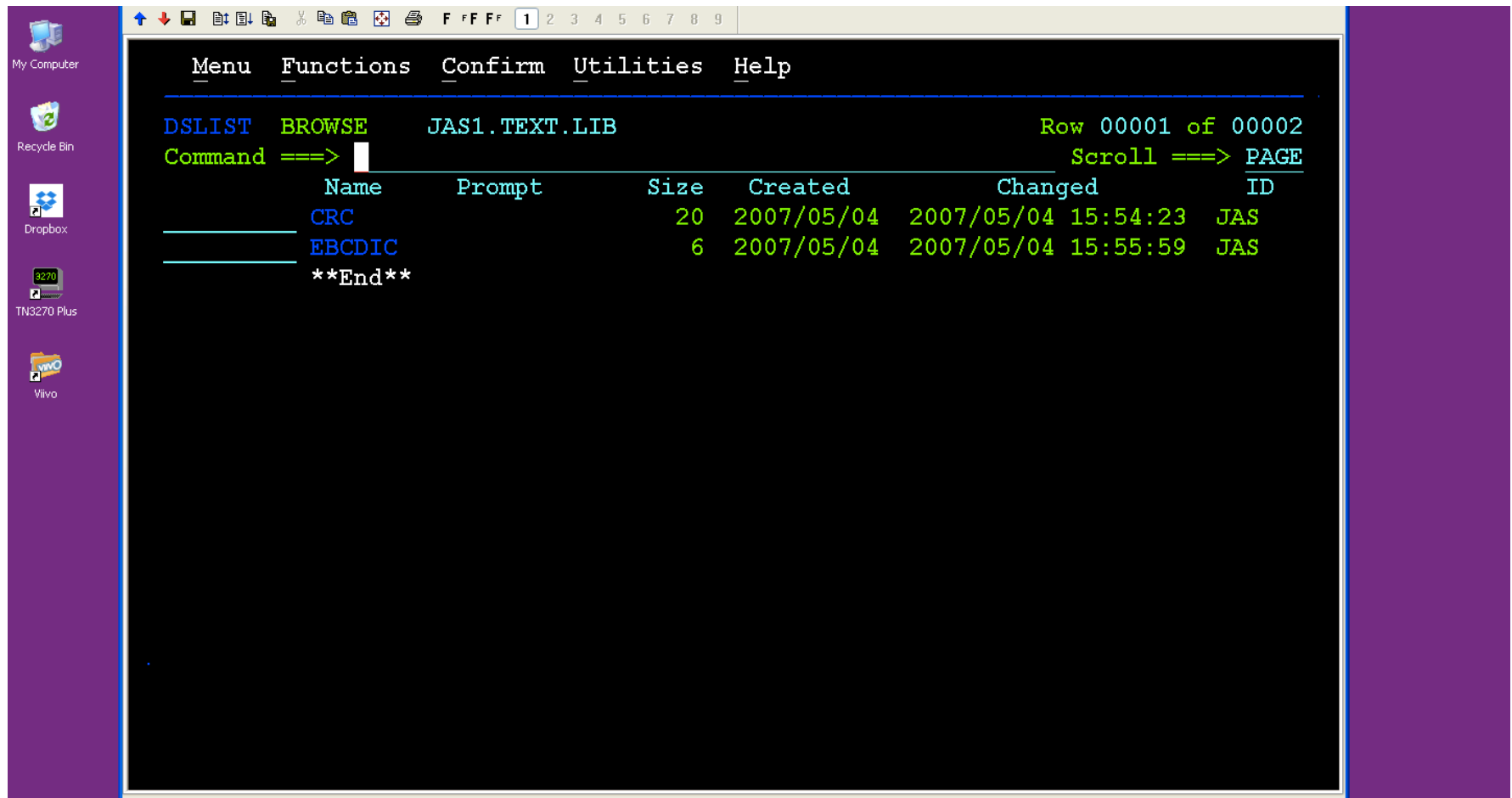
Data Set Name . . . . : JAS1.TEXT.LIB

General Data                               Current Allocation
Management class . . : EXTRABAK           Allocated cylinders : 1
Storage class . . . : WORK                Allocated extents . : 1
Volume serial . . . : WORK05              Maximum dir. blocks : 108
Device type . . . . : 3390
Data class . . . . . : **None**

Current Utilization
Organization . . . : PO                   Used cylinders . . : 1
Record format . . . : FB                  Used extents . . . : 1
Record length . . . : 80                  Used dir. blocks . : 1
Block size . . . . . : 27920              Number of members . : 2
1st extent cylinders: 1
Secondary cylinders : 10
Data set name type  : PDS

Dates
Creation date . . . : 2014/03/09
Referenced date . . : 2014/03/09
Expiration date . . : ***None***
  
```

Demo 2 – LPAR PKW8



Menu Functions Confirm Utilities Help

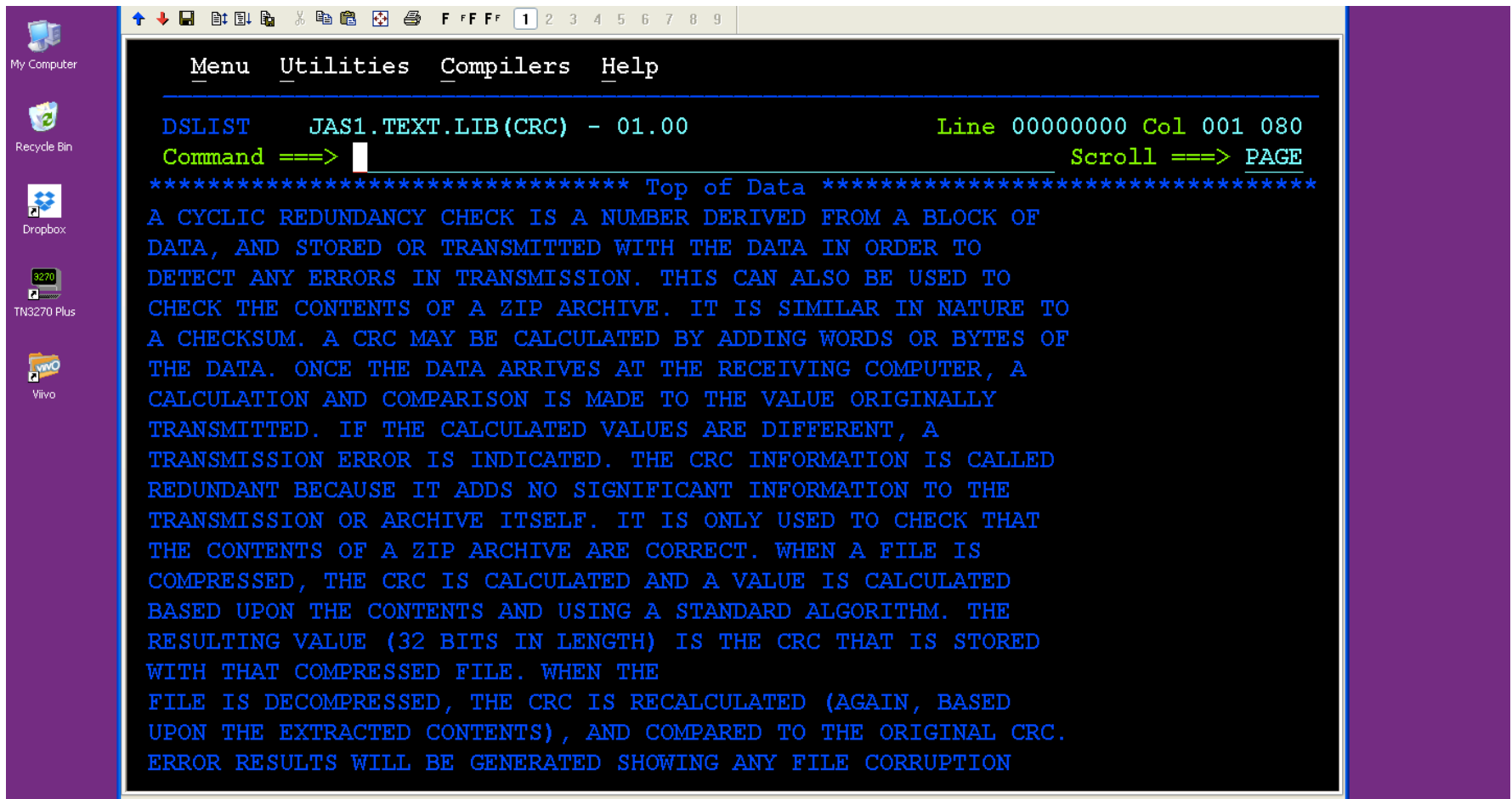
DSLIS_T BROWSE JAS1.TEXT.LIB Row 00001 of 00002

Command ==> Scroll ==> PAGE

Name	Prompt	Size	Created	Changed	ID
CRC		20	2007/05/04	2007/05/04 15:54:23	JAS
EBCDIC		6	2007/05/04	2007/05/04 15:55:59	JAS

End

Demo 2 – LPAR PKW8



The screenshot shows a terminal window with a menu bar at the top: Menu Utilities Compilers Help. Below the menu, the text reads: DSLIST JAS1.TEXT.LIB(CRC) - 01.00 Line 00000000 Col 001 080. The command prompt is Command ==> and the scroll prompt is Scroll ==> PAGE. The main content of the terminal is a text file named JAS1.TEXT.LIB(CRC) containing a definition of a Cyclic Redundancy Check (CRC). The text is as follows:

```

***** Top of Data *****
A CYCLIC REDUNDANCY CHECK IS A NUMBER DERIVED FROM A BLOCK OF
DATA, AND STORED OR TRANSMITTED WITH THE DATA IN ORDER TO
DETECT ANY ERRORS IN TRANSMISSION. THIS CAN ALSO BE USED TO
CHECK THE CONTENTS OF A ZIP ARCHIVE. IT IS SIMILAR IN NATURE TO
A CHECKSUM. A CRC MAY BE CALCULATED BY ADDING WORDS OR BYTES OF
THE DATA. ONCE THE DATA ARRIVES AT THE RECEIVING COMPUTER, A
CALCULATION AND COMPARISON IS MADE TO THE VALUE ORIGINALLY
TRANSMITTED. IF THE CALCULATED VALUES ARE DIFFERENT, A
TRANSMISSION ERROR IS INDICATED. THE CRC INFORMATION IS CALLED
REDUNDANT BECAUSE IT ADDS NO SIGNIFICANT INFORMATION TO THE
TRANSMISSION OR ARCHIVE ITSELF. IT IS ONLY USED TO CHECK THAT
THE CONTENTS OF A ZIP ARCHIVE ARE CORRECT. WHEN A FILE IS
COMPRESSED, THE CRC IS CALCULATED AND A VALUE IS CALCULATED
BASED UPON THE CONTENTS AND USING A STANDARD ALGORITHM. THE
RESULTING VALUE (32 BITS IN LENGTH) IS THE CRC THAT IS STORED
WITH THAT COMPRESSED FILE. WHEN THE
FILE IS DECOMPRESSED, THE CRC IS RECALCULATED (AGAIN, BASED
UPON THE EXTRACTED CONTENTS), AND COMPARED TO THE ORIGINAL CRC.
ERROR RESULTS WILL BE GENERATED SHOWING ANY FILE CORRUPTION

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Summary

- Interoperability across Enterprise platforms
 - EBCDIC-to-ASCII data translation
 - Short term and Long term storage options
- Metadata Archive
 - Allows z/OS datasets to be stored on alternative platforms/ storage and still retain original DCB attributes
 - Easy restoration of long term archived data
- Encrypted data at rest *and* in motion
 - Address industry security regulations and compliance
 - Data is secured before, during and after being transferred to and from public storage alternatives