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# z/VM Goody Bag

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maxim  
ove agility; save tim  
enges colleagues

# Disclaimer and Acknowledgement



The examples presented here are for demonstration only. While they are based on real experience, there is no assurance that they will be applicable outside the original use at Nationwide Insurance.

Thanks to my coworker and SHARE's Deputy Director of Operations Jim Vincent for the work he did to extract the information about the VM "gems".



## Sources

- “Free” stuff that came with VM  
aka “Hidden Gems”
- VM Download Packages web page  
<http://www.vm.ibm.com/download/packages/>
- University of Kentucky VM Workshop Tools  
<http://ukcc.uky.edu/~tools/>
- V/Soft Software  
<http://www.vsoft-software.com/downloads.html>
- Slippery Rock University – Fran Hensler  
<http://zvm.sru.edu/~download>





## The Hidden Gems

- Where are these “gems”? On MAINT’s....
  - 193 disk - “CMS system tools” a.k.a. “Samples disk”
    - the 493 disk is the “Test CMS system tools”
  - 194 disk - “CP & DV object code”
  - 3B2 disk - “CMS & REXX object code”
- Installation samples along with undocumented samples
- Everything from how to bake a cake to the benefits of having a cat for a pet...



# The Hidden Gems

```

CAKE      SCRIPT  F1  V 132  Trunc=132 Size=13 Line=0 Col=1 Alt=0
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6
00000 * * * Top of File * * *
00001 Cake Recipe
00002
00003 3 cups flour
00004 1 cup sugar
00005 2 cups pineapple
00006 2 eggs
00007 1 tbsp. oil
00008 1 tsp. baking powder
00009 1 tsp. baking soda
00010 1 tsp. salt
00011
00012 Mix all ingredients in a large bowl.
00013 Pour into a pan and bake at 350 degrees for 30 minutes.
00014 * * * End of File * * *

```



# The Hidden Gems

- A real “fish” story:

```

DEEP      SEA      F1  F 80  Trunc=80 Size=8 Line=0 Col=1 Alt=0
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6
00000 * * * Top of File * * *
00001 THAT REMINDS ME OF THE TIME I ALMOST
00002 CAUGHT THE 50-POUND FISH.
00003 IT WAS EARLY IN THE MORNING, AND I WAS ALONE.
00004 I HAD A SUDDEN BITE ON THE LINE, AND I
00005 BEGAN FURIOUSLY REELING IT IN.
00006 I HAD GOTTEN THE FISH ALMOST IN THE BOAT,
00007 AND IT WAS A BEAUTY!
00008 SUDDENLY, THE LINE WENT SLACK.
00009 THE FISH WAS GONE!
00010 * * * End of File * * *

```



# The Hidden Gems

- And a definitive story about cats:

```

CAT      TALES      F1  F 80  Trunc=80 Size=8 Line=0 Col=1 Alt=0
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6.
00000 * * * Top of File * * *
00001 THERE ARE MANY KINDS OF ANIMALS TO CHOOSE FROM
00002 WHEN YOU ARE LOOKING FOR A PET.
00003 BUT MANY PEOPLE FIND CATS ARE AN EXCELLENT CHOICE.
00004 CATS ARE CLEAN AND DO NOT REQUIRE A LARGE LIVING SPACE.
00005 ALTHOUGH THEY ARE INDEPENDENT, CATS ARE ALSO VERY AFFECTIONATE
00006 AND DEVOTED TO THEIR OWNERS.
00007 SO, IF YOU ARE LOOKING FOR A FRIENDLY, FURRY ADDITION
00008 TO YOUR FAMILY, CONSIDER A CAT.
00009 * * * End of File * * *

```



## The Hidden Gems

- Those files, among others, are ‘samples’ used to populate the SFS directory VMSYS:MAINT.CMSREXX.OBJECT when INSTPOOL EXEC is run to start the file pool servers during VM installation
- Why are they there? They were/are used with the CMS/Xedit primer





## Gems on Maint's 193/493

- 193/493 disk - “CMS system tools” a.k.a. “Samples disk”
- The following are all found on those disks...



## SFS Tool: WHO EXEC

- WHO will sort the storage groups and output what users (who) are enrolled in each storage group.
- Very easy way to find out how much space everyone in a filepool is using
- Example: WHO VMBSYS (FILE



# SFS Tool: WHO EXEC

STORAGE GROUP REPORT FOR VMBSYS

DATE: 02/19/09

TIME GENERATED: 23:34:57

USERS IN STORAGE GROUP 2

User	Storage Group	4K Block Limit	4K Blocks Committed	Threshold
BARLOWR	2	100000	41923-41%	90%
CFCONSOL	2	2000	13-00%	90%
DRUSER	2	5000	5-00%	90%
DRWEB	2	50000	167-00%	90%
HTTPD	2	5000	3663-73%	90%
MAINT	2	400000	169864-42%	90%
RSCSDNS1	2	1000	22-02%	90%
SOFTWARE	2	500000	447226-89%	90%
VINCENJ	2	150000	93849-62%	90%

...and many many more...



## SFS Tool: TALLY EXEC

- TALLY will tabulate the amount of space which has been added to a storage group. It will show the amount of space being used and also show the amount of free space left. TALLY will also calculate the difference between the actual physical space and the logical allocated space.
- Example: TALLY VMBSYS (FILE



# SFS Tool: TALLY EXEC

STATUS REPORT FOR VMBSYS

DATE: 08/17/09

TIME GENERATED: 18:03:30

## FILE POOL INFORMATION

1000 MAXIMUM NUMBER OF STORAGE GROUPS  
 1000 MAXIMUM NUMBER OF MINIDISKS  
 2527232 POTENTIAL ADDRESSABLE 4K BLOCKS IN FILE POOL

## CURRENTLY DEFINED MINIDISK INFORMATION

MINIDISK NUMBER	GROUP NUMBER	4K BLOCKS IN-USE	4K BLOCKS FREE
1	1	1772 - 99%	18
4	1	3567 - 99%	21
6	1	3582 - 100%	6
9	1	8769 - 98%	214
14	1	8173 - 91%	810
17	1	8953 - 52%	8122
21	1	3392 - 13%	23573
2	2	44944 - 100%	0
3	2	165926 - 92%	13878
5	2	47979 - 100%	22
7	2	17971 - 100%	3
8	2	17969 - 100%	5
10	2	198158 - 99%	1964
11	2	187429 - 94%	12693



# SFS Tool: TALLY EXEC

## PHYSICAL/ALLOCATED BLOCK INFORMATION

GROUP NUMBER	# of USERS	PHYS. 4K BLOCKS	ALLOC. 4K BLOCKS	DIFFERENCE
1	0	70972	0	70972
2	93	2092310	5789280	-3696970
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0



## SFS Tool: SFSTRANS EXEC

- Transfer ownership of all directories and files from one userid to another. This exec must be run on a userid with Shared File System Administrator authority. The target userid must already be enrolled.
- After this exec has completed, a DELETE USER command must be executed to delete the old userid from the filepool.
- Very easy way to transfer *everything* when a userid needs to be renamed, a person leaves and someone else needs the files, etc.
- Syntax: SFSTRANS userid1 userid2



## SFS Tool: REGRANT EXEC

- This exec will regrant file and directory authorities for a user who has changed their userid.
- For example: if user WASME changed their userid to NEWME, all file and directory level grants to WASME would be changed to NEWME. All references to OLDID will then be deleted (revoked). This exec can be executed after a userid has been transferred using the SFSTRANS EXEC.





## SFS Tool: REGRANT EXEC

- System Administrator authority is required
- Syntax: REGRANT
  - The routine will prompt for the userid(s) that need to be re-granted.



# CMS Pipelines

- Built in part of CMS
- PIPE MODULE on CMS 190 disk  
CMSPIPES DCSS
- Highly optimized, modular, application development tool
- Throw-away, stand-alone command line Pipes
  - Excellent for z/VM administration and automation
- Use from REXX
- User-written extensions in REXX, Assembler or compiled languages



# CMS Pipelines

```
pipe CP Q DASD|split at ,|strip|specs /QUERY PAV/ 1 w2 nw|cp|locate /is an alias/|take  
10|cons
```

Device 30C0 is an alias Parallel Access Volume device whose base device is 3000

Device 30C1 is an alias Parallel Access Volume device whose base device is 3001

Device 30C2 is an alias Parallel Access Volume device whose base device is 3002

Device 30C3 is an alias Parallel Access Volume device whose base device is 3003

Device 30C4 is an alias Parallel Access Volume device whose base device is 3004

Device 30C5 is an alias Parallel Access Volume device whose base device is 3005

Device 30C6 is an alias Parallel Access Volume device whose base device is 3006

Device 30C7 is an alias Parallel Access Volume device whose base device is 3007

Device 30C8 is an alias Parallel Access Volume device whose base device is 3008

Device 30C9 is an alias Parallel Access Volume device whose base device is 3009



## Pipelines Runtime Library

- This is the author's version of what has been included in the CMS distribution as CMS Pipelines feature. The Runtime Library contains the most current enhancements.
- The Pipelines Runtime Library was made available in response to a SHARE requirement "which requested IBM's permission for software vendors (including shareware vendors) to package a current version of the CMS Pipelines runtime library with their software products in order that they could use new features of Pipes in their products".
- <http://www2.marist.edu/~pipeline>
- See PIPELINE NEWS for the list of changes



## Pipe Tool: RITA MODULE

*“Lovely Rita, Meter Maid...”*

- Rita reports on the CPU utilization of a pipeline complex by stage and pipeline specification.
- Detailed output is written to a disk file, and a summary is displayed on the console.
- A MUST HAVE for anyone writing, debugging, and tuning CMS Pipelines!!





## Pipe Tool: RITA MODULE

- The most current version of RITA can be found at: <http://www2.marist.edu/~pipeline/>
- Use RITA by replacing any “PIPE” command with “RITA”
- Example, change:

**PIPE** CP Q DASD|split at ,|strip|specs /QUERY PAV/ 1 w2 nw|cp|locate /is an alias/|take 10|cons

to

**RITA** CP Q DASD|split at ,|strip|specs /QUERY PAV/ 1 w2 nw|cp|locate /is an alias/|take 10|cons



# Pipe Tool: RITA MODULE

```
rita CP Q DASD|split at ,|strip|specs /QUERY PAV/ 1 w2 nw|cp|locate /is an alias/|take 10|cons
```

```
Device 30C0 is an alias Parallel Access Volume device whose base device is 3000
```

```
Device 30C1 is an alias Parallel Access Volume device whose base device is 3001
```

```
Device 30C2 is an alias Parallel Access Volume device whose base device is 3002
```

```
Device 30C3 is an alias Parallel Access Volume device whose base device is 3003
```

```
Device 30C4 is an alias Parallel Access Volume device whose base device is 3004
```

```
Device 30C5 is an alias Parallel Access Volume device whose base device is 3005
```

```
Device 30C6 is an alias Parallel Access Volume device whose base device is 3006
```

```
Device 30C7 is an alias Parallel Access Volume device whose base device is 3007
```

```
Device 30C8 is an alias Parallel Access Volume device whose base device is 3008
```

```
Device 30C9 is an alias Parallel Access Volume device whose base device is 3009
```

```
    CPU Utilization by Pipeline Specification          17 Aug 2009 18:20:27
```

```
54.536 (    54.536) ms total in "NoName001" (1 invocation)
```

```
70.469 ms total.
```

Detailed output from Rita in UNNAMED RITA001.



# Pipe Tool: RITA MODULE

```

UNNAMED RITA001 A1 V 89 Trunc=89 Size=22 Line=0 Col=1 Alt=0 18:23
====>
|...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....
* * * Top of File * * *
CPU Utilization by Pipeline Specification          from: 17 Aug 2009 18:20:26
                                                    to: 17 Aug 2009 18:20:27

CPU utilization of pipeline specification "NoName001":
  4.296 (    4.296) ms ( 570K) in stage 1 of pipeline 1: CP Q DASD
  5.768 (    5.768) ms ( 1K) in stage 2 of pipeline 1: split at ,
  5.867 (    5.867) ms ( 1K) in stage 3 of pipeline 1: strip
 22.136 (   22.136) ms ( 4K) in stage 4 of pipeline 1: specs /QUERY PAV/ 1 w2 nw
 16.306 (   16.306) ms ( 8K) in stage 5 of pipeline 1: cp
  0.144 (    0.144) ms ( 1K) in stage 6 of pipeline 1: locate /is an alias/
  0.010 (    0.010) ms ( <1K) in stage 7 of pipeline 1: take 10
  0.009 (    0.009) ms ( 2K) in stage 8 of pipeline 1: cons
 54.536 (   54.536) ms total in "NoName001" (1 invocation) <=====

54.536 ms attributed to stages; no virtual I/O.

  0.004 ms in general overhead.
  0.044 ms in scanner.
 15.718 ms in dispatcher.
  0.167 ms in accounting overhead.

70.469 ms total.
* * * End of File * * *

```





## Pipe Tool: CALENDAR EXEC

- An easy way to create a 3-month calendar from a Pipe.
- Produces a calendar of three months starting with the input date or today's month and RC = 0 RC=998 input date cannot be processed. e.g. 5-digit year RC=999 if the specified month is not valid.



# Pipe Tool: CALENDAR EXEC

- PIPE CALENDAR | CONSOLE would produce

February 2009							March 2009							April 2009						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7				1	2	3	4
8	9	10	11	12	13	14	8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	15	16	17	18	19	20	21	12	13	14	15	16	17	18
22	23	24	25	26	27	28	22	23	24	25	26	27	28	19	20	21	22	23	24	25
							29	30	31					26	27	28	29	30		

Look in the CALENDAR REXX file for the syntax/use notes



## Pipe Tool: CALENDAR REXX

- There is a newer version at <http://www2.marist.edu/~pipeline/>
- We have a couple of mods too:

22 Nov 1999 ... Allow current month in MIDDLE – CurrMonMid  
18 Nov 1999 ... Add WEEKS and SUNDAYLAST options  
Move Sunday BACK to start of week

- If you'd like our copy, let me know or E-mail me later.



## Pipe Tool: OSPDS REXX

- Decompose an OS PDS unloaded with IEBCOPY
- Input: The logical records written by IEBCOPY. If the dataset comes from tape, then it is usually in a VB format which must be unblocked before it comes here; a reader file (sendfile) is in netdata format and must be unblocked from that format.



## Pipe Tool: PIPDSCR EXEC

- Takes a 1403 formatted SCRIPT (DCF) and displays it with highlighting, etc, on your console.
- This is way cool...
- The only way to explain it is to show it to you:

```
EXEC PIPDSCR PIPDSCR $SCRIPT
```



# Pipe Tool: PIPDSCR EXEC

- Takes a script file that looks like...

```

A - VMB1
File Edit Transfer Appearance Communication Assist Window Help
PIPDSCR $SCRIPT C1 V 80 Trunc=80 Size=240 Line=0 Col=1 Alt=0 12:33
====>
|...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....
*** Top of File ***
¿SCRIPT/V3 3.2.1: DEVICE 1403N8 CHARS MONO
»
¿ CMS Pipelines PIPDSCR. (c) Copyright 1991 IBM Corporation
¿ CMS Pipelines PIPDSCR. (c) Copyright 1991 IBM Corporation
¿ CMS Pipelines PIPDSCR. (c) Copyright 1991 IBM Corporation
¿ CMS Pipelines PIPDSCR. (c) Copyright 1991 IBM Corporation
¿
¿ PIPDSCR - A BROWSER FOR FORMATTED SCRIPT FILES
¿ PIPDSCR - A BROWSER FOR FORMATTED SCRIPT FILES
¿ PIPDSCR - A BROWSER FOR FORMATTED SCRIPT FILES
¿ PIPDSCR - A BROWSER FOR FORMATTED SCRIPT FILES
¿
¿
¿
¿ PIPDSCR browses a file, with machine control characters, formatted for 140
¿ output. The four highlightings are displayed using colour and extended high
¿ lighting; highlight zero is normal text like this, highlight 1, highlight 2
¿                                highlight 2
¿                                highlight 2
¿                                highlight 2
¿                                highlight 2
¿ and highlight 3.
¿                highlight 3
¿                highlight 3
¿                highlight 3
¿                highlight 3
¿                _____
¿
¿
¿
¿
¿
¿
¿
¿
¿
¿

```



# Pipe Tool: PIPDSCR EXEC

- ... and makes it look like:

```

A - VMB1
File Edit Transfer Appearance Communication Assist Window Help

CMS Pipelines PIPDSCR. (c) Copyright 1991 IBM Corporation

PIPDSCR - A BROWSER FOR FORMATTED SCRIPT FILES

PIPDSCR browses a file, with machine control characters, formatted for 1403
output. The four highlightings are displayed using colour and extended high-
lighting; highlight zero is normal text like this, highlight 1, highlight 2,
and highlight 3.

PIPDSCR [<fname> [<ftype> [<fmode>]] [% <dtype>]

Figure 1. PIPDSCR Command Syntax

<fname> Is the file name of the file you wish to see. The default is
PIPDSCR.

<ftype> Is the file type of the file. The default is $SCRIPT.

<fmode> Is the mode of the file. All disks are searched by default.

<dtype> Is the filename of a REXX external function that returns the
desired character attributes used when constructing the 3270 data
stream. The default is DSCRDEF.
  
```

# Other Gems... SCM XEDIT



- SCM formats comments in EXECs so that they are nice and neat. Found on MAINT's 493/193 disks.
- Example:

```

TEMP      EXEC      A1  V 255  Trunc=255 Size=5 Line=0 Col=1 Alt=12      12:41
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
00000 * * * Top of File * * *
00001 /* A test exec */
00002 Address 'COMMAND' /* Address basics */
00003 'CP Q TIME' /* Is it time to go yet?? */
00004 'CP MSG SLOTH Are you going to do some work today?' /* Be wise... */
00005 Exit /*adios!*/
00006 * * * End of File * * *

```



# Other Gems... SCM XEDIT



- SCM \* 71 would give:

```

TEMP      EXEC      A1  V 255  Trunc=255 Size=5 Line=0 Col=1 Alt=17      12:42
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
00000 * * * Top of File * * *
00001 /* A test exec                                     */
00002 Address 'COMMAND'                                /* Address basics */
00003 'CP Q TIME'                                     /* Is it time to go yet?? */
00004 'CP MSG SLOTH Are you going to do some work today?' /* Be wise... */
00005 Exit                                           /*adios! */
00006 * * * End of File * * *

```



# Other Gems... FMTP XEDIT

- An easy way to format your Pipelines into a more readable format (Found on MAINT's 493/193 disks)
  - “readable” is a personal preference

## • Example

```

TEMP      EXEC      A1  V 255  Trunc=255 Size=5 Line=0 Col=1 Alt=0          12:46
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
00000 * * * Top of File * * *
00001 /* A test exec */
00002 Address 'COMMAND'
00003
00004 'PIPE CP Q TIME | CONSOLE | COUNT LINES | VAR HOWMANY'
00005
00006 * * * End of File * * *

```

# Other Gems... FMTP XEDIT



- FMTP typed in the Prefix area next to the PIPE command would produce:

```

TEMP      EXEC      A1  V 255  Trunc=255 Size=9 Line=0 Col=1 Alt=5          12:50
====>
      |...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
00000 * * * Top of File * * *
00001 /* A test exec */
00002 Address 'COMMAND'
00003
00004 'PIPE(name TEMP)|',
00005     'CP Q TIME |',
00006     'CONSOLE |',
00007     'COUNT LINES |',
00008     'VAR HOWMANY'
00009
00010 * * * End of File * * *

```



# VM Download Library

## List of All-Time Favorites (40 total)

Rank	Count	Name	Types	Abstract	More...
1	15434	<b>B2H</b>	<a href="#">v-2894K</a> <a href="#">z-576K</a>	B2H: Convert Bookmaster, GML, Script/VS and "flat" files to HTML (Internet) <b>Release 4.7</b>	<a href="#">(+)</a>
2	7059	<b>PRFCOPY</b>	<a href="#">v-36K</a> <a href="#">z-25K</a>	The most complete "cut&paste" for XEDIT <b>V4.2.f</b>	<a href="#">(+)</a>
3	6014	<b>YR2000VM</b>	<a href="#">v-656K</a> <a href="#">z-215K</a>	Technical Description of VM/ESA's Year 2000 Support (updated Sept. 1999)	<a href="#">(+)</a>
4	5868	<b>CPQUERY</b>	<a href="#">v-345K</a>	CMS GUI exec, issues CP Query commands and manages NSS <b>V4.0.1</b>	<a href="#">(+)</a>
5	5466	<b>VMWEBCD</b>	<a href="#">v-5245K</a> <a href="#">z-1091K</a>	Redbook SG24-5347 "Web-Enabling VM resources" sample programs.	<a href="#">(+)</a>
6	5180	<b>CHARLOTT</b>	<a href="#">v-812K</a>	Charlotte - fullscreen, textual World Wide Web browser for CMS	<a href="#">(+)</a>
7	5099	<b>LP3820</b>	<a href="#">v-405K</a>	Convert AFP (LIST3820) files to personal printers	<a href="#">(+)</a>
8	4972	<b>H2S</b>	<a href="#">v-91K</a> <a href="#">z-66K</a>	H2S - Converts HTML to Script/VS (DCF) for fine printing with AFP or PostScript	<a href="#">(+)</a>
9	4953	<b>GUISKEL</b>	<a href="#">v-1676K</a>	A framework to build REXX CMS/GUI applications much easier. <b>V3</b>	<a href="#">(+)</a>
10	4935	<b>GUIBLD95</b>	<a href="#">v-1208K</a>	Windows 95 GUI Builder for Writing CMS GUI Applications	<a href="#">(+)</a>
11	4734	<b>PRFGUI</b>	<a href="#">v-478K</a>	A MSGUI interface for VM/PRF Trend & Summary files <b>Version 1.13</b>	<a href="#">(+)</a>
12	4612	<b>PIPESERV</b>	<a href="#">v-801K</a>	A Pipeline Server. A driver for service machines. Version 1.2.4.	<a href="#">(+)</a>
13	4580	<b>MAILGATE</b>	<a href="#">v-90K</a>	Package to enable SMTP gateway functions on a pre-VM/ESA 2.3.0 system.	<a href="#">(+)</a>
14	4445	<b>RSK-GA</b>	<a href="#">v-342K</a>	RSK Extras (GA level)	<a href="#">(+)</a>
15	4416	<b>RSKFIX</b>	<a href="#">v-355K</a>	Reusable Server Kernel (RSK) fix pack	<a href="#">(+)</a>
16	4316	<b>FILELIST</b>	<a href="#">v-215K</a>	Improvements to FILELIST, RDRLIST and EXECUTE <b>Version 2.4.7</b>	<a href="#">(+)</a>
17	4244	<b>GUIONE</b>	<a href="#">v-1632K</a>	Make your own CMS/GUI performance monitor (includes GBOS2) <b>V1.1</b>	<a href="#">(+)</a>
18	4238	<b>COMPARE</b>	<a href="#">v-145K</a> <a href="#">z-169K</a>	Comparing files with XEDIT, Comparing minidisks (or FILELISTS). <b>V1.9</b>	<a href="#">(+)</a>
19	4195	<b>MONVIEW</b>	<a href="#">v-60K</a>	Tools to look at raw VM/ESA or z/VM monitor data.	<a href="#">(+)</a>
20	4175	<b>LIBRCMS</b>	<a href="#">v-81K</a>	VSE/ESA Librarian Server for CMS users	<a href="#">(+)</a>



# VM Download Library

21	4142	<b>PICKPIPE</b>	<a href="#">v-33K</a>	Choose between default VM, Marist, and test runtime versions of Pipelines	(+)
22	4118	<b>FCOPY</b>	<a href="#">v-131K</a>	* FCOPY - High speed CMS file copy routine with PACKLIB support	(+)
23	4108	<b>SG245148</b>	<a href="#">v-201K</a>	Redbook "VM/ESA Network Computing with Java and NetRexx" sample programs	(+)
24	4107	<b>SEARCH</b>	<a href="#">v-352K</a>	Search Engine for VM-Hosted Web Sites	(+)
25	4084	<b>VMHP</b>	<a href="#">v-114K</a>	Tools we use to manage the VM home page system.	(+)
26	4073	<b>LOOKALL</b>	<a href="#">v-65K</a>	Probably the best XEDIT-based search engine you will find.	(+)
27	4035	<b>SPOOLCHN</b>	<a href="#">v-474K</a>	System Programmer/System Operator Extended Spool Query Commands	(+)
28	3959	<b>INFOLIST</b>	<a href="#">v-266K</a>	The CMS File Manager. Replaces FILELIST, RDRLIST, MACLIST	(+)
29	3941	<b>PIPEFIND</b>	<a href="#">v-545K</a>	VERY FAST/FUZZY PIPELINES SEARCH OF FILES.	(+)
30	3915	<b>CHAT</b>	<a href="#">v-10K</a>	Network chatting tool demonstrating various CMS APIs.	(+)
31	3902	<b>VM220PRF</b>	<a href="#">v-840K</a>	VM/ESA Version 2 Release 2.0 Performance Report	(+)
32	3889	<b>TLD</b>	<a href="#">v-144K</a>	TCP/IP line driver for CMS distributed queues.	(+)
33	3889	<b>XASTOR</b>	<a href="#">v-49K</a>	A multi-functioned, programmable, full-screen storage display	(+)
34	3887	<b>GETBACK</b>	<a href="#">v-15K</a>	Recover a wrongly erased file.	(+)
35	3876	<b>ECHO</b>	<a href="#">v-8K</a>	Empty Rexx/Sockets-based, multi-client TCP server	(+)
36	3855	<b>HASHWF</b>	<a href="#">v-28K</a> <a href="#">z-17K</a>	A General HASH function (S/370 and other systems)	(+)
37	3811	<b>SG245164</b>	<a href="#">v-92K</a>	Redbook "Exploiting Recent CMS Function: A User's Guide to CMS Application Multitasking" sample programs.	(+)
38	3773	<b>DRM</b>	<a href="#">v-205K</a>	An XEDIT based interface to manage the CP Directory <b>Version 4.5.3</b>	(+)
39	3701	<b>MULTISRV</b>	<a href="#">v-444K</a>	Multiple protocol server for TCP/IP	(+)
40	3662	<b>BOX2BMS</b>	<a href="#">v-3K</a>	Draw box diagrams for BookMaster documents	(+)



# VMARC

- VMARC is a data compaction and file archiving utility for VM/CMS. Although compacted files may make economical use of storage space or network bandwidth, they are not directly usable by applications.
- Similar in function to WinZip
- File date / time preserved in VMARC
- <http://www.vm.ibm.com/download/>



# VMARC

```

A - VMB ICC
File Edit Font Transfer Macro Options Window Help
COMMANDS VMARC All Help Information line 1 18:37
-----
VMARC Version 1.2
Copyright (c) 1989-1993, John S. Fisher, Troy, New York
-----
VMARC is a data compaction and file archiving utility for VM/CMS.
Although compacted files may make economical use of storage space or
network bandwidth, they are not directly usable by applications.

For information about Creating Self-Extracting Archives see
the RELATED help.

The syntax for the VMARC command is as follows:

VMARC command input output ( options...

-----
The VMARC command functions and their parameters are each discussed
individually in this section, with complete descriptions.

They appear in this order: PACK UNPACK LIST
-----

THE PACK FUNCTION
-----

The PACK function creates archives a group of CMS files.
PF1= Brief 2= Top 3= Quit 4= Return 5= Clocate 6= ?
PF7= Backward 8= Forward 9= PFkeys 10= 11= Related 12= Cursor

====> _
Macro-read 1 File
Ma 172.24.144.237:23 vmb08ax vmbicc.nwie.net a 31,7

```




# University of Kentucky

VM Workshop Tools - Mozilla Firefox

File Edit View History Bookmarks Tools Help Google tapemap utility for cms

UK http://ukcc.uky.edu/~tools/







## VM WORKSHOP TOOLS

A tradition of the VM Workshop is the Tools Tape. Attendees contribute mods, original programs, documentation, etc. that they have written that might be of use or interest to other VM installations. Many of the presentations at the Workshop involve these contributions. Tools from a few recent Workshops are available here.

- [1998](#) Marist College
- [1997](#) McGill University
- [1996](#) University of Kentucky
- [1995](#) Wichita State University

SEARCH THE DESCRIPTIONS OF THE 1996 THRU 1998 TOOLS

[SEARCH](#) [HELP ?](#)

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SHARE 113 - Session 9153

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# V/Soft Software

**V/Soft Software**

V/Soft Software, Inc.

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*"Now THIS is a server!!"*

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### Downloads

Here are some interesting and perhaps useful technical documents and software tools and applications for the z/VM and Linux under z/VM environments, free for the taking. Unless otherwise noted, the software tools and applications are the property of their respective authors. Enjoy.

**Documents:**

- "z/VM Licensing and Pricing" -- a short description, in plain English, of how IBM licenses and charges for ZVM V5. A .pdf version is [here](#) and a MS Word version [here](#).

**Tools and applications:**



# Slippery Rock University

Fran Hensler's VM & VSE Download Page - Mozilla Firefox

http://zvm.sru.edu/~DOWNLOAD/

## Welcome to Fran Hensler's VM & VSE Download Page

These packages have been collected over many years from various authors who offered them to members of the VM and VSE discussion lists. To the best of my knowledge these packages can be freely redistributed. I provide the packages on an "AS IS" basis and no support is offered. I have used the some of the packages in various releases of VM and VSE. They may not work in a current release of VM or VSE.

If an author or copyright holder wishes that a package be removed from the library it will be done ASAP after contacting me.

Slippery Rock University is the host for this web page but I am solely responsible for its contents.

SRU AND I MAKE NO WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE CONCERNING THE LIBRARY.

/Francis J Hensler  
mailto: fjh@zvm.sru.edu

The easiest way to download a VMARC package is to use the CMS browser Charlotte. Just put the cursor on the Download button and press F4 twice. The package will be downloaded in 80 byte records ready to UNPK with VMARC. If you need to download VMARC itself please visit the IBM VM Download site at <http://www.vm.ibm.com/download/>

To download a VMARC archive to your PC from this VM site:

- Click on the package's **Download**.
- Instruct your browser to save the file to disk
- Upload the file to VM in BINARY
- Run the file through this pipeline (where 'fn' is the name of the file you uploaded):

```
PIPE < fn VMARC A | tblock 80 00 | > fn VMARC A F 80
```

- Unpack the resultant file using VMARC:

```
VMARC UNPK fn VMARC A
```

If you wish to view or unpack the VMARC package on your PC you can use the VMA Utility available at <http://www.homerow.net/zvm/vma.htm>

Dane

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# Slippery Rock University



**SHARE**

Technology Connections - Results

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File Edit View History Bookmarks Tools Help Google tapemap utility for cms

http://zvm.sru.edu/~DOWNLOAD/

## Packages Filelist

Filename	Filetype	Fn	Format	Recs	Records	Blocks	Date	
ARCHIE	EXEC	A2	V	94	307	2	1994-03-25	<a href="#">Download</a>
ARCUTIL	EXT	A1	V	82	714	7	1991-05-07	<a href="#">Download</a>
ARCUTIL	VMARC	A1	F	80	1987	39	1993-08-04	<a href="#">Download</a>
BLOCHTAP	EXT	A2	F	80	84	2	1987-05-11	<a href="#">Download</a>
BLOCHTAP	VMARC	A1	F	80	882	11	1997-05-20	<a href="#">Download</a>
CEEBNITA	ASSEMBLE	A1	F	80	385	8	1997-09-19	<a href="#">Download</a>
CHARLOTT	VMARC	A1	V	80	10384	208	2002-10-16	<a href="#">Download</a>
CMSMAKE	VMARC	A1	F	80	536	11	2007-01-30	<a href="#">Download</a>
CPCONFIG	EXEC	A1	V	73	833	6	2004-04-02	<a href="#">Download</a>
DETERSE	VMARC	A1	F	80	501	10	1998-03-11	<a href="#">Download</a>
DETERSE	MODULE	A1	V	55200	2	14	1985-06-21	<a href="#">Download</a>
DIAG84	VMARC	A1	F	80	79	2	2006-09-14	<a href="#">Download</a>
DIAG84	VMARC	A1	F	80	151	3	1993-08-10	<a href="#">Download</a>
DUSERX	VMARC	A1	V	80	1363	28	1999-07-08	<a href="#">Download</a>
EDITM	VMARC	A1	F	80	341	7	2003-07-24	<a href="#">Download</a>
ESAY	VMARC	A1	F	80	64	2	1989-04-05	<a href="#">Download</a>
FTP2HOME	VMARC	A1	F	80	235	5	2007-01-18	<a href="#">Download</a>
GAMES	VMARC	A1	F	80	241	8	2004-02-10	<a href="#">Download</a>
HTTPO	MEMO	A1	V	67	2	1	2003-01-10	<a href="#">Download</a>
ICUENR	EXEC	A1	V	77	177	2	2003-07-24	<a href="#">Download</a>
LNAME	VMARC	A1	F	80	602	12	1995-05-01	<a href="#">Download</a>
LAUNCHKE	ZIP	A1	V	7240	9	11	1998-02-05	<a href="#">Download</a>
MAILABLE	EXEC	A1	V	72	707	7	2002-10-31	<a href="#">Download</a>
MSGD	VMARC	A1	F	80	825	17	2004-03-02	<a href="#">Download</a>
NASHVSAM	VMARC	A1	F	80	190	3	2005-12-07	<a href="#">Download</a>
NMR	VMARC	A1	F	80	4210	83	1995-06-20	<a href="#">Download</a>
PCPRINT	VMARC	A1	F	80	1399	27	2005-06-06	<a href="#">Download</a>
PGP	VMARC	A1	F	80	4243	83	1996-10-30	<a href="#">Download</a>
POPFETCH	VMARC	A1	F	80	428	9	2000-09-06	<a href="#">Download</a>
POPPER	VMARC	A1	F	80	1031	21	1999-04-20	<a href="#">Download</a>
POPPER	MODULE	A1	V	65535	6	36	1999-04-19	<a href="#">Download</a>
POWERZVM	JPG	A1	V	4344	3	4	2008-06-15	<a href="#">Download</a>
PROD_DR	HTML	A1	V	167	172	3	2008-07-17	<a href="#">Download</a>
PROD_DR	VMARC	A1	F	80	208	5	2006-08-04	<a href="#">Download</a>
REXXREF	VMARC	A1	F	80	199	4	2003-07-24	<a href="#">Download</a>
REXXVSAM	VMARC	A1	F	80	1661	33	2007-08-23	<a href="#">Download</a>
REXXWAIT	VMARC	A1	F	80	415	9	1996-08-16	<a href="#">Download</a>

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https://zvm.sru.edu/~DOWNLOAD/

REXXREF	VMARC	A1	F	80	1661	33	2007-08-23	<a href="#">Download</a>
REXXVSAM	VMARC	A1	F	80	415	9	1996-08-16	<a href="#">Download</a>
REXXWAIT	VMARC	A1	F	80	366	8	2003-07-24	<a href="#">Download</a>
RXLDEV	VMARC	A1	V	80	3228	65	1998-06-09	<a href="#">Download</a>
ROOMATHEN	VMARC	A1	F	80	95	2	2003-07-24	<a href="#">Download</a>
RXSET	VMARC	A1	F	80	387	8	2003-07-24	<a href="#">Download</a>
RXSOCKET	VMARC	A1	F	80	5468	107	1998-05-27	<a href="#">Download</a>
RXSOCKET	VMARC	A1	F	80	5468	107	1998-05-27	<a href="#">Download</a>
SCANCMS	VMARC	A1	F	80	3306	65	1998-10-08	<a href="#">Download</a>
SMON	VMARC	A1	F	80	18371	301	2007-03-02	<a href="#">Download</a>
SMTFNOTE	DOC	A1	V	33260	1	9	2003-07-24	<a href="#">Download</a>
SMTFNOTE	EXEC	A1	V	72	780	8	2003-07-24	<a href="#">Download</a>
SNAPRSIM	VMARC	A1	F	80	20971	410	1998-12-31	<a href="#">Download</a>
SPD	VMARC	A1	F	80	1279	25	2003-07-24	<a href="#">Download</a>
SRUSEP	ASSEMBLE	A1	F	80	119	3	1998-03-08	<a href="#">Download</a>
SRUSEP	TEXT	A1	F	80	5	1	1998-03-08	<a href="#">Download</a>
SRUSEP	EXEC	A1	V	41	2	1	1998-03-08	<a href="#">Download</a>
TMR	VMARC	A1	F	80	304	6	2003-08-08	<a href="#">Download</a>
TMR	README	A1	V	69	138	2	2003-05-08	<a href="#">Download</a>
TMR	READLIST	A1	V	100	18	1	2003-05-08	<a href="#">Download</a>
TWV100	VMARC	A1	F	80	633	13	1994-11-01	<a href="#">Download</a>
TPRINT	VMARC	A1	F	80	368	8	1996-08-16	<a href="#">Download</a>
TXI2PDF	HTML	A1	V	96	40	1	2004-05-26	<a href="#">Download</a>
VMARC	HELPCMS	A1	V	75	732	8	1996-07-19	<a href="#">Download</a>
VMARC	MODULE	A1	V	13486	3	4	2002-08-19	<a href="#">Download</a>
VMARC	VMARC	A1	F	80	2859	56	2002-05-19	<a href="#">Download</a>
VMBEAR	TXT	A1	F	80	52	2	2007-04-27	<a href="#">Download</a>
VMBEAR	GIF	A1	V	80	84	2	1997-05-07	<a href="#">Download</a>
VMFTP	VMARC	A2	V	80	586	12	1998-07-14	<a href="#">Download</a>
VMFUFUD	VMARC	A1	F	80	679	14	2006-06-30	<a href="#">Download</a>
VMPOP3	VMARC	A1	F	80	1800	36	1998-08-04	<a href="#">Download</a>
VMPOP3X	VMARC	A1	F	80	1836	36	1998-03-06	<a href="#">Download</a>
WEBROVER	VMARC	A1	F	80	114	3	2005-01-28	<a href="#">Download</a>
WEBCOUNT	VMARC	A1	F	80	162	4	1998-03-16	<a href="#">Download</a>
WEBSHARE	VMARC	A1	V	80	2415	49	1999-08-29	<a href="#">Download</a>
XCLOCK	EXEC	A1	V	68	52	1	2003-07-24	<a href="#">Download</a>
XCOMPARE	VMARC	A1	F	80	1475	29	1999-01-15	<a href="#">Download</a>

2421 references to this page

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# TRACK

- The 'widely acclaimed' TRACK utility for monitoring and poking around in virtual machines, real storage, etc.
- Includes
  - Basic dis-assembler
  - Ability to display ASCII for Linux guests
- <http://www2.marist.edu/track/>
- TRACK for z/VM – What's Happening in Your Virtual Machines?  
From past SHARE, Session 9123

# TRACK



Track for VM - A VM System Programmer Tool - Mozilla Firefox

http://m.anarist.edu/track/

Powered by **z/VM** **Track for VM** With 64-bit Support! The one tool you can't live without!

**Feb. 2009: Announcing TRACK for z/VM 5.4**  
 This newest version of TRACK supports **all** VM systems from VM/XA through z/VM Version 4 in 32 or 64-bit mode, and **z/VM Version 5+** in 64-bit mode. To download the new TRACK code, click on the Download Page link on the left side navigation.

**PDF Manual available!** Get the new manual here: [Track for z/VM User's Guide \(Beta Version\)](#)

**Recent TRACK updates**

- > z/VM 5.4.0 support
- > New! Support of FCP devices in DEV panel
- > Overhaul of VST/RST disassembler processing and other fixes from Steve Powell

**Some TRACK for z/VM 5.3 Highlights**

- > z/VM 5.3.0 support
- > New HOSTREAL switch for Logical/Real storage displays

**Other TRACK z64 Highlights**

- > FILE option for TRACK command. Writes contents of panel to a file and exits immediately w/no screen displayed. Used for wrapping around server and/or web presentation
- > IUCV panel added; Entering IUCV on the TRACK command line will display the IUCV/APPC connections for that userid. If TRACKING SYSTEM, then it will show all the system connections and allow filtering based on CP Service Name. Example: **TRACK SYSTEM IUCV \*IDENT**
- > VMD panel switches to "long" format for ESAME guests. This shows the PSW and Regs as 16 byte fields.
- > All panels will handle storage from 1MB to 16EB (That's 16 Exabytes, or 2<sup>60</sup>. A boat-load of storage no matter how you look at it!)
- > ASCII ON/OFF command that switches all storage display panels between EBCDIC and ASCII for the data values. Handy for Linux guests!
- > Support for **all** zArchitecture instructions on the disassembly panel.

More to come... This is all a work-in-progress, including this web site. I am still working on some additional enhancements and support that will be coming soon. I am planning on adding screen-shots of the TRACK panels as a visual guide on using TRACK, and a FAQ section also.

Huh? If you have questions, comments, suggestions, please contact me via the Contact Me link on the top-right of the web page.

Have fun and enjoy TRACK for VM!

Dinos and other anachronisms  
[\[ Join Now | Ring Hub | Random | << Prev | Next >> \]](#)



# TRACK

```

A - VMB ICC
File Edit Font Transfer Macro Options Window Help
=====
TRACK 1 USER : OPERATOR      ****  VMD  ****  for z/VM 5.4  18:49:43  08/17/09
=====
VMDBK @ 0B7B0000      Class = ABCDEGMR5      Share= 5000  R
Logon= 06/16/09 15:23  Virtcpu = 009:02.94  Totcpu = 010:52.80  25  Devices
Storage= 32M      Account = *SERVC      Console= DISC
Last CP= SET      Locked= 0      WSS= 436
PSW= 030E0000 00F353E0      CC = 0      Stat = EC ENABLED  WAIT SUPR
CPUaddr= 00      #CPUs= 01      Mach= XA      Amode= 31-bit      370accm= ON
Sio= 2035377  Pr= 885122  Pun= 54      Read = 0      Dist = 3-25-02
Rstat=
Qstat=
Ostat= SYSOP IN-USERCT DISC
Com = EXEC      Exec = LDEV      Mod = DMSWRS      Tran= EXECDROP
Ipl = IPL 190 PARM AUTOCR
R0-7= 00000001 FF1B99F0 00000001 00000003 80E46624 00E46610 00E478BC 00E46510
R8-F= 00E48538 00F36298 0000A000 00007A50 00F35298 00003108 00F12908 00F35412
disc#exec sysclear | exec qextid | c | sysclear | exec qextid | stop | d |

=====
CR=Upd CLEAR=Subset ==> _
2=Auto 3=Quit 4=Prt 5=File 1=RST 9=VMD 10=VST 11=DEV 12=DBK 7=Prev 8=Next
Ma 172.24.144.237:23 vmb08ax vmbicc.nwie.net a 30,26

```



# CHARLOTT

- Web Browser for VM
- CHARLOTT is a highly capable 3270-compatible web browser.
- Handles most text-heavy web pages with no problem. Web pages with a lot of graphics are not very useful.
- <http://www.vm.ibm.com/download/charlott.vmarc>



# CHARLOTT

```

A - VMB ICC
File Edit Font Transfer Macro Options Window Help
IBM: VM Download Packages
+ - 1-28/1320 < > 1-79/79
Skip to main content
IBM@
  • United States
  • [ change ]
Search for: _____ {Search}
  • Home
  • Business solutions
  • IT services
  • Products
  • Support & downloads
  • My IBM
IBM Systems > System z > z/VM >
VM Download Packages
Read the license agreement before downloading, and if you need instructions on
how to unpack what you download, visit the download page .
On this page is the Entire Library view of the library. If the list appears
truncated or corrupted, flush your browser's memory and disk caches and then
reload this page.
1: 1=Help      2=URL keys   3=Return    4=File keys  5=Search     6=Top/Bot
   7=Backward   8=Forward    9=Hotlist   10=Left     11=Right    12=Exit
Ma 0.1 08/12/08.225 02:41PM vmbicc.nwie.net a 3,2

```





# GOPHER

- Gopher is a protocol system, which in advance of the World Wide Web, allowed server based text files to be hierarchically organized and easily viewed by end users who accessed the server using Gopher applications on remote computers.  
From The Internet Gopher [http://www.codeghost.com/gopher\\_history.html](http://www.codeghost.com/gopher_history.html)
- <http://www.casita.net/~rmt/software/gopher24.vmarc>



# IPGATE

- An application that allows the sharing APPC resources across VM systems without the need of SNA. IPGATE communicates through TCP/IP and sets up a separate session for each conversation. One conversation is needed per user and APPC resource pair. IPGATE has been tested extensively with Shared File Pools (SFS) and the IBM Performance ToolKit (a.k.a. FCON/ESA).
- Written in REXX and uses MTREXX
- Allow distributed IUCV across TCP/IP when ISLINK and SNA are not an option
- <http://www.vsoft-software.com/downloads.html>



## VMFTP

- VMFTP is a macro processor for the VM TCP/IP File Transfer Protocol (FTP) command. It allows a REXX program to issue FTP subcommands and process the responses to them.
- From Romney White in a pre-IBM endeavor
- <http://zvm.sru.edu/~download/vmftpupd.vmarc>



# VMFTP - Example

```
/* Sample VMFTP Macro named TEST*/  
'open some.where'  
If RC <> 220 Then Signal Oops  
  
i = OUTPUT.0  
Parse Var OUTPUT.i user rest  
If user <> 'USER' Then Signal Oops  
  
'barlowr'  
If RC <> 331 Then Signal Oops  
  
'my_pw'  
If RC <> 220 & RC \= 230 Then Signal Oops  
  
'dir'  
If RC <> 226 Then Signal Oops
```

```
'quit'  
If RC <> 221 Then Signal Oops  
  
Exit 0  
  
Oops:  
Say 'Return code' RC 'not expected'  
Say OUTPUT.0 'lines'  
Do i = 1 To OUTPUT.0  
    Say ""Output.i""  
End  
Exit RC
```



# VMFTP - Example

VMFTP TEST

Return code 250 not expected

7 lines

'200 Port request OK. '

'125 List started OK '

'AG           SERVERS   V           17           10           1 2008-08-08 18:45:45 -'

'AGLIST      EXEC       V           71           29           1 2008-08-08 18:26:34 -'

'DPTOOL      IMAGE       V           49152       212          1264 2007-10-23 13:51:12 -'

'WORK                    DIR           -           -           - 2005-06-10 09:04:13 -'

'250 List completed successfully. '

>>>QUIT

221 Quit command received. Goodbye.



# TAPEMAP

- TapeMap describes the contents of a tape.
- Scans a tape from beginning to end and attempts to determine how many files and the layout
- Source files and install notes in VMARC;  
Build TAPEMAP MODULE
- <http://ukcc.uky.edu/~tools/1998/tapemap.vmarc>



# TAPEMAP

```
A - VMB ICC
File Edit Font Transfer Macro Options Window Help
COMMANDS TAPEMAP All Help Information line 1 12:34
TAPEMAP

TapeMap describes the contents of a tape.

Note: TapeMap requires that a tape drive be attached to your userid. If tape
drives are not available to CMS users at your installation the TAPEMAP command
cannot be used under CMS.

+-----+
| TAPEMAP | <options...> |
+-----+

Options

BBCopy=Yes The BBCOPY option specifies how blocks containing errors are
           No to be handled. Specify NO to cause blocks that may contain
           errors to be skipped by MAP=DATA, MAP=ALTDATA, and OUTPUT
           option processing. The default is YES.

BBLimit=n The BBLIMIT option specifies the number of input errors that
           32 will be allowed. TapeMap execution will terminate when the
           specified number of recoverable errors have occurred. The
           PF1= 2= Top 3= Quit 4= Return 5= Clocate 6= ?
           PF7= Backward 8= Forward 9= PFkeys 10= 11= 12= Cursor

====> _ Macro-read 1 File

Ma 0.4 08/14/08.227 12:34PM vmbicc.nwie.net a 31,7
```



# WEBSHARE

- Rick Troth's HTTPD server for z/VM (CMS)
- Written entirely in REXX and CMS Pipelines
- Allows both text and binary files to be served out to web browsers very easily from CMS
- <http://www.vsoft-software.com/downloads.html>







# Contact Information



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Systems Engineering Consultant

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