



B I MOYLE ASSOCIATES, INC.

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BIM-Dr.C

VM CMS MINIDISK BACKUP SYSTEM

USERS GUIDE

Release 2.122

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This documentation applies to Release
2.122 of the program product BIM-
Dr.C.

Original Printing.....11/29/2001
Last Revised11/29/2001

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Installation

1. Logon to userid MAINT or to a userid that is authorized to update the user directory.
2. Attach a tape drive to the userid specified in step 1 as 181 and mount the BIM-Dr.D/BIM-Dr.C install tape.
3. Issue the command 'VMFPLC2 REW'.
4. Issue the command 'VMFPLC2 FSF 11'.
5. Issue the command 'VMFPLC2 LOAD DRCSAMP DIRECT A'.
6. Issue the command 'CP DETACH 181'.
7. Make your modifications to DRCSAMP DIRECT as required.
8. Update the directory for userid DRC then logon to DRC.
9. Attach a tape drive to userid DRC as 181 and mount the BIM-Dr.D/BIM-Dr.C install tape.
10. Issue the command 'VMFPLC2 REW'.
11. Issue the command 'VMFPLC2 FSF 11'.
12. Issue the command 'VMFPLC2 LOAD * * A'.
13. Issue the command 'DRCINST EXEC' to create the DRC module. The name and the location of the CP User Directory will be required for installation.

Customization

We have provided an automatic method of running full or incremental CMS backups. The exec called 'DRCAUTO' is provided to automatically choose the correct default parameters based on the current day of the week. It is set to do a full backup on each Friday and an incremental backup of all files that have changed since the last full backup on all other days of the week.

You will want to use Doctor D. to do your full volume backups on you full backup days because of its speed and functionality although you may use BIM-Dr.C for this purpose. If you use Dr.D to do your full backups then you should change the &GOTO label in the DRCAUTO EXEC to go to -SKPFULL.

A sample profile exec called 'DRCPROF' is also provided to allow BIM-Dr.C to run in a disconnected virtual machine. In this manner a facility such as VMUTIL could automatically log on DRC to run every day at the same time. Be sure to rename or copy the DRCPROF EXEC to PROFILE EXEC to be able to use it.

A sample exclude file called 'DRCSAMP EXCLUDE' can be used to force certain minidisks or all of a user's minidisks to be excluded. For example, you may wish to exclude MAINT's 123, 124 along with all of \$ALLOCS disks. Specification of userid's is in column 1-8, the minidisks address is specified in columns 9-12 (note: 4 digits for X/A compatibility) and column 13-15 specify R/O to have the disk linked Read Only. If the minidisk address is blank, then all disks for that userid are bypassed. Be sure to rename or copy the sample exclude to the DRC EXCLUDE file to be able to use it.

Effective with version 2.1.04 BIM-Dr.C now uses the 'MR' mode to link to user minidisks. Due to the fact that BIM-Dr.C will now link in the write mode you may consider using a R/O option in the Exclude file to force 'RR' mode for system disks whose directory may be in a DCSS (such as MAINTS 190 & 19E).

Operation - Backing Up CMS Files

Assuming you have BIM-Dr.C properly installed, you may now invoke BIM-Dr.C to run a backup. If you run BIM-Dr.C without any parameters it is the same as invoking the following:

DRC OPERATOR NODETAIL NOSELECT

This will route all critical messages to the OPERATOR userid and will produce a full backup with only a summary listing.

In order to alter the detail to selection parameters you must key in DRC followed by the userid that will be receiving the messages, followed by other options such as:

DETAIL/NODETAIL, SELECT/NOSELECT, SELECT-DATE

DETAIL/NODETAIL Provide a full list of files (DETAIL) being backed up or just show userid and minidisk address (NODETAIL). It is recommended to use NODETAIL if you are using NOSELECT due to the size of the listing produced.

SELECT/NOSELECT SELECT means run an incremental backup. If SELECT was chosen, a date parameter may also be specified to back up files changed since that date. The date is in the form of YY/MM/DD. If SELECT is specified with no date then the current date is used by default. If the sample exec is used, the date parameter is generated that contains the date of the last full backup. This is the recommended way of running BIM-Dr.C.

SELECT-DATE Specify the date selection parameter as YY/MM/DD. This is the selection date to run an incremental backup. This parameter is invalid if you are running with the option NOSELECT. Generally this parameter would specify the date when the last full backup was run. It is generated automatically in the sample DRCAUTO EXEC.

Example: DRC OPERATOR DETAIL SELECT 19980101

This invokes BIM-Dr.C with all critical messages being routed to the OPERATOR userid, producing an incremental backup of files updated since January 1, 1998 and produces a detailed list of the files that were backed up.

Operation - Restoring CMS Files

The BIM-Dr.C backup tape is created in standard IBM/VMFPLC2 format as shown below.

FILE 1. The layout of the anticipated backup order.
FILE 2-X user's CMS files separated by userid CUU.
FILE LAST contains the complete map showing the tape locations where the
 userid minidisk files reside.

You can determine the exact number of files to forward space by using the output list from BIM-Dr.C that did the backup. If you don't have the list you can simply issue the command 'VMFPLC2 SCAN userid CCUU (EOT' to position the tape correctly for the restore process. Note that since the tape has standard labels, that a CMS 'TAPE FSF' command must be given before the SCAN is initiated to space over the labels on the tape.

Please note that CCUU must be specified as 4 positions such as 'VMFPLC2 SCAN userid CCUU (EOT'. Once the tape is positioned correctly you are ready to restore. If you want to restore a specific file then you may issue 'VMFPLC2 LOAD filename filetype FM'.

After you have restored the file you can send the file to the user requesting the restore. If you are restoring an entire minidisk you may want to link to the requestor's target minidisk in write mode and load it by keying 'VMFPLC2 LOAD ** FM' where FM is the write accessed mode of the target minidisk.

DRCREST EXEC is supplied to automate the above process. The parameters are as follows: DRCREST userid cuu filename filetype.

Userid This is the name of the User to be restore.
CUU This is the Virtual address to be restore.
Filename This is the File Name to be restored. '*' may be specified.
Filetype This is the File Type to be restored. '*' may be specified.

The DRCREST exec restores files to V-DISK then issues the CMS Sendfile command to send the files to the specified user.

Messages

- DOCTOR 801 UNDETERMINED I/O ERROR**
BIM-Dr.C has encountered an unrecoverable I/O error that could be from either tape or disk. This is usually a hardware error or a defective magnetic tape. This message is associated with another informational type of message.
- DOCTOR 802 NOTIFY B I MOYLE ASSOCIATES, INC.**
This message is associated with another informational type of message. Please have your console listings available when you call for assistance.
- DOCTOR 803 END-OF-FILE REACHED ON OUTPUT TAPE**
BIM-Dr.C has detected the end of file on the output tape. This message is associated with another informational type of message.
- DOCTOR 804 PLEASE MOUNT ANOTHER SCRATCH**
BIM-Dr.C requires another scratch tape to be mounted. This message is associated with another informational type of message.
- DOCTOR 805 PLEASE DISABLE WRITE-PROTECT ON 181**
BIM-Dr.C had detected write protection on virtual 181. Please disable the write protection on whatever means are appropriate for the particular hardware.
- DOCTOR 806 PLEASE ATTACH TAPE 181- WAKEUP IN NN MIN**
BIM-Dr.C produces this message at initiation time if a virtual 181 does not exist and repeats every nn+1 minutes until the total time exceeds 20.4 hours. When a tape is attached as virtual 181 operation will resume.
- DOCTOR 807 DISK ACCESSED AS THE 'A' IS READ ONLY**
BIM-Dr.C requires write access to the 'A' disk. Please take appropriate action.
- DOCTOR 808 DISK ACCESSED AS THE 'A' IS FULL**
The BIM-Dr.C 'A' disk is full. This could happen when running a full backup and specifying the DETAIL parameter. It could also happen when you are running an incremental backup over a long period of time. Also, there may have been a large number of files that have changed since the selection date. The obvious solution is to enlarge the 'A' disk to accommodate the increased activity.
- DOCTOR 809 UNDETERMINED ERROR FROM FSWRITE MACRO**
BIM-Dr.C has incurred an error while writing on the 'A' disk. This message is usually associated with another informational type message.
- DOCTOR 810 12345678 12345678 12 ERROR READING CP DIRECTORY**
BIM-Dr.C has incurred an error while reading the user direct file.
- DOCTOR 811 DRC - MINIDISK BACKUP UTILITY COMPLETE**
BIM-Dr.C has completed the backup without errors.
- DOCTOR 812 TAPE I/O ERROR ON VIRTUAL 181**
BIM-Dr.C has detected a possible hardware error while accessing this tape. This message is usually associated with another informational message.
- DOCTOR 813 TAPE ON VIRTUAL 181 CONTAINS NO VALID FILES - REPLACE**
BIM-Dr.C was unable to write on this tape. This is usually caused by a hardware error or bad tape. Please mount another tape. This message is usually associated with another informational type of message.

- DOCTOR 814 INVALID CPU SERIAL NUMBER - PROGRAM TERMINATED**
BIM-Dr.C has detected an invalid CPU serial number. Contact your BIM support representative for assistance.
- DOCTOR 815 PRODUCT HAS EXPIRED - PROGRAM TERMINATED**
BIM-Dr.C has expired due to the activation date being passed. Contact your BIM support representative to resolve the problem or extend the time period.
- DOCTOR 816 PRODUCT EXPIRES IN NN DAYS**
BIM-Dr.C produces this message when the product is 30 days or less from expiring. Contact your BIM support representative to extend the expiration date.
- DOCTOR 817 USER DIRECT * DOES NOT EXSIST**
BIM-Dr.C cannot find the user direct file. Execution of BIM-Dr.C is terminated. The file name and type of this file are determined from the installation settings.
- DOCTOR 818 ERROR RECEIVED FROM TAPESL - RC = NNN**
BIM-Dr.C received a return code (NNN) from the TAPESL macro. The most likely reason for this is a missing LABELDEF statement for file TAPEOUT. Refer to the CMS command and macro reference guide for more details.
- DOCTOR 819 ERROR RECEIVED FROM VMFPLC2 - RC = NNN**
BIM-Dr.C received a return code (NNN) from the VMFPLC2 module. Check the code in the VM messages manual to determine the cause or have information available when you call for technical support.
- DOCTOR 820 ERROR RECEIVED FROM FSREAD - RC = NNN**
BIM-Dr.C received an unexpected return code (nnn) from the FSREAD macro. Consult the CMS macro reference guide for further details or have information available when you call your BIM support representative.
- DOCTOR 821 ERROR RECEIVED FROM FSWRITE - RC = NNN**
BIM-Dr.C received an unexpected return code (nnn) from the FSWRITE macro. Consult the CMS macro reference guide for further details or have information available when you call your BIM support representative.
- DOCTOR 822 ERROR RECEIVED FROM DMSFREE - RC = NNN**
BIM-DR.c received an unexpected return code (nnn) from the DMSFREE macro. Consult the CMS macro reference guide for further details oe have information available when you call your BIM support representative.
- DOCTOR 823 WAIT TIME EXCEEDED - PLEASE TRY AGAIN LATER**
This message is produced after repeated number of messages to get a tape attached have failed. Please see message DOCTOR 806.

Sample Output Report

DRC VM/ESA M I N I D I S K B A C K U P U T I L I T Y Page 1								
Tuesday Selection Criteria = 2001-11-21 12:45:24 2001-11-30 17:00:02								
CPU=033D51837490			System=VM/ESA 2.4.0 0101					
Version 2.1.22			Tape File ID=DRC.DAILY.BACKUP					
Userid	CCUU	Filename	Filetype	FileDate	FileTime	Tape	File	Valid
Directory		DRC	LISTING			1	1	002050
MAINT	0191	DSF2	EXEC	2001-11-21	17:26:34	1	69	002050
		FFMT	EXEC	2001-11-24	19:16:18	1	69	002050
		IMAG4245	CNTRL	2001-11-26	11:09:59	1	69	002050
		RGAVM	MDISKMAP	2001-11-25	13:28:34	1	69	002050
	0199	CPBACK	EXEC	2001-11-21	12:48:58	1	72	002050
		PROFILE	EXEC	2001-11-22	18:44:57	1	72	002050
	02C2	RGAVM	DIRECT	2001-11-26	12:05:47	1	79	002050
CMSBATCH	0195	LOAD	MAP	2001-11-30	12:33:34	1	123	002050
OPERATOR	0191	PROFILE	EXEC	2001-11-23	06:51:12	1	152	002050
EREP	0191	XAEREPIO	RECORD	2001-11-30	13:02:52	1	154	002050
DISKACNT	0191	ACCOUNT	\$A112101	2001-11-21	18:02:46	1	156	002050
		ACCOUNT	\$A112201	2001-11-22	22:35:08	1	156	002050
		ACCOUNT	\$A112301	2001-11-23	22:14:10	1	156	002050
		ACCOUNT	\$A112401	2001-11-24	22:42:34	1	156	002050
		ACCOUNT	\$A112501	2001-11-25	22:17:47	1	156	002050
		ACCOUNT	\$A112601	2001-11-26	20:30:28	1	156	002050
		ACCOUNT	\$A112701	2001-11-27	22:07:35	1	156	002050
		ACCOUNT	\$A112901	2001-11-29	20:29:12	1	156	002050
		ACCOUNT	\$A113001	2001-11-30	17:25:30	1	156	002050
VMUTIL	0191	WAKEUP	TIMES	2001-11-30	17:00:00	1	158	002050
VSEMAINT	0191	VDSKSET	EXEC	2001-11-22	08:09:41	1	276	002050
REPORTER	0191	DRC	20011121	2001-11-21	14:12:22	1	292	002050
		DRC	20011122	2001-11-22	17:33:11	1	292	002050
		DRC	20011123	2001-11-23	18:21:49	1	292	002050
		DRC	20011124	2001-11-24	17:50:09	1	292	002050
		DRC	20011125	2001-11-25	17:13:26	1	292	002050
		DRC	20011130	2001-11-30	08:01:37	1	292	002050
UCONS	0191	DRC	20011120	2001-11-25	17:13:26	1	293	002050
		DRC	20011126	2001-11-30	08:01:39	1	293	002050
		MAINT	20011120	2001-11-25	15:23:37	1	293	002050
		MAINT	20011126	2001-11-26	17:09:15	1	293	002050
		RGMAINT	20011120	2001-11-21	15:31:20	1	293	002050
		RGMAINT	20011126	2001-11-27	06:34:37	1	293	002050
		UCONE01	EXEC	2001-11-26	09:17:44	1	293	002050
		UCONS	20011126	2001-11-26	09:17:59	1	293	002050
		VMLIB3	20011120	2001-11-23	12:00:16	1	293	002050
Directory		DRC	LISTING			1	476	002050

List of 'DRCSAMP' DIRECT Procedure

```
FILE: DRCSAMP  DIRECT  A1          VM CONVERSATIONAL MONITOR SYSTEM
USER DRC      DRC      2M  4M BG
*
*
ACCOUNT 12345678 DRC
IPL CMS PARM AUTOCR
CONSOLE 009 3215 T OPERATOR
SPOOL 00C 2540 READER *
SPOOL 00D 2540 PUNCH A
SPOOL 00E 1403 A
LINK MAINT 190 190 RR
LINK MAINT 19E 19E RR
MDISK 191 DEVTYPE STRTCYL NCYL VOLID MR RDRC WDRC MDRC
* SET UP FOR APPROX 750 4K BLOCKS. (5 3380 CYLINDERS)
*
```

List of 'DRCAUTO' EXEC Procedure

```
FILE: DRCAUTO EXEC A1 VM CONVERSATIONAL MONITOR SYSTEM

&TRACE OFF
LABELDEF TAPEOUT
*****
* SET FOR DAY OF WEEK TO PERFORM FULL BACKUP *
*****
&FULLDAT = FRIDAY
*****
* SET FOR USERID TO RECEIVE MESSAGES *
*****
&MSGUID = OPERATOR
QUERY TIME (STACK
&READ VARS &A &B &C &DAY &DATE
DESBUF
&YY = &PIECE OF &DATE 7 2
&MM = &PIECE OF &DATE 1 2
&DD = &PIECE OF &DATE 4 2
*****
* IF FULL BACKUP IS DONE VIA ANOTHER METHOD SUCH *
* AS Dr.D (Doctor D.) THEN CHANGE THE FOLLOWING *
* GOTO TO GO TO LABEL -SKPFULL WHICH WILL BYPASS *
* THE CMS FULL BACKUP *
*****
&IF &DAY = &FULLDAT &GOTO -SETFULL
STATE DRC STATFILE A
&IF &RC NE 0 &GOTO -SETFULL
EXECIO 1 DISKR DRC STATFILE * 1
&READ VARS &SELDATE
&DETAIL = DETAIL
&SELECT = SELECT
DRC &MSGUID &DETAIL &SELECT &SELDATE
&EXIT &RC
-SETFULL
&DETAIL = NODETAIL
&SELECT = NOSELECT
DRC &MSGUID &DETAIL &SELECT
&IF &RC NE 0 &EXIT &RC
-SKPFULL
&STACK &DATE
EXECIO 1 DISKW DRC STATFILE A 1
```

List of 'DRCPROF' EXEC Procedure

```
FILE: DRCPROF EXEC A1 VM CONVERSATIONAL MONITOR SYSTEM

&TRACE OFF
CP SET PF12 RETRIEVE
EXECIO * CP (STRING Q DRC
&READ ARGS
&IF .&3 NE .DSC &EXIT
CP SPOOL CONSOLE * START
EXEC DRC
CP LOGOFF
```

List of 'DRCSAMP' EXCLUDE Procedure

```
FILE: DRCSAMP  EXCLUDE    A1      VM CONVERSATIONAL MONITOR SYSTEM

*****
* This file is used to Exclude User's minidisks                *
* Positions 1-8  the userid                                     *
* Positions 9-12 the 4-byte address to exclude                 *
* If 9-12 are blank the exclude will be generic for the user  *
* positions 13-15 specify R/O to have the disk linked read only *
* Use this for disks such as Maint's 190 and 19E to prevent DCSS *
* error messages such as 'Shared S-stat and/or Y-stat not available' *
*****
$ALLO$
$DRCT$
$PAGE$
$SYSC$
$SYSW$
$TDSK$
$TEMP$
MAINT  0190R/O
MAINT  019ER/O
MAINT  0124
MAINT  0125
MAINT  0126
PRODVSE
SQLDBA 0200
SQLDBA 0201
SQLDBA 0202
SQLDBA 0203
SQLDBA 0204
TESTVSE
```