

Information Technology Group

IMAGE/1000-II DATA BASE MANAGEMENT SYSTEM

Configuration Guide



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PRINTING HISTORY

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LIST OF EFFECTIVE PAGES

The List of Effective Pages gives the date of the most recent version of each page in the manual. To verify that your manual contains the most current information, check the dates printed at the bottom of each page with those listed below. The date on the bottom of each page reflects the edition or subsequent update in which that page was printed.

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This guide provides system generation, configuration, and software loading information required to run the IMAGE/1000-II Data Base Management System (92081A) on either the RTE-6/VM (REV 2540 or higher) or RTE-A (REV 2540 or higher) Operating System.

Installation of IMAGE/1000-II requires the generation of a new RTE operating system, with IMAGE software then loaded on-line using the LINK program. User-level knowledge of IMAGE is presupposed, and can be obtained by reading Chapters 1 through 5 of the IMAGE/1000-II 92081A Data Base Management System Reference Manual, part number 92081-90001.

This guide is organized as follows:

- System Planning (Software requirements)
- System Generation
- IMAGE Installation

For additional RTE-6/VM and RTE-A system generation and software loading information, refer to the following manuals:

- RTE-6/VM System Manager Reference Manual, part number 92084-90009.
- RTE-6/VM On-Line Generator Reference Manual, part number 92084-90010.
- RTE-A System Design Manual, part number 92077-90013.
- RTE-A System Generation and Installation, part number 92077-90034.
- RTE-6/VM Software Installation Manual, part number 92084-90011.
- RTE-A Primary System Software Installation Manual, part number 92077-90038.

For additional information on DS/1000-IV system generation, refer to the following manual:

- DS/1000-IV Network Manager's Manual, Volume II, part number 91750-90011.



CONVENTIONS USED IN THIS MANUAL

NOTATION

DESCRIPTION

nonitalics

Words in syntax statements which are not in italics must be entered exactly as shown. Punctuation characters other than brackets, braces and ellipses must also be entered exactly as shown. For example:

EXIT;

italics

Words in syntax statements which are in italics denote a parameter which must be replaced by a user-supplied variable. For example:

CLOSE *filename*

[]

An element inside brackets in a syntax statement is optional. Several elements stacked inside brackets means the user may select any one or none of these elements. For example:

$\left[\begin{array}{l} A \\ B \end{array} \right]$ User *may* select A or B or neither.

{ }

When several elements are stacked within braces in a syntax statement, the user must select one of those elements. For example:

$\left\{ \begin{array}{l} A \\ B \\ C \end{array} \right\}$ User *must* select A or B or C.

...

A horizontal ellipsis in a syntax statement indicates that a previous element may be repeated. For example:

[, *itemname*]. . . ;

In addition, vertical and horizontal ellipses may be used in examples to indicate that portions of the example have been omitted.

A shaded delimiter preceding a parameter in a syntax statement indicates that the delimiter *must* be supplied whenever (a) that parameter is included or (b) that parameter is omitted and any *other* parameter which follows is included. For example:

itema [\blacksquare *itemb*] [, *itemc*]

means that the following are allowed:

itema
itema, itemb
itema, itemb, itemc
itema, , itemc

CONVENTIONS (continued)

Δ When necessary for clarity, the symbol Δ may be used in a syntax statement to indicate a required blank or an exact number of blanks. For example:

```
SET[(modifier)] $\Delta$ (variable);
```

underlining When necessary for clarity in an example, user input may be underlined. For example:

```
NEW NAME? ALPHA
```

In addition, brackets, braces or ellipses appearing in syntax or format statements which must be entered as shown will be underlined. For example:

```
LET var[[subscript]] = value
```

shading

Shading represents inverse video on the terminal's screen. In addition, it is used to emphasize key portions of an example.

The symbol may be used to indicate a key on the terminal's keyboard. For example, RETURN indicates the carriage return key.

CONTROL char

Control characters are indicated by CONTROL followed by the character. For example, CONTROLY means the user presses the control key and the character Y simultaneously.

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SYSTEM PLANNING

SECTION

1

This section covers the software requirements for IMAGE on the RTE-A, RTE-6 and RTE-6/VM operating systems. This includes:

- Media Configuration
- Remote Data base Modules
- Program Libraries

MEDIA CONFIGURATION

IMAGE/1000-II Data Base Management System software is available in the following media configurations:

MEDIA	FORMAT	92081A PART NUMBER
Cartridge Tape (CS/80)	TF	92081-13301
3 1/2" Micro-flexible Disc	CI	92081-13401,-13402, -13403,-13404,-13405, -13406,-13407,-13408, -13409
800 bpi Magnetic Tape	TF	92081-13501
1600 bpi Magnetic Tape	TF	92081-13502

Refer to the IMAGE/1000-II Software Numbering File, part number 92081-17999, for a listing of individual software modules.

REMOTE DATA BASE OPERATIONS

Remote data base operations are provided by operating IMAGE/1000-II and DS/1000-IV or NS/1000 together. When using this configuration, the IMAGE/1000-II program Remote Data Base Access (RDBA) provides access to a data base stored at a remote RTE-6/VM or RTE-A node.

This section provides the information required to configure the RTE operating system so that IMAGE/1000-II can operate either with or without distributed system remote capability.

Remote data base access relies on the IMAGE modules found in the table below:

PART NUMBER	MODULES	DESCRIPTION
92081-16880	RDBAM.REL	The RDBA monitor. Required in a node whose data base will be accessed from another node.
92081-16020	RDBAP.REL	The RDBA program. Required in a node whose data base will be accessed from another node.
92081-16410	RDTB.REL	The RDBA coordinating table. Required in a node whose data base will be accessed from another node.
92081-12006	DSDB.LIB	The RDBA library. Needed to create DBMS2.LIB and DBMS3.LIB.

Once configured with the respective operating system, DS/1000-IV allows data base access from any RTE-6/VM or RTE-A node. NS/1000 allows access between any two RTE-A nodes.

LIBRARIES

IMAGE/1000-II has three operational access modes, each requiring a separate library configuration. The following table defines the libraries required for each type of access mode.

Libraries for using IMAGE/1000-II in remote access mode must be created from available library modules. CDS refers to Code and Data Separation and is available on RTE-A systems with VC+.

ACCESS MODE	LOADR LIBRARY NAME	LINK LIBRARY NAME	CDS LIBRARY NAME
Local Only	DBMS1.LIB	DBMX1.LIB	CDS_DBMX1.LIB
Remote Only	DBMS3.LIB	DBMX3.LIB	CDS_DBMX3.LIB
Local and Remote	DBMS2.LIB	DBMX2.LIB	CDS_DBMX2.LIB

The software installation files create DBMS1.LIB and DBMX1.LIB by default. The appropriate installation file (IMAGEA.CMD or IMAGE6.CMD) must be edited to create the others.



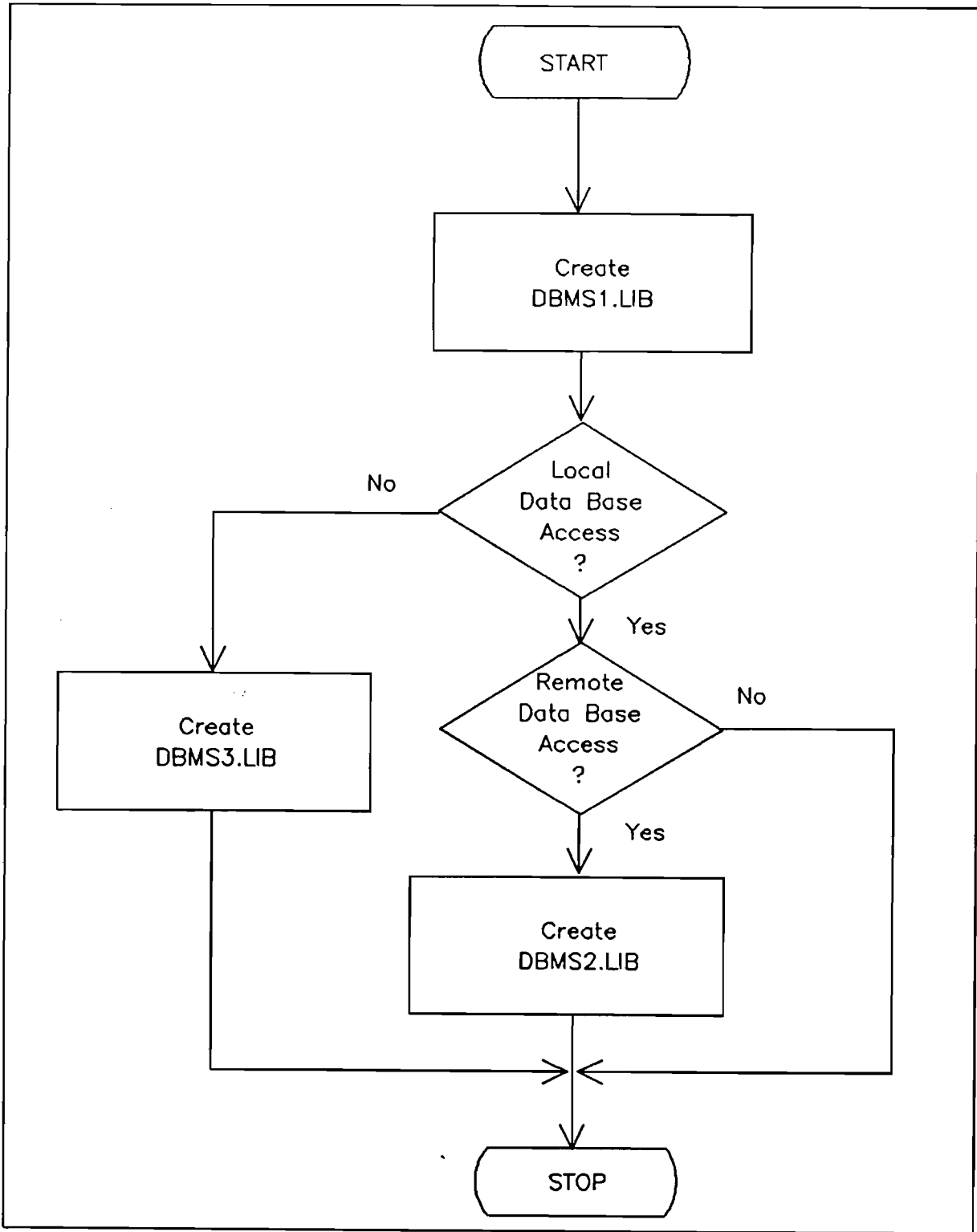


Figure 1-1. Decision Tree for IMAGE Library Creation.

After system planning has completed, a new RTE-6/VM or RTE-A operating system can be generated. This chapter provides the information required to generate the operating system. To generate a new operating system, you must perform the following:

- Edit the System Generation Answer File
- Execute the System Generation Answer File
- Install the New Operating System
- Define a Scratch Cartridge

EDITING THE SYSTEM GENERATION ANSWER FILE

You must edit the system generation answer file to tailor the operating system to your needs. The following information should be taken into consideration when you edit the file.

System Boundaries

System boundary definition requirements include the number of I/O classes, resource numbers, system available memory (SAM), number of blank long ID segments, and the number of ID Extensions.

Required Class Numbers

IMAGE on RTE-6/VM and RTE-A requires 4 class numbers for the IMAGE subsystem (DBMON, DBCLN, DBSPL, DBUTL), one class number for each active IMAGE application program, and one class number for each remote program (up to 20 remote programs per system).

Required Resource Numbers

IMAGE always requires three resource numbers.

System Available Memory

For good performance, at least 2081 words of SAM should be available for IMAGE on RTE-6/VM.

On RTE-A, DBSTR requires eight contiguous pages of SAM for operation to buffered magnetic tape drives.

EDITING THE SYSTEM GENERATION ANSWER FILE. Each IMAGE program uses an ID segment. However, most programs can share a single ID segment, as long as, they are not running concurrently. This means that at least 5 ID segments are required for the IMAGE programs plus, however many will be running concurrently with IMAGE.

Each RDBAP copy providing access for a remote user also requires one ID segment. In general, fifteen ID segments should be sufficient for IMAGE.

Required ID Extensions (RTE-6/VM)

At least 4 ID extensions are required on RTE-6/VM. An ID extension is needed for all EMA/VMA programs at link time, hence the following programs, which use EMA/VMA, require one ID extension each: DBMON, DBRBR, DBRFR, and DBDS.

Libraries (RTE-6/VM)

The Decimal String Arithmetic Library, %DECAR, should be generated-in at system configuration time because it contains string manipulation routines used by IMAGE. (It is part of \$BIGLB.LIB.)

All IMAGE libraries must be loaded after generation, never during generation because the generator does not accept 16-character entry point names.

Libraries (RTE-A)

The Decimal String Arithmetic Library, %DECAR, should be generated-in at system configuration time because it contains string manipulation routines used by IMAGE.

During system generation, one DBMSn, DBMXn, or CDS__DBMXn library can be made a system library, if desired.

System libraries can simplify the loading operation by not requiring advance user knowledge of required libraries. However, LINK always searches all system libraries, possibly degrading performance for loads not requiring many of the generated-in libraries. Nevertheless, having one library generated-in does not preclude having LINK search any other library to satisfy a given external. In this way a default subroutine can be pre-empted at the choice of the user.

If it is decided that one of the IMAGE libraries should be generated-in, make sure that the library has been created before executing the answer file (see Section 3).

CAUTION

For a system with both IMAGE/1000-II and PMC (Process Monitoring & Control): there is an entry point GETRN in the IMAGE library, %DBMS, and in one of the PMC libraries. To avoid unexpected errors resulting from searching the wrong library, do not generate-in IMAGE/1000-II libraries in such a situation.

Remote Data Base Access (RTE-6)

If data bases at this DS node are to be accessed from other nodes, the Remote Data Base Table, RDTB.REL (program name RD.TB), must be relocated in SSGA at generation time with the command RD.TB,30. RDBAM and RDBAP must be loaded on-line. (Please refer to Software Loading, in Section 3 for more information.)

RDBAP copies need access to the Subsystem Global Area (SSGA) common for communication purposes.

Never RP the RDBAP program.

Remote Data Base Access (RTE-A)

If data bases at this node are to be accessed from other nodes, the remote data base access table, RDTB.REL, must be relocated in the labelled system common.

RDBAM and RDBAP must be loaded on-line. Prior to initializing DS/1000-IV or NS/1000, use the RP command on RDBAM. Never use RP on RDBAP.

DS/1000-IV Time-Out Parameter

When using remote data base access, DS/1000-IV will often require greater time-out values than normal operation. If a large number of DS08 (time-out) errors should occur during remote data base access operations, a larger time-out value could eliminate the problem.

ANSWER FILE EXECUTION AND NEW OPERATING SYSTEM INSTALLATION

Please refer to the RTE-A System Generation and Installation Manual and the RTE-6/VM On-Line Generator Reference Manual.

Define Scratch Cartridge

When using IMAGE/1000-II on RTE-A or RTE-6/VM, a system scratch cartridge must be defined at boot time. If this cartridge is not defined, DBMON will get a VMA error. Refer to the RTE-A System Generation and Installation manual for information on defining the scratch cartridge. On either RTE-A or RTE-6, a DBMON error 390 through 396 will appear on system LU 1, if there is not enough room for the VMA file.

To define a scratch cartridge for RTE-6/VM, use the file manager command, VL. Enter the following command at the FMGR: prompt.

```
VL,crn
```

This command can be included in the WELCOM file. A VM error may occur if a scratch cartridge is not defined.

Memory Usage

DBMON is a VMA program that requires a minimum partition size of 99 or a maximum partition size of 132 on the RTE-6 operating system. DBMON has a 26-page program area, an EMA working set (WS) size between 73 and 105 pages, and a virtual memory size that is 75 pages larger than the working set.

RTE-6 Generation Example

The following example shows RTE-6 system generation. Note that only the Program Input and Program Parameter phases are shown.

*Program input phase

*

LINKS IN CURRENT

MAP ALL

*

* RTE-06 OPERATING SYSTEM MODULES *

*

REL,%CR6S1::V6 * OP SYS

REL,%CR6S2::V6 * OP SYS

REL,%CR6S3::V6 * OP SYS

REL,%\$CNFG::V6 * OP SYS

*

* DRIVERS *

*

REL,%DVR32::V6 * MAC DISC DRIVER (2126)

REL,%DVA32::V6 * HPIB DISC DRIVER (2126)

REL,%T2A32::V6 * TRACK MAP BY KFH, HPIB SUBCHANNELS/7925H

REL,%6DV37::V6 * HPIB DRIVER

REL,%DVA05::V6 * 2644/2645 CRT (2013)

REL,%DVB12::V6 * 2608 LINE PRINTER (1826)

REL,%DVR23::V6 * 7970 MAG TAPE (810202)

REL,%DVA66::DS * DS 1000 HDLC DRIVER

REL,%MDV00::DS * DS LU-MAP DRIVER

REL,%DVY77::GJ * DUMMY DRIVER

*

* SESSION MONITOR SOFTWARE *

REL,%SMON1::V6 * SESSION TERMINAL HANDLERS (PRMPT,R\$PN\$) (2121)

REL,%SMON2::V6 * SESSION MONITOR LIBRARY (2121)

*

* USER PROGRAMS *

*

MAP OFF,MODULES

REL,%T5IDM::V6 * TYPE 5 ID SEGMENT MANAGER (2121)

REL,%DBUGR::V6 * USER DDT (21XX)

REL,%WHZAT::V6 * RTE-VI WHZAT (FOR REMOTE DS) (2121)

REL,%\$LDR::V6 * RTE-VI LOADER (2121)

REL,%INDXR * OS

*

* LIBRARIES *

REL,\$FDSL B::V6 * MATH LIBRARY DS ONLY (2140)
REL,\$6SYL B::V6 * SYSTEM LIBRARY (2121)

* DECAR is required for IMAGE-II

REL,%DECAR::V6 * DECIMAL STRING LIBRARY
REL,\$MATH::V6 * Math Library
REL,\$FLIB::V6 * Fortran formatter library
REL,\$FOLD F::V6 * Fortran old-files library
REL,\$LDRL N::V6 * LOADR LIBRARY
REL,\$DTCL B::V6 * DISC UTILITY LIBRARY
REL,\$IB6A::V6 * HPIB LIBRARY

* IMAGE-II RD.TB table for remote access *

REL,RDTB.REL::IMAGE2 * IMAGE RD.TB TABLE

* DS/1000 SOFTWARE *

LINKS IN BASE

REL,%QUEUE::DS * INTERRUPT REQUEST HANDLER
REL,%GRPM::DS * RTE-RTE REQUEST/REPLY PROCESSOR
REL,%QCLM::DS * COMMUNICATION ERROR LOGGER
REL,%RTRY::DS * COMMUNICATION ERROR RETRY MODULE
REL,%UPLIN::DS * COMM.MGMT TIMEOUT AND MODULE ENABLER
REL,%MATIC::DS * TIME PROCESSOR FOR MESSAGE ACCOUNTING
REL,%IOMAP::DS * IO MAPPING INTERFACE FOR MAPPED LU
REL,%LUMAP::DS * IO MAPPING PERFORM DEXEC MAPPING REQUEST
REL,%LUQUE::DS * IO MAPPING TRANSFER DATA
REL,%SYSAT::DS * IO MAPPING SYSTEM ATTN MODULES
REL,%PTOPM::DS * PTOP COMMUNICATION SLAVE MONITOR
REL,%EXECM::DS * REMOTE EXEC
REL,%EXECW::DS * REMOTE EXEC PROGRAM RUNNING W/WAIT
REL,%RSMCC::DS * REMOTE SESSN MONITOR THAT KNOWS/TELLS ALL
REL,%INCNV::DS * INPUT CONVERTER: 91740 TO 91750
REL,%OTCNV::DS * OUTPUT CONVERTER: 91750 TO 91740
REL,%RFAM2::DS * REMOTE FILE ACCESS MONITOR
REL,%DLIS1::DS * REMOTE DL FOR REMAT
REL,%OPERM::DS * REMOTE OPERATOR COMMAND MONITOR
REL,%#SPLU::DS * ENTRY POINT FOR REMOTE IO MAPPING
REL,%DSMOD::DS * ALTER DS PARMS SET AT INIT
REL,%DINIS::DS * NETWORK INIT WITH SHUTDOWN

LINKS IN CURRENT

```

*
REL,$DSMX6::DS      * Microcode for MEF
REL,$DSL1::DS       * DS LIBRARY
REL,$DSL2::DS       * DS LIBRARY
REL,$DSL3::DS       * DS LIBRARY
REL,$DSMA::DS       * MESSAGE ACCOUNTING
REL,$DSSM::DS       * SESSION MONITOR IS ON THIS NODE
REL,$DSNRR::DS      * NO MESSAGE REROUTING

```

LINKS IN BASE

```

*
REL,%RESSM::DS      * MEF W/SESSION MON

```

LINKS IN CURRENT

```

DISPLAY UNDEFS

```

```

/E

```

* PROGRAM PARAMETERS PHASE

```

* The type of RD.TB needs to be 30 to place it in SSGA

```

```

*
D.RTR,2,1
WHZAT,19,41
PRMPT,1,10
R$PN$,1,10
JOB,3
LOGON,3,50
LGOFF,3,52
SPOUT,2
E$ND,2
SMP,2
GASP,3

```

```

* Put RD.TB in SSGA

```

```

RD.TB,30

```

* DS CHANGES

```

*
GRPM ,17             * GENERAL REQUEST PROCESSOR MEM RESIDENT w/SSGA
UPLIN,17            * TIMER & RESOURCE CLEANUP MEM RESIDENT w/SSGA
MATIC,17            * MA TIMER MEM RESIDENT w/SSGA
QUEUE,17            * MEM ALLOC & DRIVER INTFC MEM RESIDENT w/SSGA
RTRY ,17            * ERROR REPORTER MEM RESIDENT w/SSGA
LUQUE,17            * I/O MAPPING MONITOR MEM RESIDENT w/SSGA
LUMAP,17            * I/O MAPPING.MONITOR MEM RESIDENT w/SSGA
IOMAP,19            * I/O MAPPING PROGRAM DISC RES w/SSGA
DSMOD,19            * DS MODIFIER BG DISC RES w/SSGA
DINIT,147           * DS INIT 19(BG DISC RES w/SSGA) +128(NO CLONE)

```

```

* Nothing more in the generation pertains to IMAGE

```

```

* End of IMAGE/1000-II generation example.

```


RTE-A Generation Example

The following is an example of RTE-A system generation. Note that everything from the O/S relocations through the Interrupt Table definition have been excluded from this example.

```
* Memory Allocation
*
* Class I/O numbers?
*
CLAS,100
* Resource numbers?
RESN,100
* ID segments?
ID,100
* Reserved partitions?
RS,0
* System available memory?
SAM,31000
* 31744 words of SAM
Spool limits (lower,upper)?
SL
* Background priority?
BG,30
* Time slice quantum, priority?
QU,100,50
* # of shared programs?
SP,10
* system memory block?
*
*
MB,250
* # of concurrent users?
US,10
* System common relocation
*
* SYSTEM COMMON
*
* For remote data base access, the RD.TB (file name RDTB.REL)
* must reside in system common.
*
* DS/1000 LABELED COMMON AREA
*
RE,RDTB.REL::IMAGE2
RE,%RESA::RTEA
RE,$BIGDS::RTEA,#NRVS
RE,$BIGDS::RTEA,#RQUA
RE,$BIGDS::RTEA,#LEVL
RE,$BIGDS::TREA,D$EQT
MS,$BIGDS::RTEA
*
END,,,LABELED SYSTEM COMMON RELOCATION
COM,1024
```

* System message relocation

*

* END

*

System Libraries

*

LIB,DBMX1.LIB::LIBRARIES

LIB,PASCAL.LIB::LIBRARIES

LIB,\$FNDLB::LIBRARIES

LIB,\$BIGLB::LIBRARIES

*

*

END

* System size in pages 32

* System common size in pages 1

* System error message size in pages 3

* System available memory in pages 31

* Total size in pages 76

* 0 errors *

*

* End of IMAGE/1000-II generation example.

JAN 86
2-10

Before IMAGE/1000-II can run under the operating system generated in Chapter 2, executable programs must first be created from the relocatable modules. This is done by using software loading files found in the IMAGE/1000-II product. The process consists of the following steps:

- The IMAGE/1000-II product must be on the global directory /IMAGE2/. To restore software from the media, refer to Appendix G in the RTE-A Primary System Software Installation Manual or Appendix E in the RTE-6/VM Software Installation Manual.
- Edit the software loading file (IMAGE6.CMD (RTE-6/VM) or IMAGEA.CMD (RTE-A)) if remote operation is required. Default is local operation.
- Edit DBMON.LOD to modify the working set size and the virtual memory size, if desired.
- Execute software loading file from a super-user account or from MANAGER.SYS (RTE-6).
- If the current data bases are created by an earlier version of IMAGE/1000-II (Rev.2537 or earlier), run DBUPGRADE on the current root files.
- Load all required user, CDS, or remote data base access programs not previously loaded.
- Modify the WELCOM file, to RP RDBAM if remote data base operation is desired.
- The /IMAGE2/ files can be archived, if desired. The files on the directory may be discarded, however the directory itself must remain. Be sure to keep all necessary DBMSn or DBMXn libraries. (They are placed on /LIBRARIES/ for convenience.)

IMAGE GLOBAL SYSTEM DIRECTORY

Before DBUTL can be run the first time, a directory named /IMAGE2.DIR must be created on a new file system cartridge. DBUTL then creates the IMAGE control file, +DBCON, on this directory. The /IMAGE2.DIR directory must always exist, though only +DBCON need be on it after IMAGE is installed.

CAUTION

If +DBCON is purged, all log file names required for crash recovery will be lost and soft crash recovery will be impossible. Hard crash recovery is still possible.

NOTE

On RTE-6 systems, the /IMAGE2.DIR directory and all IMAGE log files must remain READ/WRITE accessible to all sessions. This is necessary because DBMON is in the system session. DBUTL creates IMAGE log files without READ or WRITE protections.

EDIT SOFTWARE LOADING FILES

Software loading transfer files IMAGE6.CMD and IMAGEA.CMD only need to be edited when remote operation is required. These files have been designed to provide maximum flexibility, with the expectation that the user will modify them to meet specific needs.

The default in these transfer files is local-only data base access. If remote data base operation is required, do the following:

1. Uncomment the lines to merge and index the appropriate IMAGE libraries. For local-and-remote data base access, create DBMX2.LIB, CDS_DBMX2.LIB, or DBMS2.LIB. For remote-only data base access, create DBMX3.LIB, CDS_DBMX3.LIB, or DBMS3.LIB.
2. Uncomment the line to link DBCLN with remote cleanup ability and comment out the line to link DBCLN with local-only cleanup ability.
3. If you want to be able to access data bases on the host computer from a remote node, uncomment the lines to link RDBAM and RDBAP. Note that RDBAP must be placed on a FMGR LU.

NOTE

The LINK program library is used to load IMAGE product software. The library DBMX1.LIB must always be searched when loading DBDS, DBBLD, DBSTR, DBRST, DBULD, DBLOD, DBSPA, DBUTL, DBRBR, DBMON, DBCLN, QUERY and RDBAP. This is reflected in the IMAGE loading transfer files.

If remote data base operations are desired, the remote-only or local-and-remote IMAGE libraries are to be searched when linking user application programs only. DBMX1.LIB should still be used to link all IMAGE product software.

The DBUTL help file (DBUTL.HLP) must exist on /SYSTEM/ and the QUERY help file (>QY000) must exist on /CATALOGS/. These help files are placed there automatically by the installation files.

When installing IMAGE on RTE-A, please note that the DBUTL file specifies the LINK SU command to make DBUTL a system process on RTE-A and to create only one copy of DBUTL. This type of load is required for critical DBUTL commands (refer to Chapter 6 of the IMAGE User Reference Manual) and means that only one copy of DBUTL will be available for execution on RTE-A. To have additional copies of DBUTL available for non-critical DBUTL commands (e.g., HE), the additional copies must be renamed to something other than DBUTL and linked without the SU command.

EDIT DBMON.LOD

DBMON is a VMA program that requires a minimum memory size of 99 pages or a maximum memory size of 132 pages on RTE-6. DBMON has a 26-page program area, an EMA working set (WS) size between 73 and 106 pages, and a virtual memory size (VS) that is 55 pages larger than the working set.

Minimum:

WS = 73

VS = 128

Partition = 99

Maximum:

WS = 106

VS = 161

Partition = 132

The DBMON.LOD command file is set to load DBMON for best performance with the maximum working set size and virtual memory size specified above. This allows all of DBMON's segment to remain in memory simultaneously. However, any WS or VS size between the minimum and the maximum specified above can be chosen. Performance will increase with a larger WS size until the maximum is reached, after which there will be no further performance gain.

The root file structure of IMAGE/1000-II changed at Rev. 2540 to provide new file system support. IMAGE utilities of Rev. 2540 or later only recognize the new root file format. Therefore, data bases that are created by an earlier version of IMAGE need to be upgraded to the new format.

EXECUTE IMAGE/1000-II SOFTWARE LOADING FILES

Prior to loading the relocatable modules, IMAGE must have access to the Pascal library PASCAL.LIB. It must either be in the system libraries, or accessible to LINK through the LI command.

RTE-6/VM

To load IMAGE/1000-II on the RTE-6/VM Operating System, enter the command string from CI:

```
TR,/IMAGE2/IMAGE6.CMD
```

RTE-A

To load IMAGE/1000-II on the RTE-A Operating System, enter the command string from CI:

```
TR,/IMAGE2/IMAGEA.CMD
```

Program files are placed on /PROGRAMS/, load maps are placed on /IMAGE2/, libraries are placed on /LIBRARIES/, help file for DBUTL is placed on /SYSTEM/, and help file for QUERY is placed on /CATALOGS/.

CONVERT ROOT FILE STRUCTURE

The DBUPGRADE utility lets you upgrade the data base root file without unloading and reloading the data base.

This utility converts the IMAGE/1000-II root files (Rev. 2321 thru 2537) into the new format. DBUPGRADE can be run on either the existing operating system or the new operating system (DSD 4.0). The conversion of the root file is done in a matter of seconds.

The syntax for the DBUPGRADE utility is as follows:

```
RU DBUPGRADE data-base-name [level-word]
```

data-base name is the file descriptor identifying the root file.

level-word is the highest level of access for the data base. (It can be omitted if no level words are defined.)

If the parameters are omitted, a help facility describing the parameters is displayed.

LOAD ADDITIONAL PROGRAMS

Loading User Programs on RTE-6/VM and RTE-A (non-CDS)

User-written programs that access the local data base can be loaded at this time. Use the LIBRARY command to supersede any IMAGE library that was included in the system generation. Use the SZ command to allow additional space in the partition for dynamic storage. The main segment of segmented programs must make a call to DBBUF.

Programs that access remote data bases must be loaded with system common access via the OP or SS command in LOADR, or the LC or SS command in LINK. For programs to have access to remote data bases when running on RTE-A, they must be attached to the system session. This means either run the programs from a non-session terminal or call DTACH from the program. For more information on the system routine, DTACH, refer to the Relocatable Libraries Reference Manual, part number 92077-90037.

The main segment of a segmented program accessing remote data bases must call DSEXT, as well as DBBUF. Neither DBBUF nor DSEXT have any parameters or error returns, and are both used to force the main segment to have the only copy of necessary control data.

Loading CDS Programs (RTE-A with VC+)

IMAGE/1000-II provides libraries compatible with CDS (Code and Data Separation). All Pascal parts of a program must be compiled with CDS ON or CDS OFF. Mixtures are not allowed due to the naming conflicts in the Pascal run time libraries. Therefore, the proper library must be chosen for a Pascal program (either CDS ON or CDS OFF, as appropriate) because IMAGE libraries contain Pascal code.

The following are examples of LINK LI commands:

CDS OFF	CDS ON
LI, DBMX1.LIB	LI, CDS_DBMX1.LIB
LI, PASCAL.LIB	LI, PASCAL_CDS.LIB



MODIFY THE WELCOM FILE

The Remote Data Base Monitor, RDBAM, controls data base access for programs at other nodes. If RDBAM has been loaded, the command

```
RP,RDBAM.RUN::PROGRAMS
```

must be done before DINIT is scheduled. The DINIT initialization file must include RDBAM as one of the monitors that it schedules (refer to the DS Network Manager's manual for information on DINIT). DINIT schedules RDBAM, which in turn tests RDBAP for availability. If no ID segment has been established for RDBAM, a warning message will be issued by DINIT.

IMAGE/1000-II SUBSYSTEM FILES

The default directory is /IMAGE2/ directory for storing IMAGE log files, defined by DBUTL's commands BL, RL, SL and TL. These log files may be created on other directories, including FMGR LU's.