IBM

Program Directory for

DB2 Server for VSE

and

Guest Sharing for VSE, Client Edition

Version 7 Release 5, Modification Level 0

Program Number 5697-F42

for Use with
z/VSE

Document Date: September 2007

GI11-8337-00

┌─── **Note!** ──┐

 Before using this information and the product it supports, be sure to read the general information under "Notices" on page viii.

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This program directory, dated September 2007, applies to DB2 Server for VSE Client Edition Version 7 (DB2 for VSE Client Edition) Release 5, Modification Level 0 , Program Number 5697-F42 for the following:

COMPIDs	Feature Numbers	System Name
5697-F42-07	6762	z/VSE

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DB2 Server for VSE	CICS/VSE
DB2	DRDA
z/VSE	CICS
VSE/ESA	VTAM
DB2 Server for VSE & VM	VM/ESA

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None

1.0 Chapter 1. Before You Begin

1.1 Program Materials

An IBM program is identified by a program number and a feature code. The program number for DB2 for VSE Client Edition is 5697-F42.

The program announcement material describes the features supported by DB2 for VSE Client Edition. Ask your IBM marketing representative for this information if you have not already received a copy.

The following sections identify:

* The basic and optional program materials available with this program

1.1.1 Basic Machine-Readable Material

The distribution medium for this program is a 3480 cartridge. The tape or cartridge contains all the programs and data needed for installation. Figure 1 describes the tape or cartridge. Figure 2 describes the file content of the program tape or cartridge.

Note: The program tape and cartridge contain "Restricted Materials of IBM."

Figure 1. Basic Material: Program Tape

Medium	Feature Number	Physical Volume	External Label Identification	VOLSER
3480 cart.	6762	1	DB2 Server for VSE Client Edition	N/A
		1	DB2 VSE Help Text	N/A

* Not available in Japan

Figure 2. Program Tape: File Content

VOLSER	File	Name
N/A	1	DB2 for VSE Client Edition Copyright Records
N/A	2	DB2 for VSE Client Edition History Files
N/A	3	DB2 for VSE Client Edition Product
N/A	4	Tape Mark
N/A	5	Tape Mark

1.1.2 Optional Machine-Readable Material

There are no optional machine-readable materials for DB2 for VSE Client Edition.

1.2 Program Publications

The following sections identify the basic and optional publications for DB2 Server for VSE Client Edition.

1.2.1 Displayable Softcopy Publications

Publications for DB2 Server for VSE Client Edition are offered in displayable softcopy form. A subset of DB2 Server for VSE Client Edition publications are translated into French, German and Japanese. These translated publications and all unlicensed manuals are included except for:

- DB2 Server for VSE & VM Overview
- DB2 Server for VSE & VM Licensed Program Specifications for VM Systems and for VSE Systems
- Memo to Users DB2 Server for VSE & VM

The displayable manuals are part of the basic machine-readable material. The files are shipped on CD-ROM, where PDF and HTML versions of the library are provided. (Note: The DB2 Server for VSE & VM Master Index and Glossary publication will not be available in HTML version.)

These displayable manuals can be viewed using an HTML browser installed on your system. The PDF versions can be viewed or printed, using the Adobe Acrobat Reader.

1.2.2 Basic Program Publications

Figure 3 identifies the basic program publications for DB2 Server for VSE Client Edition. In addition to the displayable softcopy publications in 1.2.1, "Displayable Softcopy Publications," one copy of the following publications are included when you order the basic materials for DB2 Server for VSE Client Edition. For additional copies, contact your IBM representative.

An asterisk(*) beside the Form Number indicates it contains "Restricted materials of IBM."

Figure 3. Basic Material: Unlicensed Publications

Publication Title	Form Number
Memo to Users DB2 Server for VSE & VM	GI10-5010
DB2 Server for VSE & VM Overview	GC09-2806
DB2 Server for VSE & VM Licensed Program Specifications for VM Systems and for VSE Systems	GC09-2982

Figure 4. Basic Material: Licensed Publications

Publication Title	Form Number
DB2 Server for VSE & VM Diagnosis Guide and Reference	LC09-2907(*)

1.2.3 Optional Program Publications

Figure 5 on page 3 identifies the optional program publications for DB2 for VSE Client Edition. To order one or more copies, contact your IBM representative.

An asterisk(*) beside the Form Number indicates it contains "Restricted materials of IBM."

Figure 5. Optional Material: Unlicensed Publications

Publication Title	Form Number
DB2 Server for VSE & VM Messages and Codes	GC09-2985
DB2 Server for VSE & VM SQL Reference	SC09-2989
DB2 Server for VSE & VM System Administration	SC09-2981
DB2 Server for VSE & VM Database Administration	SC09-2888
DB2 Server for VSE & VM Operation	SC09-2986
DB2 Server for VSE & VM Interactive SQL Guide and Reference	SC09-2990
DB2 Server for VSE & VM Database Services Utility	SC09-2983
DB2 Server for VSE & VM Application Programming	SC09-2889
DB2 Server for VSE & VM Quick Reference	SC09-2988
DB2 Server for VSE & VM Performance Tuning Handbook	GC09-2987
DB2 Server for VSE & VM Master Index and Glossary	SC09-2890

1.2.4 Program Source Materials

There are no source materials available for DB2 for VSE Client Edition.

1.3 Program Support

This section describes the IBM support available for DB2 for VSE Client Edition.

1.3.1 Preventive Service Planning
Before installing DB2 for VSE Client Edition, check with your IBM Support Center or use either Information/Access or SoftwareXcel Extended to see whether there is additional Preventive Service Planning (PSP) information that you should know. To obtain this information, specify the following UPGRADE and SUBSET values:

Figure 6. PSP Upgrade and Subset ID

UPGRADE	SUBSET	RETAIN Release
DB2VSEVM750	DB2VSEC	5NN

1.3.2 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 7 on page 4 identifies the component IDs (COMPID) for DB2 for VSE Client Edition.

Figure 7. Component IDs

COMP ID	Component Name	CLC
5697-F42-07	DB2 Server for VSE Client Edition V750	5NN

1.4 Program and Service Level Information

This section identifies the program and any relevant service levels of DB2 for VSE Client Edition. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated. Information about the cumulative service tape is also provided.

1.4.1 Program Level Information

This version of DB2 Server for VSE, Client Edition has incorporated all closed APARs from previous versions/releases at the time of the product General Availability.

1.4.2 Service Level Information

Check the DB2VSEVM750 subset DB2VSEC PSP bucket for any additional PTFs that should be installed or any additional install information.

Please order APARs and all its prerequisites and corequisites for VSE, LE/VSE, TCP/IP, CICS, and CICS according to your VSE releas e. Warning: You should bring your LE/VSE and TCP/IP environment to the most current service level to avoid any potential problems in DB2 for VSE Client Edition when connecting to remote database server over TCP/IP.

1.4.3 Cumulative Service Tape

There is no cumulative service tape for DB2 for VSE Client Edition.

1.5 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DB2 Server for VSE Client Edition.

1.5.1 System Requirements

This section describes the environment of the system required to install and use DB2 for VSE Client Edition.

1.5.1.1 Operating System Requirements:

DB2 Server for VSE, Client Edition operates under the z/VSE operating system release 3.10 or higher. A valid DB2 Server for VSE, C lient Edition product key must be installed.

For password encryption support LE for VSE 1.4.2 or later is required to be able to use this feature.

To use, EZASMI enabled Online Client feature, z/VSE 4.1 or higher is required.

1.5.1.2 Machine Requirements:

One tape drive supported by z/VSE is required for installation.

1.5.1.3 Programming Requirements:

1.5.1.3.1 Prerequisite Programs:

This section summarizes the program products required or recommended for the DB2 Server for VSE, Client Edition functions and environments available with this release. Unless otherwise stated, the database manager works with all subsequent versions, releases, and modification levels of the products listed in this section as well as with equivalent non-IBM products.

When installing DB2 Server for VSE, Client Edition on a VSE system, you require an environment provided by z/VSE Version 3 Release
 1 or later. DB2 Server for VSE, Client Edition requires VSE/VSAM, which comes included with VSE operating system.

This operating system also includes the following licensed program products that DB2 for VSE requires:

- VSE/POWER for Query/Report Writing support
- VSE/ICCF for an interactive development environment and
- CICS for online support.

The z/VSE Version 3 Release 1 system supplies the minimum requirements to support DB2 for VSE Client Edition. However, the APARS described in *"Service Level Information"* must be applied.

Refer to the planning manual for your VSE system to determine whether DB2 for VSE Client Edition is supported as an optional product.

If you have CICS Transactions that access local DB2 for VSE Server(s), you must use the restart resynchronization capability of CICS. *Section 2.6: Prepare the CICS Environment*, describes the CICS table updates needed to use restart resynchronization.

Users of Double-Byte Character Set (DBCS) data should consider the following:

- PL/I programs using DBCS require no additional preprocessing (the PL/I compiler supports DBCS).
- DBCS variables and constants are not supported in FORTRAN and Assembler programs. This does not prevent you from using DBCS in dynamically defined SQL statements.

- In COBOL/VSE programs for VSE, SQL identifiers, SQL host variables, and SQL labels with DBCS characters can be used in SQL statements. The COBOL Kanji Preprocessor is not required.

A complete description of the software and hardware requirements is listed in chapter 1 of the *DB2 Server for VSE System Administration manual, GC09-2981*. Read this chapter before you begin your installation.

DB2/VSE Environments	DB2/VSE Components[1]			Supported Languages				
	Batch RA	ORA	ISQL	PL/I	Cobol	Fortran	C	ASM
Batch	X			X	X	X	X	X
Online		X	X	X	X		X	X
Query/Report Writing		X	X					
DRDA Requestor	X	X	X	X	X		X	X
Notes:								
[1] For this column: • **Batch RA** refers to the Batch Resource Adapter of the DB2 Server for VSE, Client Edition support for batch environment. • **ORA** (online resource adapter) refers to the DB2 Server for VSE support for transaction processing (CICS*) environments. • **ISQL** refers to the terminal user query and report-writing facilities.								

Figure 8. VSE Environments

Prerequisite programs should be installed before you begin to do any of the steps described in this manual.

1.5.2 DASD Storage Requirements

DASD storage requirements are described in *Chapter 2.*

Notes:

- National Language Versions of the DB2/VSE HELP TEXT and messages are included with the DB2 for VSE basic material.
- These allocations include approximately 25 percent free space to allow for maintenance.
- Maintain System History Program (MSHP) auxiliary history file are based on suggested values in the z/VSE System Control Statements manual for your VSE operating system.
- FB-512 devices include 3370-2, 9332, 9335, and 9336 storage devices.

1.5.3 Processor Storage Requirements

This section offers guidelines for estimating the processor resources needed for the database manager.

In general, with CICS for both preplanned and unplanned (dynamic SQL, ISQL) query transactions, requires:

- Approximately 6 to 10 megabytes of storage for CICS, the DB2 Server for VSE batch programs and a minimum of 6MB partition for the
  batch support when using DB2 Server for VSE, Client Edition.

Following are suggestions on making detailed estimates of virtual storage requirements.

1.6 Virtual Storage Requirements of Components

Figure 9 provide data for calculating the virtual storage needed for a particular installation of the DB2 Client Edition.

Figure 9. Virtual Storage Requirements of DB2 Server for VSE Components in the CICS Partition
| ```
ONLINE RESOURCE ADAPTER:
Initialization, Termination,    666 280   (See Note 2)
 and Transaction Display


Global Control Blocks           1200 + 8 192 x Number of links from the
                                             CICS/VSE partition to the
                                             Database partition (See Note 3)


Execution Time Code             215 000


Execution Time Control Blocks   3 x Maximum number of CICS/VSE transactions
                                      that will access concurrently (See Note 3)
``` |
| ```
ISQL                            613632 + Online resource manager requirements
                                  + 45000 for each ISQL user
                                  + 200000 for each additional message repository
``` |

Notes:

 1. All numbers are in bytes.

 2. The initialization/termination/transaction display code needs to be in the CICS partition only when the CIRA, CIRB, CIRC, CIRT, or CIRD transactions are active. For certain abnormal conditions, the system internally activates CIRT. (For more information, see the manual.) This value is calculated by adding the sizes of the following phases: ARIRCONT, ARI0OLRM, ARIMS001, and ARICMOD. If CICS is not able to load the termination phase, the CICS/VSE system waits until storage becomes available. Shutdown is thus delayed, and the wait can be long. Shutdown must complete its process before online access to the database manager can be restarted. Therefore, it is important that the CICS partition contain enough virtual storage to allow the initialization/termination/transaction display code to run. (To avoid the problem of not being able to load the termination code at a critical time, consider specifying RES=YES in the DFHPPT entry for ARIRCONT.)

3. The global control blocks are maintained until CIRT (termination) completes its processing. If the virtual storage requirement for the control blocks is less than 32768 bytes, CICS provides the storage from its own pool. Otherwise, the partition's GETVIS area is used.

4. For execution time control blocks:

   • This storage requirement does not include the virtual storage used by the application transaction.

   • The maximum number of CICS transactions that concurrently access the database manager is **not** the value NOLINKS (used by the CIRB transaction). The 3-kilobyte virtual storage area is required for a transaction from the time of the first database manager access until the end of the transaction.

   • During online link initialization, a message buffer of 8192 bytes is obtained. This message buffer (mailbox) is used by the resource adapter to gather all the inputs generated by one SQL statement. The inputs are sent as one contiguous message to the database partition. If the SQL statement generates more input than 8192 bytes, the resource adapter attempts to get a larger message buffer from the partition's GETVIS area.

     If the GETVIS fails due to insufficient storage, SQLCODE -932 and an indication (SQLERRD1) of the amount of storage required are returned to the transaction. If this occurs, either the GETVIS area must be made larger, or the transaction must be run when fewer transactions are active.

5. For online application programs, if the fetch/insert blocking option is in effect, add 8 kilobytes to the CICS partition size for each currently open cursor that qualifies for blocking.

6. The numbers shown in the figure do not include a user-written accounting exit.

7. If DRDA is used, add 1 megabyte to the CICS partition size to allow for the additional code in the online resource adapter.

Figure 10. Recommended Virtual Storage Increase for User Partition	
DB2 Server for VSE Component	**Recommended Minimum Virtual Storage Increase for a VSE Partition (in Kilobytes)**
Batch resource adapter	365 (Client Edition installed without DRDA) 2260 (Client Edition installed with DRDA support)
DBS utility	225 + batch resource adapter = 590 (base) 225 + batch resource adapter = 2485 (DRDA)
Any DB2 Server for VSE preprocessor (PL/I, Assembler, COBOL, FORTRAN, or C)	250 + batch resource adapter = 615 (base) 250 + batch resource adapter = 2510 (DRDA)
User program	User application size + batch resource adapter

Notes:

1. The batch resource adapter uses a minimum of 2260 kilobytes of virtual storage in the batch (or VSE/ICCF) application's partition as DRDA support is enabled for the Client Edition by default. This

value must be added to the virtual storage requirements of the SQL application to arrive at the total VSE or VSE/ICCF partition size.

2. For programs running in multiple user mode, if the fetch/insert blocking option is in effect, add 8 kilobytes for each currently open cursor that qualifies for blocking.

3. If you have coded an accounting exit, a cancel exit or a TRANSPROC, add its size to the total virtual storage requirements.

1.7 CICS Dynamic Storage Considerations

The amount of virtual storage in the CICS dynamic area varies for ISQL. An average of 35 to 45 kilobytes for each user, plus 330 kilobytes, is recommended at the start. This supports most ISQL usage. The following variables can be considered to adjust the size of the dynamic area:

- Use of SELECT
- Use of routines
- Other CICS transactions.

1.7.1 Use of SELECT

The row length is the only variable that affects the amount of storage needed by a SELECT result: the number of rows retrieved from a SELECT has no effect on this.

Before retrieving any rows from tables, ISQL gets a buffer to hold enough storage for two screens of rows. If more than two screens are retrieved, this buffer is reused. (The number of rows depends on the size of the terminal screen.)

The number of columns referenced in a SELECT command in ISQL is limited to 45. ISQL uses the length of the retrieved columns not the number of column references to determine the buffer size. The storage needed is the number of rows for two screens, multiplied by the length of one row. (Note that the length of the row may be larger than the length of the screen.) If the storage required for the buffer exceeds 32 kilobytes, not all selected columns are displayed or the user receives an error message.

The SET VARCHAR and FORMAT VARCHAR ISQL commands change the size of the row and thus the size of the buffer.

1.7.2 Use of Routines

CICS temporary storage can be either MAIN or AUXILIARY, as determined by the TSP parameter in your SIT. If MAIN storage is used, the delta for ISQL users should be increased. The amount of storage required is based on the number of lines in the routines and the number of concurrent routines being run. The amount of storage for each line of a routine is 254 bytes.

If AUXILIARY storage is used, routines do not affect ISQL virtual storage requirements. Routines are read into CICS temporary storage before the first command of the routine is run.

Other CICS Transactions

The numbers given here are delta numbers for ISQL. They do not include any storage for other CICS transactions that your installation has.

1.7.3 CICS Temporary Storage Queues

CICS temporary storage queues can be defined as nonrecoverable. Recoverable temporary storage queues are incompatible with ISQL operation.

1.8 Initial Considerations for Installing DB2 Server on a VSE System

1.8.1 Loading of DB2 Server for VSE Distribution Libraries

When you use the installation function provided by VSE/Interactive Interface (VSE/II), choose option 2: "Install Programs--V1 Format". The job stream generated installs the library contained in the DB2 Server for VSE, Client Edition installation tape in the VSE librar y PRD2.DB2750C.

If you are using the V2 format dialog, do not perform option 1: "Prepare for Installation" because the distribution tape is nonstacked.

If you have received your DB2 Server for VSE Client Edition as part of your z/VSE order, see the z/VSE Installation Manual 'Installing a Program from the z/VSE Extended Base Tape'

1.8.2 Machine-Readable Material

IBM distributes machine-readable DB2 for VSE Client Edition material on magnetic tape (reel or cartridge, non-stack). The format of the tape for VSE is:

File 1   DB2 Server for VSE Client Edition Copyright Records

File 2   DB2 Server for VSE Client Edition History File

File 3   DB2 Server for VSE Client Edition Product

File 4   Tape Mark

File 5   Tape Mark.

This tape is intended for processing by the VSE Maintain System History Program (MSHP), or VSE/II. You will need the following information to download DB2 Server for VSE:

- The tape label for DB2 Server for VSE is DB2/VSE.CE.7.5.0

- The library for the product is PRD2

- The sublibrary for the product is DB2750C.

Be sure you have a distribution tape in the correct format for your VSE system. To verify this tape, scan it by running the sample JCL shown in Figure 11 on page 11. Figure 12 on page 11 shows a sample report from a scan job.

```
// JOB SCAN TAPE
* ********************************************************
* PLEASE MOUNT DB2 CLIENT EDITION R7.5.0 DISTRIBUTION TAPE ON A TAPE DRIVE
* AND ASSIGN SYS006 TO THAT TAPE DRIVE.
* THEN PRESS THE ENTER KEY WHEN READY ...
* ********************************************************
// PAUSE            PLEASE ASSIGN SYS006 NOW ...
// MTC REW,SYS006
// EXEC LIBR
RESTORE * TAPE=SYS006 SCAN=YES
/*
/&
```

Figure 11. Scanning the DB2 Server for VSE Client Edition 750 Distribution Library

```
   RESTORE * TAPE=SYS006 SCAN=YES
L059I BACKUP FILE ID = 'DB2/VSE.CE.7.5.0'
L123I HISTORY FILE FOUND ON TAPE
L091I SUBLIBRARY PRD2.DB2750C FOUND ON INPUT TAPE
   APPROXIMATE SPACE REQUIREMENT:   27856 LIBRARY BLOCKS
   3375 :    1115 TRACKS =     92 CYLINDERS 11 TRACKS
   3380 :     899 TRACKS =     59 CYLINDERS 14 TRACKS
   3390 :     845 TRACKS =     56 CYLINDERS  5 TRACKS
   9345 :     996 TRACKS =     66 CYLINDERS  6 TRACKS
   FBA  :   55732 BLOCKS
L113I RETURN CODE OF RESTORE IS 0
```

Figure 12. Sample Report from the Scan Job

1.9 IBM Supplied Installation Aids

To help you install DB2 Server for VSE Client Edition sample job control members are supplied as Z-type source members on the installation tape.

Some of the job control members will require modifications before submitting them for execution. These members and the required changes are discussed in the preparation, installation and migration chapters.

A REXX exec is supplied to aid in the modification and execution of these jobs. You can also punch these members out of the installation library into VSE/ICCF or another editor, for changes and submission.

2.0 Chapter 2. Preparing to Install DB2 Server for VSE Client Edition 7.5

To prepare to install DB2 Server for VSE Client Edition:

1. Read *"Appendix A: How to Use the Job Manager"*

2. Read "Planning for Installation" in the DB2 Server for VSE System Administration Manual

3. Ensure that the VSE operating system and all necessary programs are already installed and running correctly. (See "Prerequisite Programs" in Chapter 1)

4. Review this document completely before installing DB2 Server for VSE Client Edition. For any optional steps, understand why the step is optional.

5. Review the section on service considerations, check for any prerequisite program temporary fixes (PTFs). Contact the IBM Support Center, or access with Information/Access or IBM Link, to see whether there is any additional preventative service planning (PSP) information which you should be aware of.

6. Complete all of the mandatory steps in this chapter, and any optional ones that apply to your installation. These steps are shown in Figure 13.

Step	Optional/ Mandatory	Automated/ Manual	Description
1	M	Manual	Set up the VSE Environment
2	M	Manual	Allocate DASD for the Distribution Library
3	M	Manual	Restore the DB2 Server for VSE Client Edition Distribution Library
4	O	Manual	Prepare the CICS Environment
5	O	Automated	Define CICS programs and Transactions
6	O	Automated	Setup the SQLGLOB and BIND files
7	M	Automated	Updating Labels for the new datasets

Figure 13. Preparation Steps

Figure 14 on page 13 includes the global variables required in the Preparation Step.

Parameter Name	Default value	Description	Used in member:
GLOBCAT	VSESP.USER.CATALOG	The default VSAM catalog where SQLGLOB resides	ARIS75CD, ARISSTDL
BINDFILE	DB2.BIND.MASTER	This is the name of the dataset which will hold the global variables	ARIS75CD, ARISSTDL, ARIS757D, ARISIQBD
BINDWFILE	DB2.BIND.WORKF	This is the name of the dataset which will hold the preprocessor bind pack-ages.	ARIS75CD, ARISSTDL, ARIS759D
MASTERFILE	DB2.SQLGLOB.MASTER	This is the name of the dataset which will hold the global variables	ARIS75CD, ARISSTDL, ARIS758D, ARISGDEF
ATYPE	CYL	The type of allocation unit for database IDCAMS DEFINE. The default allocation unit is Cylinders. Use **BLK** for FBA devices, or **CYL** for (E) CKD devices	ARIS75CD, ARIS757D, ARIS759D

Figure 14. Description of global parameters

2.1 Preparation Step 1: Setup the VSE Environment

This step is mandatory

Ensure that your VSE system is prepared as follows:

- Equip the system with a tape drive for the type of distribution tape ordered.

- Be sure that the system files are assigned correctly. During the installation process, input is read from SYSIPT and source members from the DB2 Server for VSE Client Edition sublibrary. Output is written to the printer file, SYSLST, and the SYS001 workfile.

- Ensure that the SYS001 workfile size is at least equal to 1 cylinder on an IBM 3390 DASD (960 blocks on FBA devices).

See the *DB2 Server for VSE System Administration* manual for detailed information about capacity plan-ning for storage requirements.

The partition sizes given below are the minimum required to successfully install a DB2 Server for VSE, Client Edition. For a detailed discussion of how to calculate partition sizes based on real operating condi-tions see the DB2 Server for VSE System Administration manual. Also, refer to the *IBM z/VSE Planning* for information about partition configuration that could be used during the installation of optional program product such as DB2 Server for VSE.

- Compiling and running application programs - 2.0 megabytes;

- To support DRDA batch requestor 2.0 megabytes ;

- CICS system to support ISQL - 8.0 megabytes;

– to support DRDA Requester, approximately 1 additional megabyte is required for the resident online resource adapter

For certain installation steps, a target database server is expected to be running to enable the installation process to update p ackages, conversion tables, help text information.

If the target database server is DB2 on VSE or VM running in Multiple user mode:

– Batch installation application programs can be started in any partition with enough storage. The library search assignment must include the DB2 Server for VSE Client Edition V7.5 sublibraries for installation programs executed in the partition.

– ISQL must be executed in the CICS partition.

– If the ISQL facility will be used in the CICS partition, the available CICS dynamic transaction storage size must be at least 900 kilobytes to support ISQL. See *"Installation Step 3: Link-Edit the DB2 Server for VSE 7.5 Online Support Components".*

VSE/REXX Version 6 Release 1 must be enabled.

2.1.1 DB2 Server for VSE Client Edition Key Enablement

Users on z/VSE Version 3 Release 1 and later, who want to run DB2 Server for VSE Client Edition, are required to install a DB2 permanent product activation key, or a DB2 "90-day trial mode" product key.

z/VSE Version 3 Release 1 and later is shipped with a DB2 "90-day trial mode" product key. After the 90-day trial period is over, it is necessary to supply a DB2 permanent product key. This DB2 permanent product key is supplied automatically from IBM whenever an order is placed for DB2 Server for VSE & VM.

DB2 product enabling is driven by a phase which can be generated by the following EXEC IVALPKEY. The statement to execute IVALPKEY is supplied by z/VSE Version 3 Release 1, and later, in the member SKUSERBG in ICCF library 59.

```
// EXEC IVALPKEY,PARM='PRODUCT=DB2 KEY=0000-1111-2222-3333-4444 CUSTINFC
            O=C111-111-1111'
```

The key that appears in this EXEC statement is the DB2 "90-day trial mode" product key. Please note that the 90-day trial period starts when IVALPKEY is run (and not when DB2 Server for VSE Client Edition is installed). Each time DB2 Server for VSE Client Edition is accessed, message ARI4027W is displayed informing you of the number of days left within the 90-day trial period.

Once you have completed a license agreement for DB2 Server for VSE Client Edition, you will replace the string shown in the sample EXEC statement with the DB2 Server for VSE, Client Edition permanent product activation key.

IVALPKEY must be run whenever the z/VSE operating system is IPLed. Therefore, it is recommended that you place the job to execute IVALPKEY on the POWER RDR queue so that it is released automatically at each IPL of the z/VSE system during background processing.

If IVALPKEY is not run when the z/VSE operating system is IPLed, DB2 Server for VSE Client Edition cannot be installed, migrated or started.

2.2 Preparation Step 2: Allocate DASD for the Distribution Library

This step is mandatory

APPROXIMATE SPACE REQUIREMENT: 30,000 LIBRARY 1K BLOCKS.

DASD Storage Requirements for DB2 Server for VSE Client Edition Library

APPROXIMATE SPACE REQUIREMENT: 30,000 LIBRARY BLOCKS		
DASD Device Type	Approximate Library Space Required	MSHP History File Space Required
3375	120 cylinders	15 tracks
3380	74 cylinders	15 tracks
3390	70 cylinders	15 tracks
9345	84 cylinders	15 tracks
FB-512	60,000 blocks	900 blocks

Figure 15. DASD Storage Requirements for DB2 Server for VSE Client Edition Library

Notes:

1. These allocations include free space to allow for maintenance.

2. If you are installing versions of the DB2 Server for VSE HELP text or messages in languages other than English, then you may consider an extra 400 library blocks for each supported language.

   Note: The Help Text or messages provide help information only for DB2 Server for VSE and VM commands/messages and codes. Hence, Help Text Support will not be available for remote servers connected via DRDA.

3. The sizes for the Maintain System History Program (MSHP) auxiliary history files are based on suggested values in the IBM z/VSE System Control Statements manual for your VSE operating system.

4. FB-512 devices include 3370-2, 9332, 9335, and 9336 storage devices.

2.3 Preparation Step 3: Restore the Distribution Library

This step is mandatory.

You can restore the DB2 Server for VSE Client Edition Distribution Library in two ways. We recommend using the VSE/Interactive Interface, Product Installation Dialog in z/VSE. If you use this method, you need to know that DB2 Server for VSE Client Edition is shipped on a **NON-STACKED V2 FORMAT** tape. For directions on using this method, refer to the *IBM z/VSE Installation* for your VSE operating system.

If you have received your DB2 Server for VSE as part of your z/VSE order, see the z/VSE Installation Manual 'Installing a Program from the z/VSE Extended Base Tape'

Alternatively, you may create the job control member shown in Figure 16 on page 16 to restore the Distribution Library. Mount the distribution tape and run your modified job.

```
// JOB ARIS75AE          INSTALL DB2 Server
// MTC REW,cuu                       *-- REWIND TAPE
// ASSGN SYS002,cuu1                 *-- AUXILIARY HISTORY FILE
// ASSGN SYS005,UA              *-- NO RESTORE TO XXXXXX
// ASSGN SYS006,cuu                  *-- DISTRIBUTION TAPE
// OPTION CATAL
// EXEC MSHP
INSTALL PRODUCT FROMTAPE ID='DB2/VSE.CE.7.5.0' - *--ACTUAL TAPE ID (1)
PROD IN=PRD2.DB2750C  *-- IDENTIFICATION OF LIBRARIES  (2)
DEFINE HISTORY AUX EXTENT=xxx:yyy
/*
// MTC RUN,cuu
/&
```

Figure 16. Job ARIS75AE (Using MSHP to Install DB2 Server for VSE)

Notes for Figure 16:

- Before execution, modify the above statements as follows:

cuu   Replace with the address of the tape drive.

cuu1   Replace with the address of the disk drive on which the auxiliary history file resides.

xxx   Replace with the starting address of the auxiliary history file (in tracks or blocks).

yyy   Replace with the size of the auxiliary history file (in tracks or blocks).

- You receive various messages from MSHP. These messages are normal and can be ignored. If you want more details about the MSHP control statements, refer to the *DB2 Server for VSE Messages and Codes*.

- Later installation steps do not require the distribution tape.

(1)   **DB2/VSE.CE.7.5.0**' is the actual ID of the tape.

(2)   If necessary, replace **PRD2.DB2750C** with the library and sublibrary names you used in Figure 16.

2.4 Preparation Step 4: Prepare the CICS Environment

If you will **not** be using DB2 Server for VSE Client Edition in an CICS interactive environment, or if you will **not** be using ISQL, skip this step.

This step is optional for the installation process, but mandatory for the users who are **migrating** from a previous release and **are** using ISQL.

To prepare the CICS system for DB2 Server for VSE Client Edition, update the CICS control tables and modify the CICS startup job control. The modifications to the tables take effect the next time the CICS system is stopped for maintenance and then restarted. The changes to the startup job control ensure that the CICS system can find the DB2 Server for VSE 7.5 sublibrary, and that the CICS subpool is properly defined. You may also define a printer for ISQL.

You need to update the CICS control tables and startup job control to include journaling and the restart resynchronization facility, to ensure the coordinated rollback of a CICS activity when a DB2 Server for

VSE activity is being rolled back. This is a requirement for CICS Database Switching support. Refer to the *DB2 Server for VSE System Administration* manual for detailed information about this support.

Note: You have to allocate and format the journal files before restarting CICS.

Modifying the CICS Start-Up JCL

Figure 17 shows an example of CICS startup job control for the application server. Make sure that you add the DB2 Server for VSE Client Edition sublibrary in your library concatenation chain for your startup job.

```
// JOB CICS START
// OPTION LOG, ., SYSPARM='00'  ( 7 ) // LIBDEF PHASE,SEARCH=(PRD2.DB2750C,...)
// UPSI 1              (1)
*
*
*
// DLBL SQLBIND,'DB2.BIND.MASTER',,VSAM=catalog,DISP=(OLD,KEEP) (5)
// DLBL SQLGLOB,'DB2.SQLGLOB.MASTER',,VSAM=catalog,DISP=(OLD,KEEP)
// DLBL ARITRAC,'TRACE.FILE1',
// EXTENT ,VOLXXX,1,0,nnn,120      (5)(6)
// ASSGN SYS007,cnn
*
*
*
// ASSGN SYS098,cuu       (2)
// EXEC DFHSIP,SIZE=nnnnK
*-- DETERMINATION OF THE CICS SUBPOOL SIZE FOR CICS/VSE (3)
// EXEC DFHSIP,SIZE=DFHSIP,PARM='DSALIMIT=6M...'
*-- FOR CICS T/S  (3)
*
*
*
*                       *
| Optional CICS System    |
| Initialization Parameter |      (4)
| Override Statements     |
*                       *
*
*
*
/*
/&
```

Figure 17. Starting the CICS System for Use with ISQL

Notes for Figure 17:

(1) In a VSE/ICCF environment, place the UPSI statement after the EXEC statement (see note 3 below). The UPSI setting shown in the example allows reconfiguration at initialization time and console responses from SYSIPT. You may need to use different UPSI settings for your environment.

(2) The logical unit SYS098 is used for ISQL report output. For multiple-copy support, assign SYS098 to a VSE/POWER-intercepted printer (**cuu**). ISQL uses the 8-position resource name "PRINT98" to control use of the printer.

The logical unit SYS098 is also used for the Online Resource Adapter FFDC Dump output.

(3)   For CICS/VSE, EXEC statement parameter SIZE=**nnnnK** controls the CICS subpool size, which is the amount of dynamic storage remaining after the CICS system assigns storage for management and resident program purposes, and is shared by all CICS transactions. (**nnnn**) specified depends on the CICS configuration.

FOR CICS/TS, the dynamic subpool size is specified with the DSALIMIT startup parameter.

You need at least 3 megabytes of virtual storage below the 16MB line for the CICS/TS partition to run DB2 in ICCF. Refer to the *IBM z/VSE Planning* manual for more inf ormation on how to allocate storage for a CICS system.

(4)   DB2 Server for VSE Client Edition requires the CICS system to support journaling. Set bit 1 of the UPSI to 1 to force the CICS system to read the optional CICS system initialization parameter override statements from SYSIPT. You can then include the journaling parameter in the override statements.

(5)   These are the job control statements for the BIND file, the SQLGLOB file, and the trace output DASD SAM file to the CICS startup JCL. The file IDs specified for SQLBIND and SQLGLOB must be identical to the name of the file that was specified in the respective DEFINE command of IDCAMS and listed in the VSE/VSAM catalog. See "Preparation Step 8: Setup the SQLGLOB and BIND files" for more information on the IDCAMS DEFINE CLUSTER jobs for the SQLGLOB and SQLBIND files. SQLBIND is an optional dataset, it is only required for DRDA application requester functions.

It is recommended that SQLGLOB and SQLBIND DLBL statements be placed in Standard Labels (see Figure 26 on page 28).

(6)   If the output of the application requester trace is directed to tape, a TLBL statement for the trace output file must be included in the CICS start-up job instead. An example of a TLBL statement for a trace output file is as follows:

```
// TLBL  ARITRAC,'TRACE.FILE2'
```

(7)   For TCPIP connections to remote databases, // OPTION SYSPARM='xx', should be added to the CICS startup JCL, where xx is to match the xx specified in the ID=xx parameter for starting up a specific TCP/IP server. If // OPTION SYSPARM is not specified, the default is 00. Refer to *DB2 Server for VSE System Administration* for more information on the SYSPARM parameter.

2.4.1 CICS Entries Required by DB2 Server for VSE Client Edition.

The following CICS resources must be updated to define the DB2 Server for VSE online support and ISQL to the CICS system. DB2 Server for VSE programs and transactions in the CICS System Definition (CSD) file:

DFHSIT   System Initialization Table

DFHJCT   Journal Control Table

DFHTCT   Terminal Control Tables or RDO definitions in the CSD (System Definition) file

DFHFCT   File Control Table (Required for CICS/VSE). Usage of the DFHFC is optional under CICS/TS and the file definitions may be added with RDO to the CSD (System Definition) file.

The required entries are described later in this step.

This manual describes only the CICS resources required for DB2 Server for VSE Client Edition. For complete descriptions of the CICS tables and parameters, refer to the *CICS* manuals.

To update the CICS tables, you must make the changes and recompile them. However, you have to wait until the CICS system is stopped and restarted for the changes to take effect. You can change programs and transactions with a batch job, or online using the Resource Definition Online (RDO) tool. For more information on RDO and CEDA, see the *CICS/VSE Resource Definition (Online). for CICS/VSE* and *CICS Transaction Server for VSE/ESA Resource Definition Guide.*

Beside the minimum entries required to use DB2 Server for VSE Client Edition online support and ISQL, the CICS Journaling Support and the CICS Restart Resynchronization Support must be enabled. These are discussed in "CICS Journaling Support" and in "CICS Restart Resynchronization Support" in this chapter. In addition, you may make optional entries that allow you to use:

- CICS Monitoring Facility
- DB2 Server for VSE Accounting.

For a description of the entries required for each optional feature for CICS, refer to *Appendix F, "Additional CICS and VSE Updates for the DB2 Server System".*

2.4.2 Entries Required in DFHSIT

The DFHSIT macro must always include:

AMXT=nn Limit on the number of active tasks within the CICS system.

If you are adding DB2 Server for VSE Client Edition work to an existing CICS environment, consider increasing the AMXT value. Each active ISQL user requires *two* active tasks within the CICS system. (If the AMXT limit is reached, response time may be adversely affected.)

DBP=YES|xx Dynamic transaction backout support.

Specifying DBP=YES requests use of the *default* dynamic transaction backout module. The DBP parameter can be specified as DBP=xx, where "xx" is the 2-character suffix of the module to be used.

EXEC=YES Command-level support.

EXITS=YES User exits will be used.

TST=NO|xx Identifies the auxiliary temporary storage program support.

Temporary storage queues defined to ISQL must be non-recoverable, because recoverable storage queues are incompatible with ISQL. Temporary storage queues with names like CISQXXXX and XXXXCISQ (where XXXX is the terminal ID) are reserved for use by ISQL, and should not be used by other CICS applications.

For information about the optional DFHSIT entries to control access to ISQL, see the *DB2 Server for VSE System Administration* manual.

The DB2 Server for VSE installation process assumes that the application name identified by the DFHSIT APPLID parameter is DBDCCICS. If the application name is not DBDCCICS, take special action (see *"Installation Step 8: Grant SCHEDULE Authority"*).

2.4.2.1 Entries in DFHTCT Required by ISQL:

The DFHTCT TYPE=TERMINAL macro must include:

ALTSCRN=(lines,columns) Alternate screen size

> This parameter is optional. Specify it if you want to use ISQL large-screen support for IBM 3270 terminals with screens larger than 24 rows by 80 columns.

DEFSCRN=(24,80) Default screen size

TRMSTAT=TRANSCEIVE Terminal status.

2.4.2.2 Entries in DFHTCT for CICS Local Terminal Printers:

The DFHTCT TYPE=TERMINAL macro should include the ALTPAGE and PGESIZE parameters.

If you specify FORMFEED=YES, the value you use for these two parameters should match the page size of the CICS local terminal printer since the ISQL SET command will no longer have full control over the page size.

If you specify FORMFEED=NO, assign the value (1,132) to the ALTPAGE and PGESIZE parameters. This will allow the ISQL SET command to have full control over the page size.

To use the ISQL terminal printer support, define a DFHTCT entry for each terminal printer.

Terminal definitions can also be made in the CICS System definition facility.

2.4.2.3 Entries in DFHFCT for DB2 Server for VSE Client Edition: The entries in sample ARIS75FC, a A-type member, should be placed in the File Control Table (DFHFCT). File Control Table (FCT) for the CICS system in which online support is required, can use a COPY statement to include the entries. If you change the suffix on the FCT INITIAL statement, code an FCT=xx override on CICS Initialization JCL.

Optionally with CICS TS, entries may be defined with RDO and placed i the CICS System Definition (CSD) file.

```
********************************************************  *********
*              DB2 FOR VSE AND VM 7.5   FCT ENTRIES              *
******************************************************************
*
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                      GLOBAL Variables
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*
SQLGLOB DFHFCT TYPE=FILE,                                        X
   ACCMETH=(VSAM),                                               X
   FILE=SQLGLOB,                                                 X
   FILSTAT=(ENABLED,OPENED),                                     X
   SERVREQ=(ADD,BROWSE,DELETE,UPDATE),                           X
   RSL=PUBLIC,                                                   X
   STRNO=2
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                   Preprocessor BIND file
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*
SQLBIND DFHFCT TYPE=FILE,                                        X
   ACCMETH=(VSAM),                                               X
   FILE=SQLBIND,                                                 X
   FILSTAT=(ENABLED,OPENED),                                     X
   SERVREQ=BROWSE,                                               X
   RSL=PUBLIC,                                                   X
   STRNO=2
```

Figure 18. DFHFCT Sample entries

For CICS, the file definitions can be made in the CICS System Definition facility.

2.4.3 CICS Journaling Support

If the CICS Journaling Support was not enabled when the CICS system was installed, you have to update the following CICS tables to provide the Journaling Support required by DB2 Server for VSE.

DFHJCT   Journal Control Table

DFHSIT   System Initialization Table.

DFHJCT Entries:

A journal used for the CICS system log must be defined in DFHJCT by specifying JFILEID=SYSTEM in a DFHJCT TYPE=ENTRY macro.

Figure 19 on page 22 shows an example of how to code DFHJCT for a CICS system log allocated to a 3380 DASD device.

```
DFHJCT TYPE=INITIAL,SUFFIX=jj        (1)
DFHJCT TYPE=ENTRY,                                          X
       JFILEID=SYSTEM,                                      X
       BUFSIZE=1024,                                        X
       BUFSUV=1024,                        (2)             X
       JOUROPT=(CRUCIAL,INPUT),                             X
       JTYPE=DISK1,                                         X
       OPEN=INITIAL,                                        X
       DEVADDR=sysxxx,           (3)
DFHJCT TYPE=FINAL
END DFHJCTBA
```

Figure 19. DFHJCT Examples for CICS Journaling

Notes for Figure 19:

- CICS journal files must be formatted before use. See the CICS manuals for information on CICS journal files.

(1)　　　　　The SUFFIX value **jj** must be supplied in the DFHSIT JCT=**jj** parameter.

(2)　　　　　**BUFSUV** parameter is not applicable in CICS/TS.

(3)　　　　　**sysxxx** is the logical unit address for the CICS system log journal (JFILEID=SYSTEM) assigned to a 3390 DASD file.

DFHSIT Entries:

The DFHSIT macro must include the JCT parameter. Specify JCT=YES or JCT=(**jj**<,....>) where **jj** is the SUFFIX parameter value specified in the DFHJCT TYPE=INITIAL macro defining the CICS system log journal data set.

2.4.4 CICS Restart Resynchronization Support

If the CICS Restart Resynchronization Support was not enabled when the CICS system was installed, you have to update the following CICS tables to enable the CICS Restart Resynchronization capability.

DFHJCT　　　Journal Control Table

DFHSIT　　　System Initialization Table.

DFHJCT Entries:

A journal used for the CICS system log must be defined in the DFHJCT by specifying JFILEID=SYSTEM in a DFHJCT TYPE=ENTRY macro.

Figure 19 is an example of how you could code your DFHJCT for a CICS system log allocated to a 3390 DASD device.

Programs and Transactions: Use the CICS RDO tool to add the resources required for CICS Restart Resynchronization.

CEDA ADD GROUP(DFHRMI) LIST(VSELIST)

Use the list that is coded in the value for GRPLIST in your DFHSIT or CICS startup.

DFHSIT Entries:

The DFHSIT macro must include the JCT parameter. Specify JCT=YES or JCT=(**jj**<,....>) where **jj** is the SUFFIX parameter value specified in the DFHJCT TYPE=INITIAL macro defining the CICS system log journal data set.

2.4.5 CICS Transaction Server (TS) considerations

CICS internal security and therefore the CICS Sign-On table (DFHSNT) is not available in CICS TS. Instead, any external security manager (ESM) may be used that conforms to the z/VSE RACROUTE interface. Alternatively, the basic form of external security manager z/VSE 3.1 may be used. The BSM provides sign-on and transaction attach security only.

When using an ESM, refer to the relevant documentation supplied with the ESM on defining DB2 for VSE user id(s), operator data and transaction security.

If the BSM is used, DB2 for VSE userids and DB2 for VSE transactions must be defined using the VSE Interactive Interface. In addition, all DB2 for VSE transactions defined to the CSD file should also be added to the VSE Transaction Secure Table (DFHSECTXS.A).

Since the CICS TS and CICS/VSE 2.3 System Definition (CSD) files are not compatible, all DB2 for VSE entries should be added to the CICS TS System Definition (CSD) file using the DFHCSDUP utility as provided with CICS TS.

For DB2 for VSE with CICS TS, the following System Initialization (DFHSIT) parameters are obsolete. Refer to the Transaction Server for VSE/ESA Migration Guide below for a complete list of obsolete DFHSIT parameters.

```
  AMXT=  (Obsolete because of the new dispatching mechanism)
  EXEC=  (Obsolete because a command-level environment is mandatory)
  EXITS= (Obsolete because the user-exit interface is now always
          initialized)
  MONITOR= (replaced by new monitoring parameters)
```

For more information on installing DB2 for VSE V7.5 with CICS TS, refer to the following publications:

```
CICS Transaction Server for VSE/ESA   Release Guide             GC33-164
CICS Transaction Server for VSE/ESA   Migration Guide           GC33-164
CICS Transaction Server for VSE/ESA   Resource Definition Guide SC33-165
```

2.5 Preparation Step 5: Define DB2 Server for VSE Client Edition Programs and Transactions to CICS

Job name is ARIS75JD.

This step is mandatory if you will be using ISQL or online CICS transactions.

Job ARIS75JD is used to define resources to the CICS System Definition file, specifically Programs and Transactions. File definitions for online DB2 for VSE support are not included.

Start Job Manager - see Figure 59 on page 60.

Parameter Name	Default value	Description
LIST	VSELIST	Name of the CICS definition List to which the DB2 group has been added. The List is referenced during CICS startup.
GROUP	DB2750C	Name of the group that contains the run time routines and is in the group list used during CICS startup.
CICSFILE	CICS.CSD	The VSAM Fileid name for the CICS System Definition (CSD) file.
CSDCAT	VSESP.USER.CATALOG	The VSAM catalog where CICSFILE resides
TRANSEC	2	Not required with an ESM and is only required when using the BSM.
ISQL	Y	Definitions will be made for ISQL. Specify N to indicate that ISQL is not used.
CICSTS	Y	Specify N to use the CICS/VSE system definitions. The default Y, will make CICS Transaction Server entries.

Figure 20. The parameters for ARIS75JD

Expected return code is 4.

2.6 Preparation Step 6: Setup the SQLGLOB and BIND files

 This step is mandatory for new installations and optional for migration. The Online Resource Adapter(ORA) and the Batch Resource Adapter(Batch RA) get the default configuration settings for connecting to a database server from the SQLGLOB file.

 If you have used the default file-id(DB2.SQLGLOB.MASTER) to define your existing DB2 Server for VSE's SQLGLOB file VSAM CLUSTER, then you should have used a different file-id when you were performing the installation process. This will enable you to run both the existing DB2 Server for VSE and this release of DB2 Server for VSE Client Edition.

The SQLGLOB file is used to contain DB2 Server for VSE Client Edition Global variables. Refer to the *DB2 Server for VSE System Administration* Manual for more information.

When referencing the SQLGLOB file, after it has been defined, it is required to code the DISP=(OLD,KEEP) parameter on the DLBL.

2.6.1 Defining the Global Variable File (SQLGLOB)

Job ARIS758D is required and defines, and initializes the Global Variable (SQLGLOB) file. Jobs ARISGDEF, ARIS757D, and ARIS759D will be submitted to the VSE environment following the completion of ARIS758D.

Parameter Name	Default value	Description
VOLUME	XXXXXX	The volume in the VSAM catalog, where the dataset will be defined
ATYPE1	TRACKS	The default allocation unit is Tracks. Use **BLK** for FBA devices.
ALLOC1	15	This is the primary space allocation for the VSAM dataset. The size of the dataset is based on the number of CICS users of DB2 for VSE. There will be one record for each user who does not use the system global defaults, and will use his/her own. The default allocation is sufficient for about 6000 users.
ALLOC2	5	This is the secondary space allocation for the VSAM dataset. The allocation unit is in tracks.

Figure 21. The parameters for ARIS758D

See global parameters.

The expected return code is 0. Return code 12 means that MASTERFILE already exists.

2.6.2 Updating the SQLGLOB file with IBM-Supplied Global Defaults

ARISGDEF updates the SQLGLOB file with the IBM-supplied global default values.

See global parameters.

Expected return code is 0.

2.6.3 Defining the Preprocessor Bind File (SQLBIND)

ARIS757D is only required if you will be using batch or online binding. This dataset is a repository for preprocessor bind files(bind-records), that will be bound to application servers.

Parameter Name	Default value	Description
BINDCAT	VSESP.USER.CATALOG	The VSAM catalog where BINDFILE resides
VOLUME	XXXXXX	The volume in the VSAM catalog, where the BINDFILE will be defined
ALLOC1	10	This is the primary space allocation for the VSAM dataset. The size of the dataset is based on the number of bind files contained in it, and on the size of the packages. The default allocation unit is cylinders and is defined by the ATYPE parameter.
ALLOC2	5	This is the secondary space allocation for the VSAM dataset. The size of the dataset is based on the number of bind files contained in it, and on the size of the packages. The default allocation unit is cylinders and is defined by the ATYPE parameter.

Figure 22. The parameters for ARIS757D

Expected return code is 0. Return code 12 means that BINDFILE already exists.

2.6.4 Defining the Preprocessor Bind Work File (BINDWKF)

Job ARIS759D is required for batch and online binding. This dataset is a repository for preprocessor bind files (bind-record) whi ch will be bound to an application server.

Parameter Name	Default value	Description
BINDWCAT	VSESP.USER.CATALOG	The VSAM catalog where BINDFILE resides
VOLUME	XXXXXX	The volume in the VSAM catalog, where the BINDFILE will be defined
ALLOC1	1	This is the primary space allocation for the VSAM dataset. The size of the dataset is based on the size of the packages. The default allocation unit is cylinders and is defined by the ATYPE parameter.
ALLOC2	1	This is the secondary space allocation for the VSAM dataset. The size of the dataset is based on the size of the packages. The default allocation unit is cylinders and is defined by the ATYPE parameter.

Figure 23. The parameters for ARIS759D

Expected return code is 0. Return code of 12 means that BINDWFILE already exists.

2.6.5 Loading the ISQL bindfile ARISIQBD.A to a VSAM bindfile File

Job ARISIQBD is required by batch or online binder to create ISQL pa ckage. The ISQL package is required by ISQL, to be available at target server. Job ARISIQBD will load the supplied A-type member ARISIQBD in the VSAM Bind file.

Parameter Name	Default value	Description
BINDCAT	VSESP.USER.CATALOG	The VSAM catalog where BINDFILE resides
READ MEMBER	ARISIQBD.A	Bindfile that needs to be loaded

Figure 24. The parameters for ARISIQBD

Expected return code is 0.

If the ISQL bind file cannot be stored on the VSAM dataset, the following message is displayed on the VSE console:

```
ISQL BIND FILE CANNOT BE BUILT DUE TO ERROR
```

Otherwise, the following message will be displayed:

```
ISQL BIND FILE BUILT SUCCESSFULLY
```

2.6.6 Loading the other bindfiles (A-member) to a VSAM bindfile

IBM does not provide you VSAM bindfile that contains ISQL, DBSU and Stored Procedure bindfiles(bind-records) that are created as result of prep with "BIND" option. Instead,Bindfile (bind-records) of ISQL,DBSU and Stored Procedures are sent as A-member.You need to create your own VSAM bindfile and load bindfiles provided you as A-member. One job to load each A-member has been provided. Job names are in the format ARIXUxxB. Each job will load the corresponding A-member into VSAM bindfile as one record for each member.

By default, ARISIQBD.Z loads supplied A-type member ARISIQBD in the VSAM Bind file. ARISIQBD can be used to load DBSU and Stored Procedure bindfiles (A-members) by replacing the name of ARISIQBD.A to any other bindfile (like ARIXU01B.A).

Parameter Name	Default value	Description
BINDCAT	VSESP.USER.CATALOG	The VSAM catalog where BINDFILE resides
	ARIXUxxB.A	Bindfile that needs to be loaded

Figure 25. The parameters for ARISIQBD

Expected return code is 0.

If the ISQL bind file cannot be stored on the VSAM dataset, the following message is displayed on the VSE console:

```
ISQL BIND FILE CANNOT BE BUILT DUE TO ERROR
```

Otherwise, the following message will be displayed:
```
ISQL BIND FILE BUILT SUCCESSFULLY
```

2.7 Preparation Step 7: Updating Labels for the new datasets

Job name is ARISSTDL.

This step is Mandatory.

The job will add the labels for the new datasets to the standard label area.

 It is recommended that the labels for the new datasets (SQLGLOB, SQLBIND, and BINDWKF) be added
to the system standard labels at system initialization. For co-existance consideration: if you have an
existing DB2 Server for VSE installed, you may want to create a
 PROC for the labels required by DB2 Server for VSE, Client Edition instead of adding them to the
standard labels at system initializ ation. Please refer to the *"z/VSE System Control Statements"* and the
"VSE Guide to System Functions" for more information.

Parameter Name	Default value	Description
BINDCAT	VSESP.USER.CATALOG	The VSAM catalog where BINDFILE resides
BINDWCAT	VSESP.USER.CATALOG	The VSAM catalog where BINDWFILE resides

Figure 26. The parameters for ARISSTDL

Also see global parameters.

Note: The DLBL for BINDWKF must not have the DISP parameter coded.

Expected return code is 0.

3.0 Chapter 3. Installing DB2 Server for VSE Client Edition

To install this product:

1. Read *"Appendix A: How to Use the Job Manager"*.

2. Refer to Appendix B, "Techniques Used for Installation" for a description of how to adapt the IBM-supplied materials to your local needs.

3. Complete the steps in Chapter 2, "Preparing to Install DB2 Server for VSE Client Edition 7.5"

4. Perform all the mandatory steps in this chapter, and any of the optional ones that apply to your installation (See Figure 27).

Attention: If any procedure within any of the steps in this chapter fails to execute successfully, fix the problem and rerun the step again before continuing.

Step	Optional/ Mandatory	Automated/ Manual	Description
1	Mandatory	Manual/ Automated	Set up DBNAME Directory
2	Mandatory	Automated	Set up default userid and password in ARISICON "A" Member
3	Mandatory	Automated	Link-Edit the DB2 Server for VSE online Support Components
4	Mandatory	Manual	Start the default database server
5	Optional	Automated	Install Optional Components
6	Optional	Automated	Reload CCSID-Related Phases Package
7	Optional	Automated	Selecting National Language Support
8	Optional	Automated	Grant Schedule Authority
9	Optional	Automated	Create CCSID-Related Phases (Target DB must be DB2 on VSE or VM)
10	Optional	Automated	Run the Sample Programs to verify Installation
11	Optional	Manual	Run ISQL to Verify Installation
12	Optional	Manual	Stop the DB2 VSE Client
13	Optional	Manual	System Customization Activities

Figure 27. Steps to Install DB2 Server for VSE Client Edition version 7 Release 5

Parameter Name	Default value	Description	Used in member:
PROC1	ARIS75DB	DB2 Server DATABASE ID Proc	ARIS75WD
COMPILELIB	PRD2.DB2750C	Library for cataloging PHASE type members	ARISCNVD, ARIS6ASD, ARIS6C2, ARIS6CD, ARIS6PLD, ARIS6FTD
WDISK	SYSWK1	Sequential workdisk volume	ARISCNVD, ARIS6ASD, ARIS6C2, ARIS6CD, ARIS6PLD, ARIS6FTD
START	xxxx	Start track or block allocated for SYSPUNCH and SYSIPT.	ARISCNVD, ARIS6ASD, ARIS6C2, ARIS6CD, ARIS6PLD, ARIS6FTD
FOR	xxxx	Extent size in tracks or blocks allocated for SYSPUNCH and SYSIPT.	ARISCNVD, ARIS6ASD, ARIS6C2, ARIS6CD, ARIS6PLD, ARIS6FTD
GLOBFILE	DB2.SQLGLOB.MASTER	This is the name of the dataset which will hold the global variables	ARIS6ASD, ARIS6CD, ARIS6PLD, ARIS6FTD
CATALOG	VSESP.USER.CATALOG	The VSAM catalog where SQLGLOB resides	ARIS6ASD, ARIS6CD, ARIS6PLD, ARIS6FTD
LELIB	PRD2.SCEEBASE	Language Environment library	ARIS6C2D, ARIS6CD, ARIS6PLD

Figure 28. Description of global parameters

3.1 Installation Step 1: Setup the DBNAME Directory

Job name is ARISBDID.

This step is mandatory. Required for Local and Remote databases.

1. Punch the A-type source member ARISDIRD.

2. Update the DBNAME and other parameters. See *"DB2 Server for VSE System Administration"* manual *"Chapter 2: Setting Up the DBNAME Directory"* for information about the input file format and syntax.

3. Re-catalog the A-type source member ARISDIRD.

Start Job Manager - see Figure 59 on page 60.

Job ARISBDID (see Figure 29 on page 31) converts A-type source member ARISDIRD into an assembler source file, which will be assembled and link-edited into two PHASEs, namely, ARICDIRD.PHASE for online and ARICDBND.PHASE for batch.

```
// SETPARM ISMIGR=%%MIGRATION%%
// IF ISMIGR='NO' THEN
// GOTO GENERATE
// EXEC REXX=ARICCDID, PARM='%%PLIB%%.%%INPUT%% %%LIB1%%.%%OUTPUTA%%'
/. GENERATE
// LIBDEF *,SEARCH=%%LIB1%%
// LIBDEF PHASE,CATALOG=%%COMPILELIB%%              *-- UPDATE LIBRARY
// EXEC REXX=ARICBDID,PARM='%%LIB1%%.%%OUTPUTB%%'  (1)
// IF $RC <  4 THEN
// GOTO EXITOK
/. ERREXIT
* SQL/DS DBNAME DIRECTORY CANNOT BE BUILT DUE TO ERROR
// GOTO SQLDONE
/. EXITOK
* SQL/DS DBNAME DIRECTORY BUILT SUCCESSFULLY
/. SQLDONE
```

Figure 29. Job ARISBDID (Setup DBNAME directory)

Notes for Figure 29:

(1)   %%LIB1%%.%%OUTPUTB%% is the input Dbname Directory source member. The default parameter is: 'PRD2.DB2750C.ARISDIRD.A' - see Figure 30.

Parameter Name	Default value	Description
MIGRATION	NO	Should be 'NO' for Installation process
OUTPUTB	ARISDIRD.A	Member containing defaults for DBNAME
LIB1	PRD2.DB2750C	Installation Library

Figure 30. The parameters for ARISBDID

A return code of 2 is acceptable for this job. ARICDIRD.PHASE and ARICDBND.PHASE are created.

3.2 Installation Step 2: Setup default userid and password

Job name is ARIS75CZ.

This step is mandatory. Required for Local and Remote databases.

1. This step generates an A member ARISICON which will contain an SQL CONNECT statement. The userid and password for the CONNECT statement will be read from the GLOBAL parameter section in Installation section in the Z member ARISIVRR. The generated ARISICON.A member will be placed in the installation sublibrary that will be read by other job steps such as ARIS360D, ARIS130D, ARIS110D and ARIS063D.

Parameter Name	Default value	Description
DBUSRID	uuuuuuuu	Default administrative DBA userid
DBPWORD	pppppppp	Default administrative DBA password

Figure 31. The parameters for ARISIVRR

3.3 Installation Step 3: Link-Edit the DB2 Server for VSE Client Edition Online Support Components

Job name is ARIS75BD.

This step is optional. Required for Local and Remote databases with CICS/VSE or CICS/TS.

If you will not be using DB2 Server for VSE Client Edition online support in a CICS interactive environment, skip this step.

Job control member ARIS75BD is used to link-edit the online support components. The link-edit will include the CICS interface modules DFHEAI and DFHEAI0, found in the CICS PRD1.BASE sublibrary. The output is cataloged to the installation library by default. If you want to use your own libraries, change the parameter value.

If you do not want ISQL support, and only want support for your own CICS online applications, then set the ARIS140D, ARIS150D, and ARIS160D parameters to *.

Parameter Name	Default value	Description
CICSLIB	PRD1.BASE	This is the name of the sublibrary where CICS components are installed.[1]
ARIS140D	//	Default parameter to include ISQL support. Enter * to omit this job.
ARIS150D	//	Default parameter to include ISQL support. Enter * to omit this job.
ARIS160D	//	Default parameter to include ISQL support. Enter * to omit this job.

Figure 32. The parameters for ARIS75BD

Note: **(1)** The library search path is:

```
// LIBDEF *,SEARCH=(%%LIBNAME%%,%%CICSLIB%%,PRD2.CONFIG)
where LIBNAME is the installation library name. See Figure 60 on page 61.
```

Expected return code is 0.

3.3.1 Installation Step 3.1: Link-Edit the DB2 Server for VSE Client Batch

Resource Adapter DRDA code with Assembler Interface

This step is required for Remote databases.

Job name is ARIS75LD

This step is optional for the installation process.

Job ARIS75LD generates the batch resource adapter for a remote database environment by link-editing the required object modules and producing the ARIRBARM.phase for batch.

3.4 Installation Step 4: Start the Default Database Server

This step is optional for the installation process. Only required for Local databases.

Bring up the default application server to which the installation process will connect to for binding DB2 VSE Client Applications,
Reload help text, reload CCSID packages (if the server is DB2 on VSE or VM). The optional steps to perform the above mention steps will be carried
out only if this step is successfully completed and the
application server is running.

For information to bring up DB2 Server on VSE and VM, please refer to DB2 Server for VSE and VM Operations Manual. For any other application server, please refer to respective program manuals.

3.5 Installation Step 5: Install Optional Components

This Step will be performed only if Step 4: Start the Default Database Server is successfully completed.

This step involves execution of two jobs ARIS75DU and ARIS75ED.

This step is optional and is onlt required for local databases.

We recommend that you install **all** these optional client components, even if you do not plan to use them now.

Job ARIS75DU prepares the batch utility, DBSU to facilitate some of the Installation steps that follow which use this utility to update the tables in the default database (the *default* database is identfied by the keyword *SYSDEF=Y* in the DBNAME directory built in Installation Step 1).

Job ARIS75ED contains the job control statements to load the optional components of a database into an existing database. You may omit specific optional components by removing the procedures in job ARIS75ED that create that component.

If you do not want ISQL support, then set the ARIS110D, ARIS120D, ARIS130D parameters to *.

Parameter Name	Default value	Description
ARIS110D	//	Install ISQL
ARIS120D	//	Install ISQL
ARIS130D	//	Install ISQL

Figure 33. The parameters for ARIS75ED

Expected return code is 0.

Note:

- The ARIS75ED job runs the application server in single user mode. Ensure that it runs in the DB2 Server for VSE partition as described in "Preparation Step 3: Set Up the VSE Environment".

- Procedure ARIS080D installs the DB2 Server for VSE online support, which you need to run ISQL or any of your own interactive applications.

- Procedure ARIS360D loads the FIPS flagger into the database. For more information on the FIPS flagger, see the *DB2 Server for VSE & VM Application Programming*.

3.6 Installation Step 6: Reload CCSID-Related Phases Package

This Step will be performed only if Step 4: Start the Default Database Server is successfully completed.

Job name is ARIS75WD.

This step is optional and only required for local databases.

Job control member ARIS75WD, contains the job control statements to load the CCSID-related phases package into the database. Procedure ARIS175D reloads the CCSID-related phases package in the database by running the application server in single user mode or multiple user mode against that database(defined in DBNAME Directory).

Parameter Name	Default value	Description
SUM	N	Load CCSID-Related Package in Single User Mode. Code N to use Multiple User Mode.
DBNAME	SQLDS	Database to load the CCSID-Related Package to in Multiple User Mode.

Figure 34. The parameters for ARIS75WD

Expected return code is 4.

3.7 Installation Step 7: Selecting National Language Support

This Step will be performed only if Step 4: Start the Default Database Server is successfully completed.

Job name is ARIS75HZ.

This step is optional and only required for local databases.

This step will install a national language for DB2 Server for VSE, and optionally load the ISQL Help Text for that language. The following steps will be performed:

- Enlarge Help Text Dbspace.
- "Install" Language.
- Verify Installation.

Parameter Name	Default value	Description
PAGES	8192	Number of pages acquired for the HELPTEXT DBSpace. Default value 8192 is enough to define 3 languages.

Figure 35. The parameters for ARIS75HZ

Expected return code is 0.

3.7.1 Install Language and ISQL Help Text

The ARIS75JZ Z-type member calls the ARIS380D PROC-type member that was modified according to the parameters specified in ARISIVRR file when you started the Installation Step (Chapter 3). If you have modified the parameters used in ARIS380D (Figure 37 on page 36) in ARISIVRR file after executing Installation Step 1, you might need to update ARIS380D file manually before submitting ARIS75JZ.

This is only necessary if the Help Text Dbspace is not large enough to hold the addition of this language. As supplied, DB2 Server for VSE has 8192 pages assigned for the PUBLIC.HELPTEXT dbspace. This is sufficient for the Help Text for 3 languages.

Language List:

Language	Short Name
Mixed English	AME
Uppercase English	UCE
French	FRE
German	GER
Japanese	KAN

Parameter Name	Default value	Description
LANGUAGE	AME	Short form of the language name, taken from the language list.
HELP	NO	If you want only the ISQL help text to be loaded, change value to HELP=ONLY. To install a National language in addition to the Help Text, set HELP=YES. If you do not want Help Text to be loaded keep current value.
CUU	181	Tape drive address.
DEFAULTL	NO	If you want this language to be the default language, set DEFAULTL parameter to YES. Otherwise, set the value to NO.

Figure 36. The parameters for ARIS75JZ

Parameter Name	Default value	Description
NLSLIB	PRD2.DB275 (For AME) **Note:** There is no '0' at the end of PRD2.DB275.	Language Library. **Note:** The name of NLSLIB must not exceed 5 characters, since NLS suffix is 3 characters - making library name 8 characters. The NLS suffix will be added during the execution of the program. The suffix is generated by procedure ARIS385D. For LANG=AME library will be PRD2.DB275**0** For LANG=FRE library will be PRD2.DB275**S03**,etc.
CLIB	PRD2.DB2750C	The Installation Library

Figure 37. The parameters for ARIS380D

Note: Read *"Appendix A: What should you keep in mind."*

ARIS75JZ job will perform the following functions:

- Define a sublibrary for the language components
- Linkedit the message repository
- Update SQLDBA.SYSLANGUAGE with language key and language id
- Linkedit language specific parts
- Change the default language if requested
- Load Help text if requested.

Expected return code is 0, however, return code 6 is acceptable.

3.8 Installation Step 8: Grant SCHEDULE Authority

Job name is ARIS75FD.

This step is optional and only required for local databases. This step is to enable the Client Edition to CONNECT to a database server on VSE. If the target database server is on a non VSE platform this step can be skipped.

If the CICS application name specified in the SIT table is DBDCCICS (APPLID=DBDCCICS) and you are using the default password (SQLDBAPW), skip this step.

In "Installation Step 5: Install Optional Components", procedure ARIS080D granted SCHEDULE authority to user ID DBDCCICS and assigned it the password SQLDBAPW. DBDCCICS is the default CICS application name (APPLID). This would apply if the customer has a VSE or VM Guest Sharing database server.

However, if in "Entries Required in DFHSIT", you specified a different CICS application name in the SIT (APPLID=**name**), this **name** should be granted SCHEDULE authority instead. To do this, run job control member ARIS75FD, shown in Figure 38. From the following example,

// EXEC PGM=DFHSIP,SIZE=DFHSIP,PARM='APPLID=OMYGW001 ...

you would GRANT SCHEDULE to OMYGW001

The password (**namepw**) specified in the GRANT SCHEDULE command must also be specified in the CIRB and CIRT transactions used to start and stop the DB2 Server for VSE online support.

See "Starting the DB2 Server for VSE Online Support" on page 43 and "Stopping the DB2 Server for VSE Online Support" on page 46. For details on the CICS APPLID, refer to the *CICS* manuals.

Parameter Name	Default value	Description
NAME	DBDCCICS	CICS application name (APPLID=name)
NAMEPW	SQLDBAPW	Password
SUM	N	Load CCSID-Related Package in Single User Mode. Code N to use Multiple User Mode.
DBNAME	SQLDS	Database to load the CCSID-Related Package to in Multiple User Mode.

Figure 38. The parameters for ARIS75FD

Expected return code is 0.

3.9 Installation Step 9: Create CCSID-Related Phases

Job name is ARISCNVD.

There are three default copies of CCSID-Related Phases that are shipped in product tape which will be copied to the distribution library during installation of the DB2 Server for VSE Client Edition. But this might not contain some conversion code pages that are not part of the standard list.

If the default server that was brought up in "Installation Step 4: Start the Default Database Server" contains these customer specific conversion then this step can be run to regenerate the CCSID-Related phases. This job step can be skipped and run post installation if the target server is not the default server.

This step is optional and only required for local databases. ARISCNVD must be executed while the database

server is active.

Parameter Name	Default value	Description
PARMS	SQLDBA/SQLDBAPW/SQLDS	SQLDBA is user id with DBA authority, SQLDBAPW is the connect password, SQLDS is the RESID of the database to connect to the DBNAME parameter of the database server.

Figure 39. The parameters for ARISCNVD

Note: See global parameters for installation.

Expected return code is 0.

3.10 Installation Step 10

Run the Sample Programs to Verify Installation

This step is optional and only required for local databases.

You should run the sample application programs to verify that you correctly installed the DB2 Server for VSE, Client Edition system.

For each language supported by an DB2 Server for VSE preprocessor program application program is supplied that shows how SQL commands can be coded in the preprocessor programs. These sample programs all access and manipulate the DB2 Server for VSE sample tables in a similar manner. Refer to the manual for listings of the sample programs.

IBM also supplies the following DB2 Server for VSE Z-type source members with the job control statements to run the sample programs.

ARIS6ASD preprocesses, assembles, link-edits, and runs the assembler.

See global parameters.

Expected return code is 0.

ARIS6C2D preprocesses, assembles, link-edits, and runs COBOL.

Parameter Name	Default value	Description
COBLIB	CMPLR22.COBVSE	Default library for Cobol compiler

Figure 40. The parameters for ARIS6C2D

See global parameters.

Expected return code is 0.

ARIS6CD preprocesses, assembles, link-edits, and runs C (DO NOT run this job if C is not installed on your system)

Parameter Name	Default value	Description
C-LIB	CMPLR22.CVSE	Default library for C compiler

Figure 41. The parameters for ARIS6CD

See global parameters.

Expected return code is 2.

ARIS6FTD preprocesses, assembles, link-edits, and runs FORTRAN (DO NOT run this job if FORTRAN is not installed on your system)

Parameter Name	Default value	Description
FRTLIB	COMPILE.COMPILE	Default library for Fortran Compiler

Figure 42. The parameters for ARIS6FTD

See global parameters.

Expected return code is 4.

ARIS6PLD preprocesses, assembles, link-edits, and runs PL/I (DO NOT run this job if PL/I is not installed on your system)

Parameter Name	Default value	Description
PLDLIB	COMPILE.COMPILE	Default library for PL/I Compiler

Figure 43. The parameters for ARIS6PLD

See global parameters.

Expected return code is 4.

3.11 Installation Step 11: Run ISQL to Verify Installation

3.11.1 Starting the CICS System

You have to restart the CICS system after updating both the CICS
starup job control and the CICS control tables before you can use
DB2 Server for VSE, Client Edition online support in the
CICS system. See "Preparation Step 6" and "Preparation Step 7".

3.11.1.1 Starting the DB2 Server for VSE Client Edition Online Support:

You can use the CICS CIRB transaction with all its internal default parameters, to start the DB2 Server for VSE Client Edition online support. The CIRB transaction accepts six positional parameters having the following default values:

password   Defaults to SQLDBAPW. This is the password for the CICS APPLID discussed under "Installation Step 7: Grant SCHEDULE Authority ".

number of links (NOLINKS) defaults to 3.

default user ID (DEFUID) defaults to CICSUSER.

resource adapter ID (RMID) defaults to 0.

language ID   (LANGID) specifies the language that is link-edited and the search order. The default is American English (AMENG).

SERVER-NAME (SERVER-NAME) defaults to SQLDS (or to the system default application server if you have performed "Installation Step 1: Set Up the DBNAME Directory".

Entering CIRB is thus the same as entering:

CIRB SQLDBAPW,3,CICSUSER,0,AMENG,SQLDS

Refer to the *DB2 Server for VSE System Administration* manual for details about the parameters that can be passed in a CIRB transaction. (That discussion includes a description of how the user IDs DBDCCICS and CICSUSER relate to the DB2 Server for VSE online support.)

If the CIRB transaction fails to run successfully, ensure that:

- The required CICS table updates have been made.

- The CICS system has been restarted **after** the required table updates were made, or RDO was used to update the required tables

- The DFHSIT application name (APPLID) has been granted SCHEDULE authority in the database. (See "Installation Step 7: Grant SCHEDULE Authority".)

- The DB2 Server for VSE sublibrary has been concatenated to the appropriate search chains in the partition in which the CICS system or ICCF runs.

- The application server has been started in multiple user mode.

- All prerequisite service required by DB2 Server for VSE has been applied.

- The CICS restart resynchronization support has been enabled.

3.11.2 Starting ISQL

ISQL runs as a CICS transaction, and is invoked just like any other transaction. Details of the sign-on and exit procedures are in the **DB2 Server for VSE & VM Interactive SQL Guide and Reference**.

After the CICS terminal has been activated and the DB2 Server for VSE online support has been started, start ISQL by typing:

ISQL

The system responds with the ISQL sign-on screen, and prompts you to enter your user ID, password and optionally a target database name.

All further actions are handled conversationally between the CICS user and ISQL.

If you cannot log on to ISQL, ensure that:

- The CICS resources were successfully updated during "Preparation Step 6" and Preparation Step 7".

- There is enough CICS dynamic storage for ISQL (900 kilobytes).

- ISQL was installed successfully during "Installation Step 4: Install Optional Components".

  - DB2 Server for VSE online support has been started with links to the specified (or default) database.

  - All links managed by DB2 Server for VSE online support have not been used up.

  - All prerequisite service required by DB2 Server for VSE has been applied.

3.11.3 Verify the Installation

 Set up the DBNAME directory (ARISDIRD.A) for all types of servers such as LOCAL, REMOTE, HOSTVM, REMTPN.

 To test the installation of the DB2 Server for VSE Client Edition batch client, if DBSU was not installed in step 4, submit the preprocess DBSU job ARIS75DU to a target server listed in the DBNAME directory. To install DBSU on all servers, repeat this step for all the DBNAMEs listed in the DBNAME directory.

 Create a Job that looks like the one shown below to execute the DBSU utility ARISDBS. Replace **userid** and **password** references with a valid userid and password in the JCL.

Figure 44 on page 42 uses the DBS utility to verify DB2 Server for VSE Client Edition installation.

```
  // JOB TESTCLNT
// LIBDEF *,SEARCH=(PRD2.DB2750C)
   ON $RC>4 GOTO END
// EXEC ARIDBS,SIZE=AUTO
CONNECT userid IDENTIFIED BY password;
SET ERRORMODE CONTINUE;
SET AUTOCOMMIT ON;
CREATE TABLE CHKINSTTAB (VAR1 INT, VAR2 CHAR(20));
INSERT INTO CHKINSTTAB VALUES (100, 'TESTCLIENT');
INSERT INTO CHKINSTTAB VALUES (200, 'SUCCESSFUL');
SELECT * FROM CHKINSTTAB;
/*
/&
```

Figure 44. Verify Batch Operations for the client Installation

If CICS environment is available, perform the CIRB transaction to enable the Online Resource Manager for all the servers or add specific servers using the CIRA transactions after issuing CIRB to enable the transaction.

If ISQL was not previously installed, follow instructions under topics **5.3.1 Installing ISQL after DB2 Server for VSE Client Edition, 5.3.2 Reloading the ISQL Package (SQLDBA.ARIISQL)** to install ISQL.

To test ISQL, sign on to CICS and execute the ISQL transaction to verify that DB2 Server for VSE Client Edition is correctly installed. For ISQL commands refer to *DB2 Server for VSE & VM Interactive SQL Guide & Reference* manual.

Execute the following example SQL if you are connected to a target server.

CREATE command through ISQL:

```
CREATE TABLE CHKINSTTAB (VAR1 INT, VAR2 CHAR(20))
```

INSERT command through ISQL:

```
INSERT INTO CHKINSTTAB VALUES (100, 'TESTCLIENT')
INSERT INTO CHKINSTTAB VALUES (200, 'SUCCESSFUL')
```

CREATE command through ISQL:

```
CREATE TABLE CHKINSTTAB (VAR1 INT, VAR2 CHAR(20))
```

SELECT command through ISQL:

```
SELECT * FROM CHKINSTTAB
```

To print the display results, enter the ISQL display command:

```
PRINT
```

The successful execution of the PRINT command verifies that SYS098 has been assigned to a VSE/POWER-intercepted printer, or to a real printer. (Refer to *"Modifying the CICS Start-Up JCL".*)

3.11.4 Stopping ISQL

To end the display and terminate the ISQL session:

Type the ISQL display command:

```
END
```

Type the ISQL session termination command:

```
EXIT
```

3.12 Installation Step 12: Stop the DB2 VSE Client

3.12.1 Stopping the DB2 Server for VSE Online Support

You can use the CICS CIRT transaction with all its internal default parameters, to stop the DB2 Server for VSE online support. The CIRT transaction accepts three positional parameters, which have the following default values:

password   Defaults to SQLDBAPW. This must be the same password as the one specified (or the default) in the CIRB transaction.

mode   Defaults to NORMAL. Options are NORMAL or QUICK.

interval   Defaults to 30 (seconds). This is a decimal value between 0 and 3600 (seconds).

Entering CIRT is thus the same as entering:

```
CIRT SQLDBAPW,NORMAL,30
```

Refer to the *DB2 Server for VSE System Administration* manual for details about the parameters that can be passed in a CIRT transaction.

3.12.2 Stopping the CICS System

The CICS system need not be stopped when the application server is being shut down; it can continue to process transactions that do not access DB2 Server for VSE. If the CICS system must be stopped, that action can be taken in its normal way; DB2 Server for VSE does not restrict CICS shutdown.

4.0 Post-Installation Activities

4.1 Installation Step 13: System Customization Activities

This step lists further administration and customization activities you should consider at this time. These are:

- Install and activate the DRDA Application Requestor code.

- Prepare to Use TCP/IP. See the chapter "Using TCP/IP with DB2 Server for VSE" in DB2 Server for VSE System Administration manual that pertain to VSE Requestor side.

- Initialize the user partition since the default after installation is INTERNATIONAL. The CCSID defaults for the target server are determined when a CHARNAME is chosen.

4.1.1 VSE Guest Sharing

This section discusses how to complete the installation of DB2 Server for VSE to enable VSE Guest Sharing. It does not attempt to explain Guest Sharing in detail. For more information on Guest Sharing, refer to the *DB2 Server for VSE System Administration* manual. You can also refer to the IBM z/VSE Planning manual.

The term "Guest Sharing" is used because the VSE system is a "guest" of the z/VM system and it "shares" the data with the host's application server.

The VSE Guest Sharing installation process requires you to install the complete DB2 Server for VSE Client Edition as a guest of a z/VM system.

4.1.2 VSE Guest Machine Parameters

The number of links between the VSE guest machine and the VM database is limited by the MAXCONN parameter in the VSE guest machine directory entry. If this parameter is not specified, the default is 16.

Each VSE guest machine partition that (batch and online) that will us the VSE guest sharing facility must have a minimum of 40K PFIX storage allocated for the DB2 Server for VSE communication link. To allocate this storage, use one of the following methods:

```
// SETPFIX LIMIT=40K,PERM -  In the VSE partition during IPL
// SETPFIX LIMIT=40K       -  In the VSE JCL before program execution
ALLOC R,fx=40K             -  In the BG ASIPROC for the desired partition
```

See the z/VSE System Control Statements manual for further details on using either the SETPFIX or ALLOC R commands.

Online users can access another application server on the z/VM systems by supplying a different database name on the SERVER-NAME parameter of the CIRB transaction.

4.1.3 VSE Guest Sharing Installation Checklist

Here is the checklist for setting up guest sharing support for DB2/VSE

- Preparation Step 1: Setup VSE Environment
- Preparation Step 2: Allocate Dasd for the Distribution Library
- Preparation Step 3: Restore the Distribution Library
- Preparation Step 4: Prepare the CICS Environment
- Preparation Step 5: Define DB2 Server Programs and Transactions
- Preparation Step 6: Setup the SQLGLOB and SQLBIND Files
- Preparation Step 8: Update Standard Labels
- Installation Step 1: Setup the DBNAME Directory
- Installation Step 2: Setup default userid and password
- Installation Step 3: link Edit Online Support Components
- Installation Step 4: Start the default database server
- Installation Step 5: Install Optional Components
- Installation Step 6: Reload CCSID-Related Phases Package
- Installation Step 7: Select National Language Support
- Installation Step 8: Grant Schedule Authority
- Installation Step 9: Create CCSID-Related Phases
- Installation Step 10: Run Sample Programs to Verify Installation
- Installation Step 11: Run ISQL to Verify Installation

To set up the DBNAME directory for DB2/VSE, you must first determine the RESID and DBNAME of the DB2/VM database server. Often they are the same name, but they can be different. The DBNAME is the same as the DBNAME parameter used on the DB2/VM SQLSTART command The RESID was determined when SQLDBGEN was done. It corresponds to the filename of some of the DB2/VM database definition files, resid SQLFDEF Q and resid SQLDBGEN Q. If the DB2/VM server is running, the SHOW INITPARM operator command can be issued. The DBNAME and RESID can taken from that output.

Set up the ARISDIRD.A file specifying the RESID as the APPLID and the DBNAME as the DBNAME. Set up system default and/or partition defaults if desired. The TPN, SYSID and REMTPN fields should be blank. DB2/VSE determines that guest sharing is to be used if the APPLID field does not begin with SYSARI0.

After the ARISDIRD.A file has been cataloged into the DB2/VSE library, ARISBDID job must be run to generate the DBNAME directory phase. For example:

```
TYPE=HOSTVM
DBNAME=VMDB1
RESID=DB2VM1
SYSDEF=Y
```

Figure 45. DBNAME directory

In an application use

`CONNECT uid IDENTIFIED BY upass TO VM_DB`

In CICS, to activate the online resource adapter for the VM database, use

`CIRB ,,,,, VM_DB`

For information on how VSE batch/ICCF applications access different application servers, refer to the *DB2 Server for VSE System Administration* manual.

5.0 Chapter 4. Maintenance Activities

DB2 Server for VSE Client Edition maintenance includes adding new components (because they were not installed initially) and replacing existing ones (because of service updates). Both types of activities are discussed below.

The IBM-supplied procedures and source members for installing DB2 Server for VSE components assume that the user ID is SQLDBA, and that the password is SQLDBAPW. If the password has been changed, it should be reassigned before the reinstallation activity. The technique for changing the password is shown when needed in each description below.

5.1 DBS Utility Maintenance

5.1.1 Reloading the DBS Utility Package (SQLDBA.ARIDSQL)

The DBS utility package must be reloaded in all databases if there is a service update to the A-type source member ARIDSQLP. To reload it, prepare and run the job control statements shown in Figure 46.

Refer to the information supplied with each DB2 Server for VSE service update to see if you should take this action.

```
// JOB RELOAD DBS UTILITY
// LIBDEF PROC,SEARCH=(PRD2.DB2750C)
// EXEC PROC=ARIS75SL    *-- DB2 Server LIBRARY DEFINITION      (1)
// EXEC PROC=ARISDBUD    *-- INVOKE DBSU (2)
CONNECT SQLDBA IDENTIFIED BY currentpw;
GRANT CONNECT TO SQLDBA IDENTIFIED BY SQLDBAPW;
/*
// EXEC PROC=ARIS040D    *-- CREATE DBS UTILITY PACKAGE         (4)
// EXEC PROC=ARISDBUD    *-- INVOKE DBSU (5)
CONNECT SQLDBA IDENTIFIED BY SQLDBAPW;
GRANT CONNECT TO SQLDBA IDENTIFIED BY newpw;
/*
/&
```

Figure 46. Reloading the DBS Utility Package

Notes for Figure 46

(1)   Procedure ARIS75SL identifies the DB2 Server for VSE sublibraries.

(4)   Procedure ARIS040D creates the package SQLDBA.ARIDSQL in the database from the DB2 Server for VSE A-type source member ARIDSQL P.

     If the database view SQLDBA.SYSUSERLIST exists when you run this step, the step ends with a return code of 0. If this view does not exist, this step ends with a return code of 4.

(5)   Provide a valid userid and password in place of SQLDBA and SQLDBAPW.

5.2 Online Resource Adapter Control Maintenance

5.2.1 Installing Online Resource Adapter Control after DB2 Server for VSE Installation

If you have already installed the DB2 Server for VSE Client Edition without online resource adapter control, you can add it later as follows:

1. Link-edit the online support as described below.

2. Run procedure ARIS080D to grant CONNECT authority to PUBLIC and SCHEDULE authority to the CICS system.

3. Review "Installation Step 8: Grant SCHEDULE Authority" to determine if procedure ARIS080D granted SCHEDULE authority to the correct user ID.

The procedures for installing these tables are found in "Preparation Step 5: Prepare the CICS System for DB2 Server for VSE".

5.2.2 Re-Link-Editing Online Resource Adapter Control

If you must re-link-edit online resource adapter control after the initial installation of DB2 Server for VSE Client Edition, prepare and run the job control statements shown in Figure 47

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you should take this action.

```
// JOB RELINK ONLINE RESOURCE ADAPTER CONTROL
// LIBDEF *,SEARCH=(PRD2.DB2750C,PRD1.BASE,PRD2.CONFIG),              X
         CATALOG=PRD2.DB2750C                              (1)
// EXEC PROC=ARIS090D
*-- LINK-EDIT ONLINE RESOURCE ADAPTER CONTROL (2)
/*
/&
```

Figure 47. Re-Link-Editing Online Resource Adapter Control

Notes :

- This job specifies the standard CICS libraries in the LIBDEF search path. If required, modify the job to search your own CICS libraries.

(1)   This job requires that you specify the DB2 Server for VSE Client Edition sublibrary into which the linkage editor output is cataloged; in this job, the output is cataloged in the PRD2.DB2750C sublibrary. Specify your own if it has a different name. If you have installed a National Language, then specify the sublibrary into which the language was installed in the LIBDEF SEARCH chain (before PRD2.DB2750C), and also as the value for the LIBDEF CATALOG parameter.

(2)   Procedure ARIS090D link-edits the DB2 Server for VSE Client Edition online resource adapter control into the DB2 Server for VSE sublibrary. It must not be changed. This link-edit job will include the CICS interface modules DFHEAI and DFHEAI0 found in the CICS PRD1.BASE sublibrary, or your own CICS libraries.

Restart the CICS system after the link-edit is successfully completed. For information, refer to Preparation Step 5: Prepare the CICS System for DB2 Server for VSE

5.3 ISQL Maintenance

5.3.1 Installing ISQL after DB2 Server for VSE Client Edition Installation

If you have already installed DB2 Server for VSE Client Edition without ISQL, you can add it later as follows:

1. Reload the ISQL package (SQLDBA.ARIISQL).

2. Re-link-edit ISQL.

3. Re-link-edit the ISQL ITRM terminal transaction.

4. Re-link-edit the ISQL ITRX terminal extension.

Instructions for each of these tasks follow immediately.

5.3.2 Reloading the ISQL Package (SQLDBA.ARIISQL)

If you reload the ISQL package SQLDBA.ARIISQL after the initial DB2 Server for VSE Client Edition installation, prepare and execute the job control statements shown in Figure 48. The package must be reloaded in all applicable databases if there is a service update to A-type source member ARIISQLM.

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you should take this action.

```
// JOB RELOAD ISQL
// LIBDEF PROC,SEARCH=(PRD2.DB2750C)
// EXEC PROC=ARIS75SL    *-- DB2 CE LIBRARY DEFINITION  (1)
// EXEC PROC=ARIS120D    *-- RELOAD THE ISQL PACKAGE    (2)
// EXEC PROC=ARIS75VD    *-- CONNECT TO DB2 VIA DBSU    (3)
CONNECT SQLDBA IDENTIFIED BY SQLDBAPW;
GRANT CONNECT TO SQLDBA IDENTIFIED BY newpw;
/*
/&
```

Figure 48. Reloading the ISQL Package

Notes for Figure 48

    (1)   Procedure ARIS75SL identifies the DB2 Server for VSE, Client Edition sublibraries.

    (2)   Procedure ARIS120D reloads the package SQLDBA.ARIISQL into the database from the DB2 Server for VSEA-type source member ARIISQLM. This step must be executed by the user SQLDBA.

    (3)   Procedure ARIS75VD connects to the base to reset the password for SQLDBA.

                    This step successfully completes with a return code of 0 through 3.

5.3.3 Re-Link-Editing ISQL

To re-link-edit ISQL after initial installation, prepare and execute the job control statements shown in
Figure 49 on page 50

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you
should take this action.

```
// JOB RELINK ISQL
// LIBDEF *,SEARCH=(PRD2.DB2750C,PRD1.BASE,PRD2.CONFIG),              X
         CATALOG=PRD2.DB2750C                            (1)
// EXEC PROC=ARIS140D   *-- LINK-EDIT ISQL        (2)
/*
/&
```

Figure 49. Re-Link-Editing ISQL

Notes for Figure 49

- This job specifies the standard CICS libraries in the LIBDEF search path. If required, modify the job to
  search your own CICS libraries.

(1)   This job requires that you specify the DB2 Server for VSE Client Edition sublibrary into
                 which the linkage editor output is cataloged; in this job, the output is cataloged in the
                 PRD2.DB2750C sublibrary. Specify your own if it has a different name. If you have
                 installed a National Language, then specify the sublibrary into which the language was
                 installed in the LIBDEF SEARCH chain (before PRD2.DB2750C), and also as the value for
                 the LIBDEF CATALOG parameter.

(2)   Procedure ARIS140D link-edits the DB2 Server for VSE Client Edition ISQL facility into the
                 DB2 Server for VSE Client Edition library. It must not be changed. This link-edit job will
                 include the CICS interface modules DFHEAI and DFHEAI0 found in the CICS PRD1.BASE
                 sublibrary, or your own CICS libraries.

The CICS system must be restarted after the link-edit is successfully completed. See "Preparation Step 5:
Prepare the CICS System for DB2 Server for VSE Client Edition". Alternatively, you can access the new
phase by executing the CICS CEMT master command after the link-edit is successfully completed. Refer
to the CICS manuals for information on this command.

5.3.4 Re-Link-Editing the ISQL ITRM Terminal Transaction

To re-link-edit the ISQL ITRM terminal transaction after initial installation, prepare and execute the job
control statements shown in Figure 50 on page 51. This is required by a service update to the ISQL ITRM
terminal transaction program module.

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you
should take this action.

```
// JOB RELINK ISQL ITRM TERMINAL TRANSACTION PROGRAM
// LIBDEF *,SEARCH=(PRD2.DB2750C,PRD1.BASE,PRD2.CONFIG),           X
          CATALOG=PRD2.DB2750C                               (1)
// EXEC PROC=ARIS150D   *-- LINK-EDIT ITRM TERMINAL TRANSACTION  (2)
/*
/&
```

Figure 50. Re-Link-Editing the ISQL ITRM Terminal Transaction

Notes for Figure 50:

- This job specifies the standard CICS libraries in the LIBDEF search path. If required, modify the job to search your own CICS libraries.

(1)   This job requires that you specify the DB2 Server for VSE Client Edition sublibrary into which the linkage editor output is cataloged; in this job, the output is cataloged in the PRD2.DB2750C sublibrary. Specify your own if it has a different name. If you have installed a National Language, then specify the sublibrary into which the language was installed in the LIBDEF SEARCH chain (before PRD2.DB2750C), and also as the value for the LIBDEF CATALOG parameter.

(2)   Procedure ARIS150D link-edits the DB2 Server for VSE Client Edition ISQL facility ITRM terminal transaction module into the DB2 Server for VSE Client Edition library. It must not be changed. This link-edit job will include the CICS interface modules DFHEAI and DFHEAI0 found in the CICS PRD1.BASE sublibrary, or your own CICS libraries.

The CICS system must be restarted after the link-edit is successfully completed. See "Preparation Step 5: Prepare the CICS System for DB2 Server for VSE Client Edition". Alternatively, you can access the new phase by executing the CICS CEMT master command after the link-edit is successfully completed. Refer to the CICS manuals for information on this command.

5.3.5 Re-Link-Editing the ISQL ITRM Terminal Extension Program

To re-link-edit the ISQL ITRM terminal extension program after initial installation, prepare and execute the job control statements shown in Figure 51. This is required by a service up date to the ISQL ITRM terminal extension program module.

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you should take this action.

```
// JOB RELINK ISQL ITRM TERMINAL EXTENSION PROGRAM
// LIBDEF *,SEARCH=(PRD2.DB2750C,PRD1.BASE,PRD2.CONFIG),           X
          CATALOG=PRD2.DB2750C                               (1)
// EXEC PROC=ARIS160D   *-- LINK-EDIT ITRM TERMINAL EXTENSION  (2)
/*
/&
```

Figure 51. Re-Link-Editing the ISQL ITRM Terminal Extension Program

Notes for Figure 51:

- This job specifies the standard CICS libraries in the LIBDEF search path. If required, modify the job to search your own CICS libraries.

(1)   This job requires that you specify the DB2 Server for VSE Client Edition sublibrary into which the linkage editor output is cataloged; in this job, the output is cataloged in the PRD2.DB2750C sublibrary. Specify your own if it has a different name. If you have installed a National Language, then specify the sublibrary into which the language was installed in the LIBDEF SEARCH chain (before PRD2.DB2750C), and also as the value for the LIBDEF CATALOG parameter.

(2)   Procedure ARIS160D link-edits the DB2 Server for VSE Client Edition ISQL facility ITRM terminal extension program module into the DB2 Server for VSE Client Edition library, and must not be changed. This link-edit job will include the CICS interface modules DFHEAI and DFHEAI0 found in the CICS PRD1.BASE sublibrary, or your own CICS libraries.

The CICS system must be restarted after the link-edit is successfully completed. See "Preparation Step 5: Prepare the CICS System for DB2 Server for VSE Client Edition". Alternatively, you can access the new phase by executing the CICS CEMT master command after the link-edit is successfully completed. Refer to the CICS manuals for information on this command.

You can use operator commands to search the file for a new copy. See the appropriate CICS manual for details.

5.4 CCSID-Related Phases Maintenance

5.4.1 Reloading the CCSID-Related Phases Package (SQLDBA.ARIRSQR)

The CCSID-related phases package must be reloaded in all applicable databases if there is a service update to A-type source member ARIRSQRM. To reload it, run job control member ARIS75WD shown in Figure 52.

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you should take this action.

```
// JOB ARIS75WD     RELOAD CCSID-RELATED PHASES PACKAGE
// LIBDEF PROC,SEARCH=(PRD2.DB2750C)
// EXEC PROC=ARIS75SL   *-- DB2 Server LIBRARY DEFINITION
// EXEC PROC=ARIS175D   *-- RELOAD CCSID-RELATED PHASES PACKAGE
/*
/&
```

Figure 52. Reloading the CCSID-Related Phases Package

Notes for Figure 52:

• For procedure ARIS75SL, substitute your own procedures or job control statements that identify your current database and the DB2 Server for VSE Client Edition Version 7 Release 5 sublibrary.

5.4.2 Recreating the CCSID-Related Phases

To recreate the CCSID-related phases after initial installation, execute job ARISCNVD (supplied as a Z-type job control member). You must recreate the CCSID-related phases after any updates are made to the SYSTEM.SYSCCSIDS, SYSTEM.SYSCHARSETS, or SYSTEM.SYSSTRINGS system catalog tables. Refer to "Migration Step 16: Create CCSID-Related Phases" for details.

5.5 FIPS Flagger Maintenance

5.5.1 Reloading the FIPS Flagger Package (SQLDBA.ARIFCRD)

The FIPS flagger package must be reloaded in all applicable databases if there is a service update to A-type source member ARIFCRDM. To reload it, prepare and run the job control statements shown in Figure 53

Refer to the information supplied with each DB2 Server for VSE Client Edition service update to see if you should take this action.

```
// JOB RELOAD FIPS FLAGGER
// LIBDEF PROC,SEARCH=(PRD2.DB2750C)
// EXEC PROC=ARIS75SL   *-- DB2 Server LIBRARY DEFINITION    (1)
// EXEC PROC=ARISDBUD   *-- INVOKE DBSU (2)
CONNECT SQLDBA IDENTIFIED BY currentpw
GRANT CONNECT TO SQLDBA IDENTIFIED BY SQLDBAPW
/*
// EXEC PROC=ARIS360D   *-- RELOAD THE FIPS FLAGGER             (3)
// EXEC PROC=ARISDBUD   *-- INVOKE DBSU CONNECT SQLDBA IDENTIFIED BY SQLDBAPW
GRANT CONNECT TO SQLDBA IDENTIFIED BY newpw
/*
/&
```

Figure 53. Reloading the FIPS Flagger Package

Notes for Figure 53:

(1)   Procedure ARIS75SL identifies the DB2 Server for VSE Client Edition sublibraries.

(2)   You must supply a valid DBA userid and password in the place of SQLDBA and SQLDBAPW.

(3)   The step executed by procedure ARIS360D reloads the package SQLDBA.ARIFCRD into the database from the DB2 Server for VSE Client Edition A-type source member ARIFCRDM. The step must be executed by the user SQLDBA.

          This step is successfully completed with a return code of 0 through 4.

5.6 DB2 Server for VSE Client Edition Library Maintenance

In a VSE environment, a production sublibrary is required for DB2 Server for VSE.

5.6.1 Replacing DB2 Server for VSE Client Edition

To replace DB2 Server for VSE Client Edition:

1. Purge the existing sublibrary as described below.

2. Restore DB2 Server for VSE Client Edition through MSHP by following "Preparation Step 4: Restore the DB2 Server for VSE Distribution Library".

3. Perform the link-edits in "Installation Step 3: Link-Edit the DB2 Server for VSE 7.5 Online Support Components".

5.6.2 Purging DB2 Server for VSE Client Edition Libraries

To purge existing sublibraries of all entries relating to DB2 Server for VSE, prepare and execute the job control statements shown in Figure 54

```
// JOB DELETE DB2 Server VSE VERSION CLIENT EDITION 7.5 LIBRARIES
// EXEC LIBR,PARM='MSHP'
ACCESS SUBLIB=PRD2.DB2750                (1)
DELETE *.*
/*
/&
```

Figure 54. Purging DB2 Server for VSE Client Edition Libraries

Note for Figure 54:

(1)   The ACCESS statement must contain the name of the sublibrary that contains DB2 Server for VSE Client Edition. Change this name as required.

5.7 DB2 Server for VSE Client Edition Link Books

Table 2 shows the relationships between DB2 Server for VSE Client Edition components, link books, and phase names. Refer to it when re-link-editing DB2 Server for VSE phases.

Note:

    1. Only the following DB2 Server for VSE Client Edition phases are eligible for the VSE shared virtual area (SVA):

ARICDIRD	ARIDBS	ARIPRPA	ARIPRPC
ARIPRPF	ARIPRPP	ARIRBARM	

    If you install all of the phases eligible for SVA into the VSE shared virtual area, allocate an additional 4.1 megabytes of storage to the SVA.

Table 2. Link Books for the DB2 Server for VSE Client Edition Components

Figure 55 (Page 1 of 3). Link Books for the DB2 Server for VSE Client Edition Components		
Component	**Link Book**	**Phases**

Figure 55 (Page 2 of 3). Link Books for the DB2 Server for VSE Client Edition Components		
DB2 Server for VSE Client Edition Copyright	None	$$$COSQL
VSE Dependent Functions	ARISLKED	ARISD00D ARISD01D ARISD10D ARISD11D ARISD12D ARISD13D ARISD14D ARISD15D ARISD16D ARISD20D ARISD21D ARISD22D ARISD23D ARISD24D ARISD25D ARISD26D ARISD30D ARISD31D ARISD32D ARISD33D ARISD34D
User Exit Router	ARISLKXD	ARIXSXR
Assembler Preprocessor	ARISLKAD	ARIPRPA
Flagger Semantic Routines	ARISLK4D	ARIFFVL
Flagger View Analysis Routines	ARISLK5D	ARIFBVL
Flagger LGP tables modules	ARISLK7D	ARIFF00 ARIFS00 ARIFB00
C Preprocessor	ARISLK6D	ARIPRPB
COBOL Preprocessor	ARISLKCD	ARIPRPC
PL/I Preprocessor	ARISLKPD	ARIPRPP
FORTRAN Preprocessor	ARISLKTD	ARIPRPF
DBS Utility	ARISLKUD	ARIDBS
Batch Resource Adapter	ARISLKBD	ARIRBARM
Batch RA with CSI Interface	ARISLKB1	ARIRBARM
Batch RA with EZASM Interface	ARISLKB2	ARIRBARM
Online RA Control with CSI	ARISLKY1	ARIRCONT
Online RA Control with EZASM	ARISLKY2	ARIRCONT
Online DRDA Router with CSI	ARISLKZ1	ARI0RTRM
Online RA with DRDA with CSI	ARISLKZ2	ARI0OLRM
Online RA with DRDA with EZASM	ARISLKZ3	ARI0OLRM
Online DRDA Router with EZASM	ARISLKZ4	ARI0RTRM
Online Resource Adapter	ARISLKZD	ARI0OLRM
DBNAME Directory Generator	ARISLK8D	ARICBDID
DBNAME Directory Services	ARISLKDA	ARICDIRD
Trace Formatter	ARISLKFD	ARIMTRA
Online Resource Adapter Control (ENABLE/DISABLE CICS Resource Adapter)	ARISLKYD	ARIRCONT
ISQL Mainline Transaction	ARISLKID	ARIISQL
ITRM Terminal Transaction program	ARISLKJD	ARIITRM
ITRM Terminal Extension Program	ARISLKLD	ARIITRX
Abend Checking Support for LE/VSE	None	ARICABC
Message Repository (American English)	None	ARIMS001
DRDA2 Support	ARISLKVD ARISLKOD ARISLKND ARISLKWD	ARICDEBD ARICDRAD ARICDAXD ARICDR2

Figure 55 (Page 3 of 3). Link Books for the DB2 Server for VSE Client Edition Components		
COBOL Dynamic Support	None	ARIPADR4 ARIPADR5 ARIPRDI ARISSMA **Note:** Note: You can use Z-type source member ARIS51LP to create these Phases.
CCSID-Related Phases	ARISLKQZ ARISLKRZ ARISLKSZ	ARIRRFCD ARIRRFRD ARIRRFSD
CBND Mainline Transaction	ARISLKBA	ARIPCBND
CBND sub-transaction	ARISLKCA	ARIPCB2D
SQLGLOB File Default Setting Program	ARISLKGZ	ARICGDEF
ISQL Package Conversion Program	ARISLKBZ	ARICIQBD
Password encryption routine for online resource adapter	ARISLKSV	ARICSCC
Password encryption routine for batch resource adapter and server	ARISLKSE	ARICSEC
TCP/IP online resource adapter	ARISLKTV	ARICTCC
TCP/IP batch resource adapter	ARISLKTE	ARICTCP
Batch Binder	ARISLKBB	ARIPBIN

6.0 Appendix A. How to Use the Job Manager

> **IMPORTANT:** READ THIS APPENDIX BEFORE STARTING THE INSTALLATION.

6.1 Overview of Installation and Migration

This section is an introduction to the installation of DB2 Server for VSE Version 7 Release 5 (7.5) Client Edition and the migration of existing databases to 7.5. At the beginning of chapters 2 throu gh 4, you can find an outline of the preparation, installation and migration steps in each chapter.

An installation aid is supplied to help with the installation and migration processes. Some steps in Chapters 2 through 4 utilize this aid, and some are performed manually.

6.2 Installation

If you are installing DB2 Server in a VSE Client Edition for the first time, follow the steps in Chapter 2, Preparing to install DB2 Server Client Edition for VSE 7.5, and Chapter 3, Installing DB2 Server for VSE Client Edition.

6.3 Optional Steps

Not all of the steps in the installation are mandatory. Depending on how you want to install DB2 Server for VSE Client Edition, you may decide to not perform some optional steps.

6.4 The Job Manager

The Job Manager is a set of REXX Exec, Job Control members, and parameter tables, to assist in the DB2 Server for VSE Client Edition Installation and Migration processes. REXX program ARISIMGC controls the overall job flow, based on the contents of the job list control tables(supplied as Z-type members). There are job lists for Preparation steps(ARISITCP), for Installation steps(ARISITCI), and for Migration steps(ARISITCM).

The Job Manager selects the job control member from the job list, extracts the member from the library, modifies the JCL, submits the job, evaluates the execution, posts the results, and then repeats the process. Modifications to the job control members are based on substituting variables in the JCL, using the parameters in ARISIVRR(a Z-type member).

6.4.1 How Parameter Substitution Works

The Job Manager reads variables stored in ARISIVRR (a Z-type member).

Before starting the Job Manager:

1. Punch and modify the sample ARISIVRR from your installation library.
2. Re-catalog ARISIVRR to your installation library.

Note:

- Make sure to preserve the structure of ARISIVRR member.
- You do not need to update parameters for a step, you are not planning to execute.

The parameter table (see ARISIVRR a Z-type member) has one line for each parameter for each job. The lines of the parameter table are in the following format:

Job name	The job name that requires Parameter(s)
Parameter name	The variable name in the job JCL
Value of the parameter	The value of the parameter that can be changed

Figure 56. The description of parameters in ARISIVRR

The parameter table also has one line for each global parameter. These parameters are used in more than one job, but apply only within the start/end group being processed.

Parameter name	GLOBAL (constant keyword)
Parameter name	This name appears in a JCL for the job
Value of the parameter	This is actual value of the global parameter, which can be changed

Figure 57. The description of Global parameters in the ARISIVRR

6.4.2 How Job List Works

The job list is used by the Job Manager to determine the jobs required by each step (Preparation/ Installation or Migration).

Job's name	Name of member in the distribution library
Job's type	Type of member in the distribution library
Return code	• RC = 'X' - job did not complete successfully or has not run before. • RC=number, job has run and RC contains the return code of the job.
MAXRC	MAXRC maximum return code allowed for this job to continue the installation process.
Is job Optional?	O - Optional, M - Mandatory (for Installation part)
Is job Optional?	O - Optional, M - Mandatory (for Migration part)
Is input required?	• YES - input required (get variables from ARISIVRR) • NO - input is not required. **Note:** If the only required parameter is installation library name or a global variable, then input marked as 'NO'
Stop Job Manager?	• YES - stop the execution of the Job Manager after this step. • NO - continue the execution of the Job Manager.

Figure 58. Description of each column in a job list

Note: Every parameter in a job list must be in upper case, separated from other parameters by one blank space.

Here is an example of a job list for the Preparation Step:

```
ARIS75JD Z X 4 O M YES NO
```

In the example, ARIS75JD is a Z type member, which was not executed yet. The maximum return code allowed for ARIS75JD is 4. ARIS75JD is Optional step in Preparation for Installation, but mandatory step in Preparation for Migration. The ARIS75JD requires parameters from ARISIVRR and the execution of the Job Manager will not stop after this step.

As ARIS75JD is submitted to your VSE system, the Job Manager will compare the maximum return code from the execution to MAXRC. If the job completes with a return code greater than MAXRC, the Job Manager stops.

6.4.2.1 How to Run All Jobs Again:

If you have multiple databases and want to execute Preparation, Installation, or Migration Step again this section will explain how to do it. You can choose one of the following:

1. Punch a Job List corresponding to the step you want to execute:

   • ARISITCP - Job List for Preparation Step

   • ARISITCI - Job List for Installation Step

   • ARISITCM - Job List for Migration Step

   Change the "Return Code" fields (See Figure 58) for all jobs with **"X"** and re-catalog the Job list to the installation library.

WARNING: When changing the records in the file, note that the fields must be separated by only one blank.

---

2. See Figure 60 on page 61.

6.4.3 Starting the Job Manager

> **IMPORTANT:** Modify ARISIVRR Z-type member with the appropriate parameters. If you subsequently change ANY ARISIVRR global variables you MUST restart the Job Manager.

After successful modification of ARISIVRR control table, punch and submit job control member ARISIMGC.Z from the distribution library, which will start execution of Job Manager.

```
* $$ JOB JNM=ARISIMGC,CLASS=x    (1)
* $$ LST CLASS=V,DEST=(,userid)  *modify accordingly
// JOB ARISIMGC JCL TO START MANAGER EXEC
// LIBDEF *,SEARCH=(PRD2.DB2750C) *modify accordingly
// EXEC REXX=ARISIMGC
/*
/&
* $$ EOJ
```

Figure 59. Starting the Job Manager

(1)   For *CLASS* specify any available partition to run the Job Manager.

        Note: ARISSTDL Z-type member must run in background partition, thus for the Preparation Step do not submit the Job Manager to run in background partition. See Figure 60 on page 61:

> **Note:** ARISIMGC Job will always complete with the return code of 0. You must check the return code of the executed job and rely on the messages from the Job manager to make sure that the execution was successful.
>
> See "How the Job Results are Evaluated".

6.4.3.1 User Interface:

```
F4 0004 ***********************************************************
F4 0004       PREPARE FOR INSTALLATION/MIGRATION PROCESS
F4 0004 ***********************************************************
F4 0004 ENTER INSTALLATION LIBRARY NAME (PRD2.DB2750C   default) Q Exit  (1)
F4-0004
4
F4 0004 YOU HAVE SELECTED  PRD2.DB2750C
F4 0004 PRESS ENTER TO CONTINUE OR ENTER ANOTHER LIBRARY NAME
F4 0004                                                  Q Exit
4
F4 0004 ENTER PARTITION NUMBER: (default 4)              Q Exit  (2)
F4-0004
0
F4 0004 YOU HAVE SELECTED  0
F4 0004 PRESS ENTER TO CONTINUE OR ENTER ANOTHER PARTITION NUMBER
F4-0004
4
F4 0004 PLEASE SELECT ONE OF THE FOLLOWING :
F4 0004 FOR PREPARATION.... ENTER (P)
F4 0004 FOR INSTALLATION... ENTER (I)
F4 0004 FOR MIGRATION...... ENTER (M)
F4 0004                                                  Q Exit
4 p
F4 0004 IF PREPARATION FOR:                              Q Exit
F4 0004 INSTALLATION... PLEASE ENTER (I)
F4 0004 MIGRATION...... PLEASE ENTER (M)
F4-0004
4 i
F4 0004 DO YOU WANT TO EXECUTE ALL JOBS? {Y|N-default}   Q Exit  (3)
F4-0004
4 n
F4 0004 IF YOU WANT TO START FROM A SPECIFIC JOB ENTER 1         (4)
F4 0004 IF YOU WANT TO EXECUTE ONLY ONE STEP     ENTER 2 (Default)  (5)
F4 0004                                                  Q Exit
4 2
F4 0004 ENTER THE JOB NAME YOU WANT TO EXECUTE (ex. ARIS75JD):
F4 0004                                                  Q Exit
4 ARIS75jd
F1 0001 1Q47I   F4 ARIS75JD 00021 FROM (JCL) , TIME=12:45:32
BG 0000 * ** JOB JNM=ARIS75JD,CLASS=0,DISP=D
BG 0000 * ** LST CLASS=V,DISP=D,DEST=(,XXXXXXX)
BG 0000 // JOB ARIS75JD DEFINE DB2750C PROGRAMS AND TRANSACTIONS
```

Figure 60. Sample user answers when running the Job Manager

Notes for Figure 60:

(1)   The installation library name, which is specified here, is included in library search path for all jobs
                as the parameter - LIBNAME.

```
// JOB name
// LIBDEF PROC,SEARCH=(%%LIBNAME%%)
```

(2)   **For Preparation Step** - answer 0 (BG partition). **Note:** the BG partition must be available.

                For Installation/ Migration Steps - specify any available partition that has enough size to start
                the DB2 startup database

(3)   Enter **'YES'** if you want to run all jobs within the current step (Preparation/ Installation/ Migration).

         Note: the Job Manager will skip all jobs which were run successfully. The first job it will submit will be a job which failed in previous execution or which was never run before.

         The default answer is **'NO'**.

(4)   Enter **'1'** if you want the Job Manager to start from a particular job and continue execution of all jobs which follow the specified one.

         Note: this choice is useful if you have to execute some jobs twice, even if the execution of the jobs was successful.

(5)   The default answer is **'2'** - to execute only one job.

Note: At any time Enter Q to quit and terminate the Job.

6.4.4 Execution of Jobs Submitted by the Job Manager

On the console during the execution of job you should see the following:

```
F4 0001 1Q47I F4 name_of_submited_job 00025 FROM
(ARISIMGC) , TIME=11:39:33
F4 0004 // JOB name_of_job comment from submitted job
DATE 09/12/2001, CLOCK 11/39/33
* more comments from submitted_job (if available)
F4 0004 EOJ name_of_job MAX.RETURN CODE=0000
DATE 09/12/2001, CLOCK 11/39/36, DURATION 00/00/03
F4 0004 EOJ NO NAME
DATE 09/12/2001, CLOCK 11/39/37
F4 0001 1Q34I F4 WAITING FOR WORK
F1 0001 1Q34I LST WAITING FOR WORK ON 00E
F4-0004 ********************************************
F4-0004 * JOB:  name_of_job EXECUTED SUCCESSFULLY        (1)
F4-0004 ********************************************
F4-0004 JOB MANAGER COMPLETED SUCCESSFULLY              (2)
F4-0004 EOJ JCL      MAX.RETURN CODE=0000
BG-0000
```

Figure 61. Console output from the Job Manager

(1)   This message will always appear if submitted job executed successfully.

         The possible error messages are:

- 'ERROR! RETURN CODE FROM LAST STEP WAS xxx'
- 'JOB WAS CANCELED'
- 'READ CONSOLE FOR DETAILS.'

(2)   **If error occurs you must investigate, correct the error and restart the Job Manager.**

6.4.5 How the Job Results are Evaluated

What do you look for:

- Messages from the Job manager (ARISIMGC). If it was terminated, read console and check your reader to make sure you understand what went wrong, correct the error, and restart Job Manager.

- Messages from submitted jobs.

  - Some jobs have error checking inside the JCL. In such situations Job Manager will wait for an user response to continue or to stop the installation process.

  - Other jobs that terminate abnormally will produce readable output on the console and send the console output file to your reader. Please read the file to determine what went wrong.

  - Some jobs will not terminate until there is a console response from the user. If no response was received after 30 seconds, Job Manager will output a warning message on the console and wait for your response.

- If the return code allowed for a job was greater than zero, it is your responsibility to check whenever this code was expected or if it occurred because of some kind of error. This is very important for Z-type member ARIS75DD. Please read the console output for this job and make sure no errors are found.

> **IMPORTANT:** Always verify if the execution of the last job was successful. If the Job Manager stops its execution, before proceeding to another step, make sure that no errors occured and that you executed all mandatory jobs for the step.

6.4.6 What Should You Keep in Mind

As soon as you start the Job Manager for Installation or Migration Steps, it will update and recatalog three members: **ARIS75SL** and **ARIS380D**

Note: If you need to make any changes to ARIS75SL or ARIS380D after starting the Job Manager for Installation or Migration Steps, you must do it **manually**.

ARIS75SL　　This member will be updated using following parameters:

- Default Installation Library, which you specify when starting the Job Manager (default is PRD2.DB2750C)

ARIS380D　　This member will install a language. See 3.7.1, "Install Language and ISQL Help Text" on page 35. If you need to install more than one language you need to modify this procedure manually.

6.5 The Disclaimer

The Job Manager is supplied as an installation aid for DB2 Server for VSE Client Edition, and is not intended to be used as a general purpose monitoring tool. Any use of the Job Manager, other than Preparation, Installation, and Migration for DB2 Server for VSE, Client Edition is not supported.

7.0 Appendix B. Techniques Used for Installation

The following are techniques used in some of the DB2 Server for VSE Client Edition installation procedures and members:

- Embedding database identification statements

- Embedding DB2 Server for VSE, Client Edition library identification statements

- Using READ MEMBER statements

- Suppressing preprocessor output.

7.1 Embedding DB2 Server for VSE, Client Edition Library Identification Statements

The IBM-supplied procedure ARIS75SL contains the library identification (LIBDEF) statements for most of the installation steps. The IBM-supplied procedure ARIS75PL contains the LIBDEF statements for normal use of DB2 Server for VSE Client Edition.

The LIBDEF statements in procedures ARIS75SL and ARIS75PL are not unique to a particular database. They are included whenever a set of DB2 Server for VSE, Client Edition libraries is needed.

You can replace the references to ARIS75SL and ARIS75PL with your own LIBDEF statements, or with references to your own procedures set up for this purpose.

7.2 Using the READ MEMBER Statement

DB2 Server for VSE, Client Edition can read input from a source member with a statement of the form:

```
READ MEMBER member-name[.member-type] [(NOCONT]
```

Note: The square brackets [ ] indicate an optional parameter.

member-name
> Specifies a source member in the DB2 Server for VSE, Client Edition library.

member-type
> Specifies the source member type. The default is ".A". For example, either **BOOK1** or **BOOK1.A** is correct.

NOCONT Specifying NOCONT prevents READ MEMBER from continuing to read from SYSIPT. It also ensures that the EOF indicator is returned. If NOCONT is specified, subsequent records are read from SYSIPT after the end of member

A READ MEMBER statement:

- Can occur anywhere between byte 1 and byte 71 of a SYSIPT record.

- Is accepted only if it occurs immediately after an EXEC statement or another READ MEMBER statement.

- Is accepted after a SCHEMA or RELOAD PACKAGE command if the INFILE specified is SYSIPT. The NOCONT option is required to properly end the file.

- Is accepted after a DATALOAD command if the INFILE specified is (*). An ENDDATA command is required at the end of the input data records, whenever the end of data is inside the member or in SYSIPT.

- Must not follow other SYSIPT data records. However, SYSIPT data records can follow it if the NOCONT option is not specified.

- Is not intended to be used outside of the DB2 Server for VSE Client Edition process. Using READ MEMBER to include members with SQL INCLUDE statements results in errors.

You can place SYSIPT data immediately after an EXEC statement and not READ MEMBER statement.

7.3 Suppressing Preprocessor Output

SYSPCH and SYSLST output from the DB2 Server for VSE Client Edition Assembler preprocessor is suppressed during the database install action process. It is not required because only access modules are being built for the database. Assignment and label information for SYSPCH is not needed when the SYSPCH output is suppressed. The assignment and label information is only required for output to disk file.

Preprocessor parameters NOPRINT (NOPR) and NOPUNCH (NOPU) are used. Refer to the *DB2 Server for VSE Application Programming manual* for a complete description of the preprocessor parameters.

Preprocessor diagnostic messages are always written to SYSLST.

8.0 Appendix C. Procedures Provided by IBM

This appendix lists the procedures provided by IBM for your use. Any procedures not documented in this manual are included in the DB2 Server for VSE System Administration manual.

Procedure	Purpose
ARISIMGC	Rexx Job Manager
ARISDBUD	Run the DBS Utility in DB2 Server for VSE
ARIS040D	Create the DBS Utility Package
ARIS055D	Load Sample Table and Routines
ARIS059D	Activate the Messages for Language xxxx
ARIS061D	Deactivate a Language
ARIS075D	Drop, Recreate, and Load the Sample Tables
ARIS090D	Link-edit Online Resource Adapter Control with Assembler TCP/IP interface
ARIS095D	Link-edit Online Resource Adapter Control with EZASMI TCP/IP interface
ARIS100D	Link-edit Online Resource Adapter Control with LE/C TCP/IP interface
ARIS110D	Create/Grant ISQL Tables/Authorizations
ARIS120D	Reload the ISQL Package
ARIS130D	Complete the Installation of ISQL
ARIS140D	Link-edit ISQL
ARIS150D	Link-edit ISQL ITRM Terminal Transaction
ARIS160D	Link-edit ISQL ITRM Terminal Extension Program
ARIS170D	Link-edit DB2 Server for VSE Batch Resource Adapter
ARIS175D	Reload the CCSID-related Phases Package
ARIS180D	Link-edit DB2 Server for VSE Trace Formatter
ARIS75FC	Sample File Control Table Entries for SQLBIND and SQLGLOB
ARIS75PL	DB2 Server for VSE Client Edition Production Library Definition
ARIS75SL	DB2 Server for VSE Client Edition Optional Service/Production Library Definition
ARIS360D	Load FIPS flagger
ARIS380D	User entry for NLS Installation
ARIS385D	Procedure to install NLS and Load Help Text
ARIS390D	Load initial record to SQLGLOB VSAM file
ARIS395D	Load initial record to SQLBIND VSAM file

9.0 Appendix D. A-Type Source Members

This appendix identifies the members that are distributed as DB2 Server for VSE A-type source members. The members contain sample input used during installation and migration.

Member	Contents
ARIDSQLB	Bindfile for DBS Utility
ARIDSQLP	Source Code of the DBS Utility Package
ARIFCRDM	FIPS Flagger Package
ARIISQLM	ISQL Package
ARIPREPF	Prep parm file for preparing DBSU at installation
ARIRCAN	User Cancel Exit Support Macro
ARIRMAR	User Cancel Exit Support Macro
ARIRSQRM	CCSID-related Phases Package
ARISAMDB	SQL Statements to be Executed by the DBS Utility to Build Sample Tables
ARISAMPI	SQL Statements to be Executed by the DBS Utility to Load the Sample ISQL Routines into the Database
ARISCMDB	DBS Utility Commands to Drop Sample Tables
ARISCON	SQL CONNECT Command to be Executed by the DBS Utility
ARISCTM	Database Catalog Migration Authorization Updates
ARISCTMP	System Catalog SYSTEM.SYSOPTIONS Updates
ARISDIRD	Directory of all DBNAMEs and TPNs in the VSE system
ARISDTM	Commands to Update Datetime Defaults
ARISEXP	DBS Utility Input to Create the New EXPLAIN Tables to be Dropped and Recreated
ARISI20	Input to ARIS110D (ISQL Installation)
ARISI21	Input to ARIS130D (ISQL Installation)
ARISI22	Input to ARIS110D (ISQL Installation, for Client Edition only)
ARISIQBD	Bindfile for ISQL
ARISMMDB	Commands that Create Manufacturing Sample Tables
ARISS001	Commands to Add American English Entry on SQLDBA.SYSLANGUAGE table
ARISTFF	Commands to the DBS Utility for Installing the French Help Text (Input to ARIS060D)
ARISTF1	Commands to the DBS Utility for Installing the French Help Text (Input to ARIS060D)
ARISTF3	Commands to the DBS Utility for Installing the French Help Text (Input to ARIS060D)
ARISTGF	Commands to the DBS Utility for Installing the German Help Text (Input to ARIS060D)
ARISTG1	Commands to the DBS Utility for Installing the German Help Text (Input to ARIS060D)

ARISTG3	Commands to the DBS Utility for Installing the German Help Text (Input to ARIS060D)
ARISTJF	Commands to the DBS Utility for Installing the Japanese Help Text (Input to ARIS060D)
ARISTJ1	Commands to the DBS Utility for Installing the Japanese Help Text (Input to ARIS060D)
ARISTJ3	Commands to the DBS Utility for Installing the Japanese Help Text (Input to ARIS060D)
ARISTUF	Commands to the DBS Utility for Installing the Uppercase English Help Text (Input to ARIS060D)
ARISTU1	Commands to the DBS Utility for Installing the Uppercase English Help Text (Input to ARIS060D)
ARISTU3	Commands to the DBS Utility for Installing the Uppercase English Help Text (Input to ARIS060D)
ARISTXF	Commands to the DBS Utility for Installing the Mixed English Help Text (Input to ARIS060D)
ARISTX1	Commands to the DBS Utility for Installing the Mixed English Help Text (Input to ARIS060D)
ARISTX3	Commands to the DBS Utility for Installing the Mixed English Help Text (Input to ARIS060D)
ARIS6ASD	Sample Assembler Language Application Program to Manipulate the Sample Tables (see note below)
ARIS6CBD	Sample COBOL Application Program to Manipulate the Sample Tables (see note below)
ARIS6CD	Sample C Application Program to Manipulate the Sample Tables (see note below)
ARIS6FTD	Sample FORTRAN Application Program to Manipulate the Sample Tables (see note below)
ARIS6PLD	Sample PL/I Application Program to Manipulate the Sample Tables (see note below)
ARIUXDT	User Date Conversion Routine
ARIUXIT	User Exit Router Routine
ARIUXTM	User Time Conversion Routine
FP102CY	Sample field procedure for cultural sorting for the Cyrillic code page (Regions: Russia, Bulgaria, Serbia and Montenegro).
FP870L2	Sample field procedure for cultural sorting for the Latin 2 code page (Regions: Slovenia, Poland and Romania).
ARISPDEF	DBS Utility Commands to create tables and procedures for Schema Stored Procedures

Note:

Members ARIS6ASD, ARIS6CD, ARIS6CBD, ARIS6FTD, and ARIS6PLD are shown in the *DB2 Server for VSE Application Programming*. They serve as coding examples for application programmers.

You can punch the A-type members listed in this appendix by using the JCL statements shown in Figure 62 on page 69. Replace **XXXXXXXX** with the name of a member.

```
// JOB PUNCH
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                           *
* PURPOSE: JOBSTREAM TO PUNCH OUT MEMBER XXXXXXXX.A
    *
*                                                           *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
// EXEC LIBR,PARM='MSHP'
ACCESS SUBLIB=PRD2.DB2750C
PUNCH  XXXXXXXX.A
/*
/&
```

Figure 62. Example of JCL Required to Punch A-Type Members

10.0 Appendix E. Z-Type Source Members

This appendix identifies the members that are distributed as DB2 Server for VSE Z-type source members. The members contain sample JCL. Any members not documented in this manual are included in the DB2 Server for VSE System Administration manual.

Member	Contents
ARISIMGC	Job Control to Start Job Manager
ARISIVRR	Control Table with parameters
ARISITCP	Control Table with list of jobs for Preparation Step
ARISITCI	Control Table with list of jobs for Installation Step
ARISITCM	Control Table with list of jobs for Migration Step
ARISBDID	DBNAME Directory Generation Job Control
ARISCNVD	Job Control to Refresh CCSIDs-Related Phases
ARISGDEF	Job Control to set SQLGLOB file default value
ARISSTDL	Job Control to update labels for the new datasets
ARISIQBD	Job Control to load ISQL and other bindfiles to VSAM bindfile
ARIS6ASD	DB2 Server for VSE Sample Assembler Program Job Control
ARIS6CBD	DB2 Server for VSE Sample COBOL Program Job Control
ARIS6CD	DB2 Server for VSE Sample C Program Job Control
ARIS6C2D	DB2 Server for VSE Sample COBOL Program Job Control
ARIS6FTD	DB2 Server for VSE Sample FORTRAN Program Job Control
ARIS6PLD	DB2 Server for VSE Sample PL/I Program Job Control
ARIS75AE	Job Control to prepare for installation and restore the Distribution Library
ARIS75BD	Job Control to Do DB2 Server for VSE Link-Edits
ARIS75ED	Job Control to Install Optional DB2 Server for VSE Components
ARIS75JD	Job Control to Define CICS Programs and Transactions
ARIS75JZ	Job Control to Install National Language
ARIS75KD	Job Control to Define CICS DB2 for VSE DRDA Programs and Transactions for CICS
ARIS75QD	Job control to Create the DBS Utility Package
ARIS75SD	Job Control to Migrate the Help Text Tables
ARIS75TD	Job Control to Reload the English Help Text
ARIS75UD	Job Control to Enable DRDA AR Support with LE/C TCP/IP interface
ARIS75VD	Job Control to Change the Password for User SQLDBA
ARIS75WD	Job Control to Reload the CCSID-Related Phases Package

ARIS75ZD	Job Control to Enable DRDA AR Support with EZASMI TCP/IP interface
ARIS754D	Linkedit LE/VSE Abend Checking Support
ARIS755D	Job Control to Enable DRDA AR Support with Assembler TCP/IP interface
ARIS756D	Job Control to Remove DRDA AR Support
ARIS757D	Job Control to Define VSAM Preprocessor Bind File
ARIS758D	Job Control to define SQLGLOB VSAM file
ARIS759D	Job Control to define BINDWKF VSAM file
ARIS75KZ	Load Fips Flagger
ARIS75LZ	Reload ISQL
ARIS75NZ	Reset SQLDBA Password
ARISPGPH	Job Control to generate phases for Schema Stored Procedures
ARIDSQLB	Job Control to load DBSU bindfile
ARISIQBD	Job Control to load ISQL bindfile
ARIXUxxB	Job Control to load ARIXUxx stored procedure bindfile
ARISPCTB	Job Control to create tables and procedures for Schema Stored Procedures
ARISPSET	Job Control to reload packages and grant authorities for Schema Stored Procedures
ARIS75LD	Enable DRDA AR Support for Batch with Assembler TCP/IP interface
ARIS75LF	Enable DRDA AR Support for Batch with EZASMI TCP/IP interface
ARIS75LB	Enable DRDA AR Support for Batch with LE/C TCP/IP interface

You may punch the Z-type source members presented in this appendix using the JCL in Figure 63. Replace **XXXXXXXX** with the name of a member.

```
// JOB PUNCH ZTYPE
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                               *
* PURPOSE: JOBSTREAM TO PUNCH OUT MEMBER XXXXXXXX.Z
   *
*                                                               *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
// EXEC LIBR,PARM='MSHP'
ACCESS SUBLIB=PRD2.DB2750C
PUNCH XXXXXXXX.Z
/*
/&
```

Figure 63. Example of JCL Required to Punch Z-Type Members

11.0 Appendix F. Additional CICS and VSE Updates for the DB2 Server System

Chapters 2 and 3 of this manual presented the basic CICS and VSE requirements for DB2 Server for VSE Client Edition. This appendix describes additional entries you may choose to make. Only the CICS and VSE entries related to DB2 Server for VSE Client Edition are described here: for information about CICS entries to control access to ISQL, see the DB2 Server for VSE System Administration manual.

This appendix is not a tutorial on CICS or VSE installation and customization. For complete descriptions of product usage, refer to the applicable CICS and VSE manuals.

11.1 Additional Updates Required for the CICS Monitoring Facility

 - CICS/VSE only

If DB2 Server for VSE Client Edition will be used in an online environment, and if your system will use the CICS Monitoring Facility, update these CICS tables:

DFHJCT   Journal Control Table

DFHMCT   Monitor Control Table

DFHFCT   File Control Table

DFHSIT   System Initialization Table.

DFHTCT   Terminal Control Table

These entries are described in the following sections.

11.1.1 DFHJCT Entries - CICS/VSE only

Define a journal used for the CICS system log in the DFHJCT. Specify JFILEID=SYSTEM in a DFHJCT TYPE=ENTRY macro.

Also, define a journal used to record the monitoring facility output data in a DFHJCT TYPE=ENTRY macro as a user journal. Specify a JFILEID value between 02 and 99. Specify FORMAT=SMF for the user journal so that the SMF block format is used instead of the CICS block format.

Figure 64 on page 73 shows an example of how to code your DFHJCT. Here, a CICS system log is allocated to a 3390 DASD device, and an DB2 Server user journal is assigned to a tape device.

```
DFHJCT TYPE=INITIAL,SUFFIX=jj        (1)
DFHJCT TYPE=ENTRY,                                      X
       JFILEID=SYSTEM,                                  X
       BUFSIZE=1024,                                    X
       BUFSUV=1024,                                     X
       JOUROPT=(CRUCIAL,INPUT),     (2) X
       JTYPE=DISK1,                                     X
       OPEN=INITIAL,                                    X
       DEVADDR=sysxxx,              (3) X
JDEVICE=3390         X
DFHJCT TYPE=ENTRY,                                      X
       JFILEID=nn,                  (4) X
       BUFSIZE=4096                                     X
       BUFSUV=4096,                                     X
       FORMAT=SMF,                                      X
       JTYPE=TAPE1,                                     X
       OPEN=INITIAL,                                    X
       DEVADDR=sysyyy,              (5)
       JDEVICE=TAPE
DFHJCT TYPE=FINAL
END    DFHJCTBA
```

Figure 64. DFHJCT Examples for CICS Monitoring Facility

Notes for Figure 64:

- CICS journal files must be formatted before use. See the CICS manuals for information on CICS journal files.

(1) The SUFFIX value **jj** must be supplied in the DFHSIT JCT=**jj** parameter.

(2) Use of the **CRUCIAL** parameter causes the CICS system to ABEND if the log is inaccessible. This condition usually occurs because of a permanent I/O error which makes the log unreadable. Consequently, it may not be possible to correctly recover all resources.

An alternative and preferable procedure is not to specify **CRUCIAL**, in which case the operator is notified with a DFH4513 message, and the CICS system continues. The operator should then perform a non-immediate shutdown of the CICS system, but before starting it again with a new log, should backup recoverable resources so the backups are properly synchronized with the new log.

(3) **sysxxx** is the logical unit address for the CICS system log journal (JFILEID=SYSTEM) assigned to a 3390 DASD file.

(4) The JFILEID value **nn** must be between 02 and 99. This value must also be supplied as the DFHMCT TYPE=RECORD entry DATASET parameter value.

(5) **sysyyy** is the logical unit address for the DB2 Server user journal (JFILEID=**nn**) assigned to a tape file.

11.1.2 DFHMCT Entries

11.1.2.1 DFHMCT Entries - CICS/VSE only:

Figure 65 on page 74 shows an example of how to code your DFHMCT to activate all the DB2 Server clocks and counters for CICS/VSE. Refer to the **DB2 Server for VSE & VM Performance Tuning Handbook** for a description of these clocks and counters.

```
   DFHMCT TYPE=INITIAL,SUFFIX=mm           (1)
*
* CLOCK/COUNTER FOR TIME WAITING FOR A LINK
*
DFHMCT TYPE=EMP,ID=(PP,16),CLASS=PERFORM,PERFORM=SCLOCK(1)       (2)
  DFHMCT
TYPE=EMP,ID=(PP,17),CLASS=PERFORM,PERFORM=PCLOCK(1)
*
* TIME USER HOLDS A LINK
*
DFHMCT TYPE=EMP,ID=(PP,18),CLASS=PERFORM,PERFORM=SCLOCK(2)
DFHMCT TYPE=EMP,ID=(PP,19),CLASS=PERFORM,PERFORM=PCLOCK(2)
*
* TIME IN DB2 Server for VSE PARTITION
*
DFHMCT TYPE=EMP,ID=(PP,20),CLASS=PERFORM,PERFORM=SCLOCK(3)
DFHMCT TYPE=EMP,ID=(PP,21),CLASS=PERFORM,PERFORM=PCLOCK(3)
*
* DB2 Server FUNCTION COUNTERS (4 COUNTERS) FOR LINK USAGE AND
ALLOCATION
*
DFHMCT
TYPE=EMP,ID=(PP,22),CLASS=PERFORM,PERFORM=(MLTCNT(1,4))
*
* CICS/VS USER JOURNAL
*
DFHMCT
TYPE=RECORD,CLASS=PERFORM,DATASET=nn,MAXBUF=2040,FREQ=100      (3)
  DFHMCT TYPE=FINAL
END
```

Figure 65. DFHMCT Example for CICS Monitoring Facility

Notes for Figure 65:

(1)   The DFHMCT TYPE=**INITIAL** macro defines the SUFFIX value **mm** to be used for the DFHSIT MCT parameter value.

(2)   The DFHMCT TYPE=**EMP** macros define clocks and counters to record the DB2 Server monitored events.

(3)   The DFHMCT TYPE=**RECORD** macro identifies the CICS user journal to which the data is to be sent for each class of data being collected (in this case, the performance class). The DATASET value **nn** specified must correspond to the DFHJCT JFILEID value specified for the user journal.

To include support for the CICS Monitoring Facility, use the CICS RDO tool (CEDA):

```
CEDA ADD GROUP(DFHSTAND) LIST(VSELIST)
CEDA ADD GROUP(DFHJRNL) LIST(VSELIST)
```

Replace VSELIST with the value specified for GRPLIST in your DFHSIT or CICS startup JCL.

11.1.2.2 DFHMCT Entries - CICS/TS only: Figure refid=KKKKKKK. show an example of how to code your DFHMCT to activate all the DB2 Server clocks and counters for CICS/TS.

```
    DFHMCT TYPE=INITIAL,SUFFIX=MM      (1)
 *
* CLOCK/COUNTER FOR TIME WAITING FOR A LINK
 *
   DFHMCT TYPE=EMP
   ,ID=215,CLASS=PERFORM,PERFORM=SCLOCK(1) (1)
   DFHMCT TYPE=EMP,
   ID=216,CLASS=PERFORM,PERFORM=PCLOCK(1)
 *
* TIME USER HOLDS A LINK
 *
   DFHMCT TYPE=EMP,
   EMP,ID=217,CLASS=PERFORM,PERFORM=SCLOCK(2)
   DFHMCT TYPE=EMP,
   ID=218,CLASS=PERFORM,PERFORM=PCLOCK(2)
 *
                   * TIME IN DB2 SERVER FOR VSE PARTITION
                   *
                            DFHMCT
TYPE=EMP,ID=219,CLASS=PERFORM,PERFORM=SCLOCK(3)
                            DFHMCT
TYPE=EMP,ID=220,CLASS=PERFORM,PERFORM=PCLOCK(3)
                 *
*DB2 Server FUNCTION COUNTERS (4 COUNTERS) FOR LINK USAGE AND ALLOCATION
*
                            DFHMCT
TYPE=EMP,ID=221,CLASS=PERFORM,PERFORM=(MLTCNT(1,4))
                   *
                   * CICS/TS RECORDING
                   *
   DFHMCT TYPE=RECORD,CLASS=PERFORM        (3)
   DFHMCT TYPE=FINAL
END
```

Figure 66. CICS/TS DFHMCT Example for CICS Monitoring Facility

Notes for Figure 66:

(1)　　　　　　The DFHMCT TYPE=INITIAL macro defines the SUFFIX value MM to be used for the DFHSIT MCT parameter value.

(2)　　　　　　The DFHMCT TYPE=EMP macros define clocks and counters to record the DB2 Server monitored events.

(3)　　　　　　The DFHMCT TYPE=RECORD macro specifies that performance data is recorded to a DMF datasets under CICS/TS.

To include support for the CICS Monitoring Facility, use the CICS RDO tool (CEDA):

```
 CEDA ADD GROUP(DFHSTAND) LIST(VSELIST)
 CEDA ADD GROUP(DFHJRNL) LIST(VSELIST)
```

Replace VSELIST with the value specified for GRPLIST in your DFHSIT or CICS startup JCL.

Refer to the CICS Transaction Server for VSE/ESA Customization Guide, Operations and Utilities Guide, and Performance Guide for more information on the CICS Monitoring Facility.

11.1.3 DFHSIT Entries

11.1.3.1 DFHSIT Entries - CICS/VSE only: The DFHSIT macro must include:

- CMP=YES to identify the monitoring program.

- JCP=2$ to identify journal control programs without dynamic transaction backout.

- JCT=(**jj**<,...>) where **jj** is the SUFFIX parameter value specified in the DFHJCT macro.

- MCT=**mm** where **mm** is the SUFFIX parameter value specified in the DFHMCT macro.

- MONITOR=PER to record performance class information. The operator can later use the CSTT transaction to activate or deactivate any of the monitoring classes. For example:

```
CSTT MONITOR,ON=PER
```

11.1.3.2 DFHSIT Entries - CICS/TS only: The DFHSIT macro must include:

- MCT=mm, where mm is the SUFFIX parameter value specified in the DFHMC macro.

- MN=ON, MCT Monitoring is turned ON.

- MNCONV=YES, Monitor conversational tasks.

- MNPER=ON, Monitor performance class records.

- MNSYNC=YES, Monitor syncpoint activity.

- MNTIME=LOCAL, Monitor time is set to local.

- STATRCD=ON, Turn on statistics recording. Statistic recording can be turned on to start automatically in the DFHSIT. Alternately, STATRCD=OFF
  can be specified in the DFHSIT and statistical recording
  can be turned on by issuing:

```
CEMT SET STATISTICS ON
```

11.2 Additional Updates for DB2 Server Accounting

If DB2 Server accounting is to be used, you must:

- Provide CICS Restart Resynchronization capability, as described under "CICS Restart Res ynchronization Support".

- Include z/VSE job accounting. The parameter JA=YES must be specified on the IPL SYS command.

11.3 Additional Updates for CIRB Auto-Initiation

If CICS sequential device support is to be used to auto-initiate the CIRB transaction, update the CICS DFHTCT table.

11.3.1 DFHTCT Entries Required for Card Reader Line Printer Support
- CICS/VSE and CICS/TS

When a CRLP (card reader, line printer) device is defined in the DFHTCT, the CIRB transaction can be automatically executed by including the CIRB statement in the CICS startup job stream.

Figure 67 on page 77 shows an example of how you might code your DFHTCT entry for CRLP support.

```
DFHTCT TYPE=SDSCI,                    X
   DEVADDR=SYSIPT,                    X
   DEVICE=2540,                       X
   DSCNAME=READER
DFHTCT TYPE=SDSCI,                    X
   DEVADDR=SYSLST,                    X
   DEVICE=1403,                       X
   DSCNAME=PRINTER
DFHTCT TYPE=LINE,                     X
   ACCMETH=BSAM,                      X
   TRMTYPE=CRLP,                      X
   ISADSCN=READER,                    X
   OSADSCN=PRINTER,                   X
   INAREAL=80
DFHTCT TYPE=TERMINAL,                 X
   TRMIDNT=SAMA,                      X
   TRMTYPE=CRLP,                      X
   TRMSTAT=TRANSCEIVE
```

Figure 67. DFHTCT Examples for CRLP Support

After the CRLP device has been defined in the DFHTCT, the CIRB statement can be included in the CICS startup job stream. Code it just as you would if entering it from a terminal. Include '\' at the end of the statement to indicate the end of data. Following is an example of auto-initiating CIRB using CRLP support.

```
// EXEC DFHSIP,SIZE=nnnnK
CIRB PASSWORD,3,PRODCICS,0\
/*
```

Figure 68. Auto-initiating CIRB using CRLP support

When the CICS system is initialized, the CIRB transaction is automatically invoked. Do not include a CSSF GOODNIGHT statement following the CIRB statement. This allows the CIRB statement to be processed in all CICS startup modes (COLD, AUTO, or EMER).

11.3.2 DFHTCT Entries Required for Sequential DASD Support
- CICS/VSE and CICS/TS

When a sequential DASD device is defined in the DFHTCT, the CIRB statement can be read from a sequential DASD data set.

Figure 69 on page 78 shows an example of how you might code your DFHTCT entry for sequential DASD support.

```
DFHTCT TYPE=SDSCI,                     X
   DEVADDR=SYS001,                     X
   DEVICE=2314,                        X
   DSCNAME=DISKIN1
DFHTCT TYPE=SDSCI,                     X
   DEVADDR=SYS006,                     X
   DEVICE=2314,                        X
   DSCNAME=DISKOT1
DFHTCT TYPE=LINE,                      X
   ACCMETH=SEQUENTIAL,                 X
   TRMTYPE=DASD,                       X
   ISADSCN=DISKIN1,                    X
   OSADSCN=DISKOT1,                    X
   INAREAL=80
DFHTCT TYPE=TERMINAL,                  X
   TRMIDNT=SAMB,                       X
   TRMSTAT=(TRANSCEIVE)
```

Figure 69. DFHTCT Examples for Sequential DASD Support

To use sequential DASD support, two sequential DASD data sets must be defined. These can be either Sequential Access Method (SAM) data sets or SAM-managed VSAM data sets.

The input data set (DISKIN1 in Figure 67 on page 77) must contain the CIRB statement. Depending upon the data set type, a utility such as DITTO or VSAM IDCAMS can be used to load the CIRB statement to the input data set. Load the CIRB statement just as you would if entering it from a terminal. Include "\" at the end the statement to indicate the end of data. The output data set (DISKOT1 in Figure 68 on page 77) contains the messages from the CIRB initialization process.

When DASD data sets are used to simulate a CICS terminal, provide DLBL, EXTENT, and ASSGN job control statements (depending upon the access method). When the CICS system is initialized, the CIRB statement is automatically invoked. Do not include a CSSF GOODNIGHT statement following the CIRB statement. This allows the CIRB statement to be processed in all CICS startup modes (COLD, AUTO, or EMER).

11.4 Additional Updates Required for the Online Resource Adapter DRDA

Router Tracing - CICS/VSE and CICS/TS

DB2 Server for VSE Client Edition uses VSAM files (or VSE/VSAM Space Management for the SAM feature) to store trace records. CICS/VSE treats SAM files as **Extrapartition Transient Data**. Transient data queues are called **destinations**. They must be predefined in a table known as the destination control table (DCT).

Data directed to of from an external destination is called extrapartition data and consists of sequential records that are fixed-length or variable-length, blocked or unblocked. The record format for an extrapartition destination must be defined in the DCT by the system programmer.

Note that Transient data queue definitions point to an associated data definition (DLBL/TLBL) statement in the CICS start-up JCL.

If Online Resource Adapter DRDA Router Tracing will be used in an online environment (for example, the SQLGLOB parameter TRACERA or TRACEDRRM or TRACECONV is ON), the following steps are required for creating trace records:

1. Define the SAM file to CICS. This involves updating the DCT.

2. Add the appropriate TLBL, DLBL, EXTENT and ASSGN JCL statements to the CICS startup JCL to define file ARITRAC.

Figure 70 shows an example of how to code your DFHDCT to define the Resource Adapter trace file to CICS.

```
* Use one of the following SDSCI entries - not BOTH
* This definition is used if tracing to TAPE
DFHDCT   TYPE=SDSCI,       (1)              X
  BLKSIZE=4096,                             X
  BUFNO=1,                                  X
  DSCNAME=ARITRAC,                          X
  RECFORM=VARBLK,                           X
  DEVICE=TAPE,                                X
  DEVADDR=SYS018,  (2)              X
  FILABL=STD,                               X
  ERROPT=IGNORE,                            X
  RECSIZE=4088,                             X
  REWIND=UNLOAD,                            X
  TYPEFLE=OUTPUT
* This definition is used if tracing to Disk

DFHDCT   TYPE=SDSCI,       (1)              X
  BLKSIZE=4096,                             X
  BUFNO=1,                                  X
  DSCNAME=ARITRAC,                          X
  RECFORM=VARBLK,                           X
  DEVICE=DISK,                              X
  ERROPT=IGNORE,                            X
  RECSIZE=4088,                             X
  TYPEFLE=OUTPUT

DFHDCT   TYPE=EXTRA,                        X
  DESTID=ARIT,                             X
  DSCNAME=ARITRAC,                         X
  OPEN=INITIAL,    (3)                     X
  RESIDNT=YES,     (5)                     X
  RSL=PUBLIC       (4)
```

Figure 70. DFHDCT Example

Notes:

(1)   The "TYPE=SDSCI" definitions do not include a **MODNAME=name** parameter. Because this operand is omitted, a standard VSE name is generated for calling the logic module when the DCT is link-edited.

(2)   Code **DEVADDR** with the symbolic unit address. This operand is not required for disk data sets when the symbolic address is provided through the EXTENT system control statement.

(3)   **OPEN=DEFERRED** may be used. In this case, the command **CEMT SET QUEUE (ARIT) ENABLED OPEN** must be used to open the file.

(4)   **RSL=0** or **RSL=number** may also be used. In these cases, any transactions defined with RSLC(YES) may not be able to access the ARITRAC file. See the CICS/VSE Resource Definition (Macro) manual or the CICS Transaction Server for VSE/ESA Resource Definition Guide for more details.

(5)   The RESIDNT= parameter is obsolete in CICS/TS and is not required.

The output of the Online Resource DRDA Router trace can be directed to either tape or disk.

To direct the output to tape, include a TLBL statement in your CICS startup job control for generating a trace. An example of a TLBL statement for a trace output file is as follows:

```
// ASSGN SYS018,181
// TLBL ARITRAC,'DB2.ARITRAC'
```

To direct the output to disk, include a DLBL, an EXTENT, and an ASSGN statement in the CICS startup job control for generating a trace.

The following is an example of the job control required for a trace output DASD file.

```
// ASSGN SYS018,DISK,VOL=&vol,SHR
// DLBL ARITRAC,'DB2.ARITRAC',0,SD
// EXTENT SYS018,&vol,1,0,195,90
```

12.0 Bibliography

This bibliography lists publications that are referenced in this manual or that may be helpful.

Related Publications

- DB2 Server for VSE & VM Data Restore Guide,SC09-2991

- IBM SQL Reference, Version 2, Volume 1, SC26-8416

- IBM SQL Reference, SC26-8415

Other Distributed Data Publications

- DRDA: Every Manager's Guide, GC26-3195

- IBM Distributed Data Management (DDM) Architecture, Architecture Reference, Level 3, SC21-9526

- IBM Distributed Data Management (DDM) Architecture, Implementation Programmer's Guide, SC21-9529

- VM/Directory Maintenance Licensed Program Operation and User Guide Release 4, SC23-0437

- IBM Distributed Relational Database Architecture Reference, SC26-4651

- IBM Systems Network Architecture, Format and Protocol

- SNA LU 6.2 Reference: Peer Protocols

- Reference Manual: Architecture Logic for LU Type 6.2

- IBM Systems Network Architecture, Logical Unit 6.2 Reference: Peer Protocols

- Distributed Data Management (DDM) List of Terms

  CCSID Publications

  – Character Data Representation Architecture, Executive Overview, GC09-2207

  – Character Data Representation Architecture Reference and Registry, SC09-2190

  C/VSE Publications

  – IBM C/VSE V1R1.0 Installation and Customization Guide, GC09-2422

  – IBM C/VSE V1R1.0 User's Guide, SC09-2423

  – IBM C/VSE V1R1.0 Language Reference, SC09-2425

  Communication Server for OS/2 Publications

  – Up and Running!, GC31-8189

  – Network Administration and Subsystem Management Guide, SC31-8181

  – Command Reference, SC31-8183

  – Message Reference, SC31-8185

  – Problem Determination Guide, SC31-8186

  Distributed Database Connection Services (DDCS) Publications

  – DDCS User's Guide for Common Servers, S20H-4793

– DDCS for OS/2 Installation and Configuration Guide, S20H-4795

VTAM Publications

– VTAM Messages and Codes, SC31-6493

– VTAM Network Implementation Guide, SC31-6494

– VTAM Operation, SC31-6495

– VTAM Programming, SC31-6496

– VTAM Programming for LU 6.2, SC31-6497

– VTAM Resource Definition Reference, SC31-6498

– VTAM Resource Definition Samples, SC31-6499

CSP/AD and CSP/AE Publications

– Developing Applications, SH20-6435

– CSP/AD and CSP/AE Installation Planning Guide, GH20-6764

– Administering CSP/AD and CSP/AE on VM, SH20-6766

– Administering CSP/AD and CSP/AE on VSE, SH20-6767

– CSP/AD and CSP/AE Planning, SH20-6770

– Cross System Product General Information, GH23-0500

Query Management Facility (QMF) Publications

– QMF General Information, GC26-4713

– QMF z/VSE Setup and Usage Guide, GG24-4196

– Managing QMF for z/VSE, SC26-3252

– Installing QMF on z/VSE, SC26-3254

– QMF Learner's Guide, SC26-4714

– QMF Advanced User's Guide, SC26-4715

– QMF Reference, SC26-4716

– Installing QMF on VM, SC26-4718

– QMF Application Development Guide, SC26-4722

– QMF Messages and Codes, SC26-4834

– Using QMF, SC26-8078

– Managing QMF for VM/ESA, SC26-8219

DL/I DOS/VS Publications

– DL/I DOS/VS Application Programming, SH24-5009

COBOL Publications

– COBOL/VSE V1R1.0 Migration Guide, GC26-8070

– COBOL/VSE V1R1.0 General Information, GC26-8068

– COBOL for VSE/ESA Language Reference V1.2, SC26-8073

– COBOL for VSE/ESA Programming Guide, SC26-8072

Systems Network Architecture (SNA) Publications

- SNA Transaction Programmer's Reference Manual for LU Type 6.2, GC30-3084

- SNA Format and Protocol Reference: Architecture Logic for LU Type 6.2, SC30-3269

- SNA LU 6.2 Reference: Peer Protocols, SC31-6808

- SNA Synch Point Services Architecture Reference, SC31-8134

Miscellaneous Publications

- IBM 3990 Storage Control Planning, Installation, and Storage Administration Guide, GA32-0100

- Dictionary of Computing, ZC20-1699

- APL2 Programming: Using Structured Query Language, SH21-1056

- ESA/390 Principles of Operation, SA22-7201

Related Feature Publications

- DB2 Replication Guide and Reference, SC26-9920

- Control Center Operations Guide for VSE, GC09-2992

12.1 Contacting IBM

Before you contact DB2 customer support, check the product manuals for help with your specific technical problem.

For information or to order any of the DB2 Server for VSE & VM products, contact an IBM representative at a local branch office or contact any authorized IBM software remarketer.

If you live in the U.S.A., then you can call one of the following numbers:

- 1-800-237-5511 for customer support

- 1-888-426-4343 to learn about available service options
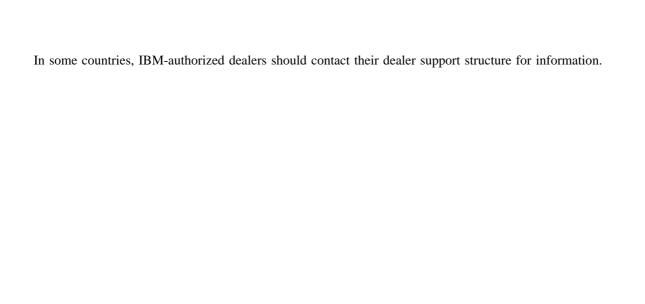
12.1.1 Product information

DB2 Server for VSE & VM product information is available by telephone or by the World Wide Web at http://www.ibm.com/software/data/db2/vse-vm

This site contains the latest information on the technical library, product manuals, newsgroups, APARs, news, and links to web resources.

If you live in the U.S.A., then you can call one of the following

- 1-800-IBM-CALL (1-800-426-2255) to order products or to obtain general information.

- 1-800-879-2755 to order publications.

For information on how to contact IBM outside of the United States, go to the IBM Worldwide page at http://www.ibm.com/planetwide

In some countries, IBM-authorized dealers should contact their dealer support structure for information.

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