DB2 Server for VSE & VM

Master Index and Glossary

Version 7 Release 3

SC09-2890-02

DB2 Server for VSE & VM

Master Index and Glossary

Version 7 Release 3

SC09-2890-02

Before using this information and the product it supports, be sure to read the general information under “Notices” on page 127.

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About This Manual

This manual presents an overview of the DB2 Server for VSE & VM library and consolidates the indexes of the manuals in the library into one master index. The master index directs readers to one or more manuals in which a topic is discussed.

Who Should Use This Manual

The master index and glossary is intended for use by readers interested in topics described in the DB2 Server for VSE & VM library.

Organization

This manual contains the following:

- Chapter 1, "Library Overview" on page 1 discusses the documentation available for the DB2 Server for VSE & VM product.
- Chapter 2, "Alphabetic Codes" on page 7 lists the alphabetic codes that identify the books to which the master index refers.

The **Glossary** lists specialized terminology used in the manuals in the DB2 library.

The **Master Index** lists all the index entries in books in the DB2 Server for VSE & VM library and indicates the book that contains each index entry.

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Summary of Changes

This is a summary of the technical changes to the DB2 Server for VSE & VM database management system for this edition of the book. Several manuals are affected by some or all of the changes discussed here. For your convenience, the changes made in this edition are identified in the text by a vertical bar (|) in the left margin. This edition may also include minor corrections and editorial changes that are not identified.

This summary does not list incompatibilities between releases of the DB2 Server for VSE & VM product; see either the *DB2 Server for VSE & VM SQL Reference*, *DB2 Server for VM System Administration*, or the *DB2 Server for VSE System Administration* manuals for a discussion of incompatibilities.

Summary of Changes for DB2 Version 7 Release 3

Version 7 Release 3 of the DB2 Server for VSE & VM database management system is intended to run on the VM/ESA Version 2 Release 4 or later environment and on the Virtual Storage Extended/Enterprise Systems Architecture (VSE/ESA®) Version 2 Release 5 Modification 1 or later environment.

Enhancements, New Functions, and New Capabilities

The following have been added to DB2 Version 7 Release 3:

Cancel TCP/IP Agent in VM

With this new functionality, if the client is connected to a DB2 for VM application server via TCP/IP, and the client disconnects from the application server, the DB2 for VM application server will detect that the client has disconnected and will immediately release the resources that it had held.

Force Inactive Users

This function introduces a new DB2 Server for VM operator command, FORCE INACTIVE. The FORCE INACTIVE command will disconnect inactive users on DB2 Server for VM. Also, when SQLEND is issued on DB2 Server for VM, inactive users will be automatically disconnected so that they do not delay database shutdown. This will make the behavior of SQLEND consistent on DB2 Server for VM and on DB2 Server for VSE.

See the *DB2 Server for VSE & VM Operation* manual for further details.

CLI/JDBC V8 Redesign

If you would like to use DB2 Server for VSE & VM as a server with access by CLI/ODBC/JDBC/OLE clients, you need the support of schema functions on the DB2/VSE&VM database servers. These schema functions allow applications to get catalog information in a way that is database vendor independent. The schema functions return a standard result set to the user. In DB2 Universal Database V8.1, these functions are implemented with views and stored procedures if the views rely on SQL that is not supported on the VSE & VM platforms.

There is now a set of stored procedures that will generate the schema functions results sets without views. The result sets returned by these stored procedures correspond to the results obtained from other servers when SELECTing from the schema views.

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The schema stored procedures created on VM and VSE servers are invoked internally by CLI/JDBC drivers.

See the *DB2 Server for VSE & VM Database Administration* manual for additional information.

Control Center for VSE Enhancements

The Control Center for VSE restriction of a hard coded user name and password for connecting to a database has been removed. When a Control Center for VSE transaction is initiated in CICS, Control Center will request the user ID and the password from the terminal user. A parameter card will be used for batch programs to input the user ID and password.

Control Center for VM Enhancements

Control Center enhancements include support for new operator commands, enhancements to existing operator functions, and enhancements to current initialization parameters.

Reliability, Availability, and Serviceability Improvements

Alternate Logging

A new inactive log can now take over when the active log reaches the ARCHPCT value and alternate logging is enabled, instead of immediately forcing a log archive to be taken. A log archive can then be taken at a later time, as determined by the operator. If an attempt to switch to the inactive log occurs and that inactive log has not already been archived, the operator is forced to take an archive of the inactive and active logs.

For more information, see the following DB2 Server for VSE & VM documentation:

- *DB2 Server for VSE System Administration*
- *DB2 Server for VM System Administration*
- *DB2 Server for VSE & VM Diagnosis Guide and Reference*
- *DB2 Server for VSE & VM Operation*
- *DB2 Server for VSE Program Directory*
- *DB2 Server for VM Program Directory*

Data Restore Changes

Data Restore now allows users to use the RELOAD function with RECOVERY=YES, even if an event such as a COLDLOG has broken the logical continuity of the log files. In this case, the log can now be applied until this event is reached. Alternate logging is fully supported with Data Restore for VSE & VM V7.3.

Release Empty Pages

You can now release empty pages in any dbspace on VM without having to issue DROP DBSPACE, by using a new single user mode utility called SQLRELEP. A new single user mode startup option, STARTUP=P, is introduced to enable you to release empty pages on VSE. For more information, see the *DB2 Server for VSE & VM Database Administration* manual.

More Information on TCP/IP Messages

In the event of a TCP/IP server-side error, new messages will now be displayed with more information pertaining to the TCP/IP error. This information will include the input parameters of the service causing the error.

Migration Considerations

Migration is supported from SQL/DS® Version 3 and DB2 Server for VSE & VM Versions 5 and 6. Migration from SQL/DS Version 2 Release 2 or earlier releases is not supported. Refer to the *DB2 Server for VM System Administration* manual or the *DB2 Server for VSE System Administration* manual for migration considerations.

Chapter 1. Library Overview

This chapter discusses the documentation available for the DB2 Server for VSE & VM product.

IBM provides a library that supports the DB2 Server for VSE & VM product, a relational database management system designed for both end users and data processing professionals. The DB2 Server for VSE & VM product works with the following systems or their equivalents:

- Virtual System Extended/Enterprise Systems Architecture (VSE/ESA) system
- Virtual Machine/Enterprise Systems Architecture (VM/ESA) system

Separate libraries of DB2 Server for VSE & VM manuals are available for VSE and VM users.

DB2 Server for VSE & VM Library

The DB2 Server for VSE & VM library contains the following:

- The *DB2 Server for VSE & VM Overview* booklet provides information for executives, demonstrating organizational benefits that can be obtained from using the DB2 Server for VSE & VM database manager.
- The *DB2 Server for VSE & VM Database Administration* manual describes tasks in database administration including configuration planning, operating environments, application design, database design, data security, performance improvements, and error recovery.
- The *DB2 Server for VM System Administration* and the *DB2 Server for VSE System Administration* manuals cover the planning and administration tasks from a systems administration perspective. The topics in this document include: configuration planning, operating environments, installation planning, operations planning, accounting, startup parameters, authorizing users, adding and deleting users, providing and managing space, customizing features of the DB2 Server for VSE & VM product, and using the DB2 Server for VSE & VM product in a distributed environment.
- The *DB2 Server for VSE & VM Interactive SQL Guide and Reference* manual covers the basic uses of SQL statements and the commands of the Interactive SQL (ISQL) facility. This guide includes exercises that can be done at a display terminal or on paper. It also references ISQL command syntax for end users.
- The *DB2 Server for VSE & VM Operation* manual explains how to control the DB2 Server for VSE & VM system with commands from the system operator's console.
- The *DB2 Server for VSE & VM Application Programming* manual is the guide and reference book for programmers using SQL. This book presents a complete description of all SQL statements.
- The *DB2 Server for VSE & VM Database Services Utility* manual is the guide and reference book for users of the DB2 Server for VSE & VM Database Services Utility program.
- The *DB2 Server for VM Messages and Codes* and the *DB2 Server for VSE Messages and Codes* manuals are reference manuals that explain each DB2 Server for VSE & VM message and completion code. Each explanation includes the action to be taken when that message or code is issued.

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- The *DB2 Server for VSE & VM Diagnosis Guide and Reference* manual provides information that helps in determining if the DB2 Server for VSE & VM database manager is the source of the problem, recovering from problems, describing and reporting a defect. It also provides information on the DB2 Server for VSE & VM concepts for use in problem diagnosis.
- The *DB2 Server for VSE & VM Master Index and Glossary* manual lists all the index entries in books in the DB2 Server for VSE & VM library and indicates the book that contains a particular index entry. It also includes a glossary of DB2 Server for VSE & VM terms.
- The *DB2 Server for VSE & VM Quick Reference* manual summarizes SQL statements, Database Services Utility commands, ISQL commands, operator commands, functions, queries, SQL language elements, catalog tables, and reserved words.
- The *DB2 Server for VSE & VM SQL Reference* manual contains syntax diagrams and descriptions for all commands and statements that an application programmer uses in the DB2 Server for VSE & VM system.
- The *DB2 Server for VSE & VM Performance Tuning Handbook* manual helps you analyze and tune the performance of the DB2 Server for VSE & VM product. It provides details on how to manage storage and configure the operating system, how to configure the application server and application requester, and how to improve data access performance by analyzing and rewriting SQL statements. It also contains the information for operating, tailoring, and tuning VMDSS on a VM/ESA operating system.
- The *DB2 Server for VSE & VM Licensed Program Specifications* defines the warranty criteria for the DB2 Server for VSE & VM database manager.

DB2 Server for VSE & VM Optional Features Library

The DB2 Server for VSE & VM Optional Features Library contains the following:

- The *DB2 REXX SQL for VM/ESA Installation and Reference* manual, SC09-2891, is a separately priced feature and must be ordered separately using the order number.
- The *DB2 Server for VSE & VM Data Restore Guide*, SC09-2991, provides installation and usage information for the Data Restore feature which provides extended archive and recovery options.
- The *DB2 Server for VSE & VM Control Center Operations Guide for VSE*, GC09-2992, provides installation and usage information for the Control Center feature which provides database administration tools that help you automate many routine tasks in the VSE/ESA environment.
- The *DB2 Server for VSE & VM Control Center Operations Guide for VM*, GC09-2993, provides installation and usage information for the Control Center feature which provides database administration tools that help you automate many routine tasks in the VM/ESA environment.
- The *QMF Messages and Codes* manual, GC27–0717, lists all of Query Management Facility's Messages
- The *Installing and Managing QMF for VM* manual, GC27–0720, helps systems programmers install QMF in the VM/ESA environment. Subtasks include planning for installation, customizing QMF, or customizing co-requisite products to optimize QMF.
- The *Installing and Managing QMF for VSE* manual, GC27–0721, helps systems programmers install QMF in the VSE/ESA environment. Subtasks include planning for installation, customizing QMF, or customizing co-requisite products to optimize QMF.

- The *Introducing QMF* manual, GC27–0714, assists the customer in making a buy decision.
- The *QMF Reference* manual, SC27–0715, provides detailed information about the structure of a QMF command or an SQL query. This is for people who have experience with QMF.
- The *Using QMF* manual, SC27–0716, documents the end-user getting started functions available in QMF. Guides the user to online help for learning about QMF.
- The *Developing QMF Applications* manual, SC27–0718, discusses what you can do to design and develop Query Management Facility (QMF) applications.
- The *Getting Started with QMF for Windows* manual, SC27–0723, provides assistance in operating and maintaining QMF for Windows. This guide explains the basic layout of QMF for Windows and how to execute the most common end user tasks within the QMF for Windows environment.
- The *Installing and Managing QMF for Windows* manual, GC27–0722, provides assistance in planning for installing, configuring, and maintaining QMF for Windows.

Distributed Data Library

If you connect to other IBM relational databases using the Distributed Relational Database Architecture™ (DRDA) implementation, or if your DB2 Server for VSE & VM system is being accessed as an application server by other IBM relational databases using the Distributed Relational Database Architecture (DRDA) implementation, you may wish to consult the following:

- *DB2 Connect Enterprise Edition Quick Beginning*, S10J-7888
- *DB2 Connect Personal Edition Quick Beginning*, S10J-8162
- *DB2 Connect User's Guide*, S10J-8163.

Task Orientation of the Manuals

The DB2 Server for VSE & VM library is organized into the following tasks:

Table 1. Task Organization of the Manuals

For Information on	Look in
Evaluation	
Examining and judging the applicability of an IBM product to an installation's needs.	*DB2 Server for VSE & VM Overview* booklet
Planning and Administration	
Making fundamental decisions about the options a program offers. The decisions are presumably specified in written directions and procedures that are followed during the implementation tasks of installation, operation, resource definition, application programming, and program service. Planning is an iterative task in that many of the decisions are made before installation, continually evaluated after installation, and revised as appropriate.	*DB2 Server for VSE & VM Database Administration*, *DB2 Server for VM System Administration* or *DB2 Server for VSE System Administration*, *DB2 Server for VSE & VM Performance Tuning Handbook*
Defining the characteristics of data processing resources to a program. The resources can be databases, programs, users, and others.	*DB2 Server for VSE & VM Database Administration*, *DB2 Server for VM System Administration* or *DB2 Server for VSE System Administration*, *DB2 Server for VSE & VM Performance Tuning Handbook*
Installation	
Making the database manager ready for use.	*DB2 Server for VM Program Directory* or *DB2 Server for VSE Program Directory*
Operation	
Starting the database manager, monitoring it to keep it operating, and shutting it down when it is no longer needed.	*DB2 Server for VSE & VM Operation*
Application Programming	
Designing, coding, preprocessing, compiling, executing, debugging, and maintaining application programs to perform specific functions.	*DB2 Server for VSE & VM Application Programming*, *DB2 Server for VSE & VM SQL Reference*, *DB2 Server for VSE & VM Database Services Utility*
End Use	
Directing use of an IBM program for the purpose for which it was provided.	*DB2 Server for VSE & VM Interactive SQL Guide and Reference*, *DB2 Server for VSE & VM Quick Reference*
Diagnosis and Program Service	
Identifying the IBM program that is the source of a programming problem, describing the problem, comparing it to similar known problems, reporting a new problem, and correcting the problem.	*DB2 Server for VM Messages and Codes* or *DB2 Server for VSE Messages and Codes*, *DB2 Server for VSE & VM Diagnosis Guide and Reference*

Bill of Forms Numbers and Contents

A bill of forms has been set up to help you order the DB2 Server for VSE & VM manuals.

SBOF-8937 DB2 Server for VM Library for a VM Environment

Ordering SBOF-8937 is the same as ordering each of the following:

Title	Order Number
DB2 Server for VSE & VM Overview	GC09-2995
DB2 Server for VSE & VM Database Administration	SC09-2888
DB2 Server for VM System Administration	SC09-2980
DB2 Server for VSE & VM Interactive SQL Guide and Reference	SC09-2990
DB2 Server for VSE & VM Operation	SC09-2986
DB2 Server for VSE & VM Application Programming	SC09-2889
DB2 Server for VSE & VM Database Services Utility	SC09-2983
DB2 Server for VM Messages and Codes	GC09-2984
DB2 Server for VSE & VM Master Index and Glossary	SC09-2890
DB2 Server for VSE & VM SQL Reference	SC09-2989
DB2 Server for VSE & VM Quick Reference	SC09-2988
DB2 Server for VSE & VM Performance Tuning Handbook	GC09-2987

Items Not in the DB2 Server for VM Bill of Forms

These items are **not included** in the bill of forms grouping:

- The *DB2 Server for VSE & VM Diagnosis Guide and Reference* manual, LC09-2907, is a licensed manual and must be ordered separately using the order number.
- The *DB2 Server for VSE & VM Licensed Program Specifications* is not needed in a working library. (One copy is supplied with the DB2 Server for VSE & VM product tape.)
- The *DB2 Replication Guide and Reference*, SC26-9920, provides information on how to plan, configure, administer, and operate the IBM Replication tools available as DataPropagator Relational Version 5.1 or later program products or within DB2 Universal Database Version 5.2 or later.
- The following optional features items are also **not included**:
  - *DB2 REXX SQL for VM/ESA Installation and Reference*
  - *DB2 Server for VSE & VM Data Restore Guide*
  - *DB2 Server for VSE & VM Control Center Operations Guide for VM*
  - *QMF Messages and Codes*
  - *Installing and Managing QMF for VM*
  - *Introducing QMF*
  - *QMF Reference*
  - *Using QMF*
  - *Developing QMF Applications*
  - *Getting Started with QMF for Windows*
  - *Installing and Managing QMF for Windows*.

SBOF-8936 DB2 Server for VSE Library for a VSE Environment

Ordering SBOF-8936 is the same as ordering each of the following:

Title	Order Number
DB2 Server for VSE & VM Overview	GC09-2995
DB2 Server for VSE & VM Database Administration	SC09-2888
DB2 Server for VSE System Administration	SC09-2981
DB2 Server for VSE & VM Interactive SQL Guide and Reference	SC09-2990
DB2 Server for VSE & VM Operation	SC09-2986
DB2 Server for VSE & VM Application Programming	SC09-2889
DB2 Server for VSE & VM Database Services Utility	SC09-2983
DB2 Server for VSE Messages and Codes	GC09-2985
DB2 Server for VSE & VM Master Index and Glossary	SC09-2890
DB2 Server for VSE & VM SQL Reference manual	SC09-2989
DB2 Server for VSE & VM Quick Reference	SC09-2988
DB2 Server for VSE & VM Performance Tuning Handbook	GC09-2987

Items Not in the DB2 Server for VSE Bill of Forms

These items are **not included** in the bill of forms grouping:

- The *DB2 Server for VSE & VM Diagnosis Guide and Reference*, LC09-2907, manual is a licensed manual and must be ordered separately using the order number.
- The *DB2 Server for VSE & VM Licensed Program Specifications* is not needed in a working library. (One copy is supplied with the DB2 Server for VSE & VM product tape.)
- The *DB2 Replication Guide and Reference*, SC26-9920, provides information on how to plan, configure, administer, and operate the IBM Replication tools available as DataPropagator Relational Version 5.1 program products or within DB2 Universal Database Version 5.2.
- The following optional features items are also **not included**:
  - *DB2 Server for VSE & VM Data Restore Guide*
  - *DB2 Server for VSE & VM Control Center Operations Guide for VSE*
  - *QMF Messages and Codes*
  - *Installing and Managing QMF for VSE*
  - *Introducing QMF*
  - *QMF Reference*
  - *Using QMF*
  - *Developing QMF Applications*
  - *Getting Started with QMF for Windows*
  - *Installing and Managing QMF for Windows*.

Chapter 2. Alphabetic Codes

Entries in the master index refer you to the appropriate DB2 Server for VSE & VM manuals through the use of uppercase alphabetic codes. For example, **APP-13** represents the *DB2 Server for VSE & VM Application Programming* manual and page number that the topic will be found on.

The following alphabetic codes are used in the master index to identify a specific DB2 Server for VSE & VM manual:

Code	Manual Name
APP	*DB2 Server for VSE & VM Application Programming*
DBA	*DB2 Server for VSE & VM Database Administration*
DBSU	*DB2 Server for VSE & VM Database Services Utility*
DIAG	*DB2 Server for VSE & VM Diagnosis Guide and Reference*
ISQL	*DB2 Server for VSE & VM Interactive SQL Guide and Reference*
OPER	*DB2 Server for VSE & VM Operation*
PERF	*DB2 Server for VSE & VM Performance Tuning Handbook*
SYVM	*DB2 Server for VM System Administration*
SYVSE	*DB2 Server for VSE System Administration*
SQLREF	*DB2 Server for VSE & VM SQL Reference*

The following items do not have indexes, and are thus not represented in the master index:

- *DB2 Server for VSE & VM Overview*
- *DB2 Server for VSE & VM Quick Reference*
- *DB2 Server for VSE & VM Licensed Program Specifications*
- *DB2 Server for VM Program Directory*
- *DB2 Server for VSE Program Directory*

The master index does not include index entries from the *DB2 Server for VM Messages and Codes* or *DB2 Server for VSE Messages and Codes* manuals.

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Glossary

This glossary includes terms and definitions from:

- The *American National Standard Dictionary for Information Systems*, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018.
- The *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC1/SC1).

A

access. The manner in which files or data sets are referred to by a computer.

access module. See *package*.

access path. The path used to get to data specified in SQL statements. An access path can involve either an index, a sequential search, or a combination of both.

access plan. A package or a product-specific object that contains control structures used to execute SQL statements.

ACL. See *Automatic Cartridge Loader.*

active log. The log currently being used by the database manager.

addressing mode (AMODE). The addressing scheme used in the System/370 environment; either 24-bit or 31-bit.

Advanced Communications Function for Virtual Telecommunications Access Method (ACF/VTAM). An IBM licensed program that controls communications and flow of data in an SNA network. It provides single-domain, and interconnected network capability.

advanced program-to-program communication (APPC). The inter-program communication service within SNA LU 6.2 on which the APPC/VM interface is based.

advanced program-to-program communication/virtual machine (APPC/VM). An application programming interface that uses the SNA LU 6.2 protocol to enable two application programs to communicate.

agent. A structure that the database manager allocates to a user to enable the processing of requests by an application server.

allocated cursor. A cursor defined for stored procedure results sets by using ALLOCATE CURSOR.

alternate logging. An optional facility that allows an inactive log disk to be used once the active log disk is full.

American National Standard (ANS). A standard produced by the American National Standards Institute.

American National Standards Institute (ANSI). An organization consisting of producers, consumers, and general interest groups, that establishes the procedures by which accredited organizations create and maintain voluntary industry standards in the United States.

American Standard Code for Information Interchange (ASCII). An encoding scheme used to represent character data in the OS/2® environment.

AMODE. See *addressing mode*.

ANS. See *American National Standard.*

ANSI. See *American National Standards Institute.*

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API. See *application programming interface.*

APPC. See *advanced program-to-program communication*.

APPC/VM. See *advanced program-to-program communication/virtual machine*.

APPC/VM VTAM Support (AVS). A component of VM/370 and VM/ESA that lets application programs using APPC/VM communicate with programs anywhere in an SNA network. AVS transforms APPC/VM into APPC/VTAM protocol.

application. A program or set of programs that performs a task; for example, a payroll application.

application-embedded SQL. SQL statements coded within an application program. See *static SQL.*

application process. A general term for a unit that depends on the environment, but has the same basic properties in all environments. An application process involves the execution of one or more programs and is the unit to which resources and locks are allocated.

application program. A program used to perform a particular data processing task, such as inventory control or payroll. ISQL and QMF are examples of application programs.

application programming interface (API). The interface that application programs use to request services from a program such as a database manager.

application requester. A component that accepts a database request from an application and passes it to an application server.

application server. The database manager component that receives and processes database requests issued by the application requester.

archive. A copy of the database at a given time plus all the changes made since that time. It is used as a backup and to recover the database if a failure occurs. See *log*.

arithmetic expression. (1) An expression that contains arithmetic operations and operands and that can be reduced to a single numeric value. (2) A statement containing any combination of data items joined by one or more arithmetic operators in such a way that it can be evaluated as a single numeric value. (3) An arithmetic operation (+, -, *, /) involving numeric operands. An expression preceded by a numeric minus sign is also considered to be an arithmetic expression.

ASCII. See *American Standard Code for Information Interchange (ASCII)*.

assembler language. A programming language that provides symbolic form for machine instructions. It usually also provides macro instructions.

atomic integrity. The condition in which either all or none of the actions involved in an operation or a logical unit of work are performed.

authority. See *CONNECT authority, RESOURCE authority,* and *DBA authority*.

authorization. The right granted to a user to communicate with or make use of a computer system.

authorization ID. (1) A character string that designates a set of privileges. The authorization ID of a statement is used by the database manager for authorization checking and as an implicit qualifier for the names of tables, views, and indexes. (2) A user or a group of users. Contrast with *user ID*.

authorization name. A character string that is coded as part of some SQL statements, such as GRANT, REVOKE, and CONNECT. The character string must correspond to the character string designated for the user's authorization ID, to execute a desired statement that requires certain privileges granted on objects such as tables, views, and packages.

auto protocol. A protocol option that lets a DB2 Server for VM application server communicate with a DB2 Server for VM application requester using the SQLDS-only protocol or with a non-DB2 Server for VM application requester using the DRDA protocol.

automatic cartridge loader (ACL). get defn.....

AVS. See *APPC/VM VTAM support*.

AXE transaction. This is the APPC-to-XPCC Exchange transaction that serves as an APPC communications adapter for the DB2 Server for VSE DRDA application server. This AXE transaction communicates externally with the application requester using the APPC protocol (basic conversion) and internally with the DB2 Server for VSE application server using the XPCC protocol. Its main function is to route a data stream received through CICS/APPC to a DB2 Server for VSE application server using XPCC.

B

backout. A process in which the database manager restores a database to the condition it was in before a specific *logical unit of work* began and releases the locks that were acquired for that logical unit of work.

basic predicate. A predicate that compares two values.

batch. Pertaining to activity involving little or no user action. See *noninteractive processing*. Contrast with *interactive processing*.

big-endian. A format for storage or transmission of binary data in which the most significant bit (or byte) comes first. The reverse convention is little-endian.

binary integer. A basic data type that can be further classified as small integer or large integer.

bind. The process in which the database manager transforms the specification of an SQL statement into a plan for a sequence of internal operations.

BIT data. Data that is not associated with a coded character set and is therefore never converted.

buffer. A portion of storage used to hold input or output data temporarily.

C

C. A programming language containing both high level and low level language constructs. C programs can be run on different types of computers with minimal change to the code.

callable services library (CSL). A package of CMS assembler routines that can be stored as an entity and made available to a high-level language, REXX, or an assembler program.

cascade. A delete rule that can be specified in the definition of a referential constraint. When a parent row of the referential constraint is deleted, the delete operation is propagated to its dependent rows.

catalog. A set of tables maintained by the database manager. These tables contain information such as descriptions of tables, views, and packages.

catalog table. A table maintained dynamically by the database manager containing information about objects such as tables and views, and other entities such as conversion tables and authorization IDs defined to the database manager.

CCSID. See *coded character set identifier (CCSID)*.

CDRA. See *Character Data Representation Architecture.*

centralized database. Data that is stored in a single database. Contrast with *distributed database*.

character. (1) A letter, digit, or other symbol in a data character set. (2) A data type in SQL.

character conversion. The conversion of a string from one coded character set to another.

Character Data Representation Architecture (CDRA). The architecture that defines CCSID values to identify the codes used to represent characters and the conversion of these codes, as needed, to preserve the characters and their meanings.

character set. A defined set of characters.

character string. A sequence of bytes or characters.

checkpoint. A set of cleanup and recovery actions taken periodically by the database manager. Actions include writing a copy of the database to disk, recording information in the database log, and freeing storage pool space.

CICS. See *Customer Information Control System.*

CICS/VSE®. Customer Information Control System/Virtual Storage Extended.

clause. In SQL, a distinct part of a statement, such as a SELECT clause or a WHERE clause.

clustered index. An index whose sequence of key values closely correspond to the sequence of rows stored in a table.

clustering index. The first index created for a table. The database manager uses it to determine the placement of subsequent rows.

CMS. See *Conversational Monitor System.*

CMS communications directory (COMDIR). A CMS facility used by the DB2 Server for VM resource adapter that lets APPC/VM or TCP/IP applications establish conversations with remote systems using symbolic destination names. The resource adapter uses two levels of directories: the *system communications directory* and the *user communications directory*. CMS user and system communications directories map a *server-name* to a symbolic destination name.

COBOL (common business-oriented language). A high-level programming language, based on English, that is used primarily for commercial data processing applications.

code page. A set of assignments of characters to *code points*.

code point. In CDRA, a code point is a unique bit pattern that represents a character in a code page.

coded character set. The one-to-one mapping between each character in a character set and its coded representation.

coded character set identifier (CCSID). A 16-bit number that includes an encoding scheme identifier, character set identifiers, code page identifiers, and other information that uniquely identifies the coded graphic character representation used.

collection. A logical grouping for SQL objects. See also *TSAF collection*.

column. The vertical component of a table. A column has a name and a particular data type (for example, character, decimal, or integer).

column function. An SQL operation that produces a value from a set of values. It is expressed in the form of a function name followed by an argument enclosed in parentheses.

COMDIR. See *CMS communications directory*.

command. Generally, a request for system action. ISQL and the DBS utility uses commands to interact with the DB2 Server for VM and DB2 Server for VSE database managers. Contrast with *statement.*

commit. The operation that terminates a *unit of work* by releasing locks so that the database changes made by that unit of work can be perceived by other processes. The process that allows data changes to be made permanent. When a commit occurs, other applications can reference the just-committed data.

commit point. A point in time when data is considered to be consistent.

common programming interface (CPI). A set of languages and services that programmers can use to develop applications that take advantage of SAA consistency.

comparison operator. A symbol (such as =, >, <=) used to specify a relationship between two values.

compatibility. In SQL, when two expressions have similar attributes (for example, both are numeric). Compatibility allows the expressions to be compared or assigned to each other.

component CCSIDS. Mixed CCSIDs have a single byte component CCSID and a double byte component CCSID. For example, in mixed CCSID 5035, CCSID 1027 is used for single byte characters and CCSID 4396 is used for double byte characters.

composite key. An ordered set of key columns of the same table.

concurrency. The shared use of resources by multiple interactive users or application processes at the same time.

CONNECT authority. The authority to use database functions (such as SQL statements) on a database.

connectivity. The capability that allows different database managers to work together in response to a request for data. The database managers can be *like* or *unlike*, for example, all database managers or a combination of the DB2 Server for VSE & VM and DB2® database managers.

console. That part of a computer used for communication with the operator.

constant. A language element that specifies an unchanging value. Constants are classified as string constants or numeric constants. Contrast with *variable*.

Control Program (CP). A component of a VM system that manages the resources of a single computer so that multiple computing systems appear to exist. Each virtual machine is the functional equivalent of an IBM System/370 or System/390 system.

CONV. See *data conversion*.

Conversational Monitor System (CMS). A virtual machine operating system that provides general interactive time sharing, problem solving, and program development capabilities, and operates only under the control of the VM Control Program.

conversion selection table. Information about all valid source and target CCSIDs and all necessary conversions.

coordinated resource recovery (CRR). A CMS facility that implements the LU 6.2 sync point architecture, which ensures that transactions can update multiple protected resources with integrity. This means that all updates, within the transaction, are either completed (committed) or not completed (rolled back or backed out). CRR consists of the coordination function, the resynchronization function, and the logging function. The coordination function resides in the application program's virtual machine. The resynchronization and logging functions reside in the CRR recovery server.

correlated subquery. A subquery (part of a WHERE or HAVING clause) applied to a row or group of rows of the table or view named in an outer subselect.

correlation name. An identifier that designates a table, a view, or individual rows of a table or view within a single SQL statement. It can be defined in any FROM clause or in the first clause of an UPDATE or DELETE statement.

CP. See *control program*.

CPI. See *common programming interface (CPI).*

creator. See *owner*.

CRR. See *coordinated resource recovery*.

CS. See *cursor stability*.

CSL. See *callable services library*.

cursor. A visual cue that shows a user where keyed input will appear on a screen. A named control structure used by an application program to point to a specific row within some ordered set of rows. The cursor is used to retrieve rows from the set.

cursor stability. An isolation level that (1) prevents a row changed by a concurrently executing application process from being read until that row is committed by the application process and (2) ensures that the current row of every cursor is not changed by concurrently executing application processes. Under level CS, a row that is read and not updated during a unit of work and is no longer the current row of a cursor can be changed by concurrently executing application processes.

Customer Information Control System (CICS). An IBM licensed program that enables transactions entered at remote terminals or workstations to be processed concurrently by user-written application programs. It includes facilities for building, using, and maintaining databases.

Customer Information Control System/Disk Operating System/Virtual Storage. A general-purpose licensed program that controls online communication between terminal or workstation users and a database.

D

daemon. A software "entity" that monitors a TCP/IP port for a request from a client.

data conversion (CONV). A component of the DB2 Server for VSE & VM database manager that performs data conversion and returns data to the user when the DRDA datastream is used. Also converts character and graphic data, regardless of the protocol used.

data integrity. The condition where the accuracy and consistency of data in the database is preserved regardless of changes made. Data integrity is achieved with *atomic integrity, entity integrity*, and *referential integrity*.

data type. (1) An attribute used for defining data. For example, CHARACTER, NUMERIC, and GRAPHIC data each have different data types. (2) A set of values together with a set of permitted operations in a programming language. The SQL data types are SMALLINT, INTEGER, DECIMAL, FLOAT, CHARACTER, VARCHAR, GRAPHIC, VARGRAPHIC, LONG VARCHAR, LONG VARGRAPHIC, DATE, TIME, and TIMESTAMP. If data is specified as NUMERIC, it is treated like DECIMAL.

database administrator (DBA). (1) An individual or group responsible for the design, development, operation, safeguarding, maintenance, and use of a database. DBA is the highest authority level a DB2 Server for VSE & VM user can have. (2) An individual or group responsible for the rules by which data is accessed and stored. The DBA is usually responsible for database integrity, security, performance, and recovery.

database archive. To copy the database (Directory and DBEXTENTS) to tape for the purpose of media recovery.

database machine. A virtual machine that has access to DB2 Server for VM code and a database. The database machine controls access to the database.

database management system (DBMS). A software system that controls the logical and physical resources and facilities of a database.

database manager. A program product that processes SQL statements.

database partition. A VSE partition that has access to DB2 Server for VSE code and a database. It controls access to the database.

Database Services utility (DBS utility). An application program supplied with the DB2 Server for VSE & VM database managers to provide several utility functions, including the loading and unloading of data and packages, and the execution of SQL statements previously saved in a command file.

database storage subsystem (DBSS). A component of the database manager that accesses and manages the database DASD.

data pages. 4096-byte pages that contain the tables in a DBSPACE.

data system control (DSC). A component of the DB2 Server for VSE & VM database manager that initiates, terminates, and supervises communications for the database machine. Used on both the user and the database machine.

date. A three-part value that designates a day, month, and year.

date duration. A value that represents a number of years, months, and days.

datetime arithmetic expression. An addition or subtraction operation in which one of the operands is a DATE, TIME, or TIMESTAMP data type.

datetime data type. One of the DATE, TIME or TIMESTAMP data types.

datetime duration. A period of time. A date duration is represented in the form yyyymmdd, where yyyy is the number of years, mm is the number of months, and dd is the number of days. A time duration is represented in the form hhmmss, where hh is the number of hours, mm is the number of minutes, and ss is the number of seconds.

datetime value. A value of the data type DATE, TIME, or TIMESTAMP.

DB2 Server for VSE operator console. A workstation used for communication between the operator and the DB2 Server for VSE database manager. It is used, for example, to specify information concerning application programs and to monitor system operation.

DBA. See *database administrator*.

DBA authority. The authority to perform all SQL operations on all SQL tables. DBA authority includes both CONNECT authority and RESOURCE authority.

DBCS. See *double-byte character set (DBCS)*.

dbextent. The physical medium where database data is stored. Storage pools are composed of one or more dbextents.

DBMS. See *database management system.*

dbname. See *server-name*.

DBNAME Directory. A directory of all DBNAMEs for local, remote, and host VM (Guest Sharing) application servers. It identifies the system default application server and partition defaults. It identifies all valid TPNs used to access the DB2 Server for VSE application server from remote application requesters.

DBS utility. See *Database Services utility.*

dbspace. A logical allocation of space in a *storage pool* contained in a database. Contains one or more tables and their associated indexes.

dbspace scan. An access path for retrieving the results of an SQL statement by which all nonempty data pages of the DBSPACE are fetched.

DBSS. See *database storage subsystem*.

DCSS (discontiguous saved/shared segment). See *discontiguous shared segment*.

DDM. See *distributed data management*

ddm-rdb. Well-known service name for relational databases. The well-known port number that is assigned to ddm-rdb is 446.

deadlock. An impasse that occurs when a process is waiting for a resource that is being held by another process that is currently waiting for the first resource.

default. Pertaining to an attribute, value, or option that is assumed when none is explicitly specified.

delete casade. See *casade*.

delete-connected table. A table that may be involved in a delete operation on another table.

delete restrict. See *restrict*.

delete rule. A rule associated with a referential constraint that can restrict the deletion of a parent row or specify the effect of such a deletion on the dependent rows.

delete set null. See *set null*.

delimited identifier. A sequence of characters enclosed within double quotation marks (″). The sequence must consist of a letter followed by zero or more characters, each of which is a letter, a digit, or the underscore character.

delimiter token. A string constant, a delimited identifier, an operator symbol, or any of the special characters shown in syntax diagrams.

dependent row. A row that contains a foreign key that matches the value of a primary key in the *parent row*.

dependent table. A table that is a dependent in at least one referential constraint.

descendent table. A table is a descendent of table T if it is a dependent of T or a dependent of a descendent of T.

directory. (1) A list of identifiers that map corresponding items of data. For example, a DB2 Server for VSE & VM directory maps dbspaces to addresses on a physical device. (2) The CMS communications directory maps the server-name to its destination.

directory block. A 512-byte record from the directory.

directory buffer. A storage area for directory blocks.

disconnect mode. A facility that allows an interactive user to disconnect from the database manager while the database manager continues to run. The user can later reconnect.

discontiguous shared segment (DCSS). A *shared segment* that occupies one or more architecturally-defined segments.

dispatcher. The component of DB2 Server for VSE & VM that is responsible for allocating processor service to agents.

distributed data management (DDM). A protocol architecture that allows an application program to access data from a remote system. DDM, together with LU type 6.2, CDRA, and FD:OCA, provides the base for DRDA architecture.

distributed database. A collection of logically related data that is physically stored over different but interconnected computing systems. Each site of the network has autonomous processing capability and can run local applications on local databases. Contrast with *centralized database*.

distributed relational database. A set of tables that is spread across different but interconnected computing systems.

Distributed Relational Database Architecture (DRDA). Pertaining to an IBM connection protocol for the access and use of distributed relational data wherever it resides in an interconnected network of relational database products.

dotted-decimal form. Notation for an internet address. For example, "9.21.23.103". A dotted-decimal form address must be converted to network byte order before it can be used in a socket interface.

double-byte character set (DBCS). A set of characters in which each character is represented by 2 bytes. Languages such as Japanese and Chinese, which contain more symbols than can be represented by 256 code points, require double-byte character sets. Because each character requires 2 bytes, entering, displaying, and printing DBCS characters requires hardware and supporting software that are DBCS capable.

distributed unit of work (DUOW). Lets a user or application program read or update data at multiple locations within a single unit of work. With distributed unit of work, you can have many SQL statements within a unit of work; you can access one database management system with each SQL statement; and you can access many database management systems within a unit of work.

double precision floating-point number. A 64-bit approximate representation of a real number.

DRDA. See *Distributed Relational Database Architecture (DRDA)*.

DRDA protocol. A protocol for communicating with both DB2 Server for VM and non-DB2 Server for VM database managers.

DSC. See *data system control*.

dual logging. An optional facility that produces a duplicate copy of log data.

DUOW. See *distributed unit of work*.

duration. A number that represents an interval of time. See *labeled duration, date duration*, *time duration*, and *timestamp duration*.

dynamic SQL. SQL statements that are prepared and executed within a program while the program is executing. In dynamic SQL, the SQL source is contained in host language variables rather than being coded into the application program. The SQL statement might change several times during the program's execution.

E

EBCDIC. See *extended binary-coded decimal interchange code (EBCDIC)*.

ECECPs. Euro Country Extended Code Pages. These code pages are identical to the existing Country Extended Code Pages (CECPs), except that the Euro symbol occurs in the new CECPs in the location where the international monetary symbol occurs in the existing CECPs.

embedded SQL. SQL statements coded within an application program. See *static SQL*.

encoding scheme. A set of rules to represent character data.

enter. To type characters and press the Enter key, instructing the computer to perform the requested action.

entity integrity. The state in which all values of a table's primary key are unique and not null regardless of changes made to data in the table.

escape character. The symbol used to enclose an SQL delimited identifier. This symbol is the double quotation mark (″). A character coded in the ESCAPE clause of the LIKE predicate.

ESM. See *External Security Manager*.

EUC. See *extended UNIX code (EUC)*.

exclusive lock. A lock that prevents concurrently executing applications from accessing row data.

executable statement. An SQL statement that can be (1) embedded in an application program, (2) dynamically prepared and executed, or (3) issued interactively.

EXEC. A CMS file with a file type of EXEC. It contains a series of commands or instructions that are executed when you enter the filename of the EXEC file.

exposed name. Names specified in a FROM clause are exposed or nonexposed. An exposed name is a correlation name or a table or view name for which a correlation name is not specified. Contrast with *nonexposed name*.

expression. An operand or a collection of operators and operands that yields a single value.

extended binary-coded decimal interchange code (EBCDIC). An encoding scheme used to represent character data in the MVS, VM, VSE, and OS/400® environments.

extended dynamic SQL. SQL statements that support direct creation and maintenance of packages. They provide a function similar to the DB2 Server for VSE & VM preprocessors, and can be used to create additional preprocessors and database interface routines.

extended UNIX code (EUC). Defines a set of encoding rules that can support sets of characters from 1 to 4 bytes in length. EUC is a means of specifying a collection of codepages rather than actually being a codepage encoding scheme itself. This is the UNIX alternative to the PC double-byte (DBCS) codepage encoding schemes.

External Security Manager (ESM). Software that is not part of DB2 Server for VSE & VM that is used to define and authenticate user access to system resources. An example of an external security manager is RACF.

extract. Selected data that is copied from a remote system and loaded into the local system. The process of copying selected data from a remote system and loading it into a local system.

F

FD:OCA. See *formatted data object content architecture*.

fenced. This term is used to describe a stored procedure that is separated from the database manager with respect to execution and memory usage.

field procedure. A user defined exit to encode values before they are inserted into a database and to decode them when the values are retrieved. Used, for example, to change the alphabetic collating sequence.

FIPS. Federal Information Processing Standards.

fixed-length string. A character or graphic string whose length is specified and cannot be changed. Contrast with *varying-length string*.

flagger. An optional preprocessor function that identifies all SQL statements in an application program that do not conform to the SQL-89 standard or the SAA standard.

foreign key. A row in a dependent table with a foreign key value that matches a primary key value in a parent table, and is referenced in the referential constraint.

formatted data object content architecture (FD:OCA). An architected collection of constructs used to interchange formatted data. DDM, CDRA, LU type 6.2, and FD:OCA, provide the base for the remote unit of work architecture.

free class. An approximation of the free space on a data page.

free space. The number of bytes on a data page that are available for storing rows.

fullselect. Two or more subselects linked by UNION operators. A fullselect does not include an ORDER BY clause or a FOR UPDATE OF clause. A form of subselect that specifies that a result table is to be used, or is one or more subselects linked by UNION operators.

function. A *column function* or *scalar function*.

G

gatename. The DB2 Server for VSE & VM NAME for a lockable object. It is a multipart name.

GDS. See *general data stream*.

general data stream (GDS). An SNA data stream that consists of transaction program data preceded by a 2-byte binary logical length (LL) field and a 2-byte binary identification (ID) field.

gigabyte (GB). 2^{30}, or 1,073,741,824 bytes.

graphic string. A sequence of DBCS characters.

guest operating system. An operating system that runs on the user's primary operating system. For example, VSE can run as a guest operating system on VM.

guest sharing. A facility that enables VSE/ESA to run as a guest operating system under VM/ESA and access a DB2 Server for VM database.

H

header pages. 4096-bytes that contain the control row describing the tables and indexes in the DBSPACE.

heterogeneous. See *unlike*.

heuristic commit. A commit of an in-doubt unit of work performed manually by an operator with the FORCE *n* COMMIT command.

heuristic damage. Heuristic damage has occurred if a heuristic commit or rollback was performed and then, at a later time, the transaction manager tries to resolve the in-doubt units of work but cannot due to the heuristic action taken previously by the operator. That is, the operator performed a heuristic commit and then the transaction manager requests that the unit of work be rolled back, or the operator performed a heuristic rollback and then the transaction manager requests that the unit of work be committed.

heuristic rollback. A rollback of an in-doubt unit of work performed manually by an operator with the FORCE *n* ROLLBACK command.

homogeneous. See *like*.

host-identifier. A name declared in the host program.

host language. Any programming language in which you can embed SQL statements.

host program. A program written in a host language that contains embedded SQL statements.

host variable. In an application program, a variable referenced by embedded SQL statements.

I

inactive key. A primary or foreign key that is not being enforced. A foreign key becomes dependently inactive when the primary key it references is made inactive.

inactive log. Used for alternate logging, this log will become the active log once the ARCHPCT value is reached.

inactive table. A table that has an inactive primary or foreign key, references an inactive *primary key*, or is referenced by an inactive *foreign key.*

independent table. A table that is not related to any other table through a referential constraint.

index. A set of pointers that are logically ordered by the values of a key. Indexes can provide quick access to data and can enforce uniqueness on the rows in a table.

index key. The set of columns in a table used to determine the order of index entries.

index pages. 4096-byte pages that contain the indexes on the tables in a DBSPACE.

index scan. (1) An access path that uses an index to retrieve the results of an SQL statement. (2) To retrieve all the rows using an index.

indicator variable. A variable used to represent the null value in an application program. If the value for the selected column is null, a negative value is placed in the indicator variable.

initial program load (IPL). (1) The initialization procedure that causes an operating system to commence operation. (2) The process of loading system programs and preparing a system to run jobs.

internet address. The unique 32-bit address identifying each node in an internet.

insert cursor. A cursor associated with an INSERT statement that an application uses to access rows in an active set.

insert rule. A condition enforced by the database manager that must be met before a row can be inserted into a table.

installation. (1) A particular computing system, including the work it does and the people who manage it, operate it, apply it to problems, service it, and use the results it produces. (2) The process of adding a product, such as the DB2 Server for VSE & VM database manager, to a computing system.

interactive processing. A processing method in which each user action causes a response from the program or system.

interactive SQL facility. An SQL application program that reads statements from a terminal, prepares and executes them dynamically, and displays the results to the user. The QMF™ and ISQL facilities use interactive SQL.

Interactive Structured Query Language (ISQL). A DB2 Server for VSE & VM *Interactive SQL Facility*.

internal dbspace. A temporary dbspace used by the database manager to perform tasks such as sorting data or processing a query.

International Standards Organization (ISO). An organization of national standards bodies from various countries established to promote development of standards to facilitate international exchange of goods and services, and develop cooperation in intellectual, scientific, technological, and economic activity.

IPINIT file. TCP/IP for VSE/ESA configuration file.

IPL. See *initial program load*.

ISO. See *International Standards Organization (ISO)*.

isolation level. An application attribute that defines the degree to which that application process is isolated from other currently executing application processes. The degree of independence that one *unit of work* has from another.

ISQL. See *Interactive Structured Query Language (ISQL)*.

J

join. A relational operation that allows retrieval of data from two or more tables based on matching column values.

K

key. One or more columns identified as such in the description of a table, index, or referential constraint.

keyword. In programming languages, a predefined word that has a special meaning or function. For example, in the DB2 Server for VSE & VM database managers, SELECT is the keyword used to retrieve data from a table.

L

labeled duration. A number that represents a duration of years, months, days, hours, minutes, seconds, or microseconds.

leaf page. An index page at the lowest level in the index tree structure; it contains key or TID pairs to the data in the table on which the index was created.

length attribute. A value associated with a string that represents the declared fixed or maximum length of the string.

like. Pertaining to two relational database management systems that are the same product (for example, both are DB2 Server for VM, both are DB2 Server for VSE, or one is DB2 Server for VM and the other is DB2 Server for VSE). Contrast with *unlike*.

literal. A string whose value is given by the content of the string itself. For example, the numeric literal 7 has the value 7. Synonym for *constant*.

little-endian. A format for storage or transmission of binary data in which the least significant bit (or byte) comes first. The reverse convention is big-endian.

load. To transfer data from one medium to another; for example, transferring data from a sequential file to a database, or transferring a program from DASD to computer memory.

local server. In VSE, a local server can be 1) a DB2 Server for VSE application server residing in the same VSE machine as the application program connecting to it, 2) a DB2 Server for VM application server accessed through VSE guest sharing. Contast with *remote server*.

location. Either the name of a host or a relational database. The location is represented by an identifier of 1 to 18 characters.

lock escalation. A lock escalation occurs when the database manager increases the size of the data being locked. The database manager always escalates a lock to the dbspace level. (It does not increase locking from a row level to a page level.)

lock mode. The kind of lock that can be requested (and held). Possible lock modes are: IN, IS, IX, S, SIX, X, U, and Z.

locking. The mechanism used by the database manager to ensure the integrity of data. Locking prevents concurrent users from accessing inconsistent data.

locking hierarchy. A prescribed sequence for locking objects such that conflicts can be recognized at their highest level.

locking protocol. Rules followed by the system to assure that actions taken on behalf of LUWs are protected against interference from other LUWs.

log. A collection of records maintained by the database manager to describe events that occurred during operation of a database. This information is used for recovery if a failure occurs while the database manager is executing.

log archive. To copy the database log to tape or disk for the purpose of media recovery.

logical unit of work (LUW). A recoverable sequence of operations within an application process. At any time, an application process is a single unit of work, but the life of an application process can involve many units of work as a result of commit or rollback operations.

logical unit of work identifier (LUWID). A name that uniquely identifies a logical unit of work within a network.

logical unit type 6.2 (LU 6.2). The SNA logical unit type that supports general communication between programs in a distributed environment.

long string. A varying-length string whose maximum length is greater than 254 bytes or 127 double-byte characters.

LRB. Lock Request Block. A data area used to hold information about a lock request and define the characteristics of a lock on a data object.

LU 6.2. See *logical unit type 6.2*.

LUW. See *logical unit of work (LUW)*.

LUWID. See *logical unit of work identifier.*

M

mailbox. An area in which messages from one machine to another machine are constructed.

MBCS. See *Multi-byte character set (MBCS)*.

minidisk. A logical division of a physical direct access storage device.

mixed data string. A character string that can contain both single- and double-byte characters.

mixed single- and double-byte character set. A set of characters in which each character is represented by either 1 or 2 bytes. A mixed single- and double-byte character set combines characters from one single-byte character set and one double-byte character set.

multi-byte character set (MBCS). A set of characters in which each character is represented by 2, 3, 4 or more bytes. Multi-byte character sets which have characters encoded using only 2 bytes are more commonly known as double-byte character sets (DBCS).

multicolumn key. A key composed of more than one column.

multiple user mode. A mode of operating the database manager in which one or more users or application programs can access the database at the same time. Contrast with *single user mode.*

N

national language support (NLS). National language support allows messages to be displayed in the language of your choice.

navigational database. A database system in which the user performs the logic needed to find the data. Contrast with *relational database*.

network byte order. Also big-endian byte order. The socket interface requires that addresses are in network byte order.

NLS. See *national language support*.

nonexposed name. Names specified in a FROM clause are exposed or nonexposed. A nonexposed name is a table or view name for which a correlation name is specified. Contrast with *exposed name*.

noninteractive processing. A processing method in which an application program is executed with no user interaction.

nonleaf page. An index page at the intermediate level in the index tree structure; it contains page numbers of pages in the next level in the index tree structure.

nonpreemptive. An environment in which agents willingly relinquish control of the processor; agents are not interrupted.

nonrecoverable storage pool. A storage pool for which the database manager does not provide automatic recovery to restore data to the condition it was in before a failed operation or a system failure.

NUL. In C, a single character that denotes the end of the string in a C NUL-terminated host variable.

not fenced. This term is used to describe a stored procedure that has nothing separating it from the database control structures that are used by the database manager.

null. A special value that indicates the absence of information.

NUL-terminated host variable. A varying-length host variable where the length of the data is indicated by the presence of a NUL-terminator.

NUL-terminator. The value in a NUL-terminated host variable that indicates the end of the string. For character strings, the NUL-terminator is X'00'.

O

object. Anything that can be created or manipulated with SQL - for example, tables, views, indexes, or packages.

online. Pertaining to a user's ability to interact with a computer from a terminal or workstation.

operator command. A command that controls the operation, or provides information, about the operation of the database manager.

optimizer. A component of a relational DBMS that carries out the logic required to find data in a database. The optimizer determines the *access path*.

ordinary identifier. An uppercase letter followed by zero or more characters, each of which is an uppercase letter, a digit, or the underscore character. An ordinary identifier must not be a *reserved word.*

ordinary token. A numeric constant, an ordinary identifier, a host identifier, or a keyword.

overflow. The leftmost part of the result of an operation (arithmetic or data movement) that exceeds the capacity of the intended unit of storage.

owner. The authorization ID associated with an SQL object.

P

package. A control structure produced during program preparation that is used to execute SQL statements. Previously called *access module*.

packed decimal format. A format in which each byte in a field, except the rightmost byte, represents two numeric digits. The rightmost byte contains one digit and the sign; for example, the decimal value 123 is represented as 0001 0010 0011 1111.

packed decimal notation. A binary-coded decimal notation in which two consecutive decimal digits, each having 4 bits, are represented by one byte. The datetime data types use this notation.

parameter. A variable that is given a constant value for a specified operation.

parameter marker. A question mark (?) that appears in a statement string of a *dynamic SQL* statement. The question mark indicates that a host variable can appear if the statement string was a static SQL statement.

parent row. A row that has at least one dependent row.

parent table. A table that is a parent in at least one referential constraint.

PassTicket. An alternative to the RACF password that permits workstations and client machines to communicate with the host. It allows a user to gain access to the host system without sending the RACF password across the network. PassTickets are supported by RACF V1R10 for VM (5740-XXH) or later.

phantom row. A table row that can be read by application processes being executed with any isolation level except repeatable read. When the application process issues the same query multiple times, additional rows called phantom rows can appear in between queries because of data being inserted and committed by concurrently executing application processes.

placeholder. Symbol representing a quantity that can assume any of a given set of values.

PL/I (Programming Language/One). A high-level programming language designed for use in a wide range of commercial and scientific computer applications.

port. (1) An endpoint for communication between devices, generally referring to a logical connection. (2) A 16-bit number identifying a particular TCP or UDP resource within a given TCP/IP node.

portability. The ability to run a program on more than one processor without changing it. Portable packages can be created on one processor and used in another.

portable package. A file containing a package that can be used by *like* and *unlike* database managers.

positional parameter. A parameter that must be in a specified location relative to other parameters.

precision. The total number of binary or decimal digits excluding the sign.

predicate. An element of a search condition that expresses or implies a comparison operation.

prepared SQL statement. The executable form of an SQL statement that has been processed by the PREPARE statement.

preprocess. The process of generating executable SQL statements from SQL statements in an application program. Preprocessed SQL statements are stored in (bound to) a database in a *package*. The SQL statements in the source code are replaced with calls to sections of the package that are derived from the original SQL statements.

primary key. A unique key that is part of the definition of a table. If the table is a parent in a referential constraint, the values of its primary key determine the valid values of the foreign key of the constraint.

private dbspace. A logical space in a database owned by one user.

privilege. The right or authority to access a specific database object in a specified way.

program preparation. The process of producing an executable program. This process includes precompilation, compilation, and bind.

PROGS. A table used by RDS to keep track of loaded packages.

protocol. The rules that must be followed by two communication stations or processes. The protocol defines the actions that can be taken by a station when it receives a transmission or detects an error condition.

pseudo agent. A DB2 Server for VSE & VM structure that is allocated to a user upon establishing an IUCV or APPC/VM connection with the database machine, or to a remote requestor upon establishing a connection with the DB2 Server for VSE application server.

public dbspace. A logical space in a database that is accessible to many users.

Q

QMF. See *Query Management Facility*.

quantified predicate. A predicate that compares a value with a set of values.

query. A component of certain SQL statements that specifies a result table. A request for data using an SQL SELECT statement.

query cursor. A cursor associated with a SELECT statement and used by an application program to access rows in a result table.

Query Management Facility (QMF). An *interactive SQL facility*.

R

RDBMS. See *relational database management system.*

RDIIN. The key input data area to RDS from a DB2 Server for VSE & VM application program.

RDS. See *relational data system*.

real storage. The main storage in a virtual storage system. Physically, real storage and main storage are identical. Conceptually, however, real storage represents only part of the range of addresses available to the user of a virtual storage system.

rebind. To recreate a package. Rebinding can occur when (1) An application program is repreprocessed, (2) The system dynamically rebinds any invalid package, or (3) A DBS Utility RELOAD PACKAGE or REBIND PACKAGE command is issued.

recoverable storage pool. A storage pool that protects its data by using the database manager's automatic recovery facilities to restore data to the condition it was in before failed operations or system failure.

recovery. The process of rebuilding databases after a system failure.

referential constraint. The referential integrity rule that the non-null values of the foreign key are valid only if they also appear as values of a primary key.

referential cycle. A set of referential constraints such that each table in the set is a descendent of itself.

referential integrity. The state of a database in which all values of all foreign keys are valid.

referential structure. A set of tables that are related to each other by *referential constraints.*

registered. In a distributed environment, a database is registered by including it in a corporate database directory service. A registered database is uniquely identified by its *server-name.*

relational data system (RDS). A component of the DB2 Server for VSE & VM database manager that supports the relational model of data; letting users conceptualize data as rows and columns of a table. Also translates SQL statements for the database storage system.

relational database. A database that can be perceived as a set of tables and manipulated in accordance with the relational model of data.

relational database management system (RDBMS). A database management system that is based on the relational database model. The DB2 Server for VSE & VM relational database management system are examples.

remote server. In VSE, a remote server is 1) a DB2 Server for VSE application server not residing in the same VSE machine as the application program connecting to it, 2) a DB2 Server for VM application server not accessed through Guest Sharing by a VSE batch or CICS application program, 3) a non-DB2 Server for VSE application server which supports IBM's implementation of the DRDA protocol. Contrast with *local server*.

remote unit of work. Lets a user or application program read or update data at one remote location per unit of work. With remote unit of work, you can have many SQL statements within a unit of work; you can access one database management system with each SQL statement; and you can access one database management system within a unit of work.

remote unit of work protocol. Communication protocols for *unlike* databases such as DB2 Server for VSE and DB2 UDB for OS/390.

repeatable read (RR). An isolation level that completely isolates an application process from all other concurrently executing application processes. Under level RR, (1) rows read during a unit of work cannot be changed by concurrently executing application processes until the unit of work is complete and (2) rows changed by concurrently executing application processes cannot be read until they are committed by that application process, and (3) phantom rows are prevented.

reserved word. A keyword in a programming language than cannot be used as an identifier in a statement.

residency mode (RMODE). Identifies where in virtual storage a loaded program can reside; above or below 16M.

resource. A facility of a computing system, such as main storage, programs, the processing unit, or database storage.

RESOURCE authority. The authority to create tables in a public dbspace and to acquire a private dbspace.

restart table. The table from which RELOAD will begin reloading when the RELOAD command is entered with the RESTARTTABLE parameter.

restrict. A delete rule that does not allow a parent row to be deleted if it has dependent rows.

result set. The set of rows returned to a client application by a stored procedure.

result set locator. A 4-byte value used to uniquely identify a query result set returned by a stored procedure.

result table. A set of rows produced by the evaluation of a SELECT statement. See also *active set*.

REXX. A procedural language that allows programs and algorithms to be written in a clear and structured way.

RMODE. See *residency mode*.

rollback. The process of restoring data changed by SQL statements to the state at its last commit point. All locks are freed. Contrast with *commit*.

ROLLBACK WORK. The end of a logical unit of work that results in the backout of its changes to the database.

root page. The highest level in the index tree structure.

routine. A series of commands and statements stored under an identifying name.

row. The horizontal component of a table. A row consists of a sequence of values, one for each column of the table.

RR. See *repeatable read*.

S

saved segment. An area of virtual storage that was previously loaded, saved, and assigned a unique name. See also *discontiguous shared segment*.

SBCS. See *single-byte character set*.

SBCS data. Data in which every character is represented by a single byte.

scalar function. An SQL operation that produces a single value from another value and is expressed as a function name followed by a list of arguments enclosed in parentheses.

scale. The number of digits in the fractional part of a number.

schema. The set of statements, expressed in data definition language, that completely describe the structure of a database. SCHEMA is a Database Services Utility command that allows you, under the specified authorization ID, to read the text of a schema and execute the statements in it.

search condition. A criterion for selecting rows from a table. A search condition consists of one or more predicates.

section location table (SLT). Directory of sections and their corresponding statements in a package.

select-list. The column names specified by an SQL SELECT statement.

select-statement. A query that can be directly specified in a DECLARE CURSOR statement, or prepared and then referenced in a DECLARE CURSOR statement. A select-statement is a fullselect that also optionally contains ORDER BY or UPDATE clauses.

self-referencing row. A row that is a parent of itself. Not directly supported by the DB2 Server for VSE & VM database manager.

self-referencing table. A table that is a parent and a dependent in the same referential constraint. Not directly supported by the DB2 Server for VSE & VM database manager.

server-name. A name up to 18 characters that uniquely identifies and fully qualifies a database.

set null. A delete rule that allows the *parent row* to be deleted and automatically sets to null the nullable *foreign key* columns in all *dependent rows*. Do not confuse with the ISQL SET NULL command.

SFS directory. See *shared file system directory.*

share lock. A lock that limits concurrently executing application processes to read-only operations on row data.

shared file system directory (SFS directory). A part of CMS that allows users to organize their files into groups known as directories, and to selectively share those files and directories with other users.

shared segment. An area of virtual storage that was previously loaded, saved, and assigned a unique name. The segment or segments can contain only read-only data or reentrant code that many users can share. See also *discontiguous shared segment*. Also called *DCSS*.

shift-in character. A special control character (X'0F') used in EBCDIC systems to denote that the following bytes represent SBCS characters. See *shift-out character*.

shift-out character. A special control character (X'0E') used in EBCDIC systems to denote that the following bytes (up to the next shift-in control character) represent DBCS characters.

short string. A fixed-length or a varying-length string whose maximum length is less than or equal to 254 bytes (127 double-byte characters).

single-byte character set (SBCS). A set of characters in which each character is represented by 1 byte. National languages such as English or French, and computer languages such as EBCDIC or ASCII use single-byte character sets.

single user mode. A mode of operation in which the database manager and one application run in the same partition. No other application programs or users can access the database at the same time. Contrast with *multiple user mode*.

SNA. See *Systems Network Architecture.*

socket. (1) An endpoint for communication between processes or applications. (2) A pair consisting of TCP port and IP address, or UDP port and IP address.

special register. A storage area that is defined for an application process by the database manager and is used to store information that can be referenced in SQL statements. Examples are USER and CURRENT DATE.

SPM. See *sync point manager*.

SQL (Structured Query Language). See *Structured Query Language*.

SQL92. A term that refers to the combination of the following standards:

- ISO (International Standards Organization) 9075-1992(E)
- ANSI (American National Standard for Information Systems) X3.135-1992
- FIPS (Federal Information Processing Standards) publication 127-2

These documents list more than one level of conformance. The levels are Entry, Transitional (FIPS only), Intermediate, and Full SQL. SQL92 as used by DB2 Server for VSE & VM refer to the Entry level.

SQL comment. Any text that follows two consecutive hyphens (--) on one line of a static SQL statement in an application program or DBS Utility, or in the command portion of a DBS Utility command. Compare with *host language comment*.

SQL communication area (SQLCA). A set of variables that provides an application program with information about the execution of its SQL statements.

SQL descriptor area (SQLDA). A set of variables that is used to provide description information in the execution of certain SQL statements. It may be used to describe columns, input variables, or output variables. The SQLDA is used with dynamic SQL.

SQL object. See *object*.

SQL return code. See *SQLCODE* and *SQLSTATE*.

SQLCA. See *SQL communication area (SQLCA)*.

SQLCODE. A code set by the database manager after an SQL statement is executed to indicate the success or failure of the SQL statement. The value returned in the SQLCODE is specific to the DB2 Server for VSE & VM database managers. Contrast with *SQLSTATE*. See also *SQL communication area*.

SQLDA. See *SQL descriptor area (SQLDA)*.

SQLSTATE. A code set by the database manager after an SQL statement is executed to indicate the success or failure of the SQL statement. The value returned in the SQLSTATE is common to the SAA-participating database products. See also *SQLCODE* and *SQL communication area*.

SQL/DS. See *Structured Query Language/Data System*.

SQLDS protocol. A private flow used for communication between 1) a DB2 Server for VM application requester and a DB2 Server for VM application server, 2) a DB2 Server for VSE application requester and a DB2 Server for VM application server via Guest Sharing, 3) a DB2 Server for VSE application requester and a DB2 Server for VSE application server residing in the same VSE machine as the DB2 Server for VSE application requester. Contrast with *remote unit of work protocol*.

statement. An instruction in a program or procedure. A language construct that represents a step in a sequence of actions. Contrast with *command*.

static SQL. SQL statements that are embedded within a program, and are prepared during the program preparation process before the program is executed. After being prepared, the statement itself does not change (although the values of host variables specified by the statement may change).

storage pool. A specific set of available storage areas. These areas are used by the database administrator to control storage of the database. A storage pool contains one or more dbspaces.

stored procedure. A user-written application that is compiled and stored at the server.

stored query. An SQL statement stored in a database that can be recalled by typing a preassigned name.

Stored Procedure Handler. A DB2 Server for VSE & VM supplied application that runs in the Stored Procedure Server. It is the interface between the database manager and the stored procedure.

Stored Procedure Server. In VM, a virtual machine in which a stored procedure runs. In VSE, a partition in which a stored procedure runs.

stream socket. A reliable connection oriented service. Data is sent without errors or duplication and is received in the same order as it is sent.

string. See *character string* or *graphic string*.

Structured Query Language (SQL). A language for managing data in a relational database. Many non-IBM relational database products use the Structured Query Language.

Structured Query Language/Data System (SQL/DS). Pertaining to the IBM licensed program for the VM and VSE environments. For Version 5 Release 1, the product name (SQL/DS) has been changed to DB2 Server for VSE & VM.

subquery. A subselect used within a predicate. For example, a select-statement within the WHERE or HAVING clause of another SQL statement.

subselect. A form of query that does not include the ORDER BY clause, the UPDATE clause, or UNION operators.

substitution character. A unique character that is substituted during character conversion for any characters in the source coding representation that do not have a match in the target coding representation.

subtype. A specification that indicates how to interpret character data to the database manager. Subtypes enable character columns to be used for bit data, SBCS data, or mixed data.

sync point manager (SPM). This system function is responsible for coordinating two-phase commit activity. That is, the sync point manager ensures that updates to multiple sites are either all committed or all rolled back.

sync point tree. A method used to conceptually organize all the protected conversations that are coordinated by a sync point manager in a transaction. The sync point tree consists of nodes that contain the targets of protected conversations.

synonym. A user's alternative name for a table or view.

system communications directory. A CMS communications directory that resides at a system-wide or TSAF collection-wide location. See *CMS communications directory*.

Systems Network Architecture (SNA). The IBM architecture that describes a logical structure, format, protocol, and operational sequence for transmitting information units through a network. It also controls the configuration and operation of a network.

T

table. A named data object consisting of a specified number of columns and any number of unordered rows.

table designator. A column name qualifier that designates a specific object table. This can be a table or view name, a *synonym* or a *correlation name*.

TCP. Transmission Control Protocol

TCP/IP. Transmission Control Protocol/Internet Protocol

task-related user exit (TRUE). Allows a CICS transaction to access an external CICS resource, such as a database, that would not otherwise be available to the CICS system.

TID. Tuple identifier. An internal identification of a row (tuple).

time. A three-part value that designates a time of day in hours, minutes, and seconds.

time duration. A value that represents a number of hours, minutes, and seconds.

timestamp. A seven-part value that consists of a date and time, expressed in years, months, days, hours, minutes, seconds, and microseconds.

timestamp duration. A value that represents a number of years, months, days, hours, minutes, seconds, and microseconds.

token. The basic syntactic unit of a computing language. A token consists of one or more characters, excluding the blank character and the characters within a string constant or delimited identifier.

Transparent Services Access Facility (TSAF). A component of VM that handles communication between systems by letting APPC/VM paths span multiple VM systems. TSAF lets a source program connect to a target program by specifying a name identified by the target program, instead of an authorization ID and node ID.

truncation. The deletion or omission of a leading or trailing portion of a string in accordance with specified criteria. The termination of a computation process, before its normal conclusion or natural termination, if any, and in accordance with specified rules.

TRUE. See *task-related user exit*.

TSAF. See *Transparent Services Access Facility*.

TSAF collection. A group of VM processors, each with a TSAF virtual machine, connected by channel to channel, binary synchronous lines, or LANs.

U

UCS. Universal Character Set

UCS-2. Unicode (UCS-2) is the two-byte version of the ISO/IEC 10646-1 standard. It is the Basic Multilingual Plane (BMP) of 10646 -- the only part of the 10646 standard which is currently defined.

UDP. User Data Protocol.

uncommitted read (UR). An isolation level that allows, for read-only operations, (1) any row that is read during the unit of work to be changed by other application processes and (2) any row that was changed by another application process to be read even if the change has not been committed by that application process. For other operations, the rules of CS apply. Read-only operations are SELECT INTO, FETCH with read-only cursor, and subselect used in a subquery.

UNION. An SQL operation that combines the results of two subselects. The UNION operation is used to merge lists of values obtained from several tables.

unique constraint. One or more non-nullable columns that uniquely identify each row in a table. These columns are identified as a unique constraint in the table definition. A unique constraint is similar to a primary key, but cannot be referenced by a foreign key. A table may have more than one unique constraint.

unique index. An index that ensures that no identical key values are stored in a table.

unique key. A key that is constrained so that no two of its values are equal.

unit of recovery. See *logical unit of work.*

unit of recovery descriptor (URD). Describes a unit of recovery about which an external resource manager may be in-doubt owing to a connection failure between CICS and the resource manager. When CICS is unable to complete a syncpoint request to an external resource manager such as DB2 Server for VM, it records the state of the LUW by creating an URD.

unit of work. See *logical unit of work (LUW).*

unlike. Pertaining to relational database management systems that are different products (for example, the DB2 Server for VSE and DB2 UDB for OS/390). Contrast with *like*.

update rule. A condition enforced by the database manager that must be met before a column can be updated.

user communications directory. A CMS communications directory that resides on a user's virtual machine. See *CMS communications directory*.

user ID. A string of characters that uniquely identifies a user to a system. Contrast with *authorization ID*.

user machine. A virtual machine containing the user's application program and an application requester.

UR. See *uncommitted read*.

URD. See *unit of recovery descriptor*.

V

value. Smallest unit of data manipulated in SQL.

variable. A data element that can assume any of a given set of values. Contrast with *constant*.

varying-length string. A character or graphic string whose length can vary from zero up to a specified limit. Contrast with *fixed-length string*.

view. An alternative representation of data from one or more tables. A view can include some or all of the columns contained in the table or tables on which it is defined.

Virtual Machine (VM). A functional simulation of a computer and its associated devices. VM manages the computer's resources in such a way that all workstation users have their own virtual machine. All users can work at their virtual machines as though each is the only person using the real computer.

Virtual Telecommunications Access Method (VTAM®). An IBM licensed program that controls communication and the flow of data in a computer network. It provides single-domain, multiple-domain, and multiple-network capability. VTAM runs under MVS, OS/VS1, VM, and VSE.

VM. See *Virtual Machine (VM)*.

VM/ESA. Virtual Machine/Enterprise Systems Architecture. The 370 Feature addresses a maximum of 16 megabytes of virtual storage per virtual machine. The ESA Feature addresses a maximum of 2 gigabytes of virtual storage per virtual machine.

VSE. Virtual Storage Extended.

VSE/ESA. Virtual Storage Extended/Enterprise Systems Architecture.

VTAM. See *Virtual Telecommunications Access Method*.

W

well-known port. A port number that has been preassigned for specific use by a specific protocol or application. Clients and servers using the same protocol communicate over the same well-known port.

work unit manager (WUM). A component of the DB2 Server for VSE & VM database manager that interfaces between the DRDA component DRRM and the non-DRDA components RDS and DSC.

workstation. A device, usually equipped with a keyboard and display device capable of sending and receiving information. A workstation can be programmable or nonprogrammable. Nonprogrammable workstations are also called nonprogrammable terminals.

WUM. See *work unit manager*.

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