ALLBASE/SQL
Release 3 Release Notes

HP 9000 Computer Systems

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Acknowledgments

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1 Announcements

ALLBASE/SQL is Hewlett-Packard's relational database management system. ALLBASE/SQL includes the interactive SQL interface (ISQL); the C, FORTRAN, PASCAL and COBOL Preprocessors (psqlc, psqlfor, psqlpas and psqlcob respectively); and the utility programs SQLAudit, SQLUtil, SQLGEN, SQLMigrate and SQLMON. An optional component of ALLBASE/SQL is ALLBASE/NET, which you can install by itself to form a runtime client-only configuration, or in addition to the rest of ALLBASE/SQL in a server configuration.

ALLBASE/SQL, version G3, contains several major enhancements providing significant benefits in the following areas:

- String Functions
- Security
- Year 2000 Compatibility
- ODBCLink/SE

The ALLBASE/SQL version numbers for this release are:

- 36217-02A.G3.03 (Series 700 and 800)

OMNIBACK Support Dropped from SQLUtil

ALLBASE/SQL no longer supports OMNIBACK as the backup routine in SQLUtil. Previously, OMNIBACK could be chosen to do the backup and restore operations in SQLUtil by invoking the SET BACKUP OMNIBACK option. SQLUtil now supports only ALLBASE/SQL internal backup mechanism, and it is the default setting.

SQLUtil is modified in the following manner:

- `SET BACKUP` command will not accept OMNIBACK as the keyword. It will fail with the message, "Command not yet implemented. (DBERR 8102)."

- SET will only display the following values for the flags: ECHO_ALL, EXIT_ON_DBERR, and ALLBASE.

- Default backup setting is ALLBASE/SQL internal format. It can also be selected explicitly by SET BACKUP ALLBASE.

2 What's in This Version?

ALLBASE/SQL, version G3 contains several major enhancements providing significant benefits in the following areas:

- String Functions (G3)
- Security (G2)
- Year 2000 Compatibility (G2)
- ODBCLink/SE (G2)

If you are updating from an earlier release of ALLBASE/SQL, refer to the migration information in the "Installation Procedures" section appearing in the chapter "Compatibility and Installation Requirements." To order this product, contact your HP Representative.

A list of ALLBASE/SQL reference manuals for HP-UX is provided in chapter 5.

Features

The following features are contained in G3 and later releases.

String Functions

With the G3 release of ALLBASE/SQL and IMAGE/SQL, the supported SQL syntax has been enhanced to include the following string manipulation functions: `UPPER`, `LOWER`, `POSITION`, `INSTR`, `TRIM`, `LTRIM` and `RTRIM`. These string functions allow you to manipulate or examine the `CHAR` and `VARCHAR` values within the SQL syntax, allowing for more sophisticated queries and data manipulation commands to be formed. These string functions were designed to be compatible with functions specified in the ANSI SQL '92 standard and functions used in ORACLE. In cases where the ANSI SQL '92 standard and the ORACLE functions were not compatible (such as the `LTRIM` and `RTRIM` in ORACLE versus `TRIM` in the ANSI standard), both versions were implemented. The specifications for each of these functions follows.

Function Specification

LOWER

Converts all the characters in *stringexpr* to lower case

   Syntax [LOWER (*stringexpr*)]

UPPER

Converts all the characters in *stringexpr* to upper case

   Syntax [UPPER (*stringexpr*)]

POSITION

Searches for the presence of the string *stringexpr1* in the string *stringexpr2* and returns a numeric value that indicates the position at which *stringexpr1* is found in *stringexpr2*

   Syntax [POSITION (*stringexpr1*, *stringexpr2*)]

INSTR

Searches *stringexpr1* beginning with its nth character for the mth occurrence of *stringexpr2* and returns the position of the character in *stringexpr1* that is the first character of this occurrence. If n is negative, Instr counts and searches backward from the end of *stringexpr1*. The value of m must be positive. The default values of both n and m are 1, meaning Instr begins searching at the first character of *stringexpr1* for the first occurrence of *stringexpr2*. The return value is relative to the beginning of *stringexpr1* regardless of the value of n, and is expressed in characters. If the search is unsuccessful (if *stringexpr2* does not appear m times after the nth character of *stringexpr1*) the return value is 0.

If n and m are not specified the function is equivalent to the ANSI SQL-92 POSITION function, except that the syntax is slightly different.

   Syntax [INSTR (*stringexpr1*, *stringexpr2* [,n [,m]])]

LTRIM

LTRIM function trims the characters specified in *charset* from the beginning of the string *stringexpr*.

   Syntax [LTRIM (*charset*, *stringexpr*)]

RTRIM

RTRIM function trims the characters specified in *charset* from the end of the string *stringexpr*.

   Syntax [RTRIM (*charset*, *stringexpr*)]

TRIM

`TRIM` function allows you to strip the characters specified in *charset* from the beginning and/or the end of the string *stringexpr*. If *charset* is not specified, then blank characters would be stripped from *stringexpr*.

Syntax

```
[ TRIM ({ LEADING | TRAILING | BOTH} (,charset ,stringexpr)]
```

Examples:

Example 1

```
SELECT LOWER (OWNER) || '.' || LOWER (NAME)
FROM SYSTEM.TABLE
WHERE NAME = UPPER ('vendors');
```

Returns "purchdb .vendors "

Example 2

```
SELECT POSITION ('world', 'hello world')
FROM SYSTEM.TABLE
WHERE NAME = UPPER('vendors');
```

Returns the numeric value 7

Example 3

```
SELECT INSTR ('hello world hello world', 'world', 5, 2)
FROM SYSTEM.TABLE
WHERE NAME = UPPER('vendors');
```

Returns the numeric value 18 (starting position of the second occurrence of the string 'world')

Example 4

```
SELECT * FROM SYSTEM.TABLE
WHERE NAME = LTRIM ('?*', 'VENDORS?*???***')
AND OWNER = 'PURCHDB';
```

Returns the system table entry for PURCHDB.VENDORS

Example 5

```
SELECT TRIM (BOTH '?*' FROM '??**?*hello ?* world???*')
FROM SYSTEM.TABLE
WHERE NAME = 'VENDORS';
```

Returns 'hello ?* world'.

Security

Two new authorities have been added to the G2 release of ALLBASE/SQL: MONITOR and INSTALL. These new authorities can be granted to users using the GRANT command, or can be revoked from users using the REVOKE command.

MONITOR Authority

MONITOR authority gives a user the ability to run SQLMON, an on-line diagnostic tool that monitors the activity of an ALLBASE/SQL DBEnvironment. Before this new authority, SQLMON can only be run by the creator of the DBEnvironment (also known as the DBECreator), someone who knows the maintenance word (maint word), or someone who has superuser capability. See the *ALLBASE/SQL Reference Manual* for more details.

INSTALL Authority

INSTALL authority gives a user the ability to use the SQL preprocessors to create an SQL module owned by someone other than themselves, or to use ISQL to install a module owned by someone other than themselves. This is an important capability for those needing to move modules from a development DBEnvironment to a production DBEnvironment. Before this new authority, only a DBA had this ability. See the *ALLBASE/SQL Reference Manual* for more details.

Year 2000 Compatibility

As the end of the century quickly approaches there has been much concern about dates being handled correctly in the twenty-first century. This is particularly an issue for systems and applications that are using a two digit year to express dates. ALLBASE/SQL has always stored dates in a four digit year format which largely eliminates the year 2000 compatibility problem. ALLBASE/SQL applications can be coded using four digit year dates, thus avoiding any ambiguity. However, for existing applications that may allow dates to be entered using a two digit year format, there is still an issue as to how these dates get converted to the ALLBASE/SQL internal format using the TO_DATE function or TO_DATETIME. For example, what date value would the following functions return?

```
TO_DATE('12/31/35','MM/DD/YY')
TO_DATETIME('351231235959','YYMMDDHHMISS')
```

Would these functions evaluate the year as 1935 or 2035?

Solution

When YY is specified in the format specification of either TO_DATE or TO_DATETIME, and if its value of the year specified is less than 50, then the century part of the DATE or DATETIME defaults to 20, otherwise it is set to 19. This behavior can be overridden by setting the environment variable HPSQLsplitcentury to a value between 0 and 100. If the year specified is less than the value of the environment variable HPSQLsplitcentury then the century part is set to 20, otherwise it is set to 19.

For the above example,

Case 1: HPSQLsplitcentury is not set

```
TO_DATE('12/31/35','MM/DD/YY') = 2035-12-31
TO_DATETIME('351231235959','YYMMDDHHMISS') = 2035-12-31 23:59:59
```

Case 2: HPSQLsplitcentury is set to 0

```
TO_DATE('12/31/35','MM/DD/YY') = 1935-12-31
TO_DATETIME('351231235959','YYMMDDHHMISS') = 1935-12-31 23:59:59
```

Case 3: HPSQLsplitcentury is set to 70

```
TO_DATE('12/31/35','MM/DD/YY') = 2035-12-31
TO_DATETIME('351231235959','YYMMDDHHMISS') = 2035-12-31 23:59:59
```

ODBCLink/SE

ODBCLink/SE is a replacement for the current HP PC/API. It is an implementation of Microsoft's Open Database Connectivity (ODBC) interface that enables Microsoft Windows based applications and tools to access ALLBASE/SQL on HP 9000, in a client/server environment. ODBCLink/SE is a part of ALLBASE/SQL.

In this environment, application developers and end-users can take advantage of the PC's graphical user interface (GUI) and processing power, while relying on the security, integrity, and database management capabilities of ALLBASE/SQL and IMAGE/SQL.

HP PC/API with Gupta can co-exist with ODBCLink/SE, but it will no longer be supported, and will not be distributed in HP-UX 11.0 and subsequent releases.

ODBCLink/SE server runs under HP-UX Versions 9.x, 10.x and 11.x on the HP 9000 Series 7xx and 8xx servers. The client side runs under Microsoft Windows 3.1 and 3.11, Windows95, or WindowsNT V3.51 and V4.0. Connection via Winsock is available in both the 16-bit and the new 32-bit version.

The driver can be used in two ways: by direct calls from a Windows program, such as Foxbase, or through an ODBC-compliant application, such as Microsoft Access or Visual Basic.

The ODBC LongVarBinary data type will be supported for binary large objects (BLOBs), such as compressed photographs or document images.

ODBC Level 2 Compliance

ODBCLink/SE is 95 percent ODBC Level 2 compliant. These exceptions are not supported:

- SQLBrowseConnect
- SQLExtendedFetch
- SQLSetPos
- SQLSetStmtOptions
- Scalar functions
- SQL_BIT, SQL_TINYINT, and SQL_BIGINT data types

Client/Server Interface

The networked HP 9000 Series 7xx or 8xx with ALLBASE/SQL provides the relational database environment on the server.

Security is provided by the HP-UX logon system and ALLBASE/SQL.

ODBCLink/SE connects the client to the server with a collection of dynamic link libraries (DLLs) on the client and runs under Microsoft Windows 3.1 and 3.11, Windows95, or WindowsNT 3.51 and 4.0.

Client application requests are routed over the network to an ALLBASE/SQL database on the server, and replies are returned to the client application. A listener process establishes

the connection between the client application and the target database on the server. The listener works with ARPA Services on the HP 9000.

With ODBCLink/SE and application software on the client, you can develop SQL applications, generate reports, and query ALLBASE/SQL on the server. The tested client applications include the following as well as many more:

Table 2-1.

Cognos Axiant	Microsoft Access	Visual Basic
Cognos Impromptu	Microsoft Query	Visual C++
Jetform	Paradox	Visual FoxPro
Lotus 1-2-3	PowerBuilder	

Requirements

- HP 9000 server requirements:

    — HP-UX Version 9.0 or 10.0 (or later)

    — ALLBASE/SQL Version A.G2.01 (or later)

    — ARPA Services must be configured and turned on

- Client requirements:

    — 486 processor at a minimum, preferably a Pentium

    — 8 MB memory at a minimum, preferably 16 MB

    — 5 MB of free disk space

    — Windows 3.1 or 3.11, Windows95, or WindowsNT V3.51 or 4.0

    — Microsoft or WRQ TCP/IP software

- Software provided:

    — Server program for the HP 9000

    — Client programs for both 16 and 32-bit platforms

       When using a 32-bit operating system, you should use the 32-bit driver if possible. However, if you have a 16-bit application running under Win95 or WinNT, you must install the 16-bit version of the driver. On Windows95 or WindowsNT, you can run both the 16 and 32-bit versions of ODBCLink/SE. 16 and 32-bit data-sources are maintained separately and coexist.

    — Dr. DeeBeeSpy from Syware Inc. for tracing calls to the ODBC driver

Migration from HP PC API

A data migration tool is provided to migrate data sources created from HP PC API to ODBCLink/SE. Once the sources are identified, the translation is performed automatically.

Performance Considerations

ODBC access to the server is very fast. You should note the following performance exceptions:

- Reading and sorting a large table may prevent the server from returning control to the client until the entire database has been read and sorted.

- Opening a large table in MS-Access will cause a screen full of data to be displayed and then appear to wait for user input. In many cases, data is still being downloaded to the client. Careful thought needs to be employed before granting ODBC access to large tables on the server.

- Using dynamic substitution parameters speeds up your application, if you are writing your own SQL to do multi-row inserts or updates

- In general, ODBCLink/SE will not complete any request faster than ISQL would, and could be slower due to network overhead.

Supported Functions and Commands

These are the ALLBASE/SQL functions and commands supported by ODBCLink/SE:

- The complete ALLBASE/SQL syntax dynamic SQL
- All SQL functions

You can use the ODBC SQLGetFunctions call to obtain a list of the supported ODBCLink/SE driver functions.

Areas Not Fully Implemented

Some areas of certain functions are not fully implemented. They are as follows:

- SQLColAttributes

  All functions will receive a return value of:

  ```
  Not Implemented
  ```

  except the following supported options:

Table 2-2.

SQL_COLUMN_COUNT	SQL_COLUMN_NAME
SQL_COLUMN_TYPE	SQL_COLUMN_LENGTH
SQL_COLUMN_PRECISION	SQL_COLUMN_SCALE
SQL_COLUMN_DISPLAY_SIZE	SQL_COLUMN_NULLABLE

- SQLSetConnectOptions

  All functions will return this message:

  ```
  Driver not Capable (SQLState S1C00)
  ```

except the following supported options:

Table 2-3.

SQL_AUTOCOMMIT	1=ON (default) 0=OFF
SQL_OPT_TRACE	supported by Driver Manager
SQL_OPT_TRACEFILE	supported by Driver Manager
SQL_TRANSLATE_DLL	supported
SQL_TRANSLATE_OPTION	supported
SQL_TXN_ISOLATION	supported
SQL_TXN_READ_UNCOMMITTED	Read Uncommitted (RU)
SQL_TXN_READ_COMMITTED	Read Committed (RC)
SQL_TXN_REPEATABLE_READ	Repeatable Read (RR)
SQL_TXN_SERIALIZABLE	Repeatable Read (RR)
SQL_TXN_VERSIONING	Not Implemented

- SQLSetStmtOptions are not supported.

    The driver will return either of these messages:

    ```
    Driver not Capable (SQLState S1C00)

    Option value changed (SQLState O1S02)
    ```

Supported Data Types

ODBCLink/SE supports ALLBASE/SQL types.

The following table shows the correspondence between ALLBASE/SQL data types and ODBC data types.

Table 2-4.

ALLBASE/SQL DATA TYPE	ODBC DATA TYPE
CHAR, max length <255	SQL_CHAR
CHAR, max length >=255	SQL_LONGVARCHAR
VARCHAR, max length <255	SQL_VARCHAR
VARCHAR, max length >=255	SQL_LONGVARCHAR
BINARY, length <256	SQL_BINARY
BINARY, length >=256	SQL_LONGVARBINARY
VARBINARY <256	SQL_VARBINARY
VARBINARY >=256	SQL_LONGVARBINARY

Table 2-4.

ALLBASE/SQL DATA TYPE	ODBC DATA TYPE
LONG BINARY	SQL_LONGVARBINARY
LONG VARBINARY	SQL_LONGVARBINARY
INTEGER (32-bit)	SQL_INTEGER
SMALLINT (16-bit)	SQL_SMALLINT
DECIMAL (Internal representation is packed decimal)	SQL_DECIMAL
FLOAT(24), REAL	SQL_REAL
FLOAT(53), DOUBLE PRECISION	SQL_DOUBLE
DATE	SQL_DATE
TIME	SQL_TIME
DATETIME	SQL_TIMESTAMP
INTERVAL	SQL_CHAR

ALLBASE/SQL Storage space for BLOBs should be created using a LONG VARBINARY column.

Stored Procedures

ODBCLink/SE implements all types of ALLBASE/SQL stored procedures, including those which return multiple-format result sets. You can list the stored procedures available to your ODBC session by calling SQLProcedures. Parameter information for stored procedures is obtained by calling SQLProcedureColumns.

Features Specific to ODBCLink/SE

The following is a list of features that are unique or specific to ODBCLink/SE and some details about them:

- Primary key name returned by SQLStatistics

  Most ODBC applications including MS Access, Visual Basic, and PowerBuilder require a unique primary key for a table to be updatable.

- Reading or writing to ALLBASE/SQL LongVarBinary items

  Any file residing on the Hewlett-Packard server can be inserted into an ALLBASE/SQL LongVarBinary field with the INSERT INTO SQL command.

- Maximum number of statements

  ODBCLink/SE supports up to 50 concurrent statements, or cursors, per connection.

  To use multiple statements when you are not writing your own SQL application, tell ODBCLink/SE to have SQLGetInfo report more than one statement per connection.

ALLBASE/SQL Restrictions

These are the ALLBASE/SQL restrictions on the ODBC grammar.

Table 2-5.

STATEMENT	PROGRAMMING CONSIDERATIONS
CREATE TABLE	UNIQUE PRIMARY KEY must follow NOT NULL
DROP TABLE	ALLBASE/SQL does not provide CASCADE or RESTRICT
REVOKE	ALLBASE/SQL does not provide RESTRICT

• ALLBASE/SQL provides a DATETIME data type similar to TIMESTAMP.

• ALLBASE/SQL does not implement optimistic locking.

  Optimistic locking means that the DBMS does not lock data until just before an update is made, thus improving concurrency because locks are not held for long.

ANSI Character Set

The HP 9000 uses the default ROMAN8 character set. Most applications running under Microsoft Windows use the 8-bit ANSI (ISO 8859/1) character set to provide support for Western European languages (including American). The first 127 characters are the same for both ROMAN8 and ANSI character sets, only the extended and special characters are different.

If your client application uses these extended or special characters, then the data from the server must be converted from ROMAN8 to ANSI, and the data returning to the server must be converted from ANSI to ROMAN8. A translation DLL has been provided to accomplish this task.

Unsupported ALLBASE/SQL Statements

There are several reasons why some ALLBASE/SQL statements are not supported in the ODBCLink/SE environment:

• ODBCLink/SE does not support embedded SQL, therefore statements that work only with embedded SQL are not supported.

• Statements that relate to functions, such as connection, that have been replaced by functions resident on the client.

• Some functions are best restricted to the DBA; statements which control these functions are accessible only through Interactive Structured Query Language (ISQL) on the server.

• ODBCLink/SE internally prepares an SQL statement to be dynamically preprocessed. Therefore, you cannot use some statements such as `EXECUTE IMMEDIATE`.

Statements that Work Only with Embedded SQL

Client application software that accesses ALLBASE/SQL databases through ODBCLink/SE does not support embedded SQL. The application software calls the database functions directly; there is no need for preprocessing.

Because the following ALLBASE/SQL statements function only with embedded SQL, they are not supported by ODBCLink/SE:

Table 2-6.

CLOSE CURSOR	BEGIN DECLARE SECTION
DECLARE CURSOR	DESCRIBE
END DECLARE SECTION	EXECUTE
EXECUTE IMMEDIATE	FETCH
INCLUDE	OPEN
PREPARE	REFETCH
SQLEXPLAIN	WHENEVER

Statements Replaced by Functions on the Client

Some ALLBASE/SQL functions have been moved from the server to the client with ODBCLink/SE

The following ALLBASE/SQL statements are not supported because they have been replaced by other functions resident on the client:

Table 2-7.

CONNECT	DISCONNECT
RELEASE	RESET
SET CONNECT	SET MULTITRANSACTION
START DBE	START DBE NEW
START DBE NEWLOG	STOP DBE

Utilities

The utilities provided with ODBCLink/SE do the following:

- Test and verify that the driver is functioning correctly.
- Determine which version of ODBCLink/SE is running.
- Delete unwanted drivers.
- Delete unwanted translation DLLs

Tools on the Server

The following server tools are available to allow monitoring of the ODBCLink/SE listener process:

- HP GlancePlus/UX Program

- HP-UX Process Status (ps) Command

- Monitoring ALLBASE/SQL Activity with SQLMON

- ODBCUTSE for testing/troubleshooting the host connection or table access

- The parameter to have error messages logged to the ODBCLOG files, "Trace SQL calls on the server."

Tools on the Client

The tools on the client that you can use to monitor or troubleshoot the ODBCLink/SE client process:

- The configuration parameter, "Trace ODBC calls on the client" is used to log information to the ODBCLink.LOG file.

- The application, Dr. DeeBeeSpy, is used to trace calls to the ODBC driver. Dr. DeeBeeSpy is shipped with ODBCLink/SE.

ODBCLink

ODBCLink/SE is a "Special Edition" of M.B. Foster Associates Limited ODBCLink option of DataExpress. ODBCLink, the full product, offers the following features in addition to the features of ODBCLink/SE:

- Support for serial and/or modem connections

- Read/Write access to CISAM files

- Read/Write access to byte stream files

- Support for PowerHouse dictionaries including PDL and PowerHouse subfiles

- Access to Oracle databases

- Access to Multiple DBEnvironments

- Access to procedures in a proclib, via remote procedure call

- Enhanced security via field level access controls

You may obtain an upgrade from ODBCLink/SE to the full product ODBCLink by contacting M.B. Foster Associates at 1-800-ANSWERS, (800-267-9377) or 613-448-2333, or by visiting the M.B. Foster website at www.mbfoster.com.

Documentation

For further information on ODBCLink/SE, refer to the *ODBCLink/SE Reference Manual*.

3 Compatibility and Installation Requirements

Software Requirements

ALLBASE/SQL is bundled with HP-UX systems and requires Software Distributor(SD) as a prerequisite for the Software to be installed.

Hardware Requirements

ALLBASE/SQL is supported on HP 9000 Series 700 and 800 computer systems.

Operating System Platform Requirements

ALLBASE/SQL is supported on HP 9000 Series 700 and 800 computer systems running on the HP-UX based operating system. ALLBASE/SQL is also supported on HP 3000 computer systems running MPE/iX.

Disk Space Requirements

To install and operate ALLBASE/SQL, you need at least 4 megabytes of memory and 10 megabytes of swap space for a single-user DBEnvironment. Allow 3.5 megabytes of swap space for each additional concurrent ALLBASE/SQL user in a multiuser DBEnvironment.

- /opt Directory Space

The following is an estimate of the amount of disk space required in /opt to install each fileset in the ALLBASE/SQL product (figures are *approximate*):

Table 3-1. Disk Space Required by ALLBASE/SQL FileSets

Fileset	Name	700/800 Space
RunTime	AB-RUN	25.2 Mbytes
Development	AB-DEV	8.0 Mbytes
AB-NET	AB-NET	0.75 Mbytes
AB-SAMPLEDB	AB-SAMPLEDB	1.2 Mbytes

About two thirds of the total is in /opt/allbase/bin and one third is in /opt/allbase/lib.

- Local Directory Space

The following space is required in a local directory ($local) to create a copy of the sample DBEnvironment PartsDBE and to preprocess, compile, and link the sample programs:

Table 3-2. Disk Space Required for Copies of Sample DBEnvironment

Pathname	700/800 Space
$local/hpsql/sampledb	2.6 Mbytes
$local/hpsql/programs	15 Mbytes

Files in the ALLBASE/SQL Filesets:

Table 3-3. AB-RUN Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
4555	hpdb	bin	/opt/allbase/bin/dumpshm	support tool
555	bin	bin	/opt/allbase/bin/isql	ISQL program file
4555	hpdb	bin	/opt/allbase/bin/sqlgen	SQLGEN program file
4555	hpdb	bin	/opt/allbase/bin/sqlmig	SQLMigrate program file
4555	hpdb	bin	/opt/allbase/bin/sqlutil	SQLUtil program file
555	bin	bin	/opt/allbase/bin/sqlver	SQLVER program file
4555	hpdb	bin	/opt/allbase/bin/sqlmon	SQLMON program file
4555	hpdb	bin	/opt/allbase/bin/sqlcheck	SQLCheck program file
555	bin	bin	/opt/allbase/bin/sqlaudit	SQLAudit program file
444	bin	bin	/opt/allbase/bin/odbcse/odbccl16	Self-extracting file, all 16-bit client software
444	bin	bin	/opt/allbase/bin/odbcse/odbccl32	Self-extracting file, all 32-bit client software
6544	bin	bin	/opt/allbase/bin/odbcse/odbclnse	The listener program
4455	bin	bin	/opt/allbase/bin/odbcse/odbcutse	Utility for support purposes
444	bin	bin	/opt/allbase/lib/hpsqlcat	message catalog file
4555	hpdb	bin	/opt/allbase/lbin/hpsqlproc	ALLBASE/SQL program file
444	bin	bin	/opt/allbase/lib/isqlwel	welcome message banner
444	bin	bin	/opt/allbase/lib/libsql.a	ALLBASE/SQL library file
444	bin	bin	/opt/allbase/lib/nls/C/sqlver.cat	sqlver message catalog file
444	bin	bin	/opt/allbase/lib/nls/C/hpsqlcat	message catalog file
444	bin	bin	/opt/allbase/lib/nls/C/isqlwel	welcome message banner
4555	hpdb	bin	/opt/allbase/lbin/sqldaemon	process cleanup daemon

Table 3-4. AB-DEV Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
555	bin	bin	/opt/allbase/bin/psqlc	C preprocessor program file
555	bin	bin	/opt/allbase/bin/psqlcbl	COBOL preprocessor program file

Table 3-4. AB-DEV Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
555	bin	bin	/opt/allbase/bin/psqlfor	FORTRAN preprocessor program file
555	bin	bin	/opt/allbase/bin/psqlpas	Pascal preprocessor program file
444	bin	bin	/opt/allbase/include/sqlcall.c	COBOL preprocessor interface source file
444	bin	bin	/opt/allbase/include/sqlcall.cbl	COBOL preprocessor system file
444	bin	bin	/opt/allbase/include/sqlcall.h	COBOL preprocessor interface header file

Table 3-5. AB-NET Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
4544	root	bin	/opt/allbase/bin/hpdaARPA	listener daemon for ARPA
444	bin	bin	/opt/allbase/lib/hpsqlcat	message catalog file
555	bin	bin	/opt/allbase/bin/isql	ISQL program file
444	bin	bin	/opt/allbase/lib/isqlwel	welcome message banner
444	bin	bin	/opt/allbase/lib/libsql.a	ALLBASE/SQL library file
555	bin	bin	/opt/allbase/bin/netutil	ALLBASE/NET utility program file
444	bin	bin	/usr/lib/nls/C/hpsqlcat	message catalog file
444	bin	bin	/usr/lib/nls/C/isqlwel	welcome message banner

Table 3-6. AB-SAMPLEDB Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
444	bin	bin	/opt/allbase/lib/readme	text file
Files installed in /opt/allbase/lib/hpsql/				
444	bin	bin	readme	text file
555	bin	bin	setup	executable script
555	bin	bin	sqlsetup	executable script
444	bin	bin	sampledb/Album	data file
444	bin	bin	sampledb/CREAINDX	command file

Table 3-6. AB-SAMPLEDB Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
444	bin	bin	sampledb/CREASEC	command file
444	bin	bin	sampledb/CREATABS	command file
444	bin	bin	sampledb/Clubs	data file
444	bin	bin	sampledb/Events	data file
444	bin	bin	sampledb/Inventor	data file
444	bin	bin	sampledb/LOADTABS	command file
444	bin	bin	sampledb/Members	data file
444	bin	bin	sampledb/OrderIte	data file
444	bin	bin	sampledb/Orders	data file
444	bin	bin	sampledb/Parts	data file
444	bin	bin	sampledb/Report1	data file
444	bin	bin	sampledb/STARTDBE	command file
444	bin	bin	sampledb/SupplyBa	data file
444	bin	bin	sampledb/SupplyPr	data file
444	bin	bin	sampledb/TestData	data file
444	bin	bin	sampledb/Title	data file
444	bin	bin	sampledb/Vendors	data file
444	bin	bin	sampledb/creajob	creation script
444	bin	bin	sampledb/gengen	command file
444	bin	bin	programs/TMPLC1	Up and Running template
444	bin	bin	programs/TMPLC2	Up and Running template
444	bin	bin	programs/TMPLC3	Up and Running template
444	bin	bin	programs/TMPLCA	Up and Running template
444	bin	bin	programs/TMPLCB	Up and Running template
444	bin	bin	programs/cex10a	C program
444	bin	bin	programs/cex10b	C program
444	bin	bin	programs/cex12	C program

Table 3-6. AB-SAMPLEDB Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
444	bin	bin	programs/cex2	C program
444	bin	bin	programs/cex5	C program
444	bin	bin	programs/cex7	C program
444	bin	bin	programs/cex8	C program
444	bin	bin	programs/cex8a	C program
444	bin	bin	programs/cex9	C program
444	bin	bin	programs/cobex10a	COBOL program
444	bin	bin	programs/cobex10b	COBOL program
444	bin	bin	programs/cobex12	COBOL program
444	bin	bin	programs/cobex2	COBOL program
444	bin	bin	programs/cobex5	COBOL program
444	bin	bin	programs/cobex7	COBOL program
444	bin	bin	programs/cobex8	COBOL program
444	bin	bin	programs/cobex8a	COBOL program
444	bin	bin	programs/cobex9	COBOL program
444	bin	bin	programs/forex12	FORTRAN program
444	bin	bin	programs/forex2	FORTRAN program
444	bin	bin	programs/forex5	FORTRAN program
444	bin	bin	programs/forex7	FORTRAN program
444	bin	bin	programs/forex8	FORTRAN program
444	bin	bin	programs/forex8a	FORTRAN program
444	bin	bin	programs/forex9a	FORTRAN program
444	bin	bin	programs/forex9b	FORTRAN program
444	bin	bin	programs/pasex10a	Pascal program
444	bin	bin	programs/pasex10b	Pascal program
444	bin	bin	programs/pasex12	Pascal program
444	bin	bin	programs/pasex2	Pascal program

Table 3-6. AB-SAMPLEDB Fileset

MODE	OWNER	GROUP	FILENAME	DESCRIPTION
444	bin	bin	programs/pasex5	Pascal program
444	bin	bin	programs/pasex7	Pascal program
444	bin	bin	programs/pasex7l	Pascal program
444	bin	bin	programs/pasex8	Pascal program
444	bin	bin	programs/pasex8a	Pascal program
444	bin	bin	programs/pasex9	Pascal program

System Configuration

This section discusses the system configurable parameters which directly affect the execution of ALLBASE/SQL. These parameters are part of the system configuration and can be modified using SAM. Please refer to the *System Administration Tasks HP 9000* for more information. You may need to increase parameter values to meet your needs.

The system parameters namely semmni, semmns, shmmni and shmseg and their uses by ALLBASE/SQL are explained in the following table:

Table 3-7. System Parameters Used By ALLBASE/SQL

Parameter	700/800 Default	Purpose
maxuprc	50	Specifies the maximum number of processes that a user may have. When an application connects to a DBEnvironment, a process is spawned. In addition, each active DBEnvironment has one database daemon process running.

semmni	64	Specifies the number of sets (identifiers) of semaphores available to the users. The semmni should be set to:
		
		`semmni =  NDBE + (2 * NCON)`
		
		`where: NDBE  =  number of distinct DBEnvironments`
		`       NCON  =  number of DBEnvironment connections`
		`                 (maximum of 32 per user application)`
		
		See the *System Administration Tasks HP 9000* for the interactions of the semmni parameter with other system parameters.

semmap	formula at right	Specifies the maximum number of semaphore maps. The system default is:
		
		`semmap = ((semmni + 1) / 2 + 2)`
		
		`    where: semmni =  number of semaphore identifiers`
		
		Note: If semmap is set too low, the following message appears on the console:
		
		`danger: mfree map overflow`

Table 3-7. System Parameters Used By ALLBASE/SQL

Parameter	700/800 Default	Purpose

semmns	64	Specifies the maximum number of semaphores. To determine the maximum number of semaphores allowed, use the following formula:
		
		`semmns = (2 * NDBE) + (3 * NCON)`
		
		`where: NDBE  =  number of distinct DBEnvironments`
		`       NCON  =  number of DBEnvironment connections`
		`                (maximum of 32 per user application)`

shmseg	12	Specifies the maximum number of shared memory segments to which one process can simultaneously attach. An ALLBASE/SQL user application will be attached one shared memory segment for every connection to a DBEnvironment. The maximum number of DBEnvironment connections for a user application is 32. This shared memory segment allows communication between the user application and the ALLBASE/SQL DBCore process.

shmmni	100	Specifies the maximum number of shared memory segments that can be allocated by the system. To determine how many shared memory segments you will need, use the following formula:
		
		`shmmni = NDBE + NCON`
		
		`where: NDBE  =  number of distinct DBEnvironments`
		`       NCON  =  number of DBEnvironment connections`
		`                (maximum of 32 per user application)`

shmmax	64 Mbytes	Specifies in hexadecimal the maximum number of bytes in a shared memory segment. (Decimal values are given in parentheses). The total size of the shared memory segment specified by the parameters of the SQL START DBE command or the SQLUtil ALTDBE command cannot exceed this maximum. For ALLBASE/SQL, the shared memory used by a particular DBEnvironment comprises the Number of Runtime Control Block Pages, the Number of Log Buffer Pages, the Number of Data Buffer Pages, and the Number of Transaction Block Buffer Pages.

There are several other system parameters which are not directly affected by the execution of ALLBASE/SQL, but may be indirectly affected by an ALLBASE/SQL user's application. Refer to the *System Administration Tasks HP 9000* for information on memory allocation and system reconfiguration. Refer also to "Estimating Shared Memory Requirements" in the "Physical Design" chapter of the *ALLBASE/SQL Database Administration Guide* for further information on system parameters.

Installation Procedures

ALLBASE/SQL is auto-installable. However, if you are updating from an earlier release of ALLBASE/SQL, you must perform the ALLBASE/SQL migration to migrate your DBEnvironments to the G4 format. The method used depends upon the version of ALLBASE/SQL you are currently running. The version options are:

- Updating from G0, G1 or G2 using SQLINSTL

- Updating from E0, E1, or F0 using SQLMigrate

- Updating from versions prior to E0—contact your Hewlett-Packard Response Center for procedures if updating from these old versions.

Backing Up your DBEnvironment and Software

Unless this is a new installation, create a backup of each DBEnvironment and the ALLBASE/SQL software prior to updating the operating system and ALLBASE/SQL software.

Do the following for each DBEnvironment that will be migrated:

1. Start ISQL and issue a `START DBE` statement. This ensures that the DBEnvironment is logically consistent. Type the following:

   ```
   isql
   isql=> START DBE 'DBEnvironmentName'

   isql=> exit
   ```

2. Start SQLUtil and issue the `STORE` command to backup each DBEnvironment. Type the following:

   ```
   sqlutil
   >>store
   WARNING:  If you are using STORE to support RollForward
             .
             .
             .
   Do you wish to proceed (y/n)?: y
   DBEnvironment Name: DBEnvironmentName
   Maintenance Word: MaintenanceWord
   To File Name: TAPE
   ```

NOTE   Log files are not stored using this command.

See the *ALLBASE/SQL Database Administration Guide* appendix, "SQLUtil," for more information.

3. Backup the ALLBASE/SQL software. Refer to the `Release Notes` for your current release of ALLBASE/SQL for a complete listing of files.

4. If you are updating the operating system, make sure you have a backup of the operating

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system. Refer to the *System Administration Tasks HP 9000* for information on how to do a system backup.

Installing the Software

1. Install the appropriate version of the HP-UX operating system. Refer to the documentation on *Installing and Updating HP-UX* for information. If you are not installing a new operating system, omit this step.

2. Install the G3 version of the ALLBASE/SQL software. Refer to "HP-UX SWINSTALL Utility" later in these *Release Notes*.

3. If you are updating from an earlier version, proceed to the appropriate section for your older version.

Updating from Versions G0, G1 or G2 Using SQLINSTL

If your release of ALLBASE/SQL is G0, G1 or G2, execute the SQLINSTL script to migrate to the current version G3. ALLBASE/SQL has added new views and modified some existing views. The SQLINSTL script is provided to make it easy for a database administrator to migrate between versions of a release (such as G3.02 to G3.03) or minor releases (such as G2 to G3). Using SQLINSTL ensures that you have access to the most recent version of the SYSTEM and CATALOG views, and it also uses `VALIDATE FORCE` statements to revalidate all stored sections.

If SQLINSTL is not executed on a DBEnvironment after installing a new version of ALLBASE/SQL, stored sections may not be properly revalidated causing run-time errors. Revalidating stored sections at run-time during production hours can also cause concurrency problems due to exclusive locks placed on the system catalog. You must execute SQLINSTL whenever a new version of ALLBASE/SQL is installed unless you need to use SQLMigrate. SQLINSTL does not need to be executed if SQLMigrate is being executed to migrate between major releases.

Example using SQLINSTL:

```
HP-UX    /usr/bin/isql
         isql=> start /usr/lib/allbase/hpsql/sqlinstl (mydbe);
         isql=> exit;
```

Read the SQLINSTL file on your system for more information.

If you are using `ARCHIVE MODE LOGGING`, you must make a backup of the DBEnvironment after using SQLINSTL. This backup must be used if rollforward recovery is to be performed at some point in the future.

NOTE   Customers installing G3 cannot apply rollforward recovery to a backup created using the G0 version (or earlier) of ALLBASE/SQL.

Updating from Versions E0, E1, or F0 Using SQLMigrate

If your old release of ALLBASE/SQL is E0, E1, or F0, use SQLMigrate to migrate to version G3. A backup of the DBE should be done prior to running SQLMigrate. The

procedures below also appear in the *ALLBASE/SQL Database Administration Guide*.

Use the following procedure to convert a DBEnvironment from E0, E1, or F0 format to the G3 format:

1. Enter the command:

   ```
   :sqlmig
   ```

2. For each DBE that is to be migrated, check for potential errors during the migration by using the PREVIEW command, which follows:

   ```
   SQLMIGRATE=> PREVIEW 'DBEnvironmentName' FORWARD;
   ```

NOTE   Make sure that you have a backup of the DBEnvironment prior to issuing the PREVIEW command since PREVIEW is not a read-only command.

During the PREVIEW check, you may receive messages stating that there is not enough space in the SYSTEM DBEFileSet. If this occurs, use the following commands to create a new DBEFile and add it to the SYSTEM DBEFileSet:

```
SQLMIGRATE=> CREATE DBEFILE DBEFileName
    WITH PAGES = DBEFileSize, NAME = 'SystemFileName';
```

```
SQLMIGRATE=> ADD DBEFILE DBEFileName TO DBEFILESET SYSTEM;
```

The syntax of these commands is the same as in ISQL.

Repeat this step until no errors are encountered and SQLMigrate returns the following message:

```
The proposed migration should be successful
```

3. Issue the MIGRATE command as follows:

   ```
   MIGRATE=> MIGRATE 'DBEnvironmentName' FORWARD;
   ```

   When the forward migration has successfully completed, SQLMigrate purges the old log files and performs a START DBE NEWLOG to create a new log file using the parameters stored in the DBECON file. This is shown in the following example.

   ```
   START DBE NEWLOG BEGINNING (TUE, JUL 09, 1996, 4:12 PM)

   START DBE 'DBENAME' NEWLOG
      BUFFER = (100,24),
      TRANSACTION = 50,
      MAXIMUM TIMEOUT = 3600 SECONDS,
      DEFAULT TIMEOUT = 30 SECONDS,
      RUN BLOCK = 37

      LOG DBEFILE log1 WITH PAGES = 250,
          NAME = 'DBELog1';

   START DBE NEWLOG SUCCEEDED (TUE, JUL 19, 1996, 4:13 PM)
   ```

4. If the START DBE NEWLOG (issued by SQLMigrate) should fail for any reason, you must run ISQL and issue the START DBE NEWLOG command from ISQL.

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5. To enable archive-mode logging, run SQLUtil and issue the `STOREONLINE` command.

6. Exit SQLMigrate:

    `SQLMIGRATE=>` **`EXIT;`**

7. Make a backup of the migrated DBEnvironment immediately after the START DBE NEWLOG statement completes. SQLUtil STOREONLINE should be used for switching on archive logging and STORE for keeping up non-archive logging.

8. Start SQLUtil (if you are not already in SQLUtil from the previous step) and issue the `SHOWDBE` command to check the parameters of the new version of the DBEnvironment. Use the `ALTDBE` command if changes are necessary. Use the `SHOWLOG` command to display current log information.

9. Exit SQLUtil. The DBEnvironment should be ready for access.

Installation Information and Recommendations

Before upgrading or installing ALLBASE/SQL, ensure that your system meets the requirements described in this section:

- HP-UX Version
- ALLBASE/SQL Configuration
- The User hpdb
- The ALLBASE/SQL Filesets
- RunTime ALLBASE/SQL Considerations
- HP-UX SWINSTALL Utility
- Using SQLVER

HP-UX Version

These release notes are specifically for ALLBASE/SQL Release G3 on HP-UX release 11.0. Please make sure that your version of ALLBASE/SQL is appropriate for your version of HP-UX. If not, you must install the appropriate version of HP-UX on your system in addition to ALLBASE/SQL Release G3.

ALLBASE/SQL Configuration

When running ALLBASE/SQL with a large number of users, increase the configurable parameters accordingly. You can do this when you first create the DBEnvironment or by using SQLUtil. Refer to the "Maintenance" chapter in the *ALLBASE/SQL Database Administration Guide* for more information setting ALLBASE/SQL parameters. See the *ALLBASE/SQL Performance and Monitoring Guidelines* for more information about choosing the optimal values for configurable parameters.

The User hpdb

Before creating or connecting to an ALLBASE/SQL DBEnvironment, make sure there is a special user named *hpdb* with a user id number of 27 and a group id number of 2 on your system. If necessary, add the following line to the /etc/passwd file before invoking the HP-UX SWINSTALL utility to install the ALLBASE/SQL product:

```
hpdb:*:27:2: hpdb ALLBASE/SQL:/usr:/sbin/sh
```

In addition, add user *hpdb* to the group *bin* in the /etc/group file, as in the following example:

```
bin::2:root,rootc,bin,daemon,lp,hpdb
```

The user id number 27 is reserved for the user name *hpdb*, which is required to execute the ALLBASE/SQL program files. It is not required that the *hpdb* user belong to the group *bin*; however, all of the ALLBASE/SQL files are associated with *bin*. If the user id number

27 does not exist on your system, or if a user other than *hpdb* is assigned to this user id number, the security and integrity of your DBEnvironments cannot be guaranteed.

The ALLBASE/SQL program files are owned by the user *hpdb*. Several of the ALLBASE/SQL program files have set the file mode to 4555 which causes the "switch user id bit" to be turned on. Any users executing these ALLBASE/SQL program files have their effective user name changed to *hpdb* while these program files are executing. The user's group name remains the same as the group name the user is associated with in the file /etc/group. All files that are created as part of the database have the file permissions of 600, are owned by *hpdb*, and have the file creator's group association. For example, if user *peter*, who is a member of group *dbsupport*, creates a DBEnvironment named *PartsDBE*, the HP-UX file permissions and ownership for the DBECon file (DBEnvironment configuration file) will appear as follows:

```
-rw-  1 hpdb     dbsupport  12288 Apr 15 17:00 PartsDBE
```

The ALLBASE/SQL Filesets

The number of filesets on your installation tape depends on which bundle of ALLBASE/SQL you have purchased.

ALLBASE/SQL Development bundle has the following filesets:

- ALLBASE-SQL.Development.AB-DEV
- ALLBASE-SQL.Development.AB-NET
- ALLBASE-SQL.Development.AB-RUN
- ALLBASE-SQL.Development.AB-SAMPLEDB

ALLBASE/SQL Runtime bundle has the following filesets:

- ALLBASE-SQL.Runtime.AB-NET,
- ALLBASE-SQL.Runtime.AB-RUN, and
- ALLBASE-SQL.Runtime.AB-SAMPLEDB

ALLBASE/SQL Replicate bundle has this fileset:

- ALLBASE-SQL.Replicate.AB-REPLICATE

You do not need to load the SAMPLEDB fileset. SAMPLEDB is provided as an educational example and is not required for either the runtime or development version of ALLBASE.

Runtime ALLBASE/SQL Considerations

With Release G3, you have the option of installing a runtime version of ALLBASE/SQL. If you are installing only the runtime system, *and* if you have previously installed a complete earlier version of ALLBASE/SQL on your system, you should remove pre-Release G3 ALLBASE/SQL files from your system to ensure that all database files are consistent. Before removing the ALLBASE/SQL pre-Release G3 files, you may want to make a backup copy of them. If the database files are in their original directories, you may have to remove all previously installed ALLBASE/SQL files.

For example, assume that your system currently has ALLBASE/SQL F0.00. Installing the runtime version of ALLBASE/SQL G2 would result in an F0.00 version of the ALLBASE/SQL preprocessors coexisting with a Release G3 version of the runtime system. In this case the preprocessors will not work correctly.

After removing the old files, install your new ALLBASE/SQL package as shown in the section "HP-UX SWINSTALL Utility."

Client-Only Configuration

The AB-NET fileset contains ALLBASE/NET, which is required for remote database access. If you desire a runtime client-only configuration, this is the only fileset you need to install.

Terminating a Database Process

The `kill -9` command, commonly used by a superuser to abort a process, may cause an undetected deadlock condition to occur or other processes connected to the same DBEnvironment to terminate or hang if it is used to abort a database process in a multiuser environment. You should never use the `kill -9` command to abort an ALLBASE/SQL database process in a multi-user environment. Instead, use the TERMINATE USER command in ISQL to terminate a specific SessionID or all sessions for a DBEUserID. Refer to the *ALLBASE/ISQL Reference Manual* for further details.

Remote Database Access

Use ALLBASE/NET to establish remote access to ALLBASE/SQL DBEnvironments.

HP-UX SWINSTALL Utility

The `swinstall` utility is used by system administrator to add optional software to the system and to update the entire system when necessary. For detailed instructions on the use of `swinstall`, refer to the appropriate HP-UX Installation manual for your series.

The `swinstall` command installs the software-selections from a software source (tape) to the local host (root filesystem). The software is configured for use on the target after it is installed.

There are three main steps in the installation process namely:

- **Selection phase**
- **Analysis phase**
- **Install phase**

Type `swinstall` at the command line.

You will be first asked to specify the target or destination of the software. Then you will be asked for the source from where the software will be installed. Fill up the details for Source Host Name and the Source Depot Path from where the software has to be installed. Press OK. You will get the message saying "Reading the Software source." The Software Selection Window then displays the Software bundle that is available with the tape.

Selection Phase

ALLBASE/SQL is available on both S800 and S700 platforms and is bundled as follows:

- B5419AA_APX ALLBASE/SQL Runtime Environment (S800)
- B5421AA_APX ALLBASE/SQL Development Environment (S800)
- B5425AA_APX ALLBASE/SQL Replicate Environment (S800)
- B5415AA_APX ALLBASE/SQL Runtime Environment (S700)
- B5417AA_APX ALLBASE/SQL Development Environment (S700)
- B5423AA_APX ALLBASE/SQL Replicate Environment (S700)
- B5419AA_APZ ALLBASE/SQL Runtime Environment (S800)
- B5415AA_APZ ALLBASE/SQL Runtime Environment (S700)
- B5421AA_APZ ALLBASE/SQL Development Environment (S800)
- B5417AA_APZ ALLBASE/SQL Development Environment (S700)
- B5425AA_APZ ALLBASE/SQL Replicate Environment (S800)
- B5423AA_APZ ALLBASE/SQL Replicate Environment (S700)

NOTE	Your product tape will only contain the bundles that you have ordered.

Select the software bundle that you need to install.

1. Select and highlight the names of software bundles to install by pointing and clicking the left mouse button.

2. Mark the highlighted bundles or products by selecting the Mark For Install item from the Actions menu. You will get the message marked `Yes` under `Marked` column of the Software Selection Screen.

Analysis Phase

The **Analysis Phase** lets you determine if the software can be successfully installed on the system BEFORE it is actually installed. A series of checks are performed on the process and the results are displayed in the window or written to a log file.

1. Open up the Actions pop-up menu of the Software Selection screen.

2. Select the option `Install(Analysis)`. There will be a new pop-up window Install Analysis, when the analysis phase is being carried out.

   Once the Analysis Phase is successful, the confirmation window for Installation appears and waits for you to type `Yes` or `No` to continue the Installation Process.

3. Select `Yes` for installation.

   The Install Window screen appears.

Install Phase

The **Install Phase** is when the actual installation takes place. The Install window allows you to monitor the progress of the operation as the software is loaded and configured.

This completes the process of Installation of ALLBASE/SQL on HP-UX System. To confirm that the installation is successful and no files are missing, refer to "Using SQLVer" below.

Native Language Support Issues

The default user language for ALLBASE/SQL and HP-UX Release 10.0 is **C**.

Using SQLVer

SQLVer allows you to check the version strings of the ALLBASE/SQL files. To verify that the correct files have been installed and that no files are missing, run SQLVer, as shown in this example:

```
% sqlver

-------------------------------------------------------------------------Check
ing AB-RUN(Runtime).
AB-RUN: No missing files.


-------------------------------------------------------------------------Check
ing AB-DEV (Development).
AB-DEV: No missing files.


-------------------------------------------------------------------------Check
ing AB-NET (Net).
AB-NET: No missing files.


----------------------------------------------------------------------
                    ******************
                    This Pass => A.G3.00
                    ******************
0 missing files.
----------------------------------------------------------------------
```

4 What's New in this Release

New Features in G1, G2 and G3

The following table highlights the new or changed functionality added in G1, G2 and G3 releases, and shows you where each feature is documented.

Table 4-1. New Features in ALLBASE/SQL Releases G1 and G2

Ver.	Feature (Category)	Description	Documented in...
G3	String Functions (Usability)	The supported SQL syntax has been enhanced to include the following string manipulation functions: `UPPER, LOWER, POSITION, INSTR, TRIM, LTRIM, AND RTRIM`. These string functions allow you to manipulate or examine the `CHAR` and `VARCHAR` values within the SQL syntax, allowing for more sophisticated queries and manipulation commands to be formed.	In future version of the *ALLBASE/SQL Reference Manual*.
G2	Allow or disallow SQLMON for users. (Usability)	Grants or revokes the ability to run SQLMON for specific users. New attribute for `GRANT` and `REVOKE: MONITOR`.	*ALLBASE/SQL Reference Manual*, GRANT, REVOKE in "SQL Statements."
G2	Allow or disallow authority to create modules. (Usability)	Grants or revokes the ability to create modules for specific users. New attributes for `GRANT` and `REVOKE: INSTALL`.	*ALLBASE/SQL Reference Manual*, GRANT, REVOKE in "SQL Statements."
G2	PC ODBC 16-bit and 32-bit support (Connectivity, Client/Server)	ODBCLINK/SE allows connectivity to ALLBASE and IMAGE/SQL servers from a PC running MS Windows using ODBC.	*ODBCLINK/SE Reference Manual*

Table 4-1. New Features in ALLBASE/SQL Releases G1 and G2

Ver.	Feature (Category)	Description	Documented in...
G2	Year 2000 solution (Standards)	Provides the JCW `HPSQLSPLITCENTURY` to use in setting a value between 0 and 99. This value is used to change the century part of the `DATE` and `DATETIME` functions to override the default of 19.	"Date/Time Functions" in the "Expressions" chapter of the *ALLBASE/SQL Reference Manual.*
G1	New operand to concatenate strings (Standards)	Adds an operand to concatenate character or binary strings in an expression. New operand: ||	*ALLBASE/SQL Reference Manual*, "Expressions."
G1	`RENAME` Column or Table (Usability)	Adds capability of defining a new name for an existing table or column in a DBEnvironment. You cannot rename a table or column that has check constraints or an IMAGE/SQL table. New commands: `RENAME COLUMN`, `RENAME TABLE`.	*ALLBASE/SQL Reference Manual*, `RENAME COLUMN` and `RENAME TABLE` in "SQL Statements."
G1	`CAST` function added to Expression syntax (Usability)	Adds the `CAST` function to allow explicitly converting from one data type to another. It allows conversion between compatible data types and between normally incompatible data types such as `CHAR` and `INTEGER`. New Expression function: *CastFunction.*	*ALLBASE/SQL Reference Manual*, "Cast" in "Expressions."
G1	Syntax added to `VALIDATE` (Usability, Performance)	Automates execution of `COMMIT WORK` after each module or procedures is validated when `WITH AUTOCOMMIT` is used. All sections are revalidated whether valid or invalid when `FORCE` is used. This can reduce log space and shared memory requirements for the `VALIDATE` statement. New syntax for `VALIDATE`: `FORCE, WITH AUTOCOMMIT`.	*ALLBASE/SQL Reference Manual*, `VALIDATE` in "SQL Statements."

Table 4-1. New Features in ALLBASE/SQL Releases G1 and G2

Ver.	Feature (Category)	Description	Documented in...
G1	Syntax added to `DELETE` (Usability, Performance)	Automates execution of `COMMIT WORK` at the beginning of the DELETE and after each batch of rows is deleted when `WITH AUTOCOMMIT` is used. Reduces log-space and shared-memory requirements. `WITH AUTOCOMMIT` cannot be used in some cases (see the DELETE statement). New syntax for `DELETE: WITH AUTOCOMMIT`.	*ALLBASE/SQL Reference Manual*, `DELETE` in "SQL Statements."
G1	Decimal operations (Usability)	Increases maximum precision from 18 to 27.	*ALLBASE/SQL Reference Manual*, "Decimal Operations" in "Data Types."
G1	Terminate a query (Usability, Performance)	Allows termination of a query for a connection or transaction. New statement: `TERMINATE QUERY`. New syntax for `SET SESSION`, `SET TRANSACTION`.	*ALLBASE/SQL Reference Manual*, `TERMINATE QUERY`, `SET SESSION`, `SET TRANSACTION` in "SQL Statements."
G1	Terminate a transaction (Usability, Performance)	Allows stopping of a given transaction. New statement: `TERMINATE TRANSACTION`. New syntax for `SET SESSION`, `SET TRANSACTION`.	*ALLBASE/SQL Reference Manual*, `TERMINATE TRANSACTION`, `SET SESSION`, `SET TRANSACTION` in "SQL Statements."
G1	Timeout enhanced to allow specifying what is rolled back or terminated (Usability, Performance)	Allows specifying the action when a timeout expires. New attributes for `SET SESSION` and `SET TRANSACTION`: `TERMINATION AT LEVEL`, `USER TIMEOUT`, `ON TIMEOUT ROLLBACK`.	*ALLBASE/SQL Reference Manual*, in "SQL Statements."
G1	New SQLUtil command `CHKPTHLP` reduces time for flushing data (Performance)	Flushes the data in parallel to the `CHECKPOINT` command in ISQL. New SQLUtil command: `CHKPTHLP`.	*ALLBASE/SQL Database Administration Guide*, `CHKPTHLP` in "SQLUtil"
G1	Allow or disallow `SQLMON` for users. (Usability)	Grants or revokes the ability to run `SQLMON` for specific users. New attribute for `GRANT` and `REVOKE: MONITOR`.	*ALLBASE/SQL Reference Manual*, `GRANT, REVOKE` in "SQL Statements."

Table 4-1. New Features in ALLBASE/SQL Releases G1 and G2

Ver.	Feature (Category)	Description	Documented in...
G1	Allow or disallow authority to create modules. (Usability)	Grants or revokes the ability to create modules for specific users. New attributes for `GRANT` and `REVOKE`: `INSTALL`.	*ALLBASE/SQL Reference Manual*, `GRANT`, `REVOKE` in "SQL Statements."
G1	Script for migration to a new release (Usability, Tools)	Provides `SQLLINSTL` script for migration to a new release of ALLBASE/SQL. Read the `SQLINSTL` file on your system for more information.	SQLINSTL file; *Communicator 3000 MPE/iX Release 5.5 (Non-Platform Software Release C.55.00)*, "ALLBASE/SQL Enhancements"; *ALLBASE/SQL Database Administration Guide* in 'SQLINSTL' section of the "DBA Tasks and Tools" chapter.
G1	`GENPLAN` on a section (Usability)	Obtains an access plan of a stored static query by specifying the module and section number. Changed syntax: `GENPLAN`.	*ALLBASE/SQL Reference Manual*, GENPLAN in "SQL Statements."
G1	POSIX support (Tools)	Starting with G1, the ALLBASE/SQL preprocessor (PSQLCOB) supports preprocessing and generation of Microfocus COBOL source code under POSIX (Portable Operating system Interface).	*Communicator 3000 MPE/iX Release 5.5 (Non-Platform Software Release (C.55.00)*, "ALLBASE/SQL Enhancements."
G1	Terminate a user's connections (Connectivity)	Terminates one or more connections for a user. New syntax for `TERMINATE USER`: CID *ConnectionID*.	*ALLBASE/SQL Reference Manual*, `TERMINATE USER` in "SQL Statements."
	Run Queue Control for ALLBASE/NET (Connectivity)	Allows running `HPDADVR` in D queue for an MPE/iX session or HP-UX connection or C queue for an MPE/iX job connection. New environment variable: `HPSQLJOBTYPE`.	*Communicator 3000 MPE/iX Release 5.5 (Non-Platform Software Release C.55.00)*,"ALLBASE/SQL Enhancements."
	PC ODBC 16-bit and 32-bit support (Connectivity, Client/Server)	ODBCLINK/SE allows connectivity to ALLBASE and IMAGE/SQL servers from a PC running MS Windows using ODBC.	*ODBCLINK/SE Reference Manual*

Table 4-1. New Features in ALLBASE/SQL Releases G1 and G2

Ver.	Feature (Category)	Description	Documented in...
	Year 2000 solution (Standards)	Provides the JCW `HPSQLSPLITCENTURY` to use in setting a value between 0 and 99. This value is used to change the century part of the `DATE` and `DATETIME` functions to override the default of 19.	"Date/Time Functions" in the "Expressions" chapter of the *ALLBASE/SQL Reference Manual.*

5   ALLBASE/SQL Manuals

Table 5-1.

Title	Part Number
ALLBASE/ISQL Reference Manual	36217-90188
ALLBASE/NET User's Guide	36216-90101
ALLBASE/SQL Advanced Application Programming Guide	36216-90099
ALLBASE/SQL C Application Programming Guide	36216-90080
ALLBASE/SQL COBOL Application Programming Guide	36216-90081
ALLBASE/SQL Database Administration Guide	36216-90214
ALLBASE/SQL FORTRAN Application Programming Guide	36216-90079
ALLBASE/SQL Message Manual	36216-90213
ALLBASE/SQL Pascal Application Programming Guide	36216-90082
ALLBASE/SQL Performance and Monitoring Guidelines	36216-90103
ALLBASE/SQL Reference Manual	36216-90001
Up and Running with ALLBASE/SQL	36389-90016