

HP ALLBASE/4GL (B.07.00)
Software Update Notice

For HP-UX Systems

READ ME BEFORE INSTALLING!



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NOTICE

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HP ALLBASE/4GL Conventions

The syntax conventions used in this manual are summarized below.

Notation	Description
COMMAND	In syntax statements, HP ALLBASE/4GL command names are shown in bold UPPERCASE letters.
*ARGUMENT	Command arguments are prefixed with the symbol * and are shown in UPPERCASE letters.
<i>Slanted text</i>	Words in slanted text in syntax statements denote a parameter that you must replace with a suitable name. For example: FILE *CLOSE <i>file_name</i>
[]	In syntax statements, square brackets enclose elements that are optional. Several elements stacked inside square brackets means that you may select any one of these elements. For example: $\left[\begin{array}{l} A \\ B \end{array} \right] \text{You can select A, B, or neither.}$
{ }	In syntax statements, braces enclose elements that you must include in the command. Several elements stacked inside braces means that you must choose one of the elements. For example: $\left\{ \begin{array}{l} A \\ B \\ C \end{array} \right\} \text{You must select A or B or C.}$
□	When necessary for clarity, the symbol □ is used in syntax expressions to indicate a required blank or an exact number of blanks.

underlining



When necessary for clarity, underlining indicates user input. For example:

login: name

shading

Shaded text represents function keys on the computer or terminal screen.



The symbol  indicates a key on the terminal keyboard. For example,  indicates the carriage return key.

...

In syntax expressions, an ellipsis indicates that the preceding element may be repeated.

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Product Update Overview

This *Software Update Notice* describes the B.07 release of HP ALLBASE/4GL on HP-UX.

The information described in this Notice is NOT documented in the fifth edition of the *HP ALLBASE/4GL Developer Reference Manuals*, *HP ALLBASE/4GL Developer Administration Manual*, or the *HP ALLBASE/4GL Run-Time Administration Manual*.

Caution There are changes in the installation instructions for this release. **DO NOT INSTALL** without reading the chapter on upgrading HP ALLBASE/4GL in this *Software Update Notice*.

Master Index

The indices of both the *HP ALLBASE/4GL Developer Reference Manuals* and the *Software Update Notice* have been combined to create a master index for your use and convenience. All *Software Update Notice* index entries are preceded by the letter U.

For example,

U1-1

represents this page, and

UC2-1

is page one of appendix C2 in this *Software Update Notice*.

New Appendices

New and Modified Error Messages for B.07 Appendix C2

This appendix is an addendum to the Data Manager Error Messages appendix C in the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*.

Manual Installation and Customization Appendix G

An appendix has been added containing information needed for a manual or customized installation of this product. If necessary, during the upgrade installation you will be directed to this appendix.

Versions

To use this release of HP ALLBASE/4GL, you must use the HP-UX operating system version A.09.00 or later for either series 300, 400, 700, or 800.

Do not attempt to install this release of HP ALLBASE/4GL under earlier releases of HP-UX. You can check the version of HP-UX by entering the following command at the HP-UX prompt:

```
uname -r
```

If your applications use ALLBASE/SQL, the following version of ALLBASE/SQL needs to be installed on your system.

F.0 Pass 67 or later

To check the ALLBASE/SQL version, enter the following:

```
sqlver
```

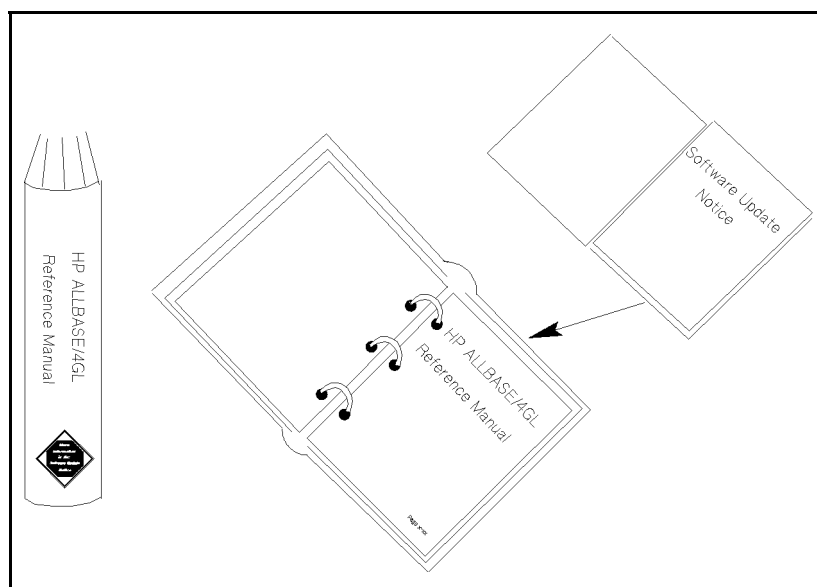
Note

The update pages from this *Software Update Notice* may be removed, or reproduced and inserted in the *HP ALLBASE/4GL Developer Reference Manual, Volume 1-2*, *HP ALLBASE/4GL Developer Administration Manual*, or *HP ALLBASE/4GL Run-Time Administration Manual*. No other update pages are provided.

Throughout this *Software Update Notice* you will see notes marked by this figure:



In addition, we have provided some self-stick labels with a similar graphic that you can put on the front of your *Reference Manual*.



Defect Fixes and Enhancements for Release B.07

Defect Fixes and Enhancements

SR. #	Class ¹	Description
Defect Fixes		
1653050914	C	AB/4GL softkeys do not work over very slow networks 8.0 HP-UX x.25.
5000536243	C	MENU SECURITY ITEMS are not unloaded/reloaded with application.
5000624411	C	Message delay (-m0 option) does not work in the administ application.
5003102376	C	Decimal data types fail on assignment from databases AB/4GL B.05.01.
5003151670	C	ZONE decimal data types not handled correctly MPE/iX in AB/4GL B.06.10.
5003166678	C	LINK command using a variable as the target performs left justification.
D500129734	C	Delete user, add new one, new user gets menu item security of old user.
D500164822	C	Moving a signed packed field to a variable x field drops the - sign.
D500164889	C	CALC of a packed decimal / float32 terminates application.
D500164913	C	CALC of a packed decimal / float64 terminates application.
D500164954	C	Moving a larger packed decimal field to a char field results in 0.
D500181016	C	Run-time system customize script abort.
1650124719	S	Minimum entry length missing in ASCII target file after using hp4stoa.
1653056952	S	" DATA" == "" always returns true in B.06.XX AB/4GL.
1653069534	S	EXTERNAL command adds "" character to infostring.
1653072124	S	FILE *BUFFER resets *FILENAME.
1653079079	S	If application has 12 user/group error invalid user at line NNN (283).
5000645820	S	AB/4GL does not perform rounding in a consistent manner.
5003107896	S	Display of scratchpad vars delete leading zeros if < 1.
5003112508	S	300/400 AB/4GL cannot call shared lib externals.
5003123463	S	Changes made to SQL logic blocks do not take place in run-time env MPE/iX.
5003146688	S	Duplicate *TEMP filename from time to time AB/4GL will abort.
5003148262	S	Not null data items not working in B.06.10.
5003149104	S	hp4stoa does not use NLS settings on MPE/iX AB/4GL version B.06.10.
5003168195	S	If AB/4GL aborts, SQL transactions may be posted.
5003198416	S	Versions cannot find base apps SQL logic blocks.
D500128645	S	AB/4GL does not accept the *LONG keyword in the CALL command.
D500149021	S	Error 19552 if report selection criteria is on non character field.
D500164830	S	Division by zero with a packed field as denom. multiplies result by 1000.
D500165621	S	Display is not correct for 16 bit chinese-t language.
D500174367	S	AB/4GL sometimes truncates or rounds values.
D500174425	S	The CHECK command does not allow the use of binary data types.
D500174557	S	Cannot use *R - argument by reference in CALL command.
D500179242	S	Blank parameter for an external is not being protected by quotes.
D500180000	S	Literal compares restricted to 1000 chars.
1653035881	M	Name Recall not finding all entries in catalog.

1 C=Critical, S=Serious, M=Medium, L=Low

1-4 Product Update Overview

Defect Fixes and Enhancements

SR #	Class ¹	Description
Defect Fixes, cont.		
1653059535	M	Problem with Swap Display pages in AB/4GL, limited to 30 lines.
1653069294	M	*REMOVE does not allow a ERROR trap.
5003093864	M	Change to field item edit code does not force change to storage type.
5003105759	M	hp4atos errs with ERROR: Out of memory 181.
5003106930	M	Display of result of packed decimal (P) CALC not correct.
5003134056	M	Document outer joins in AB/4GL.
D500115667	M	CALC - Negative results can be assigned to an unsigned variable.
D500119230	M	In the field spec. the decimal places value is not set to 0 for int type.
D500142919	M	When creating KSAM files AB/4GL reports the error 60035, "Cannot write ...".
D500146605	M	Moving -1 to packed decimal len=4 dec. places=2 when displayed = -.00.
D500160523	M	Child process unable to connect to SQL db if parent is connected.
D500165605	M	hp4stoa not handling 16 bit correctly for chinese-t.
D500165720	M	Padding of left justified numerics incorrect if zero decimal places.
D500166223	M	Variable V- strings have data left justified when set w/leading blanks.
D500167296	M	Generation failed for function: ent2 msg overlays 20th gen fail reason.
D500174359	M	Allow floating point and double precision values larger than 18 digits.
D500174433	M	AB/4GL does not handle overflow conditions in a consistent manner.
D500174565	M	Incorrect directory path for library CALL command has wrong error msg.
D500176958	M	Truncation behavior not consistent for packed decimal.
D500119222	L	When committing an int field spec 20 chars, no warning message is printed.
D500161554	L	Incorrect message in field spec for number of times a field is repeated.
Enhancement Requests		
5000547935	C	AB/4GL does not allow accesses to new SQL UNION functionality.
5000660753	C	Remove the 255 count limit of number of allowed variables in AB/4GL.
1650122408	S	AB/4GL should use SQL nested selects.
1650139618	S	Enhancements required for AB/4GL to support SQL for 7.0 & 8.0.
1653025197	S	SQL select list capacity not adequate. User needs 60 lines.
1650130401	M	SQL OPEN KEEP CURSOR Directive Enhancement Request.
1650142786	M	AB/4GL SQLEXPLAIN message buffer should be increased.
5000642405	M	Expand number of available lines for AB/4GL SQL logic blocks.
5003053702	M	Documentation not correct for function keys global_keys_2 in AB/4GL.
5003123547	M	Enhance run-time system to NOT delete security with a AB/4GL upgrade.
D500129874	M	Support the SQL statement "KEEP CURSOR" in AB/4GL.
D500170183	M	Enhance AB/4GL to allow more than 18 digits displayed on floating point #'s.
5000566216	L	Enhancement for SQL Environment Name vs. SQL Database Name.
Documentation		
5003151845	S	CALL statement doc improper for file and work area buffers.
D500116483	S	Option to disable Name Recall documented incorrectly.
5003145250	M	*LONG is invalid keyword in CALL statement, using INT instead.

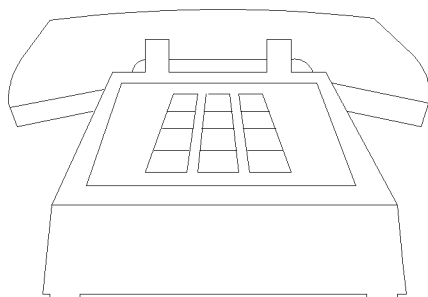
1 C=Critical, S=Serious, M=Medium, L=low

Documentation

All previous *Software Update Notices* have been removed from the documentation list. No existing manuals were replaced for this release. This *Software Update Notice for B.07 Release* has been added. The following part numbers and edition dates are the current numbers for this release:

Title	Customer Order Number	Edition Date
<i>HP ALLBASE/4GL Developer Administration Manual</i>	30662-60001	E0192
<i>HP ALLBASE/4GL Installation Guide</i>	30662-90002	E0192
<i>HP ALLBASE/4GL Developer Reference Manual Vol. 1</i>	30662-60002	E0192
<i>HP ALLBASE/4GL Developer Reference Manual Vol. 2</i>	30662-60003	E0192
<i>HP ALLBASE/4GL Developer Self-Paced Training Guide</i>	30662-60004	E0192
<i>HP ALLBASE/4GL Developer Quick Reference Guide</i>	30662-90005	E0192
<i>HP ALLBASE/4GL Run-Time Administration Manual</i>	92441-64050	E0192
<i>HP ALLBASE/4GL Software Update Notice for B.07</i>	30662-90010	E0594
Book binder	9282-1161	

These parts are orderable by calling HP Parts Direct Ordering (1-800-227-8164) and referencing the order numbers.



1-800-227-8164

HP Parts Direct Ordering has a convenient, electronic method for finding the prices and for ordering manuals or binders. If you need to talk to an ordering representative, the electronic message directs you to press a number so an HP representative can help you.

1-6 Product Update Overview

If you have a customer account number, please have it ready when you order.
If you do not have a customer account number, you can still place your order
using this 800 number.

Clarifications to Previous Documentation

Pull-down Menus

The enhancement for pull-down menus provided in the B.04 release affects only the developer and administrator products. It does not provide the capability to create pull-down menus for applications.

CALL Command



The CALL command argument types INT, SHORT, and LONG have been corrected in the product and documentation. The data type examples found on pages 11-16 and 11-17 in the *HP ALLBASE/4GL Developer Reference Manual, Volume 2* have been updated with this *Software Update Notice*.

You can insert these corrections near pages 11-11 through 11-17 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. These pages may also be reproduced.

The following data type keywords have been corrected:

- INT has been corrected to read SHORT
- LONG has been corrected to read INT

HP ALLBASE/4GL Data Types for the CALL Command

The following table shows the corrected HP ALLBASE/4GL data types (as per the storage type field in the data dictionary) and the corresponding C data types.

4GL Data Type	Storage Type	C Data Type
CHAR	C	Native C pointer to character data type. Arguments of this type are terminated with a NULL character before being passed to the library routine. The NULL character is ignored by HP ALLBASE/4GL on return.
SHORT	I	Address of 16 bit integer data type.
INT	L	Address of 32 bit integer data type.
FLOAT	F	Address of single-precision floating-point data type.
DOUBLE	G	Address of double-precision floating-point data type.

2-2 Clarifications to Previous Documentation

Buffers

When using a file record buffer or a work area buffer, pass the item using the *CHAR data type. In your C code, reference the item using the data type or structure reference you desire for the parameter.

Data Type Examples

Example 1

When using the CALL command to pass two parameters, where the first parameter consists of an array of 50 integers, and the second is a file buffer, the following demonstrates the CALL command and C function declaration.

```
CALL V-my_function V-my_library B-int_50 *V *CHAR R-file_buf *R *CHAR
```

The code would look as follows:

```
my_func(int_50, file_buf)
int      *int_50 [];
MY_STRUCT *file_buf; /* MY_STRUCT is the file buffer definition */
{
    . . .
}
```

Example 2

```
CALL V-functionx V-my_lib W-int_var.my_record *V *INT
```

This example passes the address of the HP ALLBASE/4GL field W-int_var.my_record to the C function. Any changes to the field are not reflected in the field when control returns to HP ALLBASE/4GL.

This example assumes that no information needs to be written to the screen and therefore, the *REFRESH option is not used.

Example 3

```
CALL "functionx" V-my_lib W-int_var.my_record *R *INT
```

This example also passes the address of the HP ALLBASE/4GL field `W-int_var.my_record` so that the C function can actually change it. However, any changes made to the field in the C function are also reflected in the field when control returns to HP ALLBASE/4GL.

This example assumes that no information needs to be written to the screen and therefore, the `*REFRESH` option is not used.

Example 4

```
MOVE "2" W-int_var.my_record
MOVE "This is a test string" V-var2
MOVE "mylib" V-lib_name
MOVE "my_func" V-func_name
CALL *REFRESH V-func_name V-lib_name W-int_var.my_record *R *INT
      V-var2 *V *CHAR
```

This example shows the relationship between the HP ALLBASE/4GL command and the associated function that it calls. On returning to HP ALLBASE/4GL, the field `W-int_var.my_record` is incremented by 1. The standard I/O function `printf` is used in this example.

The function `my_func` could be as follows:

```
#include <stdio.h>

my_func(number, string)
int *number;           /* storage type I in HP ALLBASE/4GL */
char *string;         /* storage type C in HP ALLBASE/4GL */
{
    *number = *number + 1; /* increment the number */
    printf("The string is %s \n Press return to continue.",string);
    getchar;
}
```

2-4 Clarifications to Previous Documentation

Math Operations

Several numeric data type defects have been fixed. Some inconsistencies were found in the way HP ALLBASE/4GL rounded or truncated numeric values. As a rule, HP ALLBASE/4GL should round the results of a MATH or CALC operation based on the resultant data field's data type. The MOVE operation should truncate as a rule. HP ALLBASE/4GL has been modified to make this occur in every case.

In addition to the above, the following changes have been made in this release:

- Better overflow verification and reporting. In all cases of a numeric overflow, the maximum value for the field will be returned.
- Floating-point numbers greater than 18 digits can now be displayed.
- Moving a negative value to an unsigned numeric field will now generate a warning message. The result will be the absolute value (the same functionality as in previous releases, in addition to the added warning message).
- A negative packed decimal number moved to an unsigned packed decimal field will no longer retain the sign. In previous versions, HP ALLBASE/4GL retained the sign, but when displayed, the unsigned field dropped the sign making the number look positive.
- The CHECK command will now allow a numeric data type for a `data_ref` parameter.
- If an error occurs during a packed decimal MATH or CALC operation, the value of the first operand will not be modified.

Quick Reference Table

HP ALLBASE/4GL does not always use floating-point arithmetic. The type of arithmetic performed is based on the storage types of the operands. As a basic rule, the MATH and CALC commands perform arithmetic using the operand with the highest precision. The following quick reference table shows the relationship between the storage types of the operands and the type of arithmetic operation performed.

Math Operations Quick Reference Table

Operand 1	Operand 2					
	Storage Type					
	C	F	G	I	L	P
	Character	4-byte IEEE floating point	8-byte IEEE floating point	2-byte 2's complement integer	4-byte 2's complement integer	Packed decimal (BCD, or binary coded decimal)
Character Storage Type C	8-byte IEEE	8-byte IEEE	8-byte IEEE	8-byte IEEE	8-byte IEEE	Packed decimal
4-byte IEEE floating point Storage Type F	8-byte IEEE	8-byte IEEE	8-byte IEEE	8-byte IEEE	8-byte IEEE	Packed decimal
8-byte IEEE floating point Storage Type G	8-byte IEEE	8-byte IEEE	8-byte IEEE	8-byte IEEE	8-byte IEEE	Packed decimal
2-byte 2's complement integer Storage Type I	8-byte IEEE	8-byte IEEE	8-byte IEEE	4-byte 2's	4-byte 2's	Packed decimal
4-byte 2's complement integer Storage Type L	8-byte IEEE	8-byte IEEE	8-byte IEEE	4-byte 2's	4-byte 2's	Packed decimal
Packed decimal (BCD, or binary coded decimal) Storage Type P	Packed decimal	Packed decimal	Packed decimal	Packed decimal	Packed decimal	Packed decimal

2-6 Clarifications to Previous Documentation

Upgrade Installation Instructions

Before You Begin

If you are installing this product for the first time (not installed over a previous version of HP ALLBASE/4GL), use the installation instructions provided in the *HP ALLBASE/4GL Installation Guide*.

If you are installing this product over a previous version of HP ALLBASE/4GL, use the instructions in this chapter.

The upgrade installation consists of the following primary procedures:

- pre-upgrade preparation
- perform the upgrade
- test the installation
- reload the applications and system information

If you are upgrading both HP ALLBASE/4GL and ALLBASE/SQL, contact your ALLBASE/SQL administrator to determine if your databases need to be migrated. If necessary, migrate the databases before performing the upgrade. Refer to the ALLBASE/SQL installation instructions.

Also, you or your HP ALLBASE/4GL administrator will need to save any existing HP ALLBASE/4GL applications and system information before beginning the upgrade. If you have a developer system, you will be using the `hp4stoa` and `hp4atos` utilities instead of the `unload` and `load` utilities. The `unload` and `load` utilities are not compatible with any version prior to Release B.07 of HP ALLBASE/4GL.

Saving your applications and system information using the `hp4stoa` utility performs two functions previous versions of the unload facility do not perform:

- preserves the menu security defined for the application
- extracts system information, including the following:
 - user names and passwords
 - system definitions
 - logic command and communication area synonyms
 - master titles
 - database definitions

If you have a run-time system, you will be loading your applications using the `load` utility from the latest source media supplied by the application developer.

The following applications DO NOT need to be saved since they are part of the base environment delivered with the new version of HP ALLBASE/4GL (unless you have made changes and want to keep the changes):

- administ
- developr
- example
- HPLIB000
- hpqm
- sqldemo
- tutorial

After saving your applications and completing the upgrade installation, you will reload your HP ALLBASE/4GL applications using the `hp4atos` utility. Finally, you will regenerate each application and recreate any unload files. Instructions are provided in this chapter for each of these procedures.

3-2 Upgrade Installation Instructions

Saving HP ALLBASE/4GL Applications and System Information

The following instructions for saving your applications and system information include examples for both the developer and run-time systems. It is assumed your s-files reside in `/HP4GL/s` for developer and `/HP4GLrt/s` for run-time. If your applications reside in a different directory (or directories), you need to perform the same steps on those directories.

1. Logon as superuser.
2. Do a full system backup to protect your system files.
3. Backup your s-files by copying the current s-files to another directory on the system. If necessary, you can use these files for future reference.

First, create a backup directory other than `s.old`, since that directory is overwritten during the installation process. Then, copy the pre-B.07 s-files into the backup directory.

For example,

For developer:

```
cd /HP4GL
mkdir sfile_backup
cp /HP4GL/s/s*.[i,d] /HP4GL/sfile_backup
```

For run-time:

```
cd /HP4GLrt
mkdir sfile_backup
cp /HP4GLrt/s/s*.[i,d] /HP4GLrt/sfile_backup
```

hp4stoa Instructions for Developers

For the run-time system: skip to page 3-6, “To Save and Reload Run-Time Systems” and continue with the upgrade.

For the developer system:

The `.asf` files created by the `hp4stoa` utility are saved in your current directory. Record the name of this directory before starting the `hp4stoa` instructions. The directory name will be needed when you reload your applications using the `hp4atos` utility.

1. Set the environment variables for `HP4SPATH` and `HP4GLPATH`.

```
export HP4SPATH=/HP4GL/s
```

```
export HP4GLPATH=/HP4GL
```

2. Save applications and system information with `hp4stoa` utility.

For example,

To extract the system information:

```
/HP4GL/bin/hp4stoa -uadminist:password >system.asf
```

To extract the application source:

```
/HP4GL/bin/hp4stoa -udevelopr:password -aapplication_1:security_code >app1.asf
```

```
.  
. .  
.
```

```
/HP4GL/bin/hp4stoa -udevelopr:password -aapplication_n:security_code >appn.asf
```

3. Verify all `.asf` files are non-empty files before continuing the upgrade.

```
ll *.asf
```

The size in bytes should be greater than zero. If not, perform the `hp4stoa` operation for that file again.

3-4 Upgrade Installation Instructions

For additional information on using the `hp4stoa` utility refer to the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*.

Note

If `hp4stoa` reports an error on an object, have your HP ALLBASE/4GL administrator perform one of the following procedures to correct the problem.

- Recommit the offending object and regenerate the object (if applicable).
- Delete the object, re-add, and regenerate the object.

Perform the `hpstoa` operation again.

To Save and Reload Run-Time Systems

Run-time systems cannot use the `hp4stoa` or `hp4atos` utilities to save and reload applications. Instead, load your applications after installation using the latest source media supplied by the application developer.

Note If you have been using a run-time version, check with the supplier of your applications for the availability of the B.07 (or later) unload files. Do not continue the upgrade installation until you have the unload files for each of your applications that were created with the B.07 (or later) version of HP ALLBASE/4GL.

You may want to print the following reports. These reports are useful in setting up your system before loading the applications.

- applications
- end users
- system specifications
- master titles
- database definitions

From the Administrator Menu in the `administ` application:

1. select Utilities
2. select Print Administrator Documentation
3. select the appropriate report

3-6 Upgrade Installation Instructions

Checking the printers and system status:

1. Install a printer in HP-UX if you intend to use the printer with HP ALLBASE/4GL. Refer to the *System Administration Tasks Manual* for details on installing HP-UX printers.
2. Check if HP ALLBASE/4GL is being used. The following command will display all processes containing the name `hp4gl`. No other sessions should be running other than your current session.

```
ps -ef |grep hp4gl
```

Make sure no one is using HP ALLBASE/4GL when you start the update and that no one will attempt to sign on to the product while you are updating the system.

3. Check the printer status.

```
lpstat
```

4. Shut down the printer scheduler so no new reports will print.

```
/usr/lib/lpshut
```

Note	During the installation, the <code>customize</code> script shuts down the printer scheduler if it is still running. This does not cause any loss of data, but any reports that are printing when the scheduler is shut down will need to be started from the beginning when the scheduler is restarted.
-------------	---

Performing the Upgrade

All unload and dbm files created with any version of HP ALLBASE/4GL prior to version B.07 are not compatible with this release. Once version B.07 is installed on your system, any existing unload and dbm files for applications will need to be recreated. If you have unloaded your applications, you will need to recreate the unload and dbm files after the installation is complete.

If the applications were not generated using the B.07 or later version of HP ALLBASE/4GL, you must have the applications regenerated before they can run on this release.

To Use the Update Facility

Use the update facility to install the product. If you do not have this facility refer to appendix G “Manual Installation and Customization” of this *Software Update Notice* and continue with the upgrade installation.

1. Mount the update media.
2. Start the update facility. You must be logged on as superuser to run this program.

```
/etc/update
```

The update facility automatically loads an install script and a tar file into the HP-UX /tmp directory.

3. Change to the /tmp directory.

```
cd /tmp
```

4. Run the install script. The install script performs a number of pre-installation checks which include some prompts. The prompts and explanations are listed on the following page.

For developer:

```
./hp4_install
```

For run-time:

```
./hp4rt_install
```

3-8 Upgrade Installation Instructions

Prompts:

- a. The printer scheduler must be shut down to proceed with the upgrade. If you have not shut down the printer scheduler, the install script will prompt you to shut down the printer scheduler now.
- b. The script now prompts you for the destination directory for HP ALLBASE/4GL.

To use the default directory (`/HP4GL` for the developer system and `/HP4GLrt` for run-time), press the carriage return. To install HP ALLBASE/4GL under a different directory name, specify the path name.
- c. If an HP ALLBASE/4GL system already exists under the specified destination directory, a warning message tells you there is an existing HP ALLBASE/4GL system. A prompt asks if you want to continue. If you answer **yes**, the script overwrites the existing system.

Other conditions can also cause warning messages. Each message includes instructions for completing the upgrade, if needed.

- not enough disk space available
- users are accessing the existing HP ALLBASE/4GL system
- an `s.old` directory exists under the specified destination directory. This directory, which contains a set of s-files from a previous installation, will be replaced with the current backup s-files.

If all conditions are satisfactory, the HP ALLBASE/4GL fileset is copied from the tar file into the destination directory. This takes a few minutes.

The complete directory structure is described in appendix C of the *HP ALLBASE/4GL Developer Administration Manual* and in chapter 5 of the *HP ALLBASE/4GL Run-Time Administration Manual*.

Install and Customize Scripts

The install script runs the `customize` script after it loads the fileset. The `customize` script may prompt you for additional information as it performs the following tasks:

- Creates a user named `HP4GL` (for the developer system) or `HP4user` (for the run-time system). See the following section, “HP-UX User Definitions” for details.
- Creates a group named `HP4GL`. See the following section, “HP-UX User Definitions” for details.
- Transfers ownership of the HP ALLBASE/4GL fileset to `HP4GL` (or `HP4user`) and the group `HP4GL`.
- Checks files and subdirectories in the `HP4GL` or `HP4GLrt` directory.
- Attempts to set environment variables in the HP ALLBASE/4GL sign-on scripts.
- Adjusts the entries in the `/etc/passwd` file to suit the destination directory.
- Builds the HP ALLBASE/4GL printer control subsystem.

For additional information see “Answering the Customize Script Prompts” in appendix G.

HP-UX User Definitions

This default user has an identification number of 50 and the group has an identification number of 50. If the group or user already exist, the installation does not create a new one. If the user or group number already exists (but the user or group doesn't), the script uses the next highest available user or group number.

Under the default configuration, this entry is created in the `/etc/passwd` file:

```
HP4GL:*:50:50:HP4GL User Name:/HP4GL:/HP4GL/hp4gl
```

or

```
HP4user:*:50:50:HP4GL Run-time User Name:/HP4GLrt:/HP4GLrt/hp4gl
```

Note

The user names `HP4GL` and `HP4user` cannot be used directly as user logins. They are created to facilitate the creation of the directory structure.

However, you can edit the `/etc/passwd` file and change the asterisk (*) to a comma followed by two dots (...). This allows a user to logon using `HP4GL` or `HP4user`. When first logging on using this name, the user must answer a prompt to enter a new password. For subsequent logons using this name and password, the HP ALLBASE/4GL Sign-on Screen appears.

You can create other user names in the HP ALLBASE/4GL user group or even transfer ownership of the HP ALLBASE/4GL files to another group. The following entry must be present in the `/etc/group` file to allow group ownership of the HP ALLBASE/4GL fileset in the `HP4GL` group:

```
HP4GL:*:50:HP4GL or HP4GL:*:50:HP4user
```

Testing the Installation

1. Set the TERM HP-UX environment variable.

```
export TERM=hp
```

If TERM is undefined, HP ALLBASE/4GL displays an error message and terminates.

2. Set the HP4GLPATH environment variable, if necessary.

```
export HP4GLPATH=/HP4GL
```

See appendix C of the *HP ALLBASE/4GL Developer Administration Manual* for details on setting environment variables.

3. Run hp4gl using the appropriate command in the table below to verify the upgrade version number on the logon screen.

System Description	Action/Command Line
From a terminal logged in as HP4GL or HP4user	The HP ALLBASE/4GL script presents the HP ALLBASE/4GL Sign-On screen when you log in.
From a terminal or terminal emulator with access to the HP4GL or HP4GLrt directory	Type this command at the user prompt: /HP4GL/hp4gl or /HP4GLrt/hp4gl
From a bit-mapped monitor with HP Windows/9000	Type: /HP4GL/wmhp4gl or /HP4GLrt/wmhp4gl
From a bit-mapped monitor with X11 on X Windows:	Type: /HP4GL/x11hp4gl or /HP4GLrt/x11hp4gl

3-12 Upgrade Installation Instructions

Reloading Applications

The following procedures only apply if you are upgrading an existing HP ALLBASE/4GL system. It is assumed that the s-files reside in `/HP4GL/s` and the product is in `/HP4GL` for the developer system. And for the run-time system, it is assumed the s-files are in `/HP4GLrt/s` and the product is in `/HP4GLrt`.

To Reload Developer Applications

If you have s-files in other directories, copy the s-files from `/HP4GL/s` to the other directories **before** loading the applications in `/HP4GL/s`.

Once the copying is complete, reload the applications in all of the s-files directories using the `hp4atos` utility as described in the steps below.

hp4atos Instructions

1. Change to the directory containing the application `.asf` files.

```
cd directory
```

2. Set the environment variables for `HP4SPATH` and `HP4GLPATH`. Also, set the environment variable `HP4SQLPATH` if you have any ALLBASE/SQL databases.

```
export HP4SPATH=/HP4GL/s
```

```
export HP4GLPATH=/HP4GL
```

3. Load the system information.

```
/HP4GL/bin/hp4atos -uadminist:password <system.asf
```

Only the administrator user (administ) and password are needed when loading the system definitions. No application name needs to be given.

4. Load the application source.

```
/HP4GL/bin/hp4atos -u developer:password -a application_1:security_code <app1.asf
```

```
.  
. .  
. .
```

```
/HP4GL/bin/hp4atos -u developer:password -a application_n:security_code <appn.asf
```

5. Regenerate each application.
6. Re-create any unload files.

See the *HP ALLBASE/4GL Developer Reference Manual, Volume 2* for further details on the `hp4atos` utility.

To Reload Run-Time Applications

1. Set the environment variables for HP4SPATH and HP4GLPATH.

```
export HP4SPATH=/HP4GLrt/s
```

```
export HP4GLPATH=/HP4GLrt
```

2. Add your users and any System Specifications or Master Titles.
3. Load the application source.

If you have copies of the new source media supplied by your HP ALLBASE/4GL application developer, load them into the `/HP4GLrt/s` directory.

4. Load your applications into the new HP ALLBASE/4GL system using the Load Application screen in the administrator Utilities menu.
5. Move any existing customized terminfo files you will continue to use into the `/usr/lib/termdata` directory.

Previously, customized files were placed in the `/usr/lib/terminfo` directory.

Installing Printers

All printers that are currently installed in the HP-UX system are available to HP ALLBASE/4GL as soon as the printer is defined on the HP ALLBASE/4GL system-wide definition screen in the HP ALLBASE/4GL Administrator application. HP ALLBASE/4GL can support up to four printer definitions.

To define a printer:

1. Sign on to the Administrator application.
Type the user name `administ` at the HP ALLBASE/4GL Sign-on Screen and press `Commit Data`.
2. Select System Specs.
3. Select System Definition.
4. Enter the names of the printers as known by the HP-UX printer scheduler in the printer fields.
If you only want to use one printer, put the name of that printer in all the printer fields.
5. After changes are entered, press `Commit Data`.

For more details about identifying printers, read chapter 3 of the *HP ALLBASE/4GL Developer Administration Manual*.

Installing Additional Printers

An executable script file `pr_install` in the `HP4GL/lib/install` or `HP4GLrt/lib/install` directory allows you to install additional printers in HP ALLBASE/4GL. The script rebuilds a number of subdirectories and files in the `/usr/spool/lp` directory. These files must be present for the HP ALLBASE/4GL printer control system to operate.

To install a new printer:

1. Install the printer in HP-UX using the `lpadmin` command.

Refer to the *System Administration Tasks Manual* for details of this command.

2. Logon as superuser.
3. Shut down the printer scheduler.

`/usr/lib/lpshut`

4. Install the printer in HP ALLBASE/4GL.

For example,

For developer:

`/HP4GL/lib/install/pr_install`

For run-time:

`/HP4GLrt/lib/install/pr_install`

This script will install each printer in HP ALLBASE/4GL that corresponds to the printers on the system.

If you have installed HP ALLBASE/4GL under a directory other than the root directory, you must prefix these commands with the appropriate directory path name.

5. Restart the printer scheduler.

`/usr/lib/lpsched`

6. In the administrator application, add the new printer to the system-wide definition. Use the steps “To define a printer” found on the previous page.

Enhancements for B.07 for HP-UX Systems

Welcome to Release B.07!

The HP ALLBASE/4GL team works hard to provide you with continued, high quality improvements. Many of the improvements, enhancements, and features included in this release were requests from our customers. We hope you enjoy the benefits. Listed below are the highlights of the team's effort for this release.

“New Features” Key

- Lets you preview new commands and improvements from the developer's main menu screen.
- Provides instructions for printing additional copies of this *Software Update Notice*.

Improvement to Application Definition Screen

- Increases consistency in terminology with name change to field label.

SQL Interface Enhancements

- Improves the efficiency of compiling, executing, and storing with a pass-through mechanism for ALLBASE/SQL commands.
- Permits complex and nested queries for the SELECT command using the UNION operator.
- Expands supported commands to include CLOSE, CONNECT, EXECUTE IMMEDIATE, OPEN, and RELEASE.
- Allows EXECUTE PROCEDURE command from within HP ALLBASE/4GL to invoke a SQL procedure.

New FILE Command Option

- Increases user capabilities with new HP ALLBASE/4GL *REFETCH option in the FILE command.

Choice of External Editor

- Permits user-selected editor when modifying functions, processes, SQL logic blocks, and SQL select lists.

Expansion of Item Limits

- Increases the maximum sizes of the SQL select lists and SQL logic blocks.

New LABEL Command

- Allows developers to jump to a specific statement (instead of only a statement number) when using the ENTER and SERIES commands.

Improvement to Menu Item Security

- Retains menu item security when loading and unloading applications.

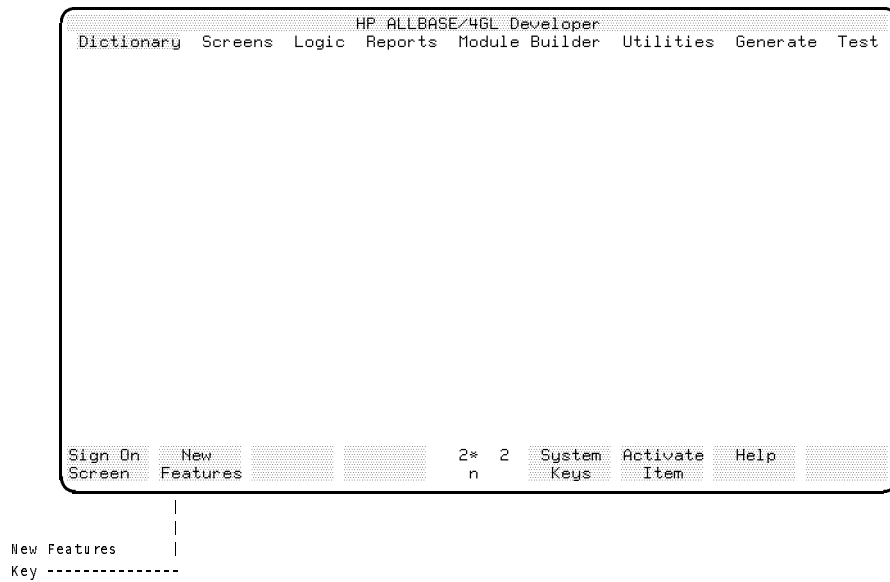
New “-V” (Verbose) Option for hp4stoa and hp4atos

- Monitors the progress of applications being saved and restored to the s-files.

Note The following pages may be reproduced and placed in the appropriate *HP ALLBASE/4GL Developer Reference Manual*, *HP ALLBASE/4GL Developer Administration Manual*, or *HP ALLBASE/4GL Run-Time Administration Manual*.

“New Features” Key

A **New Features** key appears on the Main Menu of the developer application. Pressing the function key displays a menu of features and improvements.



You can read about the latest changes from your screen, or you can print this *Software Update Notice* by following simple instructions.

Application Definition Screen Change

The field label on the Application Definition Screen in the administrator application (*administ*) changed from “SQL Database Name” to “SQL DBEnvironment”.

```
Administrator      Application Definition      applic_defn
Application      sqldemo
Current Password
New Password      ██████████
Repeat New Password
Current Development Security Code
New Development Security Code
Repeat New Security Code
Initial Action Name main      Type M (M/P)
SQL Owner Group  SQLGRP
SQL DBEnvironment sqldbase

Valid Users/Groups
*ALL

Description
sqldemo
PURPOSE: SQL training application from ALLBASE/4GL
self paced training guide.

Last Modification:      Date 1/19/94      Time 11:21:27

Operator  Utility  User  System  6* 21  System  Commit  Help  Previous
Menu     Menu   Menu  Menu    n      Keys   Data   Menu  Menu
```

This change was made to maintain consistent terminology throughout the product. The field still requires the name of the ALLBASE/SQL DBEnvironment configuration file (DBECon file).



This screen has been modified to reflect the field name change. The Application Definition screen is also discussed on pages 4-15 and 9-16 of the *HP ALLBASE/4GL Developer Administration Manual*. This page may be reproduced.

ALLBASE/SQL Interface Enhancements

Stored Database Sections

A stored database section is any command compiled and placed into the ALLBASE/SQL system tables. Most commands kept as stored database sections in ALLBASE/SQL are now supported by HP ALLBASE/4GL. Stored database section commands pass directly to ALLBASE/SQL for syntax checking and storing as a section. By using this pass through mechanism, HP ALLBASE/4GL can support many future stored database section commands added to ALLBASE/SQL without any modification of HP ALLBASE/4GL.

Note	There may be some restrictions for ALLBASE/SQL commands, such as FETCH and REFETCH. In these cases, HP ALLBASE/4GL mechanisms are provided for returning data. Compound statements, having more than one terminating semi-colon, will not be allowed. CREATE PROCEDURE is an example of a compound SQL statement.
-------------	---

Non-Stored Database Sections

The following non-stored database section commands are now recognized in HP ALLBASE/4GL:

- CLOSE
- CONNECT
- EXECUTE IMMEDIATE
- OPEN
- RELEASE

The syntax of the CLOSE, EXECUTE IMMEDIATE, and RELEASE commands is described in the *ALLBASE/SQL Reference Manual*. CONNECT and OPEN are covered later in the chapter.

Unsupported SQL Commands

The following commands may not be used in SQL logic blocks:

- BEGIN DECLARE SECTION
- BULK
- CREATE PROCEDURE
- DECLARE
- DESCRIBE
- END DECLARE SECTION
- EXECUTE
- FETCH
- INCLUDE
- INTO clause with SELECT command
- PREPARE
- REFETCH
- START DBE
- STOP DBE
- WHENEVER



These commands may not be used in SQL logic blocks. You can make necessary notes in your manual or insert this page near page 9-3 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 1*. For additional information about these commands refer to the *ALLBASE/SQL Reference Manual*. This page may also be reproduced.

CONNECT

The CONNECT command starts a DBE session for a specific DBEnvironment. Connections to multiple databases are not allowed. If there is an existing connection to the database, it will be released and a new connection will be made.

Format

```
CONNECT TO { 'DBEnvironmentName' }  
           { :HostVariable }
```

Parameters

<i>DBEnvironmentName</i>	Identifies the DBEnvironment to be used.
<i>HostVariable</i>	Character string host variable containing the name of the DBEnvironment.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



This command is now available in HP ALLBASE/4GL. You can make necessary notes in your manual or insert this page near page 9-6 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 1*. This page may also be reproduced.

OPEN

The OPEN command opens and makes a cursor and its associated active set available for manipulation. This command must be preceded by the SELECT command.

Format

```
OPEN CursorName [ KEEP CURSOR [ WITH LOCKS  
                  [ WITH NOLOCKS ] ] ]
```

Parameters

<i>CursorName</i>	Specifies the cursor to be opened. The <i>CursorName</i> must be the same as the name of the SQL logic block currently being created or modified.
KEEP CURSOR	Maintains the cursor position across transactions until a CLOSE command is issued on a cursor.
WITH LOCKS	Keeps only those locks associated with the position of the kept cursor after a COMMIT WORK commands and releases all other locks. This is the default.
WITH NOLOCKS	Releases all locks associated with the kept cursor after a COMMIT WORK command.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



This command is now available in HP ALLBASE/4GL. You can make necessary notes in your manual or insert these pages near pages 9-6 in the *HP ALLBASE/4GL Developer Reference Manual, Volume 1*. These pages may also be reproduced.

SELECT Command

The SELECT command allows the user to perform simple and complex queries. However, you can now use the UNION operator, subqueries, and specialized predicates with the SELECT command to generate complex queries.

HP ALLBASE/4GL does require a slightly modified format for the SELECT command in SQL logic blocks. You must use the SELECT command in the following format:

Format

```
SELECT [ ALL  
       DISTINCT ] { :table_name }  
                { :select_list }  
  
FROM { [ Owner. ] TableName [ CorrelationName ] } [ , ... ] [ other clauses ]  
  
[ FOR UPDATE OF column_name [ , column_name... ] ] ;
```

Parameters

ALL	Prevents elimination of duplicate rows from the result. If neither the ALL or DISTINCT option is specified, the ALL option is assumed.
DISTINCT	Ensures that each row in the query result is unique. All null values are considered equal. You cannot specify this option if the select list contains an aggregate function with DISTINCT in the argument.
<i>table_name</i>	The HP ALLBASE/4GL table name that has been defined on the File/SQL Table Definition screen in the dictionary.
<i>select_list</i>	A select list name that has been defined in the dictionary.

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<i>[Owner.]TableName</i>	Identifies a table or view to be referenced. The tables and views can be listed in any order.
<i>CorrelationName</i>	Specifies a synonym for the preceding table or view. The correlation name can be used instead of the actual table or view name anywhere within the SELECT statement. The correlation name must conform to the ALLBASE/SQL syntax rules for a basic name. All correlation names within a SELECT command must be unique. They cannot be the same as any table name or view.
<i>Other Clause</i>	Any other valid ALLBASE/SQL select clause. Refer to the <i>ALLBASE/SQL Reference Manual</i> for additional information.

You cannot use the INTO clause in a SELECT command. The SELECT * FROM form of the SELECT command is limited to subqueries.

To create complex queries

In addition to simple queries, you can create complex queries which may contain more than one SELECT command. Several SELECT commands may be combined into a single query expression with the UNION operator. Within each query, an optional search condition can be used which contains predicates that incorporate subqueries. A subquery is a single query block that can contain other subqueries but cannot contain a UNION operator. A complex query is created using the following:

- The UNION operator, which allows you to take the union of all rows returned by several query blocks in one SELECT command.
- Subqueries (also known as nested queries) which allow you to embed a query block within the search condition of an outer SELECT command.
- Special predicates, such as ALL, ANY, EXISTS, IN, and SOME, which allow you to compare the value of an expression with the value of special structures and subqueries.

Refer to the *ALLBASE/SQL Reference Manual* for more information about complex queries.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



The functions described here are new. You can make necessary notes in your manual or insert these pages near pages 9-5 thru 9-6 in the *HP ALLBASE/4GL Developer Reference Manual, Volume 1*. These pages may also be reproduced.

EXECUTE PROCEDURE

ALLBASE/SQL stored procedures can be invoked from HP ALLBASE/4GL using the SQL statement EXECUTE PROCEDURE.

HP ALLBASE/4GL does not allow the definition of stored procedures. However, they can easily be created using the CREATE PROCEDURE statement in an ISQL script. Refer to the *ALLBASE/SQL Reference Manual* for more information.

Format

```
EXECUTE PROCEDURE [ : ReturnStatusVariable = ] [ Owner. ] ProcedureName
[ ( [ ParameterValue [OUTPUT] ] [ , [ ParameterValue [OUTPUT] ] ] [ ... ] ) ]
```

Parameters

<i>ReturnStatusVariable</i>	A host variable that will receive the return status from the procedure. This host variable can be any one of the following: <ul style="list-style-type: none">■ a variable■ a scratch-pad field name■ a screen field name■ a file record field name■ a work area field name
[<i>Owner</i> .] <i>ProcedureName</i>	Specifies the owner and the name of the procedure to execute. If an owner name is not specified, the owner is assumed to be the current DBEUserID.
<i>ParameterValue</i>	A literal value or :HostVariable that is passed to or received from the procedure. A colon (:) is required for a host variable. A literal is either a quoted string, using the single quote mark ('), or a numeric. A literal parameter cannot be an OUTPUT parameter.

A host variable can be any one of the following:

- a numeric constant
- an alphanumeric constant
- a variable or calculated item
- a scratch-pad field name
- a screen field name
- a file record field name
- a work area field name

An OUTPUT parameter cannot be used with:

- a numeric constant
- an alphanumeric constant
- a calculated item

Refer to the *ALLBASE/SQL Reference Manual* for more information about this command.



This command is now available in HP ALLBASE/4GL. You can make necessary notes in your manual or insert these pages near pages 9-7 in the *HP ALLBASE/4GL Developer Reference Manual, Volume 1*. These pages may also be reproduced.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



This is a new keyword option for the FILE command. You can place these pages near pages 11-69 thru 11-74 in the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. These pages may also be reproduced.

External Editor

Two methods are available for modifying files. You can still use the menu driven editor for building processes, functions, logic blocks, or select lists. Or, you can use an optional external editor, such as 'vi', or even set up your editor-of-choice using an environment variable.

HP ALLBASE/4GL communicates with the editor through a file. A temporary file is created in the current directory, then passed to the editor as the first parameter. The temporary filename, which consists of letters and numbers, is a unique file. If you want to pass additional parameters to the editor, a shell script can be created to set up the needed parameters.

The optional external editor is accessible from the following areas:

- the Function Details screen
- the Process Details screen
- the SQL Logic Blocks Details screen
- the SQL Select List Details screen

Setting up the External Editor

Set the environment variable HP4EDIT to the name of the editor or shell script. The path of the editor must be in the PATH environment variable. For example,

```
HP4EDIT=vi  
export HP4EDIT
```

The editor must be able to text in the file name listed as the first parameter. For example,

```
vi filename
```

From the Function Details or Process Details screen:

1. Enter "E" in the Action field. Then, press the carriage return, Commit Data, or Tab.

```

Developer          Function Details          function_detail
          Function add_option
.....1.....2.....3.....4.....5.....6.....7.....
1 IF U-option_status = C-record THEN MESSAGE option_warn ; EXIT
2 MOVE S-product_no F-product_no.option
3 FILE *INSERT option ; ENTER 7
4 MESSAGE opt_add_ok
5 IF F-option_no.option = N-zero THEN MOVE C-option U-current_record ; WINDOW
6 EXIT
7 MESSAGE file_error
8 EXIT
9
10

Step Number  1      Action  E  (A/C/D/I/R/L/S/E)      Command

Command  Function  Process  Generate  16* 35  System  Commit  Help  Previous
Help    Header   Detail  Function   n      Keys   Data   Menu

```

... OR

```

Developer          Process Details          process_detail
          Process customer_proc
.....1.....2.....3.....4.....5.....6.....7.....
1 MODE *WRITE customer
2 SCREEN customer_scrn
3 IF 3 *ON THEN ENTER 13
4 IF 1 *ON THEN ENTER 6
5 IF 2 *ON THEN ENTER 10 ELSE ENTER 8
6 FILE *INSERT customer
7 MESSAGE add_ok
8 SQL commit
9 ENTER 2
10 SQL customer2 ; ENTER 16

Step Number  1      Action  E  (A/C/D/I/R/L/S/E)      Command

Command  Process  Function  Generate  16* 35  System  Commit  Help  Previous
Help    Header   Detail   Process   n      Keys   Data   Menu

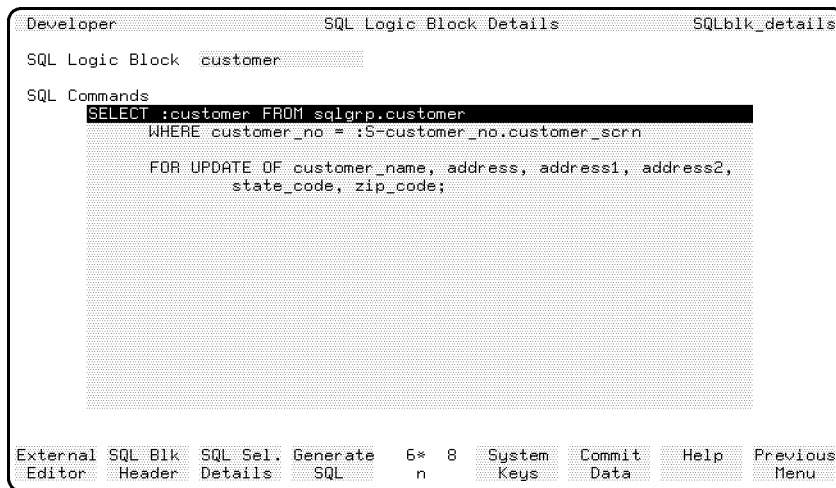
```

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- Any function or process with more than 99 lines or 400 bytes/line is flagged as an error and the user returned to the editor to make the correction.
- All HP ALLBASE/4GL keywords are upshifted.

From the SQL Logic Block Details screen:

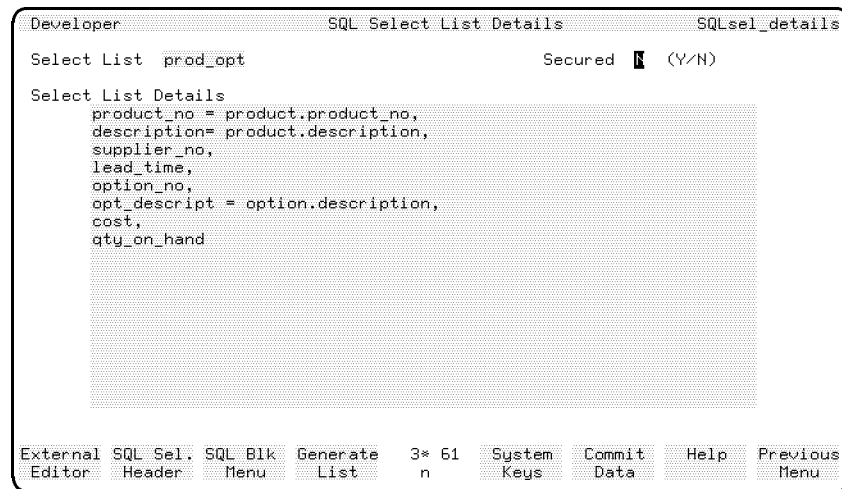
1. Enter the SQL logic block name. Press the carriage return, **Commit Data**, or **(Tab)**.
2. Then, press **External Editor**.
3. Save the file, then exit the editor.



|
 |
 External
 Editor Key ---

From the SQL Select List Details screen:

1. Enter SQL select list name. Press the carriage return, **Commit Data**, or **Tab**.
2. Enter Y or N for the Secured field.
3. Then, press **External Editor**.
4. Save the file, then exit the editor.



External
Editor Key ---

Note

The **External Editor** replaces the **Database Items** on the SQL Logic Block Details screen and the **Field Specs.** on the SQL Select List Details screen.

You can use the menu tree to get to either the Database Items menu or Field Specifications screen.

The screens for the SQL Logic Block Details and SQL Select List Details allow 65 characters per line, 17 lines per screen. If the item being edited exceeds block field limits, the block becomes display only and a message tells the user to use an external editor to modify the item.

Generating SQL select lists and SQL logic blocks remains the same as before.

Hints for Editing SQL Logic Block and Select List Details Screens

- If the user creates a file containing more than 32,000 bytes, an error message is displayed and the user is returned to the editor so the correction can be made. Size is determined by multiplying the longest line by the number of lines.



The external editor is a new feature with the release of B.07. You may want to insert these pages near pages 5-60 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 1*, or near pages 10-9, 10-14, or 10-19 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. These pages may also be reproduced.

Item Limits

Some item limits have been increased on the number of items in an application. The following table summarizes these limits.

Item Type	Limit per Application
Field specifications	4000
Validation ranges	999
Validation tables	999 *
Variables	999
Alphanumeric constants	999
Numeric constants	999
Scratch-pad fields	99
Application titles	4000
Master titles (per set of s-files)	4000
Calculated items	999
Record layouts	4000
Work areas	999
File definitions	999
Messages	4000
Help screens	4000
Screens	4000
Function key sets	4000
Functions	4000
Processes	4000
SQL logic blocks	4000
Decision tables	4000
Reports	4000

(* Depends on table size. Total table text cannot exceed 32 kilobytes)

Other Limits

HP ALLBASE/4GL also imposes some limits on the number of components in certain item types. These limits are summarized below.

Fields per record layout	255
Record layouts per file	12
Key fields per record layout	19
Characters per record field	999
Characters per key field	120
Characters per record layout	2048
Fields per screen	99
Characters per screen field	80
Lines per report definition *	255
Characters per report field *	255
Fields per report line *	127
Characters per report line	255
Characters per SQL select list	32,000
Characters per SQL logic block	32,000

(* Depends on system memory configuration.)

In some cases, logically deleted items still occupy space in the HP ALLBASE/4GL internal name lists. If deleted items occupy a significant amount of name list space, some of the limits listed above may be reduced.

To recover this space, generate the entire application by selecting the *All* option on the Generate menu. HP ALLBASE/4GL compacts the internal name list when it generates an entire application.

Increasing the SQL Select List or SQL Logic Block Size

To increase the size of an SQL select list or SQL logic block beyond the 17 line by 65 byte limit, invoke the external editor.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with item limits.



Item limits were previously described in appendix E of the *HP ALLBASE/4GL Developers Reference Manual, Volume 2*. These pages replace appendix E. You may reproduce these pages.

LABEL Command

The LABEL command allows developers to use the ENTER and SERIES commands to jump to a specific label in the code rather than just to a statement number. Because statement numbers in the code can change with the addition or deletion of statements, statement numbers referenced by the ENTER and SERIES commands may need to change. With the use of labels, the label in the code will not change with the addition or deletion of lines but maintains its relative position. This command must be the only command on a line.

Caution Previously, the built-in HP ALLBASE/4GL editor for functions and processes automatically modified the statement numbers used with the ENTER and SERIES commands. When using the external editor, these statement numbers are not modified automatically. Using a LABEL command to identify a particular section and using the label in the ENTER or SERIES commands eliminates the need to modify the statement numbers.

Format

LABEL *label_name*

Parameters

label_name

An alphanumeric name from 2 to 16 characters that must start with an alphabetic character. The name may contain the underscore ('_') character. The *label_name* must be a literal.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



This is a new HP ALLBASE/4GL command. You can make necessary notes in your manual or insert these pages near page 11-88 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. These pages may also be reproduced.

ENTER Command

Format

$$\text{ENTER} \left\{ \begin{array}{l} \textit{step_number} \\ \textit{data_ref} \\ \textit{label_name} \end{array} \right\}$$

Parameters

step_number

Unchanged.

data_ref

Unchanged.

label_name

Must be an alphanumeric literal from 2 to 16 characters starting with an alphabetic character.

For example,

`ENTER begin_loop`

When HP ALLBASE/4GL encounters a `ENTER` command with a *label_name*, processing will continue on the statement immediately following the `LABEL` command with the specified *label_name*.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



This is an enhancement to the ENTER command. You can make necessary notes in your manual or insert these pages near page 11-35 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. These pages may also be reproduced.

SERIES Command

Format

$$\text{SERIES } \left\{ \begin{array}{l} \textit{begin_step_number} \\ \textit{begin_data_ref} \\ \textit{begin_label_name} \end{array} \right\} \left\{ \begin{array}{l} \textit{end_step_number} \\ \textit{end_data_ref} \\ \textit{end_label_name} \end{array} \right\}$$

Parameters

<i>begin_step_number</i>	Unchanged.
<i>end_step_number</i>	Unchanged.
<i>begin_data_ref</i>	Unchanged.
<i>end_data_ref</i>	Unchanged.
<i>begin_label_name</i>	The label name of the first step number to be executed. Must be an alphanumeric literal from 2 to 16 characters starting with an alphabetic character.
<i>end_label_name</i>	The label name of the last step number to be executed. Must be an alphanumeric literal from 2 to 16 characters starting with an alphabetic character.

For example,

```
SERIES error_begin error_end
```

When HP ALLBASE/4GL encounters a SERIES command with a *label_name* as the first (begin) parameter, processing will continue on the statement immediately following the LABEL command with the specified *begin_label_name*. Execution of

the statements continues until the *end_label_name*, *end_step_number*, or *end_data_ref* has been reached.

New error messages

See appendix C2 of this *Software Update Notice* for error messages associated with this command.



This is an enhancement to the SERIES command. You can make necessary notes in your manual or insert these pages near page 11-133 of the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. These pages may also be reproduced.

Improved Menu Item Security for unload and load Utilities

Menu item security has been improved for the `unload` and `load` utilities. You no longer need to redefine menu item security for the application after using the `load` utility. The `load` utility automatically performs the following:

- Users/group names found in the security list that do NOT exist in the destination system are removed from the security list.
- When none of the user/group names exist in the destination system, the user/group names are removed and the user “`developr`” is added to the security list. This ensures menu item security.



This supercedes the information found on pages 4-19 and 7-18 in the *HP ALLBASE/4GL Developer Administration Manual* and pages 4-16 and 7-12 in the *HP ALLBASE/4GL Run-Time Administration Manual*. You can make necessary notes in your manual or insert this page near pages 4-19 and 7-18 of the *HP ALLBASE/4GL Developer Administration Manual*, and pages 4-16 and 7-12 in the *HP ALLBASE/4GL Run-Time Administration Manual*. This page may also be reproduced.

hp4stoa and hp4atos Utility “-V” Option

A “-V” (verbose) option has been added to the `hp4stoa` and `hp4atos` utilities. This option displays the progress of the utilities. Users of large applications can monitor the progress of the application being saved or restored into the s-files.

For `hp4stoa`, the “-V” option will display the dictionary type that is currently being saved to disk.

Example

```
hp4stoa -V -aMyApp -udevelopr > my_app.asf
```

```
Processing field_spec
Processing function
Processing process
Processing dec_table
Processing report
Processing record
Processing screen
Processing sql_logic_block
Processing sql_select_list
Processing file
Processing calc_item
Processing message
Processing soft_keys
Processing title
Processing help
Processing variable
Processing work_area
Processing constant
Processing numeric
Processing range
Processing table
Processing scratch_pad
```

For `hp4atos`, the “-V” option will display the number of objects processed. This display will be updated for every 100 objects processed.

Example

```
hp4atos -V -aMyApp -udevelopr < my_app.asf
```

```
100 objects processed  
200 objects processed  
300 objects processed  
400 objects processed  
500 objects processed  
600 objects processed  
700 objects processed  
800 objects processed  
847 objects processed
```



This is an enhancement to the `hp4stoa` and `hp4atos` utilities. Please refer to page 12-13 in the *HP ALLBASE/4GL Developer Reference Manual, Volume 2* for details on these utilities. This page may be reproduced.

C2

New and Modified Error Messages for B.07

Place this addendum in appendix C of the *HP ALLBASE/4GL Developer Reference Manual, Volume 2*. This addendum contains new and modified error message descriptions, the probable cause, and some actions you can take to correct the error.

- 15295 **SIGNED to UNSIGNED move - absolute value used.**
This warning message is displayed when a negative value is moved to an unsigned numeric field. The result is an absolute value.
- 14166 **Only applications stored using B.07 or later may be loaded.**
Use the `hp4stoa` and `hp4atos` utilities, or use a B.07 unload file.

External Editor

- 14740 **External edit file could not be created. Check permissions and disk space.**
Check for disk space and correct if necessary. Check to see that the permissions are set properly for creating a file in your current directory.

- 14741 External edit file could not be found. Item not changed.
HP ALLBASE/4GL could not find the file created for the external editor while trying to read in the changes.
- 14742 Item must be retrieved before using the external editor.
Retrieval of the item is required before using the external editor. Retrieve the item.
- 14750 More than 99 lines found.
Reduce number of lines to 99 or less.
- 14751 Line <number> contains more than 400 characters.
Reduce the line length to 400 characters or less.
- 14760 More data exists than can be displayed.
The file is larger than can be displayed on the screen.
Modify the file using an external editor.
- 14761 More than 32,000 bytes exist in file.
Check file size. Reduce size to less than 32,000 bytes by eliminating blank space or blank lines.

Item Limits

- 20128 The ALLBASE/4GL limit of 999 select lists has been reached.
No more select lists may be added.

C2-2 New and Modified Error Messages for B.07

- 20140 The ALLBASE/4GL limit of 999 ranges has been reached.
No more ranges may be added.
- 20141 The ALLBASE/4GL limit of 999 tables has been reached.
No more tables may be added.
- 20150 The ALLBASE/4GL limit of 999 alphanumeric constants has been reached.
No more alphanumeric constants may be added.
- 20160 The ALLBASE/4GL limit of 999 variables has been reached.
No more variables may be added.
- 20170 The ALLBASE/4GL limit of 999 numeric constants has been reached.
No more numeric constants may be added.
- 20180 The ALLBASE/4GL limit of 999 data files has been reached.
No more data files may be added.
- 20190 The ALLBASE/4GL limit of 999 calculated items has been reached.
No more calculated items may be added.

LABEL Command

- 16620 **Label must be at least 2 characters.**
Increase label characters. Label must be from 2 to 16 characters.
- 16621 **Labels must be 16 characters or less.**
Decrease label characters. Label must be from 2 to 16 characters.
- 16622 **Labels must start with a alpha character (non-numeric).**
Start labels with non-numeric characters.
- 16623 **Invalid characters found in label. Must be alphanumeric.**
Remove all invalid characters. Must be alphanumeric.
- 16624 **Label does not exist.**
A label name was specified with an ENTER or SERIES command that does not exist in the function or process. Check for misspelling on the ENTER, SERIES, or LABEL commands. Also, check for a missing LABEL statement with the specified label name. Regenerate the function or process after making the correction.
- 16625 **Label is already defined.**
Two or more labels with the same name exist in the same function or process. Modify the function or process to use unique label names.

Menu Item Security

15725 User <user name> not found -- menu item security for menu <menu name> has been changed.

This is a warning message displayed during an application load if menu item security has been changed.

SQL Logic Block Commands

16706 SELECT or SELECT/OPEN must be the only SQL commands in a block.

A command other than an OPEN command is following a SELECT command. Check the syntax. Make sure only a single SELECT command or a SELECT command followed by an OPEN command are the only commands in the SQL logic block.

16724 Wrong number of parameters for EXECUTE IMMEDIATE command.

The EXECUTE IMMEDIATE command allows only one parameter. Check the syntax.

16725 Wrong number of parameters for CONNECT command.

The CONNECT command allows only one parameter. Check the syntax.

16726 An OPEN command must be preceded by a SELECT command.

Add a SELECT command to the SQL logic block which precedes the OPEN command.

16727 Only an OPEN command may follow a SELECT command.
The only valid SQL command that can follow a SELECT command is an OPEN command.

60154 The requested FILE *REFETCH <filename> operation is out of sequence or cannot be performed at this time.
You must use a SELECT and a FILE *NEXT command before you can use the FILE *REFETCH command.

Manual Installation and Customization

Manual Installation and Customization

Under some circumstances, you may not be able to use the `hp4_install` or `hp4rt_install` script to install HP ALLBASE/4GL. This may occur under the following conditions:

- You are installing HP ALLBASE/4GL on a mounted volume that is normally part of a different HP-UX system.
- You are using a LAN to install HP ALLBASE/4GL on a remote system.
- You have sufficient disk space via a symbolic link to another mounted volume, but insufficient disk space on the installation volume. (The `hp4_install` and `hp4rt_install` scripts do not follow symbolic links.)

Under these circumstances you can read the HP ALLBASE/4GL fileset manually using the HP-UX `tar` utility. You can then run the `customize` script manually to complete the installation.

To install the HP ALLBASE/4GL fileset manually:

1. Mount the HP ALLBASE/4GL media.
2. Logon as superuser.
3. Change your current directory to the destination directory for the HP ALLBASE/4GL system.

If you are installing HP ALLBASE/4GL over a LAN, you may need to copy the HP ALLBASE/4GL fileset into a suitable directory on the host system, and then copy the fileset to the destination system using the LAN.

4. Use the following command from the destination directory for the HP ALLBASE/4GL system:

For developer:

```
tar -xvf /tmp/HP4GL.tar HP4GL system
```

For run-time:

```
tar -xvf /tmp/HP4GLrt.tar HP4GLrt system
```

If your destination directory is the **root** directory, go to the “Customizing the Manual Installation” section.

If your destination directory is not the root directory, you must move some files to the **/system** directory to complete the installation before you customize it.

To move the system directory files to /system:

Caution These steps do **not** apply if you are installing HP ALLBASE/4GL under the HP-UX root directory. **Executing these commands in the HP-UX root directory will damage the HP-UX file system.**

1. Start in the directory where you just put the HP ALLBASE/4GL system.
2. Copy the HP ALLBASE/4GL system files.

```
cp -r ./system /
```

3. Delete the **system** directory and the files under it from the directory containing the HP ALLBASE/4GL system.

Do not execute this command in the HP-UX root directory.

```
/bin/rm -r system
```

You can now mount the disk on its normal HP-UX system and run the **customize** script to complete the installation.

G-2 Manual Installation and Customization

Customizing the Manual Installation

1. Mount the disk on the other HP-UX system.
2. Logon to the other HP-UX system as superuser and change to the directory containing the HP ALLBASE/4GL system.
3. Run the customize script.

For example,

For developer:

/system/HP4GL/customize

For run-time:

/system/HP4GLrt/customize

Refer to “Install and Customize Scripts” in chapter 3 for a description of the actions performed by the `customize` script.

4. Test the installation and reload the applications following the instructions also found in chapter 3 “Upgrade Installation Instructions”.

Answering the Customize Script Prompts

In some cases, the `customize` script may not be able to identify the correct directory path name to make the changes. In this case, you will either get a prompt where you can either enter the correct information or a warning so you can edit the script file and the `/etc/passwd` file manually after you complete the other parts of the installation.

1. Is the destination device normally part of the host HP-UX system?

The `customize` script can only run automatically if the destination directory is on the HP-UX root volume or a volume that is normally a part of the host system.

Answer **yes** if the destination device is normally part of the host HP-UX system.

If you answer **no** or **quit** for this prompt, the script terminates and you must do the customization tasks manually. (Look at the above descriptions of what the customize script does and do those tasks.)

2. Do you want to overwrite the `s.old` directory?

The `s.old` directory contains the s-file from the previous installation of HP ALLBASE/4GL. As part of the installation process, the s-files from the currently installed version are written to the `s.old` directory and the prior version s-files are deleted. The new s-files are installed in HP4GL/s or HP4GLrt/s.

Normally, the files in `s.old` are two versions away from the new installation and it doesn't matter if they get overwritten. However, if you have started the installation and aborted it for some reason, the `s.old` directory may contain the version of the s-files for the immediately prior release and would be overwritten by the s-files from the aborted installation. In that case, you would not want the `s.old` directory to be overwritten.

The current `s.old` directory will be overwritten by the files from the new installation. Do you want to continue?

Answer **yes** to the prompt if you want the `s.old` directory to be overwritten. If you answer **no** the `s.old` directory will retain the s-files as they are.

3. Do you want to overwrite the existing (non-empty) backup volume catalog file with the new, empty backup volume catalog file?

If you answer **Y**, a new, empty file is copied into the `HP4GL/control/backup_new` (or `HP4GLrt/control/backup_new`) directory. If you answer **N** to overwrite the existing file, the non-empty backup volume catalog file is converted to serial format and saved.

New message catalog files (`HP4GL.dat` and `HP4GL.idx`) are installed in subdirectories under `/usr/lib/nls/american` and `/usr/lib/nls/C`. The messages catalog files are linked to files under `/usr/lib/nls/n-computer`.

The existing messages catalog files are moved to `s.old`. You can delete these old files after the installation is complete if you want.

The installation is now complete. Press the carriage return to acknowledge the upgrade completion and return to the HP-UX prompt.

If the printer scheduler was running when you started the `hp4_install` script, it is restarted automatically. If you had the scheduler shut down before you started, you can restart it now.

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