IBM Cognos Application Development Tools
IBM Cognos PowerHouse 4GL

Version 8.40G for OpenVMS

IBM

Getting Started

Information Management software

Product Information

This document applies to IBM Cognos PowerHouse 4GL 8.40G for OpenVMS and may also apply to subsequent releases. To check for newer versions of this document, visit the IBM Cognos Information Centers (http://publib.boulder.ibm.com/infocenter/cogic/v1r0m0/index.jsp).

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About this Document

This document describes how to install IBM® Cognos® PowerHouse® 4GL version 8.40G for OpenVMS. It is intended for system managers familiar with the OpenVMS environment.

Chapter 1, "Installing IBM Cognos PowerHouse 4GL ", provides information about installing PowerHouse 4GL and setting the environment.

Chapter 2, "Client Network Support (PowerGrid)", provides information about running and configuring PowerGrid.

Conventions Used in this Document

In this document, the term *<install directory>* refers to the directory in which you installed the components.

When this document uses the term "enter", type the information and then press the Enter or Return key.

Getting Help

For more information about using this product or for technical assistance, go to http://www.ibm.com/support. Under **Choose support type**, select **Information management,** then under **Choose a product,** select **Cognos Application Development Tools**. Under **Cognos Application Development Tools support,** click **Documentation**.

For More Information

For information on the supported environments for your specific platform and any last-minute product information or corrections to the documentation, please refer to the *IBM Cognos PowerHouse 4GL Release Notes*.

Chapter 1: Installing IBM Cognos PowerHouse 4GL

This chapter describes how to install IBM Cognos PowerHouse 4GL.

Before You Begin

Before you begin the installation, read this document and the *IBM Cognos PowerHouse 4GL Release Notes* in their entirety.

Important Note Regarding Licensing and Software Enable Keys

As of version 8.40F, PowerHouse 4GL no longer requires software enable keys, the PowerHouse Licensing software, license files, or the license daemon. For more information, see the *IBM Cognos PowerHouse 4GL Release Notes*.

The use of this software program ("Program") is subject to the terms of the license agreement previously entered into between you and Cognos, or between you and IBM, as applicable. Regardless of the fact that all Program features and data access are enabled, your use of this Program continues to be restricted by the number of users and by the entitlements described in your order and license agreement. It is your responsibility to ensure that users are restricted from using any other Program functionality. If you have any questions, contact your sales representative.

Installation Package

There are two IBM Cognos PowerHouse 4GL 8.40G packages, one each for OpenVMS AlphaServer and OpenVMS Integrity (Itanium®). Each package consists of an IBM Cognos PowerHouse 4GL Installation CD and the IBM Cognos PowerHouse 4GL Books CD. If you have downloaded the files, the contents of the downloaded files are identical to the contents of the CDs.

Download Instructions

If you are downloading the installation package, follow these steps to download the files.

Steps

1. Download the files to your Microsoft® Windows® system but do not unzip or open them. When the "File Download" dialog appears, select "Save". Do not attempt to open the download directly from the download page.
2. Transfer the PowerHouse 4GL OpenVMS AlphaServer or OpenVMS Integrity zip file to your OpenVMS system as binary.
3. Unzip the PowerHouse 4GL OpenVMS AlphaServer or OpenVMS Integrity zip file to a temporary location using the correct HP OpenVMS Systems UNZIP from

   http://h71000.www7.hp.com/openvms/freeware/freeware.html
4. Change the file attributes by typing:
   ```
   SET FILE/ATTRIBUTE=(RFM:FIX,RAT:NONE,LRL:32256) powerhouse084.%
   SET FILE/ATTRIBUTE=(RFM:FIX,RAT:NONE,LRL:32256) powergrid074.%
   ```
5. Extract the IBM Cognos PowerHouse 4GL Books zip file to a temporary folder on your Windows system and ensure that the option "Use folder names" is checked.

OpenVMS Supported Versions

Refer to the *IBM Cognos PowerHouse 4GL Release Notes* for a list of supported software versions in the OpenVMS environment. PowerHouse 4GL will not install on a version of OpenVMS less than 8.2 on HP AlphaServer and 8.2-1 on HP Integrity.

Installation Requirements

Refer to the *IBM Cognos PowerHouse 4GL Release Notes* for the installation requirements for your OpenVMS environment.

Installation Overview

The restoration and installation procedures have a conversational structure, with default answers enclosed in square brackets for most questions. To select the default answer, press Enter or Return. To obtain more information at any prompt, enter a question mark (?).

PowerHouse 4GL and PowerGrid are installed using VMSINSTAL, the standard OpenVMS tool for installing software. For more information about VMSINSTAL, see the *OpenVMS System Manager's Manual*.

To install PowerHouse 4GL and Client Network Support (PowerGrid), follow these steps.

Steps

1. Install Client Network Support (PowerGrid) if you are connecting to Axiant® 4GL.

   If you require PowerGrid, it must be installed before PowerHouse 4GL.
2. Install PowerHouse 4GL.
3. Set up Client Network Support if you installed PowerGrid in step 1.

Details on completing steps 1 and 2 are covered in this chapter. For more information about Client Network Support, see Chapter 2,"Client Network Support (PowerGrid)".

Before Running the Installation Procedure

Before running the installation, verify that there is sufficient space on the target disk. If you try to install with insufficient disk space, the install procedure issues an error message and asks you if you want to continue or not.

The install attempts to determine the amount of system resources currently in use and verify that there are sufficient free resources. It can be difficult to determine how much of the available resources are in use. For example, in a new installation, the LOCKIDTBL value may need to be increased. The LOCKIDTBL value may appear sufficient, when in fact another application is using that resource heavily. For more information about resources, see the *OpenVMS System Management Utilities Reference* manual.

The procedure recommended by HP for adjusting these parameters is to mark the changes in SYS$SYSTEM:MODPARAMS.DAT and use the AUTOGEN procedure (as described in the *OpenVMS Cluster Systems* manual). By using MODPARAMS.DAT, you can ensure that the changes necessary for PowerHouse 4GL are not lost when you adjust other system parameters or when you upgrade OpenVMS.

You should use the ADD_ option with GBLPAGES and GBLSECTIONS, and the MIN_ option with LOCKIDTBL and RESHASHTBL.

Oracle Rdb and PowerHouse 4GL use many of the same system resources (in particular, LOCKIDTBL, RESHASHTBL, and GBLPAGES). If Oracle Rdb is installed on your system, ensure that there are sufficient resources to run PowerHouse 4GL and Oracle Rdb together.

If you are using a shared PHD format dictionary, you will need the following system resources:
- GBLSECTIONS - one section per dictionary that is to be shared.
- GBLPAGES - one page per file block and 2 for each dictionary to be shared. For example, if the dictionary size is 1500 blocks, you will need 1502 GBLPAGES.

Using Oracle 10g Release 2

If you are using Oracle 10g Release 2 (10.2.0), you must re-link the Oracle executable for proper version resolution. The process uses LINK. You will be prompted for the path to your Oracle setup location. Typically, you will find ORAUSER.COM in the Oracle setup location.

If you select Oracle 10.2.0 during the PowerHouse 4GL installation, the procedure prompts you to enter the path to your Oracle setup location. If you do not provide the correct path, you are prompted to continue the installation. If you stop the installation, obtain the correct path and start the installation again. If you continue the installation, you must relink the Oracle 10.2.0 executable after the installation is complete.

Steps

1. To set up the Oracle logicals required by the re-linking script, run the Oracle 10.2.0 setup script provided by Oracle (ORAUSER.COM).
2. From PH_LOCATION (by default PATH$POWERHOUSE:[840G.PH_COMMON]), re-link the Oracle executable by running

```
@SETPOWERHOUSE 840G
SET DEFAULT PATH$POWERHOUSE:[840G.PH_COMMON]
@ORDBA1020 @SETUP_ORDBA1020
```

3. From PH_INSTALL_LOCATION (by default PATH$POWERHOUSE:[840G.INSTALL]), de-install and re-install the PowerHouse 4GL images by running

```
@PWRDEINSTALL 840G
@PWRINSTALL 840G "" "" 1020
```

Installing PowerGrid

PowerGrid provides network communication services for thin-client applications using Axiant 4GL. The main function of the PowerGrid network daemon is starting the servers needed by client applications. To respond to requests from client and server applications, the PowerGrid network daemon (NETD) must be started before trying to connect to the server from a client PC. The network daemon must be left running as a background process on each host.

You do not need PowerGrid unless you are building and deploying Axiant 4GL thin-client applications.

If you need PowerGrid, PowerHouse 4GL 8.40G requires PowerGrid version 7.4.

You must install PowerGrid before you install PowerHouse 4GL.

Steps

1. Log on to an account with system privileges.
2. If a PowerGrid network daemon is running, terminate the daemon, which will have the process name NETD_UCX_MAIN. For more information about terminating the daemon, see .
3. Initiate the installation by entering the command:

```
$ @SYS$UPDATE:VMSINSTAL POWERGRID074 <devicename>
```

POWERGRID074 is the name of the software and *<devicename>* is either the name of a device or the directory specification where the PowerHouse 4GL savesets are found. For example, DQAO:.

VMSINSTAL may issue warning messages concerning, for example, other users on the system. These messages may be ignored.

The following message may appear:

```
Do you want to continue anyway [NO]?
```

If you want to continue, enter YES.

You may also be asked about your backup status:

```
Are you satisfied with the backup of your system disk [YES]?
```

If you want to continue, enter YES or press Return.

4. You must agree to the license agreement in order for the installation to continue.

5. You are prompted to designate the target disk on which to restore the files:

   ```
   * Enter the target disk [SYS$SYSDEVICE]:
   ```

   If IBM Cognos products are already installed on your system, DISK$COGNOS is the default; otherwise SYS$SYSDEVICE is the default. The device you specify must be a disk name and cannot be a concealed device (such as SYS$SYSROOT:). The colon on the device name is optional.

6. Designate the target root directory in which to restore the files in response to the prompt:

   ```
   * Enter the target root directory [COGNOS]:
   ```

   If IBM Cognos products are already installed on your system, the translation of ROOT$COGNOS in the system logical name table is used as the default. Otherwise, the root directory is created at the top level of the directory tree and is named COGNOS.

   The root directory must be located at either the top or the second level of the directory tree. If you want the root at the second level, the top level directory must already exist. Respond to the prompt as follows:

   ```
   <top level directory>.COGNOS
   ```

   where *<top level directory>* is the name of the top level directory and .COGNOS is optional because it is assumed.

7. The following prompts appear if the COGNOS account does not exist. For trials and demonstrations, the COGNOS account is recommended but not required. The first prompt is:

   ```
   * Would you like the COGNOS account created? [N]:
   ```

   If you choose NO, skip to the next step. If you choose YES, the following prompts appear:

   ```
   Enter the UIC group number (1 to 37776 in octal) [200]:
   ```

   Specify a particular group of users. Choose an octal number in the range of 1 to 37776. The default is 200.

   ```
   Enter the UIC member number (0 to 17776 in octal) [504]:
   ```

   Specify a particular member of a group. Choose an octal number in the range of 0 to 17776. The default is 504.

   The account is created as follows:
   - the password is POWERHOUSE
   - the default device is set to the target device entered earlier
   - the default directory is set to the root directory entered earlier

8. You are prompted to designate an owner of the files:

   ```
   * Which user name will own the PowerGrid files? [COGNOS]:
   ```

   Enter a valid user name or resource identifier. The ownership of the PowerGrid files restored from the distribution medium is set to this user. If a COGNOS account exists, the default is COGNOS, otherwise the default is SYSTEM ([1,4]).

9. Enter the PowerGrid file protection:

   ```
   Enter the file protection [S:RWED,O:RWED,G:RE,W:RE]:
   ```

   The default grants the group and world categories read (R) and execute (E) access to the PowerGrid files, and grants the owner full access to the files, including delete (D). The SYSTEM protection code should be set to read (R), write (W), execute (E), delete (D) to ensure proper installation.

   If the install creates the COGNOS directory, the protection for the COGNOS directory and all files in the COGNOS directory tree are set to this protection. Otherwise, the protection is only set for the version directory and all the files in the version directory tree. The install also ensures that none of the directory files have delete access granted to them.

10. If you already have an existing PowerGrid daemon on your system, the existing and target versions are listed with a message that the existing daemon will be replaced with a NEWER, OLDER, or the SAME version. You are then prompted for authorization to proceed:

    ```
    Do you wish to continue [YES]?
    ```

    Enter YES if you want to replace your current daemon with the target version. Enter NO if you want to keep your current daemon.

11. If you responded YES in the previous step, the PowerGrid installation begins with the message:

```
Installing PowerGrid for HP TCP/IP Services for OpenVMS
```

If you do not have TCP/IP Services for OpenVMS installed on your system, PowerGrid issues an error message similar to the following:

```
HP TCP/IP Services for OpenVMS (formerly UCX) is not installed.
```

You may finish installing PowerGrid, but do not attempt to execute the version-specific PGBOOT command procedure until the appropriate network has been installed. PowerGrid requires HP TCP/IP Services for OpenVMS.

12. Specify the PowerGrid port number in response to:

```
* Specify the PowerGrid Port Number [1526]
```

Enter 0 or a number from 1024 to 65535. The default port number is 1526. IBM Cognos client applications use this port number when initializing a communications session with PowerGrid. If a value other than 1526 is specified, be sure to alert IBM Cognos client application users, as they must configure their applications to use the same number.

A value of 0 has a special meaning; it indicates that the PowerGrid communications port number will be maintained in the network product Services file.

13. The install verifies that there is sufficient disk space (2,500 blocks) to install PowerGrid. If there is insufficient disk space, a warning message appears, and you must specify if you wish to continue, YES or NO.

14. The install verifies that the specified user name receiving ownership of the PowerGrid files has sufficient disk quota to accept them. If disk quotas are enabled and the disk quota for the user is too low, a warning message indicating that the disk quota will be increased in the final phase appears.

15. The install verifies that the system parameters are sufficient. For each system parameter, the install displays the amount required for PowerGrid, the current setting, the amount in use, and the amount available. For each insufficient resource, an error message appears, and the following question is asked:

```
* Do you wish to continue? [N]
```

To proceed, answer YES, otherwise VMSINSTAL will exit with a warning message that the installation has failed. To restart VMSINSTAL, re-issue the VMSINSTAL command.

16. When resource checking is complete, the install takes the following actions:
    • Creates the COGNOS directory if it does not already exist.
    • Creates the COGNOS account if you requested this. It also changes the disk quota if necessary.
    • Restores the PowerGrid files from the distribution medium and sets the protection and ownership accordingly.
    • If a HP TCP/IP Services network type has been selected, the install creates the system-specific version of the PowerGrid start-up command file PGBOOT.COM and the network-specific version of the PowerGrid daemon start-up command file NETD_START.COM.
    • PGBOOT.COM is moved to the system manager account, SYS$MANAGER. NETD_START.COM is moved to PATH$POWERGRID:[UCX.NETWORK].

The installation of PowerGrid is now complete.

After you have installed PowerHouse 4GL, configure PowerGrid. For more information, see Chapter 2, "Client Network Support (PowerGrid)".

Installing PowerHouse 4GL

If you intend to use Axiant 4GL with PowerHouse 4GL 8.40G for OpenVMS, you must install PowerGrid first. See "Installing PowerGrid" (p. 9).

Steps
1. Log on to an account with system privileges.
2. Ensure that PowerHouse 4GL is not running.

3. If you have the installation CD, insert the CD into the CD drive on your OpenVMS system. If you have downloaded the installation file, locate the temporary directory on your OpenVMS system where you extracted the file. Initiate the installation by entering the command:

    ```
    $ @SYS$UPDATE:VMSINSTAL POWERHOUSE084 <devicename>
    ```

    POWERHOUSE084 is the name of the software and *<devicename>* is the name of the device or the directory specification where the PowerHouse 4GL savesets are found. For example, DQA0:.

    VMSINSTAL may issue warning messages concerning, for example, other users on the system. These messages may be ignored.

    The following message may appear:

    ```
    Do you want to continue anyway [NO]?
    ```

    If you want to continue, enter YES.

    You may also be asked about your backup status:

    ```
    Are you satisfied with the backup of your system disk [YES]?
    ```

    If you want to continue, enter YES or press Return.

4. You must agree to the license agreement in order for the installation to continue.

5. You are prompted to choose the product feature set that you want to restore. Based on your selection the appropriate directory structure is created and the appropriate images are installed in memory. For more information, see the *IBM Cognos PowerHouse 4GL Release Notes*. The following prompt appears:

    ```
    Which feature do you wish to restore:
    1.  Development.
    2.  Runtime.
    3.  Runtime with Reporting.
    4.  Reporting-Only.
    5.  Reporting No Dictionary
    * Choice [1]:
    ```

    Enter the number corresponding to the feature you wish to restore.

6. You must indicate whether you want to install PowerHouse 4GL with or without IBM Cognos network services. This is in addition to the PowerGrid installation. PowerGrid must be installed before PowerHouse 4GL. The following prompt appears:

    ```
    Make a selection from the following list:
    1.  Install PowerHouse 4GL.
    2.  Install PowerHouse 4GL using IBM Cognos Network Services.
    * Choice [2]:
    ```

    If you choose option 1, PowerHouse 4GL will be installed without any of its client-server functionality, which requires IBM Cognos network services for data communications. Choose option 1 if you are not using Axiant 4GL.

    If you choose option 2, PowerHouse 4GL will be installed with full client-server functionality. Choose option 2 if you are using Axiant 4GL. The following message will appear:

    ```
    The default Network Configuration HP TCP/IP is being used
    ```

    Note: If you have installed PowerHouse 4GL using IBM Cognos network services (option 2) and PowerGrid is not yet installed, a series of informational messages informs you that PowerGrid is not available. A prompt gives you the opportunity to continue or exit. If PowerGrid is not yet installed and is required, exit the installation and see "Installing PowerGrid" (p. 9).

7. You are prompted to select the Oracle gateway to install.

    If you are running OpenVMS 8.2 or greater on AlphaServer, the following appears:

    ```
    Make a selection from the following list:
    1.  Install PowerHouse 4GL to use Oracle 9.2.0
    2.  Install PowerHouse 4GL to use Oracle 10.1.0
    3.  Install PowerHouse 4GL to use Oracle 10.2.0
    4.  None
    * Which version of Oracle would you like to use [1]:
    ```

    If you are running OpenVMS 8.2-1 or greater on Integrity, the following appears:

```
Make a selection from the following list:
1.  Install PowerHouse to use Oracle 10.2.0
2.  None
* Which version of Oracle would you like to use [1]:
```

Select the gateway that corresponds to the Oracle client version you are using. If you are installing PowerHouse on multiple nodes, the gateway may be different for each install depending on the available Oracle client version.

Based on your selection, the system level logical ORDBA7_4_VERS will be set to the version and the system level logical ORDBA7_44_<build#> will be set to point to the Oracle 9.2.0, 10.1.0, or 10.2.0 gateway when @SETPOWERHOUSE is executed.

8. If you selected Oracle 10.2.0, you must re-link the Oracle executable for proper version resolution. You are prompted to enter the path of your Oracle 10g Release 2 (10.2.0) setup location:

```
Please enter the path of your Oracle 10.2 setup location:
```

The install checks the path. If the path is not valid or if the path is not found, the install issues a message and prompts you to continue:

```
Do you wish to continue [NO]?
```

If you continue, you must re-link Oracle after installing PowerHouse 4GL. For more information, see "Using Oracle 10g Release 2" (p. 9).

9. You are prompted to designate the target disk on which to restore the files:

```
* Enter the target disk [SYS$SYSDEVICE]:
```

If IBM Cognos products are already installed on your system, DISK$COGNOS is the default; otherwise SYS$SYSDEVICE is the default. The device you specify must be a disk name and cannot be a concealed device (such as SYS$SYSROOT:). The colon on the device name is optional.

10. Designate the target root directory in which to restore the files in response to the prompt:

```
* Enter the target root directory [COGNOS]:
```

If IBM Cognos products are already installed on your system, the translation of ROOT$COGNOS in the system logical name table is used as the default. Otherwise, the root directory is created at the top-level of the directory tree and is named COGNOS.

The root directory must be located at either the top or the second level of the directory tree. If you want the root at the second level, the top level directory must already exist. Respond to the prompt as follows:

```
<top-level directory>.COGNOS
```

where *<top-level directory>* is the name of the top-level directory and .COGNOS is optional because it is assumed.

11. The following prompts appear if the COGNOS account does not exist. For trials and demonstrations, the COGNOS account is recommended, but not required. The first prompt is:

```
* Would you like the COGNOS account created? [N]:
```

If you choose NO, skip to the next step. If you choose YES, the following prompts appear:

```
Enter the UIC group number (1 to 37776 in octal) [200]:
```

Specify a particular group of users. Choose an octal number in the range of 1 to 37776. The default is 200.

```
Enter the UIC member number (0 to 17776 in octal) [504]:
```

Specify a particular member of a group. Choose an octal number in the range of 0 to 17776. The default is 504.

The account is created as follows:

- the password is POWERHOUSE
- the default device is set to the target device entered earlier
- the default directory is set to the root directory entered earlier

12. You are prompted to designate an owner of the files:

```
* Which user name will own the PowerHouse 4GL files? [COGNOS]:
```

Enter a valid user name or resource identifier. The ownership of the PowerHouse 4GL files restored from the distribution medium is set to this user. If a COGNOS account exists, the default is COGNOS; otherwise the default is SYSTEM ([1,4]).

13. Enter the PowerHouse 4GL file protection:

```
* Enter the file protection [S:RWED,O:RWED,G:RE,W:RE]:
```

The default grants the group and world categories read (R) and execute (E) access to the PowerHouse 4GL files, and grants the owner full access to the files, including delete (D). The SYSTEM protection code should be set to read (R), write (W), execute (E), delete (D) to ensure proper installation.

If the install creates the COGNOS directory, the protection for the COGNOS directory and all files in the COGNOS directory tree is set to this protection. Otherwise, the protection is only set for the version directory and all the files in the version directory tree. The install also ensures that none of the directory files have delete access granted to them.

14. The following prompt only appears if you have specified a disk and/or root directory different from the one defined at the system level:

```
* Do you wish to change the default COGNOS directory tree from the existing
one to the new one being installed [No]?
```

If you respond NO, the system logical names are not replaced during the final phase of the installation procedure and the next two steps are bypassed.

If you respond YES, the system logical names are replaced during the final phase of the installation procedure.

15. You must select the version or versions of PowerHouse 4GL to install. The install displays all the available versions of PowerHouse 4GL, those currently on the system and the version being installed. If there are no other versions of PowerHouse 4GL available, you will see only the version being installed.

Note: If you are in a cluster, installation can only occur if you are logged on to the same computer to which you are restoring.

For example:

```
Available PowerHouse 4GL versions:
840D1
840E
840F
840G
* Which version to install: 840D1
* Which version to install: 840E
* Which version to install: 840F
* Which version to install: 840G
* Which version to install:
```

Specify the available version. The prompt repeats so that you can install the shareable image sets for several versions at once. When you have finished, press Return. Pressing Return at the first prompt skips the shareable image set installation. PowerHouse 4GL will function correctly if the shareable image sets are not installed, but you may want to install them for enhanced performance or for additional privileges.

16. After you have chosen which version you want to install, the install prompts you for the default version of PowerHouse 4GL:

```
* Which version of PowerHouse 4GL is the default version: <version>
```

The prompt only appears if there are other versions of PowerHouse 4GL available. If only *<version>* is available, it is assumed to be the default. You should use the previous version of PowerHouse 4GL as the default until you have tested your applications with the new version. To change the default version of PowerHouse 4GL at a later date, edit the command file:

```
SYS$MANAGER:PWRBOOT_<feature_type>.COM
```

Change the call to SYS$MANAGER:PWRLOGICAL.COM to specify the desired version number and feature type.

The default version is used to define the logical name, PH_DEFAULT_VERSION. It is determined from the choice made in the previous prompt. There is also a default feature type that is used to define the logical name, PH_DEFAULT_LICENSE. SETPOWERHOUSE uses these logical names when no version or feature is provided.

17. You are prompted to specify the maximum number of users:

```
* What is the maximum number of users? (1 to BALSETCNT) [BALSETCNT]:
```

This number is only used to determine system requirements. To determine what the locking requirements may be, you should first determine the maximum number of processes that will be using PowerHouse 4GL concurrently, including interactive and batch processes. The default is the maximum number of processes allowed on the system based on the system BALSETCNT number. If you are not certain, use the default. Otherwise, enter the maximum number of concurrent users.

18. Before restoring the savesets, you are asked if you want to verify the system resources before continuing:

```
* Should system resources be verified [YES]?
```

If you respond YES, the install verifies system resources. If you respond NO, resource checking is bypassed.

19. The install verifies that the system parameters are sufficient. For each system parameter, the install displays the amount required for PowerHouse 4GL, the current setting, the amount in use, and the amount available. For each insufficient resource, an error message is displayed, and the following question is asked:

```
* Do you wish to continue [NO]?
```

To proceed, answer YES, otherwise VMSINSTAL will exit with a warning message that the installation has failed. To restart VMSINSTAL, re-issue the VMSINSTAL command.

20. The install verifies that there is sufficient disk space to install PowerHouse 4GL. The actual amount required depends on the product feature selected. If there is insufficient disk space, an error message is issued, but the installation continues.

21. The install verifies that the specified user name receiving ownership of the PowerHouse 4GL files has sufficient disk quota to accept them. If disk quotas are enabled and the disk quota for the user is too low, a warning message is issued specifying that the disk quota will be increased in the final phase.

   In addition to the normal disk space requirements for each feature type, about 200 blocks are temporarily required on the system disk during installation.

22. When the resource check is complete, the install takes the following actions:

   - Creates the COGNOS directory if it does not already exist.
   - Creates the COGNOS account if you requested this. It also changes the disk quota if necessary.
   - Restores the PowerHouse 4GL files from the distribution medium and sets the protection and ownership accordingly.
   - Relinks Oracle if you selected Oracle 10g Release 2 (10.2.0).
   - Creates the system-specific version of the PowerHouse 4GL system startup command file for the PowerHouse 4GL feature type being installed called PWRBOOT_*<feature_type>*. The system-specific version is created to invoke PWRLOGICAL with the right default version, disk, directory, and feature type. It also adds a line to invoke PWRINSTALL with the version and feature type for each image set selected for installation. If no versions are selected, PWRINSTALL is not included in the PWRBOOT_*<feature_type>* file. A copy of PWRLOGICAL.COM, PWRINSTALL.COM and PWRBOOT_*<feature_type>*.COM are then moved to the system manager account, SYS$MANAGER.
   - Invokes PWRLOGICAL to set the logical names in the system table for the default version and default feature type of PowerHouse 4GL. It assumes that if there is an alternative path, it should be overridden.
   - If you chose to install PowerHouse 4GL using IBM Cognos network services, the install verifies that the COGNOS network services directory exists. If not, it is created before the network services files are restored from the distribution medium with the appropriate protection and ownership.
   - If you chose to install PowerHouse 4GL with IBM Cognos network services, the restore procedure searches for files from the PowerGrid install to generate new command files.

- Generates the version-specific PowerGrid files, PGBOOT*<version>* and NETD_START*<version>* command files. The PGBOOT*<version>*.COM file is then moved to the system manager account, SYS$MANAGER. The NETD_START*<version>*.COM file is moved into the PowerGrid network directory. These are the files that must be used when running PowerGrid with this version of PowerHouse 4GL.

23. The install searches for a NETD_START.COM file from the PowerGrid install and, if successful, extracts a network port id from this file. The install verifies that this is the id you want to use.

    ```
    *Please enter a new PowerGrid Port Number, or hit <Return> to accept the one
    the install has found [1526]:
    ```

    This prompt only occurs if you chose to install PowerHouse 4GL using IBM Cognos network services.

24. If this is an initial install of this version, you are asked if you want to install the PowerHouse 4GL Server executable files into memory.

    ```
    * Do you wish to install the PowerHouse 4GL Server [NO]?
    ```

    Choose YES to install the PowerHouse 4GL Server executable files.

The IBM Cognos PowerHouse 4GL Books

The IBM Cognos PowerHouse 4GL Books CD lets you install the PowerHouse 4GL Reference books on your Windows system and place shortcuts in your Start Menu. You can choose to install other documents as well. You can also access the books in the folders directly from the CD or copy them to a folder of your own choosing.

If you downloaded the IBM Cognos PowerHouse 4GL Books zipped file, the contents of the downloaded file are identical to the contents of the CD.

The following Reference books are included:
- IBM Cognos PowerHouse 4GL PowerHouse Rules
- IBM Cognos PowerHouse 4GL PowerHouse and Relational Databases
- IBM Cognos PowerHouse 4GL PDL and Utilities Reference
- IBM Cognos PowerHouse 4GL PHD Reference (OpenVMS)
- IBM Cognos PowerHouse 4GL QDESIGN Reference
- IBM Cognos PowerHouse 4GL QUIZ Reference
- IBM Cognos PowerHouse 4GL QTP Reference

The following books are also included:
- IBM Cognos PowerHouse Web Planning and Configuration
- IBM Cognos PowerHouse Web Developer's Guide
- IBM Cognos PowerHouse 4GL Primer
- IBM Cognos PowerHouse 4GL Migration Planning Guide for OpenVMS
- A Guided Tour of IBM Cognos Axiant 4GL

In addition, the following installation documents are included for each supported platform (OpenVMS, the UNIX® and Linux® operating systems, and Windows):
- IBM Cognos PowerHouse 4GL Getting Started
- IBM Cognos PowerHouse 4GL Release Notes

PowerHouse 4GL Books Installation

If you have the installation CD, insert the CD into the CD drive of your Windows system. If the Auto Start system feature has been disabled you must find and double-click the setup.exe file in the root directory of the CD drive.

If you have downloaded the installation file, locate and double click the setup.exe file in the root of the temporary folder where you extracted the zipped file.

The PowerHouse 4GL Books Installation window appears with the following options:
- PowerHouse 4GL Getting Started
- PowerHouse 4GL Release Notes
- Install PowerHouse Books
- Cancel

PowerHouse 4GL Getting Started

Clicking the PowerHouse 4GL Getting Started option displays a list of the supported platforms. Clicking a platform displays the corresponding *IBM Cognos PowerHouse 4GL Getting Started* document.

PowerHouse 4GL Release Notes

Clicking the PowerHouse 4GL Release Notes option displays a list of the supported platforms. Clicking a platform displays the corresponding *IBM Cognos PowerHouse 4GL Release Notes*.

Installing the PowerHouse 4GL Books

Steps

1. Click Install PowerHouse Books.

   The Setup box appears as the PowerHouse 4GL Books prepares for the installation. When the setup is complete, the Welcome dialog box appears.

2. Follow the prompts to continue the installation.

   Note: If the User Information dialog box does not appear, check that the disk containing your Temp folder has at least 2 MB of free space. With less than this, the Program starts but does not continue.

3. You must agree to the license agreement in order for the installation to continue.

4. The Choose Destination Location dialog box appears. By default, the PowerHouse 4GL Books are installed to the location

   ```
   C:\Program Files\Cognos\PowerHouse 4GL <version> - Books
   ```

   To specify a different location, click the Change button. The Choose Folder dialog box will appear and you may specify a different location.

5. By default, all of the PowerHouse 4GL Reference books are installed. You can select other books to be installed or select specific PowerHouse 4GL reference books.

6. In the Select Program Folder dialog box, choose the program folder in the Start Menu. By default, the program folder is

   ```
   IBM Cognos PowerHouse 4GL <version> - Books
   ```

7. Continue the prompts until the install is completed. Shortcuts are placed in your Start Menu.

Uninstalling the PowerHouse 4GL Books

To uninstall the PowerHouse 4GL Books, open the Add or Remove Programs Control Panel and select IBM Cognos PowerHouse 4GL *<version>* - Books. Click Remove and follow the instructions.

Considerations When Using Oracle

Shared Images

If you installed PowerHouse 4GL or PowerHouse Web with shared images, you must also install the Oracle Client with shared images. To avoid problems accessing Oracle databases, ensure that the logical name for the Oracle Client is set.

Determine the location of your Oracle Client by searching for LIBCLNTSH.SO and use the following commands:

```
$INSTALL
ADD/HEAD/SHAR/OPEN
 <device>:[<Oracle Client location>]LIBCLNTSH.SO
EXIT
$DEF/SYS/EXEC LIBCLNTSH
 <device>:[<Oracle Client location>]LIBCLNTSH.SO
```

PowerHouse 4GL and PowerHouse Web Share Oracle Logicals

Although both the PowerHouse 4GL and PowerHouse Web installs prompt for a version of Oracle, you can only use one version of Oracle if you are installing both PowerHouse product images in memory. PowerHouse 4GL and PowerHouse Web share the ORDBA7_44_*<build#>* logical.

Changing the Version of Oracle

If the PowerHouse 4GL and PowerHouse Web images are not installed in memory, redefine the logical ORDBA7_4_VERS at the process level from the old version (920, 1010, or 1020) to the new version (920, 1010, or 1020). Entering

```
$ @SETPOWERHOUSE
```

sets the second logical, ORDBA7_44_<build#> as required.

If the PowerHouse 4GL and PowerHouse Web images are installed in memory, both Oracle images are installed in memory to facilitate switching between versions, and the logicals must be defined at system level in order to function correctly.

Steps

1. Redefine ORDBA7_4_VERS at the system level in Executive mode from the old version (920, 1010, or 1020) to the new version (920, 1010, or 1020) as follows:

   ```
   $ DEF/EXEC/SYS ORDBA7_4_VERS 920
   $ DEF/EXEC/SYS PHWEB_ORDBA7_4_VERS 920
   ```

2. For PowerHouse 4GL, determine the build number of the services version by entering:

   ```
   $ TYPE PH_LOCATION:UDAVERS.TXT
   ```

   For PowerHouse Web, determine the build number of the services version by entering:

   ```
   $ TYPE PHWEB_LOCATION:UDAVERS.TXT
   ```

   The format of the output will be:

   ```
   7_44_<build#>
   ```

   If the PowerHouse 4GL and PowerHouse Web UDAVERS.TXT contents are the same, only one ORDBA7_44_<build#> logical must be changed. If the contents are different, change the logicals for each services version.

3. Use the version output to show the logical value:

   ```
   $ SHOW LOGICAL/SYS ORDBA7_44_<build#>
   ```

4. Use the result of the SHOW LOGICAL in the define, changing the value from the old version (920, 1010, or 1020) to the new version (920, 1010, or 1020):

   ```
   $ DEF/EXEC/SYS ORADB7_44_<build#> <SHOW_LOGICAL_value>
   ```

For example, to change from 920 to 1010:

```
$ DEF/EXEC/SYS ORDBA7_4_VERS 1010
$ DEF/EXEC/SYS PHWEB_ORDBA7_4_VERS 1010
$ TYPE PH_LOCATION:UDAVERS.TXT
7_44_487973
$ SHOW LOGICAL/SYS ORDBA7_44_487973
"ORDBA7_44_487973" =
"_$1$DIA420:[COGNOS.POWERHSE.840G.PH_COMMON]ORDBA9207_44_487973A840G.EXE"
 (LNM$SYSTEM_TABLE)
$ DEF/EXEC/SYS ORDBA7_44_487973  -
_$1$DIA420:[COGNOS.POWERHSE.840G.PH_COMMON]ORDBA10107_44_487973A840G.EXE
```

Ensure that your 1010 Oracle Client is installed and that the correct logical is set as described on (p. 17). Users who are using the images installed in memory should not define ORDBA7_4_VERS or PHWEB_ORDBA7_4_VERS at a process level.

To preserve the version change across a system reboot, modify the PWRBOOT_*<feature type>*.COM and PHWEBBOOT*<version>*.COM files found in SYS$MANAGER. Modify the lines beginning with

`@SYS$MANAGER:PWRINSTALL`

and

`@SYS$MANAGER:PHWEBINSTALL`

An example for 8.40G development would be to change the line:

`@SYS$MANAGER:PWRINSTALL "840G" DEVELOPMENT`

to

`@SYS$MANAGER:PWRINSTALL "840G" DEVELOPMENT "" "1010"`

After this change is made, the logicals will be set correctly for the chosen version when the system reboots.

PowerHouse 4GL Configuration

Directory Structure

The PowerHouse 4GL files reside in the standard COGNOS directory structure that indicates the release and/or version of PowerHouse 4GL installed on your system. For example
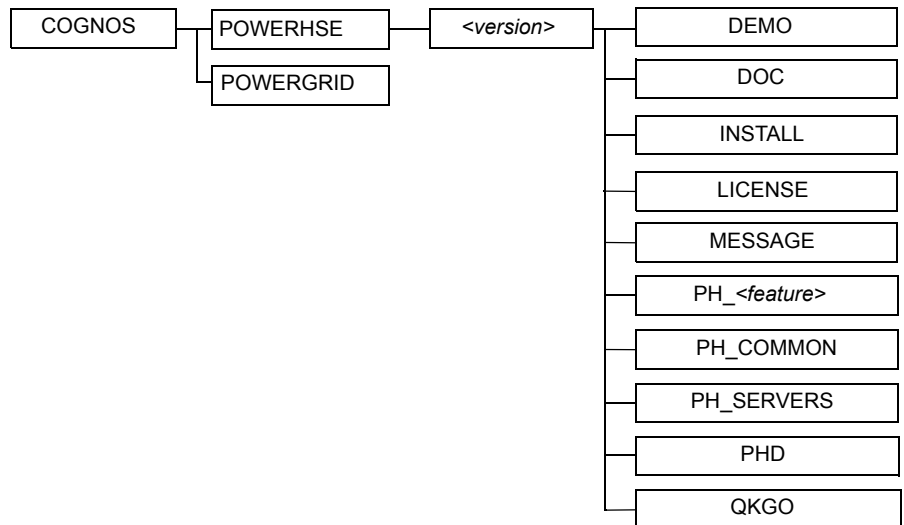
where *<version>* is the PowerHouse 4GL version, for example 840G. For more information about the PowerGrid directory structure, see "PowerGrid Directory Structure" (p. 31).

The PowerHouse 4GL software is stored in a version directory below the [.POWERHSE] directory. The directory names reflect the release and version number of PowerHouse 4GL that is installed. The [.*<version>*...] directory tree contains the existing PowerHouse 4GL software. The new release of PowerHouse 4GL is installed in the directory named after the version being installed, for example [.POWERHSE.840G] for OpenVMS.

During the installation, you are asked which version of PowerHouse 4GL you want as the default (the version selected when you enter the SETPOWERHOUSE command without a version number). You can specify any version of PowerHouse 4GL as the default, however we recommend that you choose your current version instead of *<version>*, so that your existing applications are not accidentally run on the new version.

PowerHouse 4GL Command Files

The following table describes the PowerHouse 4GL command files:

PowerHouse 4GL Command File	Description
PWRBOOT_*<feature_type>*	`$ @SYS$MANAGER:PWRBOOT_<feature_type>`
	This command file should be invoked by the system startup procedure. It will invoke two other command procedures: PWRLOGICAL and PWRINSTALL. All three files are located in the SYS$MANAGER directory and the PH_INSTALL_LOCATION. There is a PWRBOOT file for each feature type of PowerHouse 4GL. Only one feature type per version (for example, 8.40G for OpenVMS Development) is allowed on a particular system or a node within a cluster. The types are:
	PWRBOOT_DEVELOPMENT (Development)
	PWRBOOT_RUNTIME (Run-time)
	PWRBOOT_RT_REPORTING (Run-time with Reporting)
	PWRBOOT_REPORTING_ONLY (Reporting Only)
PWRDEASSIGN	`$ @PH_INSTALL_LOCATION:PWRDEASSIGN <lnm_table> <version>`
	This command file deletes all PowerHouse 4GL logical names created by PWRLOGICAL.COM. It accepts two parameters: the table (PROCESS, JOB, GROUP, or SYSTEM) in which the logical names are defined and the PowerHouse 4GL version. The defaults are SYSTEM table and the definition of PH_DEFAULT_VERSION.
PWRDEINSTALL	`$ @PH_INSTALL_LOCATION:PWRDEINSTALL <version> <feature_type> [LOG]`
	This command file de-installs all PowerHouse 4GL images for a particular feature type in the PATH$POWERHOUSE:[*<version>*...] directory tree that have been installed. If the version and feature type are not specified, the values from PH_DEFAULT_VERSION and PH_DEFAULT_LICENSE are used. The LOG parameter displays the status. To specify LOG, the version and feature type must also be specified.

PowerHouse 4GL Command File	Description
PWRINSTALL	`$ @SYS$MANAGER:PWRINSTALL <version> <feature_type> [LOG] <oracle_version>` This command file installs the PowerHouse 4GL images for a particular feature type in the PATH$POWERHOUSE:[<version>...] directory tree. If no version and/or feature type is specified, PH_DEFAULT_VERSION and/or PH_DEFAULT_LICENSE will be used. The LOG parameter displays each image as it is installed, with the privileges used. The Oracle version can be 920, 1010, or 1020. If no Oracle version is specified, 920 is used on AlphaServer, and 1020 is used on Integrity. If you want to change how the images are installed, modify the version of PWRINSTALL.COM in SYS$MANAGER. A copy of this command procedure is also located in PH_INSTALL_LOCATION.
PWRLOGICAL	`$ @SYS$MANAGER:PWRLOGICAL <lnm_table> <version> <disk> <dir> <feature_type>` This command file creates the logical names for the common directories and files used by PowerHouse 4GL for a particular feature type. It is located in the SYS$MANAGER directory as well as in PH_INSTALL_LOCATION. It accepts the following optional parameters:

	<lnm_table>	The table in which to define the logical names (PROCESS, JOB, GROUP, or SYSTEM). Default: SYSTEM
	<version>	The version of PowerHouse 4GL to set up, such as 8.40G. The version must be the name of a version directory in PATH$POWERHOUSE:[000000]. The default is the choice specified at the prompt during the restore/install procedure, or, if no default was specified at the prompt, the PH_DEFAULT_VERSION setting is used.
	<disk>	The root disk. The device may be specified with or without the colon. Default: SYS$SYSDEVICE:
	<dir>	The root directory. The directory may be specified with or without brackets (either [] or <>). Default: [COGNOS]
	<feature_type>	The PowerHouse 4GL feature type. The feature type may be one of DEVELOPMENT, RUNTIME, and so on. Default: DEVELOPMENT

PowerHouse 4GL Command File	Description		
PWRREMOVE	`$ @PH_INSTALL_LOCATION:PWRREMOVE <version>`		
	This command file de-installs the installed PowerHouse 4GL images, all pertinent system logical names for all feature types, and all files in the directory tree for the specified version. If *<version>* is not specified, it prompts for whether to delete all files and directories in the [COGNOS.POWERHSE...] directory tree, and all PowerHouse 4GL files in the SYS$MANAGER directory.		
PHSRVINSTALL	`$ @PH_INSTALL_LOCATION:PHSRVINSTALL <version> <install_option>`		
	This command file is used to install or de-install PowerHouse 4GL Server images into memory. If the system is rebooted, all the images in memory are lost. This file can be used to reinstall the files from the PATH$POWERHOUSE directory.		
		<version>	The version of PowerHouse 4GL to set up, such as 8.40G. The version must be the name of a version directory in PATH$POWERHOUSE:[000000]. The default is the choice specified at the prompt during the restore/install procedure, or, if no default was specified at the prompt, the PH_ACTIVE_VERSION setting is used.
		<install_option>	Either Install or Deinstall.
			Default: Install

PowerHouse 4GL Logical Names

The logical names defined by PWRLOGICAL are described below. The names indicate the various directories and file locations used by PowerHouse 4GL.

PowerHouse 4GL Logical Name	Description
ROOT$COGNOS	The root directory for IBM Cognos software. By default, this is [COGNOS].
PATH$COGNOS	The root device and directory for IBM Cognos software. By default, this is SYS$SYSDEVICE:[COGNOS].
PATH$POWERHOUSE	The disk and directory specification for the PowerHouse 4GL directory tree. In the default environment, this corresponds to SYS$SYSDEVICE:[COGNOS.POWERHSE]. The root device, SYS$SYSDEVICE, and root directory, [COGNOS], may be different if the defaults are not selected when executing VMSINSTAL.
PH_LOCATION	Directories for PowerHouse 4GL images and software.

PowerHouse 4GL Logical Name	Description
PH_DEFAULT_QKGO	Defines the default QKGO file.
PH_DEFAULT_VERSION	Defines the default version of PowerHouse 4GL.
PH_DEMO_LOCATION	Directory for PowerHouse 4GL sample dictionary and data files as well as SITEHOOK and external subroutine examples.
PH_DOC_LOCATION	Directory for PowerHouse 4GL message information files and external locking routines.
PH_INSTALL_LOCATION	Directory for PowerHouse 4GL installation command files.
PH_MESSAGE_LOCATION	Directory for PowerHouse 4GL message files.
PH_QKGO_LOCATION	Directory for PowerHouse 4GL QKGO images and software.
PHD_LOCATION	Directory for the PowerHouse 4GL PHD Screen System for maintaining PHD Dictionaries.
PH_DEFAULT_LICENSE	Defines the default feature type of PowerHouse 4GL for your system.
SETPOWERHOUSE	The complete file specification for the release-independent command file that is executed when a user first starts a PowerHouse 4GL session.

When SYS$MANAGER:PWRBOOT_*<feature_type>*.COM is invoked, the logical names defined above are defined in the system table. Parameters to PWRLOGICAL allow these logical names to be defined in different logical name tables and to be set up for different versions and feature types of PowerHouse 4GL.

The following logical names are defined by PWRINSTALL.COM and SETPH.COM:

PowerHouse 4GL Logical Name	Description
ORDBA7_4_VERS	Defines the version of Oracle being used.
PH_CREATE_SHARED	Determines the availability of sections for dictionary sharing for compile .pdc dictionaries. The options are P for Private, G for Group, and S for System. The default is G. See also the Screen Section option in the QKGO Execution-Time Parameters Screen in Chapter 5 of the *IBM Cognos PowerHouse 4GL QDESIGN Reference*.

PWRINSTALL.COM also creates the system logical names for the PowerHouse 4GL shared images and gateways when the images are installed with privileges. All images are located in PH_LOCATION. The LIBCOGUDATCP7_44_*<build#>* logical and file are only required when using Axiant 4GL thin-client applications, where *<build#>* is an internal number. The logical names and corresponding images on AlphaServer are:

PowerHouse 4GL Logical Name	Image Installed
PHLIBA*<version>*	Points to the PowerHouse library image PHLIBA*<version>*.EXE where *<version>* is the PowerHouse 4GL version, for example 840G.

PowerHouse 4GL Logical Name	Image Installed
LIBCOGUDA7_44_*<build#>* LIBCOGUDASQL7_44_*<build#>* LIBCOGUDATCP7_44_*<build#>*	Point to the PowerHouse Services images LIBCOGUDA7_44_*<build#>*A*<version>*.EXE, LIBCOGUDASQL7_44_*<build#>*A*<version>*.EXE, and LIBCOGUDATCP7_44_*<build#>*A*<version>*.EXE respectively
ORDBA7_44_*<build#>*	Points to the Oracle gateway image ORDBA*<oracle_version>*7_44_*<build#>*A*<version>*.EXE
RVDBA7_44_*<build#>*	Points to the Oracle Rdb gateway RVDBA7_44_*<build#>*A*<version>*.EXE

The logical names and corresponding images on Integrity are:

PowerHouse 4GL Logical Name	Image Installed
PHLIBI*<version>*	Points to the PowerHouse library image PHLIBI*<version>*.EXE where *<version>* is the PowerHouse 4GL version, for example 840G.
LIBCOGUDA7_44_*<build#>* LIBCOGUDASQL7_44_*<build#>* LIBCOGUDATCP7_44_*<build#>*	Point to the PowerHouse Services images LIBCOGUDA7_44_*<build#>*I*<version>*.EXE, LIBCOGUDASQL7_44_*<build#>*I*<version>*.EXE, and LIBCOGUDATCP7_44_*<build#>*I*<version>*.EXE respectively
ORDBA7_44_*<build#>*	Points to the Oracle gateway image ORDBA*<oracle_version>*7_44_*<build#>*I*<version>*.EXE
RVDBA7_44_*<build#>*	Points to the Oracle Rdb gateway RVDBA7_44_*<build#>*I*<version>*.EXE

Modifying the Time-out Period for Idle Connections

The default user time-out period for a thin-client connection to the server is 30 minutes (1800 seconds). If the server has not received any input from the user in that time, the server rolls back all transactions, backs out, and terminates. You can override the default using the logical name, COGSERVER_TIMEOUT, followed by the desired length of the time-out period in seconds. For example, a value of 3600 represents a time-out period of one hour. A value of -1 indicates that no time-out is required.

Screen Tuning

The AX_SCREEN_TUNING logical is used to tune certain internal table settings in QUICK and direct the internal screen manager. It should only be used under the direction of IBM Cognos Customer Support. Do not use AX_SCREEN_TUNING with the **reuse_screen_buffers** program parameter or REUSE SCREEN BUFFERS Resource file statement.

The AX_SCREEN_LOG logical is used to specify a log file for screen manager actions. The log is produced if QUICK is started with the -S program parameter. The default log file name is SCREEN.LOG in the current working location.

The settings for AX_SCREEN_TUNING are in the form

n,e,i,gA

The default is 15,0,1,15M

n

The number of initial screen slots to allocate.

e

The extent size when no more slots are available.

i

The minimum interval in seconds between unused slot removals.

g

The maximum number of unused slots that are removed.

A

Specifies the access method. M is mapped, P is physical, and S is shared. Not all access methods are supported on all platforms.

Note: There is no comma between the **g** and **A** values.

Relational Databases Services Log

The DMAPIFIL logical is used to create a log of relational database services api calls. It should only be used under the direction of IBM Cognos Customer Support. The value of the logical is the log file name which must have a .api extension.

SQL 92 Compatibility

PowerHouse 4GL 8.4xD introduced strict SQL 92 compatibility. In many cases this removed ambiguity and differences between databases. However, in some cases, it meant that code from previous releases caused parse errors. To remove the requirement for strict SQL 92 compatibility, use the STRICT_SQL92 logical and set the value to NO. The default value is YES.

Temporary Sort File Location

PowerHouse 4GL establishes the temporary sort file directory location by using the value of one of the TEMPFILEDIRS, TMPDIR, or TEMP logicals. The directory must be valid for the value to be used. If a logical called TEMPFILEDIRS is set but the directory is invalid then the search continues with TMPDIR, and so on. The PowerHouse 4GL install does not create any of these logicals. If nothing is specified, the default location will be SYS$SCRATCH.

The full sequence is:
1. Check the TEMPFILEDIRS logical.
2. Check the TMPDIR logical.
3. Check the TEMP logical.

System Resources and Parameters

The system should be carefully monitored during the period immediately following installation.

To prepare your production environment for the installation of PowerHouse 4GL, we recommend the following steps.

Steps
1. Run the production system with a representative number of PowerHouse 4GL users for at least 24 hours. Approximately 50% of normal load is a good number of users.
2. While the system is running, monitor it carefully, noting CPU and memory usage.
3. Use a monitoring tool such as MONITOR to establish what resource parameters should be changed to optimize the environment. Use the AUTOGEN system tool to make changes where feasible.

Note: Remember to scale the changes to handle a full load of users.

4. After the initial environment has been tuned, we recommend performance monitoring during the first week of operation to ensure that all parameters are set to their optimal values for your production environment.

   You should review the following system parameters:

   - Page File Size and the number of Page Files available may need to be increased. Your system may increase its use of the paging file(s) for PowerHouse 4GL. If you see excessive swapping during the controlled testing described above, do one of the following: increase your system's page file space, increase your swap file space if swapping occurs, or increase your working set quotas, if necessary.

   - Virtual Memory Settings may need to be adjusted, depending on how your system behaves. Parameters that you should consider reviewing include NPAGEDYN.

User Resources and Parameters

Certain user-based resource parameters and quotas may need to be reviewed in order to optimize your system performance. Some parameters may need tuning to ensure that users do not experience product failures.

During the installation, the following user parameters may need to be increased to improve application performance and/or functioning.

Page File Quota

If a user's working set is not set appropriately, the additional memory required by PowerHouse 4GL may have to be paged out to the paging files. Insufficient page file quota will cause applications to terminate. Be aware that increasing user paging file quotas will also require that you review the size and/or number of page files needed on your system.

Working Set Extent

This parameter sets an absolute limit on the amount of physical memory a user may have. Insufficient memory quota could result in increased page faulting, increased disk I/O and increased page file usage.

Open File Limit

For user accounts close to the file limit, this parameter may need to be increased. Compared to previous versions, the PowerHouse 4GL QKGO subsystem requires more file opens.

Job-Wide Logical Name Table Byte Quota

For users who define many logical names, this parameter may need to be increased. PowerHouse 4GL defines additional logical names in the LNM$JOB_TABLE logical name table. Users who are close to the limit may experience problems when upgrading to PowerHouse 4GL.

Account Resources

The following table shows the minimum resources required for those accounts using PowerHouse 4GL:

Process Quota	Description	Minimum Value
FILLM	File open limit	50
ENQLM	Enqueue quota	200
PRCLM	Subprocess quota	6
BYTLM	I/O byte count quota	8192
WSQUOTA	Maximum working set	600

Process Quota	Description	Minimum Value
WSEXTENT	Maximum working extent	200

Note: These are minimum process quotas. Some accounts may require higher process quotas depending on the file system or database being used, the complexity of the applications being accessed, and so on.

For a description of these process quotas, see the *OpenVMS System Management Utilities Reference Manual*.

For accounts that access Oracle Rdb, ensure that the resources for the process are sufficient. Oracle Rdb requires higher values for ENQLM and BYTLM. For more information, see the *OpenVMS Record Management Utilities Reference Manual*.

Modifying the Time-out Period for Idle Connection

The default time-out period for a thin-client connection to the server is 30 minutes (1800 seconds). You can override the default using the logical, COGSERVER_TIMEOUT, followed by the desired length of the time-out period in seconds. For example, COGSERVER_TIMEOUT 3600 represents a time-out period of one hour. A value of -1 indicates that no time-out is required.

Allowing Access to PowerHouse 4GL

Modifying the Startup File

If you want to set up PowerHouse 4GL when the system reboots, edit the system startup file to include a call to:

```
SYS$MANAGER:PWRBOOT_<feature_type>
```

The system startup file will be:

```
SYS$MANAGER:SYSTARTUP_VMS.COM
```

You do not have to reboot the system or execute PWRBOOT_*<feature_type>* as this was done during the installation.

If you want to change the default version of PowerHouse 4GL at a later date, edit SYS$MANAGER:PWRBOOT_*<feature_type>* and change the call to SYS$MANAGER:PWRLOGICAL.COM with the version number and feature type you want.

Modifying System Login Command Files

We recommend that you place the following command in either the system login command file pointed to by the logical name SYS$SYLOGIN or the login command file of each PowerHouse 4GL user:

```
@SETPOWERHOUSE <version>
```

System Resources in a Cluster

The install procedure verifies various system resources, but only on the node used for installation. If you are running PowerHouse 4GL on different nodes in a cluster, you will need to verify that the required system resources are sufficient on each node in the cluster where PowerHouse 4GL runs. After the installation is complete, ensure that the latest product startup files, PWRBOOT_*<feature_type>*.COM, PWRINSTALL.COM, and PWRLOGICAL.COM in SYS$MANAGER are used by the cluster members that will use PowerHouse 4GL.

Chapter 2: Client Network Support (PowerGrid)

This chapter describes how to configure PowerGrid and how to start the PowerGrid network daemon.

What is PowerGrid?

PowerGrid provides network communication services for thin-client applications using Axiant 4GL. The main function of the PowerGrid network daemon is to start the servers needed by client applications. To respond to requests from client and server applications, the PowerGrid network daemon (NETD) must be started before connecting to the server from a client PC. The network daemon must be left running as a background process on each host.

You do not need PowerGrid unless you are building and deploying Axiant 4GL thin-client applications.

If you need PowerGrid, PowerHouse 4GL 8.40G requires PowerGrid version 7.4.

Before configuring PowerGrid, you must have installed PowerGrid and PowerHouse 4GL. For more information, see Chapter 1,"Installing IBM Cognos PowerHouse 4GL".

Operating PowerGrid

Starting the Network Daemon for HP TCP/IP

You start PowerGrid by invoking the command file, SYS$MANAGER:PGBOOT*<version>*.COM, that defines a system logical, PATH$POWERGRID, and starts the network daemon (NETD). The network daemon is an image that runs continuously in a detached process. It responds to requests from client applications and creates server applications when asked.

Before you start the network daemon, ensure that any existing daemon has been terminated. To do this, search for a process with a name of NETD_UCX_MAIN.

To start the network daemon, invoke the following command procedure, which is generated during installation:

```
$ @SYS$MANAGER:PGBOOT<version>.COM
```

The command file PGBOOT*<version>*.COM is located in the SYS$MANAGER directory.

Verifying that PowerGrid is Running

To verify that the network daemon has started, check for an active process and for the startup log.

To check for an active process, list the processes on the system, and look for the network daemon process name:

```
NETD_UCX_MAIN
```

To check the startup log, examine the file:

```
NETD_UCX_STARTUP.LOG
```

Testing a Network Daemon Connection

Test the Network Daemon connection using NetInfo from the IBM Cognos Axiant 4GL installation. For more information, see the *IBM Cognos Axiant 4GL Getting Started* document.

Debug Parameters

Debug parameters assist you and IBM Cognos Customer Support personnel to troubleshoot network problems.

To add program parameters, edit the NETD_START command file located in:

```
$@PATH$POWERGRID:[840G.UCX.NETWORK]NETD_START<version>.COM
```

Locate the $ RUN ... command near the end of the file and insert any parameters:

```
$ RUN_NETD <parameters> PATH$POWERHOUSE:[840G.PH_SERVERS]
```

-d -g -x

These parameters enable debug output at various levels. When specified, the parameters cause NETD to produce trace messages (output) while executing. The messages are useful in analyzing client-server activity.

The **-d** parameter provides minimal trace output and may be useful in indicating client-server activity. For example, if NETD starts with the **-d** parameter, five trace messages are printed each time a client makes a request to start a server.

The **-g** and **-x** parameters provide more detailed trace output. The **-g** parameter enables PowerGrid RPD tracing. The **-x** parameter enables XDR Library tracing.

-f<*filespec*>

Directs debug output to a file. If <*filespec*> is not specified, output will be directed to the NETDLOG file.

Running Multiple Network Daemons

In most situations, there should only be one active network daemon or NETD process per system. It is possible, however, to run more than one NETD process at the same time.

If you want network access for multiple versions of PowerHouse 4GL, as of PowerHouse 4GL version 8.40D you must have a separate NETD running for each version you run.

Each NETD must use a different communications service port. The following lines describe how to redefine the NETD port number. They are in the file NETD_START.COM (for versions of PowerHouse 4GL prior to 8.10C) or NETD_START<*version*>.COM (for versions of PowerHouse 4GL 8.10C and above), located in PATH$POWERGRID[840G.UCX.network], and are provided here for your reference:

```
$!The following sample lines are used by netd for the non-
$!default service port. Please change yyyy below to the actual
$!port number before restarting the PowerGrid Network Daemon.
$DEFINE NPNETD "Isyyyy"
```

To restart the PowerGrid network daemon execute one of the following command files

PowerHouse 4GL Version	Command File
Prior to 8.10C	SYS$MANAGER:pgboot.com
8.10C and above	SYS$MANAGER:pgboot<*version*>.com

Terminating the Network Daemon

Steps

1. Determine the process identifier (PID) for the network daemon with the following command:
   ```
   $ SHOW SYS/PROC=NETD_UCX_MAIN
   ```
2. Terminate the network daemon with the following command:
   ```
   $ @SYS$MANAGER:PGBOOT<version> DEINSTALL
   ```

A PowerGrid Example

The following is an example of how to start, verify, and terminate PowerGrid:

```
$@SYS$MANAGER:PGBOOT<version>
%RUN-S-PROC_ID, identification of created process is 204020BB
$DIR/SIZE NETD_UCX_STARTUP.LOG
NETD_UCX_STARTUP.LOG;1 0
$SHOW SYS/PROC=NETD_UCX_MAIN
$@SYS$MANAGER:PGBOOT<version> DEINSTALL
```

If multiple network daemons are started by accident, the process name will be altered by the system.

Multiple network daemons can only be active simultaneously if the communications ports are different. Only one image can use any one port at a time.

Should a network daemon fail to start, the cause will usually be that another network daemon is already active and is using the target communications port.

If the Network Daemon Process Terminates Automatically

If the network daemon process terminates automatically after invoking PGBOOT*<version>*, check the following:

- Examine the contents of the start-up log file for possible causes of the problem. For more information, see "Verifying that PowerGrid is Running" (p. 29).
- Check whether a network daemon is already active. If there is, and you want to re-start it, stop the current network daemon and start a new version. For more information, see "Terminating the Network Daemon" (p. 30).
- Verify that the network product is properly installed and operational. For more information, see the documentation for HP TCP/IP Services.
- Verify that PowerGrid is installed properly by examining the directory structure. If you detect a problem, re-install PowerGrid.
- Clean up the existing PowerGrid directory structure and re-install PowerGrid.
- Verify that a port number of 0 was not specified for the HP TCP/IP services network product support, during the installation of PowerGrid. If a port number of 0 was specified, re-install PowerGrid and select the default port number or a non-zero value.
- Examine the value of the Internet software device sockets by entering the following command:

  ```
  $ UCX SHOW COMMUNICATION
  ```

  This value may need to be increased, as each server instance created by the network daemon uses at least one device socket.

  To increase the value, add, or modify the following statement in SYS$MANAGER:UCX$INET_SET_INTERFACES.COM:
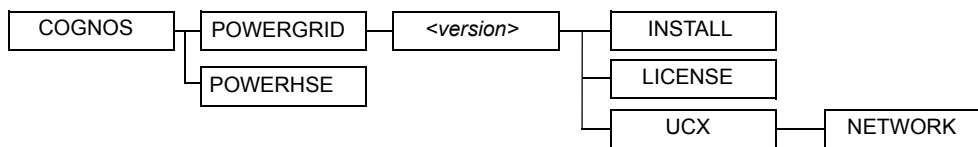
  ```
  SET COMMUNICATION /DEVICE_SOCKETS=<nn>
  ```

  where *<nn>* is a number greater than the current specified value. For more information about using device sockets, see the *UCX Systems Manager's Guide*.

  If the problem is a shortage of device sockets, this may not be immediately apparent. The problem may occur when a client application user attempts to create a server after the network daemon is operational. The network daemon terminates when this occurs.

PowerGrid Configuration

PowerGrid Directory Structure

The PowerGrid files reside in COGNOS standard directory structure, as shown below.

```
COGNOS ──┬── POWERGRID ──── <version> ──┬── INSTALL
         │                              │
         └── POWERHSE                   ├── LICENSE
                                        │
                                        └── UCX ──── NETWORK
```

PowerGrid Command Files

The following table describes the PowerGrid command files:

PowerGrid Command File	Description
PGBOOT*<version>*	`$@SYS$MANAGER:PGBOOT<version>`
	Applicable to versions PowerHouse 4GL 8.10C and above. The install re-generates this file based on the version of PowerHouse 4GL you install. This file is a startup command file for PowerGrid.
NETD_START*<version>*	`$@PATH$POWERGRID:[840G.UCX.NETWORK]` `NETD_START<version>`
	This command file is called from PGBOOT*<version>*.COM and is the PowerGrid daemon startup command file.

Modifying the Time-out Period for Idle Connection

The default time-out period for a thin-client connection is 30 minutes (1800 seconds). The default time-out period can be overridden using the logical, COGSERVER_TIMEOUT, followed by the desired length of the time-out period in seconds.

For example, to change the time-out period to one hour, in the NETD_START*<version>* command file, after the line that defines NPNETD, use:

`$DEFINE COGSERVER_TIMEOUT 3600`

A value of -1 indicates that no time-out is required.

PowerGrid Logical Name

The system logical name defined by PowerGrid indicates the various directories and file locations used by PowerGrid:

PowerGrid Logical Name	Description
PATH$POWERGRID	Specifies the disk and directory specification for this PowerGrid directory tree. In the default environment, this corresponds to SYS$SYSDEVICE:[COGNOS.POWERGRID.]. The root device, SYS$SYSDEVICE, and root directory, [COGNOS], may be different if the defaults are not selected when installing PowerGrid.

PowerGrid Privilege Requirements

To use PowerGrid, users must be granted the following privileges for communications:
- TMPMBX
- NETMBX

These privileges are typically granted by default.

Removing PowerGrid

Steps

1. Terminate the network daemon, if a HP TCP/IP Services network type was selected during installation.

   For more information, see "Terminating the Network Daemon" (p. 30).

2. Delete the following files and directory structure:

   ```
   $delete SYS$MANAGER:PGBOOT*.com;*
   $delete SYS$MANAGER:NETD_START*.COM;*
   $delete SYS$HELP:POWERGRID*.*;*
   $set FILE/PROT=W:RWED PATH$POWERGRID:[000000...*.DIR]
   $delete PATH$POWERGRID:[000000...]*.*;*
   ```

   Repeat the delete command until all directory levels are removed, that is, until there are no further error messages.

   ```
   $set FILE/PROT=W:RWED PATH$COGNOS:[000000]POWERGRID.DIR
   $delete PATH$COGNOS:[000000]POWERGRID.DIR;*
   ```

3. De-assign the PowerGrid system logicals, if they exist, using the following commands:

   ```
   $DEASSIGN/SYSTEM PATH$POWERGRID
   ```