

# Pervasive Backup Agent

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## *Pervasive Backup Agent Guide*

Pervasive Software Inc.  
12365 Riata Trace Parkway  
Building B  
Austin, TX 78727 USA

Telephone: 512 231 6000 or 800 287 4383

Fax: 512 231 6010

Email: [info@pervasive.com](mailto:info@pervasive.com)

Web: <http://www.pervasive.com>

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**Pervasive Backup Agent Guide**

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# *About This Manual*

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This manual is intended as a complete guide for getting started and using Pervasive Backup Agent. Topics include installation requirements and instructions, aspects of using the product, as well as reference material for incorporating the Backup Agent technology into your application. Answers to common questions following an installation are also included.

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## Who Should Read This Manual

This manual provides information for users who install and run Pervasive Backup Agent. This manual is also useful for programmers and system administrators responsible for performing live backups of Pervasive PSQL databases.

Pervasive Software would appreciate your comments and suggestions about this manual. As a user of our documentation, you are in a unique position to provide ideas that can have a direct impact on future releases of this and other manuals. If you have comments or suggestions for the product documentation, post your request at <http://cs.pervasive.com/forums>.

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## Manual Organization

This manual is divided into the following sections:

- Chapter 1—[Welcome to Pervasive Backup Agent](#)  
This chapter provides a basic introduction to Pervasive Backup Agent.
  - Chapter 2—[Installing Pervasive Backup Agent for Windows](#)  
This chapter details system requirements and installation steps for Pervasive Backup Agent.
  - Chapter 3—[Using Pervasive Backup Agent](#)  
This chapter contains information on using Backup Agent to manage your Pervasive PSQL database live backups.
  - Chapter 4—[Backup Agent on Linux](#)  
This chapter contains information on installing and using Backup Agent to manage Pervasive PSQL database live backups on Linux systems.
  - Appendix A—[Programmer's Reference](#)  
This appendix provides reference information for the Pervasive Backup Agent application programming interface.
  - Appendix B—[Pervasive Software Resources and Contacts](#)  
This appendix gives contact information for Pervasive Software.
- This manual also contains an index.

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## Conventions

Unless otherwise noted, command syntax, code, and examples use the following conventions:

CASE	Commands and reserved words typically appear in uppercase letters. Unless the manual states otherwise, you can enter these items using uppercase, lowercase, or both. For example, you can type <code>MYPROG</code> , <code>myprog</code> , or <code>MYprog</code> .
<b>Bold</b>	Words appearing in bold include the following: menu names, dialog box names, commands, options, buttons, statements, etc.
Monospaced font	Monospaced font is reserved for words you enter, such as command syntax.
[ ]	Square brackets enclose optional information, as in <code>[log_name]</code> . If information is not enclosed in square brackets, it is required.
	A vertical bar indicates a choice of information to enter, as in <code>[file name   @file name]</code> .
< >	Angle brackets enclose multiple choices for a required item, as in <code>/D=&lt;5   6   7&gt;</code> .
<i>variable</i>	Words appearing in italics are variables that you must replace with appropriate values, as in <i>file name</i> .
...	An ellipsis following information indicates you can repeat the information more than one time, as in <code>[parameter ...]</code> .
::=	The symbol ::= means one item is defined in terms of another. For example, <code>a::=b</code> means the item <code>a</code> is defined in terms of <code>b</code> .

# *Welcome to Pervasive Backup Agent*

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*A Basic Introduction to Pervasive Backup Agent*

Thank you for purchasing Pervasive Backup Agent. Backup Agent provides you with an alternative method for implementing the Continuous Operations function provided with Pervasive PSQL.

This chapter contains the following topics:

- [Pervasive Backup Agent Overview](#)
- [Backup Agent Components](#)
- [Backup Agent Licensing](#)

## Pervasive Backup Agent Overview

Pervasive Backup Agent provides a quick and simple method for you to set and manage Continuous Operations on your Pervasive PSQL database files. Setting and managing Continuous Operations is a critical piece when backing up your Pervasive PSQL databases. Backup Agent automatically handles setting and managing Continuous Operations on your open files so that your data is still available from your application during your backup. Once the backup procedure is complete, stopping Backup Agent automatically takes the files out of Continuous Operations and rolls in all the changes captured during the backup.

### **Product Features**

Pervasive Backup Agent works seamlessly with many of the most popular backup applications on the market today.

Pervasive Backup Agent manages files that are opened during a backup automatically for you, unlike the Continuous Operations feature in the Pervasive PSQL utilities, which requires that you to enter a list of specific file names.

Lastly, once you have installed Backup Agent with the Pervasive PSQL Server and implemented the agent to work with your specific backup routine, you are ready to start backing up your Pervasive PSQL databases. There are no special configuration settings required.



**Note** You should note that Pervasive Backup Agent does not backup your Pervasive PSQL database files; it is designed to complement your current backup solution.

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## Backup Agent Components

This section discusses the components that make up Pervasive Backup Agent. The two utility components along with the Software Developer's Kit (SDK) give you three ways to easily incorporate the agent into your backup routine, depending on your business needs.

### **Command-line Utility**

The command-line interface (CLI) utility (pvbackup.exe) is one access method Backup Agent offers. For implementation with any of the popular backup products on the market, simply add the executable commands into pre and post command settings. With this implementation, your backup software automatically starts the agent prior to backup and stops the agent after the backup completes. Using this method ensures that your regularly scheduled backups include consistent and reliable Pervasive PSQL data.

The command-line utility is available on both Windows and Linux platforms and available for either 32-bit or 64-bit machines.

### **GUI Utility**

Another access method for Backup Agent is the graphical user interface (GUI) utility (pvbackupgui.exe), which is available from the Start menu or from within Pervasive Control Center. In this interface you can start and stop the agent at the touch of a button — without having to recall commands or parameters required for the command-line interface. Using this method allows you the flexibility to perform ad-hoc backups of your Pervasive PSQL data quickly and almost effortlessly.

The GUI utility is available only on Windows platforms.

### **Controller**

The Controller component of Pervasive Backup Agent consists of a DLL which provides a common interface for the agent utilities. The Controller handles all communications with the Event Handler.

### **Durable File List**

The Durable File List (dfl.txt) is located in the program's data path and is generated by Pervasive Backup Agent. The default location for the data path is set at installation as *<Pervasive PSQL install directory>\PBA\Data*. This file contains a list of all the files in Continuous Operations at any given time. When a file goes into Continuous Operations, it is automatically added to the list. Similarly, when the file is taken out of Continuous Operations, it is then removed from the list.



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**Note** Backup Agent files are installed in the Application Data directory for Pervasive PSQL and not the Program Files directory. See *Getting Started With Pervasive PSQL* for more information on Pervasive PSQL installation locations.

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### **Exclude File List**

The Exclude File List (efl.txt) is located in <*Pervasive PSQL Application Data directory*>\PBA\Data. You can exclude files from being placed into Continuous Operations by Backup Agent by listing them in the exclude file list.

### **Event Handler**

The Event Handler is the workhorse inside Pervasive Backup Agent. The primary purpose of this component is to intercept files as they are opened so that they can be placed in Continuous Operations. Backup Agent uses the MicroKernel hook interface to work with the Controller to handle all the operations, or events, requested through the Backup Agent interfaces. As the name implies, the Event Handler handles all the events going on inside Backup Agent.

### **Include File List**

The Include File List (ifl.txt) is located in <*Pervasive PSQL Application Data directory*>\PBA\Data. You can include files to be placed into Continuous Operations by Backup Agent by listing them in the include file list.

Files in this list will be placed into continuous operations as soon as Pervasive Backup Agent is turned ON, irrespective of whether the files are currently opened or not by the Pervasive PSQL engine.

### **Log File**

Pervasive Backup Agent maintains a log file (baevent.log) which reports informational and warning messages from the event handler. The log file resides at <*Pervasive PSQL install directory*>\PBA\Logs, and this location cannot be modified.

The maximum size for the log file is preset to 50 MB and cannot be changed. When this limit is reached, the file is automatically renamed for archival purposes, using a naming convention of baevent.1, baevent.2, and so on. Backup Agent maintains a maximum of five archived log files.



**Software  
Developer Kit  
(SDK)**

Under Windows, Pervasive Backup Agent includes an application programming interface (API) so that developers can embed Backup Agent directly into a software application. The API, along with the necessary header and library files, make up the SDK developers need for this type of implementation. Integrating Backup Agent directly into your application using the SDK provides the highest level of backup data assurance.

## Backup Agent Licensing

Pervasive Backup Agent supports installation on only one machine. You may install an evaluation version of Pervasive Backup Agent without a license. At the end of the evaluation period, Backup Agent returns an error message when it attempts to start.

### **On Windows**

If you initially installed an evaluation version, you may later apply an activation license. Use the License Administrator utility to register a valid license number to replace an evaluation license.

For detailed information on using the Windows License Administrator, refer to the License Administrator online help or consult *Pervasive PSQL User's Guide*.

### **On Linux**

Pervasive products on Linux administer license keys through a command line utility `clilcadm`. For brief instructions, see [Using the Command Line License Administrator](#).

For more information on this utility, see *Pervasive PSQL User's Guide*.

# *Installing Pervasive Backup Agent for Windows*

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## *Installation Instructions for Pervasive Backup Agent on Windows*

This chapter contains procedures for installing Pervasive Backup Agent on Windows. The chapter contains the following sections:

- [Backup Agent Installation Overview](#)
- [Backup Agent Windows Installation Checklists](#)
- [Before You Begin](#)
- [Installing Pervasive Backup Agent](#)
- [Common Questions After Installing Backup Agent](#)
- [Installing Backup Agent as Part of Your Application](#)
- [Uninstalling Pervasive Backup Agent](#)



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**Note** For instructions to install or uninstall Pervasive Backup Agent on Linux, see [Backup Agent on Linux](#).

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## Backup Agent Installation Overview

This section provides an overview of the requirements needed for installation, instructions for installing Backup Agent on your Windows machine, and information about the files included during installation.

Issues involved in installing Backup Agent on Linux are similar to those for Windows, and Linux is mentioned in several places in this section, but that type of installation is covered specifically under [Backup Agent on Linux](#).

### ***Where to Install Backup Agent***

Pervasive Backup Agent must be installed on the same computer as the Pervasive PSQL Server or Workgroup engine. The Backup Agent installation process detects the location of your Pervasive PSQL engine and automatically determines the installation location for Pervasive Backup Agent. You cannot alter this location.



**Note** The Pervasive PSQL installation directory was modified to comply with the new guidelines established by Microsoft for the Vista operating system. Refer to *Getting Started With Pervasive PSQL* for detailed information on installation directory locations.

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## Backup Agent Windows Installation Checklists

This section provides you with checklists and other information to prepare you for installation.

### **Precautions**

The following lists important precautions to follow prior to installing Pervasive Backup Agent.

- Your system hardware and software meets the minimum requirements to install Pervasive Backup Agent.



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**Note** In order to install Pervasive Backup Agent your system must meet the minimum requirements to install Pervasive PSQL v11. The hardware and software requirements are listed on the Pervasive Software web site.

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- As with any software application, you should always back up any important files on the hard drive before you begin the installation.
- If you are running Pervasive Control Center (PCC), you must close PCC prior to installation. Closing PCC during installation allows Backup Agent to get added in PCC Tools menu.
- If you have enabled Archival Logging, you must disable it before you can use Pervasive Backup Agent.
- The Pervasive PSQL database engine is stopped and restarted during the installation of Pervasive Backup Agent. If your business requirements prohibit stopping the database engine during certain hours, install Backup Agent during an acceptable period.

### **Backup Agent Pervasive PSQL Engine Requirements**

Pervasive Backup Agent 3.0 is supported on the following Pervasive PSQL releases. It is not supported on any previous versions of Pervasive PSQL.

#### **Windows**

- Pervasive PSQL v11 Server (32-bit)

- Pervasive PSQL v11 Server (64-bit)
- Pervasive PSQL v11 Workgroup

### **Linux**

- Pervasive PSQL v11 Server 32-bit
- Pervasive PSQL v11 Server 64-bit

### ***Backup Agent Readme File***

Pervasive Software strongly recommends that you read the information contained in the readme file. This file contains important product news that could not be included in the product documentation but may be essential to your installation and use of the product release.

On Windows, the readme file is located at the root on the installation CD. On Linux, it is located in the /doc directory of the unpacked archive file.

## Before You Begin

This section contains information with which you need to be familiar to successfully install Pervasive Backup Agent on Windows. Before installing Backup Agent, review the following information:

- [Backup Agent Installation Overview](#). This section provides important information including system requirements and platform specific notes that are relevant to your operation.
- Readme file. This file contains late-breaking product news that could not be included in the product documentation. This file is located on the distribution media.

### **Windows Platform Notes**

Be aware of the following conditions.

- You must have full administrator-level rights on the machine where you install Pervasive Backup Agent.
- If you run with Advanced Power Management, disable it while installing Pervasive Backup Agent. The power management can cause an installation to fail if the server is suspended during the install. You control the advanced power management via the Power Options on Control Panel.
- You may need to disable antivirus software or change its settings to allow installation of Pervasive Backup Agent.



**Note** For steps to install Pervasive Backup Agent on Linux, see [Backup Agent on Linux](#).

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## Installing Pervasive Backup Agent

Pervasive Backup Agent requires a Pervasive PSQL Server or Workgroup engine. Ensure that your machine contains a server or workgroup database engine before attempting to install Backup Agent.

If your machine lacks a Pervasive PSQL Server or Workgroup database engine, install one from your original CD media or download the appropriate Pervasive PSQL product from <http://www.pervasive.com>.

For Pervasive PSQL installation steps, see the user documentation for your Pervasive PSQL database engine product.

### ► To install Pervasive Backup Agent

- 1 Launch the installation program from your Windows machine.
  - a. Insert the CD in the CD-ROM drive.
  - b. If the installation does not start automatically, click **Start** then **Run** from your Windows desktop, and type *drive*:\setup where *drive* is the drive letter of your CD-ROM device.

The InstallShield Wizard checks your system as it prepares to install Backup Agent on your machine.

Once the Installshield Wizard checks and verifies the system, the Welcome screen displays.

- 2 Click **Next** to begin installation.

The License Agreement dialog appears.
- 3 Accept the license agreement and click **Next**.

A dialog asks for a Pervasive Backup Agent license key.
- 4 Enter your Backup Agent license key in the License field.



**Tip** Leave the field blank to install an evaluation license.

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The product license number is provided on the following:

- The case of the Pervasive Backup Agent installation CD



- The product registration card
- The printed license agreement



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**Caution** If you install an evaluation copy, Backup Agent returns an error message when you attempt to use the program after the evaluation period.

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You may install the evaluation version and apply a license key later using the License Administrator utility. See *Pervasive PSQL User's Guide* for detailed instructions on using the License Administrator.

**5** Click **Next**.

A dialog box indicates that the install program is ready to begin.

**6** Click **Install** to proceed with installation. (If you need to return to the license agreement, click **Back**.)

**7** The installation process continues, displaying a series of status messages that inform you what action is taking place. Most of the message dialogs contain a progress bar to indicate the progress.

At the end of the installation, a dialog informs you that setup is complete.

**8** Click **Finish**.

### **Viewing the Backup Agent Readme File**

Pervasive Software strongly recommends that you view the readme file because it contains important information that could not be included in the product documentation but may be essential to your configuration and use of the product.

The readme file is installed in the *<Pervasive PSQL install directory>\PBA\Docs* directory should you want to refer to it after installation. You may also access the file from the Pervasive group on the **Start** menu.



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**Note** The PBA directory is created in the Application Data directory where you installed your Pervasive PSQL engine.

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**What to Do  
After You  
Install Backup  
Agent**

After you successfully install Pervasive Backup Agent you are ready to begin using the agent to manage your Pervasive PSQL live backups. The next chapter, [Using Pervasive Backup Agent](#) discusses using the graphical user and the command-line interfaces of the utility.

## Common Questions After Installing Backup Agent

This section contains information you should read after running the Backup Agent installation program.

### **Do I have to configure anything in Pervasive Control Center (PCC) for Backup Agent?**

No. Pervasive Backup Agent requires no special settings in PCC, but you should make sure that you close PCC prior to installing (or uninstalling) Backup Agent.

### **Does Backup Agent create any log files?**

Yes. See [Log File](#).

### **How do I integrate Backup Agent with my backup software?**

For help on integrating Backup Agent to work with your backup software, refer to [Integrating with your Backup Software](#) and to your backup software user documentation.

### **I had to uninstall and then reinstall my Pervasive PSQL Engine. Why doesn't Backup Agent operate anymore?**

In a situation like this, you will need to reinstall Backup Agent. This issue is due to a current limitation in the Pervasive PSQL engine and will be addressed in a future release of the product.

### **Where are the Pervasive Backup Agent files installed?**

Pervasive Backup Agent requires that you have the Pervasive PSQL Server or Workgroup database engine installed. Backup Agent installs to a PBA subdirectory of the Pervasive PSQL installation directories. The directory in which Backup Agent files are installed is dependent on the platform to which you are installing.

For the complete list of default Windows installation locations, refer to *Getting Started With Pervasive PSQL*.

## Installing Backup Agent as Part of Your Application

This guide explains how to install Backup Agent interactively from a CD. You can also install Backup Agent as part of your own application installation process. The Backup Agent installation can be non-interactive, in which no input is required from the user. This is referred to as a silent installation.

### **How To Perform a Silent Install of Backup Agent**

The following steps explain how to perform a silent installation of Backup Agent. It is important to note that these instructions are only for the installation of Backup Agent.

Before you begin, ensure that all Pervasive PSQL utilities, such as PCC, and all applications that use Pervasive PSQL are closed before performing a silent install.

#### ➤ **To install Backup Agent silently**

- 1 Copy all files from the Pervasive Backup Agent CD to a temporary directory on a hard disk.

Use a machine that does not have Backup Agent already installed.

- 2 Open a command prompt window and navigate to the directory location where you copied the program files.
- 3 Execute a Backup Agent setup command along with the server license number. You will enter a command similar to the following:

```
SetupBackupAgent_<platform>.exe /s /v" /qn  
PVSW_BA_LICENSE_KEY=key"
```

Where *key* is the Pervasive Backup Agent license number.

The product license number is provided on the following:

- The case of the Pervasive Backup Agent installation CD
- The product registration card
- The printed license agreement

Because the silent install has no user interaction, you will not receive notification of a successful installation. You will notice though, that Backup Agent is automatically installed in your Pervasive PSQL program group once installation has completed.

## Uninstalling Pervasive Backup Agent

The uninstall program removes all Backup Agent components from your system.



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**Caution** If you are running Pervasive Control Center (PCC), you must close PCC prior to uninstalling. Closing PCC during uninstall allows Backup Agent to get removed from the PCC Tools menu.

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### ➤ To uninstall Pervasive Backup Agent

- 1 Access the **Add/Remove Programs** from the Control Panel on your Windows operating system.
- 2 Click **Pervasive Backup Agent** in the list.
- 3 Click the button to remove a program. The button may be labelled **Add/Remove** or **Remove**. A dialog appears to confirm the removal of Pervasive Backup Agent.
- 4 Click **Yes** to confirm removal of Backup Agent.

A status box displays progress of the uninstall.

When the uninstall completes, you will be returned to the **Add or Remove Programs** dialog.



# *Using Pervasive Backup Agent*

*chapter*

3

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*A Reference for Using Pervasive Backup Agent*

- [A Review of Continuous Operations](#)
- [Backup Agent Precautions](#)
- [Specifying Files for Continuous Operations](#)
- [Using the Backup Agent Command-Line Interface](#)
- [Using the Backup Agent Graphical User Interface](#)

## A Review of Continuous Operations

Continuous Operations is a MicroKernel feature included with Pervasive PSQL which provides you the ability to put data files in a temporary state so that you may backup data files while the database files are open and in use.

During a backup, open data files are typically omitted because they are open and in use. When turned on, Continuous Operations sends a call to the MicroKernel to open the selected files as Read-Only. Doing this allows the backup utilities to access and backup a static image of the selected files. Once the data files are open as Read-Only, the MicroKernel begins to record any changes made to the files in temporary delta files. These temporary delta files retain running versions of the files, complete with the changes that have transpired during the backup process.

The temporary delta files created by Continuous Operations mode have the same name as the corresponding data files but use the extension ".^^^" instead. No two files can share the same file name and differ only in their file name extension if both files are in the same directory. For example, do not use a naming scheme such as INVOICE.HDR and INVOICE.DET for your data files.

In the case of same name files, only one file will be placed in continuous operations. The Backup Agent log file will detail the file that is excluded from continuous operations. If all files are intended to be placed in continuous operations, review the log file and either place same name files in different directories or consider renaming files so that all are placed in continuous operations by Backup Agent.

After the backup is complete, the data files must be removed from Continuous Operations, at which time the changes stored in the delta files are rolled into the data files. The MicroKernel then deletes the delta files as soon as all changes are rolled into the data files.

### **Starting Continuous Operations**

Starting Continuous Operations mode is handled in Pervasive PSQL through BUTIL or the Maintenance utility, depending on the type of files you are accessing. The Maintenance utility is the interactive version of BUTIL and requires file paths.



## **Ending Continuous Operations**

Ending Continuous Operations is also handled in Pervasive PSQL through BUTIL or the Maintenance utility, depending on the type of files you are accessing. The utility you used to invoke Continuous Operations is the same utility you would use to end Continuous Operations.

The *Pervasive PSQL Advanced Operations Guide* provides in-depth information on the Continuous Operations functionality provided in Pervasive PSQL.

## **Why Use Backup Agent?**

So why would you use Backup Agent if you already have the utilities available to start and end Continuous Operations for backing up Pervasive PSQL databases? Because Backup Agent takes Continuous Operations a step farther. Backup Agent implements what we call intelligent Continuous Operations management.

With intelligent Continuous Operations management, files are placed into Continuous Operations *automatically* by the agent instead of a system administrator providing (and maintaining) a list of files that are to be backed up. This file management eliminates the need for `butil -startbu` scripts that can too often get out of date, and it eliminates putting files into Continuous Operations that are not opened by users during a backup session. Backup Agent handles *only* the files that are accessed and that need to be put into Continuous Operations. This can reduce the amount of data that is backed up during incremental or differential backup processes drastically.

Another good reason to use Backup Agent is because it integrates quickly and easily with most popular backup software products on the market.

The next section covers some of the issues surrounding data backup and precautions you should know when using Backup Agent.

## Backup Agent Precautions

This section lists some precautions and considerations you should be aware of before you begin using Pervasive Backup Agent.

### Archival Logging

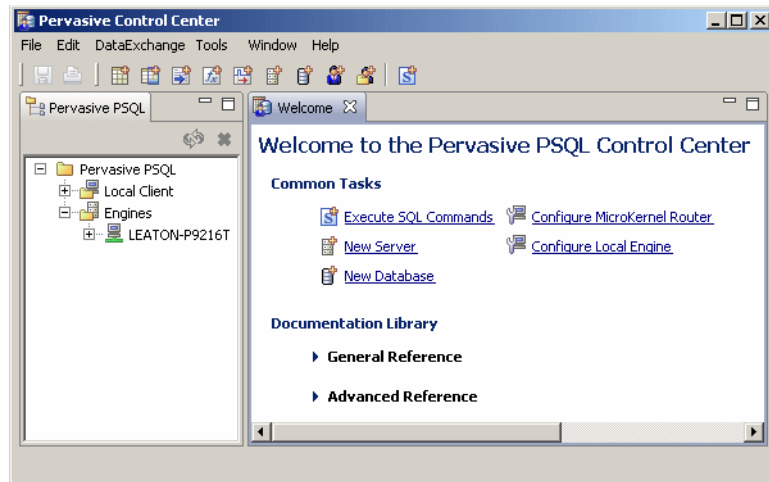
If you have enabled Archival Logging in Pervasive PSQL, you *must* disable it before you can use Pervasive Backup Agent. If you are uncertain if Archival Logging has been enabled, you can check the setting in Pervasive Control Center to verify.

➤ **To verify Archival Logging is disabled**

- 1 On the Start menu select **Control Center & Documentation** from the **Pervasive PSQL** program group.

The **Pervasive Control Center** appears.

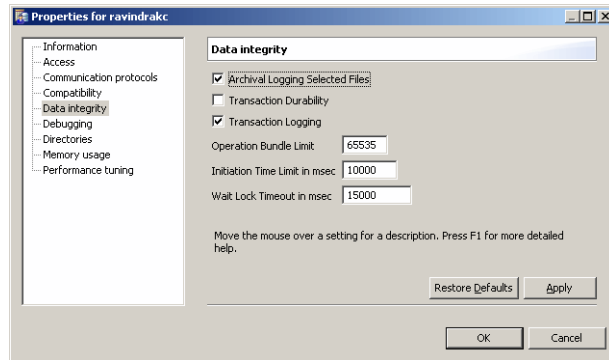
*Figure 3-1 PCC Welcome Screen*



- 2 Click **Configure Local Engine** on the Welcome page.

The **Properties** dialog appears.

Figure 3-2 Archival Logging Setting in PCC.



### 3 Click **Data integrity**.

The **Data integrity** settings display in the right pane.

By default, the **Archival Logging Selected Files** option is not selected.

### 4 To disable Archival Logging, clear the **Archival Logging Selected Files** option, click **Apply**, and then click **OK**.




---

**Caution** The configuration change will not be applied until the Pervasive PSQL Server engine has been restarted.

---

## **Temporary Files**

The MicroKernel locks temporary files. Consequently, Backup Agent does not place temporary files into Continuous Operations.




---

**Note** Attempting to put a temporary file into Continuous Operations results in a Status Code 85: The file is locked.

---

## **Files in a Read-Only Directory**

In the scenario where a file resides in a read-only directory, the MicroKernel is unable to create a delta file, and Backup Agent does not put the file into Continuous Operations.




---

**Note** Attempting to put a file located in a Read-Only directory into Continuous Operations results in a Status Code 94: The application encountered a permission error.

---

**Read-Only Files** Although read-only files cannot be accessed for Write operations, Backup Agent puts these files into Continuous Operations. The MicroKernel does not create the delta file, since there would be no updates to a read-only file. The MicroKernel will then return an error on any Write operation and the Write operation will not be carried out. Since the delta file is never created, there is nothing left for Backup Agent to manage.

**Remote Agent Activation** If your business rules dictate that you start and stop Pervasive Backup Agent from a remote machine, you may do so using any of the remote access software applications available on the market. (For example, you may need to start Backup Agent using a Telnet session.)

**Using Other Utilities** Using BUTIL or the Maintenance Utility to start Continuous Operations is strongly discouraged. If a file is put into Continuous Operations by another utility, Backup Agent cannot manage it. It is then your responsibility to remember to take the file out of Continuous Operations, using the same utility with which you put the file into Continuous Operations.

**Performance Issues** To avoid a potential performance decline, you should always try and schedule your backup process to run during off-hours or periods of low data activity. It's also important to be certain and stop the agent once your backup has completed. The following circumstances could impact your database application performance when running Backup Agent.

- Delta files that grow to a size larger than 2 GB will slow down data reads and writes, thus causing potential performance issues. This can occur during times of increased data access and can be avoided by scheduling your backups during off hours or during decreased data access.



---

**Note** If a delta file grows to the 4 GB maximum size limit you will encounter Status Code 132: File full.

---

- Turning Backup Agent on will block all pending transaction ends (commits/rollbacks) and could potentially impact performance, depending on the number of files associated with the transaction.

- Turning Backup Agent off requires that the changes recorded in the delta files get rolled into the database files. Depending on the amount of changes that occurred, this process could impact performance for a variable amount of time.



---

**Caution** Leaving Backup Agent on after your backup finishes not only creates large delta files that can slow down performance but can also compromise the integrity of your data.

---

### **Recovery Startup Timeout**

In the event that you have files in Continuous Operations using Backup Agent and the server is restarted, there is a 30 minute limit for rolling in changes. If the 30 minute timeout is reached, Pervasive Backup Agent logs the file at which the timeout occurred. Any delta file still active will continue to increase in size if database changes are still being made to the original file. The delta file continues to grow until the changes are rolled in to the original file. You can eliminate this situation by opening the original file using the Function Executor or Pervasive Control Center to roll in the delta file.



---

**Note** If the timeout is reached during a file roll-in, all the changes made up to that point are retained. Any remaining changes are rolled in the next time the file is opened.

---

### **System Failure**

If you are using Pervasive Backup Agent with your backups and you encounter a hard drive failure, you cannot use Archival Logging and the Maintenance utility Roll Forward command to restore changes to your data files that occurred after the last backup. If a hard drive failure occurs, you will lose all changes to your data since the last backup.

If the server goes down while Backup Agent has files in Continuous Operations, Backup Agent detects the existing delta file and rolls in the changes when the server is restarted the next time.

## Specifying Files for Continuous Operations

You can specify files for Backup Agent to include in Continuous Operations by specifying the files in the inclusion file (ifl.txt). Conversely, you can specify files to be excluded from Continuous Operations by using the exclusion file (efl.txt).

If you successfully installed Backup Agent, the include (ifl.txt) and exclude (efl.txt) files are available in the following location:

- *<Pervasive PSQL Application Data directory>*\PBA\Data (On Windows)
- *<Pervasive PSQL Application Data directory>*/PBA/Data (On Linux)



---

**Note** Backup Agent files are installed in the Application Data directory for Pervasive PSQL and not the Program Files directory. See *Getting Started With Pervasive PSQL* for more information on Pervasive PSQL installation locations.

---

If you place a file into Continuous Operations using BUTIL or the Maintenance utility, the file is not excluded although it is listed in efl.txt.



---

**Note** You cannot modify the exclude or include files when Backup Agent and Pervasive PSQL are running, as these files are locked. Stop the Pervasive PSQL engine and Backup Agent before making changes to these files; changes take effect after restarting the Pervasive PSQL engine and Backup Agent.

---

### **Including Files**

List files separated by semicolon or by listing each file on a separate line in the include file list (ifl.txt). You can also use wildcard patterns to include files. Filenames must include the absolute pathname.

#### **➤ To include files into Continuous Operations**

- 1 Navigate to one of the following:
  - *<Pervasive PSQL Application Data directory>*\PBA\Data (On Windows)

- `<Pervasive PSQL Application Data directory>/PBA/Data`  
(On Linux)
- 2 Open the `ifl.txt` file.
  - 3 Enter the names of files or file types as semicolon-separated values, on the same or on separate lines.

The following are the entries in a sample include file list:

```
C:\Documents and Settings\All Users\Application
Data\Pervasive Software\PSQL\demodata/
tuition.mkd; (Includes the tuition.mkd file in the demodata
directory)
```

```
/usr/local/psql/data/demodata/*.ddf (Includes all
files with a DDF extension, in the demodata directory)
```

```
samples\f???.ddf; (Includes all files with names starting
with f, including four characters, and having a DDF extension, in
the samples directory)
```

```
C:\Documents and Settings\All Users\Application
Data\Pervasive Software\PSQL\demodata\bill*.*
(Includes all files whose names start with bill, in the
demodata directory)
```

- 4 Save and close the `ifl.txt` file.
- 5 Restart Pervasive PSQL engines, and turn Backup Agent ON.

Notice that all the files in your include list, irrespective of whether the files are currently opened or not by the Pervasive engine are now placed into Continuous Operations.




---

**Note** If you have the same file name in the include and exclude list, the exclude file takes precedence. The file will be excluded from Continuous Operations, as it is listed in the exclude list.

---

- 6 Check the log file.

The following message indicates the exclusion:

```
Backup Agent has included these files:
<file name>
<file name>
```

**Excluding Files** List files separated by semicolon or by listing each file on a separate line in the exclude file list (efl.txt). You can also use wildcard patterns to exclude files.

➤ **To exclude files from being placed into Continuous Operations**

- 1 Navigate to one of the following:
  - `<Pervasive PSQL install directory>\PBA\Data` (On Windows)
  - `<Pervasive PSQL install directory>/PBA/Data` (On Linux)
- 2 Open the efl.txt file.
- 3 Enter the names of files or file types as semicolon-separated values, on the same or on separate lines.

The following are the entries in a sample exclude file list:

`demodata/tuition.mkd;` (Excludes the tuition.mkd file in the demodata directory)

`/usr/local/psql/data/demodata/*.ddf` (Excludes all files with a DDF extension, in the demodata directory)

`samples\f????.ddf;` (Excludes all files with names starting with f, including four characters, and having a DDF extension, in the samples directory)

`C:\Documents and Settings\All Users\Application Data\Pervasive Software\PSQL\demodata\bill*.*`  
(Excludes all files whose names start with bill, in the demodata directory)

- 4 Save the changes to efl.txt file, and close it.
- 5 Restart Pervasive PSQL engines, and turn Backup Agent ON.
- 6 When the Backup Agent is running, open one of the files that you included in the exclude list.

Although the file is open, it is not placed into Continuous Operations, as it is listed in the exclude list.

- 7 Check the log file.

The following message indicates the exclusion:

`Backup Agent has excluded these files:`



*<file name>*

*<file name>*

## Using the Backup Agent Command-Line Interface

The Backup Agent command-line interface (CLI) utility (pvbackup.exe) is a perfect solution for integrating an automatic Continuous Operations function with your backup software applications. Before we discuss implementing this utility with a backup software application, let's first look at using the utility by itself.

### **Turning Backup Agent (CLI) ON**

➤ **To turn Backup Agent CLI on**

- 1 At a command prompt, type one of the following commands and press **Enter**.

```
pvbackup -on (32-bit)
pvbackup64 -on (64-bit)
```

A message similar to the following appears to indicate that the agent was successfully turned on.

```
Backup Agent is now ON.
```

### **Turning Backup Agent (CLI) OFF**

➤ **To turn Backup Agent CLI off**

- 1 At a command prompt, type one of the following commands and press **Enter**.

```
pvbackup -off (32-bit)
pvbackup64 -off (64-bit)
```

A message similar to the following appears to indicate that the agent was successfully turned off.

```
Backup Agent is now OFF.
```

### **Requesting Backup Agent (CLI) Status**

➤ **To request the current state of Backup Agent CLI**

- 1 At a command prompt, type one of the following commands and press **Enter**.

```
pvbackup -status (32-bit)
pvbackup64 -status (64-bit)
```

A message similar to the following appears to indicate the status of the agent.

```
Backup Agent is now ON.
```

## Displaying Backup Agent (CLI) Help

### ➤ To display the Backup Agent CLI help

- 1 At a command prompt, type one of following commands and press **Enter**.

```
pvbackup -? (32-bit)
```

```
pvbackup -h (32-bit)
```

```
pvbackup64 -? (64-bit)
```

```
pvbackup64 -h (64-bit)
```

The help for using the command-line utility appears.

```
Usage:  pvbackup  [-on | -off | -status]
        pvbackup64

Options: -on          Turns Backup Agent ON
        -off         Turns Backup Agent OFF
        -status      Displays current state of Backup Agent
                     (ON, OFF, ON-WITH-ERROR, BUSY)
        -? | -h      This help screen
```

## Integrating with your Backup Software

You can easily implement Pervasive Backup Agent into some of the most popular backup software applications on the market. Some backup applications can be configured to have specific operations or scripts run prior to a scheduled backup. With this functionality, you may also have the flexibility built in to the software to run specific operations or scripts after a backup has completed.

For example, some backup applications allow you to set Pre or Post commands. So where you configure a Pre command, you might enter something similar to the following, depending on the specific requirements of your backup software.

```
<drive>: \<fulldatapath>\pvbackup -on
```

You would also specify a Post command, to be executed after your backup has completed. An example of this might be something like the following, depending on your backup software requirements.

```
<drive>: \<fulldatapath>\pvbackup -off
```

Depending on the backup software you are using, you may not need to enter the full pathname. Refer to the user documentation or online help that accompanied your backup software for specific requirements.

## Using the Backup Agent Graphical User Interface

The Backup Agent graphical user interface (GUI) utility (pvbackupgui.exe) is designed as a one-touch solution for managing your backup files. With an easy to use interface, this utility may become your first stop to starting your ad-hoc backup processes.

### Starting the Backup Agent (GUI) Utility

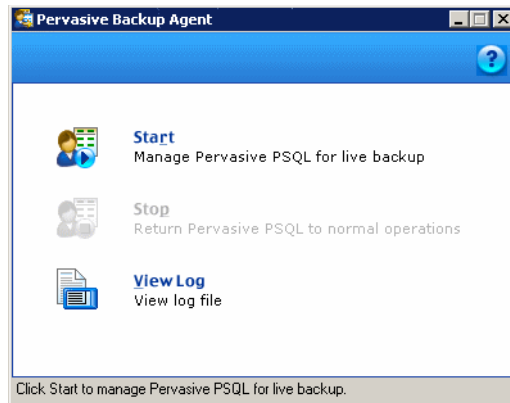
You can access the Backup Agent GUI from the Start menu or from Pervasive Control Center (PCC).

#### ➤ To start Backup Agent GUI from the Start menu

- 1 On the Start menu select **Backup Agent** from the **Pervasive PSQL** program group.

The **Pervasive Backup Agent** dialog appears.

*Figure 3-3 Initial Pervasive Backup Agent Dialog*

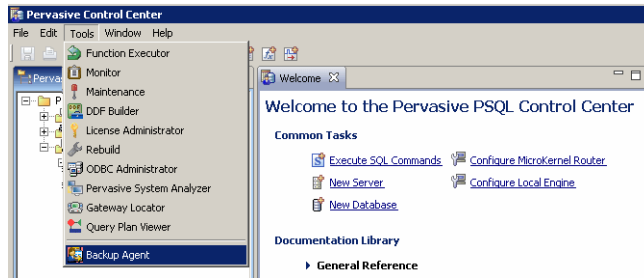


To manage your Pervasive PSQL files for live backup, refer to [Turning Backup Agent \(GUI\) ON](#).

#### ➤ To start Backup Agent GUI from Pervasive Control Center

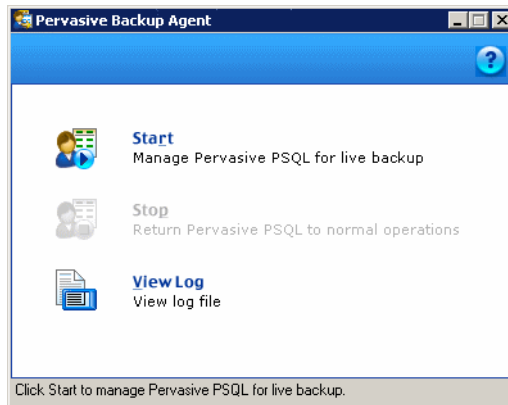
- 1 From the Pervasive Control Center menu bar, click **Tools** ▶ **Backup Agent**.

Figure 3-4 Starting Backup Agent from PCC



The Pervasive Backup Agent dialog appears.

Figure 3-5 Initial Pervasive Backup Agent Dialog



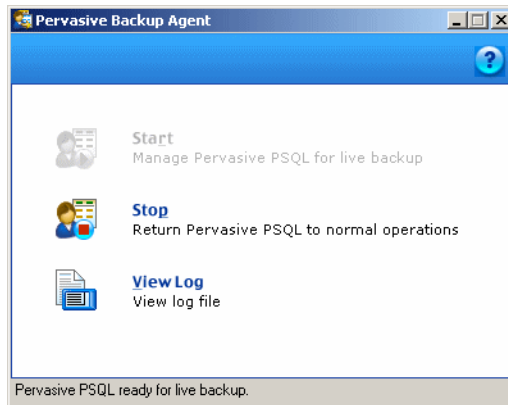
To manage your Pervasive PSQL files for live backup, refer to the next section, [Turning Backup Agent \(GUI\) ON](#).

### **Turning Backup Agent (GUI) ON**

- **To turn Backup Agent GUI on**
  - 1 From the Pervasive Backup Agent initial dialog, click **Start** to turn the utility on and begin managing your Pervasive PSQL databases for live backup.

Once you have turned Backup Agent on, the utility displays the following.

Figure 3-6 Pervasive Backup Agent ON



Backup Agent is now on and managing your Pervasive PSQL databases for live backup.

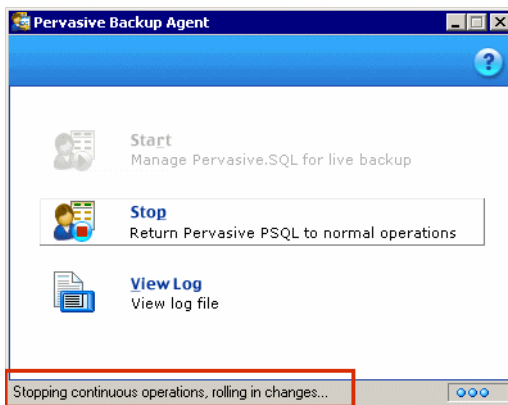
### Turning Backup Agent (GUI) OFF

➤ **To turn Backup Agent GUI off**

- 1 From the Pervasive Backup Agent on dialog (shown in Figure 3-6), click **Stop** to turn the utility off and return to normal operations.

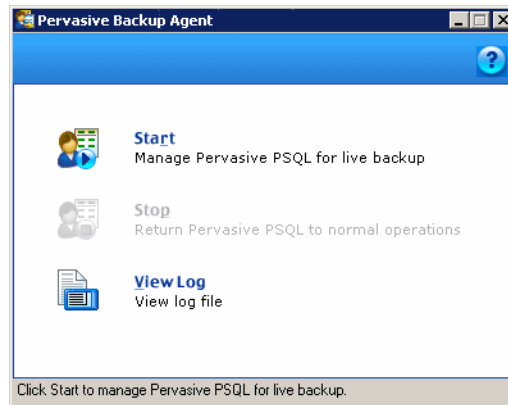
When you first select **Stop**, the following status message appears.

Figure 3-7 Rolling in Changes Status Message



- 2 Once you have turned Backup Agent off, the utility returns to the initial display.

Figure 3-8 Initial Pervasive Backup Agent Dialog

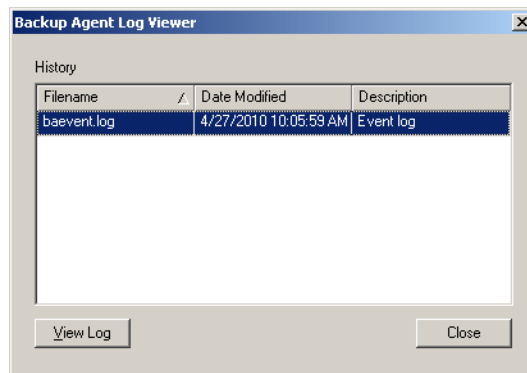


Backup Agent is now off and has returned to normal operations.

### Viewing the Backup Agent (GUI) Log File

- **To view the Backup Agent GUI Log File**
- 1 Click **View Log** to view the available Backup Agent log files. The **Backup Agent Log Viewer** dialog appears.

Figure 3-9 Backup Agent Log Viewer



- 2 Click **Close** to exit the **Backup Agent Log Viewer** window. You can view a specific log file by clicking **View Log**.

### Displaying Backup Agent (GUI) Online Help

- **To display the Backup Agent GUI online help**
- 1 In the Backup Agent dialog, click the **Help** button located in the upper right corner of the dialog.





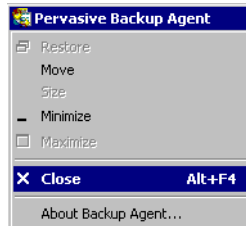
The Pervasive Backup Agent online help file appears.

### ***Closing the Backup Agent (GUI) Utility***

➤ **To close the Backup Agent GUI utility**

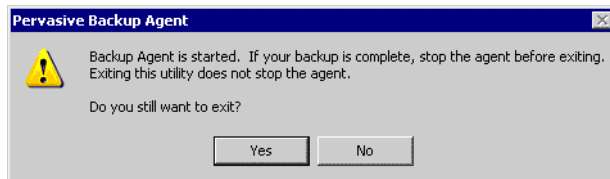
- 1 Click the **Backup Agent** program icon in the upper left corner of the screen.

*Figure 3-10 Close Backup Agent*



- 2 Click **Close**.

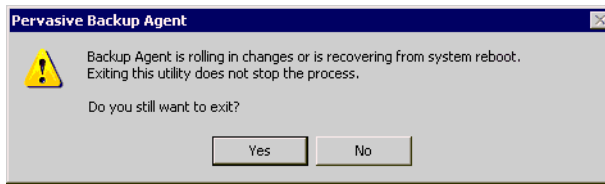
If you attempt to close the utility during an active backup session or before you have stopped the agent, the following message appears.



This message explains that the agent is currently ON.

If you attempt to close the utility during a system reboot or when Backup Agent is rolling in changes, the following message appears.

Figure 3-11 Exiting Backup Agent while Rolling in Changes



- 3 If you are certain you want to exit the utility, click **Yes**. If you want to return to the interface to stop the agent, click **No**.



---

**Tip** Closing this utility interface does **not** stop the agent.

---

If you close this interface without stopping the agent, you could accidentally leave the agent on, causing extremely large delta files to be created and compromising the integrity of your current backup.

The current size limit for delta files is 4 GB, but significant performance decrease could be noticed if the delta file reaches a size of 2 GB or greater. If your delta file reaches the 4 GB limit, you will receive a return status code of 132 - File Full.



---

**Caution** It is important that you stop the agent when your backup process has completed to avoid extremely large delta files that could compromise system performance and data integrity.

---

# *Backup Agent on Linux*

---

## *Installing and Using Backup Agent on Linux*

This chapter contains procedures for installing and using Backup Agent on the Linux operating system. The chapter contains the following sections:

- [Before You Begin](#)
- [Backup Agent Linux Installation Checklists](#)
- [Installing Backup Agent Using TAR](#)
- [Installing Backup Agent Using RPM](#)
- [Installation Scripts](#)
- [Using the Command Line License Administrator](#)
- [Common Questions After Installation](#)
- [Using Backup Agent on Linux](#)
- [Uninstalling Backup Agent on Linux](#)

## Before You Begin

This section contains information with which you need to be familiar to successfully install Pervasive Backup Agent on Linux.

Before installing, begin by reviewing the following documents for important information:

- This chapter provides important information such as system requirements and platform specific notes that are relevant to your operation.
- *Readme file* - This file is located on the distribution media and contains late-breaking product news that could not be included in the product documentation. The file is available as both HTML and text on the CD-ROM and as HTML after installation in the file `/usr/local/psql/pba/doc/readme.htm`.

## Backup Agent Linux Installation Checklists

This section provides you with checklists and other information to prepare you for installation on Linux.

### **Precautions**

The following lists important precautions to follow prior to installing Pervasive Backup Agent.

- Your system hardware and software meets the minimum requirements to install Pervasive Backup Agent.



**Note** In order to install Pervasive Backup Agent your system must meet the minimum requirements to install Pervasive PSQL v11. The hardware and software requirements are listed on the Pervasive Software web site.

---

- The Pervasive PSQL database engine is stopped and restarted during the installation of Pervasive Backup Agent. If your business requirements prohibit stopping the database engine during certain hours, install Backup Agent during an acceptable period.
- As with any software application, you should always back up any important files on the hard drive before you begin the installation.
- If you have enabled Archival Logging, you must disable it before you can use Pervasive Backup Agent.

### **Linux Platform Notes**

This section provides information that is specific to the Linux version of Pervasive Backup Agent.



**Note** Pervasive Backup Agent does not support kernel 2.2 versions. You must have at least kernel 2.4 for successful installation.

---

## Installing Backup Agent Using TAR

For TAR installation, Backup Agent is provided in a file named like the following example:

Pervasive-Backup-Agent-4.00-020.000.i486.tar.gz

Verify the actual name for the file you install.



**Caution** Installation of Backup Agent stops and then restarts Pervasive PSQL services, so **your database is briefly shut down.**

---



**Note** If you use a Linux system that supports RedHat Package Manager (RPM), you may want to use RPM instead of TAR. See [Installing Backup Agent Using RPM](#) for more information.

---

### ➤ To install Backup Agent using TAR

- 1 Log in as the root user.
- 2 Change the current directory to `/usr/local/psql`.

```
cd /usr/local/psql
```

- 3 Copy the TAR file into the current directory.

```
cp <path>/Pervasive-Backup-Agent-4.00-020.000.i486.tar.gz .
```

For example, if you download the file into `/home/bholly`:

```
cp /home/bholly/Pervasive-Backup-Agent-4.00-020.000.i486.tar.gz .
```

- 4 Unpack the TAR file using the following command, replacing the file name used here with the correct name, if needed.

```
tar -xzf Pervasive-Backup-Agent-4.00-020.000.i486.tar.gz
```

- 5 Change directories to the newly created `/usr/local/psql/pba/etc` folder where the Backup Agent shell scripts reside.

```
cd pba/etc
```

- 6** First, run the preinstallation script.

```
sh preinstall.sh
```

- 7** Finish by running the postinstallation script.

```
sh postinstall.sh
```

If successful, the prompt displays the following message:

```
Install has successfully completed.
```

- 8** To know what actions the scripts performed, see [Installation Scripts](#).
- 9** After installation, you can verify that both engines (`mkded` transactional and `sqlmgr` relational) are running by using the Linux `ps` utility at the command prompt:

```
ps -e | egrep `mkded|sqlmgrd`
```

## Installing Backup Agent Using RPM

For RPM installation, Backup Agent is provided in a file named like the following example:

Pervasive-Backup-Agent-4.0-032.000.i486.rpm

Verify the actual name for the file you install.



**Note** To install this package, you must be logged in as root. If you are installing from the CD, you must be in the CD root directory.

---



**Caution** Installation of Backup Agent stops and then restarts Pervasive PSQL services, so **your database is briefly shut down**.

---

### ➤ To install Backup Agent using RPM

- 1 Log in as the root user.
- 2 Change directories to the location of the RPM package
- 3 Issue the following command, replacing the package name used here with the correct name:

```
rpm -ivh Pervasive-Backup-Agent-4.00-032.000.i486.rpm
```



**Note** If you are installing to a non-RPM based Linux installation such as Slackware, you need to add the `--nodeps` option so that the package manager does not check for RPM dependencies, which your system does not have. For example, `rpm -ivh --nodeps <package>`.

---

The package scripts install the product and perform other tasks as noted in [Installation Scripts](#). If successful, the prompt displays the following message:

```
Install has successfully completed.
```



- 4 After installation, you can verify that both engines (`mkded` transactional and `sqlmgr` relational) are running by using the Linux `ps` utility at the command prompt:

```
ps -e | egrep 'mkded|sqlmgrd'
```

### **Verifying RPM Installation**

You can verify that RPM installed the Backup Agent package by issuing the following case-sensitive command at a prompt:

```
rpm -q 'Pervasive-Backup-Agent'
```

When successful, a specific version should be returned. For example:

```
Pervasive-Backup-Agent-4.00-032.000
```

## Installation Scripts

This section contains additional information about Backup Agent installation on Linux.

If you use the RPM installation system, installation scripts run automatically before and after the package manager copies all needed files to the location `/usr/local/psql/pba`.

If you use TAR, you will run the script `postinstall.sh` manually after installation.

In either case, the scripts perform the following tasks:

- Verify necessary permissions to complete the installation
- Shut down Pervasive PSQL services
- Set user:group ownership to `psql:pvs` for the installed files
- Configure and register Backup Agent with Pervasive Services
- If no permanent license exists, install an evaluation license
- Restart Pervasive PSQL services



**Caution** Installation of Backup Agent stops and then restarts Pervasive PSQL services, so **your database is briefly shut down**.

---



**Note** For more information about Backup Agent licensing on Linux, see [Using the Command Line License Administrator](#).

---

---

## Using the Command Line License Administrator

By default, Pervasive Backup Agent installation on Linux provides a trial license. At any time, you may manually apply a permanent activation license using the Pervasive `clilcadm`, the Command Line License Administrator utility.

➤ **To upgrade to a permanent license**

- 1 Log in as the root user.
- 2 Then log in as `psql` or any other user of group `pvsu`. For user `psql`, no password is needed.

```
su - psql
```

- 3 Change directories to the Pervasive binary folder.

```
cd /usr/local/psql/bin
```

- 4 Apply the permanent license key using one of the following commands.

```
./clilcadm -a key (32-bit)
```

```
./clilcadm64 -a key (64-bit)
```

Where *key* is the activation license provided by Pervasive in the product packaging.



**Note** More information about the License Administrator can be found in the man pages and under Linux supplementary documentation in *Pervasive PSQL User's Guide*.

---

## Common Questions After Installation

This section contains information that you should read after installing Backup Agent on Linux. If you have problems with installation, see the troubleshooting chapter in *Getting Started With Pervasive PSQL* or visit <http://support.pervasive.com/eSupport> for online help resources.

### Where Do I Find the Product Documentation?

The product includes a man page. To read it, use the following command:

```
man pvbackup
```

Backup Agent documentation in PDF format is available in the following file:

```
/usr/local/psql/pba/doc/pvbackup.pdf
```

A readme file for the latest changes and additions to the product is available in the following file:

```
/usr/local/psql/pba/doc/readme.htm
```

The distribution media also includes this readme file.

### What Files Were Installed as Part of Backup Agent under Linux?

Under Linux, the installation of Pervasive Backup Agent places the directories and files under the Backup Agent root directory. By default this directory is `/usr/local/psql/pba`.

## Using Backup Agent on Linux

On Linux, the `pvbackup` command is used at the command line exactly the same as it is under Windows systems. This section provides an overview of the command and its syntax. For more information, see [Using the Backup Agent Command-Line Interface](#).

### pvbackup

### pvbackup64

**Description** This utility sets and manages Continuous Operations on a Pervasive PSQL database files during a live backup using a backup software application.

**Syntax** `pvbackup -on | -off | -status | -help`



**Tip** `pvbackup64` is used with Backup Agent 64-bit.

### Options

<code>-on</code>	Turns Backup Agent on
<code>-off</code>	Turns Backup Agent off
<code>-status</code>	Displays status of Backup Agent
<code>-help</code>	Displays help for Backup Agent

**Remarks** You must be logged in as user `psql` to run this utility. Other users also can run it if their Linux Pervasive PSQL accounts are configured to do so. For details, see the Linux application management chapter in *Getting Started With Pervasive PSQL*.

**Availability** Linux distribution with Kernel 2.4 and Glibc 2.2.

## Uninstalling Backup Agent on Linux

This section covers removal of Backup Agent from a Linux machine.



---

**Caution** Uninstalling Backup Agent stops and then restarts Pervasive PSQL services, so **your database is briefly shut down**.

---

### **Uninstalling the TAR Version**

#### **➤ To uninstall using TAR**

- 1 Log in as the root user.
- 2 Then log in as `psql` or any other user of group `pvsww`. For user `psql`, no password is needed.

```
su - psql
```

- 3 Be sure that Backup Agent is turned off by issuing one the following commands:

```
pvbackup -off  
pvbackup64 -off
```

The command displays the following text:

```
Backup Agent is now OFF.
```

- 4 Exit back to root user.
- 5 Since the uninstall will remove `/usr/local/psql/pba` and its subdirectories, be sure the current working directory is located above the Backup Agent home directory. For example, change directories to `/usr/local/psql`.

```
cd /usr/local/psql
```

- 6 Run the first uninstall script.

```
sh pba/etc/preuninstall.sh
```

The system shuts down Pervasive PSQL, cleans up memory, unregisters Backup Agent libraries, and removes files, logs, links, and configuration settings made by the initial installation.

Backup Agent is now removed from your Linux system.

- 7 When the first script finishes, run the second uninstall script.

```
sh pba/etc/postuninstall.sh
```

The second script removes the Backup Agent directories and restarts Pervasive PSQL.

Backup Agent is now removed from your Linux system.

- 8 After installation, you can verify that both engines (`mkded` transactional and `sqlmgr` relational) are running by using the Linux `ps` utility at the command prompt:

```
ps -e | egrep 'mkded|sqlmgrd'
```

## Uninstalling the RPM Version

### ➤ To uninstall using RPM




---

**Caution** Uninstallation of Backup Agent stops and then restarts Pervasive PSQL services, so your database is briefly shut down.

---

- 1 Log in as the root user.
- 2 Then log in as `psql` or any other user of group `pvsu`. For user `psql`, no password is needed.
 

```
su - psql
```
- 3 Be sure that Backup Agent is turned off by issuing one of the following commands:
 

```
pvbackup -off
pvbackup64 -off
```

The command displays the following text:

```
Backup Agent is now OFF.
```
- 4 Exit back to root user.
 

```
exit
```
- 5 Since the uninstall will remove `/usr/local/psql/pba` and its subdirectories, change the current directory to another location. For example, change directories to `psql` home, `/usr/local/psql`.
 

```
cd /usr/local/psql
```
- 6 Issue the following command:
 

```
rpm -e Pervasive-Backup-Agent
```

The package manager stops Pervasive PSQL services, removes the `/usr/local/psql/pba` directory, its subdirectories, and all files, logs, links, and configuration settings made by the initial installation, then restarts Pervasive PSQL services again.

Backup Agent is now removed from your Linux system.

- 7 After installation, you can verify that both engines (`mkded` transactional and `sqlmgr` relational) are running by using the Linux `ps` utility at the command prompt:

```
ps -e | egrep 'mkded|sqlmgrd'
```



# *Programmer's Reference*

# A

---

## *A Reference for the Pervasive Backup Agent API*

This appendix provides technical reference information for developers using the application programming interface (API) included with Pervasive Backup Agent. This appendix is not designed to provide high-level conceptual or how-to information.

The following functions are included:

- [PvBackupSetOn\(\)](#)
- [PvBackupSetOff\(\)](#)
- [PvBackupGetStatus\(\)](#)
- [PvBackupGetLogDir\(\)](#)
- [PvBackupGetLogDirW\(\)](#)

## PvBackupSetOn()

**Description** Turns on Backup Agent

**Include** pvbackupapi.h

**Library** pvbackupapi.lib (Windows 32-bit)  
w64pvbackupapi.lib (Windows 64-bit)  
libpvbackupapi.so (Linux)

**Syntax** `BU_STAT PvBackupSetOn();`

### Return Value

BU_ON	Backup Agent is successfully turned on (or was already on when this function was called).
BU_ERROR	Backup Agent cannot be turned on because of an error. Use <a href="#">PvBackupGetLogDir()</a> to locate log files containing specific error information.
BU_BUSY	Backup Agent cannot be turned on because the system is busy due to a cleanup or startup operation in progress. Try again in a few seconds.
BU_ON_WITHERROR	Backup Agent is turned on, but some errors have occurred since it was turned on.
BU_INSTALL_ERROR	Incompatible MicroKernel or incomplete Backup Agent installation was detected. Backup Agent event handler may not be installed and registered correctly. Please reinstall Backup Agent software.

## PvBackupSetOff()

**Description** Turns off Backup Agent

**Include** pvbackupapi.h

**Library** pvbackupapi.lib (Windows 32-bit)  
w64pvbackupapi.lib (Windows 64-bit)  
libpvbackupapi.so (Linux)

**Syntax** BU\_STAT PvBackupSetOff ();

### Return Value

BU_OFF	Backup Agent is successfully turned off (or was already off when this function was called).
BU_ERROR	Backup Agent cannot be turned off because of an error. Use <a href="#">PvBackupGetLogDir()</a> to locate log files containing specific error information. This value will not be returned if an error occurred BEFORE this function was called; use <a href="#">PvBackupGetStatus()</a> to get that information.
BU_BUSY	Backup Agent cannot be turned off because the system is busy due to a cleanup or startup operation in progress. Try again in a few seconds.
BU_INSTALL_ERROR	Incompatible MicroKernel or incomplete Backup Agent installation was detected. Backup Agent event handler may not be installed and registered correctly. Please reinstall Backup Agent software.

## PvBackupGetStatus()

**Description** Retrieves current status of Backup Agent

**Include** pvbackupapi.h

**Library** pvbackupapi.lib (Windows 32-bit)  
w64pvbackupapi.lib (Windows 64-bit)  
libpvbackupapi.so (Linux)

**Syntax** `BU_STAT PvBackupGetStatus ();`

### Return Value

BU_ON	Backup Agent is turned on and no errors have occurred.
BU_OFF	Backup Agent is turned off.
BU_ERROR	Backup Agent cannot get the status because of an error. Use <a href="#">PvBackupGetLogDir()</a> to locate log files containing specific error information.
BU_ON_WITHERROR	Backup Agent is turned on, but some errors have occurred since it was turned on.
BU_BUSY	Backup Agent cannot process the get status request because the system is busy due to a cleanup or startup operation in progress. Try again in a few seconds.
BU_INSTALL_ERROR	Incompatible MicroKernel or incomplete Backup Agent installation was detected. Backup Agent event handler may not be installed and registered correctly. Please reinstall Backup Agent software.

## PvBackupGetLogDir()

**Description** Obtains the directory where Backup Agent log files are written

**Include** pvbackupapi.h

**Library** pvbackupapi.lib (Windows 32-bit)  
w64pvbackupapi.lib (Windows 64-bit)  
libpvbackupapi.so (Linux)

**Syntax**

```
const char* const PvBackupGetLogDir();
```

### Return Value

---

char*	A pointer to a static buffer containing the ANSI string in the system default character encoding. Returns NULL on failure, or if LogsPath registry key is deleted or empty.
	The string is usable as ASCII on an English-only system.

---

**Remarks** This is the single-byte character set.

**See Also** [PvBackupGetLogDirW\(\)](#)

## PvBackupGetLogDirW()

**Description** Obtains the directory where Backup Agent log files are written

**Include** pvbackupapi.h

**Library** pvbackupapi.lib (Windows 32-bit)  
w64pvbackupapi.lib (Windows 64-bit)  
libpvbackupapi.so (Linux)

**Syntax**

```
const wchar_t* const PvBackupGetLogDirW();
```

**Return Value**

---

wchar_t*	A pointer to a static buffer containing the wide-character string. Returns NULL on failure, or if LogsPath registry key is deleted or empty.
----------	--

---

**Remarks** This is the double-byte character set.

**See Also** [PvBackupGetLogDir\(\)](#)

# *Pervasive Software Resources and Contacts*

---

*A Guide to Pervasive Software Customer Information Resources*

Pervasive Software strives to ensure that your experience with our products is successful. This appendix describes the resources and information available to you as a valued customer of Pervasive Software.

- [Available Resources](#)

## Available Resources

The following table lists a variety of resources to help you get answers to your questions, troubleshoot problems, and interact with the Pervasive team as well as with other customers.

Table 2-1 Pervasive Software Resources and Contact Information

Resource	Description	Contact Information
Pervasive Software Web site	The Pervasive Software Web site is a great source for everything Pervasive PSQL.	<a href="http://www.pervasive.com">http://www.pervasive.com</a>
Pervasive Resource Center	The Resource Center provides a quick and easy way to access Pervasive resources, such as:  Free Trials - Data Sheets - White Papers - Success Stories - Tech Papers - Demos - Webinars - Audio - Training - Subscription Center - Developer Center - Dev Talk Technical Forums	<a href="http://www.pervasive.com/resources/">http://www.pervasive.com/resources/</a>
FTP Site	The Pervasive FTP site contains downloadable updates and patches to our product offerings, as well as additional debugging tools, documentation, third-party tools, and beta releases.	<a href="ftp://ftp.pervasive.com/support/">ftp://ftp.pervasive.com/support/</a>
Newsgroup	The Pervasive PSQL newsgroup is managed by the end-user community, posting and answering questions as they wish.	<a href="news://comp.databases.btrieve">news://comp.databases.btrieve</a> .
Technical Support	The Support site contains product support assistance, support offerings, as well as online forms to submit service tickets, feedback and product defects.	<a href="http://www.pervasive.com/support/">http://www.pervasive.com/support/</a>
Pervasive PSQL Knowledge Base	The Pervasive PSQL Knowledge Base is a searchable database of information on installation, configuration, component management, product defect status, and answers to the frequently asked questions (FAQs).	<a href="http://support.pervasive.com/eSupport/">http://support.pervasive.com/eSupport/</a>



Table 2-1 Pervasive Software Resources and Contact Information

Resource	Description	Contact Information
Pervasive Library	View the current documentation and technical papers online and access Pervasive discussion forums.	<a href="http://www.pervasive.com/library">http://www.pervasive.com/library</a>
Online Documentation	Download the latest versions of Pervasive PSQL product manuals.	<a href="http://www.pervasive.com/support/technical/online_manuals.asp">http://www.pervasive.com/support/technical/online_manuals.asp</a>
	The complete suite of online documentation is installed automatically on Windows, unless you specifically excluded it, during installation.	Access installed documentation from the <b>Pervasive</b> program on the <b>Start</b> menu or from the installation CD-ROM.
Printed Documentation	Printed versions of each manual are available for purchase separately, or you may purchase the entire documentation set.	<a href="http://www.pervasive.com/ecommerce/Scripts/default.asp">http://www.pervasive.com/ecommerce/Scripts/default.asp</a>  Send e-mail to: <a href="mailto:salesupport@pervasive.com">salesupport@pervasive.com</a>  Or telephone: 1 800 287 4383.
Telephone Contacts	Pervasive Software has offices worldwide to help solve your product support issues.	<a href="http://www.pervasive.com/company/contact">http://www.pervasive.com/company/contact</a>
E-Mail Contacts	Pervasive Software welcomes your comments, suggestions and requests for assistance via e-mail.	

### **Technical Support**

If you still have questions or problems relating to your Pervasive Backup Agent installation, you can obtain help from the Pervasive Software Customer Support department.



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