

# Pervasive DataExchange

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## *Getting Started with Pervasive DataExchange*

**Data Synchronization Edition**

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# *About This Manual*

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This manual explains how to get started using Pervasive DataExchange for data synchronization. Topics include requirements for installation, installation steps, upgrade steps, and answers to common questions following an installation.

## **Who Should Read This Manual**

This manual provides information for users who install and run Pervasive DataExchange (Data Synchronization Edition). This manual is also useful for system administrators who are responsible for installing and maintaining applications that use DataExchange replication.

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://www.pervasive.com/devtalk>.

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## Manual Organization

This manual is divided into the following sections:

- Chapter 1—“Welcome to Pervasive DataExchange”  
This chapter provides a basic introduction to Pervasive DataExchange.
- Chapter 2—“Preparing to Install Pervasive DataExchange”  
This chapter discusses preparations that you should undertake before attempting to install Pervasive DataExchange.
- Chapter 3—“Installing Pervasive DataExchange with No Previous Installation”  
This chapter describes how to install DataExchange for the first time.
- Appendix A—“Troubleshooting”  
This appendix discusses how to troubleshoot problems with replication.
- Appendix B—“Upgrading Your Pervasive DataExchange Installation”  
This chapter explains how to upgrade a previous version of DataExchange.

This manual also contains an index.

## 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 [ <i>log_name</i> ]. If information is not enclosed in square brackets, it is required.
	A vertical bar indicates a choice of information to enter, as in [ <i>file name</i>   @ <i>file name</i> ].
< >	Angle brackets enclose multiple choices for a required item, as in /D=<5   6   7>.
<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 [ <i>parameter</i> ...].
::=	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 DataExchange*

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*chapter*

*1*

*A Basic Introduction to Pervasive DataExchange*

Thank you for purchasing Pervasive DataExchange. This chapter contains the following topics:

- “What’s New in Pervasive DataExchange” on page 1-2
- “About Pervasive DataExchange” on page 1-3
- “Overview of How Pervasive DataExchange Works” on page 1-4
- “Where to Install DataExchange” on page 1-6
- “DataExchange Licensing” on page 1-7

## **What's New in Pervasive DataExchange**

The following features are new in this release of Pervasive DataExchange:

- Support for the current version of Pervasive PSQL.
- Use and administration of replication features through the Java user interface in Pervasive PSQL.
- Support for replication of table names beginning with the prefix “PDC”

## About Pervasive DataExchange

Pervasive DataExchange is Pervasive Software's database replication solution. It reliably moves data between two or more Pervasive PSQL databases to maintain a current backup system, drive data into reporting servers, or synchronize multiple remote databases. In short, Pervasive DataExchange offers several ways to help you replicate your data.

Pervasive DataExchange is available in two editions: Real-Time Backup and Data Synchronization. The following table summarizes the features of Pervasive DataExchange based on the edition.

*Table 1-1 Comparison of Pervasive DataExchange Editions*

Feature	Edition	
	Real-Time Backup	Data Synchronization
One-way replication	✓	✓
Two-way replication		✓
Scripted set up	✓	
Data-driven replication		✓

## Overview of How Pervasive DataExchange Works

The DataExchange technology works by capturing and sharing changes from one Pervasive PSQL database to other databases in a DataExchange replication network. Each database is augmented with DataExchange, which adds two software components to a Pervasive PSQL database: the Replication Event Handler and the Replication Engine.

- The Replication Event Handler (REH) plugs directly into the Pervasive PSQL database engine. Specifically, the REH is a set of DLLs that operate within the database engine, so if the database is running, the replication event handler is running as well. The database engine activates the REH when there is a change event (insert, update, delete). The REH then makes note of the event in one of its private control tables.
- The Replication Engine is a separate process that performs the actual replication task. It reads the control tables to determine what records have changed since the last replication session. It then groups these changes into packets and shares them with the other replication engines participating in a DataExchange network. These other engines then apply the updates to their own databases. The replication process occurs either continuously, at scheduled intervals, or on demand. The replication engine does not require constant network connectivity, so DataExchange is suitable for scenarios with intermittent connectivity, like remote users with dialup connections.

### Notification Agent

The notification agent, or agent for short, is another component installed by DataExchange. Its purpose is to initiate an e-mail if a replication failure occurs. The agent requires the basic Simple Mail Transfer Protocol (SMTP) to communicate with a mail server.

Note that the agent is installed only if the machine contains the Pervasive PSQL Server product. The agent is not available if you install DataExchange on a machine with the Pervasive PSQL Workgroup product.

See “dxagent” on page 7-34 in *Pervasive DataExchange User’s Guide*.

## Replication-specific Files

DataExchange adds its own tables on the machine where replication executes. It uses two types of tables: system configuration and replication control. Configuration tables record information such as the databases being replicated, the sites to which data is replicated, and replication schedules.

Control tables shadow data files and track the replication state of each record in the data. Each data table or file has a control table counterpart. Similarly, each data record has a companion control table record. Through the control tables, the replication engine determines what records need to be replicated when.

DataExchange tables for replication configuration and control can reside with the files to be replicated or separately in their own database. The choice of location depends on your replication needs. Replication of entire tables can be done with a separate replication database.

Every kind of available replication solution is covered in *Pervasive DataExchange User's Guide*.

## **Where to Install DataExchange**

Pervasive DataExchange must be installed on the same computer as the Pervasive PSQL Server engine or Pervasive PSQL Workgroup engine. See also “Preparing to Install Pervasive DataExchange” on page 2-1.

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## DataExchange Licensing

Pervasive DataExchange Data Synchronization Edition requires an activation license for *each* machine involved in a replication network. A replication network consists of a First Site and one or more Partner Sites. The installation program prompts you to enter a license string and decodes it to ensure that it is valid.

You may install an evaluation version of Pervasive DataExchange without a license. At the end of the evaluation period, the replication engine returns an error when it attempts to start. Use the Event Viewer of your operating system to view the error in the Application event log.

You may initially install an evaluation version then later apply an activation license. Use the following steps to replace an evaluation license with a nonevaluation license.

### ➤ To upgrade an evaluation license

- 1 Obtain the license key from one of the following locations:
  - Case of the DataExchange installation CD
  - Product registration card
  - Printed license agreement
- 2 If you need to purchase a license, contact Sales Support at Pervasive Software (salessupport@pervasive.com). See also “How to Get Additional Help” on page A-16.
- 3 Apply the license using the Pervasive PSQL License Administrator utility. See the License Administrator chapter in *Pervasive PSQL User's Guide*.

*Welcome to Pervasive DataExchange*

# *Preparing to Install Pervasive DataExchange*

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## *Preparation Needed for Pervasive DataExchange Installation*

This chapter contains the following topics:

- “DataExchange Installation Overview” on page 2-2
- “DataExchange Installation Checklists” on page 2-4

## DataExchange Installation Overview

This section provides an overview to the components that make up Pervasive DataExchange and information on the files included in the different types of installation.

### **DataExchange Components**

Pervasive DataExchange consists of the following product components:

- Replication Event Handler
- Replication Engine
- Notification Agent
- Utilities
- Documentation

See “Overview of How Pervasive DataExchange Works” on page 1-4 for a discussion of the replication event handler, replication engine, and notification agent.

### **Utilities**

Pervasive DataExchange includes several utilities designed to help you control and manage the replication process. The following table lists the main utilities. All of the utilities are discussed in *Pervasive DataExchange User’s Guide*. Refer to Part IV, “Replication Tools and Utilities,” in that guide.

*Table 2-1 Summary of Main Pervasive DataExchange Utilities*

Utility Name	Description
Designer	Creates customized designs for replication.
Deployment tool	Sets up a two-machine replication network between a primary site and a backup site. See “Replication Deployment” on page 4-1.
Manager	Sets up replication schedules and user access.
Monitoring tool	Monitors data replication, configures replication sessions, and sets logging options.

Table 2-1 Summary of Main Pervasive DataExchange Utilities continued

Utility Name	Description
Activation tool	Enable a database to participate in replication and establish the database as belonging to a site on the replication network.
Deactivation tool	Removes a database from the list of those available for replication. If you want to delete a replicated database from physical storage, you must deactivate it first.

## Documentation

The installation of Pervasive DataExchange includes the documentation in HTMLHelp and PDF format. The documentation consists of the following:

- This book—*Getting Started with Pervasive DataExchange (Data Synchronization Edition)*—helps you to get Pervasive DataExchange installed and setup. This book is also provided in hardcopy.
- *Pervasive PSQL User's Guide*—provides conceptual information and tasks to help you use the DataExchange products. The *User's Guide* covers both the Real-Time Backup Edition and the Data Synchronization Edition. You may order a hardcopy version of this manual through Pervasive Software Sales.
- *Getting Started with Pervasive DataExchange (Real-Time Backup Edition)*—provided as an additional reference in case you want to learn more about the Real-Time Backup Edition. You may order a hardcopy version of this manual through Pervasive Software Sales.

## DataExchange Installation Checklists

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

**Quick Checklist** Each of the following items is described in more detail in the topics that follow.

- You have observed the appropriate precautions before installing Pervasive DataExchange.
- Your system hardware and software meets the minimum requirements to install Pervasive DataExchange.



**Tip** The hardware and software requirements are listed on the Pervasive Software web site.

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- You have full administrator-level rights on the machine where you plan to install the product.
- You have a license (unless you want an evaluation version).
- You have checked any special configuration issues, such as installing into a clustered environment.
- At the end of the installation, you have access to the Readme file for important, late-breaking information.

### **Precautions**

The Pervasive PSQL database engine must be stopped and restarted during the installation of Pervasive DataExchange. If your business requirements prohibit stopping the database engine during certain hours, install DataExchange during an acceptable period.

Back up any important files on the target hard drive, including data files, before you begin the installation.

### **Ensure Adequate Permissions**

To install DataExchange on Windows 2000, you must have full administrator-level rights on the machine.

***Activation  
License***

See “DataExchange Licensing” on page 1-7 for a discussion of the activation license.

***The  
DataExchange  
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.

The Readme file is located at the root on the installation CD.



# *Installing Pervasive DataExchange with No Previous Installation*

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*Instructions for First-time Installation*

This chapter contains procedures for installing Pervasive DataExchange. The chapter contains the following sections:

- “Before You Install DataExchange” on page 3-2
- “Installing Pervasive DataExchange” on page 3-5
- “Common Questions After Installing Pervasive DataExchange” on page 3-10
- “Uninstalling Pervasive DataExchange” on page 3-12

## **Before You Install DataExchange**

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

- “Preparing to Install Pervasive DataExchange” on page 2-1. This chapter 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 DataExchange.
- You may need to disable antivirus software or change its settings to allow installation of Pervasive DataExchange.

### ***Installing Over Windows Terminal Services***

Microsoft Terminal Services is a multisession environment that provides remote computers access to Windows-based programs running on a server. (Citrix MetaFrame extends Windows Terminal Services with additional client and server functionality.)

Pervasive DataExchange is supported in the following environments:

- Windows 2000 Terminal Service SP4
- Windows 2000 Terminal Service SP4 with Citrix MetaFrame 1.8
- Windows 2003 Terminal Service

To install DataExchange to a Terminal Server client, you must first modify a registry setting on the Terminal Server client. The default value for the registry setting prevents you from performing Pervasive administrative functions. You must have administrative authority to install DataExchange.

Use the following steps to modify the registry setting. You must have administrative authority on the Terminal Server client.



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**Caution** Incorrectly editing your computer's registry can damage the registry. The damage can cause undesirable results, such as your computer not being able to boot. If you do not feel comfortable editing the registry, obtain the services of a qualified technician. Pervasive Software accepts no responsibility for a damaged registry.

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➤ **To modify the security registry setting on a Terminal Server client**



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**Note** We suggest that you create a backup of your registry before editing the registry. Refer to the online help for your operating system. Look for index entries such as "registry, backing up," or "emergency repair disk."

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- 1 Click **Start** ▶ **Run**, enter **regedt32**, and click **OK**.  
Registry Editor opens.
- 2 Find the following registry key:  
**HKEY\_LOCAL\_MACHINE\Software\Pervasive  
Software\Utilities Interface\Settings\Restricted Access On WTS  
client**
- 3 Double-click **REG\_DWORD** for the key.  
The Edit DWORD Value dialog box opens.
- 4 In the Value Data field, change the value from **1** to **0** (zero).
- 5 Click **OK**.  
The **REG\_DWORD** value should read **0x00000000 (0)**.
- 6 Exit Registry Editor.



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**Note** Changing this registry setting to zero grants Pervasive administrative authority to *everyone* who has access to the Terminal Server client machine. To restrict Pervasive administrative authority, you may want to restore the default value of the registry setting after DataExchange is installed. To do this, change the REG\_DWORD value back to 1 (see step 4 in “To modify the security registry setting on a Terminal Server client”).

You may also use regedt32 to change the permissions on the registry key so that only certain users are allowed to modify the key value.

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## Installing Pervasive DataExchange

You must install Pervasive DataExchange on a machine that contains a Pervasive Server or Workgroup engine.



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**Note** The Pervasive database engine are stopped and restarted during the installation of Pervasive DataExchange. If your business requirements prohibit stopping the database engine during certain hours, install DataExchange during an acceptable period.

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If the installation fails before the program copies any files to the target installation directory, refer to the installation log file (replinst.log) in the <drive>:\Windows directory.

DataExchange installs a service called the notification agent if the machine contains the Pervasive Server product. The notification agent is not available if you install DataExchange on a machine with the Pervasive Workgroup product. See “dxagent” on page 7-34 in *Pervasive DataExchange User’s Guide*.

➤ **To install Pervasive DataExchange**

You will run the installation twice: once on the First Site and once on a Partner Site.

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

The Welcome window appears.

- 2** Click **Next**.

The Software License Agreement appears.

- 3** Read the license agreement. To accept it, click **Yes**.

The installation asks for a DataExchange license key.

- 4** In the License field, do one of the following:

- Type or paste the license key.
- Leave it blank to install an evaluation copy of DataExchange.

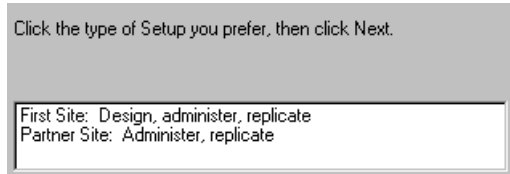
A First Site and a Partner Site use the same key, which is provided on the case of the DataExchange installation CD, the product registration card, and the printed license agreement.

At the end of the evaluation period, the replication engine returns an error when it tries to start. You may apply a license key at any time. See “To upgrade an evaluation license” on page 1-7.

- 5** Click **Next**.

The installation asks you to choose a setup type.

Figure 3-1 Setup Type



- 6 Choose one of the following:
  - **First Site: Design, administer, replicate**

You will use a First Site to design and configure the replication network. Its components include the DataExchange Designer, administrative utilities, and replication engine.
  - **Partner Site: Administer, replicate**

A Partner Site replicates data with the First Site. Its components include the DataExchange administrative utilities and replication engine. You may install a Partner Site before installing a First Site, but you must initialize and configure the replication network from the First Site.



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**Caution** Do not install more than one First Site on a network, or replication conflicts may occur.

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- 7 Click **Next**, then continue as follows:
  - To install a First Site, continue with step 8.
  - To install a Partner Site, skip to step 9.
- 8 Read the message that appears about the installation of DataExchange Designer as part of a First Site installation.

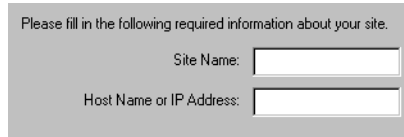
Click **Yes** if you have **not** installed a First Site on your replication network. Otherwise, click **No** to return to the dialog on which you specify a setup type.
- 9 Specify a folder for the Start menu. You may accept the default, type a name into the **Program Folders** field, or double-click a folder name in the **Existing Folders** list.

The default folder name is Pervasive\DataExchange.

**10** Click **Next**.

A dialog appears on which you specify site information.

*Figure 3-2 Site Information*



Please fill in the following required information about your site.

Site Name:

Host Name or IP Address:

Both names default to the host name of your machine.

- The **Site Name** identifies your machine on the replication network. The name can be whatever you want. Accept the default or enter a more descriptive site name.
- The **Host Name** identifies this machine to the DataExchange Engine. If your machine has a fixed IP address and you prefer to use it, enter it here. If the address is assigned by DHCP, accept the machine host name by default.

**11** Click **Next**.

A summary of installation settings appears.

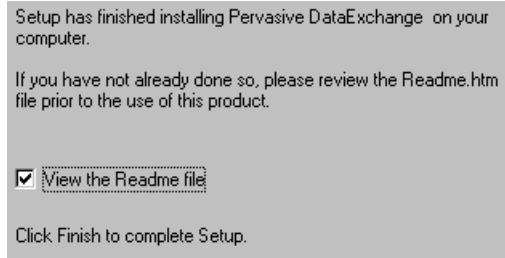
**12** Review the settings and click **Next** if they are correct. You may click **Back** to change a setting.

The DataExchange 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 amount of time elapsed.

The following types of status messages appear:

- Stopping the Pervasive database engine
- Copying components
- Installing components
- Initializing components
- Registering components
- Restarting the Pervasive database engine

At the end of the installation, setup informs you that it is complete and prompts you to view the readme file.



Pervasive Software strongly recommends that you view the readme file for important release notes concerning configuration and use of the product.

**13** Click Finish.

**14** Do one of the following:

- If you chose to view the readme file, it appears in a browser window. You must close the browser window to exit setup.
- If you cleared the View the readme file option, setup exits.

### ***After You Install DataExchange***

Pervasive DataExchange Data Synchronization Edition provides different methods to design and deploy a database for replication. The methods involve a variety of decisions, which are explained in *Pervasive DataExchange User's Guide*. See “Data Synchronization Deployment Models” in that guide.

### ***Pervasive Security***

Pervasive provides security models for Btrieve applications. However, the activated databases created by DXdeploy do not contain security, even if the source database does. You may add security to a replication database if you choose. See “Pervasive PSQL Security” on page 2-9 in *Pervasive DataExchange User's Guide*. For more details, see also the chapter on Pervasive Security in the *Pervasive Advanced Operations Guide*.

## **Common Questions After Installing Pervasive DataExchange**

This section contains information that you may have after running the installation program.

### **Do I Have to Configure Anything in Pervasive Control Center (PCC) for DataExchange?**

No. DataExchange requires no special settings in PCC.

### **Does DataExchange Create Any Log Files?**

Yes. See “Log Files” on page A-9.

### **How Do I Automate a Scheduled Replication?**

See “Schedule Tasks” on page 9-18 in *Pervasive DataExchange User’s Guide*.

### **How Do I Get Notified by E-mail for a Replication Failure?**

See “Pervasive DataExchange Agent” on page 7-34 in *Pervasive DataExchange User’s Guide*.

### **What happened to PVSXBIN?**

Since the release of Pervasive PSQL v10, Pervasive DataExchange files are no longer installed to <drive>:\pvsx\bin. This change comes as Pervasive Software adopts the same program and security guidelines established by Microsoft for the Vista operating system.

### **Where are the Pervasive DataExchange files installed?**

To comply with the new guidelines established by Microsoft for the Vista operating system, new installations of Pervasive DataExchange are in the following default location:

Table 3-1 Pervasive PSQL v10 Default Windows Installation Location

Platform	File Types	Default Installation Location
Windows Vista Windows Server 2008 (32-bit)	Application Data	<drive:>\Program Data\Pervasive Software\PSQL\Replication
	Program Files	<drive:>\Program Files\Pervasive Software\PSQL\Replication
Windows Non- Vista (32-bit)	Application Data	<drive:>\Documents and Settings\All Users\Application Data\Pervasive Software\PSQL\Replication
	Program Files	<drive:>\Program Files\Pervasive Software\PSQL\Replication

## Uninstalling Pervasive DataExchange

The uninstall program removes all DataExchange components from your system. Uninstall removes databases registered by Pervasive that are located under <Installation Directory >\Replication.

The uninstall program does not remove any databases that were created in locations other than under <Installation Directory >\Replication. It also does not remove the DSNs and database names associated with these databases.

If you have activated databases located under <Installation Directory >\Replication, perform the following actions before you uninstall DataExchange:

- Deactivate each database with the dxdeact utility. See “dxdeact” on page 7-11 in *Pervasive DataExchange User’s Guide*.
- Remove the template with Template Remover wizard. See “trwizard” on page 7-32 in *Pervasive DataExchange User’s Guide*.
- Optionally, if you no longer need the data, delete the source database or specific tables using the Drop Database wizard or the Drop Table wizard in Pervasive Control Center (PCC).

If you do not deactivate the database before you remove the template, uninstall leaves the database files and the associated replication files. The replication files do not cause any problems but you may prefer to reclaim physical storage by deleting them.



**Note** The Pervasive database engine must be stopped and restarted during the uninstall of Pervasive DataExchange. If your business requirements prohibit stopping the database engine during certain hours, uninstall DataExchange during an acceptable period.

---

### ➤ To uninstall Pervasive DataExchange



**Note** You are **not** required to uninstall DataExchange before upgrading it. If you want to upgrade DataExchange, see “Upgrading Pervasive DataExchange” on page B-3. An uninstall removes all DataExchange design and activated database

information from your system, as well as any databases created under the <Installation Directory >\Replication directory. Uninstalling requires that you redesign your replication databases.

---

- 1** Access the **Add/Remove Programs** from Control Panel on your Windows operating system.
- 2** Click **Pervasive DataExchange** in the list.
- 3** Click the button to remove a program. The button may be labelled **Add/Remove** or **Remove**. The program to uninstall **Pervasive DataExchange** begins.
- 4** Click **OK** in response to the message about completely removing DataExchange.
- 5** Click **Yes** (and **OK** to confirm) in response to any messages about removing shared components in the Pervasive directory structure.
- 6** Click **OK** when the uninstall program completes.
- 7** Reboot your system if prompted to do so.



# Troubleshooting

*chapter*

**A**

---

## *How to Proceed If You Encounter Problems Implementing Solutions*

This appendix discusses situations you may encounter as you implement a replication solution. It includes the following sections:

- “Troubleshooting Resources” on page A-2
- “Troubleshooting Strategies” on page A-3
- “Installation” on page A-4
- “Network Communications” on page A-5
- “Database Engine” on page A-6
- “Replication Engine” on page A-8
- “Log Files” on page A-9
- “Data Replication” on page A-14
- “Notification Agent” on page A-15
- “How to Get Additional Help” on page A-16

## Troubleshooting Resources

The following table describes resources available to help you solve problems.

*Table A-1 Resources that Assist with Problem Determination*

<b>Feature/ Component</b>	<b>Function</b>	<b>For More Information</b>
DataExchange log files	Logs information during replication processing.	See "Log Files" on page A-9
DataExchange Table Synchronization and Check utility	Ensures that every record in the data tables has a corresponding record in the replication control tables.	See "dxsyncables" on page 7-25 in <i>Pervasive DataExchange User's Guide</i>
Pervasive System Analyzer	Tests active engine installations and network communications in DataExchange.	See "Network Communications" on page A-5
Knowledge Base	Provides troubleshooting information about Pervasive software configurations and common environments.	Search the Pervasive Knowledge base at: <a href="http://www.pervasive.com/kb">http://www.pervasive.com/kb</a>

## Troubleshooting Strategies

You must first diagnose a problem before you can fix it. The following checklist contains items to help you diagnose problems with DataExchange.

- Did DataExchange install correctly?
- Does the network function correctly?
- Is the database engine running?
- Is the replication engine running?
- Is data being replicated correctly?
- Is the notification agent sending e-mail?
- Do the log files contain errors?
- Are other sources of help available?

The rest of this chapter discusses each checklist item in more depth.

## Installation

This section discusses topics that pertain to installation.

### ***Multiple DataExchange Designers***

Unpredictable results can occur if you design replication databases with more than one DataExchange Designer. For this reason, install only one DataExchange Designer per replication network. DataExchange Designer is installed as part of a First Site installation. In other words, install only one First Site per replication network.

### ***Terminal Services***

To install DataExchange to a Terminal Server client, you must first modify a registry setting on the Terminal Server client. See “Installing Over Windows Terminal Services” on page 3-2.

---

## Network Communications

Pervasive System Analyzer (PSA) is a diagnostic utility included with the Pervasive PSQL database engines. PSA can be used as a stand-alone diagnostic tool to help you troubleshoot network problems.



---

**Note** For DataExchange, use PSA only to troubleshoot network problems. PSA is capable of other functions pertaining only to the Pervasive PSQL database engines. The additional functions in PSA (such as archiving) do not apply to DataExchange.

---

### ***How to Start PSA***

➤ **To start PSA**

- 1 Click **Pervasive System Analyzer** from the **Pervasive** group on the **Start** menu.



---

**Note** To troubleshoot your network communications for DataExchange, select **Test Active Installation** on the **System Analyzer Options** dialog in PSA.

---

### ***Documentation for PSA***

The use of PSA is detailed in the *Pervasive PSQL User's Guide*. Please see that guide for complete information regarding PSA.

## Database Engine

The Pervasive PSQL database engine must be running to perform replication.

➤ **To verify Pervasive PSQL Server engine is running**

- 1 Open the Windows Control Panel.
- 2 Click **Administrative Tools**, then open **Services**.
- 3 Scroll the list until you reach the following services:
  - Pervasive PSQL Transactional Engine
  - Pervasive PSQL Relational Engine

Both of these services must be started for the Pervasive PSQL database engine to function correctly.

The Status column displays whether or not the service is currently running. The Startup column indicates whether the service is set to automatically start on system startup or start manually.

- 4 If a service is not started, select it in the list and click **Start**.

➤ **To verify Pervasive PSQL Workgroup engine is running**

- 1 Check for the Workgroup icon in the Windows taskbar:



If this icon (engine running) is showing, the engine is running.

The engine is not running if either of the following is true:

- The engine-running icon is not showing in the Windows taskbar.
- The following icon (engine stopped) is showing in the PCC namespace:



You can start the engine by clicking **Pervasive PSQL Workgroup Engine** from the **Pervasive** group on the **Start** menu.

## Replication Engine

The DataExchange replication engine must be running to perform replication. The engine will not run, for example, if a temporary license has expired.

Use the Pervasive PSQL License Administrator utility to determine if you have a permanent license installed for Pervasive DataExchange or to see if a temporary license has expired. See the the License Administrator chapter in *Pervasive PSQL User's Guide*.

### ➤ To verify replication engine is running with Pervasive PSQL Server

- 1 Open the Windows Control Panel.
- 2 Click **Administrative Tools**, then **Services**.
- 3 Scroll the list of services until you reach the service **Pervasive PSQL Replication**.

This service must be started for the DataExchange replication engine to function correctly.

The Status column displays whether or not the service is currently running. The Startup column indicates whether the service is set to automatically start on system startup or start manually.

- 4 If the service is not started, select it in the list and click **Start**.

### ➤ To verify replication engine is running with Pervasive PSQL Workgroup

- 1 Check the Workgroup icon in the Windows taskbar:



If this icon is showing, the engine is running. The engine is not running if this icon is not showing.

You can start the engine by clicking **DataExchange ▶ Replication Engine** from the **Pervasive** group on the **Start** menu.

---

## Log Files

Pervasive DataExchange allows you to enable event logging via log files. You may record the activity of the DataExchange Designer, the Replication monitoring tools, the DataExchange Manager, and the Replication Engine. Additionally, DataExchange keeps a messages log and an installation log.

All logs are text files and have a file extension of LOG for the current one. The files produce any mix of data: Information, Warning, Error, and Debugging. You may also choose verbose messages. Verbose messages contain the name of the program and a line number within the program to help you debug situations. Verbose applies only to the Debug logging level.

You can change the default location of the logs, which is *<Installation Directory>\Replication\LogFiles*. If you want, you can also change the default log size and the default number of files kept (a history). You can open the LogFiles folder by selecting **DataExchange ▶ LogFiles** from the Pervasive group on the Start menu.

### **Log File Size**

If you set the maximum log size to zero (“no limit”), the log will increase in size to whatever capacity the physical storage allows. We recommend that you do not set a maximum log size of zero except for troubleshooting. Even then, avoid using “no limit” for an extended period (typically, more than four hours). The Dre log, for example, can grow rapidly depending on the type of logging being performed (such as Debug logging), the frequency of replication, and the number of sites replicating.

When a log file reaches its maximum size, the file is reassigned to the next history file name. For example, when the Dre.log reaches its maximum size, it gets renamed to Dre.lo1 and a new Dre.log gets created. Dre.log is then empty and starts acquiring data once more. When the maximum size is again reached, Dre.lo1 gets renamed to Dre.lo2, Dre.log gets renamed to Dre.lo1, and a new Dre.log is again empty and able to acquire data. The setting for “maximum logs to keep” determines the extent of the history retained: lo1, lo2, lo3, and so forth.

The DataExchange Designer, DataExchange Manager, and the Statistics and Log View tools have a Logging dialog that allows you to change the logging settings.

## Log File Descriptions

The following table describes the content of the various log files.

Table A-2 DataExchange Log Files

Log File (.log)	Description
da	The log updated by DataExchange Manager when you modify schedules, user access, and so forth.
dnewsite	The replication installation log. This log is created when you install Pervasive DataExchange and contains information about setting up the replication DNA database.
dre	<p>This log contains detailed information on the status of the replications, and is the most active log file. The Replication Engine updates this log as replication occurs.</p> <p>The default maximum size of this log is 2 MB. You may want to limit this log to a maximum 5 MB. Some text editors cannot open files larger than 10 MB.</p> <p>When the Replication Engine reassigns the DRE log to the next history version (DRE.LOG to DRE.LO1, for instance), some log messages may be lost. The loss is typically minimal and may not even occur, depending on the replication activity when the history version is assigned.</p>
dregdtk	This log is created if you install a First Site (which includes the DataExchange Designer). The log contains information about registering the licenses.
dxact	The log updated by the activation utility when you activate a site.
dxdeact	The log updated by the deactivation utility when you deactivate a site.
dxdeploy	The log updated by the dxdeploy utility. See also “Working with the Demodata Sample Database” on page 4-3 for a hands-on example in which information is written to dxdeploy.log.
dxevent	The log updated by the dxevent.dll, which handles replication session event callbacks.
dxsynctables	The log updated by the dxsynctables utility, which is used to synchronize data files and the replication data control files.

Table A-2 DataExchange Log Files (Continued)

Log File (.log)	Description
ffcopy	The log updated by the ffcopy.exe utility, which copies non-Btrieve files from a First Site to a Partner Site.
mer	This log is written to if errors occur while DataExchange routes calls to the MKDE. This log is usually empty. If you suspect that data is not getting replicated correctly, check this log.
msg	This log lists messages about the replication sessions, the sites that replicated and if the replication was successful. The Replication Engine writes to this log. The dre log is more detailed.
prd	The log that DataExchange Designer updates when you design a replication template.
reh	This log contains information only if the Replication event handlers encounter problems updating control tables. If you suspect that data is not getting replicated correctly, check this log.
replinst	<p>The log that Pervasive DataExchange creates to record information related only to installation. This log file is especially useful if installation fails.</p> <p>Note that if installation fails, the file is located in the WINNT directory under Windows 2000.</p>
sess####	<p>These logs contain information about particular replication sessions. The #### represents a four-digit number.</p> <p>The logs are created if you set up a replication schedule and then replicate. The logs are deleted if you stop the replication engine, and are also deleted at regular intervals. The deletion interval is set by a registry setting.</p>

➤ **To access logging options in DataExchange Manager**

- 1 In PCC, click the name of a database.
- 2 Click DataExchange ▶ Manager.
- 3 Log on to Manager.
- 4 Click Options.

➤ **To access logging options in DataExchange Designer**

- 1 In PCC, click the name of a database.
- 2 Click **DataExchange ▶ Designer**.
- 3 Open an existing template.
- 4 Click **View ▶ Preferences ▶ Logging tab**.

➤ **To access logging options in Statistics and Log View**

➤ **To access logging options in the Progress and Log Viewers**

- 1 In PCC, right-click **Replication - Connected** and select **Statistics and Log Views**.
- 2 Right-click in the Replication Log Viewer and select **Log Messages**.

A drop-down menu displays log commands and settings, which are explained in *Pervasive DataExchange User's Guide* in Chapter 10, "Using the Replication Progress and Log Viewers" under "Recording and Monitoring Replication Activity."

➤ **To change the deletion interval for session logs**



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**Caution** Incorrectly editing your computer's registry can damage the registry. The damage can cause undesirable results, such as your computer not being able to boot. If you do not feel comfortable editing the registry, obtain the services of a qualified technician. Pervasive Software accepts no responsibility for a damaged registry.

We suggest that you create a backup of your registry before editing the registry. Refer to the online help for your operating system. Look for index entries such as "registry, backing up," or "emergency repair disk."

---

- 1 Click **Start ▶ Run**, then type **regedt32** in the **Open** input field.
- 2 Click **OK**.  
Registry Editor opens.
- 3 Find the following registry key:

**HKEY\_LOCAL\_MACHINE\Software\Pervasive  
Software\Pervasive Replication\SessionExpiry**

- 4** Double-click REG\_DWORD for the key.  
The Edit DWORD Value dialog opens.
- 5** In the Value Data field, change the value to **the desired minutes** (5 is the default).
- 6** Click OK.
- 7** Exit Registry Editor.

## Data Replication

This section discusses topics that pertain to replicating data.

### ***False Alert Because of Schedule Manipulation***

If you delete, disable, or modify a schedule, the other replication sites are not aware of this because replication does not take place. The notification agent on the other sites continues to contact the scheduling site. If the scheduling site is down or unreachable, the agent sends a failure alert. The alert is false because the schedule no longer applies.

To prevent such false alerts, manually initiate replication after you delete, disable, or modify a schedule. The replication ensures that the schedule changes get replicated. Alternatively, if your entire replication network no longer needs replication, deactivate all replication sites on the network.

### ***Correct Alarms but Replication on Wrong Schedule***

This situation occurs if you change a schedule remotely. For example, you start DataExchange Manager on site B and use it to change the schedule on site A. The replication engine on site A will not use the new settings until you restart the engine. The notification agent, however, uses the new schedule without having to be restarted. The agent properly notifies of replication being off schedule.

To prevent this situation, do not update schedules remotely.

### ***Dynamically Created Tables Not Being Replicated***

If your dynamically created tables are not being replicated, verify that the file matching patterns in the dCNF table are correct. DataExchange provides a utility, Dxdynpath, to help you verify file matching patterns. See “dxdynpath” on page 7-15 in *Pervasive DataExchange User’s Guide*.



**Note** Dxdynpath should only be used with the Real-Time Backup Edition.

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## Notification Agent

The notification agent is installed only if the machine contains the Pervasive PSQL Server product. It is not available for the Workgroup product. If the notification agent is not sending e-mail, check the following:

- The agent is running as a service
- The agent is correctly configured (see “dxagent” on page 7-34 in *Pervasive DataExchange User’s Guide*)
- The SMTP port through which the agent communicates does not require authentication or encryption
- Each replication machine with an agent has access to the SMTP server
- The SMTP server is set up to accept e-mail from each replication site running the agent

➤ **To verify notification agent is running**

- 1 Open the Windows Control Panel.
- 2 Click **Administrative Tools**, then **Services**.
- 3 Scroll the list of services until you reach the service **Pervasive DataExchange Agent**.

This service must be started for the notification agent to function correctly. The Status column displays whether or not the service is currently running. The Startup column indicates whether the service is set to automatically start on system startup or start manually.

- 4 If the service is not started, select it in the list and click **Start**.

### **Testing the Mail Server**

The SMTP mail server must also be functioning correctly. If required, verify that the SMTP mail server is sending and receiving e-mail correctly. Reference the documentation supplied for your SMTP server software or check for testing procedures on vendor Web sites.

## How to Get Additional Help

Pervasive Software strives to ensure that your product installation is easy and successful. If you encounter problems during or after the installation that are not covered in the user documentation, please contact Pervasive Software and we will address your problem promptly.

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 1-3 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>

Table 1-3 Pervasive Software Resources and Contact Information

Resource	Description	Contact Information
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://www.pervasive.com/support/">http://www.pervasive.com/support/</a>
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 DataExchange installation, you can obtain help from the Pervasive Customer Support department.

Your purchase of Pervasive products entitles you to 30 days of free technical support for installation and configuration problems.



# *Upgrading Your Pervasive DataExchange Installation*

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## *B*

### *Instructions for Upgrading an Existing Pervasive DataExchange Installation*

This appendix explains the steps to upgrade your current Pervasive DataExchange product installation. It contains the following sections:

- “Before You Upgrade DataExchange” on page B-2
- “Upgrading Pervasive DataExchange” on page B-3
- “Common Questions After Upgrading Pervasive DataExchange” on page B-7

## Before You Upgrade DataExchange

Before upgrading Pervasive DataExchange, review the following information:

- ❑ “Preparing to Install Pervasive DataExchange” on page 2-1. This chapter provides important information including 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.

Upgrading means that you are installing a newer version of the product than the version currently installed. You do not have to uninstall the previous version to upgrade.

### **Windows Platform Notes**

Be aware of the following conditions.

- You must have full administrator-level rights on the machine where you install Pervasive DataExchange.
- If you run with Advanced Power Management, disable it while installing Pervasive DataExchange. 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 in the Control Panel.

### **DataExchange 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.

The Readme file is located at the root on the installation CD.

### **Back Up Data Files**

Ensure that you have a current backup of all of your data files prior to beginning the upgrade installation. You may also want to perform and test a full system backup. A full system backup is a general precaution prior to any software installation on a server.

---

## Upgrading Pervasive DataExchange

The upgrade of DataExchange requires a previously installed version of the product.



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**Note** You are **not** required to uninstall DataExchange before upgrading it. An uninstall removes all DataExchange design and activated database information from your system, as well as any databases created under the *<Installation Directory >\Replication* directory. Uninstalling requires that you redesign your replication databases.

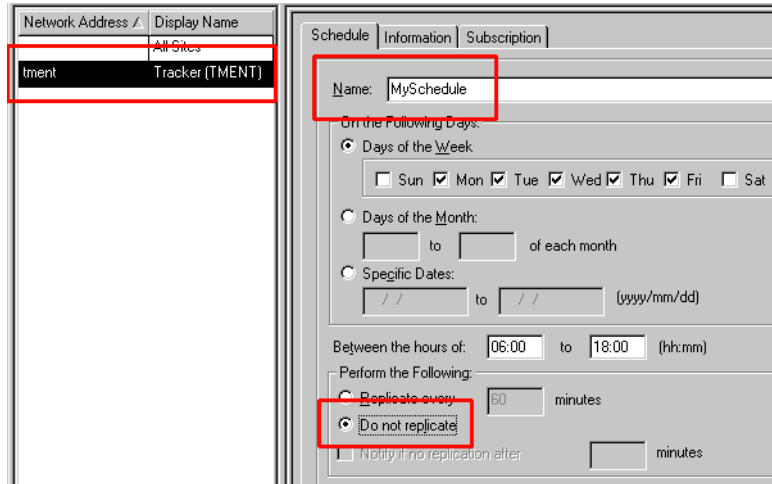
---

If the upgrade installation fails before the program copies any files to the target installation directory, refer to the installation log file (replinst.log) in the Windows directory.

### ► To upgrade Pervasive DataExchange

Remember to upgrade **all** sites used in replication.

- 1 If needed, replicate to ensure that data at all sites is current.
- 2 Stop all replication schedules.
  - In PCC, click the database for which you have a schedule set up.
  - Select **DataExchange ► Manager**.
  - Log on. By default, the Login Name is **ADMIN** and the Password is **password**. Both are case-sensitive.
  - Click the desired site in the site list.
  - Click the **Schedule** tab.
  - Select each schedule in the **Name** list (one at a time).
  - Click the option **Do not replicate** then click **Apply**.



3 Do one of the following to launch the installation program from your Windows machine:

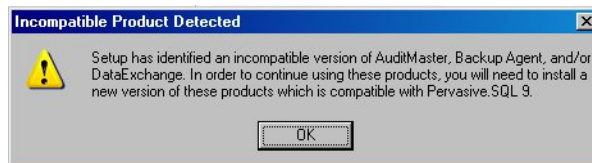
- Insert the Pervasive DataExchange CD in the CD-ROM drive.
- If the installation does not start automatically, click **Start** then **Run**, and type *drive:\setup* where *drive* is the drive letter of your CD-ROM device.

Setup checks for a previous version of DataExchange. If found, messages about upgrading appear:

Figure B-1 General Upgrade Message



Figure B-2 Message When Upgrading from Pervasive PSQL V8 to v9



4 Click OK.

The Welcome screen appears.

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

The Software License Agreement appears.

**6** Read the license agreement. To accept it, click **Yes**.

If your existing DataExchange license key needs updating, setup asks for a new one. If not, skip to step 8.

**7** In the License field, do one of the following:

- Type or paste the license key.
- Leave it blank to install an evaluation copy of DataExchange.

A First Site and a Partner Site use the same key, which is provided on the case of the DataExchange installation CD, the product registration card, and the printed license agreement.

At the end of the evaluation period, the replication engine returns an error when it tries to start. You may apply a license key at any time. See “To upgrade an evaluation license” on page 1-7.

**8** Click **Next**.

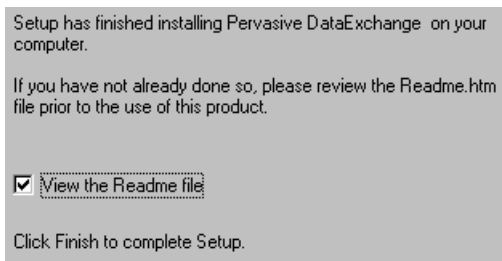
The installation program automatically determines the settings for the previously installed version of DataExchange on the machine. A summary of installation settings appears.

**9** Click **Next**.

The upgrade continues, displaying status messages. The following types of messages appear:

- Stopping the Pervasive PSQL database engine
- Copying components
- Installing components
- Initializing components
- Registering components
- Restarting the Pervasive PSQL database engine

At the end of the installation, setup informs you that it is complete and prompts you to view the readme file.



- 10 View the Readme file. Pervasive Software strongly recommends you do so to learn important information that could not be included in the product documentation but may be essential to your configuration and use of the product.
- 11 Click **Finish**.
- 12 Do one of the following:
  - If you chose to view the readme file, it appears in a browser window. You must **close** the browser window to exit setup.
  - If you cleared the **View the readme file** option, setup exits. To view it later, open the Pervasive DataExchange readme.htm file.
- 13 Restart existing replication schedules.
  - In PCC, click the database for which have you set up a schedule.
  - Click **DataExchange ▶ Manager**.
  - Log on. By default, the Login Name is **ADMIN** and the Password is **password**. Both are case-sensitive.
  - Click the desired site in the site list.
  - Click the **Schedule** tab.
  - Select each schedule in the **Name** list (one at a time).
  - Click the option **Replicate every** then click **Apply**.

## **Common Questions After Upgrading Pervasive DataExchange**

See also “Common Questions After Installing Pervasive DataExchange” on page 3-11.

### **Will my activated databases still replicate after I upgrade?**

Yes. All replication information is retained for your activated databases. Your only task to use the activated databases is to restart any replication schedules that you had established before the upgrade.

### **Are all of my DataExchange registry settings retained after I upgrade?**

Yes. The registry settings remain as before.



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