UTOPIC software

Persystent Suite Installation Guide

Version 6.0

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SECTION 1: PREFACE

Audience

Persystent Suite Installation Guide provides the information necessary to install Persystent Suite. This Installation Guide is intended for installation engineers, value added resellers, systems builders, and service providers responsible for installing this product.

Points of Contact

Utopic Software provides support to our customers to help them maximize the value of Persystent solutions. These support options include live technical support, webinars, white papers, and product documentation.

Customer Support

Phone: (813) 444-2230
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Document Conventions

- **Bold Text**—Bold text formatting is used for the following items:
  - Window names, dialog box names, areas\sections of windows or dialog boxes, console tree items, menu names, menu commands, tab names, box\field names, button names, option button names, check box names, and drop-down list selections.
  - Series of commands
- **<Angle Brackets>**—Angle brackets enclose text that you type—do not type the angle brackets.
  - For example: Type **<yes>** at the prompt.
- **<[Angle and Square Brackets]>**—Angle and square brackets enclose text that you type that is specific to your system (for example, an IP address or server name)—do not type the angle and square brackets.
  - For example: Type **<[IP address]>**.

TIP A tip provides practical but nonessential information related to the current discussion (for example, an alternative method of performing a function).

NOTE A note provides information that emphasizes or supplements important points.

CAUTION A caution highlights information that if not understood or followed will result in data loss, data corruption, or damage to hardware or software.

SECTION 2: PERSYSTENT SUITE OVERVIEW

Product Overview

Persystent Suite is a software solution that automates PC and laptop availability and compliance. With every boot cycle, Persystent Suite enforces corporate policies by reviewing and repairing a device's operating system, registry, applications, and settings. As a result, desktops maintain a healthy and authorized state that improves business continuity, reduces IT costs, and lowers business risk.

Environment Overview

Persystent Suite contains Server and Client components. The three Server components are: Persystent Suite Database, Persystent Suite Server, and Persystent Suite WebUI. These server components support three installation configurations: single-server configuration, dedicated SQL Server configuration, and dedicated server configuration. This flexibility allows Persystent Suite to seamlessly integrate into your current environment while providing scalability.

Server Components

Persystent Suite Database

Persystent Suite Database is an SQL Server database that is installed on only one computer in the Persystent Suite environment. The Persystent Suite Service and Persystent Suite Tools use this database.

Persystent Suite Server

Persystent Suite Server hosts a shared repository data store, Persystent Suite Service, and Persystent Suite Tools. Persystent Suite Server can be installed on multiple computers (each is intended to be on its own subnet) in the Persystent Suite environment.

NOTE Persystent Suite Server is also referred to as a repository server; therefore, all statements about Persystent Suite Server apply to each repository server in the Persystent Suite environment.

Persystent Suite Server hosts a shared repository data store that stores shared files, images, and client-related files. Each file is written to the shared repository once; thereafter, only the differences are stored—this is how Persystent Suite maintains operating system files, profiles, registry data, and user data.

Persystent Suite WebUI

Persystent Suite WebUI is a web-based management console that is installed on only one computer in the Persystent Suite environment.

Persystent Suite WebUI is used to schedule image captures, data backups, repairs, data restoration, data copies, image installation, package installation, client management, synchronization with third party tools, and to run scripts after the operating system has loaded. Persystent Suite WebUI can also be used to create policies to execute at reboot in response to specific events such as system check, new local printer, new user profile, repair, and final before operating system load.

Clients

A Persystent Suite client is a computer that is Persystent Suite managed—Persystent Suite software is installed on the computer, a hidden cache partition is created, and the computer's MAC address is registered with Persystent Suite WebUI.

Persystent Suite automates adding (installing) clients—by inheriting/migrating existing computers or copying a new operating system and Persystent Suite software in a Persystent Suite created image to a computer—using PXE boot, bootable DVD, or bootable USB drive.

Persystent Suite software installation installs a service, and it also creates a hidden cache partition on a client's hard drive where a client-specific version of a shared repository data store resides. The service communicates between a client's hidden cache partition and Persystent Suite Server.

NOTE The client installation process is described in a separate document, Persystent Suite Client Installation Guide.

Installation Overview

The Persystent Suite environment has flexibility designed in to support three installation configurations—single server configuration, dedicated SQL Server configuration, and dedicated servers configuration—as well as multiple repository server environments.

Each of the server components: Persystent Suite Database, Persystent Suite Server, and Persystent Suite WebUI have their own installation wizard.

Step 1: Prerequisites to Installing Persystent Suite

To ensure a successful installation and a well-running Persystent Suite environment thereafter, it is critical that you read through Section 3, Prerequisites To Installing Persystent Suite, not only to get an overview of the Persystent Suite installation process and an understanding of networking concepts relating to PXE connectivity, but also to review and prepare the following:

- The hardware and software installation requirements for the installation configuration that you will implement.
- The required AD memberships, rights, and permissions for the Persystent Suite Service Account that you will create.
- The AD Persystent Suite security group that you will create.
- The network configurations to switch ports, routers, and Dynamic Host Control Protocol (DHCP) servers that you will perform.

Step 2: Installing Persystent Suite Database

Persystent Suite Database installs SQL Server databases on the Persystent Server or dedicated SQL Server. In a master server setup or a single site setup, there are two databases installed. In a child server setup there will be only one database installed on the server. The computer where Persystent Suite Database is installed must have SQL Server installed on it before Persystent Suite Database is installed. The supported SQL Server applications are:

- SQL Server 2012 / 2012 Express
- SQL Server 2014 / 2014 Express
- SQL Server 2016 / 2016 Express
- SQL Server 2017 / 2017 Express

Step 3: Installing Persystent Suite Server

Persystent Suite Server installs a shared repository data store, and Persystent Suite Services. Persystent Suite Server can be installed on multiple computers in the Persystent Suite environment—these computers are referred to as repository servers and the environment is referred to as a multiple repository server environment.

The initial installation of Persystent Suite installs Persystent Suite Server on one computer. After completing the initial installation of the three server components and performing the post-installation tuning, additional repository servers can be installed at any time (Section 5: Installing Child Repository Server (Optional), page 28).

Step 4: Installing Persystent Suite WebUI

Persystent Suite WebUI is a web-based management console that is installed on only one computer in the Persystent Suite environment. Persystent Suite WebUI uses IIS and ASP.NET to create a web site (PTCWeb; http://<[Persystent Suite WebUI server name]>/PTCWeb) accessible from any computer on the network using an internet browser—from which the Persystent Suite environment can be completely managed.

Step Suite: Installing License Keys

To access Persystent Suite WebUI, you must first install a Persystent license key. Initial installation of a license key will be prompted by log in to Persystent Suite WebUI (you will be redirected to the License Key Installation Login page). Subsequent license key installations and license key management are accessible on the Persystent Suite WebUI server through the Persystent menu by clicking License Management.

Step 6: Post-Installation Configuration

After installation of the three Persystent Suite server components, there are some post setup tasks that may be required depending on your environment.

Step 7: Installing Multiple Repository Servers (Optional)

The initial installation of Persystent Suite installs Persystent Suite Server on one computer. After completing the initial installation of the three server components and performing the post-installation tuning, additional repository servers can be installed at any time, but each additional repository server is intended for use on its own subnet.

To install additional repository servers, repeat the installation for the Persystent Suite Server component—including the applicable pre-installation instructions and post-installation tuning instructions—on each additional repository server.

Installation Configurations

Single Server

If all server components—Persystent Suite Database, Persystent Suite Server, and Persystent Suite WebUI—are installed on one computer, it is referred to as a single server installation.

Dedicated SQL Server

If the server components are installed such that Persystent Suite Database is installed on one computer, and Persystent Suite Server and Persystent Suite WebUI are installed together on another computer, it

is referred to as a dedicated SQL Server installation. A dedicated SQL Server installation is the recommended configuration for best performance because SQL Server is resource intensive.

NOTE Dedicated SQL Server installation is the recommended installation configuration.

Dedicated Servers

If each server component—Persystent Suite Database, Persystent Suite Server, and Persystent Suite WebUI—is installed on a separate computer, it is referred to as a dedicated servers installation. The dedicated server installation is typically only found in large environments, or when company policy mandates a dedicated web server.

Multiple Repository Server Environments

The initial installation of Persystent Suite (in any installation configuration) installs Persystent Suite Server on one computer. After completing the initial installation of the three server components and performing the post-installation tuning, additional repository servers can be installed at any time, but each additional repository server is intended for use on its own subnet in distributed environments with many clients.

Persystent Suite clients are organized into logical (versus physical) groups based on shared policies, such as repair policies. This is not to say that these groups are never physical groups (for example, a group based on policies for an organization's accounting function may indeed all reside in the same physical location); however, it is best to think of and administer these groups in logical, policy-based terms.

The Persystent Suite environment is hierarchical wherein child entities inherit policies from parents. Persystent Suite Server installed during the initial installation of Persystent Suite is a parent to all other entities in the Persystent Suite environment—its policies are inherited by every group (that is, repository server groups and computer groups) and client computer.

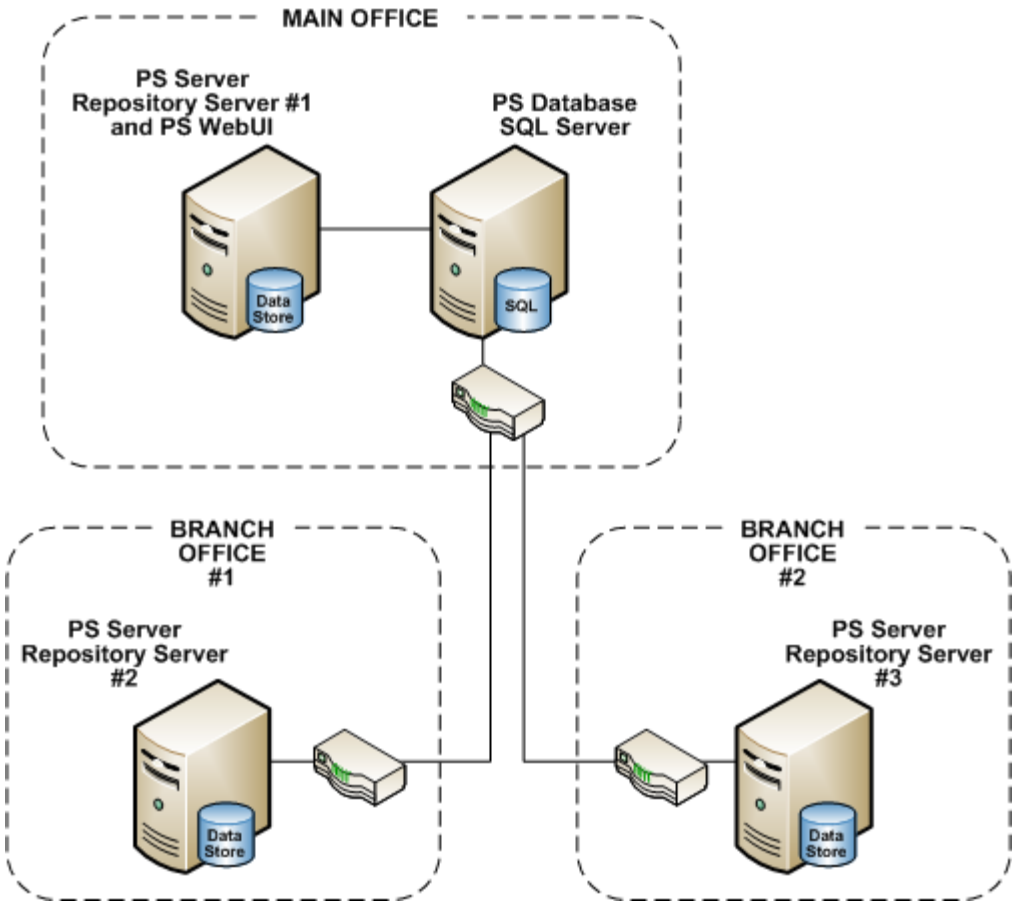
Repository server groups are logical containers for repository servers that share the same policies (note that a repository server group can be created with just one repository server as a member) or for computer groups that share the same policies. Repository server group nesting (that is, a repository server group contained by a repository server group) results from repository servers sharing some but not all policies.

Similarly, computer groups are logical containers for client computers that share the same policies (note that a computer group can be created with just one client computer as a member). Computer groups can be created under repository servers or nested under other computer groups.

Client computers can be grouped into computer groups or added directly to repository servers.

The multiple repository server environment scenario shown, is for illustrative purposes only to show relationships of repository servers to the main management database.

PERSYSTENT SUITE: MULTIPLE REPOSITORY SERVER ENVIRONMENT SCENARIO



SECTION 3: PREREQUISITES TO INSTALLING PERSYSTENT SUITE

Installation Requirements- Hardware/Software

The hardware and software installation requirements are shown below:

Server Requirements

- 2 gigahertz (GHz) 2-core processor minimum (4-core or more recommended)
- 8 gigabyte (GB) RAM minimum (16 GB or more recommended)
- 80 GB of free space minimum (150 GB free space recommended)
- Windows Server 2012 or 2016
- Microsoft .NET Framework 4.5 minimum
- SQL Server 2012 / 2012 Express or greater with Management Studio
- Microsoft Internet Information Services 6.0 or higher role installed and configured.
- Internet Explorer 6.0 or later; or Firefox 3.0 or later
- Network interface card, Network connection, and Internet access
- Windows ADK 10: https://go.microsoft.com/fwlink/p/?LinkId=526740
- Windows Deployment Server role installed and configured
- Crystal Report Plugin: http://www.UtopicSoftware.com/Tools/CRRedist2008_x64.zip

Client Requirements

- Windows XP SP3 and above; Windows Vista SP2 and above (32-bit and 64-bit Business and Ultimate Editions); Windows 7 (32-bit and 64-bit Professional and Ultimate/Enterprise Editions), Windows 8/8.1 (32-bit and 64-bit Editions), Windows 10 (32-bit and 64-bit Editions)
- 1 gigahertz (GHz) processor minimum (2 GHz or more recommended)
- 1 GB RAM minimum (2 gigabyte (GB) RAM or more recommended)
- About 30% of continuous free space based on the size of the hard drive.
- No more than 3 primary partitions on BIOS (MBR) based machines.
- .NET Framework 4.5 or above.

Configure Server Roles

The section below detail how to configure the roles on the server so that Persystent Suite can be successfully installed.

Internet Information Services (IIS)

To Allow ASP in IIS on Persystent Suite Server and Persystent Suite WebUI Installations (Windows 2003 Server)

1. Open **Internet Information Services (IIS) Manager**.
2. In the **Internet Information Services (IIS) Manager** window, in the left pane, expand the tree until the **Web Service Extensions** folder is visible, and then click to select the **Web Service Extensions** folder.
3. When the **Web Service Extensions** folder is selected, in the right details pane, right click **Active Server Pages**, notice that **Active Server Pages** status is **Prohibited**, and then click **Allow**.
4. In the right details pane, under **Web Service Extension**, notice that **Active Server Pages** status is **Allowed**, and then exit **Internet Information Services (IIS) Manager** window.

Configure SQL Server

The SQL Server Service must be set to Log On as either a local account or a domain account. If necessary, change the default Log On account of the service from **NT Service\MSSQL$SQL** to either a local or domain account.

Creating an Active Directory Persystent Suite Security Group

If you plan to use AD authentication for Persystent Suite WebUI, there must be a security group in AD that contains users who may access Persystent Suite. It is best to have this AD group ready for use before you begin installation. You can create this group with the default name of PtcSecurity (used throughout this document to refer to the AD Persystent Suite Security Group) or you can create a group with another name. If you create a group with another name, be sure to replace PtcSecurity with the other group name when it is requested during installation.

NOTE Only direct members of this AD group will have access to the Client Build Screen and Persystent Suite WebUI—a member of a nested group within this AD group will not have access.

Creating a Persystent Suite Service Account

To ensure a successful installation of Persystent Suite and a well-running Persystent Suite environment thereafter, it is critical that you set up and use a service account (Persystent Suite Service Account) with the rights and permissions.

Use the Persystent Suite Service Account in the following situations:

- Initial installation of Persystent Suite.
- Subsequent installations of Persystent Suite Server in multiple repository server environments.
- Future upgrades of Persystent Suite software.

While the Persystent Suite Service Account credentials play a central role in installation and upgrade procedures, they play an equally important role on a daily basis throughout the Persystent Suite environment. For example, these credentials are used to start/stop the Persystent Suite Service that provides the communication among Persystent Suite server components. So, while it is critical that the account credentials are set up fully as described, it is equally critical that you are aware of the details and purpose of these credentials so that you can anticipate the consequences of modifying them. Review Persystent Suite Service Account table, to ensure that you have an understanding of the details and the scope of the Persystent Suite Service Account credentials.

CAUTION Ensure that you do not let the password on the Persystent Suite Service Account expire due to password age requirements.

- Make the Persystent Suite Service Account part of the local Administrator's group on the Persystent Sever.
- Make Persystent Suite Service Account "DB Owner" of all Persystent databases in SQL Management Studio.

Preparing the Network

The LAN functioning well prior to Persystent Suite installation is critical to an optimum Persystent Suite environment—ensures that this is your position.

IGMP (Optional for Multicasting)

Enable Internet Group Management Protocol (IGMP) on switch ports for image deployment with multicasting. IGMP facilitates intelligent multicasting thereby reducing network traffic. For example, if a new operating system is being deployed to many clients simultaneously, it is advantageous to enable multicasting for these large data transmissions (to install a new operating system, all required files are downloaded during the PXE connection).

Here are some of the ports that are required for multicasts and needs to be allowed through firewalls:

- Ports 11000 UDP through 11009 needs to be open for multicast transfer.
- Allow Ports 11000 UDP through 11009 through firewall on the server.

Configuring Routers with IP Helpers

If the DHCP server will provide IP addresses across multiple subnets for hosting operations—for example, in a multiple repository server environment each repository server is intended for use on its own subnet—configure routers with IP Helpers to transport client PXE requests for a PXE boot file from the DHCP server across subnets. IP Helpers allow these requests to be forwarded without changing DHCP options.

Configure IP Helpers with the IP addresses of both the DHCP server and Persystent Suite Server (Persystent Suite Server is also a repository server and a PXE boot server).

Configuring DHCP Server Options

If Windows Deployment Services and a Microsoft DHCP server are running on the same computer, DHCP will need to be configured to add Option 60 to the DHCP scopes.

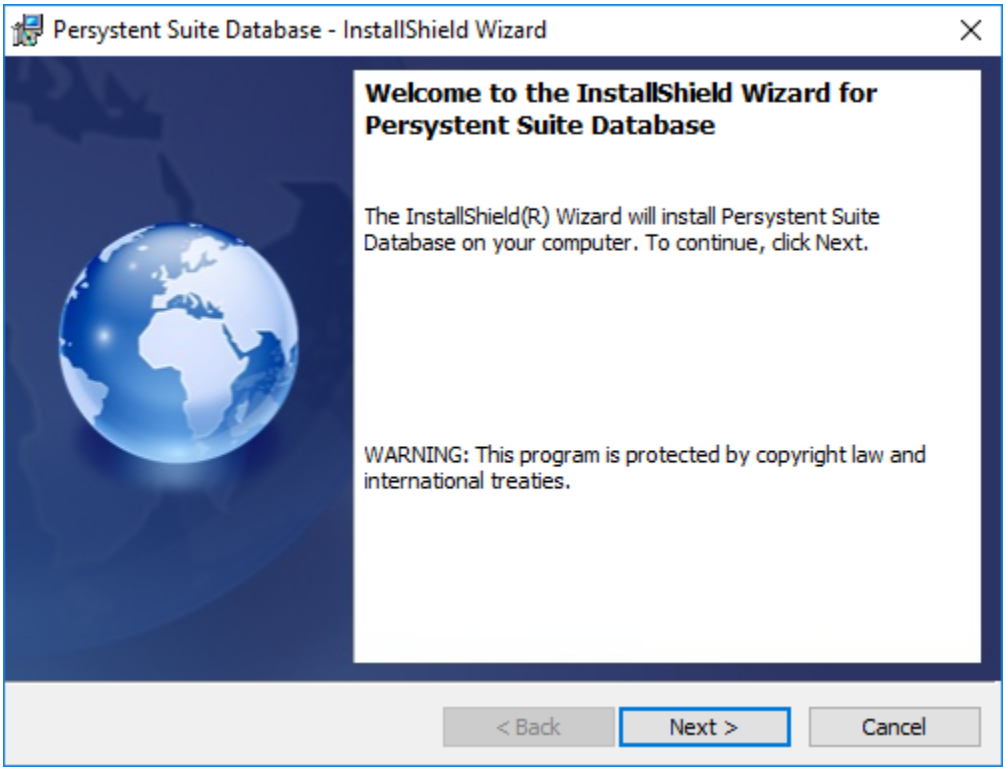
If DHCP is installed on a server that is located in a different subnet, then one of the following will need to be performed:

- (Recommended) Configure the IP Helper tables: All DHCP broadcasts on UDP port 67 by client computers should be forwarded directly to both the DHCP server and the Windows Deployment Services PXE server. Also, all traffic to UDP port 4011 from the client computers to the Windows Deployment Services PXE server should be routed appropriately (these requests direct traffic to the server, not broadcasts).
- Add DHCP options 66 and 67: Option 66 should be set to the Windows Deployment Services server (Persystent Server), and option 67 should be set to **boot\x86\wdsnbp.com**.

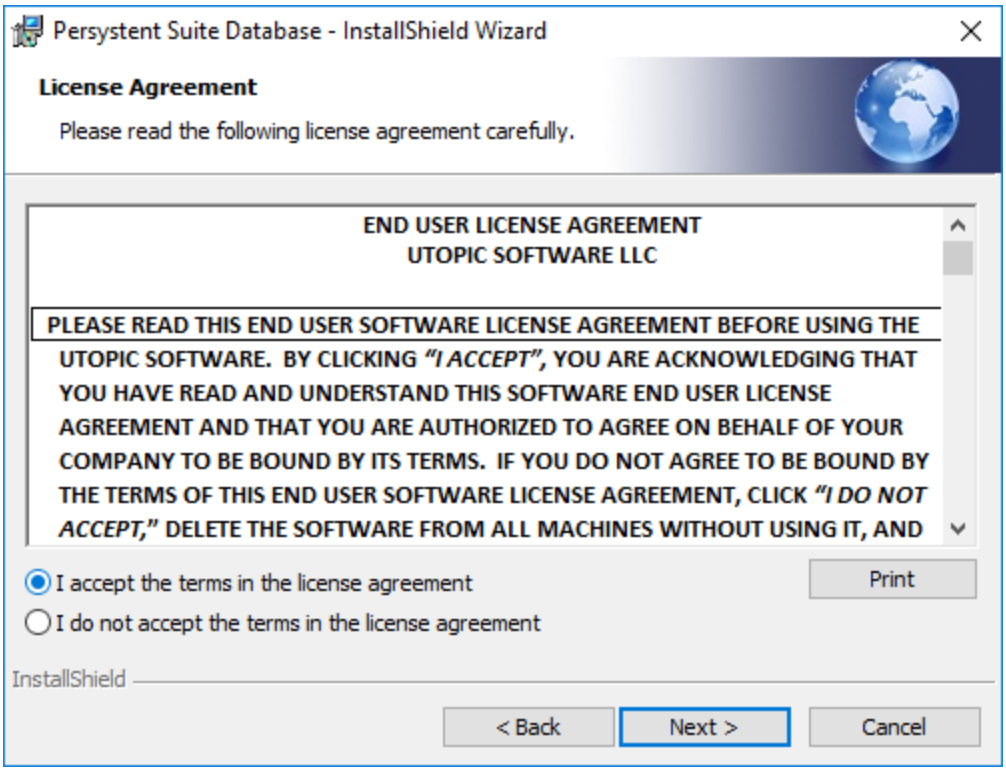
SECTION 4: INSTALLING PERSYSTENT SUITE (MASTER SERVER /SINGLE SERVER CONFIGURATION)

Installing Persystent Suite Database

1. To start the installation from a .zip file downloaded from the FTP site, unzip the file (as appropriate with your software) and extract it to a temporary folder on your computer, and then double click the installation file— **Persystent Suite Database Setup.exe**.
2. On the **Persystent Suite Database—InstallShield Wizard Welcome** page, click **Next**.



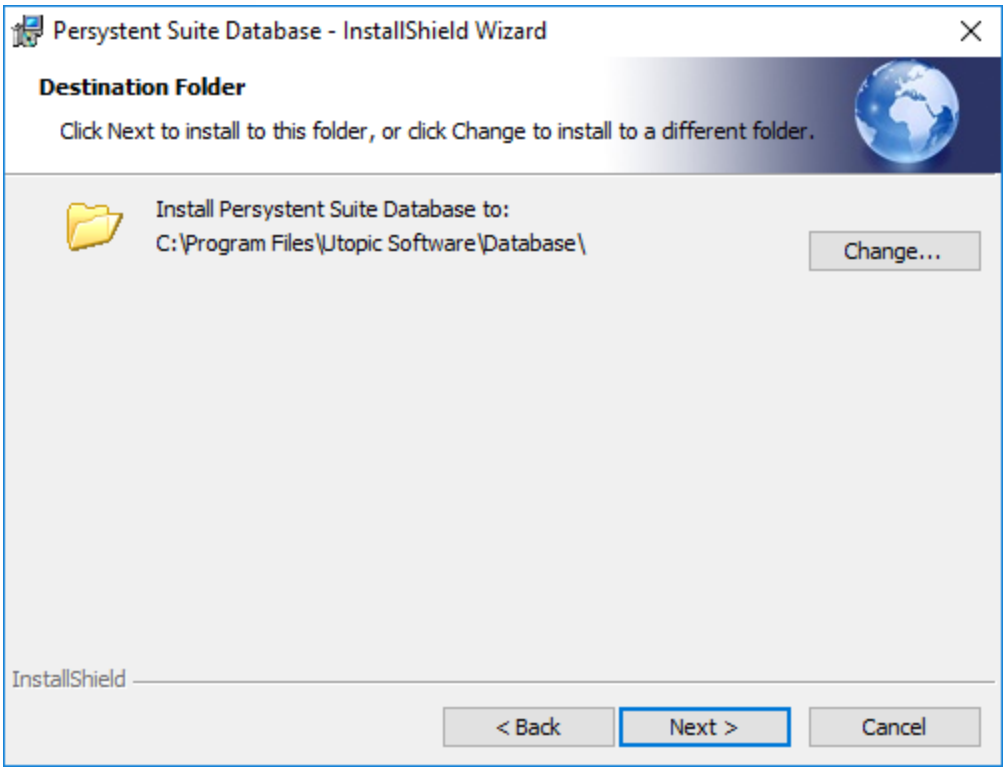
3. On the **Review License Agreement** page, read the license agreement carefully and click **I accept the terms in the license agreement**, and then click **Next**.



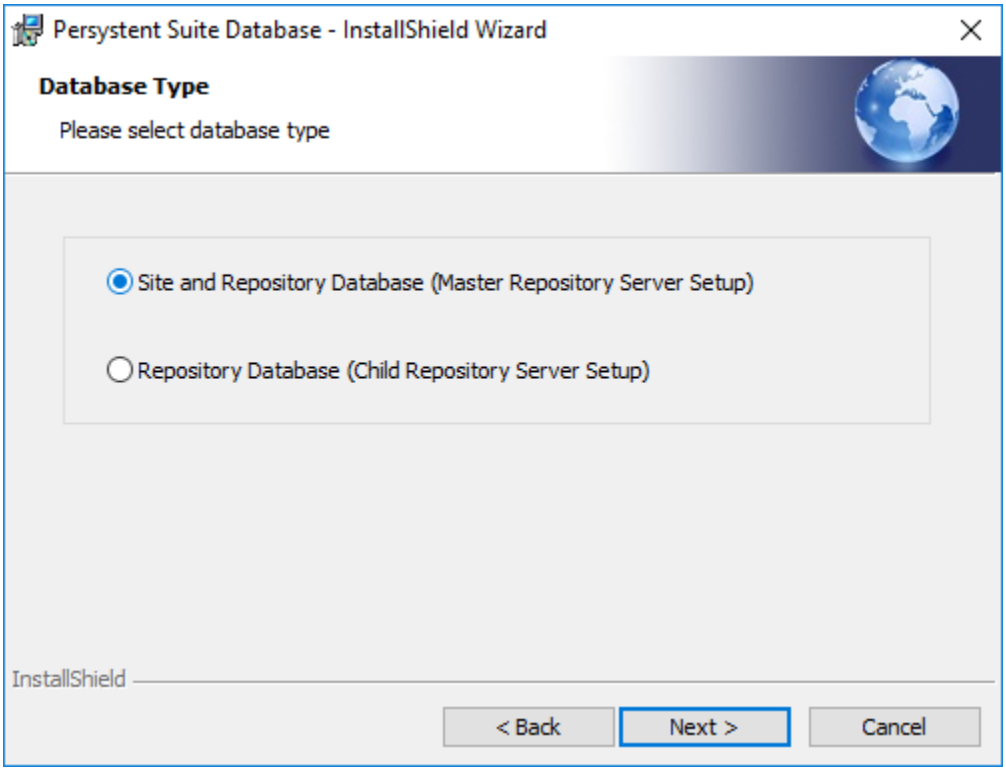
4. On the **Destination Folder** page:
    A. To install to the default folder (C:\Program Files\Utopic Software\Database\), click **Next**.
    –or–
    B. To install to a different folder, click **Change**.
        I. On the **Change Current Destination Folder** page, browse to choose an existing folder or create a folder to install to, and then click **OK**.

TIP The highlighted information in the Folder name box indicates that the drive and path are configurable.

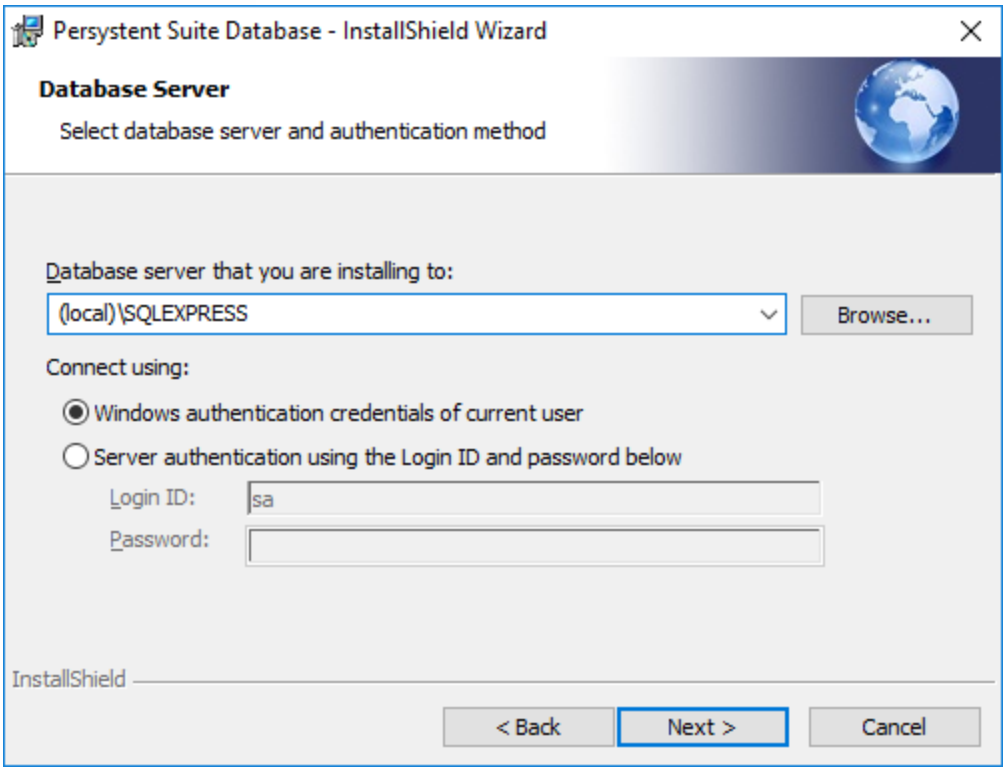
        II. On the **Destination Folder** page, notice the changed folder information and then click **Next**.



5. On the **Database Type** page, select the Site and Repository Database (Master Repository Server Setup).



6. On the **Database Server** page, click **Browse**, and select the select the database server to install to, then click **OK**.



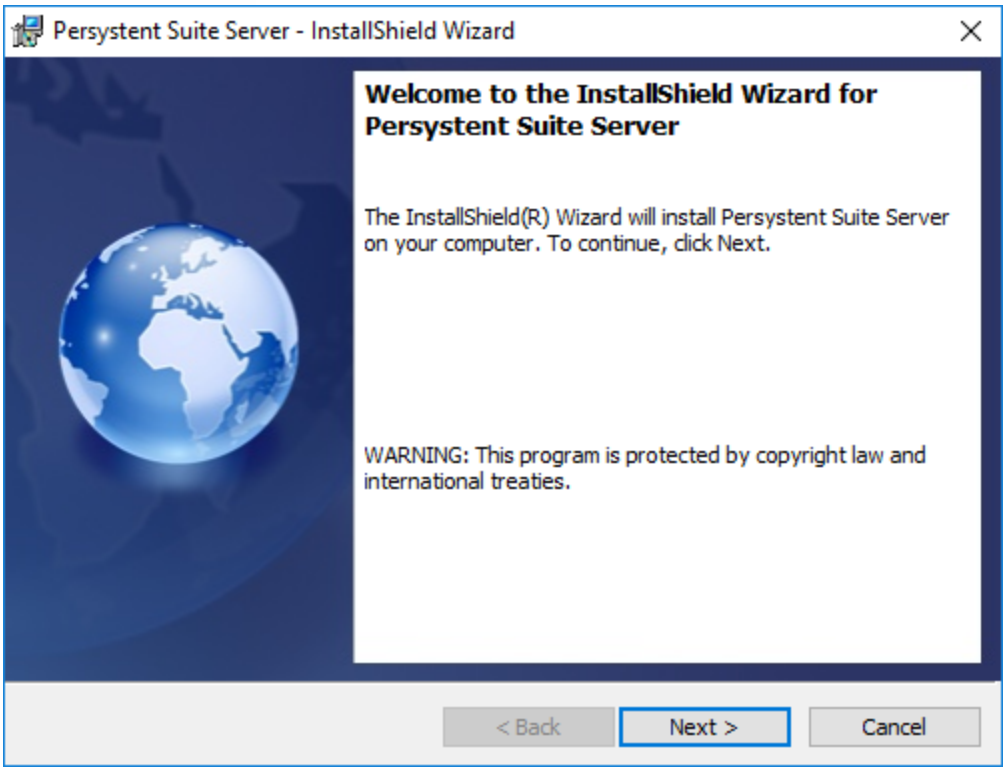
A. To select Windows authentication, click **Windows Authentication credentials of current user**, click **Next**.
–or–
B. To select SQL Server authentication, click **Server authentication using the Login ID and password below**. Enter the appropriate credentials and click **Next**.

> **NOTE** Select the authentication method that corresponds to your SQL Server installation. It is difficult to change this setting later—ensure that the authentication method chosen matches that of your SQL Server installation.

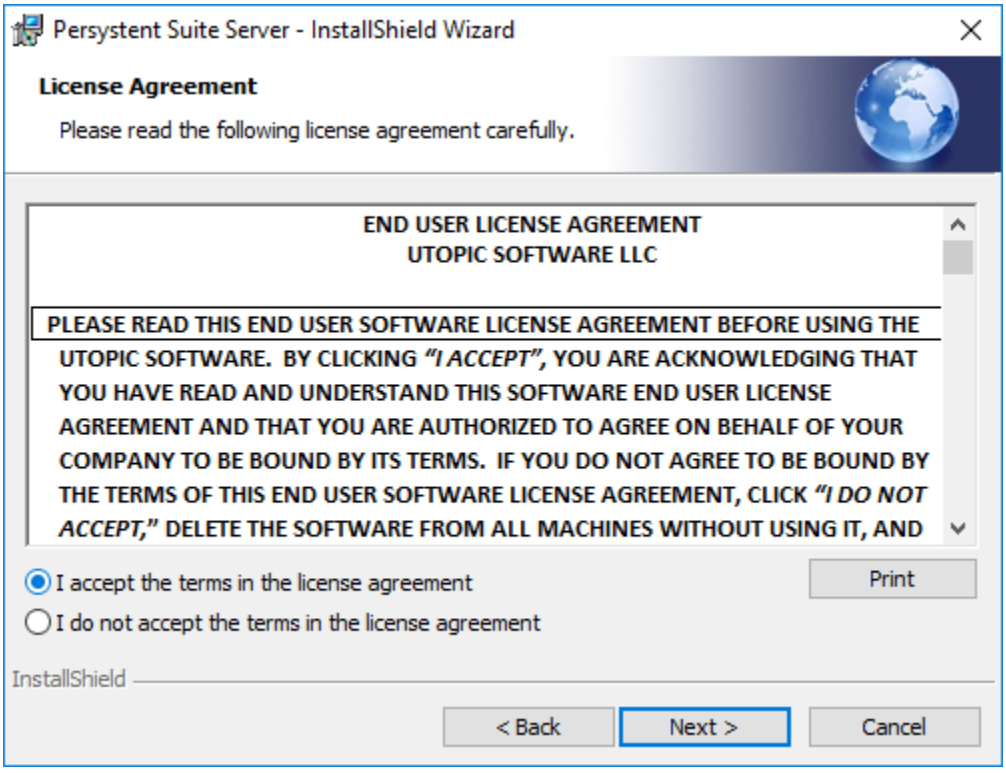
7. On the **Ready to Install the Program** page, click **Install**.
8. On the **InstallShield Wizard Completed** page, click **Finish**.

Installing Persystent Suite Server

1. To start the installation from a .zip file downloaded from the FTP site, unzip the file (as appropriate with your software) and extract it to a temporary folder on your computer, and then double click the installation file— **Persystent Suite Server Setup.exe**.
2. On the **Persystent Suite Server—InstallShield Wizard Welcome** page, click **Next**.



3. On the **Review License Agreement** page, read the license agreement carefully and click **I accept the terms in the license agreement**, and then click **Next**.



4. On the **Destination Folder** page:
    A. To install to the default folder (C:\Program Files\Utopic Software\), click **Next**.

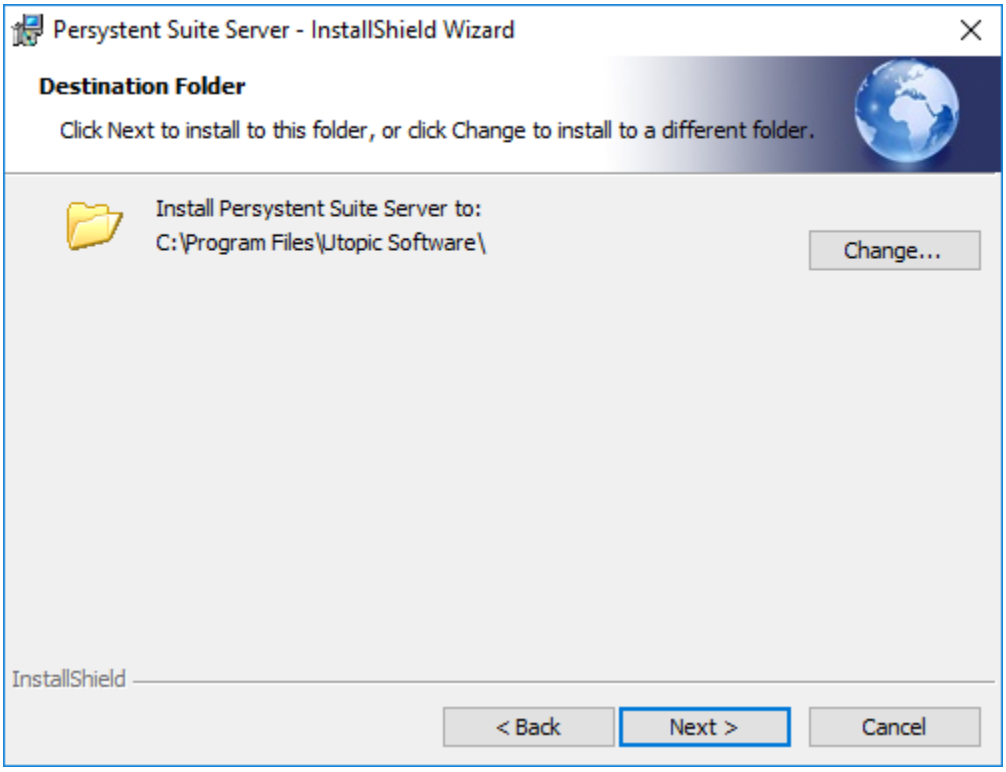
–or–

B. To install to a different folder, click **Change**.

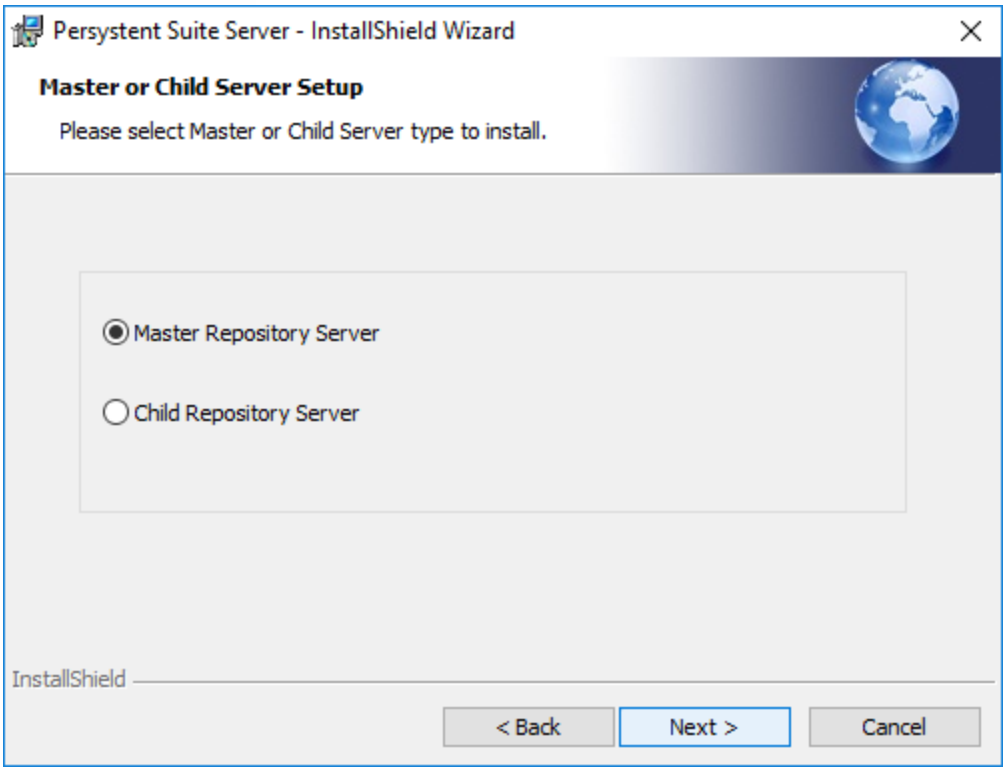
I. On the **Change Current Destination Folder** page, browse to choose an existing folder or create a folder to install to, and then click **OK**.

TIP The highlighted information in the Folder name box indicates that the drive and path are configurable.

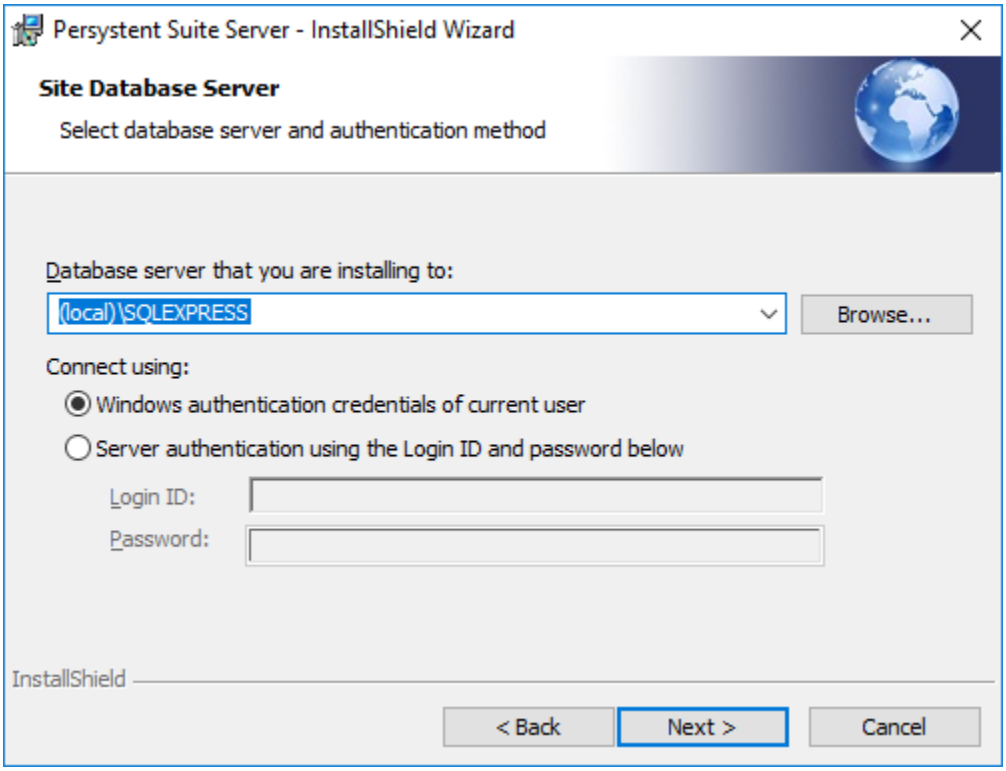
II. On the **Destination Folder** page, notice the changed folder information and then click **Next**.



5. On the **Master or Child Server Setup,** select the **Master Repository Server** option.



6. On the **Site Database Server** page, click **Browse**, and select the database server to install to, then click **OK**.



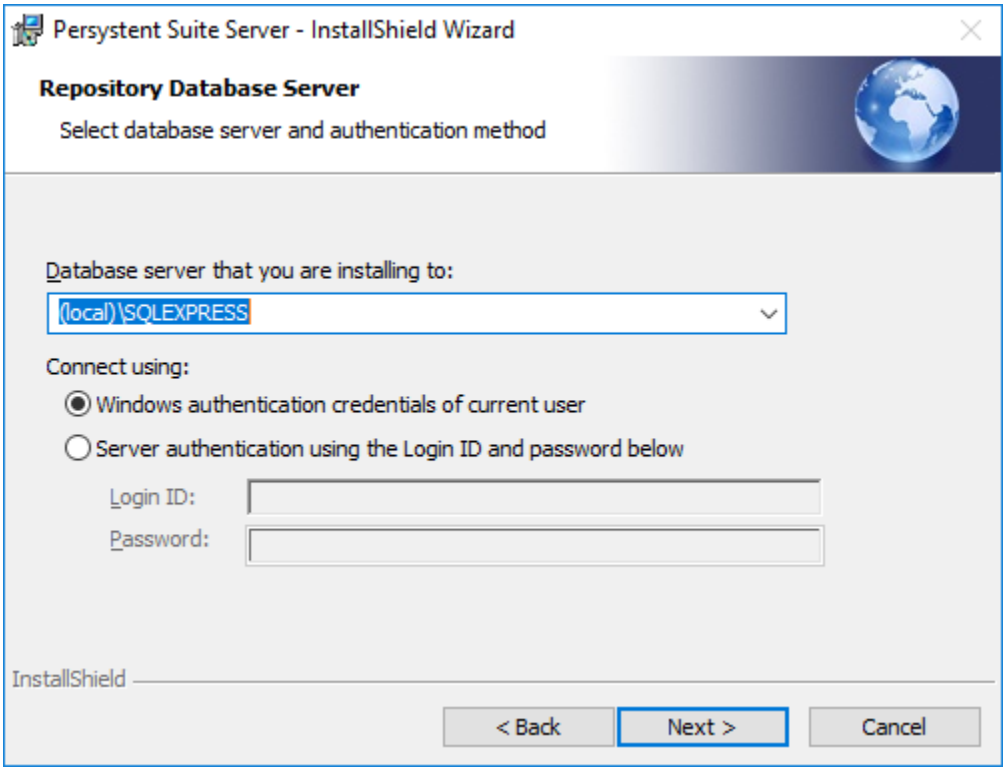
   A. To select Windows authentication, click **Windows Authentication credentials of current user**, click **Next**.

–or–

B. To select SQL Server authentication, click **Server authentication using the Login ID and password below**. Enter the appropriate credentials and click **Next**.

NOTE Select the authentication method that corresponds to your SQL Server installation. It is difficult to change this setting later—ensure that the authentication method chosen matches that of your SQL Server installation.

7. On the **Repository Database Server** page, click **Browse**, and select the select the database server to install to, then click **OK**.



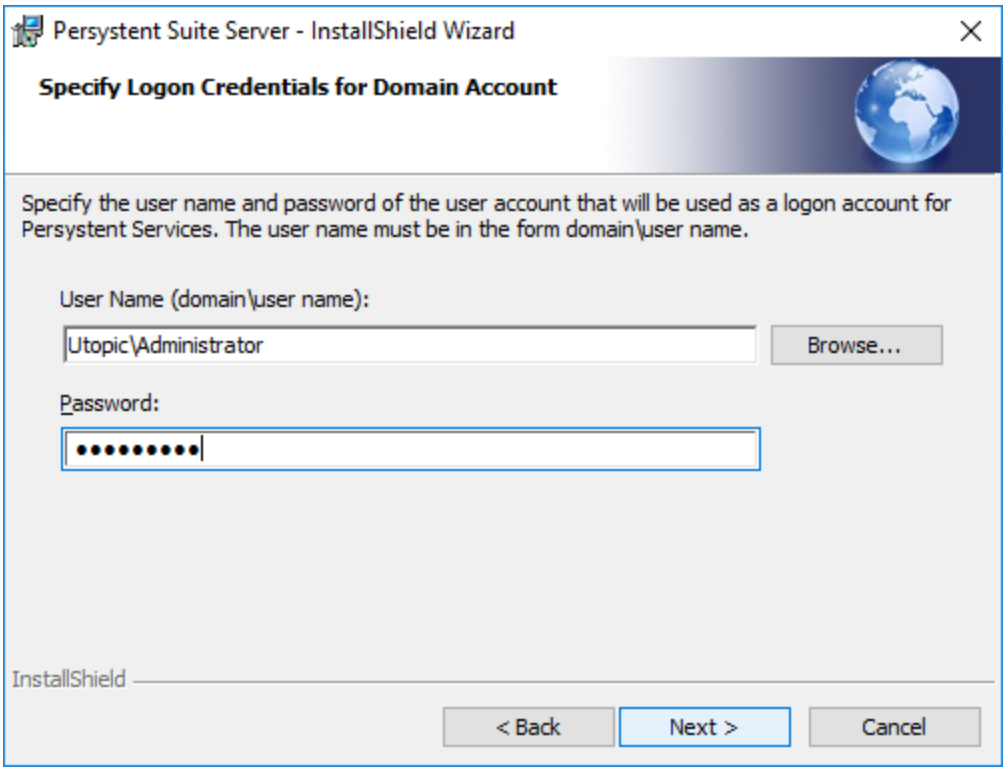
C. To select Windows authentication, click **Windows Authentication credentials of current user**, click **Next**.

–or–

D. To select SQL Server authentication, click **Server authentication using the Login ID and password below**. Enter the appropriate credentials and click **Next**.

8. On the **Specify Logon Credentials for Domain Account** page, specify the user name and password of the user account that will be used as a logon account for the Persystent Suite Service, and then click **Next**.

NOTE Logon Credentials for Domain Account must be added to the Log on as a service policy before installation. See Section 3: Prerequisites To Installing Persystent Suite.



A. In the **User Name** box, click **Browse** to select a user name and the **Browse for a User Account** dialog box appears.

NOTE The entry in the User Name box must be in the form domain\user name—the Browse for a User Account dialog box gathers this information and places it in the User Name box in the proper form.

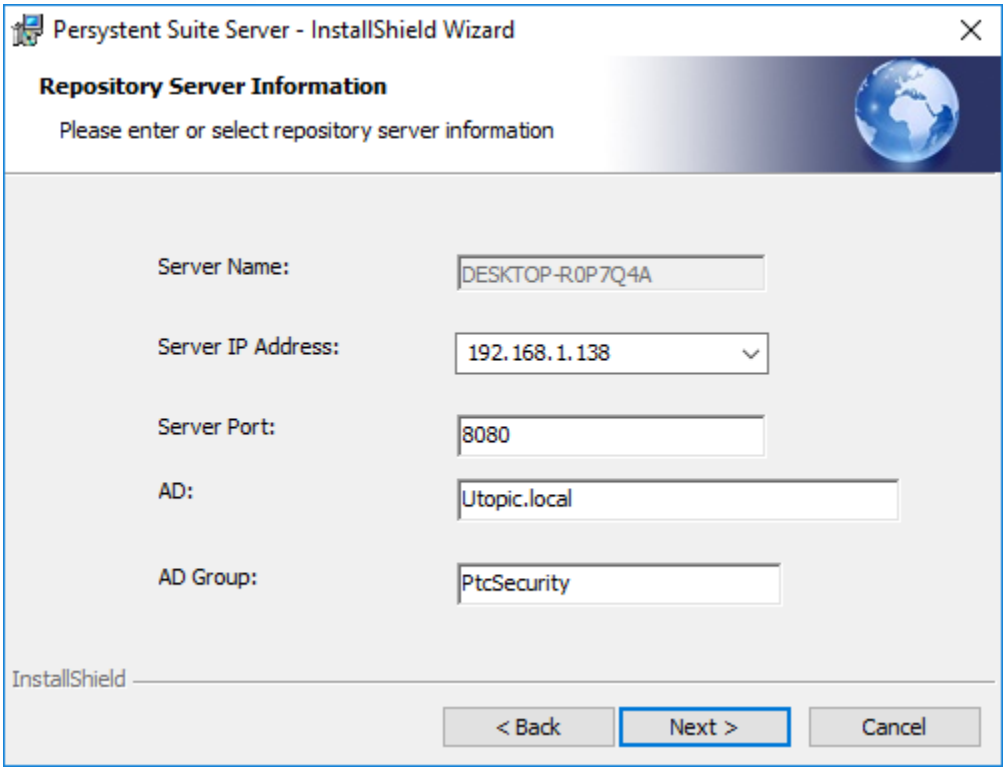
Use the Persystent Suite Service Account credentials you created (see Creating a Persystent Suite Service Account, page 11). Persystent Suite Services account credentials are used to start/stop Persystent Suite Services that provide the communication among the server components; therefore, it *is critical that these account credentials do not lapse*.

B. In the **Domain or server** box, click **Browse** and the **Select a Domain or Server** dialog box appears.
   I. Select a domain or server from the list, and then click **OK**.
   II. In the **User Name** box, click **Browse** and the **Select a User Name** dialog box appears.
   III. Select a user name from the list, and then click **OK**.

C. In the **Password** box, type a password, and then click **Next**.

TIP Logon Credentials for Domain Account: User Name (domain\user name) and Password—Keep a record of this information.

9. On the **Repository Server Information** page, accept or change the prefilled information, and then click **Next**.



   A. The Server Name box is prefilled with the local server.

> **NOTE** This server name will be used for the Persystent Suite Shared Repository Server.

   B. The **Server IP Address** list will display the IP addresses of all network interface cards (NICs) present. If multiple NICs are present, select the NIC to use for Persystent Suite Server from the list.
   C. The **Server Port** box is prefilled with **8080**; if this port is in use by your system, type an available port value in the box.
      I. This port is used by Persystent Repository Service to communicate with Persystent Client machines.
   D. The **AD** box will be prefilled with domain name if the Persystent Server is part of the domain. This will be used for authenticating users who can perform imaging and secure wipe. You can blank out this field if you do not want to use AD authentication.
   E. The **AD Group** box will be filled with default AD group **PtcSecurity** if the Persystent Server is part of the domain. You can change this group to any other AD group that you would like to use.
10. On the **Ready to Install the Program** page, click **Install**.
11. On the **InstallShield Wizard Completed** page, click **Finish**.

Installing Persystent Suite WebUI

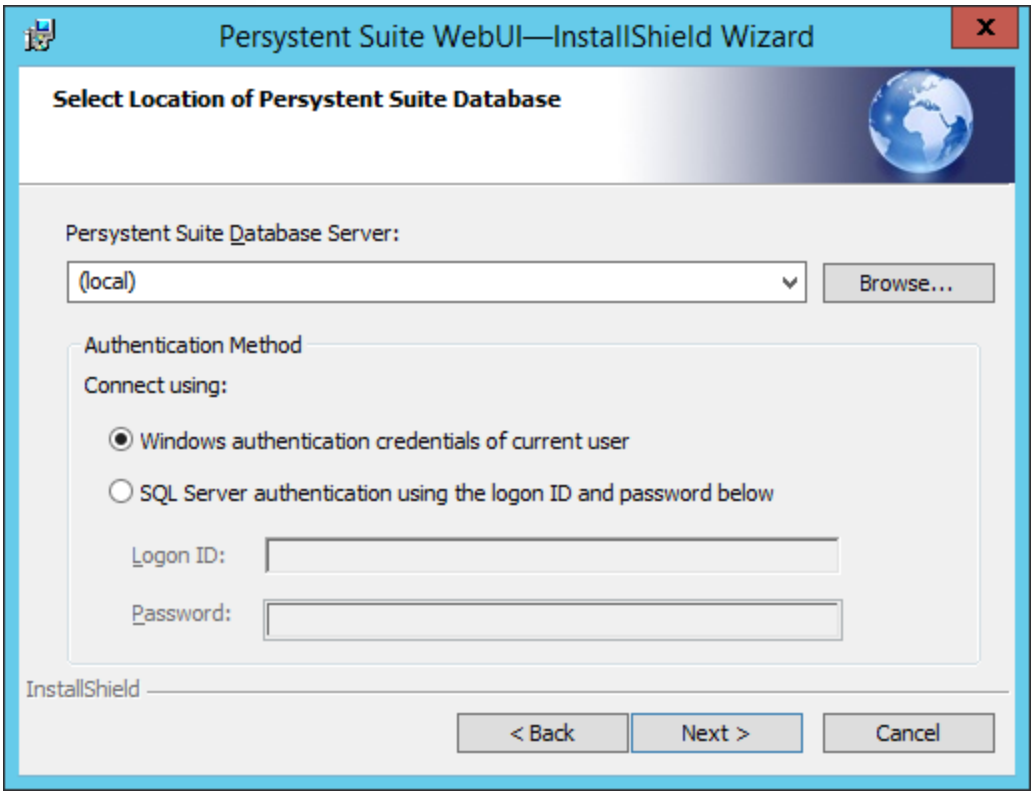
1. To start the installation from a .zip file downloaded from the FTP site, unzip the file (as appropriate with your software) and extract it to a temporary folder on your computer, and then double click the installation file— **Persystent Suite WebUI Setup.exe**.
2. On the **Persystent Suite WebUI—InstallShield Wizard Welcome** page, click **Next**.
3. On the **Review License Agreement** page, read the license agreement carefully and click **I accept the terms in the license agreement**, and then click **Next**.
4. On the **Choose Folder for Persystent Suite WebUI Installation** page:
    A. To install to the default folder (C:\Program Files\Utopic Software\WebUI\), click **Next**.
    –or–
    B. To install to a different folder, click **Change**.
        I. On the **Change Folder for Persystent Suite WebUI Installation** page, browse to choose an existing folder or create a folder to install to, and then click **OK**.

    TIP The highlighted information in the Folder name box indicates that the drive and path are configurable.

        II. On the **Choose Folder for Persystent Suite WebUI Installation** page, notice the changed folder information and then click **Next**.

    TIP Persystent Suite WebUI: Installation Folder—You will refer to the installation folder chosen here on the Specify IIS User Credentials page in Step 7, page 25. This folder will then be referred to as an IIS virtual directory.

5. On the **Select Location of Persystent Suite Database** page:



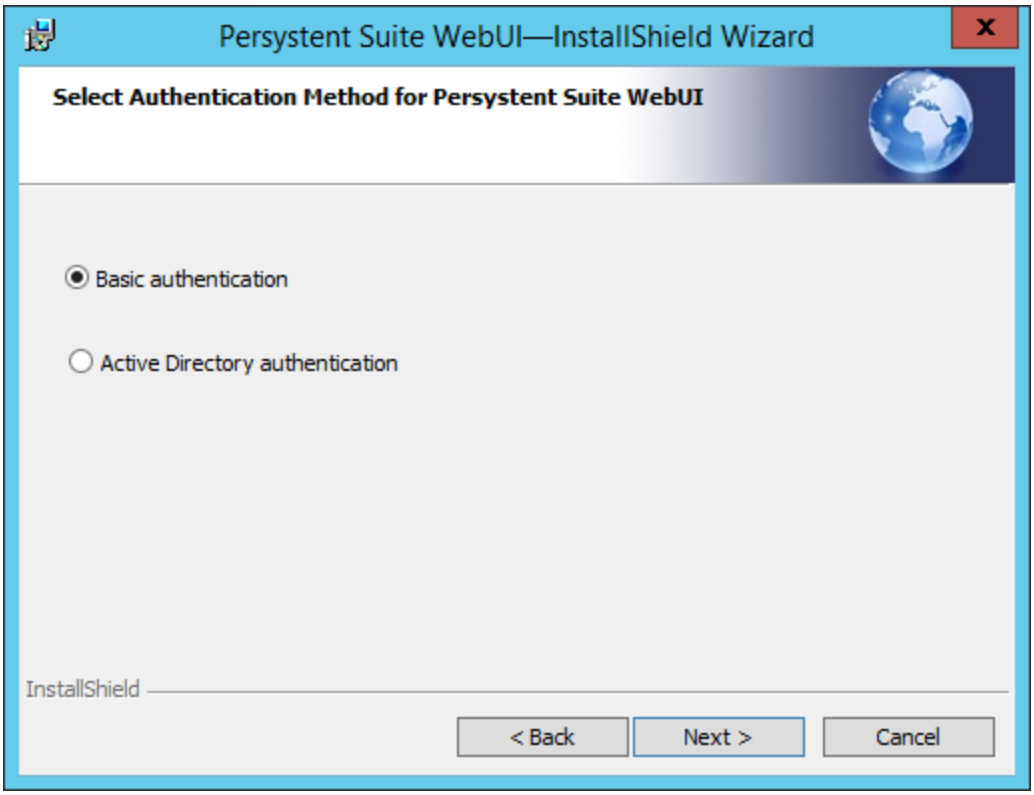
A. To select Windows authentication, click **Windows Authentication credentials of current user**, click **Next**.

–or–

B. To select SQL Server authentication, click **Server authentication using the Login ID and password below**. Enter the appropriate credentials and click **Next**.

NOTE Select the authentication method that corresponds to your SQL Server installation. It is difficult to change this setting later—ensure that the authentication method chosen matches that of your SQL Server installation.

6. On the **Select Authentication Method for Persystent Suite WebUI** page, select an authentication method, and then click **Next**.



A. To select Basic authentication, click **Basic authentication** and click **Next**, and then:
   I. If you selected Windows authentication in Step Suite, proceed to Step 7.
   –or–
   II. If you selected SQL Server authentication in Step Suite, proceed to Step 9.

–or–

B. To select Active Directory authentication, click **Active Directory authentication** and click **Next**, and then:
   I. If you selected Windows authentication in Step Suite, proceed to Step 7.
   –or–
   II. If you selected SQL Server authentication in Step Suite, proceed to Step 8.

TIP Persystent Suite WebUI: Authentication Method (Basic or AD)—Keep a record of this information.
If you select Basic authentication, the logon credentials for Persystent Suite WebUI are: User Name: admin; Password: admin.

7. On the **Specify IIS User Credentials** page, specify the user name and password of the user account that IIS will use to connect to Persystent Suite Database, and then click **Next**.

NOTE IIS will use this user account to connect to Persystent Suite Database. This user account must have read permission to the IIS virtual directory (refer to the folder you chose for Persystent Suite WebUI installation in Step 4, page 23).

A. In the **User Name** box, click **Browse** to select a user name and the **Browse for a User Account** dialog box appears.

NOTE The entry in the User Name box must be in the form domain\user name—the Browse for a User Account dialog box gathers this information and places it in the User Name box in the proper form.

B. In the **Domain or server** box, click **Browse** and the **Select a Domain or Server** dialog box appears.
   I. Select a domain or server from the list, and then click **OK**.

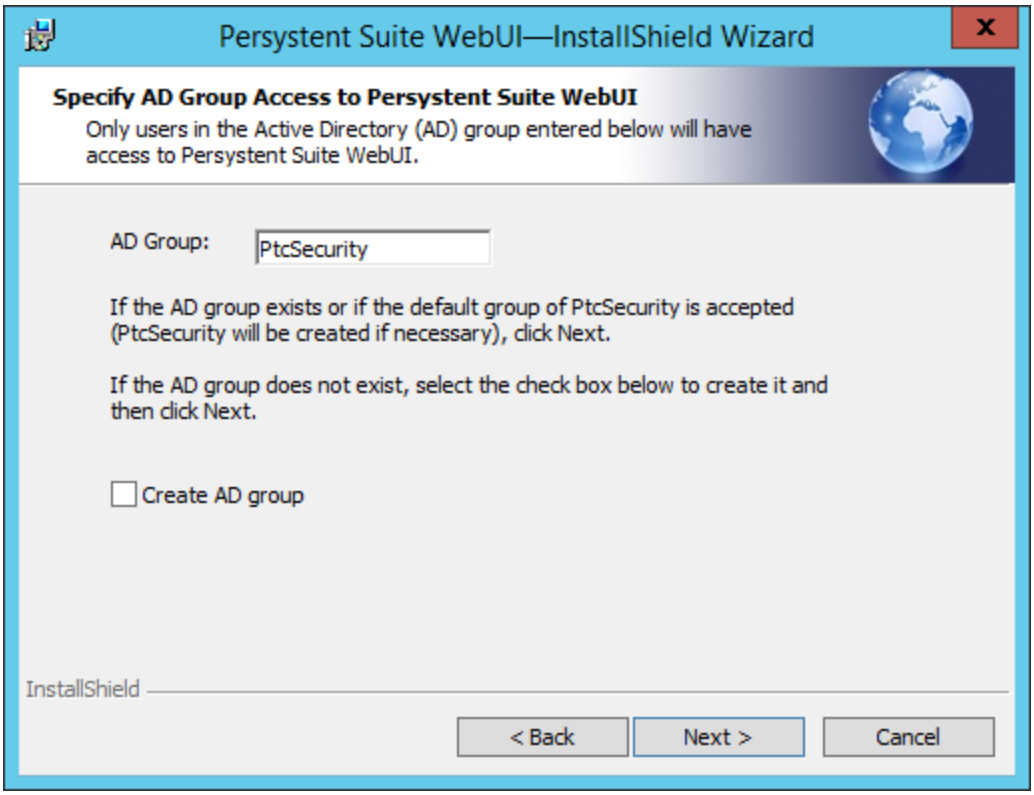
C. In the **User Name** box, click **Browse** and the **Select a User Name** dialog box appears.
   I. Select a user name from the list, and then click **OK**.

D. In the **Password** box, type a password and click **Next**, and then:
   I. If you selected Basic authentication in Step 6, proceed to Step 9.
   –or–
   II. If you selected Active Directory authentication in Step 6, proceed to Step 8.

TIP IIS User Credentials: User Name (domain\user name) and Password—Keep a record of this information.

8. On the **Specify AD Group Access to Persystent Suite WebUI** page:
   A. Type an existing AD group name in the AD Group box, and then click **Next**.
   –or–
   B. Accept the default group of **PtcSecurity** (PtcSecurity will be created if necessary), and then click **Next**.
   –or–
   C. Type a new AD group name in the **AD Group** box and select the **Create AD group** check box to create it, and then click **Next**.

NOTE **PtcSecurity** is the default name for the AD Persystent Suite Security Group (see Creating an Active Directory Persystent Suite Security Group, page 10). Only direct members of this AD group will have access to Persystent Suite WebUI.



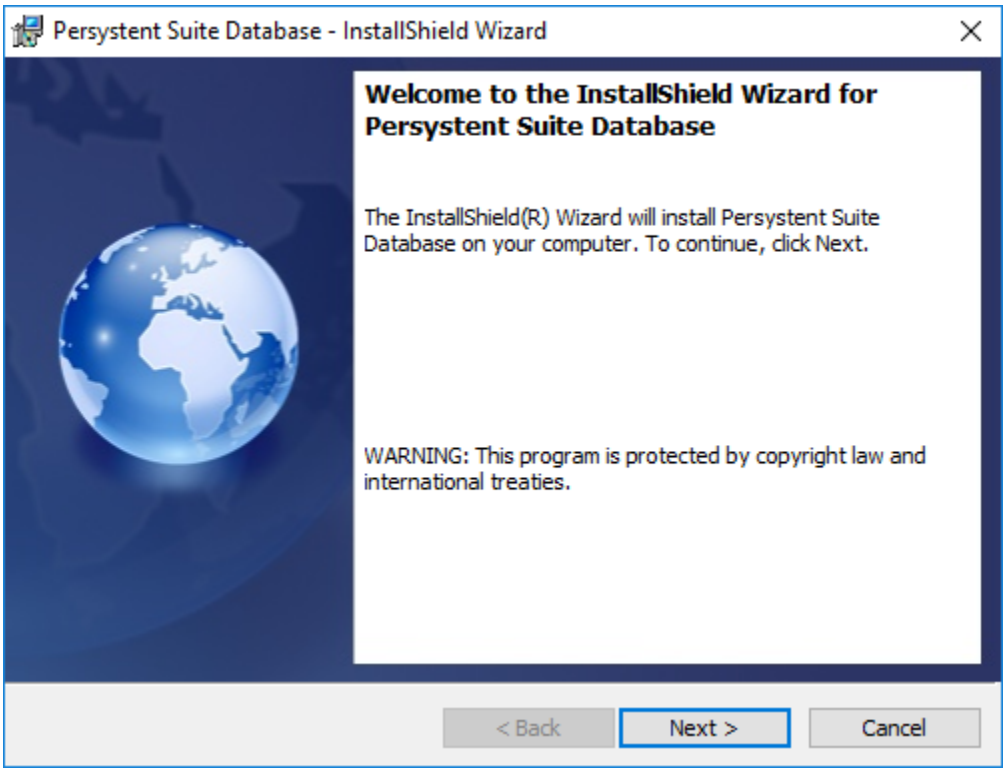
9. On the **Confirm Persystent Suite WebUI Installation** page, click **Install**.
10. On the **InstallShield Wizard Completed** page, click **Finish**.
11. Notice the following:
    A. **Utopic WebUI icon** on the desktop.

SECTION 5: INSTALLING CHILD REPOSITORY SERVER (OPTIONAL)

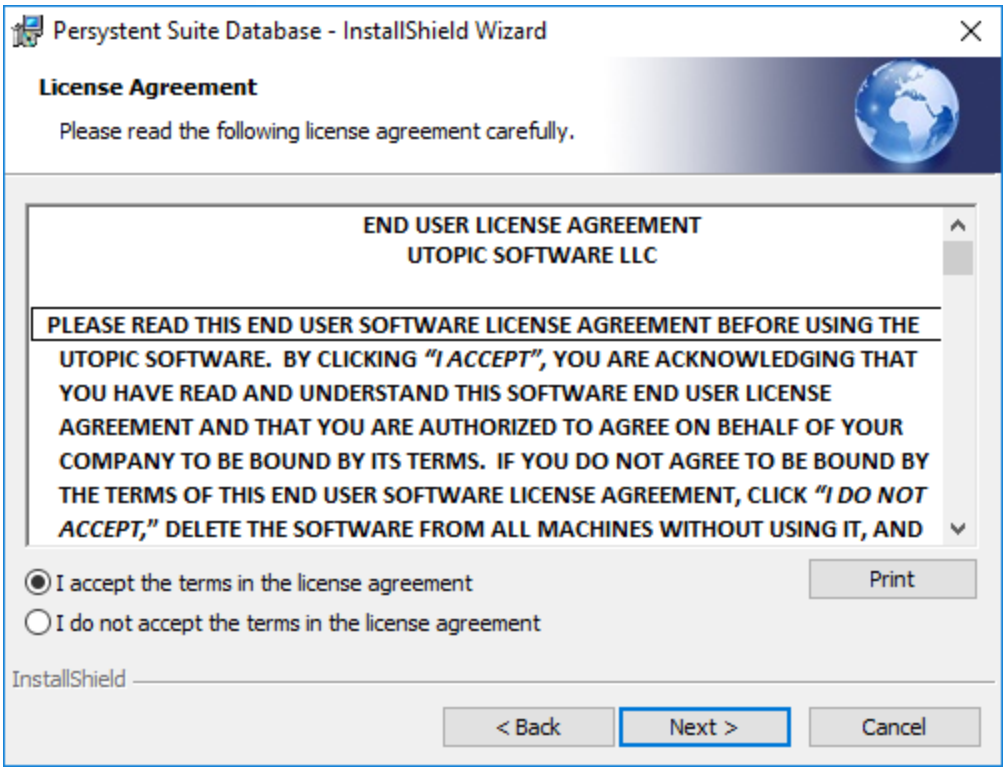
The initial installation of Persystent Suite installs Persystent Suite Server as a Master Server setup. After completing the initial installation of the three server components and performing the post-installation tuning, additional repository servers can be installed at any time. Each additional repository server is intended for use when you have multiple locations and would like to have a local repository server.

Installing Persystent Suite Database

1. Run **Persystent Suite Database Setup.exe**.
2. On the **Persystent Suite Database—InstallShield Wizard Welcome** page, click **Next**.



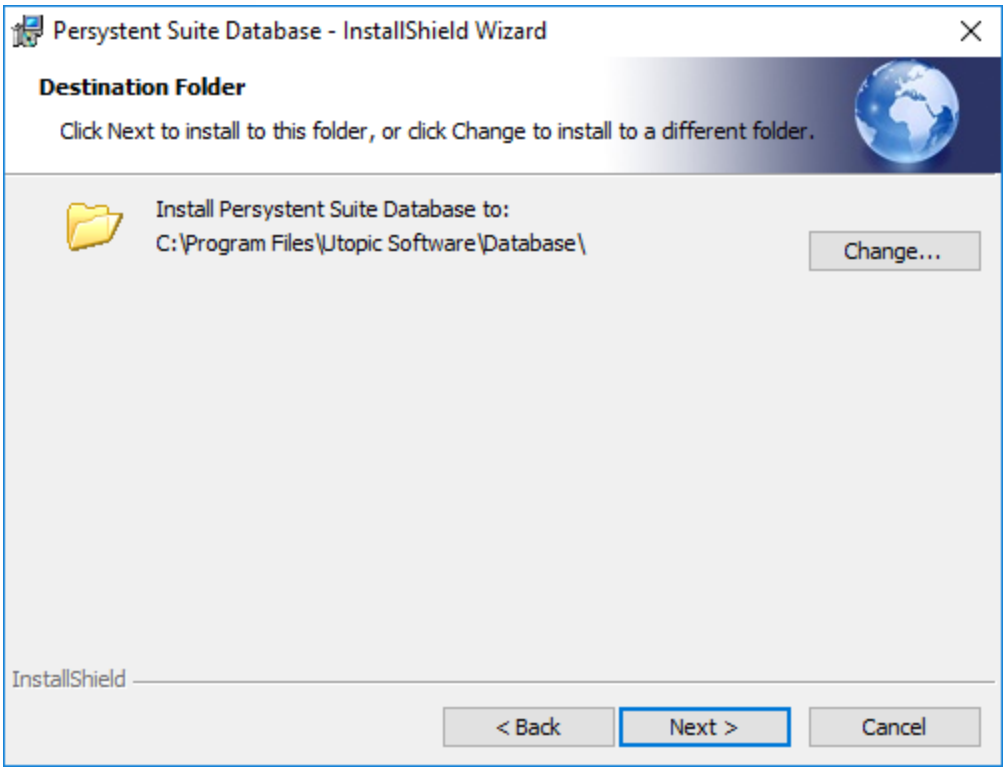
3. On the **Review License Agreement** page, read the license agreement carefully and click **I accept the terms in the license agreement**, and then click **Next**.



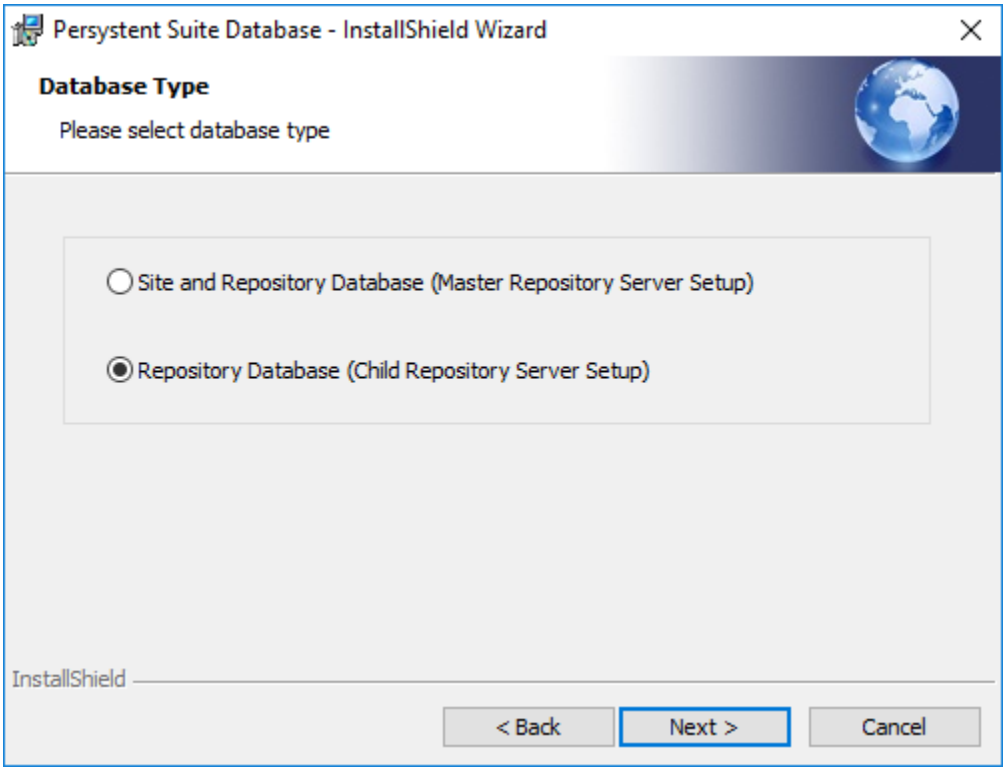
4. On the **Destination Folder** page:
    A. To install to the default folder (C:\Program Files\Utopic Software\Database\), click **Next**.
    –or–
    B. To install to a different folder, click **Change**.
        I. On the **Change Current Destination Folder** page, browse to choose an existing folder or create a folder to install to, and then click **OK**.

TIP The highlighted information in the Folder name box indicates that the drive and path are configurable.

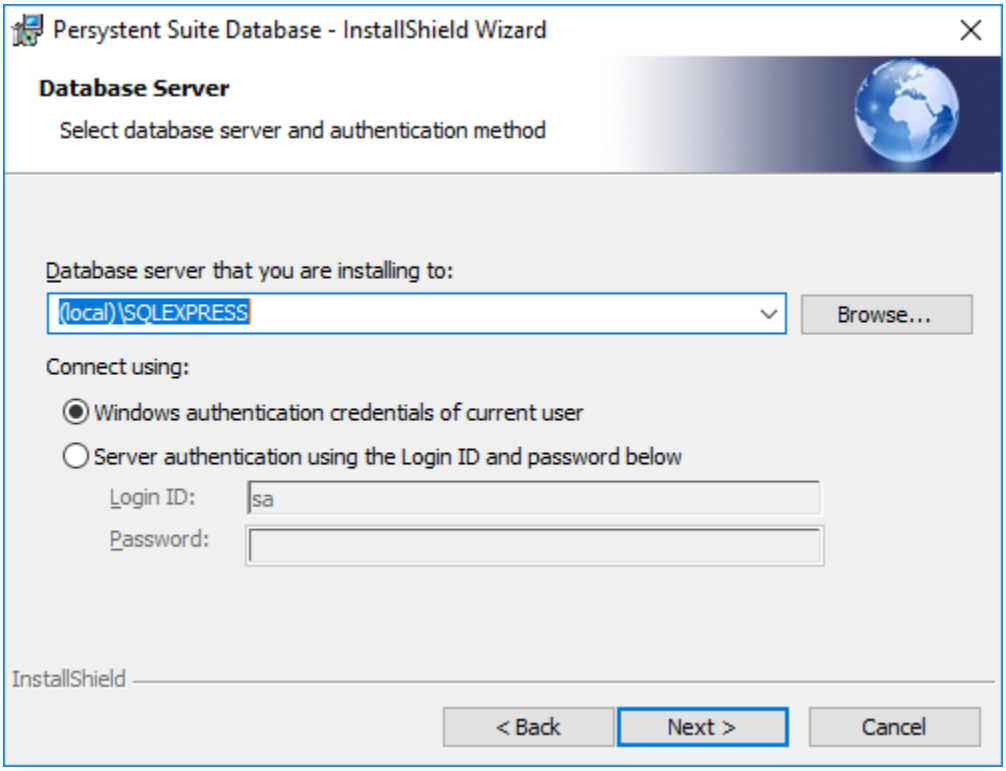
        II. On the **Destination Folder** page, notice the changed folder information and then click **Next**.



5. On the **Database Type** page, select the database type that corresponds to how Persystent Suite is going to be configured in your environment: Select **Repository Database (Child Repository Server Setup)**



6. On the **Database Server** page, click **Browse**, and select the select the database server to install to, then click **OK**.



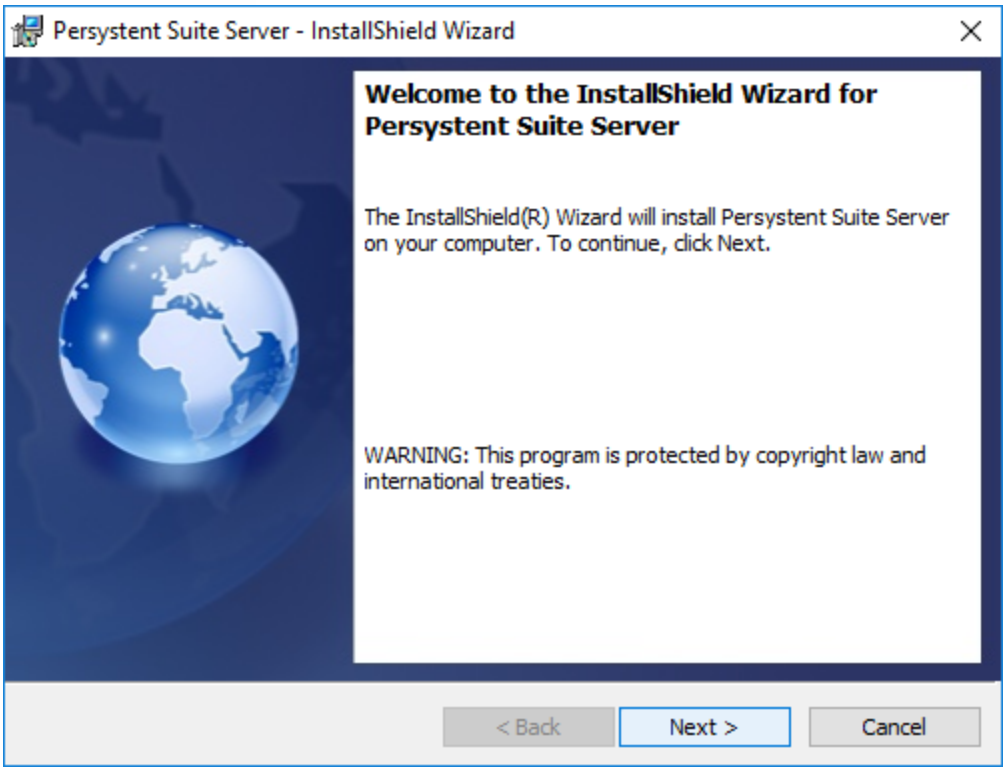
   A. To select Windows authentication, click **Windows Authentication credentials of current user**, click **Next**.
   –or–
   B. To select SQL Server authentication, click **Server authentication using the Login ID and password below**. Enter the appropriate credentials and click **Next**.

> **NOTE** Select the authentication method that corresponds to your SQL Server installation. It is difficult to change this setting later—ensure that the authentication method chosen matches that of your SQL Server installation.

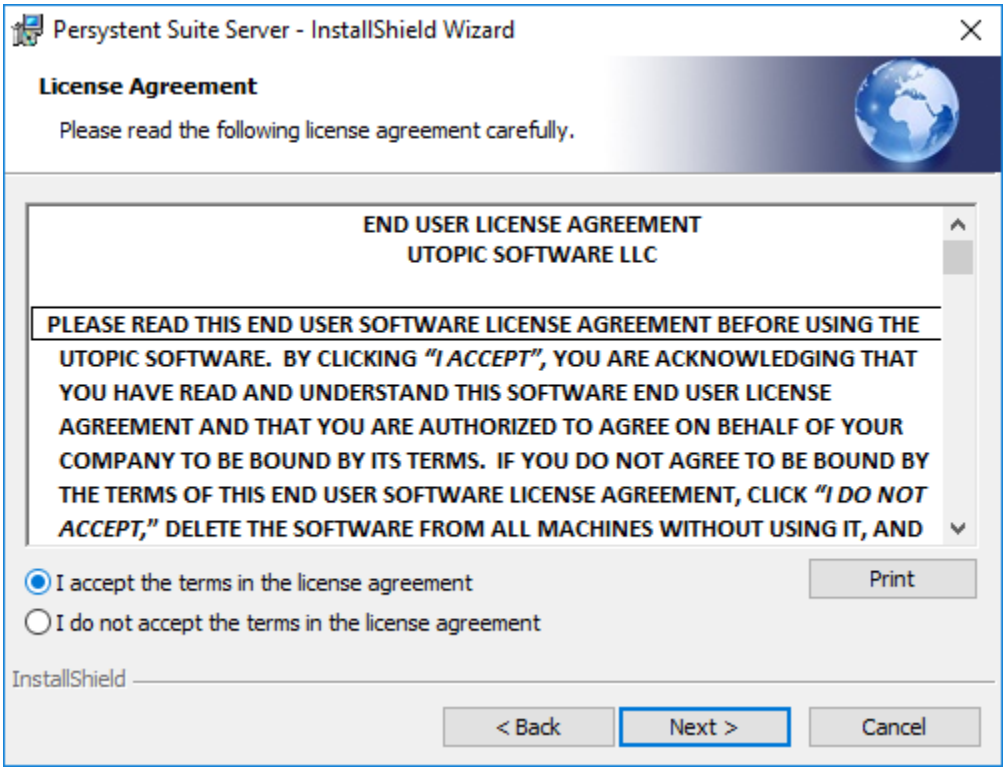
7. On the **Ready to Install the Program** page, click **Install**.
8. On the **InstallShield Wizard Completed** page, click **Finish**.
9. Proceed to **Error! Reference source not found. Error! Reference source not found.**.

Installing Persystent Suite Server

1. Run **Persystent Suite Server Setup.exe**.
2. On the **Persystent Suite Server—InstallShield Wizard Welcome** page, click **Next**.



3. On the **Review License Agreement** page, read the license agreement carefully and click **I accept the terms in the license agreement**, and then click **Next**.



4. On the **Destination Folder** page:
    A. To install to the default folder (C:\Program Files\Utopic Software\), click **Next**.

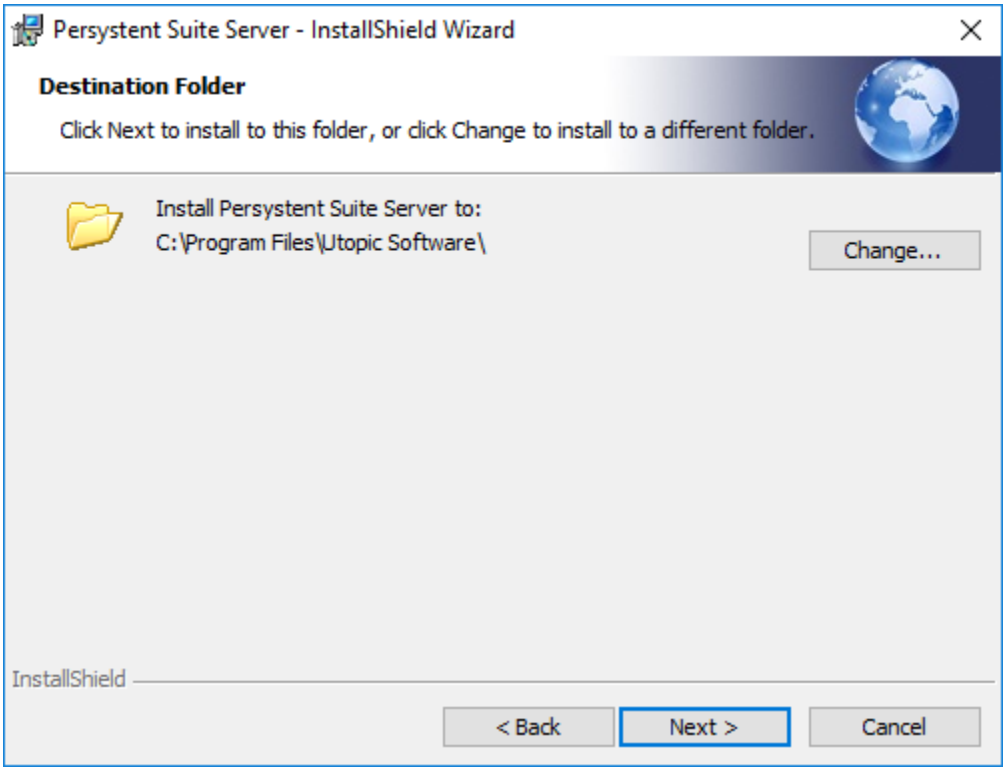
–or–

B. To install to a different folder, click **Change**.

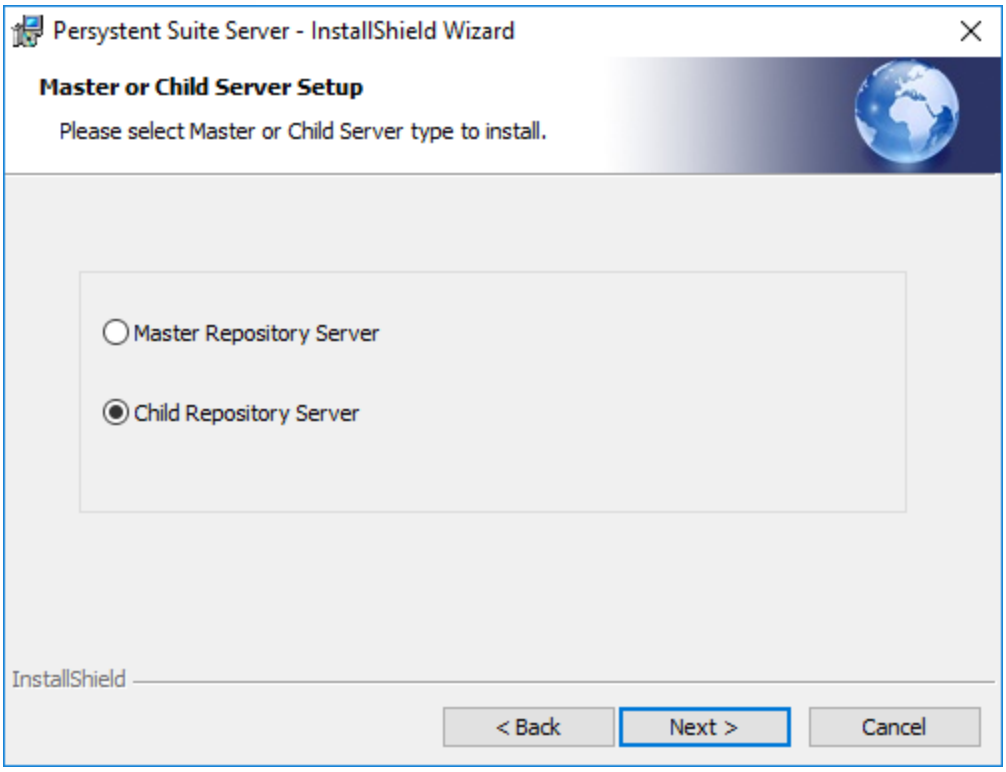
I. On the **Change Current Destination Folder** page, browse to choose an existing folder or create a folder to install to, and then click **OK**.

TIP The highlighted information in the Folder name box indicates that the drive and path are configurable.

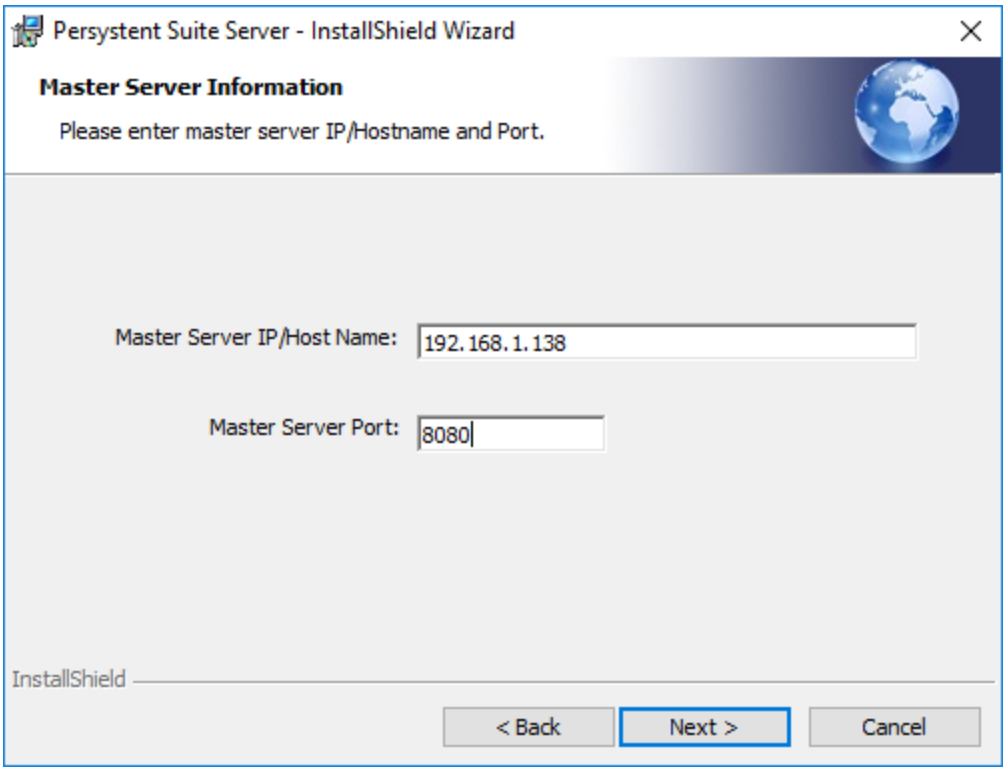
II. On the **Destination Folder** page, notice the changed folder information and then click **Next**.



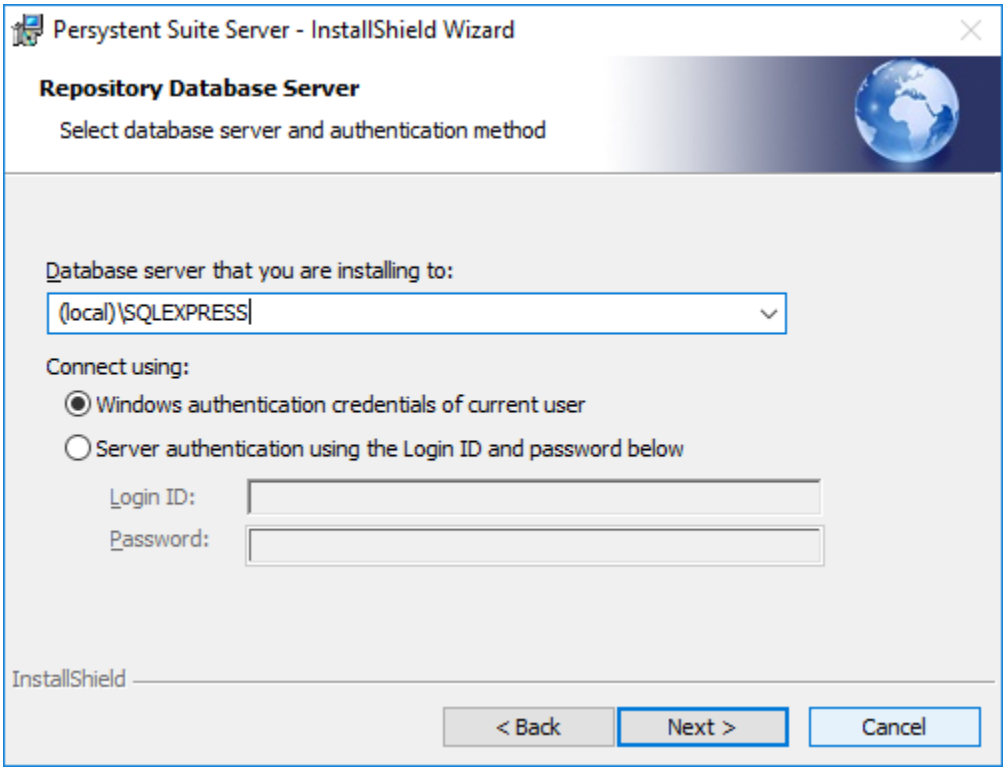
5. On the **Master or Child Server Setup** page, select **Child Repository Server** option, then click **Next**.



6. On the **Master Server Information** page, enter **Master Server IP/Host Name** and **Master Server Port**, then click **Next**.
    A. **Master Server IP/Host Name**: Enter IP or host name of master Persystent server which would be used to connect to master server.
    B. **Master Server Port**: Enter master server port which is configured on the master server.



7. On the **Database Server** page, click **Browse**, and select the select the database server to install to, then click **OK**.



   A. To select Windows authentication, click **Windows Authentication credentials of current user**, click **Next**.

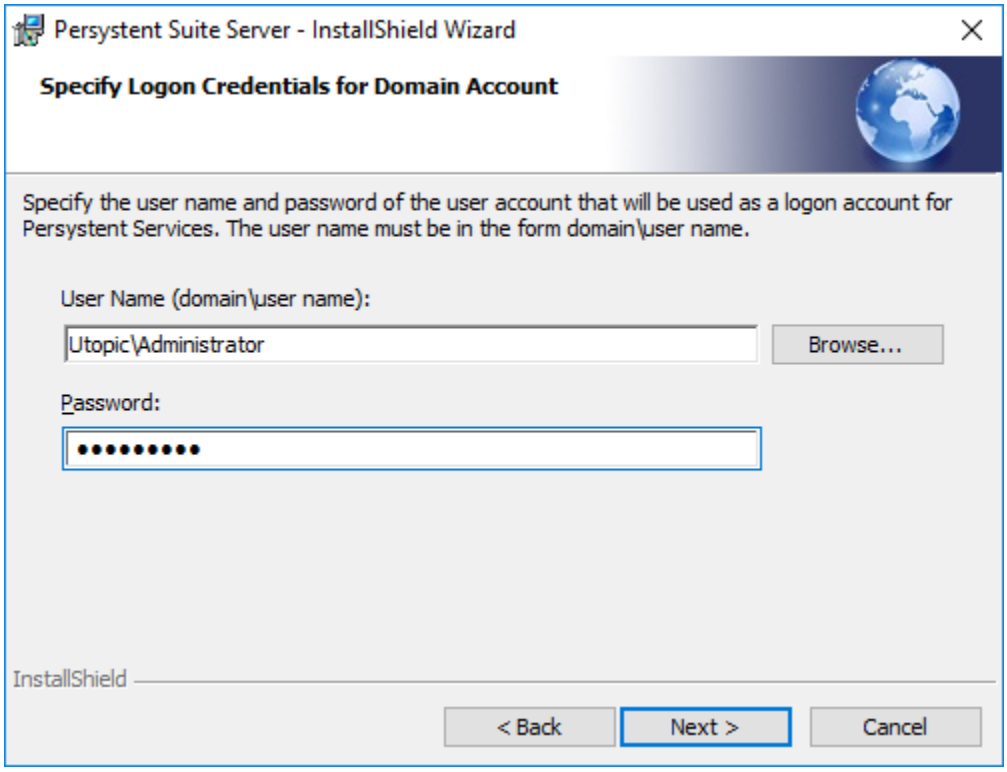
–or–

B. To select SQL Server authentication, click **Server authentication using the Login ID and password below**. Enter the appropriate credentials and click **Next**.

NOTE Select the authentication method that corresponds to your SQL Server installation. It is difficult to change this setting later—ensure that the authentication method chosen matches that of your SQL Server installation.

8. On the **Specify Logon Credentials for Domain Account** page, specify the user name and password of the user account that will be used as a logon account for the Persystent Suite Service, and then click **Next**.

NOTE Logon Credentials for Domain Account must be added to the Log on as a service policy before installation. See Section 3: Prerequisites To Installing Persystent Suite.



F. In the **User Name** box, click **Browse** to select a user name and the **Browse for a User Account** dialog box appears.

NOTE The entry in the User Name box must be in the form domain\user name—the Browse for a User Account dialog box gathers this information and places it in the User Name box in the proper form.
Use the Persystent Suite Service Account credentials you created (see Creating a Persystent Suite Service Account, page 11). Persystent Suite Services account credentials are used to start/stop Persystent Suite Services that provide the

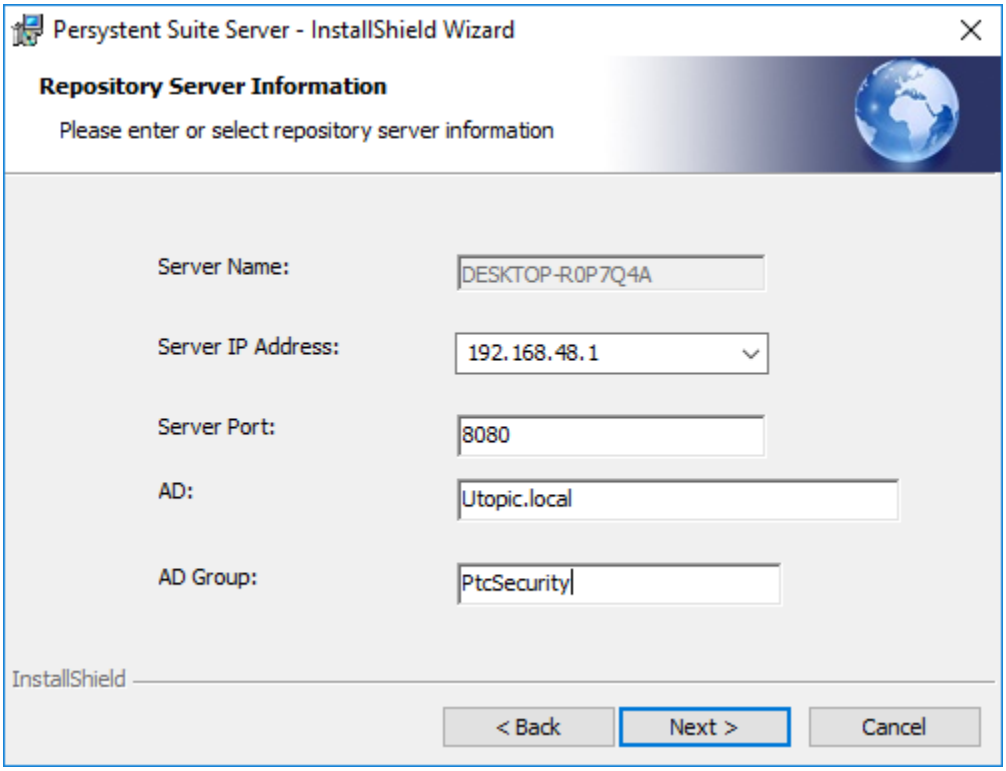
communication among the server components; therefore, it *is critical that these account credentials do not lapse*.

G. In the **Domain or server** box, click **Browse** and the **Select a Domain or Server** dialog box appears.
   I. Select a domain or server from the list, and then click **OK**.
   II. In the **User Name** box, click **Browse** and the **Select a User Name** dialog box appears.
   III. Select a user name from the list, and then click **OK**.

H. In the **Password** box, type a password, and then click **Next**.

TIP Logon Credentials for Domain Account: User Name (domain\user name) and Password—Keep a record of this information.

9. On the **Repository Server Information** page, accept or change the prefilled information, and then click **Next**.



A. The Server Name box is prefilled with the local server.

NOTE This server name will be used for the Persystent Suite Shared Repository Server.

B. The **Server IP Address** list will display the IP addresses of all network interface cards (NICs) present. If multiple NICs are present, select the NIC to use for Persystent Suite Server from the list.

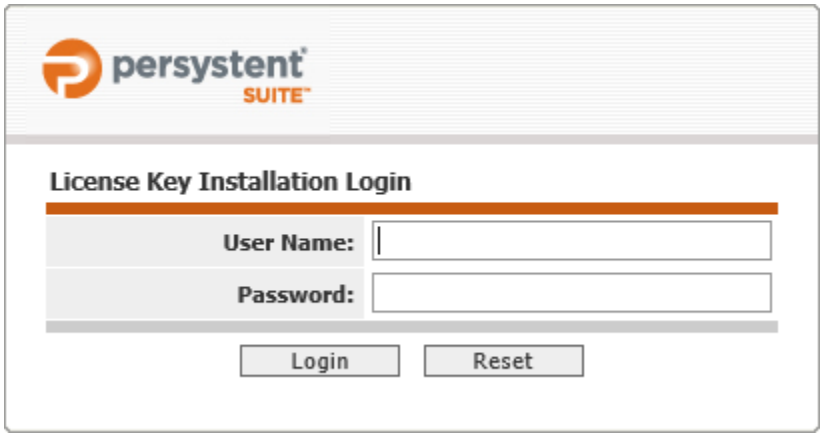
C. The **Server Port** box is prefilled with **8080**; if this port is in use by your system, type an available port value in the box.
    I. This port is used by Persystent Repository Service to communicate with Persystent client machines.
D. The **AD** box will be prefilled with domain name if the Persystent Server is part of the domain. This will be used for authenticating users who can perform imaging and secure wipe. You can blank out this field if you do not want to use AD authentication.
E. The **AD Group** box will be filled with default AD group **PtcSecurity** if the Persystent Server is part of the domain. You can change this group to any other AD group that you would like to use.
    II.

10. On the **Ready to Install the Program** page, click **Install**.
11. On the **InstallShield Wizard Completed** page, click **Finish**.

SECTION 6: INSTALLING LICENSE KEYS

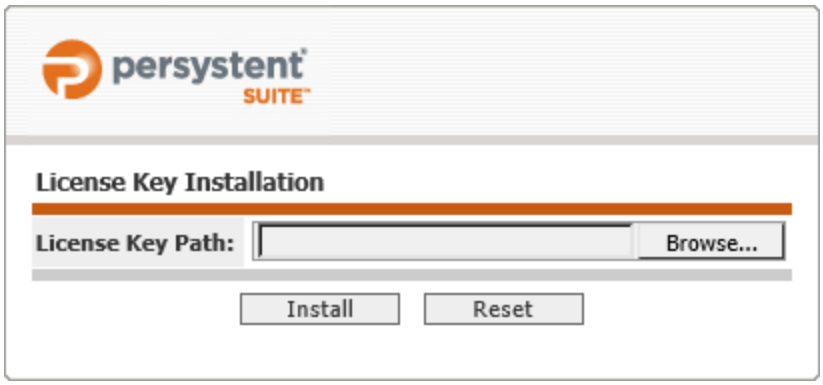
To access Persystent Suite WebUI, you must first install a Persystent license key. Initial installation of a license key will be prompted when logging in to the Persystent Suite WebUI for the first time (you will be redirected to the License Key Installation Login page). Subsequent license key installations and license key management are accessible on the Persystent Suite WebUI server through the Persystent menu by clicking License Management.

1. Double-click the **Persystent Suite WebUI** icon on the desktop or browse to http://localhost/ptcweb/LicenseMgmtLogin.aspx on the Persystent Server.
2. On the **License Key Installation Login** page, supply the following information and click **Login**, and then the **License Key Installation** page appears.
   A. In the **User Name** box, type your user name (use Persystent Suite WebUI credentials).
   B. In the **Password** box, type your password (use Persystent Suite WebUI credentials).



3. On the **License Key Installation** page, provide the **License Key Path**:
   A. Click **Browse** to select the license key file (of the form file name.lic), and then click **Install**.
   –or–
   B. In the **License Key Path** box, type **<[the full path of the license key file]>**, and then click **Install**.

CAUTION	If you type an invalid license key path in the License Key Path box and then click Install, nothing will appear to happen and you will not receive an error message.



4. Successful license key installations are followed by a confirmation page that redirects the browser to the Persystent Suite WebUI User Login page; however, it is best practice to Proceed to Section 7: Post-Installation Configuration, page 41, and tune your environment first.

SECTION 7: POST-INSTALLATION CONFIGURATION

After installation of the three Persystent Suite server components, there are some post setup tasks that may be required depending on your environment.

Windows Firewall

Depending on your server configuration it may be necessary to add a firewall exception to allow communication with the Persystent server service. To add a Windows firewall exception, follow the steps below.

Add exception to Windows Firewall

1. Open **Windows Firewall with Advanced Security**.
2. In the left pane right click **Inbound Rules** and select **New Rule**.
3. On the **Rule Type** screen select **Port** and click **Next**.
4. On the **Protocol and Ports** screen ensure **TCP** is selected. In the **Specific local ports** text field enter the port that was enter during the installation of the Persystent WebUI. Click **Next**.
5. On the **Action** screen, ensure **Allow the connection** is selected and click **Next**.
6. On the **Profile** screen, select the profile type to apply this rule to. Click **Next**.
7. On the **Name** screen, enter **Persystent Repository Service**. Click **Finish**.

Tuning Persystent Suite

To tune Persystent Suite, complete the procedures below:

Tuning Persystent Suite Service

1. On **Persystent Suite Server**, add recovery to restart the service if the service fails and set it to five minutes for the following Persystent Suite Services:
   A. Persystent Repository Service.

> **TIP** Example
> In **Services**, and right click **Persystent Repository Service**, and then click **Properties**.
> In the **Properties** dialog box, on the **Recovery** tab, in the **First failure** list, select **Restart the Service**, and then in the **Restart service afte**r box type **<Suite>**, and then click **OK**.

2. Exit **Services** console.

NOTE Perform Step 3 only if running Windows Server 2003.
Data Execution Prevention (DEP)—Windows Server 2003 prevents executables from running automatically; therefore, to allow Persystent Suite Server software to run automatically, the executables must be added to the Performance Options dialog box on the Data Execution Prevention tab using the Opt-out configuration (click **Turn on DEP for essential Windows programs and services only**.)

3. If running Windows Server 2003, configure Data Execution Prevention as follows:
   A. On **Persystent Suite Server**, click **Start | Control Panel | System and the System Properties** dialog box appears. On the **Advanced** tab, in the **Performance** area, click **Settings**.
   B. In the **Performance Options** dialog box, click the **Data Execution Prevention** tab.
   C. Click **Turn on DEP for essential Windows programs and services only**.

Tuning SQL Server

To tune SQL Server, complete the procedure applicable to your SQL Server environment.

In SQL Server Management Studio set the following:

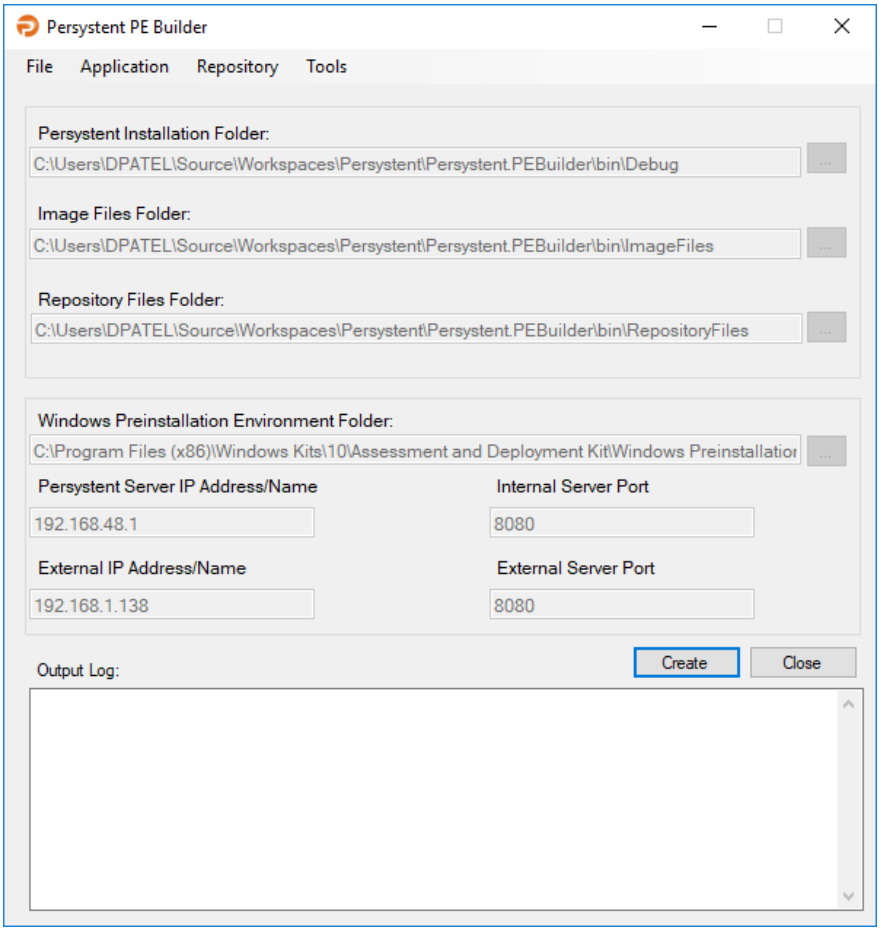
- In the Transaction Log:
  - Automatically grow file.
  - Grow by 10 percent.
  - Restrict file growth to 100 MB.
- Database to backup automatically and purge the transaction logs
  - Weekly.
  - Verify backup.
  - Remove inactive entries from Transaction Log.
  - Backup set will expire in 30 days.

Persystent PE Boot Image

A Persystent PE boot image is used to perform the pre-boot functionality including: repairing the computer, deploying images, and inheriting a computer. To create the PE boot image, perform the steps below:

Create PE Boot Image

1. On the Persystent Server launch the following executable: **C:\Program Files\Utopic Software\Server\PE Builder\Persystent.PEBuilder.exe**.



2. Ensure the **Persystent Server IP Address/Name** field contains the correct IP address or the hostname of the Persystent server. If necessary, enter the correct IP address or hostname.
3. Ensure the **Persystent Server Port** field contains the correct port configured during installation. If necessary, enter the correct port.
4. Click **Create**.
5. The PE image is being created. This may take some time, wait for it to finish.
6. Click **OK**.

Windows Deployment Services

Windows Deployment Services (WDS) is used to answer PXE requests. The Persystent PE image needs to be added to the WDS server. The server also needs to be configured to answer the PXE requests. Perform the steps below to configure WDS.

Add Boot Image to Windows Deployment Services

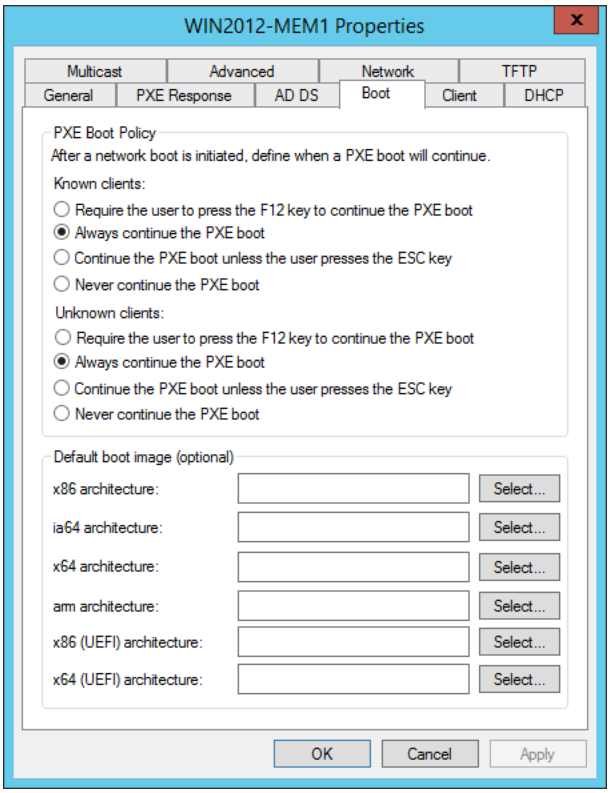
This only needs to be done if the Windows Deployment Services are running on different server than the Persystent Server. Boot file will be added automatically to Windows Deployment Services if it is on the same server as Persystent Server.

1. Launch Windows Deployment Services.
2. In the left pane expand **Servers**, expand the current server, and select the **Boot Images** folder.
3. Right click the **Boot Images** folder and select **Add Boot Image**.
4. In the **Add Image Wizard** click **Browse**:
    A. Browse to: **C:\Program Files\Utopic Software\Server\x64**.
    B. Select the **pewim.wim** image and click **Open**.
    C. Click Next.
    D. Change the **Image name** and **Image description** to **Persystent PE (x64)**, then click **Next**.
    E. Click **Next**, then click **Finish**.

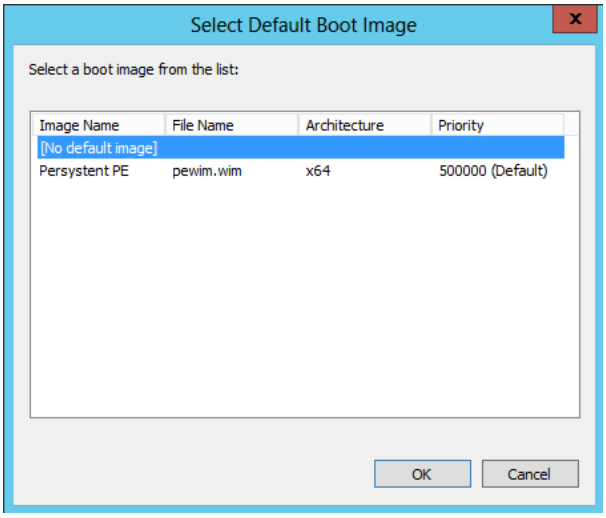
Configure Windows Deployment Services

Windows Deployment Services should be configured to answer all computers (known and unknown) for PXE boot. To perform this:

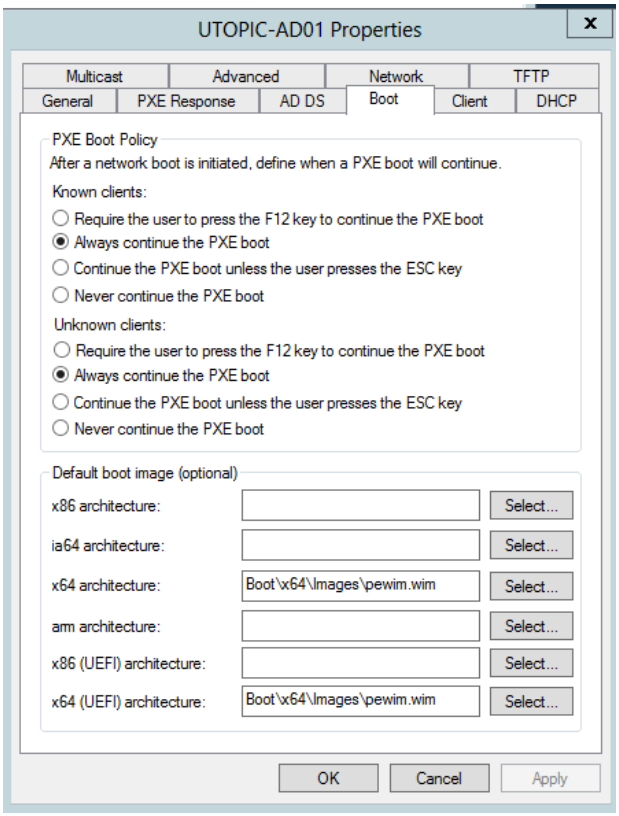
1. Launch Windows Deployment Services.
2. In the left pane expand **Servers** and right click on the desired server and select **Properties**.
3. Select the **Boot** tab.
4. Check the option **Always continue the PXE boot** for **Known clients** and **Unknown clients**.
5. (Optional) You can select Persystent Boot image as default image for "**x64 architecture**" and "**x64 (UEFI) architecture**".



6. Click on "**Select…**" button for **x64 architecture** and select the **Persystent PE** boot file and click **OK**.
7. Click on "**Select…**" button for **x64 architecture (UEFI)** and select the **Persystent PE** boot file and click **OK**.



8. Click **Apply** then **OK**.



9. Now the Persystent Server is configured to answer all PXE requests.