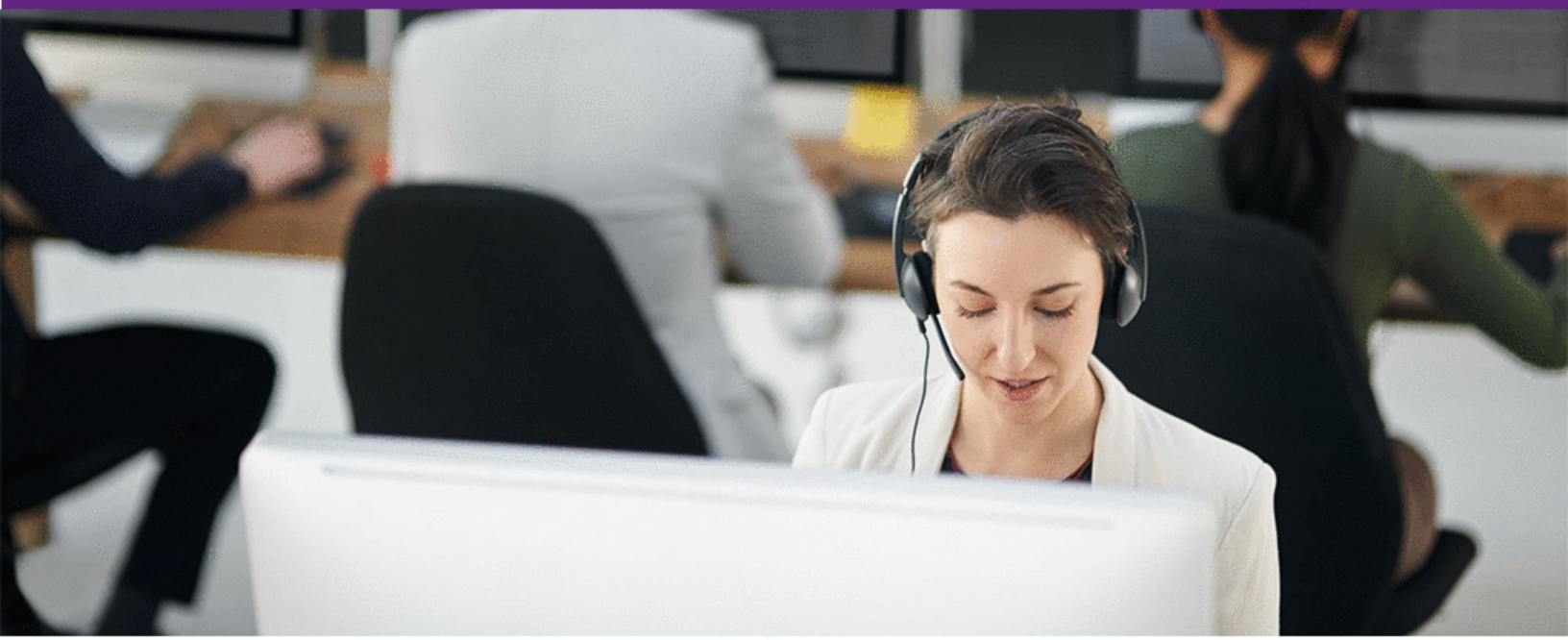
Avolin

# Verdiem Surveyor

**Version: 6.5.205**

## Installation Guide

**December 2019**



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# Contents

# 1

# About Surveyor

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| *Overview of Surveyor* |

# Overview of Surveyor

This section introduces Surveyor 6 and concepts related to the power management of Windows and Mac computers, and other devices.

Surveyor is a comprehensive power management solution that helps you manage the power states of computers and network-connected devices in a way that reduces energy consumption without disrupting work activity.

Surveyor measures, monitors, and regulates energy consumption of a variety of network devices from a central location, using a web-based administrator console.

- **Measure Costs:** For any device connected to the system, Surveyor can track the time spent in each power state and its energy usage. Surveyor can track Windows PCs, Macintosh computers.
- **Manage Energy:** The administration tools in Surveyor help you manage the power states of network-connected devices using direct commands and scheduled policies that you define to fit your organization's needs.
- **Optimize Savings:** Surveyor reports on the data it collects in useful charts and graphs that show device and user activity. In addition to energy consumption and savings reports, Verdiem provides a range of useful information to help manage your PC fleet.

## Surveyor Features

Surveyor provides the following key features:

| Feature | Description |
|---|---|
| Centralized administration | Centralized administration of device power states from a single, easy to use Web-based administrator console. |
| Agent-based power management | Agent-based, non-intrusive PC and Mac power management with minimal impact to end-users, business applications, or IT maintenance activity. |
| Direct device management | The ability to manage and control devices immediately via direct commands, or through policies and scheduled power schemes. |
| Usage data collection | The ability to collect actual usage information for computers to help you optimize intelligent power management policies. |
| Remote access and Wake on LAN support | Unhindered remote access to office computers and high performance Wake on LAN support for waking PC and Mac client agents. End users can wake Surveyor client agents from a remote location over the web and schedule strategic wake requests to work around scheduled maintenance windows. |
| Locations, energy rate schedules, and currencies | Support for multiple location that devices can be assigned to manually |

| Feature | Description |
|---|---|
| | or through auto-assignment rules. Each location can have associated energy costs (fixed or variable for TOU and intraday rates) in that location's currency. Reports reflect correct savings by automatically calculating local currencies exchange rates with the specified system currency. |
| Role-based security | Group-oriented administration with role-based security privileges. |
| Dashboards and Analytics reporting | Role-based dashboards provide actionable information on energy costs, C02 emissions, and asset inventory and health to key stakeholders. Summary reports can be emailed automatically on a scheduled basis. Analytics allow you to generate energy management and IT efficiency reports that dive-down into data based on group, location, and other categories of interest. |
| Device event reporting | Event reporting for analysis and optimization. Important events are recorded and reported to a central server. |

# Configuring Power Management in Surveyor

Power management is the ability to move devices into appropriate power states as demand requires.

A device in Surveyor can be a Windows PC or a Macintosh computer.

When devices first connect to Surveyor, they are automatically assigned the Baseline Data Collection policy. While a device uses this policy, data is collected to measure energy use and user activity; no power management settings are enforced.

Policies contain the following types of settings:

- **Scheduled power schemes** (PC and Mac only) that specify the amount of time of user inactivity before a device transitions to a lower power state. Each scheme can have a unique schedule.
- An unscheduled, **background power scheme** that runs 24/7 when no other power schemes are scheduled.
- **Scheduled power level changes** (such as wake, shutdown, sleep, or restart), each with a unique schedule. Power level changes apply to PC and Mac clients.
- **Wake up settings** for PC and Mac clients.
- **Logging and data collection settings** for PC and Mac clients.

Surveyor assigns policies manually or through assignment rules that you create. Each device can have only one policy assigned to it, but each policy can contain multiple schemes and power level changes, each with its own schedule.

**Note:** All power settings in policies apply to PC and Mac clients. For other types of devices, only scheduled power level changes apply. Surveyor collects data for all device types for reporting purposes.

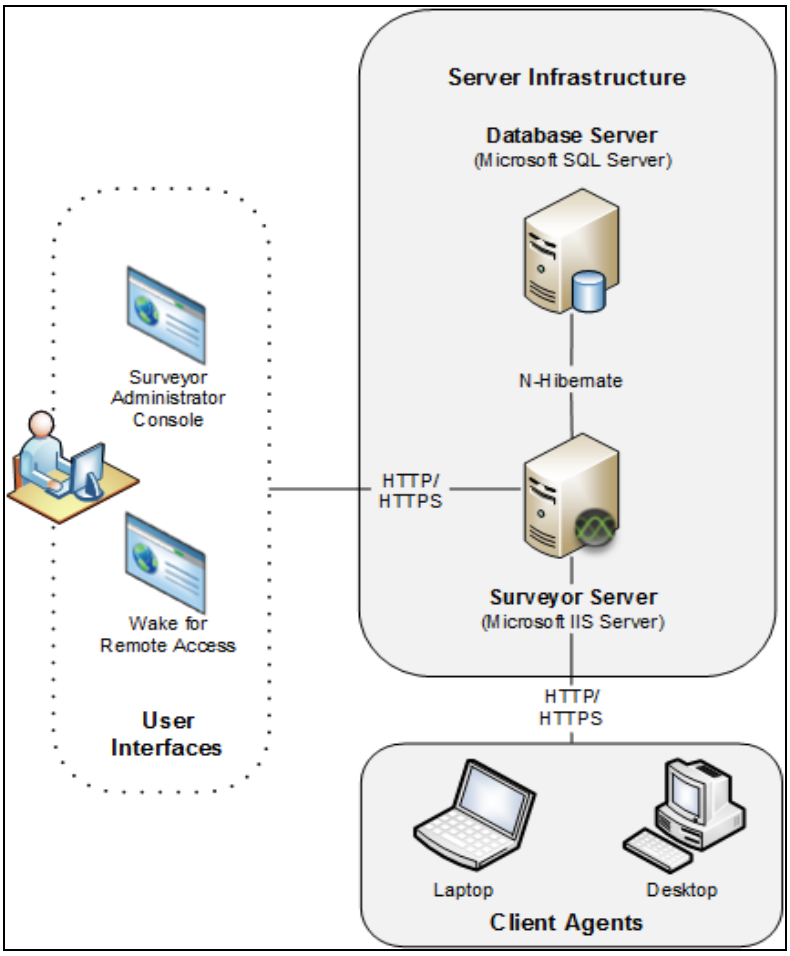
Devices can be assigned to administrative groups, either manually or through assignment rules that you create. Groups help you to organize devices logically and aid you in applying role-based permissions for delegated administration.

Devices can also be assigned to locations, which have associated currencies and energy rate schedules. For more details, see *Managing locations, energy rates, and currency Locations can be assigned for devices, along with energy rate schedules to help you more accurately track and report energy savings for devices*.

For general steps, see "Getting started with power management" in the *Surveyor 6 Administrator Guide*.

# Surveyor System Components

In a basic installation for PC and Mac power management, the Surveyor system comprises the following components:




| Component | Description |
|---|---|
| Surveyor Server | Manages policy distribution, sends power state change instructions to client devices, and captures data to send to the Surveyor database. |
| Database Server | A Microsoft SQL Server database that stores power state and other device data sent to the server. |
| Administrator Web Server | A computer running Microsoft IIS. The Administrator console is a web application hosted on an IIS server. You use the Administrator console to configure and schedule power state changes; add, arrange, remove, and monitor devices; manage and delegate permissions; and perform other management tasks. |
| Client Agents | Desktop and laptop Windows PC and Macintosh computers (referred to as clients or client agents) that receive and enforce power management instructions from the Surveyor server. |

# 2

# Preparing for the Surveyor Server Installation

**Table 2-1 In this Chapter**

| Topics |
| --- |
| *System Requirements* |
| *Server Installation Options and Prerequisite Software* |
| *Prepare the Environment for the Server Installation* |
| *Setting up the Database Environment* |

# System Requirements

This section provides steps to take to get your system ready for server installation. A typical installation includes the Surveyor server and database, Wake for Remote Access.

Review the following prerequisites and system requirements before beginning installation.

This section lists supported hardware, operating system, database, and software required for installing and running the Surveyor system. Latest patches are assumed throughout.

**Note:** For a single-server installation, supported versions of the operating system, IIS, and SQL Server software should be installed on the dedicated Surveyor Server.

With sufficient hardware, a single power management server can manage up to 70,000 devices.

## System Size and Scalability

Best practice is to dedicate the power management server to Surveyor and not to any additional critical services.

## Surveyor Power Management Server Components

The following table lists the supported system components for the Surveyor power management service, administrator console, and queue service.

Required components that are not already installed on the computer will be installed automatically as part of the server installation.

| | |
|---|---|
| Operating system | Microsoft Windows Server 2016<br>Microsoft Windows Server 2012<br>Microsoft Windows Server 2012 R2<br>Microsoft Windows Server 2008 R2<br>**Note:** Windows Server 2008 (non-R2) is not supported. |
| Web server | Microsoft Internet Information Services (IIS) 7.x must be enabled in Windows Server. |
| Software required for power management services | Microsoft .Net Framework 4.6.2<br>ActiveMQ 5.13.4 |
| Administrator console, Advanced Reporting, Wake for Remote Access web site | · Internet Explorer 8 or later OR Mozilla Firefox (current version) OR Google Chrome (current version) OR Apple Safari (current version) OR Edge . |

# Database Requirements

The power management server communicates with a Microsoft SQL Server database to store and retrieve client and power-state transition data for reporting.

| | |
|---|---|
| Supported versions | Microsoft SQL Server 2016<br>Microsoft SQL Server 2014<br>Microsoft SQL Server 2012<br>Microsoft SQL Server 2008 R2<br>Microsoft SQL Server 2014 R2 Express Edition (For evaluations only)<br>**Note:** Windows Installer 4.5 should already be installed on the server computer if you are planning to run a basic installation that uses SQL Server Express. |
| Database location | The database can reside locally on the Surveyor server computer or remotely on a separate computer. |
| Database storage space | 5 GB of hard drive storage space per 1,000 clients per year. |
| Features required to be enabled in the SQL server | • Database Engine Services<br>• Reporting Services - Native<br>• Management Tools |

# Surveyor Client Agent

The Surveyor client agent is supported on any of following operating systems.

- Windows 10 (x86 and x64)
- Windows 8.1 (x86 and x64)
- Windows 7 (x86 and x64)
- Apple Mac OS X versions 10.11 (El Capitan), 10.10 (Yosemite), 10.9 (Mavericks), 10.12.6 (Sierra) and 10.13.6(High Sierra).

# Server Installation Options and Prerequisite Software

When you run the Surveyor setup program, you can select a Basic or Advanced installation.

- *Install and Set up Server Components (Basic Installation) on page 3-2* installs all components required for the Surveyor server on a single computer. In addition to the Surveyor server and database components, a basic installation includes Wake for Remote Access.

  Components are installed in standard default locations; for example, Program Files\Verdiem\Surveyor on the local computer. The default port 80 is assigned for http communications.

  A basic installation best suits typical small- to medium-sized networks with centralized administration.

- The *Install and Set up Server Components (Advanced Installation) on page 3-4* provides options for you to specify or confirm location and service account details for the Surveyor server and database.

  The advanced installation gives more flexibility in enterprise-level networks, in which you want to host any of the Surveyor components on separate computers, or connect to a remote database.

  Installing components on separate computers may require some manual post-installation configuration. The topic*Install and Set up Server Components (Advanced Installation) on page 3-4* indicates where this configuration is needed.

## Prerequisite Software

In addition to the standard system requirements, some Surveyor server components require additional software, all of which are included in the installation process (if not detected).

- The Microsoft .Net 4 Framework (Full Version). The Administrator console requires Microsoft .Net 4 Framework (Full Version ) and IIS 7.0 running on Windows Server 2008, IIS 7.5 running on Windows Server 2008 R2, or IIS 8 and above running on Windows Server 2012 R2.
- Microsoft SQL Server 2016, 2014, 2012, or 2008 R2. If Microsoft SQL Server is not already installed, the installation automatically installs Microsoft SQL Server 2014 Express.
- ActiveMQ 5.13.4 is required for the power management service, administrator, and enterprise power management processor components.

# Additional Server Configuration Requirements

If Windows Firewall is enabled on the Surveyor server computer, and you will use web-based components, such as the Wake for Remote Access, you may need to configure the firewall to allow those components to access it.

For information, see *Configure Windows Firewall to Allow Web Components to Access the Server on page 3-13* .

# Server Installation Components

The following table lists the components that are part of the server installation process, along with the names of the Windows or web services that are installed with each component.

For more information about permissions required and information needed for the installation program, see *Permissions Required for Installation and Deployment on page 1*.

| Component | Service name & type | Description |
|---|---|---|
| Power management service | PMPService (web) | Service that communicates power management activity between managed devices and the database, and between devices and server. |
| Surveyor database | SQL Server database (outside of Surveyor) | Database that stores power-state and user-activity data.<br>Requires SQL Server 2016, 2014, 2012, or 2008 R2. Advanced installation options prompt for database server, name, instance, and authentication method.<br>Windows Installer 4.5 is required on the server computer if you are planning to run a basic installation that uses Microsoft SQL Server Express.<br>For additional database requirements, see *Setting up the Database Environment on page 2-11*. |
| Administrator API and Administrator console | Admin (web)<br>AdminUI (web) | The web server API and administrator console that runs on top of it. Requires Microsoft .Net Framework 4.0 (Full Version) and IIS. |
| Enterprise power management processor | Verdiem Surveyor Task Processor (Windows) | Windows service that performs many critical power management server functions. This is required if you install the power management service (PMP). |
| Power management queue service | Verdiem ActiveMQ (Windows) | Enables asynchronous messaging between the Administrator API and the PMP (essentially between server and clients). Requires ActiveMQ 5.13.4, which is installed if it isn't detected. |

| Component | Service name & type | Description |
|---|---|---|
| Analytics reporting engine | SQL Server Reporting Services (SSRS) | The SSRS Server processes the data queries which the Advanced Reporting Web Services then turns into charts, graphs, PDFs, and other results visible in Dashboards and Analytics reports. |

# Website Files and Virtual Directories

The installer creates the following IIS virtual directories for the components that you install:

- Admin: Administrator API
- AdminUI: Administrator console
- Dashboard: Dashboard reports
- PMPService: Power Management Processor
- WRA: Wake for Remote Access

# Permissions Required for Installation and Deployment

To install and run the Surveyor system, you need to confirm the necessary user accounts and permissions for the services that are installed.

## Creating User Accounts for Surveyor

Each service installed with Surveyor runs under a user account. The permissions for the user account must be configured to allow the service to access other components of the Surveyor system.

In general, Surveyor services require local administrator permissions on the computer on which they're installed. However, instead of using the computer's local system account or an administrator account that is also someone's personal account, it is more secure and useful for troubleshooting to create a user specifically for running Surveyor components.

## Services Installed with the Server Setup Program

The Surveyor setup program installs a number of services. Two of these are Windows services that run on the power management server; the others are web services that run through IIS. Frequently the power management and web servers will be hosted on the same computer, as is the case if you choose the Typical installation path in the Surveyor setup program.

For the Typical installation path, default options are used, and all components are installed on the same computer. The Surveyor IIS application pool runs under the network account, the Enterprise Power Management Processor runs under the local system account, and the IIS default web site is used with all of its default settings. The web services (PMPService and Admin) run under the identity of the application pool.

If you select the Advanced path, you can install individual components and specify users that run the services.

The following table lists the services installed and the permissions needed for each.

| Service | Permissions Needed |
|---|---|
| Admin web service | • The equivalent of local administrator permissions on the server, as well as on the computers that run the Administrator console.<br>• Additional administrative permissions for performing power management tasks on client agents are configured in roles in the Surveyor Administrator console. |
| Verdiem Surveyor Task Processor (background power management | Permission to run as a Windows service. |

| Service | Permissions Needed |
|---|---|
| processor) | |
| PMPService (power management processor web service) | • The equivalent of local administrator permissions on the power management and web servers.<br>• The equivalent of local administrator permissions on the power management and web servers.<br>• data_reader and data_writer permissions on the power management database in SQL Server. |
| Verdiem ActiveMQ (message queueing) service user | Permission to run as a Windows service. |

## Permissions Required for Wake for Remote Access

| Service | Permissions Needed |
|---|---|
| WRA (Wake for Remote Access web service) | Must be a member of a Surveyor security role that has **Change Device State** and **Wake** permissions on all relevant security groups that are set up in the Administrator console. |

# Prepare the Environment for the Server Installation

Before you run the Surveyor server installation program, take these steps to make sure software pre-requisites are met and the installation itself can run smoothly.

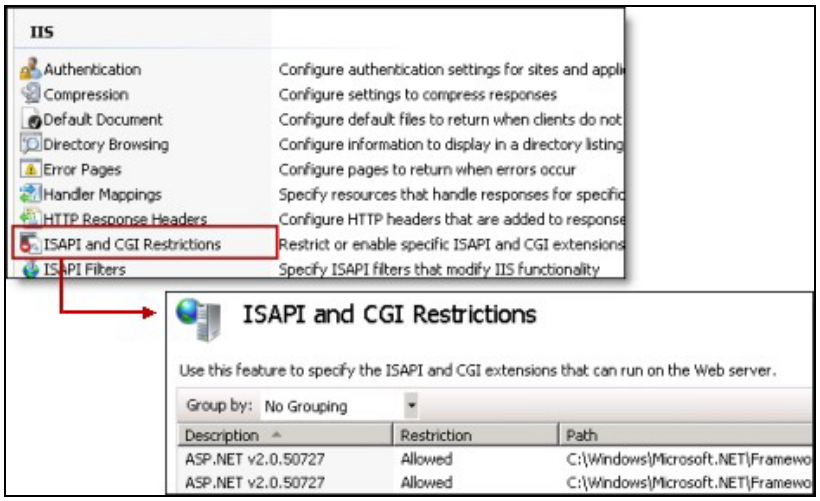
1. Identify the dedicated computer or VM you are planning to use for the server, and confirm that it is configured to meet installation requirements.

   - Minimum 4GB of RAM, 80GB of free hard disk space with a reasonably fast processor (ideally with a minimum of 2 processors or cores).
   - Supported operating system, web server, and SQL Server software.

     SQL Server 2014 Express Edition is supported for evaluations. Production use of Surveyor requires SQL Server Standard Edition or other licensed editions.

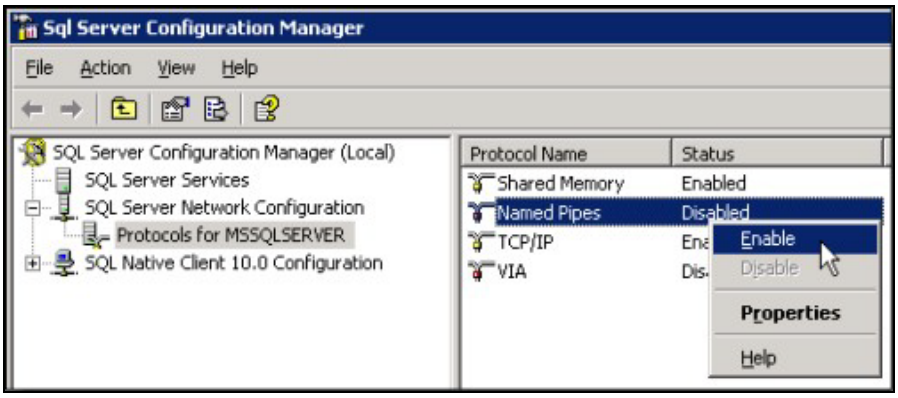
2. Log in to the Surveyor server computer as a user that is a member of the Local Administrator group.
3. Windows Server 2008 systems: Add the appropriate Windows components for IIS 7 and ASP.NET, as described in Deploying an ASP.NET Server (IIS 7) on Microsoft TechNet.s
4. Open IIS Manager, and allow ASP.NET v2.0.50727.

   IIS 7: Select the server home, double-click **ISAPI and CGI Restrictions**, and then allow **ASP.NET v2.0.50727**.




5. Enable named pipes on the database server:

   a. Open the SQL Server Configuration Manager, navigate to Protocols for **MSSQLSERVER**, and enable **Named Pipes**.




b. Restart the SQL Server from the command line:

net stop mssqlserver and net start mssqlserver

6. If Windows Firewall is enabled on the server, add an exception to allow incoming traffic from Surveyor components.

- In the Control Panel / Windows Firewall, click the **Exceptions** tab, and add TCP port 80 for power management components.

  For detailed steps, refer to the Microsoft TechNet topic Add a Port to the Firewall Rules List.

# Setting up the Database Environment

This topic describes common power management database configurations and suggestions for when to use each.

To start, you need to decide where to host the database. If your overall deployment is relatively compact, you might put it on the same computer as the server. More commonly, though, the database resides on a separate server maintained by a database administrator.

## Using a Local Database

If the server will host both the database and the Surveyor server, the most straightforward option is to log in as a local administrator, and have the Surveyor installer create the database during installation.

However, if you decide to create a user for Surveyor, make sure that the user has the appropriate database permissions. See *Using a remote database* for more information.

## Using a Remote Database

You can host the power management database on a separate computer, either on the same domain or across domains. If you will be using a remote database, you can create and configure the database independently before or after you install Surveyor, or the installer can create the database during installation.

- Creating the database during installation

  The database administrator (DBA) grants permissions on the SQL server to allow the user running the Surveyor installation program to create a new database. During installation, the account that is specified with access to the database must have sys_admin rights to the database server. After installation, the DBA can reduce permissions for that user to db_owner for ongoing administration.

  **Required permissions:** The user must be a member of the **dbcreator** role during installation. After installation, the minimum permissions required are db_datareader and db_datawriter. To create a dbcreator role, refer

- Creating the database independently of installation

  If a DBA creates the database separately, use either of these options to configure it:

  - Create it before installation, and the user installing Surveyor points to it during installation. The setup program then creates and configures the database tables for Surveyor.

    **Required permissions:** During the installation/upgrade, the account used to access the database must have db_owner and sys_admin rights. The sysadmin rights can be removed after the install. The db_owner rights can be limited to the Surveyor database.

- The DBA creates and configures the database before or after the installation, so that the installer does not touch the database server. During installation, database credentials are entered so that the installation program can write the proper settings to the configuration files.

  The required SQL script for creating the tables for Surveyor is included in the distribution package.

**Important:** If you choose to have your DBA pre-create the database prior to installing Surveyor, the DBA will need to run the EnterprisePowerManagementDB.sql against the new database. This script is located in the distribution package in the Surveyor6xx\Surveyor Server\Resources\Database folder. You will see three SQL scripts in this folder, however only the EnterprisePowerManagementDB.sql needs to be run.

# 3

# Installing and Managing the Surveyor Server Components

**Table 3-1 In this Chapter**

| Topics |
| --- |
| *Install and Set up Server Components (Basic Installation)* |
| *Install and Set up Server Components (Advanced Installation)* |
| *Manually Deploy Reports* |
| *System Settings and Descriptions* |
| *Reporting Settings* |
| *Uninstall or Change the Server Configuration* |
| *Configure Windows Firewall to Allow Web Components to Access the Server* |

# Install and Set up Server Components (Basic Installation)

When you run the Surveyor setup program, you can select a default or custom installation. This section gives an overview of the components that you can choose to install with the Surveyor system and the prerequisites for installation. It also steps through the installation process itself.

A Surveyor installation includes the Surveyor server and database, SSRS (for Advanced Reporting), Wake for Remote Access, all installed on the same computer. All required components that are not already installed on the computer will be installed automatically as part of the server installation.

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**Important:** Ensure SQL Server Reporting Services (SSRS) is configured before you begin Surveyor installation. For information about SSRS configuration, see the *Surveyor Reports Configuration Guide*.

---

1. Log on to the server computer as a user that is a member of the Local Administrator group, and then navigate to the distribution folder.
2. Run **SurveyorServerSetup.exe**.

   If an existing version of the Surveyor server (version 6.0.502 or later) is detected, the installation will indicate the components to be upgraded. Click Upgrade **Surveyor Server**, accept the end user license agreement, and then click **Begin Upgrade** to proceed. If you are upgrading, you won't need to follow the rest of the steps in this topic.
3. Click **Continue with Basic Install**.
4. Proceed through accepting the license agreement, and then click **Begin Install**.

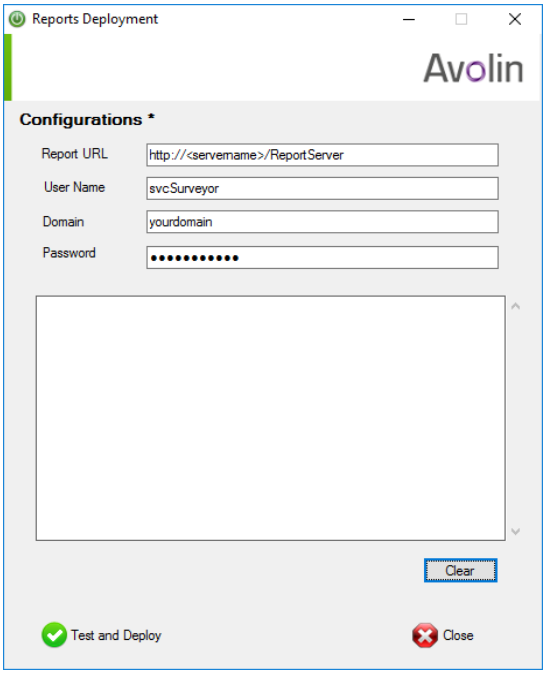
   For other details about the Default installation settings, see *Server Installation Options and Prerequisite Software on page 2-4*.
5. Do one of the following:

   - If an existing report deployment is found, the installer will automatically update the reports. Go to step 9.
   - If there is no existing report deployment, the reports need to be manually deployed. Go to step 6.
6. After installation completes, click **Manually Deploy Reports in SSRS Server**.

   The **Reports Deployment** window opens.
7. Enter the following information in the **Reports Deployment** window.

- **Report URL**: URL of the report server
- **Username**: A user name of the reporting server with appropriate access permissions.
- **Domain**: Domain of the reporting server.
- **Password**: Password associated with the user name of the reporting server.

The following is an image of the **Reports Deployment** window.




8. Click **Test and Deploy**.

After testing and deploying reports, the **Reports Deployment** window closes.

**Note:** If you need to deploy reports manually, see *Manually Deploy Reports on page 3-6*.

**Note:** You may have a server setup where the Surveyor database and SQL Server Reporting Services (SSRS) are hosted on two different servers. If this is the case, see *Advanced Reports Deployment on page 16*.

9. Click **Close Setup Wizard and Open the Surveyor Administrator Console** and begin configuring Surveyor.

**Note:** Check the logs to verify if the installation is successful.

# Install and Set up Server Components (Advanced Installation)

The advanced options for installing Surveyor provide options for remote administration.

This procedure assumes the following:

- You have followed the steps appropriate for your organization in *Prepare the Environment for the Server Installation on page 2-9*, and you have the web site and database connection information.
- You have created any user accounts you need to run the Surveyor services.
- You have configured SQL Server Reporting Services (SSRS). For information about configuring SSRS, see the *Surveyor Reports Configuration Guide.*

**Note:** If you install all of the components on one computer, you do not need to perform these extra configuration steps manually, because they are completed by the setup program.

1. Log on to the server computer as a user that is a member of the Local Administrator group, and then navigate to the Surveyor distribution folder.
2. Run **SurveyorServerSetup.exe**.

   If an existing version of the Surveyor server (version 6.0.502 or later) is detected, the installation will indicate the components to be upgraded. Click **Upgrade Surveyor Server**, accept the end user license agreement, and then click **Begin Upgrade** to proceed. If you are upgrading, you won't need to follow the rest of the steps in this topic.
3. Click **Set Advanced Install Options**.
4. Select the service account and database connection, and then click **Continue with Advanced Install Options**.
5. Select the installation path, and then click **Continue with End User License Agreements**.
6. Read and accept the agreements for the Surveyor server and then click **Begin Install**.

   A full Surveyor installation includes the Surveyor server and database, SSRS (for Advanced Reporting), Wake for Remote Access, all installed on the same computer. All required components that are not already installed on the computer are also installed automatically.
7. Do one of the following:
   - If an existing report deployment is found, the installer will automatically update the reports. Go to step 11.
   - If there is no existing report deployment, go to step 8.

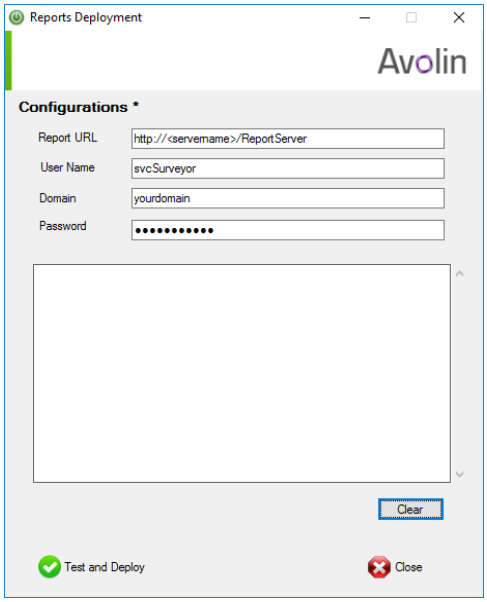
8. After installation completes, click **Manually Deploy Reports in SSRS Server**.

   The **Reports Deployment** window opens.

9. Enter the following information in the **Reports Depoloyment** window.

   - **Report URL**: URL of the report server.
   - **Username**: A user name of the reporting server with appropriate access permissions.
   - **Domain**: Domain of the reporting server.
   - **Password**: Password associated with the user name of the reporting server.

   The following is an image of the **Reports Deployment** window.




10. Click **Test and Deploy**.

    After testing the connection and deploying reports, the **Reports Deployment** window closes.

> **Note:** If you need to deploy reports manually, see *Manually Deploy Reports on the next page*.

> **Note:** You may have a server setup where the Surveyor database and SQL Server Reporting Services (SSRS) are hosted on two different servers. If this is the case, see *Advanced Reports Deployment on page 16*.

11. Click **Close Setup Wizard and Open the Surveyor Administrator Console** and begin configuring Surveyor.

> **Note:** Check the logs to verify if the installation is successful.

**Note:** If the administrator console does not open, you may need to enable ASP.NET in IIS. For details, see Administrator console does not open in the browser.

**Note:** To open the Surveyor administrator console: From the Windows Start menu, click All Programs > Verdiem > Surveyor Administrator.

If you have granted db_creator or equivalent permissions to the user running the Surveyor installer, you can reduce those permissions. If the user is also the user that will run the service, minimum required permissions are db_datareader and db_datawriter.

In addition, if you install individual server components on separate computers, you need to do some additional manual configuration.

# Manually Deploy Reports

This section contains information about manually deploying reports. This can be done using two different methods.

- **Deploy**: The existing reports are removed and a fresh deployment is done. For information about deploying reports, see *Deploy reports below*.
- **Upgrade**: The existing credentials and connection details are retained and the reports are re-deployed. For information about upgrading reports, see *Upgrade Reports on page 1.*

## Deploy reports

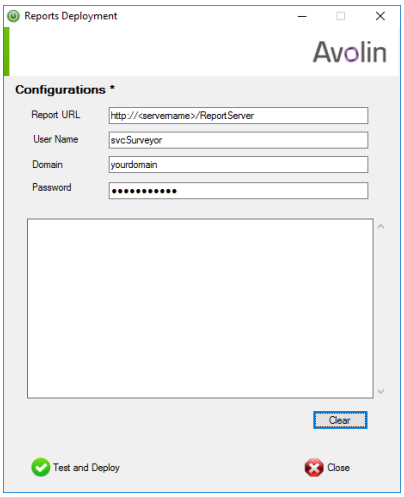
This section contains information about deploying reports.

**To deploy reports**

1. Go to **C:\Program Files (x86)\Verdiem\Surveyor\Reports**
2. Run the **DeployReports** application.

   The **Reports Deployment** window opens.
3. Provide URL and credentials for the SQL server reporting service.
4. Enter the following information in the **Reports Deployment** window.
   - **Report URL**: URL of the report server.
   - **Username**: A user name of the reporting server with appropriate access permissions.
   - **Domain**: Domain of the reporting server.
   - **Password**: Password associated with the user name of the reporting server.

   The following is an image of the **Reports Deployment** window.




5. Click **Test and Deploy**.

   A success message appears after the reports are successfully deployed.

**Note:** You may have a server setup where the Surveyor database and SQL Server Reporting Services (SSRS) are hosted on two different servers. If this is the case, see *Advanced Reports Deployment on page 16*.

# Upgrade reports

This section contains information about upgrading reports.

**To upgrade reports**

1. Open command prompt.
2. Type `<installed location>\Verdiem\ Surveyor\Reports`.

   For example: C:\Program Files (x86)\Verdiem\Surveyor\Reports

2. Run the command `DeployReportsConsole.exe update`.

**Note:** If the deployment fails, details of the deployment failure can be found under **C:\Users\<user>\AppData\Local\Verdiem Corporation\Server Install Logs\Reports_Deploy.log**.

# System Settings and Descriptions

The table in this topic contains settings from Configure Server Settings page.

## Display the server settings

To access the settings, in the Surveyor Administrator console, on the Configure menu, click System Settings.

## System Settings

These settings originate at the server and affect anyone using the Administrator console, whether locally or remotely.

| Setting | Description |
|---|---|
| Maximum number of devices returned per view | Sets the maximum number of devices to display in device lists or reports, given the currently selected group or search parameters.<br>A status message on the Devices page indicates the number of devices being shown in the current tab. If more devices exist than those that appear in the list, the status message also indicates the total number of devices.<br>**Recommended setting:** The same number as the number of devices in your largest Surveyor group.<br>**Note:** Setting this to a large number of devices (thousands) might affect viewing or browsing performance. |
| When Surveyor wakes devices | **Batch devices into sets of *X***<br>The number of clients to wake in one batch. Each subsequent wake batch is sent after the specified number of seconds. The default value is 500 clients.<br>**Wait *X* seconds before sending next request**<br>The number of seconds to wait after sending a wake job before sending the next one. This parameter takes effect if you set the wake batch size to a number that's less than the total number of clients to wake. The default value is 60 seconds. |
| Devices should check in every X minutes | The amount of time that the client device waits before checking with the server again for power-state updates. The default value is 10 minutes. |
| Number of computers to keep awake as Wake on WAN proxies | The number of PC clients in each subnet to keep awake at all times to receive magic packet requests from the server and relay them to the other clients in their broadcast segment. This setting takes effect only if you enable Wake on WAN. By default, this is set to 0 proxies.<br>It is preferred to set this as 2 proxies. |
| Keep detailed diagnostics device | The number of days that data on device diagnostic events are stored. The default is 7. |

| Setting | Description |
|---|---|
| data for X days | |
| Keep device wake job data for X days | The number of days that data on client wake jobs are stored. Storing wake job data for 1 month is usually sufficient for troubleshooting purposes. The default is 45 days. |
| Keep detailed reporting device data for X days | The number of days for which historical reporting data on devices is stored. The default is 2000. Keeping historical data improves the information available for device-specific reports. |
| Keep detailed hourly reporting device data for X days | The number of days that detailed hourly data on client reporting data is stored. Storing reporting data improves the information available for device-specific reports. The separate setting for reporting device data allows for lower granularity data to be retained for a longer period, lessening the data storage impact. The default is 60 days. |
| Keep detailed print data for X days | The number of days that detailed data on printer usage are stored. The default is 90 days. |
| Keep summarized print data for X days | The number of days that summarized data on printer usage are stored. The default is 2000 days |
| Reclaim licenses for inactive devices after X days | The number of days since last check in after which a device's license can be claimed for use by a different device. The default is 30 days. |
| Policy assignment rules run | Specifies when assignment rules will and can run: On each connection and on demand, On first connection and on demand, Only on demand. |
| Group assignment rules run | Specifies when assignment rules will run: On each connection and on demand, On first connection and on demand, Only on demand. |
| Location assignment rules run | Specifies when assignment rules will run: On each connection and on demand, On first connection and on demand, Only on demand. |

# Browser Cookie Settings

When you use the Administrator console remotely, you can set some display behavior on your own computer, without affecting others using the console.

| Setting | Description |
|---|---|
| Hide unlicensed devices in device lists | When selected, unlicensed devices are hidden in devices lists. |
| Number of devices returned per view | **Use server default setting**<br>When selected, Surveyor uses the system setting for **Maximum number of devices returned per view** (described above).To specify a local preference for the Administrator console (saved in a cookie for the current browser session), select **Return** and then specify a different number. |

| Setting | Description |
|---|---|
| | **Note:** Setting this to a large number of devices (thousands) might affect viewing or browsing performance. |

# Default baseline section

The default baseline settings determine the baseline values that are used by default for individual devices. To change a device's baseline settings, see *Set the Baseline Value for a Device on page 7-5*.

| Setting | Description |
|---|---|
| System is On | Percentage of time during a reporting period in which a computer was on. |
| System is Off | Percentage of time during a reporting period in which a computer was on. |
| Display is On | Percentage of time during a reporting period in which a display was on. |
| Display is Off | Percentage of time during a reporting period in which a display was off. |
| System is Asleep | Percentage of time during a reporting period in which a computer was asleep. |

# Reporting Settings

To access the settings:

1. In the Surveyor Administrator console, on the Configure menu  , click **Reporting Settings.**
2. Click **Units and Email Settings.**

| Setting | Description |
|---|---|
| CO2 units | Configures what units are used in Advanced Reporting for carbon dioxide emissions.<br>The available options are:<br>• Kilograms<br>• Pounds<br>• Tons<br>• Metric Tons |
| Gasoline units | Configures what units are used in Advanced Reporting for gasoline.<br>The available options are:<br>• Liters<br>• Gallons |
| One passenger vehicle generates X kilograms of CO2 in one year | Configures how carbon dioxide savings are used to display equivalent savings for passenger vehicle fuel consumption, used in Advanced Reporting. The EPA provides metrics that can be used to compute these values at http://www.epa.gov/cleanenergy/energy-resources/refs.html. |
| One tree seedling sequesters X kilograms of CO2 in one year | Configures how carbon dioxide savings are used to display equivalent savings for carbon sequestration by trees, used in Advanced Reporting. The EPA provides metrics that can be used to compute these values at http://www.epa.gov/cleanenergy/energy-resources/refs.html. |
| One liter of gasoline generates X kilograms of CO2 | Configures how carbon dioxide savings are used to display equivalent savings for gasoline savings, used in Advanced Reporting. The EPA provides metrics that can be used to compute these values at http://www.epa.gov/cleanenergy/energy-resources/refs.html. |
| Configure email server settings | Configures the server settings of Surveyor email reports. |
| Configure email report distribution | Configures the report distribution of Surveyor email reports. |

# Uninstall or Change the Server Configuration

Use **Add or Remove Programs** in the Windows Control Panel to uninstall or change Surveyor server components.

This starts the setup .msi file and gives you the appropriate options for the components installed. Run this process on each computer that hosts a Surveyor component that you want to uninstall or change.

# Configure Windows Firewall to Allow Web Components to Access the Server

If you use Surveyor components that access the server through http, and Windows Firewall is enabled on the server, make sure TCP port 80 is added to the exceptions list. If an SSL connection is used, enable port 443.

You would need to access the server through http if you do any of the following:

- Enable Wake for Remote Access for your end users to wake their computers from home or another off-site location.

  Wake for Remote Access is an add-on component that comes with Surveyor. For information see the Wake for Remote Access Guide.

- Administer the server from a remote computer; for example, as you would if you set up delegated administration.

1. On the server computer, navigate to **Windows Start menu / Control Panel / Windows Firewall**.
2. On the **Exceptions** tab, click **Add Port**.
3. In the Add a Port dialog box, do the following:
   a. Type a name that indicates that the exception is for power management components. (This name appears in the exceptions list.)
   b. Specify port 80.
   c. Select TCP.
4. Click OK, and then click OK in the Windows Firewall dialog box.

For additional information, refer to the Microsoft TechNet topic Add a Port to the Firewall Rules List.

# 4

# Surveyor Client Distribution

**Table 4-1 In this Chapter**

| Topics |
| --- |
| *Install the Surveyor Windows Client Agent from the Setup Program* |
| *Install or Uninstall Surveyor Windows Agent from the Command Line* |
| *Install Surveyor Mac Agent* |
| *Distribute the Surveyor Windows Client Agent by Disk Image* |
| *Deploy the Surveyor Windows Client Agent using Group Policy* |
| *Distribute the Surveyor Windows Client Agent through a Microsoft ConfigMgr Package* |
| *Managing Client Agent Software Upgrades* |

# Install the Surveyor Windows Client Agent from the Setup Program

This section contains information for command-window installation of the client agent and some common ways to distribute the Surveyor Windows client software to a large number of computers. If you use a management system that is not covered here and would like some help, feel free to contact Technical Support

To use the setup program, you need to know the address of the Surveyor server computer and have access to the Surveyor distribution media.

This procedure describes how to run the installation program on the Windows client computer directly. When you want to use your standard software distribution process, use the procedure for running a silent installation. For information, see *Install or Uninstall Surveyor Windows Agent from the Command Line on page 1*.

1. On the client computer, log in as a local administrator and copy the Surveyor client distribution files from the distribution media to the client computer.
2. Run the setup file **SurveyorAgentSetup.exe** and follow the instructions in the installation wizard. In the wizard pages, note the following:
   a. On the Installation Configuration page, you must replace <*servername*> with the correct address of the Surveyor server.
   b. On the same page, leave the **Add Avolin as a trusted publisher** check box selected.
3. Click **Install** to continue.

# Install or Uninstall Surveyor Windows Agent from the Command Line

This topic provides the command line parameters for installing or uninstalling the agent software for Windows clients.

## Installation Process

This procedure describes how to run the silent installation on the client computer directly. You can use this same command with your standard software distribution process to push the client agent to multiple computers.

1. Copy the files for the client distribution to a location on the client computer.
2. To run the silent installation, open a command window, change to the directory that contains the setup file, and then type the following command:

   ```
   SurveyorAgentSetup.exe /s /v"/qn PMP_
   URL=http://SurveyorWebServerName/PMPService/PMPService.svc/PMP"
   ```

   **Note:** There is no space between the /v parameter and the opening quotation mark. Adding one will cause the installation to fail.
   If you are creating a SCCM ConfigMgr package for the agent installation, there is a limitation of 171 characters in the command line argument. As a workaround, you can create a BAT file for the SCCM package to reference.

   Or, use the .msi file directly:

   ```
   Msiexec.exe /i [PATH TO Surveyor Agent.msi FILE] /qn PMP_
   URL="http://<SERVERNAME>/PMPService/PMPService.svc/PMP"
   ```

3. If you want to create an installation log file, add the **/log** parameter with the **/qn** parameter and specify the location. For example:

```
SurveyorAgentSetup.exe /s /v"/qn [other parameters] /log setup_
log.txt"
```

A reliable location for setup_log.txt is the same directory as the setup file. However, you can add the path to another location and file name. Either way, the directory that you specify must exist on the client computer.

# Confirming Client Distribution Success

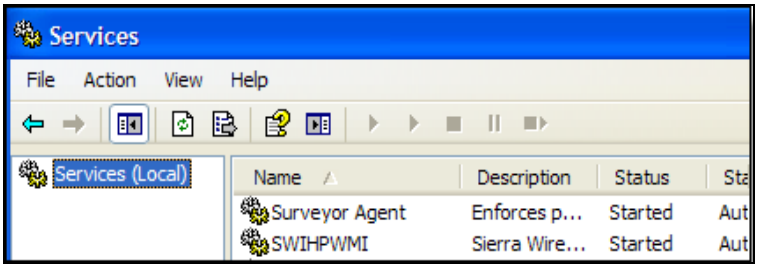
If you installed the client agent by sending a distribution package from your desktop management system to a large number of computers, verifying its success is usually a two-phase process:

- After the package runs, you can check the reports in the desktop management system to confirm that it ran successfully.
- After a week or two, use the Surveyor Administrator console to view the number of computers that are checking in with the server and the number of licenses that are used.

## Troubleshooting Windows-Based Clients

If it looks as if a computer is not checking in properly, check that the client agent is running on that computer:

1. On the client computer, open the Windows Services console: **Click Start menu / Run**, and type *services.msc*.
2. Confirm that the status of the Surveyor Agent shows **Started**.




# Parameters and Descriptions

For a standard silent installation, common parameters include:

- **/s —** silences the setup.exe file.
- **/v"[attributes]" —** passes everything inside the quotations to the setup application.

> **Important:** There is no space between the /v parameter and the opening quotation mark. Adding one will cause the installation to fail.

- **/qn —** used inside the quotations of the /v parameter to silence the .msi application. You can pass additional attributes, including:

  **INSTALLDIR=\"[path]"** — specifies the parent directory in which you want to install the client application files on the client computer. The default is C:\Program Files\Verdiem\Surveyor Agent. **Optional parameter**.

  **INSTALLCERTIFICATE=yes** — sets Avolin as a trusted publisher. **Optional parameter**. The default is yes.

  **PMP_URL=[url]** — specifies the web address to the PMP service on the Surveyor server. **Required parameter**.

  **DATA_COLLECTION_DIR=\"[path]"** — specifies the directory where historical data and service logs should be stored (if you need it to be different than default). **Optional parameter**. Available in Surveyor 6.1.0 and later.

# Uninstalling the Windows Client Agent

You can uninstall the agent from the Add/Remove Programs component of the Windows Control Panel on the client computer, or you can use the following command from the client's distribution directory:

```
msiexec /q /x "Surveyor Agent.msi"
```

If you did not copy the distribution files to the client, you can run a silent uninstall by using the product code in the registry instead the .msi file name.

For example:

```
mxiexec /q /x {387C6048-ABD5-4862-9DF7-711AABE561BB}
```

In this example the x characters represent the product code.

# Command Line Parameters Available for Surveyor Agent Installation

When running a command line install the following properties can be passed in via the /qn switch.

**Note:** INSTALLDIR and path names with spaces must be delimited by \"\".
For details on used in client installations prior to Surveyor version 6.0.4xx, please see the KnowledgeBase on www.verdiem.com or contact Verdiem support.

| Property | Description |
|---|---|
| INSTALLDIR | The parent directory for the install. The default is *C:\Program Files\Verdiem\Surveyor Agent*.<br>**Optional** |
| INSTALLCERTIFICATE | If Yes, Avolin is added as a trusted publisher. Useful if you are planning to use PSTM scripts. Default is Yes.<br>**Optional** |
| DATA_COLLECTION_DIR | Specifies the directory where historical data and service logs should be stored (if you need it to be different than default). Available in Surveyor 6.1.0 and later.<br>**Optional** |
| PMP_MAX_BACKOFF | The maximum back off time in minutes used when the agent cannot reach its PMP server. The default is 15 minutes. |
| PMP_URL | The URL for the PMP web service; for example, *http://<yourserver>/verdiemws/PMPService.svc/PMP*.<br>**Required** |
| REINSTALL | A Microsoft property used for upgrade installs.<br>**Optional** |
| REINSTALLMODE | A Microsoft property used for upgrade installs.<br>**Optional** |

# Install Surveyor Mac Agent

This topic provides an overview and step-by-step descriptions of commands you use to install the Surveyor agent package (**SurveyorAgent.pkg**) and update the **serverconfig** file. You can use these steps in the command window or within an installation script that you create.

The procedures here assume you have read *Installation Files for the Surveyor Mac Client on page 4-10* and that you have Administrator-level permissions on the Mac client computers.

Use the included **updateinstallerconfig.pl** script to recreate the package with customized **serverconfig** information.

**Note:** The SurveyorAgent.pkg can be installed on Mac OS X 10.12, 10.11, 10.10, and 10.9. The updateinstallerconfig.pl script runs only on Mac OS X 10.12, 10.11, 10.10, and 10.9.

## Install the Mac Agent Using the updateinstallerconfig.pl Script

For this procedure, you open the package, insert the server hostname into the **serverconfig** file, re-create the package, and then install it.

**Note:** The **updateinstallerconfig.pl** script runs only on Mac OS X 10.12, 10.11, 10.10, and 10.9.

### Command Overview

```
sudo perl ~/Desktop/updateinstallerconfig.pl --hostname yourserver --package ~/Desktop/SurveyorAgent.pkg
```

```
sudo installer -pkg ~/Desktop/SurveyorAgent.pkg -target /
```

where *yourserver* is the hostname of the Surveyor server.

**Note:** */Desktop* can be whatever location you have copied **updateinstallerconfig.pl** to.

### Step-by-Step Description

1. On the Mac client, open a command window and type the command to open the package and insert the Surveyor server name:

```
sudo perl ~/Desktop/updateinstallerconfig.pl--hostname yourserver --
package ~/Desktop/SurveyorAgent.pkg
```

For example:

```
sudo perl ~/Desktop/updateinstallerconfig.pl--hostname
lab.verdiem.local --package ~/Desktop/SurveyorAgent.pkg
```

For Mac agents, use the following command line to configure the package for HTTPS:

```
sudo perl ~/Desktop/updateinstallerconfig.pl --hostname

yourserver --https --package ~/Desktop/SurveyorAgent.pkg
```

2. Next, install the package:

```
sudo installer -pkg ~/Desktop/SurveyorAgent.pkg -target /
```

---

! **Important:** You must specify the system root as the target as shown here, because the Surveyor agent is installed relative to the root.

---

After you complete this procedure once, the **serverconfig** file in the installation package contains the server hostname, and for subsequent installations, you can simply run the package as in step 2.

# Manually Configure Serverconfig and Restart the Client

In cases where manual configuration of the client **serverconfig** file is required, follow these steps.

1. Stop the daemon. At the command line type:

   ```
   sudo launchctl unload
   /Library/LaunchDaemons/com.verdiem.pwrmgrdaemon.plist
   ```

2. Edit the *hostname* in the **serverconfig** located at **/Library/Application Support/Verdiem/Data** (requires sudo). Note that codepage (UTF-8) must be respected for the **serverconfig** file.
3. Restart the daemon:

   ```
   sudo launchctl load
   /Library/LaunchDaemons/com.verdiem.pwrmgrdaemon.plist
   ```

# Installation Files for the Surveyor Mac Client

This topic describes the contents of the Surveyor agent package file and configuration involved in Mac client installation.

## Updating the Serverconfig File with Your Server URL

A required step of the installation process is to enter the hostname of your Surveyor server into the appropriate **serverconfig** setting, so that clients know where to report their power-state activity.

For details, see *Install Surveyor Mac Agent on page 4-7*. You can also update **serverconfig** file manually.

### The Surveyor Agent Package File

**SurveyorAgent.pkg** is a flat package file that contains the installation components, which it installs into the following locations.

**Note:** Macintosh OS X 10.9 (or later) is required to install the **SurveyorAgent.pkg**.

| Component and installed location | Description |
|---|---|
| `/Library/Application Support/ Verdiem/SurveyorPowerManagement.app` | The application bundle. |
| `/Library/StartupItems/ PwrMgrDetection/PwrMgrDetection` | The application that detects and dispatches power-state events. |
| `/Library/StartupItems/PwrMgrDetection /StartupParameters.plist` | Registration description plist for startup items. |
| `/Library/LaunchDaemons/com .verdiem.pwrmgrdaemon.plist` | A plist used for launchctl, which handles the way that the Surveyor daemon is run and launched. |
| `/Library/Application Support /Verdiem/Data/serverconfig` | An empty serverconfig file in which you will need to enter the hostname the Surveyor server computer, either manually or by using an included script. |
| `/Library/Application Support/Verdiem/Data/ updateinstallerconfig.pl` | A Perl script that inserts the hostname of the Surveyor server into the serverconfig file and restarts the Surveyor daemon.<br>  **Note:** Macintosh OS X 10.9 is required to run this script. |

| Component and installed location | Description |
|---|---|
| /Library/PreferencePanes/ Surveyor.prefPane | The Surveyor preferences panel that appears under System Preferences. |
| /Library/LaunchAgents/ com.verdiem. pollingagentstchnagent.plist | A plist used to launch notification dialog whenever power transition happens through Verdiem. |
| /Library/Logs/Verdiem/PwrMgrService.log | A log File for Surveyor daemon. |

**SurveyorAgent.pkg** also includes the following scripts that unload and load the daemon.

- **preinstall:** Stops the Surveyor daemon if it's running.
- **postflight:** Starts the Surveyor daemon, sets file permissions correctly on files in the bundle and other files listed above.

**Note:** These scripts are used only by the installer; they are not installed on the client computer.

# Confirm Mac Client Connectivity to the Surveyor Server

This topic provides instructions for determining that a Mac client is connecting to the Surveyor server.

1. Determine that the client agent is installed and running:
   a. On the Mac client, click **Applications > Utilities > Activity Monitor**, and verify that PwrMgrDaemon appears in the list of processes running on the computer.
   b. On the Mac client, on the Apple menu > **System Preferences**. You should see the Surveyor application logo
2. Confirm that the client is connected in Surveyor.
   a. In the Surveyor Administrator console on the Devices page, select the groups that contain the Mac agent client computers.
   b. Confirm that the Mac clients appear in the device list and that they each show the following status settings:
      - Last Connected: *today's* date
      - Licensed: Yes
      - Status Summary: Current
      - Policy Status: Delivered
3. Determine that the client is connected in the Mac console:
   a. On the Mac client, click **Applications > Utilities > Console**.
   b. On the **File** menu, click **Open Recent**, and then select **PwrMgrService.log**.

# Uninstall a Mac Client

To uninstall a Mac client, you will need to stop the Surveyor daemon and then delete several files and directories.

1. Stop the daemon. At the command line type:

```
sudo launchctl unload
/Library/LaunchDaemons/com.verdiem.pwrmgrdaemon.plist
```

2. Stop the agent. At the command line type:

```
Sudo launchctl unload
/Library/LaunchAgents/com.verdiem.pollingagentstchnagent.plist
```

3. Delete the following files and directories:

```
/Library/LaunchDaemons/com.verdiem.pwrmgrdaemon.plist
/Library/Application Support/Verdiem/SurveyorPowerManagement.app
/Library/StartupItems/PwrMgrDetection/PwrMgrDetection
/Library/StartupItems/PwrMgrDetection/StartupParameters.plist
/Library/Application Support/Verdiem/Data/
/Library/LaunchAgents/com.verdiem.pollingagentstchnagent.plist
```

4. If GoGreen was advertised to the device:
   a. Navigate to /Users/<user name>/desktop/
   b. Delete the GoGreen alias file for each user.

# Distribute the Surveyor Windows Client Agent by Disk Image

This topic describes how to prepare a prototype Windows computer for distributing the client agent by copying its disk image to the other computers.

**Note:** This topic applies only to the Windows PC client.

1. On the computer you want to use as the image, install the client agent from the setup program (SurveyorAgentSetup.exe).
2. Verify that the client connects to the Surveyor server.
3. In the Windows Services console, stop the Surveyor Agent service:
   a. Right-click **My Computer** and choose **Manage**.
   b. In the Computer Management console, expand **Services and Applications**.
   c. Under Services, right-click **Surveyor Agent** and choose **Stop**.
4. In the **Program Files** or `Program Files (x86)\Verdiem\Surveyor Agent\Data` folder, delete the following files:
   - eventstore: contains power state and event history
   - policy: contains power management instructions

   When you transfer the image to new computers, you want them to begin with a clean history and no policy, so that they receive instructions only from the server.
5. In the **Data** folder:

   **For versions 6.0.4x or later**: Delete the **internal** file from the folder.

   This enables a new unique ID to be assigned to each computer when the agent is installed.
6. In the **serverconfig** file (all versions), confirm that the path to your Surveyor power management service is correct. It looks something like this:

   {"serverURL":"http:\/server_name.local\/PMPService\/PMPService.svc\/PMP"}
7. In the **Logs** folder:

   Delete all files from the **Logs** folder (but do not delete the folder itself) .

## Additional Information

After you prepare the prototype computer, you can copy its image to the other client computers.

To prevent collisions among Surveyor clients when they connect to the server, each computer that receives the disk image must have:

- a unique DNS name.
- a unique MAC address.

For more information about completing the image installation, refer to the documentation provided by your imaging software.

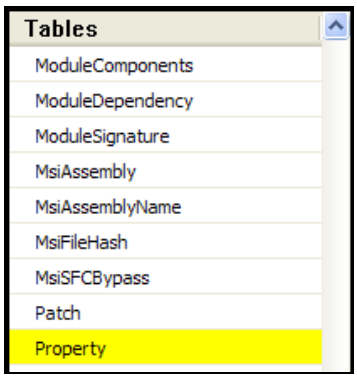
# Deploy the Surveyor Windows Client Agent using Group Policy

This process involves two separate procedures: create the transform file from the client installer package (.msi); then add the transform and package to a Group Policy object. This procedure applies to the Windows agent only.

To create the transform file, you need a transform editor. The procedure provided here uses Orca, although you can use any transform editor.

Orca is a database table editor for creating and editing Windows Installer packages and merge modules. It is available in the Windows Installer SDK, which you can download from the Microsoft Download Center.

1. Start Orca, and in the client agent folder of your Surveyor distribution, open Surveyor Agent.msi.
2. From the **Transform** menu, choose **New Transform**.
3. In the **Tables** column, select **Property**.




4. Confirm the following properties and values:

   - PMP_URL: The address of the power management web server that hosts the PMP service.

   **Note:** You must add this property.

   Specifies the web address to the PMP service on the Surveyor server. For example: http://<*servername*>/PMPService/PMPService.svc/PMP.

   - SERVER_PORT: the port number you will use for the deployment (http port 80 by default).

5. From the **Transform** menu choose **Generate Transform**.
6. Enter a name for the transform file (.mst), save it, and then exit Orca.

# Create the Group Policy Object for Surveyor Windows Client Installation

After you create a transform file from the Surveyor client installer package, you can add it and the package to a Group Policy object to install the Windows client software.

Before you can perform this procedure, use the steps on the previous page to create the transform file that you'll use in this procedure.

**Note:** This procedure is from the Group Policy Object Editor Help and modified to include the information specific to Surveyor.

**Note:** To perform the installation, user needs 'Domain Computers' permission only and the folder where client package is placed must have 'Read and Execute' permissions allowed to computers.

1. Open the Group Policy Object Editor by choosing *Start menu / Run*, and typing *gpedit.msc*.
2. Navigate to and select **Computer Configuration / Software Settings / Software Installation**.
3. Right-click in the details pane and click **New / Package**.
4. In the Open dialog box, from the Surveyor distribution folder, browse to **Surveyor Agent / Surveyor Agent.msi**, and then click **Open**.
5. In the Deploy Software dialog box, click **Advanced**, and then click **OK**.
6. In the properties dialog box for the package, in the **Modifications** tab, click **Add**.
7. In the Open dialog box, browse to the transform file you created for the Surveyor client installer, and then click **Open**.
8. Make sure you are done configuring modifications, and then in the Surveyor Client Agent Properties window, click **OK**.

   **Note:** The package is assigned or published immediately when you click OK. If the modifications are not properly configured, you will have to uninstall the package or upgrade the package with a correctly configured version.

9. Close the Group Policy Object Editor.
10. To put the Group Policy updates into effect, either restart the computers or run the command gpupdate /force to refresh the Group Policy settings.

    **Note:** If you get an error that validation of the installer package has failed, try editing the default language properties of the package. To do this, right-click the package and choose **Properties**. On the **Deployment** tab,

click **Advanced**, and then select the **Ignore language when deploying this package** check box.

# Distribute the Surveyor Windows Client Agent through a Microsoft ConfigMgr Package

Distributing the Surveyor Windows client agent through Microsoft Systems Center Configuration Manager 2007 involves three phases.

1. *Create a ConfigMgr Package for the Surveyor Window Client Agent Installation on the next page*
2. *Create an Advertisement to Distribute a Surveyor Windows Client Package on page 4-22*
3. *Validate Surveyor Windows Client Installation through ConfigMgr on page 4-23*

# Create a ConfigMgr Package for the Surveyor Window Client Agent Installation

This procedure covers the first of three phases of distributing the Surveyor Windows client agent through Configuration Manager: the settings that you use in the New Package Wizard.

1. From the Surveyor distribution, copy the Windows client agent folder to a Configuration Manager site server or to a shared network folder.
2. Open the Configuration Manager console, navigate to **Site Database / Computer Management / Software Distribution / Packages**.
3. Right-click **Packages** and choose **New / Package**.
4. Follow the instructions in the New Package Wizard:
   a. On the **General** page, enter a name for the package, and complete any additional fields you want.
   b. On the **Data Source** page, select **This package contains source files**, and click **Set**. In the Set Source Directory dialog box, under **Source directory location**, click the type of connection, enter the source directory, and then click **OK**.
   c. On the Distribution Settings page, for **Sending Priority**, select **High**.
5. When you complete the remaining wizard steps, click **Close**.

   The package appears under the **Packages** node of the site tree in the Configuration Manager console.
6. Expand the package, right-click **Distribution Points**, and choose **New Distribution Points**.
7. Select the check box beside the name of each server you want to make distribution points, and then click **Next**.

   The wizard creates the distribution points and completes.
8. Click **Close** to return to the site tree.
9. Right-click **Programs**, choose **New / Program**, and follow the instructions in the New Program wizard, noting the following specific setting for this program:
   - On the General page, For **Command line**, enter the command with the parameters you want to install the client agent.

     For a sample command and list of available parameters, see*Install or Uninstall Surveyor Windows Agent from the Command Line on page 4-3*.

After you create the package, select distribution points, and create the program for running the package, you set up an advertisement to distribute it.

# Create an Advertisement to Distribute a Surveyor Windows Client Package

This task is the second phase of distributing the Surveyor Windows client agent through Configuration Manager. You do this after you create the installation package, select distribution points, and create the program that runs the installer.

If you have not created the package for the Surveyor Windows client agent, see *Create a ConfigMgr Package for the Surveyor Window Client Agent Installation on the previous page*

1. In the Configuration Manager console, set up a collection of clients that you want to target for the Surveyor client agent distribution.

   You can base the collection on a query or direct membership rules.

2. Right-click the collection, and then choose **Distribute / Software**.
3. Follow the instructions in the Distribute Software to Collection Wizard:

   a. On the Package page, select **Select an existing package**, click **Browse**, and then select the Surveyor installation package you created.

   b. On the Advertise Program page, indicate that you want to advertise a program from this package.

   c. On the Select Program page, click the program you created for this distribution.

   d. On the Advertisement pages, configure the settings for the name, any subcollections to advertise to, and the schedule.

   e. On the Assign Program page, select **Yes, assign the program**.

   f. Complete the wizard.

After the advertisement goes out to the collection, and the installation has completed, you can validate the installation.

# Validate Surveyor Windows Client Installation through ConfigMgr

After you distribute the Surveyor client agent through Configuration Manager, you use the Surveyor Administrator console to confirm that it was successful.

If you have not yet distributed the Surveyor client agent to a collection, see *Create a ConfigMgr Package for the Surveyor Window Client Agent Installation on page 4-21*.

1. On the Surveyor server computer, open the Surveyor Administrator console in a browser.
2. On the Devices page, use the device filters to select the groups in the PC device family that represent the computers that received the Configuration Manager distribution.
3. Confirm that the PC clients appear in the device list and that they each show the following status settings:

   - Last Connected: Today
   - Licensed: Yes
   - Status Summary: Current
   - Policy Status: Delivered

**Note:** If the total number of PCs that match your search criteria exceeds the number that are displayed in the device list, you will need to refine the search to view all of them.

# Managing Client Agent Software Upgrades

Use the Agent Update Settings page to manage which versions of the agent software can be deployed to Surveyor clients.

You can automatically update all Surveyor clients to a specified version of the agent software, or deploy specific versions of the client agent to specific clients (via the Devices or Search page view).

- *Automatically Upgrade All Client Agents to the Same Version of the Agent Software on page 4-26*
- *Upgrade a Subset of Client Agents to a Specific Version of the Agent Software on page 4-27*

**Note:** Automatic updates are supported in all Windows agents versions 6.0.x, and for Mac agents starting with version 10.9.

To automatically upgrade Surveyor clients, you must point Surveyor to the correct path to the agent installer provided to you by Verdiem Technical Support. For details, see *Add an Agent Installer for Automatic Client Upgrades on the next page*.

# Add an Agent Installer for Automatic Client Upgrades

**Note:** Direct upgrade of Surveyor agents to version 6.3.101 from 6.2.101 or lower is not supported. To upgrade Surveyor agents to version 6.3.101 from 6.2.101 or lower, upgrade to 6.2.201 and then to 6.3.101.

To automatically upgrade Surveyor clients, you must point Surveyor to the correct path to the agent installer provided to you by Verdiem Technical Support.

1. Download the agent installer file onto the Surveyor server in the **AgentInstallers** folder.
2. On the Configure menu, click **Agent Upgrade Settings**.
3. Paste the URL (on the Surveyor server) for the agent installer you want to add.

   For example: **http://MySurveyorServer/AgentInstallers/AgentUpgrader_6_2_201.exe**.

4. Click **Add**.

   The installer will appear in the list of available agent installers on the Agent Upgrade Settings page and also in the Assign Device Agent Version dialog box.

**Note:** During a typical Surveyor server install or upgrade, this agent installer will be added automatically.

# Automatically Upgrade All Client Agents to the Same Version of the Agent Software

**Note:** Direct upgrade of Surveyor agents to version 6.3.101 from 6.2.101 or lower is not supported. To upgrade Surveyor agents to version 6.3.101 from 6.2.101 or lower, upgrade to 6.2.201 and then to 6.3.101.

**Note:** To upgrade Surveyor agents to version 6.3.101 from 6.2.101 or lower, use the following procedure to deploy version 6.2.201 to Surveyor agents. Then, repeat the same procedure to deploy version 6.3.101 to Surveyor agents.

Manage versions of the agent software that can be deployed to Surveyor client agents on the Agent Upgrade Settings page.

1. On the Configure menu, click **Agent Upgrade Settings**.
2. For Agent Auto-Upgrade, select the agent version you want to use for all clients, and select (check) the **Enabled** option.

   If you don't see the version you want to use, you will need to add the installer. For details, see *Add an Agent Installer for Automatic Client Upgrades on the previous page*.

   The next time the client connects to Surveyor, the client agent software is automatically upgraded to the correct version.

# Upgrade a Subset of Client Agents to a Specific Version of the Agent Software

**Note:** Direct upgrade of Surveyor agents to version 6.3.101 from 6.2.101 or lower is not supported. To upgrade Surveyor agents to version 6.3.101 from 6.2.101 or lower, upgrade to 6.2.201 and then to 6.3.101.

**Note:** To upgrade Surveyor agents to version 6.3.101 from 6.2.101 or lower, use the following procedure to deploy version 6.2.201 to Surveyor agents. Then, repeat the same procedure to deploy version 6.3.101 to Surveyor agents.

You can upgrade a subset of client agents rather than all client agents at the same time by selecting the clients in Device view.

First make sure the agent version is available in the Agent Upgrade Settings page. For details, see *Add an Agent Installer for Automatic Client Upgrades on page 4-25*.

1. On the Configure menu, click **Agent Upgrade Settings**.
2. For Agent Auto-Upgrade, clear (uncheck) the **Enabled** option.
3. On the Verdiem menu, click **Devices** or **Search**.
4. Select the devices you want to upgrade to a particular version of the agent software.

   If you don't see the version you want to use, you will need to add the installer. For details, see *Add an Agent Installer for Automatic Client Upgrades on page 4-25*.
5. On the **Item Actions** menu, click **Assign Device Agent Version**.
6. Select the agent version, and then click **OK**.

   For details on upgrading all Surveyor clients to the same version at the same time, see *Automatically Upgrade All Client Agents to the Same Version of the Agent Software on the previous page*.

   During the next 30 minutes, for any client that connects to Surveyor, the client agent software is automatically upgraded to the correct version.

**Important:** If a client does not connect within 30 minutes of setting **Assign Device Agent Version**, the message for this action will be dropped from the queue. You will need to select the installer again for that client or set of clients.

# 5

# Licensing Devices

**Table 5-1 In this Chapter**

| Topics |
| --- |
| *About Device Licenses* |
| *Viewing License Information* |
| *Add or Remove a License File* |
| *Reclaim Licenses for Inactive Devices* |

# About Device Licenses

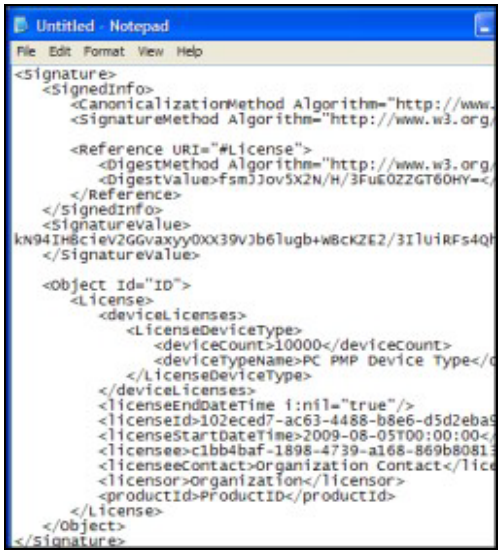
After you install the client agent, you license the devices in your system. This section describes the process.

This topic provides an overview of the license file, license types, and viewing license information in your system through the Surveyor Administrator console.

## How the License File Works

Device licenses are stored in an XML file. You import the file into the system through the Administrator console. The server can measure energy use or apply policies only on devices that are licensed.

The license file includes information such as product and license id, number of devices in the Surveyor system, effective dates, and other information that helps the server recognize which devices to measure or manage.




## How You Obtain License Files

During the evaluation period, your Verdiem representative works with you to determine the number of devices you want to license. After you decide to deploy Surveyor, the Verdiem representative goes through a process to generate a single license file that contains the number of licenses determined, the license types, and other required data.

When you receive the file, you complete just a few simple steps in the Administrator console to apply the license to client devices.

# Viewing License Information

In the server settings of the Administrator console, you can view all licenses applied to an instance of Surveyor, as well as the following status information:

- Dates for when the license became active and when it expires.
- Device families covered by the license and number of devices in each family.

> **Note:** The device type **PC PMP** represents both Windows and Mac computers. PMP refers to the Surveyor power management protocol.

- Number of total licenses available and in use.
- Licensee (your organization name), licensor's organization and individual contact names.
- License unique id.

In addition, when you view a list of devices on the License Management page, you can display a column that indicates whether each device is licensed.

# Viewing License Information

In addition to viewing the license status of devices, you can also see information about the license file itself. For example, when it expires or how many devices it covers.

## License Management Page

The Manage Licenses page is where you can add or remove license files and monitor license allocation.

The following table describes each of the settings on the **License Management page** (on the Configure menu  , click **License Management**.

| Setting | Description |
|---|---|
| Device | The type of device that is licensed under the selected license file.<br>**Device types PC PMP:**<br>PC or Mac Computers on which the client agent is installed, and on which you enforce policies. PMP stands for power management protocol. |
| Total Licenses | The number of devices that are allowed to be licensed through the selected license file. |
| Total Allocated / Total Remaining | The number of licenses in the selected license file that are in use, and the number that can still be used. |
| Start / End | The start and end dates during which the selected license file is valid. |
| Licensee | The organization to whom the license is issued. |
| Contact | The person or organization to contact to renew the license or change its conditions. |
| Licensor | The organization that issued the license. |
| ID | The globally unique string used to identify and verify the license file, automatically generated when the file is created by the Licensor. |

# Add or Remove a License File

To license devices, you obtain a license file from your Verdiem representative and then activate it though the Administrator console.

This task describes how to add or remove a license file that you have already obtained for the number of device licenses you need. Also see *Reclaim Licenses for Inactive Devices on the next page*.

1. Log on to the server computer.
2. You'll have one of the following options for saving the license file to the server's local drive:
   - Save the file attachment from email.
   - Download the file from the customer portal address you were given.
3. The license file is an XML file. If you obtained a .zip file, extract it and confirm that the license file shows the .xml extension.

   **Note:** If the file does not show the .xml extension, open it in Notepad to confirm that it's an XML file, close it, and change or add the extension. If that does not work or the file is not an XML file, you will need to contact your Verdiem representative to resolve the problem.

4. Open the Administrator console, on the Configure menu, click **License Management**.
5. Click **Add License File**, and do the following:
   a. For Files of type, replace type **Text** by manually typing *.* to show all files.
   b. Navigate to your license file location, select the file, and click **Open**.
      If you want to remove an existing license, select the file, and click **Delete**.

If you add a license file, its information is displayed in the Administrator console, indicating the number of licenses, where the license came from, and so on. Devices are licensed immediately (you do not need to restart the service).

When you remove a license file, devices that are associated with it become unlicensed. At that point, power use on those devices is no longer managed or measured.

# Reclaim Licenses for Inactive Devices

Rather than removing licences from inactive devices, you can specify a time period in which Surveyor will automatically reclaim licenses for inactive devices and make those licenses available for use by other devices.

1. In the Administrator console, on the Configure menu  , click **System Settings**.
2. For **Reclaim licenses for inactive devices after**, specify the number of days after the last check-in, in which a device's license can be claimed for use by a different device.
3. Click **Save**.

# 6

# Configuring and Running Data Summarization

**Table 6-1 In this Chapter**

| Topics |
| --- |
| *About Data Summarization* |

# About Data Summarization

This section describes data summarization, and how and when to configure, schedule, run, and check the status of it.

This topic describes how to configure, schedule, run, and check the status of the summarization process.

The data displayed in higher level Surveyor dashboard and analytics reports is aggregated, summarized data.

When you install Surveyor (starting with version 6.0.502), the following data summarization tasks are automatically configured in the Windows Task Scheduler, and use the AdminCommand.exe tool found in C:\Program Files\Verdiem\Surveyor\Tools:

- **Surveyor Resummarize Current Day** - Summarizes data incrementally. After this task is triggered soon after installation, the task runs every hour to summarize the past hour of data.
- **Surveyor Resummarize Past 30 Days** - Summarizes data incrementally at 11:45 p.m. After this task is triggered, the task runs every evening to summarize the past 30 days of Surveyor data.
- **Surveyor Resummarize All Data** - Completely resummarizes all available Surveyor data. This task is disabled by default. Running this task will take more time to complete than the tasks that summarize data incrementally.

**Note:** The time required for a data summarization task to complete depends on the amount of data to be processed. Data that is summarized on an incremental basis typically takes less time to complete.

Another scheduled task, **Surveyor Delete Old History Data**, runs every day at 10:30 p.m. and triggers the removal of historical data from the database that older than the number of days specified in **System Settings** option **Keep detailed reporting device data for**.

# Running the Summarization Process

The data summarization tasks that are already setup for Surveyor should usually be sufficient to meet your data needs for Surveyor reports. You can also set up your own scheduled tasks that call the AdminCommand.exe tool. For details, see *Resummarize Data Incrementally Using a Windows Task on page 6-6*.

If you need to resummarize data outside of the already scheduled Surveyor tasks, you can do so using the AdminCommand.exe tool with the start_summarization command. For details, see *Resummarize Data Incrementally Using the AdminCommand.exe Tool on page 6-5*.

For details on resummarizing all data, see *Resummarize All Data on page 6-9*.

**To View the Results of the Summarization Task:**

- Open the **summarization** log file in **C:\Program Files\Verdiem\Surveyor\Logs**.

# Settings that Affect Data Summarization and Reporting

The following settings and values affect data summarization calculations and how data is grouped and displayed in Surveyor reports:

- Device group, location, and policy assignments
- Historical rate information for locations
- Historical currency exchange rates
- Device power draws
- Device family assignments
- Device baseline values

If possible, it is recommended that you define these values before you run the summarization process for the first time to get the most accurate and uniform report results over time.

When you make changes to default baseline settings in the System Settings page or through a device's right-click menu, watt draw values, device family assignments, locations (device assignment), groups (device assignment), policies (device assignment), business units in metadata, only data that is collected and summarized from the time of the change will reflect the new settings (historical data will still be based on the old settings). To get the most accurate and uniform reporting results, you may need to resummarize data.

# Factors Affecting Processing Time

When a large amount of data is being processed, the computer running the summarization process can use significant system resources and the process may take some time to complete. When resummarizing data, it is best to run the task when Surveyor server is not required to be active.

Factors affecting the time required for the summarization process to complete the first time it runs:

- **Database I/O**. The summarization process potentially requests large amounts of data for the database to read out. The speed of database I/O can affect how quickly the summarization process completes.
- **Defragmentation**. Table indexes are defragmented during the summarization process. The amount of defragmentation required can affect how quickly the summarization process completes.
- **Groups, locations, policies**. Number of locations, business units, policies, and administrative groups.

- **Memory**. Available memory for SQL and the summarization process also can affect the time required.

# Resummarize Data Incrementally Using the AdminCommand.exe Tool

If you need to resummarize data outside of the already scheduled Surveyor tasks, you can do so using the AdminCommand.exe tool with the start_summarization command.

The syntax for AdminCommand.exe is:

start_summarization [<days into past>] force

This command starts, or restarts summarization. If summarization is already running and the force option is omitted, there is no effect (the previous summarization job continues). If summarization is already running and and the **force** option is included, the existing summarization job is canceled. If the number of days to be summarized isn't specified, a full re-summarization is performed.

**Note:** Avoid running a full re-summarization whenever possible.

1. Launch the Windows command prompt as an administrator.**AdminCommand.exe** from the command prompt as an administrator.
2. Run AdminCommand.exe start_summarization <*days into past*> from the **C:\Program Files\Verdiem\Surveyor\Tools** folder on the Surveyor server.

   For example:

   AdminCommand.exe start_summarization 30 force

**To View the Results of the Summarization Task:**

- Open the **summarization** log file in **C:\Program Files\Verdiem\Surveyor\Logs**.

# Resummarize Data Incrementally Using a Windows Task

This topic describes the Windows tasks available to Surveyor that handle resummarizing data incrementally.

When you install Surveyor (starting with version 6.0.502), the following data summarization tasks related to are automatically configured and scheduled to run in the Windows Task Scheduler:

- **Surveyor Resummarize Current Day** - Summarizes data incrementally. After this task is triggered soon after installation, the task runs every hour to summarize the past hour of data.

  The corresponding command line for this task is:

  AdminCommand.exe start_summarization 1

  The corresponding action is:

  "C:\Program Files (x86)\Verdiem\Surveyor\Tools\AdminCommand.exe" start_ summarization 1

- **Surveyor Resummarize Past 30 Days** - Summarizes data incrementally at 11:45 p.m. After this task is triggered, the task runs every evening to summarize the past 30 days of Surveyor data.

  The corresponding command line for this task is: AdminCommand.exe start_summarization 30 force The corresponding action is:

  "C:\Program Files (x86)\Verdiem\Surveyor\Tools\AdminCommand.exe" start_ summarization 30 force

Though these tasks are already scheduled by default, you can trigger these tasks at any time, or edit the schedule, or create your own data summarization tasks.

1. Open the Windows Task Scheduler (Windows Start menu > Administrative Tools > Task Scheduler.
2. Select **Task Scheduler Library**.
3. Select the name of the **Surveyor Resummarize Current Day or Surveyor Resummarize Past 30 Days** task, and then click **Run**.

# Configure a Scheduled Task for Data Summarization (Windows Server 2008)

This topic describes how to create a data summarization task in the Windows Task Scheduler.

1. To open Windows Task Scheduler, browse to the Windows Start menu > Administrative Tools, and then click **Task Scheduler**.
2. In the Task Scheduler, right-click **Task Scheduler (local)**, and then click **Create Task** Name the task.
3. On the **General** tab of the Create Task dialog box:
   a. Name the task.
   b. Under **Security Options**, specify any user as long as they have permissions to the following directories: **C:\Program Files\Verdiem\Surveyor\Tools**.
   c. Select **Run whether user is logged on or not**.
   d. Click **OK**.
4. On the **Actions** tab:
   a. Click **New**.
   b. For **Action**, select **Start a program**.
   c. For **Program/script**, click **Browse**, and then select **AdminCommand.exe**.

      By default, this file is installed to **C:\Program Files\Verdiem\Surveyor\Tools** on same computer as the Surveyor server.

   d. For **Add arguments**, type *start_summarization*, the *number* of days, and *force*.

      For example: start_summarization 15 force.

   e. For **Start in (optional)**, type the directory location of the **AdminCommand.exe** file: **C:\Program Files\Verdiem\Surveyor\Tools** (by default).
   f. Click **OK**.
5. On the **Triggers** tab:
   a. For **Begins the task**, select how often the task should run.

      For more up-to-date reporting, it is recommended that you run this task at least once a day.

   b. Select other advanced settings as required for your needs.
   c. Click **OK** on the Triggers tab.
6. Click **OK** in the **Create Task** dialog box.

At this point, you will need to provide your password.

To ensure the task works correctly, you can select the task you just created and click **Run**.

The message "The operation completed successfully (0x0)" in the **Last Run Result** column indicates the task is running correctly.

**To View the Results of the Summarization Process:**

- Open the summarization log file in **C:\Program Files\Verdiem\Surveyor\Logs**.

# Resummarize All Data

This topic describes how to reset summarization data for cases where you might want to resummarize data completely, from scratch.

You can resummarize data by clicking the **Resummarize All Data** button on the Device Power Draws page in the Surveyor Administrator console, or by running the **Surveyor Resummarize All Data** Windows task which uses the AdminCommand.exe start_summarization force command.

**Note:** Do not click **Resummarize All Data** unless you are certain that you want to resummarize data. If you are interested in keeping the historical data in some form, back up the Surveyor database before resummarizing all of the data. Any system settings that have changed since the previous summarization process has run will be applied to all historical data in the database. This includes changes to device baseline values, watt draw values, policies, groups, business units, or locations.
If you are running the summarization process on the Surveyor server computer (recommended), be sure to run the process when the Surveyor server is not required to be active.

To completely resummarize all Surveyor data:

1. In the Surveyor Administrator console, on the Configure menu  , click **Device Power Draws**.
2. Click the **Resummarize All Data** button.

   Optionally, you can trigger the **Surveyor Resummarize All Data** task in the Windows Task Scheduler.

   Or, manually resummarize all data by running AdminCommand.exe start_summarization force from the command prompt as an administrator from **C:\Program Files\Verdiem\Surveyor\Tools** on the Surveyor server.

**To View the Results of the Summarization Task:**

- Open the **summarization** log file in **C:\Program Files\Verdiem\Surveyor\Logs**.

# 7

# Gathering Data and Setting the Baseline

**Table 7-1 In this Chapter**

| Topics |
| --- |
| *Establishing the Baseline Level of Energy Use* |
| *Set System Default Baseline Values for Devices* |
| *Set the Baseline Value for a Device* |

# Establishing the Baseline Level of Energy Use

To determine the baseline set up your first power management policies, you need to know how much energy different departments in your organization and different device types use under normal operation.

When measuring savings achieved through policy enforcement, an accurate starting point, or *baseline*, is critical. This topic describes the concepts for determining the baseline for your network.

## Overview of the Baseline Data Collection Process

The baseline is the amount of energy that devices use without centralized power management. It is a critical factor both in determining initial power management policies and in post-enforcement reporting. Only with an accurate baseline can you obtain reliable results when measuring savings from policy enforcement.

For PC and Mac client agents in the Surveyor system, you complete the following baseline data collection process after installation but before you enforce power management policies:

1. Run the system with computers using the default policy (Baseline Data Collection) for several weeks of normal network operation.

   During this time, clients report their use to the server, and energy use is measured, but no policies are enforced.

2. On the Verdiem menu  , click **Analytics**. Generate an **Activity: Computer Power States** report that shows the number of clients reporting to the server each day during that period of time.

---

**Important:** The data displayed in the **Activity: Computer Power States** report is aggregated, summarized data. The data is aggregated during a summarization process.You will need to schedule and run the summarization process to make data available for reports. The scheduling frequency you choose will depend on how current you want the data to be in your reports.
For more information on the summarization process, see *About Data Summarization on page 6-2*.

---

3. From the Activity: Computer Power States report, select a two-week period during which a consistent number of clients reported to the server each day.

   Make sure this two-week period meets the requirements:

   - All days must reflect normal business operation.

Holidays, hardware transitions, power outages, and other events that affect normal computer operation skew the data collected, producing an inaccurate baseline.

- The **Activity: Computer Power States** report should show a consistent number of devices reporting to the server, and the number should be 80% or more of the licensed devices.

2. From the **Activity: Computer Power States** report, determine the start and end date for your baseline period, or determine the percentages of time per day that devices are in the On, Sleep, or Off power states.You can then use these numbers to set the baseline value for devices. For details, see *Set the Baseline Value for a Device on page 7-5*.

# Set System Default Baseline Values for Devices

The baseline values that you set in the System Settings page are used to calculate energy savings in reports when the option **Use system default baseline values** is selected in a device's **Edit Device Baseline** dialog box. Device baseline values are used in energy savings calculations for reports.

Before you enter the baseline values, you will need to determine what the values should be by following the steps in "Establishing the baseline level of energy use" in the *Surveyor 6 Installation Guide* .

1. In the Administrator console, on the Configure menu  , click **System Settings**.
2. In the Default Baseline section, enter percentages for:
   - System is On
   - System is Off
   - System is Asleep
   - Display is On
   - Display is Off
3. Click **Save**.

# Set the Baseline Value for a Device

You can set the baseline values for devices automatically (using a start and end date range) or manually. Or you can use the Default Baseline settings from the System Settings page. Device baseline values are used in energy savings calculations for reports.

Before you set manual or default baseline values for a device, you will need to determine what the values should be by following the steps in "Establishing the baseline level of energy use" in the *Surveyor 6 Installation Guide*.

If you plan to use the system default baseline settings, you will first need to enter those values in the Systems Settings page. For details, see "Set system default baseline values for devices" in the *Surveyor 6 Installation Guide*.

1. In the Administrator console, on the Verdiem menu  , click **Devices**, and then click a group name to view its devices.

   To filter the view, click the Search button  . Select different options in the device filters to display the set of devices you want, type a search string (optional), and then click the **Search** button to view the results set in the device list.

2. Right-click a device (or a multi-selected set of devices), and then click **Edit Device Baseline**.

   - (**Recommended option**) If you know the start and end dates for the baseline period, click **Auto-calculate baseline values from the data collected over time**, and then click **OK**.
   - To manually enter the percentages for the amount of time a system is on, off, or asleep, or a display is on or off, or to enter the average watt draw, click **Manually enter baseline values below**, and then click **OK**.
   - To use the default baseline settings, click Use the **system default baseline values**, and then click **OK**.

# 8

# Troubleshooting

**Table 8-1 In this Chapter**

| Topics |
| --- |
| *Administrator Console does not Open in Browser* |
| *Configure the Web Server to Allow ASP.NET v.2.0.50727 Applications* |
| *Wake for Remote Access Troubleshooting* |
| *Timeouts During the Wake Process* |
| *Wake for Remote Access Issues Related to the IIS Application* |
| *Duplicate Computer Names Returned in Search Results* |
| *Using the Wake for Remote Access (WRA) Test Files for Troubleshooting* |
| *Advanced Reports Deployment* |

# Administrator Console does not Open in Browser

This section includes troubleshooting information for Surveyor server and Wake for Remote Access.

This article describes the IIS settings that you can configure if the Administrator console does not open in a browser.

## Symptoms

When you attempt to open the Administrator console, the console does not open. In some cases, you might see a 404 - file not found error.

## Cause

The most common causes include:

- *IIS is not Configured to Allow ASP.NET v.2.0.50727 Applications below*
- *ASP.NET is not Registered in IIS below*
- *Multiple Versions of ASP.NET Registered in IIS on the next page*
- *Windows Authentication is not Enabled in IIS 7 and Above on the next page*

## Solution

All solutions involve configuring settings in the IIS Manager.

## IIS is not Configured to Allow ASP.NET v.2.0.50727 Applications

If this is the issue none of the Surveyor web components will open, and you might get an error 404. For steps to allow ASP.NET applications, see *Configure the Web Server to Allow ASP.NET v.2.0.50727 Applications on page 10*

## ASP.NET is not Registered in IIS

This might be the case in one of the following circumstances:

- The 32-bit version of the .NET framework has been installed on a computer running a 64-bit operating system.

To resolve the issue, enable IIS to run 32-bit applications.

- IIS was installed after the .NET framework, and multiple versions of ASP.NET exist.

  To resolve the issue, you run the ASP.NET Registration Tool (Aspnet_regiis.exe) from the command line and appropriate location.

The command uses the -i parameter, which installs the ASP.NET version that is associated with the registration tool and updates the script maps for the Sustainability Dashboard and other ASP.NET applications that use an earlier version of ASP.NET. (Applications that use a later version are not affected.)

```
<.NET installDir>\aspnet_regiis.exe -i
```

Run the registration tool from the location that will register the dashboard with the correct version of ASP.NET.

### For example

```
C:\WINDOWS\Microsoft.NET\Framework\v2.0.50727\aspnet_regiis.exe -i
```

**Note:** To download the tool and get additional information about what it can do, see ASP.NET IIS Registration on the MSDN web site.

## Multiple Versions of ASP.NET Registered in IIS

In cases where ASP.NET 4.0 was registered with the IIS, you may need to unregister ASP.NET 4.0 and then re-register ASP.NET 2.0.

- Unregister ASP.NET 4.0:

  ```
  C:WINDOWS\Microsoft.NET\Framework\v4.0.30319\aspnet_regiis.exe /u
  ```

- Re-register ASP.NET 2.0:

  ```
  C:\WINDOWS\Microsoft.NET\Framework\v2.0.50727\aspnet_regiis.exe /i
  ```

## Windows Authentication is not Enabled in IIS 7 and Above

To enable Windows Authentication in IIS 7 and above:

1. Open IIS Manager and click the **Default Web Site**.
2. In the IIS section, double-click **Authentication**.
3. Right-click **Windows Authentication** and choose **Enable**.

# Applies To

## Product

- Verdiem Surveyor 5.x versions

## Component

- Administrator console

## Other

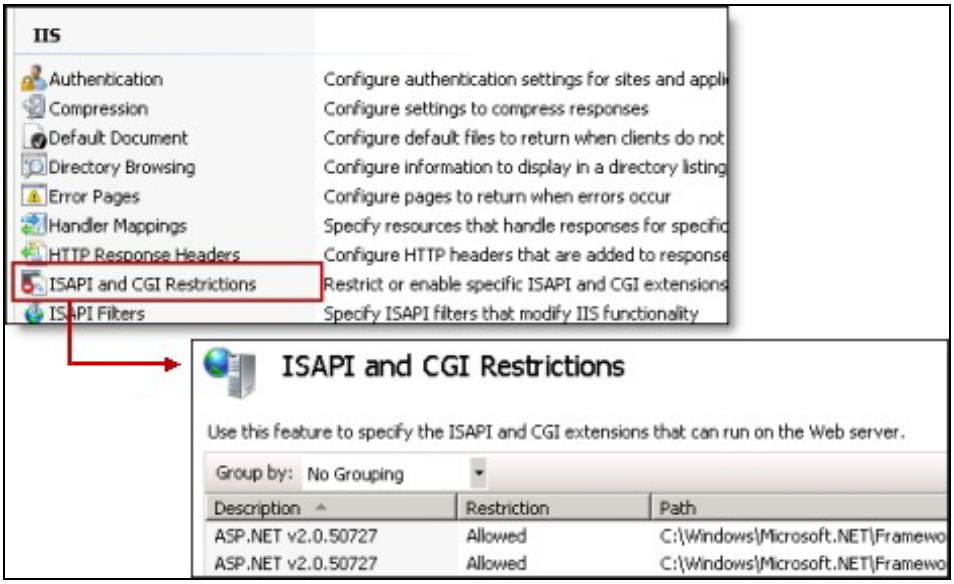
- IIS 7.0
- IIS 8.0
- IIS 8.5

# Configure the Web Server to Allow ASP.NET v.2.0.50727 Applications

The correct version of ASP.NET must be allowed on any computer that hosts the Surveyor server or Wake for Remote Access.

Open IIS Manager, and allow ASP.NET v2.0.50727.

- **IIS 7** and above: Select the server home, double-click **ISAPI and CGI Restrictions**, and then allow **ASP.NET v2.0.50727.**



# Wake for Remote Access Troubleshooting

This section provides solutions to common errors that can occur when you run Wake for Remote Access after installing it, and describes the test files that come with the Wake for Remote Access installation.

# Timeouts During the Wake Process

## Issue

A user receives a timeout error when trying to wake his or her computer.

## Conditions and Cause

The Device check-in interval, set on the Server Settings page in the Administrator console, can affect how long a wake request takes if the following conditions are true:

- A computer is already awake when a user sends a wake request through Wake for Remote Access.

  AND

- The *AutoPing application settingThe following table lists and defines the WRA application settings that you can customize in IIS Manager*is set to false.

Under these conditions, if a user sends a wake request to a client through Wake for Remote Access shortly after the client's last check-in, the wake process can take almost as long as the check-in interval.

By contrast, if the computer is asleep, it receives the wake request when the server makes the request available.

## Solution

To resolve this issue, set **AutoPing** to true, which is the default value.

**Note:** The **wake results** browser page contains information to alert the user that frequent timeouts can indicate that the computer is awake. From there it suggests that the user try to log in to the computer normally.

# Wake for Remote Access Issues Related to the IIS Application

This topic describes issues that can occur under specific conditions on the IIS server that hosts Wake for Remote Access.

## IIS Application Error

The following IIS error occurs:

An application error occurred on the server. The current custom error settings for this application prevent the details of the application error from being viewed remotely (for security reasons). It could, however, be viewed by browsers running on the local server machine.

## Resolution

You can try to view the web page from the computer on which Wake for Remote Access is installed. You can also temporarily enable the viewing of error details remotely.

**Note:** Enabling the viewing of error details remotely may impact Wake for Remote Access performance and is best for temporary troubleshooting use.

# WRA error: Unable to Process Wake

When the following attached error appears on the Wake for Remote Access web page:

| Computer Wake Information | |
|---|---|
| **Computer Name** | w2k557 |
| **Status** | Unable to process wake. If you continue to receive this error, please contact your support department. |
| **Elapsed time** | 0:02 (Action Complete) |

A possible cause of this error is that the application pool identity does not have wake access in Surveyor.

## Resolution

In IIS, right-click the WRA application pool, and then choose Properties. Click the Identity tab and ensure the correct security account is selected for this application pool.

# Duplicate Computer Names Returned in Search Results

## Issue

An end user performs a search, and the results return more than one computer with the same name.

## Solution

To find the source of this problem, open the Administrator console, and display the duplicate computers to see why there are two or more of them.

Most commonly, this issue occurs if you need to replace a computer or a network card, but you still use the same computer name. The **Last Connected** value can help you determine whether this is the case. Make sure that instances of the computer that are not in current use are unlicensed in Surveyor, so they do not appear in Wake for Remote Access search results.

# Using the Wake for Remote Access (WRA) Test Files for Troubleshooting

You can use the Wake for Remote Access test files if the issue you're experiencing is not covered earlier in this section.

These test files can provide you and Verdiem Technical Support with useful information for where to start troubleshooting unknown issues.

The test files reside in the **Program Files\Verdiem\Surveyor\WRA** directory.

## How to Use the Test Files

When you receive an error message or otherwise are not able to run Wake for Remote Access, open a web browser, and enter the test file URL in the address bar. For example, *http://"font-style: italic;letter-spacing: -1pt;">YourServerName/WRA/* test file name, where test file name is one of the following:

**test.html**—This HTML content is a simple success message. If it does not display, the source of the issue is in IIS or your Internet connection.

**test.aspx**—This file tests ASP.NET and the power management server connection. When you open this file, it displays the results of a series of tests.

The results tell you where the tests failed. For example, if **Result** shows **Connected**, but the **Permissions Test** shows **Failed**, you know that you have access to the power management server, but the current user does not have the required permissions on the power management server.

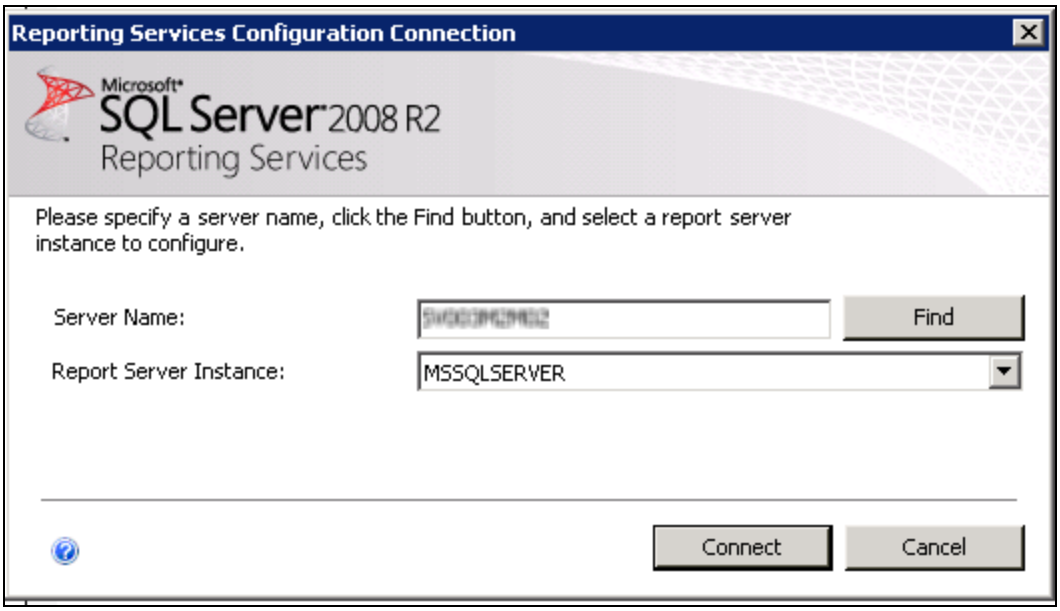
# Advanced Reports Deployment

You may have a server setup where the Surveyor database and SQL Server Reporting Services (SSRS) are hosted on 2 different servers. In such instances, the SSRS may not be able to communicate with the Surveyor database due to credential issues. Also, there may be instances where the Surveyor database and SSRS are hosted on the same server, but SSRS may not be able to access the Surveyor database due to credential issues.

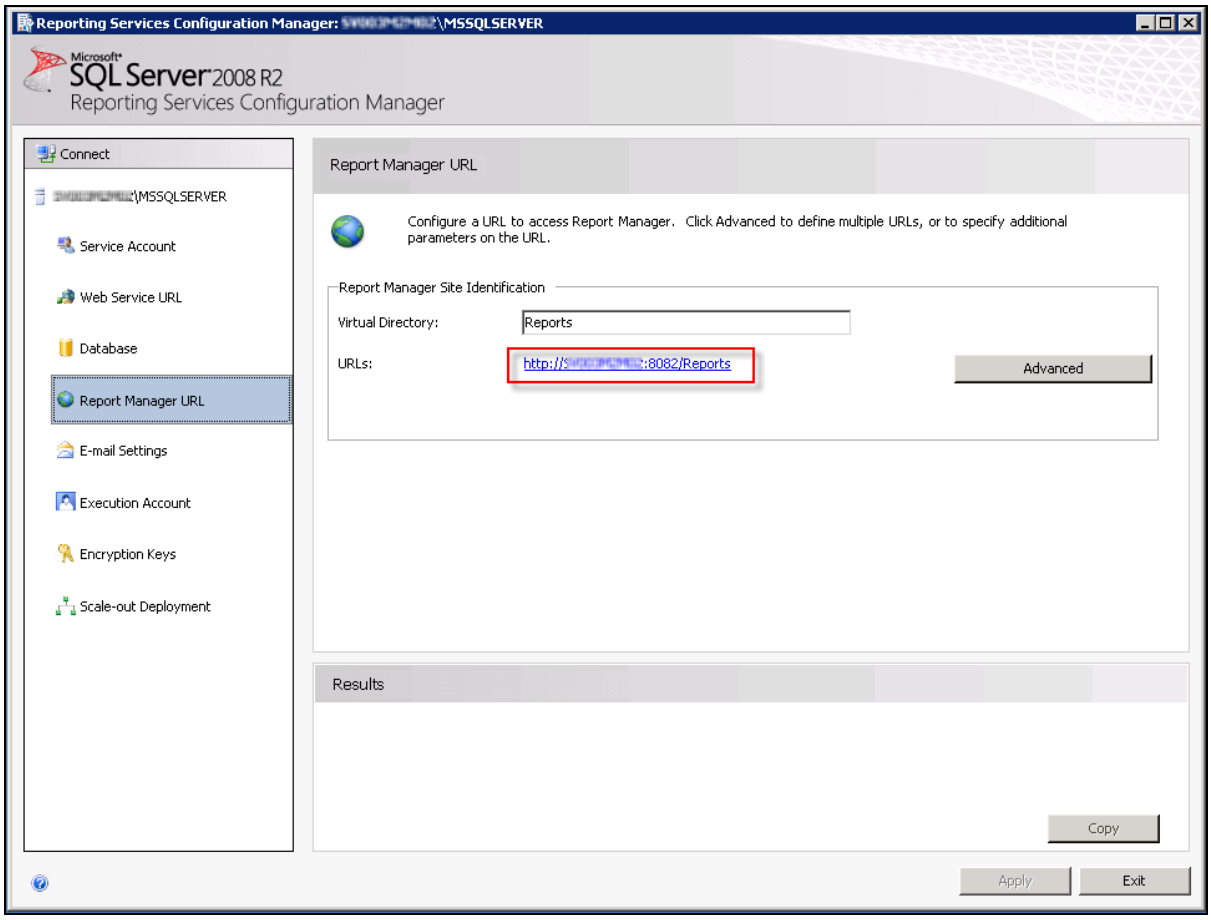
**To test Surveyor database-SSRS connection and restore connection:**

1. Click **Start** > **All Programs** > **<Your SQL Server>>** **Configuration Tools** > **Reporting Service Configuration Manager**.

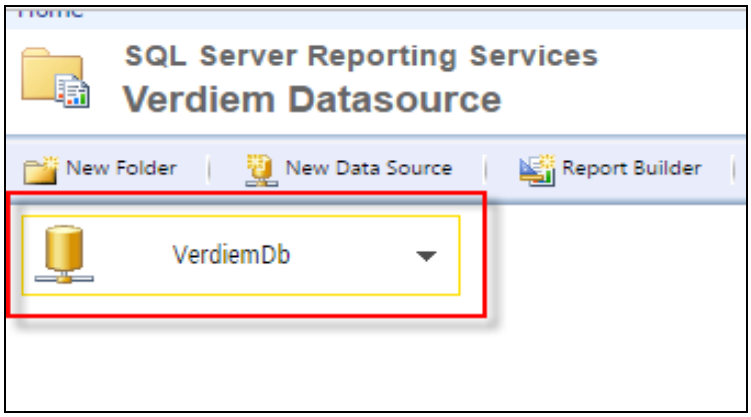
   The **Reporting Services Configuration Connection** window is displayed as seen in the following image.



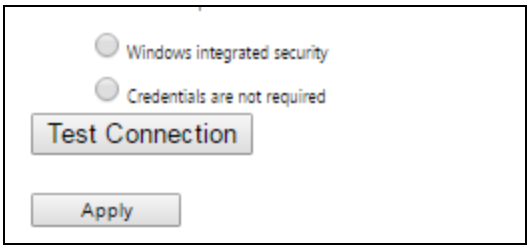

2. Use the following steps to open the **Reporting Services Configuration Manager** window.
   a. In the **Server Name** field, enter your report server name, if the server name displayed is not your report server name.
   b. Click **Find** and select the report server instance that you want to configure.
   c. Click **Connect**.
3. In the **Connect** pane, click **Report Manager URL** to open the **Web Service URL** pane.
4. Click the URL in the **Report Manager Site Identification** area as shown in the following image to access the **SQL Server Reporting Services Home** page.



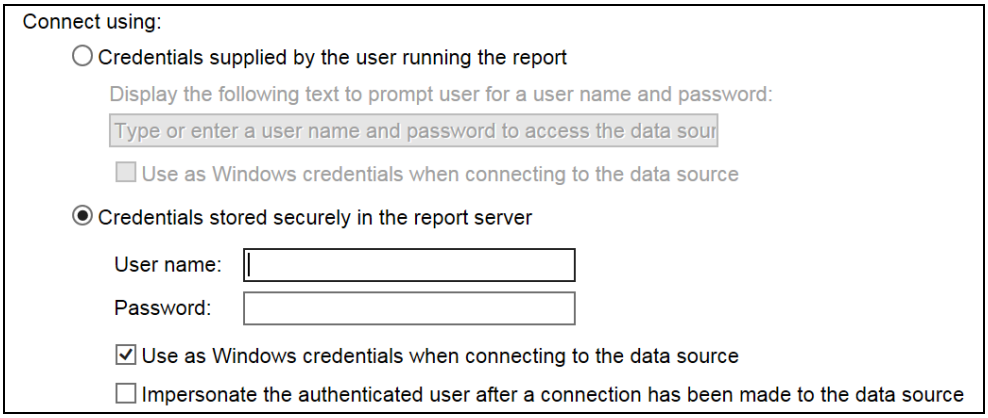

5. Click the **Verdiem Datasource** folder to open the folder.
6. Click **VerdiemDb** to open the **Properties** pane.




7. Click **Test Connection**.




8. Do one of the following:
   - If the connection is successful, your Surveyor database is connected to SSRS.
   - If the error reads **Login failed for user 'NTAUTHORITY\ANONYMOUS LOGON'**, proceed to the next step.
9. In the **Connect using** area, select **Credentials stored securely in the report server**.



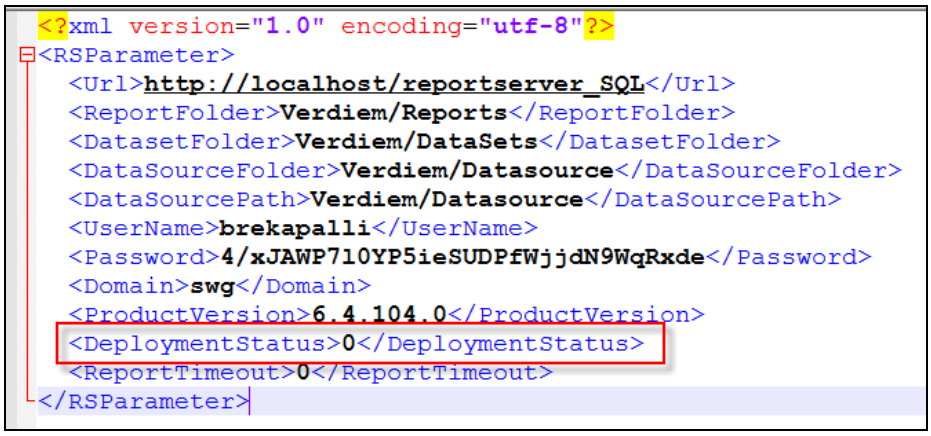

9. Provide valid credentials.
10. Click **Test Connection**.
11. If the connection is successful, click **Apply**.

# Exit Codes for Report Deployment

This section contains information about exit code numbers and the meaning of exit codes for report deployment. These exit codes give the status of report deployment. The exit codes are found in the **DepoyReportsConfig.xml** file which is in the following location.

**<InstalledLocation>/Surveyor/Reports**

The exit codes are found in the `<DeploymentStatus>` tag as shown in the following image.




The following table contains the exit code numbers and their meaning.

| Exit Code Number | Meaning |
|---|---|
| 0 | Success |
| 1 | SuccessfullyMovedDatasource |
| 2 | SuccessfullyDeletedFolders |
| 3 | SuccessfullyCreatedFolders |
| 4 | SuccessfullyCreatedDataSource |
| 5 | SuccessfullyCreatedDataSet |
| 6 | SuccessfullyPublishedReports |
| 7 | SuccessfullyPublishedImages |
| 8 | SuccessfullyUpdatedDataSources |
| 9 | SuccessfullyUpdatedDataSets |
| 10 | SuccessfullyDeployed |
| 11 | Failed |
| 12 | RSConnectionFailed |

| Exit Code Number | Meaning |
|---|---|
| 13 | IncorrectUriFormat |
| 14 | ServiceInitializationFailed |
| 15 | FolderNotFound |
| 16 | NotAbleToMoveDatasource |
| 17 | UnableToDeleteFolder |
| 18 | FolderNameIsNull |
| 19 | UnableToCreateFolders |
| 20 | ErrorInCreatingDataSource |
| 21 | ErrorInCreatingDataSet |
| 22 | ErrorInPublishingReports |
| 23 | ErrorInPublishingImages |
| 24 | ErrorInReadingFiles |
| 25 | ErrorInUpdatingDataSources |
| 26 | ErrorInUpdatingDataSets |
| 27 | InvalidOperation |