GreenScreen Installation Manual

Overview

This document will detail how to setup SensorView to use the GreenScreen plug-in. This will entail installing and setting up a database (PostgreSQL), a driver to connect to the database, a DSN for the data source, initializing the database, starting GreenScreen, and configuring GreenScreen options in SensorView.

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1: Setting Up PostgreSQL

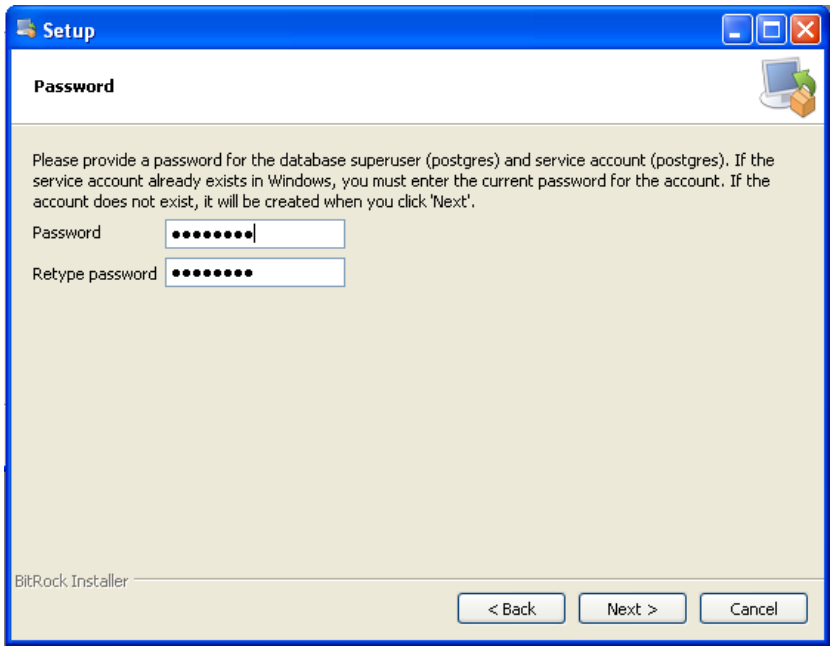
Setting up PostgreSQL on a computer requires downloading and installing the application, configuring the database to accept remote connections, and restarting the database server.

- PostgreSQL is a separate product that is maintained and developed entirely separate from SensorView and is in no way affiliated with nLight, SensorSwitch, or Acuity Brands.
- For the remainder of this document the phrase “X.Y” will refer to major and minor versions of the version of PostgreSQL being installed; for example: 9.0.
- GreenScreen is compatible with PostgreSQL versions 9.0 or higher.

1.1: Installing PostgreSQL

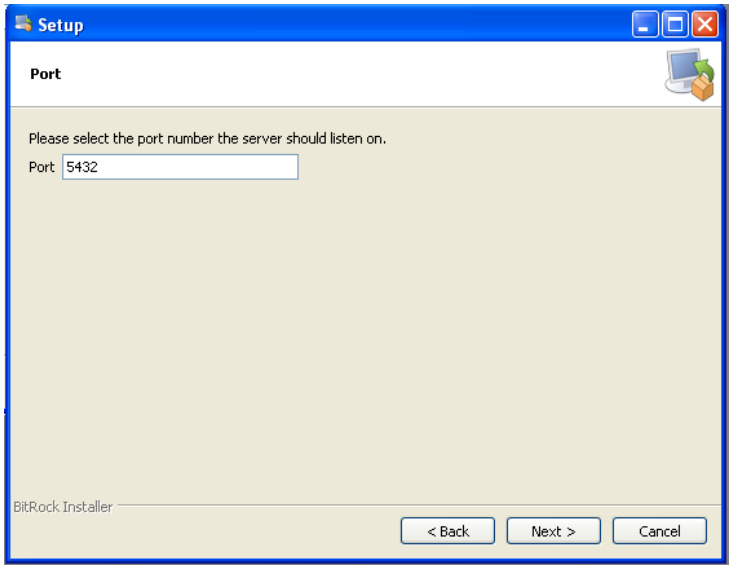
SensorView can use an existing PostgreSQL database or a dedicated one. Which option is most appropriate is at the discretion of the system owner. The most recent versions can be downloaded at: http://www.enterprisedb.com/products/pgdownload.do#windows for the relevant windows version, x86-64 (64 bit) or x86-32 (32-bit). A few notes on the installer:

Super-User Creation Screen:
The screen below configures the default super-user account for PostgreSQL, **take note of these credentials** as those will be the default login account and password for all access to the Postgre SQL database.



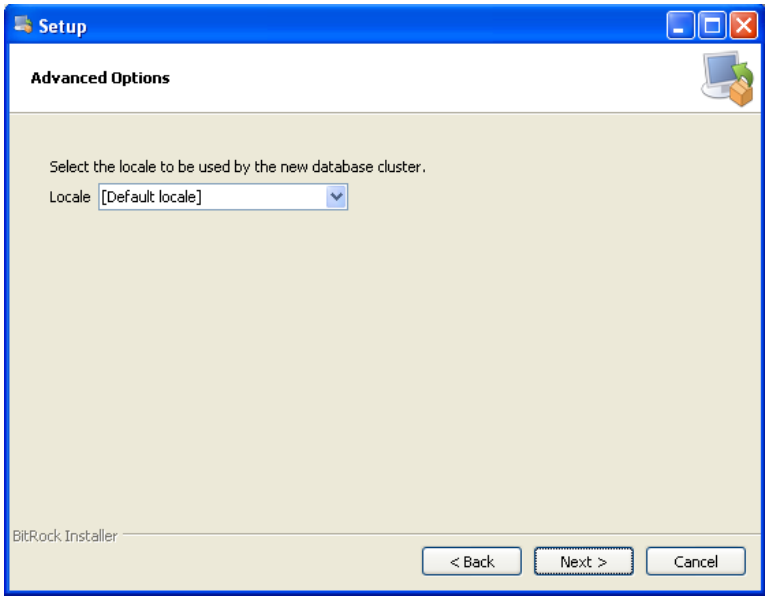
Port Configuration Screen:

The screen below allows for configuration of the port that PostgreSQL will use for connections. Use whatever value is required by system administrator. Note, SensorView and GreenScreen can be configured to use any port value.



Advanced Options:

The screen below allows for configuration of the locale that PostgreSQL is operating in. The default is almost always sufficient. If the installation site has specific requirements then select the most appropriate option from the drop down. The selected option does not seriously affect GreenScreen operations.



On the final screen, push "Next" to finish the installation of PostgreSQL onto the local computer.

1.2: Configuring PostgreSQL to allow remote connections

This step is only necessary if SensorView and the PostgreSQL database reside on separate computers. By default, PostgreSQL will not allow any remote connections; to change this, administrative access to the host machine for the database is required. To setup PostgreSQL to allow remote connections, go to the directory PostgreSQL was installed at (by default C:\Program Files\PostgreSQL), from that folder open the file at X.Y\data\pg_hba.conf; this file can be opened in notepad or any generic text editor. For additional documentation on how to configure pg_hba.conf, as well as any questions, refer to:

Version of PostgreSQL	URL
9.0	http://www.postgresql.org/docs/9.0/static/auth-pg-hba-conf.html

For all database versions, adding the following line to the bottom of the file to allow ALL remote connections to the database:

host all all 0.0.0.0/0 md5

Note, allowing all connections is a potential security risk that should be weighed by system owners.

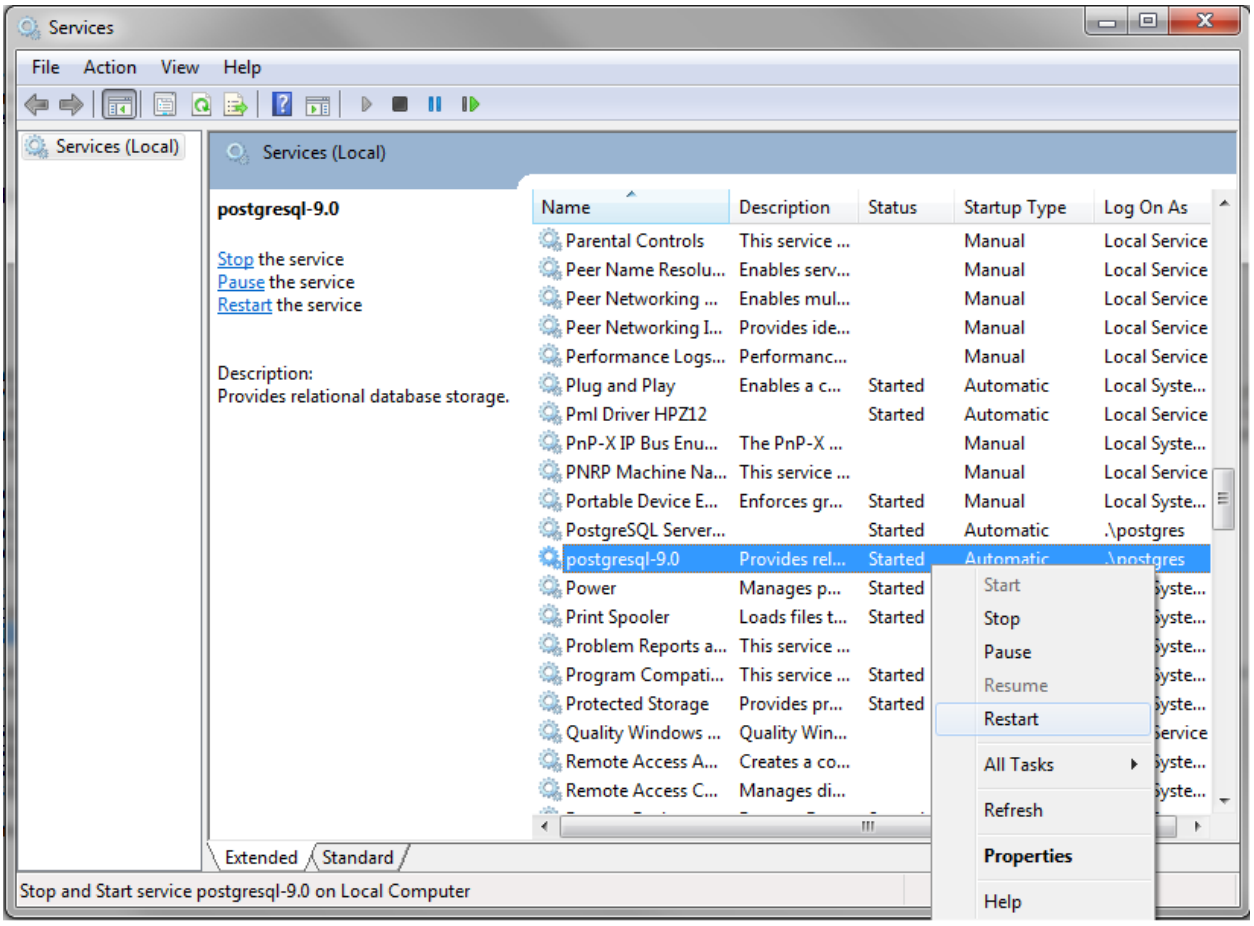
Save the changes and close the file. PostgreSQL will now accept remote connections from the configured host.

1.3: Restarting PostgreSQL

PostgreSQL must be restarted before the changes made to pg_hba.conf will take effect. If no changes were made to pg_hba.conf then this step is unnecessary. Go to **Start Menu -> Control Panel -> System and Security -> Administrative Tools -> Services**. In the services window select the following service:

Version of PostgreSQL	Service Name
9.0 (32 bit)	postgresql-9.0-PostgreSQL Server 9.0
9.0 (64 bit)	Postgresql-x64-9.0

Right click on the relevant service name and select **Restart**; this will restart the database server.



1.4: Firewall Setup

If the computer running PostgreSQL is a different from the computer running SensorView, then the firewall on the computer running PostgreSQL may need to be updated to allow for incoming connections on whichever port PostgreSQL was configured to listen on. This will vary depending on the firewall software in use.

2: Setting Up Database Connection

A connection to the database that GreenScreen will store data in must be configured. This involves downloading and installing a driver for the database and configuring a system DSN that specifies the connection parameters to SensorView and GreenScreen. Both steps 2.1 and 2.2 must be performed on the computer that is running SensorView.

2.1: Installing a PostgreSQL Driver

For SensorView to connect and control the PostgreSQL database a driver must be installed on the machine running SensorView. Install the following driver:
https://ftp.postgresql.org/pub/odbc/versions/msi/psqlodbc_09_03_0400.zip

After downloading, open the zip file and run psqlodbc.msi and install the driver.

2.2: DSN Configuration

DSNs provide a way to configure a datasource connection in a standard consistent way that can be used throughout the machine. A DSN must be configured to allow SensorView and GreenScreen to connect to the database; this must be done on the machine running SensorView. A DSN consists of a name, database, server, port, user, password, and SSL connection requirements. Locating the correct DSN configuration tool varies depending on the specific version of Windows and whether or not it is 64 bit.

To configure a DSN for all 64 bit variants of Windows go to:

> **Start Menu -> Run -> type C:\Windows\SysWOW64\odbcad32.exe and press Enter (Assuming Windows is installed to C:, otherwise substitute correct system path)**

To configure a DSN for Windows 7 32bit/Windows 10 32bit

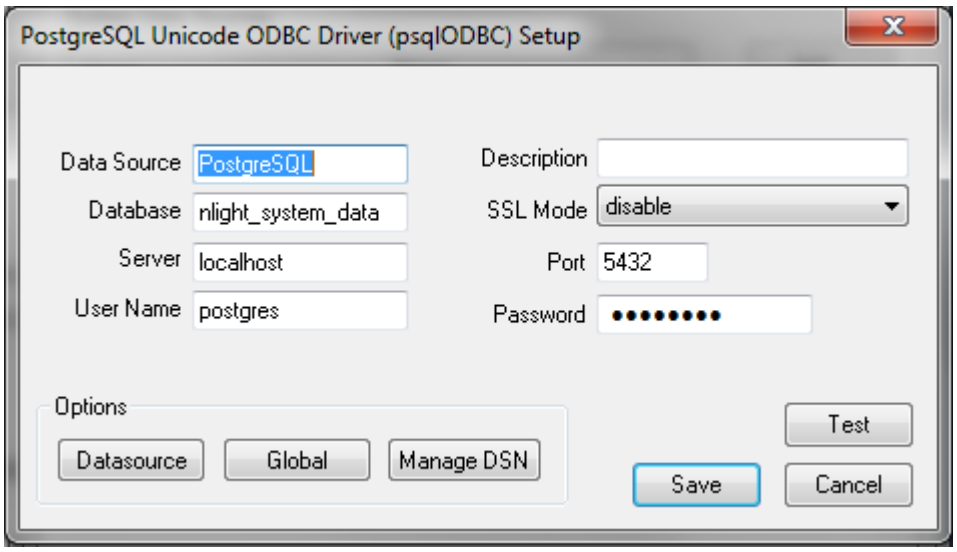
> **Start Menu -> Control Panel -> System and Security -> Administrative Tools -> Data Sources (ODBC)**

Once the Data Sources (ODBC) popup is open, select the tab **System DSN**, then press **Add**. Select a datasource from the list. The name of the driver will vary depending on what was installed, commonly for 32 bit the name will be "PostgreSQL Unicode", this is the driver that was previously installed during PostgreSQL setup (2.1). Select Finish and a form will appear with additional fields to fill out.

Fill out the form with the following values:

Data Source	A custom name for the DSN that will be put into SensorView
Database	nlight_system_data
Server	IP Address or hostname of machine running PostgreSQL server. (127.0.0.1 or localhost for local computer)
Port	Port PostgreSQL was configured to run on (by default 5432)
User name	Account name and password for the database user (refer to step 1.1 above)
Password	
SSL Mode	As appropriate for the database (disabled by default)

Sample:



Select **Save**. Note, the Data Source name value as this is the field that must be entered into SensorView later. Note that pressing the **Test** button will fail with "database not found" until step 3.1 has been completed.

3: Setting Up GreenScreen

In order to configure and run SensorView the plug-ins component must be installed. For new installs this can be accomplished by making sure that plug-ins is checked during the feature select portion of the SensorView install. For existing installations, run the installer and select Modify, then check plug-ins and push modify. Once the plug-in components have been installed, open SensorView and go to the **Admin** page and select **Plug-ins**.

3.1: Configure Administrator Email (Optional)

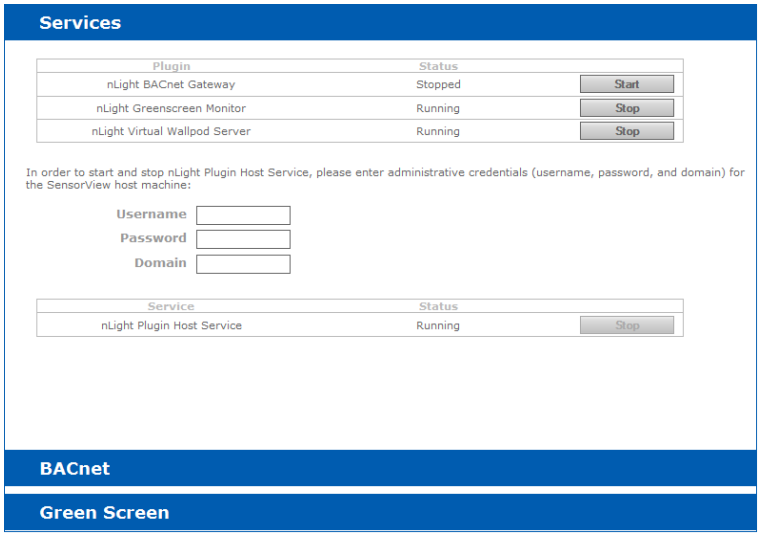
GreenScreen will notify the administrator via email if it encounters any issues while attempting to start. To configure email notification the administrator use of SensorView must have an email address entered; additionally the Mail Server section (found at Admin->Setup->Mail Server) must be filled out to allow for email to be sent from SensorView. Notification emails will be sent if the host Windows service fails.

3.2: Database Initialization

Once PostgreSQL, the database driver, and the system DSN have been set up and configured, the last step is to build the GreenScreen database and start the service. To build the database, in SensorView, go to **Admin -> Databases**. At the bottom of the screen is the GreenScreen Database Setup section. Input the name of the custom DSN that was previously configured and SensorView will build the database (upon hitting save). If the credentials supplied in the DSN do not have the create database privilege, then SensorView will prompt for credentials that do. SensorView will use those credentials to create the database and give ownership to the credentials in the DSN. Afterwards the other, higher, set of credentials will be discarded.

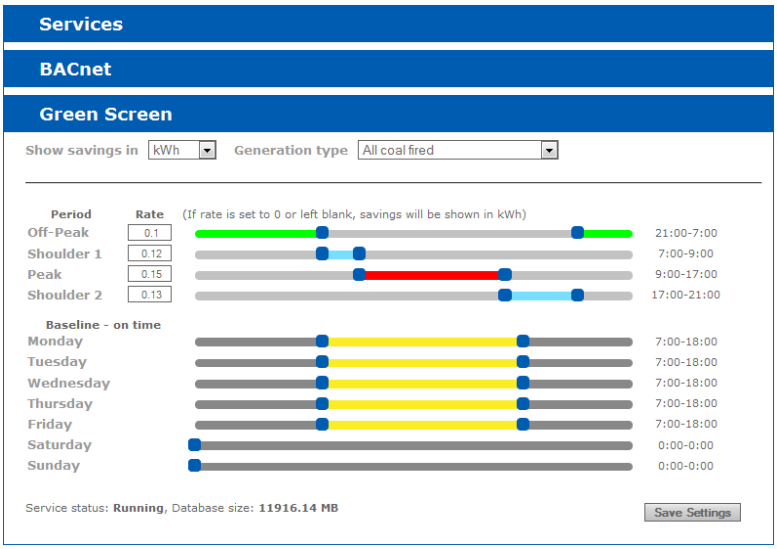
3.3: Starting GreenScreen

In order to start GreenScreen, the plug-ins component must have previously been installed (3.0); if this has not been done then there will be no **Plug-ins** tab. Proceed to the **Admin** screen in SensorView and select **Plug-ins**. The host service should already be running; if it is not then the username, password, and domain (optional) must be filled out, then start the nLight Plug-in Host Service. Once this is running GreenScreen can be started and stopped in the top window.



3.4: Configuring GreenScreen Operations

Within the accordion select **GreenScreen**; on this page options can be set that will configure how GreenScreen will compute savings and what units to display them in.



Display Options:

SensorView can be configured to show savings in dollars or kWh. For CO2 savings, the generation type for the electricity can be selected that will be used to determine CO2 savings.

Electrical Rates:

SensorView can be configured with the building's electrical rates. Set the rate and time periods in which the rate applies. These settings will only be used if SensorView is set to display savings in dollars.

Baseline Periods:

During these periods, SensorView will assume the building is occupied. Energy savings (whether in dollars or kWh) are relative to how much energy would have been spent, with all control points in the system being on for the duration of the baseline periods. Refer to the GreenScreen data sheet for a more detailed explanation of savings analysis.

Hit **Save Settings** to save the configuration.

Once SensorView has a valid Data Source which can connect to the database, it will display the current size of the database and the state of hosting service in the bottom left corner of the screen (completed in step 3.1).