

Manual

PVGuard[®]

Installation and Technical Reference



Synopsis

Describes how to install PVGuard on a PC and provides other technical troubleshooting information.

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Publisher

skytron[®] energy GmbH Ernst-Augustin-Straße 15 / D - 12489 Berlin
Managing Director: Jörgen Klammer
Tel: +49 30 338 430 - 0 / Telefax: +49 30 338 430 - 99
info@skytron-energy.com / www.skytron-energy.com

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1 Introduction

This manual is part of the documentation for the PVGuard Supervisory Platform, the skytron monitoring and control system for photovoltaic power plants. PVGuard is a sophisticated software package, written in the Java™ programming language. The manual provides information concerning the installation and operation of PVGuard, including information concerning the installation of Java, and about certain other technical issues that may affect the correct operation of the program.

1.1 Overview to Installation

The installation of the PVGuard Supervisory Platform involves the following steps:

Preparation

1. Check the computer specification against requirements
2. Install Java®
3. Obtain the user credentials from skytron

Installation

1. Download and run the installation file from the PVGuard website
2. Set the language
3. Set up the connection details for your account (including proxy settings if necessary)
4. Run the installed program

1.2 PVGuard product range

The current document describes the installation of the PVGuard Supervisory Platform, the most extensive product in the PVGuard family. The full range of products in this family includes:

Product	Description
PVGuard Supervisory Platform	PVGuard Supervisory Platform is our tool to help you with the remote monitoring and maintenance of your PV system. Specially designed for PV plants in the megawatt range, PVGuard® provides you with fast access to the operating data you need.
PVGuard WebPortal	The PVGuard WebPortal offers quick and convenient access to plant information that is typically of interest to plant owners and investors. Without the need for additional software and cumbersome program installations, and from (almost) any corner of the world, you can call up key information such as performance and yield data of your plant(s).
PVGuard Mobile	Through the PVGuard Mobile you get fast, global access to the most important plant data. The displays, which have been tailored to the needs of investors and plant operators, present performance and yield figures clearly on your mobile device.

2 Before you start

Before installing PVGuard you need to:

- Check your computer's configuration
- Ensure you have the correct software environment (Java) installed
- Obtain the login credentials from skytron

These requirements are described in the following sections.

2.1 System Requirements

Operating system

PVGuard will run on operating systems that support Java. This includes both Microsoft Windows™ Windows and Apple OS X™.

At present, Version 8 of Java is recommended although the program will run on Version 7.

Processor

At least a dual-core processor (recommended 4 or more cores)

Memory

RAM: Minimum 2 GB, 8 GB recommended

Disk: Minimum 2 GB of free disk space

Video

Recommended resolution: 1920x1080 pixels

2.2 Installation of Java™

Where can Java be obtained?

Java is produced by Oracle® and can be downloaded free of charge from the following website:
<http://www.java.com/en/download>.

In general, you should follow the guidelines published by Oracle for installing Java on a PC. The notes in the following sections provide further guidance.

Which Java Version?

Currently Java Edition 7 (JRE 7) is recommended. Unless you need to develop Java programs yourself, you will only require the *Java Runtime Environment (JRE)*.

32-Bit or 64-Bit version?

Java comes in 32-bit and 64-bit versions. You should follow the Oracle guidelines for establishing which version of Java you need.

For Windows: If your computer is running a 32-bit version of Windows, then you must install the 32-bit version of Java.

For OS X: The 64-bit version is to be used.

Guidance for this is available on the download website for Java (currently: <http://docs.oracle.com/javase/7/docs/webnotes/install/index.html>).

Updating Java

We recommend that the version of Java is kept up to date with updates as they are released by Oracle. Should any technical compatibility problems arise when installing a new version of Java, report this to the skytron service desk. Such problems are usually minor and will be resolved as a matter of priority by skytron.

Multiple versions of the Java environment

Experience has shown that having multiple versions of Java on a computer can give rise to problems, where only one (usually the latest) of the two versions is updated correctly. Therefore the use of only a single version of Java is preferred.

2.3 User credentials

When downloading and installing the program you will need the following login credentials from skytron:

- Username and Password to be able to download the program from the PVGuard website
- URL, Username and Password to must be entered into the program to access your plant data

 **Note:** If you just wish to see and evaluate the program, a demonstration version is available from the [skytron website](#), pre-configured with appropriate user credentials.

3 Installation of the PVGuard program

Once Java has been installed, the PVGuard program may be downloaded and installed. Follow the steps described in the next sections.

3.1 Getting the PVGuard program

Download the installation file

You can download the installation file from the following webpage by entering your user details: <http://www.pv-guard.com/login>. You will need the website login name and password that you received from skytron. You will then be prompted to download or open an installation file having the extension '.jnlp'.

Running the installation

On downloading the installation file you will be usually prompted by your web browser as to whether you wish to save or run the file. You may save the downloaded file if you wish, but this is not essential. Run the file immediately to install PVGuard. A security message may be displayed before the installation process starts - simply accept this to allow the installation to proceed.

3.2 Setting the initial client configuration

If you are running PVGuard for the first time, the **Client Configuration** dialog will open during the installation process as shown below.

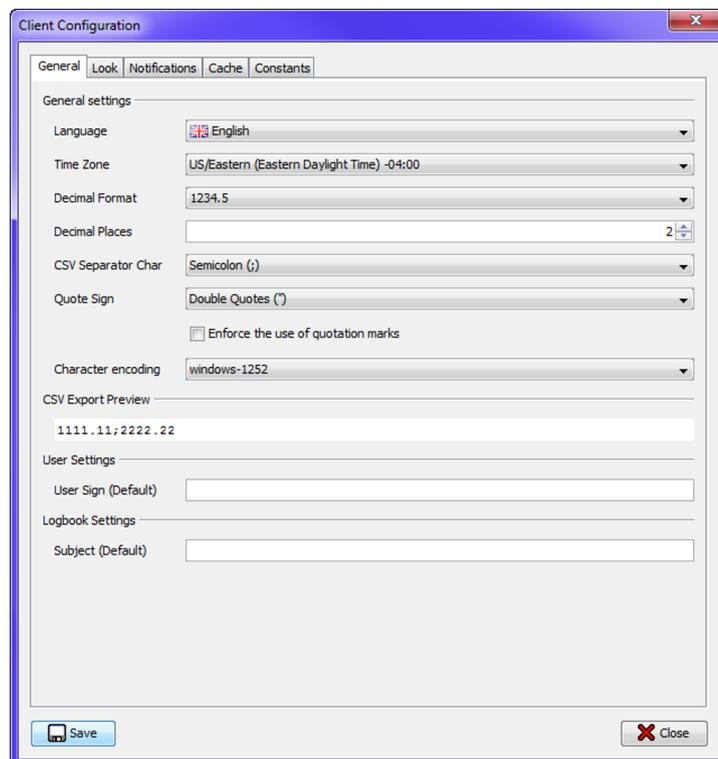


Fig 1: The Client Configuration dialog

At this point all you need do is to select the desired language of the GUI in the **Language** drop-down list and click **Save**. The language selected will be set as the default; however, the language can be easily changed at any time later.

You may also find it useful to enable the menu feature that allows you to save the window arrangement. This is described in section *PVGuard®*. Whilst not essential, many users find this function helpful.

➤➤ **Note:** The other client configuration settings can be set up later, once you have installed the program.

3.3 Allow the window arrangement to be saved

If you run PVGuard regularly, you may find that there is a certain arrangement of the views is helpful to your work.. PVGuard makes it possible to save an arrangement, so that it is restored automatically next time you start the program.

However, first you must allow this menu function to appear. This is controlled by a setting in the **Client Configuration** dialog.

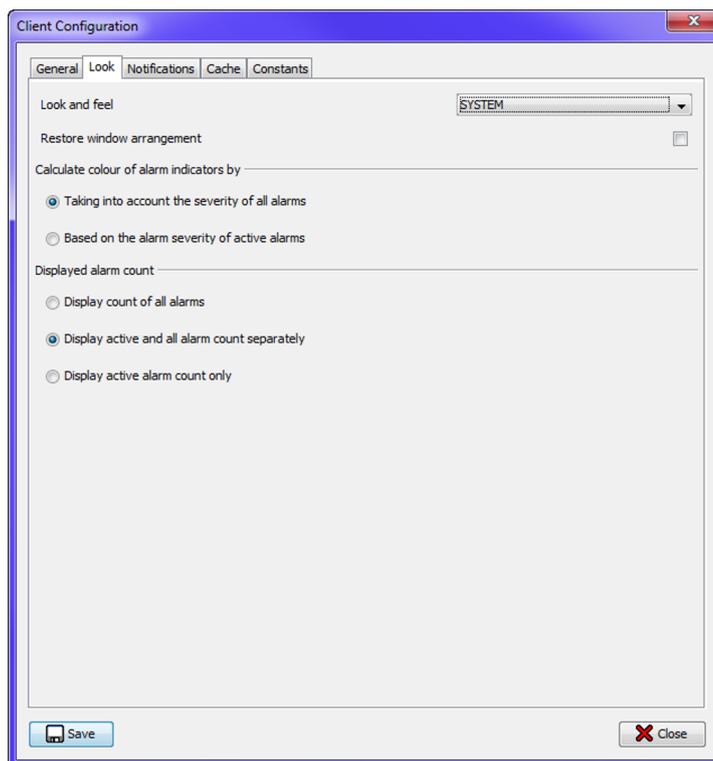


Fig 2: The Look tab in the Client Configuration dialog

Open the dialog from the menu **Configuration > Client Configuration**. Select the tab **Look**. Here, tick the box in the line **Restore window arrangement**, and click **Save**.

After this, a new menu command will become available **Views > Save Window Layout**. Arrange your preferred views in the most efficient arrangement in the program, and run this command. After this, the next time you start PVGuard, the saved arrangement of windows will be restored. You can change the arrangement at any time by running the command again.

3.4 Configuring the connection settings

The Connect dialog

Before you can run PVGuard, you need to set up the connection details for your skytron account. This information is entered through the **Connect** dialog.

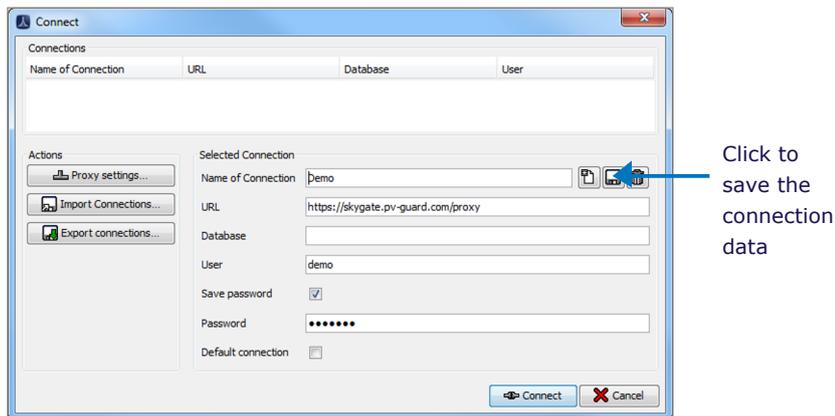


Fig 3: The Connect dialog

Fill in the fields of this dialog according to the following table:

Field	Entry
Name of Connection	Any name you wish
URL	The recommended URL is https://skygate.pv-guard.com/proxy using a secured connection. However, should you experience connection problems with this, a non-secured connection may be used through the URL http://skygate.pv-guard.com/proxy
Database	<Leave blank>
User	<Use the data supplied by skytron>
Password	<Use the data supplied by skytron>
Save Password	Activate this option box if you want avoid having to enter a password each time you use the program, and enter the password in the Password field.
Default Connection	Tick this box to have this connection re-established automatically after the program restarts.

Table 1: Fields in the Connect dialog

Save the connection details

We recommend you click the middle button, **Save this Connection** to save the connection settings as shown in the figure. The connection details for this connection will then be available in the connections list of the dialog after you restart the program.

Many organisations use a *proxy server* for Internet connections. If you know that your organisation uses such a server (or, for example, after find that you can't establish a direct connection), click on

the button **Proxy Settings...** and enter the necessary details for the proxy server in the dialog as described in [Configuring the Internet-Proxy Settings, on page 10](#).

Finally, click the **Connect** button.



Note: A detailed description about setting up connections is also given in the PVGuard User Manual.

3.4.1 Configuring the Internet-Proxy Settings

The **Proxy settings** dialog allows you to configure the settings for the Internet access. If your organisation doesn't use a proxy server for Internet connections, you don't need to do anything in this respect; the default settings will be adequate.

What is a proxy?

Many organisations use a *proxy server* as a bridge between a company's internal networks and the Internet. Traffic to and from the Internet then passes through the proxy server. This provides enhanced security and other benefits. However, programs that need to access the Internet, such as a browser or PVGuard, may need to know about the proxy server otherwise they will not be able to make connections to the Internet.

By default PVGuard will attempt to access the Internet using a direct connection. If this doesn't function and you can't connect to the Internet you may need to adjust the proxy settings. In this case it is usually best to contact your network or IT systems administrator; they will be able to advise you about the settings to use.

The Proxy Settings Dialog

The **Proxy Settings** dialog is shown in [Fig 4: The Proxy Settings dialog, on page 11](#).

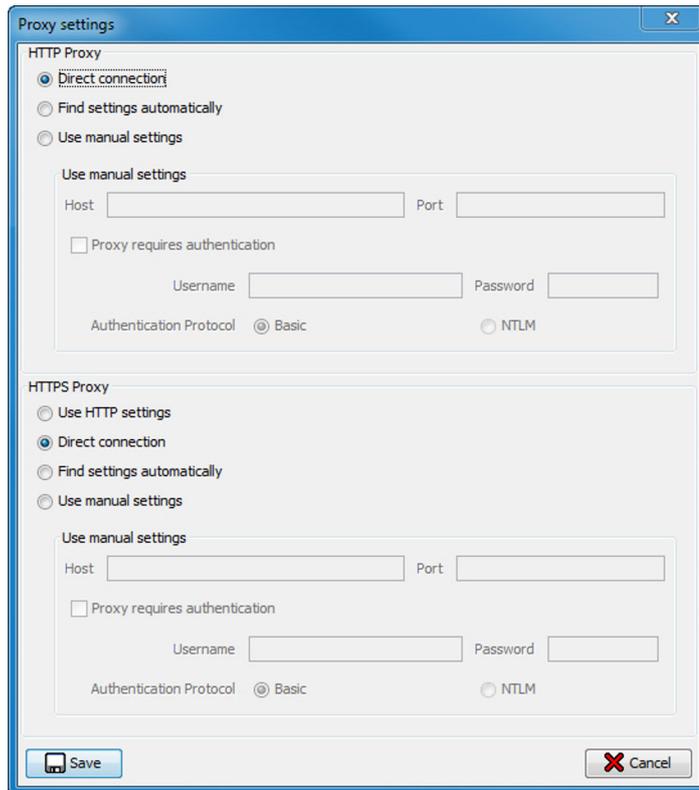


Fig 4: The Proxy Settings dialog

The dialog box is split into two similar halves: *HTTP-Proxy* and *HTTPS-Proxy*. However the use of HTTPS proxies is relatively rare, even when a URL with an https address is being contacted (such as <https://skygate.pv-guard.com/proxy>), and in this case we recommend you first consult your organisation's network administrator.

The settings are described in the following table.

Field	Entry
Direct Connection	Select this option if you have a direct connection to the internet and do not use a proxy server.
Find settings automatically	In this option, the program will attempt to find the correct settings automatically, if this option is supported by the proxy server.
Use manual settings	Here you must manually enter the data to be used for the proxy. <i>Host</i> will usually be an IP address such as 192.164.200.200, and <i>Port</i> a number such as 8080.
Proxy requires authentication	If the proxy additionally requires a user name and password to allow traffic to the Internet, you should enter these here.
Authentication protocol	PVGuard supports both Basic and NTLM protocols for authentication with a proxy. Consult your network administrator concerning this.

Field	Entry
Use HTTP settings (HTTPS section only)	Activate this option to have PVGuard use the same proxy settings for both secure (HTTPS) and non-secured (HTTP) connections.

Table 2: Fields in the Proxy Settings dialog

➤ **Note:** If in doubt or you have problems making a connection, consult your organisation's computer systems administrator.

3.5 Running the program

Running the program for the first time

During the installation, an icon will have been saved on the computer desktop. Start the program using this icon. PVGuard will open using the default connection details that you entered. (If there is no default connection, the **Connect** dialog will pop up; enter the desired connection and click **Connect**.) If you hadn't saved a password, you will be prompted for one at this point. Then the program's main window will open.

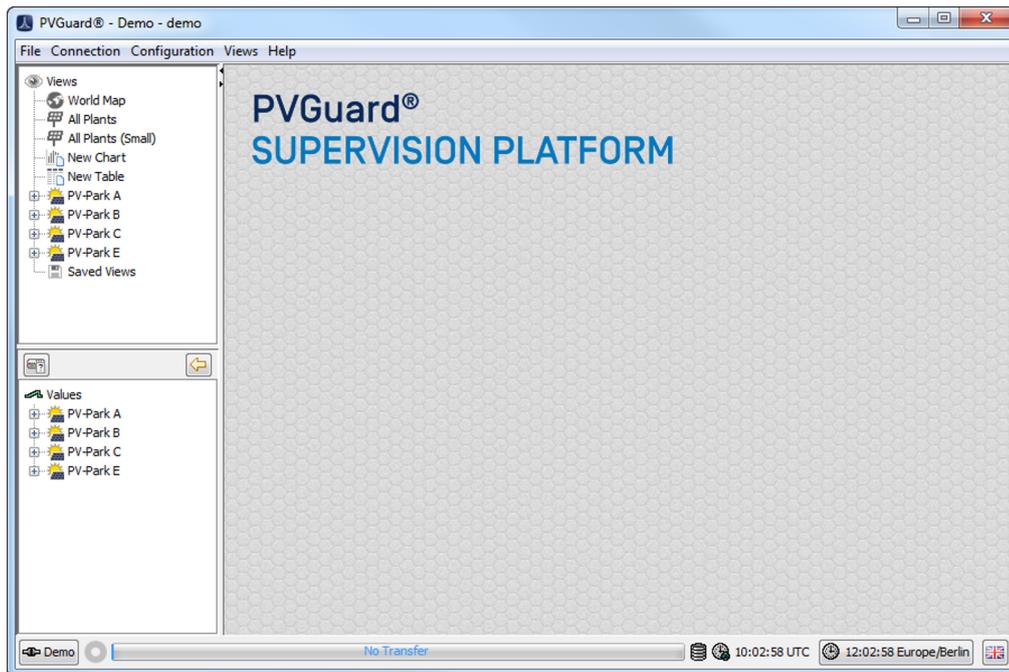


Fig 5: The PVGuard main window

Operation of the program

Full details about running the program are given in the PVGuard User Manual.

Program updates

Updates to the program will be published by skytron from time to time. These will install automatically - no action is needed on your part. For major releases you will be informed about the updates contained in the new release.

4 Troubleshooting PVGuard

Usually the program will install and run without problems. However problems can sometimes occur so that the program does not appear to be running as it should. The following section provides you with guidance in the case any such problems occur.

4.1 Possible interactions between PVGuard and anti-virus systems

Sometimes problems with PVGuard have arisen owing to interactions between PVGuard and the anti-virus system on users' PCs. The symptoms of this might include:

- PVGuard runs very slowly
- Text on the user interface is not displayed correctly (e.g. appears in block capitals)
- Switching language in the middle of a session doesn't work properly
- Data from the plants doesn't appear

This might be due to one of the following causes:

1. *Issue:* PVGuard runs significantly slower.

Reason: The anti-virus system may be checking the cache file every time PVGuard writes to it (potentially many times per second). This checking has a major impact on performance.

Resolution: skytron recommends adding the file extension **.db* to the *exception list* of the anti-virus software (the list of file types that aren't checked at runtime). For details on how to do this, you should refer to the documentation for the anti-virus system.

2. *Issue:* Text on the user interface doesn't appear correctly. Changing the language in the middle of the session doesn't work properly.

Reason: If your anti-virus system is configured to scan all *web traffic*, then this may interfere with the traffic between PVGuard and the skytron servers, since the anti-virus system must first buffer and scan all messages. This can lead to timeouts.

Resolution: The URL for PVGuard (e.g. <http://skygate.pvguard.com>) should be configured as a *trusted address* whose content doesn't need to be checked. The details of this will depend on your anti-virus system. However, we recommend setting a trusted URL using a mask such as **.pv-guard.com/**.

4.2 Repairing PVGuard

In rare cases, you might occur problems with PVGuard such as the display freezing or situations where the elements of the user interface appear in a 'skeleton' format as shown in [Fig 6: Appearance of PVGuard in 'skeleton' format, on page 14](#).

In these situations you should first run the *Repair Tool* function. The command for this can be found in the menu under **Help > Troubleshooting > Repair PVGuard**. Amongst other things, the repair tool cleans the data stored on your PC in the program's "cache". This cache stores, for example, the various texts that appear on the user display.

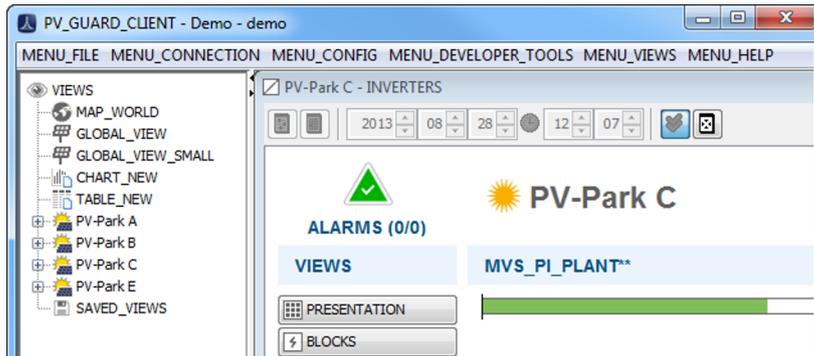


Fig 6: Appearance of PVGuard in 'skeleton' format

➤ **Note:** Note that when you run this command, the program will be restarted, so that you will lose any charts or diagrams that you have opened and set up. If these are important, you should save them first, before running the repair command.

4.3 PVGuard Cleaning Tool

If PVGuard fails to start at all, then it is possible that the application software itself has been damaged. In this case you should use the PVGuard *Cleaning Tool*. This can be found on the download page of the skytron website: <http://www.skytron-energy.com/de/downloads/>.

Download the program from the website and then extract the files either in the download directory or in a temporary folder. Two versions of the program are present: one for 32-bit systems and one for 64-bit systems. If you have a 32-bit version of Windows installed, just run the 32-bit version of the tool. Otherwise (64-bit), we recommend you first run the 32-bit cleaner and then the 64-bit version.

The tool will appear as shown below.



Fig 7: PVGuard Cleaning Tool

Click the cross to run the tool. It may take a few minutes to run. When it has finished, the message below will appear:



Fig 8: PVGuard Cleaning Tool when finished

Next, login page of the PVGuard website will be opened, allowing you to download and reinstall a new version of PVGuard. In this case, proceed as described in [Installation of the PVGuard program, on page 7](#).

4.4 Reporting PVGuard errors

In the event that PVGuard doesn't function correctly, and you have checked for the error in the troubleshooting section of the manual, then you can report the error using the error reporting function built into the program. Using this function has the advantage that the error report to skytron is accompanied by the relevant information from the program that might be needed to resolve the problem.

To report an error choose the menu function **Help > Troubleshooting > Report Software Error**. A wizard will start. Enter into the wizard an exact description of the symptoms, together with any other information you may have concerning the error.