



Welcome to Gateway!

Gateway is the new plant surveillance system from Mita-Teknik.

To operate the system you need a dongle (a hardware device used for license control) from Mita-Teknik with access codes for Gateway.

Gateway cannot be operated with a dongle which only has access codes for other SCADA products from Mita-Teknik such as the DOS Service System, WPMS or ART.

Gateway allows the user to:

- Place new sites, plants and units on an interactive globe.
- Import plant data from DOS Service system and WPMS.
- Select and edit sites using tree and list views.
- Easily set up modem communication to wind power plants equipped with controllers supporting the MNet protocol (WP1000, WP3000, WP3100, IC500, IC1000, IC3000).
- View and navigate in a remote display for a selected unit.
- Start, stop and reset a selected controller.
- Send yaw commands to wind turbines.
- Set time.
- Send start/stop command to the wind turbine.
- Show live data from the controllers.
- Export logs into a flat file and in xml format.
- Configure scheduler in order to perform automatic log collection.
- Get and view menu dumps.
- View 24 hour logs and 1000 lines logs.
- Check the status of the unit, e.g. viewing unit events.
- See if an alarm call has been made.
- See who has accessed the unit application program.
- Get and set summations.
- Get and set parameters.
- Update the application program.

For units equipped with a WP3100 controller the following special functions are also available:

- Parameter menu dump
- 36h log with up to 20 channels, each containing mean, min, max and std. dev values averaged over 10 min.
- Custom languages



System Requirements

Operating Systems

- Windows 2000 Professional
- Windows XP Professional

Dongle

A dongle from Mita-Teknik with access codes for at least one manufacturer and a Gateway "major version 1" code or higher.

Gateway dongle codes can co-exist on a dongle with access codes for WPMS, Service System, and/or ART.

Hardware (recommended)

- Pentium class PC, 2 GHz.
- 1GB RAM or more.
- 5 GB available disk space.
- Display adapter: 1024x768 pixels, true color.
- At least one modem with an appropriate Windows driver should be installed and configured.

Hardware (minimum)

- Pentium II 500 MHz.
- 512 MB RAM.
- 500 MB available disk space (for small park-turbine databases).
- Display adapter: 1024x768 pixels, true color.
- At least one modem with an appropriate Windows driver should be installed and configured.

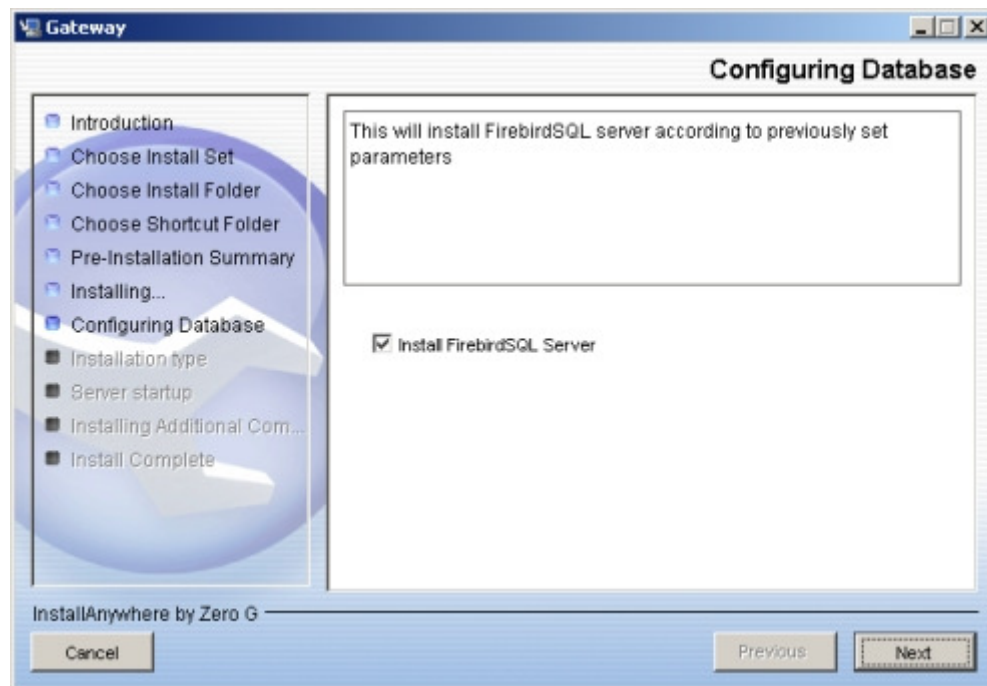
Important notice for older PCs :

After retrieving a large log, such as a 1000 lines log or a 36h log, the PC system will appear to have a very slow response time for up to a few minutes after completing the retrieval. This occurs as the PC is busy recording data to the Gateway database. Simply wait for this operation to complete and the PC's response time will return to normal.

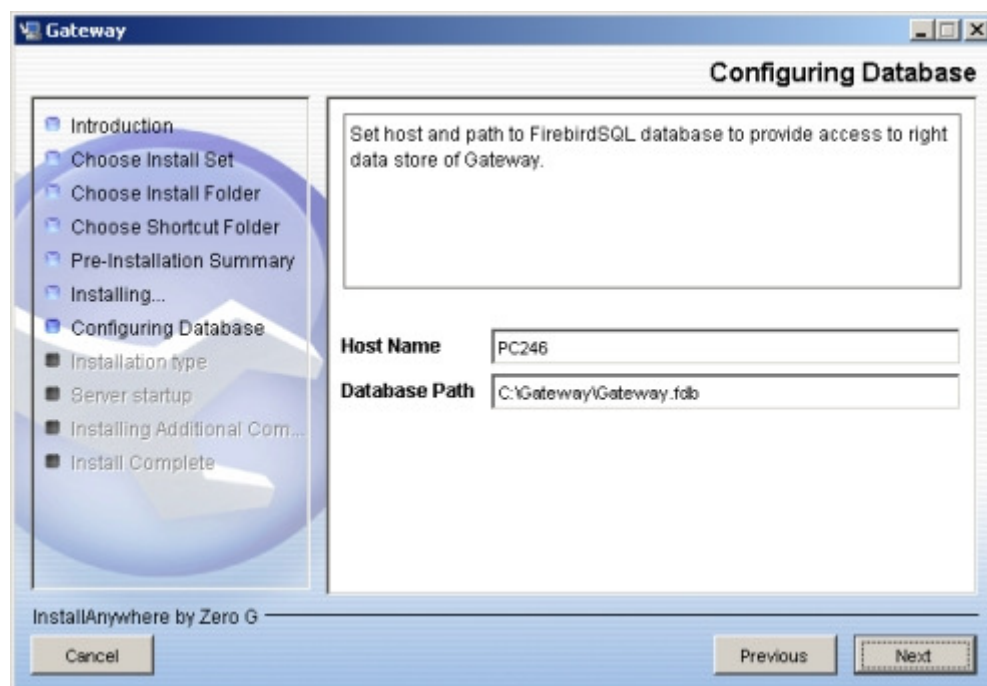


Installing Gateway

1. Close all programs
2. From the **Start menu**, select **Run...**
3. Press the **Browse...** button
4. Navigate to the folder to where the installation file **Gateway_install_X_Y_Z.exe** has been downloaded and select the file.
5. Click the **Open** button (please note that there will be a long pause before the Run dialog appears).
6. Click the **OK** button in the **Run** dialog.
7. Follow the instructions on-screen. In most cases the default settings will be appropriate. FireBird SQL server is required for data storage.



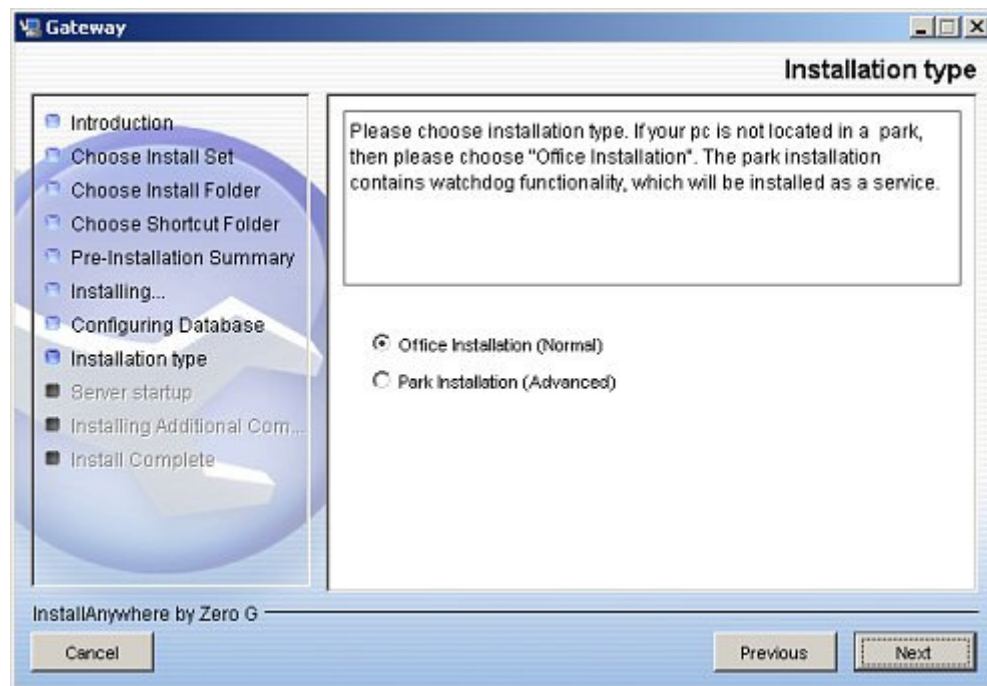
8. For correct storage of the data please leave the path in the **Database Path** field as it is suggested by the installer.



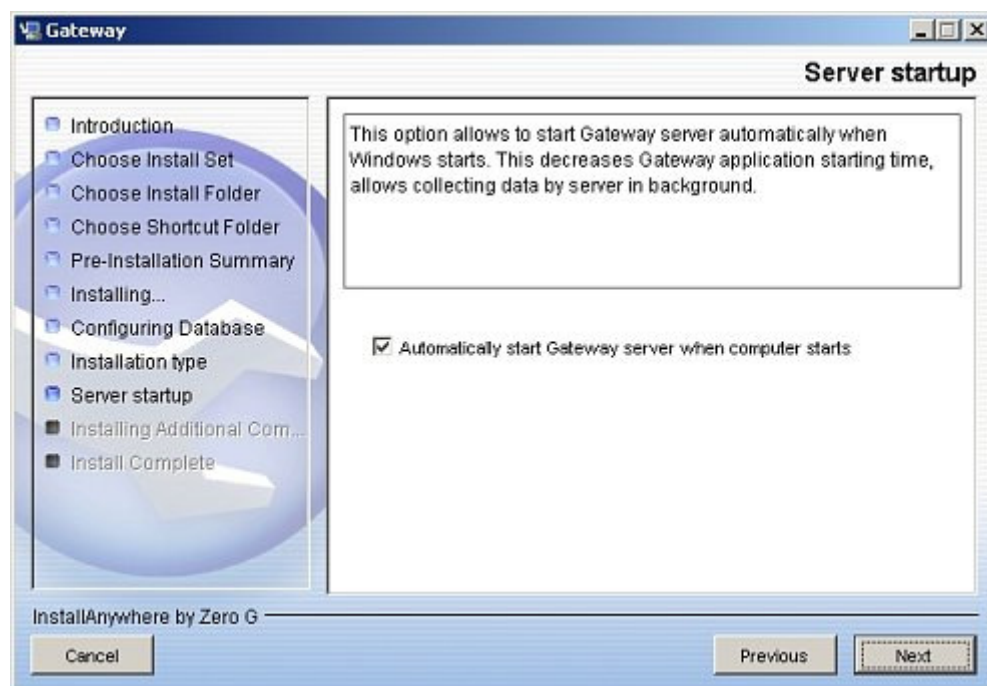
9. You have a choice of **Office** or **Park** installation depending on where your PC is situated. The park installation has an additional feature of [watchdog service](#).

Please note. For successful **Park** installation it is necessary to have the **administrator's account**. In case you don't have such an account and select the **Park installation** radio button the **Gateway** will not function properly.

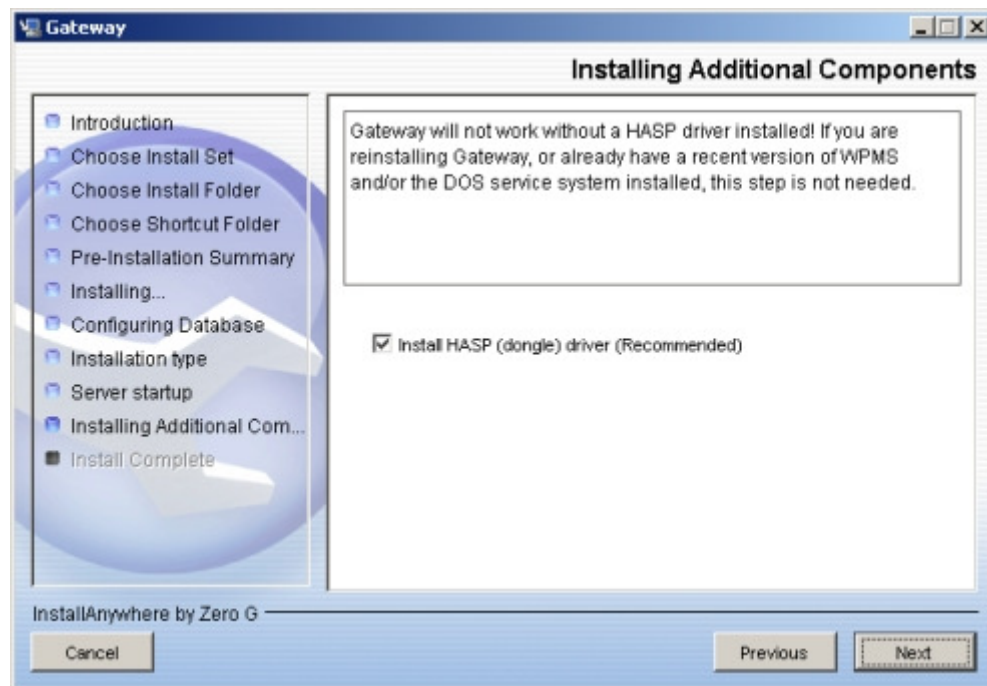
The same concerns the uninstall process. After the **Park installation** was successfully installed on the computer **to uninstall** Gateway user must have the **administrator's rights**.



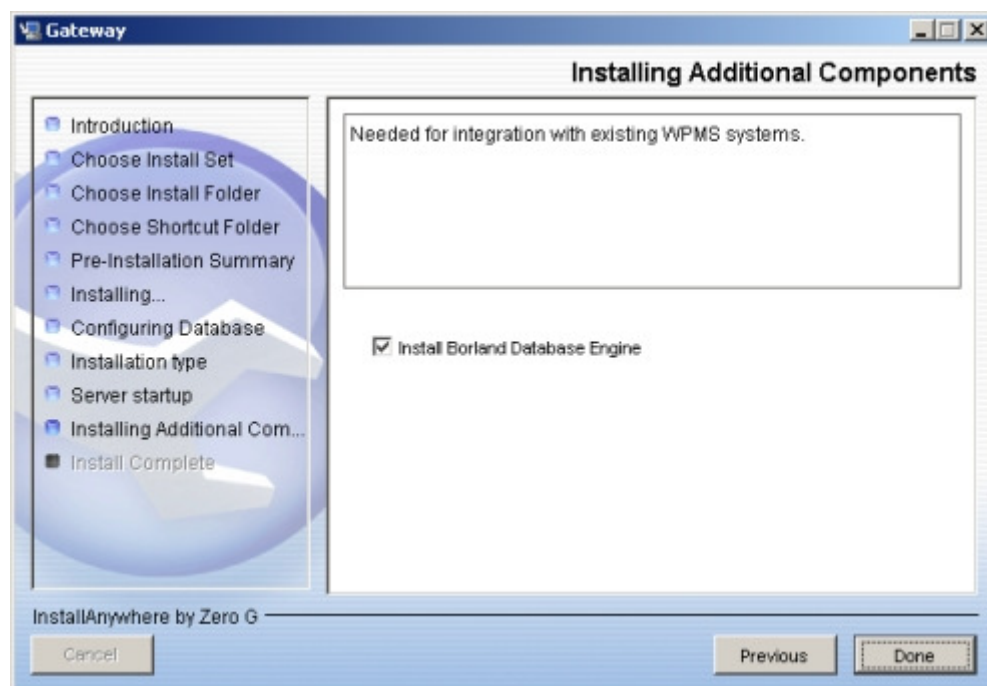
10. Tick the box **Automatically start Gateway server when computer starts** if you want the program to start every time you switch on your computer.



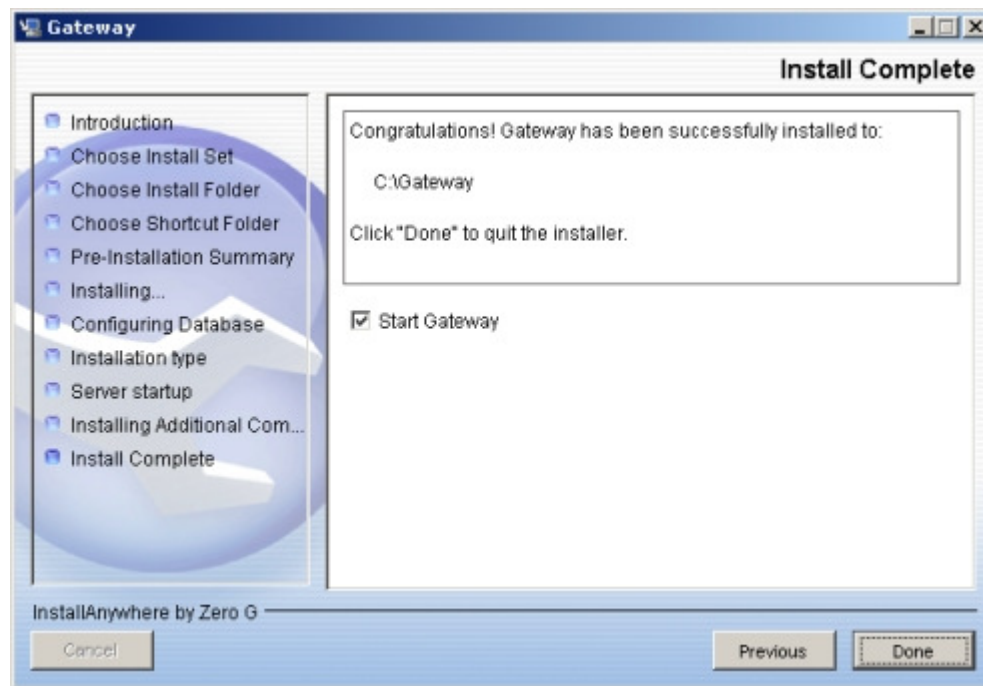
11. In one of the the last panels, the user has the option to install a driver for the dongle (HASP). A valid driver has to be present for the Gateway system to start-up.
If WPMS or the DOS Service system is already installed on the PC, a HASP driver may already be present. However, this may not be the latest version, and there is no risk in installing it again. Therefore, we recommend installing the HASP driver.



12. For import of existing park/turbine data from the WPMS, it is necessary to install the Borland Database Engine. Tick the Install option box and follow the instructions on-screen.



13. When the Borland Database Engine has been installed, click **Done** to quit the installer. The **Start Gateway** check box should be ticked if you want the program to be launched immediately.

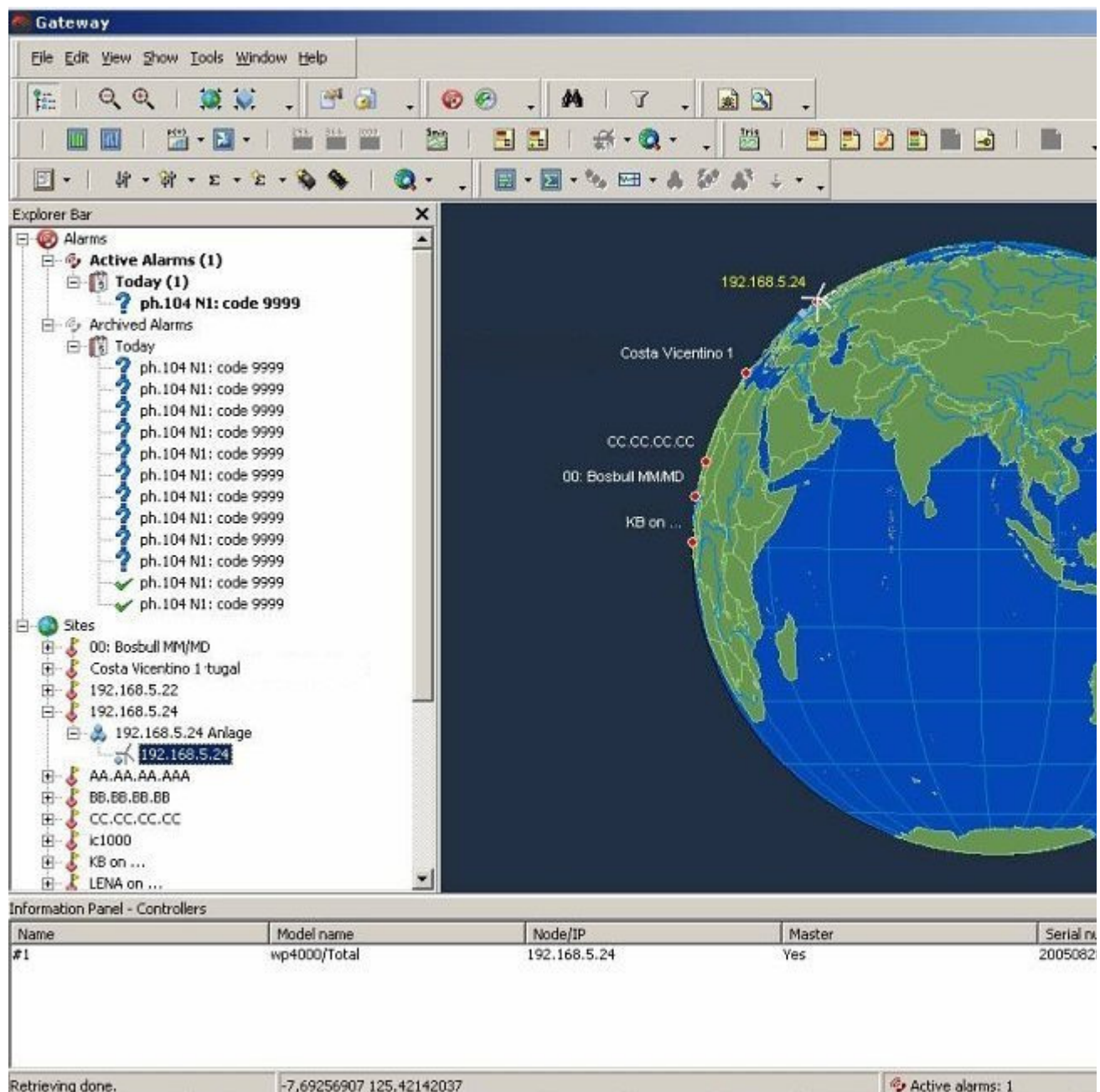


14. Gateway has now been successfully installed on your computer.

First steps



After successful installation of the **Gateway** on your computer you may run it. To do that, click button **Start** in the left bottom corner of the screen then **Programs** and eventually choose **Gateway** from the list. The main **Gateway** window called **Site selector** will appear like below. At the top of the window the main menu and the **Site selector** toolbar are located. Left part of the window resides **Site Tree** while the right one displays the globe with **Gateway** objects placed in it.



Preferences

The preferences are selected via the **Preferences...** item in the **Tools** menu.

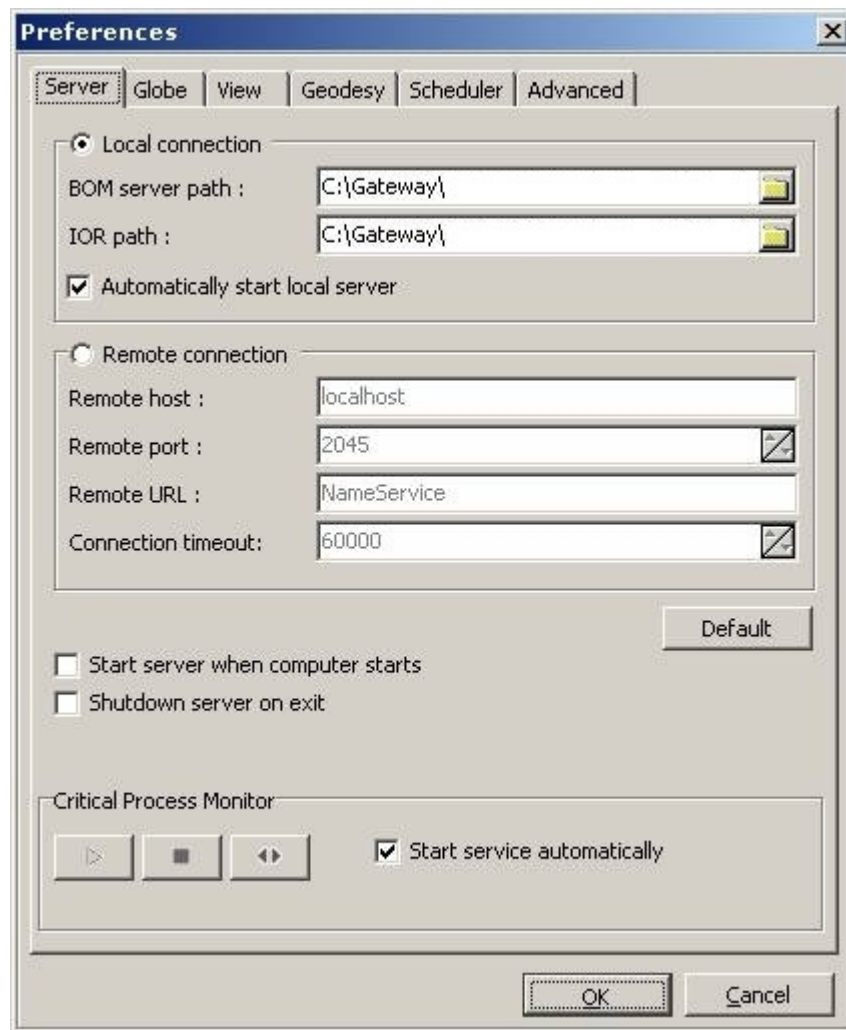
The Preferences enables the user to change the setup of several functions in Gateway, e.g. the server connection, surface texture on the globe etc.

There are six tabs in the Preference dialog window.

Server tab

Select whether or not the program should automatically connect to the server at startup and/or shut down the server on exit. Also, a timeout value can be given. Paths to the server executable files and the object reference files are user definable. [Critical Process Monitor](#) is only available in the park installation.

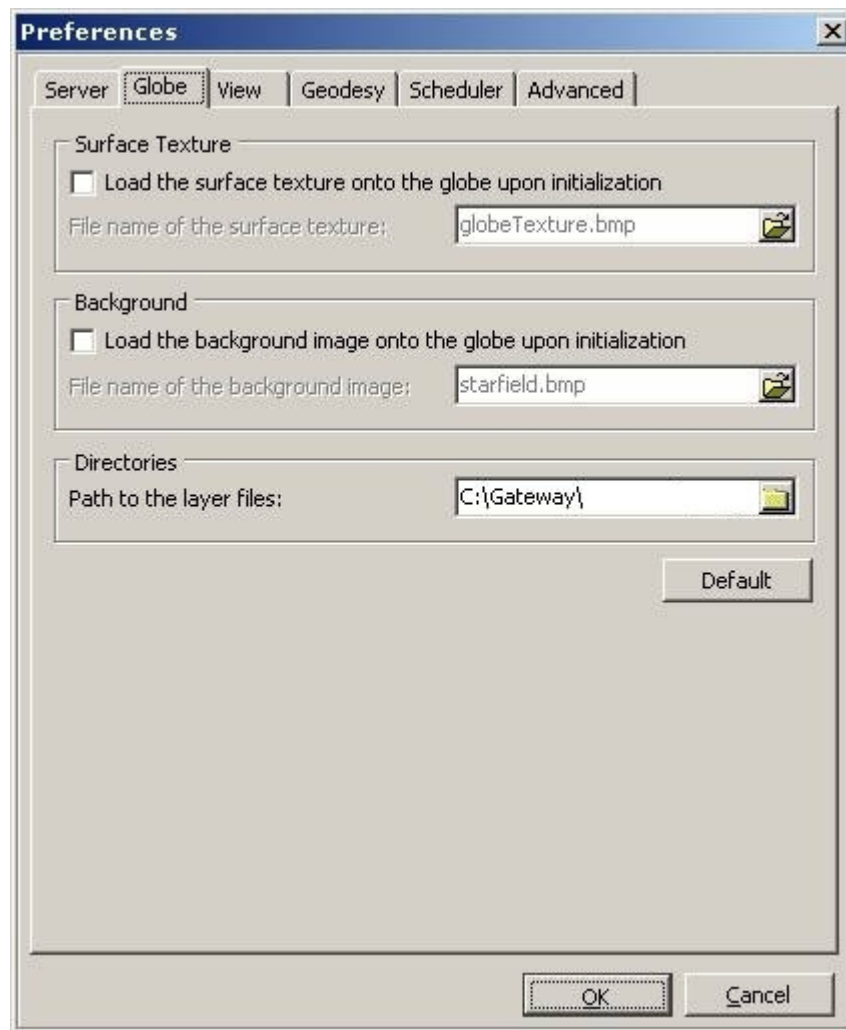




Globe tab


A surface texture for the globe as well as a background image can be loaded on startup. It is possible to wrap a surface texture map around the globe in the form of an 8-bit paletted bitmap file. One such file - GLOBALeb3colshade.bmp - is provided with the Gateway distribution. This bitmap, or another bitmap selected by the user, can be set up as surface texture via the **Globe** tab of the **Preferences** dialog window. Gateway has to be closed and reopened for the change to take effect.

Note: Typical surface textures files are very big and can take up substantial system resources. (about 20 MB RAM for the texture in the example and processing time for live rendering of the bitmap)



View tab

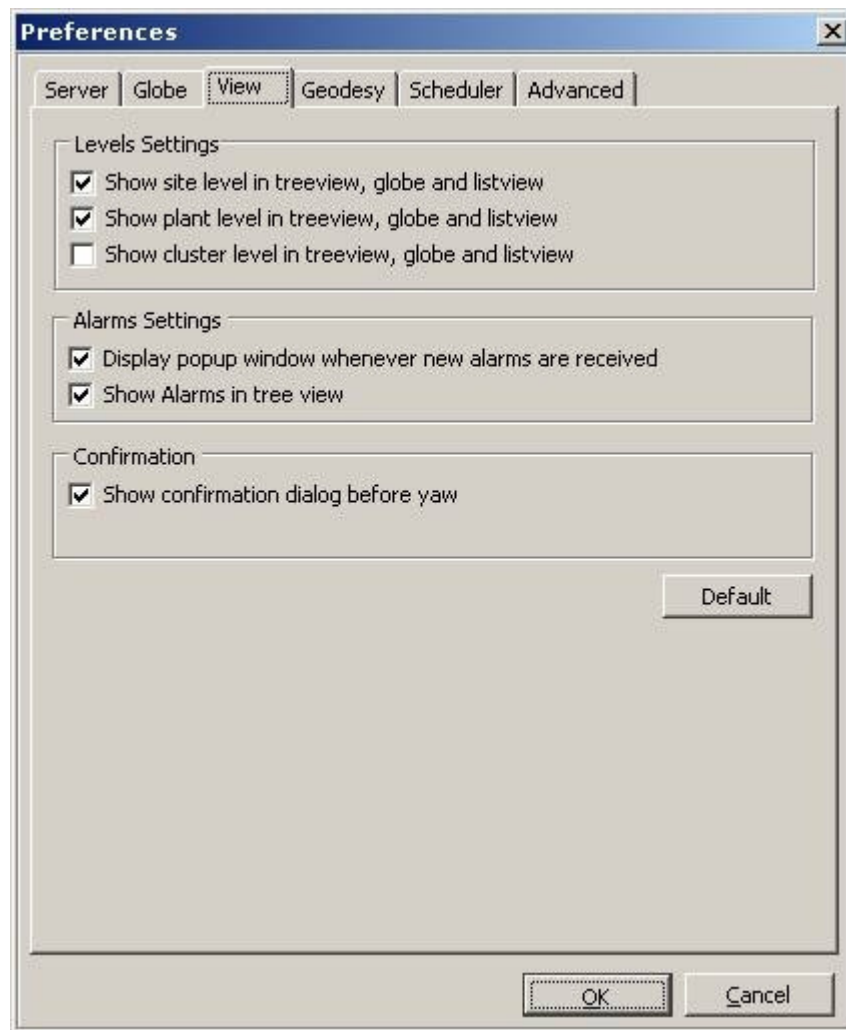
These are settings regarding the way the sites, plants, clusters and units are presented in the program. By default the site and plant levels are present in the hierarchical tree. A cluster level could be added if desired by ticking the appropriate checkbox.

Alarms settings allow a user to have alarms shown directly in tree view indicated with  icon.

Another option of displaying a pop-up window when a new alarm is received is available.

A check box **Show confirmation dialog before yaw** when ticked provides a user with the opportunity to double check that the requested yaw is desired. This acts as a safety precaution against unintentional yaw.

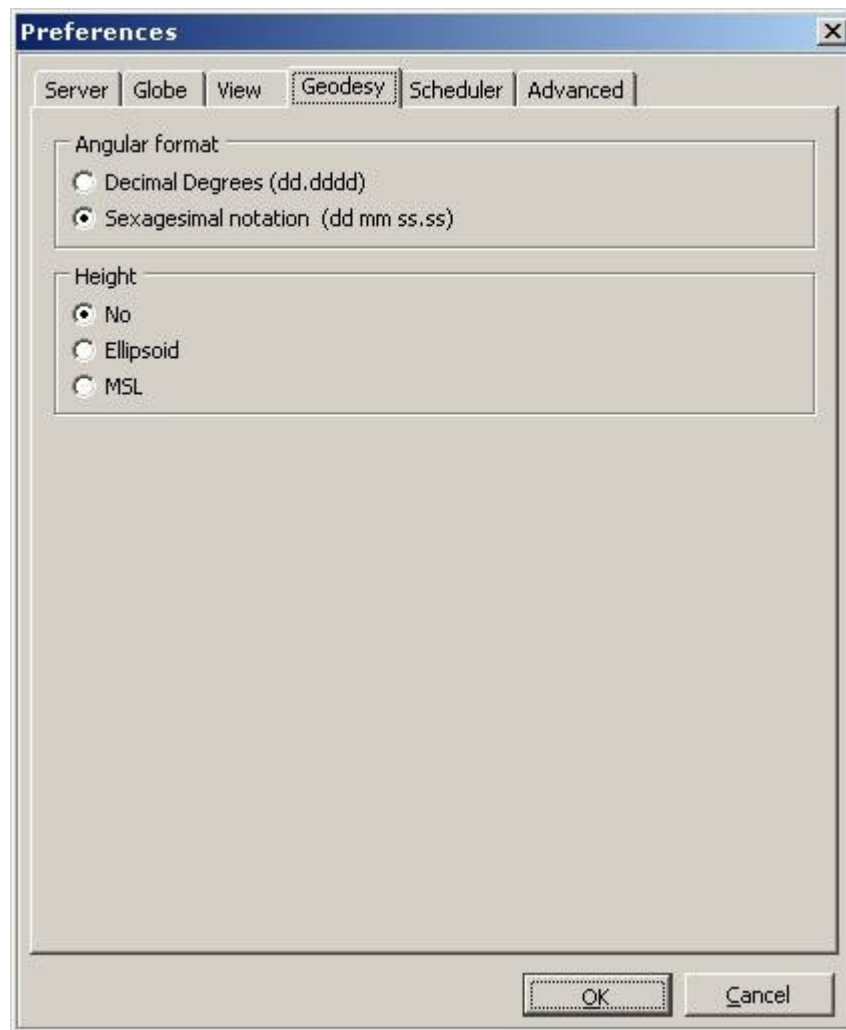
To activate the changes made, click **OK**.



Geodesy tab

This tab allows a user to choose between different representation of coordinates - either as degrees and their decimal fractions or as degrees, minutes, seconds and decimal fractions of the seconds.

Height type indicates height relative to a reference surface - ellipsoid surface or mean sea level (MSL). The Height type selection is automatically set to **No Height** whenever the currently selected coordinate reference system is two-dimensional.



Scheduler tab

The **Scheduler** tab contains a number of fields that are user definable.

The **Reschedule** pane allows a user to set parameters of tasks rescheduling in the Gateway:

Max. number of retries - means number of task execution retries in case the task? previously set in [Task Scheduler](#), has failed to execute properly.

Delay between retries - sets delay in minutes between every trying to re-execute the previously failed task.

The **Export Actions** pane is designed for setting up parameters for sending logs exported into XML files via e-mail:

Outgoing SMTP server - mail server address

Port - SMTP port, if server uses some specific port for mailing

Default email recipient - address of exports recipient (email which would receive exported files)

Mail authentication user name - user name for authentication on mail server before sending letter

Mail authentication password - password for the mail server

Reply email address - address in the field To: of sent email

File export folder - folder where exported files will be located

Alert email address - email, where notifications concerning task scheduler execution fails will be sent

The screenshot shows a 'Preferences' dialog box with a blue title bar and a close button (X) in the top right corner. Below the title bar is a tabbed interface with six tabs: 'Server', 'Globe', 'View', 'Geodesy', 'Scheduler', and 'Advanced'. The 'Advanced' tab is currently selected. The 'Advanced' tab contains two main sections. The first section, titled 'Reschedule', has two fields: 'Max. number of retries' and 'Delay between retries (min):', both with a value of '5' and a spin button. The second section, titled 'Export Action', contains several fields: 'Outgoing SMTP server:' with the value 'postsrv', 'Port:' with the value '25', 'Default email recipient:', 'Mail authentication user name:', 'Mail authentication password:', 'Reply email address:', 'File export folder:', and 'Alert email address:'. The 'File export folder:' field has a folder icon button to its right. At the bottom of the dialog box are 'OK' and 'Cancel' buttons.

For MNet controllers it is possible to have the log files exported as .xml files. This is also possible for MPP controllers but only for certain logs, such as **5min**, **Access**, **Alarm call**, **Status** and **Event** logs.

Advanced tab

In this tab a desired language could be selected.

In Miscellaneous part of the tab if the checkbox **If present, show only channels in total/trigger log with alias** is ticked, only channels listed in alias.prp file with aliases assigned to them will be shown in the log. The names of the channels will be shown as defined in alias.prp.









General description of Gateway objects

Gateway operates with such notions as **Site**, **Plant**, **Cluster** and **Unit** which can be referred to as objects. Below you can find general description of these objects.

- Site.** This object is used to represent a region, where some stationary entities of relevance are placed (or will be placed). In particular, a site can be a place where wind power plant and/or manufacturer service center are situated. Each site is given its unique name and is characterized by its position which includes geographic coordinates, belonging to certain country, and postal address (if relevant). A site can be thought of as a top element in Gateway objects hierarchy because notion of a site includes plant, cluster and unit notions.
- Plant.** A plant is an object consisting of a group of units situated on a certain site. A simple example of a plant is a single turbine equipped with a controller to which a modem is connected. The outside world can access the controller via the telephone network. A more complex example is a large wind power plant, consisting of several clusters which, in turn, consist of a number of units (wind turbines, meteorology stations, feeder stations, dump loads), a surveillance centre, a plant controller, etc. One or several remote connections of a plant with outside world can be installed. All units within the plant share the same remote connection(s) of the plant.
- Cluster.** A cluster is a part of a plant. It is formed by a group of units linked together by communication means. Grouping all units of a plant by clusters is determined by a device by which means certain linked group of units communicates with central plant controller. For instance, each such group of units (i.e., cluster) can communicate with central controller of a wind power plant through certain COM port. Therefore, each cluster is associated with its own COM port in this case. For units communicating using an Ethernet connection, each cluster is associated with a local area network (LAN).

- **Unit.** A unit is a device in a plant which carries out a specific task. To be able to communicate with a unit it must have assigned a main controller. The unit is a generic term for a mechanical device located in the Plant. The unit is the target component that either needs to be monitored, controlled, or both. In some cases, the unit needs to be created in the database as a virtual device as there is no physical device (unit) present, just the [controller](#) itself. In Gateway, the following types of units can be distinguished:

-  **Wind turbine.** Converts an energy of the wind into an electrical energy.
-  **Weather station.** Carries out measurement of meteorological data.
-  **Grid station.** A measuring/metering station that monitors the power grid and current power production from one or several turbines.
-  **Feeder station.** Basically a circuit breaker for feeding electrical power generated in the plant into a utility network.
-  **Dump load.** A unit that converts surplus electrical energy generated by the plant into heat (basically an intelligent resistor). Mainly used in stand-alone systems to ensure the stability of the plant in its interactions with an isolated utility network.
-  **Hydro turbine.** Converts an energy of the water into an electrical energy.

