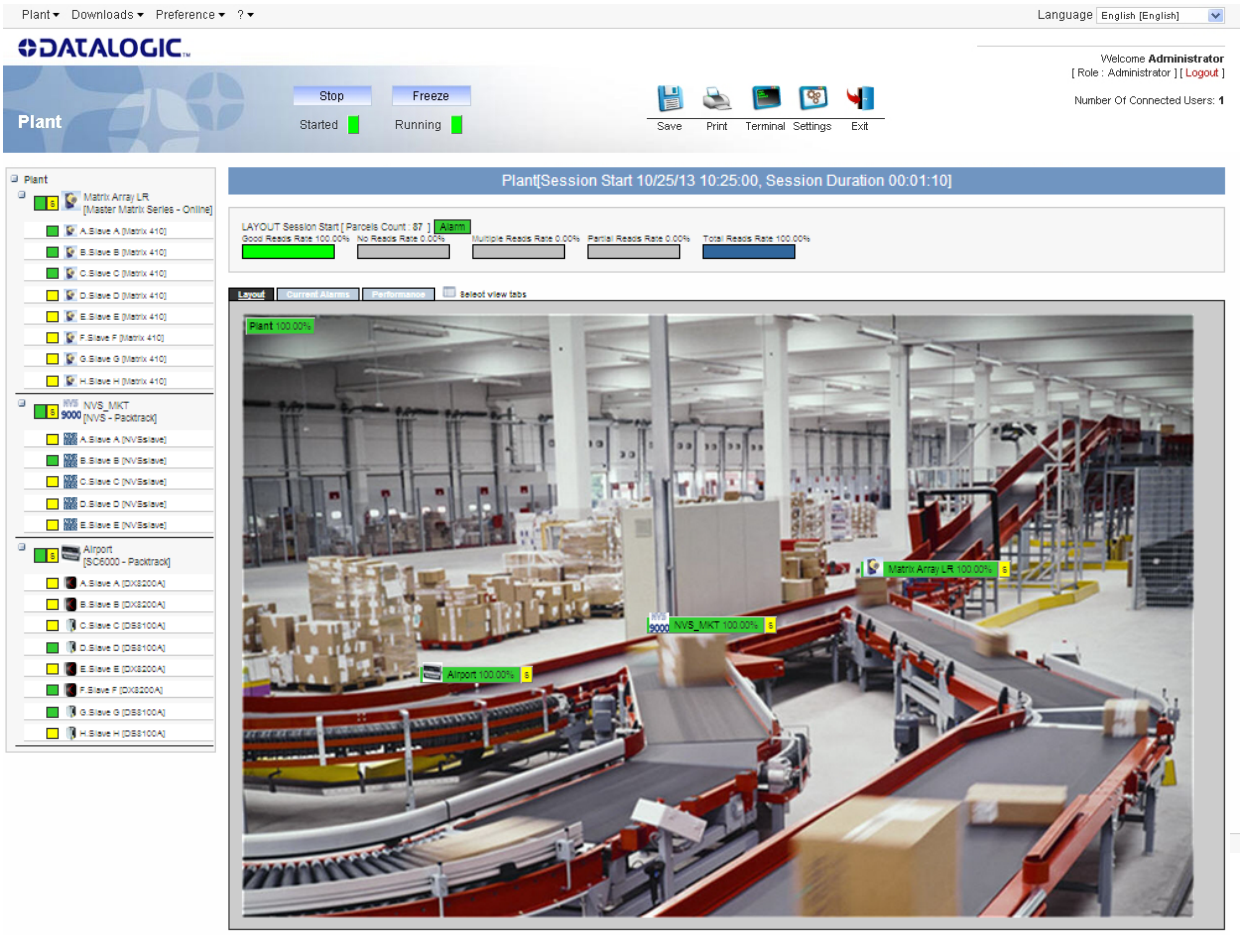
USER'S MANUAL



> Datalogic WebSentinel™

DATALOGIC

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Datalogic WebSentinel™ User's Manual

Ed.: 10/2013

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29/10/13

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CONTENTS

REFERENCES

CONVENTIONS

This manual uses the following conventions:

"WebSentinel" refers to the Datalogic WebSentinel™ Program.

"Slave level" or "Scanner level" refer to the Single Reader level views.

"User" or "Operator" refer to anyone using Datalogic WebSentinel™.

"Device" refers to physical devices used in the reading stations: cameras, controllers, scanners.

"You" refers to the System Administrator or Technical Support person using this manual to install, configure, operate, maintain or troubleshoot a plant equipped with Datalogic WebSentinel™.

REFERENCE DOCUMENTATION

The documentation related to Datalogic WebSentinel™ is listed below:

- Genius™ Help On Line
- VisiSet™ Help On Line

SUPPORT THROUGH THE WEBSITE

Datalogic provides several services as well as technical support through its website. Log on to **www.datalogic.com** and click on the **Industrial Automation** links for further information:

- **Products - Industrial Automation - Identification**

  Select your product from the links on the **Identification** page. The product page describes specific Info, Features, Applications, Models, Accessories, and Downloads including documentation, software drivers, and the Genius™ and/or VisiSet™ utility programs, which allow device configuration using a PC through Serial and Ethernet interfaces.

- **Support & Services - Industrial Automation**

  Several links from the **Industrial Automation** list take you to additional services such as: Service Program which contains Maintenance Agreements and Warranty Extensions; Repair Centers; On-Line RMA Return Material Authorizations; Technical Support through email or phone, Partner Program; Downloads for additional downloads.

1 INTRODUCTION

Datalogic WebSentinel™ software monitors the behavior of multiple reader arrays in a plant. It collects data from the arrays through an Ethernet TCP/IP bus and computes the received information flow as visual onscreen information. It also stores this information in a database and periodically produces performance and diagnostic reports.

Datalogic WebSentinel™ offers statistic and diagnostic information at plant, array and slave (single reader) level that can be saved or printed out. All the collected information is also available as report files in various formats, useful for post processing by standard third party tools.

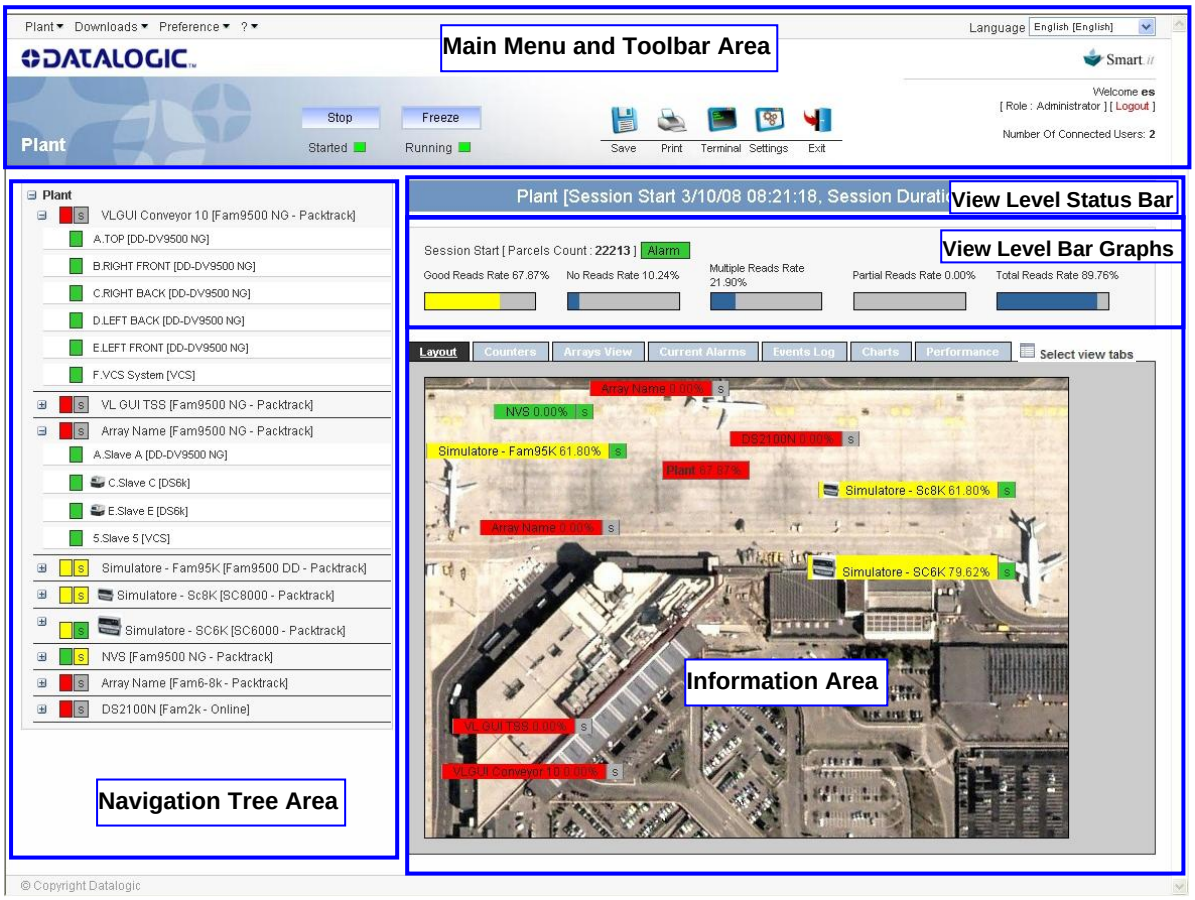


Figure 1 – Main Window Areas

1.1 MAIN FEATURES

A summary of the Datalogic WebSentinel™ main features is listed below:

- Multiple Client sessions can simultaneously access the Datalogic WebSentinel™ Server
- 6 different levels of access rights
- User and Session Language configuration in real time
- System configuration through link to Genius™; VisSet™ and other configuration tools
- Dynamic content and automatic page update
- Download of System Report and Log Files

- Up to 256 arrays managed
- Remote Access to and download of array log files (vision systems)
- Transfer image files from Array to Datalogic WebSentinel™ Server (Datalogic WebSentinel™ IMAGES versions only)

1.2 SYSTEM ARCHTECTURE

Datalogic WebSentinel™ is based the Java2 Enterprise Edition and the Tomcat Web Server. It is implemented in a three-layer architecture:

1. **Client Layer**: implemented by any Web Browser, in particular by Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, Opera. There may be several instances of the Client Layer, each allocated on its own machine. An instance is initiated when a Web Browser logs on to the Server Layer and terminates when the Web Browser is logged off by the Server Layer.

2. **Server Layer**: implemented by the Tomcat Web Server application. It interfaces the Client Layer providing it with all windows (pages) and their content. There is a single instance of the Server Layer.

3. **Backoffice Layer**: it collects all information from the **Plant**, and makes it available to the Server Layer for display. It also performs all computations and registrations that are necessary to record statistics information based on session and hour periods. There is a single instance of the Backoffice Layer.

Server and Backoffice Layers reside on the same machine. Client Layers normally reside on different machines, although it is possible for all three Layers to be activated on the same machine.

Server and Backoffice Layers are automatically activated when the user under which they are installed logs on. This user is meant to remain logged on while WebSentinel is active. For security reasons, the user may lock the screen.

Clients and Server may be part of a same intranet, but it is also possible that they belong to different domains of the internet.

The Plant is made up of several reading stations (laser scanners and/or vision systems), each interfacing Datalogic WebSentinel™ through a single controller (i.e. Controller, Master Scanner, Master NVS, Master Matrix, etc.). The connection between Datalogic WebSentinel™ and the reading stations is via TCP/IP: in fact, Datalogic WebSentinel™ and the reading station controllers will be part of a same intranet.

CAUTION: For REDs applications, Datalogic WebSentinel™ and the reading station controller must be connected to a same Ethernet (it cannot be connected through an Intranet).

The overall system architecture is depicted in the following figure:

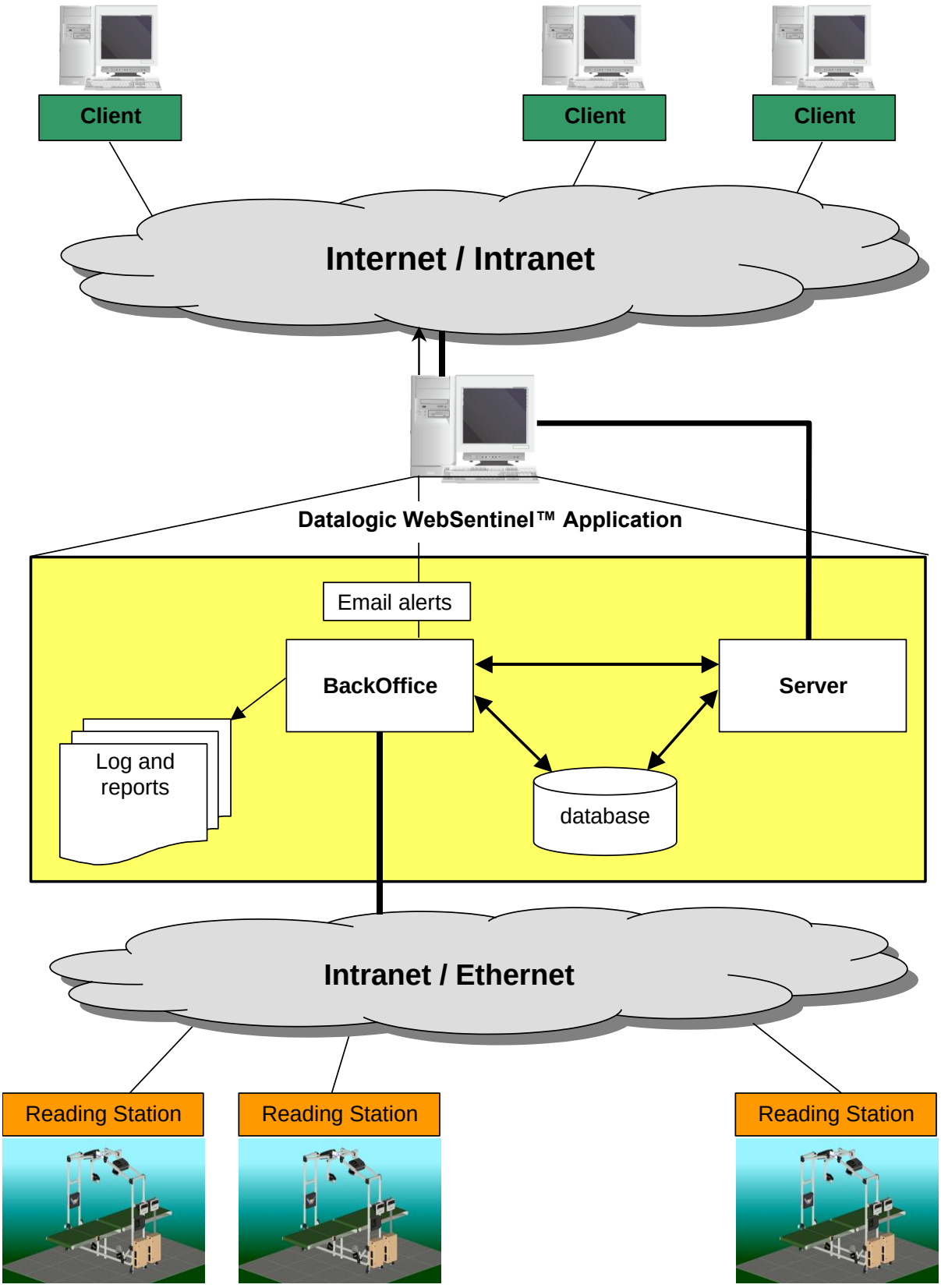


Figure 2 - Overall System Architecture

1.3 MANAGED READING SYSTEM TYPES

Datalogic WebSentinel™ manages supported array types based on the array type information. Different array types have different characteristics:

- Operating Mode
- Number and Type of reading slaves
- Number and characteristics of digital inputs
- Support of specific configuration tools
- Export of log and configuration files

The operator will be guided by the system in the configuration of an array, based on the type of array that has been selected.

The configuration entered by the WebSentinel operator must be consistent with the one that is set on the array: no consistency check is performed by WebSentinel except for the number and identity of the array's slaves.

1.3.1 Automatic Upgrade of Old Arrays

The Array type "Unknown" has been defined to support the import of configuration information from an older version of Sentinel for backward compatibility. The information that appears in the pre-existing .ini file will be completed. See par. 2.6.2 for details.

1.4 SYSTEM CAPACITY

1.4.1 Manageable Plant Size

Maximum 256 arrays.

1.4.2 Simultaneous User Sessions

Several user sessions are simultaneously allowed, however the same user cannot be logged in simultaneously on two different Client PCs.

The Maximum number of Simultaneous User Sessions is defined in the Settings>Operations window. Some common areas (physical and logical) used for access are listed below:

- Local, at conveyor's side, access
- Centralized control room access
- Remote Datalogic service access
- Remote PC laptop access

1.5 NETWORK CONNECTIONS

It is possible to use a multi-homed system (one with multiple Ethernet interfaces) in order to be able to separate the factory-floor network, which collects data from the devices, from the network which carries output to the client workstations.

A Datalogic WebSentinel™ Server PC with a single Ethernet port is actually considered the normal configuration for a small plant which does not have throughput issues.

1.6 DIGITAL INPUT SIGNALS AS ALARMS

Digital inputs are handled as alarm sources:

- Either they are associated to resources (e.g. the encoder), in which case the bit is raised/cleared when an alarm is raised/cleared for the associated resource,
- Or they are connected to an alarm sensor, in which case the bit is raised/cleared when an alarm condition is sensed active/cleared.

In any case digital inputs that are defined as relevant for an array will have to be associated to a defined alarm cause.

See "Default Inputs" under par. 9.2.1 for details and on the special case of IN3/PWO.

1.7 INTERNATIONALIZATION

The general guidelines for internationalization are as follows:

- Internationalization includes date & time and decimal separator.
- Each user can have his own localization, based on the language of his choice selected from the Main Menu, see par. 5.1 "Preferences" for details.
- A user can also modify his current localization, without affecting his normal preferences, through the use of the language button.
- Reports are always produced in English in addition to the Reporting language (par. 9.2.2), with date & time in ISO format and the dot as decimal separator.
- The measurement system is in any case explicitly configured for the whole system for all users and reports, see par. 9.2.5. From the Main Menu, the user can personalize the measurement system independently from the report settings, see par. 5.1 "Preferences" for details.

1.8 SESSIONS

One of the most important operating parameters to define for Datalogic WebSentinel™ is how to manage a session. See par. 9.2.2 for details.

2 INSTALLATION

2.1 DATALOGIC WEBSENTINEL™ DISTRIBUTION CONTENTS

The Datalogic WebSentinel™ program distribution contains the following:

- Complete Installation of Datalogic WebSentinel™ (including Java SE Runtime Environment, BackOffice, integrated Database Server and FTP Server)
- Genius, VisiSet™, RBS configuration programs for installation on the WebSentinel machine
- The UltraVNC server for installation on the WebSentinel machine
- The installation kit of all supported configuration tools that may be downloaded.
- The installation kit of the WebSentinel Configuration Tool Passthrough Bridge
- The installation kit of the UltraVNC client
- This manual

2.2 HARDWARE REQUIREMENTS

Hardware requirements are related to the number of arrays that are controlled by Datalogic WebSentinel™ and depend on the capacity of these arrays, and the amount and persistency of report files that must be produced. The following lists refer to single PCs each acting as both Datalogic WebSentinel™ Server and as Client. Remote Client requirements are less stringent.

Typical hardware requirements for a Datalogic WebSentinel™ Server/Client PC handling up to 32 arrays are:

- Intel® Core™ 2 Duo 2.66 GHz or equivalent processor
- 2 GB DDR2 800 MHz RAM
- 300 GB hard disk
- 1 G-Bit Ethernet
- CD-ROM Drive (if installing from CD)
- One 19" or larger monitor (optimized for 1280x1024 resolution)

Typical hardware requirements for a Datalogic WebSentinel™ Server/Client PC handling 64 arrays are:

- Intel® Core™ 2 Duo 3.16 GHz or equivalent processor
- 2 GB DDR2 800 MHz RAM
- 300 GB hard disk
- 1 G-Bit Ethernet
- CD-ROM Drive (if installing from CD)
- One 19" or larger monitor (optimized for 1280x1024 resolution)

Typical hardware requirements for a Datalogic WebSentinel™ Server/Client PC handling between 128 and 256 arrays are:

- Intel® Xeon® X5482 Quad Core 3.2 GHz or equivalent processor
- 4 GB FBD DDR2 800 MHz RAM
- 300 - 400 GB hard disk
- 1 G-Bit Ethernet
- CD-ROM Drive (if installing from CD)
- Two 19" or larger monitors (optimized for 1280x1024 resolution)

Any commercial PC will work for very small plants with a little traffic.

NOTE: The Datalogic WebSentinel™ license key is created based on the MAC address of a single Ethernet card installed on the PC (automatically selected and not modifiable by the user). For this reason, it is recommended to disconnect or disable all the other removable Ethernet cards in order to avoid that the registration program selects them. If the registered MAC is missing, WebSentinel won't start.

2.3 SOFTWARE REQUIREMENTS

- One of the following Windows Operating System:
  - Windows XP (32 or 64-bit)
  - Windows Vista (32 or 64-bit)
  - Windows 7 (32 or 64-bit)

- Web Browser: Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, Opera, etc.

- Genius™, VisiSet™ or other relevant Configuration Program (for Passthrough Bridge connections)

NOTE: The Google Chrome Web Browser is recommended for its superior performance characteristics.

2.3.1 Software Configuration Requirements

Check the WebSentinel Browser and Firewall settings so that the following requirements are satisfied:

- WebSentinel Client PCs must enable pop-up windows towards the internet address of the WebSentinel Server
- The following ports must be enabled for internal communication on the WebSentinel Server:

  Derby TCP-1527

  Cajo TCP-1198

  Backoffice Client TCP-1528

  VNC TCP-5900
- The following ports must be enabled for external communication on the WebSentinel Server:

  Remote SMTP TCP-25 (towards exchange server)

  All TCP ports of all the present Arrays on the Intranet (since these ports are configurable, the best solution is to use a wildcard authorization)

NOTE: If the VNC Server is used, it must be setup to "Allow Loopback Connections".

2.4 INSTALLING DATALOGIC WEBSENTINEL™

NOTE: If upgrading from a previous version see par. 2.6.

Insert the Datalogic WebSentinel™ installation CD in the CD reader (if the installation does not start automatically, run **websentinel_setup_x.y.z.exe** under the INSTALL folder on the installation CD).

When the installation is complete the Datalogic WebSentinel™ entry is created in the Start>Programs bar under “DATALOGIC”.

If installation is not from a CD, download the **websentinel_setup_x.y.z.exe** from the web and run it.

- Datalogic WebSentinel™ will run automatically at each PC boot.
- To run Datalogic WebSentinel™ manually, from the Windows Start Menu, run Datalogic>WebSentinel>WebSentinel. Backoffice will start automatically.

2.5 CUSTOMIZING DATALOGIC WEBSENTINEL™

Relevant files useful for customizing Datalogic WebSentinel™ are listed below along with their directory path:

- Login Page: the custom background image for the login page must be a .jpg file with the name: **WebSentinelLoginBackGroundImage.jpg**. This file must be copied under the installation folder: WebSentinel\BackOffice\images.
- Plant Layout: the custom plant layout background image must be a .jpg file with the name: **WebSentinelBackGroundImage.jpg**. This file must be copied under the installation folder: WebSentinel\BackOffice\images.
- Customer Logo: the customer logo must be a .gif file with the name: **customerlogo.gif**. This file must be copied under the installation folder: WebSentinel\BackOffice\CustomerLogo.

NOTE: Although the Datalogic WebSentinel™ pages are auto sized, the best results are obtained when the customer logo file is limited to a height of 20 pixels. This avoids undesired effects to the graphic layout of the pages.

NOTE: The file names and extensions are case sensitive.

NOTE: During Datalogic WebSentinel™ customization, you may need to attempt different resolutions or resizings for the background images. In this case you may need to close Backoffice and restart WebSentinel.

2.6 UPGRADING

Datalogic WebSentinel™ allows only one licensed version to be installed on the same PC.

Upgrading to a new Datalogic WebSentinel™ version does not invalidate a previously installed license.

2.6.1 Upgrading from Datalogic WebSentinel™

NOTE: Previous versions of Datalogic WebSentinel™ must be completely uninstalled before installing the new version. See below.

NOTE: Although not required for upgrading, it is always good practice to Backup WebSentinel Configuration (from the Plant Menu), and to Download WebSentinel Configuration (save it) to a backup source of your choice (hard disk, CD_ROM, etc.).

To Upgrade to a newer version of Datalogic WebSentinel™ from an older one:

1. Open the Datalogic WebSentinel™ Client interface (Plant Layout page).

2. If the current session is running (

), Stop it and wait for the transaction to finish (

). This closes the session.

3. Select Exit and wait for Datalogic WebSentinel™ to exit.

4. **Uninstall the previous version of Datalogic WebSentinel™, Tomcat Database Server and Filezilla FTP Server from the Windows® Control Panel**. The database, log files and license file will not be deleted so that they can be automatically copied during installation.

5. Run the **websentinel_setup_x.y.z.exe** file and follow the installation procedure.

   The new version of Datalogic WebSentinel™ will be installed to a new directory. The installation program will automatically copy the following files from the previous installation (not removed by the uninstall process) into the new structure.

   - Database Files
   - Report Files
   - Log Files
   - Backup Files
   - License File

NOTE: Starting from software version 1.0.1, when you uninstall the older Datalogic WebSentinel™ version, the previously mentioned files will be preserved so that the newer version can be installed without losing any data or configuration files.

2.6.2 Upgrading from Sentinel

To Upgrade to Datalogic WebSentinel™ from an older version of Sentinel:

1. Save a copy of the Sentinel **Supervisor.ini** file which the older version of Sentinel used to store the entire configuration.

2. Uninstall the older Sentinel version.

3. Install the new Datalogic WebSentinel™.

4. copy the **Supervisor.ini** file to the BackOffice directory of Datalogic WebSentinel™.

5. Run Datalogic WebSentinel™.

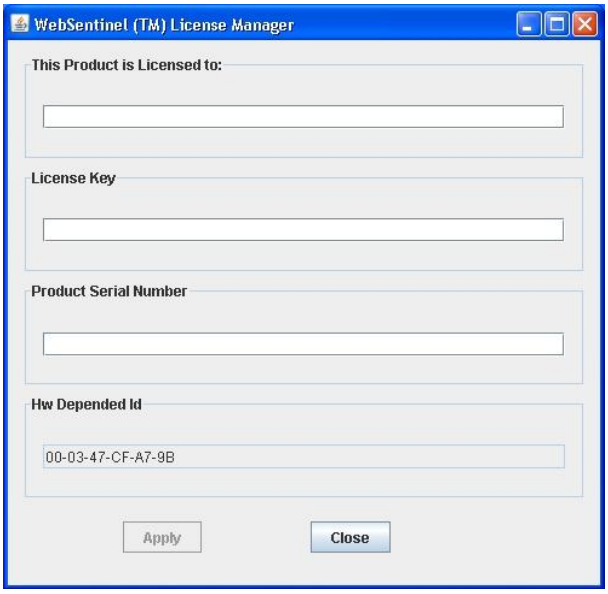
   Upon startup, Datalogic WebSentinel™ searches for the .ini file and automatically configures the system based on the information contained in it. Datalogic WebSentinel™ also adds new information that is not contained in the ini file. The .ini file is then renamed with a .bck extension.

CAUTION: Copying the **.ini** file to the installation directory will always invoke this procedure and therefore the current configuration will be overwritten potentially losing any customized parameters. Therefore this should only be done if you haven't already configured the system.

2.7 REGISTRATION

For new installations, after completion, Datalogic WebSentinel™ must be registered with the procedure described below:

When Datalogic WebSentinel™ is run, the following License Manager window is displayed:



NOTE: The Datalogic WebSentinel™ license key is created based on the MAC address of a single Ethernet card installed on the PC (automatically selected and not modifiable by the user). For this reason, it is recommended to disconnect or disable all the other removable Ethernet cards in order to avoid that the registration program selects them. If the registered MAC is missing, WebSentinel won't start.

1. Requesting Registration Data

   Send an e-mail to: swlicense.automation@datalogic.com with the following data:

- **Product Part Number**: the product part number found on the package cover and on the CD-ROM graphics (i.e. 93A101018).
- **Product Serial Number**: the product serial number found on the package cover (i.e. SN: A11A12345.
- **This Product is Licensed to**: the Name of the Company or reference person the product will be licensed to, as it will be written in the corresponding field above.
- **Hw Dependent Id**: the number as displayed in the License Manager window above.

2. Activating Datalogic WebSentinel™

Datalogic Automation will respond by email to the above providing you with the following registration data:

- **Licensed to**
- **Serial Number**
- **License Key Number**

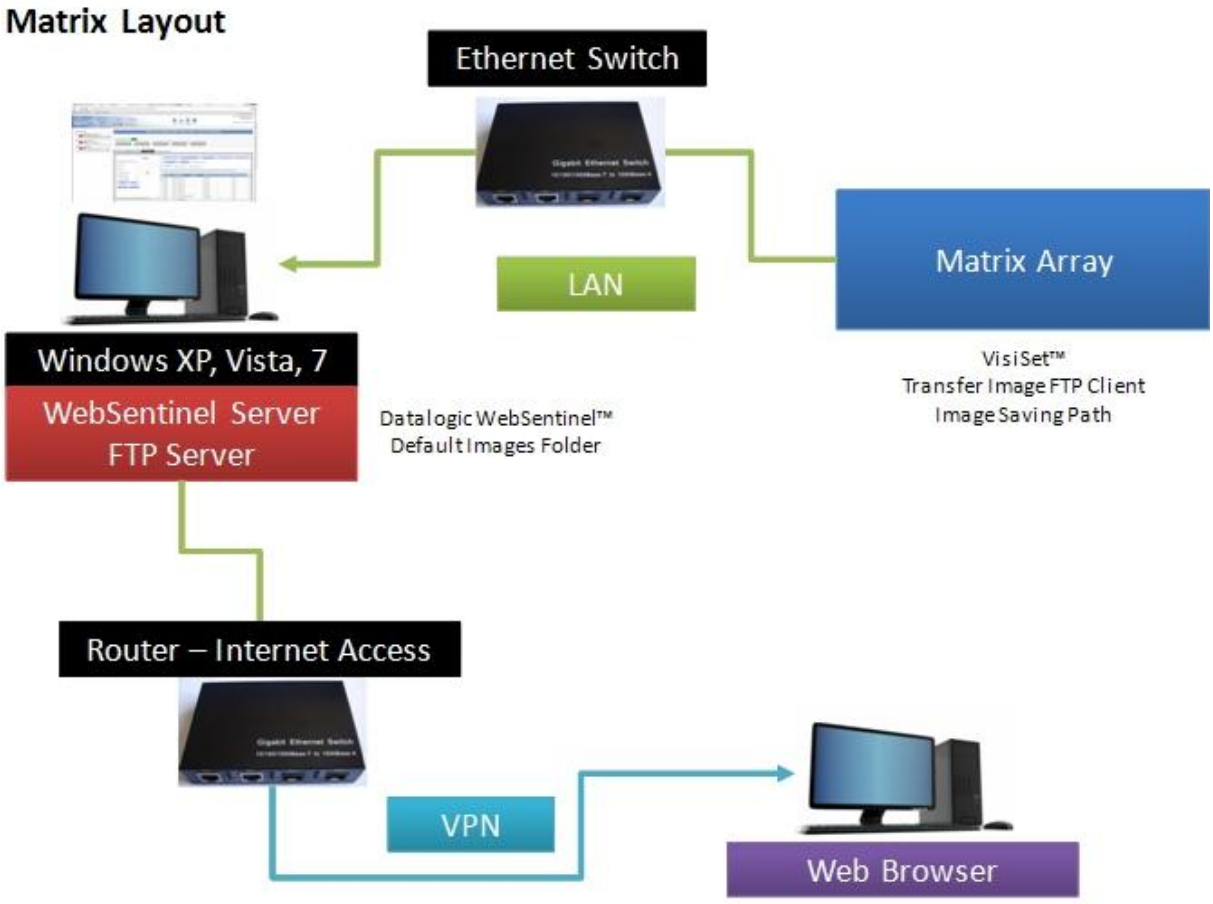
Fill in the empty fields in the License Manager window and confirm to have your copy of Datalogic WebSentinel™ registered.

After registration, the License Manager window will no longer appear.

You can view the License information from the License item in the **?** Menu.

2.8 LAYOUT CONSIDERATIONS FOR IMAGE SAVING APPLICATIONS

2.8.1 Matrix Family Layout Using WebSentinel Integrated FTP Server



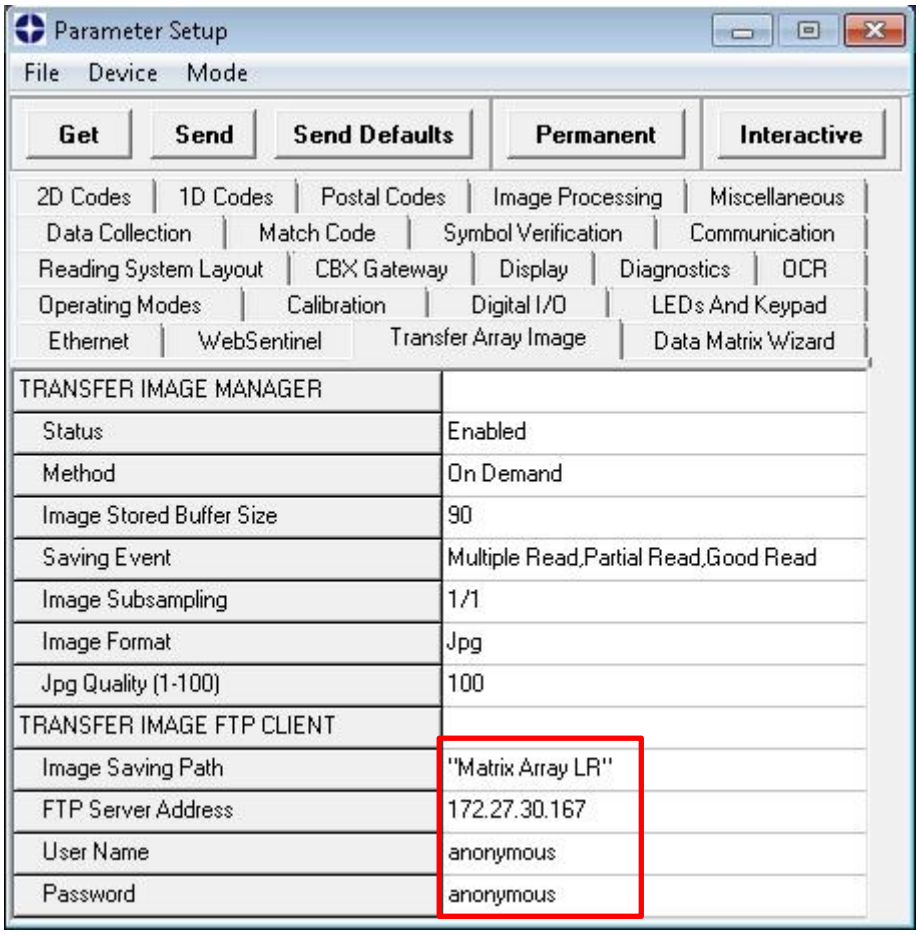
In order to use the IMAGES feature for Matrix family arrays:

- The Datalogic WebSentinel Server PC and the Matrix Arrays should be connected to the same LAN through a Gigabit Ethernet switch.
- When enabled, the images are always saved (*On Demand* or on *Timeout*), to the Datalogic WebSentinel Server PC Default Folder path using the integrated FTP Server. The Datalogic WebSentinel Server PC therefore must have sufficient disk storage space for image saving (according to the application needs).

  The default Images Folder path created automatically on the WebSentinel Server is:

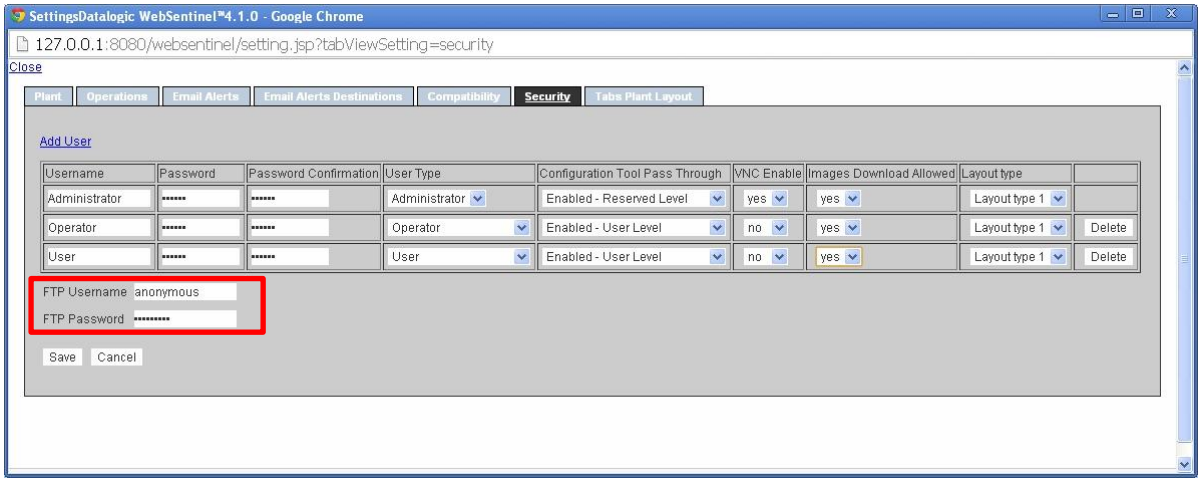
  <*WebSentinel Installation Directory*>\Backoffice\arrayImages\<*array_name*>

  In VisiSet™ the Matrix Master configuration parameter "Image Saving Path" must match the **<array_name>** directory created in WebSentinel.
  (VisiSet>Matrix Master>Transfer Array Image>Transfer Image FTP Client>Image Saving Path).



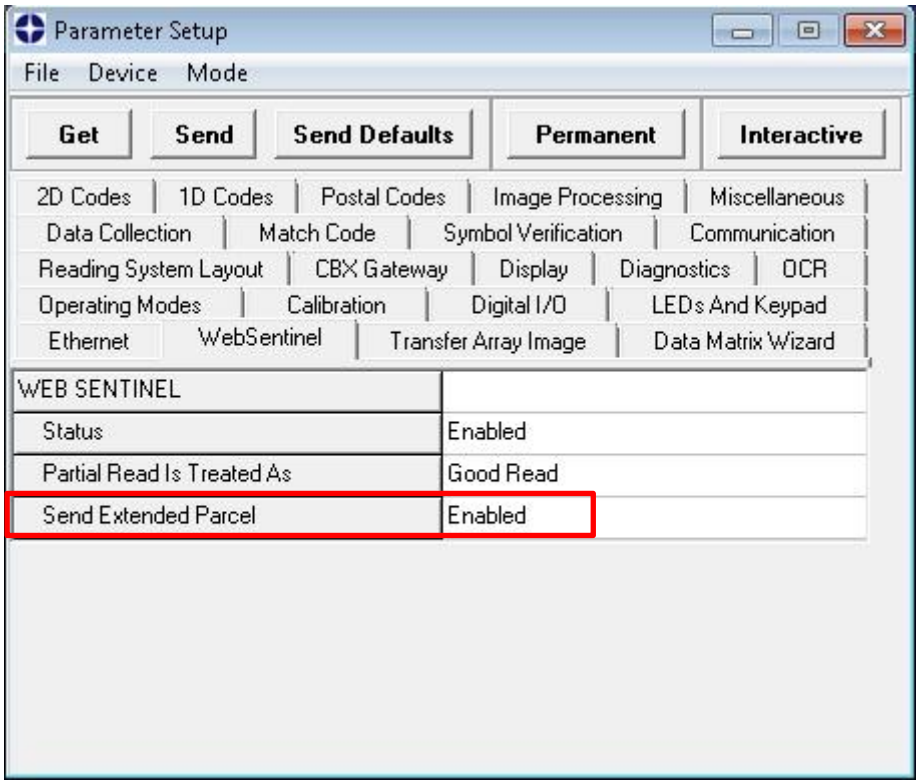
The FTP Server Address must match the Datalogic WebSentinel Server PC.

The default FTP Username and Password must match the ones set in the WebSentinel Settings>Security tab.



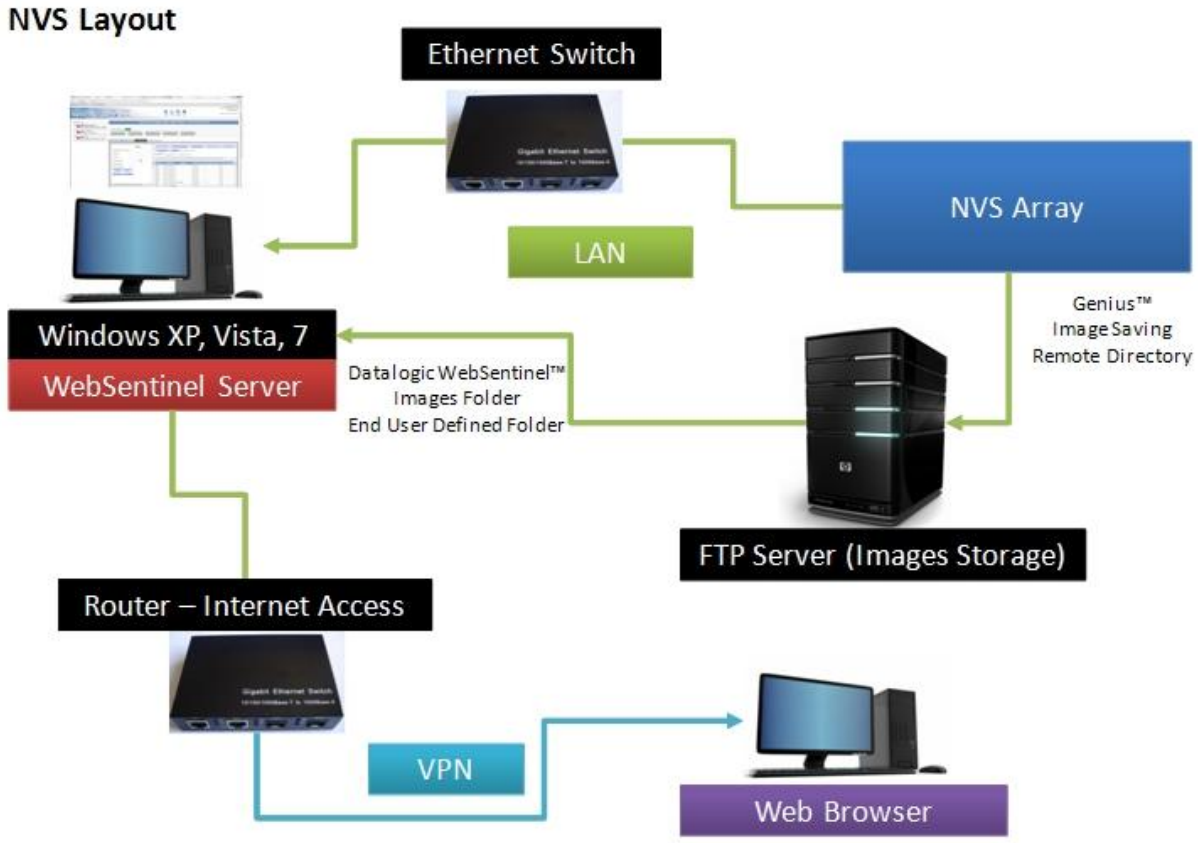
NOTE: If the specified array name contains spaces it must be included in quotation marks, (i.e.: "WebSentinel Array 1").

The Matrix Master configuration parameter "Send Extended Parcel" **must** be enabled. (VisiSet>Matrix Master>WebSentinel).



- It is possible to remotely access the Datalogic WebSentinel Server PC in the Plant in which it is installed by opening a VPN channel through Internet.

2.8.2 NVS Layout Using External FTP Server



In order to use the IMAGES feature for NVS arrays:

- The Datalogic WebSentinel Server PC and the NVS Arrays should be connected to the same LAN through a Gigabit Ethernet switch.
- Since NVS arrays are typically high throughput applications that when enabled always send images as they are acquired, it is recommended to provide a dedicated server for image saving so that the images are stored while freeing the WebSentinel Server to handle data traffic.

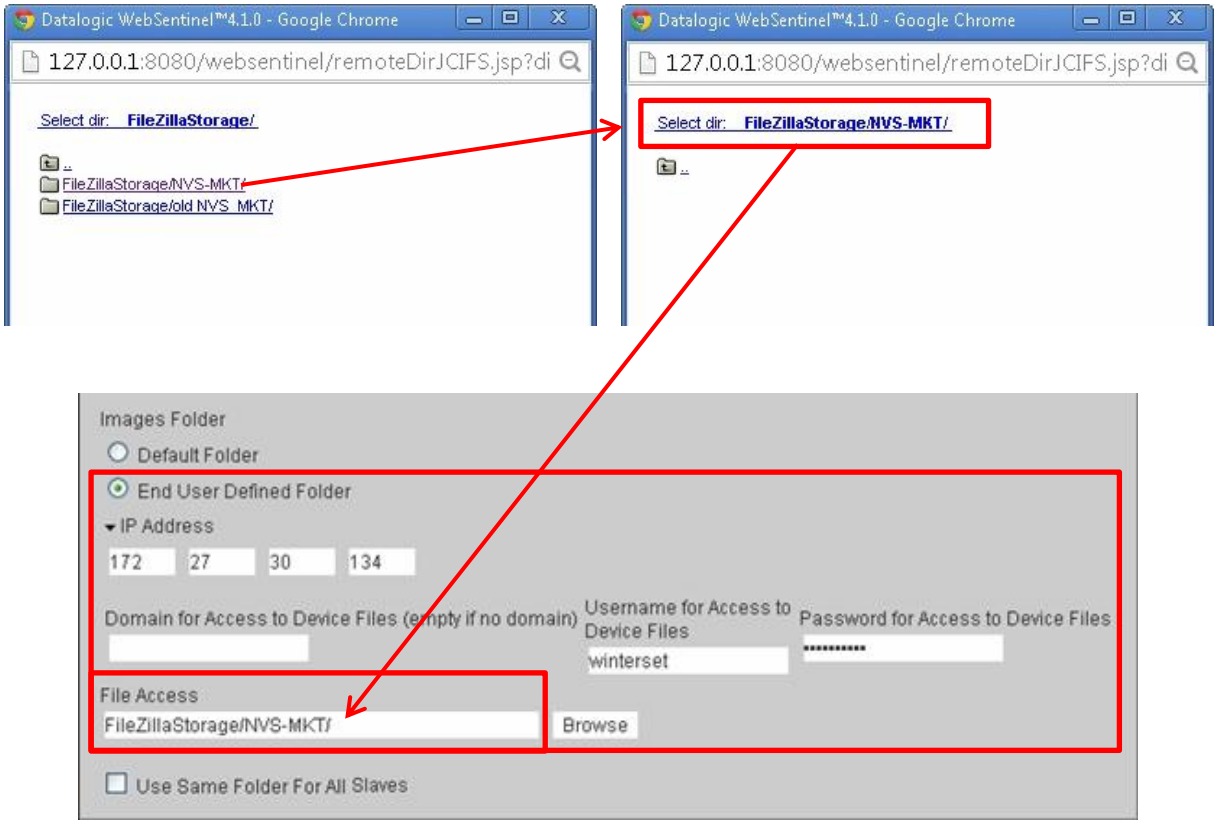
  This layout requires configuring both the WebSentinel Server and the NVS Array Master with the Image Server parameter information provided by the system administrator.

On the WebSentinel Server in the Settings tab (Array Level>Plant tab) the following parameters must be set:

- IP Address of the Image Server PC
- Username and Password to log onto the Operating System of the Image Server PC *(not the FTP Server)*
- File Access Path – the **shared directory** for Image Storage on the Image Server PC

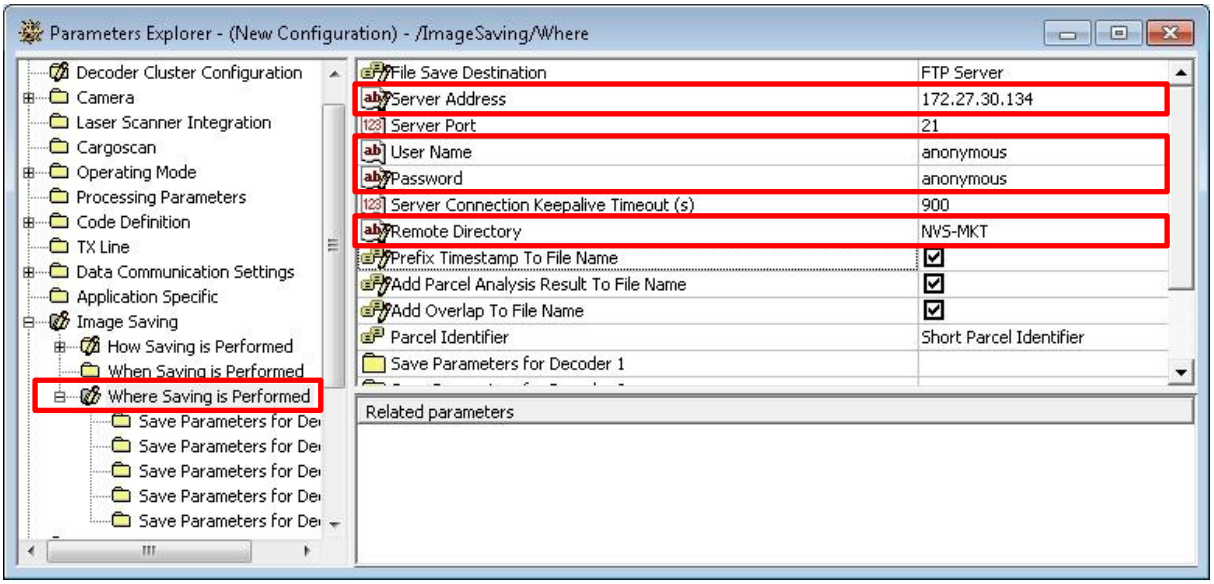
NOTE: It is strongly recommended to set the File Access path using the *Browse* button since this will test the connection to the Image Server PC.

Click on the shared directory links to arrive at the correct directory, then click the Select dir: link to enable it.

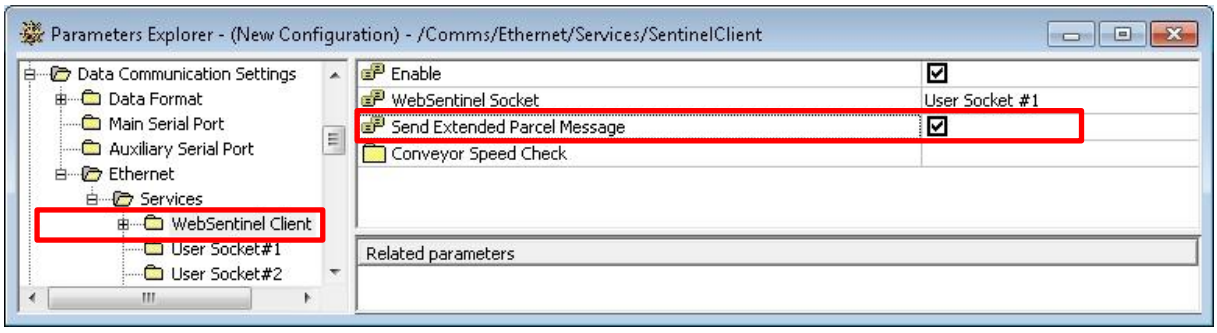


On the NVS Array Master through Genius™ (Genius>NVS9000>Image Saving>Where Saving is Performed) the following parameters must be set:

- IP Address of the Image Server PC
- User Name and Password of the FTP Server running on the Image Server PC
- Remote Directory – the **shared directory** for Image Storage pointed to by the FTP Server running on the Image Server PC *(depending on how the FTP Server is setup the image directory may or may not include the parent directory path)*



For Datalogic WebSentinel™ version 4.1.0 and later The NVS Array Master configuration parameter "Send Extended Parcel Message" **must** be enabled.
(Genius>NVS9000>Data Communication Settings>Ethernet>Services>WebSentinel Client).



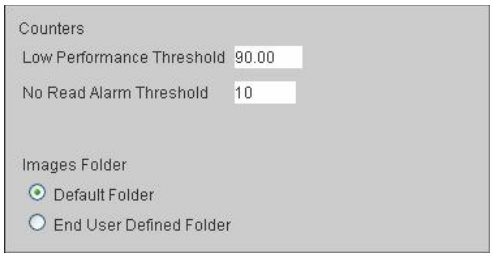
NOTE: Previous WebSentinel versions do not support Image Saving for NVS systems and therefore require this parameter to be disabled.

- It is possible to remotely access the Datalogic WebSentinel Server PC in the Plant in which it is installed by opening a VPN channel through Internet.

2.8.3 NVS Layout Using WebSentinel Integrated FTP Server

If saving images to the Datalogic WebSentinel Server PC (not recommended for high throughput applications), there must be sufficient disk storage space allocated for image saving.

The layout in this case is the same as the one shown in par. 2.8.1 for Matrix.



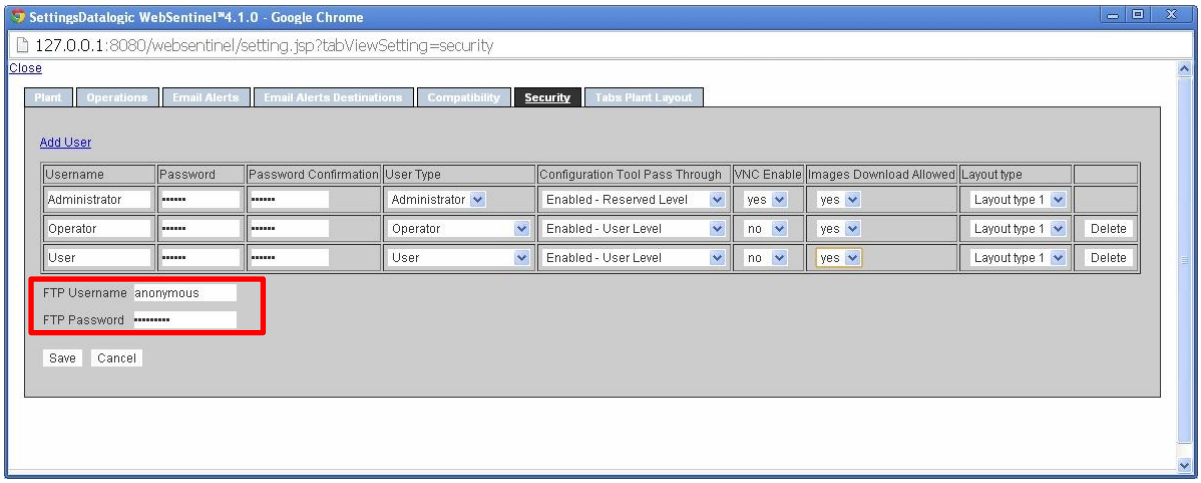
The default Images Folder path created automatically on the WebSentinel Server is:

<WebSentinel Installation Directory>*\Backoffice\arrayImages*<array_name>.

In Genius™ the NVS Master configuration parameter "Remote Directory" must match the **<array_name>** directory created in WebSentinel.
(Genius>NVS9000>Image Saving>Where Saving is Performed).

The FTP Server Address must match the Datalogic WebSentinel Server PC.

The default FTP Username and Password must match the ones set in the WebSentinel Settings>Security tab.



3 QUICK START

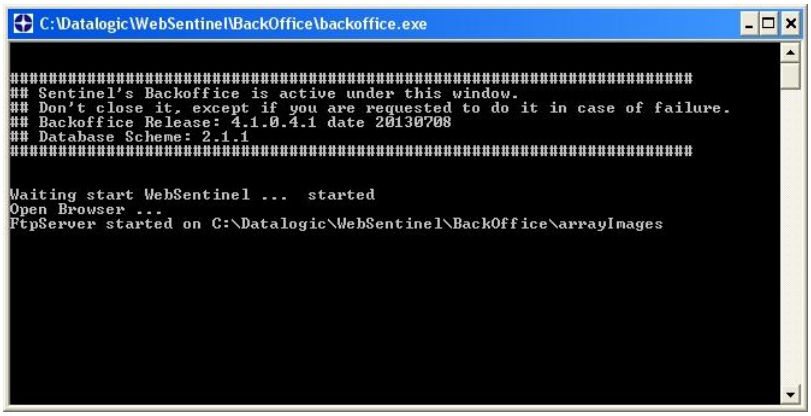
To help you get started, here is an example configuration demonstrating the basic steps of Datalogic WebSentinel™ configuration.

To configure Datalogic WebSentinel™ for your application, the following preliminary steps are assumed:

- The Plant (reading stations) are installed and running.
- Datalogic WebSentinel™ is installed, registered and running (chapter 2).

  You can verify that Datalogic WebSentinel™ is running as follows:

  – The BackOffice command window is running (usually minimized in the application bar).



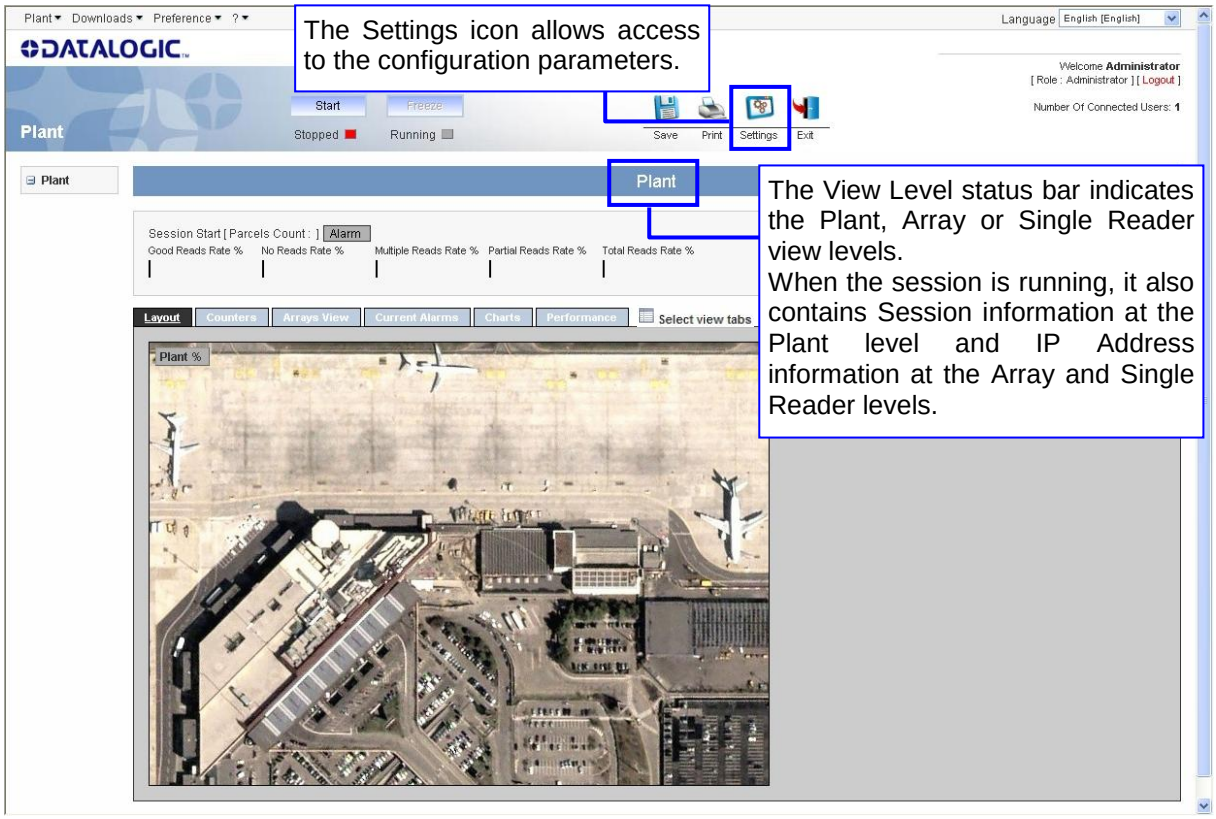
  – The Web Browser will start automatically and present the login window.

NOTE: If the Web browser doesn't start automatically you can open it from the Start menu by restarting WebSentinel.

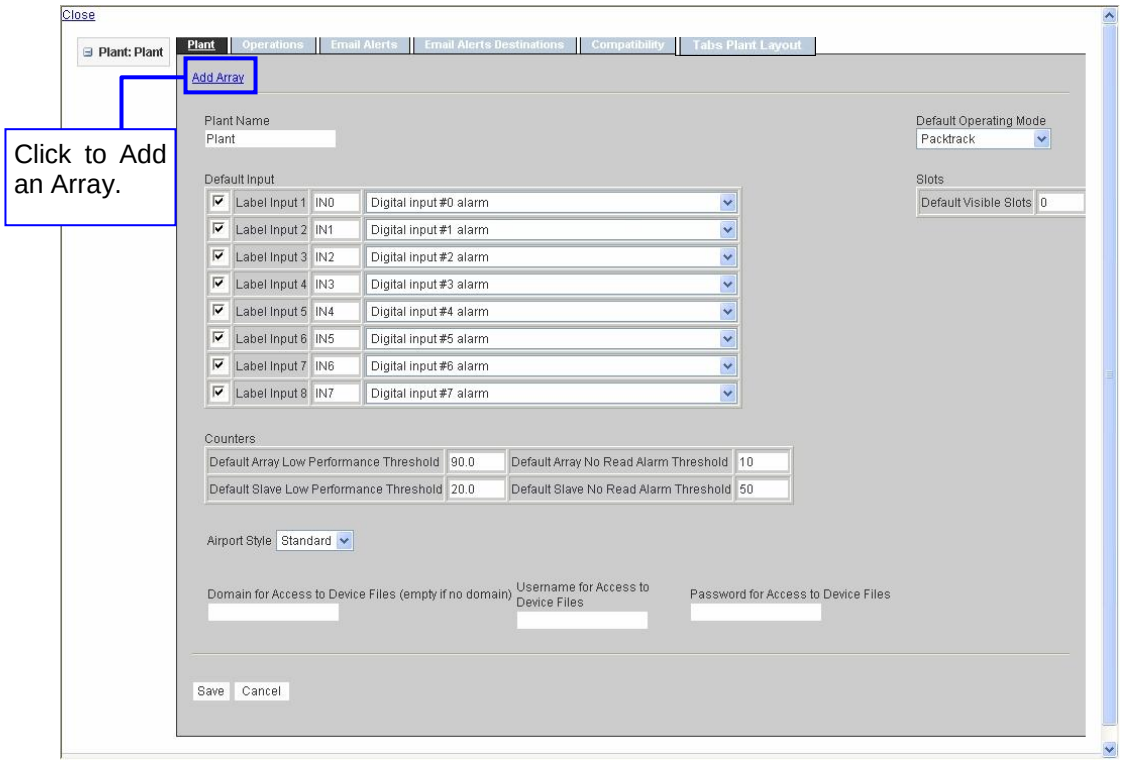
NOTE: You can also login from a remote Client PC but you must know the Datalogic WebSentinel™ Server PC IP Address or DNS.

1. Login as **Administrator** with the default password **dlussen**.

The following "Home page" window is displayed. This is the Plant View that shows the Plant Level information.



2. Open the Settings window by clicking the Settings icon to add and configure the array(s). The Settings Plant window is displayed.



3. Add an Array and complete the following fields then save:

   a. Array Type - the mask will change depending on the type of array selected from the list

   b. Array Name - this is the Array Label which appears in the Navigation Tree Area

NOTE: The Array Name must not contain special characters: **\ / : * ? " < >** since it is used in the automatic generation of the .LOG filename.

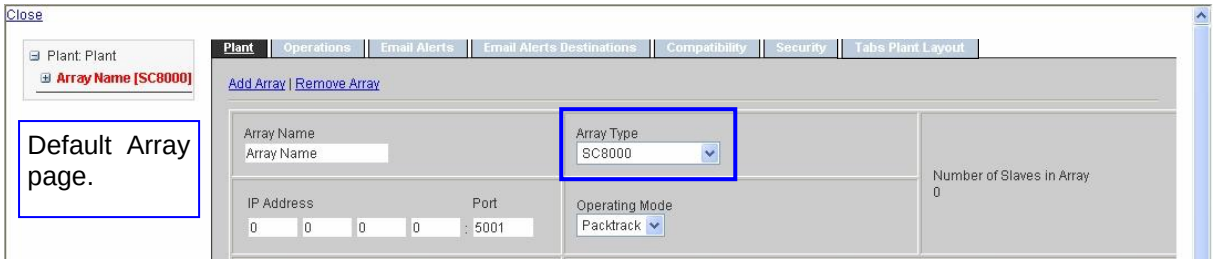
The Array Name is also used to automatically create the Image Saving directory on the WebSentinel Server. Although spaces can be used it is suggested to use the underscore character instead.

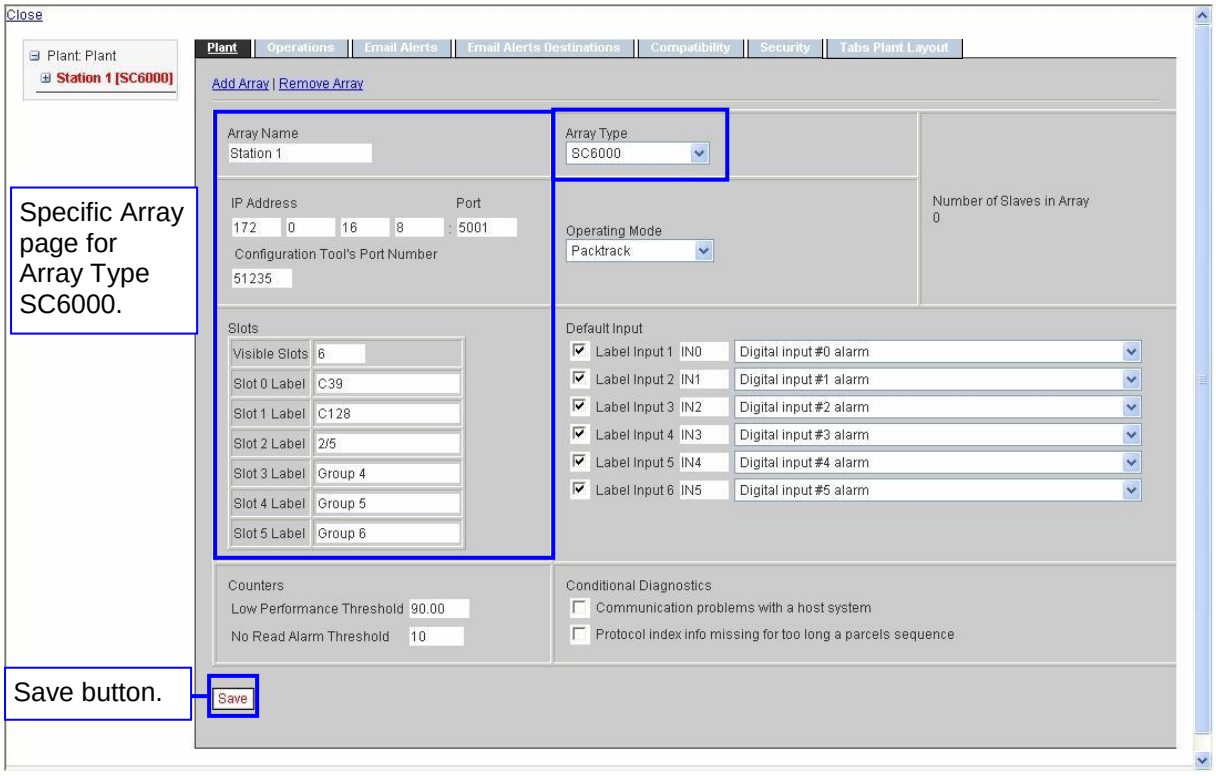
   c. IP Address of the Array Device - Master

   d. Port of the Array Device on which the WebSentinel agent is waiting for connection requests

   e. Configuration Tool's Port Number - configurable or pre-defined depending on the Single Reader Types

   f. Slots - shows the number of expected label groups (Slots), as defined in the Array device configuration. For scanners, see the Code Combination parameter for Multi Label and Logical Combination Rule in the Genius™ Help On-Line for the Array Device.



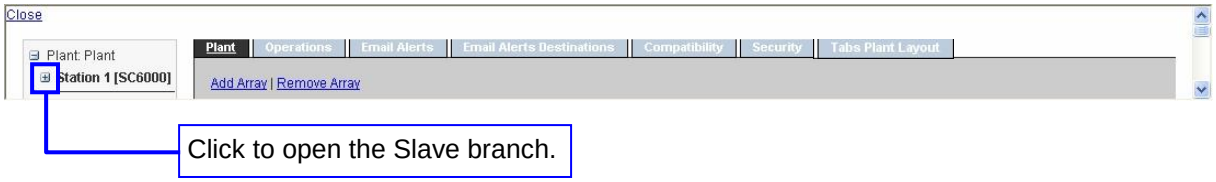


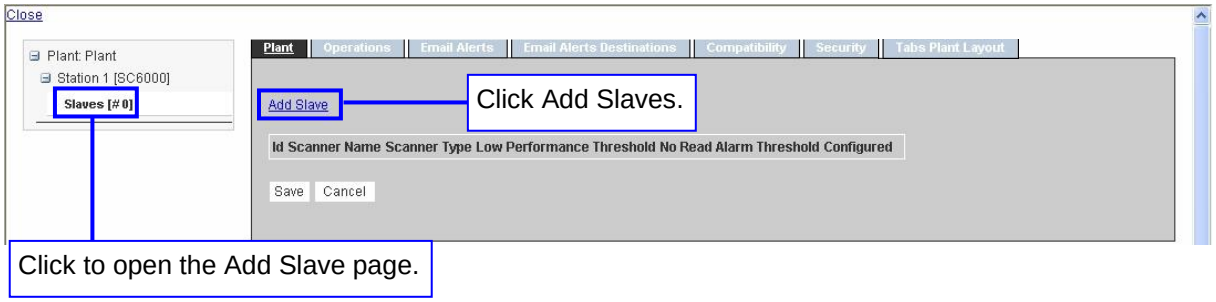
NOTE: Set other optional fields in the Settings window according to your application requirements. You must Save each individual Configuration Page.

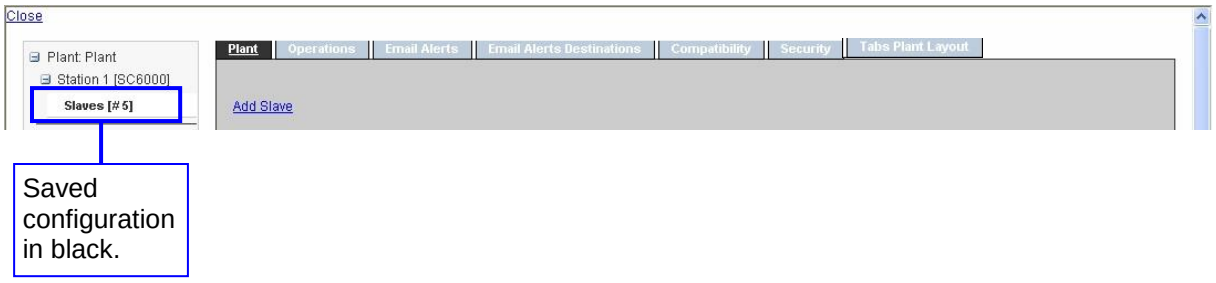
It is strongly suggested to change the Administrator password.

See chapter 9 for details.

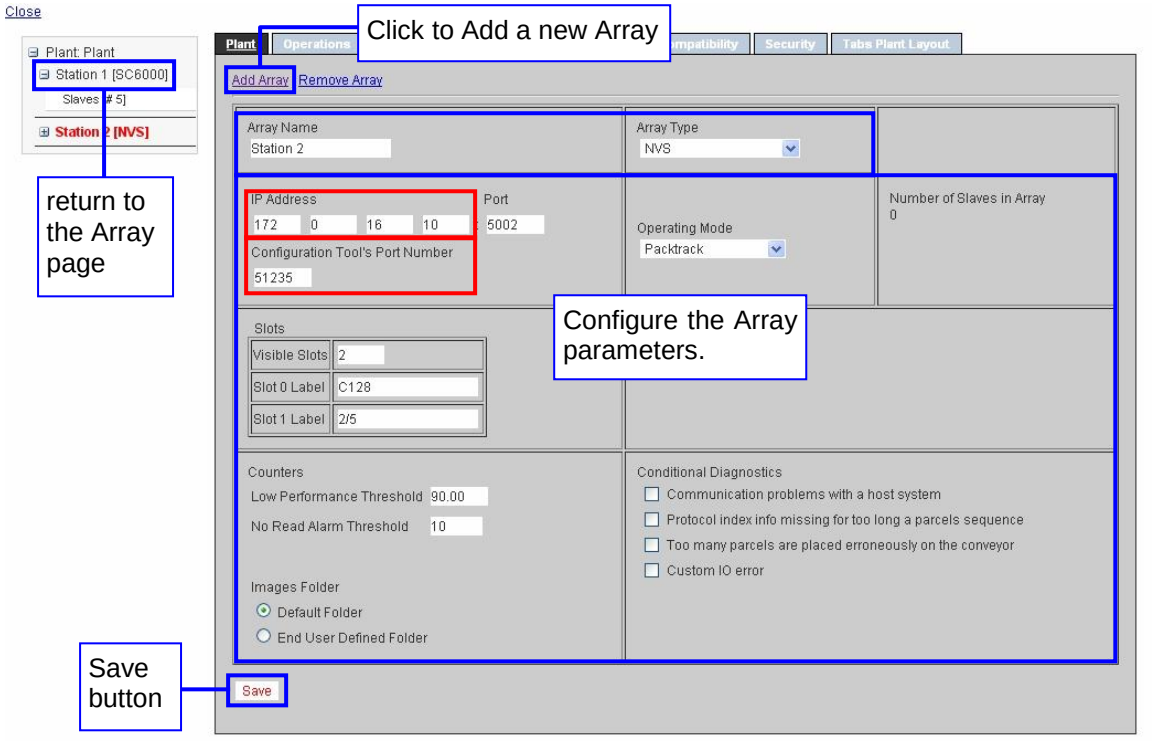
4. Click the +box to open the Slave branch and click on the Slave [#0] label and Add the corresponding Slave Types and then save.



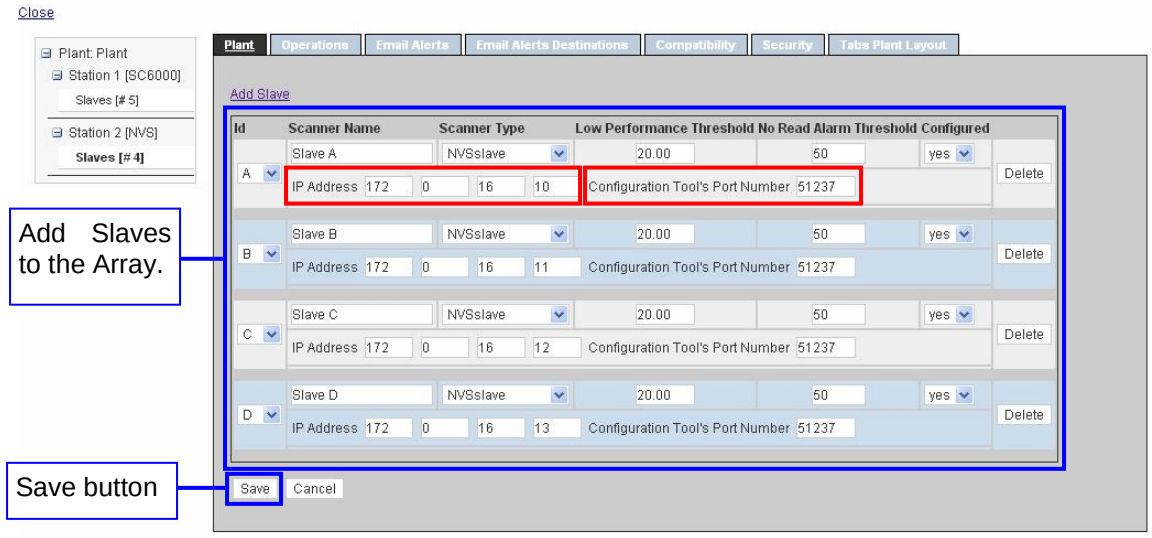




You can return to the Settings>Array window by clicking on the Array label to add one or more Arrays as in the example below.



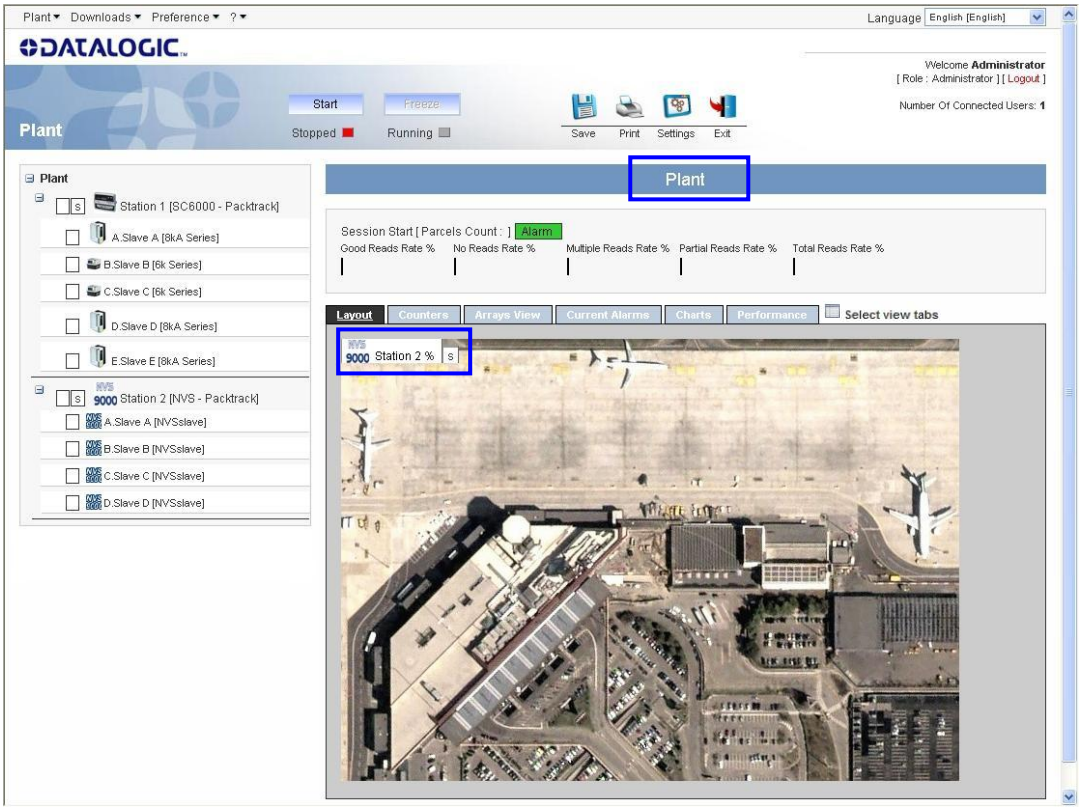
Add the relative Slaves to the new Array, then save.



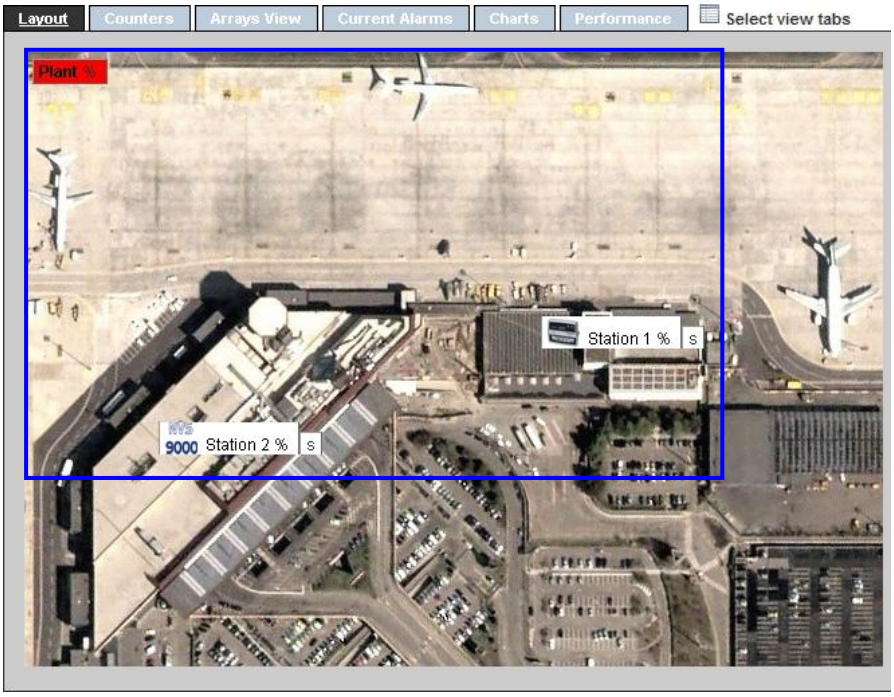
NOTE: When the Array Master is also used as a reader (i.e. scanner Master, Matrix Series reader, or NVS), it must also be listed as the first Slave in the array.

NOTE: When the Array Master is an NVS9000 camera, the configuration port at the Array Master level connects to its decoder while the slave configuration port connects to its camera.

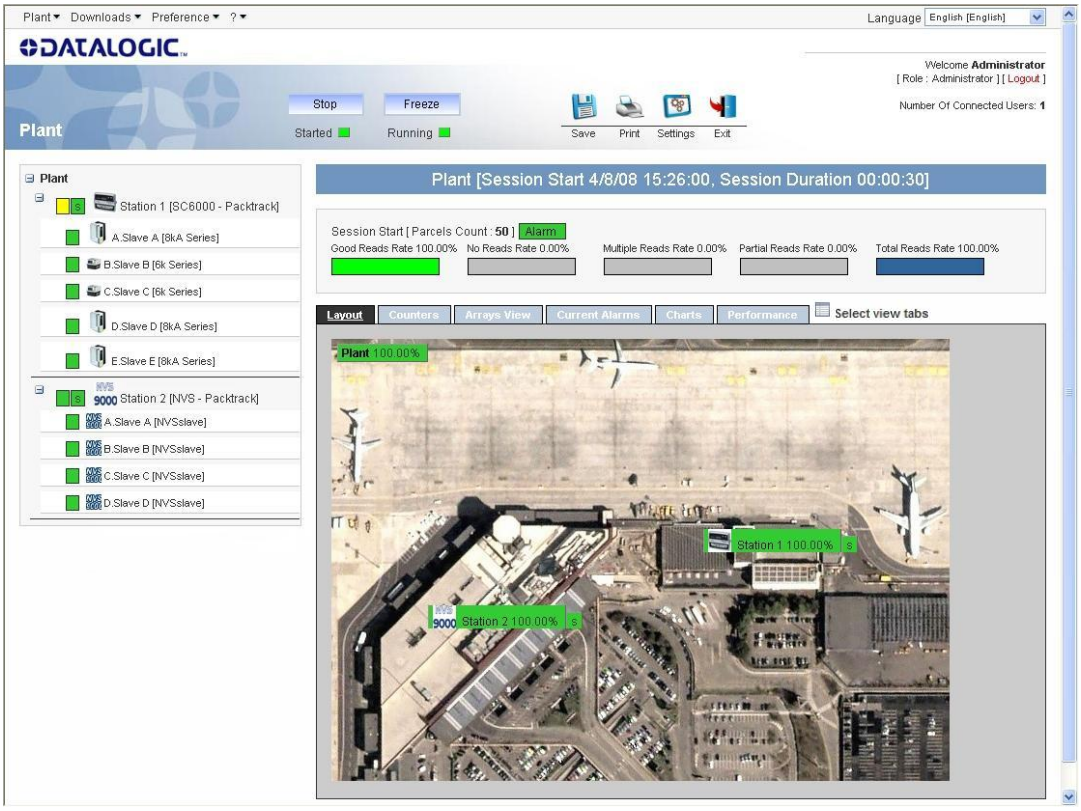
5. After all Arrays and relative Slaves are configured, Close the Settings window to return to the Plant Layout page.



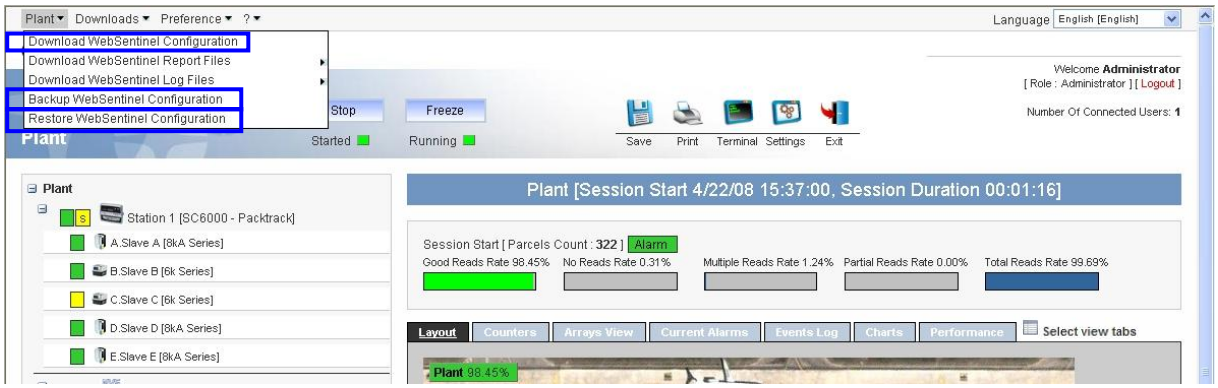
6. Right click on the Array icons and drag them to the desired position over the Plant layout image.



7. Press the Start button to begin data collection.



8. From the Plant Menu select "Backup WebSentinel Configuration". It will be saved to the BackOffice BACKUP directory.



From the Plant Menu you can also "Download WebSentinel Configuration" (save it) to a backup disk of your choice and at any time "Restore WebSentinel Configuration" (from the BACKUP directory).

NOTE: If necessary, Datalogic WebSentinel™ allows remote **Array** modification through the Array specific configuration tool using the Passthrough Bridge application. See chp. 8 for details.

4 ACCESS MANAGEMENT

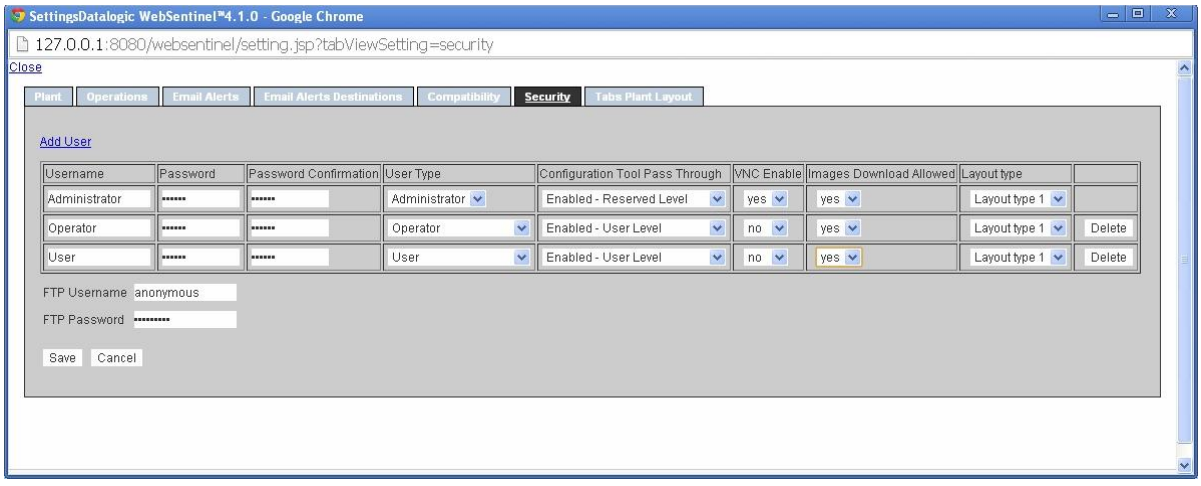
Access to Datalogic WebSentinel™ is provided through password protection in order to:

- Avoid unauthorized changes to the settings
- Start / Stop the processing
- Close and Exit from the application

In fact, only Administrator Levels can access the Settings window to change Datalogic WebSentinel™ configuration parameters including the Security tab.

Six different user types can be defined, each having its own level of access rights:

- **Administrator**: This is the System Administrator who has full access rights to all Datalogic WebSentinel™ functions and configuration including password management.
- **Limited Administrator**: The same access rights as Administrator but no access to barcode label data nor reports containing barcode label data.
- **Operator**: The Operator has access rights to all Datalogic WebSentinel™ functions excluding configuration through the Settings button/window and Exit from the application.
- **Limited Operator**: The same access rights as Operator but no access to barcode label data nor reports containing barcode label data.
- **User**: For the User, access rights are restricted to navigation of the Datalogic WebSentinel™ windows.
- **Limited User**: The same access rights as User but no access to barcode label data nor reports containing barcode label data.



New Users may be added and passwords may be changed only by the Administrator levels in the Security tab under the Settings window. The passwords can be changed by typing the new passwords into both the Password and Password Confirmation Fields. The passwords are masked with dots and do not necessarily correspond to the number of characters of the password itself. As with all password protected programs, conserve the passwords list in a secure place.

The default password for each User Type is **dlussen**.

Password access is obligatory for all User Types and cannot be removed.

The currently logged in Administrator cannot be deleted.

CAUTION: It is strongly suggested to change <u>all</u> passwords, preferably with a high level of protection (alphanumeric containing both upper and lower case letters), to avoid third party entry into the system.

NOTE: To avoid conflict of program control, the currently logged user's role may be downgraded if another user with higher access rights connects to or is already connected to Datalogic WebSentinel™.

The Configuration Tool Pass Through Level sets the access level for all the supported Configuration Tools (Genius, VisiSet, RBS, telnet, …) when connecting to them through Datalogic WebSentinel™. There are different Access Levels:

Level	Meaning
Disabled	No access to Configuration Tools through Datalogic WebSentinel™.
Enabled – User Level	Access to Configuration Tools at User Level; (no password required).
Enabled – Installer Level	Access to Configuration Tools at Installer Level; (no password required).
Enabled – Programmer Level	Access to Configuration Tools at Programmer Level; (Genius™ Programmer password required).
Enabled – Reserved Level	Access to Configuration Tools at Reserved Level; (Genius™ Reserved password required).

The mapping of the access levels defined by the Pass Through functionality and those actually implemented by each Configuration Tool, and the need to provide credentials for the requested access level, depend on each Configuration Tool. The following table describes some of these mappings:

WebSentinel Pass Through	Genius™	VisiSet™	RBS
User	User	User	User
Installer	Installer	Installer	Expert
Programmer	Programmer	Installer+trace	Expert
Reserved	Reserved	Installer+trace	Expert

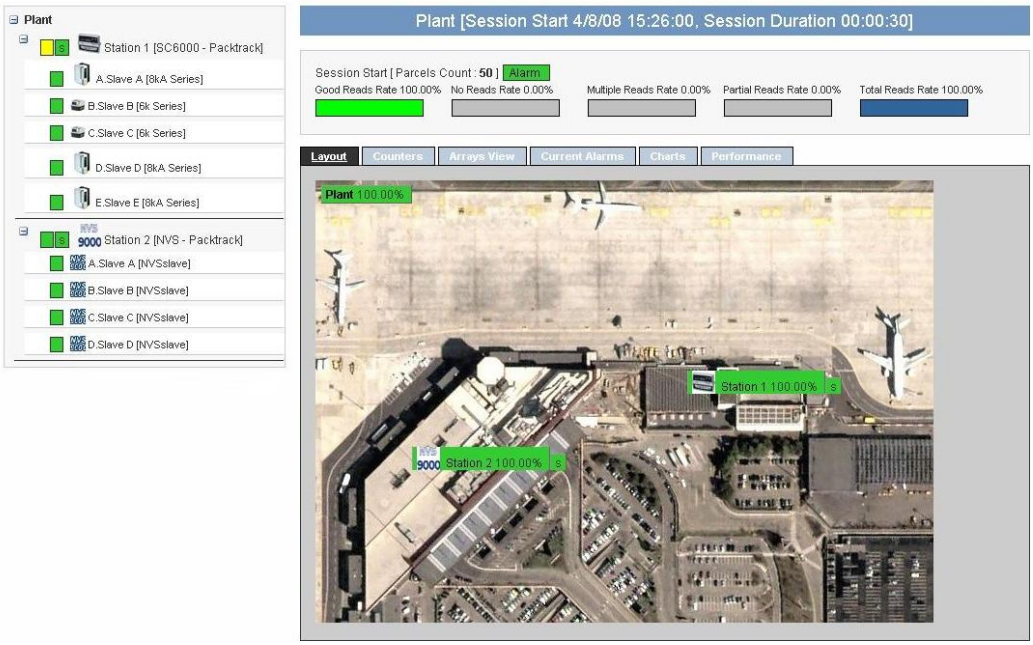
The access level to Cargoscan devices based on telnet depends entirely on the credentials that are presented after connection to the device, independent of the access level specified in the Pass Through functionality for that user.

A similar discipline applies for VNC connections that may be allowed for a user through the Pass Through functionality both with the WebSentinel station and with all devices (array controllers and slaves) that support it and are enabled for it.

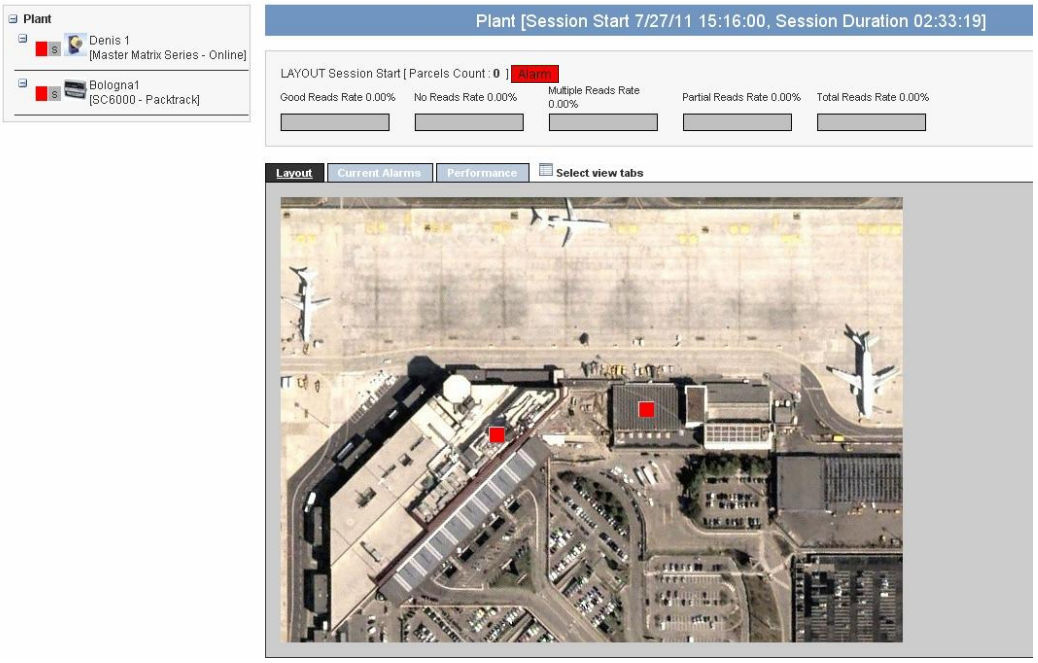
Access to the Image Array Transfer feature is also given through the Security settings (Images Download Allowed). See par. 6.1.9 for details. For this feature Datalogic WebSentinel™ uses an integrated FTP Server. The FTP Username and FTP Password (available on the Security page) must be the same as the ones defined in the FTP Client.
This feature is only available for Datalogic WebSentinel™ IMAGES versions.

Layout Type can be assigned for each level.

- **Layout Type 1**: The Plant layout shows all labels and slave branches.



- **Layout Type 2**: The Plant layout only shows arrays in alarm without labels and without slave branches. This is useful when many arrays are present to reduce unnecessary information.



5 USER INTERFACE

The Main window presents the principal areas which are indicated in the figure below:

- Main Menu and Toolbar Area – allows access to the major program functions and commands.
- Navigation Tree Area – to select Plant, Array or Single Reader information pages. The colored icons next to the devices indicate individual performance which can be viewed in detail by clicking on the device label to load the device specific pages.
- View Level Status Bar – indicates which view level is being shown: Plant, Array or Single Reader. This Status bar also contains Session information at the Plant level and Connection information at the Array and Single Reader levels.
- View Level Bar Graphs – summarize the counters for the specific level being shown: Plant, Array or Single Reader. This area also contains the parcel counts and current Alarm status of the relative level.
- Information Area – this area shows all of the statistic and diagnostic pages selected from the available tabs at the top of this area. The Select View Tabs button allows choosing the available view tabs to display depending on your application. The information depends on the view level. The Plant Layout page is the Home page.

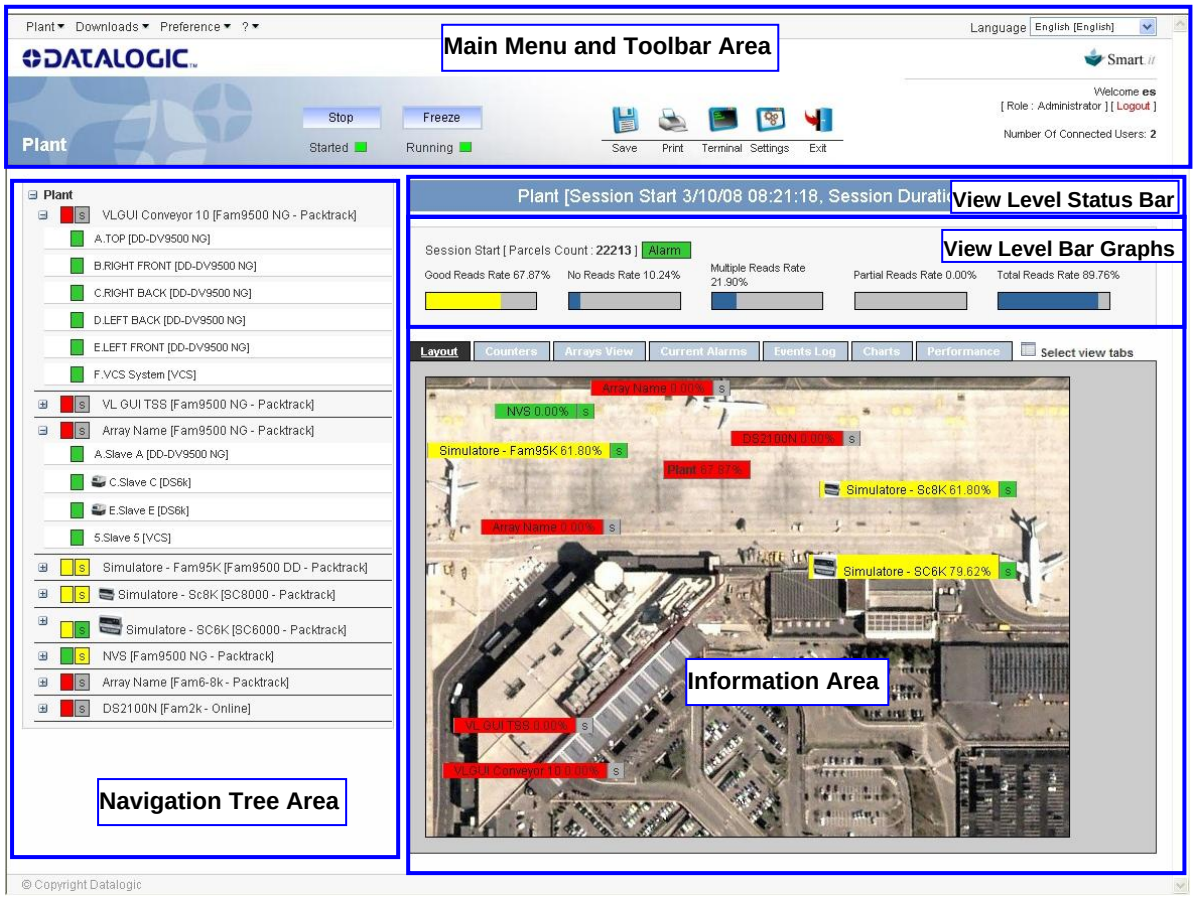
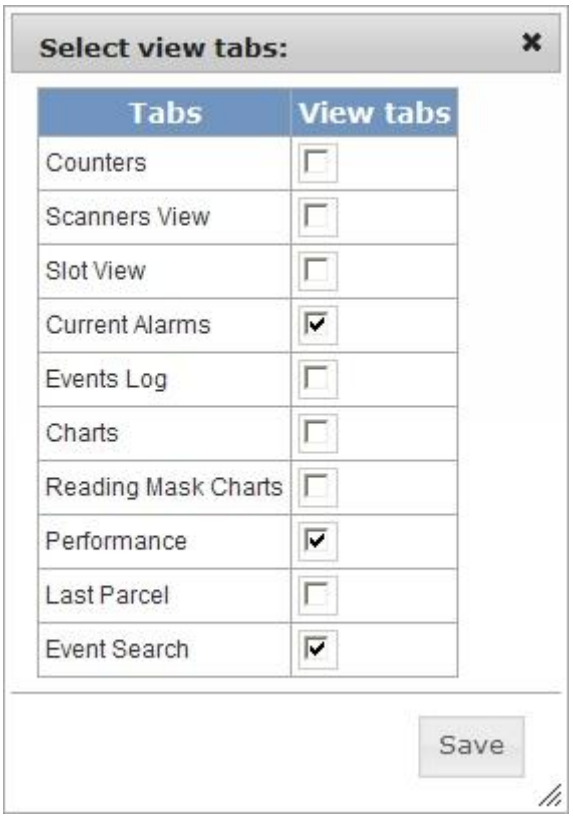


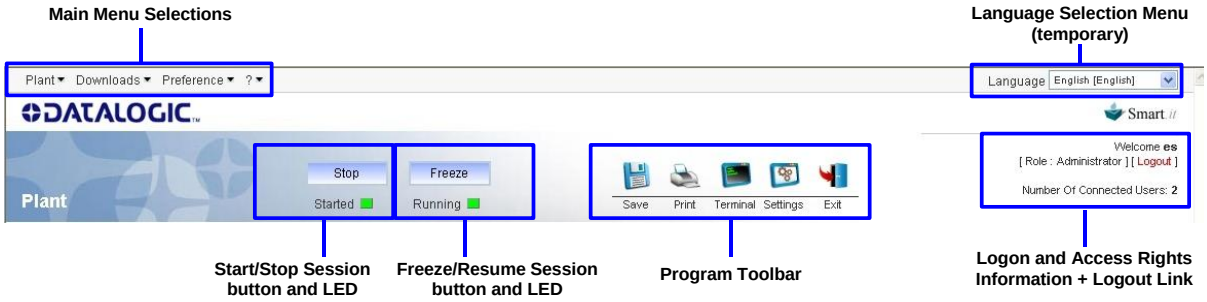
Figure 3 – Main Window Areas

The View Tabs icon opens the View Tabs List which allows you to select which tabs to include/exclude from the information area.



5.1 DATALOGIC WEBSENTINEL™ MAIN MENU AND TOOLBAR

Buttons and LEDs are located on the Datalogic WebSentinel™ toolbar as shown below



The Main Menu presents the following items:

Plant:

- **Download WebSentinel Configuration**: save the WebSentinel Configuration selected from the list of those available (previously backed up), to a disk/directory of your choice.
- **Upload WebSentinel Configuration**: load a previously backed up, WebSentinel Configuration selected from a disk/directory of your choice.
- **Download WebSentinel Report Files**: open a report file in a window of the application associated with the file extension (i.e. .txt in a Notepad window), or save it to a disk/directory of your choice. The Reporting Language files may be different from the English files, otherwise they are exact copies. See par. 9.2.2.
- **Download WebSentinel Log Files**: open a LOG file in a window of the application associated with the .log file extension or save it to a disk/directory of your choice. Reduced WebSentinel Log Files do not contain code data nor code ID information. Limited users cannot download complete log files but only reduced log files.
- **Backup WebSentinel Configuration**: backs up the current WebSentinel Configuration to the BACKUP file directory.
- **Restore WebSentinel Configuration**: restores the WebSentinel Configuration selected from the list of those available in the BACKUP file directory.
- **Backoffice Logs**: open a Backoffice log file selected from the list of those available in the Tracing file directory.
- **Tomcat Logs**: open a Tomcat log file selected from the list of those available in the Tomcat/logs file directory.

Downloads:

- **Genius™**: if Genius™ is not currently installed on the Client PC it can be downloaded here. Genius™ must be installed on the Client PC in order to open it through Datalogic WebSentinel™.
- **VisiSet™**: if VisiSet™ is not currently installed on the Client PC it can be downloaded here. VisiSet ™ must be installed on the Client PC in order to open it through Datalogic WebSentinel™.
- **Configuration Tool Passthrough Bridge**: if the Configuration Tool Passthrough Bridge is not currently installed on the Client PC it can be downloaded here. This

application is necessary to open any Configuration Tool through Datalogic WebSentinel™.

- **Simatic RBS Commissioning Tool**: if RBS is not currently installed on the Client PC it can be downloaded here. RBS must be installed on the Client PC in order to open it through Datalogic WebSentinel™.
- **Ultra VNC Viewer**: if the Ultra VNC Viewer is not currently installed on the Client PC it can be downloaded here. Ultra VNC Viewer must be installed on the Client PC in order to open it through Datalogic WebSentinel™.

Preferences:

- **Language**: allows changing the display language used in Datalogic WebSentinel™ for the current user. This setting modifies the specific user parameters and therefore this language will also be used for successive sessions and Logins.

  The drop-down Language Menu on the right side of the page changes the language for the current user temporarily (only for the current session). It will be reset to the default language after the session is closed.
- **Metrics**: this allows display level conversion of decimal (m/s, mm) or imperial (ft/min, in) measurements. The values in the reports are determined by the Settings and are not affected by the display level selection.

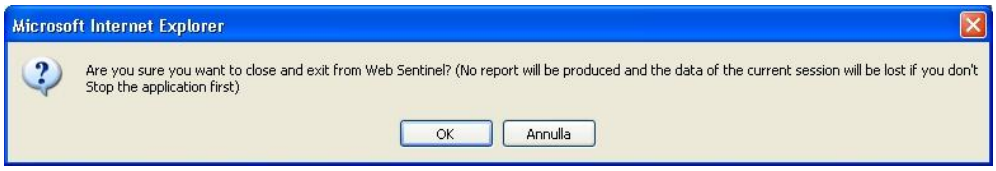
?:

- **About**: opens the information window containing the various program release and software version numbers.
- **Help**: allows downloading this manual.
- **License**: allows downloading the Datalogic WebSentinel™ License information from the Datalogic WebSentinel™ Server.

Toolbar buttons:

	Starts/stops the current session. The LED works in combination with the start/stop button. It indicates if the session is currently Started (green) or Stopped (red).
	Freezes/resumes the current session. This button only freezes the visualization of statistics data, without stopping the processing of new data. When visualization is resumed, the statistics are immediately updated. The LED works in combination with the freeze/resume and the start/stop buttons. It indicates if the session visualization is currently enabled (green) or frozen (red) if Datalogic WebSentinel™ is started. If Datalogic WebSentinel™ is stopped it is always gray.

	Saves context dependent data in .txt format to disk.
	Prints out context dependent data in text or graphic format. The default printer is used.
	Opens the Terminal window to visualize data collection in real-time. This icon is only available if enabled, see Log Window under par. 7.2.2.
	Allows access to Datalogic WebSentinel™ configuration. See chapter 9 for the details.

	Closes Datalogic WebSentinel™ (BackOffice and Server) and Exits the program after asking the user for confirmation. If the current session has not been previously closed (stopped), on exit from Datalogic WebSentinel™ the related session data will be lost.  To restart the program, run the Datalogic WebSentinel™ from the Windows Start Menu.

Logon and Access Rights Information:

This area shows the currently logged user and his/her current role. The number of connected users is refreshed.

NOTE: To avoid conflict of program control, the currently logged user's role may be downgraded if another user with higher access rights connects to or is already connected to Datalogic WebSentinel™.

5.1.1 Login Management

If a User accidentally closes the Browser without logging out, the session will automatically terminate after 30 minutes in order to free up the connection.

When logging in, if another User is already logged in at the same protection level their computer name or IP Address will be shown, so that the identified connection can be logged out if necessary.

5.2 PROGRAM ICONS

5.2.1 Alarms and Colors

The device icons are colored to indicate system status and have the following meaning:

Alarm Icons	
Array Alarms	
	TCP/IP alarm (array disconnected)
	Network and Disk alarms. If any slave in the array is red the slave set icon is also red.
	Performance Threshold Crossing Notifications (TCNs)*, No Read alarms, Input signal alarms. If no slave in the array is red but at least one slave in the array is yellow the slave set icon is also yellow.
	No Alarms: Array performing correctly. All slaves in the array are performing correctly.

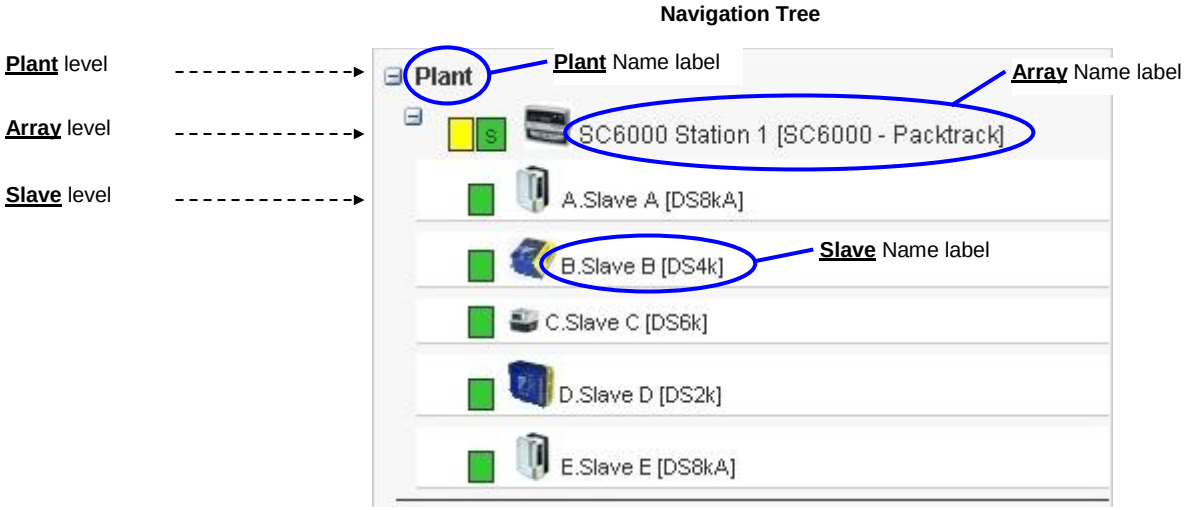
Device Alarms	
	Critical Alarm: Network Communications, ScanLine/Motor, ScanLine/Laser, or Decoder errors
	Major Alarm:
	Warning and/or Minor Alarms: Performance Threshold Crossing Notifications (TCNs)*, No Read alarms.
	No Alarms: The slave is performing correctly

* Array TCNs checked only for the current session.

5.3 VISUALIZATION LEVELS

Datalogic WebSentinel™ has a 3-level user interface (**Plant** level, **Array** level, **Slave** (Single Reader) level).

Each level can be accessed by clicking the related name labels in the navigation tree placed on the left side of the main screen.



5.4 PLANT LEVEL

The **Plant** level focuses on the complete system and is accessible by clicking the Plant name label at the top left of the navigation tree.

Data at **Plant** level are displayed in 7 different tabs (**Layout**, **Counters**, **Arrays View**, **Current Alarms**, **Events Log**, **Charts**, **Performance**).

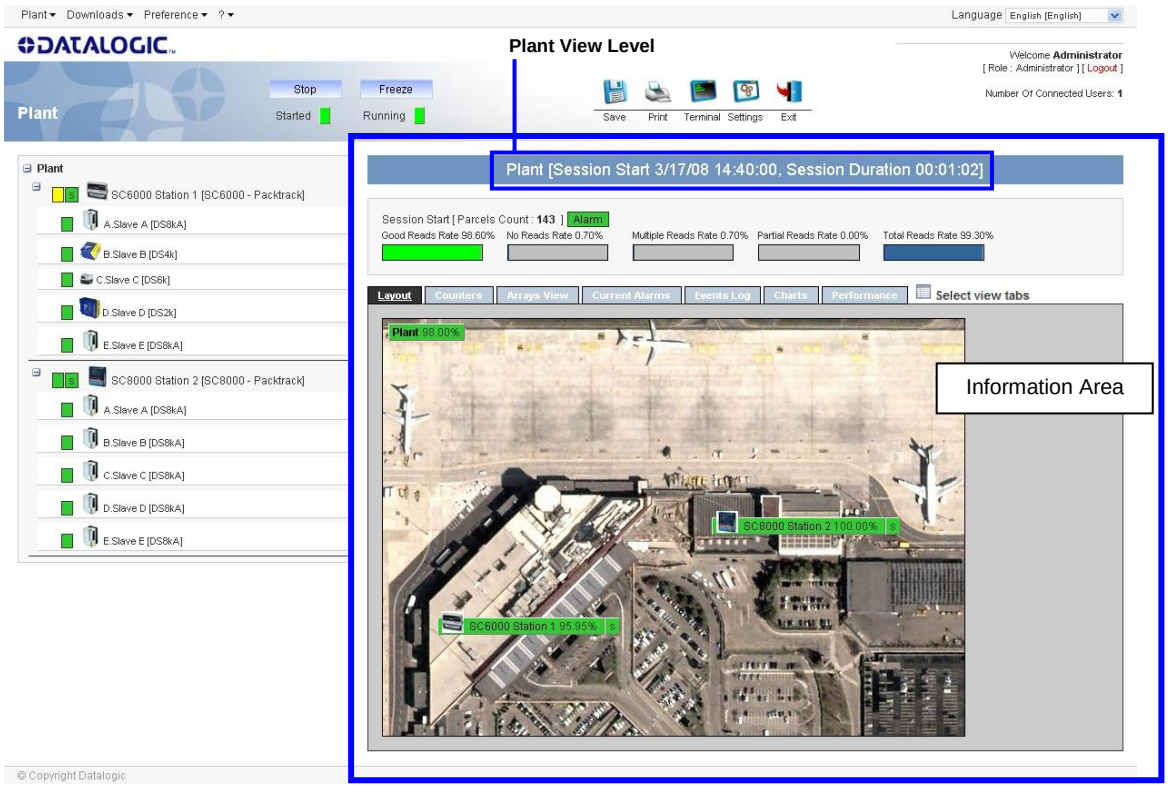
5.4.1 Layout Tab

The **Layout** tab displays the Read Rate of each array and its position on a background drawing showing the whole plant.

NOTE

Multiple layout tabs can be defined using the Settings>TabsPlantLayout configuration window. Different tabs have different, configurable names, even though they share a same background image.

Each array must be assigned to a single layout tab (Settings>TabsPlantLayout>EditAllArrayListForTabsLayout), while the plant icon will be displayed in all tabs.



All Plant, Array and Device labeling can be modified through the Settings Window.

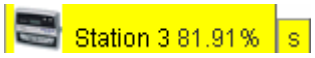
In the Information Area, the Array and Plant labels on the background layout image can be dragged with the mouse into the desired position.

Each controlled array is shown as a colored pushbutton with its name and reading rate. The color of the array depends on its reading rate (red/yellow/green). The array pushbutton, or alternatively the array label in the left navigation tree, can be clicked to access its details.

The Plant layout image can be customized, see par. 2.5.

Above the Plant layout image, the main Plant Level Read rates are shown as bar graphs for quick reference to Plant performance as well as the Total Parcel Count.

The general Plant Level Alarm icon shows the alarm level color and is an active link to the Plant Level Current Alarms page.

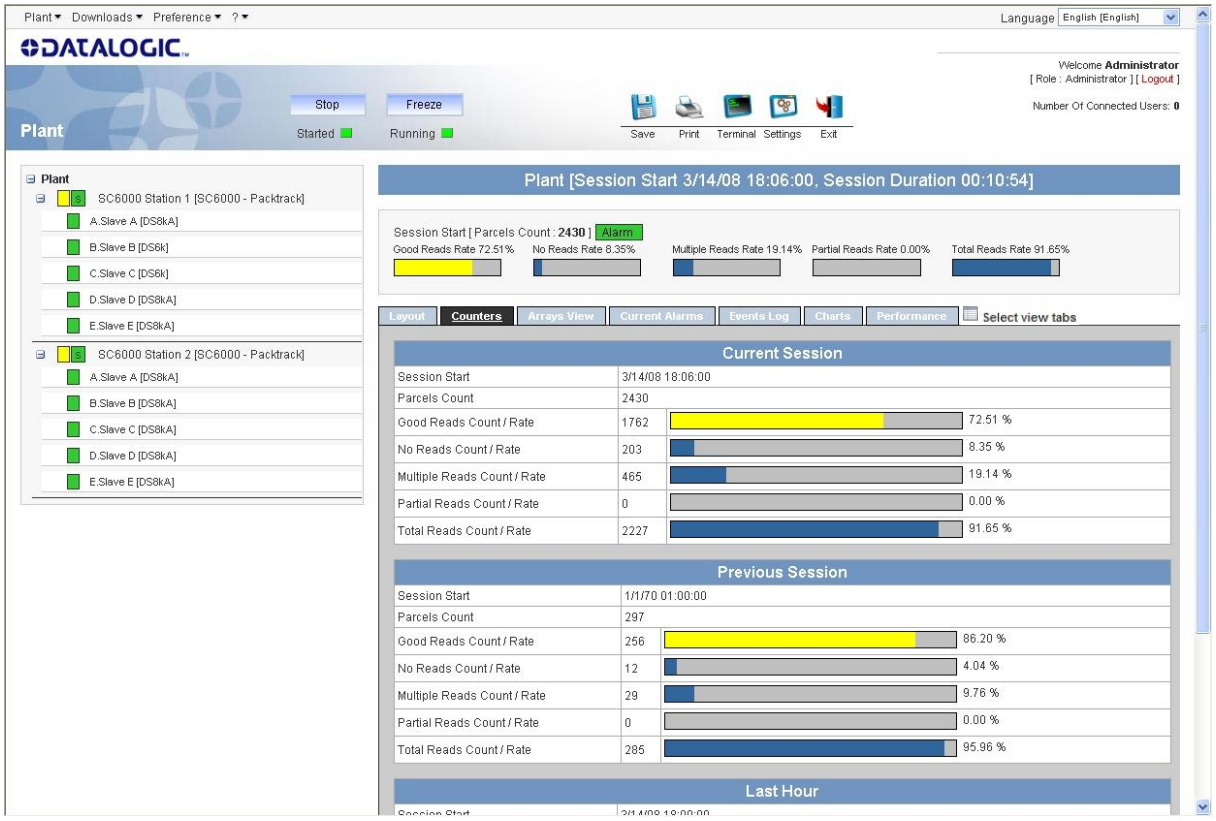
Plant Level Layout Tab	
Layout Icons	**Plant Level Performance**
	At least one array has: TCP/IP alarm (array disconnected)
	At least one array has: Array Level Performance Threshold Crossing Notifications (TCNs)*
	No Alarms: Plant performing correctly
	Array Level Performance
	TCP/IP alarm (array disconnected)
	Array Level Performance Threshold Crossing Notifications (TCNs)*
	No Alarms: Array performing correctly
	Device Set Performance
	TCP/IP alarm (array disconnected)
	At least one slave is disconnected from the array controller
	At least one slave in the array has Slave Performance Threshold Crossing Notifications (TCNs)*
	No Alarms: All slaves in the array are performing correctly.

* Array and Slave TCNs checked only for the current session.

5.4.2 Counters Tab

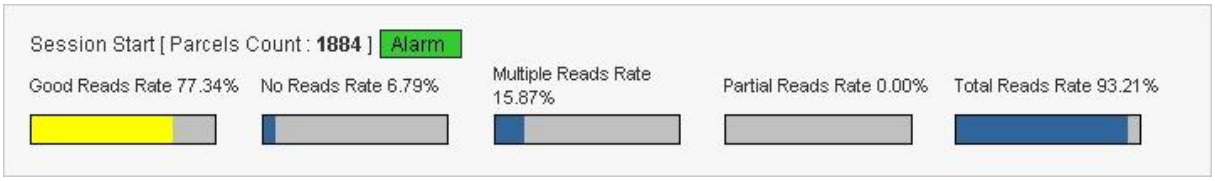
The **Counters** tab displays statistical counters and rates at plant level.

These data can be compared between Current Session, Previous Session and Last Hour data.



Plant Level Bar Graphs:

A summary of the Plant level read rates are shown in the bar graphs at the top of the information area. This area is always present for all of the Plant level pages.



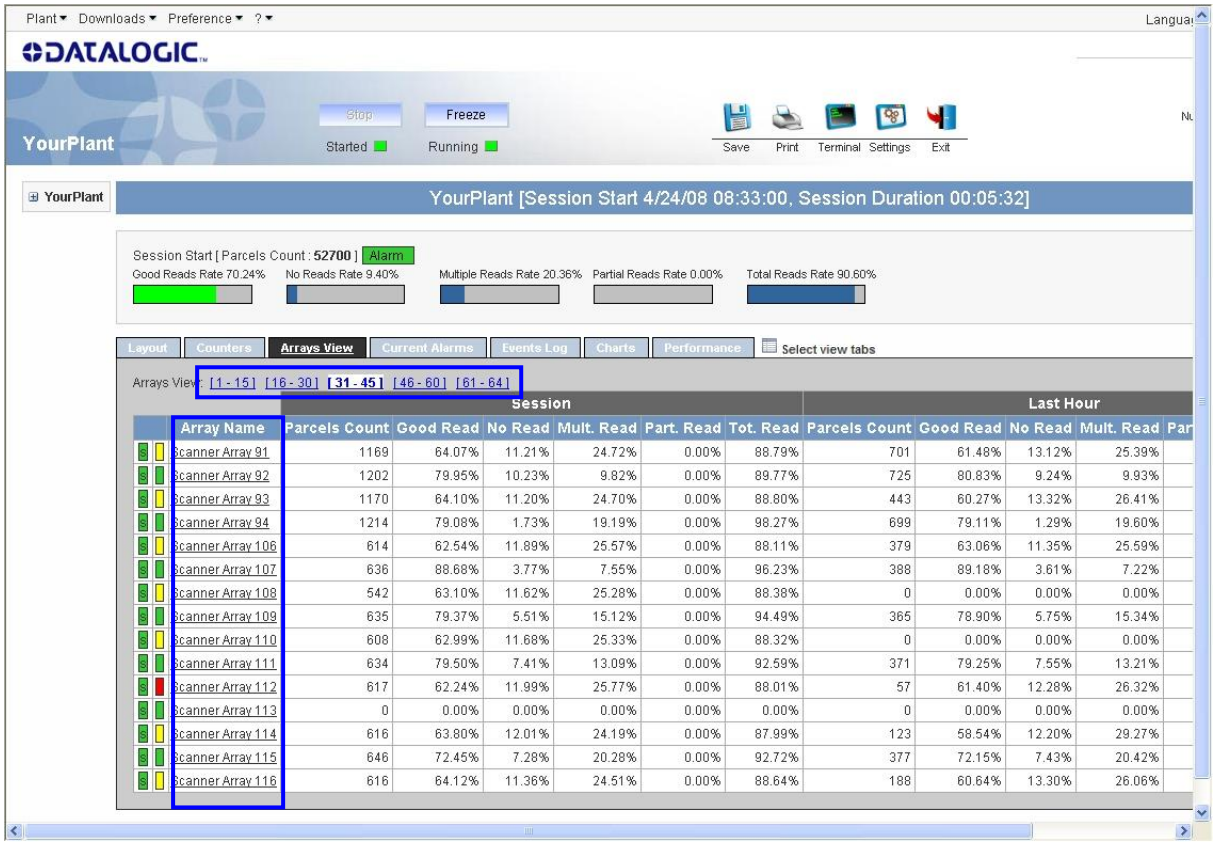
Each Reads Rate bar graph represented at the Plant level is equal to the corresponding Plant level Reads Count (the sum of all corresponding Array Reads Counts) divided by the Total Number of Parcels read in the Plant (the sum of all Array Parcels Counts). These rates are also written as a percentage over each bar.

The Good Reads Rate bar graph is colored green if all the Arrays in the Plant are reading above their individual Low Performance Thresholds. This bar is colored yellow if one or more of the Arrays in the Plant falls below its Low Performance Threshold.

The total Parcels Count for the Plant, (the sum of all Array Parcels Counts), is shown in bold and a generic Alarm LED that shows the color of the Plant level Alarms. If any Alarm is detected, the color of the LED changes accordingly. This LED is also a link to the Current Alarms page.

5.4.3 Arrays View Tab

The **Arrays View** tab displays statistical data for each array. The arrays are divided into pages showing 15 at a time. Click on the page link to select the desired Array group. Clicking on the Array Name opens the relative Array Level.

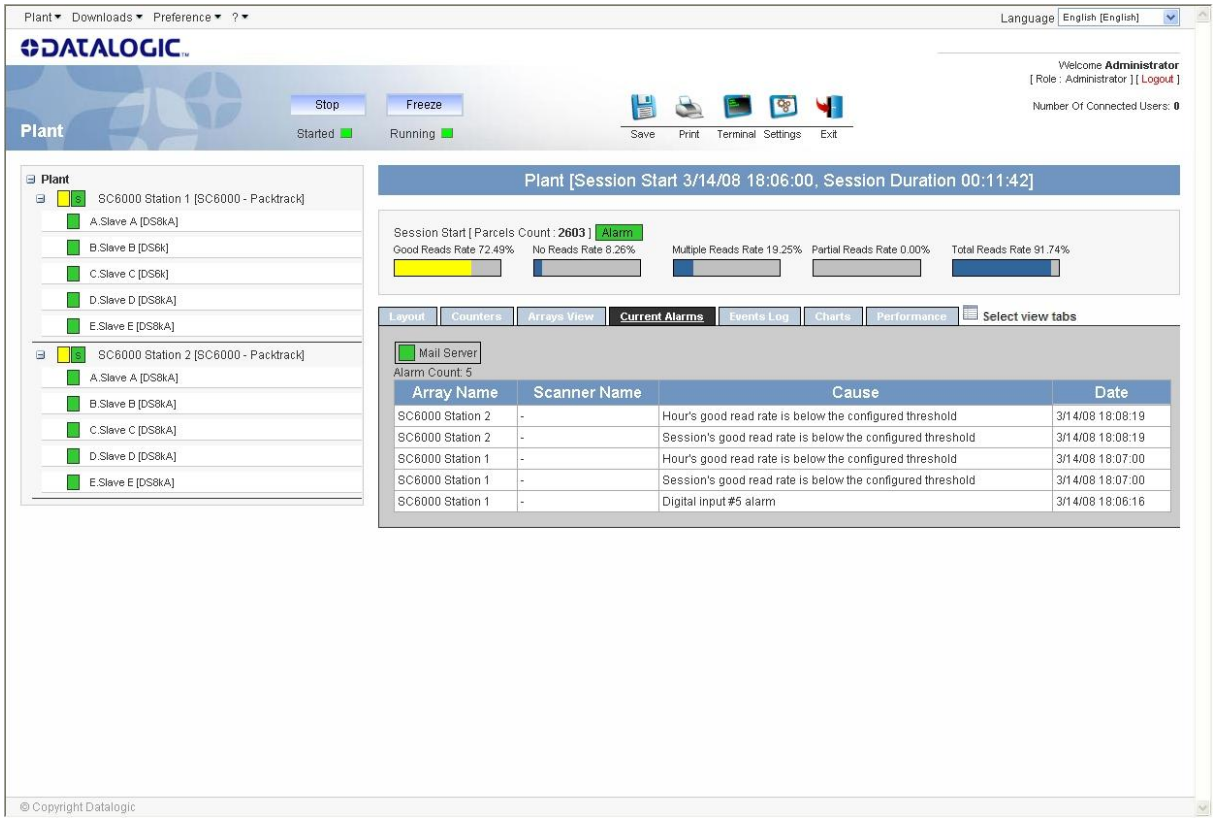


Arrays View	
Status Icons	
	Slave Set Status
S	If the array is disconnected the slave set icon is gray
S	At least one slave is disconnected from the array controller
S	Performance Threshold Crossing Notifications (TCNs) for at least one slave in the array*
S	No Alarms: All slaves in the array are performing correctly.
	Array Status
	Critical Alarm TCP/IP alarm (array disconnected)
	Major Alarm
	Warning/Minor Alarm Performance Threshold Crossing Notifications (TCNs)*
	No Alarms: The array is performing correctly

* Array and Slave Set TCNs checked both for the current session and the last hour. Evaluation of last hour performance depends on the way last hour is defined: if last hour is aligned with the day's hours then performance evaluation is continuous; if last hour is aligned with the session, evaluation takes place only every 15 minutes.

5.4.4 Current Alarms Tab

The **Current Alarms** tab displays a detailed list of all the pending alarms for each array, slave and for the Datalogic WebSentinel™ station.

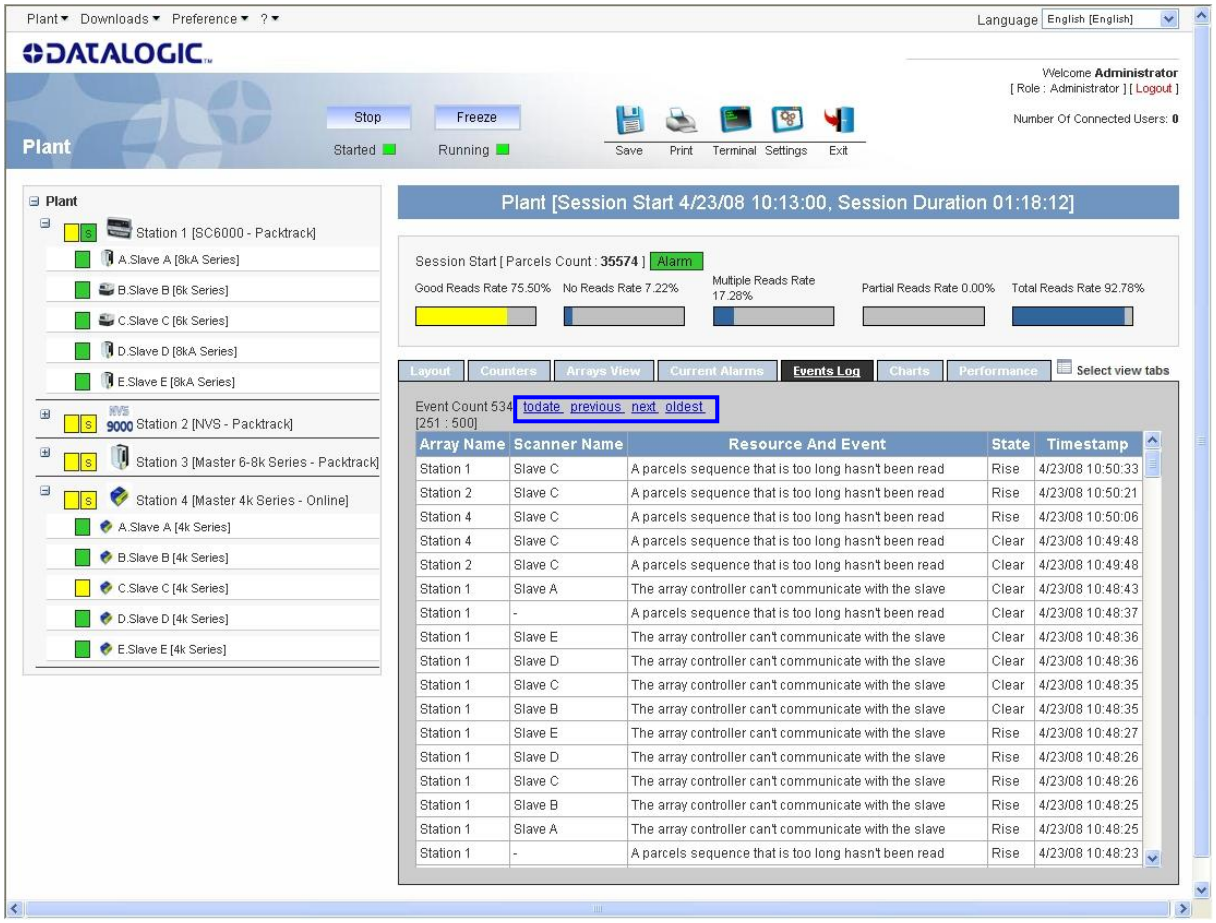


Diagnostic Alarm LED:

The only diagnostic LED available at Plant Level is the Mail Server status LED. This LED indicates whether the Datalogic WebSentinel™ station is experiencing problems in the interaction with the mail server.

5.4.5 Events Log Tab

The **Events Log** tab displays a timestamped list of all the alarms detected for each array and related slaves of the current session. Also Mail Server related events on the Datalogic WebSentinel™ station are logged in this window.



To limit the workload of maintaining this page, the log entries are subdivided into pages containing a maximum of 250 entries. You can navigate between pages by using the previous and next page links.

The oldest page link presents the last entry page in the list (the oldest entries).

The todate link presents the most current page in the list (the newest entries).

Note:

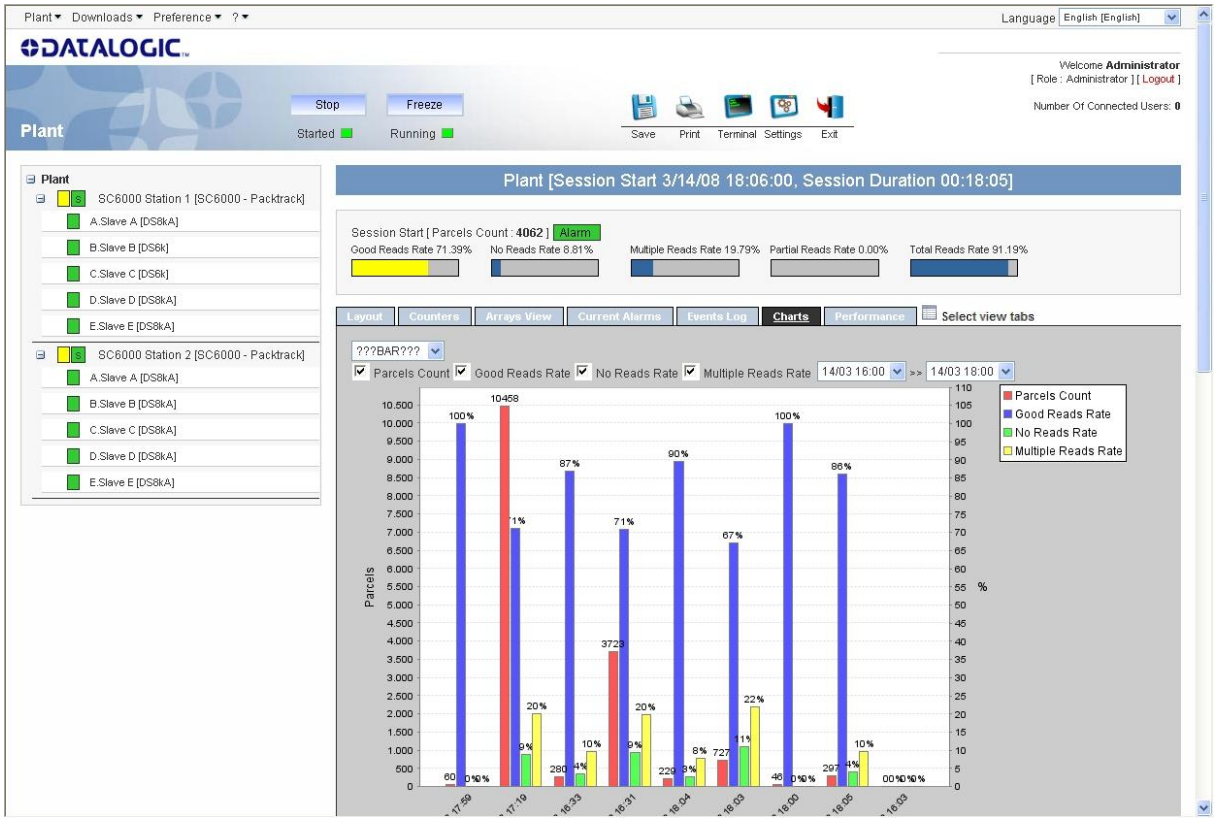
The Events Log tab may be hidden/shown through the related checkbox in the Settings>Operations tab.

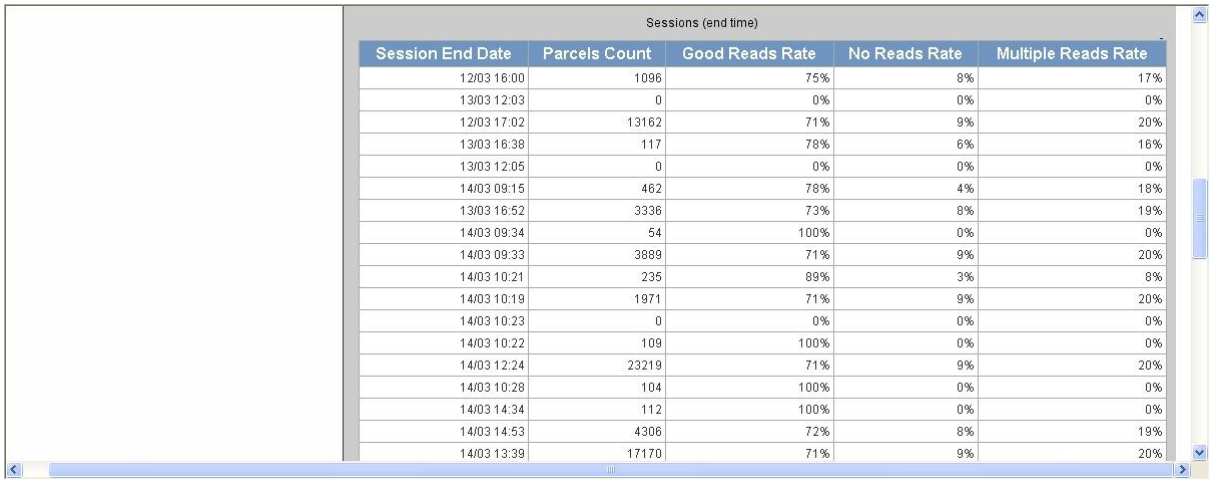
5.4.6 Charts Tab

The **Charts** tab graphically and textually displays statistical counters and rates at plant level for a selectable number of past sessions.

Multiple checkboxes are available to choose the information to be displayed.

Date/time boxes allow choosing the period (measured in sessions) for the calculation.



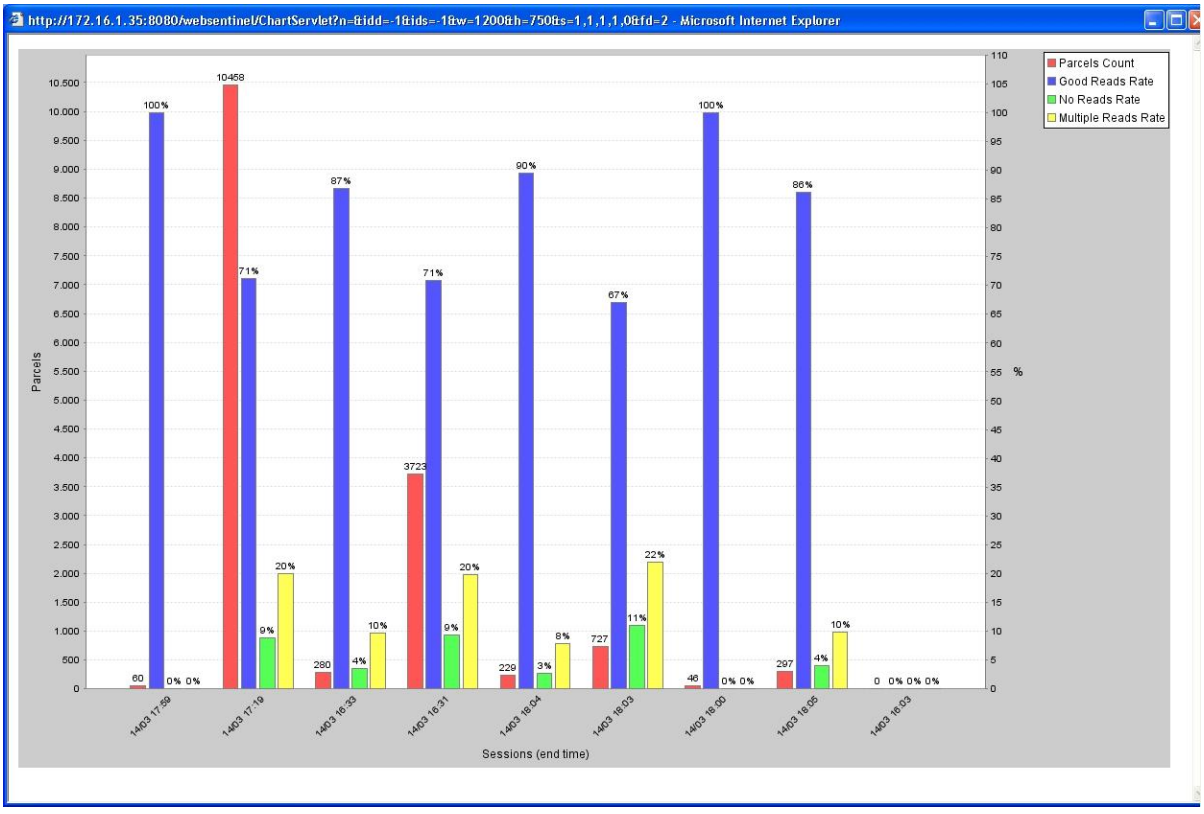


Sessions (end time)

Session End Date	Parcels Count	Good Reads Rate	No Reads Rate	Multiple Reads Rate
12/03 16:00	1096	75%	8%	17%
13/03 12:03	0	0%	0%	0%
12/03 17:02	13162	71%	9%	20%
13/03 16:38	117	78%	6%	16%
13/03 12:05	0	0%	0%	0%
14/03 09:15	462	78%	4%	18%
13/03 16:52	3336	73%	8%	19%
14/03 09:34	54	100%	0%	0%
14/03 09:33	3889	71%	9%	20%
14/03 10:21	235	89%	3%	8%
14/03 10:19	1971	71%	9%	20%
14/03 10:23	0	0%	0%	0%
14/03 10:22	109	100%	0%	0%
14/03 12:24	23219	71%	9%	20%
14/03 10:28	104	100%	0%	0%
14/03 14:34	112	100%	0%	0%
14/03 14:53	4306	72%	8%	19%
14/03 13:39	17170	71%	9%	20%

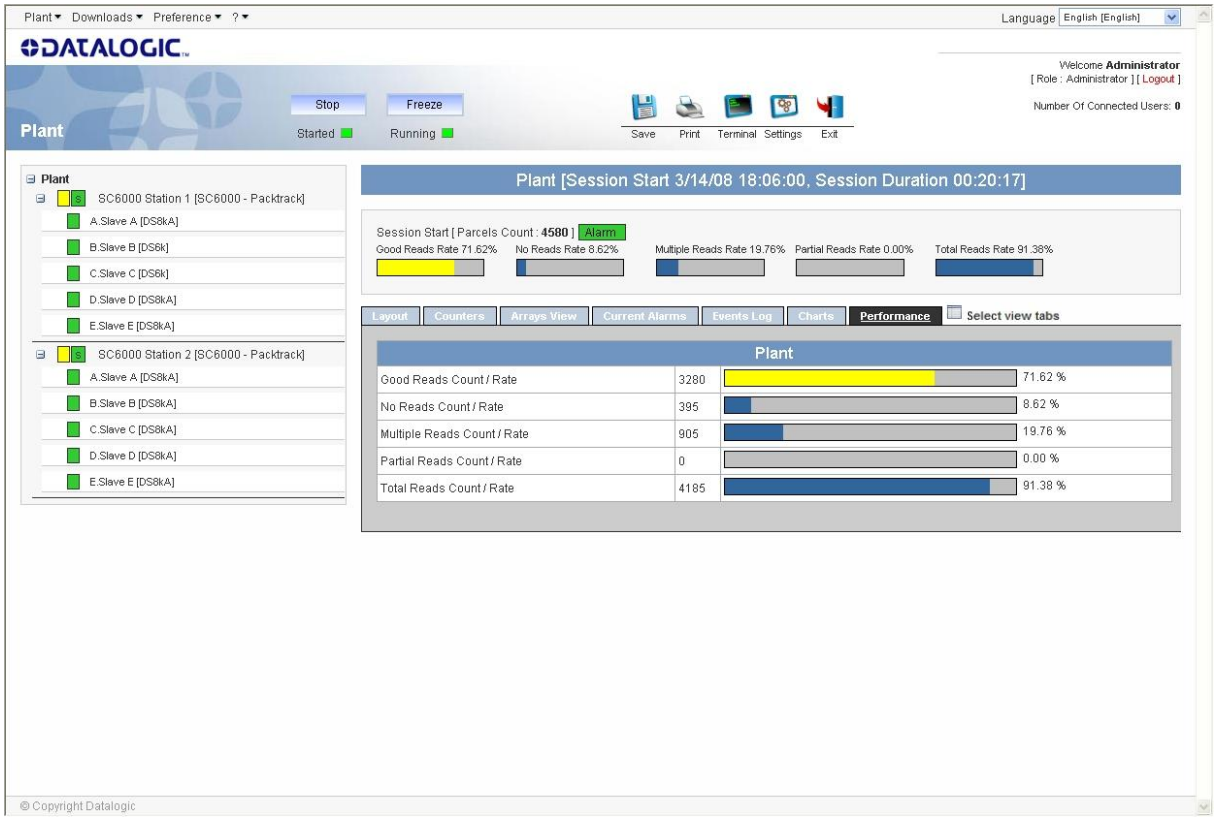
The charts can be shown in either bar or line graph representations.

By clicking on the chart in the information area, the chart will be enlarged and opened in another window making it easier to read and to be printed out.



5.4.7 Performance Tab

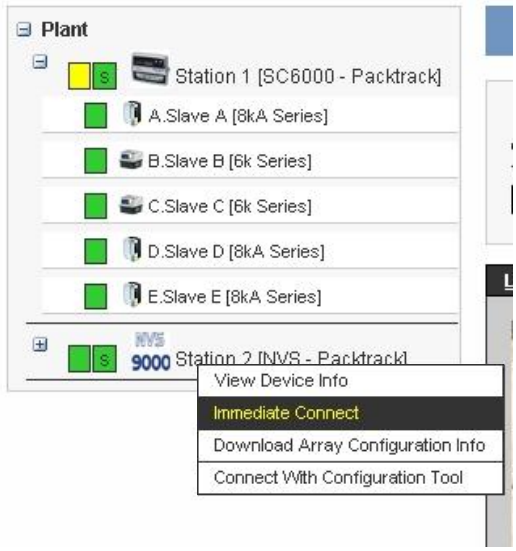
The **Performance** tab graphically and textually displays statistical counters and rates at plant level for the current session.



5.5 SINGLE ARRAY RECONNECTION

A single array reconnection function is available while a session is in progress. This can be useful for example if a connection problem is known and repaired (i.e. cable substitution) and you don't want to wait for the automatic system reconnection attempt.

By right clicking an array label on the navigation tree and selecting the "Immediate Connect" item, the related array will be immediately reconnected keeping the current session.



5.6 SYSTEM RESTART

A system restart can be performed by Exiting the Datalogic WebSentinel™ program and restarting it.

CAUTION: Remember to close the current session (STOP button) before exiting in order to save the current session data.

To restart Datalogic WebSentinel™ either:

- Reboot the Datalogic WebSentinel™ PC.

or

- From the Windows Start Menu, run Datalogic>WebSentinel>WebSentinel.

6 SINGLE ARRAY VISUALIZATION

6.1 ARRAY LEVEL

The **Array** level focuses on the configured arrays and is accessible by clicking one of the Array name labels in the navigation tree (or optionally through the related button on the **Layout** tab).

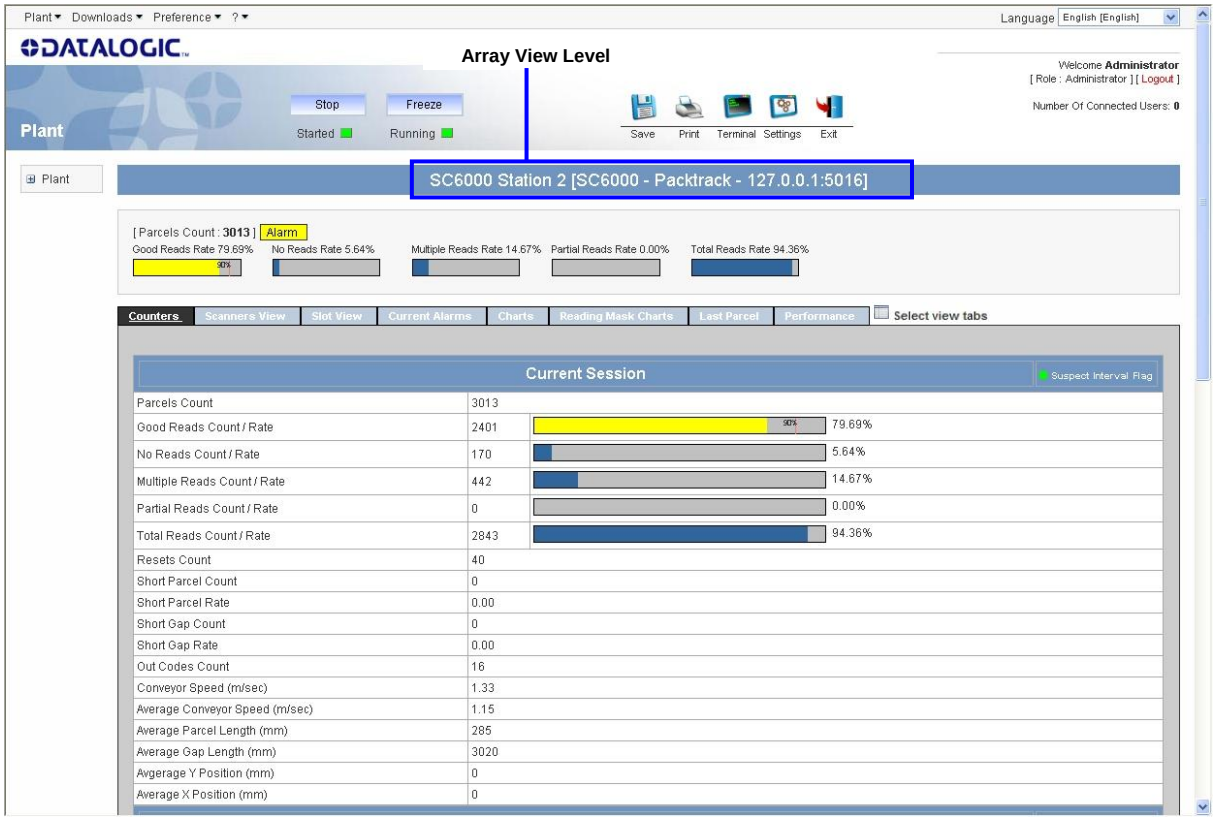
By selecting an array label it is possible to watch the statistical and diagnostic data in the information area of the display.

Data at **Array** level are displayed in 9 different tabs (**Counters**, **Scanners View**, **Slot View**, **Current Alarms**, **Charts**, **Reading Mask Charts**, **Last Parcel**, **Performance** and **Event Search**).

6.1.1 Counters Tab

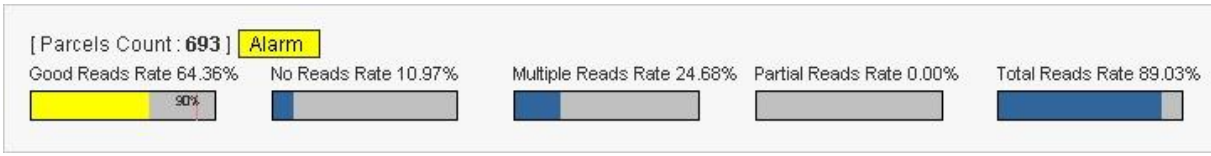
The **Counters** tab displays statistics information concerning the selected array.

These data can be compared between Current Session, Previous Session and Last Hour data.



Array Level Bar Graphs:

A summary of the specific Array read rates are shown in the bar graphs at the top of the information area. This area is always present for all of the Array level pages.



Each Reads Rate bar graph represented at the Array level is equal to the corresponding Array level Reads Count divided by the Total Number of Parcels read in the Array (this number is the same for the Array and each of its Slaves). These rates are also written as a percentage over each bar.

The Good Reads Rate bar in particular, shows a vertical line representing the Array's configured Low Performance Threshold. It is also written as a percentage inside the bar. The Good Reads Rate bar graph is colored green if the Array is reading above its individual Low Performance Threshold. This bar is colored yellow if the Array falls below its Low Performance Threshold.

The Good Read Rate Threshold is set in either the Default Plant level page or in the specific Array page of the Settings window.

The total Parcels Count for the Array is shown in bold and a generic Alarm LED that shows the color of the Array level Alarms. If any Alarm is detected, the color of the LED changes accordingly. This LED is also a link to the Current Alarms page.

Suspect Interval Flag:

The “Suspect Interval Flag” LED that is displayed at Array level informs that session related performance info is only partial, due to a previous or current disconnection of Datalogic WebSentinel™ from the array.

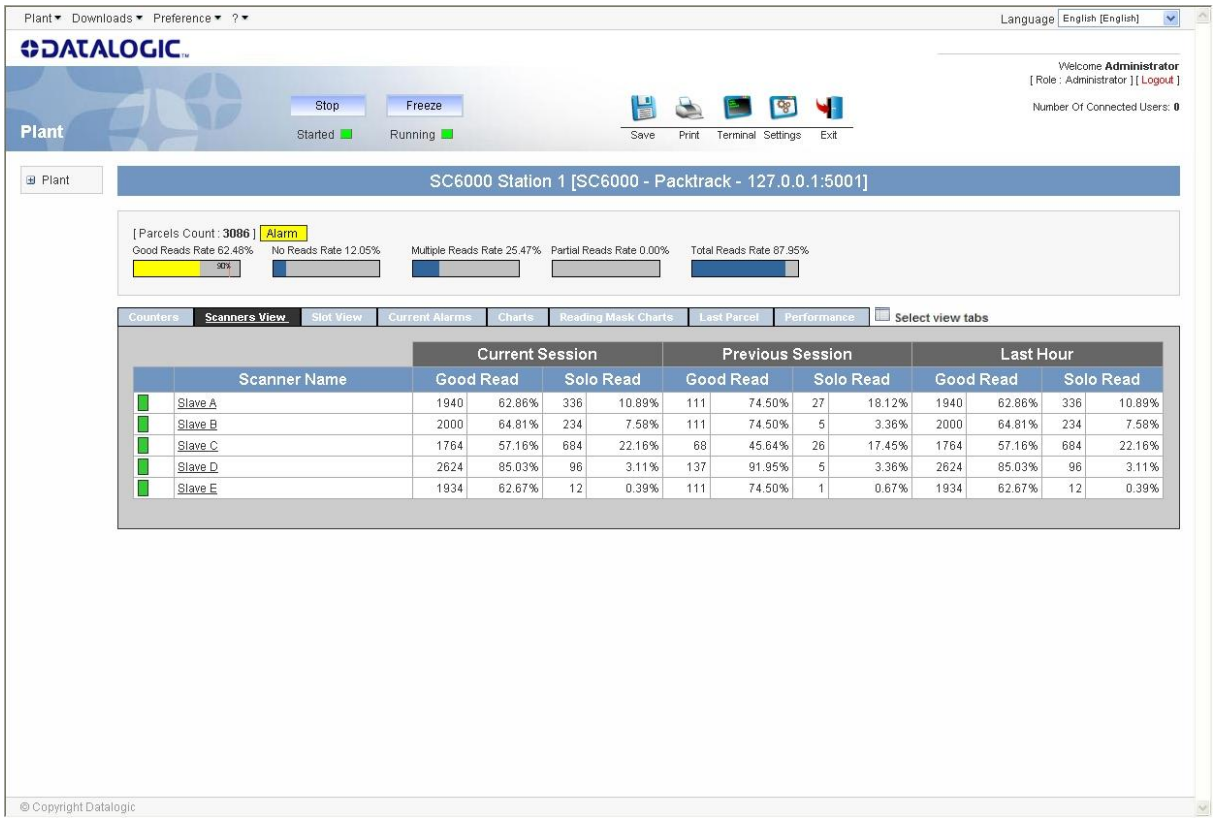
This same notice is also displayed about Last Hour information. The occurrence, time and duration of disconnections, also appear in performance statistics records, both for sessions and for hours.

The Last Hour “Suspect Interval” LED is computed based on the 24 hours of a session (in spite of the fact that Last Hour info which is displayed is computed based on different time patterns, either the current day’s hour or a sliding window that moves every 15 min).

This notice about completeness of information will not appear in **graph** windows.

6.1.2 Scanners[1] View Tab

The **Scanners View** (Single Reader) tab displays statistical data for each slave in the array.



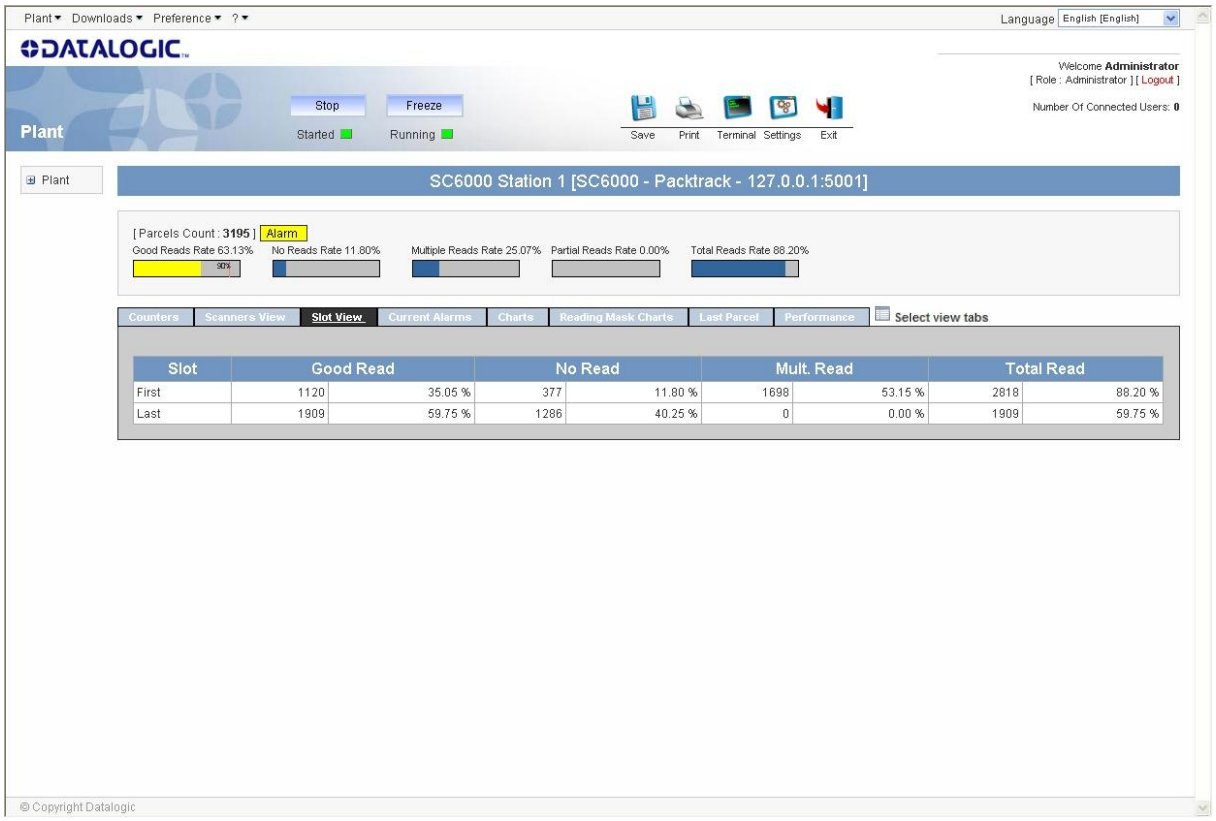
Scanners View	
Status Icons	
	Slave Status
	Critical Alarm Network Communications error
	Major Alarm
	Warning/Minor Alarm Performance Threshold Crossing Notifications (TCNs)*
	No Alarm The slave is performing correctly

* Slave TCNs checked both for the current session and the last hour. Evaluation of last hour performance depends on the way last hour is defined: if last hour is aligned with the day's hours then performance evaluation is continuous; if last hour is aligned with the session, evaluation takes place only every 15 minutes.

[1] **Scanners View** and **Slaves View** are comparable terms. These terms both refer to Single Readers in the Array.

6.1.3 Slot View Tab

The **Slot View** tab displays statistical data for each slot read by the array.

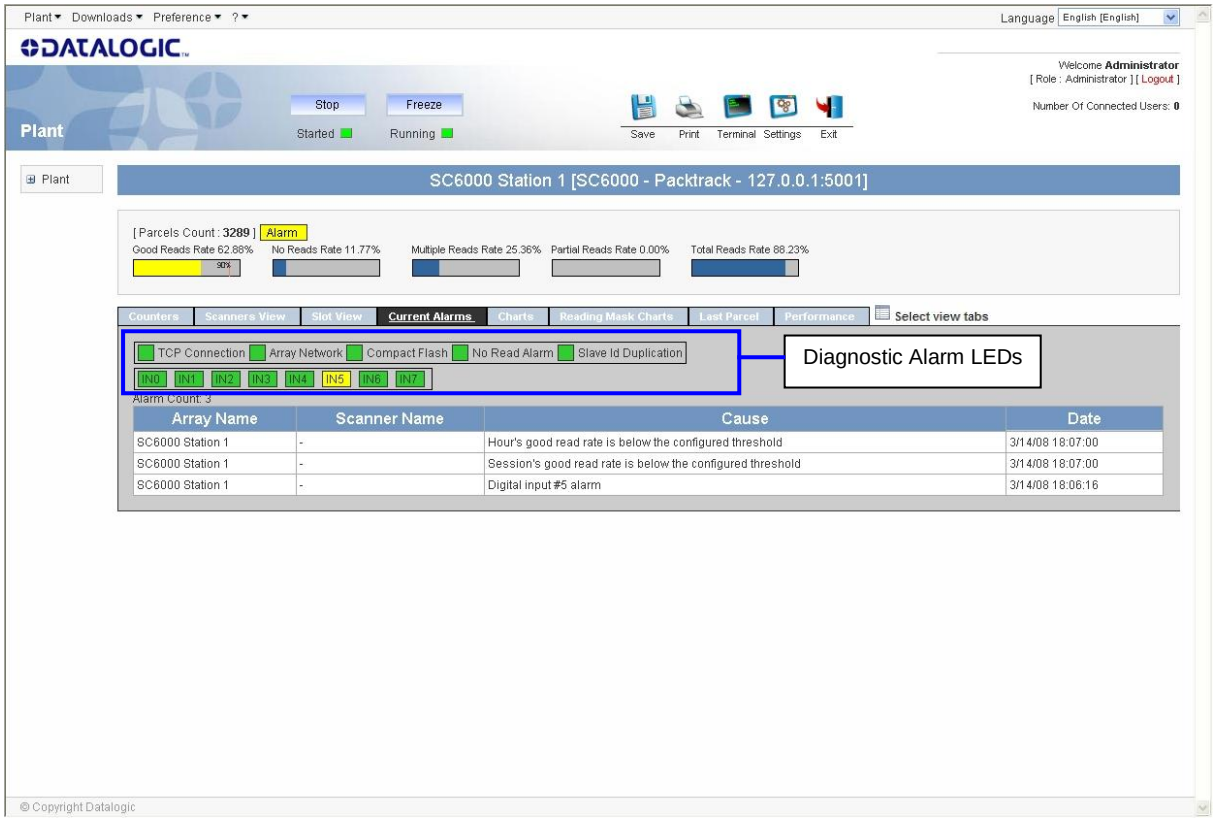


Slots refer to the number of expected label groups to be read per reading phase (per parcel), as defined in the Array device configuration.

See the Code Combination parameter for Multi Label and Logical Combination Rule in the Genius™ Help On-Line for the Array Device.

6.1.4 Current Alarms Tab

The **Current Alarms** tab displays a detailed list of all the pending alarms on each slave of the array and on the array's controller.



Diagnostic Alarm LEDs:

The diagnostic LEDs available at Array Level include: Fixed Diagnostics, Array Type Diagnostics (which depend on the Type of Array), on Conditional Diagnostic parameters enabled in the Settings>Plant – Array window, and on Hardware Input Settings.

See par. 9.2.1 for details.

See the product specific Help On-Line Diagnostic Error Conditions page for descriptions of device specific errors.

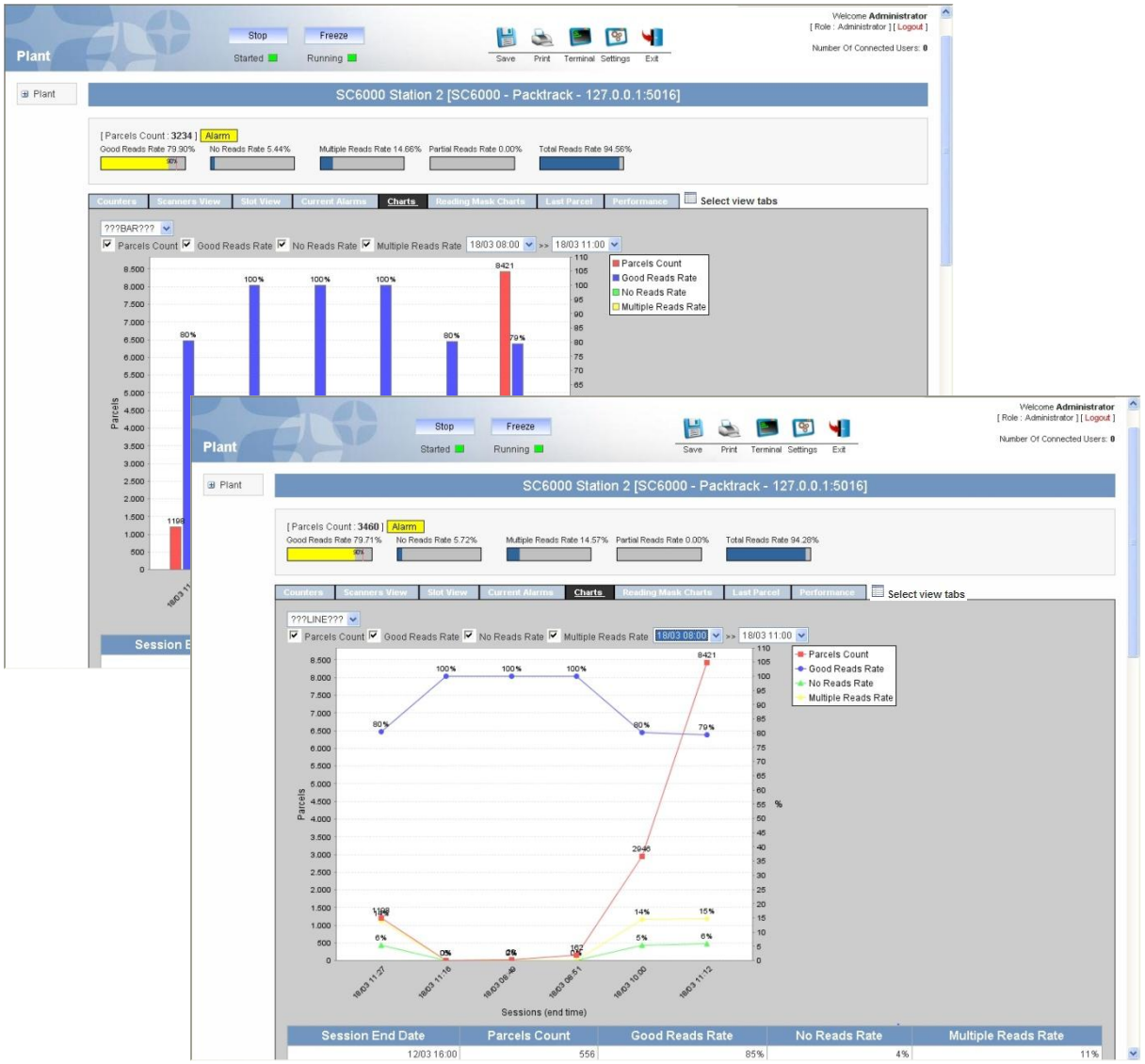
6.1.5 Charts Tab

The **Charts** tab graphically and textually displays statistical counters and rates of the selected array for a selectable number of past sessions.

Multiple checkboxes are available to choose the information to be displayed.

Date/time boxes allow choosing the period (measured in sessions) for the calculation.

The charts can be shown in either bar or line graph representations.



6.1.6 Reading Mask Charts Tab

The **Reading Mask Charts** tab graphically and textually displays the following information for the selected array and its slaves:

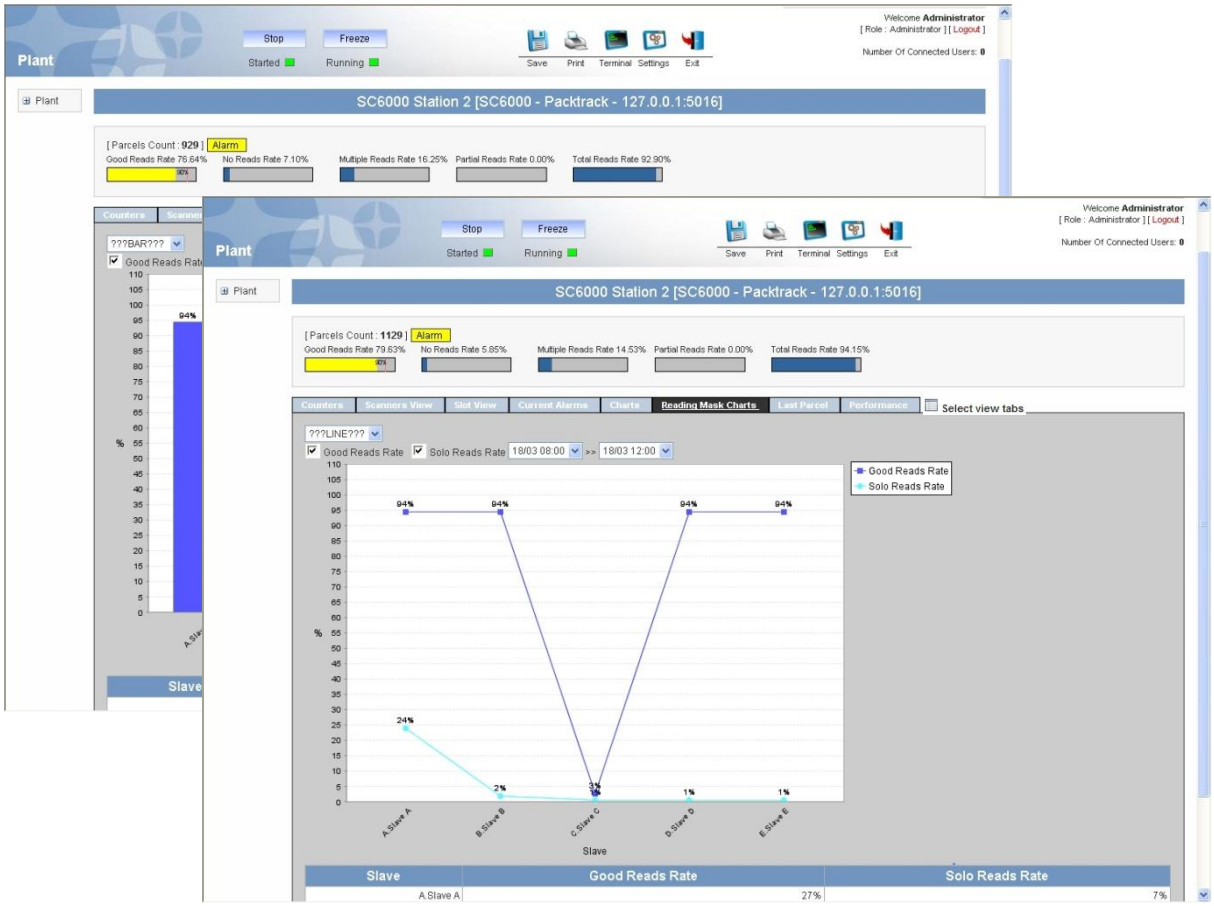
The slaves that are actually present in the array are listed in abscissa.

Notice that only slaves that are actually present are listed: this means that if for any reason a slave is not marked as present it is not listed, even though data related to it are present in the history file from which the chart is built. This is the case, for instance, when Datalogic WebSentinel™ is activated but it is still stopped: in this case no slave is registered as present.

Checkboxes are available to choose the information to be displayed.

Date/time boxes allow choosing the period (measured in sessions) for the calculation.

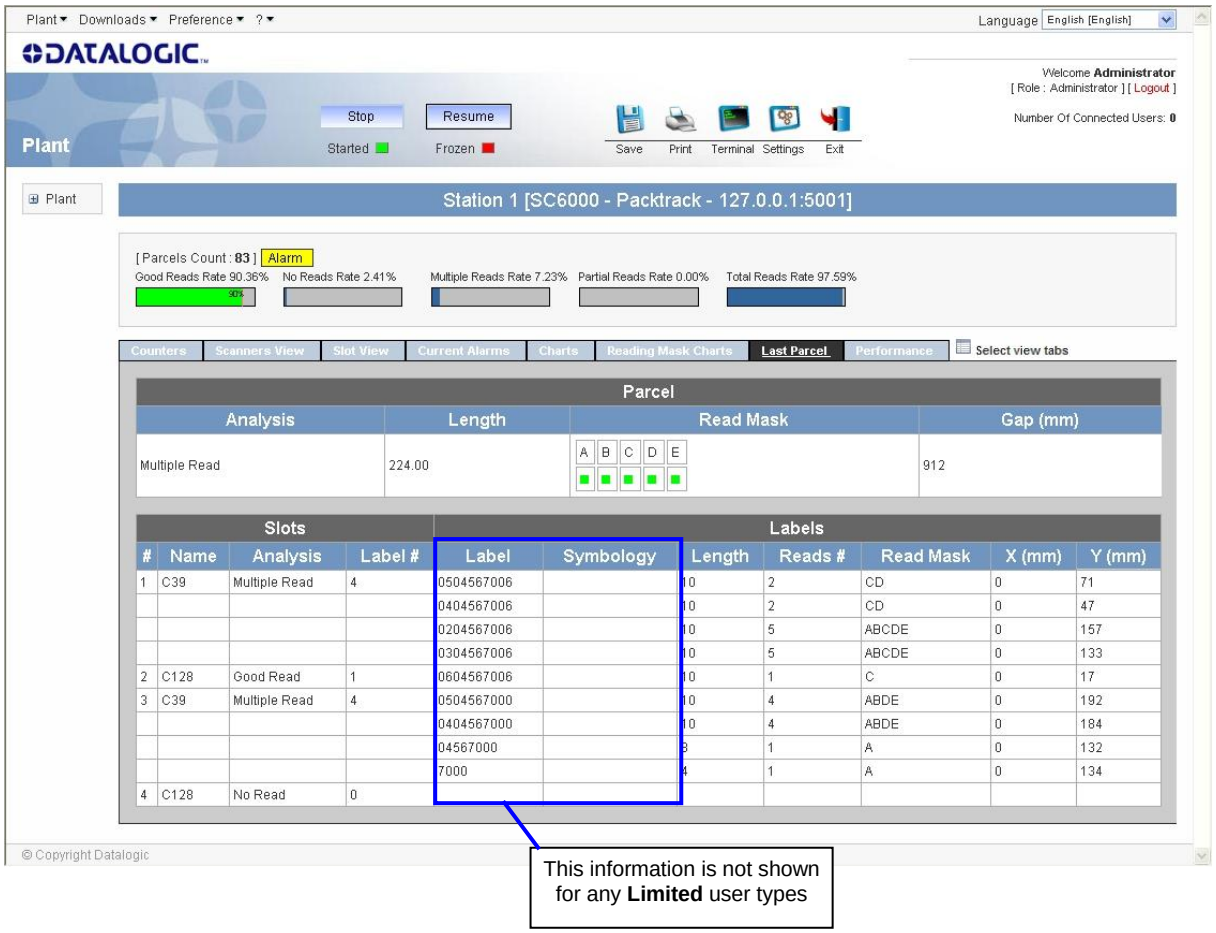
The charts can be shown in either bar or line graph representations.



6.1.7 Last Parcel Tab

The **Last Parcel** tab displays the details of the reading result for the last parcel.

At the Array Level, labels are grouped according to the configured Slots.



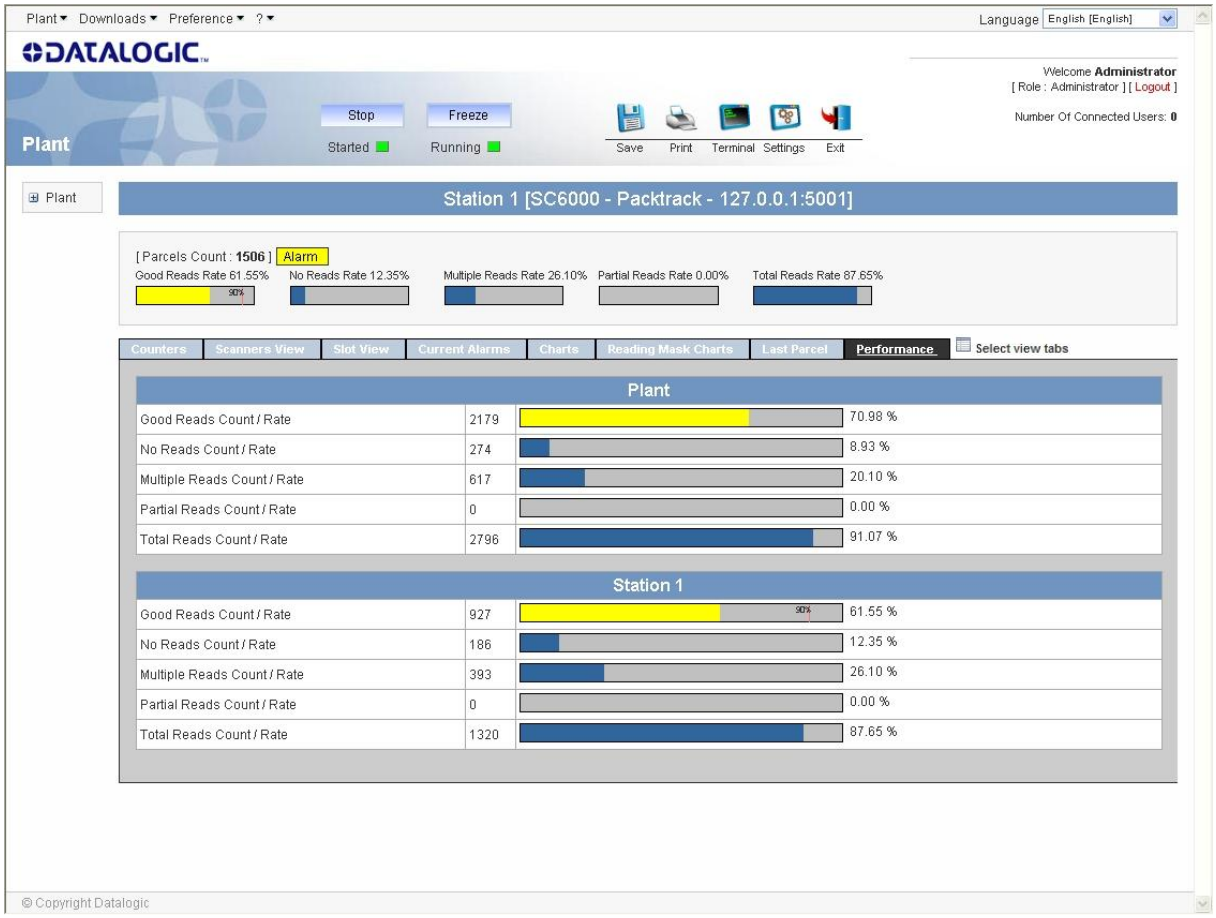
Note:

The Last Parcel tab may be hidden/shown through the related checkbox in the Settings>Operations tab.

In this window the Label and Symbology information (barcode data and Code ID) are not available for any **Limited** user types.

6.1.8 Performance Tab

The **Performance** tab graphically and textually displays statistical counters and rates at plant and currently selected array levels for the current session.



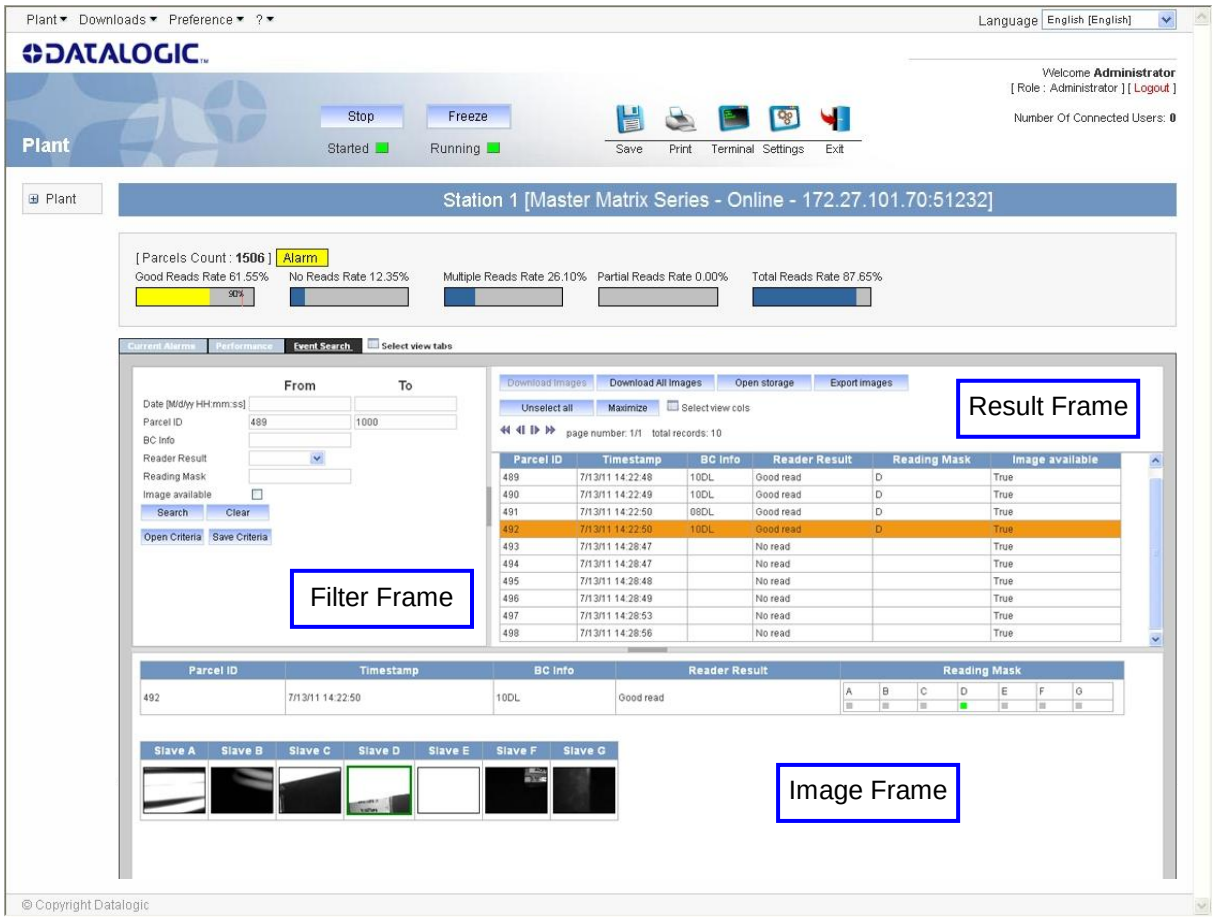
6.1.9 Event Search Tab

The **Event Search** tab opens the window that allows management of the Extended Parcel Information and Transfer Array Image feature on arrays. This feature enhances the information relative to the reading phase events with the actual images acquired during each phase.

Images related to specific reading phases can be transferred from an array through its FTP Client and saved to the WebSentinel PC using the integrated FTP Server (or for NVS arrays to a Remote PC FTP Server) for further analysis.

NOTE: In order to transfer Array Images to WebSentinel, both WebSentinel and the Array Master must be correctly configured. See par. 2.8.

This feature allows collection of parcel information including Dimensions, Volume and Weight. In addition, images associated with the parcel and relative to the given reading phases, can be collected and elaborated.



The window allows the following:

- Show Linear Dimensions (length, width and height), Volume and Weight
- Set filtering for parcels to be shown
- Request downloading of the desired parcel(s)
- Show the group of downloaded images relative to the given parcel
- Zoom the image

Filter Frame:

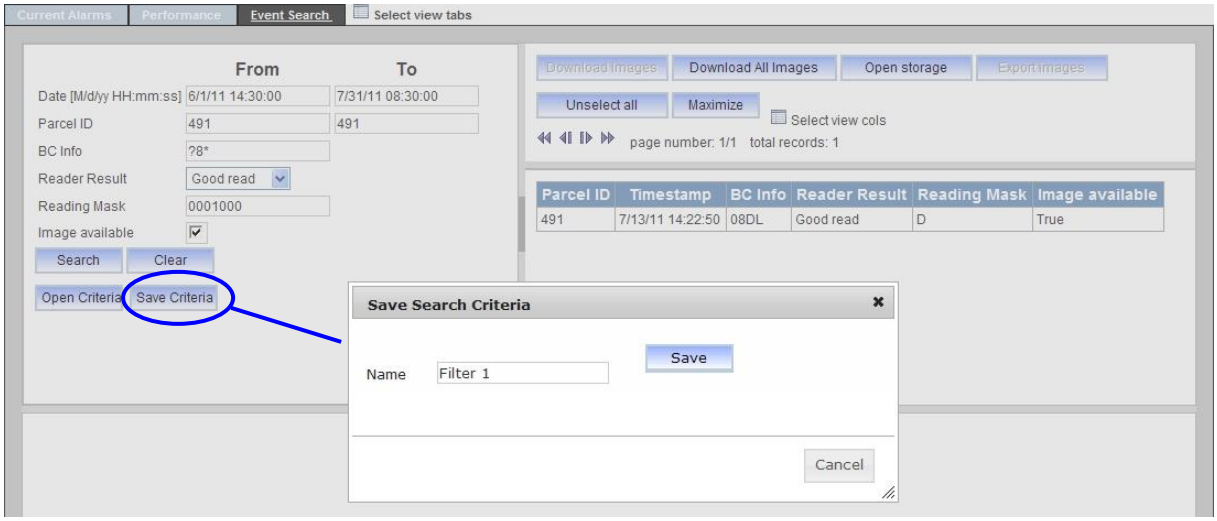
This frame allows filtering the parcels that satisfy specific conditions from among the ones present in the database. The filtering criteria are:

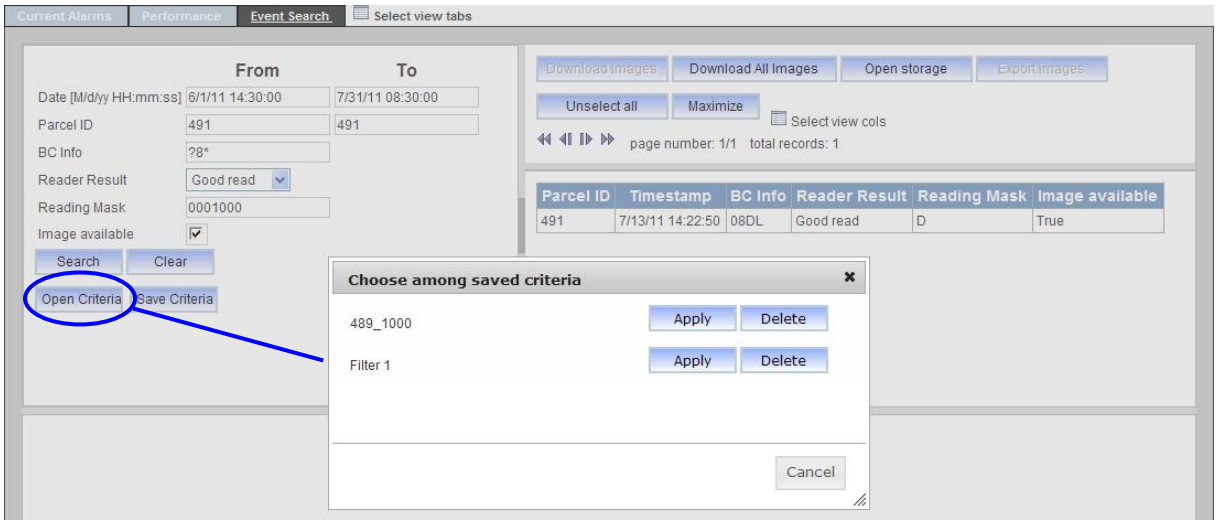
- Time interval (date/time format)
- Reading Phase (Parcel ID = reading phase)
- Code Content (wildcards **?** and ***** are allowed)
- Linear Dimensions
- Volume
- Weight
- Reading Result
- Reading Mask (see below)
- Available Image
- Parcel Overlapped (for NVS systems)

All of these filter criteria work together in logical AND. If no criteria are selected, then the filter passes all information.

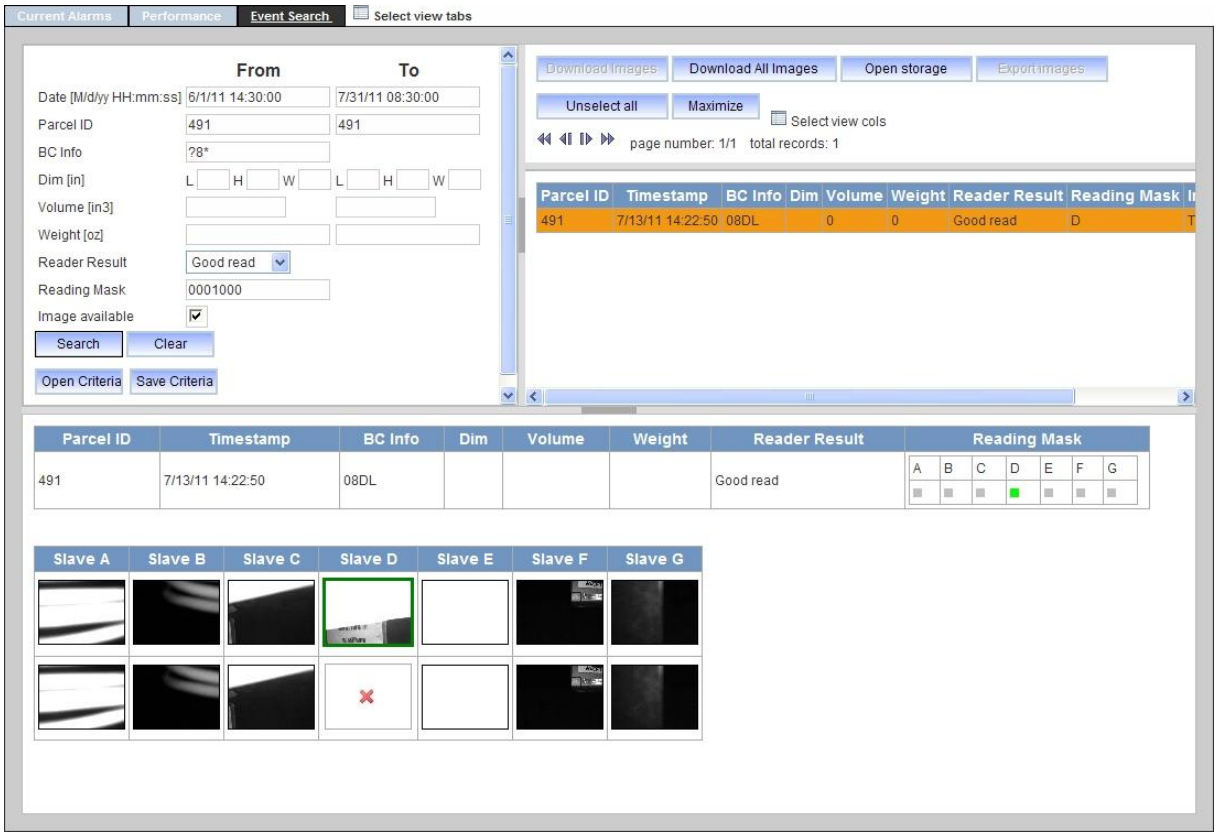
These criteria correspond to the available columns in the Result Frame. If the columns are not enabled (Select view cols), in the Result Frame, then the corresponding criteria in the Filter Frame will also not be available.

Once a filter is configured, it can be saved with a given name and then recalled from the list of saved criteria.





At this point you can press the Search button to find the desired results. The Result Frame will now contain the list of parcels that correspond to the search results of the selected filter.



Press the Clear button to clear all three frames.

Reading Mask:

The Reading Mask is a bitmask field which must correspond to the exact number of readers in the array as shown in the examples below.

Example 1: Reading Mask for Array of 8 scanners: “00000100” means filter results for reader C in the array.

Array Reader	**H**	**G**	**F**	**E**	**D**	**C**	**B**	**A**
Bitmask	0	0	0	0	0	1	0	0

Example 2: Reading Mask for Array of 5 scanners: “01000” means filter results for reader D in the array.

Array Reader	**E**	**D**	**C**	**B**	**A**
Bitmask	0	1	0	0	0

0 = filter out this reader
1 = show results for this reader

The bitmask is used to search for data from a single reader in an array.

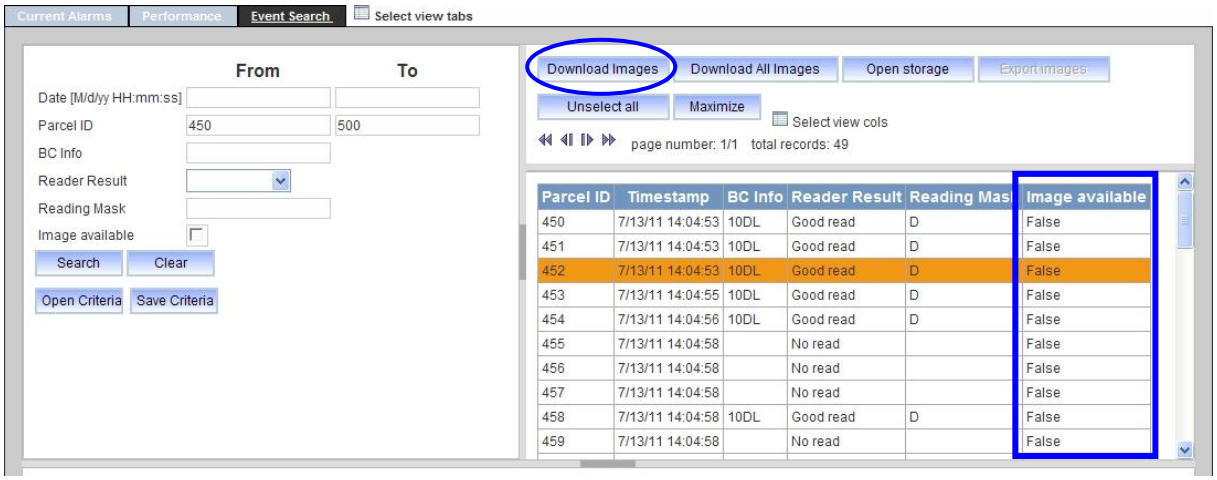
Result Frame:

This frame shows the results of all the read parcels. Each row of data represents the parcel and its characteristics. In case of multiple reads, there will be more than one row having the same **Parcel ID** number (which corresponds to the reading phase).

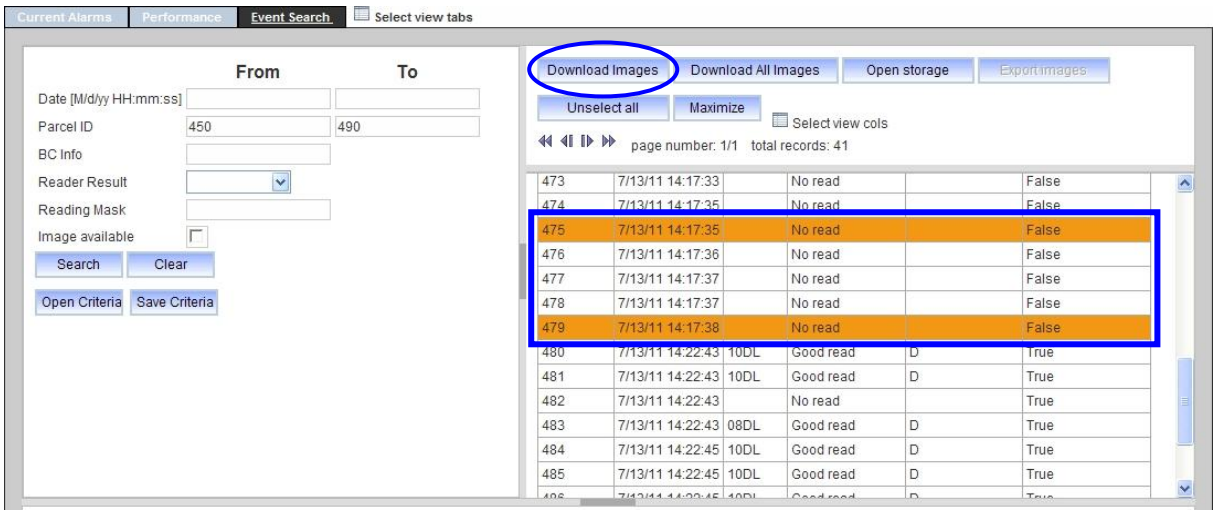
Once the Result Frame is populated, the **Image Available** column, when **True**, indicates that images relative to that parcel have been downloaded and are available on the WebSentinel PC.

NOTE: When enabled, NVS systems always transmit their images as they are acquired. For these Arrays the Download Images buttons are not present.

For Matrix Arrays, if the **Image Available** column is **False**, attempts can be made to download the images from the Array. To do this select the row and press the Download Images button.

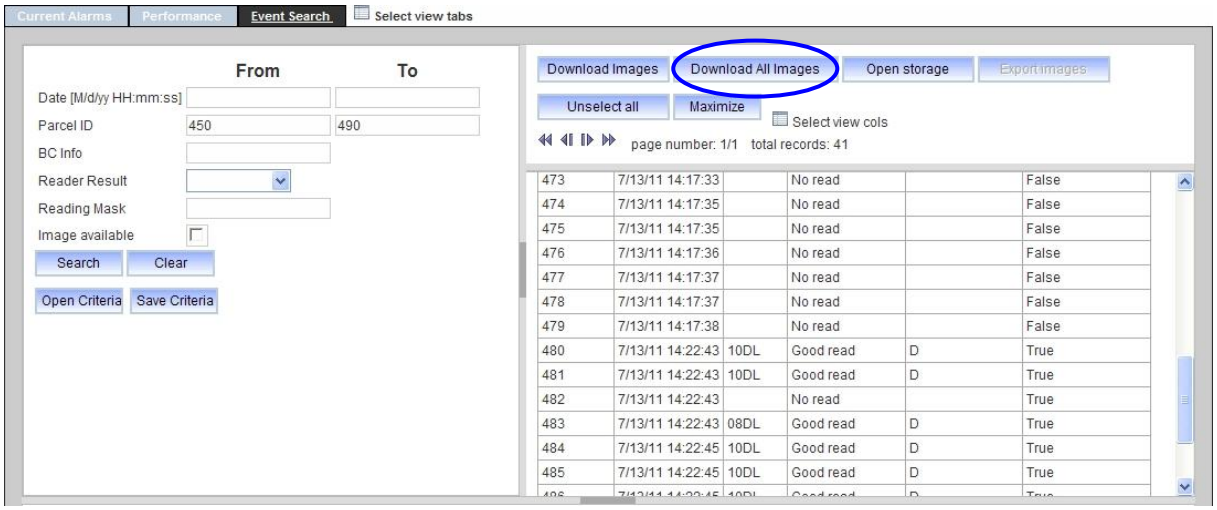


Select a range of images to download by clicking the first row of the range and then with Ctrl-C clicking the last row of the range.



In the example above the images in the range 475 to 479 will be requested from the Array.

All available images can be downloaded by clicking the Download All Images button.



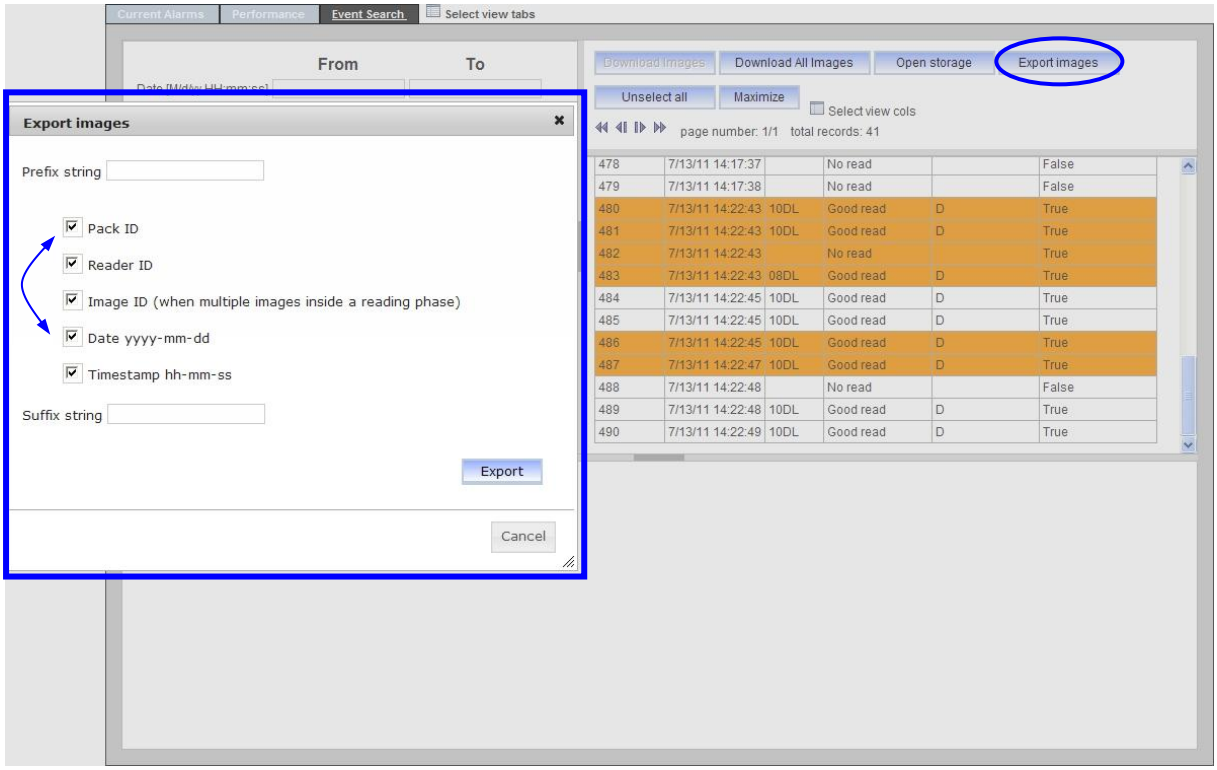
NOTE: This feature requires a cable connection; Wi-Fi connections don't have enough bandwidth. For systems with high data throughput communication may be slow and can timeout. Some images may no longer be available having being overwritten in the device buffer.

The Open Storage button instead allows the entire image archive on the WebSentinel Server PC (or FTP Server for NVS Arrays) to be shown in a separate window.

This window lists all the available images with a Hyperlink for opening or saving the file to a remote PC.

Several images can also be exported in a .zip file from the WebSentinel Server PC (or FTP Server for NVS Arrays) to a remote PC for further analysis.

Select the desired images in the Result Frame to export, (use Ctrl-C for multiple selections).



By pressing the Export Images button, The Export Images dialogue box appears which allows management of the naming scheme to be used for the individual exported images.

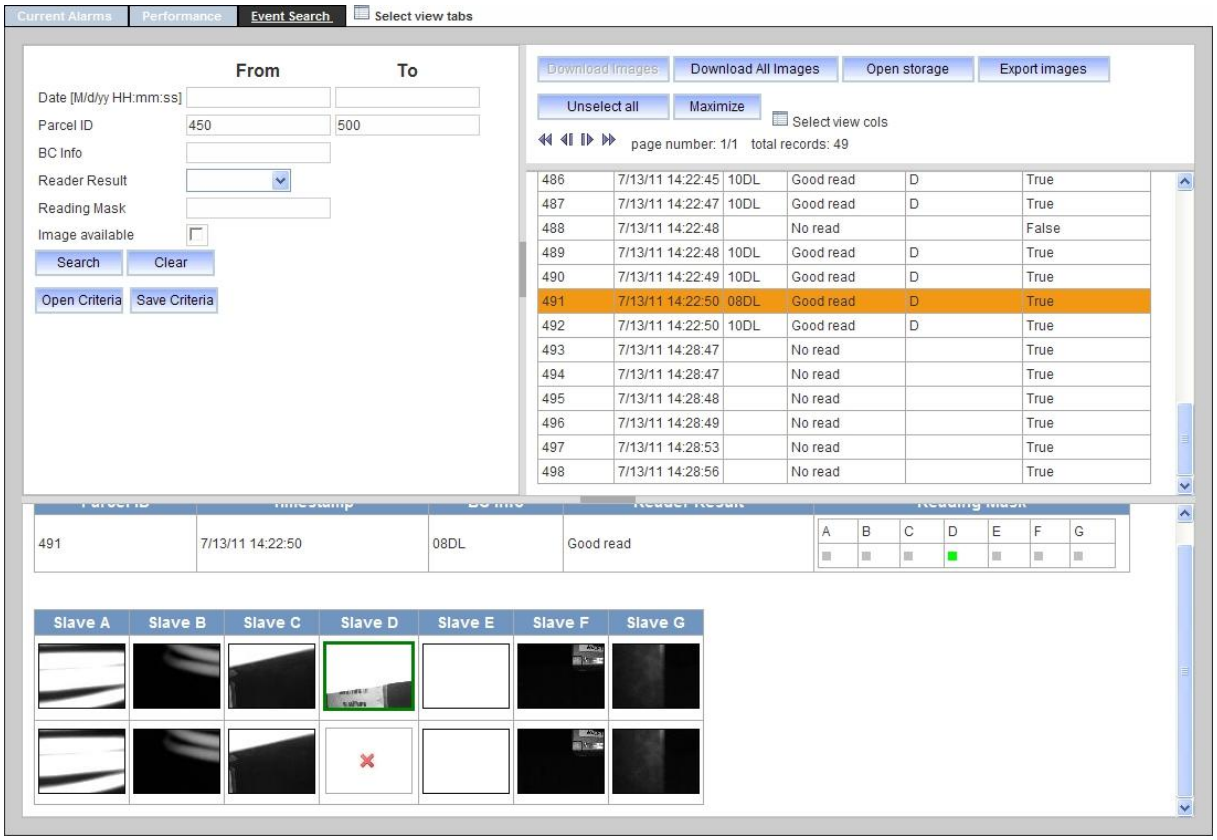
Check the fields to be included in the naming scheme. The order of the fields can also be rearranged by dragging them with the mouse to the desired position (from top to bottom). You can add a prefix or suffix string for further personalization.

The output will be a .zip file (array_name.zip), containing all of the selected images having names according to the selected scheme. This .zip file can be saved to the remote PC.

NOTE: This feature requires a cable connection; Wi-Fi connections don't have enough bandwidth. For systems with high data throughput communication can be slow and can timeout.

Image Frame:

By selecting any row in the Result Frame having the **Available Image = True**, the Image Frame will show the relative images in the following format.



The previews of the images are shown in a matrix of rows and columns where:

- Columns represent each reader in the Array
- Rows number of images collected

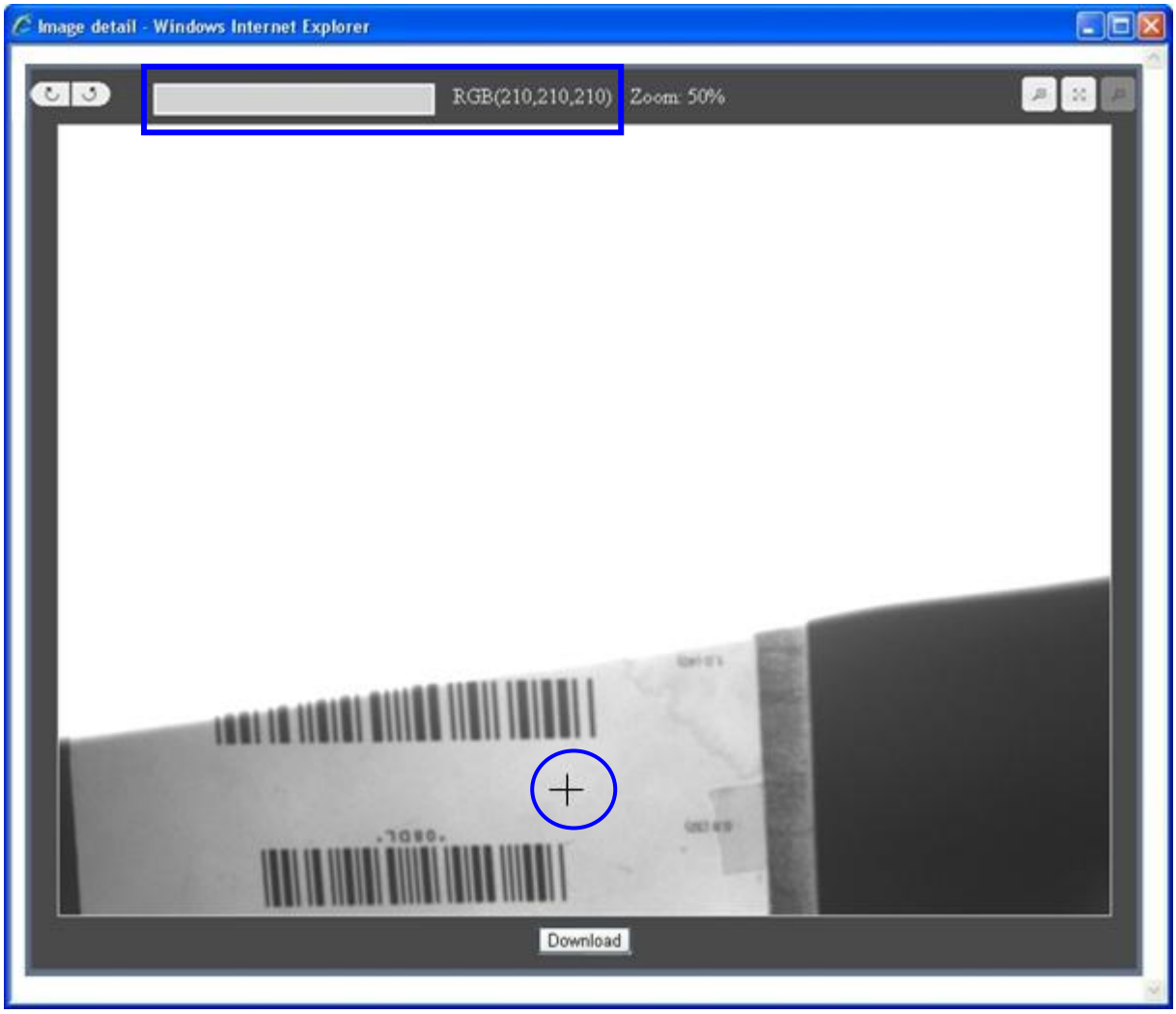
Any missing images will be filled by a placeholder.

Missing images for array readers can be a common physiological occurrence. In the figure above Slave D has stopped reading due to satisfying its configuration and thus communicated to the Master via ID.NET™, which then communicated to the other slaves to stop collecting images (end reading phase). The other slaves however had already collected another image before stopping. For this reason there are two rows of collected images (all slaves except Slave D which has a placeholder).

Another situation can occur when some Slaves, by capturing many images, overwrite the memory with successive reading phases.

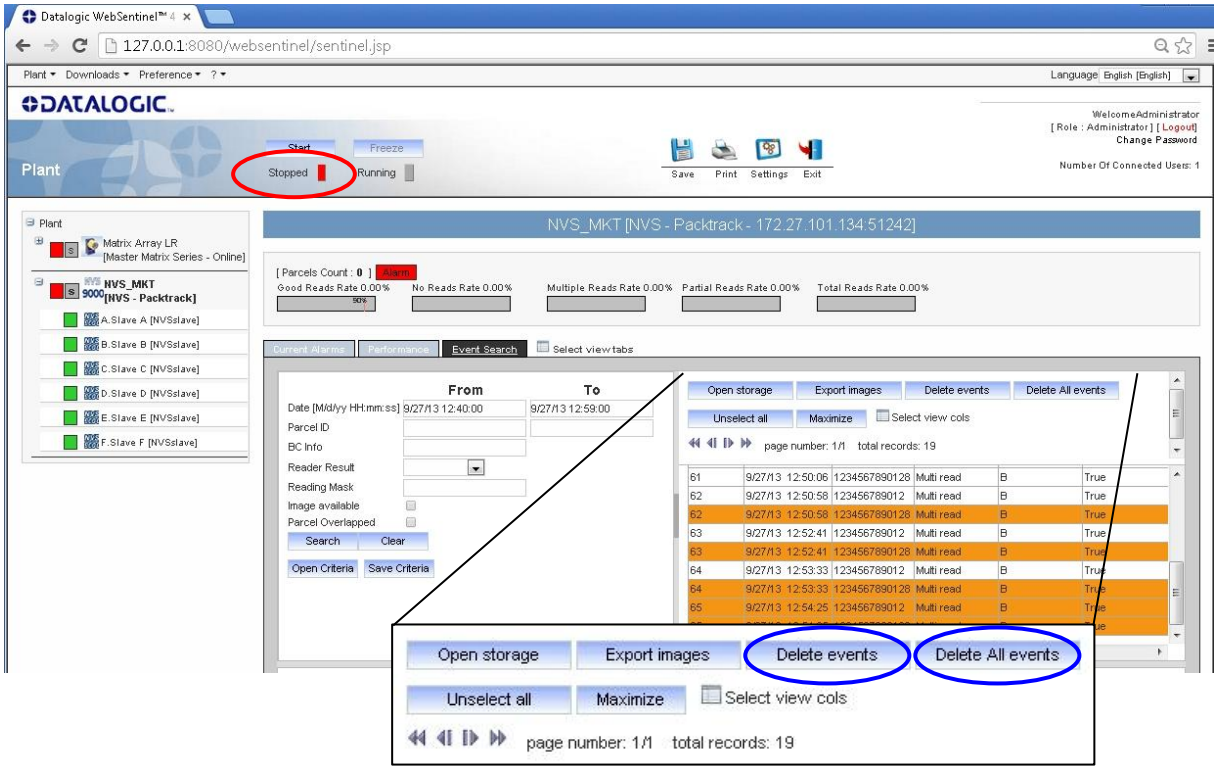
By double clicking any preview image, you can open it in a new window which allows zooming, rotating, performing grey level analysis as well as downloading the image to be processed by more sophisticated instruments.

To have feedback on the individual pixel grey level, move the cursor (cross) to the desired area and click the mouse. A grey level bar will appear at the top of the screen together with the RGB pixel level indication.



The Delete Event and Delete All Events buttons have been added (for Administrator level only!) to allow you to remove reading phase events from the database at any given time. This could be useful if the Database needs to be cleaned up or cancelled.

NOTE: This can only be performed when the system is STOPPED! The relative event images must be manually deleted from the \arrayImages subfolder (or FTP Server for NVS Arrays).



6.2 SLAVE (SINGLE READER) LEVEL

The **Slave** (Single Reader) level focuses on each configured slave and is accessible by clicking one of the Slave name labels in the navigation tree related to one of the configured arrays.

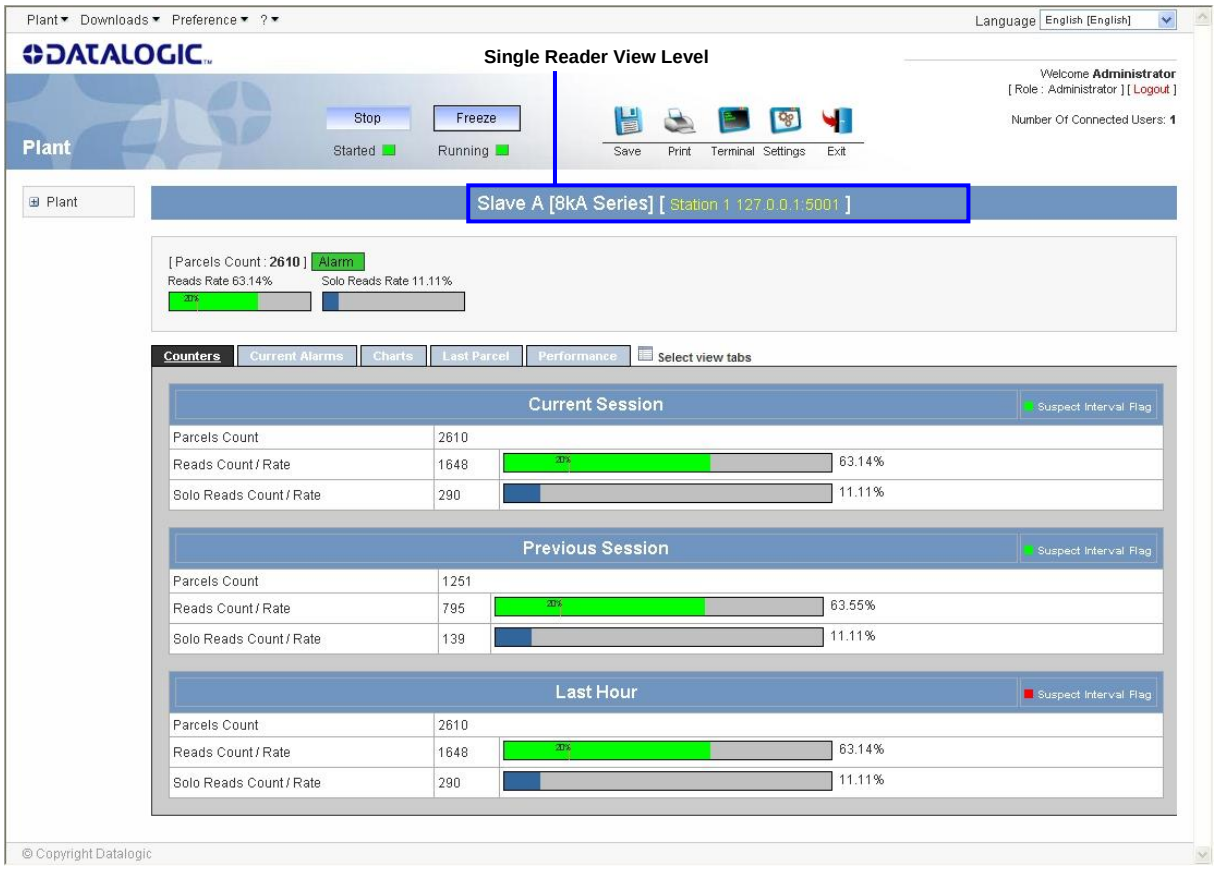
By selecting a slave label it is possible to watch the statistical and diagnostic data of a slave in the right side of the display.

Data at **Slave** level are displayed in 5 different tabs (**Counters**, **Current Alarms**, **Charts**, **Last Parcel** and **Performance**).

6.2.1 Counters Tab

The **Counters** tab displays the following information for the selected slave:

Statistic counters and rates for the current session, the previous session and the last hour



The Reads Count/Rate field is incremented by 1 each time the Single Reader reads at least one barcode relative to a parcel.

The Solo Reads Count/Rate is incremented by 1 for a parcel in which at least one of its barcodes was read only by this Single Reader.

Single Reader Level Bar Graphs:

A summary of the specific Slave read rates are shown in the bar graphs at the top of the information area. This area is always present for all of the Single Reader level pages.

The Reads Rate bar graphs represented at the Single Reader level are computed relative to the Single Reader Parcels Count (which is the same for all Slaves of the Array and the Array itself). These rates are also written as a percentage over each bar.

The Reads Rate bar in particular, shows a vertical line representing the Single Reader's configured Low Performance Threshold. It is also written as a percentage inside the bar. The Reads Rate bar graph is colored green if the Single Reader is reading above its individual Low Performance Threshold. This bar is colored yellow if the Single Reader falls below its Low Performance Threshold.

The Reads Rate Threshold is set in either the Default Plant level page or in the specific Slave page of the Settings window.

The total Parcels Count for the Single Reader is shown in bold and a generic Alarm LED that shows the color of the Single Reader level Alarms. If any Alarm is detected, the color of the LED changes accordingly. This LED is also a link to the Current Alarms page.

Suspect Interval Flag:

The “Suspect Interval Flag” LED that is displayed at Slave level informs that session related performance info is only partial, due to a previous or current disconnection of Datalogic WebSentinel™ from the array.

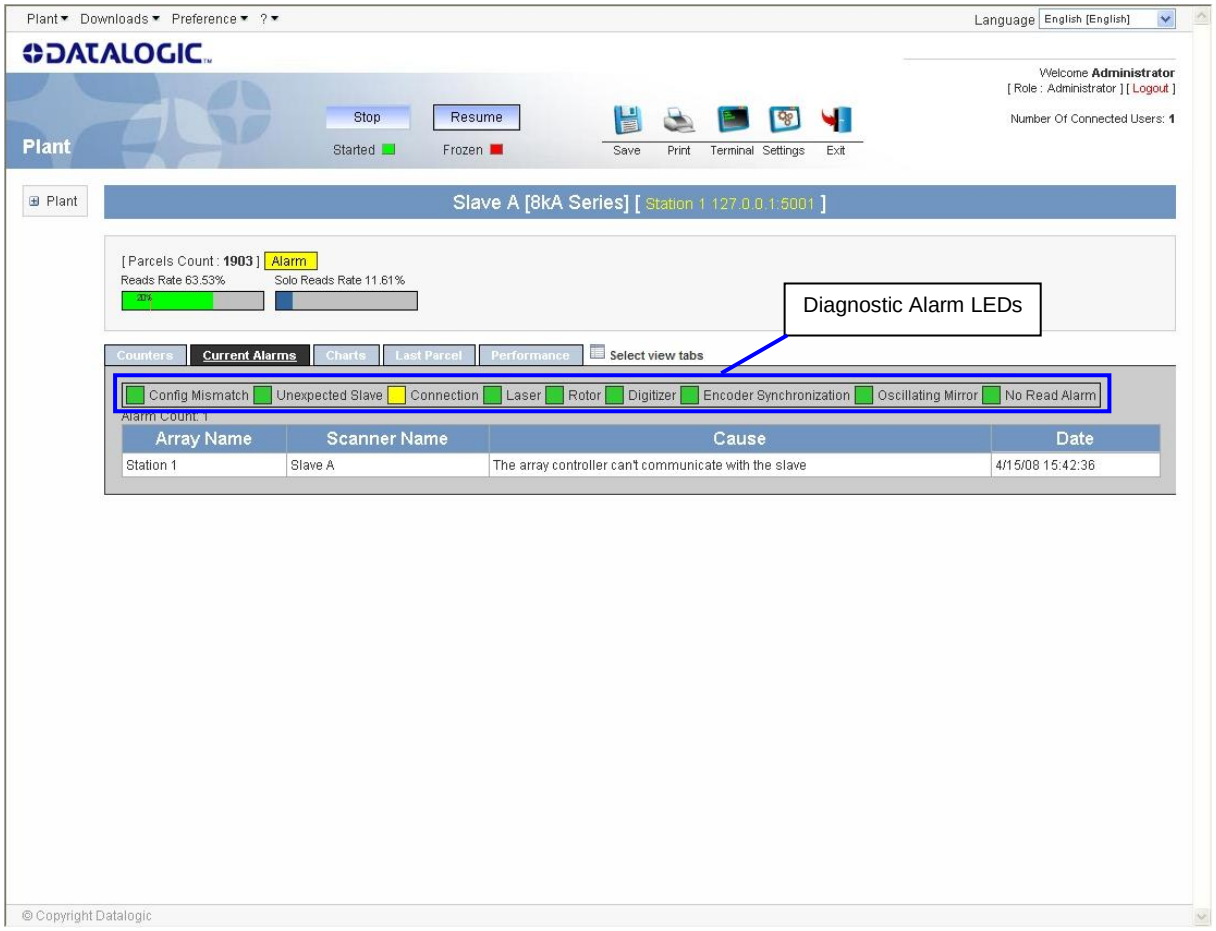
This same notice is also displayed about Last Hour information. The occurrence, time and duration of disconnections, also appear in performance statistics records, both for sessions and for hours.

The Last Hour “Suspect Interval” LED is computed based on the 24 hours of a session (in spite of the fact that Last Hour info which is displayed is computed based on different time patterns, either the current day’s hour or a sliding window that moves every 15 min).

This notice about completeness of information will not appear in **graph** windows.

6.2.2 Current Alarms Tab

The **Current Alarms** tab displays a detailed list of all the pending alarms on the specific slave.



Diagnostic Alarm LEDs:

The diagnostic LEDs available at Slave (Single Reader) Level are specific to the type of Slave device.

These LEDs are shown as a fixed group depending on the device family, independently of whether the slave diagnostic parameters are enabled through Genius™ or not, and therefore not all of the LEDs are significant for a given Slave.

See the product specific Help On-Line Diagnostic Error Conditions page for descriptions of device specific errors.

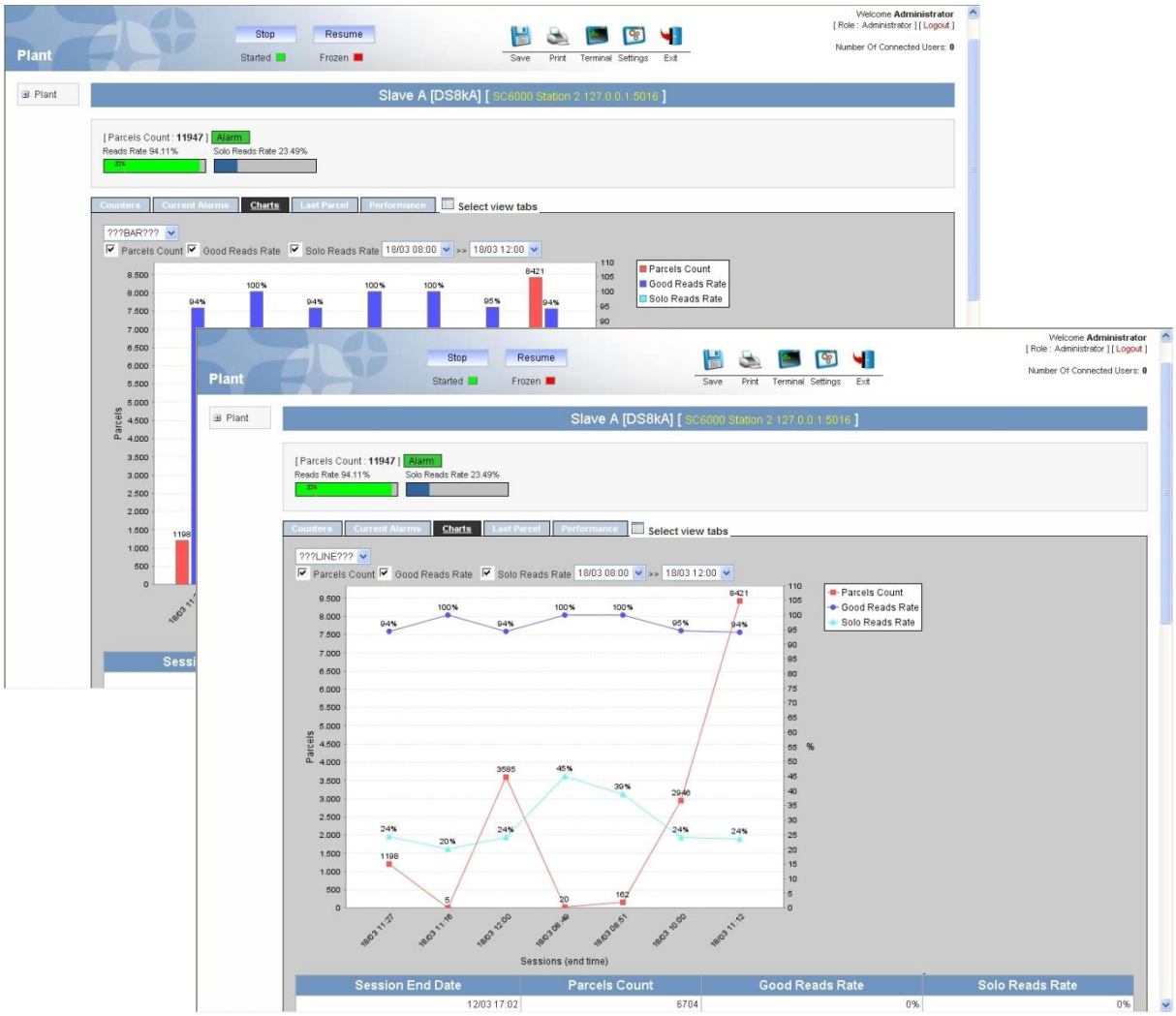
6.2.3 Charts Tab

The **Charts** tab graphically and textually displays statistical counters and rates of the selected slave.

Multiple checkboxes are available to choose the information to be displayed.

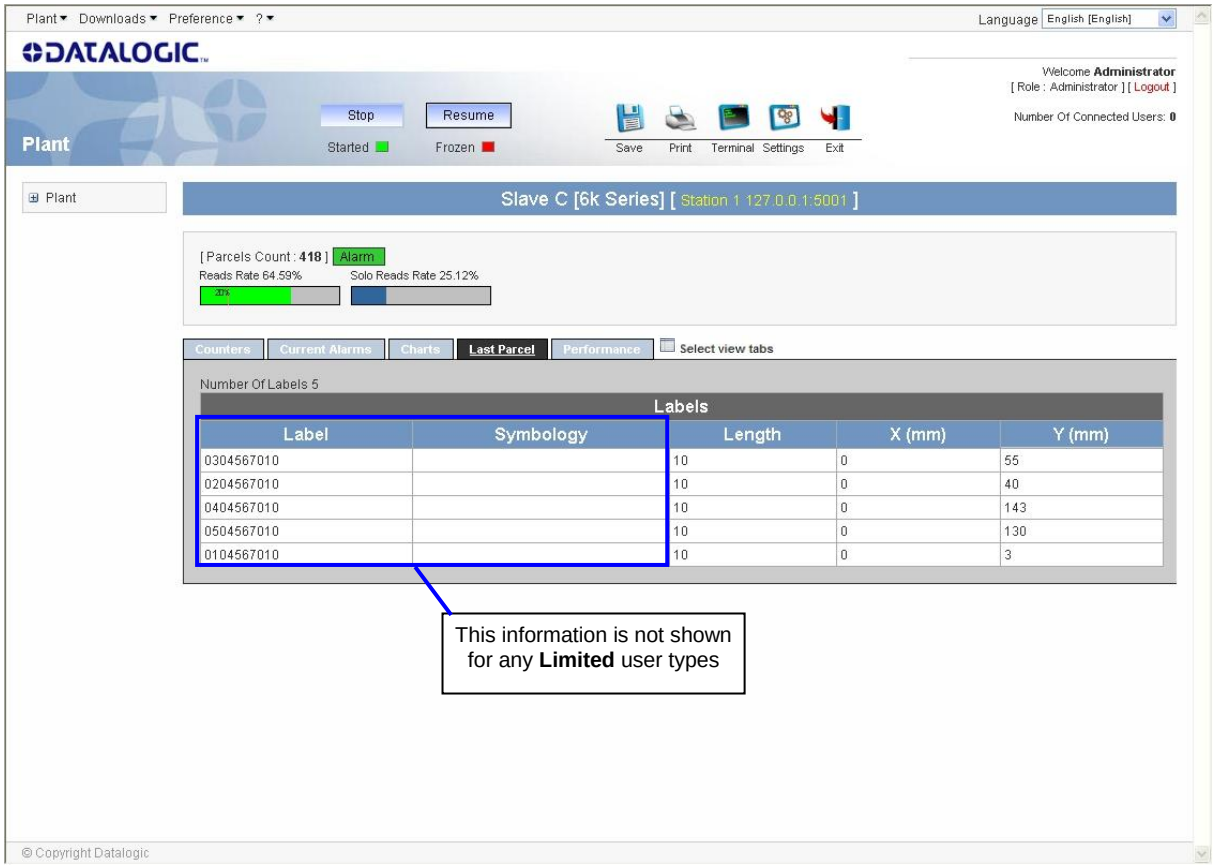
Date/time boxes allow choosing the period (measured in sessions) for the calculation.

The charts can be shown in either bar or line graph representations.



6.2.4 Last Parcel Tab

The **Last Parcel** tab displays the details of the reading result for the last parcel.



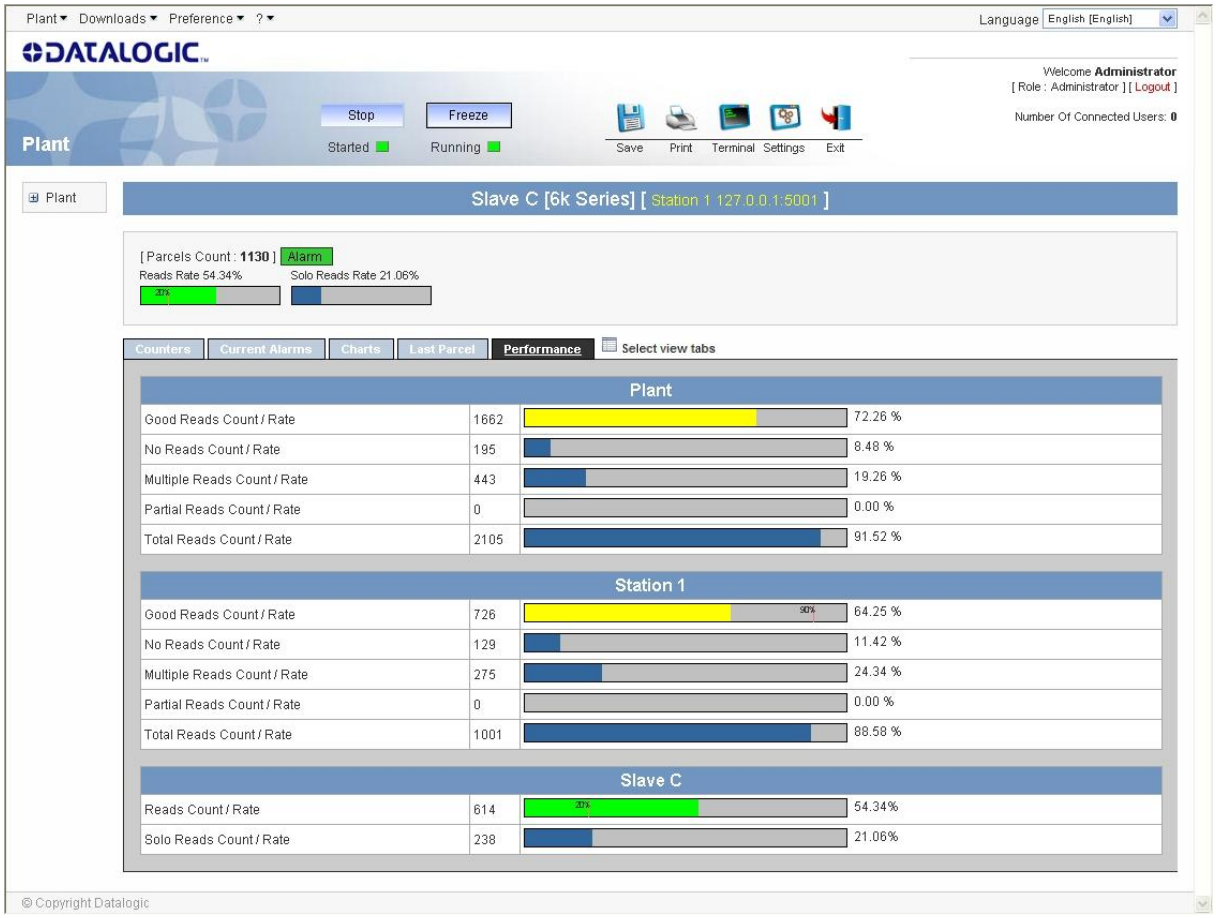
Note:

The Last Parcel tab may be hidden/shown through the related checkbox in the Settings>Operations tab.

In this window the Label information (barcode data and code ID) is not available for any **Limited** User types.

6.2.5 Performance Tab

The **Performance** tab graphically and textually displays statistical counters and rates at plant and currently selected array and slave levels for the current session.



7 MULTIDATA ARRAY VISUALIZATION

A Multidata Array Type differs from a normal array because its slaves operate independently from each other. The array controller itself is simply a multiplexer of the information collected by its slaves.

This means that different slaves may process different parcels, and that each slave performs its own code analysis independent from the other elements of the array.

The array itself is simply the summation of the operation performed by its slaves. The performance threshold for a Multidata Array is an index of the average performance of its slaves.

7.1 ARRAY LEVEL

The **Array** level focuses on the configured arrays and is accessible by clicking one of the Array name labels in the navigation tree (or optionally through the related button on the **Layout** tab).

By selecting an array label it is possible to watch the statistical and diagnostic data in the information area of the display.

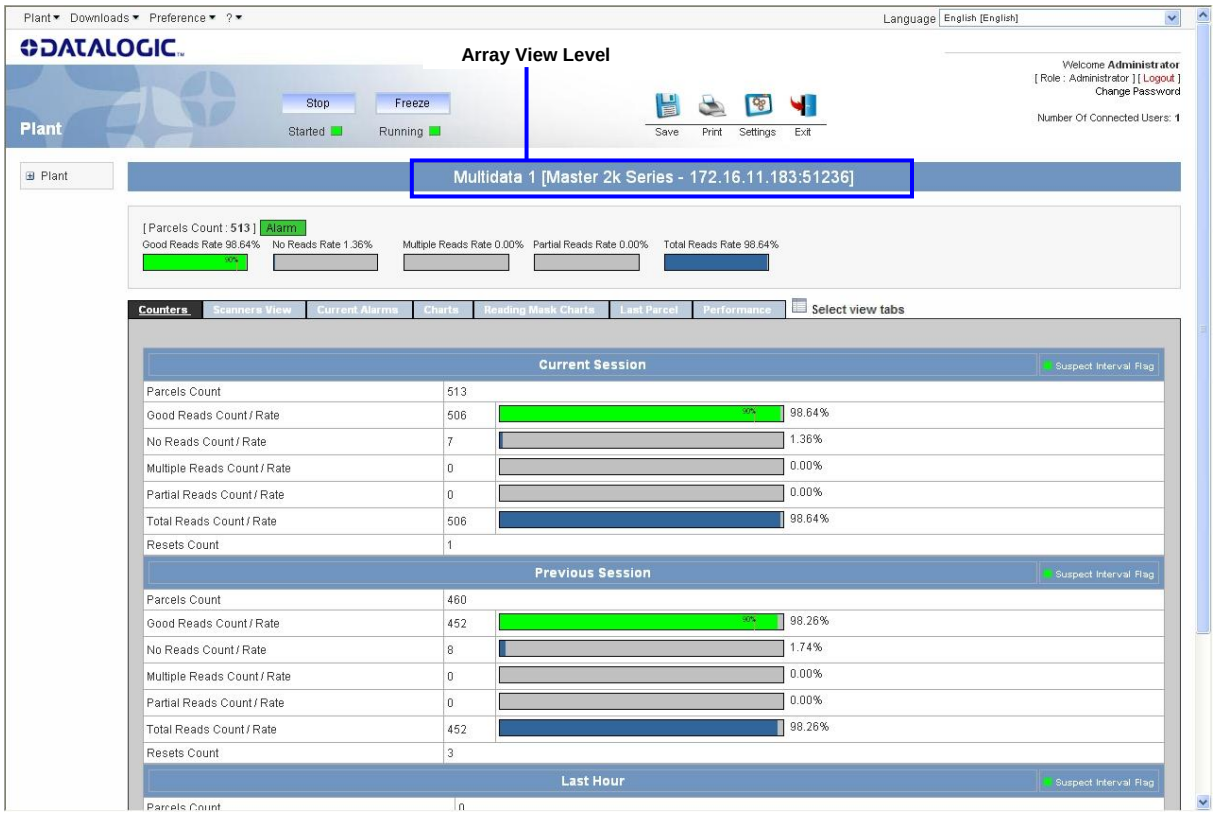
Data for a Multidata Array at **Array** level are displayed in 5 different tabs (**Counters**, **Scanners View**, **Current Alarms**, **Charts**, and **Performance**). The Reading Mask Charts and Last Parcel information are not significant for a Multidata Array.

7.1.1 Counters Tab

The **Counters** tab displays statistics information concerning the selected array.

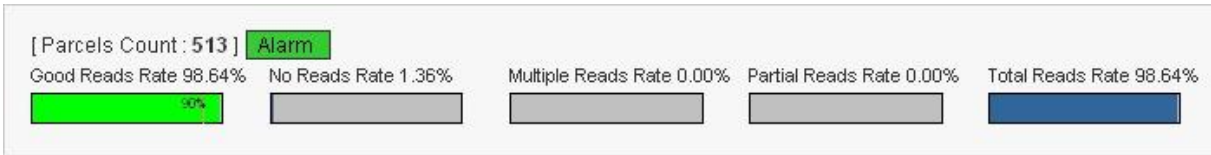
The counters in a Multidata Array are the sum of all the corresponding counters of the individual slaves.

These data can be compared between Current Session, Previous Session and Last Hour data.



Array Level Bar Graphs:

A summary of the specific Array read rates are shown in the bar graphs at the top of the information area. This area is always present for all of the Array level pages.



Each Reads Rate bar graph represented at the Array level is equal to the corresponding Array level Reads Count (the sum of all corresponding Single Reader Reads Counts) divided by the Total Number of Parcels read in the Array (the sum of all Single Reader Parcels Counts). These rates are also written as a percentage over each bar.

The Good Reads Rate bar in particular, shows a vertical line representing the Array's configured Low Performance Threshold. It is also written as a percentage inside the bar. The Good Reads Rate bar graph is colored green if the Array is reading above its individual Low Performance Threshold. This bar is colored yellow if the Array falls below its Low Performance Threshold.

The Good Read Rate Threshold is set in either the Default Plant level page or in the specific Array page of the Settings window.

The total Parcels Count for the Array is shown in bold and a generic Alarm LED that shows the color of the Array level Alarms. If any Alarm is detected, the color of the LED changes accordingly. This LED is also a link to the Current Alarms page.

Suspect Interval Flag:

The “Suspect Interval Flag” LED that is displayed at Array level informs that session related performance info is only partial, due to a previous or current disconnection of Datalogic WebSentinel™ from the array.

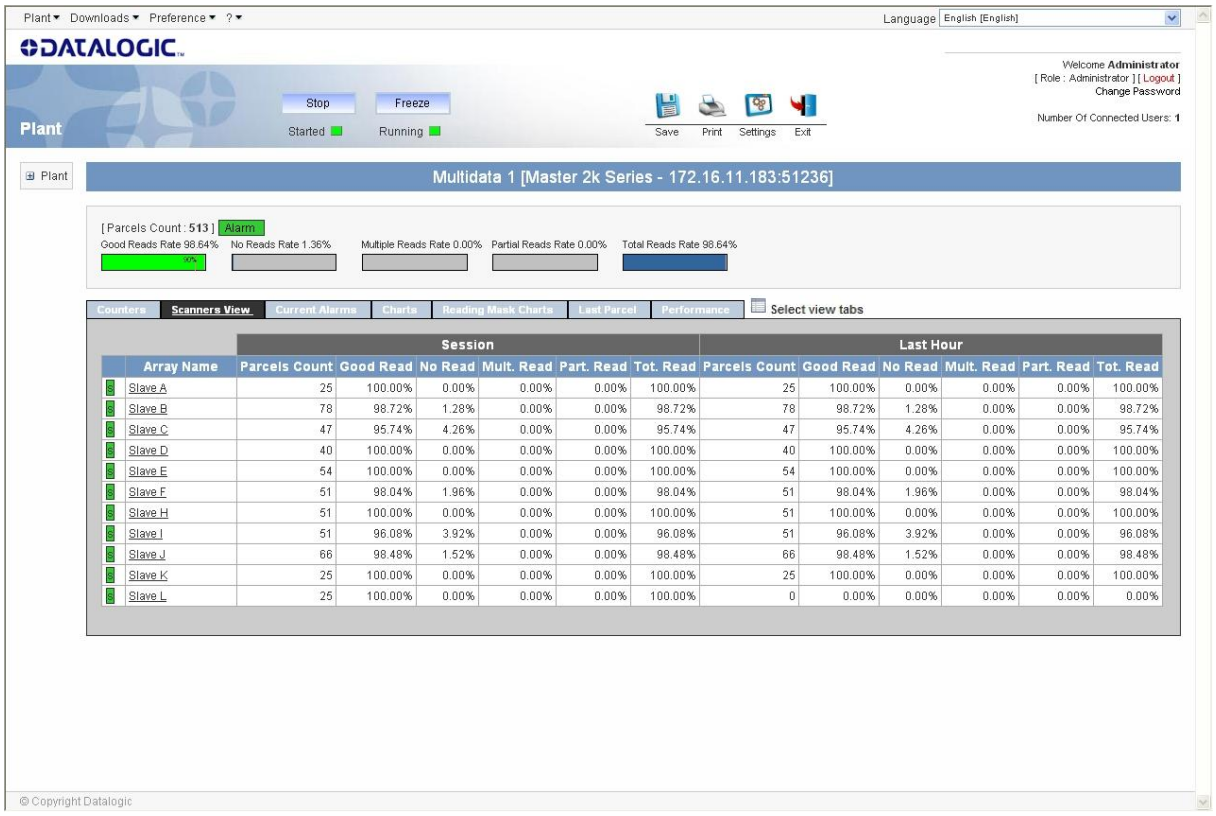
This same notice is also displayed about Last Hour information. The occurrence, time and duration of disconnections, also appear in performance statistics records, both for sessions and for hours.

The Last Hour “Suspect Interval” LED is computed based on the 24 hours of a session (in spite of the fact that Last Hour info which is displayed is computed based on different time patterns, either the current day’s hour or a sliding window that moves every 15 min).

This notice about completeness of information will not appear in **graph** windows.

7.1.2 Scanners[2] View Tab

The **Scanners View** (Single Reader) tab displays statistical data for each slave in the array.



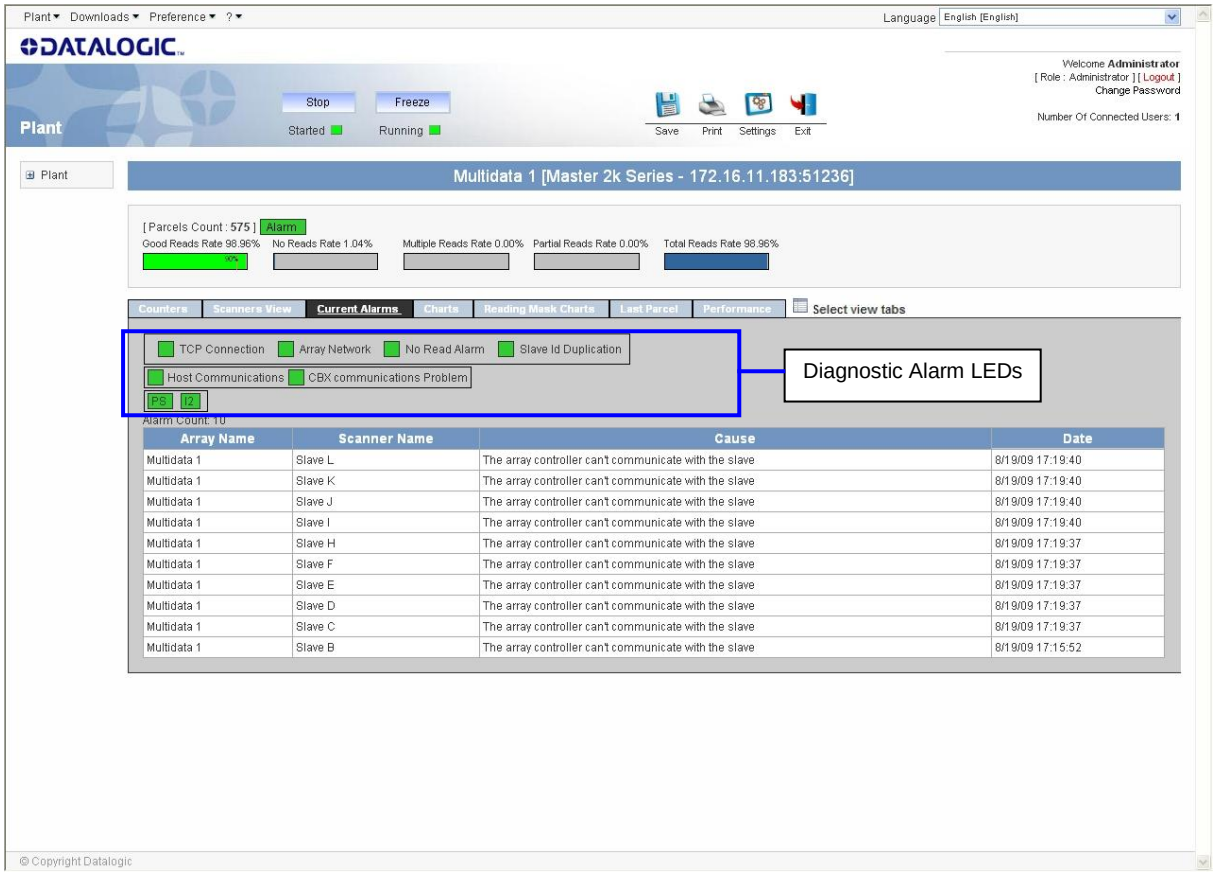
Scanners View	
Status Icons	
	Slave Status
	Critical Alarm Network Communications error
	Major Alarm
	Warning/Minor Alarm Performance Threshold Crossing Notifications (TCNs)*
	No Alarm The slave is performing correctly

* Slave TCNs checked both for the current session and the last hour. Evaluation of last hour performance depends on the way last hour is defined: if last hour is aligned with the day's hours then performance evaluation is continuous; if last hour is aligned with the session, evaluation takes place only every 15 minutes.

[2] **Scanners View** and **Slaves View** are comparable terms. These terms both refer to Single Readers in the Array.

7.1.3 Current Alarms Tab

The **Current Alarms** tab displays a detailed list of all the pending alarms on each slave of the array and on the array's controller.



Diagnostic Alarm LEDs:

The diagnostic LEDs available at Array Level include: Fixed Diagnostics, Array Type Diagnostics (which depend on the Type of Array), on Conditional Diagnostic parameters enabled in the Settings>Plant – Array window, and on Hardware Input Settings.

See par. 9.2.1 for details.

See the product specific Help On-Line Diagnostic Error Conditions page for descriptions of device specific errors.

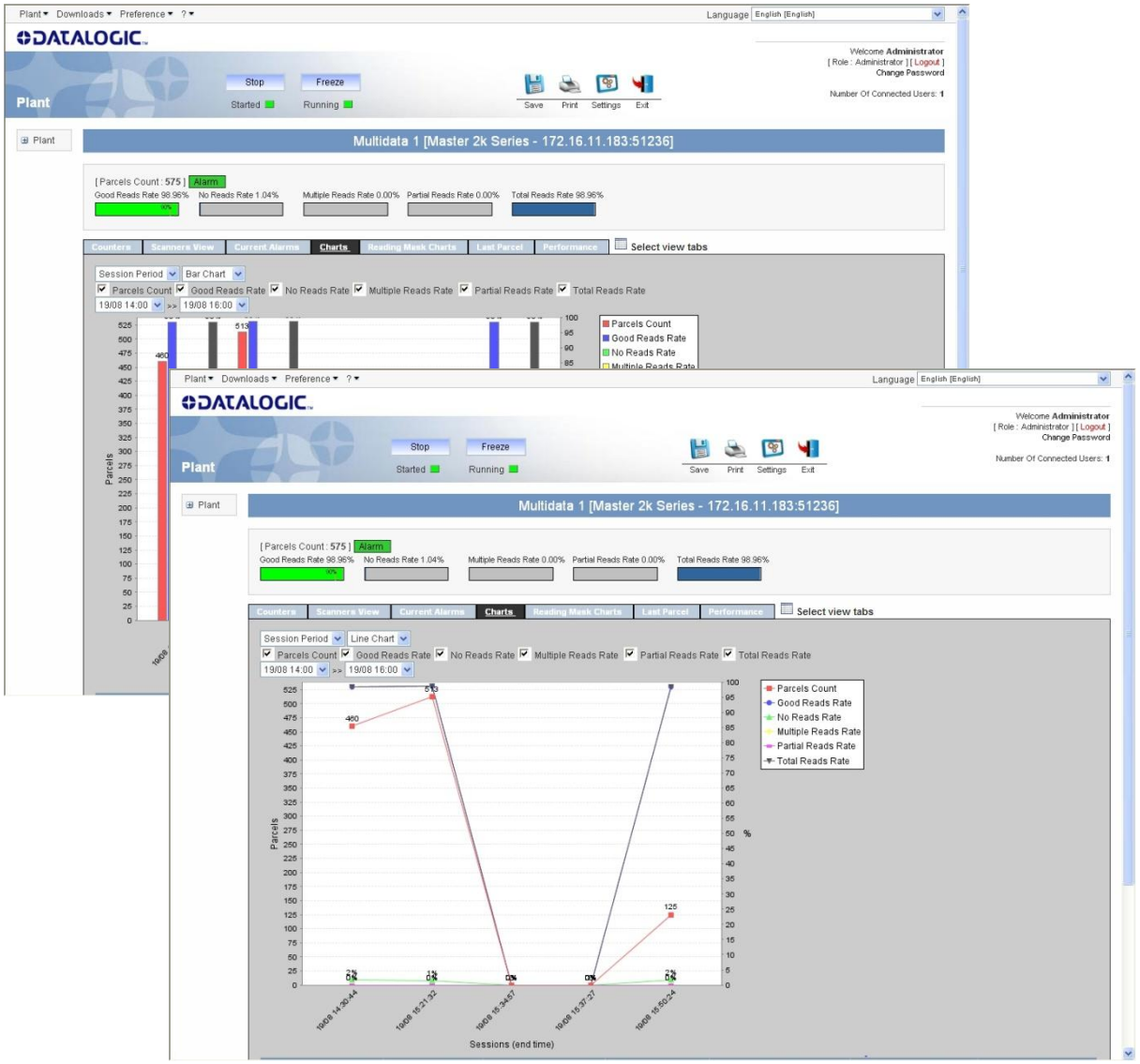
7.1.4 Charts Tab

The **Charts** tab graphically and textually displays statistical counters and rates of the selected array for a selectable number of past sessions.

Multiple checkboxes are available to choose the information to be displayed.

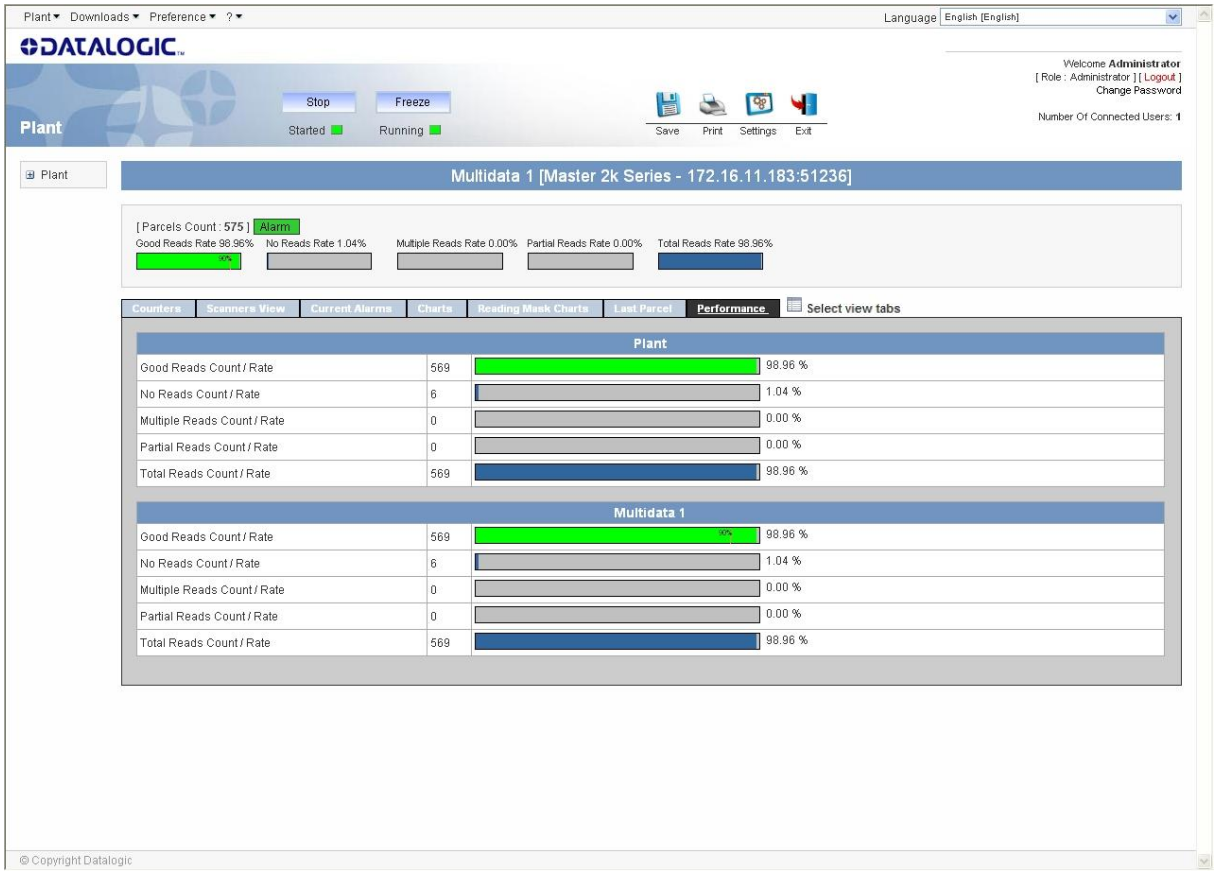
Date/time boxes allow choosing the period (measured in sessions) for the calculation.

The charts can be shown in either bar or line graph representations.



7.1.5 Performance Tab

The **Performance** tab graphically and textually displays statistical counters and rates at plant and currently selected array levels for the current session.



7.2 SLAVE (SINGLE READER) LEVEL

The **Slave** (Single Reader) level focuses on each configured slave and is accessible by clicking one of the Slave name labels in the navigation tree related to one of the configured arrays.

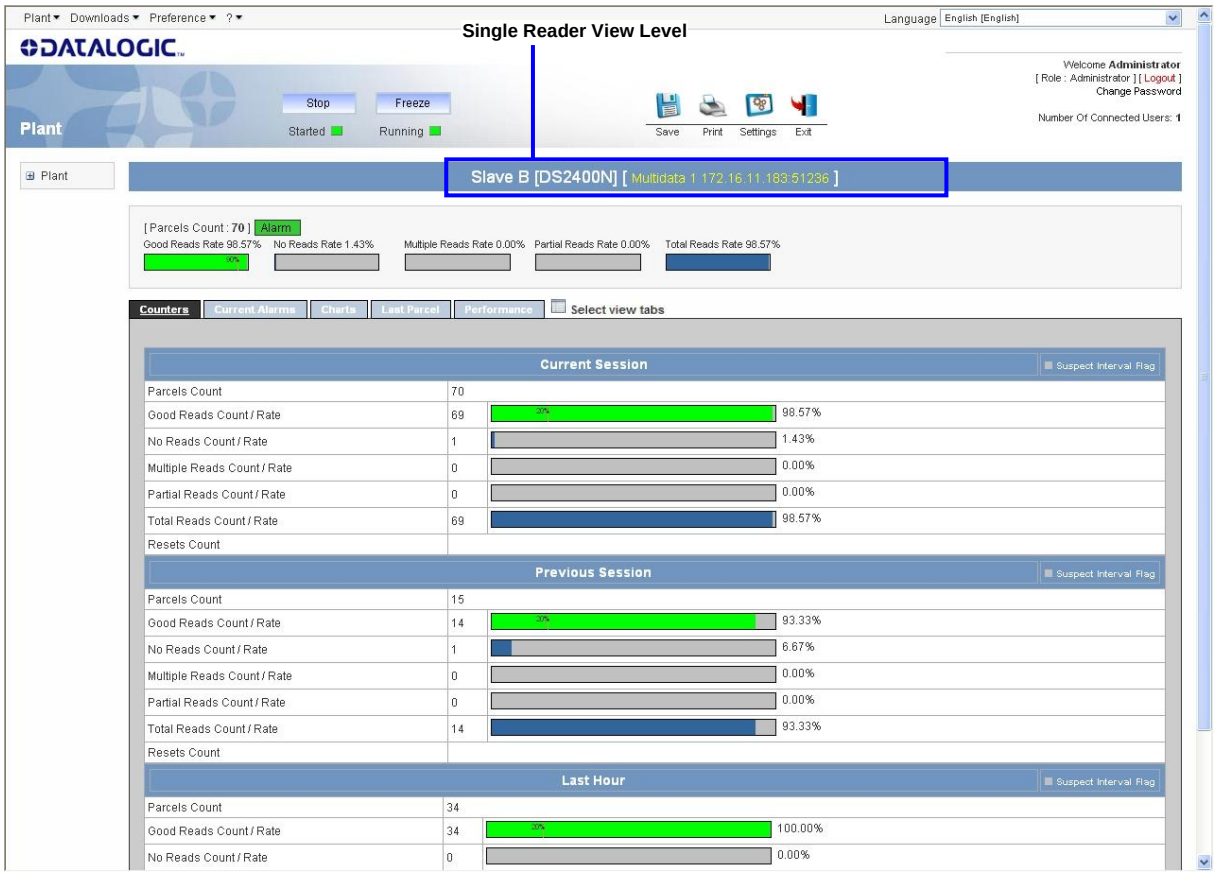
By selecting a slave label it is possible to watch the statistical and diagnostic data of a slave in the right side of the display.

Data at **Slave** level are displayed in 4 different tabs (**Counters**, **Current Alarms**, **Charts**, and **Performance**). The Last Parcel information is not significant for a Multidata Array.

7.2.1 Counters Tab

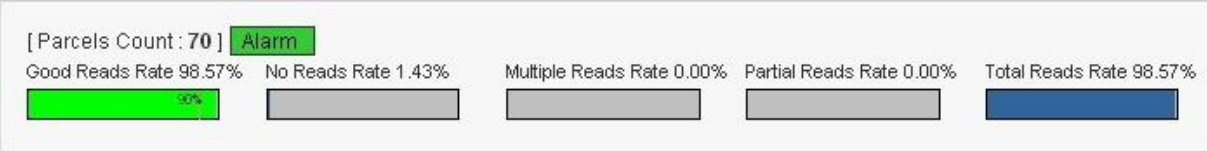
The **Counters** tab displays the following information for the selected slave:

Statistic counters and rates for the current session, the previous session and the last hour



Single Reader Level Bar Graphs:

A summary of the specific Slave read rates are shown in the bar graphs at the top of the information area. This area is always present for all of the Single Reader level pages.



The Reads Rate bar graphs represented at the Single Reader level are computed relative to the Single Reader Parcels Count. These rates are also written as a percentage over each bar.

The Reads Rate bar in particular, shows a vertical line representing the Single Reader's configured Low Performance Threshold. It is also written as a percentage inside the bar. The Reads Rate bar graph is colored green if the Single Reader is reading above its individual Low Performance Threshold. This bar is colored yellow if the Single Reader falls below its Low Performance Threshold.

The Reads Rate Threshold is set in either the Default Plant level page or in the specific Slave page of the Settings window.

The total Parcels Count for the Single Reader is shown in bold and a generic Alarm LED that shows the color of the Single Reader level Alarms. If any Alarm is detected, the color of the LED changes accordingly. This LED is also a link to the Current Alarms page.

Suspect Interval Flag:

The “Suspect Interval Flag” LED that is displayed at Slave level informs that session related performance info is only partial, due to a previous or current disconnection of Datalogic WebSentinel™ from the array.

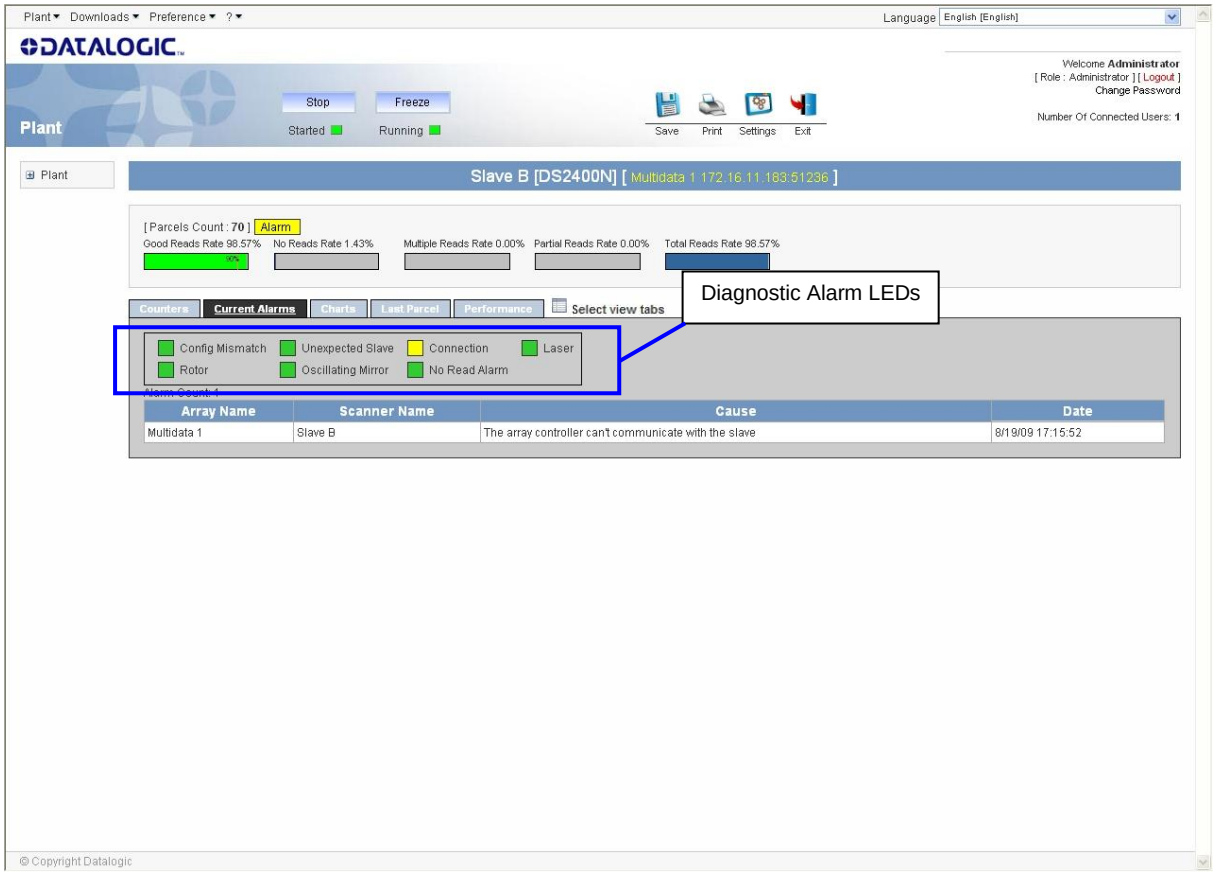
This same notice is also displayed about Last Hour information. The occurrence, time and duration of disconnections, also appear in performance statistics records, both for sessions and for hours.

The Last Hour “Suspect Interval” LED is computed based on the 24 hours of a session (in spite of the fact that Last Hour info which is displayed is computed based on different time patterns, either the current day’s hour or a sliding window that moves every 15 min).

This notice about completeness of information will not appear in **graph** windows.

7.2.2 Current Alarms Tab

The **Current Alarms** tab displays a detailed list of all the pending alarms on the specific slave.



Diagnostic Alarm LEDs:

The diagnostic LEDs available at Slave (Single Reader) Level are specific to the type of Slave device.

These LEDs are shown as a fixed group depending on the device family, independently of whether the slave diagnostic parameters are enabled through Genius™ or not, and therefore not all of the LEDs are significant for a given Slave.

See the product specific Help On-Line Diagnostic Error Conditions page for descriptions of device specific errors.

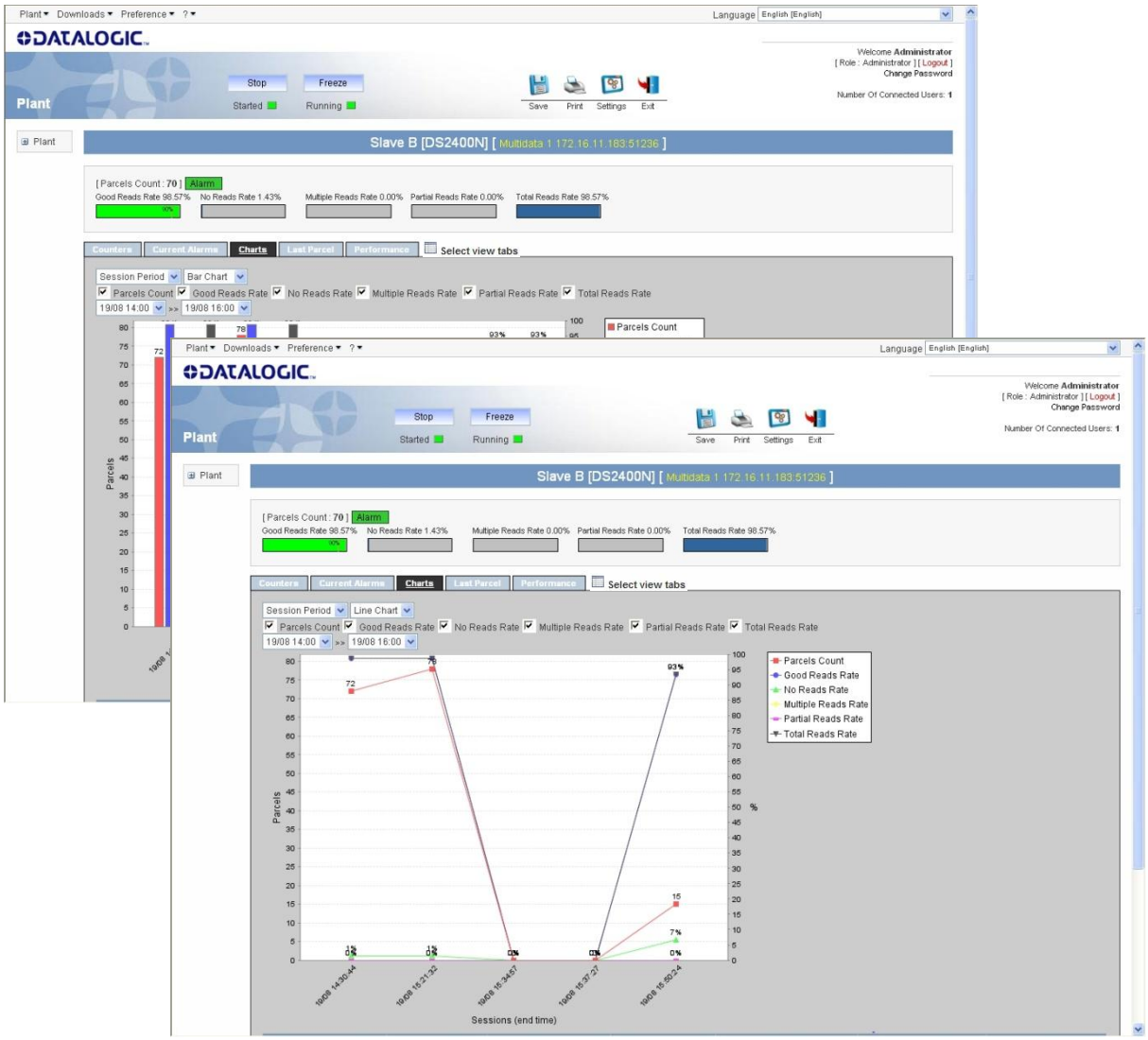
7.2.3 Charts Tab

The **Charts** tab graphically and textually displays statistical counters and rates of the selected slave.

Multiple checkboxes are available to choose the information to be displayed.

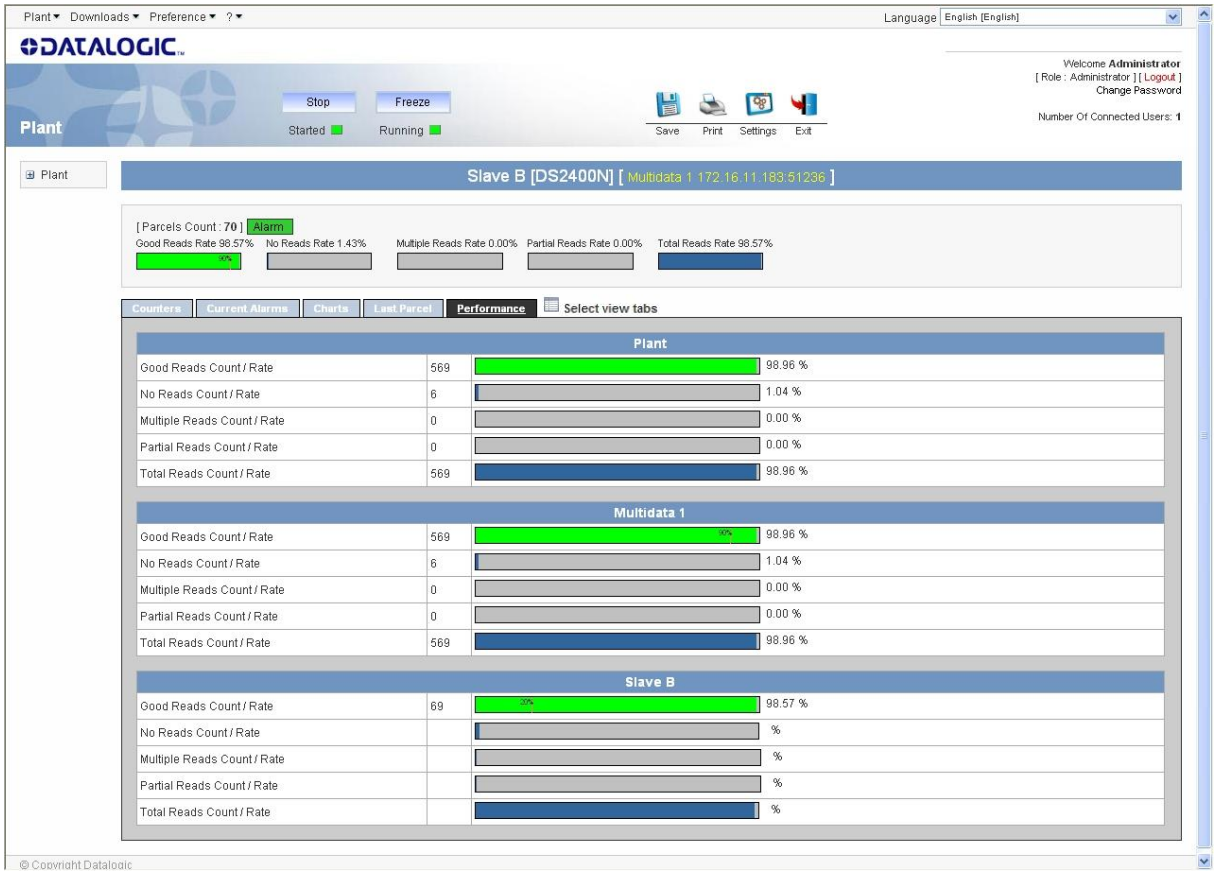
Date/time boxes allow choosing the period (measured in sessions) for the calculation.

The charts can be shown in either bar or line graph representations.



7.2.4 Performance Tab

The **Performance** tab graphically and textually displays statistical counters and rates at plant and currently selected array and slave levels for the current session.



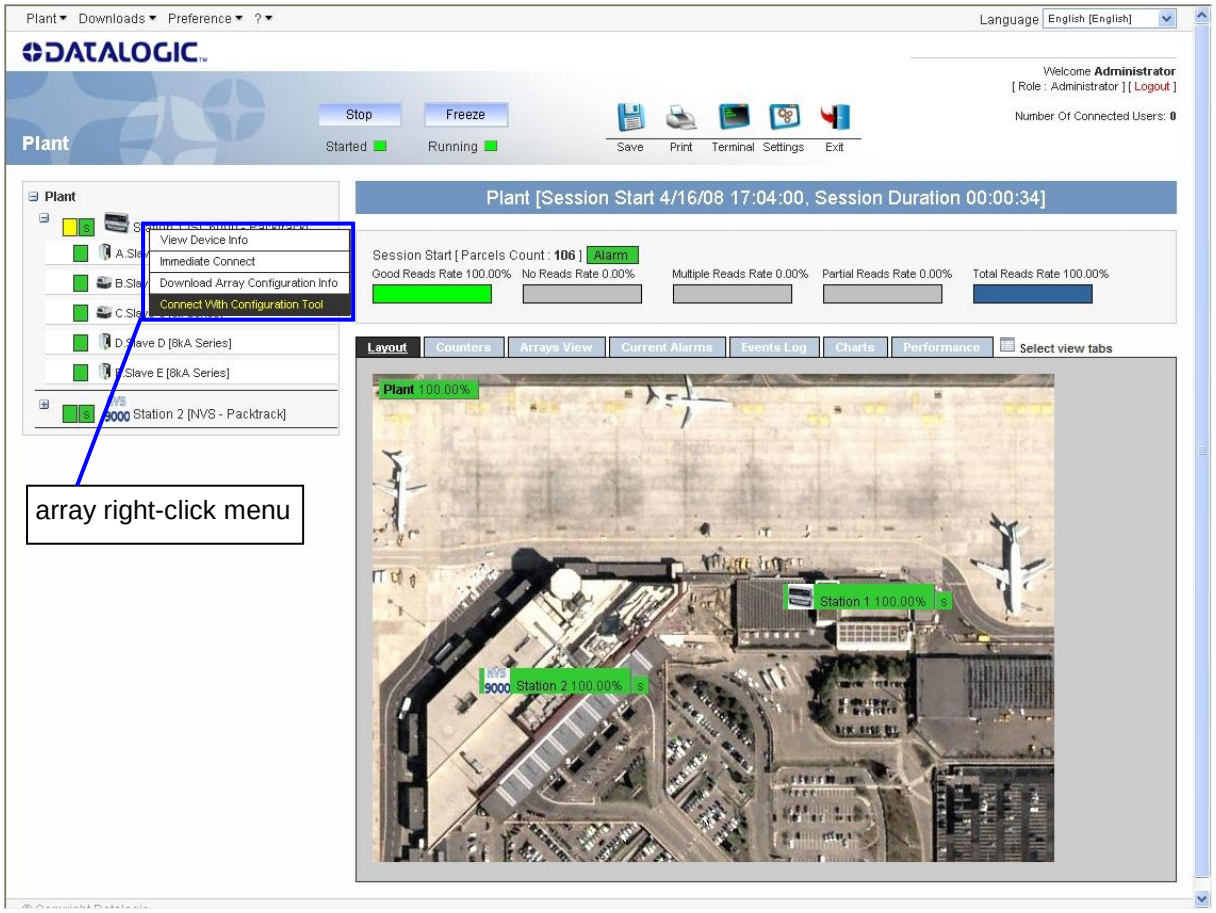
8 REMOTE SESSIONS

NOTE: This chapter applies only if the Client PC's operating system is Windows.

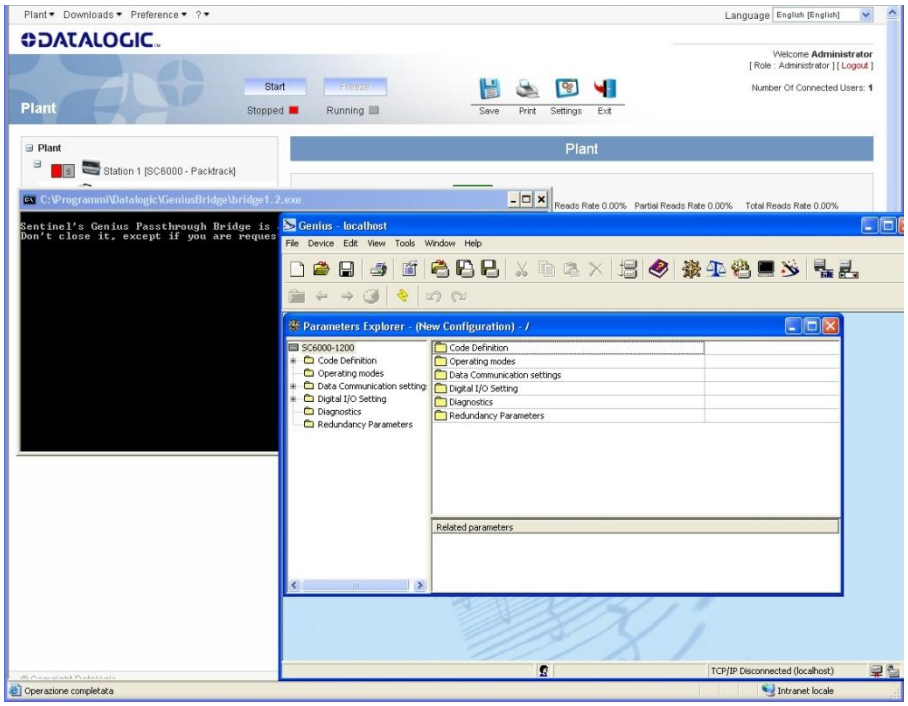
Datalogic WebSentinel™ allows **Array** configuration remotely through specific Configuration Tools using the Configuration Tool Passthrough Bridge application.

The Configuration Tool runs locally on the Client PC but the communication channel is through the Datalogic WebSentinel™ Server, therefore both the Configuration Tool and the Configuration Tool Passthrough Bridge must be installed on the Client PC. If they are not present on the Client PC then they can be installed from the Datalogic WebSentinel™ Downloads Menu.

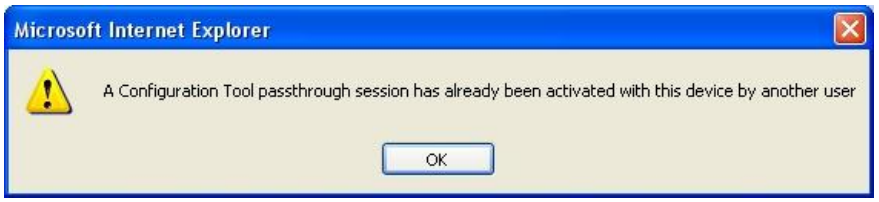
By right clicking on an array label, a shortcut menu appears allowing you to connect to the specific Configuration Tool (i.e. Genius™ for an SC6000 controller or VisiSet for a Matrix reader). Select the item "Connect With Configuration Tool".



You will be prompted to open the Pass through Bridge script files that allow connection to the Configuration Tool. The Configuration Tool will be opened automatically.



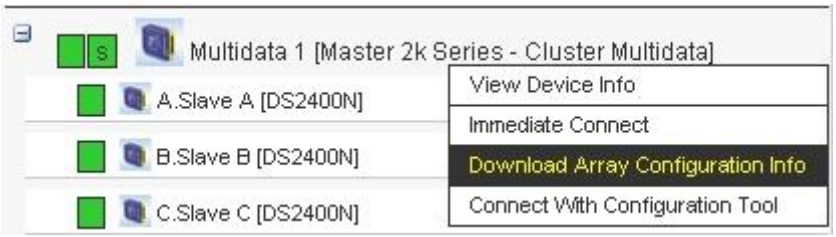
NOTE: For any given array, WebSentinel **does not allow more than one Client PC at a time** to run Genius™ through the Passthrough Bridge. The right-click menu shows the configuration tool is busy and attempting connection will produce the following error message:



Accessing the Configuration Tool through the WebSentinel Passthrough Bridge is intended for Array Fine Tuning and for small modifications. After completing such modifications and sending them to the Master, always perform a Device Backup (DARP™ for SC6000, CBX/SC4000 for 2/4K Scanners, etc.). Then Close the Configuration Tool.

NOTE: It is advised to perform complete Array configuration through Genius™ at the time of physical installation, independently from Datalogic WebSentinel™, and to make a Backup copy through the Addon Tool in Genius™.

For arrays that are managed through Genius™, you can perform a complete system backup locally through WebSentinel by right clicking on the Array Label in the Navigation Tree and selecting the Download Array Configuration Info item. Save the configuration to a backup disk of your choice. Since this backup saves all files, it can take up to several hours for an extensive array (with 31 slaves)!



The Pass Through feature is also available for Slaves that support direct configuration, such as NVS9000, CSN910 and CS5200, sub-array controllers of hybrid systems. CSN910 and CS5200 are remotely managed through telnet, so that no specific Configuration Tool is required. A WebSentinel user must be explicitly allowed permission to make use of this feature through the Settings>Security window.

Also from the Settings>Security window a WebSentinel user may be allowed permission to use the Pass Through functionality for VNC sessions. VNC sessions are supported at Plant level (on the WebSentinel Server) and by specific array and slave types which have on-board PCs (i.e. NVS9000). By right clicking on a Plant object that supports VNC sessions, a shortcut menu appears allowing you to setup such a session. Select the item "Setup VNC Connection".

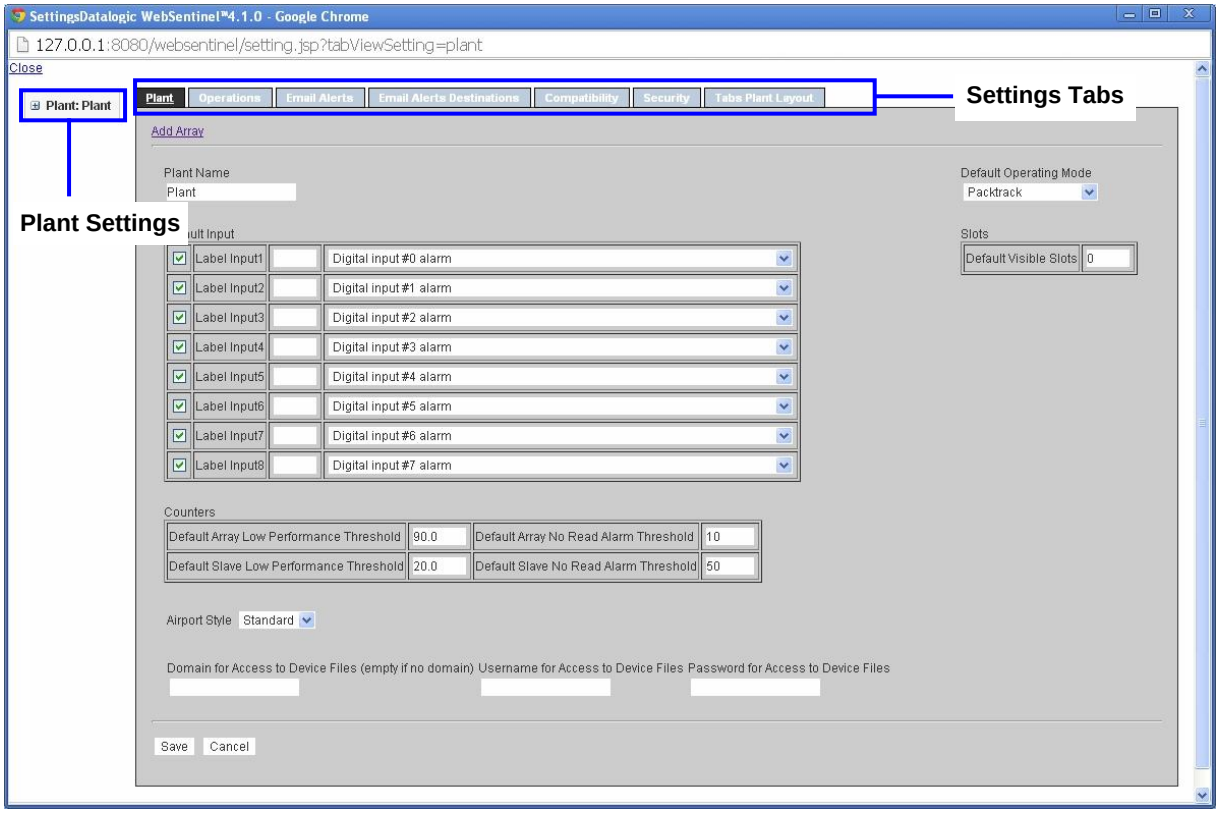
9 CONFIGURATION

9.1 MODIFYING DATALOGIC WEBSENTINEL™ SETTINGS

To modify the Datalogic WebSentinel™ settings, you must have Administrator or Limited Administrator access rights.

Pressing the Settings button will require password recognition in order to access the settings window.

9.2 DATALOGIC WEBSENTINEL™ SETTINGS WINDOW



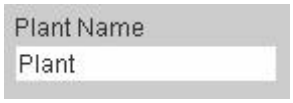
9.2.1 Plant Tab

In general, the **Default Input, Default Operating Mode, Slots,** and **Counters** options presented on the Plant page facilitate multiple configuration of the relative Array and Slave (Single Reader) specific parameters.

In fact, these Plant level parameters will automatically be applied to New Arrays and New Slaves (Single Readers) being added to the Plant. This therefore saves time for multiple Array configurations having the same parameter settings. If Array or Single Reader

parameters must be different they must be changed in their relative settings pages. These Plant level parameters have no effect on previously configured Arrays and Slaves.

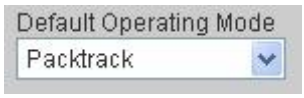
Plant Name



Here you can input the custom plant name label that will appear in the Navigation Tree and in the Alarm and Report files.

Default Operating Mode

Select the Operating mode that will be applied to new Array configurations. This parameter must match the actual Operating mode of the Array. If an array has a different Operating Mode it can be changed in the specific Settings>Array page.



On Line requires a presence sensor (or serial data string) to determine the reading phase, during which the scanner attempts to read, decode and output data on its interface.
When **On Line** is selected, no information about conveyor speed, parcel size, inter-parcel gap, and label positions are shown in the displays.

Packtrack is a patented operating mode for Datalogic Omni-Directional Reading Stations used to read and correctly assign codes read on different packs when placed in the scanner Reading Area at the same time.

Cluster Continuous is an operating mode which aggregates the same codes (by content), filtering them on the basis of their spatial position within a certain range. All the Array Slaves (Cluster) are operating in Packtrack mode.

Cluster Multidata is an operating mode where the array controller works as a pure communication multiplexer, without performing any aggregation of read results. The array slaves are actually autonomous, stand-alone systems.

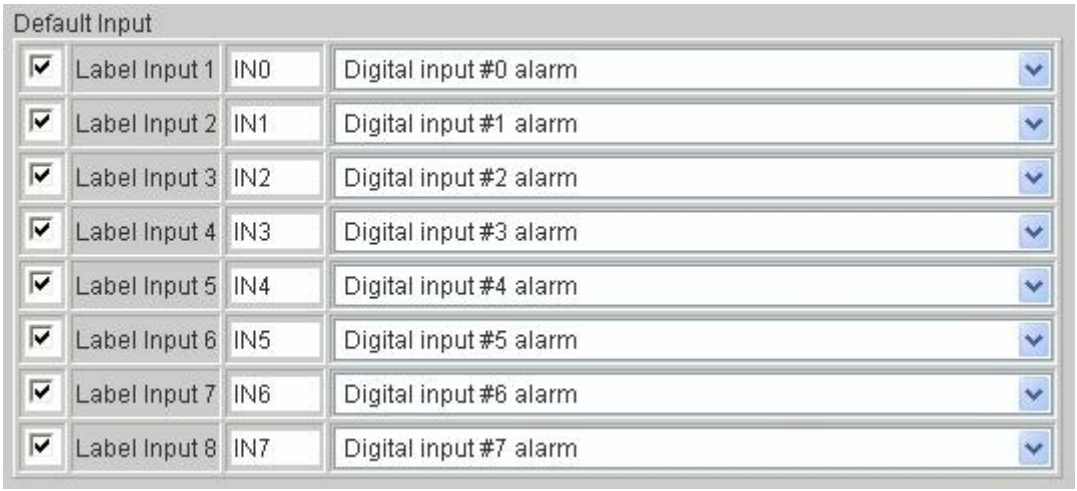
Default Input

By checking the desired Default Input boxes at the Plant level, you can configure the Digital Input LEDs globally for new Arrays (successively added to the Plant). This is useful for configuring many Arrays that have the same Input settings.

These Input LEDs will be displayed in the Array level **Current Alarms** tab.

If an Array needs to have Input settings that are different from the global ones, then check and set the Default Inputs in the specific Array page accordingly. The Array page Inputs will override the global settings for that specific Array.

Define the default digital input labels (max 3 characters) and their significance from the drop down list provided.



	Input Bit Mask vs. Hardware Inputs							
Bit Mask	0	1	2	3	4	5	6	7
SC8000	ENC	PS	IN2	IN3	IN4	IN5	IN6	IN7
SC6000 REDs	PWA	ENA	PSA	PWS	ENS	PSS	SBC	RSL
SC6000	PS	ENC	PSAux	IN1	IN2	IN3	-	-
NVS	PS	IN2	IN3	IN4	-	-	-	-
Master DS8k Series	EXT	IN2	IN3	IN4	-	-	-	-
Matrix	-	-	-	-	-	-	-	-
Master DS6k Series	EXT	IN2	IN3	IN4	-	-	-	-
SC4000	I1	I2	I3	-	-	-	-	-
Master DS4k Series	I1	I2	-	-	-	-	-	-
Master DS2k Series	I1	I2	-	-	-	-	-	-

NOTE: A special case occurs for SC6000 controllers when used with PWO junction boxes. By default, the IN3 input (IN5 bit mask) monitors PWO power levels and is therefore set when power levels are correct. If using IN3 to monitor PWO power, it is recommended to deselect the input in Datalogic WebSentinel™ to avoid a false indication of an alarm condition.

NOTE: As shown in the table above, depending on the Array device type, some Inputs may not be significant. See the specific device manual for details on the available inputs.

Slots

By selecting the number of Slots and naming them at the Plant level, you can globally set this parameter for all successively added Arrays. This is useful for configuring many Arrays that have the same Slot settings.

The number and labels of the configured slots will be displayed in the Array level **Slots View** tab and in the Array level **Last Parcel** tab.

If an Array needs to have Slot settings that are different from the global ones, then set them in the specific Array page accordingly. The Array page Slots will override the global settings for that specific Array.

Slots refer to the number of expected label groups to be read per reading phase (per parcel), as defined in the Array device configuration.

The defined Slots must be labelled in the same order as the defined groups in the Array configuration. See the Code Combination parameter for Multi Label and Logical Combination Rule in the Genius™ Help On-Line for the Array Device.

Depending on the array type there can be up to 25 defined slots max.

Counters

By selecting the Array and Slave Low Performance Thresholds and No Read Alarm Thresholds at the Plant level, you can globally set these parameters for all successively added Arrays and Slaves. This is useful for configuring many Arrays and Slaves that have the same Threshold settings.

If an Array or Slave needs to have Threshold settings that are different from the global ones, then set them in the specific Array or Slave page accordingly. The Array and Slave page Thresholds will override the global settings for that specific Array or Slave.

The Array and Slave Low Performance Thresholds are indicated in the View Level Bar Graphs Area, and shown in the relative level **Counters** tab. If the Array or Slave falls below the Threshold level, a Threshold Crossing Notification (TCN) is sent as an Alarm and the relative bar graph changes color.

The Array and Slave No Read Alarm Thresholds are shown in the relative level **Current Alarms** tab as an Alarm LED. If the Array or Slave falls below the consecutive No Read level, an Alarm is sent and the relative Alarm LED changes color.

NOTE: Here (and everywhere else) a No Read Alarm Threshold of 9999 means disabling this alarm source.

Analogously, a Low Performance Threshold of 0 means disabling this alarm source.

Access

Access to log files contained in device disk memory (i.e. vision systems cameras) can be granted through password access to shared directories.

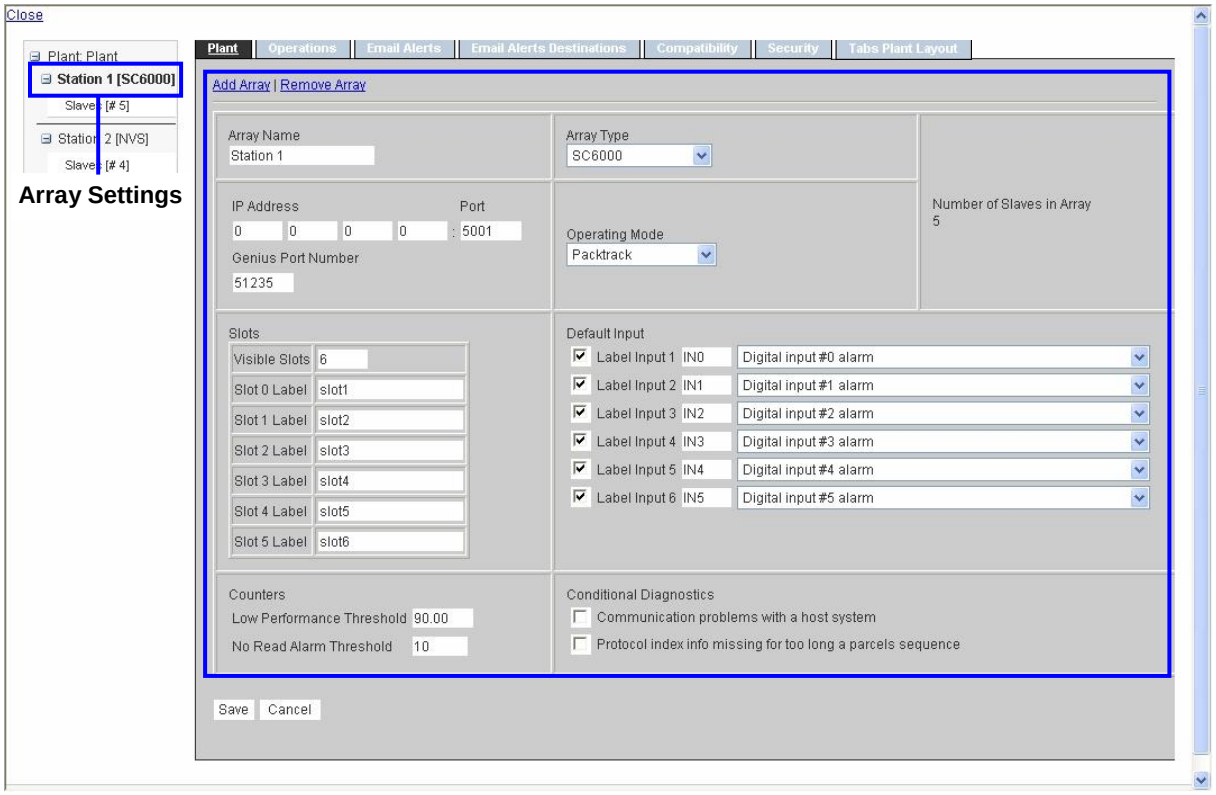
Here the Domain Name (if any) of the Camera network is required as well as the Username and Password of the shared directories of the Camera containing such files.

Airport Style

This parameter select the Slave numbering convention; either alphanumeric (Standard), or numeric only.

Array Page

By clicking on the Add Array link (or on the Array label of a previously configured Array in the Navigation Tree), you can add, remove, visualize and configure the Array(s).



Set the following fields:

- **Array Type** – select the array device type. The mask will change depending on the type of array selected from the list.
- **Array Name** - this is the Array Label which appears in the Navigation Tree Area and in the Alarm and Report files.

NOTE: The Array Name must not contain special characters: **\ / : * ? " < >** since it is used in the automatic generation of the .LOG filename.

The Array Name is also used to automatically create the Image Saving directory on the WebSentinel Server. Although spaces can be used it is suggested to use the underscore character instead.

- **IP Address** - of the Array Device.
- **Port Number** - of the WebSentinel interface of the Array Device.
- **Configuration Tool Port Number** - configurable or pre-defined depending on the Single Reader Types.

- **Conditional Diagnostics** - enable visualization of pre-defined Diagnostic Alarms depending on the Array Type. See the product specific Help On-Line Diagnostic Error Conditions page for descriptions of these errors.

NOTE: For SC4000 Array Types, the pre-defined Conditional Diagnostic Alarms labelled "CBX" refer to internal SC4000 circuitry and not external CBX connection boxes.

Set the following fields only if different from the Plant level Default settings:

- **Slots** - shows to the number of expected label groups (Slots), as defined in the Array device configuration. See the Code Combination parameter for Multi Label and Logical Combination Rule in the Genius™ Help On-Line for the Array Device.
- **Default Input** - configure the Digital Input LEDs which will be displayed in the Array level **Current Alarms** tab. Define the default digital input labels (max 3 characters) and their significance from the drop down list provided.
- **Operating Mode** – the operating mode of the Array device.
- **Counters** – The Array Low Performance Threshold is indicated in the View Level Bar Graphs Area, and shown in the relative level **Counters** tab. If the Array falls below the Threshold level, a Threshold Crossing Notification (TCN) is sent as an Alarm and the relative bar graph changes color.

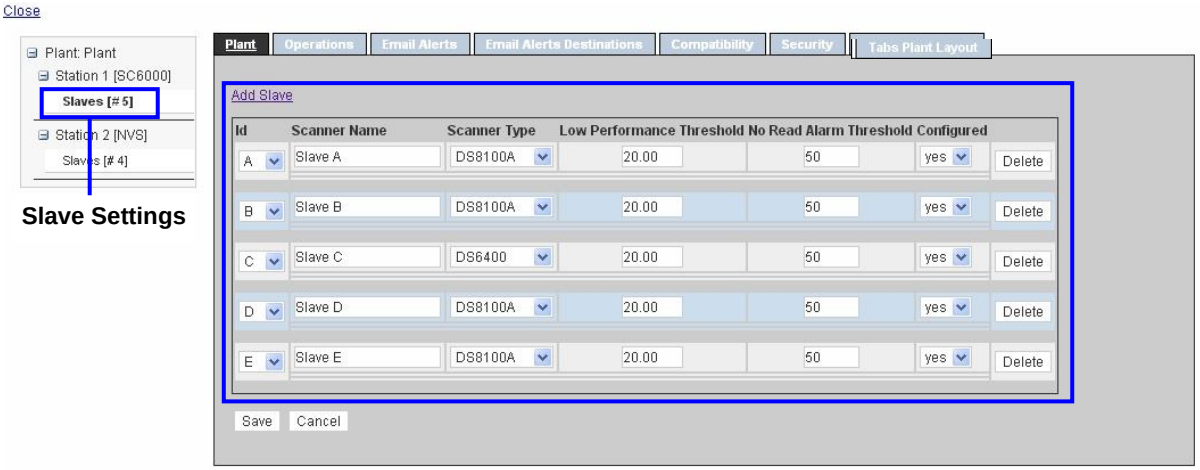
  The Array No Read Alarm Threshold is shown in the relative level **Current Alarms** tab as an Alarm LED. If the Array falls below the consecutive No Read level, an Alarm is sent and the relative Alarm LED changes color.

NOTE: No Read Alarm Threshold of 9999 means disabling this alarm source.

A Low Performance Threshold of 0 means disabling this alarm source.

Slave (Single Reader) Page

By clicking on the Add Slave link (or on the Slaves label of a previously configured Array in the Navigation Tree), you can add, remove, visualize and configure the Slave(s).



Set the following fields:

- **Scanner Type** – select the single reader device type.
- **Scanner Name** - this is the Scanner Label which appears in the Navigation Tree Area and in the Alarm and Report files.
- **Id** – the ID letter or number that will be assigned to the single reader device.
- **Configured** – whether the device is configured in Datalogic WebSentinel™ or not.

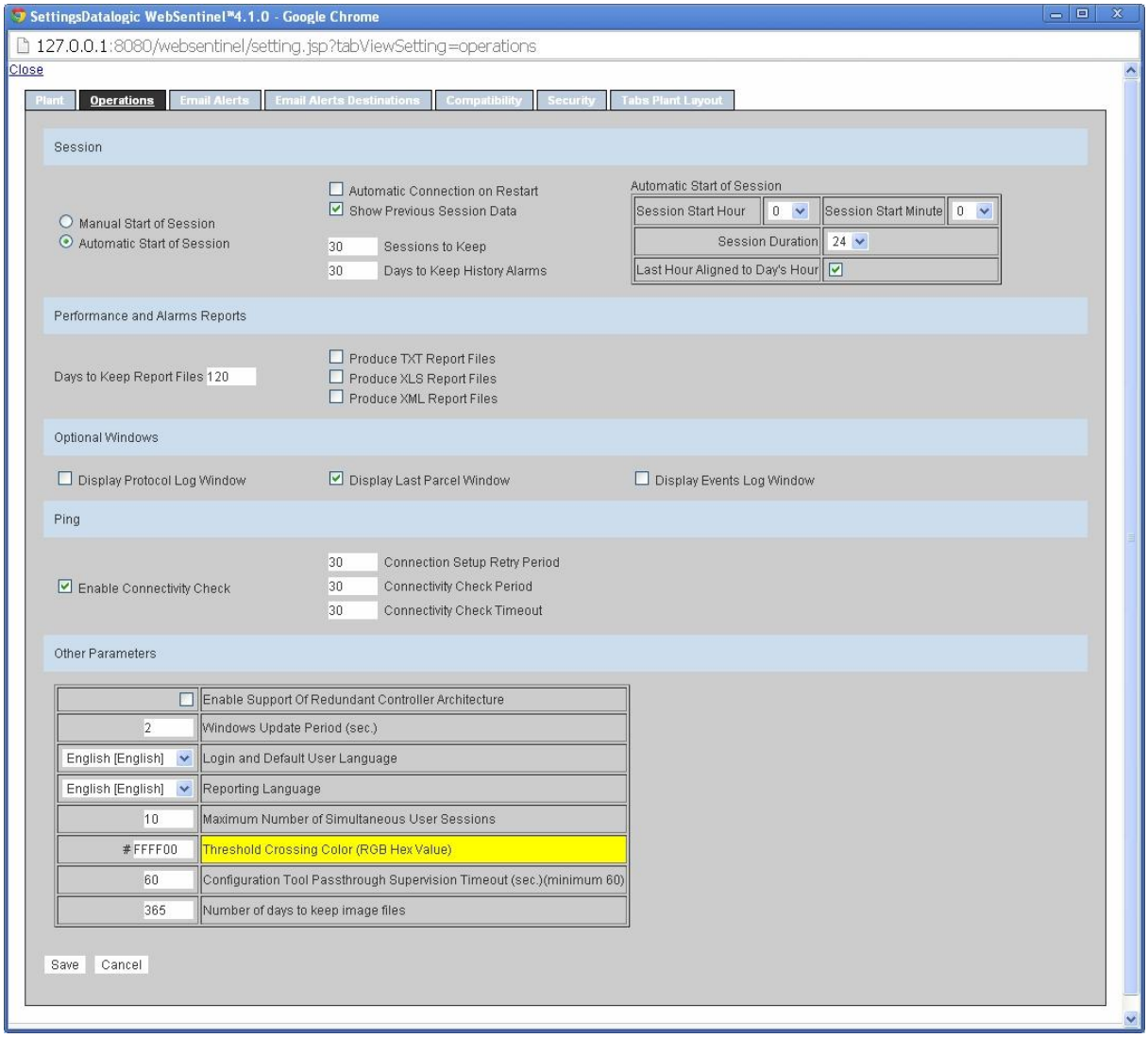
Set the following fields only if different from the Plant level Default settings:

- **Low Performance Threshold** - is indicated in the View Level Bar Graphs Area, and shown in the relative level **Counters** tab. If the Slave falls below the Threshold level, a Threshold Crossing Notification (TCN) is sent as an Alarm and the relative bar graph changes color.
- **No Read Alarm Threshold** - is shown in the relative level **Current Alarms** tab as an Alarm LED. If the Slave falls below the consecutive No Read level, an Alarm is sent and the relative Alarm LED changes color.

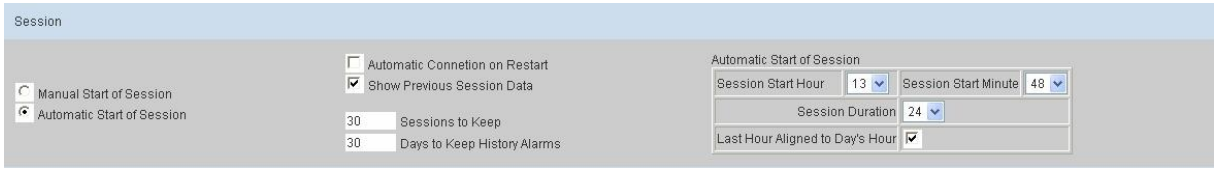
NOTE: No Read Alarm Threshold of 9999 means disabling this alarm source.

A Low Performance Threshold of 0 means disabling this alarm source.

9.2.2 Operations Tab



Session



- Define the Session operating mode (automatic/manual).

  In **Manual Start of Session**, a session begins when the Start button is clicked and it terminates when the Stop button is clicked. This mode can be used during installation or for debugging but it is not recommended for the run-time application. It allows the user to frequently start and stop Datalogic WebSentinel™ without exiting it.
  The displayed data concern the current and the previous session.

  In **Automatic Start of Session**, the duration of a session depends on the Session Duration setting (max 24 hours). A session terminates and a new session begins at the

indicated time of day in the **Session Start Hour and Minute** combo boxes. The first session upon Start will last at most 24 h.
Manually Stopping and Starting the processing however, terminates the current session and starts a new session.

NOTE: You can define a session in multiples of one hour in the Session Duration parameter. A 1 hour session definition would result in 24 sessions in one day.

- Define the alignment of Last Hour data (when session operating mode is Automatic).

  Two different ways of managing the Last Hour information in the Counters Tabs are available.

  When **Last Hour Aligned to Day's Hours** is not checked, the Last Hour fields in the Counters Tabs are updated every fifteen minutes and represent the data of the last hour with respect to the instant of update.

  Example:
  Starting the session at 16.00, at 17.32 the Last Hour displays the hourly summary of the period included between 16.30 and 17.29. At 17.45 the Last Hour value is updated to the hourly summary of the period included between 16.45 and 17.44.

  When **Last Hour Aligned to Day's Hours** is checked, the day is divided into 24 hours aligned to midnight. The Last Hour data are related to the current day's hour, they are reset at the beginning of a day's hour and they are updated continuously every new hour.

  Example:
  At 16.32, the LAST HOUR data displays the hourly summary of the period included between 16.00 and 16.32 (independently of the start time of the session).

- Show Previous Session Data adds this information to the various Counters pages.

NOTE: The parameters: **Sessions to Keep**, **Days to Keep History Alarms**, and **Days to Keep Report Files**, are verified only when a session is closed (manually or automatically) and therefore modifications to these values are effective only when the new session is closed.

- Automatic Connection on Restart automatically starts a new session upon reset of the WebSentinel Server (reboot or manual reset).

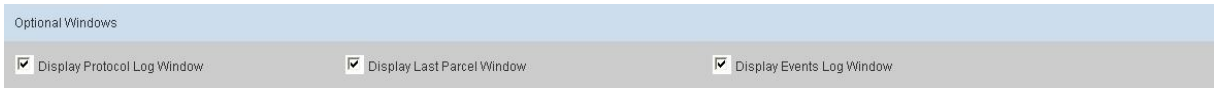
Report Files

Enables/disables the generation of the **.TXT**, **.XLS and .XML** report files and controls their retention time.
The generation of an alarm report at the end of a session in TXT format cannot be disabled.

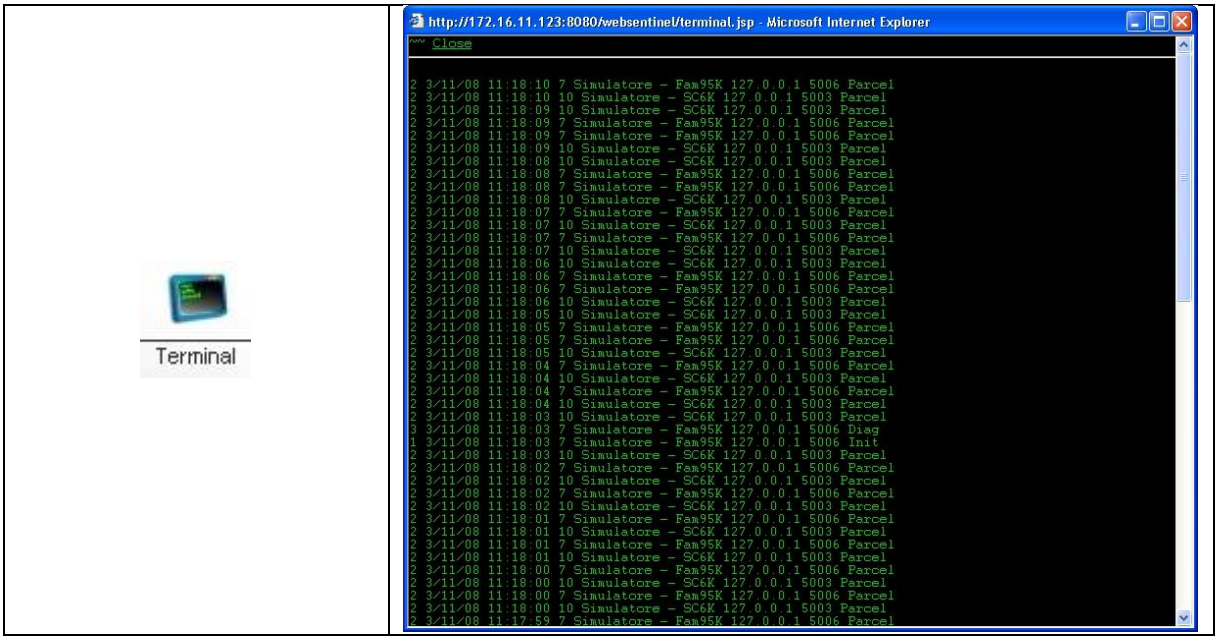
Note: the .LOG files are automatically generated and retained for a fixed period of 3 days.

See chp. 10 for more details on logging and report files.

Log Window



Display the **Protocol Log Window** (Terminal icon and therefore Terminal window).



Display the **Events Log tab** at the plant level.

Display the **Last Parcel tab** at the array level.

Ping

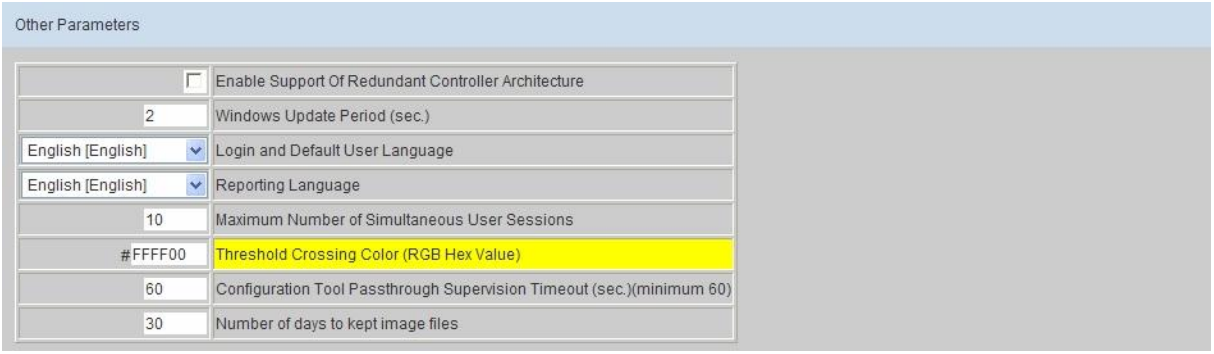
The Connectivity Check enables/disables the transmission of application level PINGs to check the status of the TCP connection of Datalogic WebSentinel™ with the arrays.

When the array is connected a ping is sent every "**Check Period**" seconds. Once the PING is sent, Datalogic WebSentinel™ waits for the answer for "**Check Timeout**" seconds. If the answer is timed out (after the number of programmed retries), the array is displayed as disconnected.

When an array is disconnected, an automatic connection attempt is performed after "**Setup Retry**" seconds after the end of the preceding unsuccessful connection attempt or after the disconnection has occurred.

If the Connectivity Check is disabled no connection supervision and no automatic reconnection attempts are performed.

Other Parameters



- **Enable Support of Redundant Controller Architecture**
  This option is necessary if support of the Active/Standby controller architecture is required. It forces a refresh of the ARP table before each Datalogic WebSentinel™ connection and speeds up the reconnection to the array that has become active.

- **Windows Update Period (sec.)**
  This option selects the refresh period in seconds for the Datalogic WebSentinel™ data displayed on the Client PCs. The default value is 2 seconds.

- **Login and Default User Language**
  This option selects the display language for all defined system users. Newly created users will also have this default language. This value can be changed for individual users (persistently) through the Preferences>Language menu of the Datalogic WebSentinel™, or (temporarily) through the Languages drop down menu (upper right).

- **Reporting Language**
  This option selects the alternative language used to create reports. Reports are always generated in English as well as this Reporting (second) Language.

- **Max Number of Simultaneous User Session**
  This parameter defines how many Client PCs can be connected simultaneously to the Datalogic WebSentinel™ program.

- **Threshold Crossing Color (RGB Hex Value)**
  This parameter defines the color that will be used in all bar graphs when the Plant, Array or Single Readers fall below their defined threshold values. The default is yellow (#FFFF00).
  The values refer to RGB expressed in hex notation: (FF0000= Red, 00FF00=Green, 0000FF=Blue, etc.)

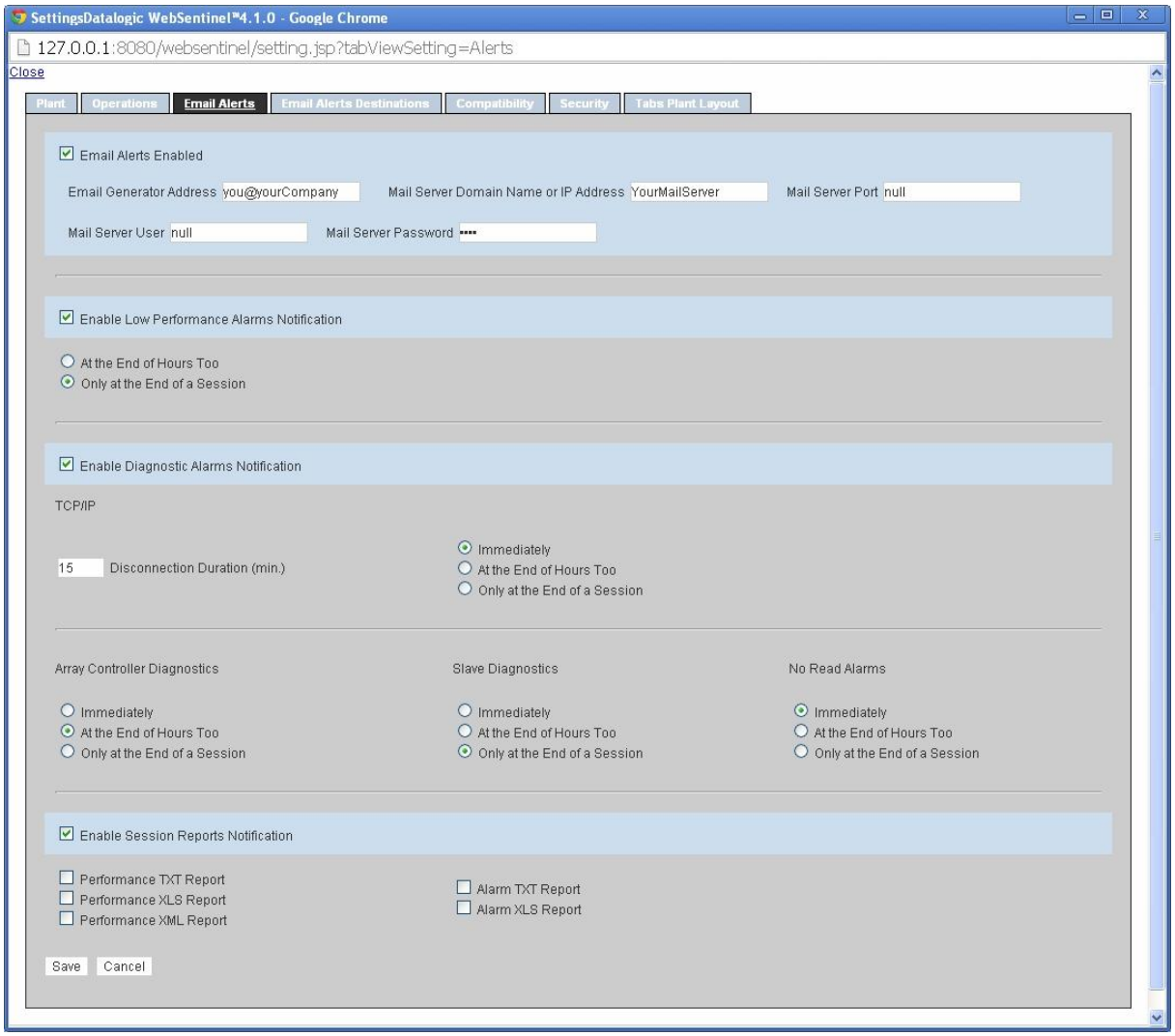
- **Configuration Tool Passthrough Supervision Timeout (sec.)**
  This parameter defines the maximum time the Configuration Tool Passthrough Bridge maintains the connection between the Datalogic WebSentinel™ Client and Server when communication has stopped (due to an error or some unexpected problem). If this timeout expires the Passthrough Bridge is automatically disconnected from the Datalogic WebSentinel™ Server. This gives other Clients the possibility to open a Configuration Tool connection through the Passthrough Bridge.

- **Number of Days to Keep Image Files**
  Defines the number of days after which a given image and its relative extended parcel information will be removed from the system.

NOTE: For Arrays that don't send images this number only refers to the extended parcel information.

This does not cancel the reading phase event from the WebSentinel Database.

9.2.3 Email Alerts Tab



To enable Email Alert generation by Datalogic WebSentinel™, the following fields should be completed:

- Email Generator Address: *you@yourCompany*
- Mail Server Domain Name or IP Address: *YourMailServer* or *IP address*
- Mail Server Port: unless specified differently, the standard Port *25* will be used
- If emails are sent using SSL authentication, complete the Mail Server User and Mail Server Password fields.

These settings enable/disable and control the issuing of email alerts when the following diagnostic events occur:

- TCP/IP connection of an array with Datalogic WebSentinel™ (only if the disconnection lasts longer than the indicated period)
- Array related alarms (internal data network, disk, input signals)
- Slave related alarms (communication, scan line, decoder)
- No Read alarms (both at slave and array level)
- Performance Threshold Crossing Notifications (both at slave and array level)

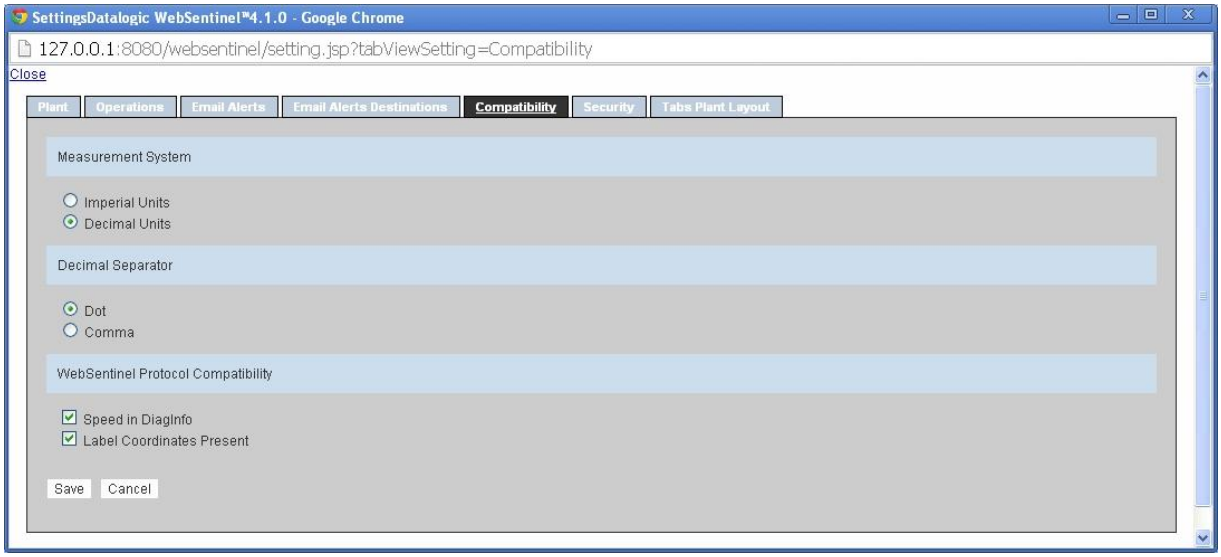
The explicit event of an alarm condition will be notified via an email alert only if the selected discipline is "**immediately**". If the selected discipline is "**end-of-hour**" or "**end-of-day**" only the raise event (the existence of a raise condition at the given time) is notified via an email alert.

It is also possible to request Datalogic WebSentinel™ to send an email with the selected report files attached which are generated at the end of a session: if the attachment of a report file that is not generated is requested, nothing will be attached and no notice will be given.

9.2.4 Email Alerts Destinations Tab

Add the email addresses of the contact people who should receive the Email Alerts from Datalogic WebSentinel™. Also select the message language to be used.

9.2.5 Compatibility Tab



Measurement System

Defines the measurement units for the displayed data (millimeters/inches). Notice that because reports and history data will be generated at the end of each session according to the selected measurement system, if one wants to have comparable data across multiple sessions he/she may not change this parameter, which should be set on installation and never modified.

NOTE: The Metric parameter in the Preferences Menu allows modifying this parameter only for display purposes and has no effect on the report files.

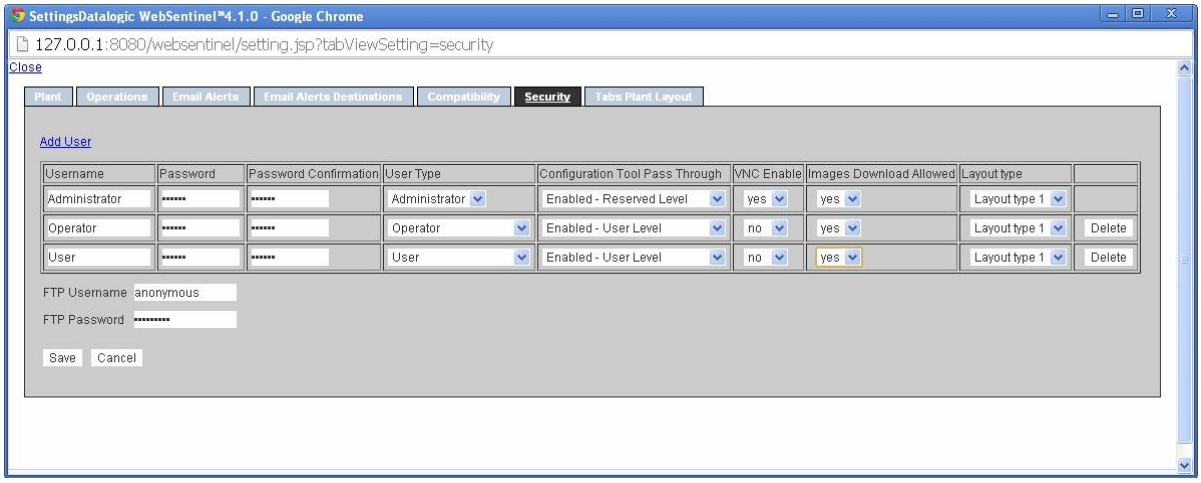
Decimal Separator

Defines the decimal separator (Dot/Comma) used in the displays. This parameter affects displays and some report files (XML files are not affected because the syntax of real numbers is defined by XML Schema).

Protocol Compatibility

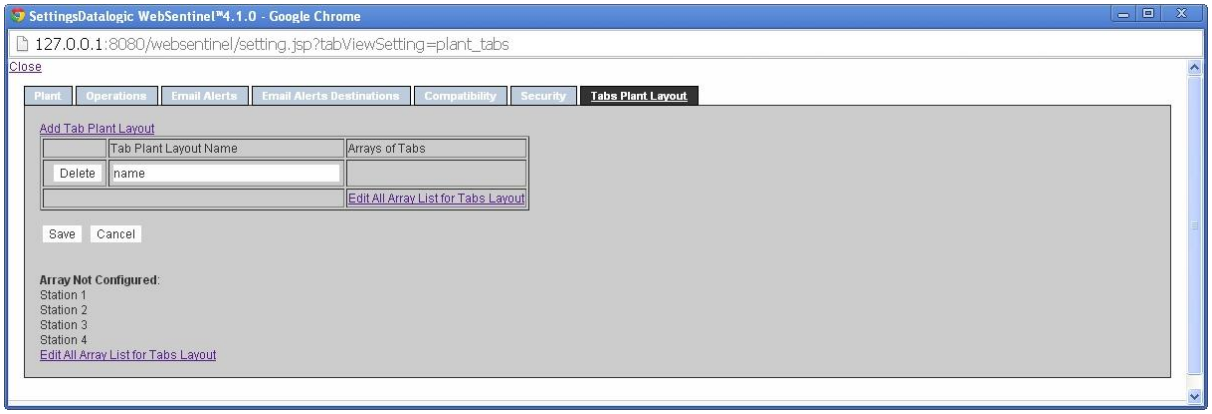
Controls the compatibility of the protocol with old implementations of Datalogic WebSentinel™ agents in the arrays. The default value should not be modified except by qualified Datalogic personnel. Erroneously changing the value of these parameters may result in malfunctions.

9.2.6 Security Tab



See chapter 4 for Access Management details.

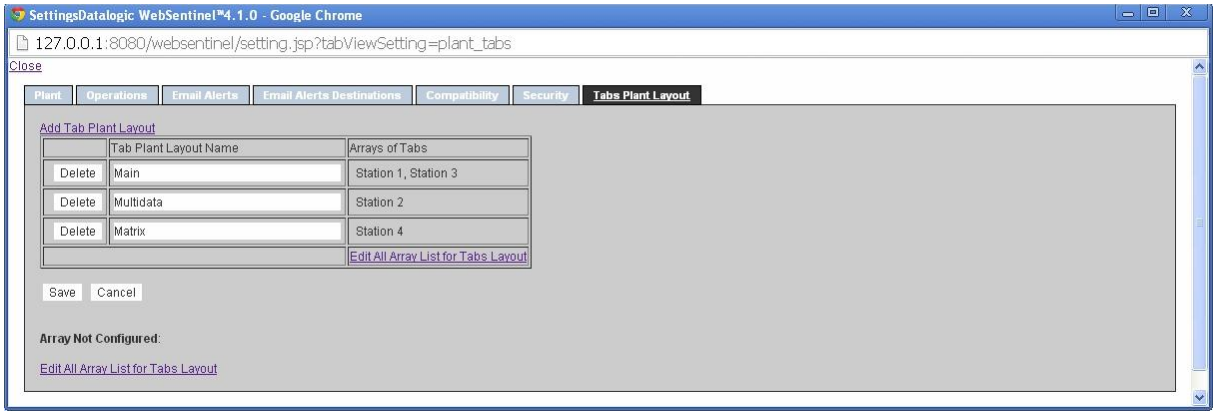
9.2.7 Tabs Plant Layout



Through this configuration window it is possible to define the structure of the Layout tab at Plant level.

If the WebSentinel user wants to distribute Arrays over multiple Layout tabs, these tabs must first be defined. This is done by clicking on the Add Tab Plant Layout link. For each added tab, a tab name must be provided.

Once the desired Layout tabs are defined, the user may assign each array to the proper tab using the Edit All Array List for Tabs Layout command: when clicking on this link the list of all arrays is shown, with the current assignment of each array to a Layout tab. The user can modify this assignment through a drop down menu.



When a new array is added to the Plant it is assigned by default to the first Layout tab.

10 DATA LOGGING

10.1 AVAILABLE LOGS AND REPORTS

Datalogic WebSentinel™ logs information and produces reports on mass storage in the **LOG** and **REPORT** subfolders.

- **Performance** reports are produced in **.XLS**, **.TXT** and **.XML** format in their relative **REPORT** subfolder.
- **Alarm** Reports are produced in **.XLS** and **.TXT** format
- Messages from the arrays are dumped in raw **.LOG** format under the **LOG** subfolder

The .XLS and .TXT Report files are generated in English as well as the selected Reporting Language (in the Settings>Operations>Other Parameters box). The English files are saved in the relative **XLS**, and **REPORT** folders. The Report Language files are saved in the **DefXLS**, and **DefReport** folders.

10.2 SUPPORT FOR .XLS AND .XML POST-PROCESSING

In order to use the .**XML** reports for post-processing with standard third party tools, the Datalogic WebSentinel™ distribution includes the following file:

- **SentinelPerfSchema.xsd** (Performance XML schema) available under the installation folder \\..\Datalogic\WebSentinel\BackOffice\Conf

10.3 TIMESTAMP

All the report filenames (except **.LOG**) are time stamped, being “YYYYMMDDhhmmss” the time referring to the beginning of the session.

10.4 REPORT FILE GENERATION AND RETENTION TIME

Report file generation and retention time is controlled by the related settings in the Settings>Operations tab, except the **.LOG** files which are automatically produced and retained for 3 days.

10.5 LOG FILES

NOTE: The Array Name must not contain special characters: **\ / : * ? " < >** since it is used in the automatic generation of the .LOG filename.

A .LOG file is produced continuously for each array of the plant where all information received from the array is registered. The name of each .LOG file is as follows:

YYYYMMDDhhmmss-<Array Name>-NN.LOG

Where:

YYYY	year
MM	month
DD	day
hh	hour
mm	minute
ss	second
<Array Name>	name of the array
NN	number of the array in the WebSentinel database

A .LOG file is structured as an XLS file where each line represents a message received from the array, prefixed with the relative timestamp:

<timestamp>,<message type>,<message specific fields>

The content of the line depends on the <message type> received from the array, which is registered as the first field after the <timestamp>.

The following message types exist:

1 = init
2 = parcel
3 = diagnostic
6 = multidata
7 = extended diagnostic

The following paragraph analyzes the **parcel** message type. Other message types are not relevant for a WebSentinel user, and in any case cannot be easily interpreted.

10.5.1 Parcel Message Type

When the message type field is **parcel**, the <message specific fields> have the following form:

<packid>,<shortparcels>,<shortgaps>,<barcodelost>,<parcellength>,<gapfrom parcel>,<conveyorspeed>,<parcelanalysis>,<noOfSlots>,<slotsequence>

Where fields have the following meaning:

<shortparcels>	number of (too short) parcels between this parcel and the previous parcel (when significant, 0 otherwise)

<shortgaps>	number of (too short) inter-parcel gaps from previous parcel (when significant, 0 otherwise)
<barcodelost>	number of barcodes not assigned to any parcel in the reading area since the previous parcel message transmission (when significant, 0 otherwise)
<parcellength>	perceived length of the parcel along the conveyor (in mm) (when significant, 0 otherwise)
<gapfromparcel>	inter-parcel gap (in mm) (when significant, 0 otherwise)
<conveyorspeed>	in mm/sec (when significant, 0 otherwise)
<parcelanalysis>	0 = GOODREAD, 1 = NOREAD, 2 = MULTIPLEREAD, 3 = PARTIALREAD
<noOfSlots>	number of code groups analyzed in this parcel
<slotsequence>	**<slot> … <slot>**

Where: <slot> = **<slotanalysis>,<labelNo>,<labelssequence>**

<slotanalysis>	0 = GOODREAD, 1 = NOREAD, 2 = MULTIPLEREAD
<labelNo>	number of labels that have been read in this code group
<labelssequence>	**<label> … <label>**

Where: <label> = **<symbology>,<length>,<barcodecontent>,<readingmask>,<x>,<y>**

<symbology>	symbology of the label according to the AIM standard (code ID=]cm), where: • ']' = the simbology identifier flag character • 'c' = simbology identification • 'm' = modifier character example:]I0 = Interleaved 2of5
<length>	number of characters of the barcode content
<barcodecontent>	the barcode content
<readingmask>	specifies which readers of the station have read this label
<x>	x coordinate of this label in mm
<y>	y coordinate of this label in mm

Symbology	AIM Identifier	Symbology	AIM Identifier
Data Matrix	]d0	Code 32	]XA
Dot Matrix	]d1	Code 39 Full ASCII	]A4
QR Code	]Q0	Codabar	]F0
Micro QR code	]Q1	Code 128	]C0
Dot QR	]Q0	GS1-128 (ex EAN 128)	]C1
MAXICODE	]U0	Code 93	]G0
Aztec	]z0	Pharmacode	]XB
PDF-417	]L0	GS1 DataBar	]e0
Micro PDF417	]L1	GS1 DataBar Truncated	]e1
Postnet	]X0	GS1 DataBar Stacked	]e2
Planet	]X3	GS1 DataBar Limited	]e3
KIX	]X5	GS1 DataBar Expanded	]e4
Australia Post	]X2	GS1 DataBar Expanded Stacked	]e5
Japan Post	]X1	GS1 DataBar Expanded Linked	]eA
Royal Mail RM4SCC	]X4	GS1 DataBar Expanded Stacked Linked	]eB
Intelligent Mail Barcode	]X6	GS1 DataBar Limited Linked	]eC
2/5 Interleaved	]I0	GS1 DataBar Linked	]eD
EAN 8	]E4	GS1 DataBar Stacked Linked	]eE
EAN 13	]E0	Code 128 Linked	]eF
UPC A	]E0	CCA Linked	]eG
UPC E0	]E7	CCB Linked	]eH
UPC E1	]E7	CCC Linked	]eI
EAN 8 with 2 ADD ON	]E5	MSI Plessey (Plessey)	]P0
EAN 8 with 5 ADD ON	]E6	ABC Codabar	]F1
EAN 13 with 2 ADD ON	]E1	ISBT 128	]C4
EAN 13 with 5 ADD ON	]E2	Code 11	]H0
UPC A with 2 ADD ON	]E1	BCD	]Xk
UPC A with 5 ADD ON	]E2	2of5 COMPRESSED	]XC
UPC E0 with 2 ADD ON	]E8	OMR	]XD
UPC E0 with 5 ADD ON	]E9	Codablock A	]O0
UPC E1 with 2 ADD ON	]E8	Codablock F	]O4
UPC E1 with 5 ADD ON	]E9	CODABLOCK 256	]O1
Code 39	]A0	Videocoding	]Z0

11 CONTROLLER REDUNDANCY SUPPORT (REDS)

11.1 ACTIVE/STANDBY ARRAYS REDUNDANCY

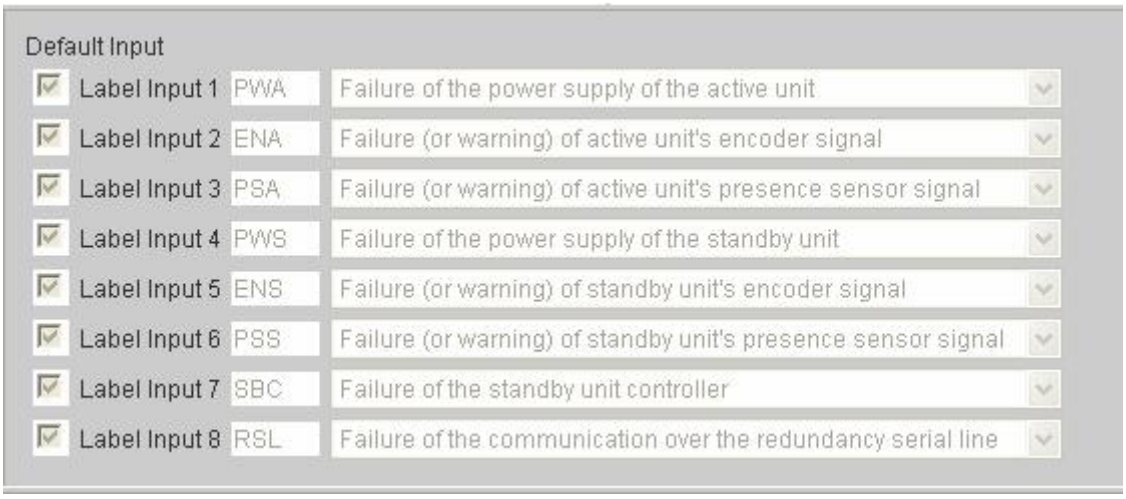
The **Active/Standby** architecture refers to a pair of array controllers, only one of which plays the Active role handling the whole network of readers of a reading tunnel and interfacing to Datalogic WebSentinel™. The reserve array controller is ready to take over in the event the active controller fails.

Since both the companion controllers (Active and Standby) share the IP address and port, an issue comes up with the time needed to connect the array that has become active, when a switch over takes place. For this reason, a specific checkbox is available in the Settings>Operations tab to support this type of architecture.

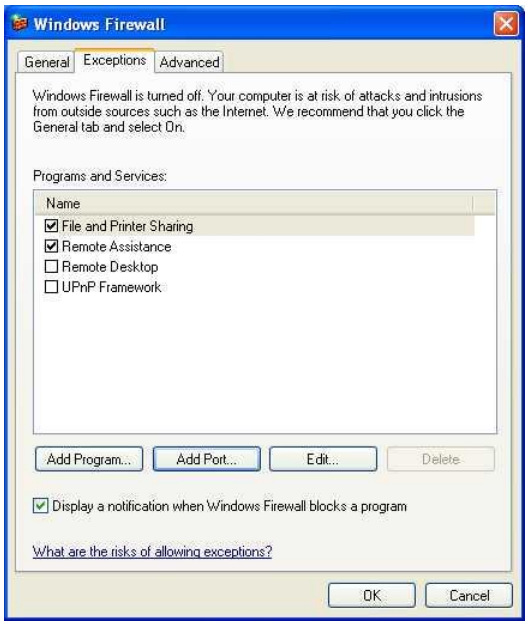
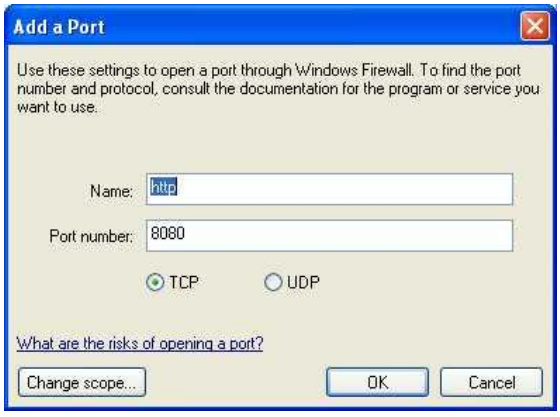
Diagnostic Alarm Conditions

For Redundant systems the Inputs shown in the Array Level Counters Tab are dedicated to monitor and display specific diagnostic alarm conditions.

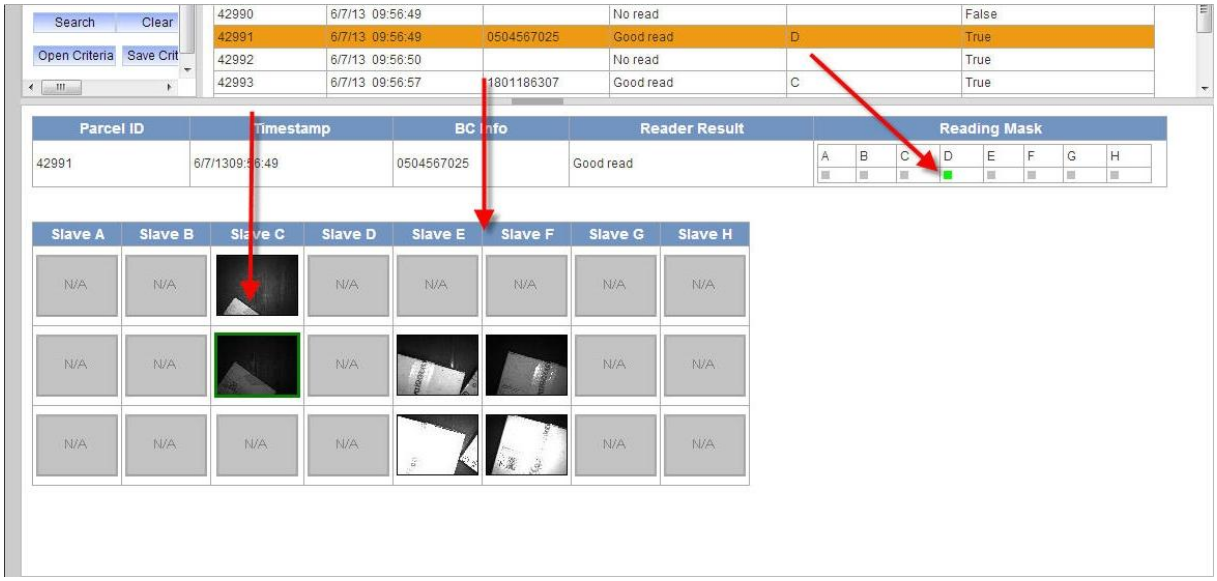
The diagnostic alarms are fixed in the following order in the Settings>Plant tab:



12 TROUBLESHOOTING

Problem	Solution
Cannot connect to Datalogic WebSentinel™	• Port 8080 of the Remote PC must not be blocked by Windows Firewall. From Control Panel check the Exceptions folder in Windows Firewall. If port 8080 is not listed select Add a Port to add it to the list.  
Backoffice doesn't start	Locate the following directories and zip their contents maintaining path name and send them to Datalogic for analysis: • Datalogic\WebSentinel\Backoffice\Tracing • Datalogic\WebSentinel\Tomcat\logs • Datalogic\WebSentinel\Backoffice\WebSentinelDB After this, remove or rename the WebSentinelDB directory and reset the Server PC. **You will lose any unsaved configuration but Backoffice should start**.

Problem	Solution
A script warning appears when loading a page	Some browsers may give a script warning for some pages. Respond "Yes" to interrupt the script and the page should be loaded without problems.
The User is not able to download images	The Image Downloading feature is only available for Datalogic WebSentinel™ IMAGES versions. The user must be enabled to Download Images in the Settings >Security menu and the FTP Username and FTP Password must be the same as the ones defined in the FTP Client. See chapter 4.
Some Images are missing	Image availability depends heavily on the number of images transferred and the rate of transfer, (system throughput and network bandwidth). Since Image downloading is usually based on specific criteria (i.e. No Read or Multiple Read conditions) the FTP Server is adequate to handle most applications. In extreme cases where a high throughput application requires all images to be downloaded it is possible that some images may not be available on the reader having been overwritten in the device's circular buffer. See an example in the figure below.



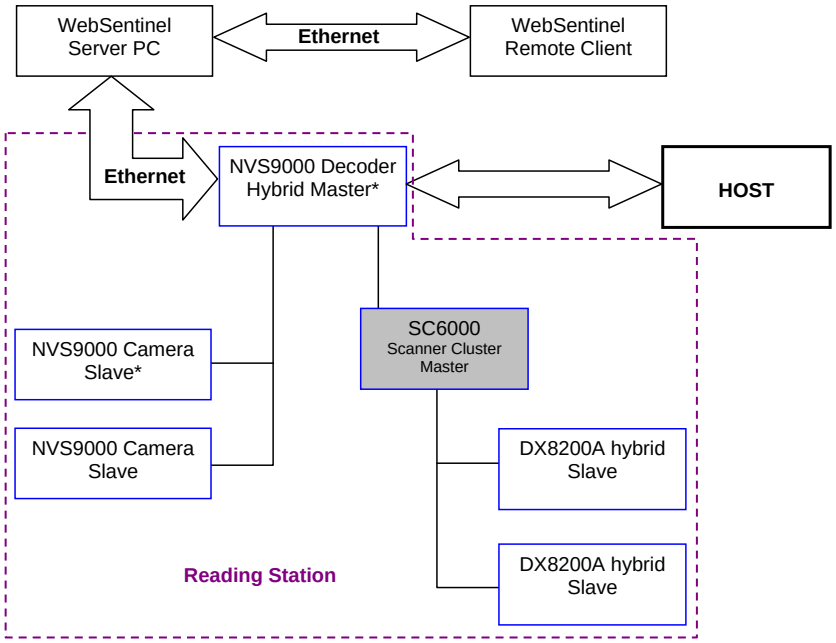
A HYBRID ARRAYS

A Hybrid Array is made up of an NVS9000 Decoder/Camera network and a Datalogic ATR barcode reading system, cooperating to provide a unique identification system. The ATR is usually made up of an SC6000 Controller with 6/8K family scanner slaves, although a 6/8K family scanner could also be Master of the scanner cluster.

There are two main configurations of the Hybrid system (NVS9000 as Hybrid Master or Scanner cluster master (SC6000) as Hybrid Master).

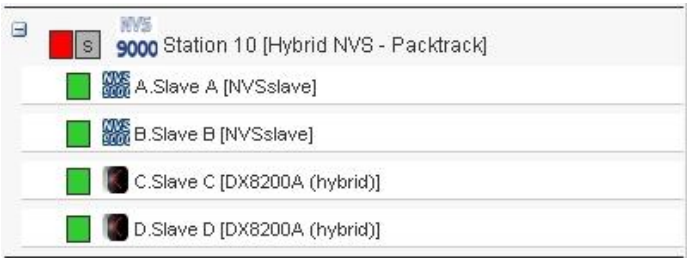
NVS AS HYBRID ARRAY MASTER

When an NVS9000 Decoder/Camera acts as Hybrid Master, the system functions as follows:



The WebSentinel Agent residing on the NVS9000 Hybrid Master collects diagnostic and statistical data for the entire system and transfers it to the WebSentinel application, located on the WebSentinel Server PC.

WebSentinel manages the hybrid system as a single array: Cameras and Scanners are considered as slave nodes at the same level in the system.



When the NVS9000 Hybrid Master is configured as Decoder Cluster>Node Type = Master + Decoder 1 (it has its own camera), then in WebSentinel this decoder/camera appears in the navigation tree both as array master (decoder) and as the first NVS9000 slave (camera).

All NVS9000 slaves (cameras) should have contiguous addresses (Id) and be positioned before the scanner slaves.

The scanner slaves should have contiguous addresses. The assigned scanner address (*Scanner Cluster>Scanner # Address* parameter), seen by the decoder starts from the last used decoder/camera address and therefore must follow this rule in the WebSentinel configuration. The individual scanner slave nodes are labelled as hybrid in order to identify their special operating mode.

When the SC6000 Controller is the dedicated scanner cluster master, it is not explicitly visible on the WebSentinel interface. If instead, one of the hybrid scanners is the scanner cluster master it does not appear differently from the other hybrid slave scanners. In any case, it is the scanner cluster master which allows hybrid slave scanner configuration through Genius. See details in the examples given in the next paragraph.

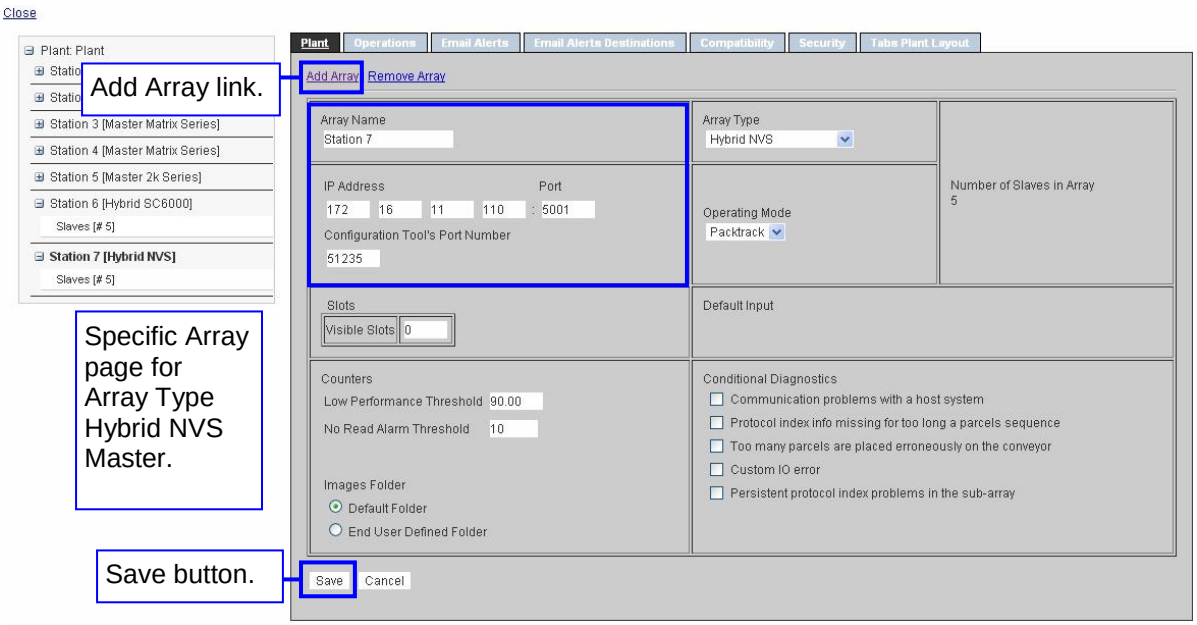
HOW TO CONFIGURE AN NVS9000 HYBRID ARRAY MASTER

The following steps are extracted from the general complete procedure shown in chapter 3. Here particular details for this type of array configuration are shown, however the complete procedure should in any case be followed for correct configuration.

1. Open the Settings window by clicking the 

icon to add and configure the array(s).

2. Add an Array and complete the following fields then save:
   a. Array Type - select the **Hybrid NVS** item
   b. Array Name - this is the user-defined Array Label which appears in the Navigation Tree Area
   c. IP Address of the Array Device, in this case the NVS9000 Hybrid Master (i.e. 172.16.11.110)
   d. Port of the Array Device on which the WebSentinel agent is waiting for connection requests
   e. Configuration Tool's Port Number - default for Master Decoder **51235**



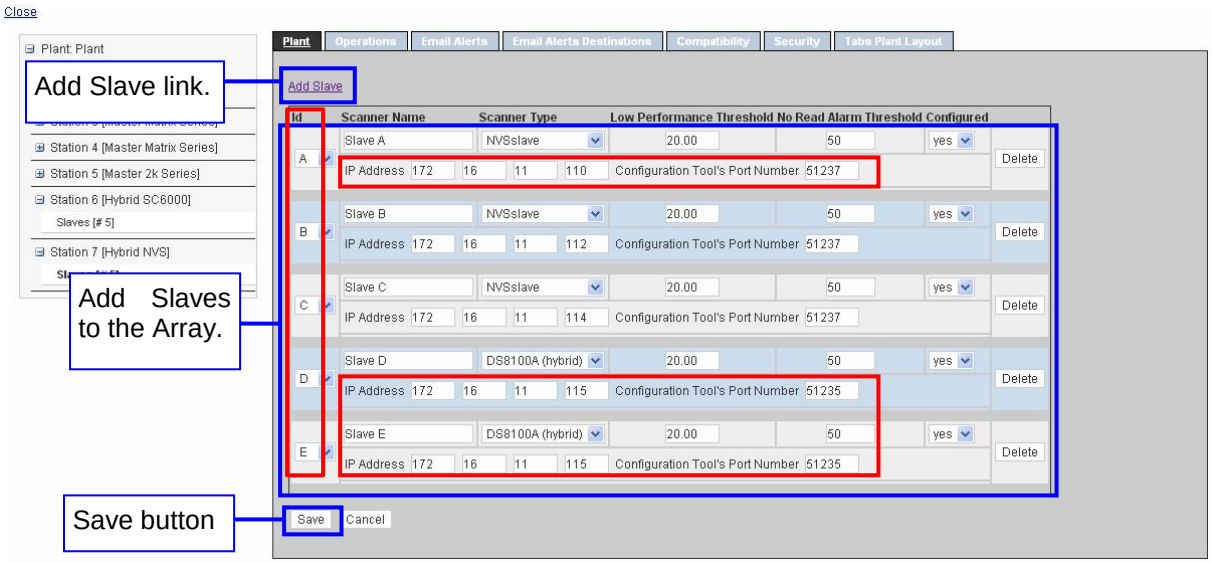
NOTE: Set other optional fields in the Settings window according to your application requirements. You must Save each individual Configuration Page.

3. Click the +box to open the Slave branch and click on the Slave [#0] label and Add the corresponding Slave Types and then save.

   a. For Hybrid systems where the NVS9000 Hybrid Master Node Type = Master + Decoder 1 (has its own camera), in WebSentinel the first NVS slave of the array is the Master's camera. Therefore its IP address is the same as the Master Decoder (i.e. 172.16.11.110), while the configuration port number is that of its Camera, default **51237**.

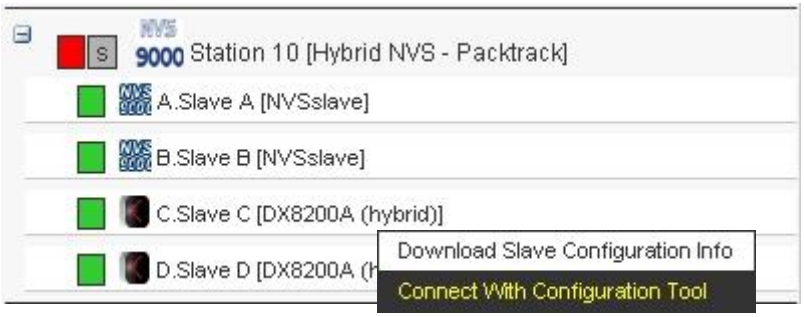
   b. All other NVS slaves (cameras) should be contiguous and must be part of the same subnetwork. Each camera has its own IP address, the Configuration Tool port number is **51237**.

   c. All slave hybrid scanner types should be contiguous (Id field) after the last camera and must be part of the same subnetwork. They are directly accessible by the Configuration Tool (in this case Genius) through the scanner cluster master (SC6000 or 6/8K scanner master). For this reason the IP address for all slave hybrid scanners is that of the SC6000 or 6/8K scanner master, the default port is **51235**.



NOTE: It is not necessary or advised to run multiple sessions of Genius for slave hybrid scanners since the connection is made to the scanner cluster master and therefore you have access to all scanner cluster slaves in a single connection.

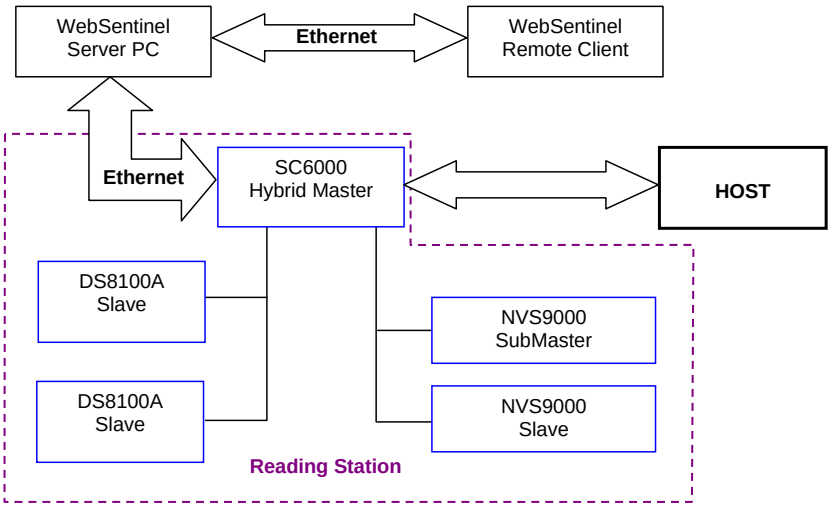
Differently from single array systems, scanners populating the hybrid system can be connected by Genius through the direct individual selection in the Web Interface by right-clicking on the scanner and selecting **Connect With Configuration Tool** to start the Genius program.



Note that the connection function will not be available from the list if the IP address and the socket port are not correctly configured for the device in question.

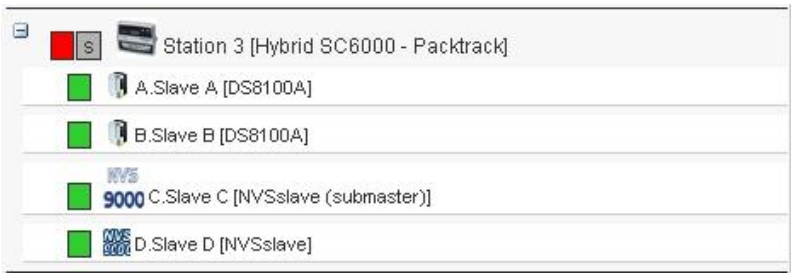
SC6000 AS ARRAY MASTER

When an SC6000 Controller acts as Hybrid Master, the system functions as follows:



The WebSentinel Agent residing on the SC6000 Hybrid Master collects diagnostic and statistical data for the entire system and transfers it to the WebSentinel application, located on the WebSentinel Server PC.

WebSentinel manages the hybrid system as a single array: Scanners and Cameras are considered as slave nodes at the same level in the system.



All scanner slaves should have contiguous addresses (Id field) and be positioned before the NVS9000 slaves.

The NVS9000 slaves should have contiguous addresses. The assigned NVS9000 addresses (*First NVS9000 Number and Number of NVS9000s in Cluster* parameters), seen by the SC6000 start from the last used scanner address and therefore must follow this rule in the WebSentinel configuration.

The first NVS9000 must be a Sub-array master. This allows the hybrid NVS9000 decoder configuration through Genius. See details in the examples given in the next paragraph.

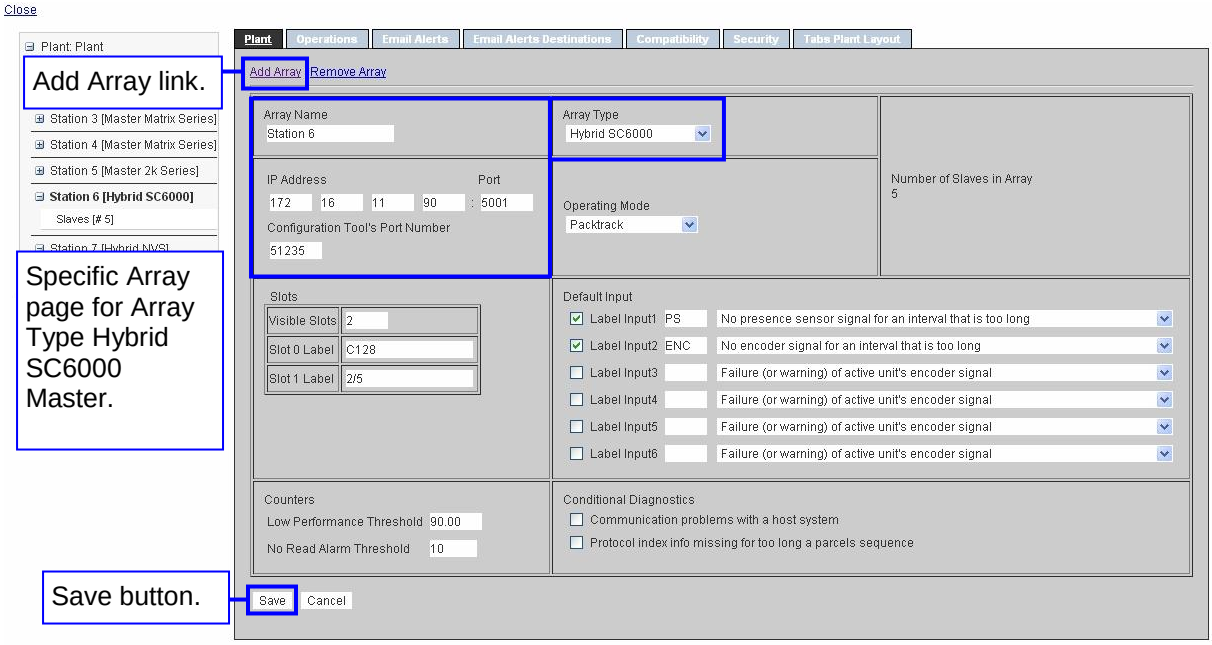
HOW TO CONFIGURE A HYBRID SC6000 ARRAY MASTER

The following steps are extracted from the general complete procedure shown in chapter 3. Here particular details for this type of array configuration are shown, however the complete procedure should in any case be followed for correct configuration.

1. Open the Settings window by clicking the 

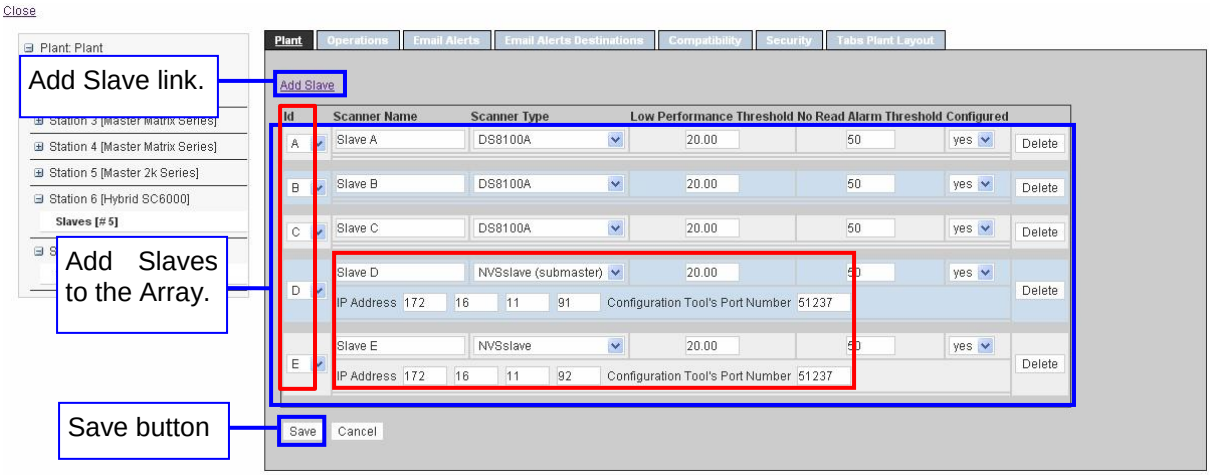
icon to add and configure the array(s).

2. Add an Array and complete the following fields then save:
   a. Array Type - select the **Hybrid SC6000** item
   b. Array Name - this is the user-defined Array Label which appears in the Navigation Tree Area
   c. IP Address of the Array Device, in this case SC6000 Hybrid Master (i.e. 172.16.11.90)
   d. Port of the Array Device on which the WebSentinel agent is waiting for connection requests
   e. Configuration Tool's Port Number - **51235** default for Genius™

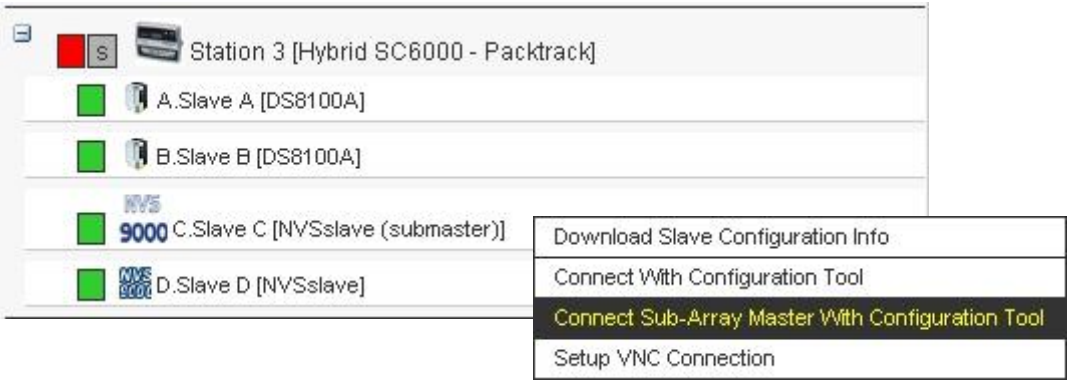


NOTE: Set other optional fields in the Settings window according to your application requirements. You must Save each individual Configuration Page.

3. Click the +box to open the Slave branch and click on the Slave [#0] label and Add the corresponding Slave Types and then save.
   a. Add all the scanner slave scanners in their defined position
   b. The first NVS slave (camera) must be defined as **submaster**. It should follow the last slave scanner and must be part of the same subnetwork. This camera has its own IP address, the Configuration Tool port number is **51237**.
   c. All other NVS slaves (cameras) should be contiguous (Id Field) and must be part of the same subnetwork. Each camera has its own IP address, the Configuration Tool port number is **51237**.

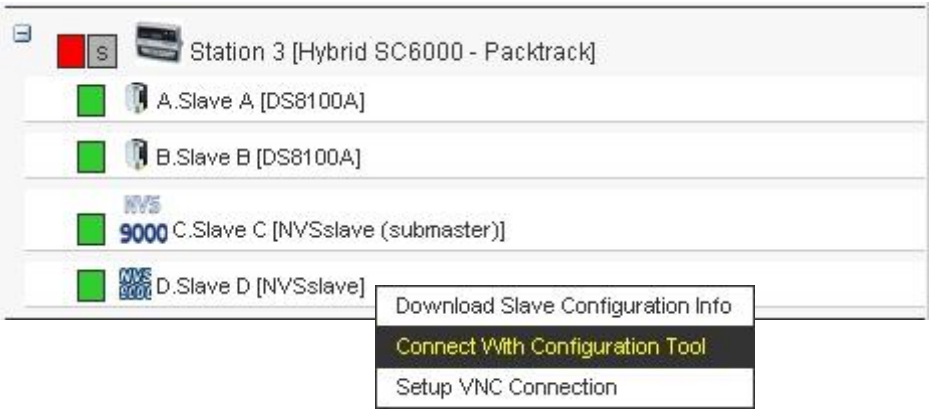


The NVS submaster (decoder) can be connected for configuration through direct individual selection in the Web Interface by right-clicking on the NVSslave (submaster) and selecting **Connect Sub-array Master With Configuration Tool** to start Genius.



By right-clicking on the NVSslave (submaster) and selecting **Connect With Configuration Tool**, the NVSslave (submaster) camera can be configured through Genius.

Note that the connection function will not be available from the list if the IP address and the socket port are not correctly configured for the device in question.
Any NVSslave (camera) can be connected for configuration through direct individual selection in the Web Interface by right-clicking on the NVSslave and selecting **Connect With Configuration Tool** to start Genius.



Note that the connection function will not be available from the list if the IP address and the socket port are not correctly configured for the device in question.

B MATRIX ARRAYS

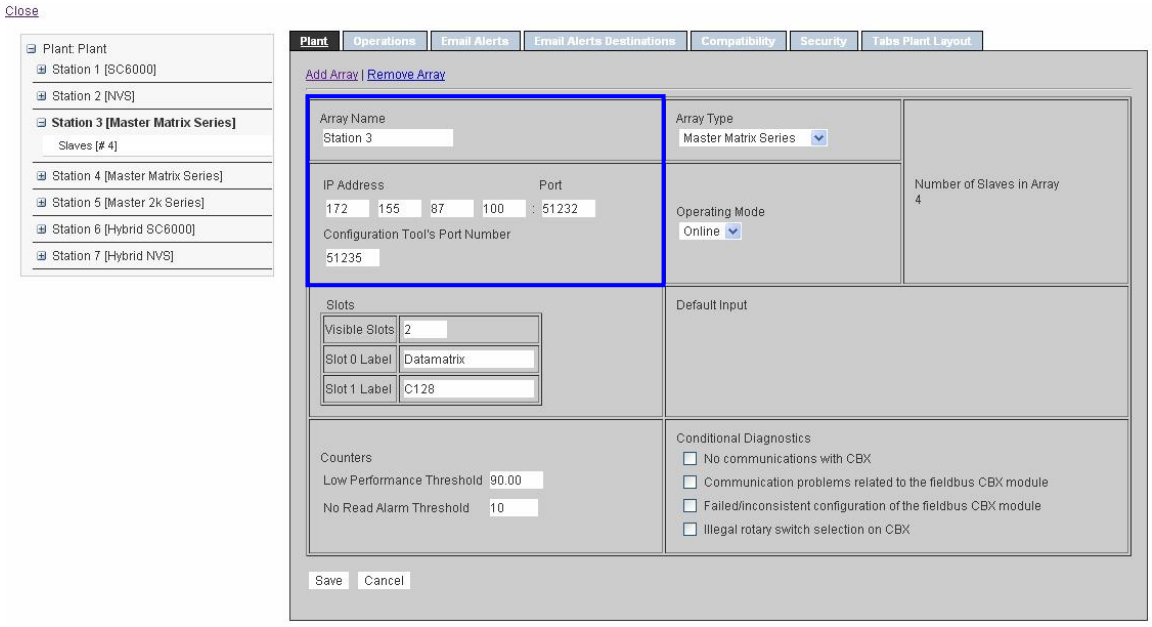
MATRIX ARRAY SETTINGS

Matrix Arrays **cannot** have an IP address ending in 0.

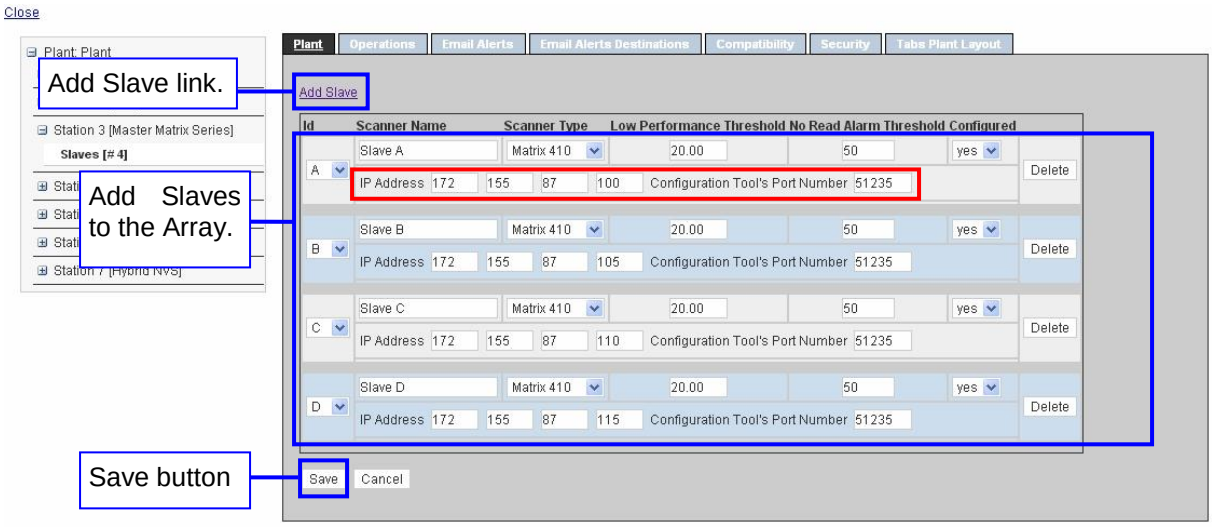
Matrix Series Arrays have the following default port settings:

WebSentinel IP address Port = 51232

Configuration Tool Port = 51235



The individual Slaves are configured using the Passthrough Bridge directly through their own Ethernet IP address. For Matrix readers, the first Slave in the Array must correspond to the Array Master.



C ARRAYS WITH DIMENSIONERS

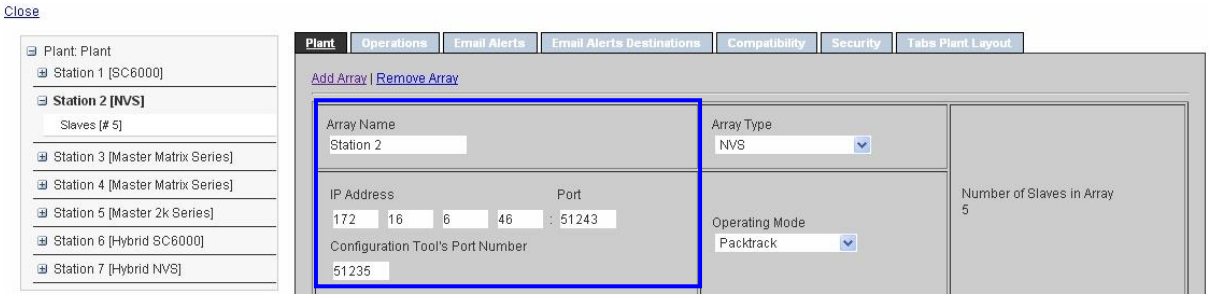
NVS Arrays (either standard or Hybrid) can have Cargoscan dimensioners as slaves.

In this example the NVS9000 Master has the following settings:

IP Address: 172.16.6.46

WebSentinel IP Address Port = 51243

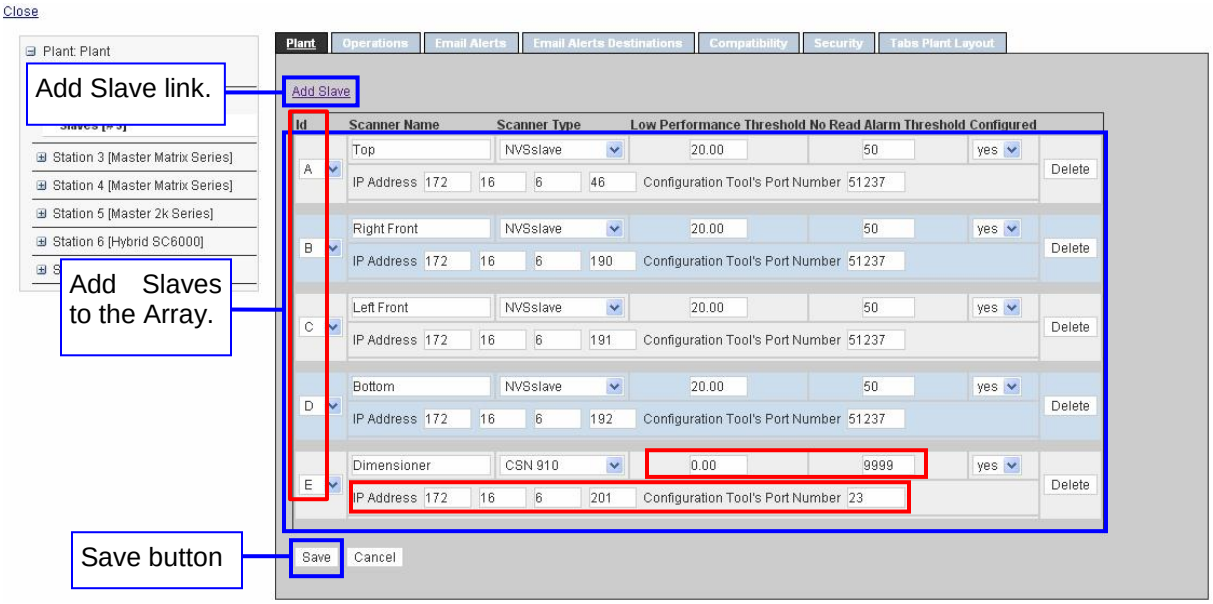
Configuration Tool Port = 51235 (Genius to Master Decoder)



The individual Slaves are configured using the Passthrough Bridge directly through their own Ethernet IP address.

The first NVS slave must correspond to the Array Master (same IP address). This camera has its own Configuration Tool port number **51237**.

All other NVS slaves (cameras) should be contiguous (Id field) and must be part of the same subnetwork. Each camera has its own IP address, the Configuration Tool port number is **51237**.



The dimensioner slave (in the example CSN910) should be contiguous to the NVS slaves and must be part of the same subnetwork. It has its own IP address, and its Configuration Tool port number is **23** (telnet port).

Low Performance Threshold and No Read Alarm Threshold are not significant for dimensioners and therefore are set as follows (these alarms will not be generated for the dimensioner):

Performance Threshold: **0.00**

No Read Alarm Threshold: **9999**

DATALOGIC

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