AS-W6500

BioTrax

Biometric Fingerprint Enrollment Software

Software Manual

May 2008

ROSSLARE
SECURITY PRODUCTS

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1. Introduction

Biotrax is the PC software for the AYC-W6500 Biometric Fingerprint Reader/Controller. Biotrax centralizes management of multiple readers in multiple sites to:

- enroll user fingerprints
- add cards and users
- download user data from the PC to the unit

Biotrax communicates with the AYC-W6500 units through the serial port, or through LAN and WAN Networks using the Rosslare optional MD-N32.

Biotrax's major features are:

- **Compatibility with the AYC-W6500** — The AYC-W6500 is a ***Convertible*** Reader/Controller hardware device designed for use in access control applications. As a Reader, it can be connected to any Controller (that matches with AYC-W6500 output formats). As a Controller, it can be connected to a PS-x5T/TU (x stands for 1 or 2) and functions as a secured stand alone controller. It features: PIN, Proximity card and dual fingerprint template per user, built-in Fingerprint Capacitive Sensor, and 1:1 fingerprint verification.
- **Fingerprint enrollment** — Using Biotrax a user can enroll his or her fingerprints to be recognized by the unit.
- **Configuration and user data download** — Data can be downloaded to the unit from the PC. Download parameters include (but are not limited to): general configurations, user information such as PIN codes and Proximity card IDs, and firmware updates.
- **Imports data from the AxTrax software** — In AxTrax AS-225/AS-525 Reader operation mode, data from the AxTrax AS-225/AS-525 database can be viewed on the Biotrax database. The data includes user information, cards, and PIN codes. Fingerprints enrolled on the Biotrax database while in the AxTrax Reader appear in the AxTrax database.

2. Install Biotrax

Biotrax comprises software and hardware components.

Hardware Requirements (minimum)

- Processor: Pentium 4 or better
- Memory: 256 MB (512 MB recommended)
- COM Port: free COM port
- LAN card: TCP/IP networking

Software Requirements (minimum)

- Windows XP with SP2/2003 server
- Microsoft.NET 2.0 (or higher) Framework

Note:
SQL Server and .NET are part of the installation package. They are not re-installed if they already exist on the computer.

2.1 Biotrax Software Installation

Note:
If you are using AxTrax software with Biotrax configured to work as AxTrax reader, be sure to install AxTrax software first. Its server is used as the server for both software systems.

To Install Biotrax:

1. On the CD provided, double-click the file `Biotrax.exe`.
   The Biotrax installation program opens.

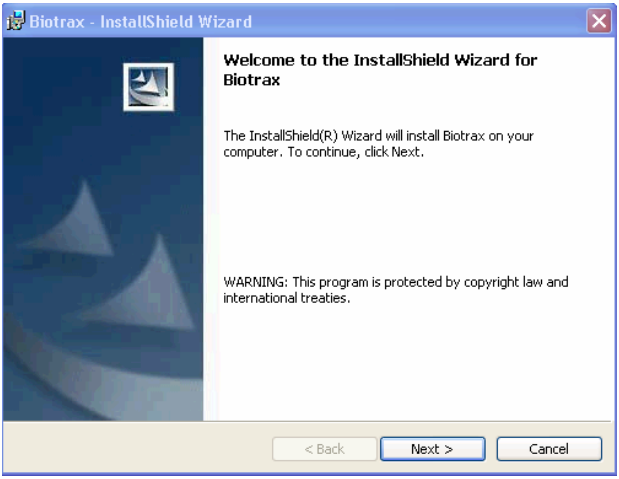


Figure 1 — Installation Welcome Window

2. Click **Next**.
   The **Database Server** window opens.

Note:
If your PC does not minimally have the Microsoft .NET Framework 2.0 installed, you are asked to install it now. Click **Yes** to install the Microsoft .NET Framework 2.0.

Note:
If your PC does not have the Microsoft SQL Server 2005, you are asked to install it now. Click **Yes** to install the Microsoft SQL Server 2005 (see Appendix A Microsoft .NET Framework on page 56).

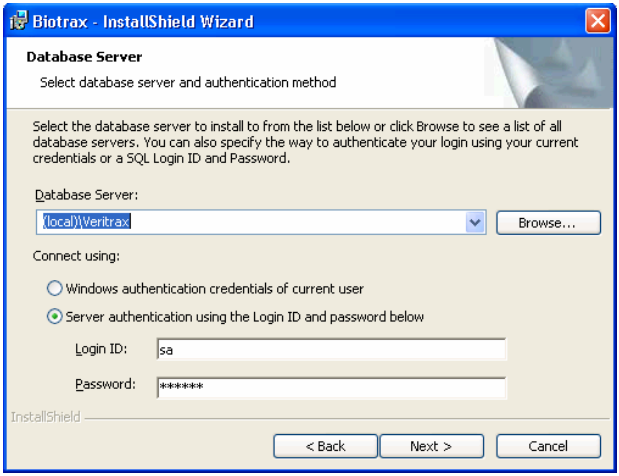


Figure 2 — Choose Destination Location Window

In the Destination Location window, select the database server and connect type.

3. Click **Next**.
   The **Setup Type** window opens.

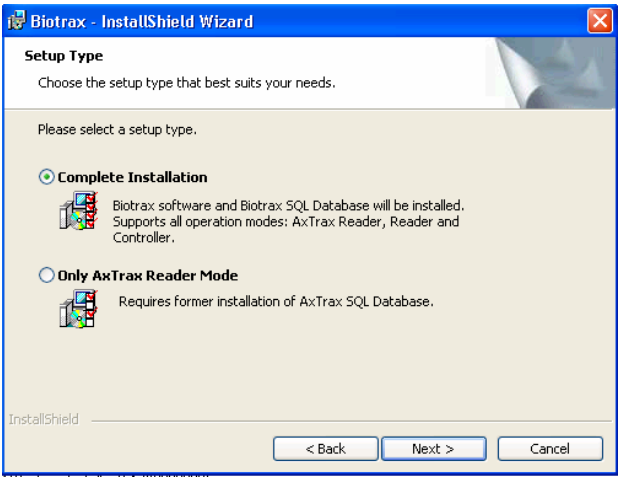


Figure 3 — Installation Setup Type Window

4. In the Setup Type window, select the Complete Installation to install a full-featured version that supports all operation modes (Reader, Controller or AxTrax Reader mode). This option also installs the SQL

Server database.
-or-

Select **Only AxTrax Reader Mode** if you only intend to use the system in AxTrax Reader mode or to only update the AxTrax Reader. In this mode SQL Server is not installed as the system uses the AxTrax database.

5. Click **Next**.
The **Choose Destination Location** window opens.

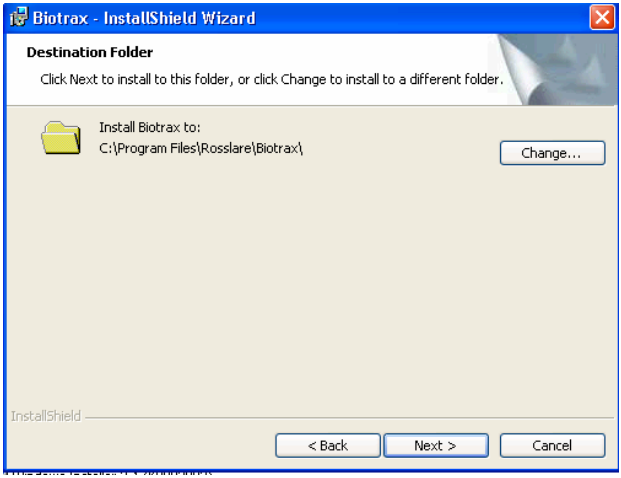


Figure 4 — Installation Destination Folder

6. Either install to the Biotrax folder or change the location by clicking **Change**. After selecting the desired installation folder, click **Next**.
The **Ready to Install** window opens.

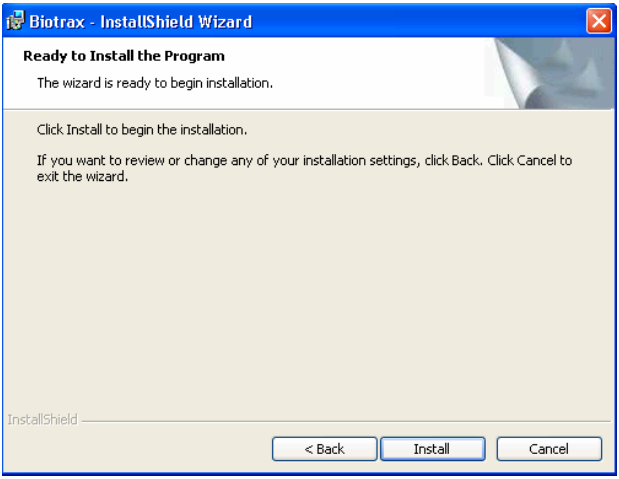


Figure 5 — Ready to Install Window

7. Verify the installation information and click **Install**.

   The **Installing Biotrax** window opens.

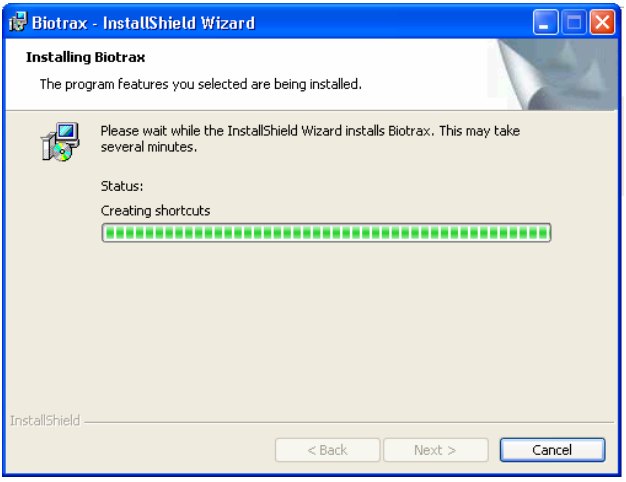


Figure 6 — Installing Biotrax Window

Upon completion the **Biotrax InstallShield** window opens.

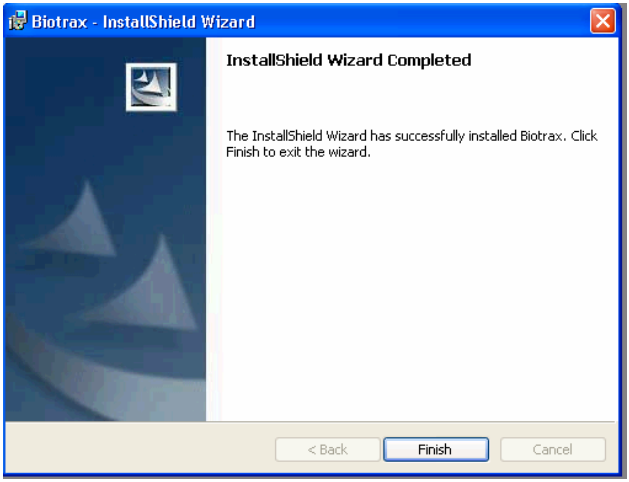


Figure 7 — Setup Complete Window

8. Click **Finish** to complete the installation. Biotrax is successfully installed.

3. Getting Started

The AYC-W6500 is a reader hardware device designed for use in access control applications. The reader is based on a fingerprint biometric sensor plus proximity card reader plus keypad reader. Every user must enter his card or his PIN code (sometimes both), and then place his previously enrolled finger on the sensor.

- **Reader Mode**: The AYC-W6500 compares enrolled fingerprints to scanned fingerprints. If the comparison is valid, the User card ID or PIN code is transmitted to host access control panel. When the user is valid and known to the host access control panel access is granted. In this mode the AYC-W6500 can be connected with most access control panels on the market.
- **Controller Mode**: The AYC-W6500 can operate as the host access control unit. In this case it activates a relay output due to a valid user code and fingerprint. In this operation mode the AYC-W6500 must be connected to a special Rosslare Secured Power Supply unit. For more details refer to the AYC-W6500 Hardware Installation Manual.
- **AxTrax Reader**: In this mode Biotrax is synchronized with the AxTrax software database and downloads it into the AYC-W6500. Most Users information comes from the AxTrax database, but some basic setup is performed in Biotrax. This mode is intended to easily integrate AYC-W6500 with the AxTrax access control system. In this mode the AYC-W6500 must be connected to Rosslare access control panels working with AxTrax.

Note:

AxTrax Reader operation mode is now supported by the AxTrax PC application. In the future it may be supported by other Rosslare access control PC applications.

The three modes, Reader, Controller, and AxTrax Reader, govern the display and operation of the Biotrax system.

Before using the full features of Biotrax it is important to understand the general operation. Many concepts in this chapter introduce simple system operations. Further information about specific features can be found in the subsequent chapters of this book.

3.1 Initiate Biotrax

- Run Biotrax as you would any other MS Windows application. Double-click the Biotrax desktop icon or select Biotrax from the Start Menu Program list.

To run Biotrax:

1. Double-click the Biotrax desktop icon. Alternately click the start menu icon. Select **Programs→Rosslare→Biotrax**.

Figure 8 — Log on Biotrax Window

2. The **Login name** pull-down menu lists the default login names: administrator, engineer, and security. For now, select **administrator**.

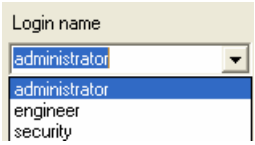


Figure 9 — Default Users

3. Enter **admin** in the **Enter password** field.
4. Click **OK**. The Biotrax main view is displayed.

Note:

- The username and password are case-sensitive.
- The default password is **admin**. The password can be changed under Operators (to the left of the screen in the Biotrax Tree).

3.2 Biotrax Main View

The Biotrax main window is the central place for accessing all the available features and options. The first time you log into Biotrax the default system operation configuration is the reader.

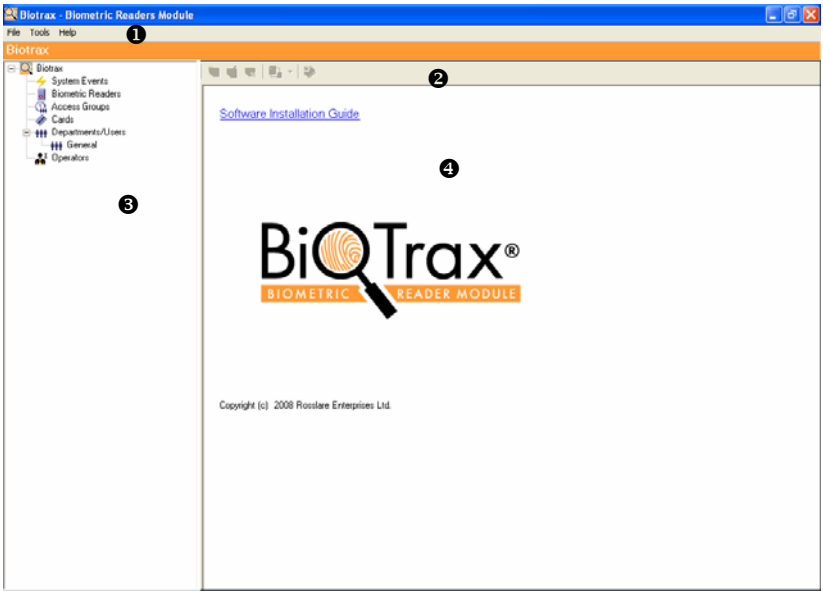


Figure 10 — Biotrax Main Window

The viewing area has four major groups:

- ❶ **Menu Bar**
- ❷ **Toolbar**
- ❸ **Biotrax Tree**
- ❹ **Properties Area**

3.3 Menu Bar

Use the Menu bar to access the main options: File, Tools, and Help.

File menu

Logon	Log on to the Biotrax system. When you log on as a new user, the previous user is logged out.
SQL Server Logon	Log on to the SQL database server.
Exit	Exit the Biotrax system.

Tools menu

Database	Open the Database window to backup and restore the Biotrax database.
Settings	Set operation mode and the PIN code length.
Import fingers	Import fingerprints from an older Biotrax database based on MS-Access.
Languages	Set the display language.

Help menu

About	Software version information.

3.4 Tool Bar

The Tool Bar provides quick access to the most frequent operations:

Icon	Name	Description
	New	Create a new element of the selected type.
	Edit	Edit the selected element.
	Delete	Delete the selected item.
	Download **Download All**	Download to one reader or to all readers using the pull-down menu.
	Update Firmware	Easily update the reader/controller firmware without effecting operation.

3.5 Biotrax Tree

The Biotrax Tree view allows users to configure and monitor Biometric readers and controllers, access groups, proximity cards, departments and users in the system, and user allowed operations.

Element Name		Description
	System Events	Displays the software operator activities log file.
	Biometric Readers/ Controllers	Displays all readers and controllers in the system. When in AxTrax Reader mode, this displays the AxTrax readers.
	Access Groups	Displays all access groups.
	Cards	Displays all proximity cards known to the system.
	Departments/ Users	Displays all departments and associated users.
	Operators	Displays all operator types.

3.6 Properties Area

When an element is selected in the tree, the contents are shown in the main display area and the toolbar icons change to suit the selected element.

This also shows System Events log file details.

3.7 Management Tasks

The first configuration parameter you must set in the Operation Mode, whether Biotrax is run in Reader Mode, Controller Mode, or AxTrax Reader Mode. All other tasks depend on the Operation Mode.

Some tasks are related, with functionality crossing element types. For example, a proximity card can be configured and learned by Biotrax using the Card task, . A proximity card can also be configured and learned when entering a new user from the Departments/Users task .

Manual Organization

- Chapter 4 System Settings, page 17.
  Change the password, the Operation Mode, and Pin code length.

- Chapter 5 Device Properties, page 21.
  Define the properties for a reader, controller, or view the AxTrax reader.
- Chapter 6 Access Groups, page 33.
  Manage system access by associating users with device groups.
- Chapter 7 Proximity Cards, page 35.
  Configure and enroll proximity cards for Reader and Controller Modes.
- Chapter 8 Departments and Users, page 37.
  Add and delete users from the system. Define departments. Associate users with departments. This is limited to Reader and Controller Modes.
- Chapter 9 Operators, page 44.
  Add, modify, and delete operators from the system. Define permissions. This is limited to Reader and Controller Modes.
- Chapter 10 Download to the Unit, page 46.
  Download new configuration information to a single reader or multiple readers. Update a single device with only the changed information or update the device with all configuration information.
- Chapter 11 Database Management, page 48.
  Manage database backup and restore operations.
- Chapter 12 Firmware Update, page 51.
  Update the device with the most current firmware release.
- Chapter 13 Import Fingerprints, page 52.
  Import fingerprints from an old Biotrax database based on MS-Access.
- Chapter 14 System Events, page 54.
  Display software operator activities.

Note:
When you open Biotrax, the SQL loads automatically. You are not required to type in a user name and password for it to work, although you have that option in the menu bar File.

Note:
To refresh any page, toggle between tree menu items.

4. System Settings

4.1 Settings Tool

Two system settings must be configured the first time the system is initiated.

- **Operation Mode** — whether the unit is a Reader, Controller, or a AxTrax Reader
- **Pin code length** — the length of the PIN code available for users (the options are 4, 5 or 6 digits or 4-8 digits)

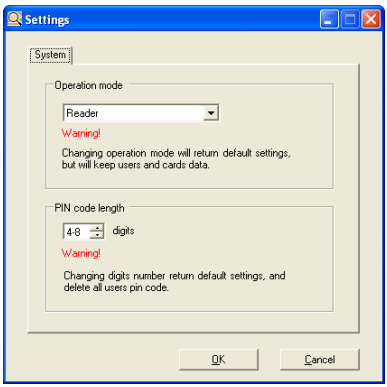


Figure 11 — Set Operation Mode/ PIN Length

Operation Mode

To Set the Operation Mode:

1. Select **Tools→Settings** from the Menu bar.
2. Choose Reader, Controller, or AxTrax Reader from the Operation mode pull-down menu.

   Reader: The device is a reader. It sends valid User ID data (card or PIN) to a host access panel and draws its power from the host access panel.

   Controller: The device is a controller. It acts as a stand-alone access controller with its own power supply. It activates a relay output (located on the power supply unit) due to a valid user code and fingerprint.

   AxTrax Reader: Biotrax is running using the AxTrax database section of Users and readers information. The elements displayed are AxTrax elements, configured through AxTrax. It is not possible to configure readers, access

groups, cards, or users from Biotrax while running the AxTrax database.

3. Click **OK**. You are asked "Are you sure you want to change devices?"
4. Click **Yes** to continue. Click **No** to cancel the device change.
   - **Reader to Controller**: In Biotrax Tree view the Biometric Readers becomes Biometers Controllers. Any devices added to the system at this time default to controller.
   - **Controller to Reader**: In Biotrax Tree view the Biometric Controllers becomes Biometers Readers. Any devices added to the system at this time default to reader.
   - **Controller or Reader to AxTrax Reader**: The SQL database logon window is displayed.

Figure 12 — SQL Logon

5. Enter the login name and the password. Click **OK**. Biotrax now displays the selected database.

PIN Code Length

The length of the PIN code can range from four to eight digits. More digits in a PIN code create a higher level of security. This feature is only valid for the Reader and Controller modes. The digits are grayed out when in the AxTrax Reader mode.

Note:
This option modifies some configurations and User information. It is intended for initial system setup only. Avoid using it after system is configured.

To set the PIN code length:

1. Select **Tools→Settings** from the Menu bar.
2. Select the number of digits for a PIN code.
3. Click **OK**.

4.2 Languages

Biotrax can be displayed different languages.

To change the language setting:

1. Select **Tools→Languages** from the Main toolbar.

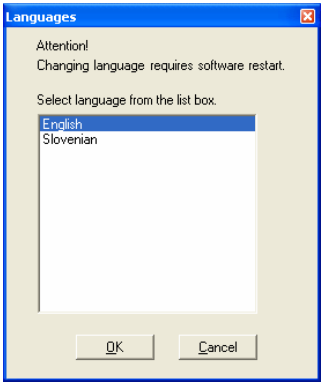


Figure 13 — Language Settings

2. Click the desired new language and then click OK.
3. Exit Biotrax. To see the changed language display, reenter Biotrax.

4.3 Operator Password Configuration

Biotrax has three predefined operator types: administrator, engineer, and security. Each operator type has a preset password. These passwords must be reconfigured with unique passwords.

Operator	password
administrator	**admin**
engineer	**engin**
security	**secur**

To change the password:

1. From the **Biotrax tree**, select **Operators**. The list of the default **Operators** opens in the **Properties Area**:

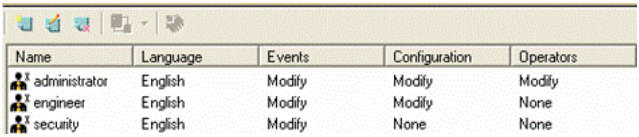


Figure 14 — Operators view

2. Choose an operator and click **Edit** or double-click on the operator name.

Figure 15 — Password Window

3. In the **New password** box, enter the new password.
4. In the **Confirm password** box, enter the new password.
5. Click **OK**.

For information about the other fields refer to Chapter 9 Operators, on page 44.

5. Device Properties

Biotrax supports three device configurations as explained in Chapter 3 Getting Started on page 11. Each device has similar properties, and each has unique properties.

The properties in common are described as the general case. When a device has additional properties, or is restricted, the occurrence in noted in the text.

Note:
Every time a parameter is changed in the Biotrax configuration, it must be downloaded to the device before it takes effect.

5.1 Biometric Tree View

The Biotrax Tree displays the unit's operation mode as either Biometric Reader or Controller. You can change the unit's properties and test the connection between Biotrax and the unit.

When the Biotrax is in Reader mode or in AxTrax Reader mode, Biometric Readers appears in the Biotrax Tree.

When the Biotrax is in Controller mode, Biometric Controllers appears in the Biotrax Tree.

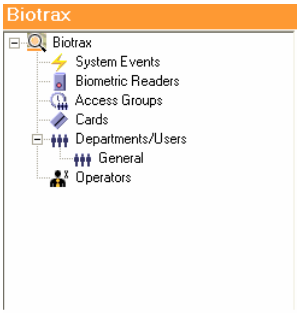


Figure 16 — Biotrax Tree Reader View

5.2 Biometric Device Properties Display

The devices, readers and controllers, are displayed in the Properties Display view.

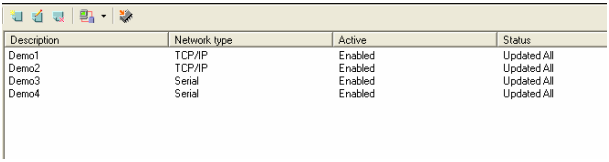


Figure 17 — Biometric Device List

Field	Description
Description	This is the device name.
Network Type	The configured network type: serial or TCP/IP.
Active	The network is enabled or disabled
Status	Updated All – all parameters must be updated (see Chapter 10 Download to the Unit, on page 46 to download parameters). No status entry – the device has the current parameters already downloaded.

To Create a Reader or Controller:

1. From the **Biotrax Tree**, select **Biometric Readers/Controllers**.

Note:

- If you switch from Reader to Controller, your descriptions in the Properties Area are still Reader 1, etc. instead of Controller 1.
- If you want different names when you switch modes you must manually change the names when you are in the Controller mode.
- To avoid the name problem, name the reader/controller appropriately during configuration.

2. Click **New** . The **Reader/Controller properties** window opens. There are four tabs shown at the top:
   - **Network** — Configure the Network type that the Reader/Controller is using.
   - **General** — Configure the Programming Code, Secure mode code, Lockout Condition, and Time.
   - **Reader** — Choose the Reader/Controller type, Keypad type, and Facility code.
   - **Test** — Test the Operation mode, Access mode, Firmware version, Bootloader version, and Sensory version.

5.3 Network Tab

The view opens to the Network tab.

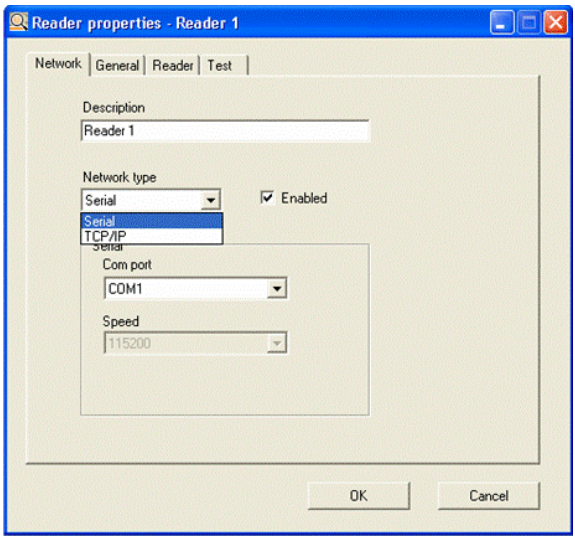


Figure 18 — Reader Properties Network Tab

1. Select the **Network type**: **Serial** or **TCP/IP** (see TCP/IP vs Serial, on page 65 for a discussion of the two communications parameters).
2. When the Network type is Serial, select the Com Port. If the selected Network type TCP/IP refer to the next section for set up details.
3. **Enable** or disable the Network with the checkbox.

To Set-up your Network to TCP/IP:

If you choose to set your Network type to TCP/IP, you can either set it up with a Remote (WAN) connection or to MD-N32 (LAN network).

Even if working in WAN, the MD-N32 must be first configured locally on LAN network.

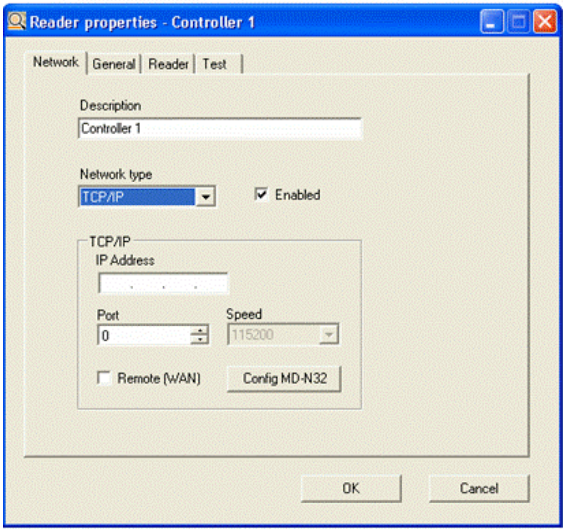


Figure 19 — Reader Properties Window TCP/IP View

1. Connect the MD-N32 on your local network.
2. On the **Network type** drop-down menu, select **TCP/IP**. A TCP/IP section appears at the bottom of the screen.
3. Select **Config MD-N32**. The MD-N32 Config window is displayed.

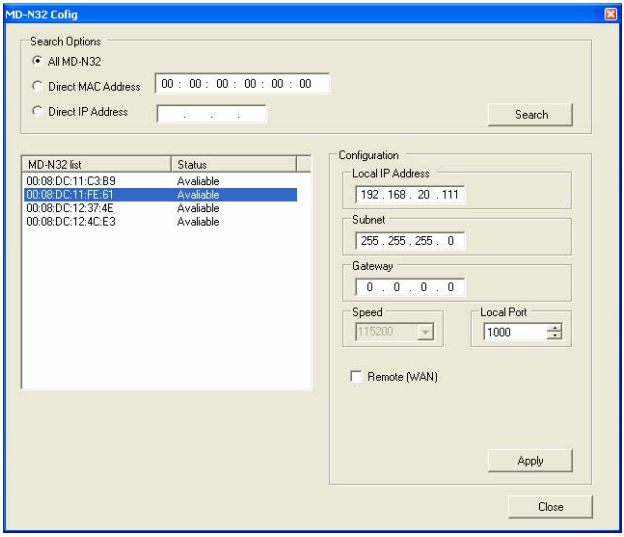


Figure 20 — MD-N32 Config Window

4. In the Search Options section, select the Search type.

   All MD-N32: Search for all MD-N32 devices.

   Direct Mac Address: Search for the device specified by the given Mac address.

   Direct IP Address: Search for the device specified by the given IP address.

5. Click **Search**. A list of all of the possible MD-N32s appears in the MD-N32 list.

6. From the MD-N32 list select the desired MD-N32 unit to connect with the AYC-W6500 being configured. The Network details section is displayed.

   You can identify the MD-N32 unit according the MAC address in MD-N32 list. It is identical to the MAC address printed on the bottom of each MD-N32 unit.

7. Fill in the Network details: Local IP address, Subnet mask, gateway address, and Local Port address.

8. If you intend to connect through WAN, select the **Remote (WAN)** checkbox. Enter the Server Port and Server IP address.

9. Click **Apply**.

10. Power-cycle the MD-N32 unit.

11. Click **Close** to close the MD-N32 Config window.

12. Make sure that MD-N32 is connected to the AYC-W6500 using serial communication cable (see the AYC-W6500 hardware manual for details).

13. If working over a WAN, make sure to re-assemble the MD-N32 and AYC-W6500 at the remote location.

14. Click **TEST** tab. Press the test button to verify communication between Biotrax and AYC-W6500.

Warning:

Consult your system administrator for proper Network parameters values for each MD-N32 before you perform the MD-N32 configuration.

5.4 General Tab

Reader Mode and Controller Mode have parameters in common. The Controller Mode has addition features that are discussed after the common features.

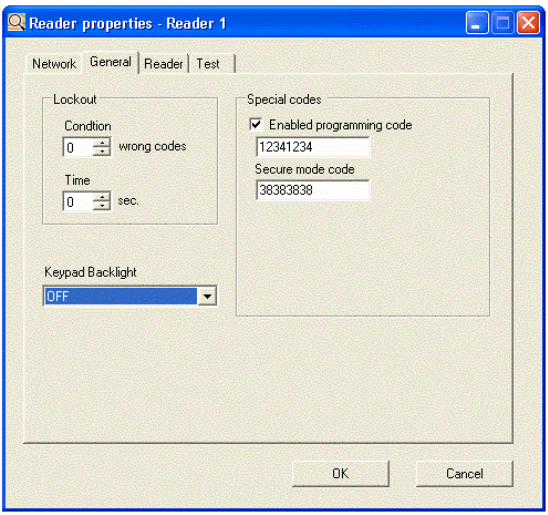


Figure 21 — Properties Window General Tab

Special Codes

A Special Code may be used to force the unit into a specific mode of operation.

Enabled programming codes — When selected, the user can enter this code at the device to force the unit into local programming mode.

Secure mode code — This code is used on the reader to switch between Normal mode and Secure mode.

- **Normal Mode**: only Card+finger or PIN+finger is required to gain entry.
- **Secure Mode**: Card+PIN+finger are required to gain access.

Lockout

Lockout — Set how many times a user can enter wrong programming code before being locked out.

Time — The length of time that the AYC-W6500 is locked out (keypad and Proximity reader are disabled).

During Lockout condition the readers beeps every few seconds

Keypad Backlight

Select your desired backlight option from the Keypad Backlight dropdown menu.

ON Backlight is always on.

OFF Backlight is always off.

ON-OFF Backlight is on when first key is touched. It stays on for a few seconds and then goes off.

Controller General Tab Additions

In addition to the Reader parameters, the Controller has two additional parameters: Test Code 1 and Auxiliary code.

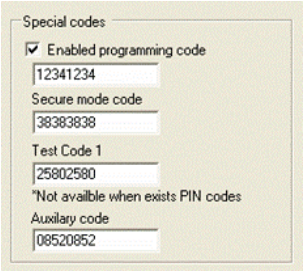


Figure 22 — Controller General Tab

Test Code 1 Used to access the Controller before any users and PIN codes are defined.

Once a user and a PIN code are defined in the system, this code is erased and the number 2580 cannot be used again as the test code.

Auxiliary Code This checks that the unit is working. The code does not have to be deleted like Test code 1, as long as it is not connected to the door.

	4digits	5digits	6digits	4-8digits
Defaults Codes:				
Programming Code	1234	12341	123412	12341234
Secure Code	3838	38383	383838	38383838
Test Code1	2580	25802	258025	25802580
Auxiliary Code	0852	08520	085208	08520852

5.5 Reader Tab

This tab is active only in Reader Mode. The keypad type sets the method used for transmitting keystrokes from the Reader to the host access control panel. The control of the reader can also be set through the auxiliary mode.

Note:
Refer to the hardware installation manual for more details on keypad format.

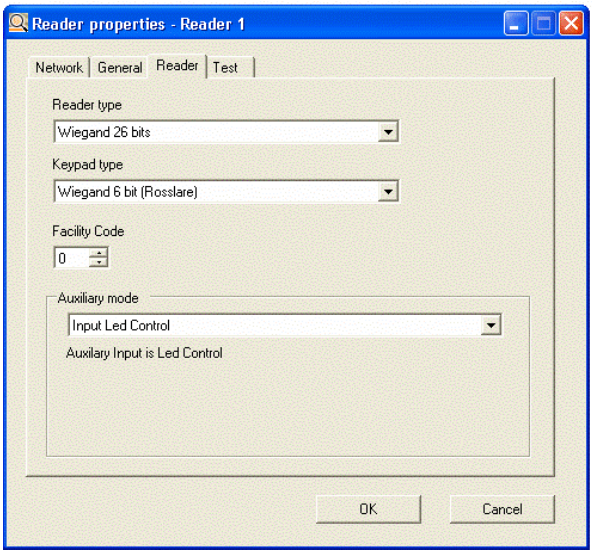


Figure 23 — Reader Properties Reader Tab

To Change the Reader Keypad Type and Auxiliary Mode:

1. From the Biotrax Tree, select **Biometric Readers**.
2. Click **Edit** . Alternatively double-click the reader description in the Properties Area. The Reader Properties Window is displayed.
3. Click the Reader tab. The Reader tab opens.
4. Choose the Reader type – **Wiegand 26 bits** or **Clock & Data**.
5. Choose the Keypad type – **Wiegand 6 bit** (Rosslare), **Wiegand 6 bit**, or **Wiegand 8 bit**.
6. Enter the **Facility Code** (depends on keypad type).
7. Select the Auxiliary mode: control the LED, buzzer, or toggle. Click **OK**.

- **Input Led Control** — Auxiliary Input functions as an LED Control. It toggles the LED color between red and green.
- **Input Buzzer Control** — Auxiliary Input functions as a Buzzer Control. It toggles the buzzer operation on and off.

5.6 Controller Tab

Set the Controller's properties such as: lock output, auxiliary input, timers, and a chime on valid entry.

To Change the Controller Properties:

1. From the Biotrax Tree, select **Biometric Controllers**.
2. Click **Edit** . Alternatively, double-click the Controller in the Properties Area.
3. Select the Controller tab.

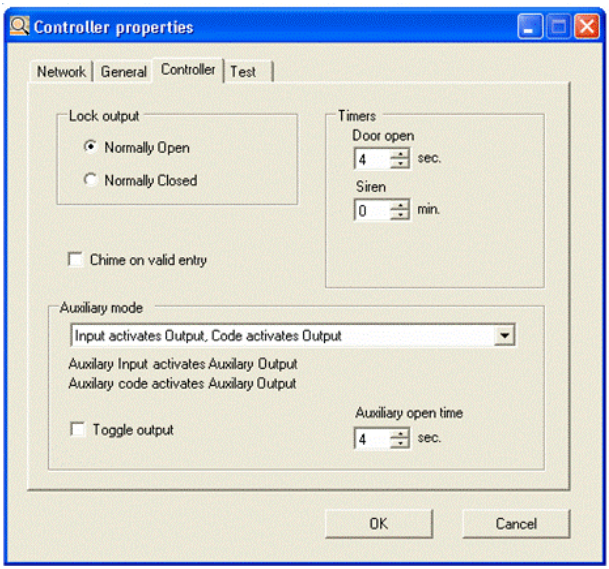


Figure 24 — Device Properties Controller Tab

4. In the **Lock output** section, select **Normally Open** or **Normally Closed**.
5. In the **Timers** section, set the time for **Door open** and **Siren**.
6. Choose whether to enable the **Chime on** valid entry.
7. Auxiliary mode has many choices:
   - Input activates Output, Code activates Output
     Auxiliary Output is activated by either shorting auxiliary input to

Ground, by the **Auxiliary Code** or by User code if this User has assignment to activate Auxiliary Output.

- Input toggles mode, Code activates Output
  Auxiliary Output is activated by **Auxiliary Code** or by the User code if this User has assignment to activate Auxiliary Output.
  Auxiliary Input toggles the operation mode between Normal mode (card or PIN + finger) and Secure mode (card + PIN + finger).
- Input toggles mode, * activates Output
  Auxiliary Output is activated by pressing the ***** key on the keypad.
  Auxiliary Input toggles between operation mode between Normal mode (card or PIN + finger) and Secure mode (card + PIN + finger).
- Input toggles mode, Tamper condition
  Auxiliary Output is activated by Tamper condition detected by the tamper sensor at the back of AYC-W6500.
  Auxiliary Input toggles between operation mode between Normal mode (card or PIN + finger) and Secure mode (card + PIN + finger).
- Input toggles mode, Direct Shunt
  Auxiliary Output is closed by any valid User Code and fingerprint. This mode is used for bypassing the intruder alarm Zone input when the door monitor input is not available.
  Auxiliary Input toggles the operation mode between Normal mode (card or PIN + finger) and Secure mode (card + PIN + finger).
- Input door monitor, Shunt condition
  Auxiliary Output follows auxiliary input condition unless valid a User code is entered. During this time it remains closed for the programmed delay duration. This mode is useful for shunting an alarm system input on valid access and fingerprint, and triggering an alarm if no valid access occurs.
  Auxiliary Input must be connected to the door monitor switch to detect a door opening duration.
- Input door monitor, Forced condition
  Auxiliary Output is activated by a door forced open condition, in which a door is forced open when no valid door open condition occurs(usually User code=finger). *Auxiliary Input* is has to be connected to the door monitor switch in order to detect a forced door open condition.
- Input door monitor, Ajar condition
  Auxiliary Output is activated by a door ajar condition, in which a door is left open for longer than a pre-programmed duration.

Auxiliary Input has to be connected to the door monitor switch, in order to detect a door opening duration.

- Input Led Control, Code activates Output
  Auxiliary Output is activated by an **Auxiliary Code** or by User code if this User has assignment to activate Auxiliary Output. *Auxiliary Input* functions as LED Control, it toggles the LED color between red and green.
- Input buzzer Control, Code activates Output
  Auxiliary Output is activated by an **Auxiliary Code** or by User code if this User has assignment to activate auxiliary output. *Auxiliary Input* functions as Buzzer Control. It can toggle the buzzer operation on and off.

Note:
Refer to the AYC-W6500 manual for an explanation of each of the options while using the Auxiliary mode.

8. Select whether to Toggle the output with the checkbox.
9. Set the time for the Auxiliary open time parameters.
10. Click **OK**.

5.7 AxTrax Reader Tab

The Biotrax Tree displays the unit operation mode as either Reader or Controller. In AxTrax Reader mode a physical difference is not seen between the AxTrax Reader and Reader in the tree. Both are selected through the **Biometric Readers**.

There are only a few functions you can view or change while using the AxTrax Reader mode:

- View System Events
- Update some General Reader Properties
- Update Firmware
- Add fingerprints

Users created in the AxTrax database can be seen in the Biotrax database. Fingerprints can be enrolled for each User from Biotrax. This is not possible in AxTrax. In addition, only readers designated in the AxTrax database as AYC-W6500 reader appear in Biotrax.

Note:
In AxTrax Reader operation mode it is still possible to change and download general reader settings which are not directly related to the User and cards.

Refer to section 5.6 Controller Tab, on page 29 for the specific parameters.

5.8 Test Tab

You can test the connection between Biotrax and the Reader unit.

To Test the Connection:

1. From the Biotrax Tree, select Biometric Readers/Controllers.
2. Click **Edit** . Alternatively double-click the reader description in the Properties Area. The Reader properties window opens.
3. Click the Test Tab.
4. Click **Test** to being testing the connection.

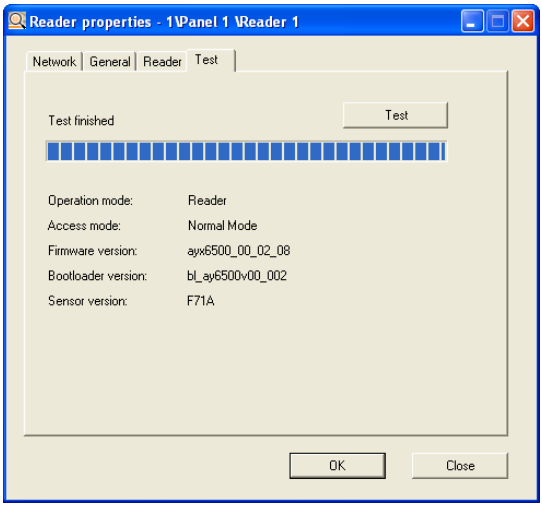


Figure 25 — Sample Reader Test

The Operation mode, Access mode, Firmware version, Boot loader version, and Sensor version are updated by the Reader unit.

5. Click **OK**.

6. Access Groups

Access Groups allow you to manage who has access to every door that is under a reader or controller. This is a useful function if you have many controllers or readers.

Note:
In AxTrax Reader mode, Access Group settings can not be changed by Biotrax. They can only be changed in AxTrax.

To Manage Access Groups:

1. On the **Biotrax Tree**, select **Access Groups**.
2. Right-click **Access Groups**, or on the **Toolbar**, click **New**.

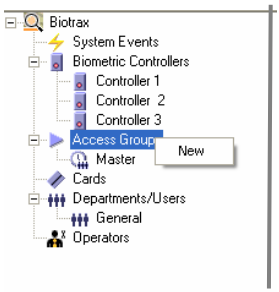


Figure 26 — New Access Groups Menu

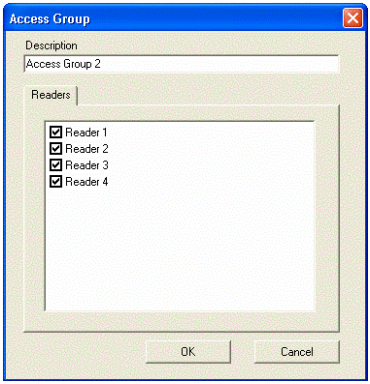


Figure 27 — Access Groups Window

3. Under **Description**, the name Access Group 2 appears by default. Keep this name or type in a new name.
4. Place a check next to each controller or reader you want managed by the Access Group you have just created.
5. Click **OK**.

Note:

You cannot delete or change the default **Master Access Group**. Master must have access to all the readers and controllers.

7. Proximity Cards

Cards are added and managed in Biotrax in two ways:

- Through Card Management
- Through User Management

A single card can be added to Biotrax either as a result of adding a user and his associated card or by adding an individual card, before it is assigned to a user.

Batches of cards may also be added to the system and assigned to users at a later time.

Note:
Card management is only applicable to Reader and Controller modes, not the AxTrax Reader mode.

7.1 Add New Card

1. In the **Biotrax Tree**, click **Cards**.
2. From the **Toolbar**, click New .

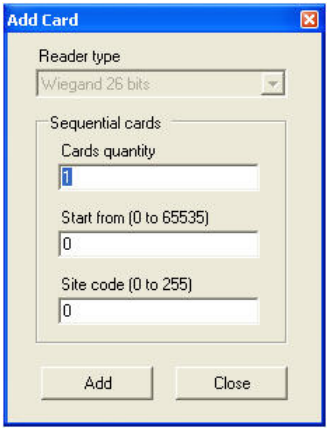


Figure 28 — Add Card Window

3. Under **Cards quantity**, type the amount of cards to add.
4. Under **Start from** type the first card number.
5. Under **Site code**, type the site code for this set of cards.
6. Click **Add**. The cards are added to the system.

7. Click **Close** to return the Main Window.

   The new cards are listed in the Properties Area.

Note:

You can delete multiple cards, but cannot do so if they are assigned to a user already.

7.2 Delete a Card

You can remove a card from the system.

To Delete a Card:

1. In the **Biotrax Tree**, select **Cards**.

   The cards list is displayed in the **Properties Area**.

2. In the **Properties Area**, select the card to delete.

3. From the **Toolbar**, click **Delete** .

   The card is deleted.

8. Departments and Users

Users are individuals in specific Departments. Both users and departments can be configured in Reader Mode and Controller Mode. When Biotrax is in AxTrax Reader mode only departments can be configured.

Note:
User management is only applicable to Reader and Controller modes, not the AxTrax Reader mode.

8.1 Add a Department

To manage users, you can organize them under different departments.

1. In the **Biotrax Tree**, right-click **Departments/Users** or in the **Toolbar**, you can click **New** .

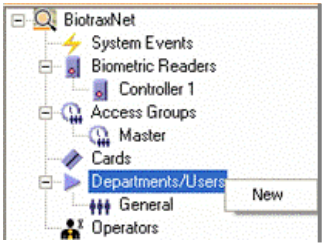


Figure 29 — New Department Menu

2. From the **Departments/Users** menu, click **New**.

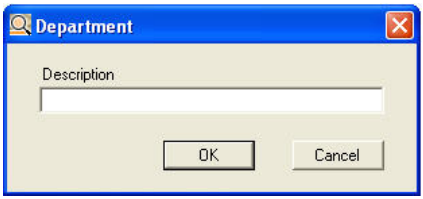


Figure 30 — Department Window

3. Under **Description**, enter the name of the new department.
4. Click **OK**.

   The department is added to the **Biotrax Tree**.

8.2 Add a User

A User is an individual working within a department.

1. In the **Biotrax Tree**, select the department where you want to add the new user.
2. From the **Toolbar**, click **New** .

   The user is automatically assigned a user number. The user number cannot be changed.

User General Tab

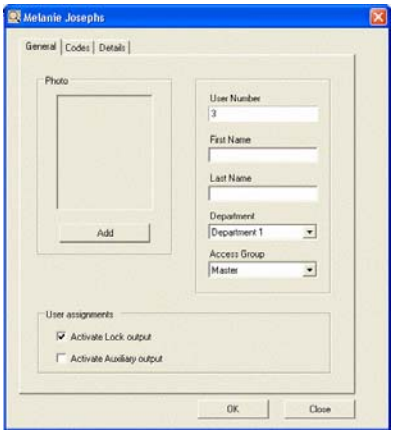


Figure 31 — User Properties Window General Tab

Note:

The **User assignments** section in the above picture is only found when you are in **Controller mode**.

1. Under **Photo**, click **Add** to add a photo for the user.
2. Type a **First Name** and **Last Name** for the user.
3. Under **Department**, you can change the department for the user.
4. Under **Access Group**, you can change the access group for the user.
5. In the **User assignments** section, you can choose to **Activate Lock output** and **Activate Auxiliary output** by checking each option.
6. Click **OK**.

User Codes Tab

Once you have added a user, you can add a PIN code and cards to that user. A user can have more than one card associated. You can choose to

make certain cards active or inactive. You can also enroll the user's fingerprints. Each user can enroll two different fingers.

To Add a PIN Code, Cards, and Fingerprints to a User:

1. Choose the department you put the user in. In the **Properties Area**, select the user name and click **Edit** . Alternatively, in the **Properties Area**, double-click the user name. The **User properties** window opens.
2. Click the **Codes** tab. The Codes tab opens.

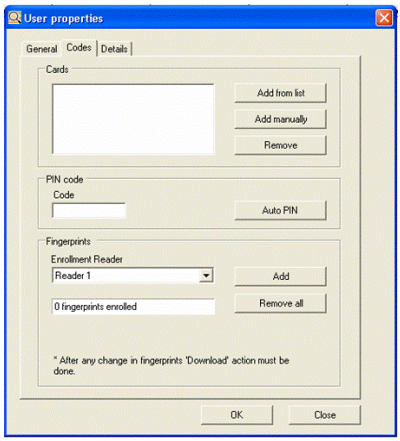


Figure 32 — User Properties Window Codes

Under **Cards**, you can add cards from the list of cards already in the system or you can add a card manually.

3. To add a card from the list, click **Add from list**.

   The **Card List** window opens.

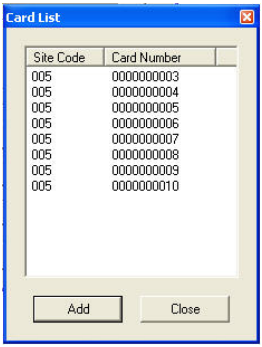


Figure 33 — Card List Window

4. Select the cards to add. You can select more than one card.

Note:
Adding more than one card per User reduces the maximum Users capacity to less than 500 Users.

5. Click **Add**.

   The selected cards are added to the user and you are returned to the **User properties - Codes** window.

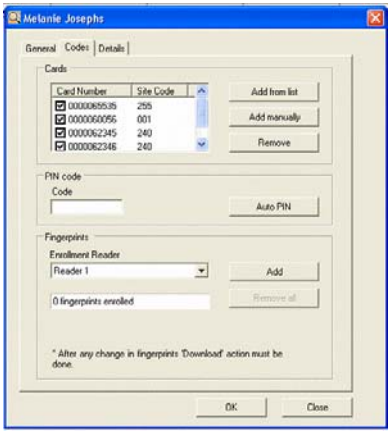


Figure 34 — User Codes with Cards Added

6. Under **Cards**, you can uncheck a card to make it inactive.
7. Under **PIN code**, type the code. Or you can simply click the **Auto PIN**, which will choose a PIN code for you.
8. Under **Fingerprints**, click **Add**.

   You will see the message *Place your finger*.

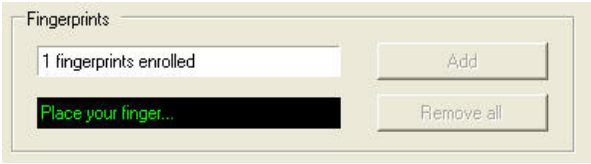


Figure 35 — Enroll Fingerprints

9. Place the user's finger on the scanner. The finger is scanned and you are asked to place your finger again.
10. Place the user's finger on the scanner for a second time.
    The finger is scanned. The message *1 fingerprint enrolled* is displayed. You can optionally add a second finger.

11. Repeat steps 8 through 10 to add a second fingerprint.

Note:
Up to 500 Users can be enrolled with one finger per User.
Up to 455 Users can be enrolled with two fingers per User.

12. To remove the fingerprints, click **Remove all.**

Note:
After any change in settings, including fingerprints, the 'Download' action must be executed.

13. Select the Download mode: Download or Download All.

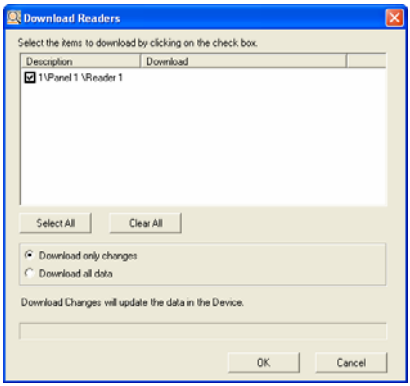


Figure 36 — Download Readers

14. Click **OK**. The status bar on the bottom of the screen displays the download progress.

User Details Tab

Biotrax saves user information such as telephone numbers and addresses and employment date. This information is optional.

To Add Details to a User:

1. In the **Properties Area**, select the user and click **Edit** . Alternatively, in the **Properties Area**, double-click the user name.
2. In the **User properties** window click the **Details** tab.

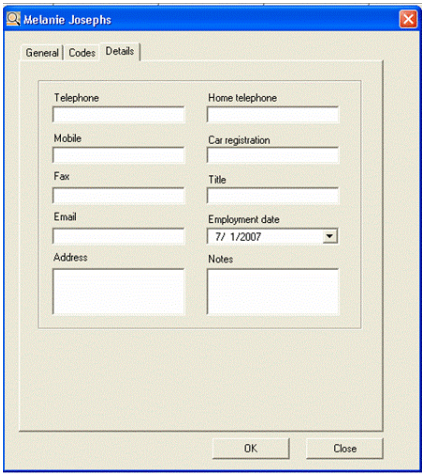


Figure 37 — User Details

3. Enter the details in each field.
4. Click **OK**.

8.3 Delete a User

You can remove a user from **User Properties**.

1. In the **Biotrax Tree**, select the department. The users list is displayed in the **Properties Area**.
2. In the **Properties Area**, select the user name to delete.
3. From the **Toolbar**, click **Delete** and perform a download.

8.4 Add Fingerprints in AxTrax Reader Mode

The users in the AxTrax database can be seen in the Biotrax database. The only action you can change in the Biotrax database that you cannot change in the AxTrax database is adding fingerprints.

To Add Fingerprints:

1. From the **Biotrax Tree**, select **Departments/Users**.
2. Click on the Department of choice. The list of users appears on the **Properties Area**.

3. Click **Edit** . Alternatively, double-click the already-existing user in the **Properties Area**.

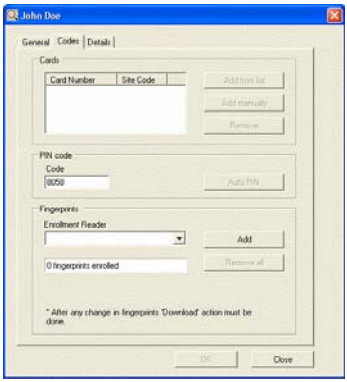


Figure 38 — User Codes Tab

Note that practically every button is grayed out, including **OK**. This is because you are not able to make most changes for the AxTrax database in the Biotrax database.

4. Click the **Codes** tab. In this tab, you are able to change one function that can be seen in the AxTrax database – adding fingerprints.
5. Under the **Fingerprints** section, click **Add**.
6. The text box below the **Enrollment Reader** indicates **place your finger** once and then a second time.
7. Only after this is completed, the **OK** and **Remove all** buttons turn dark.

Note:

Up to 500 Users can be enrolled with one finger per User.
Up to 455 Users can be enrolled with two fingers per User.

8. Repeat steps 5 through 7 to add another fingerprint.
9. Click **OK**.

Note:

In the AxTrax software, you cannot change or remove the fingerprints once a fingerprint(s) is added to the AxTrax Reader. If you need to make a change or wish to remove a fingerprint(s), you must go back to the Biotrax software.

Refer to section User Codes Tab on page 38 for a more in-depth discussion of fingerprint enrollment.

9. Operators

Biotrax has three predefined operators: administrator, engineer, and security. In Reader and Controller mode, more operators can be added to the system. In AxTrax Reader mode no other operators can be added.

Each operator can be edited.

To Display the Operators:

1. From the **Biotrax tree**, select **Operators**.

   The list of the default **Operators** open on the **Properties Area**:

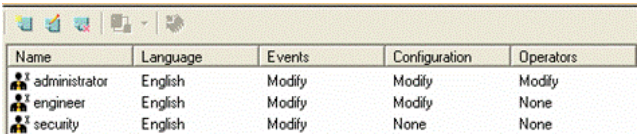


Figure 39 — Operators view

9.1 Modify an Operator

To Edit an Operator:

1. Select an operator and click **Edit** or alternatively double-click on the operator name.

   The **Operator properties** window opens.

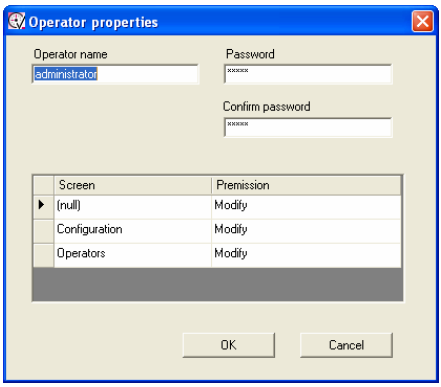


Figure 40 — Password Window

2. The name of the operator can be changed. In the **Operators name** box, enter the new operator name.
3. Enter a password in the **New password** box.
4. Enter the new password in the **Confirm password** box to confirm the new password.

5. Permissions are granted to view the **Log File**, **Configuration**, and **Operators** windows. Access is granted as **None**, **Read**, or **Modify**.

None:	The window is not displayed for this operator.
Read:	The window is displayed. The operator is restricted to read-only.
Modify:	The window is displayed and the operator has permission to modify the parameters.

6. Click **OK** to save the changes.

9.2 Add an Operator

To Add an Operator

This function is restricted to Reader and Controller Mode. New operators cannot be added when in the AxTrax Reader mode.

1. Click **New** . The **Operator properties** window opens.
2. Enter all the information according to Edit (above) and Click **OK** to save the new operator.

   The new operator name is displayed in the operator list.

10. Download to the Unit

Once you have defined users, cards, PIN codes and fingerprints, you must download the information to the unit.

Biotrax can connect to the unit and download data from Biotrax to the unit.

Warning:
The current version does not support synchronizing data. Downloading to the unit overwrites all information in the unit with the information from Biotrax.

To Download to the Unit:

1. Ensure the unit is connected to the PC via a serial cable.
2. From the **Toolbar**, click the arrow next to the Refresh icon.

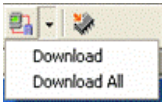


Figure 41 — Download Menu

The **Download** menu opens.

3. Click Download.

Note:
If you select **Download All**, you have the choice of downloading more than one reader or controller.

The Download Changes window appears.

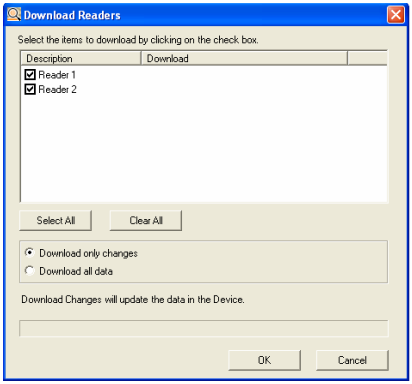


Figure 42 — Download Changes Window

4. Select either **Download only changes** or **Download all data**. The above picture is on Download only changes.
5. Click **OK** to being the download.

Warning:

Download all data clears all data in the device and copies the new data from the PC.

6. Once you have downloaded the data, your status on the Properties Area that previously showed Updated is now empty. This is how you will know whether you have updated your data.

11. Database Management

The Biotrax database can be saved, restored, and cleared.

Note:

The database cannot be updated when the Biotrax is in the AxTrax Reader mode. While using AxTrax Reader mode, in the **Menu bar** under **Tools**, **Database** is grayed out.

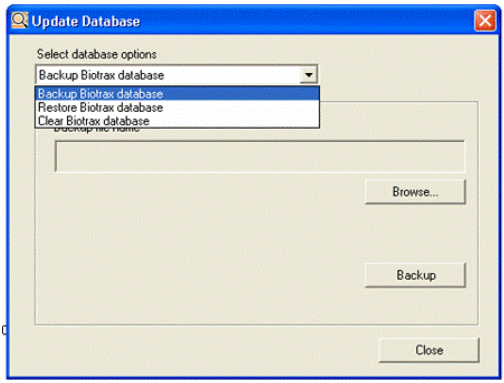


Figure 43 — Update Database Window

11.1 Backup the Biotrax Database

The current database can be backed up to a file. Periodic backup of databases is a proven method for maintaining system integrity.

To Backup the Biotrax Database:

1. From the **Tools** menu, click **Database**. The **Update Database** window opens.

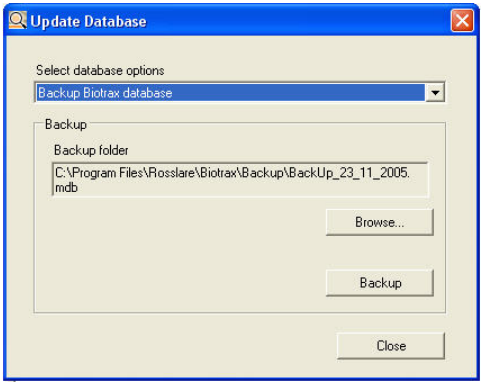


Figure 44 — Backup Biotrax Database Window

2. From the **Select database options** pull-down menu select **Backup BioTrax database**.

   The backup is automatically saved under Biotrax today's date_v1.bak.

3. Click **Browse** to change the name and location of the Backup file.
4. Click **Backup** to start the backup.
5. Click **Close** to finish. The database is saved to the selected location.

11.2 Restore a Biotrax Database

You can import a Biotrax database. When the system is initialized, use this option to use an existing Biotrax database or to import a backup.

To Restore a Biotrax Database:

1. From the **Tools** menu, click **Database**. The **Update Database** window opens.

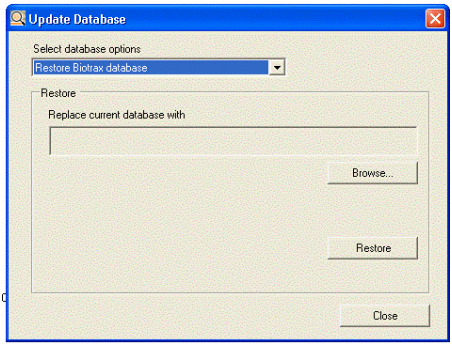


Figure 45 — Restore Biotrax Database Window

2. From the **Select database options** pull-down menu select **Restore BioTrax database**.
3. Click **Browse** to select the file to restore.
4. Click **Restore** to restore the database.
5. Click **Close** to finish.

   The database is restored and replaces all the current information.

11.3 Clear a Database

The database can be cleared of all information.

To Clear a Database:

Warning:
This option deletes all existing user and card information as well as all existing configuration.

1. From the **Tools** menu, click **Database**. The **Update Database** window opens.

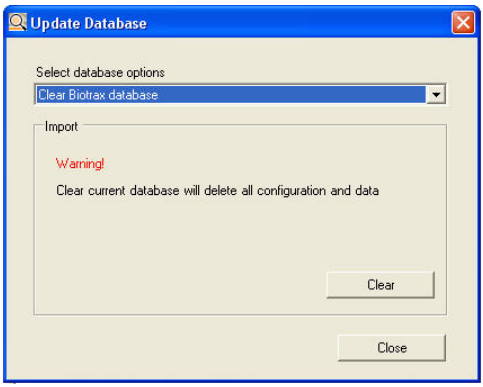


Figure 46 — Clear Database Window

2. From the **Select database options** pull-down menu select **Clear Biotrax database**.
3. Click **Clear**.
4. Click **Close** to finish.

   The current database is cleared of all information.

12. Firmware Update

Keep the firmware of the unit up to date using Biotrax.

To Update the Firmware:

1. Ensure the unit is connected to the PC.
2. Click Update Firmware . The **Update Firmware** window opens.

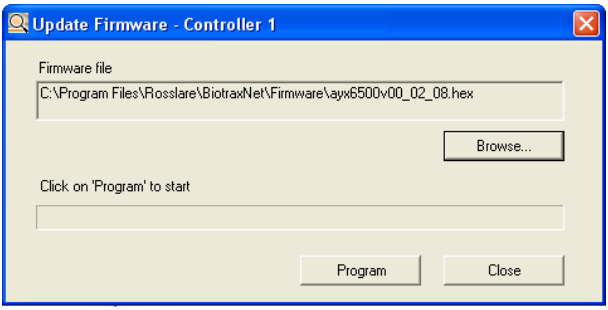


Figure 47 — Update Firmware Window

3. Click **Browse** to select the update file.
4. Click **Program** to start updating the firmware.
5. Click **Close** to finish.

   The firmware is updated.

13. Import Fingerprints

Legacy BioTrax databases may contain valuable fingerprint information. With the Import Fingerprints Wizard, you can import fingerprints from old BioTrax databases that conform to MS-Access format.

To Use the Import Fingerprints Wizard:

1. From the **Tools** menu, select **Import fingers**.

   The **Import Fingerprints Wizard** window.

Figure 48 — Import Fingerprints Wizard Window

2. Click **Browse** to select the old database file.
3. Click **Next** to start importing the fingerprints.

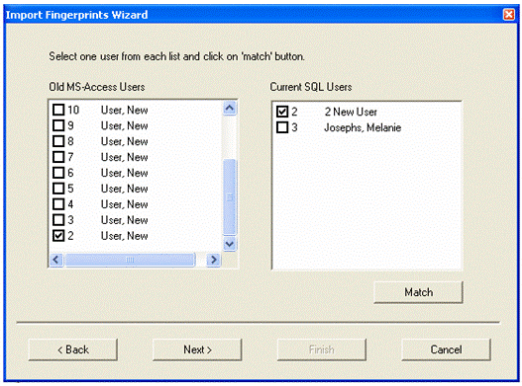


Figure 49 — Match Fingerprints View

4. Match the **Old MS-Access Users** with the **Current SQL Users**. Check the corresponding numbers in each section.

For example, check 3, Josephs, Melanie on the right hand side of the window. Check 3, User, New on the left hand side of the window.

5. Click **Match**. Once matched they disappear off the screen.
6. After matching click **Next**.

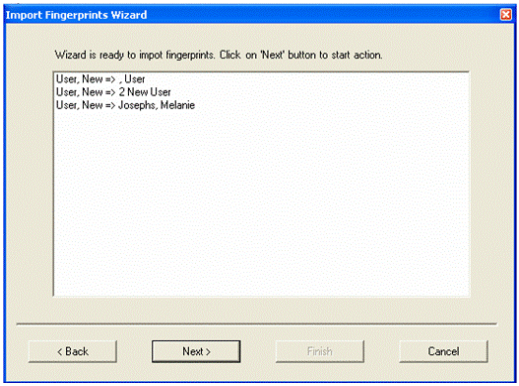


Figure 50 — Ready to Import View

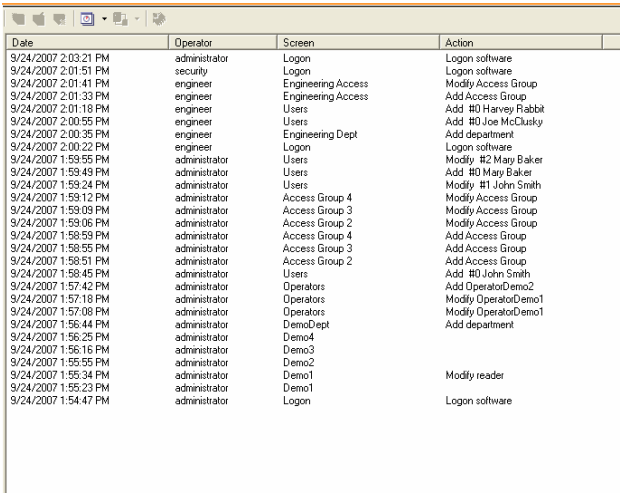
7. Click **Next** and the wizard imports the fingerprints.
8. After the import succeeds, click **Finish**.

14. System Events

View the actions performed by all operators in Biotrax.

To View the System Events:

1. From the **Biotrax Tree**, click **System Events.** The system events window opens in the **Properties Area**.



Date	Operator	Screen	Action
9/24/2007 2:03:21 PM	administrator	Logon	Logon software
9/24/2007 2:01:51 PM	security	Logon	Logon software
9/24/2007 2:01:41 PM	engineer	Engineering Access	Modify Access Group
9/24/2007 2:01:33 PM	engineer	Engineering Access	Add Access Group
9/24/2007 2:01:18 PM	engineer	Users	Add #0 Harvey Rabbit
9/24/2007 2:00:55 PM	engineer	Users	Add #0 Joe McClusky
9/24/2007 2:00:35 PM	engineer	Engineering Dept	Add department
9/24/2007 2:00:22 PM	engineer	Logon	Logon software
9/24/2007 1:59:55 PM	administrator	Users	Modify #2 Mary Baker
9/24/2007 1:59:49 PM	administrator	Users	Add #0 Mary Baker
9/24/2007 1:59:24 PM	administrator	Users	Modify #1 John Smith
9/24/2007 1:59:12 PM	administrator	Access Group 4	Modify Access Group
9/24/2007 1:59:09 PM	administrator	Access Group 3	Modify Access Group
9/24/2007 1:59:06 PM	administrator	Access Group 2	Modify Access Group
9/24/2007 1:58:59 PM	administrator	Access Group 4	Add Access Group
9/24/2007 1:58:55 PM	administrator	Access Group 3	Add Access Group
9/24/2007 1:58:51 PM	administrator	Access Group 2	Add Access Group
9/24/2007 1:58:45 PM	administrator	Users	Add #0 John Smith
9/24/2007 1:57:42 PM	administrator	Operators	Add OperatorDemo2
9/24/2007 1:57:18 PM	administrator	Operators	Modify OperatorDemo1
9/24/2007 1:57:08 PM	administrator	Operators	Modify OperatorDemo1
9/24/2007 1:56:44 PM	administrator	DemoDept	Add department
9/24/2007 1:56:25 PM	administrator	Demo4	
9/24/2007 1:56:16 PM	administrator	Demo3	
9/24/2007 1:55:55 PM	administrator	Demo2	
9/24/2007 1:55:34 PM	administrator	Demo1	Modify reader
9/24/2007 1:55:23 PM	administrator	Demo1	
9/24/2007 1:54:47 PM	administrator	Logon	Logon software

Figure 51 — System Events View

14.1 Specify Report Time

The icon is a pull-down menu to allow selection of view qualifiers.

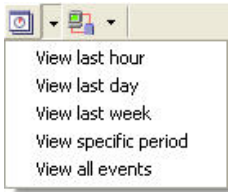


Figure 52 — System Event View Qualifiers

- **View last hour**: Only events that occurred in the preceding hour (the current time – 60 minutes) are displayed.
- **View last day**: Only events that occurred in the preceding day (the current time – 24 hours) are displayed.
- **View last week**: Only events that occurred in the preceding hour (the current time – 7 days) are displayed.

- **View specific period:** Only events that occurred in the specified time period are displayed.

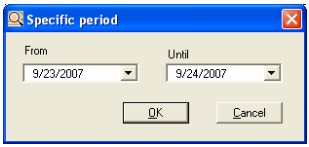


Figure 53 — System Event View Time Period

- **View all events: default view. All system events are displayed from the time Biotrax is installed.**

14.2 Sort System Events

The System Event View can be sorted according to Date, Operator, Screen, or Action. Click the desired option. The report is sorted and displayed according to the selected option.

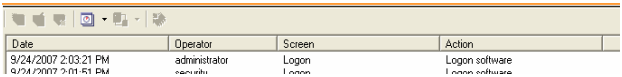


Figure 54 — System Event Sort

Appendix A. Prerequisites Installation

Microsoft SQL Server 2005 Express

When the target system does not have Microsoft SQL Server 2005 the InstallShield Wizard automatically starts the installation process. Upon being asked if you want the SQL server, answer **Yes**.

The installation begins automatically.

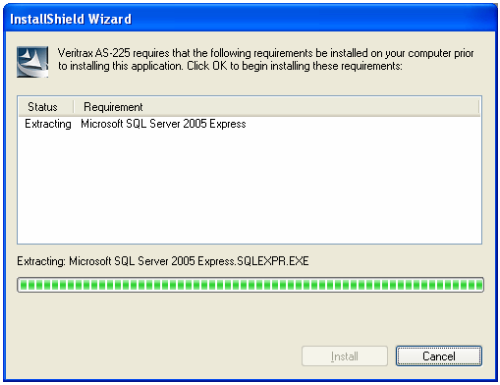


Figure 55 — Miscrosoft SQL Extraction

Several files are extracted during this process. You may see screens such as the one below. Do not interrupt the process.

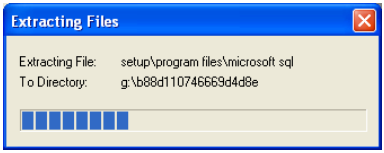


Figure 56 — Extract Files Bar

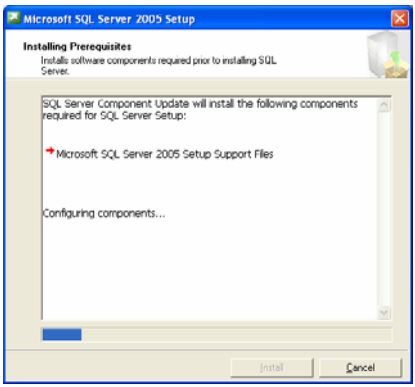


Figure 57 — SQL Configure Components

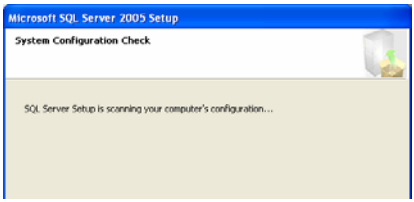


Figure 58 — SQL Discovery Process

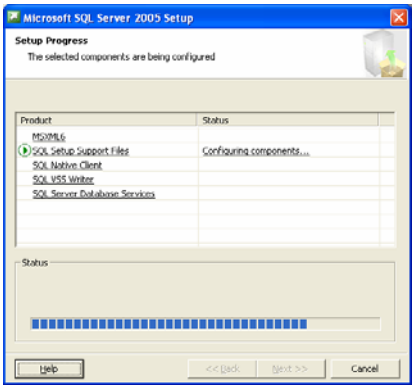


Figure 59 — SQL Component Installation

.Net Framework 2.0 Installation

After installing the SQL Server the system determines the presence of .NET Framework 2.0. If .NET Framework 2.0 is not present on the system, you are asked to install it.

Figure 60: .NET Framework 2.0 Installation Window

1. Click **Yes** to continue.

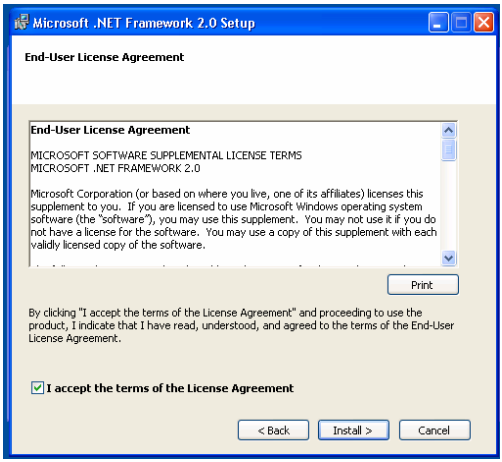


Figure 61: .NET Framework 2.0 End-User License

2. Check **I accept the terms of the License Agreement**.
3. Click **Install** to start the installation process.

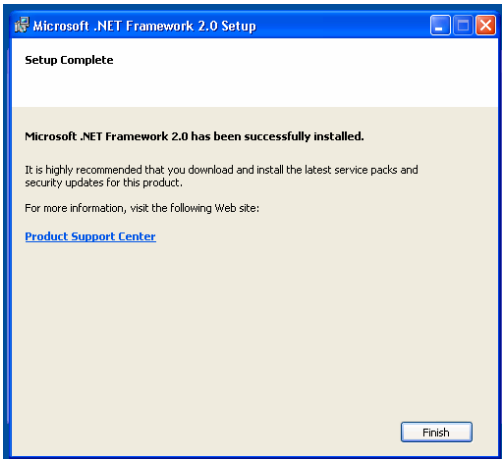


Figure 62: .NET Framework 2.0 Setup Complete

4. Click **Finish** at the end of the installation process.

Upon completion of the SQL and .NET installation, installation continues according to the Biotrax Software Installation on page 5.

Appendix B. Firewall Configuration

The following instructions explain how to configure the standard Windows Firewall for Windows XP.

To Configure the Firewall:

1. Click the **My Computer** icon on the desktop.

   The **My Computer** folder opens.

2. Select the Address Bar and type "Control Panel". Hit the Enter key.

   The **Windows Control Panel** opens.

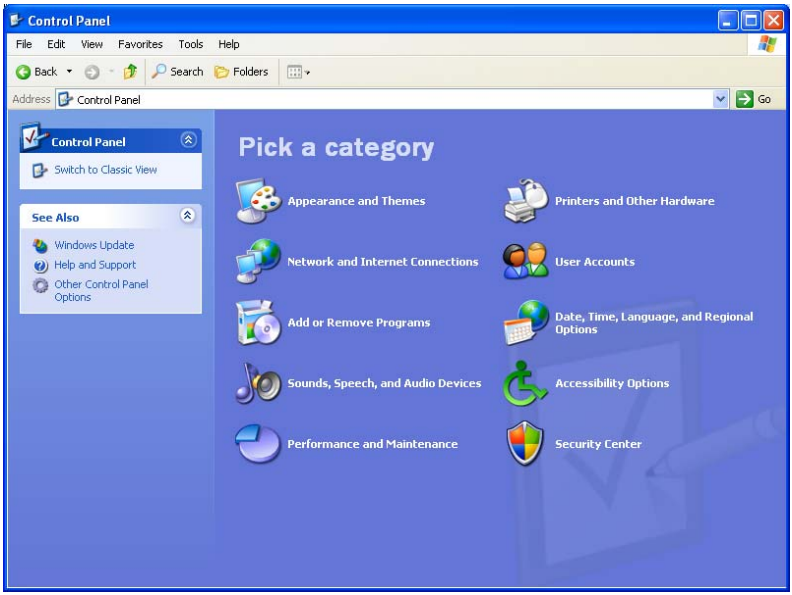


Figure 63 — Windows Control Panel

3. Click the **Security Center** category.

   (If the Control Panel is in "Classic View", click 'Windows Firewall'.)

   The **Windows Security Center** opens.

Figure 64 — Windows Security Center

4. Click **Windows Firewall**. The **Windows Firewall** opens.
5. Select the **Exceptions** tab.

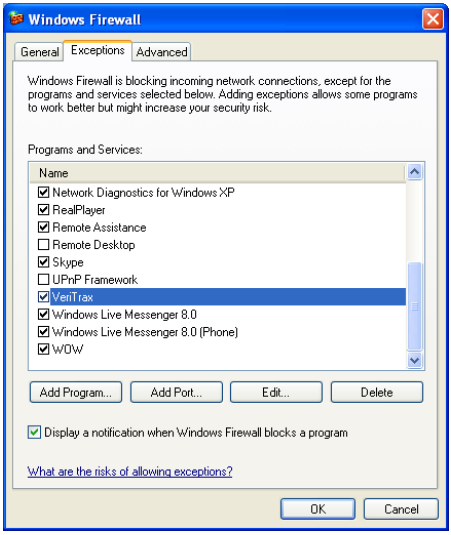


Figure 65 — Windows Firewall

6. Click **Add Program**. The **Add a Program** dialog appears.

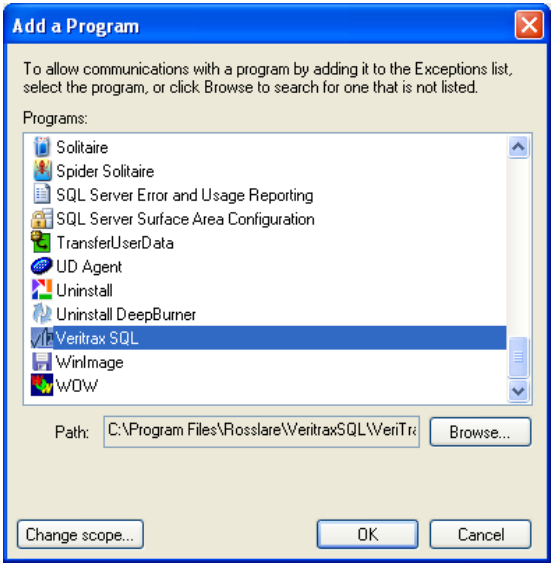


Figure 66 — Add a Program to the Firewall List

7. Click **Browse**.

   The **Browse dialog** appears.

8. In the File Name box, type:

   "C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\BINN\sqlservr.exe"
   Hit Enter.

   The sqlservr program appears in the Add a Program dialog.

9. Select the program and click **OK**.

   The sqlservr program appears on the Windows Firewall list of exceptions.

10. Repeat steps 5 and 6. In the File Name box, type:

    "C:\Program Files\Microsoft SQL Server\90\Shared\sqlbrowser.exe"
    Hit Enter.

    The sqlbrowser program appears in the Add a Program dialog.

11. Select the program and click **OK**.

    The sqlbrowser program appears on the Windows Firewall list of exceptions.

    Click **OK**.

12. Repeat steps 1 and 2.

The **Control Panel** window opens.

13. Click the **Performance and Maintenance** category.

    (If the Control Panel is in "Classic View", click Switch to Category View in the top-left Control Panel preferences pane and click the **Performance and Maintenance** category.)

    The **Performance and Maintenance** window opens.

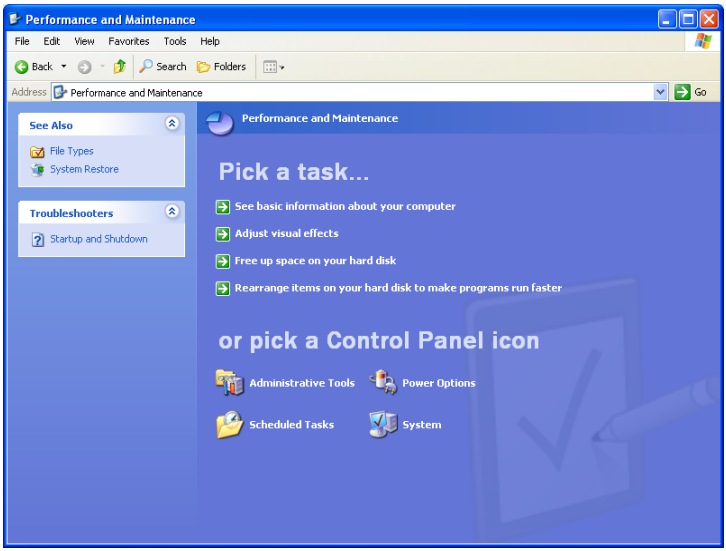


Figure 67 — Performance and Maintenance Window

14. Click **Administrative Tools**.

    The **Administrative Tools** window opens.

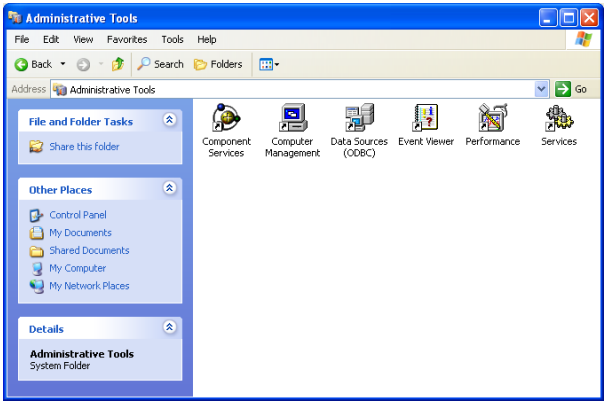


Figure 68 — Administrative Tools Window

15. Double-click on the Services icon. The **Services Console** opens.

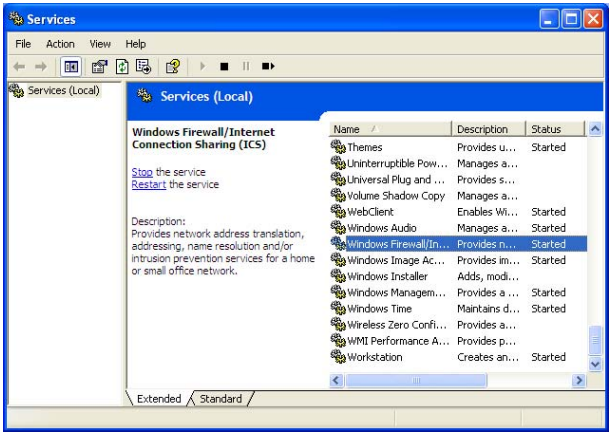


Figure 69 — Services Console

16. Right-click on Windows Firewall/Internet Connection Sharing (ICS). Click Restart from the pop-up menu.
17. Right-click on SQL Server. Click Restart from the pop-up menu.
18. Right-click on SQL Server Browser. Click Restart from the pop-up menu. The Firewall is now configured for AxTrax Biotrax.

Appendix C. TCP/IP vs Serial

When is it best to use a Serial connection for the readers and controllers, and when is it best to use TCP/IP in a WAN or LAN Network configuration? Both Serial communications and TCP/IP have advantages and disadvantages.

Serial: Direct connection to PC serial port.

There are usually only one or two serial ports on the PC. This restricts the number of readers that can be connected simultaneously to two. Cable length is limited to only a few meters from the PC; it cannot connect to remote AYC-W6500 units.

Advantages:

- Simple to configure and no additional hardware required.

Disadvantages:

- Limited number of AYC-W6500 units connected.
- Limited distance between the AYC-W6500 units and host PC.

TCP/IP: Connection to TCP/IP Network.

TCP/IP allows for an unlimited number of readers simultaneously connected to each other and to Biotrax. Also, the AYC-W6500 units can be connected remotely (using WAN) anywhere in the world that internet connection is provided. This mean the reader can be used for large enterprises with multiple, remote sites.

Advantages:

- Unlimited number of readers/controllers.
- Not limited by distance.
- Can be used in enterprises.

Disadvantages:

- The LAN/WAN solution requires an installed network.
- A Rosslare MD-N32 unit is needed for each AY-W6500.

Appendix D. Technical Support

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