PART VII – UTILITIES

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CSV Import Utility

The format of a CSV file must match the format of the Database that is receiving the data.

If you have no experience with databases or CSV files, we recommend that you consult your network administrator.

CSV Overview

The **CSV Import Utility** enables you to import a **Comma Separated Value** (**CSV**) file into the ImproNet Database.

Use the CSV Import Utility to import data from other database systems to the ImproNet Database.

Why Import a CSV File?

CSV files are commonly used to transfer data between different databases. For example, you may already have a database containing thousands of records – CSV Import lets you transfer this existing data to the ImproNet Database without re-entering it one record at a time.

Specific examples of CSV Import use include the following:

- Transferring a company's existing employee details to the ImproNet Database.
- Transferring a list of department names to the ImproNet Database.
- Transferring details from another access control system to the ImproNet Database.

How to Create a CSV File

There are two methods to create a CSV file:

- **Export data as a CSV file from another Database**—almost all Databases have a CSV export facility. Consult the documentation of the database containing the data to export. Export the relevant data to a CSV file using the database's CSV export facility.
- **Manually create it**—you can create a CSV file with a text editor. Refer to page 7 for details.

Importing a CSV File

Close all ImproNet Software before opening the CSV Import Utility.

Guidelines for CSV Import Utility

- **Parent Tables** must be added before **Child Tables**.
- Add tables with **Primary Keys** before tables containing **Foreign Keys**.
- **Not null** fields must contain data, even if it is a space character.
- **VarChar** fields can have spaces.
- **All** fields must be separated by commas.

To open the CSV Import Utility, proceed as follows:

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Utils**>**Import**.
2. Enter your **Username** and **Password**.

Open CSV File

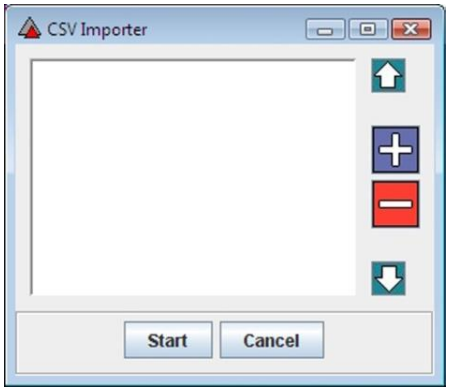

Figure 1 – CSV Importer

1. Click on the button.
2. Browse and select the relevant **CSV file**.

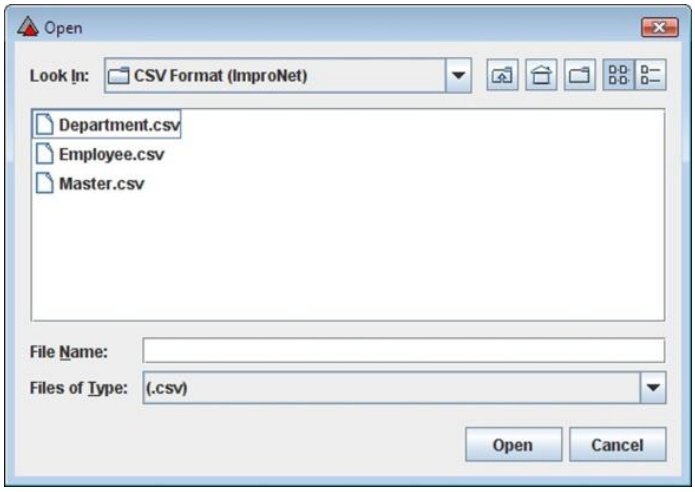

Figure 2 – Open CSV Dialog

3. Click **Open**.

*Repeat steps **1** to **3** for each CSV file to be imported.*

Ensure Correct Sequence

If you are importing any of the following files, ensure that they are in the same sequence as displayed:

1. Master.csv.
2. Department.csv.
3. Employee.csv.

To change the order of the files, select a file and use the arrow buttons.

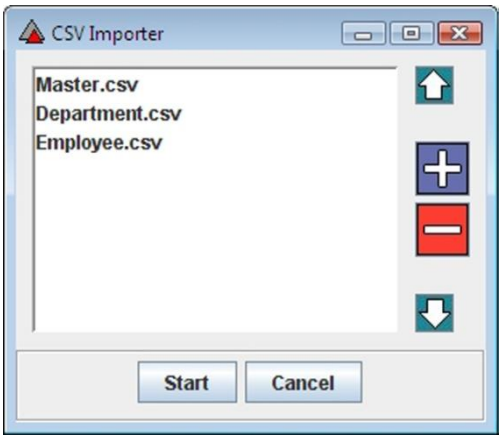

Figure 3 – CSV Importer

Import CSV File

Click **Start** to begin the import process.

A confirmation message displays after a successful import.

Creating a CSV File

You can create a CSV file manually with a plain text editor such as Notepad. Microsoft Excel is useful for creating spreadsheets to export as CSV files.

Do not use rich text editors such as WordPad or Microsoft Word as these programs contain hidden characters.

CSV files can add data to one table at a time only. Therefore, you need to have a CSV file for each table you are updating.

To create a CSV file manually, proceed as follows:

1. Ensure you know the correct field names of the table you are importing into.
2. Open your text editor.
3. Enter the **field names** separated by **commas**.
4. Press **Enter**.
5. Enter the data **value** of each record separating the values with **commas**. Press **Enter** after each record.
6. **Save** the file with a suitable name and a **csv** file extension.

Example

Figure 4 shows an example of a CSV file containing two records. The first row contains the field names separated by commas. The second line is blank. The third and forth lines contain record data; each value separated by a comma. In this example, the value for EMP_Employer is *null* in both records.

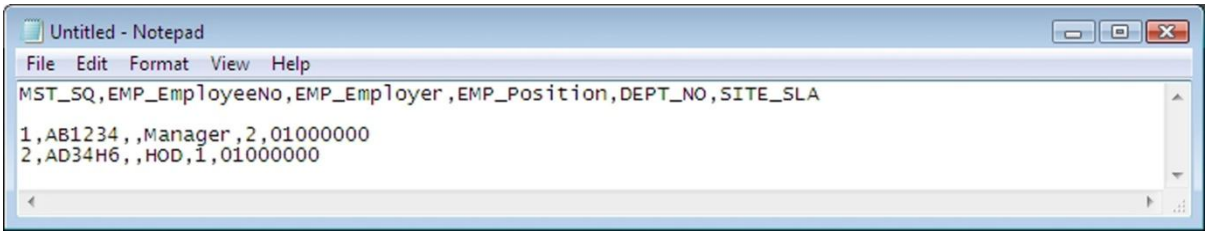

Figure 4 – Example of CSV File

Correct field types are vital for a successful import. Be sure to read the next section.

Ensuring Correct CSV File Format

If you create or modify a CSV file, ensure that its data conforms to the specified field requirements.

*Ensure that your CSV file is called after the table name, for example **"MASTER"**.csv*

Null and Not Null Values

A **Null** field in a database table means that a value is not required for that field. Do not confuse Null with zero. Zero is a value (0); Null has no value. For example, the PIN field in the ImproNet Database has a Null option. This means that you do not have to enter a value in this field—you can leave it empty.

A **Not Null** field in a database table means that a field *must* contain a value. The value can be any value that conforms to the field Type. In this case, a zero (0) is accepted as a number value, provided the field permits a number Type.

Field Types

Each field in a database table has a specified **Type**. The Type determines the data that is permitted in that field. For example, a ***Varchar*** type is a text field that accepts text and number characters. An ***Int*** type is a number field only—it cannot accept text characters. Table 1 describes some common Field Types in the ImproNet Database.

Field Type	Description
Varchar(40)	A text field permitting up to 40 alphanumeric characters
Varchar(16)	A text field permitting up to 16 alphanumeric characters
Int	A number field permitting up to 65536 characters (16 bit)
SmallInt	A number field permitting up to 256 characters (8 bit)

Table 1 – Database Field Types

You can use **Import** to add data to any of the tables in the ImproNet Database, except those containing images. However, ensure that the data conforms to the receiving table's structure.

Import Data to Other Tables

To ensure correct CSV file format for other ImproNet Database tables, view the tables' structures. We recommend using the **IBConsole** Utility to do this.

Structure of Master, Department, and Employee Tables

The following tables are the most likely tables to receive data via the Import utility:

- Master
- Department
- Employee

Master Table Requirements

Table 2 displays the field requirements for the Master Table.

Field Name	Type	Null Value
MST_SQ(PK)	Int	Not Null
MST_Title	Varchar(40)	Not Null
MST_FirstName	Varchar(40)	Not Null
MST_MiddleName	Varchar(40)	Not Null
MST_LastName	Varchar(40)	Not Null
MST_Suffix	Varchar(40)	Not Null
MST_ID	Varchar (16)	Not Null
MST_Gender	Char (1)	Null
MST_Pin	Int	Null
MST_Type	SmallInt	Not Null
MST_Current	SmallInt	Not Null
SITE_SLA(FK)	Char(8)	Not Null
USRPRF_NUM	Int	Null
MST_CDATE	Varchar(8)	Null

Table 2 – Master Table Requirements

Department Table Requirements

Table 3 displays the field requirements for the Department Table.

Field Name	Type	Null Value
DEPT_No (PK)(FK)	SmallInt	Not Null
Site_SLA(FK)	Varchar(8)	Not Null
DEPT_NAME	Varchar(40)	Not Null

Table 3 – Department Table Requirements

Employee Table Requirements

Table 4 displays the field requirements for the Employee Table.

Field Name	Type	Null Value
MST_SQ(PK)(FK)	Int	Not Null
EMP_EmployeeNo	Varchar(16)	Not Null
EMP_Employer	Varchar(16)	Not Null
EMP_Position	Varchar(40)	Not Null
DEPT_No (FK)	SmallInt	Not Null
Site_SLA(FK)	Varchar(8)	Not Null

Table 4 – Employee Table Requirements

***PK** means **Primary Key**—This is an entry unique to every record.*

***FK** means **Foreign Key**—This is an entry that corresponds with the Primary Key. It is used to link records in one table with records in another table. For example, **MST_SQ** is the Primary Key in the **Master** Table. It is also used in the **Employee** Table as a Foreign Key to identify a particular Tagholder.*

Unlock Utility

Introduction

The **Unlock Utility** unlocks Hardware, namely the ImproX RR, RH, RL, RS, RM and ProxMate, so that the dependent Software runs.

Ensure that you install an ***ImproX RR, RH, RL, RS, RM*** or ***ProxMate*** on the PC where you installed Access, Visitors or QuickTag applications. Engine requires installation of an ***ImproX RH, RL*** or ***HI***. Each of these "Units" requires unlocking prior to use.

Unlocking the Hardware

*Each **Unlock Code is unique**. The Unlock Code is therefore only intended for use on the product for which it was generated.*

1. Contact your Impro Dealer for an Unlock Code.
2. Connect the hardware direct to one of the PC's Comm. Ports (Ports 1 to 16).
3. Proceed with the steps listed in the section below titled Opening and Using the Unlock Utility.

Opening and Using the Unlock Utility

1. In Windows®, click **Start**>**Run**.
2. In the **Run** dialog, browse to **C:\ImproNet\bin\UNLOCK.EXE**.
3. Click the **OK** button.

Figure 5 – Product Unlock Dialog

4. In the **Product Unlock Key** textbox, enter your **Unlock Code**.
5. Click on the **Unlock** button.

The Utility searches Comm. Ports 1 to 16 for one of the following ImproX devices (ImproX RR, RH, RS, RM, RL, HI or ProxMate).

- If the device's found and the unlock codes correct, the **Product Unlock** dialog displays the text "**Unlock Successfully Completed**".
- If the device's NOT found or the unlock codes incorrect, the **Product Unlock** dialog displays the text detailing the fault.
- When unlocking a device, ensure that you only plug in ONE ImproX device at a time. That is, once the first device's unlocked, plug in the second device for unlocking.

6. Click on the button.

Translation - Localization

This application is provided with English text. If you need Localization of the text, dynamically translate the text making use of the Locale and Translate functions. Property resource files store the translated text, for distribution with the application.

Manual Auto-ID Utility

Introduction

The **Manual Auto-ID Utility** performs the following functions:

- Addition of Controllers and Terminals not previously added in Access.
- Editing of selected Controller and Terminal properties (for example: Site SLA, Unit Type, Fixed Address, Controller LA and Terminal LA).
- Deletion of Controllers and Terminals.

Opening and Using the Manual Auto-ID Utility

To open the **Manual Auto-ID Utility**, proceed as follows:

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Utils**>**Manual Auto ID**.
2. Enter your **Username** and **Password**.

*The default username is **SYSDBA**. The default password is **masterkey**.*

3. Click the button.

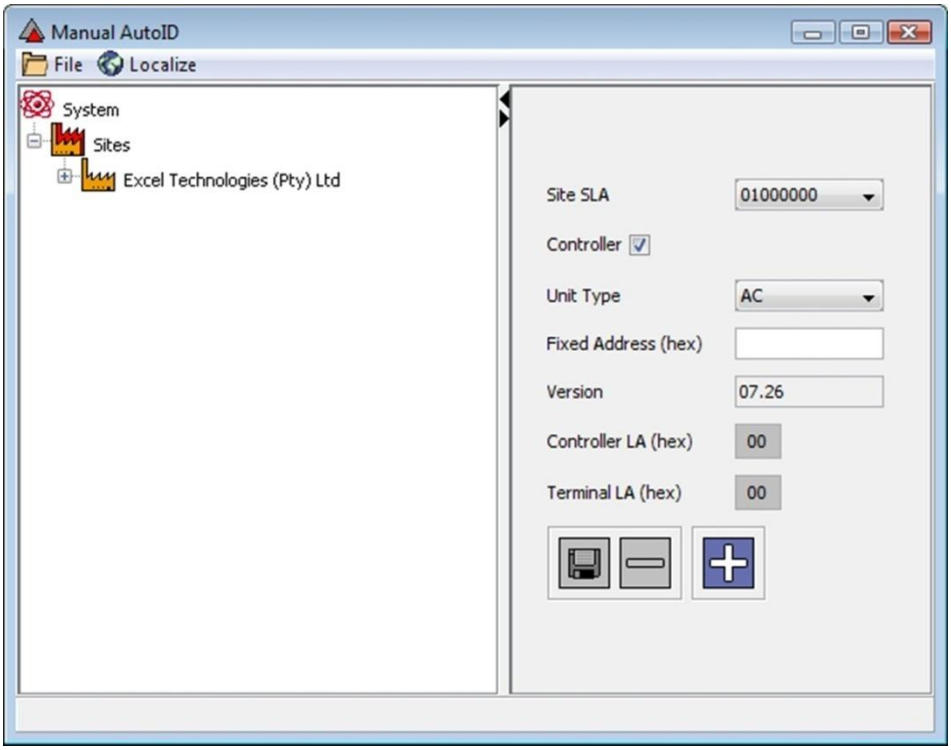

Figure 6 – Logon Dialog

Adding a Controller to the Site

1. In the Main Pane, from the **Site SLA** drop-down list, select the Site.
2. Select the **Controller** checkbox.
3. From the **Unit Type** drop-down list, select the type of Controller.
4. In the **Fixed Address (hex)** textbox, enter the Controller's Fixed Address.
5. In the **Controller LA (hex)** textbox, enter the Controller's Logical Address.
6. Click on the button.

These details only update on re-opening of the Access Module.

Adding a Terminal to the Site

1. In the Main Pane, from the **Site SLA** drop-down list, select the Site.
2. De-select the **Controller** checkbox.
3. From the **Unit Type** drop-down list, select the type of Terminal.
4. In the **Fixed Address (hex)** textbox, enter the Terminal's Fixed Address.
5. In the **Controller LA (hex)** textbox, enter the Controller's Logical Address.
6. In the **Terminal LA (hex)** textbox, enter the Terminal's Logical Address.
7. Click on the button.

These details only update on re-opening of the Access Module. Terminals appear on the Unassigned Terminals list (situated on the Hierarchical Tree in the Access Module's Navigator Pane). Assign the Terminals using Access.

Deleting a Controller (or Terminal) from the Site

You can only delete Controllers (or Terminals) not yet added (updated) in the Access Module.

1. In the Navigator Pane, on the Hierarchical Tree, select the Controller (or Terminal) for deletion.
2. Click on the button.

Editing a Controller (or Terminal)

You can only edit Controllers (or Terminals) not yet added (updated) in the Access Module.

1. In the Navigator Pane, on the Hierarchical Tree, select the Controller (or Terminal) for editing.
2. In the Main Pain, edit the fields as necessary.
3. Click on the button.

Translation - Localization

This application is provided with English text. If you need Localization of the text, dynamically translate the text making use of the Locale and Translate functions. Property resource files store the translated text, for distribution with the application.

Database Upgrade Utility

Introduction

The **Database Upgrade Utility** enables automatic updating of the ImproNet Database. The Utility checks the Database for available Scripts in the directory. Update Scripts are processed automatically and a status message is displayed. A status message is also displayed if no scripts are found.

Opening and Using the Database Upgrade Utility

To open the **Database Upgrade Utility**, proceed as follows:

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Utils**>**Database Upgrade**.
2. Enter the **Password**.

*The default Password is **masterkey.***

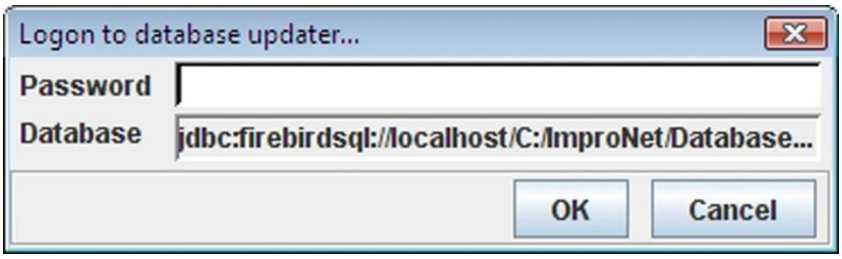

Figure 7 – Database Update Logon

3. Click the **OK** button.

If no new database scripts are found, the following message displays:

Figure 8 – Database Status Screen – No New Database Scripts Found

If new database scripts are found, a screen similar to the one shown below displays:

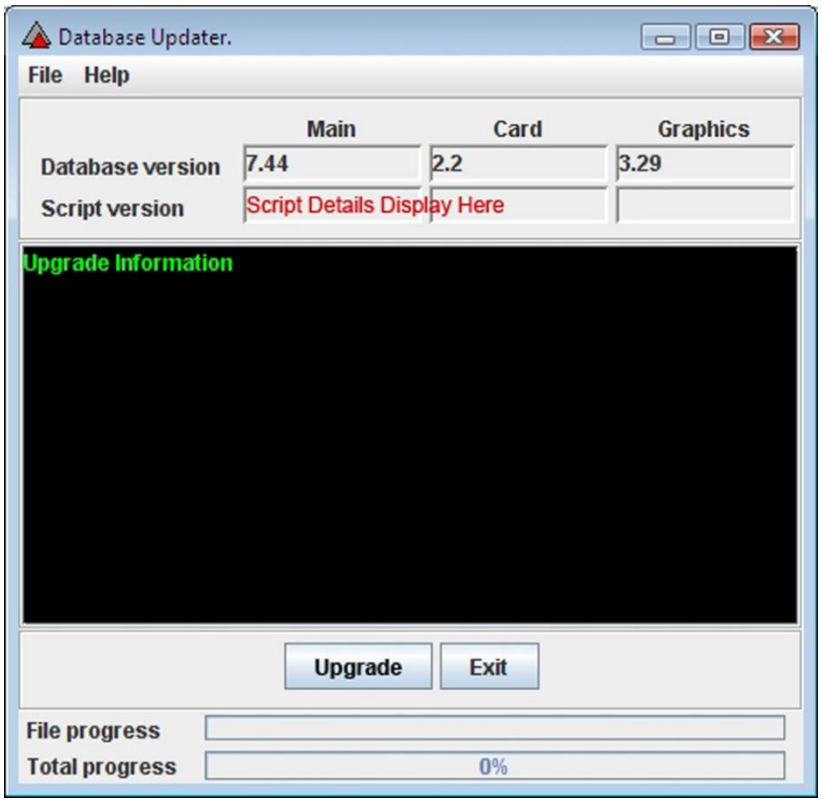

Figure 9 – Database Status Screen – Scripts Found

4. Click the **Upgrade** button.
5. In the **Message** dialog, click **OK**.

Firmware Upgrade Utility

Introduction

The Firmware Upgrade Utility lets you perform the following actions:

- Identify **Firmware versions** of connected Hardware.
- **Selection and configuration of the Communications Port**.
- You may **Ping** the connected Hardware (feedback informs you of whether Hardware is connected and working as specified).
- Perform **in-field Firmware Upgrades** to connected Hardware.

Opening the Utility

In Windows®, go to **Start**>**All Programs**>**ImproNet**>**Utils**>**Firmware Upgrade**.

Display Firmware Versions

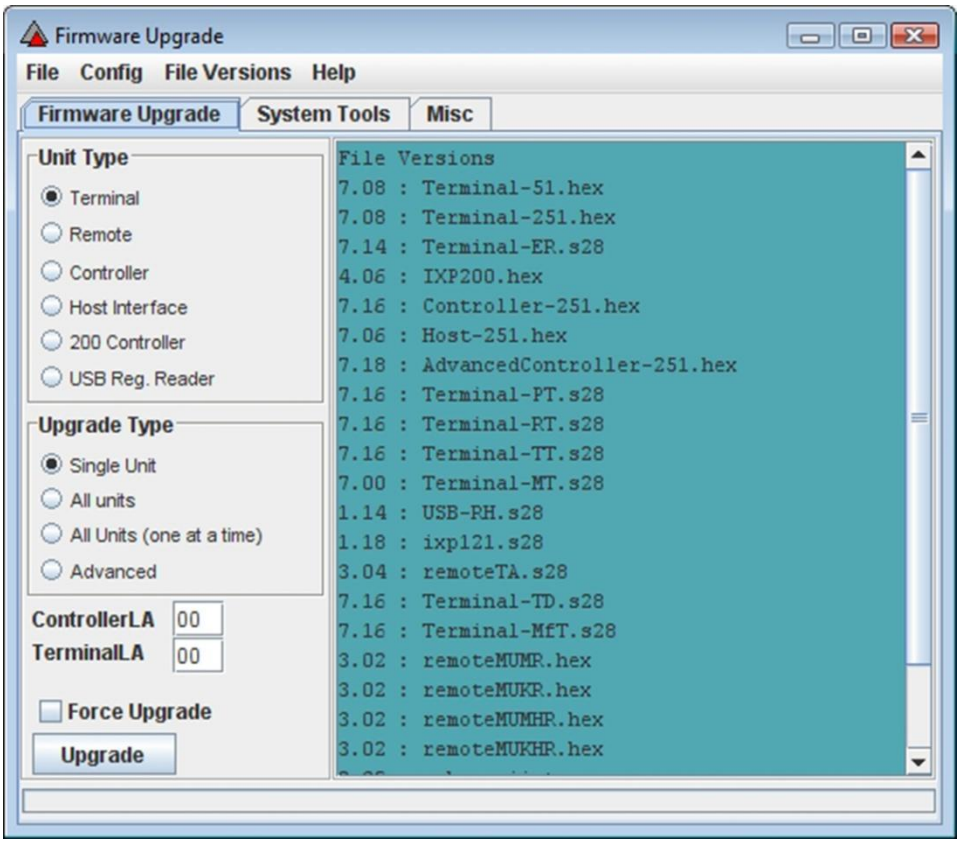

Figure 10 – File Versions Displayed

To view **File Versions** for the firmware available on the disk, continue as follows:

1. Select the **Firmware Upgrade** tab.
2. From the **File Versions** drop-down menu, select **Display**.

Select and Configure the Communications Port

To specify a communication protocol, continue as follows:

1. From the **Config** drop-down menu, select the **Protocol** option.

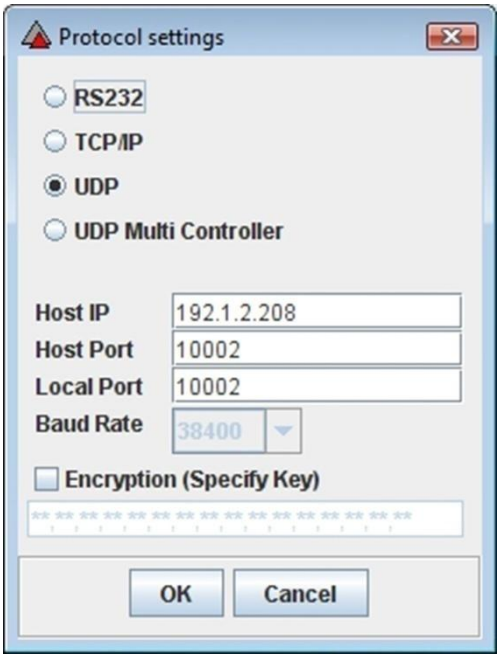

Figure 11 – Protocol Settings Dialog

2. In the Protocol Settings dialog, select one of the following radio buttons:
   - **RS232**—if you are using an ImproX HI or ImproX RH communications interface device, select the RS232 option and enter the relevant COM Port number.

*Select the **RS232** option if using a **USB** connection.*

   - **TCP/IP**—used where your Controller connects by Ethernet.
   - **UDP**—if you want to connect UDP to a single Controller.
   - **UDP Multi Controller**—if you want to connect many UDP devices as specified in the *udpmulti.csv* file.
3. Based on your selection made in step 2, complete the following activated fields:
   - **Host IP**—your Controller's IP Address.
   - **Host Port**—enter the default Host Port number of **10002**.
   - **Local Port**—enter the default Local Port number of **10002**.
   - **Baud Rate**—use the default **38 400**.
4. Click the **OK** button.

Firmware Upgrade Procedure

Controller

To upgrade the Firmware on a Controller, proceed as follows:

1. Configure the Protocol settings specific to your Controller and installation requirements. Refer to the section **Selecting and Configuring the Communications Port** on page 20.
2. Select the **Firmware Upgrade** tab.
3. Select the **Controller** radio button.
4. Select one of the following Upgrade Type options:
   - **Single Unit**—upgrades one unit only.
   - **All Units**—upgrades all units (not recommended for use with Controllers).
   - **All Units (one at a time)**—upgrades all units of the specified type, one at a time.
   - **Advanced**—allows selection of a specific Firmware file. We recommend that you do not use this feature.
5. Enter the **Controller LA**—the Logical Address of your Controller.

*If you select the **Controller** Unit Type, the **Controller LA** specifies the Controller that will be upgraded. If another Unit Type is selected, the **Controller LA** specifies the Controller that the selected unit is connected to.*

6. Click the **Upgrade** button.

*The **Force Upgrade** button forces an upgrade on a unit that has a newer firmware version than is available with your current Software Suite. We recommend that you do not use this feature.*

Terminal or Remote

To upgrade the Firmware on a Terminal or Remote, proceed as follows:

1. Configure the Protocol settings specific to your Controller and installation requirements. Refer to the section **Selecting and Configuring the Communications Port** on page 20.
2. Select the **Firmware Upgrade** tab.
3. Select the **Terminal** (or **Remote**) radio button.
4. Select one of the following Upgrade Type options:
   - **Single Unit**—upgrades one unit only.
   - **All Units**—upgrades all units, not applicable when you select the Remote radio button).
   - **All Units (one at a time)**—upgrades all units of the specified type, one at a time.
   - **Advanced**—allows selection of a specific Firmware file. We recommend that you do not use this feature.
5. Enter the **Controller LA**—the Logical Address of your Controller. The **Controller LA** number specifies the Controller that the selected unit is connected to.
6. Enter the **Terminal LA**—the Logical Address of the Terminal.
7. Click the **Upgrade** button.

*The **Force Upgrade** button forces an upgrade on a unit that has a newer firmware version than is available with your current Software Suite. We recommend that you do not use this feature.*

Ping Function

Ensure that all hardware is connected and working as specified by using the **Ping** tool.

1. Select the **System Tools** tab.
2. Click the **Ping** button.

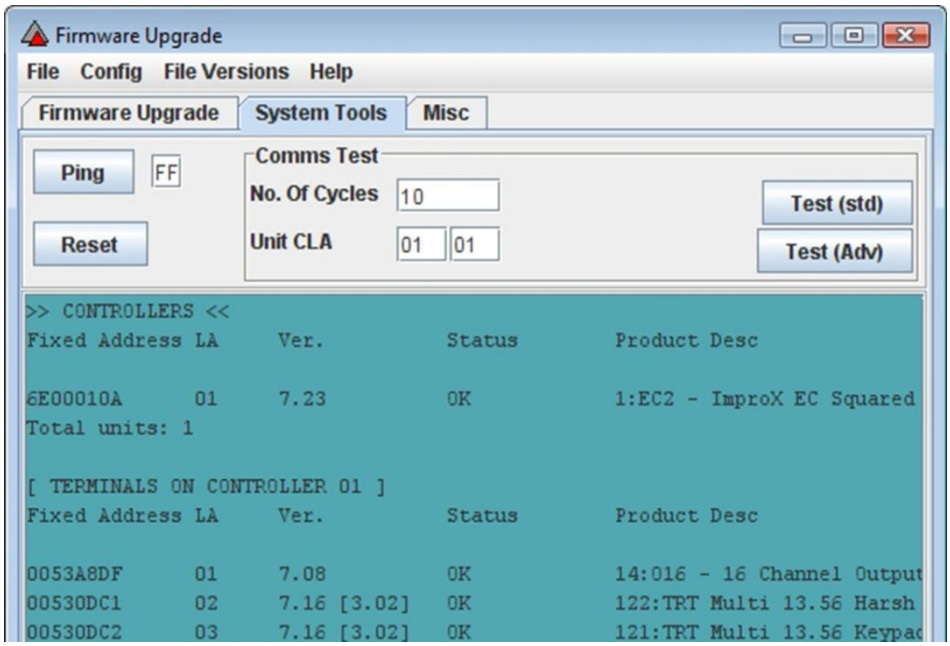

Figure 12 – Results of a Ping Check

Miscellaneous Tools

Select the **Misc Tools** tab.

Set the Logical Address

Change your Controller's Logical Address as follows:

1. From the Set Logical Address group, select the **Controller** radio button.
2. In the Fixed Address textbox, enter the Controller's **Fixed Address**.
3. In the active Logical Address textbox, enter the new **Logical Address** for the Controller.
4. Click the **OK** button.

Clear the Controller's Memory

This option clears the Controller's memory, including details of all transactions.

After clearing the Controller's memory, restore the Controller's functionality by performing a full upload.

Because of the complexities of this feature, we advise that only approved Distributors or Impro Technical Support Staff use it. Therefore, please contact your Impro Distributor for support.

Ethernet Configuration Utility

Introduction

The ImproX EC, unlike other Controllers in an ImproNet system, is not connected to the Host PC via the RS485 Host Bus. Instead, it communicates with the Host PC over a LAN using an Ethernet protocol.

Prior to V7.4 ImproNet Software, you needed an ImproX EL (or RL) between the Host PC, the LAN or WAN and the ImproX EC. With the release of V7.4 Software, you use UDP communications direct to the EC. This means that you no longer need ImproX EL's (or RL's). Please note however, this scenario does NOT support inter-controller communications.

Connecting to an ImproX EC (Pre V7.4 Software)

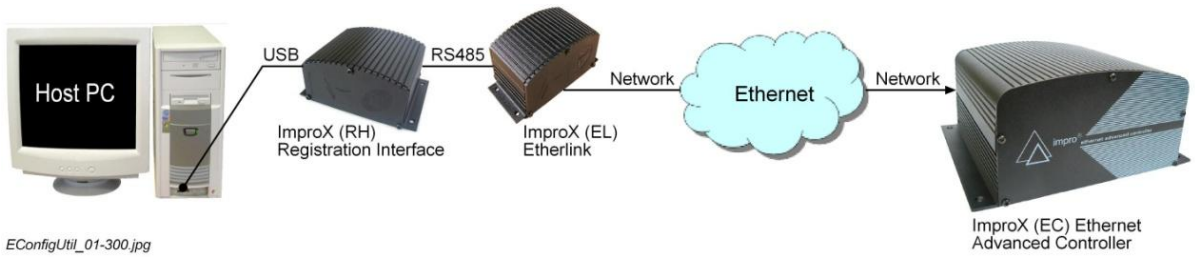

Figure 13 – ImproNet Setup Prior to V7.4 Software

The physical routing for this connection is:

- Host PC to ImproX RH.
- ImproX RH to LAN/WAN via an ImproX EL or ImproX RL to LAN/WAN.
- LAN/WAN to ImproX EC.

Connecting to an ImproX EC (Using V7.4 Software)

*There are **NO intercontroller communications** when using V7.4 Software. This means that **Interleading Zone Routing across Controllers** and **Actions across Controllers** will NOT operate.*

The ImproX RH and HI no longer function as a communications interface. Essentially they now function as a dongle, allowing ImproNet Engine Software to run.

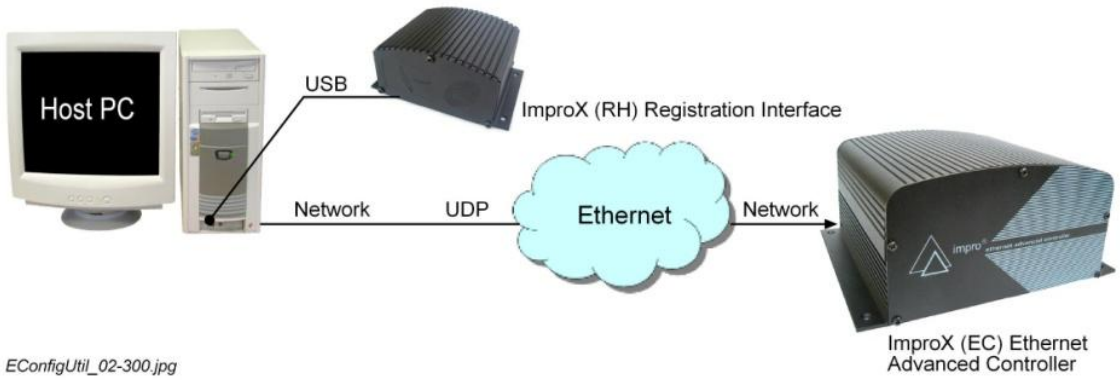

Figure 14 – ImproNet Setup Using V7.4 Software

The physical routing for this connection is:

- Host PC to ImproX RH.
- LAN/WAN (Ethernet) to ImproX EC.

Communicating with the ImproX EC

Communications between the Host PC and the ImproX EC uses Ethernet protocols. The ImproX EC must be configured for the Ethernet protocol in use on the LAN/WAN, using the Ethernet Configuration software. The Ethernet security and operational settings for the ImproX EC are configured in the Ethernet Device Configuration Utility as described in this Chapter.

Network knowledge is required to set-up ImproX EC. Additionally, some settings such as router gateway addresses require you to liaise with your local network administrator. Whatever the situation, ensure that someone with network experience is available during configuration.

Allocation of Terminals

ImproX Terminals are connected to the ImproX EC via its Terminal Bus Port.

An ImproX EC will appear in the Access Tree as an ImproX AC Controller. Terminals allocation, and other Controller settings, are performed in the same way as for an ImproX AC Controller.

Configuration Procedure

The Ethernet Configuration Utility enables you to assign an IP Address to an ImproX EC, and configure the device for Ethernet operation.

The Utility searches for and displays a list of Ethernet devices on the local subnet. When an ImproX EC is identified by its unique MAC Address, assign a static IP Address to it. Then configure the Device for network use, as described in the following paragraphs:

Assign the IP Address

Proceed as follows to open the Ethernet Device Configuration Utility:

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Utils**>**Ethernet Device Configuration Utility**.

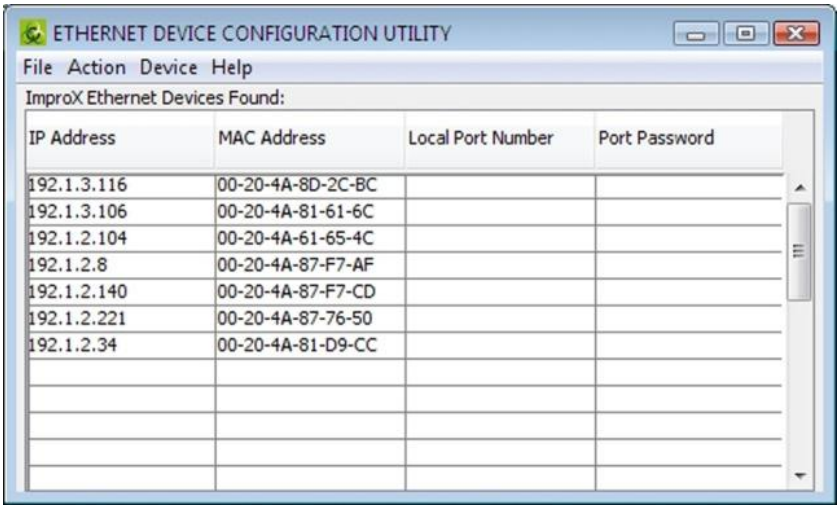

Figure 15 – Ethernet Device Configuration Utility Window

2. In the Action menu, select **Search for Devices – Local Subnet Only**. Wait for a list of Devices to be displayed.
3. Identify the ImproX EC by its MAC Address. Select the Device by clicking it.

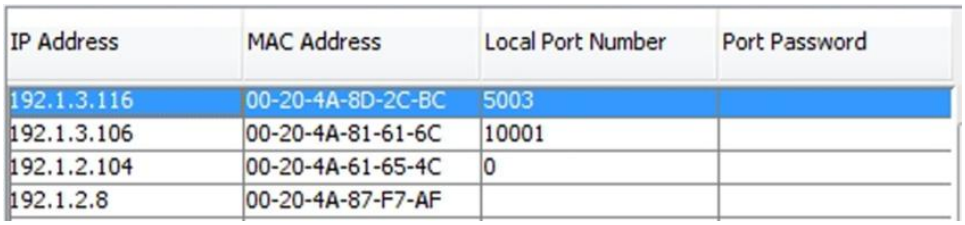

Figure 16 – Selected Device

4. In the menu, select **Action**>**Assign IP Address – Local Subnet Only**.

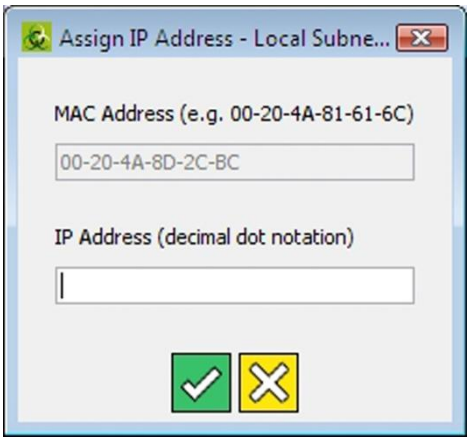

Figure 17 – Assign IP Address

5. Enter a valid static IP Address in the **IP Address** textbox.
6. Click the button.

*If an ImproX EC is not detected in the search and you know its MAC Address, select a blank row on the table, then on the menu select **Action**>**Assign IP Address**. Manually enter the Device's MAC Address and IP Address. Note that the Device must be located on the local subnet.*

Do not assign an IP address of 0.0.0.0 unless a DHCP server is present. If a DHCP server is present, assigning an IP address of 0.0.0.0 will result in the Device receiving a dynamic IP Address.

Configure the Device

Ensure that you configure the TCP/IP settings correctly for the ImproX EC's intended network. If the IP Address, Default Gateway, Subnet Mask, or Host Bits settings are not exact, the Device can lock-up. If this happens, physically remove the device from the bus and return it to your dealer for re-programming. Contact a competent Network Administrator or your regular support channel if you are unsure of the correct network settings.

When the ImproX EC has an IP Address, you can configure its Ethernet settings as follows:

1. Select the device to configure from the table.
2. On the menu, select **Device**>**Device Configuration**.

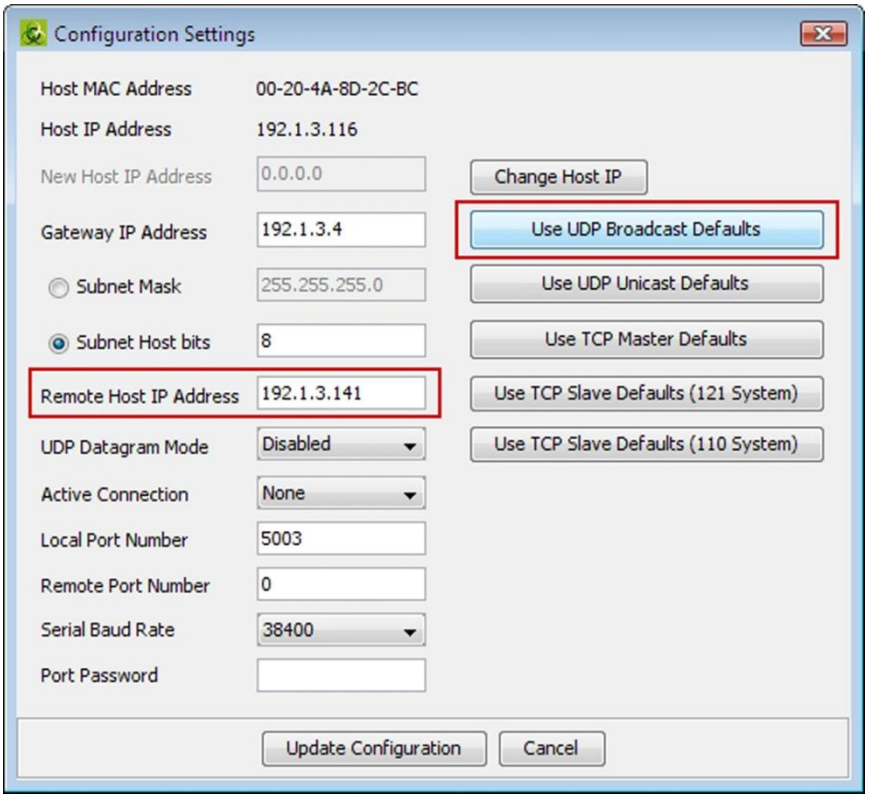

Figure 18 – Configuration Settings (Pre V7.4 Software)

Devices not destined for the local subnet can be temporarily installed on the local subnet for configuration purposes.

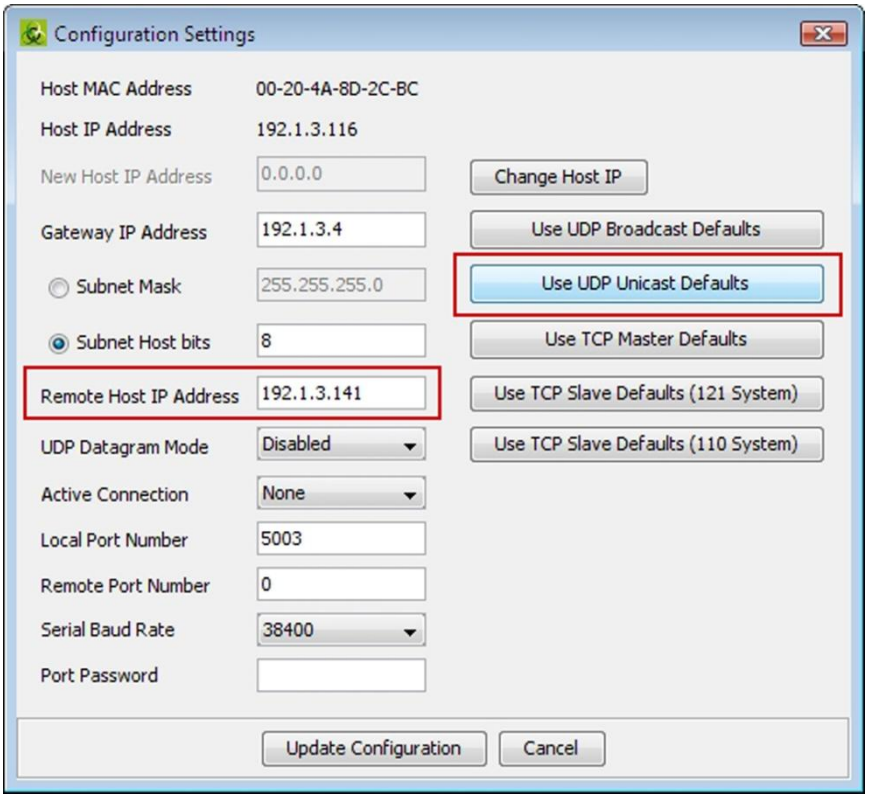

Figure 19 – Configuration Settings (Using V7.4 and Post Software)

Configuration Settings

Entering the correct Configuration Settings requires networking knowledge. If you are not familiar with the settings, consult an experienced network administrator.

Socket Connections

A Socket connection has two components: an IP Address and a Port Number. Ethernet devices must share a common Socket connection to communicate with each other. For example:

Pre V7.4 Software:	Device A = an ImproX EL Device B = an ImproX EC
Using V7.4 Software:	Device A = PC (Engine) * Device B = an ImproX EC

** Refer to page 23 for details of the Ethernet Configuration Utility.*

The Local Port on Device A equals the Remote Port on Device B and vice versa.

Proceed as follows to configure the ImproX EC network settings:

1. On the **Configuration Settings** window, enter the **Gateway IP Address** – obtain this from the network administrator.

2. Click one of the following buttons to populate the fields with preset default values:
   - Use UDP Broadcast Defaults.
   - Use UDP Unicast Defaults.
   - Use TCP Master Defaults.
   - Use TCP Slave Defaults (121 Defaults).
   - Use TCP Slave Defaults (110 Defaults).

If you are using UDP Broadcast Defaults and you change the Gateway IP Address and Subnet Host Bits values, click the Use UDP Broadcast Defaults again, before clicking Update Configuration.

For UDP Broadcast Defaults, set the Gateway IP Address to 0.0.0.0.

Refer to the Using Defaults section on page 29 for more information.

3. Enter the **Subnet Mask** *or* the **Subnet Host Bits**. If you are not using TCP Slave Defaults, enter the **Remote Host IP Address**.

If the device is destined for a different subnet, refer to the Move Devices to a Different LAN section.

4. Click **Update Configuration** to save the changes to the device.

If you need to change a static IP Address, click the Change Host IP button. The IP Address field toggles to an editable field. Note that you cannot change a Dynamic IP Address as the DHCP server allocates it automatically.

Change the Local Port Number and Remote Port Number if required. We recommend that you only change the Serial Baud Rate if the device has explicit instructions to use a different value.

*Specify a **Port Password** for additional security. However, ensure you keep a record of the password for future use.*

Save Settings to a File

Changes to the ImproX EC configuration settings can be saved to a file for later re-use. Saving settings to a file is essential if you plan to move Devices to a different subnet, as a search will not automatically detect it in it's new location. After you have clicked Update Configuration, proceed as follows to save settings for the currently selected device:

1. On the menu, select **File**>**Save IP Address**.
2. Browse to a suitable location and enter a **File Name**.
3. Click **Open**. The settings are saved to a file.

Import Settings from a File

If you move an ImproX EC to a new location, you can import its previously configured settings from a file. To do so, proceed as follows:

1. Select the ImproX EC in the table.
2. On the menu, select **File**>**Import IP Address**.
3. Browse to the saved file and click it.
4. Click **Open**. The settings from the file are imported to the selected device.

Move Devices to a Different LAN

Before moving an ImproX EC across a WAN or to a different LAN, change it's Host IP address, Gateway IP Address and Subnet Host Bits to suit its *new* network. Save the new settings to a file. To access the device in the future, import the file to obtain the saved IP address details.

If you change the Subnet Mask, the device will only function again after it has been moved to the new subnet.

Using Defaults

Clicking one of the default buttons adds default values to the configurable fields. However, you are still required to enter values into other fields.

This section provides brief instructions for using the default values. For best results, we strongly advise consulting an experienced network administrator.

- **UDP Broadcast**—this facility is simple and quick to use. However, it only works on a LAN. When using this mode, set the Gateway IP Address to 0.0.0.0. Broadcast is a one-to-many transmission.
- **UDP Unicast**—this is ideal for using over a WAN or when the local network is congested. Unicast is a one-to-one transmission.
- **TCP Master**—this is the default setting for a TCP/IP setup. Recommended when connection between units needs to be guaranteed. Note that TCP/IP requires more resources than UDP.

Ethernet Security

The XPort security features on the ImproX EC secures the Controller from unauthorized tampering via TCP/IP over the Internet. To setup the XPort security features you need to configure its Telnet settings.

Telnet Settings

Securing the ImproX EC's Telnet settings is required to prevent unauthorized access via Telnet or UDP to the dedicated ports. Only undertake Setup across a secure network.

*You must **Apply** this level of security only after configuring the Controller for TCP/IP. This is because enabling Telnet security prevents the Ethernet Device Configuration Utility from accessing the Controller.*

If you need to change the Port Password, temporarily disable the Telnet settings so that you can use the Ethernet Device Configuration Utility again.

UDP Security Configuration

To configure UDP security, proceed as follows:

1. In Windows®, open the **Control Panel**>**Programs and Features**.
2. Under Tasks, select **Turn Windows Features On or Off**.
3. Select the **Telnet Client** checkbox.
4. Click the **OK** button.
5. In Windows®, open **Accessories**>**Run**.
6. Enter **cmd** in the **Open** textbox.

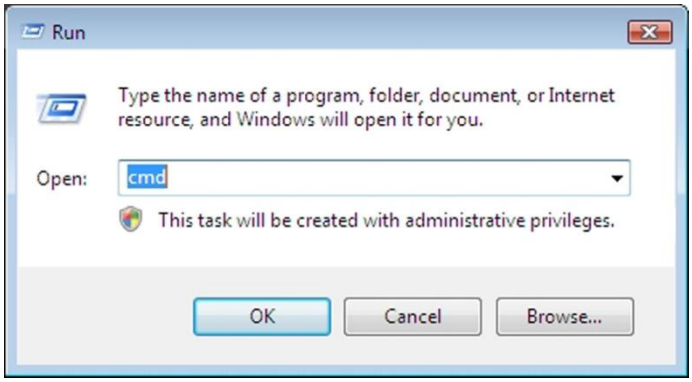

Figure 20 – Run Window

7. At the prompt, enter **telnet** followed by a **space** and the **IP Address** of the selected Controller, followed by another **space** and **9999**.For example, if the IP Address of the ImproX EC is 192.1.3.108, enter the following: *telnet 192.1.3.108 9999*

Figure 21 – Command Prompt

8. Press **Enter**.

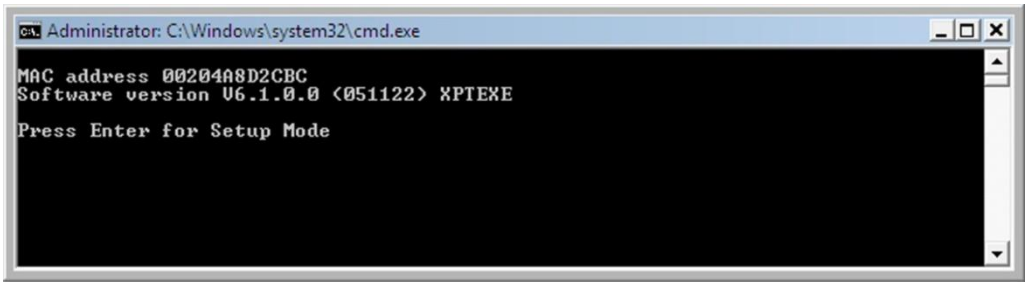

Figure 22 – MAC Address Displayed

9. Press **Enter** again to enter Setup Mode.
10. Enter **0** to select the **Server Configuration** option.
11. Press **Enter** for each prompt until the prompt **Change Telnet Password** is displayed.
12. Enter **Y**.
13. Enter a **4-character Password** when requested.

Make a note of this Password. It is required for future Telnet access.

14. Enter **6** to the select **Security** option.
15. Enter **Y** to disable all options except for the following:
    - Disable Telnet Setup <N>—Enter **N**.
    - E**nable Enhanced Password** <Y>—Enter **Y** to use a 16 character Password instead of the default 4 character Password previously selected.
    - Change the Password <Y>—Enter **Y**.
    - **Enter Password**—Enter a new **Password**, a maximum of 16 characters long.

Make a note of this Password. It is required for future Telnet access.

16. Select **9** to save and exit Telnet.

To view the settings without saving, select option 8.

The Telnet security feature prevents access to the Controller without a Password. Similarly, you cannot access the Controller via an Internet browser using the IP Address as the URL.

This is because Telnet security settings disable the XPort Web Server. Therefore, the Controller web page is unavailable. However, you can access the Controller on a network via a TCP/IP connection through the built-in serial port with a valid port password.

Temporarily Disable Telnet Security to Enable UDP Access for the Ethernet Configuration Utility

1. In Windows®, click **Start**>**Run**.
2. Enter **cmd** in the **Open** textbox.
3. Enter **telnet** and the **IP Address** of the selected Controller, followed by a **space** and **9999**. For example, if the IP Address of the ImproX EC is 192.1.3.108, enter the following command: telnet 192.1.3.108 9999
4. Press **Enter** and wait for the password prompt.
5. Enter the **Enhanced Password** previously assigned to the unit. The Setup menu is displayed.
6. Enter **6** to select the **Security** option.
7. Configure the following settings as indicated:
    - Disable SNMP <Y>—Enter **Y**.
    - Disable Telnet Setup <N>—Enter **N**.
    - Disable TFTP Firmware Update <Y>—Enter **Y**.
    - Disable Port 77FEh <Y>—Enter **N**.
    - Disable Web Server <Y>—Enter **Y**.

- Disable ECHO ports <Y>—Enter **Y**.
- Enable Enhanced Password <Y>—Enter **Y**.
- Change the Password <N>—Enter **N**.
- Disable Port 77F0H <Y>—Enter **N**.

8. Enter **9** to Save and exit Telnet.

Troubleshooting

Some common problems and their solutions are listed here.

Problem:	TCP/IP connection to the XPort serial port fails.
Solution:	Ensure that the ECHO ports option is disabled.

Problem:	Ethernet Configuration Utility / Search fails to find the unit.
Solution:	Ensure that Port 77FEH and Port 77F0H are enabled.

Problem:	Device Timeout – Please try again error message is displayed.
Solution:	Ensure your Subnet Mask is correct.

Addendum

This section provides some basic definitions and examples of network terminology. It is intended as a guide only. To fully understand the Etherlink Software, we recommend formal training in networking.

Network IP Addresses

An IP Address is unique number used to identify a device on a network. The Address is written in a so-called *dot-decimal notation* and consists of four number (octets) separated by dots, for example: 125.255.255.1. Each octet can have decimal values up to 255 (8 bits).

The first octet of each IP Address represents the network number. The remaining numbers – represented by an x - refer to specific computers or hosts. The value of the first octet determines the type of network class as follows:

- Class A: **0**.x.x.x to **126**.x.x.x
- Class B: **128**.0.x.x to **191**.255.x.x
- Class C: **192**.0.0.x to **223**.255.255.x

Class A networks reserve only the first octet for network addresses. The remaining three octets are for different host addresses. This means that a Class A network can support up to 127 networks and up to 16 777 216 (8 bit x 8 bit x 8 bit) host computers.

Class B networks reserve the first and second octets for network addresses. Octets three and four are used for host addresses.

Class C networks reserve the first, second, and third octets for network addresses. Only the last octet is available for host addresses.

IP Addresses that have a 127 value for the first octet are reserved for local host communication. A local host is the currently used computer.

Creating a Subnet

Creating a subnet on an IP network enables you to create several smaller networks from a single large network. Subnetting is used when several LANs are linked together via a router to form a WAN. You can create a subnet by defining a Subnet Mask.

Subnet Masks

A Subnet Mask filters out unwanted data from other subnets. All hosts on the same subnet or network segment must have the same Subnet Mask to communicate with each other. The following table shows the default Subnet Masks for each class of network. Note the location of the subnet octet for each network class.

Class	From IP	To IP	Subnet Mask	Host Bits
A	0.x.x.x	126.x.x.x	255.0.0.0	24
B	128.0.x.x	191.255.x.x	255.255.0.0	16
C	192.0.0.x	223.255.255.x	255.255.255.0	8
Class	**From IP**			
A	255.0.0.0			
B	255.255.0.0			
C	255.255.255.0			

Table 5 – Default Subnet Masks for Each Class of Network

The subnet mask octet can be any of the following values: 255, 254, 252, 248, 240, 224, 192, 128, or 0.

Subnet Examples:

Host Address	Subnet Mask	Network Address
10.1.4.8	255.0.0.0	10.0.0.0
114.2.4.6	255.255.0.0	114.2.0.0
192.1.3.156	255.255.255.0	192.1.3.0

Table 6 – Subnet Examples

Use a lookup table to obtain the corresponding Subnet Mask.

For further details refer to www.subnetonline.com.

A Practical Example of the ImproX EC's Configuration Procedure

This practical example lays out the procedure for setting up a UDP Site, using ImproX EC's and UDP Multi Drivers.

Pre-configuration

- Configure the ImproX EC's to communicate with the Engine PC.
- Assign the IP Address.
- If communicating across a WAN, assign the Gateway IP Address.

Settings Used in this Example

PC IP Address:	192.1.3.141
Subnet Range:	255.255.254.0
Controller IP Address:	192.1.2.3

Configuration Procedure for the Controller (IP Address 192.1.2.3)

1. Plug the ImproX EC into the Network.
2. Assign the **IP Addresses** (see the section titled Assign the IP Address
3. on page 25).
4. Configure the Controller (see the section titled Configure the Device on page 26).

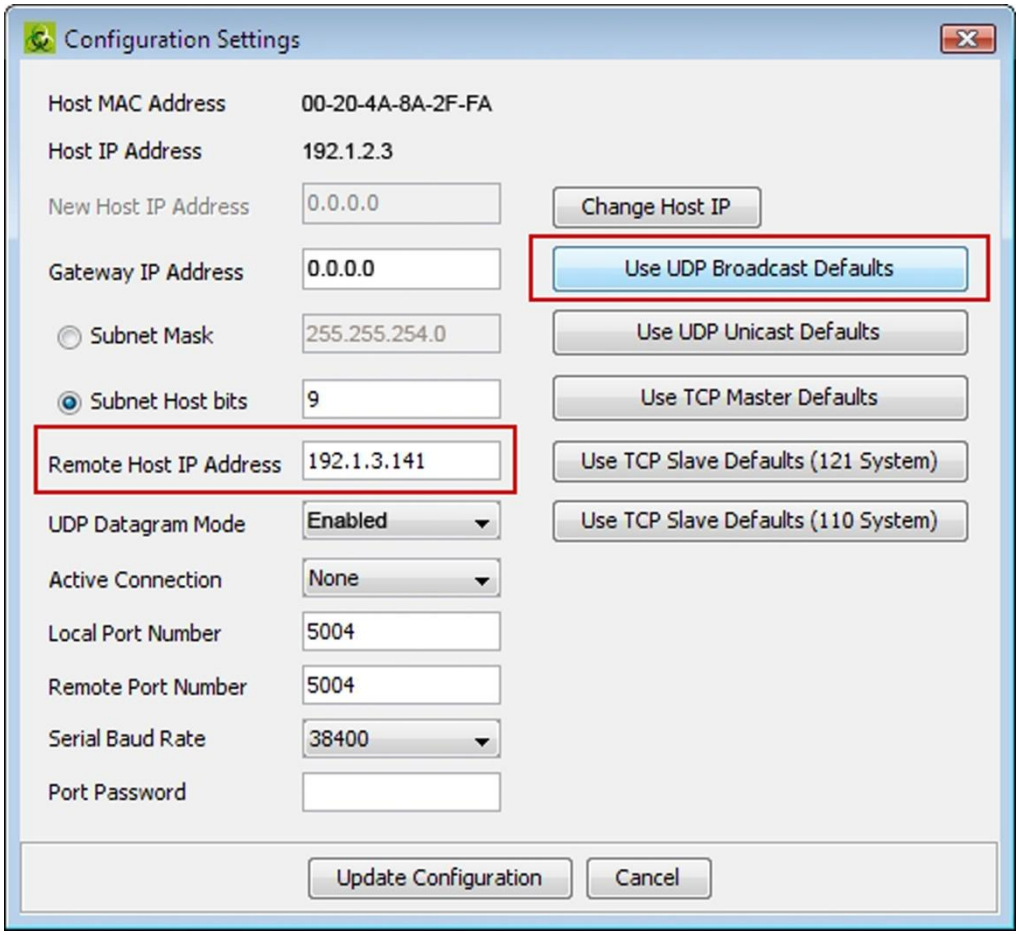

Figure 23 – Configuration Settings (Pre V7.4 Software)

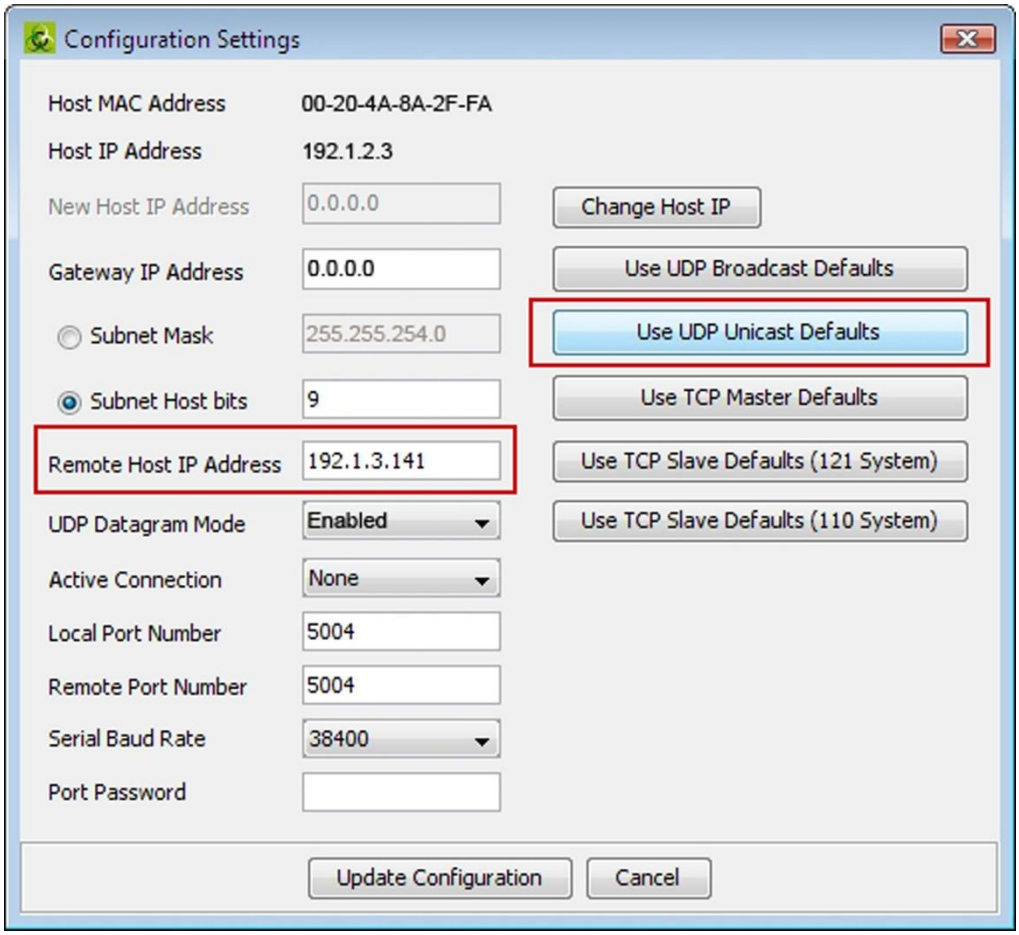

Figure 24 – Configuration Settings (Using V7.4 and Post Software)

Firmware Upgrade Utility

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Utils**>**Firmware Upgrade**.
2. From the Menu Bar, select the **Config**>**Protocol**.
3. In the **Protocol Settings** dialog, select the UDP radio button.
4. In the Host IP field, enter the **Controllers IP Address** (in this instance **192.1.2.3**).
5. Enter the **Host Port** and **Local Port** numbers (in this instance **5004**).
6. Click the **OK** button.
7. Click on the **System Tools** tab.
8. Click on the **Ping** button.

After the Ping, you will see the Fixed Address for the Controller. Follow these steps for each Controller, ensuring that you change the Host IP for each Controller.

Manual Auto-ID

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Utils**>**Manual Auto ID**.
2. Enter your **Username** and **Password**.

*The default username is **SYSDBA**. The default password is **masterkey**.*

3. Click the button.

4. In the Main Pane, from the **Site SLA** drop-down list, select the Site.
5. Select the **Controller** checkbox.
6. From the **Unit Type** drop-down list, select AC from the drop-down list.
7. In the **Fixed Address (hex)** textbox, enter the Controller's Fixed Address (in this instance we used 0051E97F).
8. In the **Controller LA (hex)** textbox, enter the Controller's Logical Address.
9. Click on the button.

After entering the Controllers details, your screen will appear as shown in Figure 25.

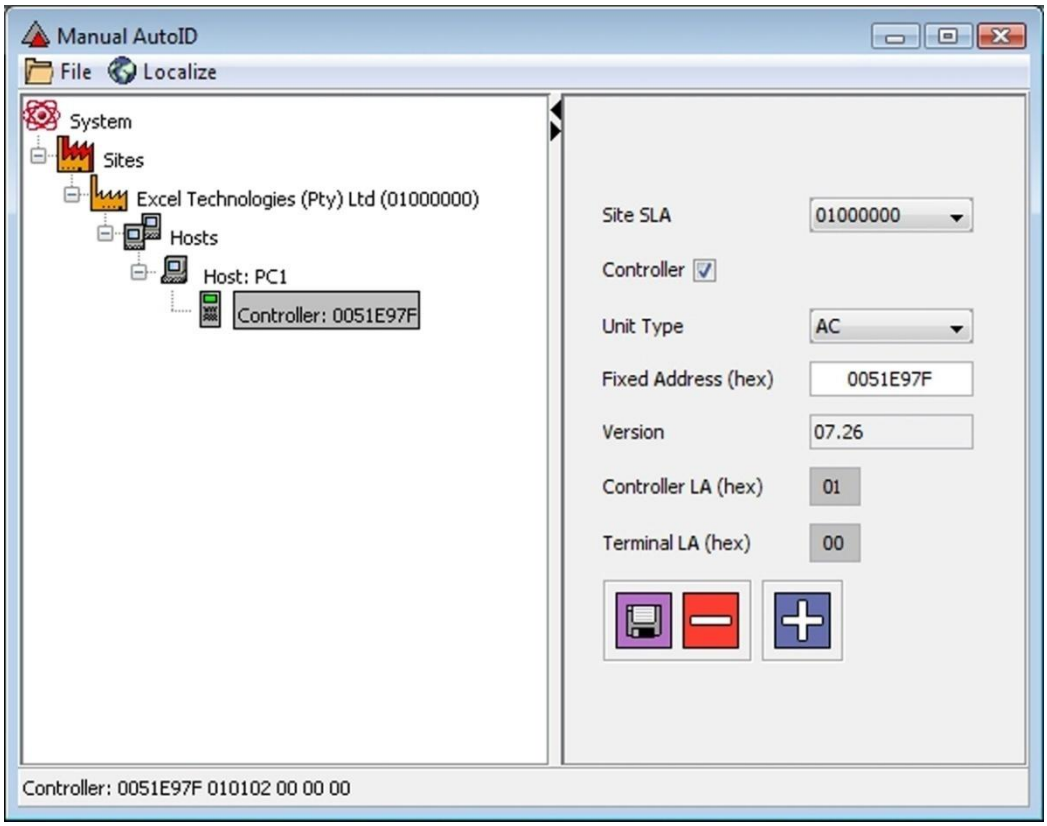

Figure 25 – Manual AutoID Dialog

These details only update on re-opening of the Access Module.

Access (Site)

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Access**.
2. In the Navigator Pane, select the **Site** icon from the hierarchical tree.
3. At the bottom of the Main Pane, select the **UDP Comms** checkbox.
4. Click on the button.
5. Select the **Site** icon, again, from the hierarchical tree.
6. Press the **F5** key on your keyboard, the Site information refreshes.

*You will notice that an **IP Mapping** icon now appears in the Navigator Pane on the hierarchical tree menu.*

Access (Host)

1. In the Navigator Pane, select the icon from the hierarchical tree.
2. Select each **Controller** individually.
3. In each Controllers Main Pane:
   - in the **IP Address** field, type in the Controllers IP Address details.
   - in the **HW Port** field, type in the Controllers Port Number.
   - click on the button..

Access (IP Mapping)

1. In the Navigator Pane, select the icon from the hierarchical tree.
2. Click on the button.

A file is exported that the Engine will use to communicate with the Controllers.

Engine

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Engine**.
2. From the Menu Bar, select **Configuration**>**Engine Properties**.
3. Select the **UDP Comms** checkbox.
4. Click the button.
5. Close Engine.
6. In Windows®, click **Start**>**Programs**>**ImproNet**>**Engine**.
7. Click the **Auto-ID** button.

From there the setup of dragging and dropping is the same.

Ethernet Discovery Utility

Configure the EC^{II} Controller

The Ethernet Discovery Utility allows the following actions:

- Detection of ImproX EC^{II} Controllers on the network.
- Configuration of the network address settings.
- Configuration of the ImproX EC^{II} Controllers settings.

We recommend you carry out configuration using the following sequence:

1. View the Controllers on the Network.
2. Confirm or change the IP Address and set the Address to static.
3. Change the default password to a suitable password for your site.

Ensure that you keep the same password across all Controllers.

4. Query the Logical Address of all the Controllers for your site.
5. Change the Logical Address of the Controllers as needed, thus ensuring that each Controller has a unique Address.

Do not change the Logical Addresses after importing them into ImproNet.

6. Set the ImproX EC^{II} Controllers configuration for each Controller. That is, select the required memory size and port number. Ensure that all the Controllers have the same configuration. (This step is optional - default settings should do for most sites).
7. Select all the Controllers for your site and export their settings to a file.
8. Check the file exists and contains the data for import into ImproNet.

Start the Discovery Utility

In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Ethernet Discovery Utility**.

View all Available Controllers

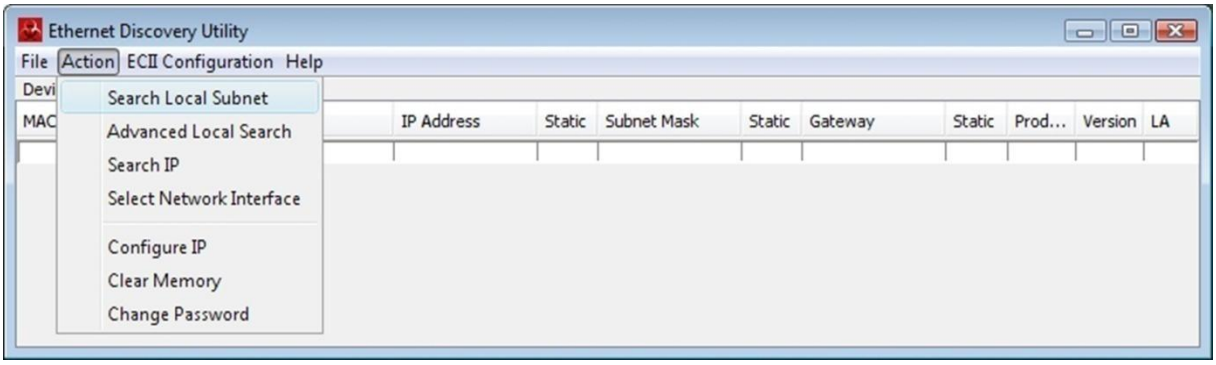

Figure 26: Ethernet Discovery Utility – Action Menu

To view all the ImproX EC^{II} Controllers on the local subnet:

1. On the menu bar, go to **Action**>**Search Local Subnet**.
2. If the Discovery Application fails to find any Devices, at the **Device Not Found** dialog, click the **OK** button.
3. On the menu bar, go to **Action**>**Advanced Local Search**.

*By selecting **Advanced Local Search**, you may:*

1. *select the correct **Network Interface** (only displayed where more than one exists) and*
2. *enter the correct **Subnet Mask**.*

If the search returns Controller details, then the Discovery Application (while running) retains the Network Interface and Subnet Mask information captured, for further searches. You may however, use the Advanced Local Search feature again during the session for further searches using different search criteria.

4. At the **Select Network Interface** dialog, select the relevant **Network Interface**, if more than one displays.
5. Click the **OK** button.
6. In the Input dialog, in the textbox, enter the **Subnet Mask** for your network.
7. Click the **OK** button.
8. Wait for the Controllers to display.

Sort the information displayed in either ascending or descending order by selecting the column header. The arrow displayed in the column header indicates whether sorting is ascending or descending, and the column on which the sort took place.

View a Specific Controller

To view a specific Controller:

1. On the menu bar, go to **Action**>**Search IP**.
2. In the **Enter IP Address** dialog, enter the **IP Address** of the Controller you're searching for.
3. Click on the button.
4. Wait for the Controller to display.

Secure Logon

Accessing certain menu choices, listed on the Action and ECII Configuration menus, needs a secure logon. These choices include:

- Configure the IP Address
- Clear the Memory
- Change the Password
- Set the ECII Configuration

A secure logon activates after about 12 seconds.

You will remain logged on to the selected Controller until you select another Controller and choose a menu alternative needing a logon.
You will also lose connection to the current Controller after changing the IP Address, clearing the memory or changing the ImproX EC^{II} Controllers configuration.

Secure Logon Dialog

Figure 27: Device Password Dialog

1. In the **Device Password** dialog, enter your **password**.

*The default password is **impro**. For improved security we recommend that you change this password, to a string of not more than 16 characters.*

2. Click on the button.

Configure IP Addresses

If you do not know your Configuration Settings, contact your Network Administrator.

If a DHCP server is present, IP Addresses can be dynamically assigned. If there is no DHCP server, obtain a suitable IP Address from your Network Administrator. A static IP Address is preferred for the Controller.

Configure a Controller's IP Address settings as follows:

1. In the Ethernet Discovery Utility window, select the Controller for configuration.
2. On the menu bar, go to Action>Configure IP.

3. Logon if requested (see page 41).

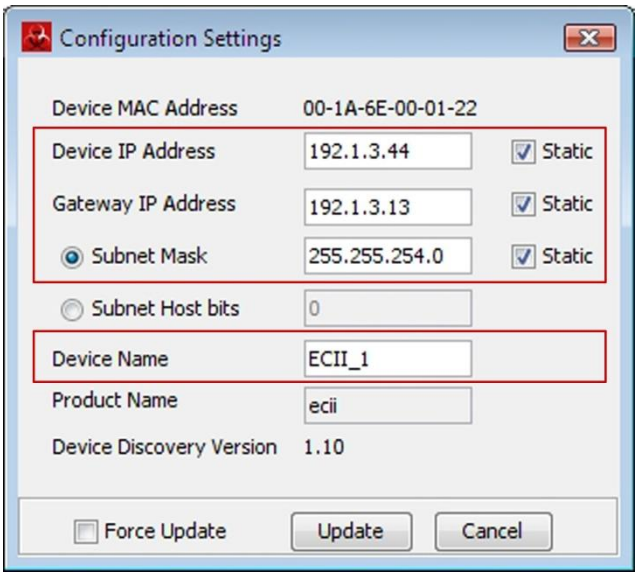

Figure 28: Configuration Settings Dialog

4. Assign the Controller to EITHER a local or non-local Subnet as follows:

Assign the EC^{II} Controller to a Local Subnet

If you assign an invalid IP Address, the EC^{II} may no longer be able to communicate. In this case restore factory defaults (Refer to the ImproX EC^{II} Hardware Installation Manual for more information).

1. In the Device IP Address textbox, enter a **Device IP Address**.
2. Tick the checkbox to set the IP Address to static.
3. In the Gateway IP Address textbox, enter a **Gateway IP Address**.
4. Tick the checkbox to set the Gateway IP Address to static.
5. Continue with *ONE* of the procedures (Subnet Mask *or* Subnet Host Bits) below:

Subnet Mask

1. Select the **Subnet Mask** radio button.
2. In the textbox, alongside, enter the **Subnet's Address**.
3. Tick the checkbox to set the Subnet Mask to static.

Subnet Host Bits

1. Select the **Subnet Host Bits** radio button.
2. Enter the number of bits in the textbox.

6. Enter a **Device Name**.

*Use the same **site prefix** to name devices belonging to the same site. Example: "**Site 1** – Factory", "**Site 1** – Testing".*

7. Ensure the **Force Update** checkbox is **UNCHECKED**.

If the Force Update checkbox remains UNCHECKED, the Controller tries to change the IP address and test communication on the new address. If successful, the update becomes final; otherwise, the Controller reverts to its old settings.

Changes to the IP Configuration result in the Controller rebooting on acceptance of the change. The Configuration Settings dialog remains open during this time, allowing the Controller to reboot. On closure of the Configuration Settings dialog, the Discovery Application again searches for the Controller and if successful, displays the updated Controller details.

8. Click the **Update** button.

Assign the ECII Controller to a Non-local Subnet

Only perform this action if you want to assign the Controller to a non-local subnet. After performing the step, the Ethernet Discovery Utility will NOT detect the Controller on the local subnet. Therefore ensure that you assign the Logical Address BEFORE changing the IP Address. Finally physically move the Controller to the required location.

To change an IP Address to an IP Address outside the local subnet, continue as follows:

1. In the Device IP Address textbox, enter a **Device IP Address**.
2. Tick the checkbox to set the IP Address to static.
3. In the Gateway IP Address textbox, enter a **Gateway IP Address**.
4. Tick the checkbox to set the Gateway IP Address to static.
5. Select the **Subnet Mask** radio button.
6. In the textbox, alongside, enter the **Subnet's Address**.
7. Tick the checkbox to set the Subnet Mask to static.
8. Tick the **Force Update** checkbox (the Controller adopts the new settings regardless).
9. Click the **Update** button.

*After installing the Controller in its new location, you can find it using the **Action**>**Search IP** menu option.*

Change the Default Password

1. On the menu bar, go to **Action**>**Change Password**.
2. **Logon** if requested (see page 41).
3. In the **Enter New Device Password** dialog, in the **Enter New Password** textbox enter a new password for the selected Controller.

Your new password must not exceed 16 characters.

4. In the **Confirm New Password** textbox re-enter your chosen password.
5. Click on the button.

Query the Logical Address

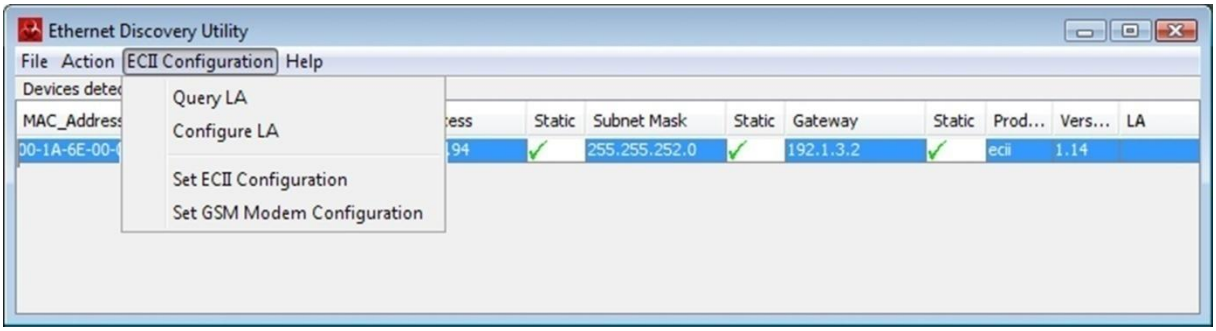

Figure 29: Ethernet Discovery Utility – ECII Configuration Menu

Display the Logical Address for the selected Controller(s) in the LA column of the Utility.

1. In the **Ethernet Discovery Utility**, select the Controller(s) you are querying.

*To select more than one Controller, hold down the **CTRL** key and **left-click** additional Controllers.*

2. On the menu bar, go to **ECII Configuration**>**Query LA**.

Assign a Logical Address

A new EC^{II} Controller has the default Logical Address **FF**. To assign a new Logical Address:

After making changes to the Controllers Logical Address, ensure that you export the configuration file, for import into ImproNet Engine.

1. In the **Ethernet Discovery Utility**, select the Controller(s) to be configured.

*To select more than one Controller, hold down the **CTRL** key and **left-click** additional Controllers.*

2. On the menu bar, go to **ECII Configuration**>**Configure LA**.
3. Type the new hexadecimal **Logical Address** in the textbox.
4. Click the button to confirm.
5. Repeat steps 3 and 4 for each selected Controller.

*The same Logical Address should not be used more than once per Site. To prevent this, select all the Controllers on a Site. Go to **ECII Configuration**>**Query LA**. The Logical Addresses display in the LA column on the right-hand side of the table. Ensure that the Logical Address is not repeated.*

Configure the Port Number and Memory Size

This is an advanced feature; use the feature only if required.

After making changes to one or more Controllers Configuration Settings, ensure that you export the configuration file for import into ImproNet Engine.

Using the **Ethernet Discovery Utility,** view or configure the **Port Number** and or **Memory Size** of the EC^{II} Controller as follows:

All Controllers on the same site MUST have the same Memory Size Configuration.

1. Select the **Controller** for configuration.
2. On the menu bar, go to **ECII Configuration**>**Set ECII Configuration**.
3. **Logon** if requested (see page 41). The current Port Number (used for communication with the Controller) and the Memory Size configuration displays. Press the button if you don't need to make any changes, or else continue with point 4.

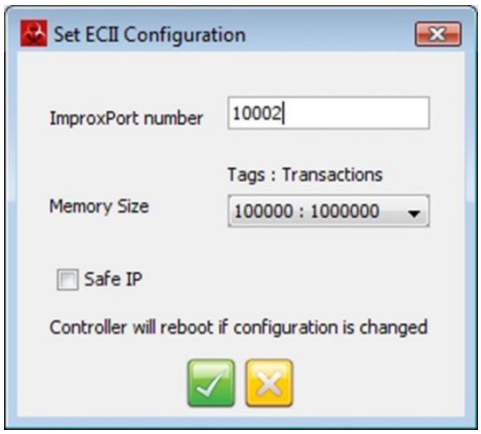

Figure 30: Set ECII Configuration Dialog

4. In the **Set ECII Configuration** dialog, in the **ImproxPort Number** textbox, change the **Port Number**.

*The default Port Number is **10002**. Only change the default Port Number, if it clashes with other devices or services on your network.*

5. If necessary, in the **Memory Size** textbox, change the **Memory Size Configuration**.

*The default Memory Size Configuration is **100 000 Tags** and **1 000 000 Transactions**.*

Enable Safe IP only AFTER configuring and setting up the whole system. Once you set Safe IP you can only change or query the Logical Address using the Ethernet Discovery Utility on the Engine PC.

6. Click the button to confirm.
7. Wait while the Controller re-boots (about 15 seconds).

Export the Controllers Configuration File

Controller information must be made available to ImproNet Modules as follows:

1. Select the **Controller(s)** to be added to a Site.
2. On the menu bar, go to **File**>**Export IP Config**.

3. In the **Save** dialog, enter a file name.
4. Click on the **Save** button.

Make a note of the file name and location. The Controller Configuration file must be imported when you configure ImproNet Engine.

We recommend that you save the file in your ImproNet folder.

*The default file name is **discovery.txt**. We recommend that you give the file a **site suffix** so that it is associated with the correct site. Example: "Discovery - **site 1**.txt."*

Importing a Controllers Configuration File

Import a previous version of the Controller's Configuration File into the Discovery Utility adding the information to the existing table.

1. On the menu bar, go to **File**>**Import IP Config**.
2. In the **Open** dialog, select the file.
3. Click on the **Open** button.

Advanced Features

Clear the Controller's Memory

This feature lets you clear the Controller's memory (used for storing the Controller's Database - that is the Tags, Transactions, Terminal Tables, Actions, Time Patterns and so on).

Only use this feature in consultation with Impro's Support personnel.

1. Select the **Controller** for configuration.
2. On the menu bar, go to **Action**>**Clear Memory**.
3. **Logon** if requested (see page 41).

Safe IP

Enable Safe IP only AFTER configuring and setting up the whole system. Once you set Safe IP you can only change or query the Logical Address using the Ethernet Discovery Utility on the Engine PC.

Safe IP is part of the EC^{II} configuration and is only accessible with a Secure Shell (SSH) Logon and the Controller password. Safe IP is accessible from ANY PC on the network, provided the password is known. Therefore ensure that you change the password from the default password, as soon as you have fully configured the Controller.

The Safe IP feature enhances the security of your site installation. It is part of the EC^{II} configuration protected by a Secure Shell (SSH) Logon with the Controller password. The Secure Shell (SSH) sets up an encrypted communication channel to the Controller.

Once you have checked the Safe IP checkbox, The Controller only responds to communication from devices in the IP Mapping Table uploaded by ImproNet Engine. This means that other PCs on the network cannot access the Controller to change or query the Controller's Logical Address.

Set the Safe IP as follows:

1. Select the **Controller** for configuration.
2. On the menu bar, go to **ECII Configuration**>**Set ECII Configuration**.
3. **Logon** if requested (see page 41).

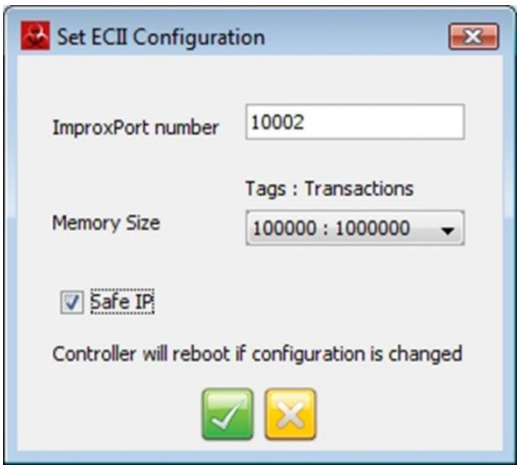

Figure 31: Set ECII Configuration Dialog

4. In the **Set ECII Configuration** dialog, click the **Safe IP** checkbox.
5. Click the button to confirm.
6. Wait while the Controller re-boots (about 15 seconds).

Set GSM Modem Configuration

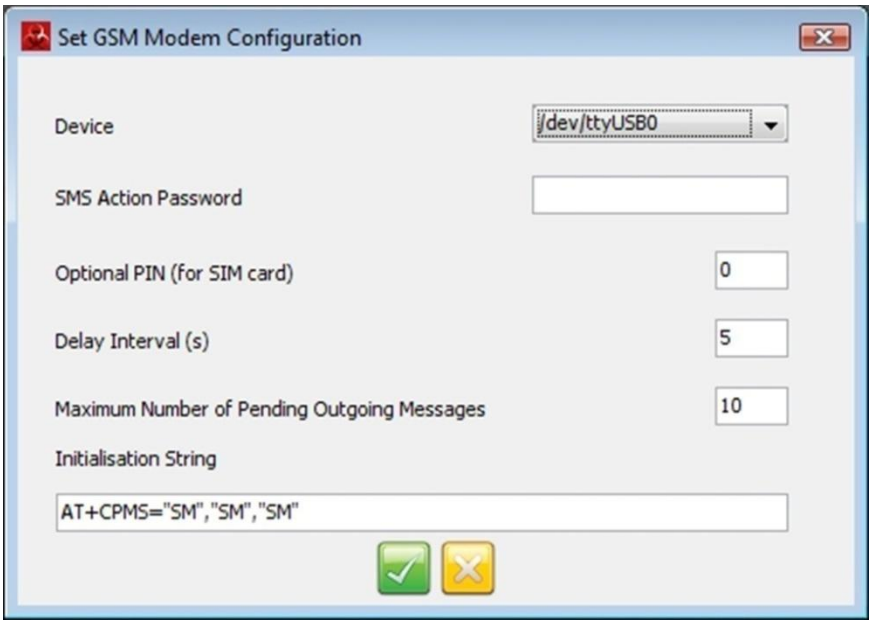

Figure 32: Set GSM Modem Configuration Dialog

This feature enables a Controller to send and respond to received SMS messages when certain trigger events occur. Set the GSM Modem Configuration as follows:

1. Select the **Controller** for configuration.
2. On the menu bar, go to **ECII Configuration**>**Set GSM Modem Configuration**.
3. **Logon** if requested (see page 41).

In the **Set GSM Modem Configuration** dialog, configure the following:

3. **Device**—select ***/dev/ttyACM0*** recommended for the *Falcom Samba 75 Modem*.
4. **SMS Action Password**—set this password for use when sending SMS messages. This password prevents unauthorized applications from using the GSM service.
5. **Optional PIN (for SIM card)**—enter your SIM card's PIN if using one.
6. **Delay Interval**—the interval in seconds between checking for SMS messages. Change this setting only to ensure the best possible operation.
7. **Maximum Number of Pending Outgoing Messages**—this setting limits the buffer in case an event repeatedly creates false messages. Change this setting only to ensure the best possible operation.
8. **Initialisation String**—depends on the Modem used. Select ***AT+CPMS="SM","SM","SM"*** recommended for the *Falcom Samba 75 Modem*.
9. Click the button to confirm.

Configure ImproNet Engine

Configure ImproNet Engine as follows:

Import EC^{II} Controller Configuration File

Using the Ethernet Discovery Utility, ensure that you assign the Logical Address to the Controller. Failure to do so results in the Import function failing for those units without Logical Addresses.

Import the EC^{II} Controller configuration file as follows:

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Engine**.
2. On the menu bar click **Configuration**>**Import ECII**.
3. Type in the location of the Controller configuration file OR click ... to browse for the file.
4. Click the button.
5. Click **Yes** to confirm.

Activate UDP Communications

Activate the UDP communication option in ImproNet Engine as follows:

1. On the menu bar, click **Configuration**>**Engine Properties**.
2. Tick the **UDP comms** option.
3. Click the button to confirm.

A Practical Example of the ImproX EC^{II}'s Configuration Procedure

This practical example lays out the procedure for setting up a UDP Site, using ImproX EC^{II}'s and UDP Multi Drivers.

Settings Used in this Example

Subnet Range:	255.255.252.0
Controller IP Address:	192.1.2.94
Controller MAC Address:	00-1A-6E-00-01-0A

Configuration Procedure for the Controller (IP Address 192.1.2.94)

1. Plug the **Controller** into the Network.

If the network's DHCP enabled, the Controller asks for an IP Address from the DHCP Server.

2. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Ethernet Discovery Utility**.

IP Address Configuration

1. On the menu bar, go to **Action**>**Search Local Subnet**.
2. If the Discovery Application fails to find any Devices, at the **Device Not Found** dialog, click the **OK** button.
3. On the menu bar, go to **Action**>**Advanced Local Search**.
4. At the Select Network Interface dialog, select the relevant **Network Interface**, if more than one displays.
5. Click the **OK** button.
6. In the Input dialog, in the textbox, enter the **Subnet Mask** for your network.
7. Click the **OK** button.
8. Wait for the Controllers to display.
9. From the records displayed in the Ethernet Discovery Utility, double-click on the Controller, you need to setup.
10. Logon if required (see page 41).

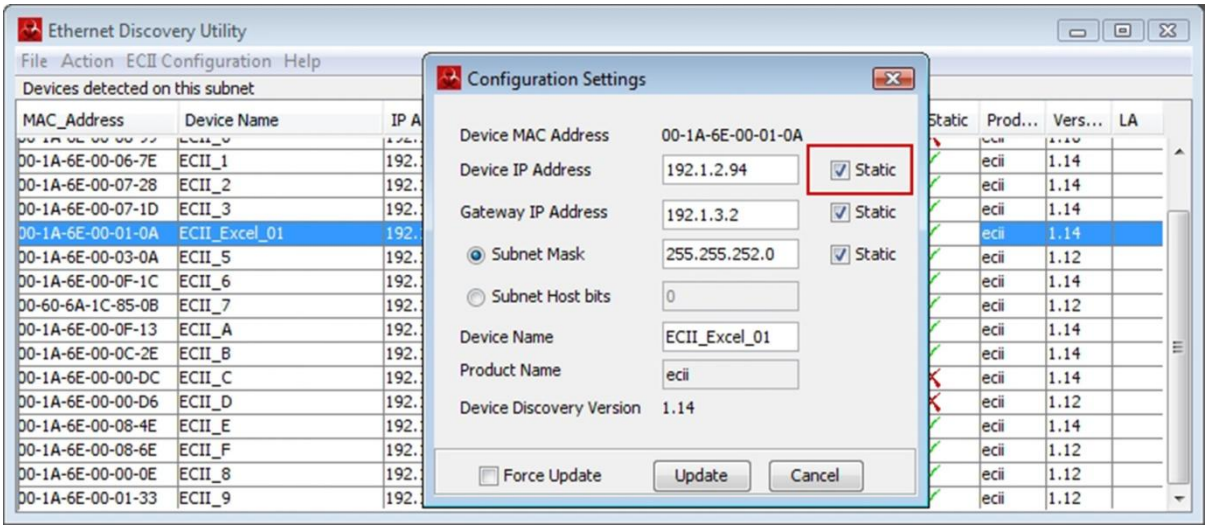

Figure 33 – Ethernet Discovery Utility – Configuration Settings

*We advise that you set the Controller's IP Address to **Static**. This ensures that if the Controller's IP Address expires on the network, and the DHCP Server assigns a new IP Address, the Engine will NOT lose connectivity to the Controller.*

Logical Address Configuration

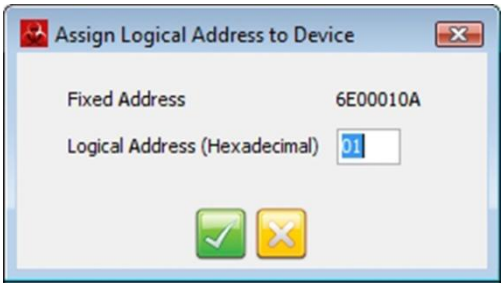

Figure 34 – Assign Logical Address to Device Dialog

1. On the menu bar, go to **ECII Configuration**>**Configure LA**.
2. In the **Logical Address** textbox, type in the Controllers (hexadecimal) Logical Address.
3. Click on the button.

*Please note that the Logical Address is in **Hexadecimal Format**, that is, numbers 01 to 09 are the same as Decimal Format. Higher numbers, that is 10 upwards, appear as follows: 10 as 0A, 11 as 0B and 12 as 0C and so on.*

When configuring multiple Controllers, hold down the CTRL key on your keyboard and select the Controllers you need with the mouse.

Export the IP Configuration File

1. On the menu bar, go to **File**>**Export IPConfig**.
2. In the **Save** dialog, click the **Save** button.

*The **Export IPConfig** menu option saves the **Discovery.txt** file to the ImproNet root directory by default.*

Configuration of the Engine

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Engine**.
2. On the menu bar click **Configuration**>**Import ECII**.

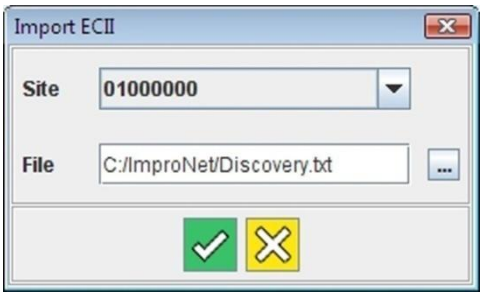

Figure 35 – Import ECII Dialog

3. In the **Import ECII** dialog, in the **File** textbox, browse for the **Discovery.txt** file.
4. Click the button.

5. Click **Yes** to confirm.
6. In **Engine**, on the main menu, click on **Configuration**>**Engine Properties**.

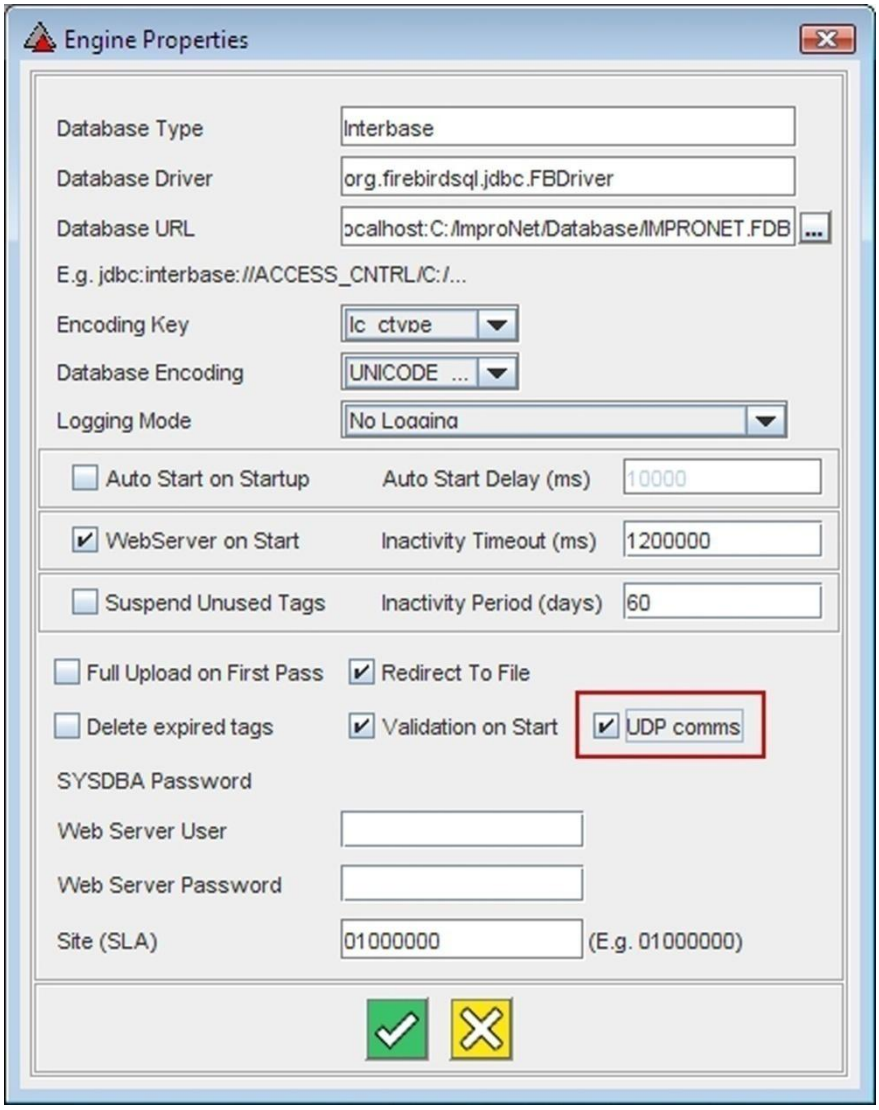

Figure 36 – Engine Properties Dialog

7. In the **Engine Properties** dialog, select the **UDP Comms** checkbox.
8. Click on the button.
9. Click the **Auto-ID** button.
10. Click the **Yes** button.

The Engine then connects to the Controllers, performing the Auto-ID as normal.

Replacing an ImproX AC or EC with an ImproX EC^{II}

Action this procedure by first making a selection from either of the choices listed below:

1. Pre ImproNet V7.60, or
2. ImproNet V7.60 or LATER.

After completing these steps, continue with the steps listed under ImproNet V7.60 or EARLIER.

Pre ImproNet V7.60

Pre ImproNet V7.60 use the following procedure when replacing an ImproX AC or EC with an ImproX EC^{II}:

Modify the Unit Type
Start the IBConsole Software
In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**IBConsole**.

Login to the InterBase Server
1. From the Hierarchical Tree, select your InterBase Server.
2. From the Server drop-down menu, select the **Login** choice.
3. In the Server Login dialog, enter the **Username** and **Password**.

*The default username is **SYSDBA**. The default password is **masterkey**.*

Refer to page 67 for details on the IBConsole Utility setup requirements.

4. Click the **Login** button.

Connect to the Database
1. From the Hierarchical Tree, select your Database file (for example impronet.fdb)
2. From the Database drop-down menu, select the **Connect** choice.

Run the Database Script
1. From the Hierarchical Tree, click on the **impronet.fdb** file.
2. On the toolbar, click on the button.
3. Capture the script details highlighted in Figure 37.

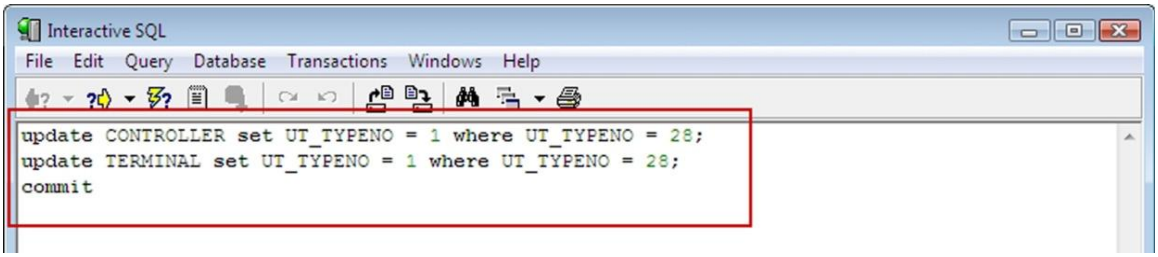

Figure 37 – Interactive SQL Dialog

4. On the toolbar, click on the button.

ImproNet V7.60 or LATER

Using ImproNet V7.60 or later, use the following procedure when replacing an ImproX AC or EC with an ImproX EC^{II}:

Keep ImproNet Engine running when you replace the Controller using the Access Module.

1. Remove the **old AC or EC Controller** from the Controller bus.
2. Connect the **new EC^{II} Controller** to the Controller bus.
3. In Windows®, click **Start**>**Programs**>**ImproNet**>**Access**.

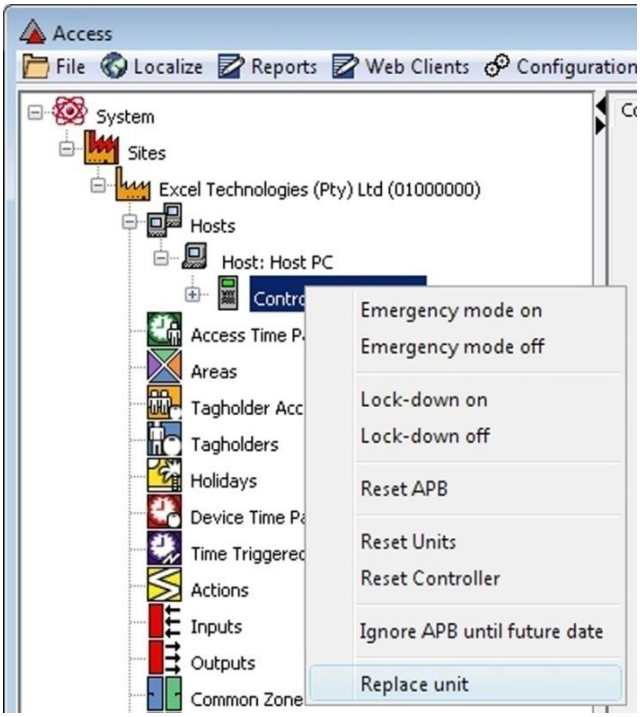

Figure 38 – Replacing the Controller

4. In the **Navigator Pane**, click the **old AC or EC Controller** to select it.
5. Right-click the Controller and select the **Replace Unit** option.
6. From the Unit Type drop-down list, select the **EC2** unit type.
7. Enter the **new Controllers Fixed Address**.
8. Click the button.

ImproNet V7.60 or EARLIER

Controller Configuration

1. Plug the **Controller** into the Network. If the network's DHCP enabled, the Controller asks for an IP Address from the DHCP Server.
2. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Ethernet Discovery Utility**.

IP Address Configuration

1. On the menu bar, go to **Action**>**Search Local Subnet**.
2. If the Discovery Application fails to find any Devices, at the **Device Not Found** dialog, click the **OK** button.

3. On the menu bar, go to **Action**>**Advanced Local Search**.
4. At the Select Network Interface dialog, select the relevant **Network Interface**, if more than one displays.
5. Click the **OK** button.
6. In the Input dialog, in the textbox, enter the **Subnet Mask** for your network.
7. Click the **OK** button.
8. Wait for the Controllers to display.
9. From the records displayed in the Ethernet Discovery Utility, double-click on the **Controller**, you need to setup.
10. **Logon** if required (see page 41).

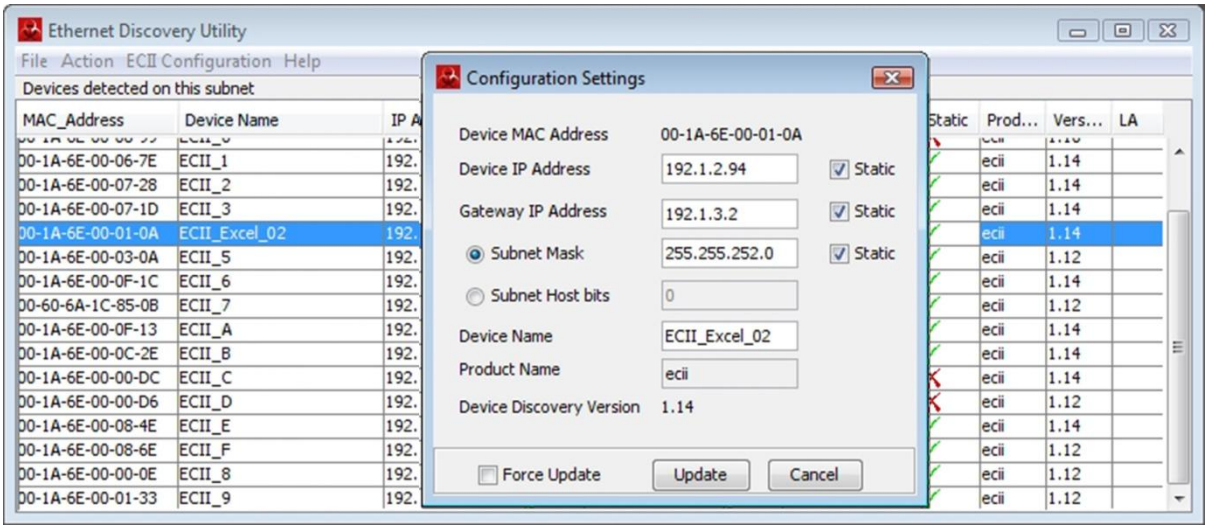

Figure 39 – Ethernet Discovery Utility – Configuration Settings

*We advise that you set the Controller's IP Address to **Static**. This ensures that if the Controller's IP Address expires on the network, and the DHCP Server assigns a new IP Address, the Engine will NOT lose connectivity to the Controller.*

Logical Address Configuration

Ensure that the Logical Address of the ImproX EC^{II} is the same as the ImproX AC or EC Controller being replaced.

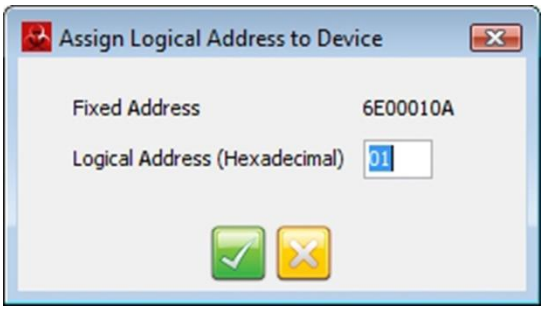

Figure 40 – Assign Logical Address to Device Dialog

1. On the menu bar, go to **ECII Configuration**>**Configure LA**.
2. In the **Logical Address** textbox, type in the Controllers (hexadecimal) Logical Address.
3. Click on the button.

*Please note that the Logical Address is in **Hexadecimal Format**, that is, numbers 01 to 09 are the same as Decimal Format. Higher numbers, that is 10 upwards, appear as follows: 10 as 0A, 11 as 0B and 12 as 0C and so on.*

Access Module Configuration

Open ImproNet Access:

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Access**.
3. Enter your **Username** and **Password**.

*The default username is **SYSDBA**. The default password is **masterkey**.*

Site Configuration

1. In the **Navigator Pane**, click the icon.
2. In the **Main Pane**, select the **UDP Comms** checkbox.
3. Click on the button.

Controller Configuration

1. In the **Navigator Pane**, click the **new Controller** to select it.
2. Right-click the Controller and select the **Replace Unit** option.
3. From the Unit Type drop-down list, select the **EC2** unit type.
4. Enter the **new ECII Controllers Fixed Address**.
5. Click the button.
6. In the **Navigator Pane**, click the **new Controller** to select it.
7. In the **Main Pane**, in the **IP Address** textbox, enter the Controller's IP Address details.
8. In the **Controller Comms Port** textbox, enter the port number.
9. In the **Inter-controller Comms Port** textbox, enter the port number.

*The default Port number is **10002**.*

IP Mapping

Export the **udpmulti.csv** file, used by Engine for communication with the Controllers, as follows:

1. In the Navigator Pane, select the icon from the hierarchical tree.
2. Click on the button.

Engine Configuration

1. In Windows®, click **Start**>**Programs**>**ImproNet**>**Engine**.
2. From the Menu Bar, select **Configuration**>**Engine Properties**.
3. Select the **UDP Comms** checkbox.
4. Click the button.
5. Close Engine.
6. In Windows®, click **Start**>**Programs**>**ImproNet**>**Engine**.
7. Click the **Full Upload** button.

Find Duplicates Utility

Introduction

Before upgrading a Database to a new version, the Utility searches the Database looking for repeats of ID Numbers and Employee Numbers.

The Utility does NOT search for duplicate Tagholder NAMES. The Tagholders Name appears for reference only.

Opening and Using the Find Duplicates Utility

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Find Duplicates**.
2. Enter your **Username** and **Password**.

*The default username is **SYSDBA**. The default password is **masterkey**.*

On opening, the **Find Duplicates** dialog lists the duplicated records.

Editing Duplicate Records

1. In the **Find Duplicates** dialog, select one of the duplicated records.
2. Click on the button.
3. In the **Edit Tagholder** dialog, edit the **ID Number** textbox.
4. Click on the button.
5. Click on the button (this refreshes the **Find Duplicates** list of records).
6. Close the **Find Duplicates** dialog, by clicking on the button.

Deleting Duplicate Records

1. In the **Find Duplicates** dialog, select one of the duplicated records.
2. Click on the button.
3. In the **Confirm Delete** dialog, click the **Yes** button.
4. Close the **Find Duplicates** dialog, by clicking on the button.

Display Tagholder Details

1. In the **Find Duplicates** dialog, select one of the duplicated records.
2. Click on the button.
3. Close the dialog, by clicking on the button.
4. Close the **Find Duplicates** dialog, by clicking on the button.

If the Utility returns details of a large number of duplicate entries, contact Impro's Customer Support for a script to resolve the problem.

IXP200 Conversion Utility

Introduction

The IXP200 Conversion Utility lets you convert IXP200 user information files to ImproNet files.

The Utility does NOT import site information; therefore, ensure that you configure the site and Hardware before converting the user information.

Opening and Using the IXP200 Conversion Utility

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**IXP200Conversion**.
2. Enter your **Username** and **Password**.

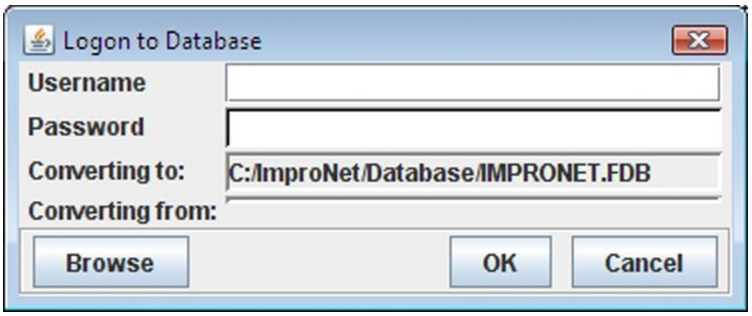

Figure 41 – Logon to Database Dialog

*The default username is **SYSDBA**. The default password is **masterkey**.*

3. Click on the **Browse** button.
4. In the **Open** dialog, select the **Database file**.
5. Click the **Open** button. The route address displays in the **Converting From** textbox.
6. In the **Logon to Database** dialog, click the **OK** button.

The **Proxette** → **ImproNet Database Conversion** dialog displays the progress of the conversion.

7. When the conversions complete, click the **OK** button.

Pump Utility

Introduction

The Pump Utility lets you flush out and correct a “muddled” or overloaded Database. When executed, the Pump takes all the Tagholders, Visitors and Transaction data and pumps this into a fresh Database.

Before implementing the Pump Utility, ensure that you close all other applications.

For large Databases carry out this action over a quiet period, as completion could take many hours.

Opening and Using the Pump Utility

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Pump**.
2. Enter your **Username** and **Password**.

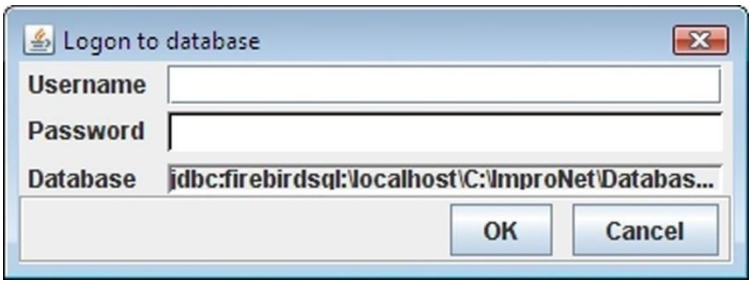

Figure 42 – Logon to Database Dialog

*The default username is **SYSDBA**. The default password is **masterkey**.*

3. Click on the **OK** button.
4. In the **Pump Database** dialog, click the **Start** button.
5. In the **Message** dialog, click the **OK** button.

Translate Utility

Introduction

This Utility lets you translate the Database contents and Reports into a different language.

Opening and Using the Translate Utility

In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Translate**.

Choose the Locale

Figure 43 – Locale Dialog

1. In the **External Translation Utility** dialog, click on the button.
2. From the **Language** drop-down list, select the language for use in the translation.
3. From the **Country** drop-down list, select the corresponding country.
4. Click the **OK** button.

Translate a File

1. In the **External Translation Utility** dialog, from **File** drop-down list, select **Open**.
2. In the **Open** dialog, select the **LOCALIZATION.XML** file.
3. Click on the **Open** button.

*Editing the Database contents files requires entry of a username and password. The default username is **SYSDBA**. The default password is **masterkey**. Editing the Web Reports files, does NOT require entry of a username or password.*

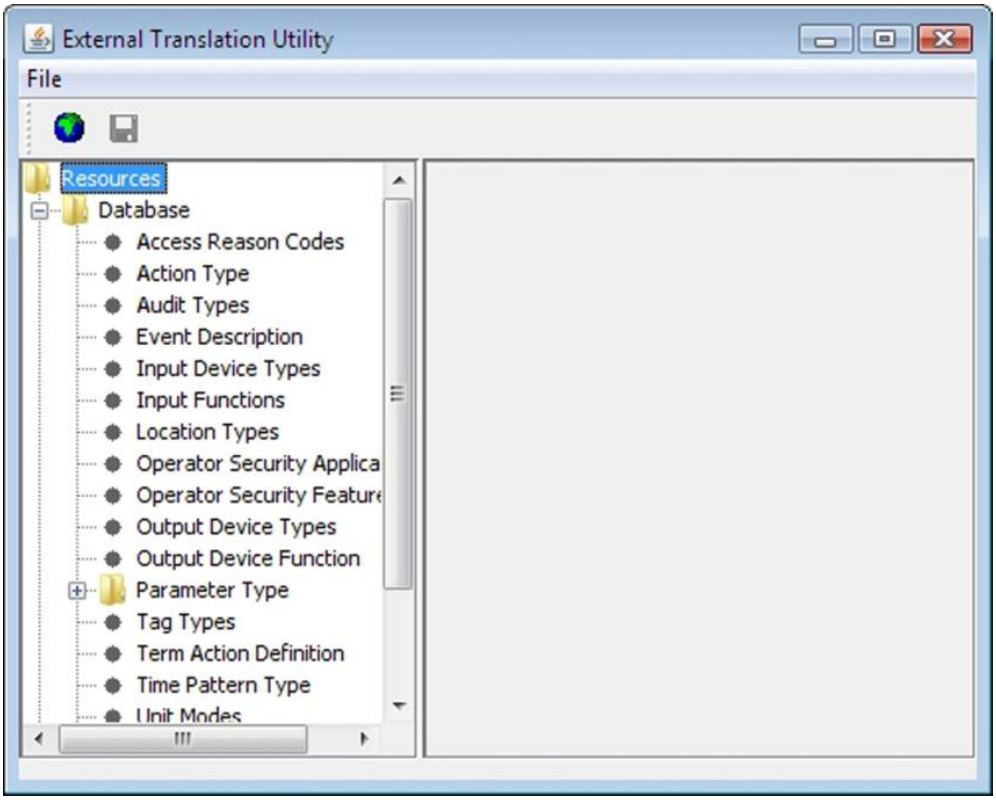

Figure 44 – External Translation Utility Dialog

4. Expand either the **Database** or **Web Reports** folders.
5. In the **Directory Tree**, double-click the **file** for editing.
6. From the **list of records** displayed, select a **line** for translation.
7. In the **Translation** column, double-click on the pre-existing text, activating the text for replacement.
8. Type in the replacement text.
9. Once you've edited the required records, click on the button.
10. From the **File** drop-down list, select **Exit**.

Archiving Utility

Introduction

This Utility lets you archive transactions (Normal, Status and Alarms), placing the transactions in a separate archived Database. We recommend that you run the Archive Utility on a regular basis. Running Utility regularly keeps your Database *below the maximum recommended database size of **2 GB***. This action has two major benefits:

- Manages the size of the Database, freeing up space on the PC.
- Keeps a cleaner, uncluttered Database.

Opening and Using the Archive Utility

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**Archive**.
2. Enter your **Username** and **Password**.

Figure 45 – Logon Dialog

*The default username is **SYSDBA**. The default password is **masterkey**.*

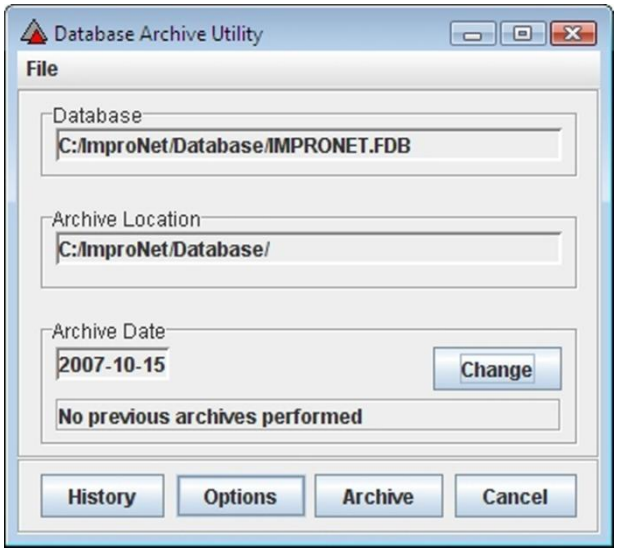

Figure 46 – Database Archive Utility Dialog

Select the Archive Date

This is the end date for the archive. Your newly archived database will therefore contain all transactions for this date and earlier.

1. In the **Database Archive Utility** dialog, in the **Archive Date** group, click on the **Change** button.
2. In the calendar dialog, click on the **Month** drop-down list and select the desired month from the list.
3. Click on the **Year** drop-down list and select the year from the list.
4. From the grid, select the day number.

Confirm the Archiving Options

Figure 47 – Archiving Options Dialog

1. In the **Database Archive Utility** dialog, click on the **Options** button.
2. In the **Archiving Options** dialog, click either the **Archive or Delete** radio button for each of the named transaction types.

*If you select the delete option, confirm the deletion in the **Delete Transactions** dialog, by clicking on the **OK** button. After confirmation, the **Archiving Options** dialog closes automatically.*

3. Click on the **OK** button.

Archive the Transactions

1. In the **Database Archive Utility** dialog, click on the **Archive** button.
2. In the **Archiving Options** dialog, confirm the archiving details by clicking on the **OK** button.

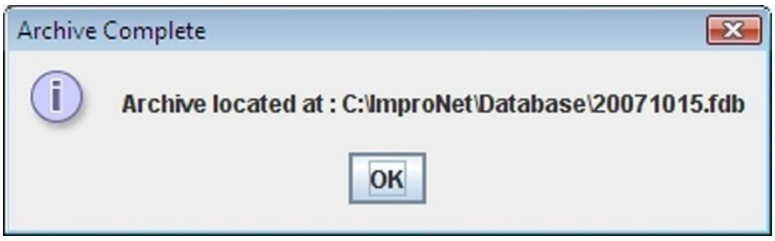

Figure 48 – Archive Complete Dialog

3. In the **Archive Complete** dialog, click on the **OK** button.

IB Console Utility

Introduction

This Utility lets you perform the following functions to your ImproNet Database:

- **Manual upgrades** from older versions of ImproNet.
- **Database maintenance** in the form of checking for errors and performing backup and restores of the Database.
- From IB Console you can **review the Database structure**, allowing addition of extra tables for third-party integration.
- **Addition and deletion of users**.
- **Password changes**.

Manual Upgrade Function

In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**IBConsole**.

Register the Server

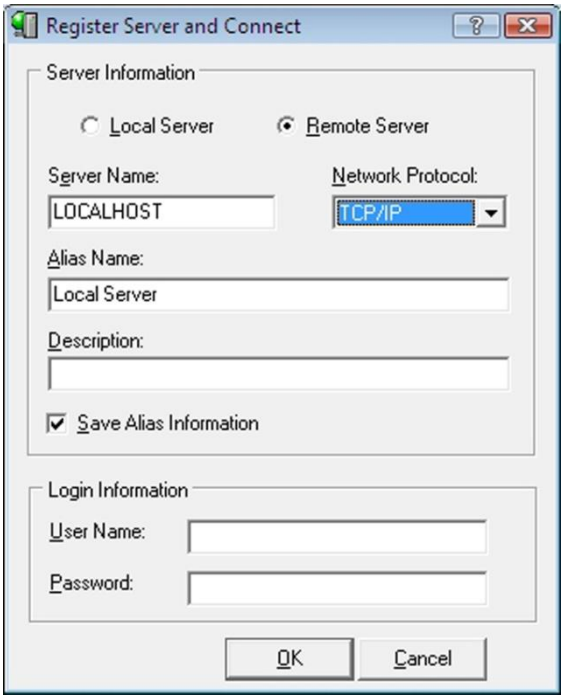

Figure 49 – Register Server and Connect Dialog

1. From the **Server** drop-down menu, select the **Register** option.
2. In the **Register Server and Connect** dialog, click the **Remote Server** radio button.
3. In the **Server Name** textbox, assign the Server a name. In this instance, we used **LOCALHOST**.

*Rather than assigning the Server a name in the **Server Name** textbox, you may use the PC's **IP Address**.*

4. In the **Network Protocol** textbox, select **TCP/IP** from the drop-down list.
5. In the **Alias Name** textbox, assign a meaningful name.
6. Leave the remaining fields unchanged.
7. Click the **OK** button.

Login to the InterBase Server

1. From the Hierarchical Tree, select your **InterBase Server** (based on the example in Figure 49 select *Local Server*).
2. From the **Server** drop-down menu, select the **Login** option.
3. In the **Server Login** dialog, enter the **Username** and **Password**.

*The default username is **SYSDBA**. The default password is **masterkey**.*

4. Click the **Login** button.

Register the Database

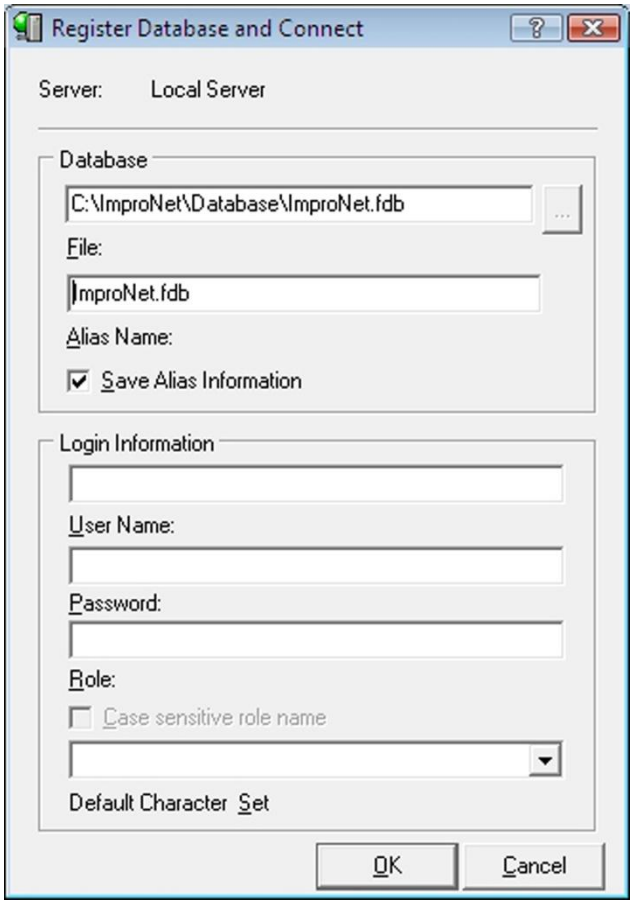

Figure 50 – Register Database and Connect Dialog

1. From the **Database** drop-down menu, select the **Register** option.

2. In the **Register Database and Connect** dialog, In the **Database** textbox, enter in the full file path to your Database (see Figure 50).
3. Click your mouse pointer in the **File** textbox, the Database's file name automatically appears.
4. Leave the remaining fields unchanged.
5. Click the **OK** button.
6. In the Hierarchical Tree, double-click on the **Impronet.fdb** file, starting the Database.

Updating the Database with Database Scripts

Since the release of ImproNet V3.0, we included extra Database Scripts to upgrade Databases earlier than V3.0. We have already applied these scripts to the newly released Databases. Thus, when upgrading your ImproNet Software, you will have to upgrade your existing Database with the Scripts new for that release.

If you install a fresh copy of ImproNet V5.0 or later you need not run any scripts. If you upgrade a version of ImproNet older than V5.0 ensure that you run the necessary scripts.

1. From the Hierarchical Tree, click on the **Impronet.fdb** file.
2. On the toolbar, click on the button.
3. From the **Query** drop-down menu, select the **Load Script** option.

*Review the **Scripts_Readme.wri** file located in **C:\ImproNet\scripts** for details of which Scripts you must run.*

4. In the **Open** dialog, browse to **C:\ImproNet\scripts\V?**.
5. Select the **Script** to run.
6. Click on the **Open** button.

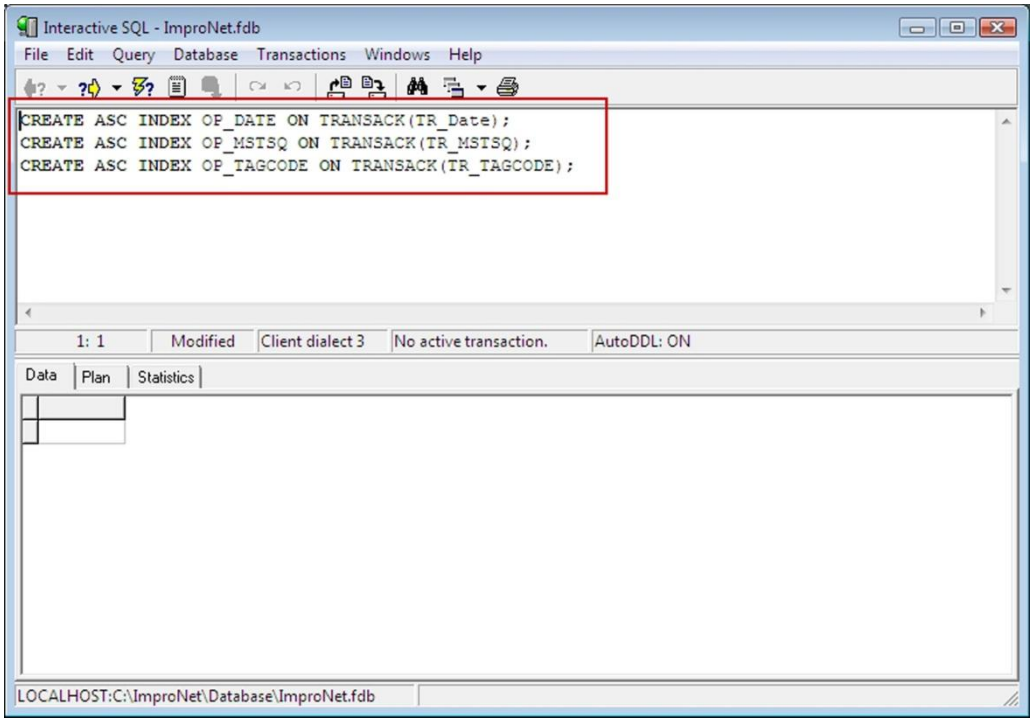

Figure 51 – Script Transferred into the Main Script Screen

7. On the toolbar, click on the button.
8. Repeat the selection and execution process outlined in steps 3 to 7, for each Script.

Database Maintenance

Performing a Backup of the Database

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**IBConsole**.
2. From the **Database** drop-down menu, select **Maintenance**>**Backup / Restore**>**Backup**.

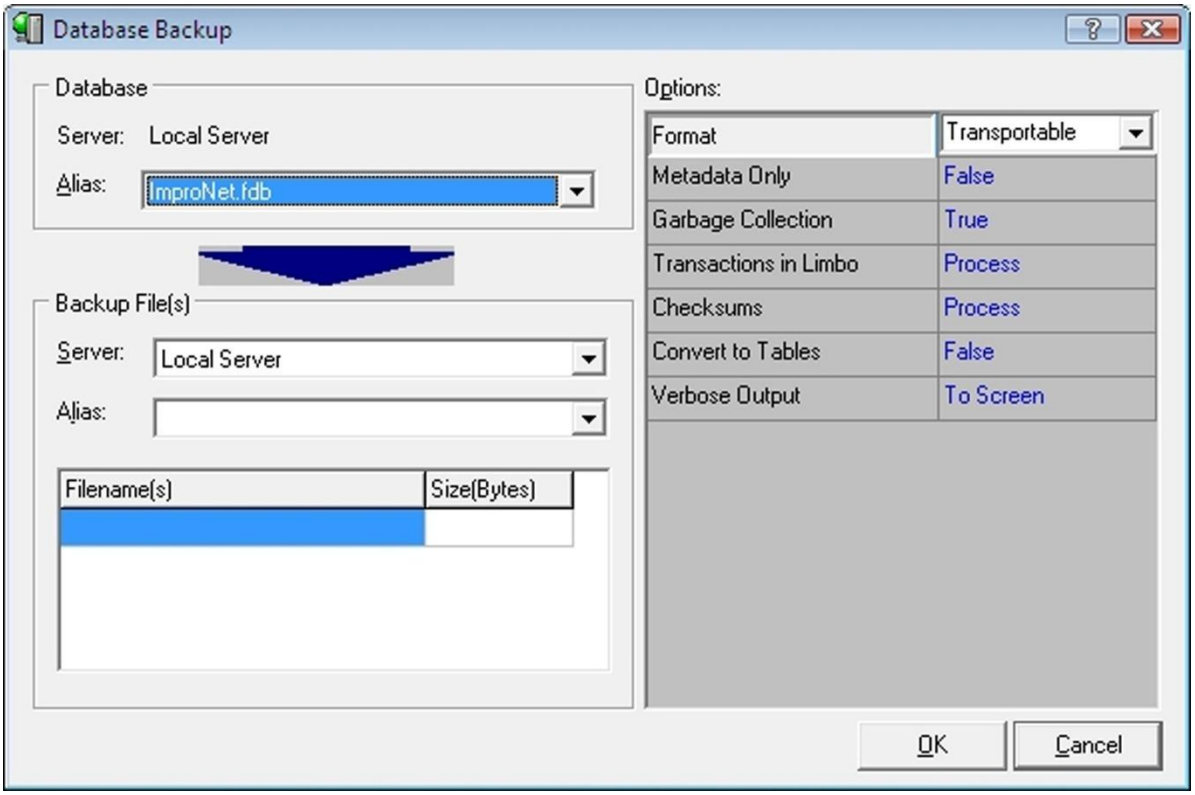

Figure 52 – Database Backup Dialog

3. In the **Database group**, from the Alias drop-down list, select the Database for backup.
4. In the **Backup File(s) group**, in the **Alias** textbox, provide a name for the backed up Database.

Ensure that your backed up file has an FBK file extension.

5. In the **Backup File(s) group**, in the **Filename(s)** textbox, provide the directory path and file name for the backup database. We suggest **C:\ImproNet\Database\ImproNet.fbk**.
6. Leave the remaining values as they are.
7. Click on the **OK** button.
8. In the **Information** dialog, click on the **OK** button.
9. Close the Database Backup dialog.

Restoring the Database

Disconnect from the Database before restoring.

1. In Windows®, go to **Start**>**Programs**>**ImproNet**>**Utils**>**IBConsole**.
2. From the **Database** drop-down menu, select **Maintenance**>**Backup / Restore**>**Restore**.

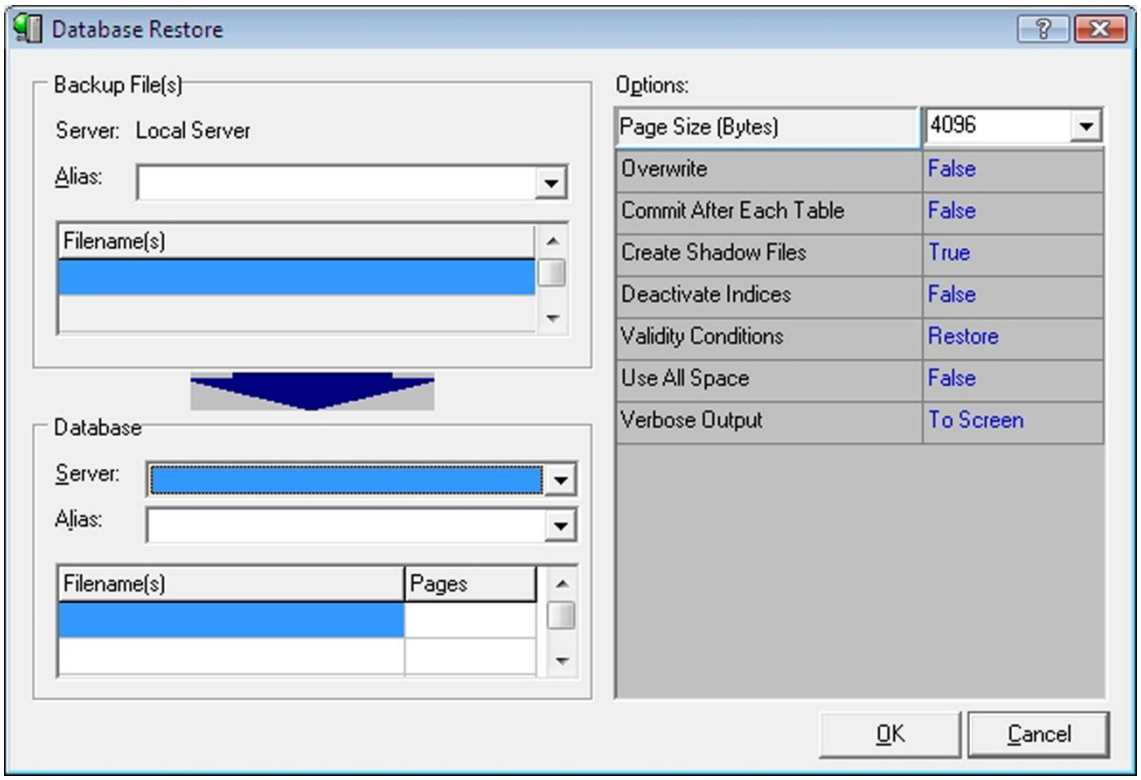

Figure 53 – Database Restore Dialog

3. In the **Backup File(s) group**, in the **Alias** textbox, select the name of the backed up Database.

If IBConsole does not auto complete the remaining fields continue as follows, otherwise continue with point 5:

- In the **Backup File(s) group**, in the **Filename(s)** textbox, provide the directory path and file name for the backup database. We suggest **C:\ImproNet\Database\ImproNet.fbk**.
- In the **Database group**, from the **Server** drop-down list, select the server in which the Database will reside.
- In the **Database group**, from the **Alias** drop-down list, select the Database to restore to.
- In the **Database group**, in the **Filename(s)** textbox, provide the directory path and file name for the restored Database. We suggest **C:\ImproNet\Database\ImproNet.fdb**.

4. From the **Options** group, select the **Overwrite** record.
5. From the **Overwrite** drop-down list, select **True**.
6. Click on the **OK** button.
7. Close the **Database Restore** dialog when you see the comment **"Service Ended"**.

Add and Delete Users

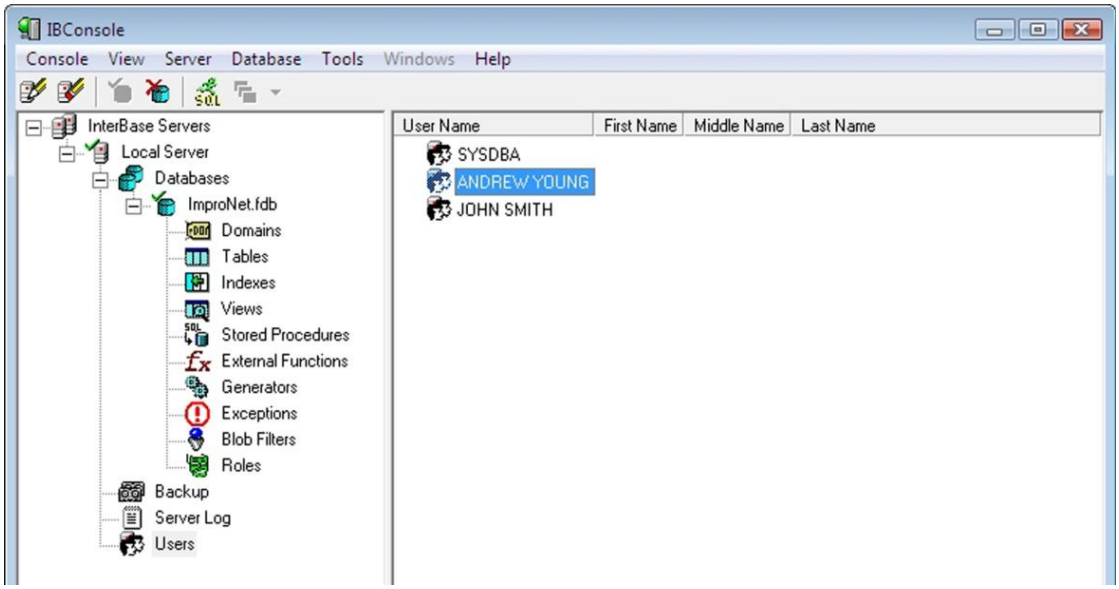

Figure 54 – IB Console Dialog

Adding a User

1. From the Hierarchical Tree, click on the (**Users**) icon.
2. Right-click over the User's icon and select the **Add User** option.
3. In the **User Information** dialog, in the **User Name** textbox, enter the user's name.
4. In the **Password** and **Confirm Password** textboxes, enter a password.
5. Click the **Apply** button.
6. Click the **Close** button.

Deleting a User

1. From the Hierarchical Tree, click on the (**Users**) icon.
2. In the right-hand pane, select the **User Name** for deletion.
3. Right-click over the **Users** icon and select the **Delete User** option.
4. In the **Confirm** dialog, click the **Yes** button.

Change Password

1. From the Hierarchical Tree, click on the (**Users**) icon.
2. Right-click over the **Users** icon and select the **Modify User** option.
3. In the **User Information** dialog, from the **User Name** drop-down menu, select the user's name.
4. In the **Password** and **Confirm Password** textboxes, enter a new password.
5. Click the **Apply** button.
6. Click the **Close** button.