
eATM tManager Release 4.1

Quick Start Manual

IMPORTANT!

Before you proceed, STOP and REGISTER your module
On our website at

<http://www.softing.us/support/product-registration/>

FACTORY DEFAULTS:

Ethernet 1 = 192.168.1.254

Ethernet 2 = DHCP

Note: IP addresses will be scrolling on the module's 4-character display

LOGIN


Username = admin

Password = admin

Table of Contents


eATM tManager : Overview and Installation	1
Overview	1
Definition of terms that will be used throughout the document:.....	1
Hardware and Software Installation	2
eATM tManager: xATM Manager	3
Connecting to the eATM tManager	3
Configuring the Ethernet Ports	4
Setting the Time on the eATM tManager	5
eATM tManager : Project Editor	6
Configuration Overview	6
Creating New Project	7
Using xATM Manager Software	7
Using the Project Editor software.....	7
Adding a Controller (Automation Adapter)	8
Adding PLC Endpoints	9
Adding Triggers	10
Trigger condition options:.....	10
Adding a Database Adapter (MSSQL)	11
Adding Database Endpoints (MSSQL)	12
Adding Maps	13
Output Schema:	13
Input Schema:	14
Connecting Outputs to Inputs:.....	15
Adding a Database Message Path.....	16
Starting Components	17
Starting a Trigger.....	17
Starting an Endpoint	18
Starting a Project.....	18
Starting an Appliance	19

If you wish to use the Knowledge Base or contact Customer Support, you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support**
or Visit <http://www.softing.us/ra/support/> and select **Support**.


Monitoring Status	19
FAQ: How do I add my CLX profile?	1
Adding CLX profile support (i.e. Supervisory Controller)	1
CLX Profile (AOP): Status and command to/from CLX	1
Status and Control information	2
FAQ: What advanced network settings are supported?.....	3
What options are available under Network Diagnostics?	4
What options are available using Network Routing?	6
FAQ: What causes the module to time-sync?.....	7
FAQ: What happens if one or more of the plc variables are not available when the trigger fires?.....	7
Can I use multiple PLCs my map as the source or destination?	7
FAQ: What are the rotary switches on the side of the module used for?.....	8
Set to Network Setting to factory default values:	8
Appendix A: Trouble-shooting	1
xATM Manager: Attention Required.....	1
Warning: Maximum number of <i>any component type</i> have been reached.....	2
Trigger: Should be firing but is not	2
ICON: Possible Trigger/Endpoint icon states	3
ProjectEditor: Clearing Locks	4
Error: “the destination for the return map must be the automation adapter”	5
Project: Type Warning	6
Project: Dependent Objects Warning	7
Network troubleshooting.....	7
Appendix B: Recommended Usage	1
Configuration design	1
Transaction Log	3
Store & Forward (S&F)	4
Automation EndPoints	5
Appendix C: eATM tManager Limits	1
Configuration Software	1

If you wish to use the Knowledge Base or contact Customer Support, you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support**
or Visit <http://www.softing.us/ra/support/> and select **Support**.

Appliance Configuration	1
Appendix D: Functionality and Hierarchy of the Configuration Programs	1
Appendix E: Minimum System Requirements	1

If you wish to use the Knowledge Base or contact Customer Support, you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support**
or Visit <http://www.softing.us/ra/support/> and select **Support**.

eATM tManager : Overview and Installation

Overview

The eATM tManager appliance provides a safe and reliable method of transmitting data between controllers and business systems (databases, JMS applications, etc.). For a complete list of supported communication methods, check the product datasheet at <http://www.softing.us/ra/product/1/eatm-tmanager/>

This manual will guide you through a simple installation. For more information on any screen, reference the software's online help.

To configure the eATM tManager you need to:

1. Define access to the appliance (network, users, etc)
2. Create your project
3. Configure project components (adapters, endpoints, data maps, triggers, etc.)
4. Place the above components, project and appliance into RUN mode

After you complete these steps the appliance will be able to transmit data.

Definition of terms that will be used throughout the document:

Mouse Usage:

Double-click to select.

Right-click to view a menu of options.

Hover Mouse to display a description of the icon.

Edit screens:

Edit: Puts the object in edit mode

OK: Saves the object and closes the pane

Apply: Saves the object without closing the pane

Cancel: Closes the pane without saving changes

Status Indicators :

This includes triangles, squares, text colors, and exclamation marks (!).


GREEN means RUNNING and active.

RED means STOPPED or HALTED or ERROR.

YELLOW means "trigger has faulted due to data transfer errors."

GRAY means set to RUNNING, but not ACTIVE because its hierarchy is not started/running.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Hardware and Software Installation

1. Plug the eATM-tManager securely into the ControlLogix chassis.
2. There are two Ethernet ports on the appliance. These ports are electrically isolated from each and can be used to connect to different subnets. Connect cables to the Ethernet 1 and/or Ethernet 2 ports on the front of the eATM tManager

NOTE "Crossover cable":

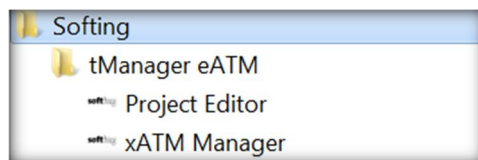
If you are connecting directly from a PC to an eATM tManager, you can use the included crossover cable. In your PC's Network Control Panel, in the TCP/IP section, set your IP address to **192.168.1.x**, and your subnet to **255.255.255.0**. Connect to the eATM tManager's factory default address of **192.168.1.254**

NOTE "License Keys":

All license keys come pre-installed on the eATM tManager. Your configuration firmware may be installed on multiple PC systems for support of the eATM tManager appliances. See the License Agreement included with the product.

3. Install the configuration software.

After the installation is complete, the computer's **Start / All Programs** menu will have a listing for **Softing / tManager eATM** and its two components -- **Project Editor** and **xATM Manager**.



These two configuration programs require that the eATM tManager be online when they are used.


NOTE "Configuration Programs Overview":

The **xATM Manager** software is used to configure administrative items (network settings, time zone, time-sync, etc.) for each eATM tManager appliance.

The **Project Editor** software is used to configure connections and their transactions.

A map of the menu system for each of these programs is provided in Appendix D.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

eATM tManager: xATM Manager

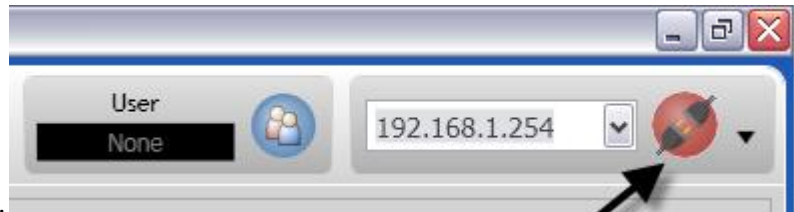
In this section of the manual we will use the xATM Manager software to establish a connection between the computer and the eATM tManager, configure its Ethernet ports, and synchronize its time.

Connecting to the eATM tManager

1. Launch the xATM Manager configuration software.
2. In the upper-right corner of the screen, type in the IP address of the eATM tManager appliance.

NOTE "IP Address":

Connected IP addresses will be scrolling across the front of the eATM tManager. The default is **192.168.1.254**



3. Press the **RED Connection** icon.
1. When prompted, enter your username and password and press **Login**.

NOTE "Username and Password":


The default username is **admin** and the default password is **admin**.



After you successfully connect, the **Connection** icon will turn **GREEN**, as show below.

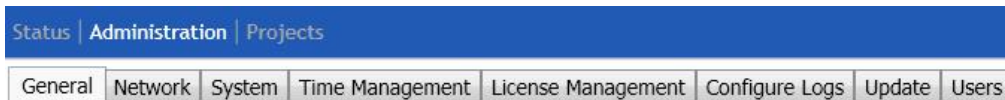


If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Configuring the Ethernet Ports

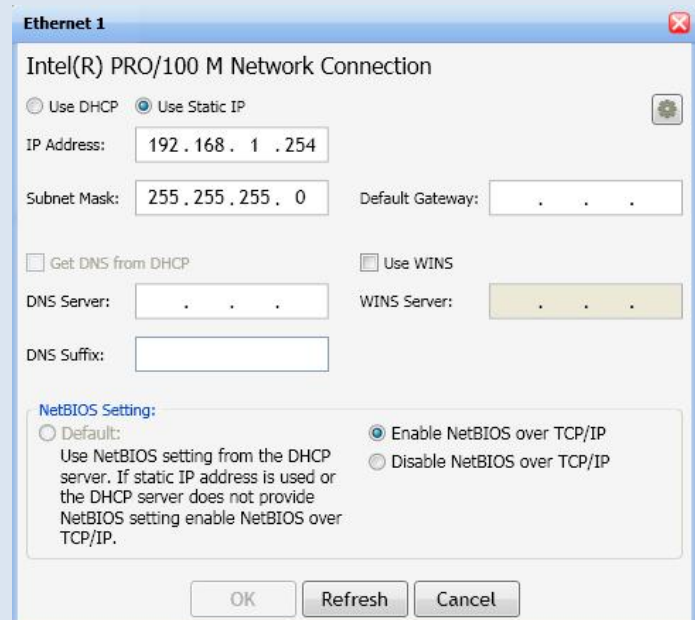
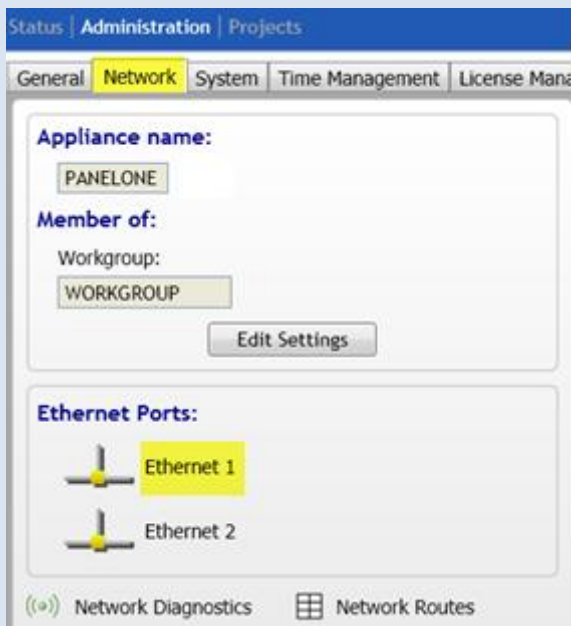
1. Select the **Administration** tab




2. Select the **Network** tab.

To configure an Ethernet port:

Double-click on the **Ethernet1** or **Ethernet2** port to edit it.




Make all required changes for the port and exit by selecting **OK**.

During the edit of a port's configuration, if you select the **Advanced Settings** icon , you will be given access to additional network settings that you can modify. See FAQ section of this document "**What advanced network settings are supported?**" for more information.

Information on the **Network Diagnostics** and **Network Routes** options are available in the FAQ section of this document.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or visit <http://www.softing.us/ra/support/> and select **Support**.

Setting the Time on the eATM tManager

The eATM tManager's time clock can be synced with a variety of devices. In this example, we will sync it with the computer's clock.

1. Select **Time Management**.
2. Select **Get Local Computer Time**.
3. Select **Set Appliance Time**.

Status | Administration | Projects

General | Network | System | **Time Management** | License Management | Configure Logs

Time Zone Settings

Timezone
Change the timezone for the appliance. Changing the timezone will cause the appliance to restart.

(GMT-05:00) Eastern Time (US & Canada)

Automatically adjust for daylight savings

Save Timezone Setting | Revert to Appliance Timezone

Time Synchronization Settings

Time Source
Select various sources from which the appliance will obtain its time. The time will only sync with a time server while the appliance is in run mode.

No Source Computer Network Automation Device

Time Destination
Add automation devices that will be automatically synced with the appliance.

Time Destinations

Automation Device Name	Timeout

Add | Remove | ↑ | ↓

Frequency
How often should the appliance sync the time with itself and other devices?

Never

Save Time Synchronization Settings | Revert to Appliance Settings

Manual Time Set

Manually set the appliance to a specific time.

Time Values


Date
July 15 2010

Time
09 32 AM

Get Local Computer Time

Set Appliance Time

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

eATM tManager : Project Editor

Configuration Overview

We will now start using the Project Editor software to define connections. The eATM tManager configuration is based around the concept of ENDPOINTS.

The destination for all data transfers is an ENDPOINT.

For example, a ControlLogix processor is an ENDPOINT, an ORACLE database is an ENDPOINT, a MSSQL database is an ENDPOINT.

- Each adapter can have multiple ENDPOINTS
- An ENDPOINT is used to define the PROPERTIES for that connection to the destination. For example, will the connection use **Store&Forward**, **Transaction Logging** or **Fail-Over**?

The eATM tManager configuration is subdivided into PROJECTS. These PROJECTS work autonomously to each other. Multiple PROJECTS can be running at the same time. Each PROJECT includes the adapters and their ENDPOINTS, data mapping and trigger events used in that project.

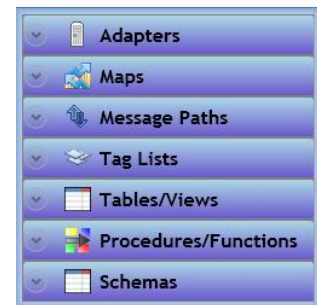
When you configure the module (using the Project Editor software) you will:

- Define the access to the module (network, users, etc)
- Create your PROJECT and its components (adapters, ENDPOINTS, data maps, triggers, etc)
- Place the above components, PROJECT and appliance into RUN mode


After you complete the above steps your module will begin transmitting data.

In this manual we will step through a simple installation. When we define the project components we will start at the top (Adapters) and work our way down the list.

For more information on any screen, reference the software's online help by pressing [F1].



If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Creating New Project

You have two options when creating a new project. Both are shown in this section.

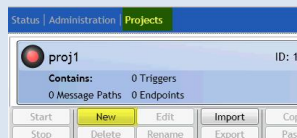
Using xATM Manager Software

To create a project from within the xATM Manager software:

1. If it's not already running, start the xATM Manager software.
2. Make sure you are connected to the xATM_Manager using the steps in the previous section. The **Connection** icon should be **GREEN**.



3. Select the **Projects** tab and then select **New**.

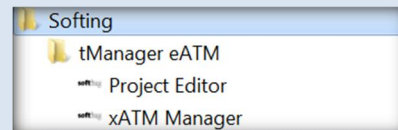


4. When prompted, type in a project **Name** and select **OK**.
5. Select your new Project and press **Edit** to open the Project Editor for this new project.

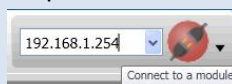
Using the Project Editor software

To create a project from within the Project Editor software:

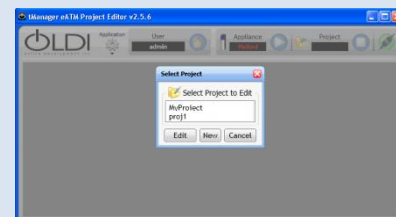
1. Startup the Project Editor software.
2. Connect to the eATM tManager the same way you did using the xATM Manger software.
START | ALL PROGRAMS | SOFTING | tManager



3. Enter the IP address of your appliance (the default is **192.168.1.254**, but you may have changed it in a previous section) and press the **RED** Connection Icon .




4. Enter your **Username** and **Password**. Both defaults are **admin**.
5. When the **Select Project** screen. Appears, select **New**.
6. When prompted, type in a Project **Name** and select **OK**.
7. Select your new Project and press **Edit**.



NOTE "Project Editor":

The **Project Editor** can only view one project at a time.
You may have multiple **Project Editors** open at the same time, if needed.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support**
or Visit <http://www.softing.us/ra/support/> and select **Support**.

Adding a Controller (Automation Adapter)

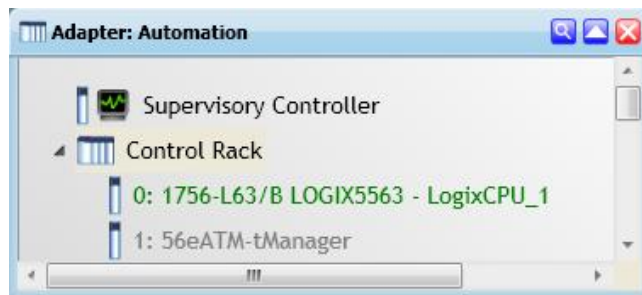
Adapters define the sources and destinations of the transactions. Each input adapter can contain one or more Triggers and each output adapter can contain one or more Endpoints. Some adapters, such as the Automation Adapter, are both input and output adapters.

The Automation Adapter allows the user to view and configure controllers, bridges and other devices in the industrial environment. This industrial environment is referred to as the Automation Tree (i.e. list of controllers, their tag/variable definitions, and the path to these controllers). The Automation Tree definition is shared among all projects on the eATM tManager appliance.

The Automation Adapter is both an input and an output adapter.

- The Automation Adapter can contain one or more Triggers.
- The Automation Adapter will contain at least one Endpoint for receiving information.

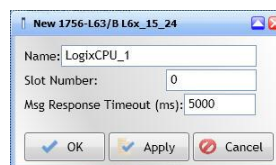
1. Open **Adapters**.
2. **Right-click** on **Automation** and select **Open**. Wait a couple seconds and you will see the contents of the local rack.



Color	Status in the Automation Tree
Black	Core item label In this example, the local rack
Brown	Item can be configured, but is not yet configured
Green	Item is configured
Red	Item is configured & has an error <i>NOTE: Cursor over the module to see the error</i>
Gray	Item is in the rack/bridge but cannot be configured
Blue	Item is an eATM front port driver

When you **right-click** on an individual module, you will see the options available for that module.

3. Click on the Logix processor, **right-click** and then select **Configure the selected module**.




4. Enter a unique name for this **Automation** device.

Name: Label for the PLC. This name will be used for the tag list which will contain the tags from this device.

Slot Number: The backplane slot number of the PLC. The current slot value will be displayed.

Msg Response Timeout: The time period the scanner will wait before assuming the connection with the PLC is broken.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

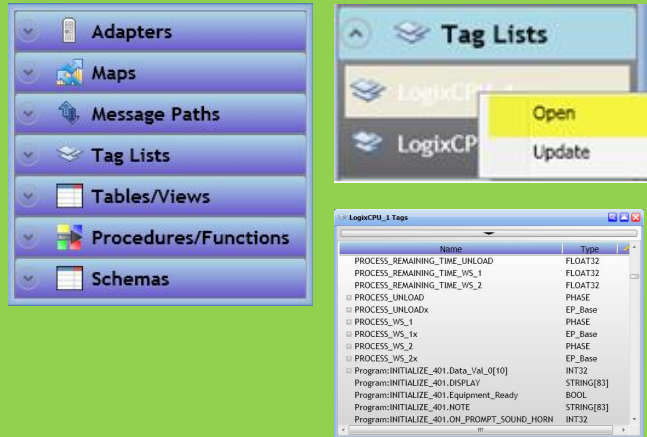
5. Select **OK** and the eATM tManager will request the tag list from the controller.

Note “Tag List”:

All defined processors have a list of variables under **Tag Lists** in the left column. You can also access the **Tag List** by right-clicking on the processor and selecting **Open Tag List**.

Note “Update Tag List”:

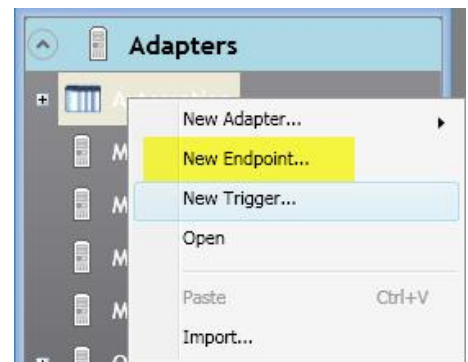
Update tag list will be used later to request an updated tag list from the processor. This update is necessary when tags have been added or removed from the processor.



Adding PLC Endpoints

An endpoint defines the destination of a data transfer.

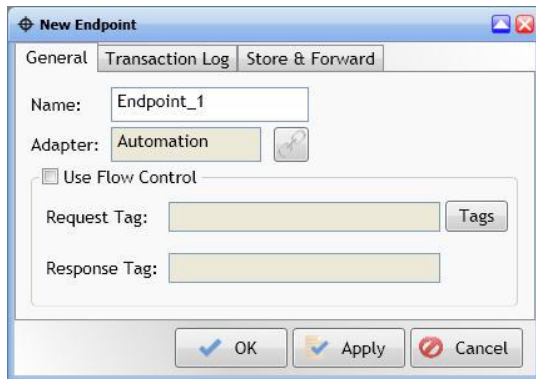
1. **Right-click** on **Automation**.
2. Select **New Endpoint**.
3. Enter a unique name for this **Automation** endpoint.
4. Select **OK**.




Name: The name of the endpoint.

Adapter: The name of the adapter that the endpoint belongs to. The link button opens the adapter for viewing or editing.

If **Use Flow Control** is set, the user can regulate the flow of messages writing to **Automation (PLC)** tags. More details are covered in Appendix B.



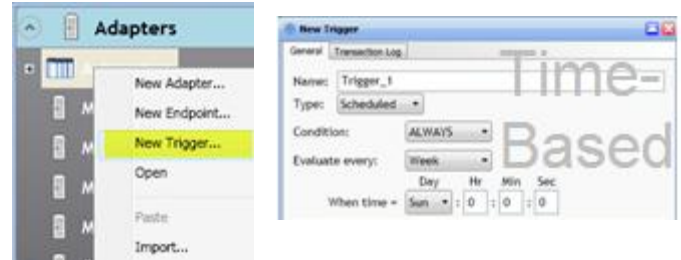
If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

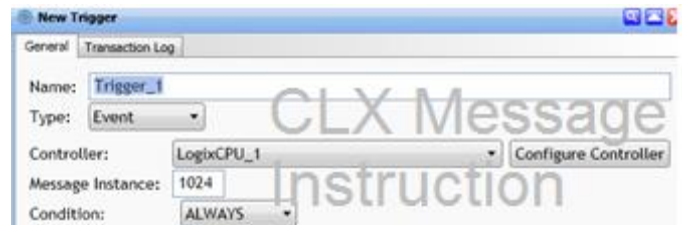
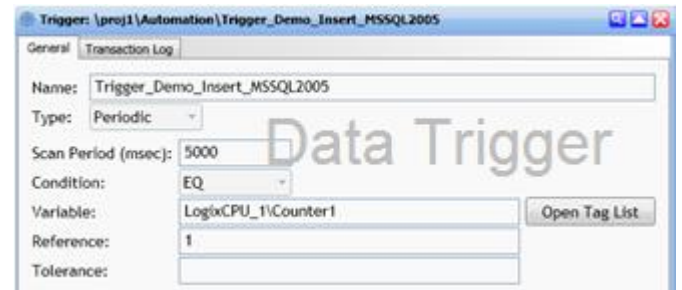
Adding Triggers

A trigger specifies when data is transacted from the controller to the business environment or when data is read from the business environment and sent to the controller.

1. **Right-click** on **Automation**.
2. Select **New Trigger**.
3. Enter a **Name** for the trigger.
4. Select the **Type**: Scheduled, Periodic or Event



- **Scheduled** – the trigger fires at a scheduled time if its conditions are met. *The CONDITIONAL TAGS (if defined) are read at the scheduled time and the condition is evaluated. If scheduled conditions and the tag conditions are TRUE, the trigger fires.*
- **Periodic** – scans the **CONDITIONAL TAGS** every scan period to see if the condition is met. If the condition is TRUE, the trigger fires
- **Event** – when the specified event occurs (i.e. CLX MSG INSTRUCTION is enabled), the **CONDITIONAL TAGS** (if any) are then read and the condition is evaluated. If both conditions are TRUE, the trigger fires
- **CONDITIONAL TAGS** are defined in the **Variable** and **Reference** fields. The **Reference** field may include a variable from any controller or a constant.



Select **OK**.

Trigger condition options:

Evaluate every:

Month – Select the day of the month and the time of day when the trigger will be evaluated

Week – Select a day of the week and the time of day when the trigger will be evaluated

Day – Enter the time of day when the trigger will be evaluated

Hour – Enter the minutes and seconds after the hour when the trigger will be evaluated

Minute – Enter the seconds after the minute when the trigger will be evaluated

Condition (available for both **Periodic** and **Scheduled** triggers):

ALWAYS - always fires

NEVER - never fires

CHANGE - fires on change of state

LT - fires when *Compare Value 1* < *Compare Value 2*

LTE - fires when *Compare Value 1* <= *Compare Value 2*

GT - fires when *Compare Value 1* > *Compare Value 2*

GTE - fires when *Compare Value 1* >= *Compare Value 2*


EQ - fires when *Compare Value 1* = *Compare Value 2*

NEQ - fires when *Compare Value 1* <> *Compare Value 2*

BAND (Bitwise AND) - fires when *Compare Value 1* bitwise ANDed with *Compare Value 2* is non zero

ELT, ELTE, EGT, EGTE, EEQ, ENEQ, EBAND - these conditions are the same as the conditions above with the exception that these conditions are edge trigger conditions. They only fire once when the **Condition** evaluates to TRUE. The Trigger will fire again once when the **Condition** evaluates to FALSE, then TRUE.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or visit <http://www.softing.us/ra/support/> and select **Support**.

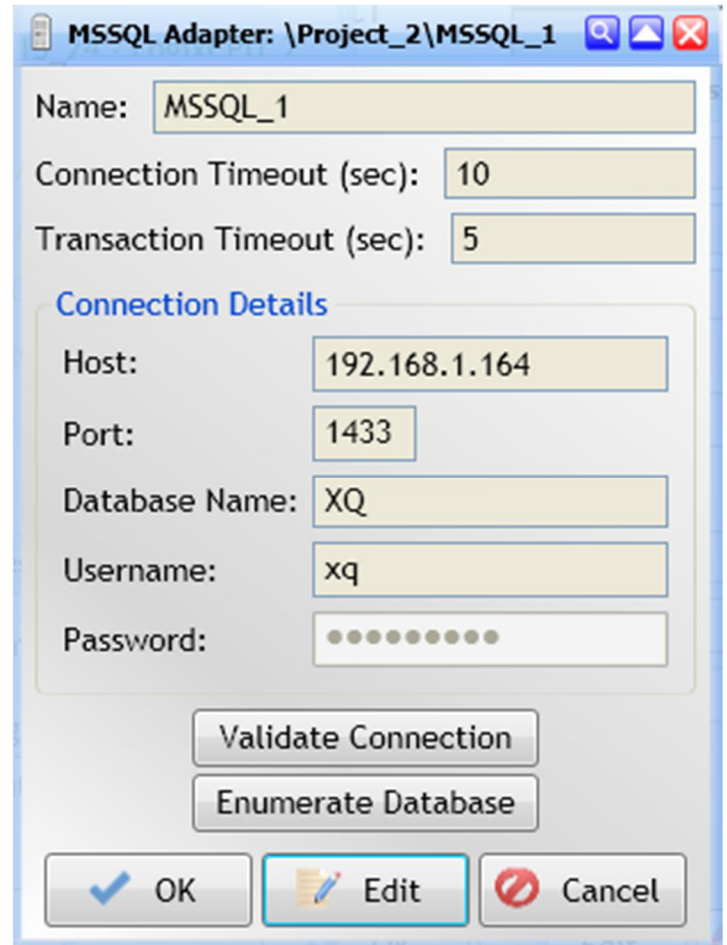
Adding a Database Adapter (MSSQL)

A **MSSQL Adapter** is an output adapter and it allows you to setup a connection to a MSSQL database.

1. **Right-click** on **Adapter**.
2. Select **New Adapter**.
3. Select **New MSSQL Adapter**.




4. Define the **Name** used to label this device in the eATM tManager.
5. Define the **Host** by either IP address or DNS name.
6. Define the **Port** this database server listens on. For MS SQL, the default is 1433; for Oracle the default is 1521. The default port for that database type is shown.
7. Input the **Database Name** as seen on the database server.
8. Input the **Username** and **Password** as defined for your access into the database server.
9. Select **Validate Connection**. This validation attempts a connection to the database to confirm that the network settings are configured correctly.
10. Select **Enumerate Database**. The eATM tManager will request the table, view, and stored procedure information from the database.
11. Select **OK**.



Connection Timeout (sec): The time in seconds the adapter attempts to connect to the database before the connection fails and messages go into the store and forward queue or are dropped.

Transaction Timeout (sec): The time in seconds the adapter attempts to send a transaction to the database before the connection fails and messages go into the store and forward queue or are dropped.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

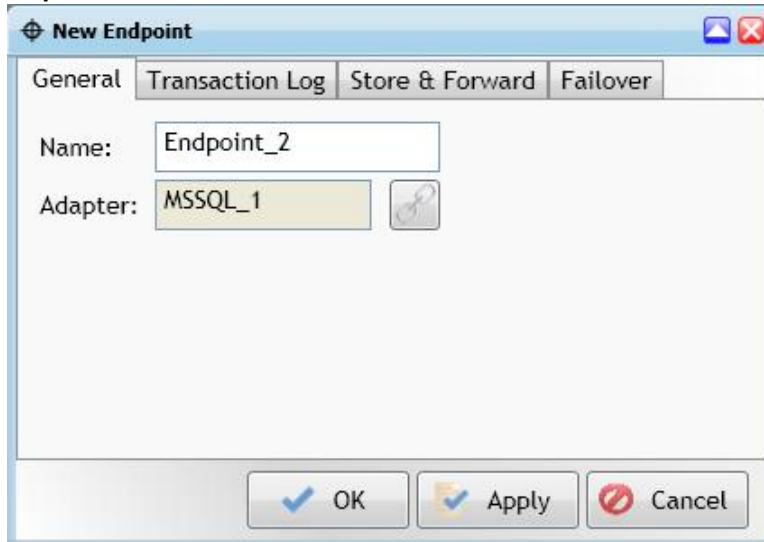
Adding Database Endpoints (MSSQL)

As an output adapter, the MSSQL adapter can contain one or more endpoints.


1. **Right-click** on **MSSQL Device Adapter**.

2. Select **New Endpoint**.

3. Enter a **Name** for this endpoint.




Adapter: The name of the adapter that the endpoint belongs to.

The **Link** button  opens the adapter for viewing or editing.

These options are covered in Appendix B:

- Database Endpoint : Transaction Log (optional)
- Database Endpoint : Store & Forward (optional)
- Database Endpoint : Failover (optional)

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

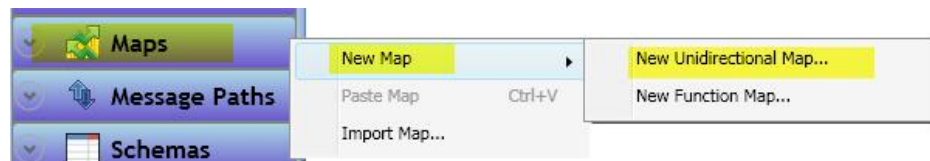
Adding Maps

The next step is to define the mapping of source data to its destination by creating a map.

You can create a unidirectional map to map data from a source to a destination, or a function map to map data from a source to parameters in a function call and outputs from the function call to a destination.

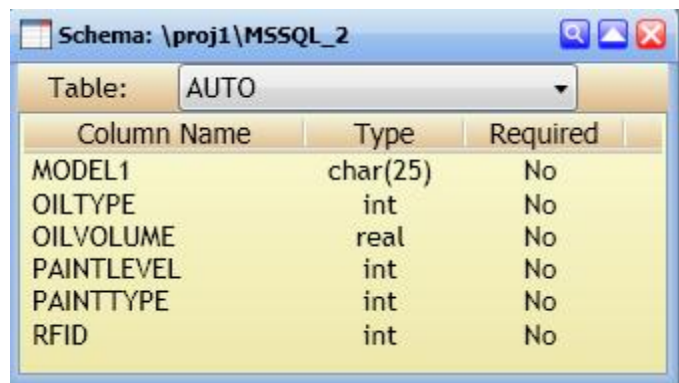
In this section we will be creating a unidirectional map. Our example will use a MSSQL database table insert, a ControlLogix tag, and a couple of eATM macro values.

1. **Right-click** on **Maps**.
2. Select **New Map**.
3. Select **New Unidirectional Map**.




Output Schema:

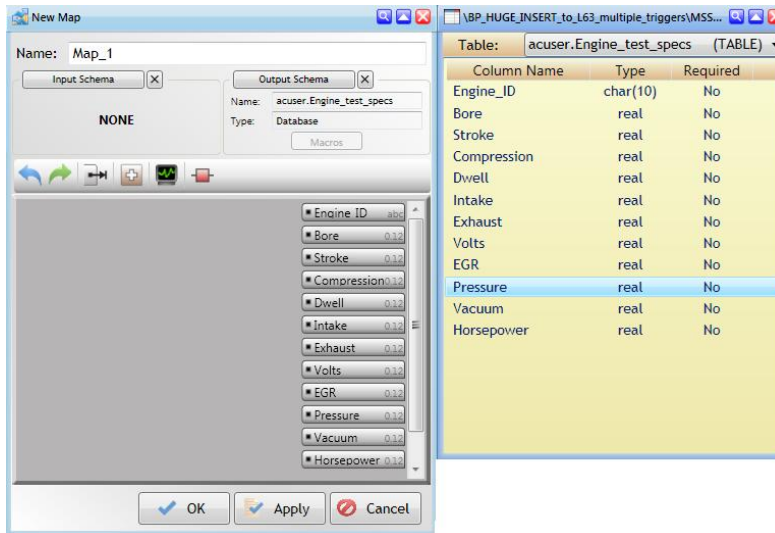
1. Select **Output Schema**.
2. Select a **Table** from the **Tables** in your database.
 1. You may only select from one table.
In the example the table named **AUTO** was selected.
 2. When you select the table, the table contents will be shown in new window.



If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

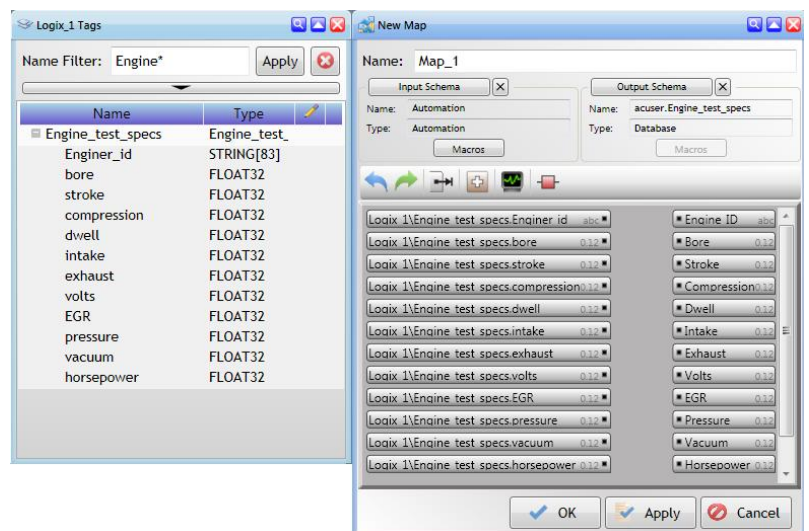
- With the configuration of the table displayed, you will now be able to drag column names from the **Schema** screen into the **Output Schema** (right side) of the **Map** screen.
- Select **OK** when you are done.




Input Schema:

The process will now be repeated for the Tags from the PLC.

- Select **Input Schema**. The screen will display a list of possible Input sources.
- Select **Automation**.
- Select the name of the PLC you want to map to.
- The **Tags** available from this processor are now displayed in a **Tag** window. Drag the ones you want into the **Input Scheme** area on the **left side** of the Map screen.




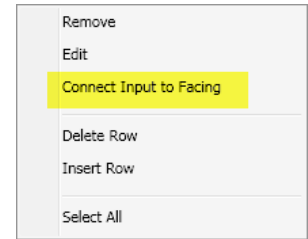
If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or visit <http://www.softing.us/ra/support/> and select **Support**.

Connecting Outputs to Inputs:

To complete the map definition, the inputs need to be connected to outputs.

1. Highlight one or more items.
2. Press the  icon or **right-click** and select **Connect Input to Facing**.
3. Repeat steps 1 and 2 until all the inputs are mapped.

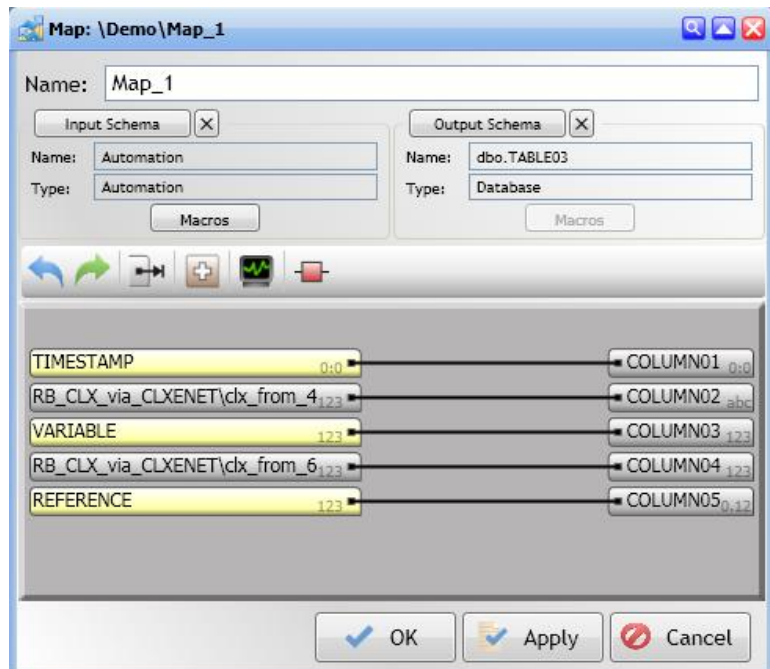


NOTE "Connecting Inputs to Outputs":


- You can map one input to multiple outputs if needed.
- You can select multiple inputs and outputs with one **Connect Input to Facing** statement.
- Inputs can be values supplied by eATM tManager **Macros**
 - Constants
 - Timestamp
 - Trigger Name including path
 - Value of the tags used in the trigger condition (Variable and Reference)
 - Reference the online **Help** for more information

When you have completed your mapping, the screen will show all inputs mapped to an output.

4. Select **OK** to save and close.



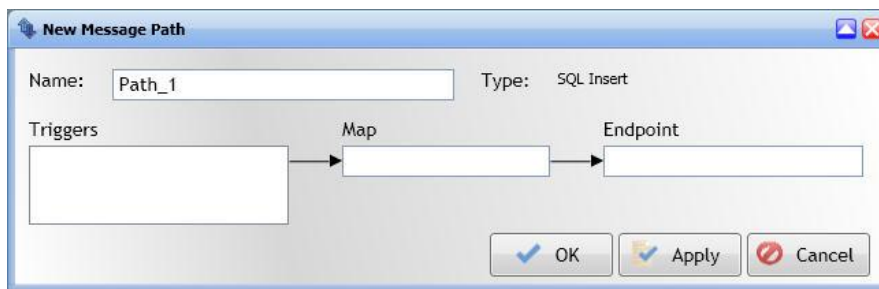
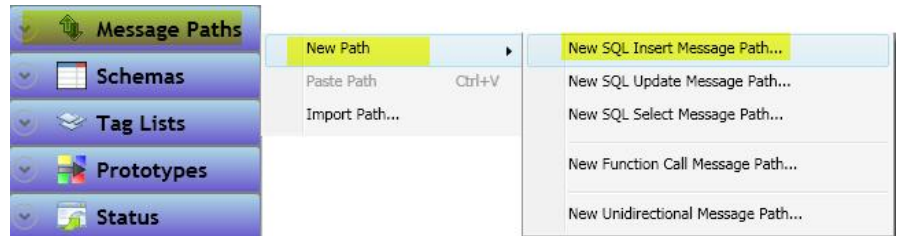
If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Adding a Database Message Path

In this example, we will create an **SQL Insert Message Path** to insert data into a database using an SQL INSERT statement.

1. **Right-click** on **Message Paths**.
2. Select **New Path**.
3. Select **New SQL Insert Message Path**.



Name: The name of the

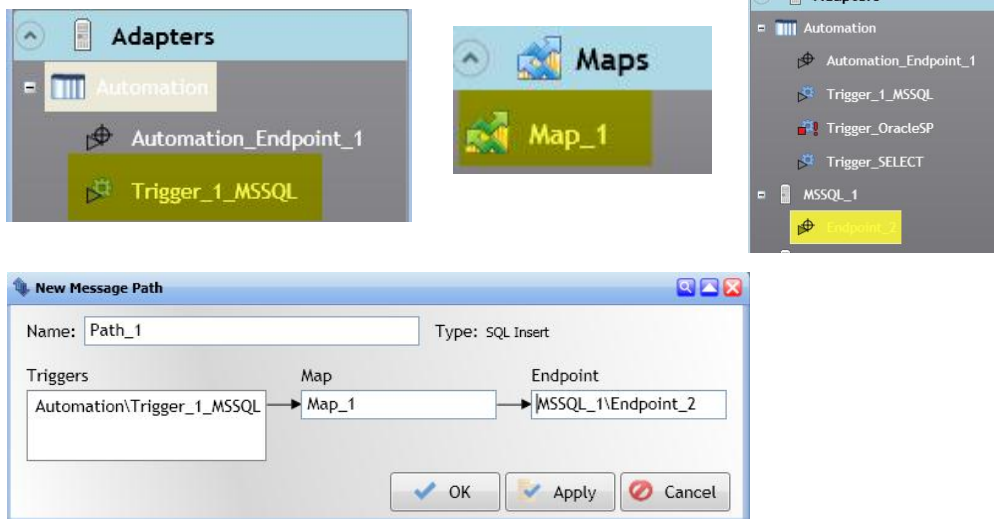
message path.

Triggers: The triggers that fire this message path. To fill this field, drag a trigger from the tree on the left.

Map: The map the message path uses. To fill this field, drag a map from **Lists configured maps** on the left.


Endpoint: The endpoint the message path sends data to. To fill this field, drag an endpoint from the tree on the left.

4. Drag items that you have already created from the configured items into the message path fields for **Triggers**, **Map**, and **Endpoint**.



5. Select **OK** to save and close

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or visit <http://www.softing.us/ra/support/> and select **Support**.

Starting Components

A component at any level can be stopped. The following may be stopped

- eATM Appliance
- Projects
- Triggers
- Endpoints

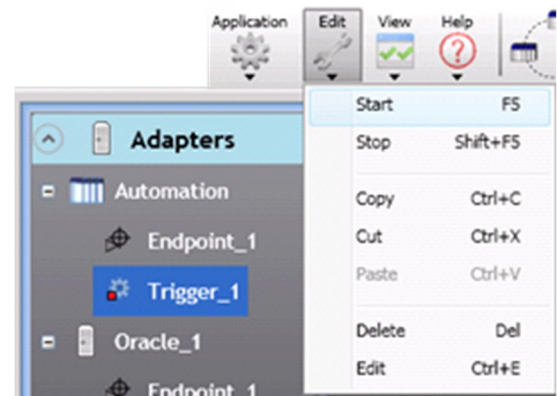
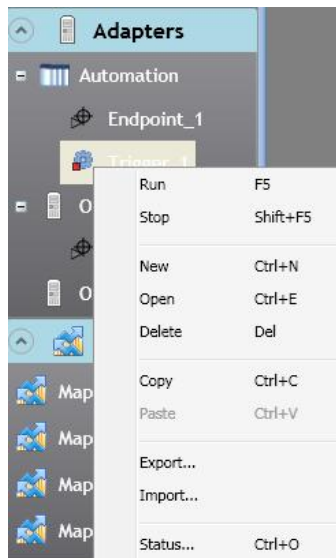
In order for a transaction to be completed, all of the components must be Started (Running).


Starting a Trigger

When a trigger is **Stopped**, its icon will be displayed with a **RED** Box as shown below.

In Project Editor, you can start triggers in several ways:


- Select the trigger, select **Edit** from the top menu bar, and then select **Start**.
- Select the trigger and press **F5**.
- **Right-Click** on the trigger and select **Run**.



After the trigger is started, its icon will display a status triangle on the trigger icon (either gray or green depending on the Project and Module status). 

NOTE: If either the Project or Module is not running, the icon triangle will be gray.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Starting an Endpoint

All of the Automation and Database endpoints that are associated with your triggers need to be started.

In Project Editor, you can start endpoints the same way you start triggers:

- Select the endpoint, select **Edit** from the top menu bar, and then select **Start**.
- Select the endpoint and press **F5**.
- **Right-Click** on the endpoint and select **Run**.

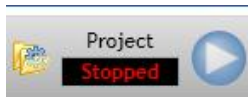
You can also start endpoints in xATM Manager:

- **Right-Click** on the endpoint and select **Start**.

Starting a Project

There are several methods of starting a PROJECT:

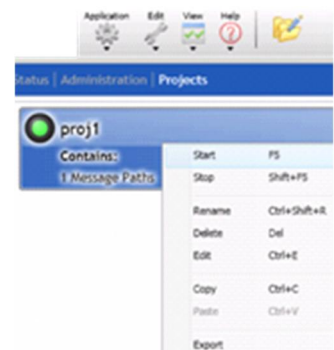
- In Project Editor, in the upper-right corner, press the button in the **Project** area.




Select **Yes** when prompted and the state will change to **Running**.



- In xATM Manager, select the **Projects** or **Status** tab, **right-click** on the project name, and select **Start**. The project ICON will change from **RED**






If you wish to use the Knowledge Base or contact Customer Support you can :

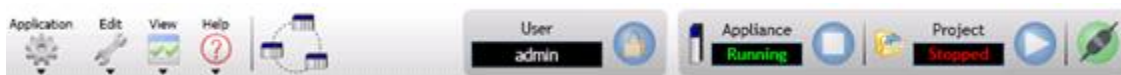
From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Starting an Appliance

An appliance can be started in either Project Editor or xATM Manager.

In the top-right corner of the screen, press the  button in the **Appliance** area. 

Select **Yes** when prompted and the state will change to **Running**. 



Monitoring Status

Now that you have started the components (trigger, endpoint, project and appliance), you can monitor the trigger and endpoint status information easily on the **PROJECTEDITOR'S** status screens.



Project Triggers Status										
	Start	Stop	Open	View Log			Reset Statistics			
Name	Count	Errors	Overruns	Exe Avg	Exe Min	Exe Max	Cycle Avg	Cycle Min	Cycle Max	
Automation:Trigger_1_MSSQL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	
Automation:Trigger_OracleSP	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	
Automation:Trigger_SELECT	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	


Project Endpoints Status													
	Start	Stop	Open	View Log				Reset Statistics		Flush Messages		Reset Failover	
Name	Successful Msgs	Errors	Timeouts	Msgs Dropped	Last Xact	Avg Xact	Min Xact	Max Xact	Msgs Active	Msgs in Q	Msgs Expired	Percent Full	
Automation:Automation_Endpoint_1	0	0	0	0	0.000	0.000	0.000	0.000	0	0	0	0%	
MSSQL_1:Endpoint_2	0	0	0	0	0.000	0.000	0.000	0.000	0	0	0	0%	
Oracle_10GEpress_161:Oracle_10GE	0	0	0	0	0.000	0.000	0.000	0.000	0	0	0	0%	
Oracle_10GEpress_161:Oracle_10GE	0	0	0	0	0.000	0.000	0.000	0.000	0	0	0	0%	
Oracle_10GEpress_163:Oracle_10GE	0	0	0	0	0.000	0.000	0.000	0.000	0	0	0	0%	
Oracle_10GEpress_164:Oracle_10GE	0	0	0	0	0.000	0.000	0.000	0.000	0	0	0	0%	

You can use these screens to Start, Stop, and access Transaction Logs, and monitor information during development.

NOTE "Viewing Status Information within xATM Manager vs. Project Editor":

This status information is available for the whole module on the **xATM_MANAGER | STATUS** screen by selecting **VIEW TRIGGER / ENDPOINT STATUS**. While the format is the same, the **xATM Manager** provided information across the appliance (i.e. all projects) and the **Project Editor** can only view one project at a time. However, you can have multiple **Project Editors** sessions open at the same time, if needed.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the **HELP** icon  and then **Online Support** or visit <http://www.softing.us/ra/support/> and select **Support**.


In **xATM Manager**, you can view trigger and endpoint status by clicking on **View Trigger /Endpoint Status** on the **Status** tab.

The screenshot shows the xATM Manager interface. The main window displays system status: Current Time: 2009-6-4 10:25, Memory Used: 237MB / 1003MB, Flash Storage Used: 430MB / 5012MB, CPU Usage: 1%. A 'View Trigger/Endpoint Status' button is highlighted. The 'View Trigger/Endpoint Status' window is open, showing two tables:

Start	Stop	Reset Statistics						
Trigger Path	Count	Errors	Overruns	Exe Avg	Exe Min	Exe Max	Cycle Avg	Cycle Min
\proj1\Automation\Trigger_1	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_2	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_3	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_4	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_5	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_5SecAndOnChg	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_6	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_7	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_8	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_10_Schedule_Trigger	0	0	0	0.000	0.000	0.000	0.000	0.000
\proj1\Automation\Trigger_Demo_Insert_MSSQL2005	0	0	0	0.000	0.000	0.000	0.000	0.000

Start	Stop	Reset Statistics	Flush Messages	Reset Failover				
Endpoint Path	Successful Msgs	Errors	Timeouts	Msgs Dropped	Last Xact	Avg Xact	Min Xact	Max Xact
\proj1\Automation\Automation_Endpoint_1	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\JMSAdapter\JMSProdQEP	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\MSSQL_1\Endpoint_1	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\MSSQL_2\Endpoint_1	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\MSSQL_2005\Endpoint_MSSQL2005	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\MSSQL_2005\MSSQL_2005_Connection	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\MSSQL_2008\Endpoint_MSSQL2008	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\Oracle_10G\Endpoint_ORACLE10G	0	0	0	0	0.000	0.000	0.000	0.000
\proj1\Oracle_10GExpress\Oracle_10GExpress_End	0	0	0	0	0.000	0.000	0.000	0.000
\Project_2\Automation\Automation_Endpoint_1	0	0	0	0	0.000	0.000	0.000	0.000
\Project_2\MSSQL_1\Endpoint_2	0	0	0	0	0.000	0.000	0.000	0.000

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

FAQ: How do I add my CLX profile?

Adding CLX profile support (i.e. Supervisory Controller)

The configuration for the supervisory controller is made using the **PROJECTEDITOR** under the **AUTOMATIONADAPTER**. All Automation adapter configurations are in effect for all the projects on the module.

For most 56eATM-tManager installations, you will utilize the CLX AOP (Add-On-Profile) so the default configuration is set the **CONTROLMETHOD** to **BACKPLANE**; therefore, no Supervisory Controller configuration changes are required.

However, you will be using a CLX AOP (Add-On-Profile) feature in RSLOGIX5000 to configure a generic profile for your tManager. The instructions below show this RSLOGIX500 AOP configuration of your generic profile.

CLX Profile (AOP): Status and command to/from CLX

Within RSLogix5000 software you will need to setup a scheduled connection using the *CLX Generic Profile*.

1. **Right-click** on **I/O configuration** and select **New Module**.
2. Under **+Other**, select **Generic 1756 Module** and select **OK**.
3. Setup you module as show in the screen capture (your name, description, and slot can differ).
4. Press **OK**.
5. Under the RSLogix5000 **Connection** tab, set the **packet interval** to 20msec or greater (50msec recommended)

New Module

Type: 1756-MODULE Generic 1756 Module
Parent: Local

Name: eATM
Description: 1756-eATM Module
Comm Format: Data - DINT
Slot: 4


Connection Parameters

	Assembly Instance:	Size:	
Input:	1	24	(32-bit)
Output:	2	22	(32-bit)
Configuration:	3	0	(8-bit)
Status Input:			
Status Output:			

Open Module Properties

OK Cancel Help

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the **HELP** icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Status and Control information

The following information is passed using the supervisory controller connection no matter which Control Method is selected.

Supervisory Controller: The controller that is currently connected to the appliance.

Status Data From the Appliance

Index 0 (Status Bits)

Bit 0 (Needs Attention): When this bit is on, there one or more errors that need attention that have occurred on the appliance. This means the needs attention indicator is active.

Bit 1 (PLC Command Error): The last PLC command executed had an error.

Bit 2 (Supervisory Confirmation Flag): This bit is **not displayed in the status data**. Bit 2 is set only in the controller that owns the Control portion of the AOP connection. If a backplane AND an ethernetIP controller have a valid AOP connection, bit 2 will be set in one or the other (depending on the supervisory controller settings). The one with bit 2 set has Control (supervisory privileges) and may send commands to the appliance. If bit 2 is clear, the connection is read-only.

Note: multiple backplane and/or multiple ethernetIP AOP connections is NOT supported, however, one backplane controller and one ethernetIP controller may simultaneously connect, with one having Control.

Bit 16 (Data in S & F): One or more store and forward queues are more than 1 % full.

Index 1 (Appliance Mode):

- 1 = appliance is halted
- 2 = appliance is suspended (free memory on the appliance is less than 10%)
- 3 = appliance is running

Index 2 (Command Trigger Echo): This index is set to the output index 0 command trigger value after the command has completed.

Index 3 (Free Running Counter): A free running counter to indicate that the appliance is still alive.

Control Commands to Appliance

Index 0 (Command Trigger): The supervisory controller must change this value to execute the command code.

Index 1 (Command Code): The supervisory controller command to the appliance.


- 0 = take no action
- 1 = go to stop mode
- 2 = go to run mode
- 4 = reset the appliance network settings
- 5 = restart the appliance
- 6 = start the project specified by project ID in command parameter
- 7 = stop the project specified by project ID in command parameter

Index 2 (Command Parameter): Parameter for supervisory controller command to the appliance.

NOTE "If a second controller needs to monitor AOP":

The appliance may only have one master for more information see the <http://www.softing.us/ra/support/> knowledgebase entry on Supervisory Controllers "AOP HIERARCHY LOGIC".

If you wish to use the Knowledge Base or contact Customer Support you can :

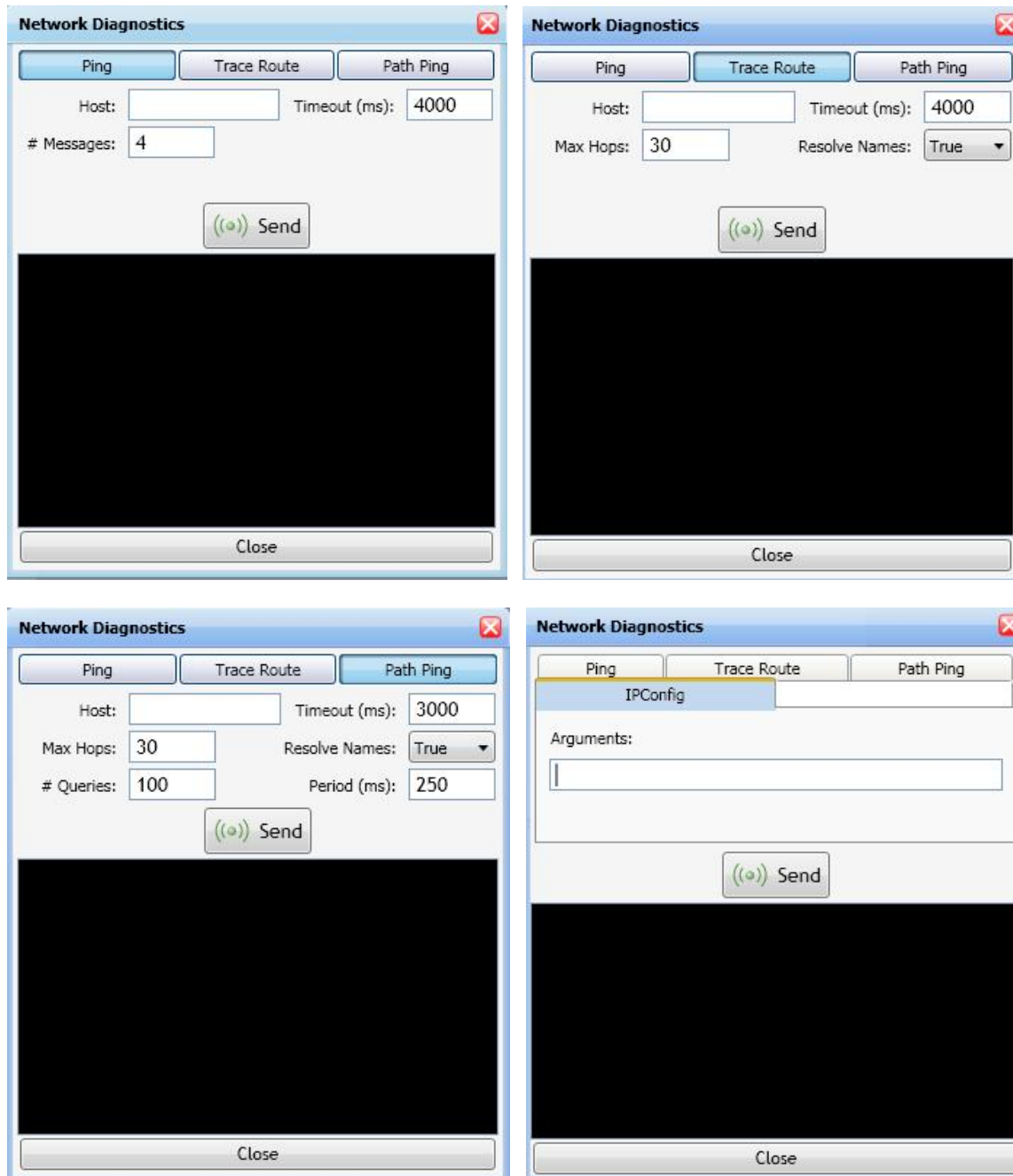
From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

What options are available under Network Diagnostics?


To access Network Diagnostics from within xATM_Manager software:

1. Select the **Administration** tab.
2. Select the **Network** tab.
3. Double-click on **Network Diagnostics**

See screen captures below for the available options. Online help is also available by pressing F1.

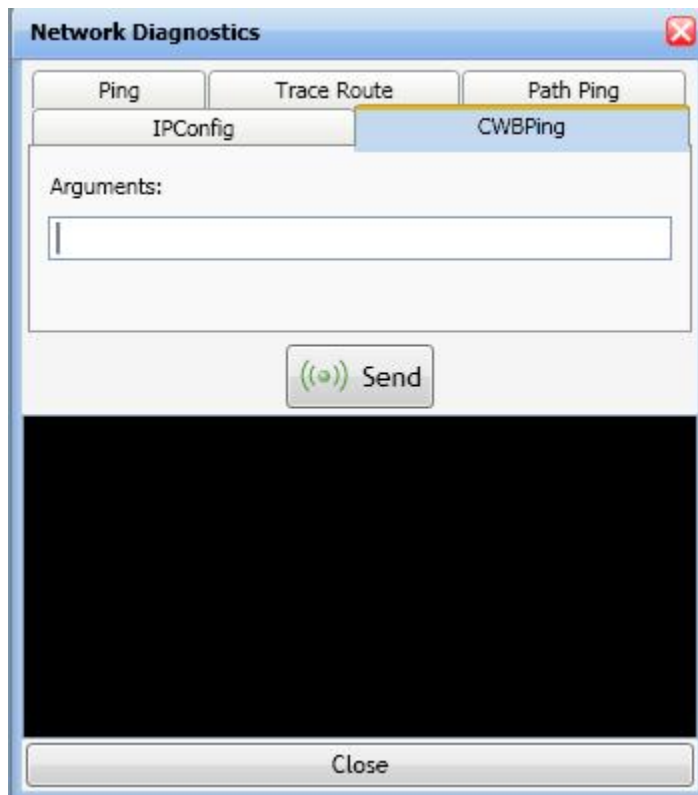


If you wish to use the Knowledge Base or contact Customer Support you can :


From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

For **AS400, iSeries, System i** users, you will also see **CWBPing**. Use this command to determine if a connection can be successfully made to an iSeries™ system, or to help determine the cause of a connection failure.

CWBPing checks the status of the host servers on the iSeries™ system. The name of the communications provider is shown, as well as the result of connecting to each of the host socket servers. To see detailed messages, use the (/v) verbose option available in the Online Help **[F1]**.



If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

What options are available using Network Routing?

To access Network Diagnostics from within xATM_Manager software:

1. Select the **Administration** tab.
2. Select the **Network** tab.
3. Double-click on **Network Routing**

See screen capture below. Online help is also available on the unit by pressing F1.

Network Routing

Interfaces:

0x1 MS TCP Loopback interface
 0x2 ...00 0d 80 00 0f 17 Intel(R) PRO/100 M Network Connection - Packet Scheduler Miniport
 0x10004 ...00 0d 80 00 0f 16 Intel(R) PRO/100 M Network Connection #2 - Packet Scheduler

Active Routes:


Network Destination	Netmask	Gateway	Interface	Metric
0.0.0.0	0.0.0.0	10.0.0.33	10.0.25.74	20
10.0.0.0	255.0.0.0	10.0.25.74	10.0.25.74	20
10.0.25.74	255.255.255.255	127.0.0.1	127.0.0.1	20
10.255.255.255	255.255.255.255	10.0.25.74	10.0.25.74	20
127.0.0.0	255.0.0.0	127.0.0.1	127.0.0.1	1
192.168.1.0	255.255.255.0	192.168.1.254	192.168.1.254	20

Persistent Routes:

Network Destination	Netmask	Gateway	Interface	Metric
---------------------	---------	---------	-----------	--------

Default Gateway: 10.0.0.33

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or visit <http://www.softing.us/ra/support/> and select **Support**.

FAQ: What causes the module to time-sync?

If time sync is enabled, a time sync cycle occurs

- After a time-synch configuration change
- After an appliance mode change
- During appliance boot
- At the specified frequency after configuration/mode-change-boot.

During a time-sync cycle:

- The time of the appliance is set from the first active synch source found.
- All the time synch destinations are set from the appliance time.
- Logging -- Failed and successful synch sources and destinations are logged.

FAQ: What happens if one or more of the plc variables are not available when the trigger fires?

Successful completion of any map requires that **“all of its PLC variables must be available”** when:

- For inputs: When the trigger fires for inputs
- For outputs: When it receives the output values

This is true for all maps whether that map contains one plc or several plcs.

If any PLC variable is not available, the trigger is disabled and does not complete until all variables are available.


Can I use multiple PLCs my map as the source or destination?

You can map from/to multiple input and/or outputs automation devices, if needed, in your application.

Things to consider when you make that decision when using multiple automation devices:

- Successful completion of this map requires that **“all of its PLC variables must be available”** when the trigger fires. This constraint is true for all maps whether that map contains one plc or several plcs.
- If any PLC variable is not available, the trigger is disabled and does not complete until all variables are available.
- If this constraint is not acceptable, limit your maps to one controller by use a single controller as a data concentrator.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support**
or Visit <http://www.softing.us/ra/support/> and select **Support**.

FAQ: What are the rotary switches on the side of the module used for?

There are 3 rotary switches on your module.

Normal operating state is set to 0-0-0.

Set to Network Setting to factory default values:

To reset the network settings to their factory default values, pull the module out of the rack and set the switches to 8-8-8.

When the module powers up with the switches set to 8-8-8, there will be a message scrolling on the display that says, " ...Network interfaces have been reset to factory default values; set rotary switches to 0-0-0 ".


At this point, eth0 is reset to 192.168.1.250 and eth1 is reset to DHCP. The module will not run until you pull the module; set the switches back to 0-0-0, plug it in and it powers up.

WARNING:

In this state, you will not be able to connect to the module.

To connect to the module, you must follow the scroll display instructions, i.e., pull the module and set the switches back to 0-0-0.

If you wish to use the Knowledge Base or contact Customer Support you can :


*From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.*

Appendix A: Trouble-shooting

xATM Manager: Attention Required

This icon means that an error has been logged on the module since the SYSTEM LOG has been last viewed.

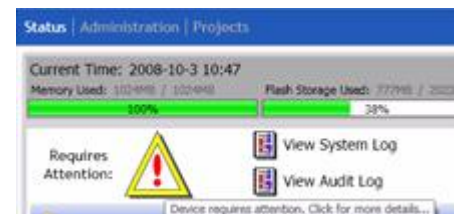
ATTENTION REQUIRED status is display in several locations:

1. The screen icon is  .

- a. On xATM Manager **STATUS** screen (as shown below)


When you hover the cursor over this icon, you will see the message below **“Device requires attention. Click for more details...”**.

When you click for more details, you will see a new window displaying the **SYSTEM LOG** listing all the errors on the unit.




- b. Project Editor top toolbar



When you **click** the icon  , it will open the xATM MANAGER so you may review the SYSTEM LOG.

Note: SYSTEM LOG email notification will notify the user of the existence of an event. These events are marked as ERROR.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Warning: Maximum number of *any component type* have been reached

If you exceed any of the configuration component limits, you will receive this error message. This error is displayed when you attempt to create a new component. See Appendix C for eATM tManager **Limit Values**.



Trigger: Should be firing but is not

If a trigger is not running and you believe that it should be, check the following items:

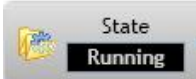
1. Is the eATM appliance RUNNING?

Look in xATM Manager.



2. Is the Project RUNNING?

Look in Project Editor. If the eATM appliance is not RUNNING and the Project is running state is

GRAY. ; however, if the eATM appliance is RUNNING, the state is in GREEN



3. If they are both running, are the trigger and its endpoints all in RUN?


Right-click and check STATUS the icon should have a GREEN triangle.



and





4. If they are then **double-check** the conditions for your trigger.
5. Check the SYSTEM LOG for errors

If you wish to use the Knowledge Base or contact Customer Support you can :




From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.



ICON: Possible Trigger/Endpoint icon states


The **state** of the trigger:

-  trigger is running
-  trigger is stopped
-  trigger is faulted
-  trigger is running, but the project is stopped or the appliance is halted

The **state** of the endpoint:


-  endpoint is running
-  endpoint is stopped
-  endpoint is running, but the appliance is halted

An item marked with the **invalid icon**  means that the item is dependent on a variable which has either been deleted or the type has changed such that it is no longer compatible with its usage. This would normally happen when you **update a tag list or schema**. If you **hold the mouse over the invalid icon** , a message is displayed describing the error.

A trigger marked with the **faulted icon**  means that the **PLC program** does not contain one of the tags used in the trigger condition or a map which the trigger is linked to.

More information is available in the *Project Editor's* online **HELP** under **Appliance Status**.

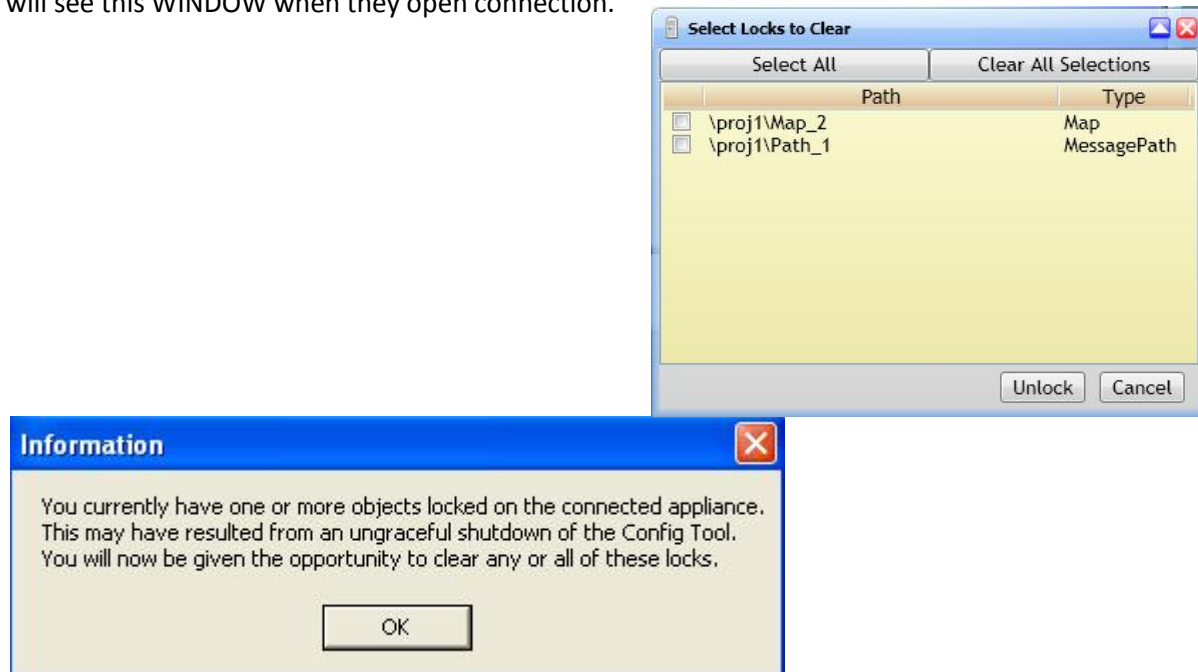
If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the **HELP** icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

ProjectEditor: Clearing Locks


When you open a selection for EDIT, you create a lock on that configuration.

If the Project Editor is closed prior to the exit of the EDIT mode, the next person to connect to this project will see this WINDOW when they open connection.



You can select to UNLOCK all or any individual items.

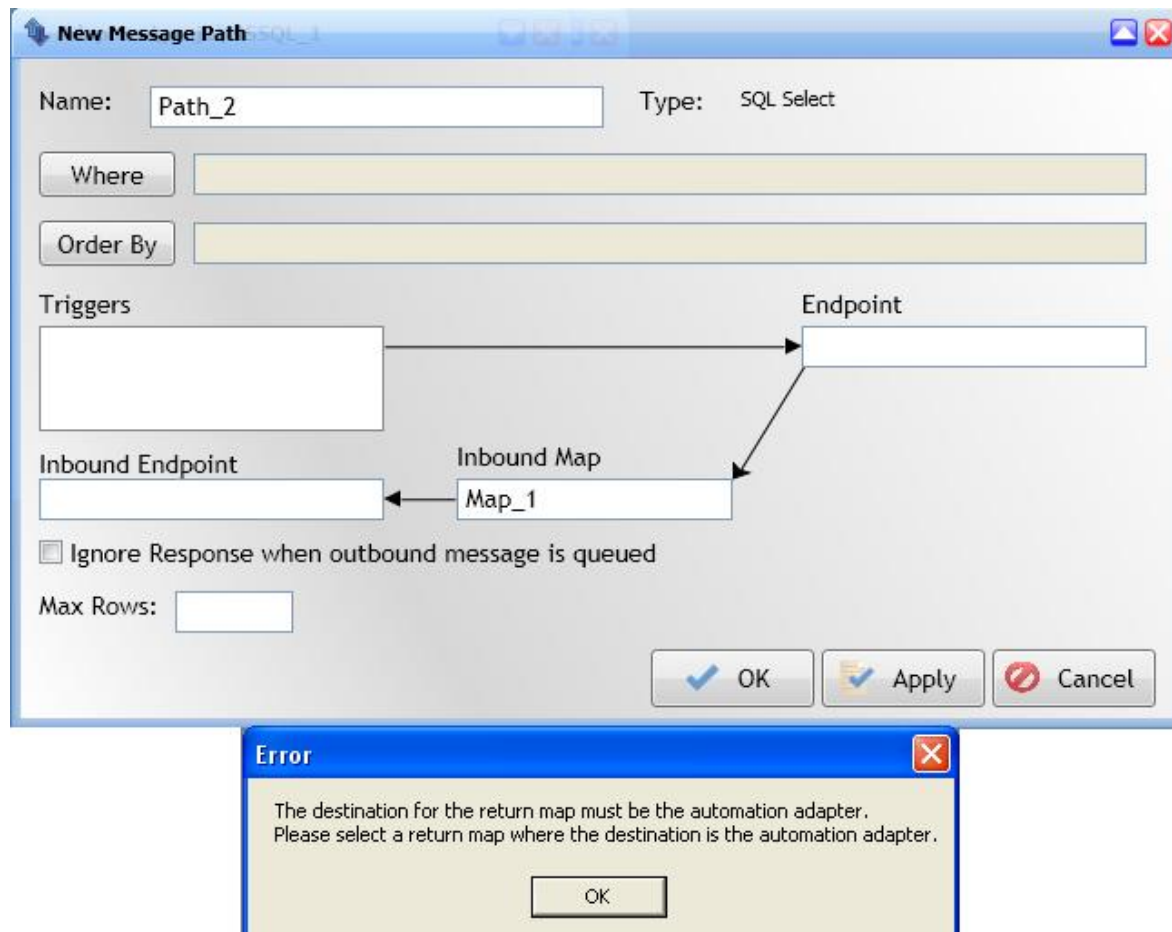
If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.


Error: “the destination for the return map must be the automation adapter”

This error means that you have selected an INBOUND MAP for this SELECT Message Path which is not mapping controller to database.

Solution: In this SELECT Message Path example, select a INBOUND MAP that maps database table information to automation tags.

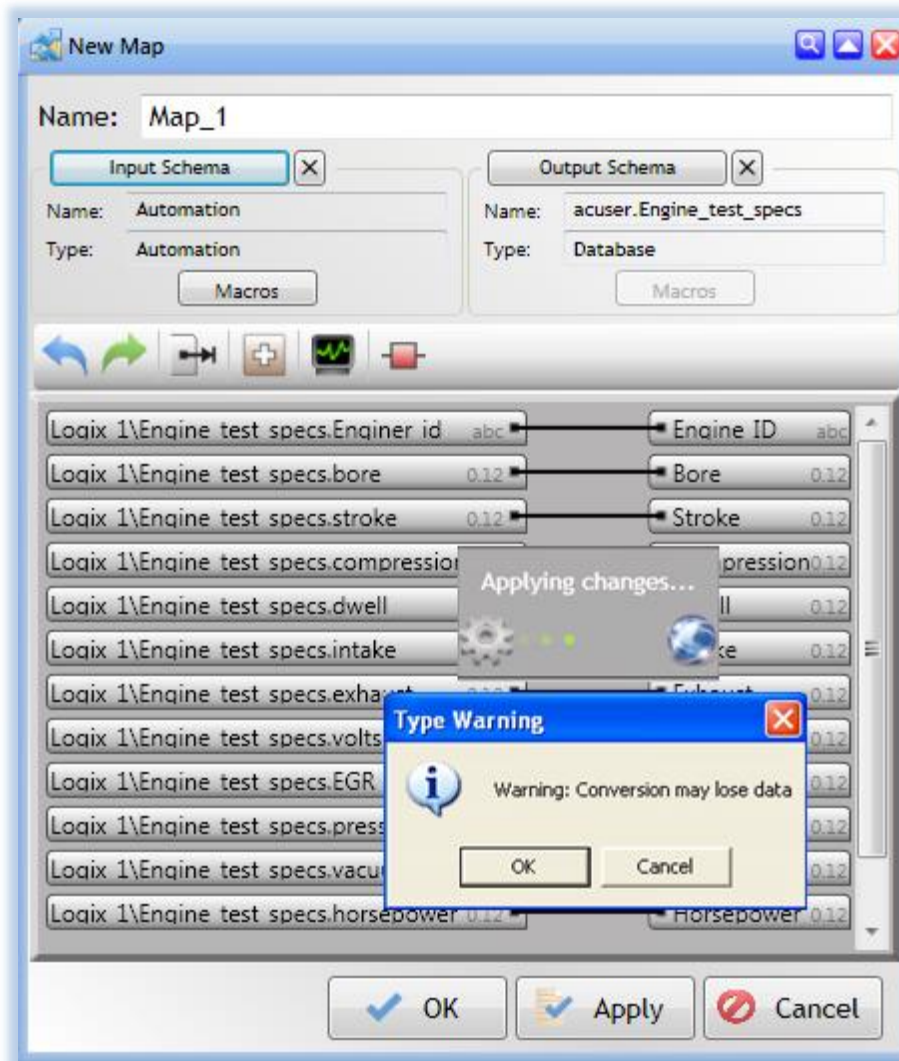


If you wish to use the Knowledge Base or contact Customer Support you can :


From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Project: Type Warning

This warning will be displayed when you APPLY or select OK (to save) and one or more of the INPUT fields on the left-side are not identical to the OUTPUT fields on the right-side. This error is informing you that you are responsible for confirming the data types are compatible on these items.

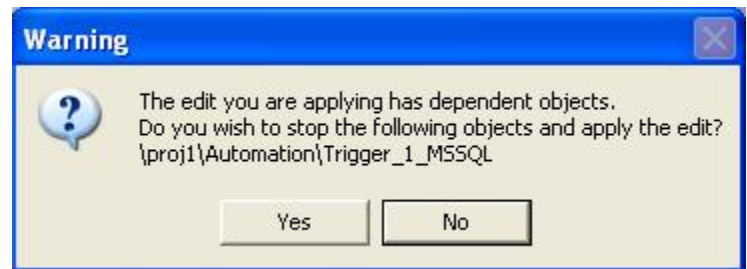


If you wish to use the Knowledge Base or contact Customer Support you can :

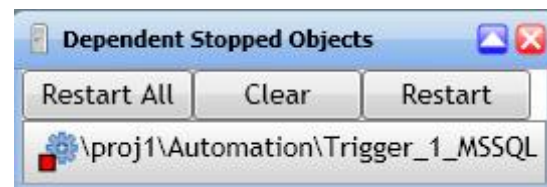
From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Project: Dependent Objects Warning

If other objects related to the item are STARTED, you will be asked if you wish to STOP them to apply the EDIT that you are now saving.



If you select YES, you will be supplied with a list of items that you will now want to restart.




Warning:

If you select **NO**, your changes are not saved.

Network troubleshooting

See FAQ sections of this document for the **NETWORK DIAGNOSTICS** and **NETWORK ROUTES**

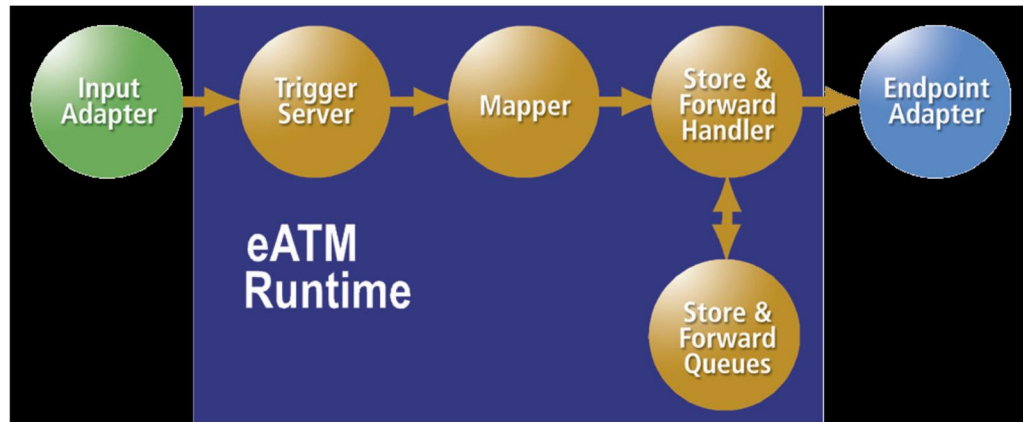
If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.


Appendix B: Recommended Usage

Configuration design


FAQ: What do you recommend when designing my configuration?



RESPONSE: The eATM-tManager products have several features that you should keep in mind when designing your configuration.

1. Triggers have several firing condition options:
 - **Option 1:** Tag-based (up to 2 tags) ← *typical selection*
 - The use of tag includes comparison of a tag to a constant or to another tag.
 - These tags do not have to reside on the same device.
 - **Option 2:** Time schedule
 - **Option 3:** CLX MSG INSTRUCTION
 - **Option 4:** Combinations
 - Multiple time-schedule conditions
 - Time-schedule condition(s) or MSG INSTRUCTION option combined with the Option 1 condition method.
 - **Note:** A trigger's transaction will not be output from the tManager if any of its map's input variables are not available when the trigger fires. If any of these variables are not available, the trigger is marked as disabled and will not retry for 60-seconds.
2. Handshake mode selection made in the trigger configuration effects when the next trigger firing occurs:
 - When combining transactions under one trigger, remember that the trigger cannot fire again until the completion of all the messages at their level of handshaking; therefore, one slow message would cause all to wait for its completion.
 - A trigger will not fire unless all the tag/variable used in both its trigger firing conditions or its maps source is not available. This disabled state is signified in the ProjectEditor trigger name marked with a yellow  triangle. When disabled, the trigger will not fire any of its messages, so no transaction will occur until all the required data is available.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

- When selecting handshake mode, you must consider the features that you will be using with your adapter endpoint.

For example:

- If you are using **STOREANDFORWARD**, you will use **INQUE**. *←typical selection*
- If you want to stop the line if your INSERT or UPDATE is not completed for any reason, you will use **SENTTODEST**
- If you want to stop the line if your SELECT or STORED PROCEDURE WITH OUTPUTS is not completed for any reason, you will use **SENTTOSRC**

3. Status Tags

- **TriggerStatusTags** *←typical selection when trigger handshaking is required*
 - It is only used if the plc logic will be monitoring the completion status of this individual trigger.
 - For triggers with multiple message paths, there is the option of a separate status tag for each message path.
- **EndpointStatusTags**
 - They are only used if the plc logic will be monitoring the overall health of this connection. It is overall health because its value will only reflect the status of the last transaction to this endpoint.

4. Endpoint architecture

- Create separate endpoints for each adapter based on the properties that your transaction will require.


For example,

- INSERTS and UPDATES sent to a database would always utilize **STOREANDFORWARD**.
- SELECT commands requests data from the database would typically not utilize **STOREANDFORWARD**
- StoredProcedures utilize **STOREANDFORWARD** or not based on the function to be performed by this StoredProcedure
- If you have a transaction message which might expect to be more time-consuming, then use a separate endpoint to allow faster transactions to continue while the slower transaction wait in the queue.

5. Map

- A transaction will not be output from the tManager if any of its map's input variables are not available when the trigger sent its read request. At that time, this trigger is disabled and will not retry for 60-seconds.
- Map may contain variables (i.e. tags) from multiple plcs *← typical installation, one plc in a map*
 - If you wish the trigger to continue when one or more of the plcs is not available, then you would use a data concentrator CLX. In that situation, the map would be using only variables from the data concentrator plc.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the **HELP** icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Transaction Log

FAQ: Why would I use transaction logging? And how would I setup transaction logging? **←Typical used for non-automation endpoints like databases and not used for AUTOMATION endpoints**

RESPONSE: There are a few reasons.

I would recommend the use of transaction logging with non-AUTOMATION endpoints.

Why? If any of the following are true:

1. If you would like to see the SQL message sent to the database and its response

Note "Transaction log contents":

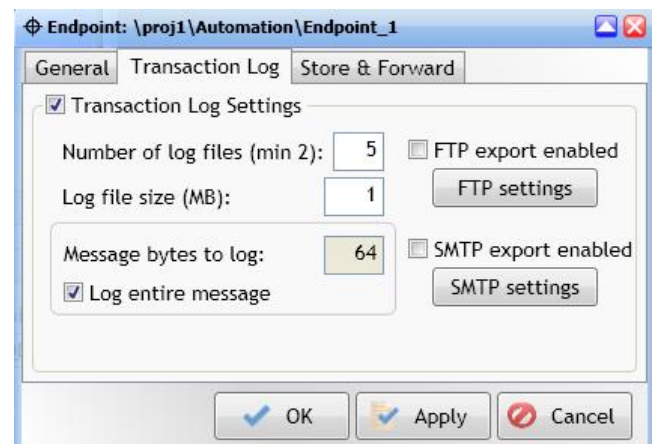
This feature is useful in trouble-shooting because both the SUCCESSFUL and UNSUCCESSFUL transactions are logged. If UNSUCCESSFUL, the database error message is included in the log.

2. If you would like a historical record of what you sent.

Note "Automatic Export of module logs":

You can have it automatically export via FTP or SMTP when a file becomes full. This feature is recommended if you wish to maintain this information for longer periods of time.

3. You have more than 2G available for the storage of your S&F and transaction log on your eATM appliance's compact flash. Therefore, define your S&F and Transaction log sizes appropriately.




Note "Transaction Log memory allocation & impact on throughput speed":

These files will be created when you save (select **OK**).

For high speed applications, you may select to use TRANSACTION LOGGING **only** during trouble-shooting.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

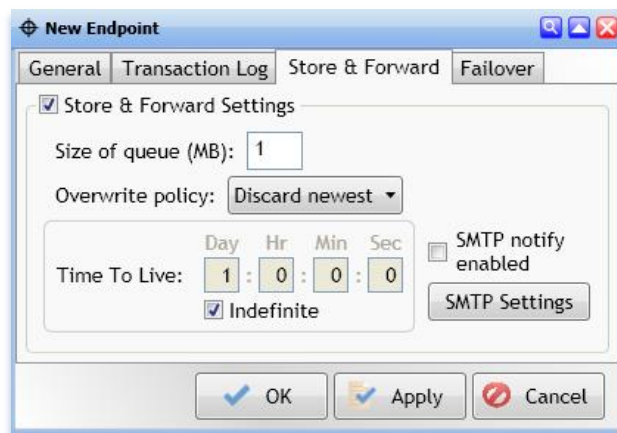
Store & Forward (S&F)

FAQ: When should I use it?

And How big should I make my *Size of queue* and *Time To Live*?

RESPONSE: You would typically use S&F with non-AUTOMATION endpoints. It is recommended for any transaction that you would like to store on the module until its destination is once again functioning. Once available, the data is passed out in a FIFO. An example of this types are the INSERT and UPDATE database commands.

The *Time To Live* is the maximum length of time that a transaction will be saved in this S&F. After this time period, the transaction will be deleted. For your *Size of queue*, you will need to allocate enough space for the storage of your transactions during the “*Time To Live*” period that you have selected.



If you are not sure, I recommend use of the default values of **(10M and INDEFINITE)**.

Note “S&F size”:


1. These files will be created when you save (select **OK**).
2. You cannot modify an endpoint configuration in any way unless the endpoint is **STOPPED** and this queue is empty.
3. I recommend that your store and forward log sizes be 10M or less. When larger sizes are selected, you will see a slow response to its selection of **OK** or **APPLY** with the larger sizes because this drive area is allocated to this purpose (i.e. S&F for this endpoint) when you save this configuration.
4. You have more than 2G available for the storage of your S&F and transaction log on your eATM appliance’s compact flash; therefore, define your S&F and Transaction log sizes appropriately.

Note “Handshake mode selection impart of S&F”:

Store&Forward is only valid when used in combination with triggers with a **HANDSHAKE MODE** of **IN QUEUE** or **RECEIVED FROM SOURCE**; therefore, no message will be placed into S&F unless these handshaking modes are selected for your message paths.

This handshaking mode selection is made on your trigger edit screen.

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Automation EndPoints

FAQ : Why would I use multiple **AUTOMATION ENDPOINTS** ?

RESPONSE: There are several reasons. A few of these are listed below.

1. Endpoint **STATUS TAG** feedback, if used, is set at the AUTOMATION ENDPOINT level. This tag will reflect the status of the last transaction back to its plcs via this endpoint.
2. **TRANSACTION LOGGING:** This log is typically not used for Automation endpoints. If you wanted to log the communication between device and this appliance for some triggers and not for other, you would use multiple **ENDPOINT**. In most cases, you will wish to log the **ENTIRE MESSAGE** or have no transaction logging; however, the flexibility of selecting the # of bytes to log per message is supported. These logs may be automatically exported as the file is full via FTP or SMTP.

NOTE: "Transaction log"

Transaction logging is seldom used with AUTOMATION ENDPOINTS. Its need originated in the enterprise adapter world; however, it can be useful if trouble-shooting controllers in the future. We recommend that this features is only used when it is needed then turned back off to remove its overhead on the module.


3. Endpoint handshaking for **FLOW CONTROL**, if used, is set at the AUTOMATION ENDPOINT level. While typically not used, you would use this feature if you wish to request data for a database for example, then hold it in the tManager (i.e. the AUTOMATION adapter's STORE AND FORWARD) until the plc was ready to receive it.

NOTE: "Flow Control"

FLOW CONTROL includes completion success and on error feedback in its response.

- You have a **REQUEST** tag and a **RESPONSE** tag (DINT)
- If successful, **RESPONSE == REQUEST** value
- On error, **RESPONSE = negative of the REQUEST** value
- Data is written to the plc when the **REQUEST** value set to a new value which is:
 - Non-zero
 - <10,000
 - not equal to the current **RESPONSE** tag (i.e. the value of the request tag changed)

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Appendix C: eATM tManager Limits

Configuration Software

There is no limit to the number of UI systems installed, so you can install the xATM Manager & Project Editor software packages on as many systems as you wish.

Appliance Configuration

The following limits are enforced on the appliance. These counts are cumulative for the entire appliance.

Example: For MaxTriggers=Z, you can have several projects that combined have Z triggers or 1 project with Z triggers.

MaxProjects = 8	MaxTriggers = 25
MaxMaps = 25	MaxPaths = 25
MaxAdapters = 16 <ul style="list-style-type: none"> Each adapter definition for a database, JMS, etc uses one of these adapter counts 1 adapter is related to each project is automatically allocated to Automation All PLCs are under this 1 adapter/project Any adapter may be used in any combination allowed by you license purchase. 	MaxAutomation = 32 <ul style="list-style-type: none"> Automation Adapter contains an AUTOMATION TREE. Inside this tree, you may only be connected to a maximum of x controllers. Recommend usage level maximum of 16 automation devices
MaxEndpoints = 25	Tag/Variable Count Limit = n/a <ul style="list-style-type: none"> No enforced tag limit during configuration


NOTE: "System Limit modification"

If your application requires a greater number contact technical support (support@softing.us) to discuss your application.

If you exceed any of these configuration component limits, you will receive this error message. This error message is displayed when try create a new component after the maximum has been reached.

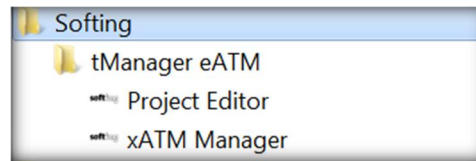


If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.

Appendix D: Functionality and Hierarchy of the Configuration Programs

After the configuration software is installed, the computer's **Start / All Programs** menu will have a listing for **Online Development Inc / tManager eATM** and its two components -- **Project Editor** and **xATM Manager**.




These two configuration programs require that the eATM tManager be online when they are used.

The **xATM Manager** software is used to configure administrative items (network settings, time zone, time-sync, etc.) for each eATM tManager appliance. The **Project Editor** software is used to configure connections and their transactions.

A map of the menu system for each of these programs is shown below.

xATM Manager functionality:	Project Editor functionality:
<ul style="list-style-type: none"> • Administration tab <ul style="list-style-type: none"> ○ Network tab <ul style="list-style-type: none"> ▪ Appliance name ▪ Ethernet ports ▪ Network Diagnostics (PING,etc) ▪ Networking Route ○ Time Management tab <ul style="list-style-type: none"> ▪ Time zone/sync source/manual ○ System tab <ul style="list-style-type: none"> ▪ Appliance Backup/Restore ▪ Appliance Restart/Shutdown ○ Update tab <ul style="list-style-type: none"> ▪ Firmware Update ▪ Retrieve Support Information ▪ Reset to factory default ○ License Management tab <ul style="list-style-type: none"> ▪ View/Update/RequestFile ○ Configure logs tab ○ General tab tab <ul style="list-style-type: none"> ▪ Location / contract / description ▪ Appliance Version/SerialNumber ○ Users tab tab <ul style="list-style-type: none"> ▪ Define users and select their access level • Status tab <ul style="list-style-type: none"> View individual appliance status ○ System log & Audit log (View&Export) ○ Projects by name <ul style="list-style-type: none"> ▪ Endpoints by name ▪ Right-click to: <ul style="list-style-type: none"> • Start/Stop • Flush Messages • Reset Failover • Clear statistics ○ Trigger & endpoint statistics 	<p>Creation of the components inside individual projects</p> <ul style="list-style-type: none"> • Adapters <ul style="list-style-type: none"> ○ AUTOMATION (PLC Connection) <ul style="list-style-type: none"> ▪ Triggers ▪ Endpoints ○ Non-PLC adapter <ul style="list-style-type: none"> ▪ Endpoints ▪ Triggers (Non-PLC&non- database) • Maps (mapping source to destination) • Message Paths • Schemas <ul style="list-style-type: none"> ○ XML database column • Tag Lists <ul style="list-style-type: none"> ○ List for variables for each Automation endpoint ○ Request update • Tables/Views • Procedures/Functions <ul style="list-style-type: none"> ○ Database stored procedures • Application <ul style="list-style-type: none"> ○ Export Cross-reference ○ Create NEW projects, triggers, endpoints,etc ○ Switch projects ○ Import Schema ○ Enumerate Schema (Automation) ○ Module Connect/Exit (Disconnect) • Edit <ul style="list-style-type: none"> ○ Start/Stop/Edit/Delete ○ Copy/Cut/Paste ○ Search&Replace (tag names, etc) ○ Project Settings (Project Status Tag)


If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the **HELP** icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.


xATM Manager *functionality:*

- **Requires Attention/No Attention Required flag**
 - View list of Attention Required events
 - Clearing flag
- **Projects tab**
 - Create/Delete
 - Import/Export
 - Copy/Paste/Rename
 - Start/Stop
 - Edit (which starts **Project Editor**)
- **Appliance Browser** (Left panel)
 - Monitor multiple eATM tManager appliances on subnet
 - **NET** : Define and scan subnets
 - **Connect** to modules
 - **Edit** projects (with Project Editor)
- **View**
 - **Appliance Browser**
 - **Full screen**
 - **License agreement**
- **Help**
 - **Context help**
 - **Online support**
 - **About this program**
- **Edit projects** (folder icon)

Project Editor *functionality:*

- **Status**
 - **Logs** (module wide)
 - View&Export
 - **System log**
 - **Audit log**
 - **Logs** (project wide)
 - View &Export **Transaction logs**
 - View **Statistics**
 - **Triggers** statistics
As well as the ability to by component
 - **Start/Stop/Open**
 - **View its log**
 - **Reset statistics**
 - **Endpoints** statistics
As well as the ability to by component
 - **Start/Stop/Open**
 - **View its log**
 - **Flush Messages**
 - **Reset Failover**
 - **Reset statistics**
 - **Tag View** (Automation variables read/write values)
- **View**
 - **Appliance Browser**
 - **Full screen**
 - **Close panes**
- **Help**
 - **Context help**
 - **Online support**
 - **About this program**
- **Manager appliance** (Return to **xATM MANAGER** with connection maintained to this eATM appliance)
- **Attention required** (triangle with ) (Selection opens **SYSTEM LOG** and clear Attention required flag)
- **User to change user**
- **Appliance** status Running/Halted & button to change status
- **Project** status Running/Stopped & button to change status
- **Plug icon** status of ProjectEditor connect to tManager (Green) and disconnect(Red) & this button changes the status

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the **HELP** icon  and then **Online Support**
or Visit <http://www.softing.us/ra/support/> and select **Support**.

Appendix E: Minimum System Requirements


The eATM tManager configuration applications require:

- .NET 4.6.1 SP1
- Windows 7 (64-bit) and Windows 10 (64-bit)
- Minimum Pentium 400MHz 4 GB RAM
Recommended: Pentium 1 GHz or higher, 8 GB or more of RAM



PN#1601766 2018-06-15

If you wish to use the Knowledge Base or contact Customer Support you can :

From within the xATM Manager or Project Editor software, select the HELP icon  and then **Online Support** or Visit <http://www.softing.us/ra/support/> and select **Support**.