

AlarmWorX32 Multimedia Training Manual

Version 9.22

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Introduction

1

1.1. Overview of AlarmWorX32 Multimedia Training

Welcome to ICONICS' AlarmWorX32 Multimedia training. This training course will take you through the development process for creating multimedia automation applications using GENESIS32™. This training manual includes hands-on exercises that cover AlarmWorX™32 Multimedia, which is an optional add-on component of GENESIS32.

1.2. Before You Begin

The material in this course assumes that you are familiar with one or more Microsoft® Windows® operating systems, including Windows XP, as well as Windows Server. You should be able to manipulate windows and know how to launch and close applications.

This course also assumes that you are somewhat familiar with or have had some experience using the ICONICS GENESIS32 suite of software applications, including AlarmWorX™32. It also assumes that you are familiar with or have been introduced to industrial automation, HMI (Human Machine Interface), and industrial devices such as PLCs, controllers, and I/O hardware.

1.3. Course Goals

After completing the AlarmWorX32 Multimedia training course you will have the basic skills necessary for developing GENESIS32 applications using ICONICS AlarmWorX32 Multimedia. This course will introduce you to the major features and functionality of AlarmWorX32 Multimedia.

You will install and configure this application and explore the configuration interfaces by creating an actual project. Please see the AlarmWorX32 Multimedia help documentation for complete information about using and configuring AlarmWorX32 Multimedia.

1.4. Course Outline

This course is divided into the following chapters, and each chapter has an associated hands-on quick lab:

- Chapter 1: Introduction
- Chapter 2: Multimedia Configurator
- Chapter 3: Alarm Inputs
- Chapter 4: Media Templates
- Chapter 5: Multimedia Agents
- Chapter 6: Alarm Configurations
- Chapter 7: Multimedia Options and Runtime
- Chapter 8: System Objects

NOTE: For complete information about AlarmWorX32 Multimedia, please see the AlarmWorX32 Multimedia Help documentation.

1.5. OLE for Process Control

OLE™ for Process Control (OPC™) is a standards-based approach for connecting data sources (e.g., PLCs, controllers, I/O devices, databases, etc.) with HMI client applications (graphics, trending, alarming, etc.). It enhances the interface between client and server applications by providing a universally supported and well-documented mechanism to transmit data from a data source to any client application. We have included a detailed description on how data is passed along with specific information on other attributes to supplement the data, such as range information, data type, quality flags, and date and time information.

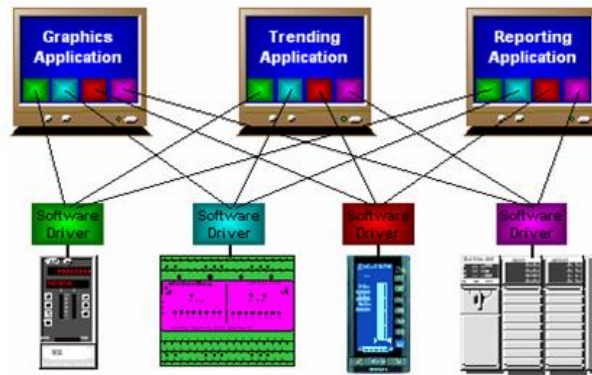


Figure 1.1.5.1 - Traditional Client-Server Architecture

To better understand the difference between the traditional client-server architecture and the OPC based client-server architecture, consider the illustrations shown in Figure 1.1.5.1 and Figure 1.1.5.2.

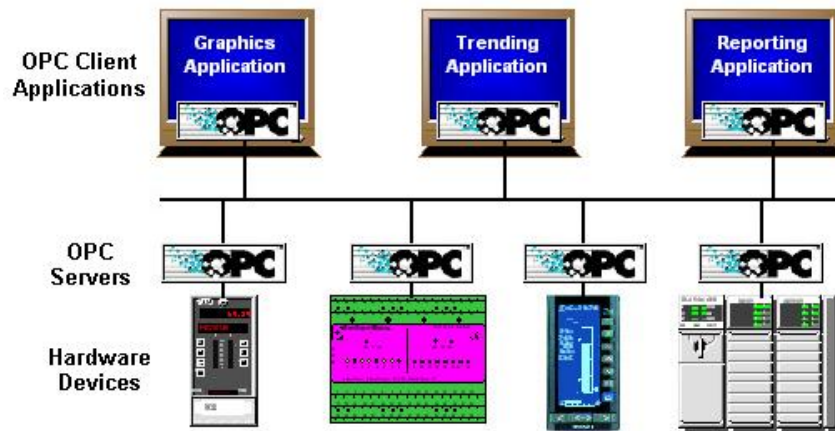


Figure 1.1.5.2 - OPC-Based Client Server Architecture

In the traditional case, as shown in Figure 1.1.5.1, each client is required to write its own set of servers to the devices (each line above represents a software interface driver). This is due to the fact that although the protocol of a device or a server may not change, the architecture of the different client applications (from different vendors) are different. This approach increases the load on the machine, development time, deployment time, and the cost for doing the project. If the device or server's protocol is changed or updated, then each of the client applications must also change.

Figure 1.1.5.2 shows the OPC Architecture, which was introduced by the OPC Foundation mainly to overcome issues presented in the traditional architecture. By following the OPC Architecture, a device only needs one standard driver, which is an OPC-compliant server.

All OPC-compliant client applications can then connect to that device, either locally or over a network. Furthermore, one can create more than one connection at the same time to any single OPC server.

Any OPC client application can connect to any OPC server. In other words, OPC offers true Plug-and-Play capability in the fields of HMI and industrial automation. OPC server types include OPC Data Access (DA), OPC Alarm and Events (AE), and OPC Historical Data Access (HDA).

1.6. *What Is AlarmWorX32 Multimedia?*

AlarmWorX™32 Multimedia is a new generation of modular automation for advanced OPC-based HMI and visualization by ICONICS. AlarmWorX32 Multimedia is an option of AlarmWorX32 that provides OPC-compliant multimedia technology for remote alarm notification. In this course you will use the AlarmWorX32 Multimedia to connect to ICONICS Alarm and Events OPC servers. The Multimedia Configurator is a database-generating tool that allows you to configure several different media to notify anyone, anywhere, of an occurring alarm. The media, or method of communication, is what we refer to as “agents”. Below is a list of all of the available agents:

-  E-mail (SMTP available)
-  Fax
-  Hardware marquee
-  Software marquee
-  Paging (including SMS/TAP, two-way paging, and SNPP)
-  Pop-up windows
-  Skype Instant Messaging
-  Voice annunciation of alarms via text-to-speech
-  Voice annunciation of alarm via recorded .wav files
-  Popup task-tray messages
-  Telephone (TAPI available)
-  Video
-  Custom Agent

NOTE: Please see the AlarmWorX32 Multimedia help documentation for complete information about using and configuring the AlarmWorX32 Multimedia Configurator.

1.7. How Does AlarmWorX32 Multimedia Work?

Figure 1.1.7.1 provides an overview of how AlarmWorX32 Multimedia enables you to send and receive alarms using various multimedia agents. The ICONICS AlarmWorX32 Multimedia Configurator is a database with a user interface that allows you to configure alarm action sets, multimedia agents, and alarm acknowledgement codes. You can also use the Multimedia Configurator to create subscriptions to OPC Alarm and Event (AE) servers. In addition, you can configure schedules and destinations for alarm notification messages.

When your database configuration is completed and you start the Multimedia server, the following occurs:

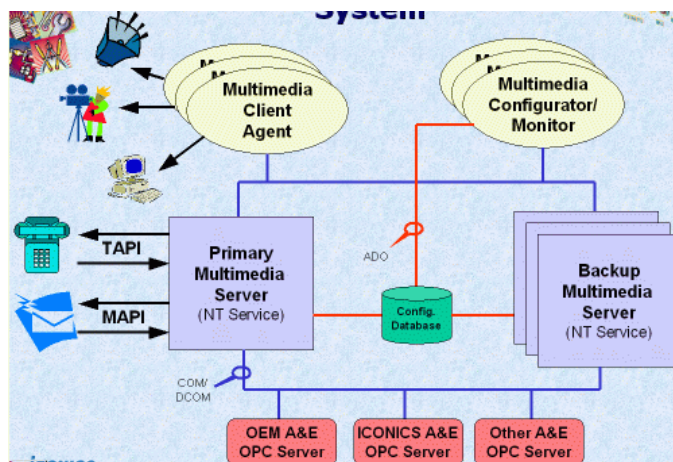


Figure 1.1.7.1 - AlarmWorX32 Multimedia Architecture

1. When the Multimedia Server enters runtime mode it reads all the alarm configurations in the multimedia configuration database.
2. The Multimedia Server then subscribes to OPC AE servers based on the subscriptions that you have created in the configuration database.
3. In turn, the Multimedia server receives alarms and events from the subscribed OPC AE servers.
4. When the Multimedia Server receives alarms it responds to those alarms according to the settings and alarm action sets in the configuration database.

5. Based on these action sets the notification messages are then sent to a recipient (an individual or a group) via the configured multimedia agents listed above, such as a telephone call or a fax.
6. The recipient of the alarm message can then acknowledge the alarms using the configured multimedia device, such as a telephone or fax machine.

Next, we will proceed to Lab 1 and be ready to start installing AlarmWorX32 Multimedia.

Lab: Installation and Overview of the Lab Project L1

1.1 Lab Overview

In this first lab you will install AlarmWorX32 Multimedia and become familiar with the system we will be using throughout this class. You will also get a feel for the project you will create in this class.

Estimated time to complete this lab: 45 minutes.

1.1.1 Task Checklist

In this lab you will complete the following tasks:

- Installation of AlarmWorX32 multimedia.
- Verify you have the required support files.
- Become familiar with the project to be created.

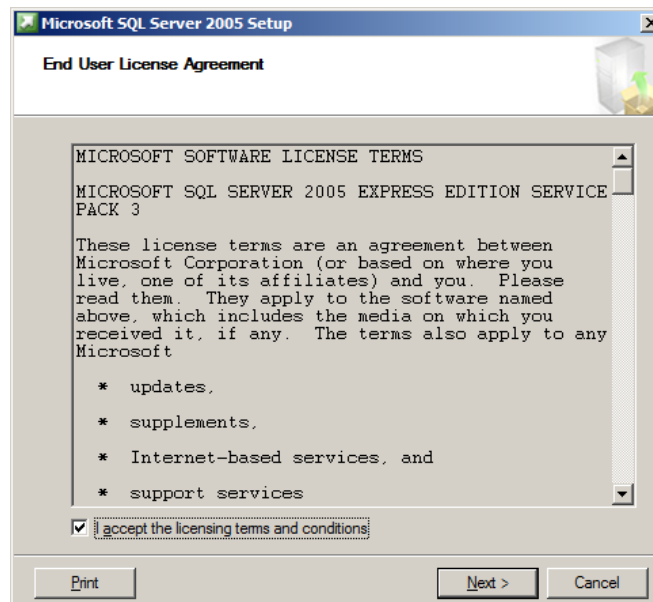
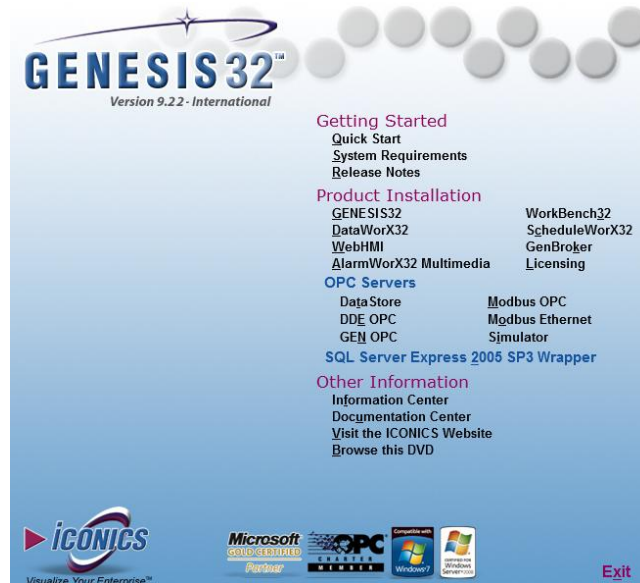
1.2 Installing AlarmWorX32 Multimedia

The following procedure explains how to install ICONICS AlarmWorX32 Multimedia, which you can install as a stand-alone application. Be sure to close any other applications before installing AlarmWorX32 Multimedia. For general guidelines and requirements for GENESIS32™ installation, please refer to the ICONICS *Getting Started* Reference Guide.

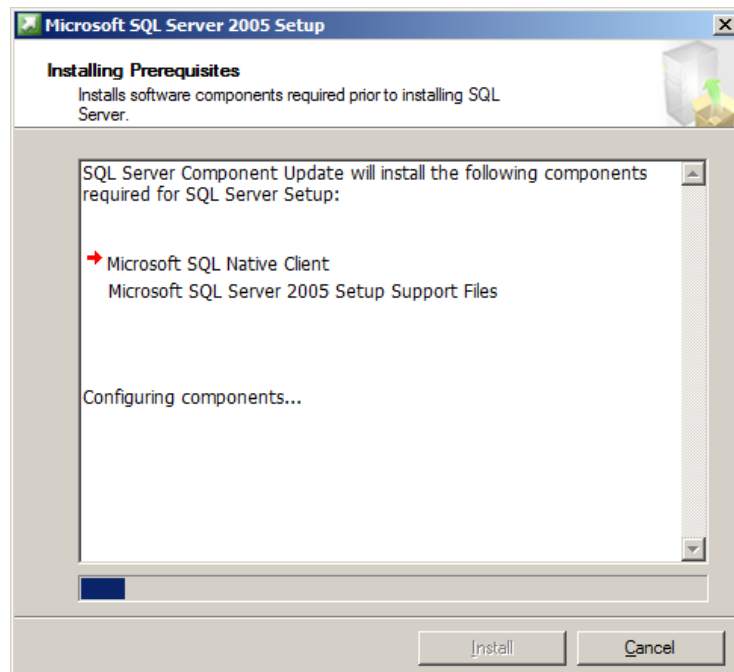
1. Insert the ICONICS GENESIS32 AUTOMATION SUITE CD. If auto run is enabled on your system, the CD introduction will start automatically. If auto run is not enabled, browse to your CD-ROM drive and run the **Default.hta** file.

Note: Prior to version 9.x you would need an ICONICS GENESIS32 OPTIONS CD. If auto run is not enabled, browse to your CD-ROM drive and run the RunMe.bat file.

2. Install SQL Server.



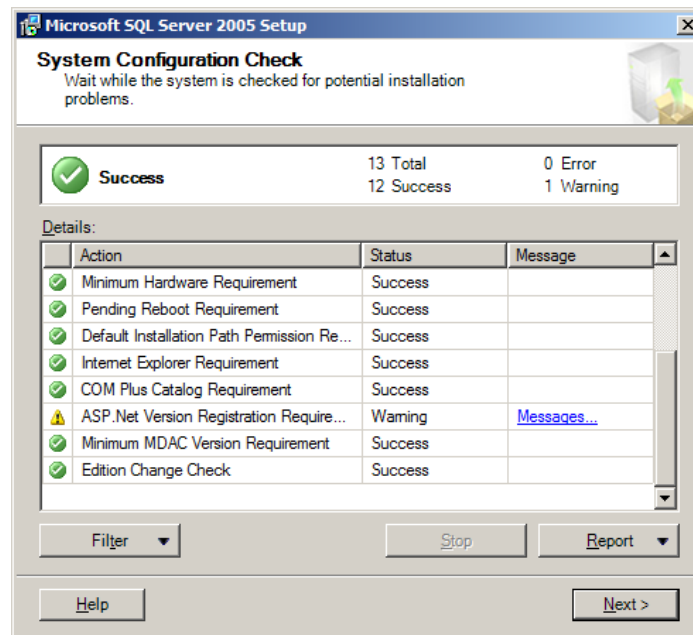
3. After clicking on 'Install', you should see the figure below.



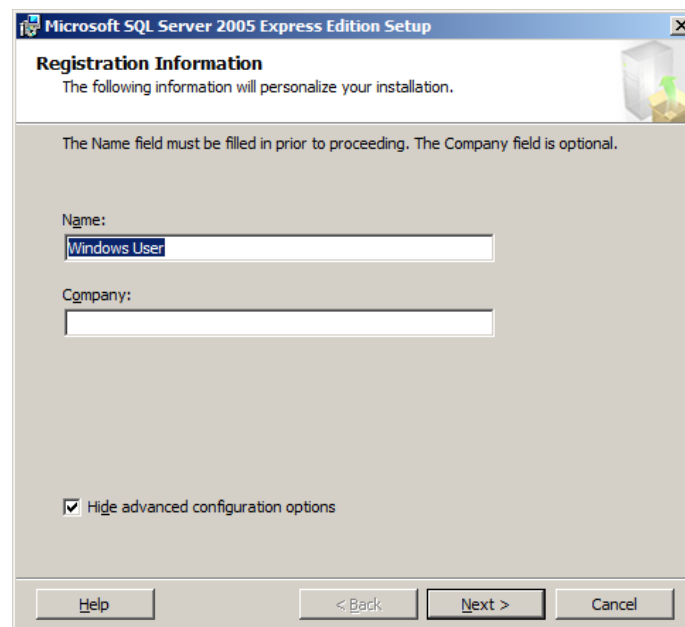
4. Click 'Next >', when complete.



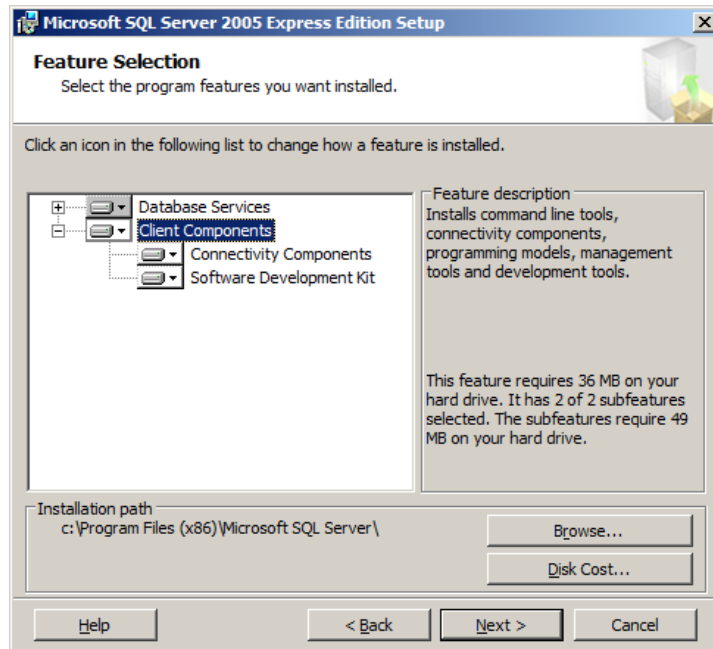
- The installation will automatically execute a System Configuration Check. The check result may vary depending on your machine. If the result is OK, just click 'Next>'.



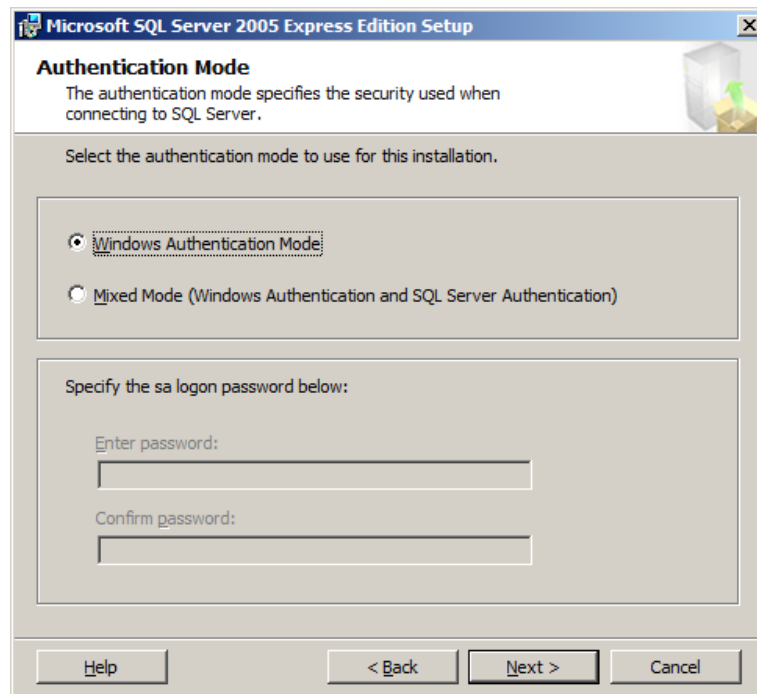
- You can put whatever name you want into the registration information.



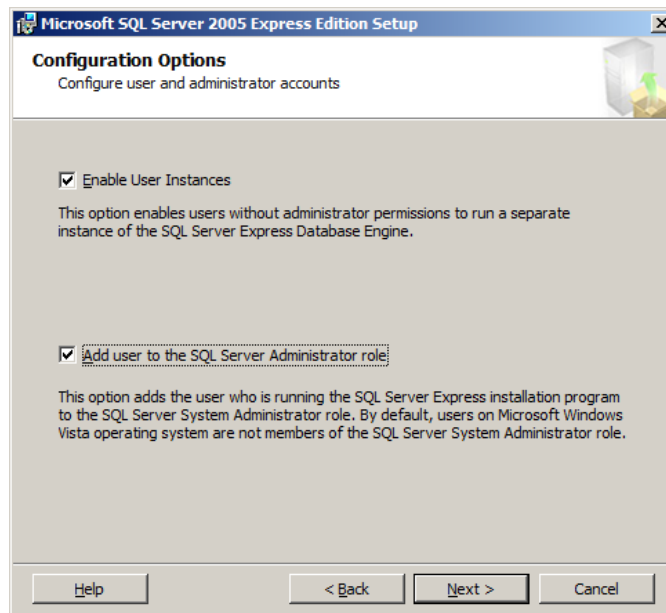
7. Install the SQL components as shown in the figure below.



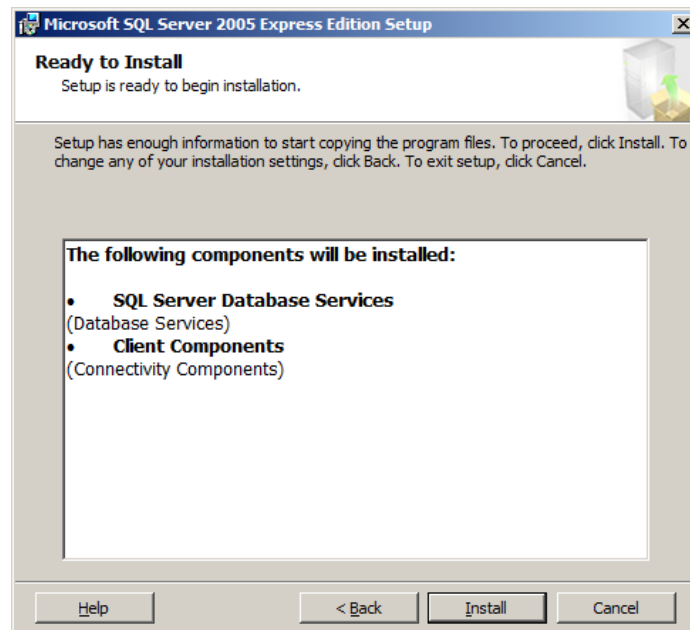
8. You can leave Windows Authentication Mode as default.

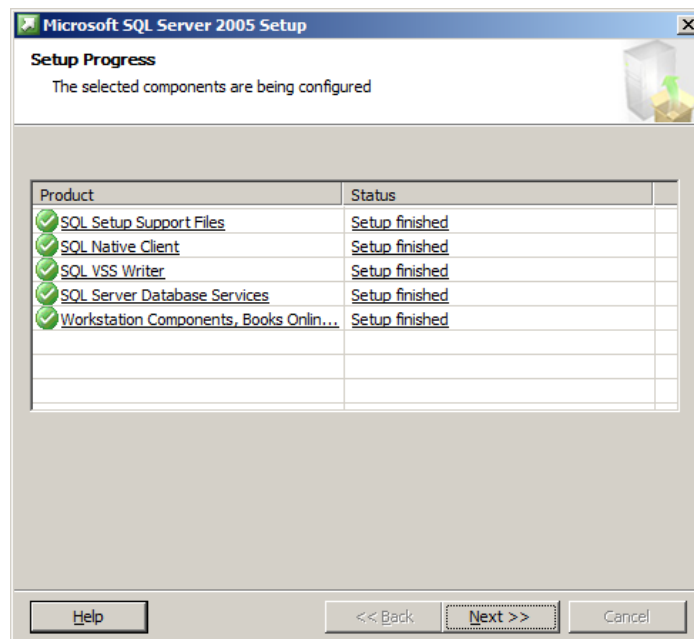


9. On the Configuration Options page, please check “Add user to the SQL Server Administrator role”.

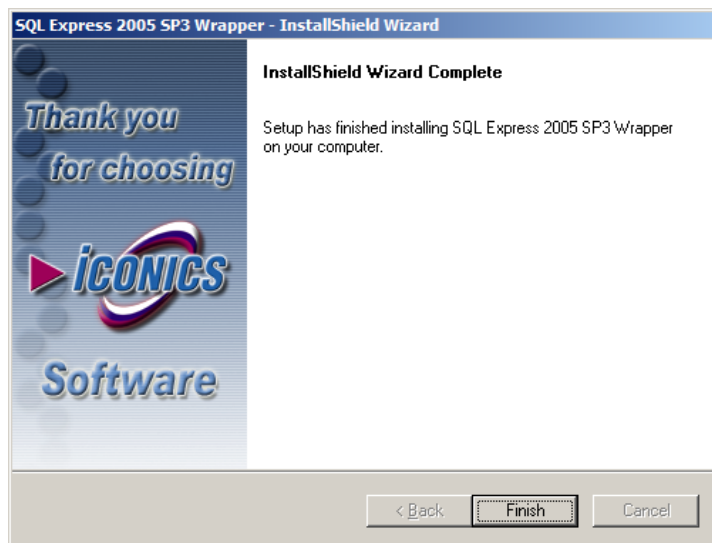


10. Without selecting any checkboxes, click ‘Next>’ in the “Error and Usage Report Setting” dialog box.
11. Click on ‘Install’. It will take a few minutes to complete.





12. Click on 'Next>>' and then on 'Finish'.



13. Click on 'Finish' again.

14. From the GENESIS32 introduction screen, click on **AlarmWorX32 Multimedia**.

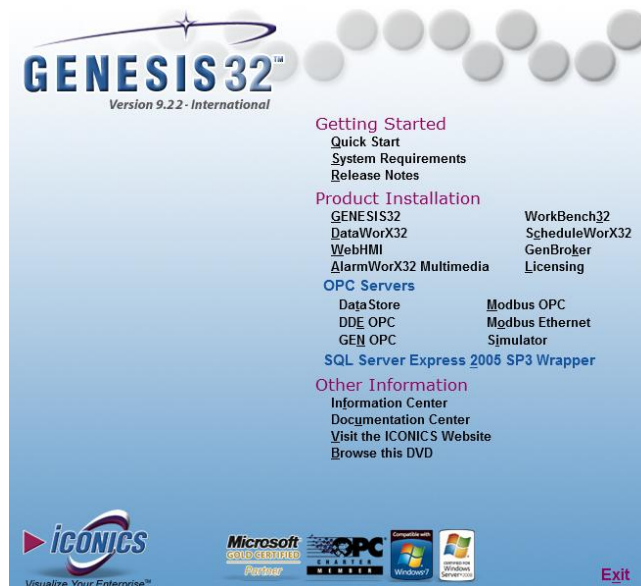


Figure L1.1 - ICONICS GENESIS32 AUTOMATION SUITE CD Introduction Screen

15. The InstallShield Wizard will start and you should see a screen just like the one below.

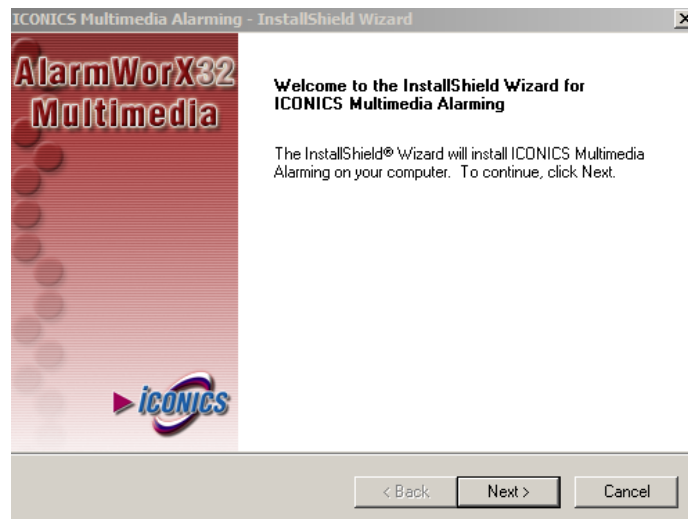


Figure L1.2 - Multimedia Alarming Setup

16. Click on “Next” to continue the installation. You will see an End User license agreement. You must accept this agreement to continue installing.

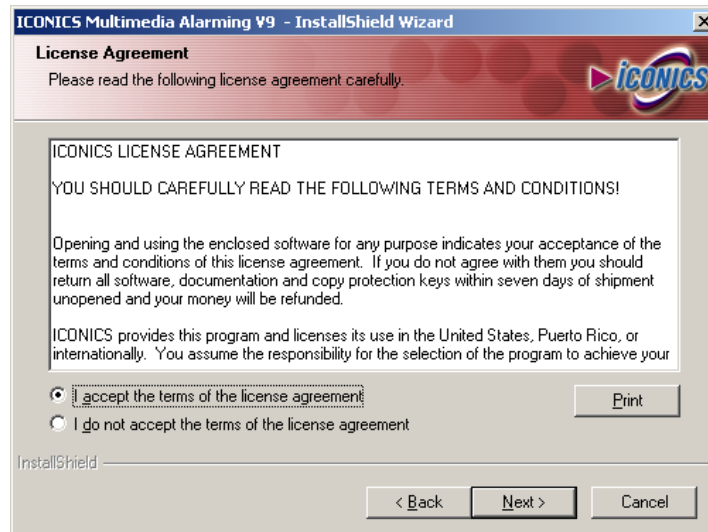


Figure L1.3 - AlarmWorX32 Multimedia End User License Agreement

17. Once you have accepted the user agreement, click on “Next” and you will see the User Information Screen.

Note: The following screen shot may not appear, depending on whether or not another GENESIS32 products has been installed.

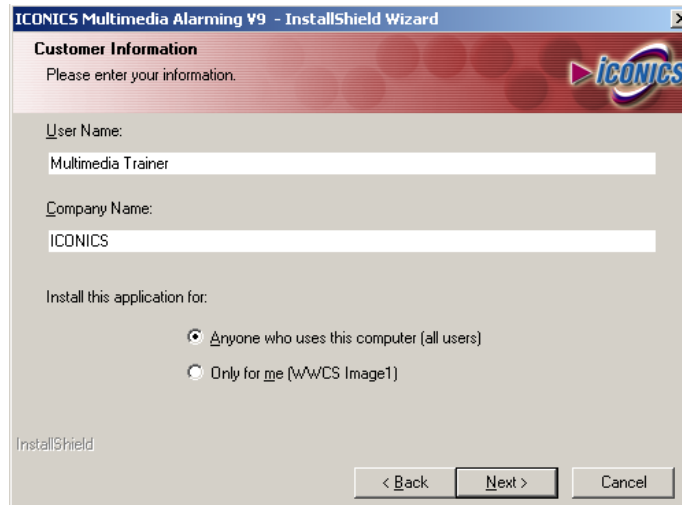


Figure L1.4 - Customer User Information

18. In the next screen, you can select the type of installation. You have the choice of the Professional, Standard, or Agent installation. The Professional installation includes all the agents. The Standard installation is used to known as the “Lite” version, which is a smaller suite and only includes the Paging, SMS, Email, Popup, and Marquee agents. The Agent installation is meant for installing only specific agents. This is useful in cases where you need the agents working on a remote location (e.g. the sound agent working on a different desktop). In our lab, we will go with Professional Multimedia.

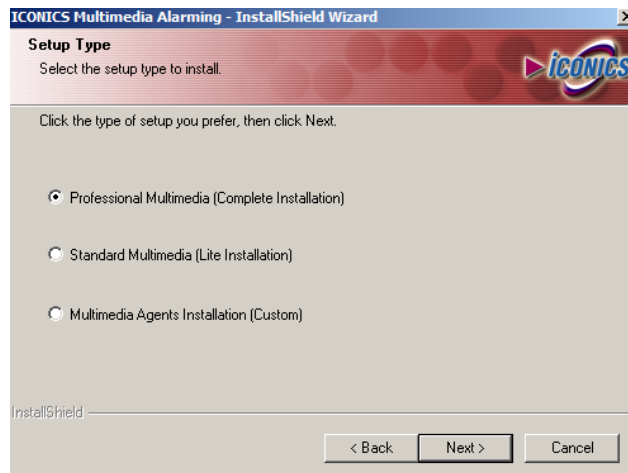


Figure L1.5 - Installation Type

19. Since the Professional installation includes the email, a dialog appears asking which email agent you would like to use. There are three by default: one for Outlook Express, Outlook, and SMTP. By default, the SMTP agent is selected. There is also a TAPI agent selection.

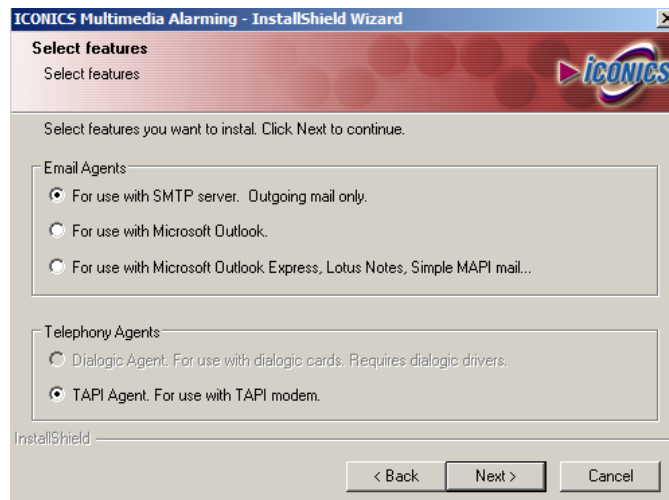


Figure L1.6 - Email and TAPI Agents Installation

20. Choose your destination by clicking on the Browse button.

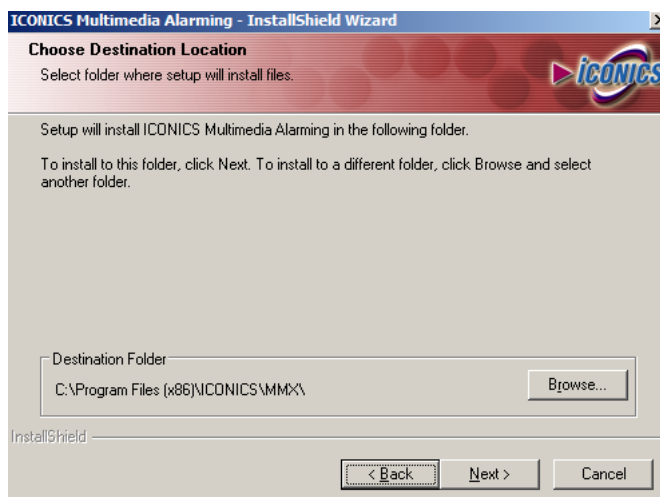


Figure L1.7 - Installation Destination

21. Select your preferred language (in this lab, we use English) and click on Next.



Figure L1.8 – Select your language

22. Click Next to start copying files.

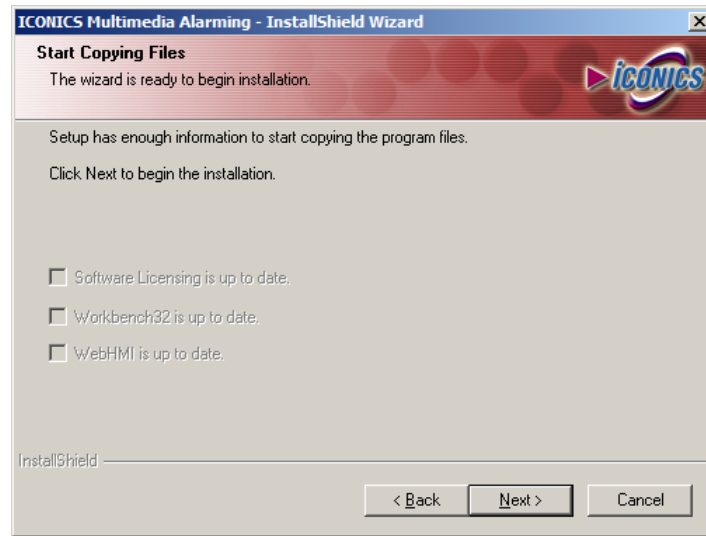


Figure L1.9 - Installing the Telephone Agent

Note: If other GENESIS32 products are installed, you may notice all the selections in the dialog above are greyed out. However, read the text next to the checkboxes for detailed information.

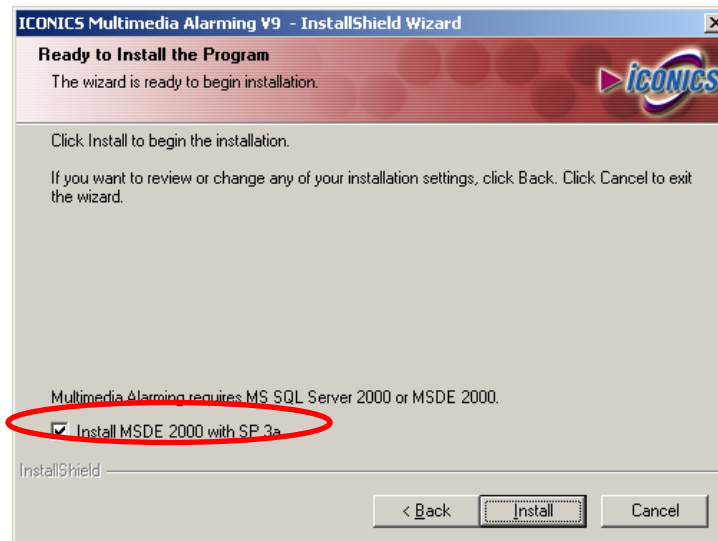


Figure L1.10 - Program Installation

23. Enter the login information into the AppSetupUtility dialog box. It is preferred you use the same user you installed GENESIS with. (if you have GENESIS32 installed already, it will automatically linked to your GENESIS32 account.) However, if GENESIS32 is not installed, the user you designate should be a member of the local Administrator group. Click OK to continue.

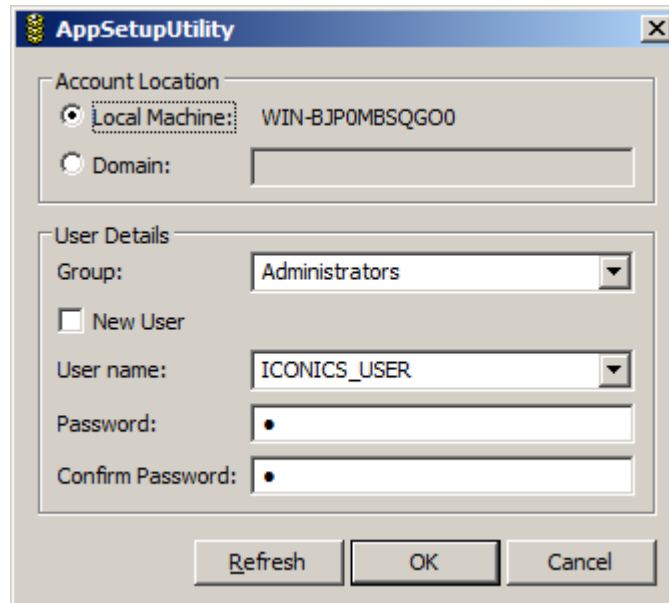


Figure L1.11 – Enter Login Information

24. The AlarmWorX32 Multimedia installation includes a Pager Agent that connects to a wide variety of pager services and supports the most popular paging protocols:

-  Tele Alphanumeric Protocol (TAP)
-  Simple Messaging Service (SMS)

During the installation of AlarmWorX32 Multimedia, you can select which paging services to include with the installation. There are two separate lists: one for the **Modem/ISDN (TAP)** pagers and one for **GSM/PCS (SMS)** pagers, as shown in the following figures. For our purposes, select all carriers in the lists, and then click **OK**.

NOTE: Please see the AlarmWorX32 Multimedia Help documentation for information about SMS and TAP pager services configuration.

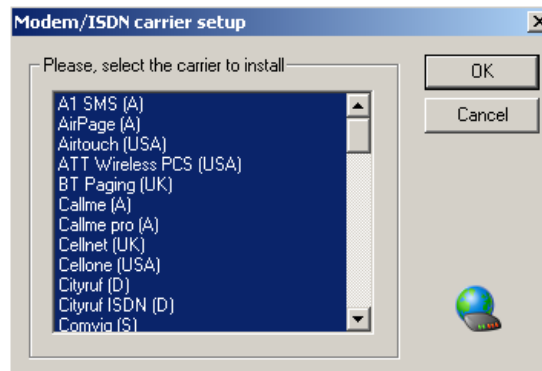


Figure L1.12 - Modem/ISDN Carrier Setup

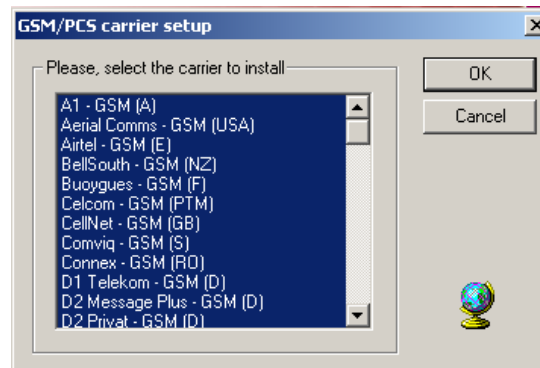


Figure L1.13 - GSM/PCS Carrier Setup

25. When it's finished installing, it will ask you to restart the computer. You can restart it immediately or later, but you must restart the computer before running the application.

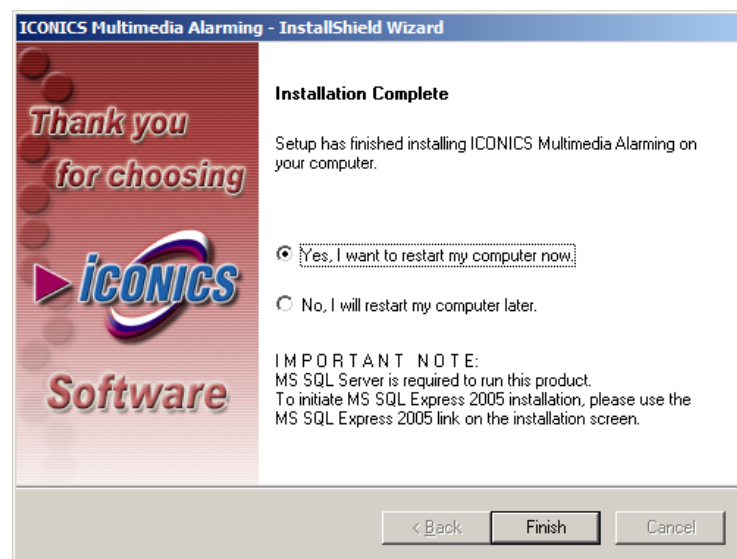


Figure L1.14 - Finish Installation

1.3 Multimedia Configuration Database Wizard

1. After a restart you will be taken directly to the configuration wizard to create a configuration database. You can always create a configuration database by going to File → New, once you are in the configurator. Follow the wizard to create your configuration database.



Figure L1.15 - Multimedia Configuration Database Wizard

2. Once you click on "Next", you will see the screen displayed in Figure L1.16, asking how you would like to create the configuration database. Select the default to create a new database. In Version 9, the configuration database can be in SQL 2000, SQL 2005, MSDE, or SQL 2005 Express format. Unlike other GENESIS32 configuration databases, you will not be able to use MS Access to create the configuration database.

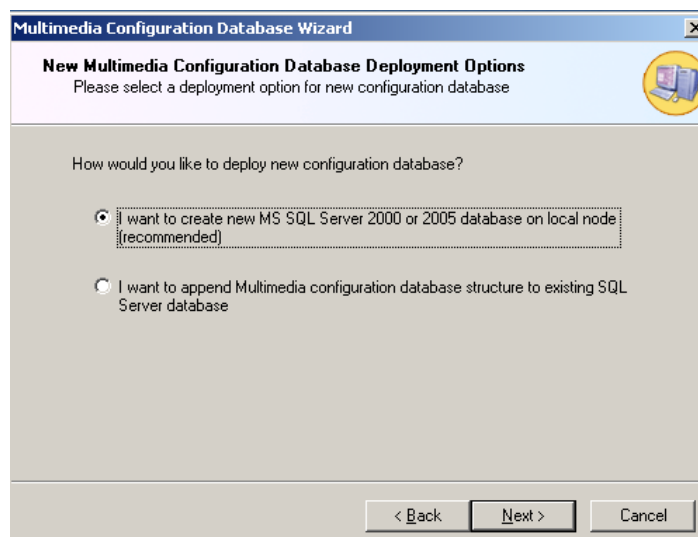


Figure L1.16 - Multimedia Database Deployment Option

3. In the next screen, you will have the chance to specify your SQL Server, give your database a name, and change the location for the database files. You will also have a chance to set some of the database properties. The database properties should normally be left as default. However, if your organization has specific requirements, you can change them accordingly.

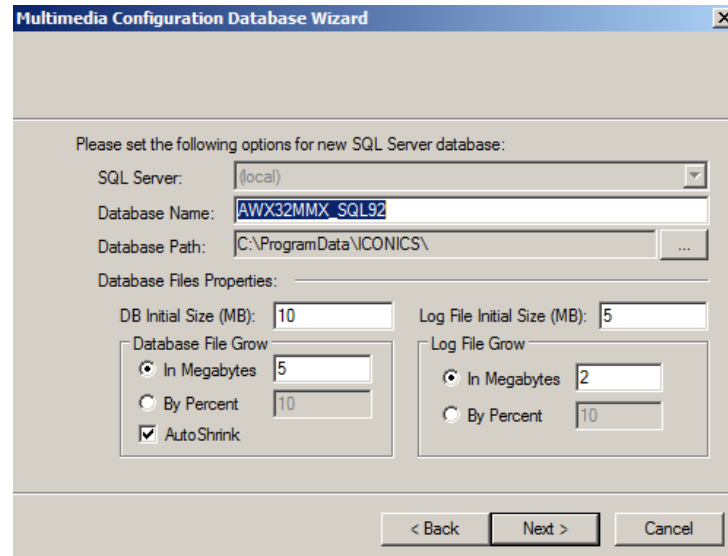


Figure L1.17 - Creating a new Multimedia Configuration Database

4. Once you click on “Next”, you will notice that the screen goes through many steps to set up your configuration database. This process is completely automatic and tailored to the specifications you have set. Once the process finishes, you will be able to click on “Next” to continue setting up your configuration database.

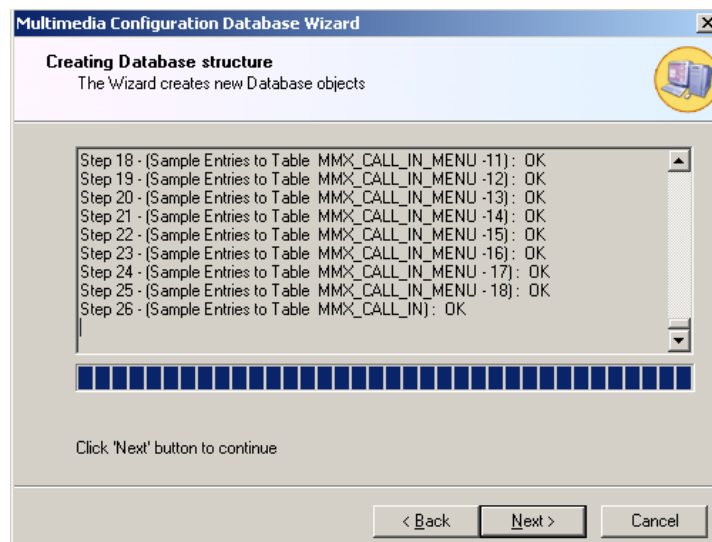


Figure L1.18 - Creating Database Structure

5. You will need a data link file to establish a connection between the Multimedia configurator graphical interface and the configuration database. In the next step, you can specify the name of this link file and its location. You may want to name this file with the same name as your database to be clear which database the link file connects to in the SQL server. You can also set the database as the default in this screen. If you decided not to set this database as the default one, you will have to do that before you can use the configuration in the server.

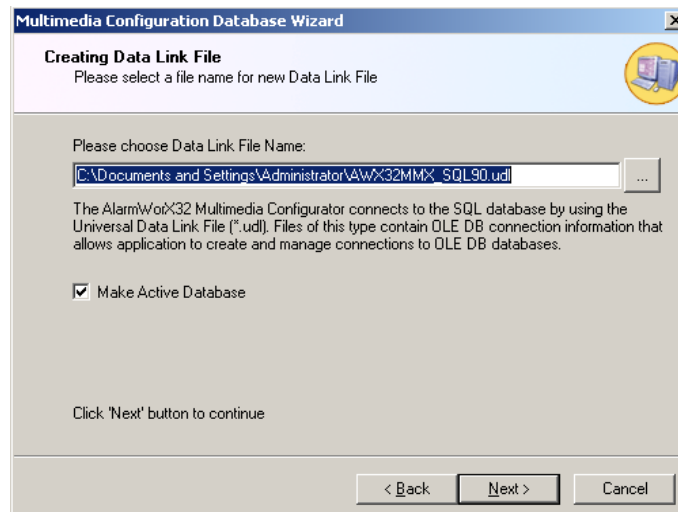


Figure L1.19 - Creating a Data Link (.udl) File

Note: The data link file path will differ depending on your operating system.

6. Once you click on Next, it will display a set of steps involved in creating the configuration database. If everything is OK, you should be able to click on the "Finish" button. You now should see the default AlarmWorX32 Multimedia configuration.

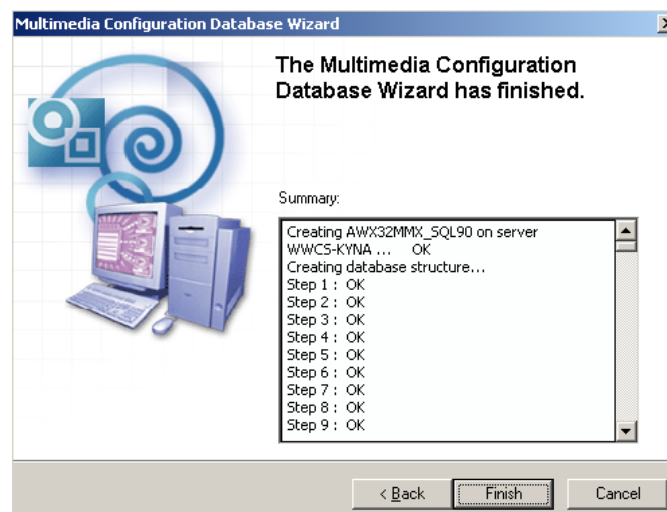


Figure L1.20 - Finished Database Creation

1.4 Adding, Reinstalling, and Uninstalling Components

The following procedure explains how you can update your AlarmWorX32 Multimedia installation at any time.

1. Select Settings → Control Panel from the Windows Start menu.
2. In the Control Panel, select Add/Remove Programs.
3. This opens the Windows Add/Remove Programs dialog box, shown in L1.21. To make changes to the Multimedia installation, select ICONICS Multimedia Alarming and click the Change/Remove button.

NOTE: The Add/Remove Programs dialog box shown below is taken from Windows Server 2003. This dialog box will vary with other operating systems.

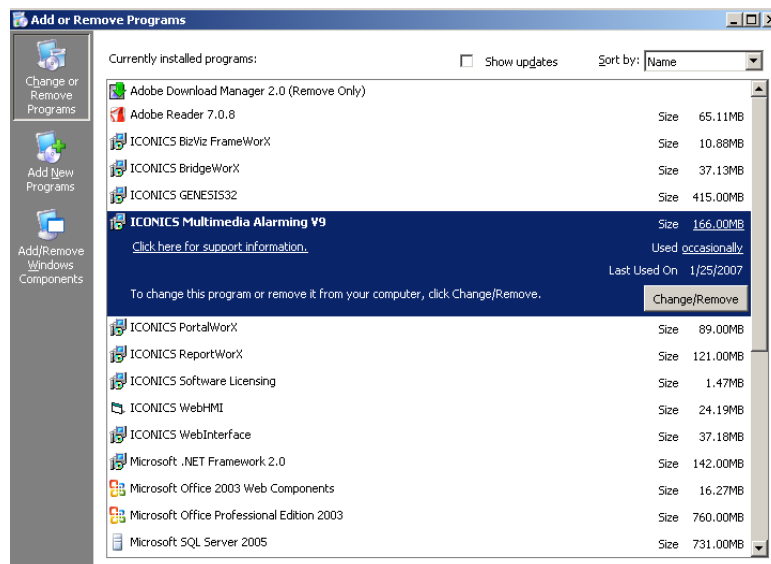


Figure L1.21- Add Remove Programs

- This opens a **Setup** dialog box that allows you to select whether to modify, repair, or remove AlarmWorX32 Multimedia, as shown in the following figure.

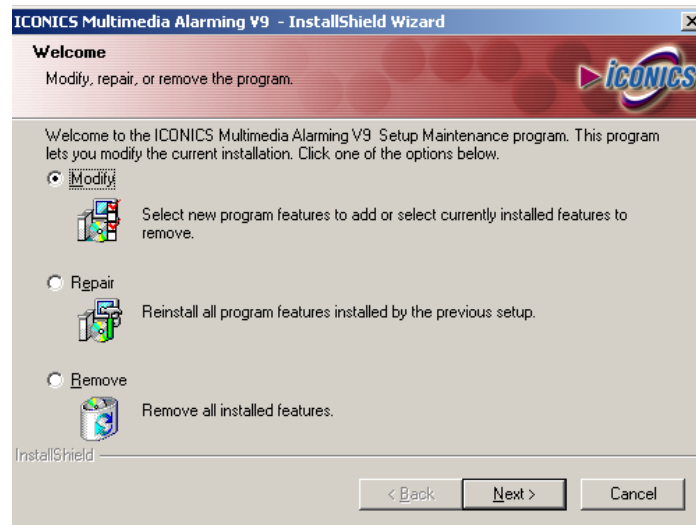


Figure L1.22- Modify, Repair, or Remove Dialog

- To add or remove specific program components, select **Modify** and then click the **Next** button. This opens the **Select Components** dialog box, where you can select which agents to add to or remove from the installation.
- To repair a corrupted installation, select **Repair** from the **Setup** dialog box. Then click **Next** to reinstall all program components.
- To uninstall all program components, select **Remove** from the **Setup** dialog box. Then click the **Next** button. A dialog box will then ask you if you wish to uninstall AlarmWorX32 Multimedia. Click **OK** to uninstall the application.

1.5 Training Support Files

There are a few support files that you will need in order for the training to run smoothly. If you are using one of the provided training computers we will review the subsequent steps for accuracy.

Note: If you have attended the GENESIS32 Standard training course, you can proceed to Section 1.6.

1. Open Windows Explorer and navigate to C:\Training
2. Create a folder here called “C:\Training” if it does not already exist. This folder will be your project folder and you will store all of the training files into this folder.
3. If necessary, copy the following files into the C:\Training directory:
 - Acmeseutical_DWXConfig.mdb
 - AcmeGASConfig.mdb
 - LanguageAliasingTranslation.txt
 - AcmePillMachine.gdf
 - PainReliefEuropeMap.gdf
 - PainReliefUSMap.gdf
 - PainReliefWorldMap.gdf

NOTE: Ask your instructor for these files if you do not have them.

- **Global Aliasing Config**
 1. Start the Global Aliasing Configurator by going to Start → Programs → ICONICS Tools → Global Aliasing Configurator
 2. Click on File → Open and browse to C:\Training and select the Acmeseutical_GASConfig.mdb and click on “Open”.
 3. Select the File menu and choose Make Active in the drop down list. If the Make Active selection is greyed out, the Acmeseutical_GASConfig is already the active database.

- **DataWorX32**

1. Start DataWorX32 Configurator by going to Start → Programs → ICONICS GENESIS32 → DataWorX32 → DataWorX32.
2. Once DataWorX32 is opened, click on File → Open and browse to C:\Training and select the AcmeSeutical_DWXConfig.mdb and click on “Open”.
3. Select File → Make Active.
4. Click on the traffic light to start DataWorX32. Be Patient, wait for the green light.
5. Close the DataWorX32 configurator.

- **Unified Data Manager**

1. Start the ICONICS Unified Data Manager configurator by going to Start → Programs → ICONICS Tools → Unified Data Manager.
2. Go to File → Open and browse to C:\Training.
3. Select the ACME_UDMconfig.mdb file and click on “Open”.
4. Click on File → Make Active.
5. Close the UDM Configurator.

1.6 Using the Lab Support Files

This class will build upon the ACMEseutical project created in the ICONICS GENESIS32 Standard class. If you are not familiar with these files, this section will familiarize you with them.

1. Open the **AcmePillMachine.gdf** display from your **C:\Training** directory. You should see a screen resembling the one below.

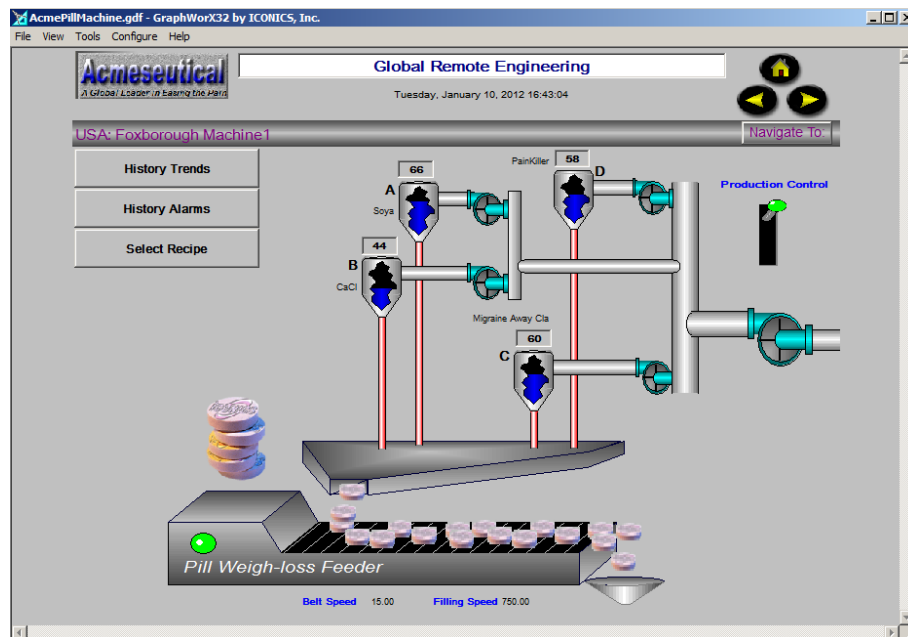


Figure L1.23- AcmePillMachine.gdf Screen

2. This is the screen that we will be using for our demonstration. The tanks we'll focus on are Tanks A and B. In runtime, you can enter a set point value in the data entry field above the tank. This set point value then translates into a percentage of the tank full allowing for the manual generation of alarms for testing (e.g. a set point of 50 will fill the corresponding tank 50%).

Recall that we have set the limit alarm value in the GENESIS32 Lab (Lab6: Alarm Notifications). In the rest of this AlarmWorX32 Multimedia training, we will show you how to set up multimedia notifications, which will be sent out via either marquee or email once the tank level is below or above the limit alarm value.

Multimedia Configurator

2

2.1 Objectives

At the end of this chapter, you will be familiar with the following concepts:

-  Starting and using the Multimedia Configurator
-  The built-in examples available in every new configuration database

2.2 Introduction to the Multimedia Configurator

Staying consistent with our GENESIS32 products, the AlarmWorX32 Multimedia server has a configurator application of a tree control organization, requiring little adaptation if the engineer is familiar with ICONICS' products. The Multimedia Server supports online configuration, and like the rest of our configurators, all settings are held in a configuration database. The configuration database must be an SQL Server type (we support SQL 2000, SQL 2005, MSED, and SQL 2005 Express).

1.2.1 Starting the Multimedia Configurator

The final phase of the installation will launch Multimedia Configurator, which will bring you directly to the configuration wizard to create a configuration database. Certainly, you can always create another configuration database by going to File → New once you are in the configurator.

Once you have a configuration database, the configurator workplace will look like Figure 2.2.1. You can configure alarm server subscriptions and filters in the Alarm Input branch. The Multimedia agents, and how they are triggered, can be configured in the Alarm Configurations branch. Scheduling and Roles for escalation are configurable in the System Objects Branch.

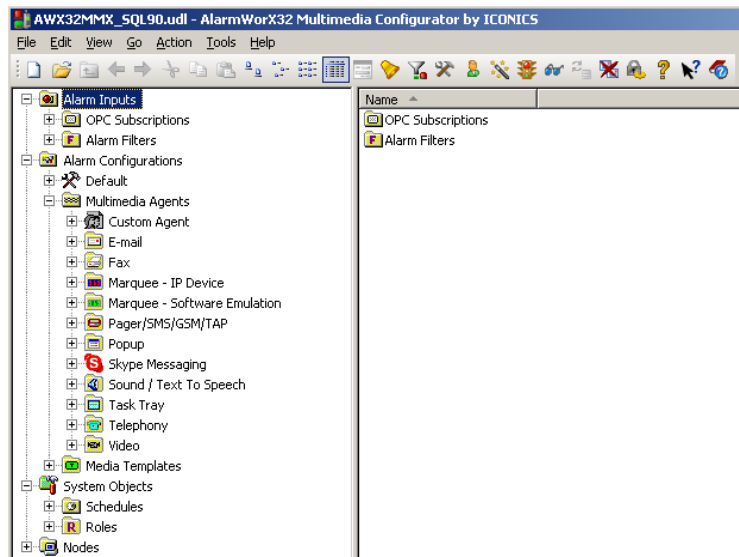


Figure 2.2.1 - The Multimedia Configurator

2.3 Built-in Example

Every new configuration database created includes several example configurations to serve as a guide and to aid in testing your server. We have created these examples to work out-of-the-box with the default AlarmWorX32 server configuration and the Multimedia Demo GraphWorX32 display – MMXDemo.gdf.

There are a number of sample alarm filters, as well as preconfigured subscription to the ICONICS Alarm Server, which allow for out-of-the-box operation. Each alarm filter refers to an alarm that exists in the default ICONICS Alarm Server Configuration.

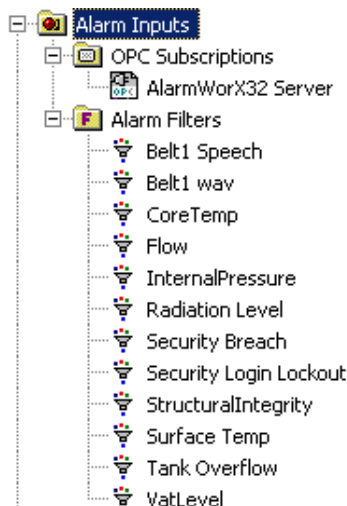


Figure 2.3.1 - Sample Alarm Inputs

There is a full example configuration called **Default**, which includes sample action sets for several of the Multimedia Agents.

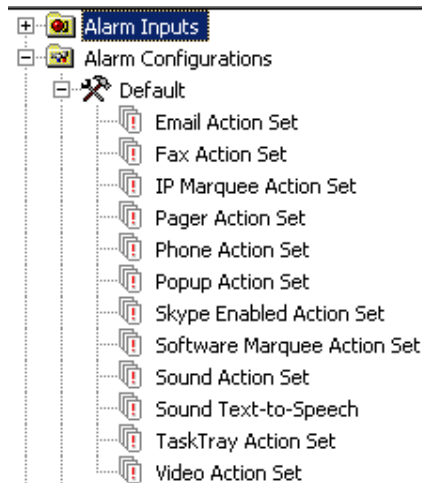


Figure 2.3.2 - Sample Default Configuration

Each of the sample action sets calls upon sample agent configurations. These sample configurations are very useful in guiding users to configure their own agents.

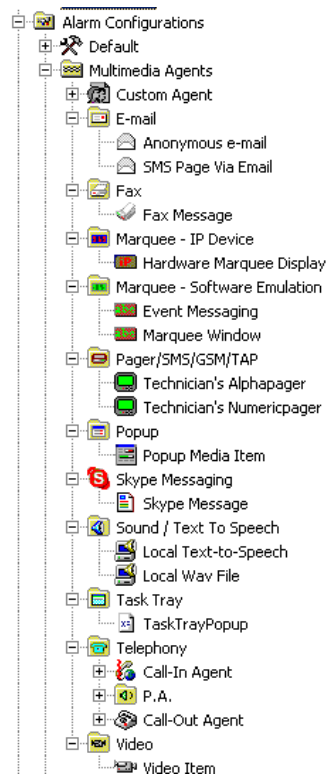


Figure 2.3.3 - Sample Agent Configuration

Each sample agent configuration refers to a default template for that agent type. These templates tell the agents what type of information to carry when they are triggered.

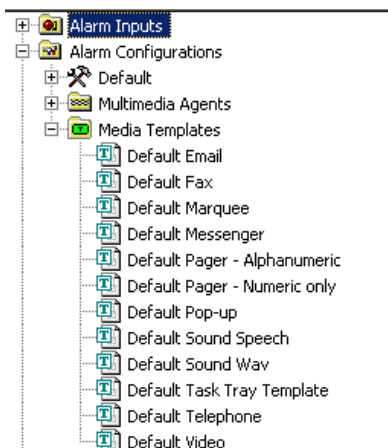


Figure 2.3.4 - Default Agent Templates

Finally, there are some sample schedules and roles configured, which illustrate the use and configuration of these features. Roles allow for escalation through groups of different authority levels.

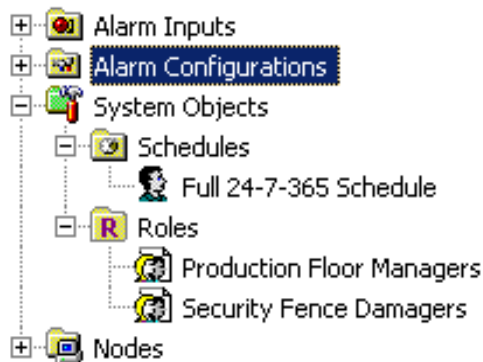


Figure 2.3.5 - Sample Role and Schedule Configurations

Lab: Multimedia Configurator

L2

2.1 Lab Overview

In this lab, you will begin building your AlarmWorX32 Multimedia project by opening the Multimedia Configurator and creating a new configuration database. You will be developing in this configuration database throughout this course until you have a completed Multimedia project.

Estimated time to complete this lab: 15 minutes.

2.1.1 Task Checklist

In this lab, you will complete the following tasks:

- Open the AlarmWorX32 Multimedia Configurator.
- Create a new Multimedia configuration database.
- Experience how AlarmWorX32 Multimedia works.

2.1.2 Support Files

To complete this quick lab, you will need the following support files:

- AcmeseuticalAlarmServer.mdb

2.2 Create a New Configuration Database

1. Open the AlarmWorX32 Multimedia Configurator from Start → Programs → ICONICS AlarmWorX32 Multimedia → AlarmWorX32 Multimedia Configurator.

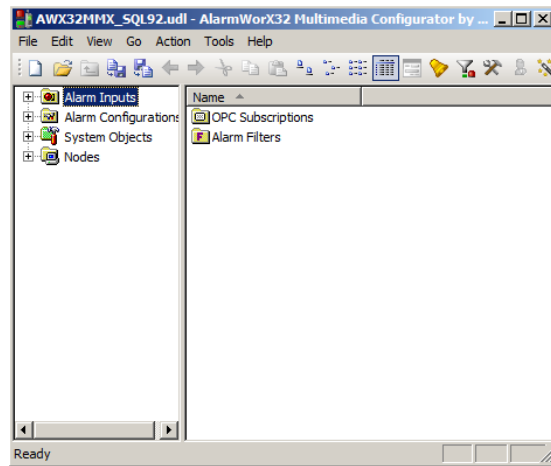


Figure L2.1 - Initial AWX MMW Configuration

2. Go to File → New to bring up the Multimedia Configuration Database Wizard and create a new configuration database and launch the Welcome splash screen. Click Next.
3. Specify you want to create a new database as shown in Figure L2.2 and click Next.

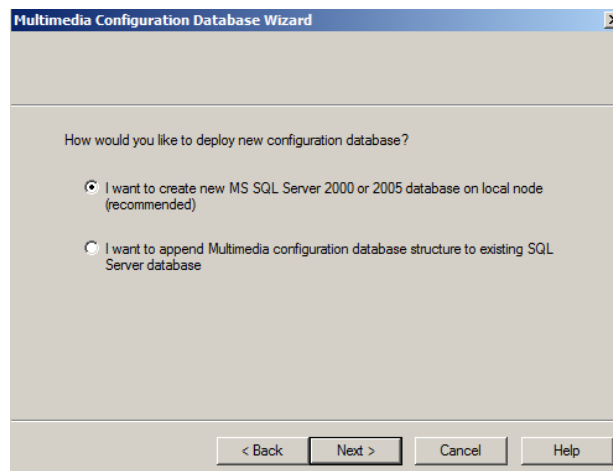


Figure L2.2 - Create New Database

4. Name this configuration database “MMX_Lab” as in Figure L2.3 and click Next.

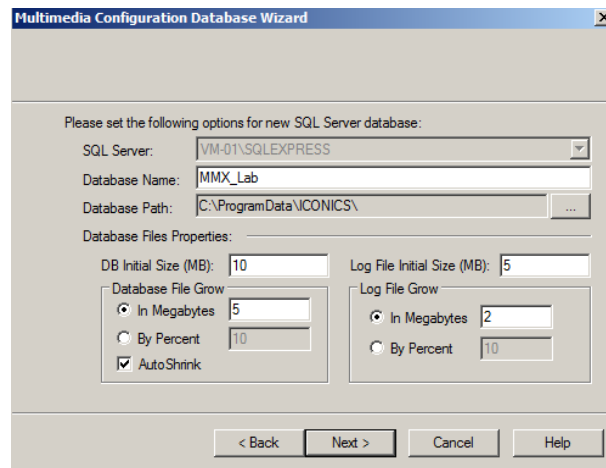


Figure L2.3 - Name the Configuration DataBase

4. Perform a cursory view of the database creation output, looking for “OK” at the end of each line. Proceed by clicking Next.
5. As in Figure X4, leave the Data Link file name as “MMX_Lab.udl” and the Make Active Database selected and click Next.

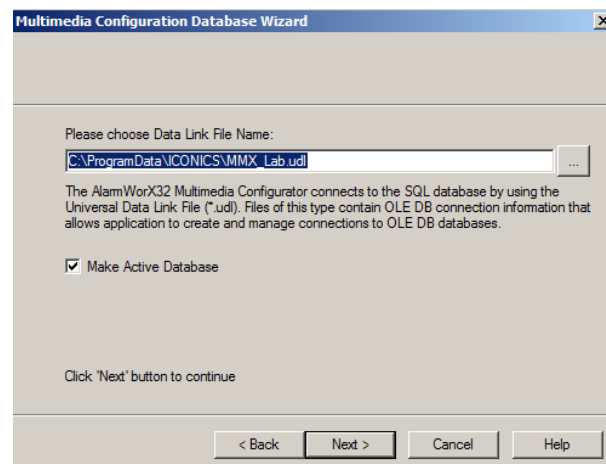


Figure L2.4 - Create ,udl file.

6. The Database Wizard is complete. Click Finish.

- Once you have a MMX_Lab configuration database loaded, click on the traffic light to start the Multimedia server. See Figure 2.5.

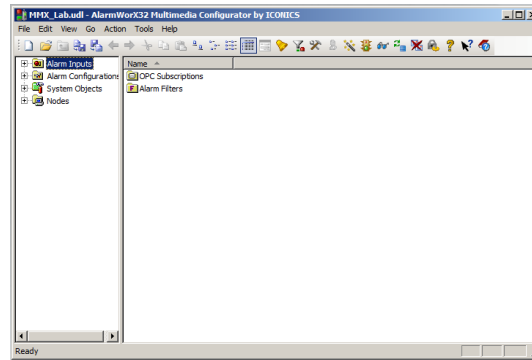


Figure 2.5 - MMX_Lab Configuration Database

2.3 Configure Alarm Server

- AlarmWorX32 Multimedia is a client and relies on the GENESIS32 AlarmWorx32 Server to pass on alarms. Now we will configure our alarm server. Open the AlarmWorX32 Server Configurator by going to Start → Programs → ICONICS GENESIS32 → AlarmWorX32 → Alarm Server Configurator.
- If you have gone through the GENESIS32 training lab, you should notice that, in the upper right corner, it reads 'AcemeseuticalAlarmServer'. If not, you will set the server to use the AcemeseuticalAlarmServer.mdb configuration by going to File → Open.

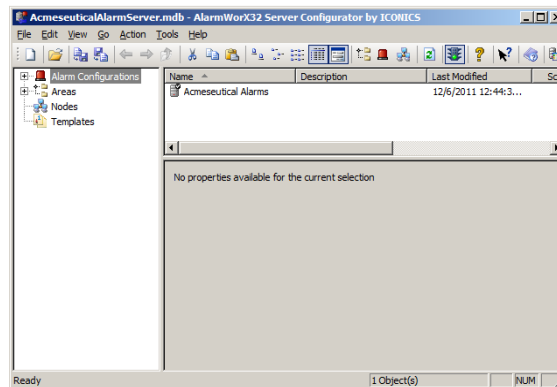


Figure L2.5 – AlarmWorX32 Server Configurator

- Once the file opens, you should notice that the title bar of the configurator displays 'AcemeseuticalAlarmServer' as the name of the database.
- Go to File → Make Active to activate this configuration. If Make Active is grayed out, then this configuration is the active one.

Alarm Inputs

3

3.1. Objectives

At the end of this Chapter, you will be familiar with the following concepts:

-  Creating alarm subscriptions to OPC servers
-  Creating alarm filters

3.2. Creating OPC Subscriptions

The first step in creating an alarm configuration is to create a subscription, which defines a connection to an alarm or event server. A subscription specifically describes alarms to which you would like the Multimedia component to respond, in case an alarm goes off. The Multimedia Configurator provides a default subscription to the ICONICS Alarm OPC Server.

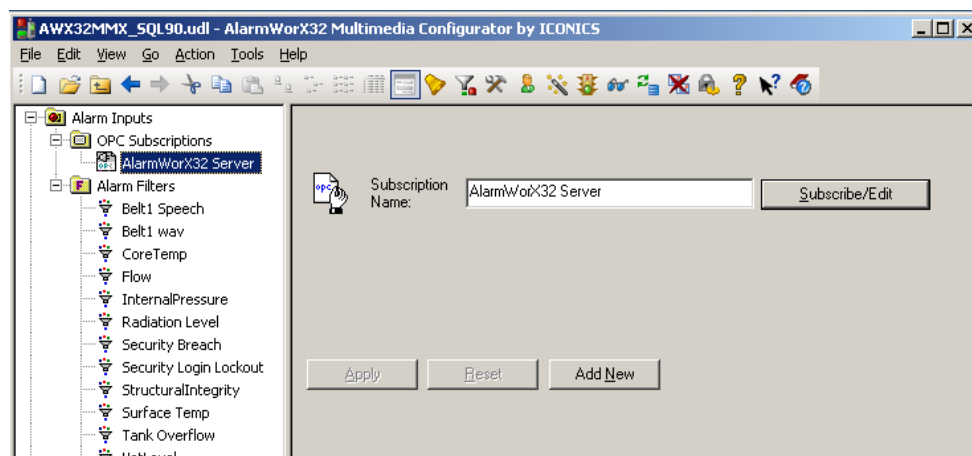


Figure 33.2.1 - Alarm Subscription

You can click on the “Subscribe/Edit” button in a subscription configuration page to launch the Subscription Properties dialog. Creating and editing a subscription is exactly the same as in any ICONICS Alarm and Event client application, such as the AlarmWorX32 Viewer ActiveX and the AlarmWorX32 Logger.

If you have many clients that use the same subscription, you may consider using a Global Subscription.

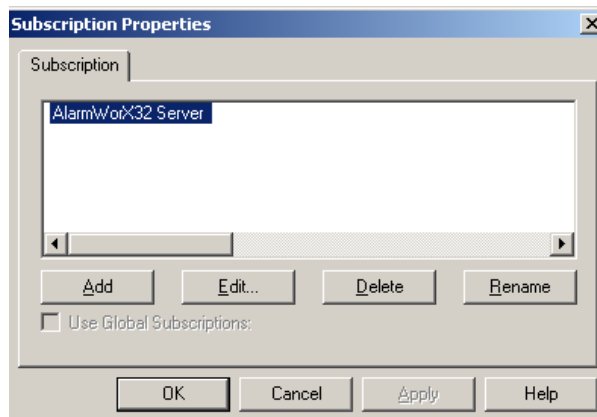


Figure 3.3.2.2 - Subscription Properties Dialog

You can create a Global Subscription in the Unified Data Manager (UDM) configuration. Once you have a Global Subscription, you need to delete all subscriptions from the dialog, and check the Use Global Subscriptions checkbox. When you click on the “Add” button, it will then bring up the Unified Data Browser for you to select a subscription you have created in the UDM. You may not mix your subscriptions. You can only subscribe to all Global Subscriptions or all local ones.

There is a pre-configured alarm subscription in each new Multimedia configuration database, to allow for out-of-the-box functionality. This includes a subscription to the ICONICS AlarmWorX32 server. You can make a subscription to any OPC-compliant A/E server.

NOTE: For more information about creating and configuring alarm subscription, please also refer to the “Creating a Subscription” section in the AlarmWorX32 Multimedia Help Documentation.

3.3. Creating Alarm Filters in the Multimedia Configurator

Once you have configured your OPC subscriptions, the Multimedia Server will receive all subscribed alarms and trigger all actions configured whenever any alarm occurs. Alarm filters allow you to trigger a subset of subscribed alarms, allowing the ability to use different agents for different alarms. You can make filters that only allow a specific alarm to pass through as well as allow for a group of alarms. The Multimedia Server uses alarm filters to specify which subset of alarms will be used to imitate a multimedia action or set of actions.

The default configuration database provided in the installation of the Multimedia Configurator contains many configured alarm filters that apply to the sample AlarmWorX32 Server configuration. You can view these filters by expanding the Alarm Inputs folder in the tree control and then expand the Alarm Filters folder. This shows all of the pre-defined filters in your system.

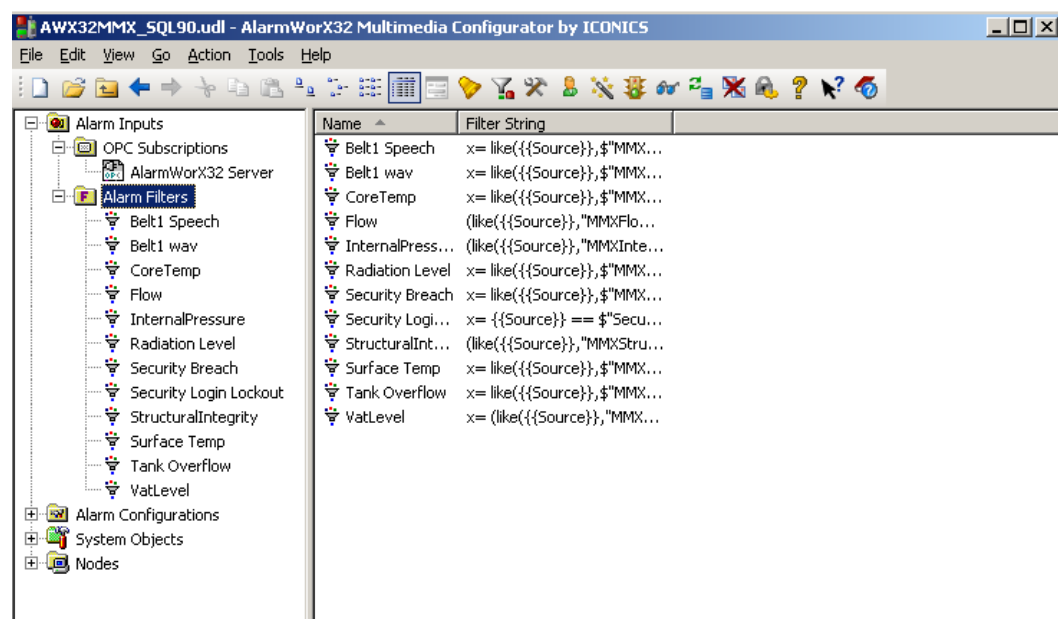


Figure 3.3.1 - Alarm Filters in the Configurator

As with the alarm configuration, you can create a global alarm filter if you deem that the filter will be used in multiple ICONICS applications. The definition for Global Filter is in the Unified Data Manager. The process for defining the global alarm filter is the same as in the Alarm Viewer ActiveX, Alarm Logger, and the Multimedia configurators.

Lab: Alarm Inputs

L3

3.1 Lab Overview

This lab will go into the details of setting up an alarm subscription and filters for different alarms. Recall that this Multimedia project will work in conjunction with the water project created in the GENESIS32 Standard Training Class or provided to you. We will subscribe to the ICONICS Alarm Server with this project's configuration in place and create filters associated with that configuration.

Estimated time to complete this lab: 20 minutes.

3.1.1 Task Checklist

In this lab, you will complete the following tasks:

- Learn how to create global alarm subscriptions
- Learn how to create global and local filters so that different agents can be triggered for different alarms

3.1.2 Support Files

To complete this lab, you will not need any support files.

3.2 Creating a Global Alarm Subscription

The first step in setting up a Multimedia configuration is to create a new configuration and make sure that the configuration is subscribed to the correct alarm server. By default, the configuration consists of a local alarm subscription to the ICONICS AlarmWorX32 Alarm Server. We will create a global alarm configuration below.

1. From the Start menu, go to Programs → ICONICS Tools → Unified Data Manager.
2. In the Unified Data Manager, click on Alarm Subscriptions. By expanding “Alarm Subscriptions. In the tree control on the left, you’ll see there is already a subscription called ‘AlarmSubscription1’. In the tree control on the left, right-click on “Alarm Subscriptions” and select New → Alarm Subscription Item
3. Name the Alarm Subscription “ICONICS Alarm OPC Server”. Feel free to give this subscription a description if you wish.
4. Click on the **Subscribe/Edit OPC Subscriptions...** button to bring up the Subscription Properties dialog.
5. Click on **Add** to add a subscription.
6. In the Event Subscription dialog click on **Browse...**, and select the ICONICS.AlarmServer.1 server and click on OK. You can leave the Node section blank since this will be a local subscription.

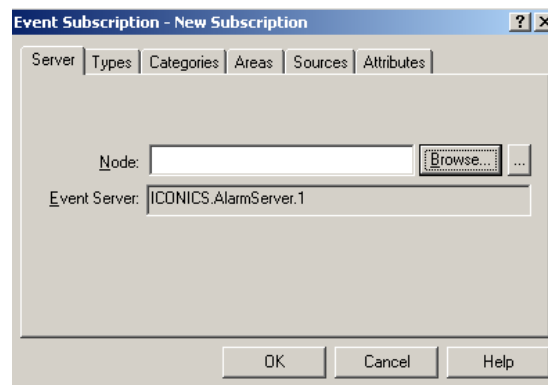


Figure L3.2.1 - Event Subscription Dialog

7. Click on the OK button, then click on the Rename button and name the subscription “Awx_MMX_Subscription” and click OK. When the “Do you want to save changes?” dialog appears click ‘Yes’.

8. You should now see that the traffic light in the Alarm Subscription area is green.

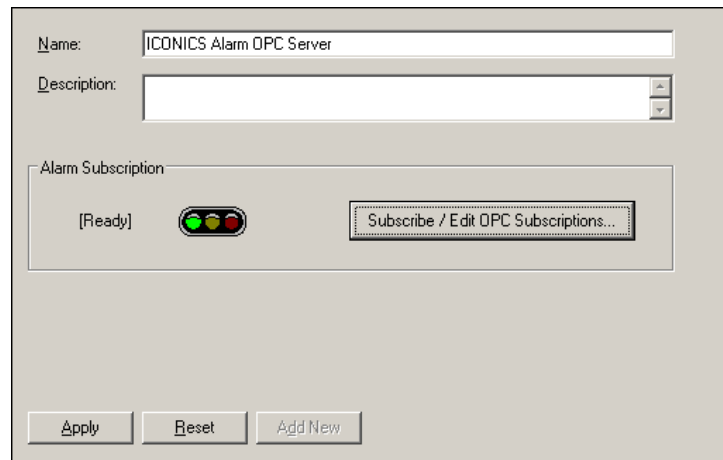


Figure 3.2.2 - Alarm Subscription in Unified Data Manager

9. If closed, re-open the AlarmWorX32 Multimedia Configurator from Start → Programs → ICONICS AlarmWorX32 Multimedia → AlarmWorX32 Multimedia Configurator.

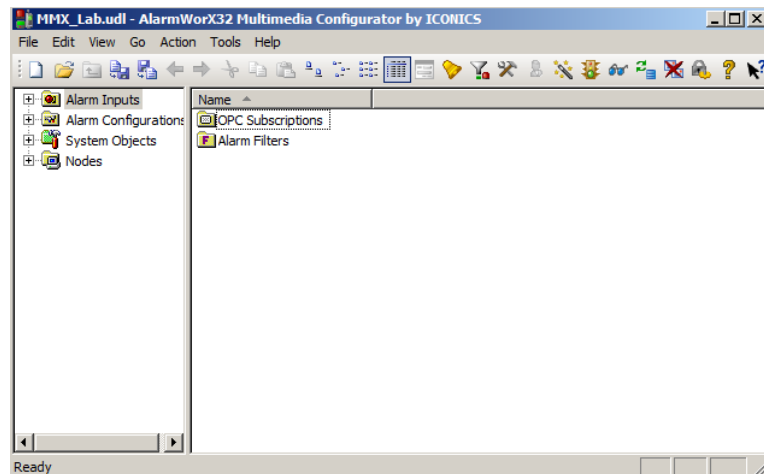


Figure 3.2.3 - Multimedia Configurator

10. In the tree-control on the left, expand Alarm Inputs → OPC Subscriptions.
11. Right-click on OPC Subscription and select New → OPC Subscription.
12. Name this subscription “Global ICONICS Alarm OPC Server” and click on the **Subscribe/Edit** button

13. In the Subscription Properties dialog window, be sure to check the “Use Global Subscriptions” checkbox.

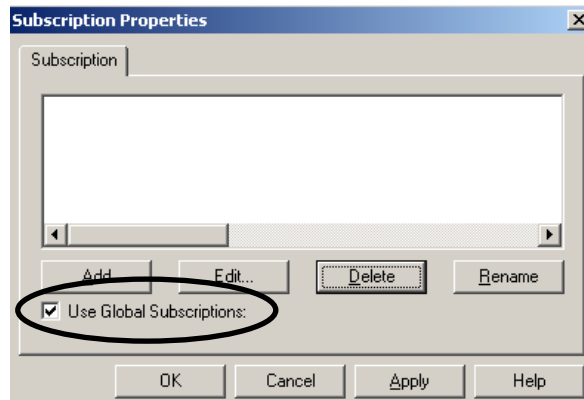


Figure 3.2.4 - Use Global Subscription

14. Click on the **Add** button to bring up the Unified Data Browser and double-click to select the ICONICS Alarm OPC Server in the list.
15. Note: If the “ICONICS Alarm OPC Server” is not in the list, check to be sure that the “Use GlobalSubscription” box is checked. Revisit Step 13. You should now be in the Subscription Properties dialog box and the name of your subscription should be ‘awxs:ICONICS Alarm OPC Server’. The prefix ‘awxs’ denotes that it’s a global AlarmWorX subscription.

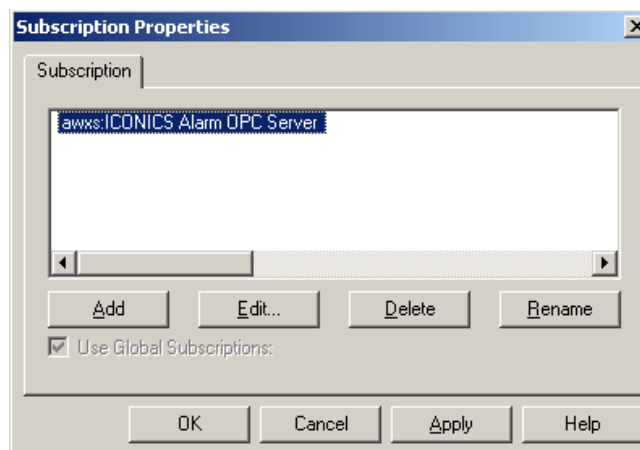


Figure 3.2.5 - Global Alarm Subscription

16. Click on OK to exit the dialog and click on **Apply** to save the subscription and commit the changes to the configuration database.

3.3 Creating Local Alarm Filters

Note: It is not recommended that you combine Local and Global filters in the same configuration. Using EITHER Local or Global filters is however recommended. This section will describe how to configure both types of filters but we will only be using local filters within labs in this course.

1. Creating local and global filters is much the same process. However, local filters will not be available to remote nodes or to use anywhere else (i.e. Alarm Viewer).
2. Open the AlarmWorX32 Multimedia Configurator. Start → All Programs → ICONICS AlarmWorX32 Multimedia → AlarmWorX32 Multimedia Configurator.
3. Right-click on the Alarm Filters branch from the tree control on the left hand side and select New → Alarm Filter.
4. Name the filter “Tank B Level Hi” and click on the **Edit Filter...** button. The Filter Wizard will pop up. This is the same filter wizard we saw in the UDM when we were creating our global filters.

Note: Clicking on the “Edit Filter” button rather than the “Get Global Filter” defines the filter as a local filter.

5. From the Filter Wizard dialog, you could select Alarm Types, Sub Conditions, Source and so on as described previously in this chapter. If you were to check the Hi Sub Condition and specify a Source when you click on the OK button your alarm filter string should look somewhat similar to the one shown in the following figure.
6. Notice the awxf prefix does not exist. This indicates that you are working with a local alarm. Click Apply.

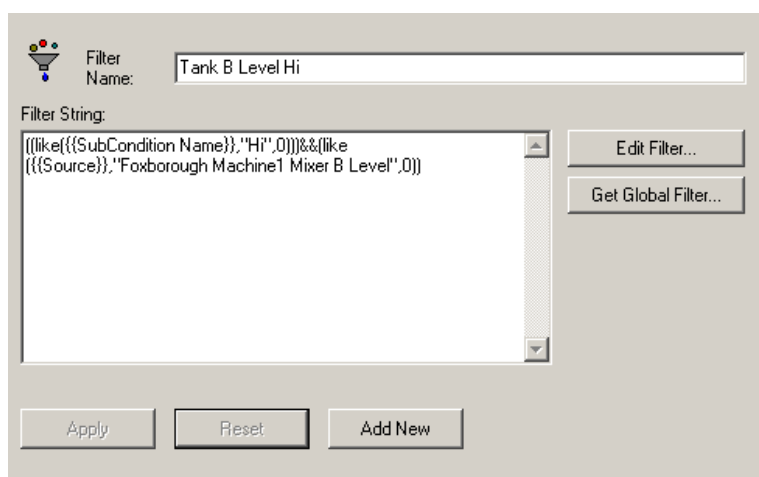


Figure L3.3.1 - Tank Level 6 Hi Alarm Filter

7. Repeat Steps 2 through 5 above to create Tank A Level Lo and Tank B Level Lo. If time allows, you can also create the filters for Tank C and Tank D, as you wish.

3.4 Creating Global Alarm Filters in the UDM (For Review Only)

1. Now we will create two global filters filters. If you closed the Unified Data Manager in the previous section, start the UDM from Start → All Programs → ICONICS Tools → Unified Data Manager and click on the Alarm Filters branch on the tree-control on the left-hand side.
2. There are several preconfigured filters in the Unified Data Manager. Right-click on the Alarm Filters branch and select New → Folder
3. Name the folder “Training Course Alarm Filters”. Click **Apply**.

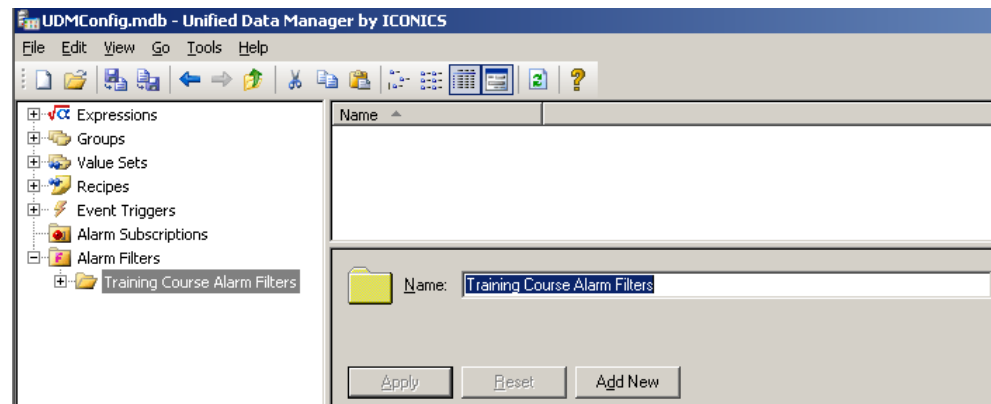


Figure L3.4.1 - Alarm Filter Folder

4. In the tree-control, right-click on the “Training Course Alarm Filters” folder that you have just created and select New → Alarm Filter Item.
5. Name the filter “Tank A Level Lo” and give it a description if you wish.
6. Click on the **Edit...** button in the Filter String section. In the Edit Expression dialog, click on the **Tags** button and select Filter Wizard.

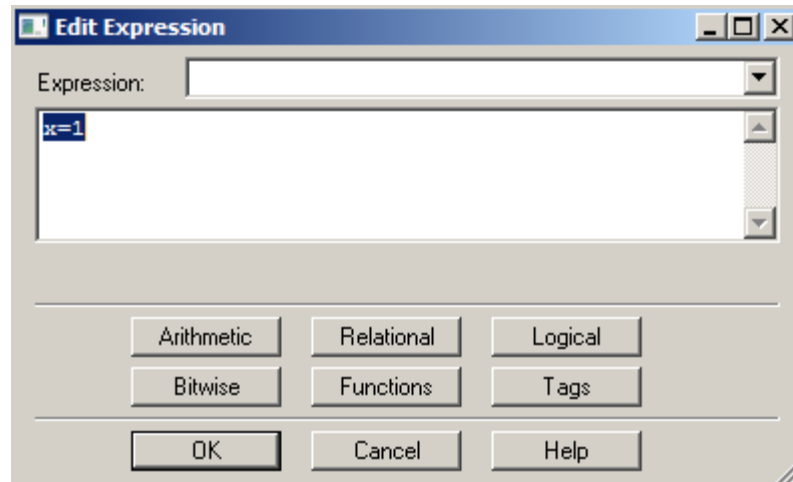


Figure L3.4.2 - Filter Option Dialog

7. Because we are only interested in Lo Limit alarm states from the Foxborough Machine1 Mixer A Level alarm, we are going to filter on the Lo sub condition and Source (or alarm tag name) attributes.
8. In the Filter Wizard dialog, check the “Lo Sub Condition” as well as the “Source” option. Select the ellipse button next to the Source field. Under the OPC AE tab, expand My Computer → ICONICS.AlarmServer.1 and select the Mixers folder. Select Foxborough Machine1 Mixer A Level from the content window on the right. Select OK. This will create a filter that will trigger action sets when the Tank A Level alarm reaches its Lo limit.

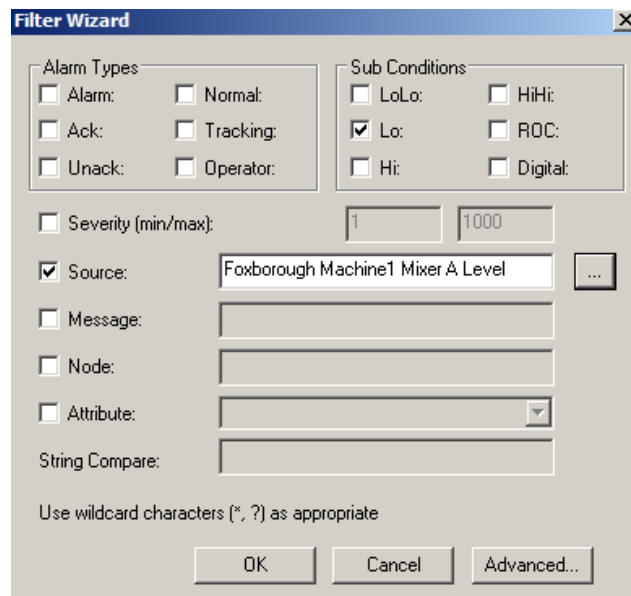


Figure 3.4.3 – Filter Wizard

9. Select OK in the Filter Wizard dialog. Your expression should look like figure 3.4.4.

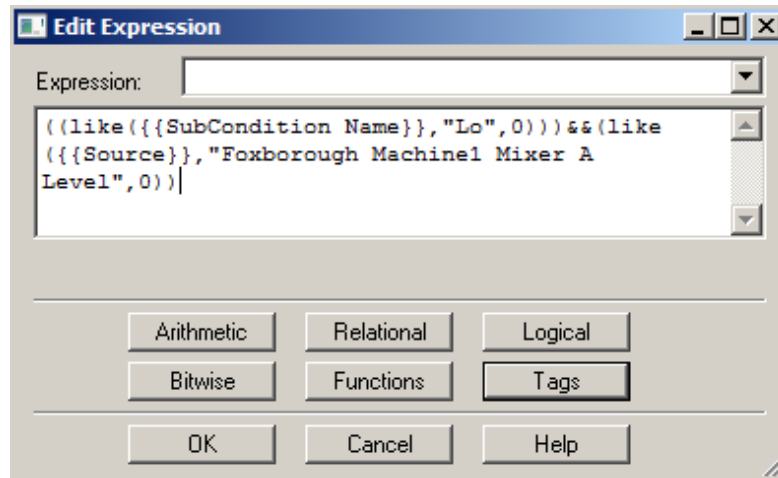


Figure L3.4.4 - Global Alarm Filter Expression

10. Click OK to return to the Configurator. Your filter should look like Figure L3.4. Click on **Apply** to commit the changes to the database.

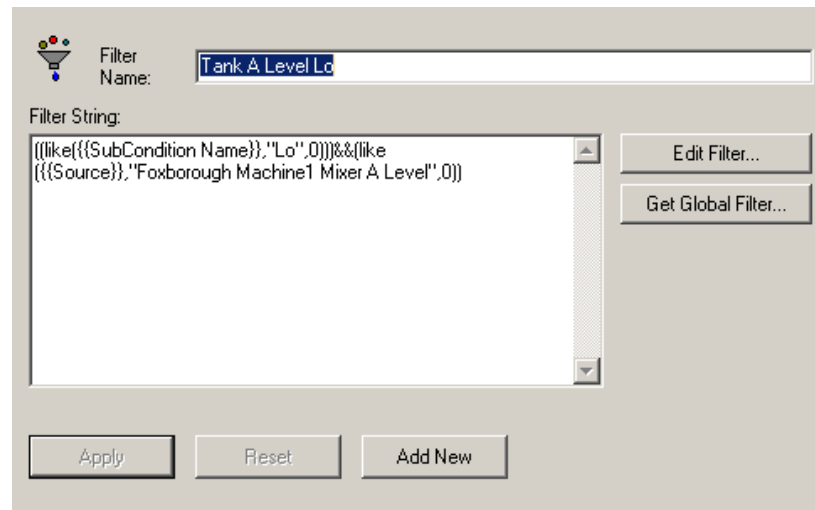


Figure L3.4.5 - Finished Filter

11. Create a filter for the Tank A Level Hi alarms. Name the filter Tank **A** Level Hi, so that you know what it does when you look at it in the Unified Data Browser.
12. Repeat Steps 4 through 11 above to create similar filters for Tank B.
13. If time allows, you can also create global filters for tanks C and D.

3.5 Connecting Global Alarm Filters to MMX (For Review Only)

1. Return to or re-launch the Alarm Multimedia Configurator by going to Start → All Programs → ICONICS AlarmWorX32 Multimedia → AlarmWorX32 Multimedia Configurator.
2. Expand Alarm Inputs and select Alarm Filters from the navigation tree on the left. Right-click and select New → Alarm Filter.
3. Name the filter “Tank A Level Lo” and click on the **Get Global Filters...** button To the right of the content dialog.
4. The Unified Data Browser (UDB) will start. Under “My Computer”, select the Training Course Alarm Filter folder. Double-click on Tank A Level Lo. You should now see your alarm filter in the Multimedia Configurator as shown in Figure L3.5.1.

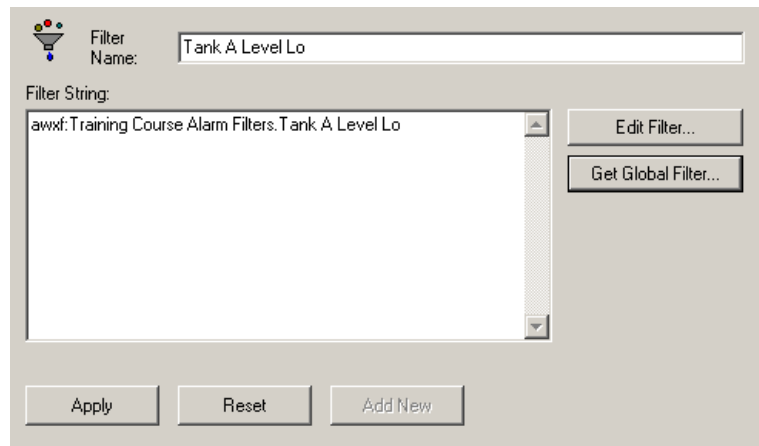


Figure L3.5.1 - Global Alarm Filter in Multimedia Configurator

5. Notice that because this is a global filter, in the filtering string it's prefixed with awxf to differentiate from local filters.
6. Click the Reset button to remove the global filter. In this lab, we just need to use local filters.

3.6 Using the Multiply Utility

1. From the tree control on the left expand the Alarm Filters branch, right click on the Tank A Level Lo alarm in the tree and select multiply.
2. The Multiply Item dialog opens. Although the multiply utility can create many consecutive items, for this lab we will only create one additional item.
3. You can leave the settings as default since we are only making one copy of the filter. Click on OK and notice that an alarm filter named “Tank A Lo001” is created.
4. Select the alarm filter Tank A Level Lo001 from the tree-control and change the filter name to Tank A Hi. Since the only difference between the Tank A Lo filter and Tank A Level Hi filter is the Filter String: sub condition. All we have to do is change the sub condition in the filter string where it says “Lo” to “Hi”. Click on **Apply** to commit the changes to the database. Note the sub condition string in figure L3.6.1.
5. You should now have two Tank A filters:, Tank A Level Lo and Tank A Level Hi,
6. If time allows, use the multiply utility to add more alarms to Tanks B through D.

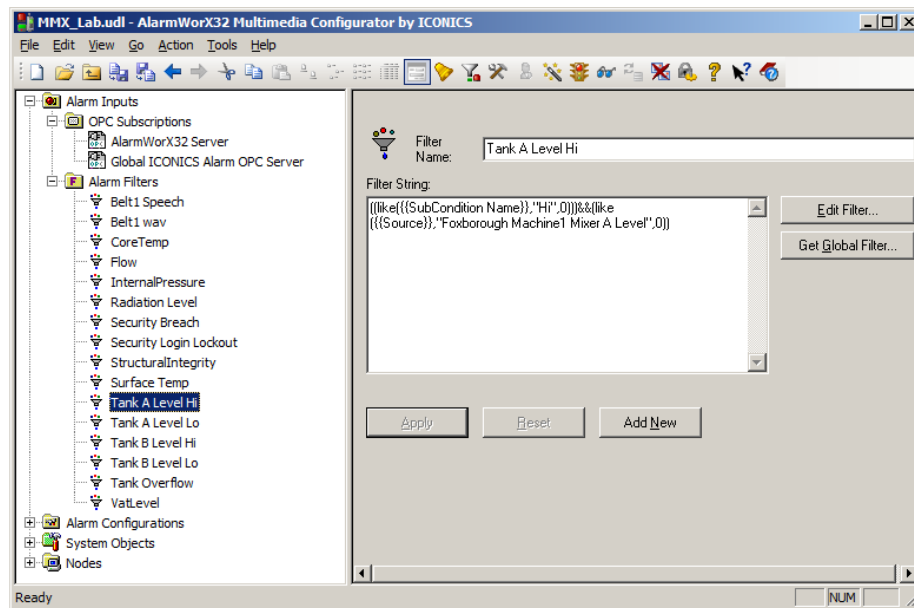


Figure L3.6.1 - Multiply Alarm Filter Complete

Note: You can create alarm filters whenever you wish. However, it should be one of the last steps in your development project. You should only apply filters after you are sure that your agents can send out alarms without a filter.

Media Templates

4

4.1. Objectives

At the end of this chapter, you will be familiar with the following concepts:

-  Creating a media template for use with media agents
-  The different types of templates available and their respective setting details

4.2. Introduction to Media Templates

When configuring a multimedia agent, you must select a media template to apply to that agent. Templates allow you to configure design elements, including what and how much information to display when presenting an alarm. You can use or modify any one of the default templates or create a new template. In the example multimedia agent configurations available in all new configuration databases, default templates are provided and used for each type of agent.

While many of the templates simply have fields that can be inserted, the templates for Marquee, Popup, and Video agents can respond to simple HTML tags used to define the appearance of alarm data upon the agent's loading. If you are comfortable using HTML and are comfortable with the organization of the multimedia templates, you may find it simpler to write HTML directly into the Template Text area. Information on how HTML is handled in each agent is available in the "Templates and HTML" section of the AlarmWorX32 Multimedia Help documentation.

For agent templates such as Email and Fax, there is a subject field along with the body text field. These subject fields only allow for Text and Alarm Field insertions to provide a simple, but meaningful, heading to the message.

4.3. *Template Field Types*

The following is a list of all template field types. When configuring a media template, click the **Insert Body Field...** button to display which field types are available for that particular template type.

-  **Alarm Field:** Represents the components of OPC alarms; allows you to choose from a dropdown list of fields; allows you to enter a field width limit (enter zero for no limit); can be used as a text field with pager, e-mail, fax, popup, and instant messaging templates, or in sound, phone, and P.A. templates via text-to-speech conversion.
-  **Email Attachment:** Represents any file that can be sent as an email attachment; used with email templates.
-  **Sound File:** Represents a sound file; allows you to choose from the included Sound Library or to add your own sound file (.wav, .mid) to the Sound Library. Can be used with sound, phone, and P.A. templates.
-  **Delay:** Enters a value representing a time delay in milliseconds before the next template item will be activated; can be used with sound, phone, P.A., and video templates.
-  **File:** Represents a file for the Popup Agent to process, you can launch any file with an associated extension; used with popup templates.
-  **URL:** Represents a URL for the Popup agent to display; used with popup templates.
-  **SnapShot Capture:** Enters a value representing the amount of time the Video agent will take to capture a video snapshot; used with video templates
-  **Picture File:** Represents an image file (.gif, .jpg) used with video templates.
-  **Video File:** Represents a video file (.avi, .mpg, .mpeg, .mov); used with video templates
-  **Text:** Allows you to enter plain text; used by all media templates.

 **HTML Text:** Text embedded in HTML tags; used by marquee, popup, and video templates.

 **Fax Cover Page:** This template field is a cover page design that will be used for all fax messages sent using the Fax Agent. Currently, we only support Fax Cover Pages in .COV format. You can create a cover page by using the Microsoft Fax Console (you may need to install this Windows component) and as long as the cover page is compliant with the Microsoft Fax Console, it should work.

NOTE: The location of the fax cover page field in the fax template does not matter because the cover page is, by default, the first item to be sent in a fax message. However, if several cover pages are selected for a single template, the Fax Agent will use only the first cover page listed.

Lab: Media Templates

L4

4.1 Lab Overview

In this lab, we will configure a few media templates for our example project. We will apply these templates later to our Multimedia agent configurations that we will create. We will specifically be dealing closely with the marquee agent in this class.

Estimated time to complete this lab: 45 minutes.

4.1.1 Task Checklist

In this lab, you will complete the following tasks:

- Learn how to copy and then edit an existing marquee media template.
- Learn how to create and configure new templates.

4.1.2 Support Files

To complete this lab, you will not need any support files.

4.2 Copying an Existing Media Template

Some agent templates, such as the marquee templates, contain HTML. Therefore, it is sometimes easier to create a template by copying an existing template and then alter some template settings to meet your needs.

1. Launch Start → All Programs → ICONICS AlarmWorX32 Multimedia → AlarmWorX32 Multimedia Configurator. From the tree control on the left, expand “Alarm Configuration”, then expand the **Media Templates** branch of the tree control to view all existing media templates.
2. There should be a default template of each agent type. Select the **Default Marquee** template. By selecting the lower right hand corner of the dialog box, expand the content area to see the configuration window shown in **Figure L4.2.1**.

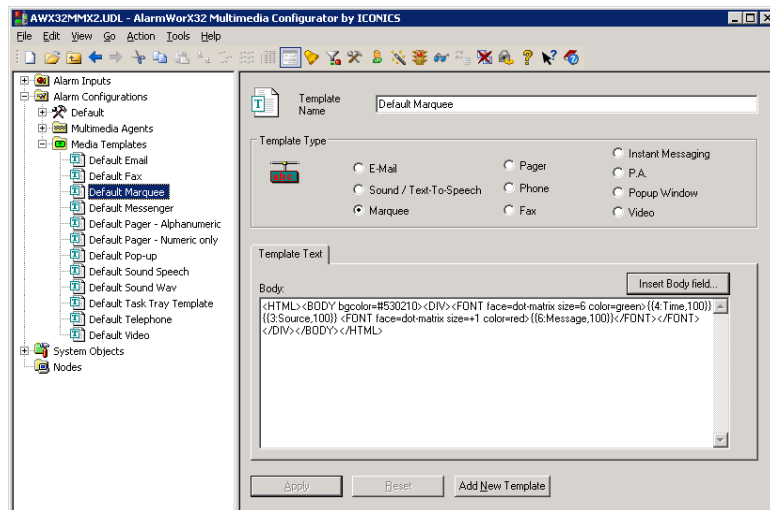


Figure L4.2.1 - Elements in the Default Marquee Template

3. As you can see in the **Template Text** tab, **Body:** section, there is a lot of information being passed to the marquee agent via HTML code. This information defines the font color, size and structure of the marquee message.
4. Since we do not want to rewrite all of this code, we will make a copy of this template and then modify it. Right-click on **Default Marquee** in the tree control on the left and choose **Copy**.
5. Now right-click on the **Media Templates** branch of the tree control and choose **Paste**. A new template of the name **Copy_of_Default Marquee** will be created with all the same configurations as the **Default Marquee** template. See Figure L4.2.2.

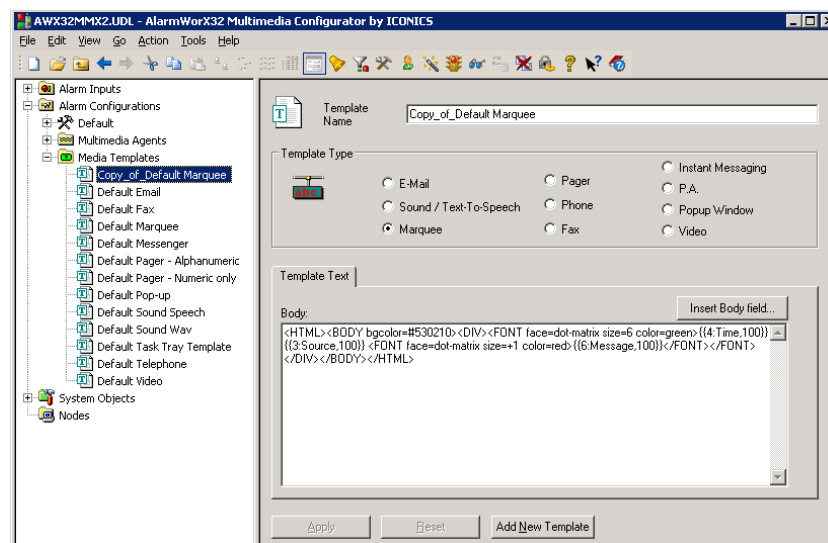


Figure L4.2.2 - Copy of the Default Marquee Template

6. Rename this template **Training Marquee** and click **Apply**.
7. From the Template Text tab, Body section, delete the text **{{3:Source,100}}**. This is the source of the alarm.
8. Within the first line of text, place the cursor between **<DIV>** and ****, and click on the **Insert Body Fields...** button to open the **Template Definition Wizard** dialog as shown in Figure L4.2.3. From the “**Select Field Type**” section, choose **Text** and enter **CAUTION** as the **Text string**. Click **Insert** when finished.

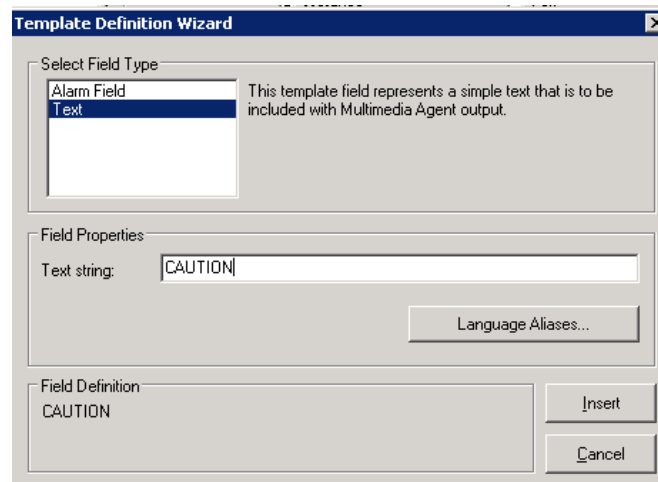


Figure L4.2.3 - Template Definition Wizard

9. You should now see your text inserted between the **<DIV>** and **** tags in the first line of the HTML code.

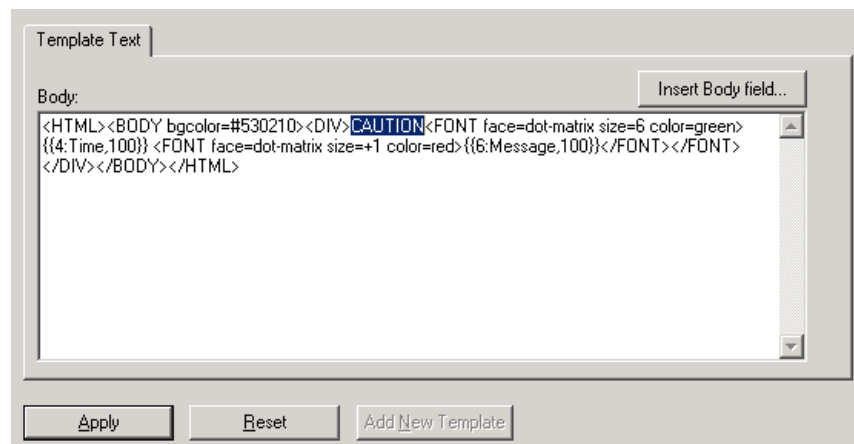


Figure L4.2.4 – Adding Text to HTML Code

10. Select the **** text preceding **{{4:Time,100}}**, copy it (**ctrl-c**) and paste (**ctrl-v**) it before the word **CAUTION**. Within the text you just pasted, select the word “**green**” and change this text to “**yellow**”. The final code body should look like **Figure L4.2.5**.

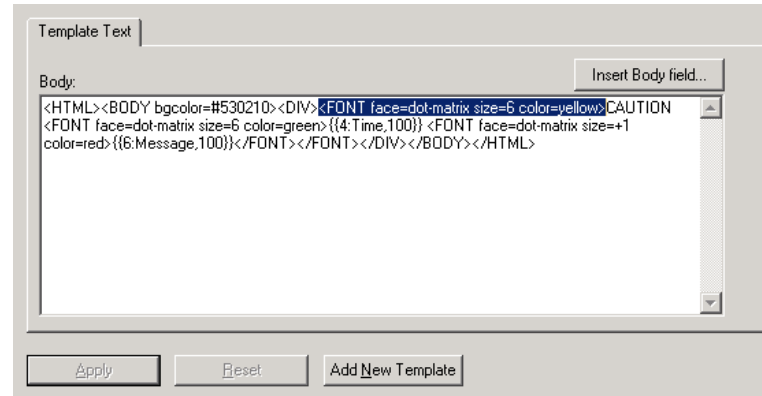


Figure L4.2.5- Completed HTML Code for the Marquee Agent

11. Click the **Apply** button to commit the changes to database.

4.3 Creating a New Media Template

We will also describe how to use the Sound/Text-to-Speech and email agents in this class. However, without speakers and an email server, these components will not be used during testing.

4.3.1 Sound Template

1. Expand the **Alarm Configurations → Media Templates** branch of the tree control on the left. Right-click on the Media Templates and choose **New → Media Template**.
2. Name the template **Training Sound** and choose **Sound/Text-to-Speech** as the **Template Type**, as shown in **Figure L4.3.1**. Choosing the template type will alter the template fields available for insertion.

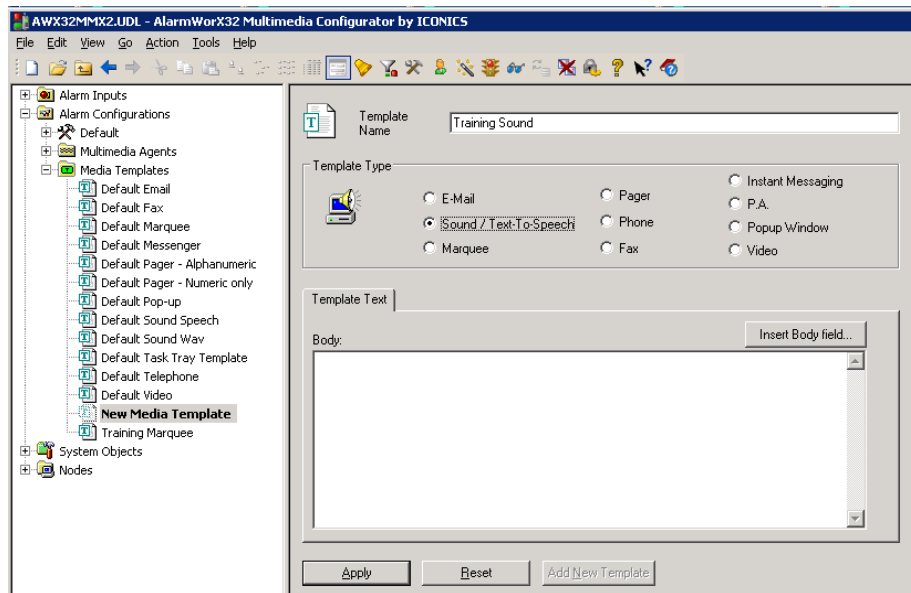


Figure L4.3.1 - Training Sound Template Configuration

3. Click the **Insert Body Field...** button to open the **Template Definition Wizard**. From the **Select Field Type** list, choose **Sound File** and click the **Sound Library** button.

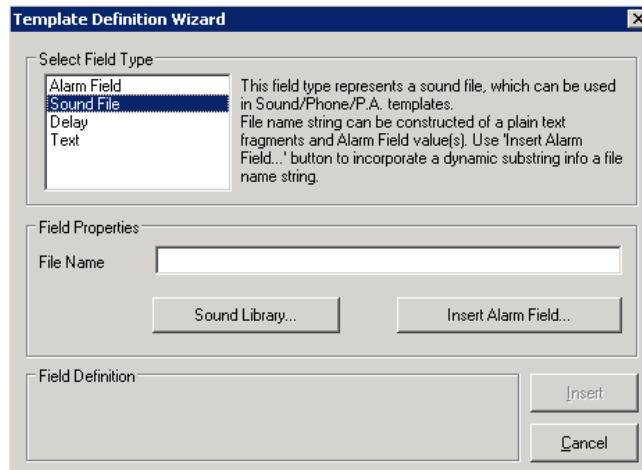


Figure L4.3.2 - Template Definition Wizard

- This will open up a list of pre-configured sound files, as shown in **Figure L4.3.3**. By selecting the “Add Sound File” button, this tool allows you to import any .wav file you may have for use in your templates. You can also record new files if desired.

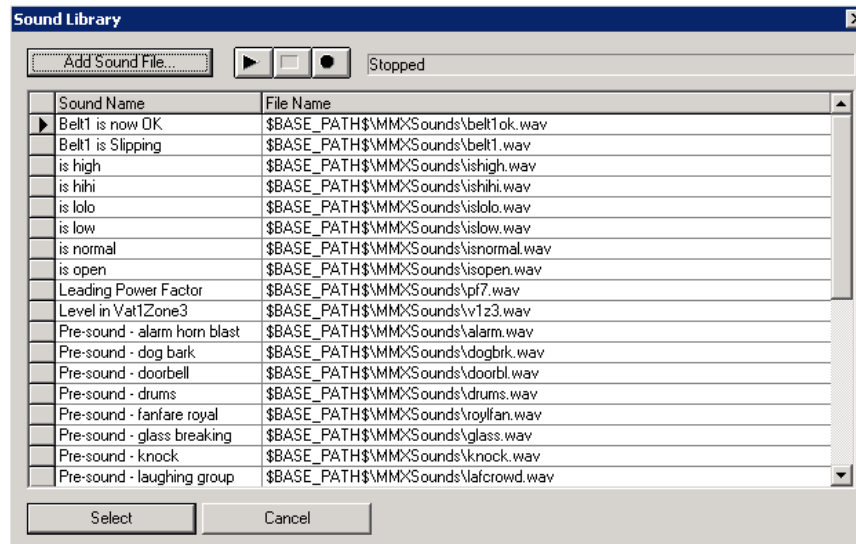


Figure L4.3.3 - Sound Library

- Choose the **Pre-sound – alarm horn blast** sound and click **Select** to return to the **Template Definition Wizard**.
- The **File Name** of the sound file will be filled in. Click **Insert** to return to the Configurator.
- Click the **Insert Body Field...** button again and this time choose **Alarm Field** to insert an alarm-specific attribute, as shown in Figure L4.3.4. Each time an alarm triggers an action set, other information (or attributes) is passed to the Multimedia Server along with the alarm. When these attributes are played as a part of a sound action, their alarm-specific value is converted from text to speech.

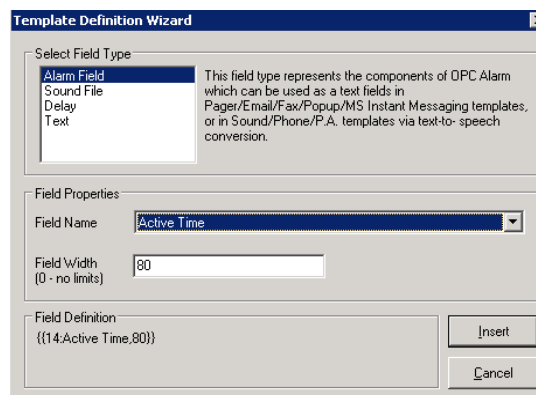


Figure L4.3.4 - Adding an Alarm Field

8. From the **Field Name** drop box choose **Active Time**. Click **Insert** to return to the Configurator.
9. Click the **Insert Body Field** button again and insert an **Alarm Field** of **Message**. Click **Insert** to return to the Configurator.
10. Click the **Insert Body Field** button one more time. From the “Select Field Type” list, select “Text”. Within the “Text string” field, type the text “**Please take action**”. Click **Insert** to return to the Configurator.
11. Your completed template should look like **Figure L4.3.5**. Click **Apply** to commit the changes to the database.

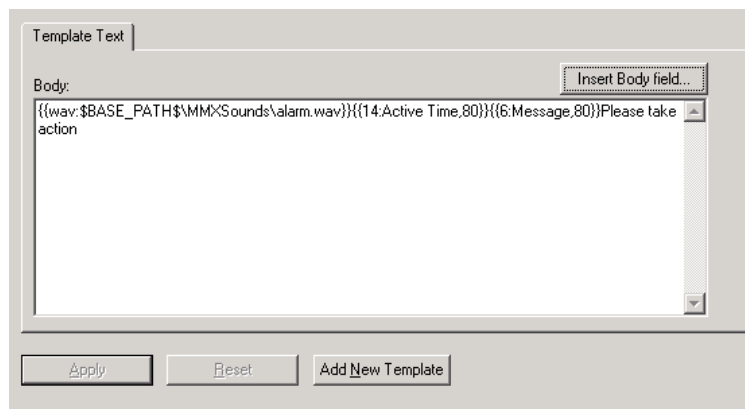
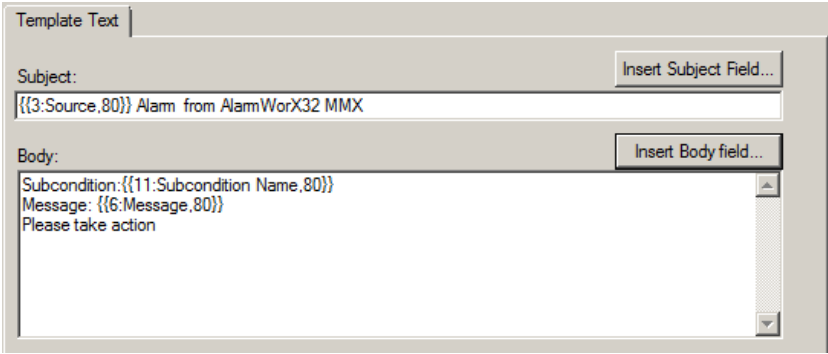


Figure L4.3.5 - Completed Training Sound Template

4.3.2 *Email Template*

1. Expand the **Alarm Configurations → Media Templates** branch of the tree control on the left. Right-click on the Media Templates and choose **New → Media Template**.
2. Name the template for the email “Training Email” and confirm E-Mail is selected under Template Type.
3. Click on the **Insert Subject Field** button. From the **Select Field Type** list, choose **Alarm Field**. From the **Field Name** drop down list select **Source** and click on the **Insert** button.
4. Place your cursor at the end of the text in the Subject: field. Enter a space and type in “Alarm from AlarmWorX32 MMX”.
5. Put your cursor in the white space of the Body: area. Type “Subcondition:” and select the **Insert Body Field** button. From the **Select Field Type** list choose **Alarm Field**. From the **Field Name** drop down list, select **Subcondition Name** and click on the **Insert** button. From within the Body section, place your cursor at the end of the string and press the Enter key to move the cursor down to a new line.
6. Type “Message:” and select the **Insert Body Field** button. From the **Select Field Type** list, choose **Alarm Field**. From the **Field Name** drop down list, select **Message** and click on the **Insert** button. Place your cursor at the end of the string and press the Enter key to move the cursor down to a new line.
7. Select the **Insert Body Field** button. From the **Select Field Type** list, choose **Text**. In the Text String: field, insert “Please take action”.
8. Your finished template should look similar to figure L4.3.6.



The screenshot shows a window titled "Template Text" with two main sections: "Subject:" and "Body:". The "Subject:" section contains the text "{{3:Source,80}} Alarm from AlarmWorX32 MMX" and an "Insert Subject Field..." button. The "Body:" section contains the text "Subcondition: {{11:Subcondition Name,80}}", "Message: {{6:Message,80}}", and "Please take action" on separate lines. There is an "Insert Body field..." button in the top right of the body section.

Figure L4.3.6 - Finished Email Template

Multimedia Agents

5

5.1. Objectives

At the end of this chapter, you will be familiar with the following concepts:

-  Creating a media template for use with media agents
-  The different types of templates available and setting details for some agents.

5.2. Configuring Multimedia Agents

You can configure any of the following multimedia agents to react when a predefined condition occurs within any alarm or events server:

-  **Email:** Sends an email message using your local email client (i.e. Outlook, Outlook Express, etc.) or via SMTP.
-  **Fax:** Sends a message to a fax machine using a fax modem.
-  **Hardware Marquee:** Sends alarm messages to a hardware marquee connected through an Ethernet port or Serial port.
-  **Software Marquee:** Creates a marquee window displaying a message on the local or remote computer.
-  **Pager:** Sends a message to a pager via a modem or SNPP.
-  **Popup Window:** Opens a program or Web site giving alarm messages either locally or remotely over a network.
-  **Skype Messaging:** Sends a message to any configured user that's signed onto Skype.
-  **Sound/Text to Speech:** Plays prerecorded sounds and/or speech from text locally or remotely over a network.

-  **Task Tray:** Displays the alarm message from the system tray (lower right-hand corner of your computer near the clock).
-  **Telephony:** Calls a defined number and gives a message with options to respond. Allows for a user to call in and retrieve alarm information.
-  **Video:** Plays a video; can be a prerecorded video capture or take a snapshot at the moment of the alarm.

You can launch all of the agents except for the Hardware Marquee, the Pager, and the Telephony agents on a remote machine. It requires an installation of these agents on the remote machine, however. In the GENESIS32 Options installation CD, you can find the stand alone installation for these agents.

You can find each agent in the Multimedia Configurator under the Multimedia Agents folder, which is in the Alarm Configurations folder on the tree control. In this chapter, we will concentrate on three common agents:

-  Software Marquee Agent
-  Sound/Text-to-Speech Agent
-  SMTP Email agent

For information on how to configure the other agents, you can refer to the AlarmWorX32 User Manual, the help files or the Appendices at the end of this manual.

5.3. *Marquee Agent*

The Marquee Agent, shown in Figure 5.3.1, allows you to send alarm information in a popup marquee window. You can display this window in the local computer or send it to a remote computer on the network. To acknowledge the alarm, you can right-click in the software marquee box and select Acknowledge.

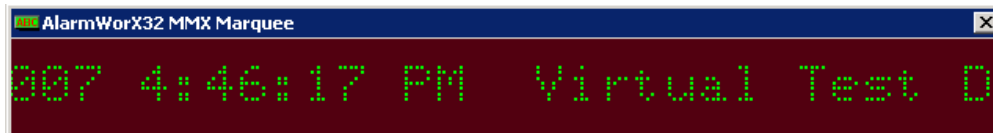


Figure 5.3.1 - Software Marquee Agent

General configuration options are set for all marquee items within the Marquee folder in the tree-control. You can change any of these options by clicking on the “General Settings” button while in the main Marquee folder. These settings include the output destination, the speed of the scroll, the background color, etc.

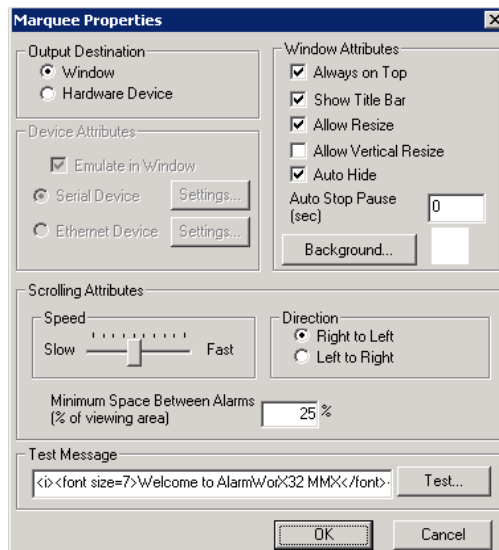


Figure 5.3.2 - General Marquee Properties Window

All software marquee agents that you will create adhere to this General Configuration. You will be able to assign a template, schedule, role, acknowledgement code, etc for individual agents. The configuration page for an individual Software Marquee Agent is shown in Figure 5.3.3.

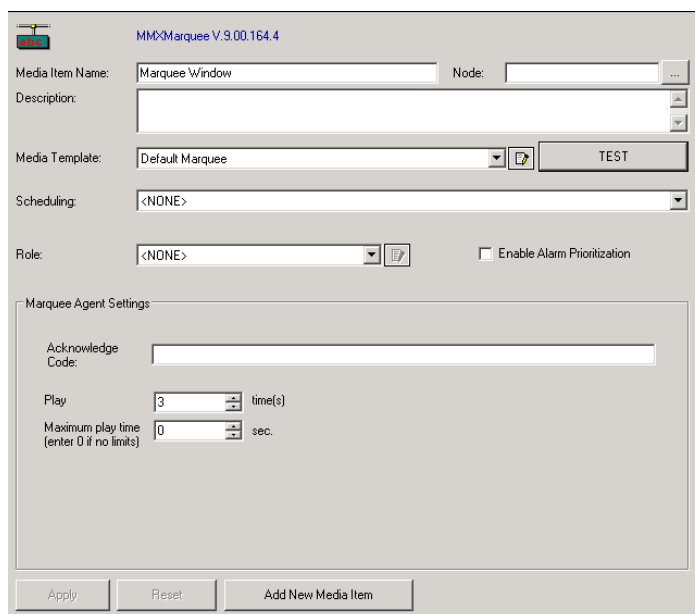


Figure 5.3.3 - Software Marquee Agent Configuration Page

The following configuration fields are available for the Marquee Agent on an individual configuration basis:

-  **Media Item Name:** Entering a name for the Marquee Agent Configuration.
-  **Node:** You may popup a scrolling marquee on other computers over the network. If you were to take advantage of this functionality, you can specify the node name (computer name) on which you wish to run the Marquee agent. Do NOT enter a node name if you want the marquee to work locally.
-  **Description:** Allows you to add comments to the agent configuration.
-  **Media Template:** You must choose a template for the agent to use. The template determines the information that the marquee message contains. The configurator includes a template, called Default Marquee, created for sending marquee messages. For more information about templates, please see Media Templates.
-  **TEST button:** Plays a marquee message to test your configuration.
-  **Scheduling:** Allows you to link the agent to a predefined schedule. If you are using scheduling, choose from the configured schedules on the drop-down list.
-  **Role:** Allows you to select a preconfigured role for the agent.
-  **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in/first-out basis.
-  **Acknowledge Code:** Enter the string you wish to use as the acknowledge code.
-  **Play # of Time(s):** Specifies the number of times the marquee message will be displayed.
-  **Maximum Play Time:** Sets the maximum play time (in seconds) for a single message.
-  **Apply button:** Saves all changes to the configuration database.
-  **Reset button:** Clears all recently added information.

 **Add New Media Item:** Adds a new Software Marquee Agent to be configured. Note that you can also add a new Software Marquee agent by right-clicking the Software Marquee folder on the tree control and selecting New → Media Item from the pop-up menu.

5.4. Sound/Text-to-Speech Agent

The Sound/Text-to-Speech Agent allows you to send alarm information using a sound playing device (i.e. speakers).

You can specify the sound in the sound template, where you can select a sound (.wav) file from the Sound Library, enter a text message to be converted to speech, or choose alarm attributes to be converted to speech. You can also add your own sound files to the Sound Library by putting files in the \Program Files\ICONICS\GENESIS32\Bin\MMXSounds directory.

You can also change the text-to-speech voice in windows setting by going to Start → Settings → Control Panel → Speech. In the Speech Properties dialog box, select the “Text To Speech” tab. Your operating system comes with a few preinstalled voices from Microsoft. You can also purchase other voices from different vendors. Those voices, once installed, will become available in the dropdown list. You can also adjust the speed of the voice and preview it in this dialog.

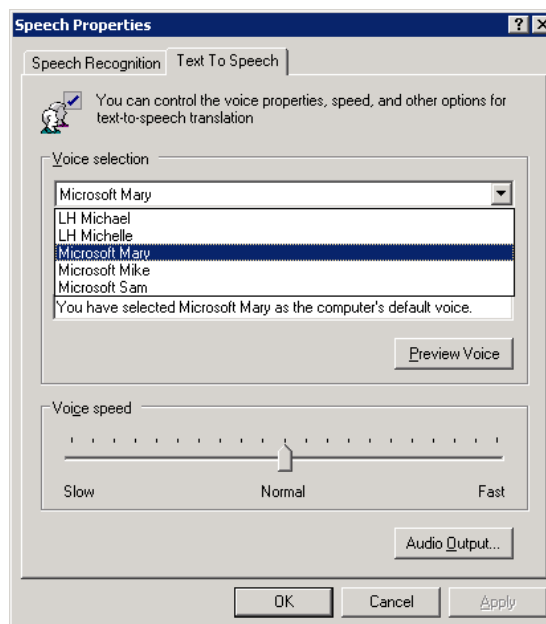


Figure 5.4.1 - Speech Properties Dialog

You must restart the Sound/Text-to-Speech agent once you change the settings in the Speech Properties dialog for it to take effect.

The configuration page for any individual Sound/Text-to-Speech Agent configuration is shown in Figure 5.4.2.

The screenshot shows the 'MMXSound V.9.0.164.3' configuration window. It contains the following fields and controls:

- Media Item Name:** A text box containing 'Local Text-to-Speech'.
- Node:** A text box with a browse button (three dots) to its right.
- Description:** A large text area for comments.
- Media Template:** A dropdown menu set to 'Default Sound Speech', with a 'TEST' button to its right.
- Scheduling:** A dropdown menu set to '<NONE>'.
- Role:** A dropdown menu set to '<NONE>', with an 'Enable Alarm Prioritization' checkbox to its right.
- Sound Agent Settings:** A section containing:
 - Play:** A spinner box set to '1' with the unit 'time(s)'.
 - Maximum play time (enter 0 if no limits):** A spinner box set to '0' with the unit 'min.'.
- Buttons:** 'Apply', 'Reset', and 'Add New Media Item' at the bottom.

Figure 5.4.2 - Sound/Text-to-Speech Agent Configuration page

The following fields are available for the Sound/Text-to-Speech Agent on an individual configuration basis:

-  **Media Item Name:** Enter a name for the Sound/Text-to-Speech Agent configuration.
-  **Node:** Enter the node name of the computer on which you wish to play the sound. If this field is left blank, the sounds will be played on the computer running the Multimedia Server. Click the Browse button to search for a node. If you want to play the sound locally, do NOT enter a node name.
-  **Description:** Allows you to add comments to the agent configuration.

 **Media Template:** You must choose a template to be used with the agent. The agent plays a sound that is specified in the sound template, where you can select a sound (.wav) file from the Sound Library.

The Configurator already includes templates, called Default Sound Wav and Default Sound Speech, created for sending sound messages. For more information about templates, please see Media Templates.

 **TEST button:** Plays a sound message to test your configuration.

 **Scheduling:** Allows you to link the agent to a predefined schedule. If you are using scheduling, choose from the configured schedules on the drop-down list.

 **Role:** Select a role from the drop-down list. For information about roles, please see “Working with Roles” in the help files.

 **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.

 **Play # of Time(s):** Plays the sound message a specified number of times.

 **Maximum Play Time:** Sets a maximum time for the sound to be played (in minutes).

 **Apply button:** Saves all changes to the configuration database.

 **Reset button:** Clears all recently added information.

 **Add New Media Item:** Adds a new agent to be configured. You can also add a new Sound/Text-to-Speech Agent by right-clicking the Sound/Text to Speech folder on the tree control and selecting New → Media Item from the pop-up menu.

5.5. Email Agent

The Email Agent allows you to send alarm information in an email using either the locally configured default email client or SMTP client. We will specifically discuss the SMTP Email Agent in this section.

The SMTP Email Agent is new to Version 9 and is much easier to set up since it does not require a default local email client setup with a default user.

When you install AlarmWorX32 Multimedia, the SMTP Email Agent is the default email agent for the system. If you change your mind later to use some other agent (or if you installed another agent during Multimedia installation), you can go to \Program Files\ICONICS\GENESIS32\Bin, run the file named RegistrationContextMenu.reg, then find an agent executable that you wish to use, right-click on it and select Register.

You can configure the SMTP Email Agent by clicking on the “General Settings” button in the main Email folder. The email Configuration Dialog is shown in Figure 5.5.1

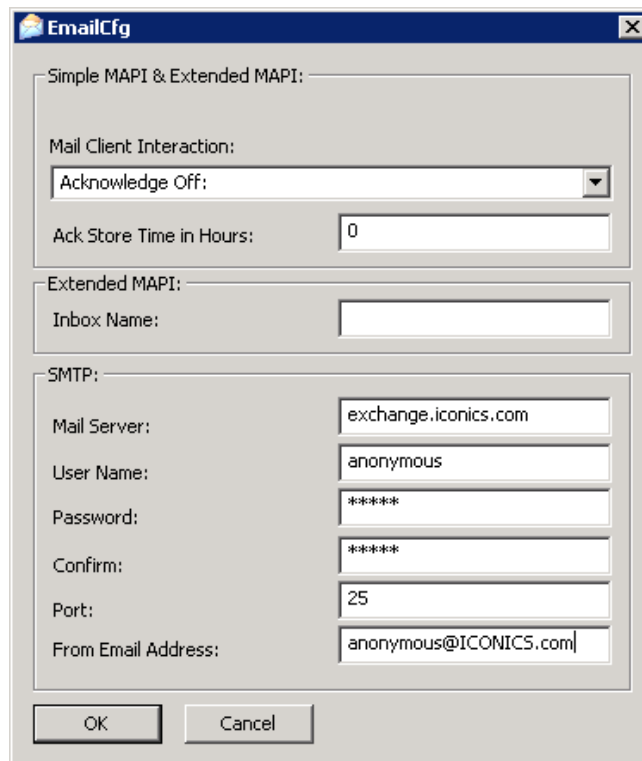


Figure 5.5.1 - Email Configuration Dialog

For SMTP mailing, you can simply fill out the SMTP section. You need to have an SMTP mail server (most free email services provide this type of server. For example, gmail is smtp.gmail.com, Hotmail is mx1.hotmail.com, Yahoo Mail is smtp.mail.yahoo.com, etc. For a free list, you can refer to <http://www.e-easy.com/SMTPServerList.aspx> or Google Search for your own results).

Once you find a provider, fill-in your user name, password (you will have to confirm it by typing it again), a port number (the default is 25 – the well known port for SMTP mail, but your provider can change the port), and enter the From Email Address if you wish. Once you are done, click on “OK” to save the changes and the general settings for the Email Agent are all set.

NOTE: For more information about the Email agent, you should refer to the help files or the application notes regarding the Email Agent.

The configuration page for an individual Email Agent Configuration is shown in Figure 5.5.2.

MMXMail V.9.0.164.4

Media Item Name: Anonymous e-mail Node: ...

Description: ...

Media Template: Default Email TEST

Scheduling: Full 24-7-365 Schedule

Role: <NONE> ☒ Enable Alarm Prioritization

Email Agent Settings:

Send To: someone@somehost.com

CC: ...

BCC: ...

Acknowledge Code: ...

☐ Send to Alpha-Numeric / Two Way Pager E-mail

Apply Reset Add New Media Item

Figure 5.5.2 - Email Agent Configuration Page

The Following configuration fields are available for the Email Agent on an individual configuration basis:

-  **Media Item Name:** Enter a name for the e-mail contact.
-  **Node:** Enter the node name for the computer from which you wish to send the e-mails. If left blank, the e-mails will be sent from the computer running the Multimedia Server. Click the Browse button to search for a node. If you want to use the local computer, do NOT enter the computer name. (For SMTP agent, this makes no difference; you will be using a remote SMTP server.)
-  **Description:** Allows you to add comments to the agent configuration.
-  **Media Template:** You must choose a template to be used with the E-mail Agent. The template determines the actual message that gets sent to e-mail recipients. The Configurator includes a template, called Default Email, created for sending e-mail messages. For more information about templates, please see Media Templates.
-  **TEST button:** Sends an e-mail message to test your configuration.
-  **Scheduling:** Allows you to link the agent to a predefined schedule. If you are using scheduling, choose from the configured schedules on the drop-down list.
-  **Role:** Select a role from the drop-down list. For information about roles, please see “Working with Roles” in the help files.
-  **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in/first-out basis.
-  **Send To:** Enter the e-mail address of the recipient to whom you wish to send the e-mail message.
-  **CC:** Sends a carbon copy of the e-mail to another recipient.
-  **BCC:** Sends a "blind" carbon copy of the e-mail message to another recipient.
-  **Acknowledge Code:** Enter the string you wish to use as the acknowledge code. You cannot Acknowledge a message if you are using the SMTP agent.

 **Send to Pager:** Uses the E-mail Agent to send an optimized message to a pager. You can still use the E-mail Agent to send a message to a pager without checking this. However, checking this decreases the character count of the identifier variables, thus reducing the cost in pages that charge according to number of characters.

NOTE: Using this option will limit you to 99,999 unique messages before resetting the numbering back to one.

 **Apply button:** Saves all changes to the configuration database.

 **Reset button:** Clears all recently added information.

 **Add New Media Item:** Adds a new agent to be configured. You can also add a new E-mail Agent by right-clicking the E-mail folder on the tree control and selecting New → Media Item from the pop-up menu.

Lab: Multimedia Agents

L5

5.1 Lab Overview

In the previous chapter, we created a few media templates with future multimedia agent configurations in mind. In this lab, we will configure sound, marquee and email agents to which we will apply our newly created templates.

Estimated time to complete this lab: 45 minutes.

5.1.1 Task Checklist

In this lab you will complete the following tasks:

- Create and configure sound/text-to-speech agents.
- Create and configure marquee agents.
- Create and configure email agents.

5.1.2 Support Files

To complete this lab you will need the following support files:

- AlarmWorX32 Multimedia configuration database.

5.2 Configuring the Sound/Text-to-Speech Agent

Feel free to explore the example agent configurations to get a feel for the different configuration options. We will start with the sound agent.

1. By now, you're expected to know how to access the AlarmWorX32 Multimedia Configurator. Expand the **Alarm Configurations → Multimedia Agents** branch of the tree control to see all the different agent folders available.
2. Right-click on the **Sound/Text-to-Speech** folder and choose **New → Media Item**, as shown in **Figure L5.2.1**.

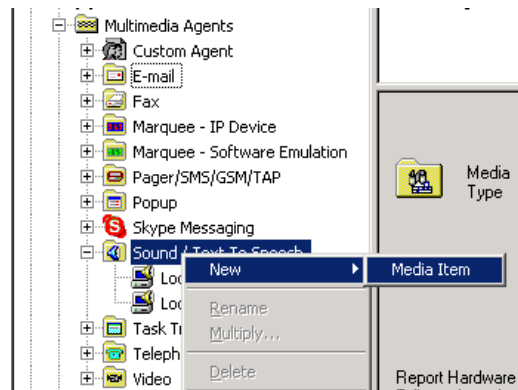


Figure L5.2.1 - Creating a New Sound Agent

3. The agent's configuration page will appear in the right-hand pane of the Configurator. Name the new agent configuration "**Training Sound**".
4. Leave the **Node** field blank. This will allow the sounds to play locally.
5. From the **Media Template** dropdown box, choose the **Training Sound** template you created in the previous chapter.
6. You can leave the **Scheduling** and **Role** setting as **<NONE>**, since we are not using either at this time.

7. Your configuration should look like **Figure L5.2.2**. Click **Apply** to commit the changes to the database. If the Apply button is not available select the handle in the lower right hand corner of the dialog and stretch the box until the Apply button is visible.

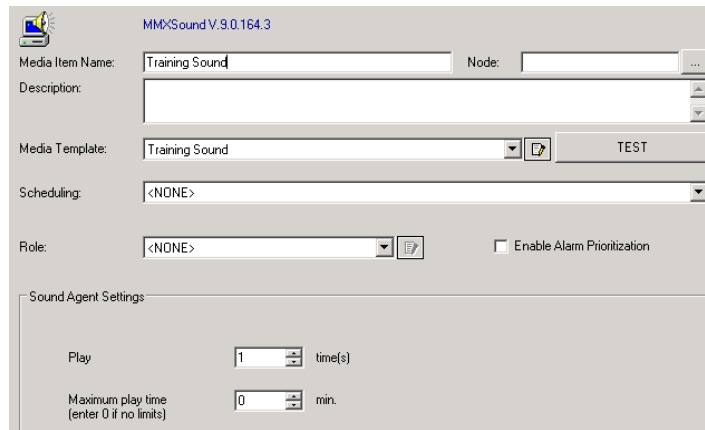


Figure L5.2.2 - Completed Training Sound Agent

8. If you're running a virtual machine in the Foxborough training center, we need to configure the Windows sound controller. Select Control Panel → Device Manager. In the tree control, expand the Sound, Video, and game controllers entry. Right click on the VMware VMaudio (VMAUDIO) (WDM) driver and select Uninstall.
9. Within the "Confirm Device Uninstall" dialog select OK.
10. Still within the Device Manager right click on the node name (top selection in the tree) and select "Scan for hardware changes". Wait for the "Device installed successfully" message in the lower right task bar.
11. Click the **TEST** button to test the agent. The test will play that the sound the template has configured.
12. When the message has finished you will receive indication that the agent finished the test successfully, as shown in **Figure L5.2.3**. Click **OK** to close the message.

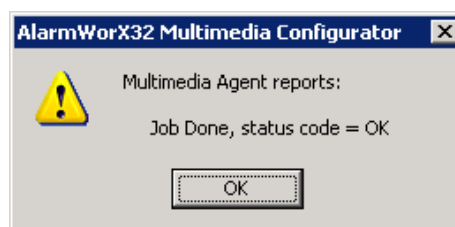


Figure L5.2.3 - Test Successful

13. Notice that the alarm attribute and body text fields of the template were spoken in a computerized voice. This is the text-to-speech engine at work. If you would like to alter the way the voice sounds, it is configurable on a node-by-node basis.

14. You can alternate the voice by going to Start → Control Panel. Depending on the Windows version, locate the “Text to Speech” configurator. Feel free to adjust the **Voice** and other settings to your liking. You can type in and apply any test strings into the Body text field of the assigned Media Template and then click **Test** to hear your settings. When you find the settings you like, click **OK** to exit and return to the Configurator. Note: if you are running Windows Server refer to “Speech Recognition” in the Microsoft documentation.

5.3 Configuring the Marquee Agent

Now that you have successfully configured a Sound/Text-To-Speech agent, we will move on to the marquee agent. Most of the agent configurations are very similar, so this should be review and practice.

1. Right-click on the **Marquee** – Software Emulation folder in the **Alarm Configurations** → **Multimedia Agents** branch of the tree control and select **New** → **Media Item**.
2. Name the new agent configuration **Training Marquee** and leave the **Scheduling** and **Role** as <NONE>.
3. Leave the **Node** as blank. From the Media Template drop down select the **Training Marquee** template you created in the previous chapter. Click on Apply.
4. Enter an **Acknowledgement Code**: of “123”. This acknowledgement code will be needed in order to acknowledge an alarm from the marquee agent window.
5. Your marquee agent configuration should look like **Figure L5.3.1**. Click **Apply** to commit the changes to the database.

MMD3Marquee V.9.00.164.4

Media Item Name: Training Marquee Node: [blank] ...

Description: [blank]

Media Template: Training Marquee [dropdown] [icon] TEST

Scheduling: <NONE> [dropdown]

Role: <NONE> [dropdown] [icon] ☐ Enable Alarm Prioritization

Marquee Agent Settings

Acknowledge Code: 123

Play: 1 time(s)

Maximum play time (enter 0 if no limits): 0 sec.

Figure L5.3.1 - Completed Training Marquee Agent

6. Click the **TEST** button. The MMX Marquee Agent will launch with test information, as was configured in our Training Marquee template.



Figure L5.3.2 - Testing the Marquee

7. Again, you should see the “Job Done, status code = OK” messages as in Figure L5.2.3.
8. Similar to Text-To-Speech, the Marquee Agent has some configurable general settings that apply to all marquee agent configurations. Select the **Marquee – Software Emulation** folder in the tree control to open the general configuration page in the right-hand pane. Feel free to edit the General Settings to give your marquee a personalized look and feel.

5.4 Configuring the Email Agent

There is one last agent that we will configure. That is the SMTP Email agent. For simplicity, we have set up the account from which the emails will be sent, shown in **Figure L5.4.1**.

Note: You will not be able to test if an email server is not accessible during training. However, as an end user you can use this information as a reference when you do setup email notification.

1. From the tree control, under Alarm Configurations → Multimedia Agents, select the E-Mail folder.
2. Click on the **General Settings** button to open the EmailCfg dialog. Enter the information as shown in Figure L5.4.1

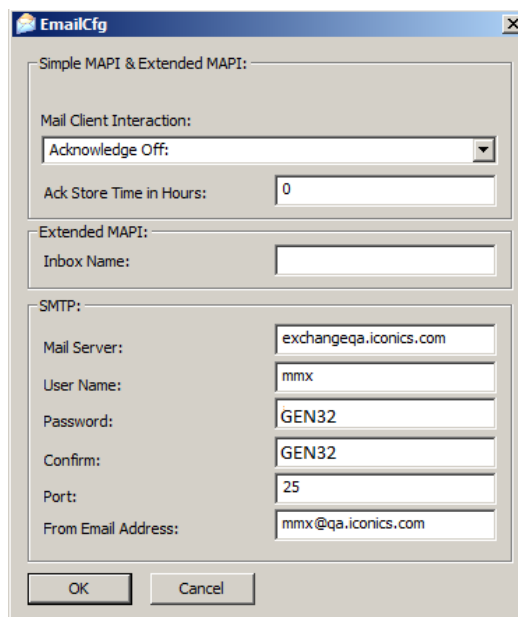


Figure L5.4.1 - Email Agent General Setup

3. From the tree control under Alarm Configurations → Multimedia Agents, right-click on the **E-mail** folder and select **New → Media Item**.
4. Name the new agent configuration “**Training Email**” and leave the **Scheduling** and **Roll** as **<NONE>**.
5. Leave the **Node** as blank and apply the **Training Email** template you created in the previous chapter.
6. In the **Sent To** field, enter the recipients email address and click on **Apply**. Your finished configuration should look similar to **Figure L5.4.2**

The screenshot shows the MMXMail V.9.0.164.4 configuration window. The 'Media Item Name' field is set to 'Training Email'. The 'Node' field is empty. The 'Description' field is empty. The 'Media Template' dropdown is set to 'Training Email'. The 'Scheduling' dropdown is set to '<NONE>'. The 'Role' dropdown is set to '<NONE>'. The 'Enable Alarm Prioritization' checkbox is unchecked. The 'Email Agent Settings' section is expanded, showing the 'Send To' field with the email address 'mmx2@iconics.com'. The 'CC', 'BCC', and 'Acknowledge Code' fields are empty. A 'TEST' button is visible next to the 'Media Template' dropdown.

Figure L5.4.2 - Completed Training Email Agent

NOTE: If you have extra time at the end of the lab, you can try sending an SMS message to your cellular phone using the Email agent if your service supports it.

Alarm Configurations

6

6.1. Objectives

At the end of this chapter, you will be familiar with the following concepts:

-  Creating an alarm configuration and making it the active configuration for the local node.
-  Creating action sets to trigger multimedia agents that we have configured, based on alarm filters we have created.

6.2. Creating Alarm Configurations

Alarm configuration is where you specify which OPC subscription to be used and where you create action sets to be followed by the Multimedia Server. Each configuration will have an alarm subscription assigned to it.

We include, in each new configuration database, an Example alarm configuration named **Default** to serve as an example, which contains a set of actions sets.

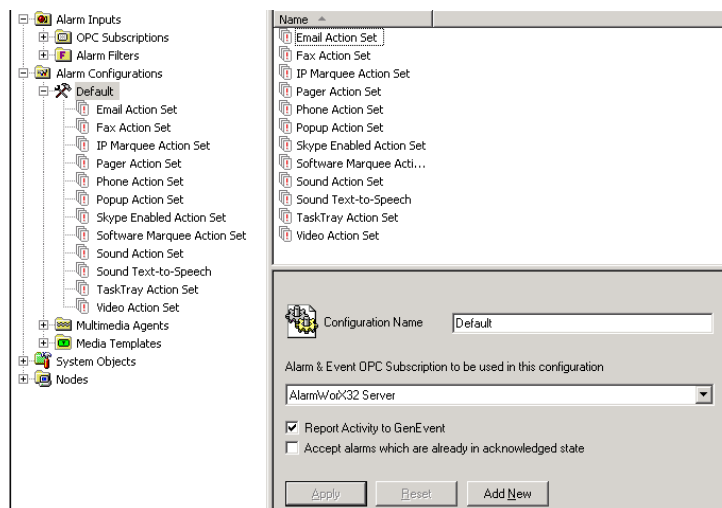


Figure 6.2.1 - Default Alarm Configuration in the Configurator

Any configuration named “Default” will automatically run on the local node, without setting up a node configuration. If you create a new alarm configuration using a name other than “Default”, you will need a node configuration and will need to link the node to the configuration in order to activate it.

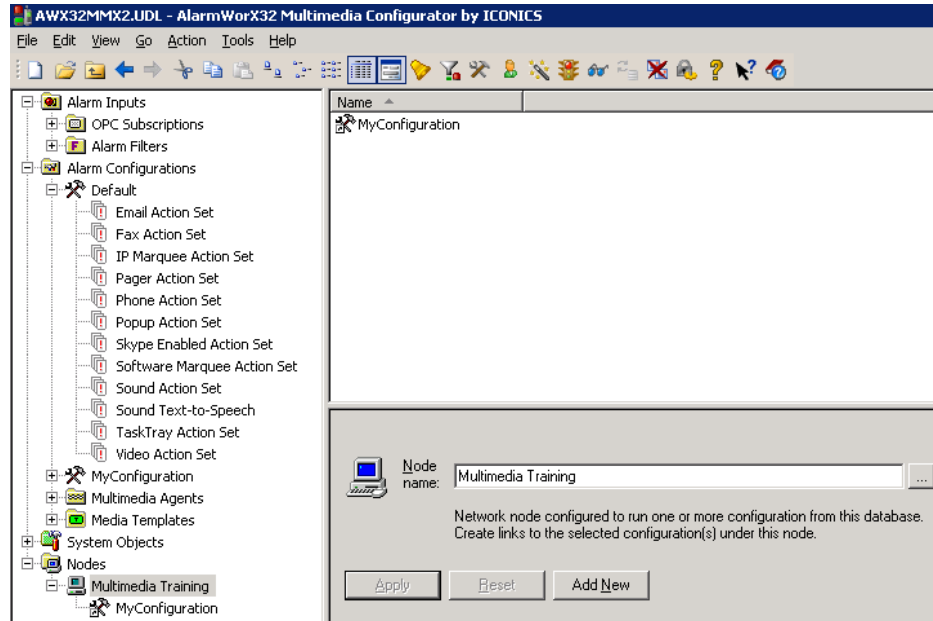


Figure 6.2.2 - Node Configuration in the Configurator

When you create a new configuration, the application automatically creates a node configuration for the local node and links it to the newly created configuration.

6.3. Creating Alarm Action Sets

An **Alarm Action Set** allows you to specify which agent(s) to use when a predefined condition occurs within an alarm/event server. You can create more than one action set under one alarm configuration. Each action set you create is based on a filter. When an alarm included in the filter occurs, the first agent in the action set is triggered as configured in the action set. It will then go down the list of agents using the predefined delay time.

Action Set Name:

Alarm Filter to use:

☒ Enable this Action Set

Action #	Action Type	Action Destination	Media Template	Delay, sec.	Ignore Schedule
1	On Alarm	Anonymous e-mail	<Use Agent setting>	0	☒
	On Return to Normal	<no action>	n/a	n/a	☐
	On Acknowledgement	<no action>	n/a	n/a	☐

Stop Actions Condition

☐ Acknowledgement Received

☒ Values Returned To Normal

☐ Return To Normal AND Acknowledgement

☐ Receipt Confirmation

Actions Loop

☒ Don't Loop at all

☐ Infinite Loop

☐ Repeat time(s)

Add Action Delete Action

Move Up Move Down

Apply Reset New

Figure 6.3.1 - Action Set Configuration Page

You can choose an action on different condition. As you can see in **Figure 6.3.1**, there are three action types: On Alarm, On Return to Normal, and On Acknowledgement. You can specify a different action for each of these different conditions.

You can choose any **Action Destinations** by clicking the  button, which will determine what happens when this action set is triggered by an alarm or set of alarms. You can choose between Type, Node, or Role as shown in **Figure 6.3.2**. You can add as many Action Destinations as you like by clicking on the **Add Action** button. You can also order the actions by clicking on the **Move Up** and **Move Down** button.

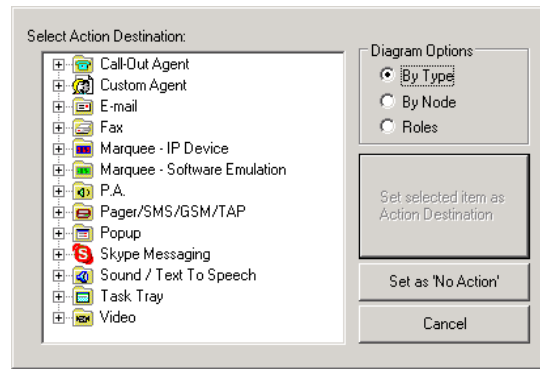


Figure 6.3.2 - Choosing an Action Destination

You can add delays between actions, allowing for escalation of tasks. These delays begin after the action they are associated with triggers. In order to have a delay before any action occurs, you must enter the first action destination as **No Actions** for all conditions and apply a delay to that non-action (essential, the action for it is a delay time). Escalation becomes more vital when using scheduling, which will be discussed later in this course.

Each action set has **Stop Action Conditions** and **Action Loop** properties configured for them. If several action destinations with delays are configured within an action set, when the stop action condition is met, the action set will finish the action destination that is in process, and will not execute the next one in the list. If looping is enabled, the list of action will be looped through as configured until the stop action condition becomes true.

Lab: Configurations and Action Sets L6

6.1 Lab Overview

Earlier in this course you used the Configuration Wizard to create a new configuration with one action set that plays a popup agent. Since then we have configured new multimedia agents and applied new media templates to them. We have also configured alarm filters for alarms that we are interested in being informed about. It is now time to pull those building blocks together into an alarm configuration that will contain an action set for each alarm filter created. These action sets will force our configured marquee and sound multimedia agents to play the information defined in our media templates.

Estimated time to complete this lab: 45 minutes.

6.1.1 Task Checklist

In this lab, you will complete the following tasks:

- Create a new alarm configuration.
- Create and configure alarm action sets.

6.1.2 Support Files

To complete this lab, you will need the following support files:

- AlarmWorX32 Multimedia configuration database

6.2 Creating a New Alarm Configuration

We will start by creating a new alarm configuration and then disabling the **Default** configuration from the database.

1. Right-click on the **Alarm Configurations** branch of the tree control and choose **New → Alarm Configuration**, as shown in **Figure L6.2.1**.

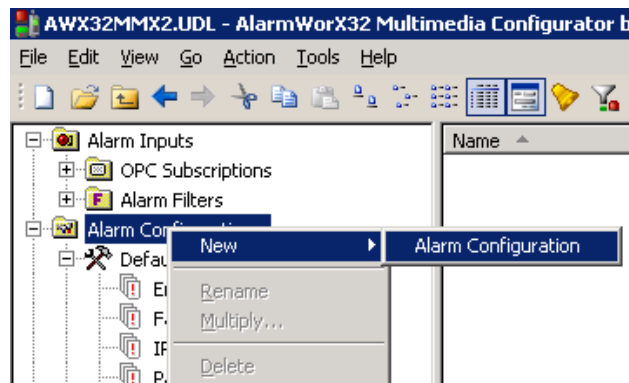


Figure L6.2.1 - Creating a New Alarm Configuration

2. Name the configuration “**Training Configuration**”. From the drop down list, choose the default **AlarmWorX32 Server** subscription that we edited previously, as shown in **Figure L6.2.2**.

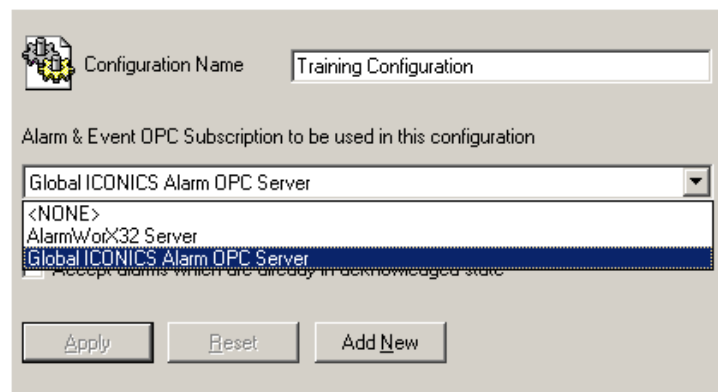


Figure L6.2.2 - Applying the OPC Subscription

3. Click **Apply** to commit the changes to the database.

- Recall that you need to link any configuration that's not named "Default" to a node configuration. Now that we created a new configuration, it should already be linked to the local node for running, as shown in **Figure L6.2.3**.

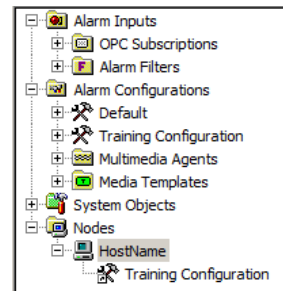


Figure L6.2.3 - Configurations Linked to the Local Node

- We no longer want the Default alarm configuration to run. We can delete it or disable it and keep the configuration for future references. We will disable it in this case by removing the connected subscription.
- Under Alarm Configurations in the tree control, select Default. From the drop down list in the right hand pane, select the subscription of <NONE>. Click **Apply**. Notice in the upper right hand pane that the configuration, as well as each action set within the configuration, now has a red cross over it, signifying that it cannot be used.

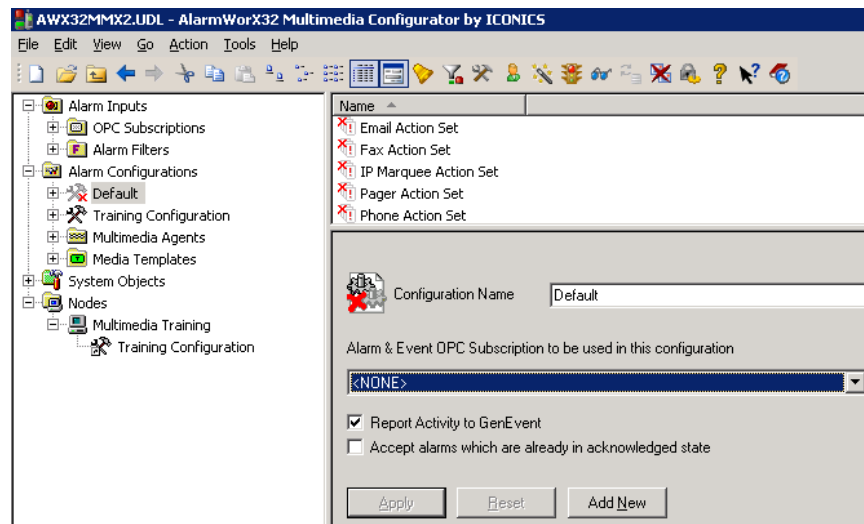


Figure L6.2.4 - Disabling the Default Configuration

6.3 Creating New Alarm Action Sets

We will now populate our new alarm configuration with action sets that will trigger based on our tank level alarms. We will want to set off the **Marquee** agent when either Tank A or B goes into alarm state (Lo or Hi), and play the **Sound** agent when the level in either Tank A or B specifically becomes too high. We will also describe how to send an email out with a delay of a minute if the Tank A and Tank B levels do not become normal from a state of Hi. Note: If you're in the Foxborough training center, you will not have access to an email server.

1. Select your new **Training Configuration** in the **Alarm Configurations** branch of the tree control. Right click and select **New → Alarm Action Set**.
2. Name the Action Set "**Tank A Level Lo**" and, from the **Alarm Filter to use** drop down, select the filter of the same name.
3. Configure an **Actions Loop** to **Repeat 2 time(s)** and choose **Stop Actions Conditions** of **Acknowledgement Received** and **Values Returned To Normal**. This configuration will force all actions to be repeated twice or until the alarm is acknowledged or returns to normal, whichever comes first. Apply the settings.
4. In the **Action Destination** column on the **on Alarm** row, click the first  button next to <NO ACTION> as shown in Figure L6.3.1.

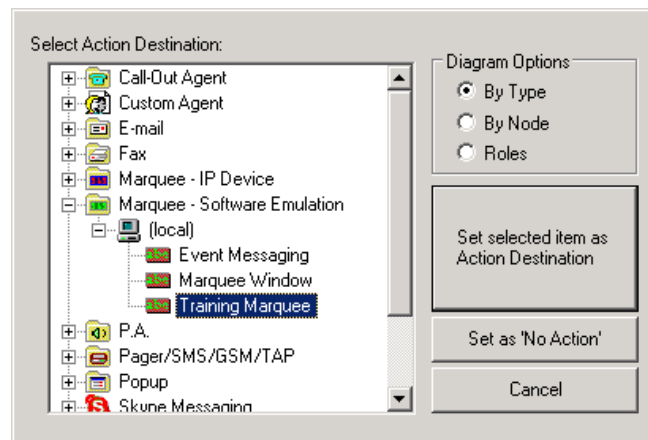


Figure L6.3.1 - Choosing an Action Destination

5. Expand **Marquee – Software Emulation → (local)** and select **Training Marquee**. This is the marquee agent configuration we created in the previous lab. Click the **Set selected item as Action Destination** button to choose this agent as the first action in this alarm action set.

6. The rest of the details for the action will be filled in automatically, so we can leave these settings as default. When finished, your **Tank A Level Lo** action set should look like Figure L6.3.2. Click **Apply** to commit the changes to the database.

Figure L6.3.2 shows the configuration for the 'Tank A Level Lo' action set. The 'Action Set Name' is 'Tank A Level Lo' and the 'Alarm Filter to use' is also 'Tank A Level Lo'. The 'Enable this Action Set' checkbox is checked. The table below lists the actions:

Action #	Action Type	Action Destination	Media Template	Delay, sec.	Ignore Schedule
1	On Alarm	Training Marquee	<Use Agent settings>	0	☒
	On Return to Normal	<no action>	n/a	n/a	n/a
	On Acknowledgement	<no action>	n/a	n/a	n/a

Below the table, the 'Stop Actions Condition' section has the following settings:

- ☒ Acknowledgement Received
- ☒ Values Returned To Normal
- ☐ Return To Normal AND Acknowledgement
- ☐ Receipt Confirmation

The 'Actions Loop' section has the following settings:

- ☐ Don't Loop at all
- ☐ Infinite Loop
- ☒ Repeat: 2 time(s)

Buttons at the bottom include 'Apply', 'Reset', 'New', 'Add Action', 'Delete Action', 'Move Up', and 'Move Down'.

Figure L6.3.2 - Completed Tank A Lo Action Set

7. Click the **New** button in the right-hand pane to create another new action set. Name this action set **Tank A Level Hi**. Apply the **Tank A Level Hi** alarm filter to this action set.
8. The Hi state of this alarm is more important than the Lo state, so configure the **Actions Loop** to be an **Infinite Loop** until the stop action conditions are met.
9. Change the **Stop Action Condition** to have just **Acknowledgment Received** checked. With this setting, all actions will be looped through in the configured order infinitely until the alarm has been acknowledged (even after it has returned to normal). Apply the changes.
10. Use the methods described in Steps 4 and 5 to select the **Training Marquee** action as the first **Action Destination**.
11. In the **Delay** column, input a delay of 30 seconds in action so that the marquee will play and the next action following will be delayed for 30 seconds.

12. Click on the **Add Action** button. Once again, in the **Action Destination** column on the **On Alarm** row, click the first  button next to <NO ACTION>. This time, choose **Sound/Text-To-Speech → (local) → Training Sound**, as shown in Figure L6.3.3. Click the **Set selected item as Action Destination** button to choose this agent as the first action in this second alarm action set.

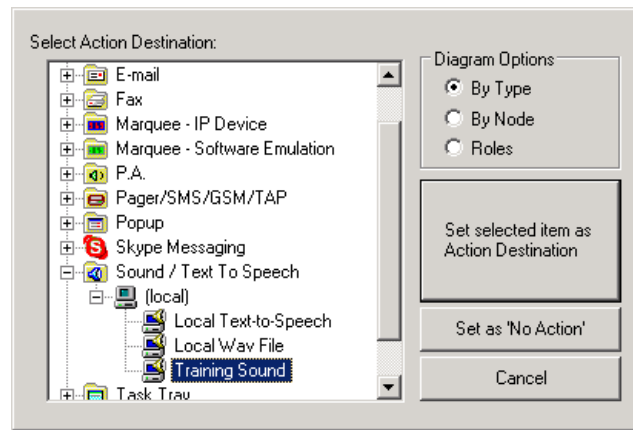


Figure L6.3.3 - Choosing the Sound Agent

13. Give a Delay of 5 minutes in this action.
14. Use the same process to add another action and associate the Training Email Agent that we have created previously.
15. Click **Apply** to commit the changes to the database. When you are finished, your configuration should look like **Figure L6.3.4**

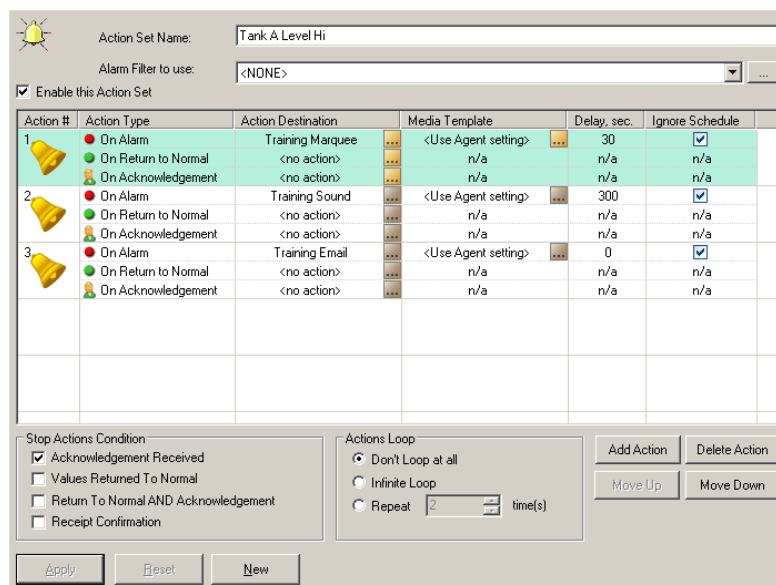


Figure L6.3.4 - Finished Tank A Hi Action Sets

16. We will create identical action sets for the Tank B alarm filters we created. Because they will be the same, with the exception of the name and filter in use, we can simply copy the action sets we've already created.
17. Under Alarm Configurations, select the **Training Configuration** branch of the tree control. Select both Tank A action sets in the right-hand pane using the SHIFT key. Right-click and choose **Copy**, as shown in **Figure L6.3.5**.

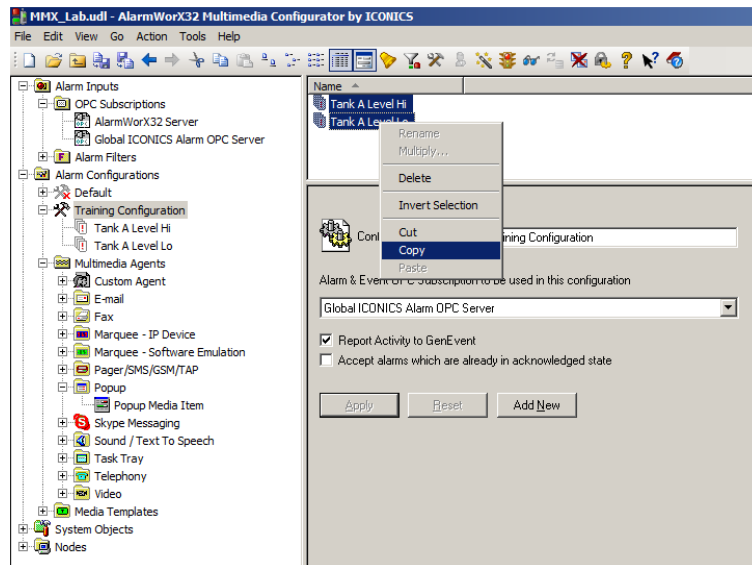


Figure L6.3.5 - Copying Action Sets

18. Now right-click on **Training Configuration** in the tree control and choose **Paste**, as shown in **Figure L6.3.6**.

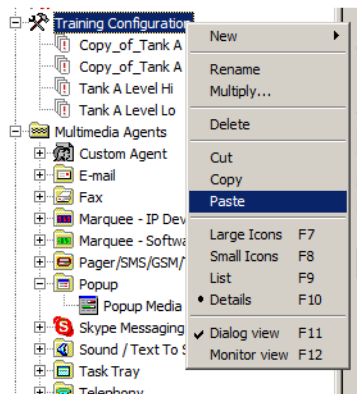


Figure L6.3.6 - Pasting Action Sets

19. You should now have four action sets, like in **Figure L6.3.7**.

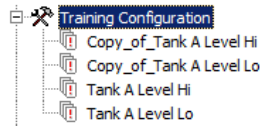


Figure L6.3.7 - All Four Action Sets

20. In the upper pane, double click on the **Copy_of_Tank A Level Lo** action set and rename it “**Tank B Level Lo**”. Also, apply the **Tank B Level Lo** alarm filter from the drop down list and click **Apply** to commit the changes to the database.
21. From the tree control, select the **Copy_of_Tank A Level Hi** action set and rename it “**Tank B Level Hi**”. Also, apply the **Tank B Level Hi** alarm filter from the drop down list and click **Apply** to commit the changes to the database.
22. You have successfully completed a full Multimedia Configuration from the ground up! Your final configuration should look like **Figure 6.3.8**.

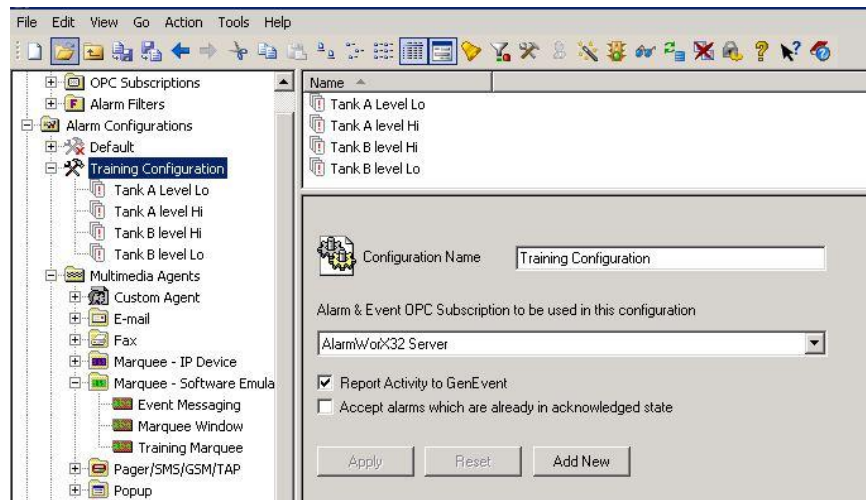


Figure L6.3.8: Final Configuration

Multimedia Options and Runtime

7

7.1 Objectives

At the end of this chapter, you will be familiar with the following concepts:

-  AlarmWorX32 Multimedia Options and where to configure them.
-  Activating a configuration and running the Multimedia Server.
-  Using the Runtime Monitor to trace the server's actions.

7.2 AlarmWorX32 Multimedia Options

To choose additional settings, you can select Tools → Options. This opens the Options Dialog box, shown in Figure 7.2.1.

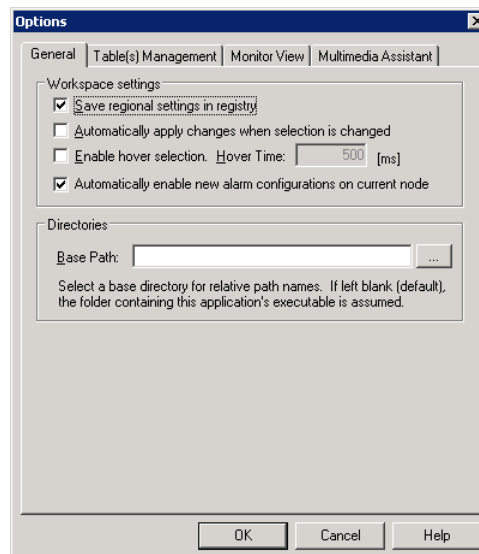


Figure 7.2.1 - AlarmWorX32 Multimedia Options Dialog

The General tab of the Options dialog contains the following options:

-  **Save regional settings in registry:** Checking this option saves regional configuration settings in the registry so that they are applied each time you start the configurator. This applies to the language settings as well as time and date settings.
-  **Automatically apply changes when selection is changed:** Checking this option allows changes to the configuration database to be saved each time you switch dialogs without clicking on the Apply button or being shown a message asking if you would like to apply changes.
-  **Enable hover selection:** Checking this option allows you to highlight an item by moving the mouse pointer over that item and keeping it there for a specified amount of time.
-  **Automatically enable new alarm configurations on current node:** If you check this option, when you create a new alarm configuration, the application will automatically add the current node to the Nodes folder with a link to the alarm configuration.
-  **Base Path:** Select a base directory for relative path names. Click the  button to choose a directory. If this field is left blank, it will use the default directory, which is the folder containing this application's executable (.exe)

The Table(s) Management tab, shown in Figure 7.2.2, controls how the Multimedia Server logs and stores data. This is the configuration for the amount of information that will be saved in your journal table.

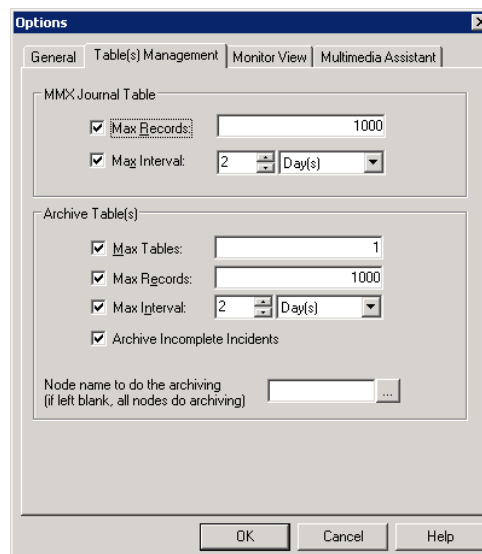


Figure 7.2.2 Table(s) Management in Options Dialog

The MMX Journal Table holds similar data shown in the Runtime Monitor. You can configure the archiving for this table in the options tab.

The Monitor View tab of the Options dialog box, shown in Figure 7.2.3, allows you to configure the settings for the Runtime Monitor. You have the options to select and update rate, the number of records displayed, and the alarm attributes displayed.

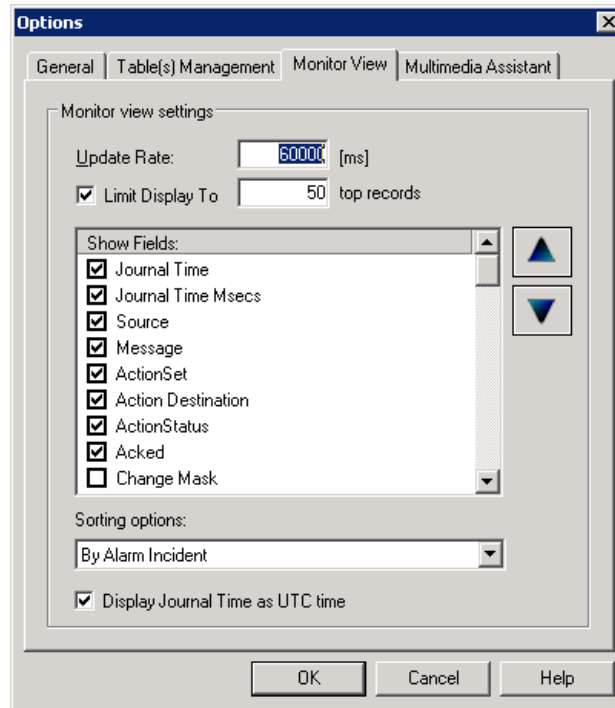


Figure 7.2.3 - Monitor View in Options Dialog

For additional help, you can consult the Multimedia Assistant at any time by selecting Multimedia Assistant from the Help menu. Follow the instructions provided by the Multimedia Assistant.

In the Multimedia Assistant tab of the Options dialog box, you can choose whether you want the Multimedia Assistant to speak or only to show text instructions.

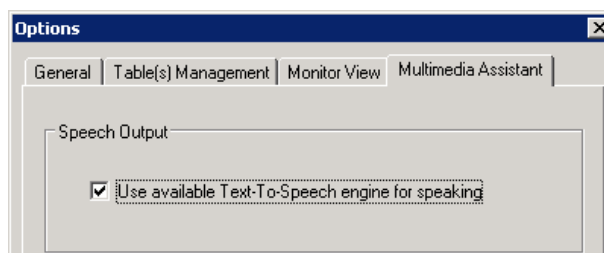


Figure 7.2.4 - Multimedia Assistant in options Dialog

7.3 Activating the Configuration Database

Once your alarm configuration is complete, you need to make sure that it is the active database. The database that is currently active is the one that the OPC server will use. To make the current database active, select File → Make Active from the configurator. If the Make Active selection is grayed out, then the current database is already the active Database.

Once you select Make Active, a dialog box will appear showing both the current active database and the database that you are currently editing. To set the editing database as the active one, click the Yes button.

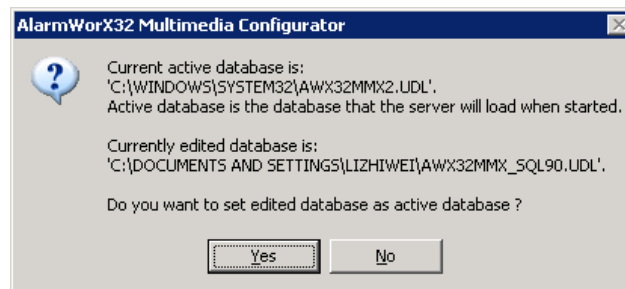


Figure 7.3.1 - Make Edited Configuration Database Active

You can update the server with your changes to the database while the server is running by clicking on the  “Update Server Data” button.

7.4 Starting the Multimedia Server

In order for the Multimedia Server to use the information in the configuration database, you must start the server and place it into Runtime mode. To start/stop the server, click the stoplight  on the toolbar, or select Action → Start Multimedia Server. To stop the server, click on the traffic light again.

You can also start/stop the Multimedia Server using GenTray or MonitorWorX. For more information, please refer to the GenTray Help documentation.

Please note that if you are using remote desktop (or any kind of remote connection), there is a chance that you will get a message saying that the Multimedia Server could not start. If you look at the Task Manager process list, however, you will notice that the multimedia server is started. We currently do not support the traffic light over a remote connection.

7.5 Runtime Monitor

When you start the Multimedia Server, you should verify that the server is connected to the configuration database. Use the Multimedia Runtime Monitor, show in Figure 7.5.1, to determine whether a connection has been established. The Runtime Monitor enables you to view the activities of the Multimedia Server during runtime mode. You can display the monitor by selecting View → Monitor View or click on the  “Monitor View” button on the toolbar. The monitor will be displayed at the bottom of the screen. Check the monitor to make sure the Multimedia server is receiving alarms.

Journal Time	Journal Time Msecs	Source	Message	ActionSet	Action Destination	ActionStatus	Acked
2/7/2007 3:17:25 PM	156	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	Agent Done - Passed	No
2/7/2007 3:16:57 PM	890	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	Agent Cancel - Passed	No
2/7/2007 3:16:57 PM	875	MMXRadiationLevel	Radiation Level is normal	/Default/Software Marqu...	Event Messaging	NORMAL	No
2/7/2007 3:16:53 PM	890	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	Invoke Agent - Passed	No
2/7/2007 3:16:53 PM	875	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	ALARM	No
2/7/2007 3:16:24 PM	187	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	Agent Done - Passed	No
2/7/2007 3:15:59 PM	953	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	Agent Cancel - Passed	No
2/7/2007 3:15:59 PM	921	MMXRadiationLevel	Radiation Level is normal	/Default/Software Marqu...	Event Messaging	NORMAL	No
2/7/2007 3:15:55 PM	468	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	Invoke Agent - Passed	No
2/7/2007 3:15:55 PM	218	MMXRadiationLevel	Radiation Level is too high	/Default/Software Marqu...	Event Messaging	ALARM	No
2/7/2007 3:15:48 PM	125	MMXRadiationLevel	Radiation Level is normal	/Default/Software Marqu...	Event Messaging	NORMAL	No

Figure 7.5.1 - Multimedia Runtime Monitor

The monitor lets you know what is going on in an active database and how the Multimedia Server is processing the alarms and the multimedia agents that you have configured. By default, the monitor displays the Journal Time, Journal Time Msecs, Source, Message, Action Set, Action Destination, Action Status, and Acked columns for the selected actions and alarms. You can choose which action sets and alarms to monitor by selecting from the Action Set to Monitor and Alarm Tags drop-down lists. Each incident for a particular agent is grouped by color.

There are a few Action Status Conditions that you would see during normal operations:

-  **NORMAL:** The alarm is in normal state.
-  **ALARM:** The alarm is in alarming state.
-  **Invoke Agent:** Indicates that the Multimedia Server has started the agent you have indicated to use in the Alarm Action Sets.
-  **Agent Done:** That agent has completed its task of trying to send out the indicated alarms.
-  **Agent Cancel:** The agent is closed and out of the process list.
-  **ACK:** The alarm has been acknowledged.

 **ACK NORMAL:** The alarm has been acknowledged and returned to the normal state.

There may be other Action Conditions that you will encounter, but the above are the most common ones that you will see. If you ever have any questions regarding an Action Condition, please contact your local support personnel.

There are four buttons in the runtime monitor, as show in Figure 7.5.2.



Figure 7.5.2 - Function Buttons for Runtime Monitor

 **Change Journal Sorting:** Allows you to change the way the Monitor groups/sorts the alarms. The default is sorting by Journal Time. The Journal Records Sorting dialog is shown in Figure 7.5.3. There are seven default sorting options that we have configured for you. You can create your own, if you wish, by clicking on the “Add New” button.

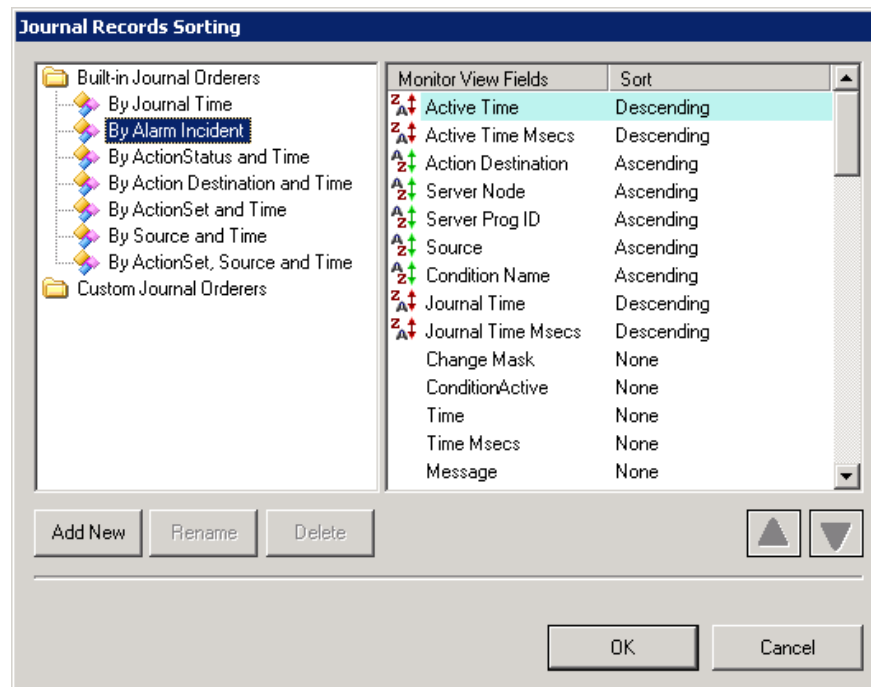


Figure 7.5.3 - Journal Records Sorting

 **Refresh:** The refresh button manually refreshes the monitor view, bringing in new records. You may also increase the refresh rate in the Options dialog box to refresh the monitor view based on a specified interval. This button is only available when the Multimedia Server is in Runtime.

-  **Delete:** This deletes all records from the journal table. This does not delete the records that have been archived. It will only delete records in the current journal table. This button is only available when the Multimedia server is NOT running.
-  **Export:** Clicking this button will export the journal table to a text file. It will open the Export Multimedia Journal dialog box, where you can specify the directory path and file name for the text file. Click the  button to browse for a directory. You also have the option to export the archived journal table as well.

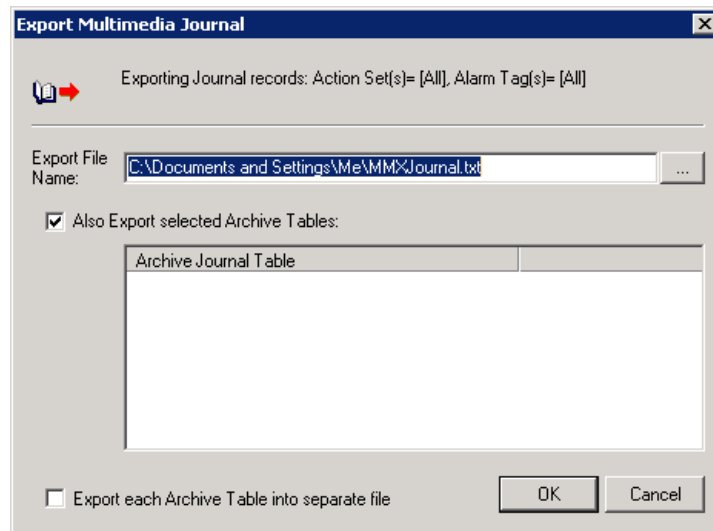


Figure 7.5.4 - Export Multimedia Journal

Lab: Running the Multimedia Server L7

7.1 Lab Overview

Now that you have created a multimedia configuration we will put the Multimedia Server into Runtime in order to test this configuration. You use the displays that you have created from the GENESIS32 standard Training class (if you did not attend the class the instructor will provide you with displays) to Monitor which action sets should be triggered. Furthermore, we will use the Multimedia Runtime Monitor to confirm that the server is functioning properly. You will see the marquee, hear the sound, and receive an email (only if the email test in lab5 was successful) about your Tank A and Tank B Lo and Hi alarms.

Estimated time to complete this lab: 15 minutes.

7.1.1 Task Checklist

In this lab, you will complete the following tasks:

- Use an Alarm Viewer ActiveX control to monitor local alarms.
- Start the Multimedia Server.
- Experience the agents that you have created in the previous lab in action.
- Use the Output Monitor to track the actions of the Multimedia Server.

7.1.2 Support Files

To complete this lab, you will need the following support files:

- AlarmWorX32 Multimedia Configuration Database
- ACMEPillMachine3.gdf
- AlarmServer.mdb

7.2 Starting the Multimedia Server

There are three ways that you could start the Alarm Multimedia Server. In Lab 2, we used the traffic light in the Multimedia Configurator to start the server. You can also start the Multimedia Server via GenTray or MonitorWorX. In this lab, we will focus on starting the server using MonitorWorX.

1. In your Windows task tray, in the lower right of the Windows desktop, you should see an icon that resembles two up arrows  or a magenta triangle. Click on whichever is accessible and launch GenTray. If you don't see the icon in your task tray, go to **Start → Programs → ICONICS Tools → GenTray**. You should see the icon in your task tray afterwards.
2. As shown in Figure L7.2.1, select GenTray → AlarmWorX32 → Multimedia Server → Start.

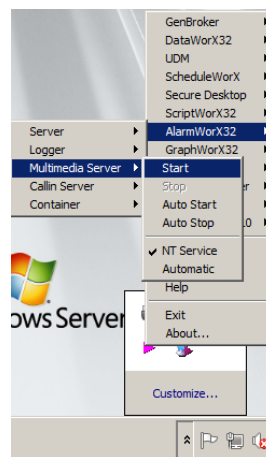


Figure L7.2.1 - MonitorWorX

3. Start a GraphWorX32 session and open your C:\training\ACMEPillMachine.gdf display. Start filling/draining your Tank A or Tank B. Once the tank level reaches the state of generating either a Lo or Hi alarm (You can set 15 for either Tank A or Tank B to test the Lo Level alarm, and set 85 to test the Hi Level alarm), you should see your marquee scrolling and, depending on which alarm, you may even hear your siren and get an email.

Note: If you have gone through the GENESIS32 training earlier, you should have set up limit alarm values in Lab 6. It is highly recommended to go back and check the LoLo, Lo, Hi and HiHi limit alarm values that you have set up in the alarm notification, because these values will decide when the alarm should go off.

7.3 Testing the Configuration

1. In the Multimedia Configurator, click the  button on the Configurator toolbar to open the **Monitor View**, if it is not already open.
2. Click the  button at the bottom of the Monitor View window, in order to clear the journal table and monitor view of all events. If the Multimedia Server is already running you will need to stop it first in order to click on the button.
3. Click **Yes** to confirm the deletion of all entries, and then click **OK** to acknowledge that the entries have been deleted.
4. Browse to your **C:\ Training** directory and open your **ACMEPillMachine.gdf** file.
5. Make sure that your Window Display Properties do not have **Always on Top** set, and put the display into Runtime. The display will look like **Figure L7.3.1**.
6. When Tank A and Tank B (the two double tanks on the bottom) are below 20, their Lo alarms will be active. When they are above 80, their Hi alarms will be active. Use this information to trigger both types of alarms for both tanks to test your Multimedia configuration. Remember, the marquee should be triggered for both types of alarms for both tanks. The sound agent will be triggered if either tank goes above 80. And if the alarm is not acknowledged after five minutes, an email will be sent out.

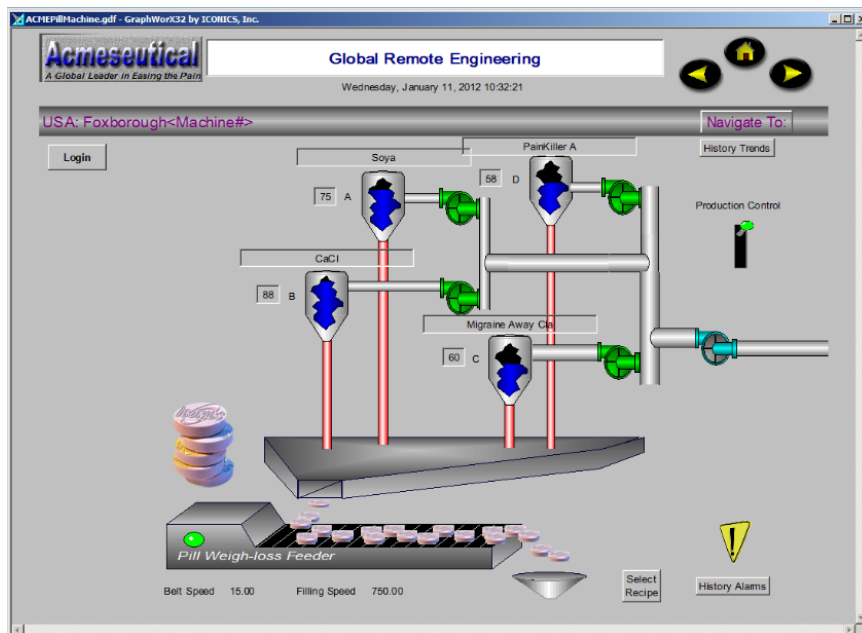


Figure L7.3.1 - ACMEPillMachine Screen

7. Fill the top tanks by clicking on the red valves and opening them. Empty the top tanks by clicking on the pumps and starting them (they will not run if there is no water in the top tanks to empty).
8. You can also monitor the alarms occurring by clicking the **Alarm Viewer** button. You can always return to this screen by clicking the **ACMEPillMachine** button.
9. Test your stop action conditions to be sure that the agents repeat as they should until the stop action conditions are met (or until the number of repetitions run out), and that the actions stop from being triggered when the conditions are met.
10. You can acknowledge an alarm from the marquee agent by right-clicking on the marquee and choosing **Acknowledge**, as shown in **Figure 7.3.2**.



Figure L7.3.2: Acknowledging from the Marquee

NOTE: You can always still acknowledge an alarm from the Alarm Viewer, and the Multimedia Server will see the acknowledgement.

System Objects

8

8.1. Objectives

At the end of this chapter, you will be familiar with the following concepts:

-  Defining roles for individuals who receive alarms.
-  Setting up personal and group schedules for alarm notification.

8.2. Overview of Schedules and Roles

The scheduling feature in AlarmWorX32 Multimedia allows you to configure the application so that it will only send out an alarm message to a particular person only if that person is available according to the schedule. If you wish to use scheduling, you must configure schedules before setting up agents or alarm action sets. Two types of schedules can be added to the System Objects → Schedules folder on the tree control of the Multimedia Configurator screen: Group Schedules and Personal Schedules. You can choose to use only personal schedules, or a combination of group and personal schedules. There are two basic ways to use group schedules:

-  You can have a group schedule that has a configured time calendar, and every person's schedule under that group follows that time calendar. Use this method when each person will have the same basic schedule. For example, this method is appropriate if your group schedule will be for a specific time shift during which every person works the same times.
-  You can also have a group schedule that does not have a configured time calendar, but each personal schedule has its own different time calendar. Use this method when each person has a unique time schedule. Once you set up the time calendars, you can add or exclude specific dates and times from any group or personal schedule.

Roles allow you to configure an alarm action set so that an alarm message will be sent to the person who is on schedule from a list of configured people. For example, if you want to call a shift supervisor when a certain alarm appears, you can setup a role called “Shift Supervisors” and assign it to an action set. Then when the alarm occurs triggering the action set, the alarm message will be sent to the shift supervisor that is on schedule.

If more than one person belongs to a role, alarm messages will be sent to all persons scheduled for the role. Personal schedules (described earlier) allow for the configuration of one or more multimedia agents for each person in the role. If the people scheduled for the role use different multimedia agents, you can specify which multimedia agent will be used to notify each person.

8.3. *Configuring Roles*

Role creation is very simple, as it is only a matter of creating a role and giving it a name (and description if desired).

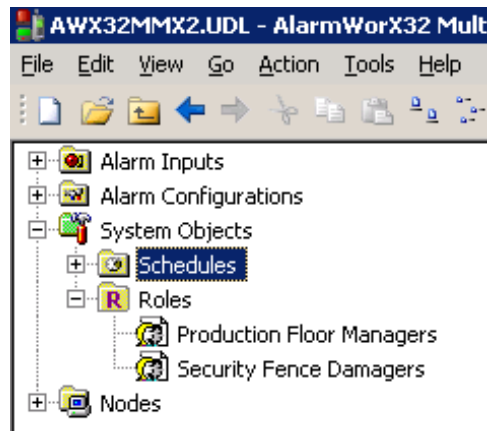


Figure 8.3.1 - Roles in the Configurator

To use a role, you must do the following:

1. Assign the role to corresponding multimedia agents.
2. Assign these personal schedules to multimedia agents.
3. Assign the role as an Action Destination in an alarm action set, if you want to send alarm messages to the role.

When an alarm triggers an action set with a role configured, all schedules with the role assigned will be found, and the system will trigger all agents with those schedules assigned. This is where escalation becomes very useful. You could have an action set with three roles listed in the action set (Operators, Shift Supervisors, and Managers) with delays in between each. When the action set is triggered, the Operators on schedule will be notified of the alarm first. If the stop action conditions are not met before the delay expires, then the Shift Supervisors on schedule are notified. If the stop action conditions are still not met before this new delay expires, then the managers are notified.

8.4. *Configuring Schedules*

Group and Personal schedules have the same configuration options, shown in Figure 8.4.1:

-  Recurring Period Configurations
-  Daily Recurrence Pattern
-  Weekly Recurrence Pattern
-  Monthly Recurrence Pattern
-  Yearly Recurrence Pattern
-  Included and Excluded Periods
-  Calendar Preview

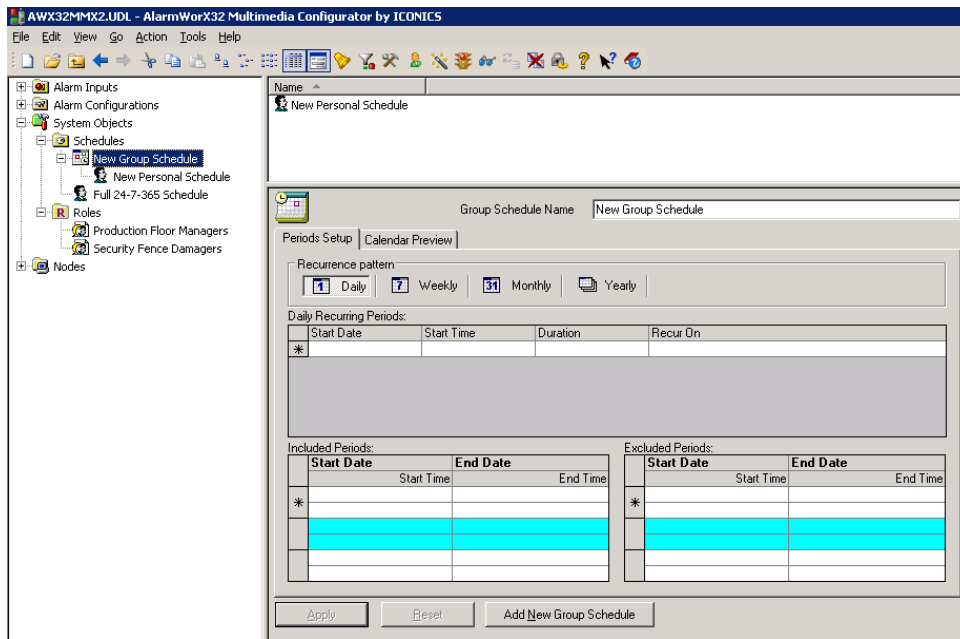


Figure 8.4.1 - Schedule Configuration

The daily, weekly, monthly, and yearly recurrence patterns and period options allow you to create a recurring schedule of virtually any pattern needed. The included and excluded period fields allow for configuring exceptions, such as vacation time, shift switching between employees, etc.

The Calendar Preview option allows you to visualize the created schedule in a month calendar view, shown in Figure 8.4.2. The colored blocks represent scheduled times.

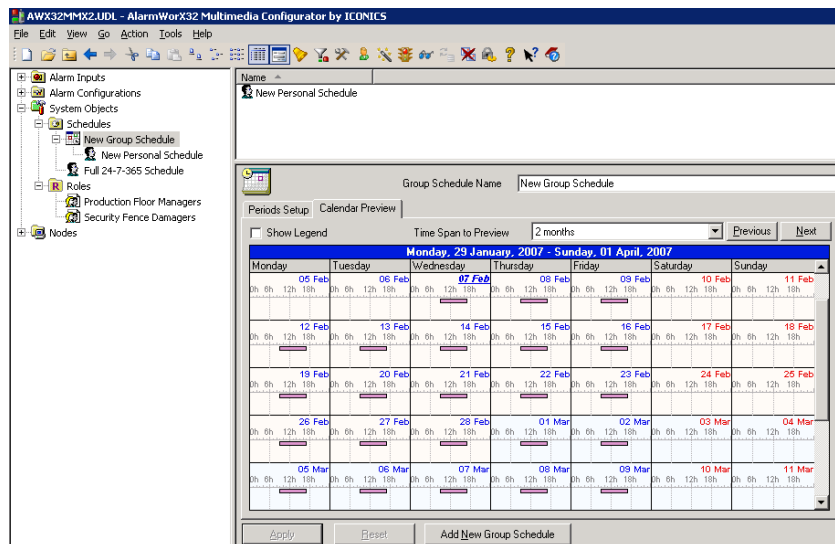


Figure 8.4.2 - Schedule Calendar Preview

Lab: Using Roles and Schedules

L8

8.1. Quick Lab Overview

Now that we have created a complete Multimedia configuration, it is time to see how we can make that configuration more advanced by adding scheduling to it. Scheduling allows our agents to be smarter and only trigger if they are meant to inform someone who is currently on schedule. By default, Multimedia includes an example Full schedule. We will demonstrate agents' on and off schedule using this example. In addition to the base scheduling, we will work with Roles in this lab. You will configure some personal schedules for users and assign them to different roles. You will then configure some action sets that call these roles in an escalating manner, so you can see the functionality of schedules with escalating roles.

Estimated time to complete this lab: 1 hour.

Lab: Using Roles
and Schedules

8.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Implement scheduling with multimedia agents.
- Create schedules and roles.
- Learn how to call upon roles in an escalating manner, putting roles and schedules to their most powerful use.
- Test your advanced configuration in Runtime.

8.1.2 *Support Files*

To complete this quick lab, you will need the following support files:

- MMX_LAB_801 configuration database
- ACMEPillMachine.gdf
- TankLevelSimulation.mdb
- AlarmServer.mdb

8.2 *Demonstrating Basic Scheduling*

A **Full 24-7-365 Schedule** is provided as an example with every new configuration database. This schedule is simply configured so that any agent it is applied to will be on schedule at all times. In order to demonstrate the most basic implementation of scheduling, we will create a fully exclusionary schedule as well, and see the difference in execution. This exercise is purely for demonstration purposes, and is not a realistic configuration.

1. We will start by making a copy of the **Full 24-7-365 Schedule**. Browse to **System Objects → Schedules** in the tree control, right-click on **Full 24-7-365 Schedule** and choose **Copy**.
2. Right-click on the **Schedules** branch of the tree control, and choose **Paste**. A new schedule named **Copy_of_Full 24-7-365 Schedule** will be created.
3. Edit the name of the new schedule to be “**Full 24-7-365 EXCLUDE TODAY**”.

- In the **Excluded Periods** region of the configuration page, click inside the first field under the **Start Date/Start Time** section. Today's date at 12:00 AM will appear in red, as shown in **Figure L8.2.1**. The **End Date/End Time** will also be filled in automatically, as one day later.

Personal Schedule Name: Full 24-7-365 EXCLUDE TODAY

Periods Setup | Calendar Preview

Recurrence pattern: ☒ Daily ☐ Weekly ☐ Monthly ☐ Yearly

Daily Recurring Periods:

Start Date	Start Time	Duration	Recur On
3/24/2006	12:00:00 AM	1d:00h:00m	☐ Every Weekday ☒ Every 1 day(s)

Included Periods:

Start Date	Start Time	End Date	End Time
*			

Excluded Periods:

Start Date	Start Time	End Date	End Time
2/7/2007	12:00:00 AM	2/8/2007	12:00:00 AM

Buttons: Apply, Reset, Add New Personal Schedule

Figure L8.2.1 - Selecting the Excluded Period

- Click **Apply** to commit the changes to the database.
- You have just created a schedule that, when applied to an agent, would allow the agent to play (if triggered by an alarm) at all times except today. Exclusion periods are often used to temporarily alter schedules for exceptions, such as vacations or sick days.
- The two schedules for this demonstration example will allow us to see how agents function when they are triggered while on and off schedule. We will apply the two schedules to two different sound agents to test this.
- Expand **Alarm Configurations** → **Multimedia Agents** → **Sound/Text to Speech** in the tree control and select **Local Wav File**. You should see that there is no schedule applied.

9. Now select our **Training Sound** agent configuration from the tree control and select our new **Full 24-7-365 EXCLUDE TODAY** schedule from the drop-down list, as shown in **Figure L8.2.2**. Click **Apply** to commit the changes to the database.

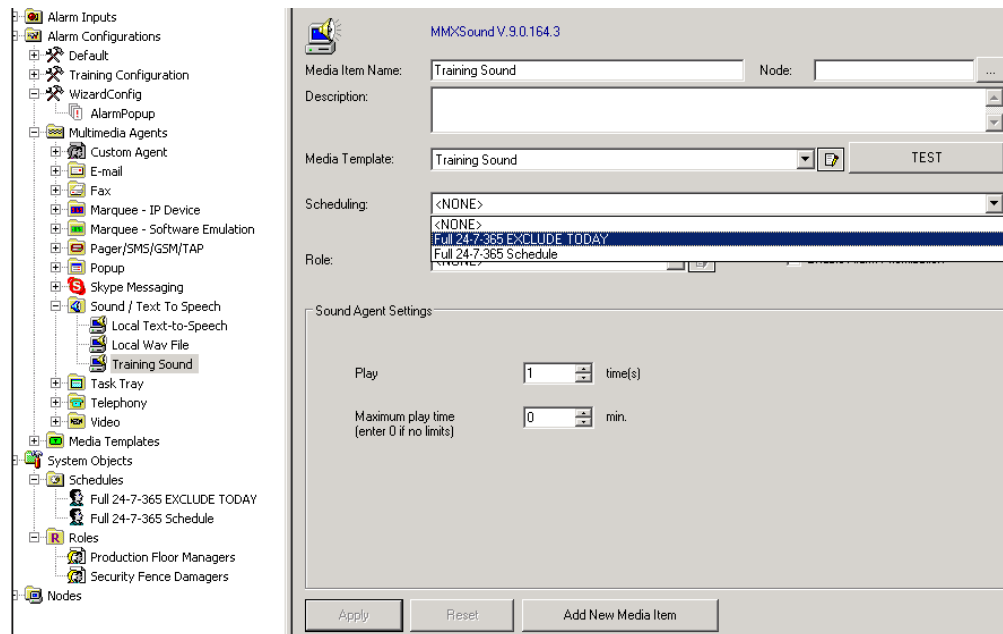


Figure L8.2.2 - Applying a Schedule to an Agent

10. Browse to Alarm Configurations → Training Configuration in the tree control. Right-click on Training Configuration, and choose New → Alarm Action Set.
11. Name the action set “Schedule Test”, and choose the Tank C Level Hi alarm filter.
12. Click inside the first row of the Action Destination column, and then click the ... button to select an action.
13. In the Select Action Destination window, browse to Sound/Text To Speech → (local), select Local Wav File, and click Set selected item as Action Destination to return to the Configurator.
14. Check the Ignore Schedule option, since in this action set we want scheduling to be considered when the action set is triggered.
15. Add another action in this action set by clicking on the Add Action button. Click on the ... button in the first line of the second action and this time browse to select the Training Sound action set. Uncheck the Ignore Schedule option.

16. We will leave looping off for this example, so the **Stop Action Conditions** do not matter, since there is no delay. This means that both actions will be invoked at the same time.
17. When finished, your action set configuration should look like **Figure L8.2.3**. Click the **Apply** button to commit the changes to the database.

Action Set Name: Schedule Test

Alarm Filter to use: Tank C Level Lo

☒ Enable this Action Set

Action #	Action Type	Action Destination	Media Template	Delay, sec.	Ignore Schedule
1	On Alarm	Local Wav File	<Use Agent setting>	0	☒
	On Return to Normal	<no action>	n/a	n/a	☐
	On Acknowledgement	<no action>	n/a	n/a	☐
2	On Alarm	Training Sound	<Use Agent setting>	0	☐
	On Return to Normal	<no action>	n/a	n/a	☐
	On Acknowledgement	<no action>	n/a	n/a	☐

Stop Actions Condition:

- ☐ Acknowledgement Received
- ☒ Values Returned To Normal
- ☐ Return To Normal AND Acknowledgement
- ☐ Receipt Confirmation

Actions Loop:

- ☒ Don't Loop at all
- ☐ Infinite Loop
- ☐ Repeat: 2 time(s)

Buttons: Add Action, Delete Action, Move Up, Move Down, Apply, Reset, New

Figure L8.2.3 - Creating an Action Set with Scheduling

18. Temporarily disable all other action sets by choosing them one at a time, unchecking **Enable this Action Set**, and clicking **Apply**. When complete, your tree control should show all action sets but the **Schedule Test** action set disabled, as shown in **Figure L8.2.4**.

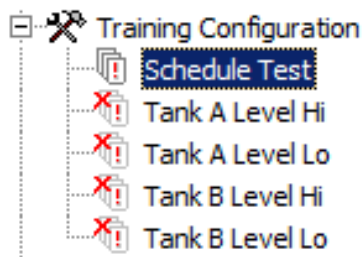


Figure L8.2.4 - All Other Action Sets Disabled

19. Your Multimedia Server should still be running from the last lab. If it is not, then start it either from GenTray or by using the stop light button on the Multimedia Configurator Toolbar. If the server is already running, then you should click the **Update Server Data** button  on the toolbar to allow the changes to take effect.

20. Trigger this new action with your **ACME Pill Machine** GraphWorX32 display by forcing Tank C to fill using the valves and pumps. You should only hear the **Local Wav File** action play (a few .wav files). You should not hear the **Training Sound** action play.
21. Return to the Multimedia Configurator and enable the **Monitor View** with the  button if it is not already enabled. From the **Action Set to monitor** drop-down list, choose **/Training Configuration/Schedule Test** in order to filter out all entries not associated with this action set.

Source	Message	ActionSet	Action Destination	ActionStatus	Acked
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	Local Wav File	Agent Done - Passed	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	Local Wav File	Invoke Agent - Passed	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	Local Wav File	ALARM	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	<no action>	NotifyOnRTN	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	<no action>	NotifyOnACK	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	Training Sound	Invoke Agent - Not Scheduled	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	Training Sound	ALARM	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	<no action>	NotifyOnRTN	No
Foxborough Machine 1 Mixer C Level	The level in Mixer C is getting low	/Training Configuration/Schedule Test	<no action>	NotifyOnACK	No

Figure L8.2.5 - Monitor View

22. You should see that the alarm occurs, and both Action Destinations are called upon, but only the Local Wav File action is invoked, as it was on schedule and the Training Sound was not.

8.3 Creating Roles and Schedules

The second way that scheduling can be implemented is through the use of **Roles**. This is more common, as it allows for escalation up the line of responsibility. In this example, we are going to create roles based on an example group of employees of two groups with different responsibilities: Operators and Engineers.

We will also assign a few schedules to these roles. We will need to make schedules for the following users, who have the following responsibilities:

- Fred: Operator
- Betty: Operator
- Barney: Operator, Engineer
- Wilma: Operator, Engineer

For this example, consider the situation where all operators are informed by the marquee or popup agent, and all engineers are informed by the sound agent. We will configure individual schedules for each user, and then apply them to the agent of choice for each user. In the case the one user is to be informed in two different ways depending on the time of day, two schedules need to be made for that user.

1. Expand the System Objects branch in the tree control of the Multimedia Configurator. Right-click on Roles and select New → Role.
2. Name the new role “Operators” and click Apply.
3. Use the same method to create a second role named “Engineers”.
4. Right-click on the Schedules branch of the tree control, and choose New → Personal Schedule. Name this schedule “Fred Marquee”.

- Choose a Daily recurrence pattern, and click inside the first Start Date field. The row will automatically be populated with today's date, and some other default settings.

Personal Schedule Name: Fred Marquee

Periods Setup | Calendar Preview

Recurrence pattern: ☒ Daily ☐ Weekly ☐ Monthly ☐ Yearly

Daily Recurring Periods:

Start Date	Start Time	Duration	Recur On
2/7/2007	8:00:00 AM	12h:00m	☐ Every Weekday ☒ Every 1 day(s)
*			

Included Periods:

Start Date	Start Time	End Date	End Time
*			

Excluded Periods:

Start Date	Start Time	End Date	End Time
*			

Buttons: Apply, Reset, Add New Personal Schedule

Figure L8.3.1 - Configuring Schedules

- Edit the **Start Time** to be **8:00 AM**, set the **Duration** to **12 hours**, and set it to **Recur Every 1 day**.
- When finished, the schedule should look similar to **Figure L8.3.1**. Click **Apply** to commit the changes to the database.
- Using the same method, create the following additional schedules with the following settings:

Table L8.3.1 - Schedule Configurations

Name	Recur Pattern	Start Time	Duration	Recur
Betty Popup	Dailey	8:00 PM	12 hours	Every 1 day
Wilma Sound	Dailey	5:00 AM	12 hours	Every 1 day
Barney Sound	Dailey	5:00 PM	12 hours	Every 1 day

9. When finished, you will have six schedules in the **Schedules** branch of the Configurator tree control, as shown in **Figure L8.3.2**.

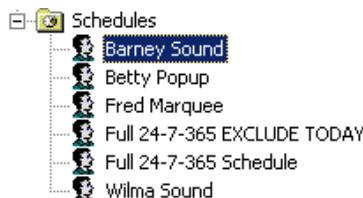


Figure L8.3.2 - Schedules Completed

8.4 Assigning Schedules to Agents

Now that schedules are created, they need to be applied to so the agents will fire. In this example, operators will first be informed via their preferred workstation agent. If the engineers are informed, they will be informed via the sound agent so they are made aware no matter where they are in the building (although each engineer may prefer a different media template).

1. Expand Alarm Configurations → Multimedia Agents and right-click on Marquee to choose New → Media Item. Name the new agent “Fred Marquee”.
2. Leave the Node to use Marquee on field blank, so it will play on the local node, and apply the Training Marquee template.
3. Choose the Fred Marquee schedule from the Scheduling drop-down list. This applies the Fred Marquee schedule to this agent, so this agent will never play unless it is during Fred’s shift defined in that schedule.
4. Select Operators in the Role dropdown list. This will categorize the agent in the Operators role.

5. Enter an Acknowledge Code of “123”, and click Apply to commit the changes to the database. When you are complete, the new agent configuration should look like Figure L8.4.1.

MMXMarquee V.9.00.164.4

Media Item Name: Fred Marquee Node: ...

Description:

Media Template: Training Marquee TEST

Scheduling: Fred Marquee

Role: Operators ☐ Enable Alarm Prioritization

Marquee Agent Settings:

Acknowledge Code: 123

Play 1 time(s)

Maximum play time (enter 0 if no limits) 0 sec.

Figure L8.4.1 - Configuring Fred's Marquee Agent

6. Repeat this method to create three additional new multimedia agent configurations, with the settings outlined in **Table L8.4.1**.

Table L8.4.1 - New Scheduled Agent Configurations

Agent Type	Name	Template	Schedule	Role	Node
Popup	Betty Popup	Default Pop-up	Betty Popup	Operators	<blank>
Sound/Text-To-Speech	Wilma Sound	Training Sound	Wilma Sound	Engineers	<blank>
Sound/Text-To-Speech	Barney Sound	Default Sound Speech	Barney Sound	Engineers	<blank>

- When finished, you should have four new agents, along with all the others you have created in this lab, as shown in **Figure L8.4.2**.

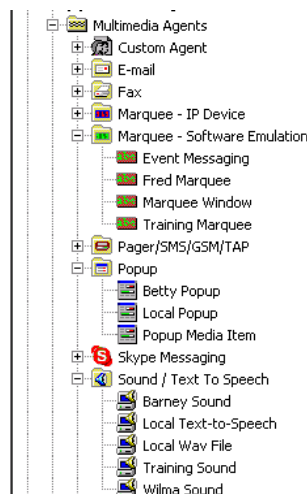


Figure L8.4.2 - Completed Scheduled Agents

8.5 Assigning Roles to Action Sets

When using the Roles feature of Multimedia scheduling, action sets are set up differently than what we have previously done. Instead of triggering agents directly, roles are called. When a role is called, all schedules assigned to that role are checked to determine which of them are on schedule at the time. Once the schedules are checked, all agents on schedule (in that role) are triggered.

- Start by selecting **Alarm Configurations → Training Configuration → Schedule Test** from the tree control, and uncheck the **Enable this Action Set** option, in order to disable it. Click **Apply** to commit the changes to the database.
- Right-click on **Training Configuration** in the tree-control, and choose **New → Alarm Action Set**. Name this new action set “**T A HI**”. This will act as our previous **Tank A HI** action set, but will be based on scheduling and be able to escalate through roles as well.
- Select the **Tank A HI** alarm filter in the **Filter to use** drop-down list.
- Click inside the first row of the **Action Destination** column, and click the  button to browse for an Action Destination.

- In the Select Action Destination dialog, select Roles in the Diagram Options section, as depicted in Figure L8.5.1. Click on Operators and then click the Set selected item as Action Destination button.

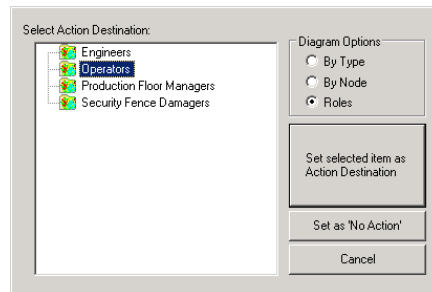


Figure L8.5.1 - Selecting a Role

- Give this action destination a delay of **2 minutes**, and make sure you uncheck the **Ignore Schedule** check box, since we want scheduling to be taken into consideration.
- Add a second action destination for the **Engineers** role. This way, if the operators on schedule do not remedy the alarm after 2 minutes, then the engineers on schedule will be informed.
- Again, uncheck the **Ignore Schedule** option. For this action, the delay doesn't matter because we will not configure looping.
- Finally, set the **Stop Action Condition** to **Acknowledgement Received** and **Values Returned to Normal**. When finished, the new action set should look like Figure L8.5.2. Click **Apply** to commit the changes to the database.

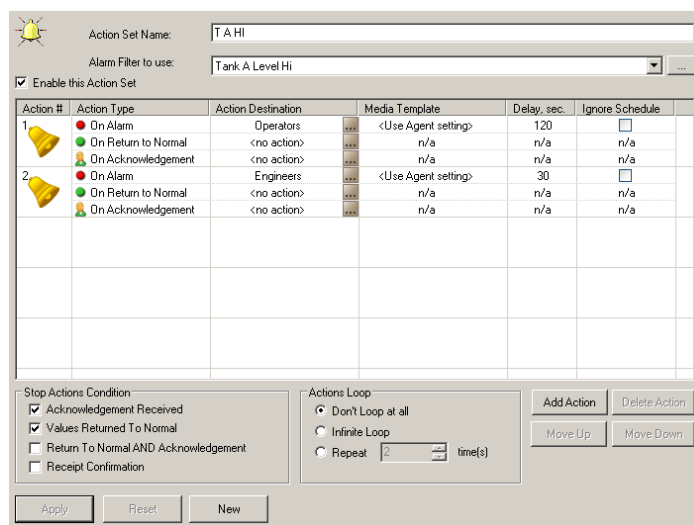


Figure L8.5.2 - New T 5 Hi Action Set

10. Repeat this method to create three more action sets, with the configuration settings outlined in **Table L8.5.1**. The action destination, stop action condition, and actions loop settings should be exactly the same for all of these action sets.

Table L8.5.1 - Action Set Configurations

Name	Filter
T A LO	Tank A LO
T B HI	Tank B HI
T B LO	Tank B LO

8.6 Testing the Configuration

You now have a complete Multimedia configuration, based on scheduling and roles. We can now test the configuration in the same way we did in the last chapter.

1. Open the ACMEPillMachine.gdf display from your C:\Training directory. You should have a screen resembling the one in Figure L8.6.1.

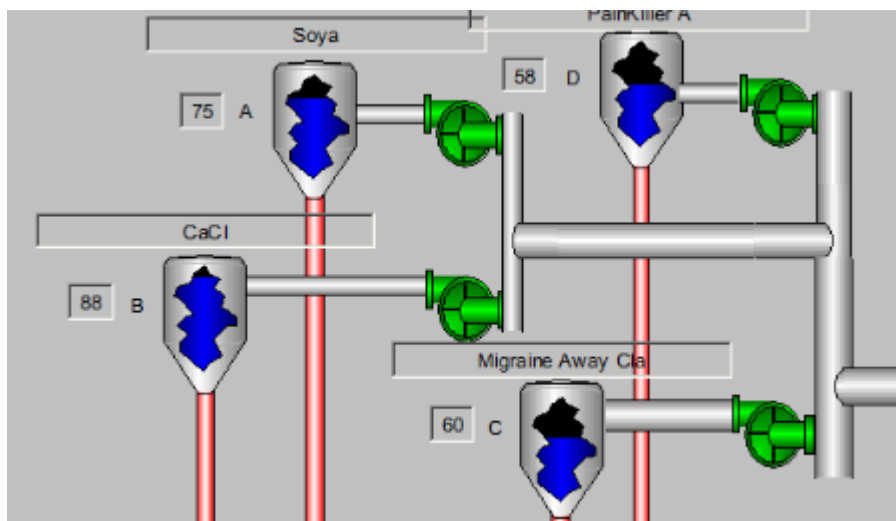


Figure L8.6.1 - ACMEPillMachine.gdf Screen

2. Use this screen in the same way you did in the last chapter to test your configuration. Trigger one of the agents by making either tank A or tank B be too low or too high.

3. When a Hi or Lo alarm occurs for either tank A or tank B, all operators on schedule will be informed first, by their preferred agent. During the day, **Fred's Marquee** will be played right away, with the **Training Marquee** template. During the night, **Betty's Popup** will be played.
4. If the operator does not acknowledge the alarm, or the alarm does not return to normal, then the engineers on schedule will be informed by their preferred agent. During the day, **Wilma's Sound** agent with the **Training Sound** template will be played. During the night, **Barney's Sound** agent will play with the **Default Sound Speech**.
5. You will want to test the situation both by meeting the stop action conditions before the **Engineers** role is called, as well as the situation where you do not, to confirm that it works properly.

Appendix1: Using the Configuration Wizard

A1

A.1. Key Steps to Creating a Configuration

As you have experienced in the previous chapters, creating a functional Multimedia configuration requires setting up many different parts. From creating filters, adding subscriptions in the Alarm Inputs to Linking the configuration to a particular node, all steps are crucial. The configuration may not work as expected if any of the steps are missed or if any components are missed configured.

Although it may seem that there are many steps involved, it actually only involves four steps: the Where, How, What and When. As long as the answers to the four steps are clear to the Multimedia server, your configuration should work. If you ever find yourself stuck while configuring the Multimedia Server, stop to ask yourself the following questions:

-  **Where:** Where is the Multimedia server getting the alarms? Remember, the Multimedia server is a client to any OPC-compliant Alarm & Event server. You must make a subscription to the server to get the alarms. Moreover, you must assign one subscription to your configuration.
-  **What:** What information do you want the receiver to obtain from Multimedia? You must decide the information you want to send out, regardless of the media you want to use to send it. You can configure the information you want to send out in the Media Template.
-  **How:** How do you want the information to be sent? AlarmWorX32 Multimedia provides you with many Agents/Media to send out your alarm. You need to select and configure an Agent so that Multimedia knows which medium to use to send out your alarm once it comes into the server. Be sure to link a template to the agent so that it knows what type of information to send out.

 **When:** When do you want to activate the agents to send out a message? The Alarm Action Sets allows you choose the agents you want to use as well as filtering alarms. This allows you to send out different messages to different people using different agents when different alarms are triggered at different times of the day (when you are using scheduling).

If you have a clear answer to the above questions, your configuration will most likely work.

A.2. Introduction to the Multimedia Configuration Wizard

We know that it takes a lot to make a functioning Multimedia configuration; with all that is involved, it is easy to miss a step or two. That is why we have created a wizard to help you along.

The Multimedia Configuration Wizard is a key feature of AlarmWorX32 Multimedia that helps you create and configure alarms and actions. The Multimedia Configuration Wizard provides a simple, user-friendly walk-through that guides you through the creation and configuration of agents and actions. Using the Multimedia Configuration Wizard simplifies the alarm multimedia configuration process down to the following steps:

1. Use the Multimedia Configuration Wizard to setup a Multimedia Configuration.
2. Activate the database.
3. Start the Multimedia Server.

The Multimedia Configuration Wizard consists of a series of dialog boxes that guide you through alarm configuration. To start the Multimedia Configuration Wizard, click the “Multimedia Configuration Wizard”  button on the toolbar or select Tools → Multimedia Configuration Wizard from the menu. Follow the instructions in the dialog boxes, which will take you through the following steps:

1. Create or select an existing configuration.
2. Create or select an existing subscription.
3. Create and configure a new alarm action set.
4. Create or select an alarm filter and apply it to your alarm action set.
5. Select a multimedia agent to respond to your alarm action set and then create or select an existing configuration for that agent.
6. Create or select an existing template for the agent.
7. Choose to add more agents to the action set or finalize the action set.

The wizard is a very useful tool for beginning users of the AlarmWorX32 Multimedia Configurator. It allows you to configure each building block of creating a functional configuration and see how all the building blocks are related.

A.3. Creating a Configuration with the Wizard

1. If the Multimedia Configurator is not already open, open it from Start → Programs → ICONICS AlarmWorX32 Multimedia → AlarmWorX32 Multimedia Configurator.
2. Click the Multimedia Configuration Wizard button  on the toolbar to launch the wizard. The first dialog of the wizard, shown in Figure A1.1, asks you to specify the Alarm Configuration you will be editing.

3. You can choose an existing configuration, or enter the name of a new one to create. Create a new alarm configuration by typing in the name WizardConfig.

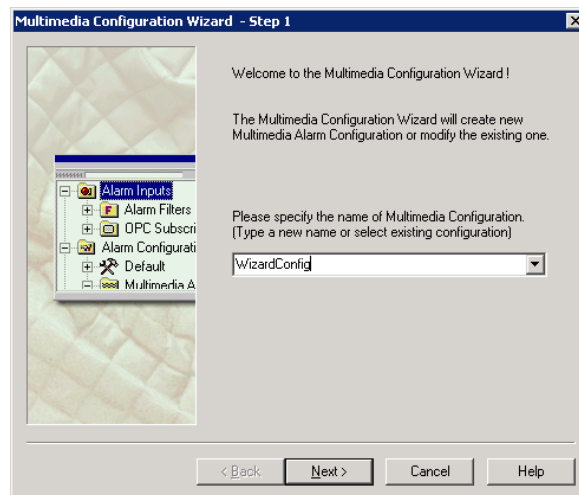


Figure A1.1 - Specifying the Alarm Configuration

4. Click **Next** to move on to configuring settings for that new alarm configuration. You can apply an existing **OPC Subscription** to the alarm configuration, or create a new subscription to apply, as shown in **Figure A1.2**.
5. Select the **Use Existing OPC Subscription** option, and choose the **AlarmWorX32 Server** subscription. This is included in every new Multimedia configuration database by default.

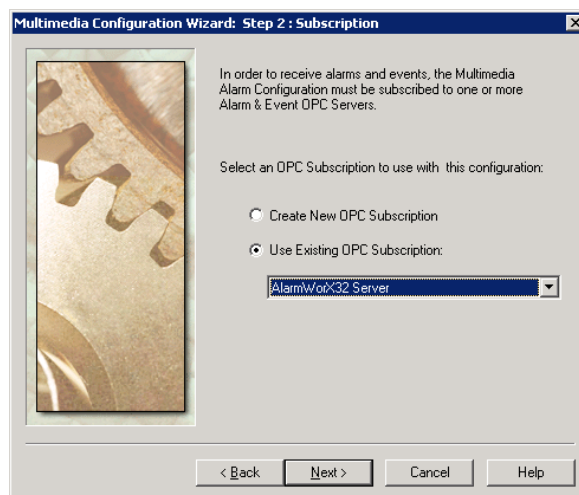


Figure A1.2 - Specifying the Alarm Subscription

6. Click **Next** to move on to adding an **Alarm Action Set** to your new alarm configuration. Give the action set a name of **AlarmPopup**, as shown in **Figure A1.3**.

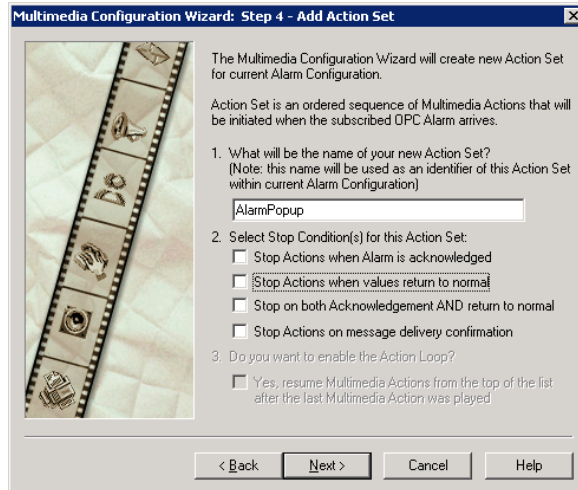


Figure A1.3 - Adding an Alarm Action Set

7. We have not chosen any looping or stop action conditions, so the AlarmPopup action set will simply play each action in its list once when it is triggered.
8. Click **Next** to apply an **Alarm Filter** to the new action set to determine what triggers the action set. As shown in **Figure A1.4**, you can apply an existing alarm filter, or create a new one.
9. Choose to **create a new Alarm Filter**, and click **Next** to continue on to the next step.

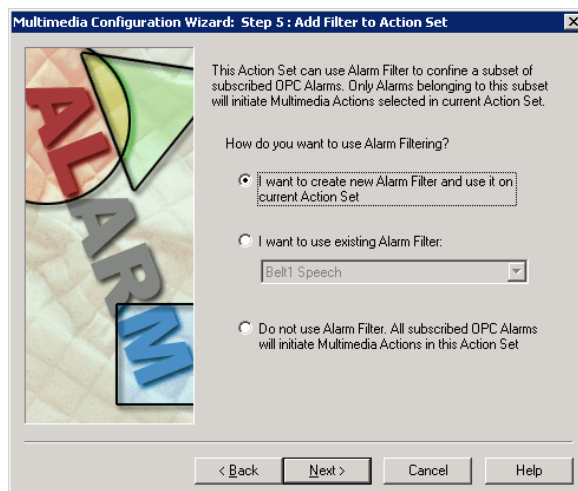


Figure A1.4 - Specifying the Alarm Filter

10. The next dialog in the wizard, shown in **Figure A1.5**, helps you to configure the settings for your new alarm filter.

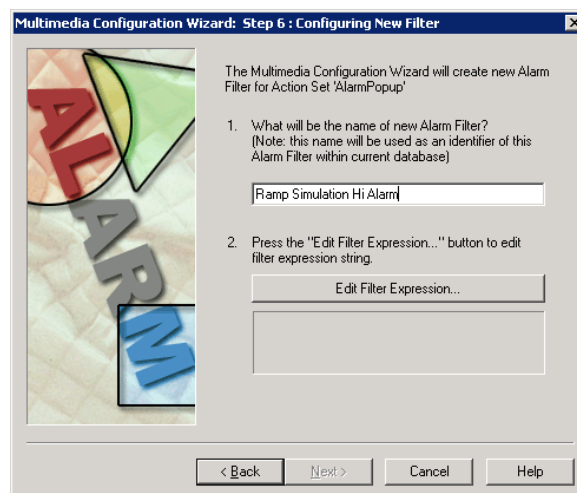


Figure A1.5 - Configuring the New Alarm Filter

11. Give your new alarm filter a name of **Ramp Simulation Hi Alarm**, and click the Edit Filter Expression to open the Filter Wizard, shown in Figure A1.6.
12. Choose **Alarm** as the **Alarm Type**, and **Hi** as the **Sub Condition**. Also click the **Source** option and type **Ramp** into the associated field. Your configurations should look like **Figure A1.6** when finished.

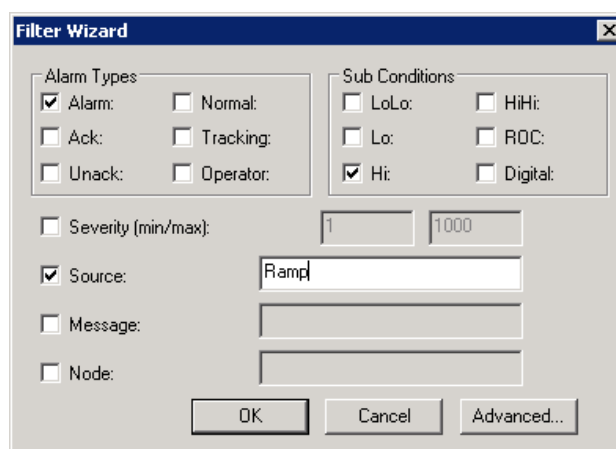
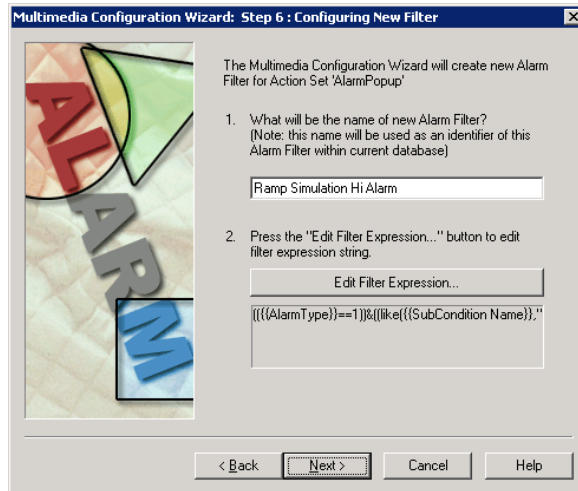


Figure A1.6 - Filter Wizard Dialog

13. A filter with these parameters will allow only Hi Limit alarms from the alarm tag named Ramp through. Click **OK** to return to the filter configuration dialog of the wizard. You should see the filter string generated by the filter wizard, as shown in **FigureA1.7**.



FigureA1.7 - Viewing the New Alarm Filter Settings

14. Click **Next** to apply this newly created filter to the new alarm action set.
15. The next step, shown in **Figure A1.8**, is to **add actions** to the action set, which will be played when the action set is triggered. Choose to add a **Window PopUp** multimedia agent as the action.

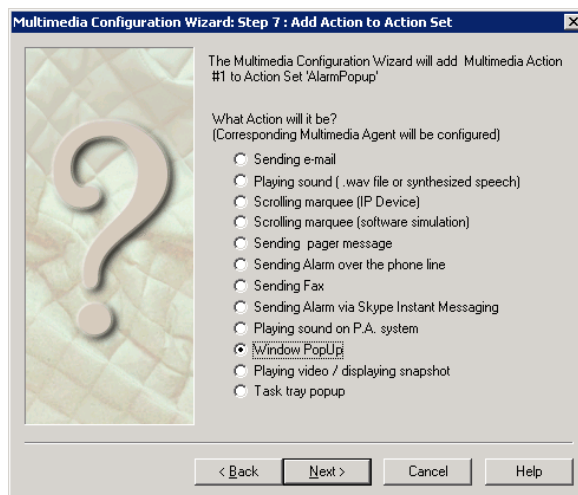


Figure A1.8 - Adding an Action to the Alarm Action Set

16. Click **Next** to specify the popup agent configuration to apply to this action, as shown in **Figure A1.9**.

17. Choose to **create a new Popup Agent configuration**, and click **Next**.

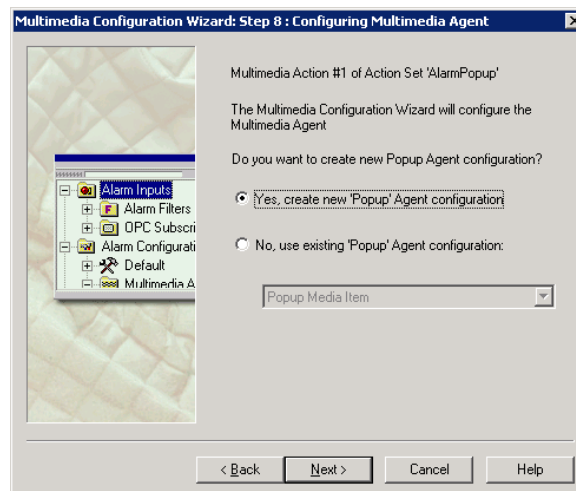


Figure A1.9 - Specifying a Multimedia Agent

18. In the next step, this wizard will ask you some configuration options for the new popup agent configuration. Name the new agent **Local Popup**, and leave the **Node** field empty to force the popup to launch locally, as shown in **Figure A1.10**.

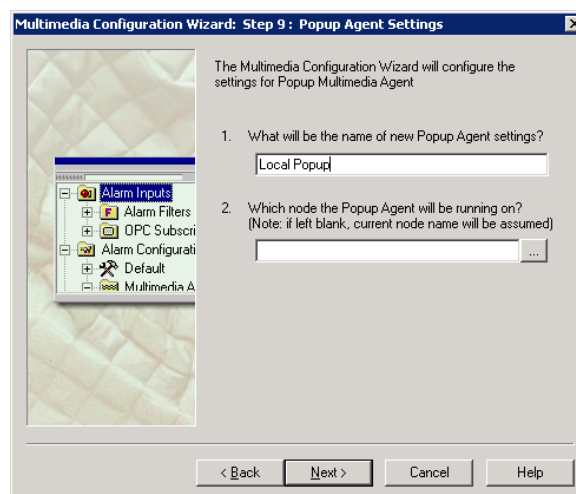


Figure A1.10 - Configuring the New Popup Agent

19. Click **Next** to specify the **Media Template** to apply to the new multimedia agent.

20. Choose to **create a new Media Template**, as shown in **Figure A1.11**, and click **Next**.

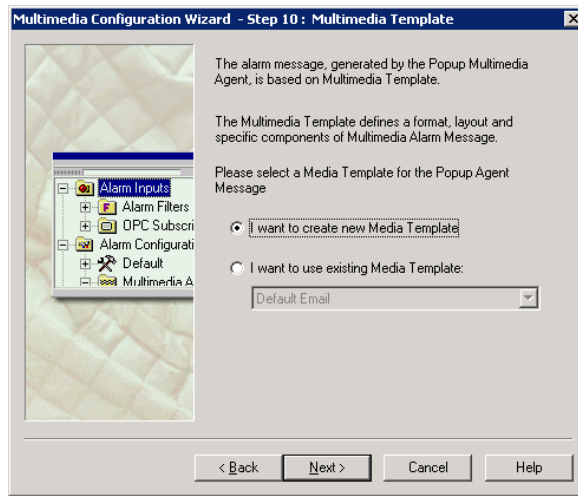


Figure A1.11 - Specifying the Media Template

21. In the next wizard dialog, shown in **Figure A1.12**, you will configure the details of the media template that will be applied to the new popup agent.
22. Name the template **Wizard Popup**, and choose to include text fields for the **Time Stamp**, **Alarm Tag**, **Alarm Message**, **Condition Name**, and **Subcondition Name**, as shown in **Figure A1.12**.

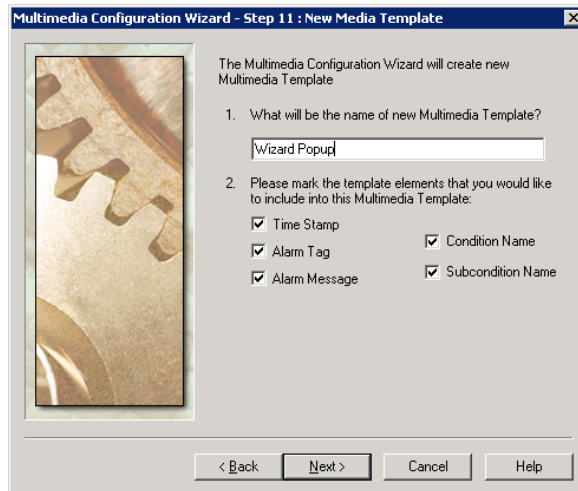


Figure A1.12 - Configuring the New Media Template

23. With this template applied, the popup agent will show all of the selected attributes with information specific to the alarm that triggered it. Click **Next** to continue.

24. You have the option at this point to add more actions to the new action set if desired, as shown in **Figure A1.13**. For now, choose not to add any more actions and click **Next**.

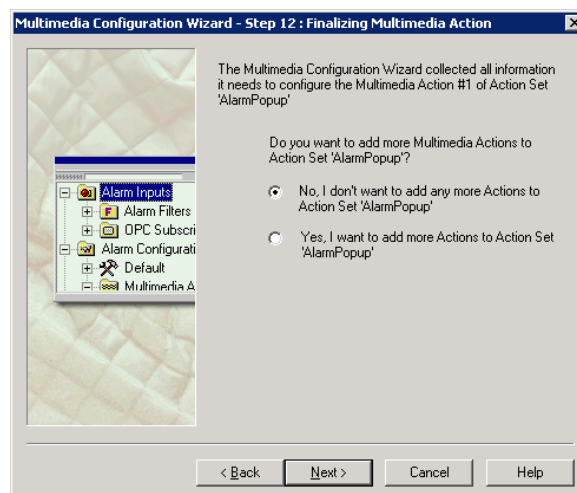


Figure A1.13 - Finalizing the Alarm Action Set

25. You have the option at this point to add more action sets to the alarm configuration if desired, as shown in **Figure A1.14**. For now, choose not to add any more action sets and click **Next**.

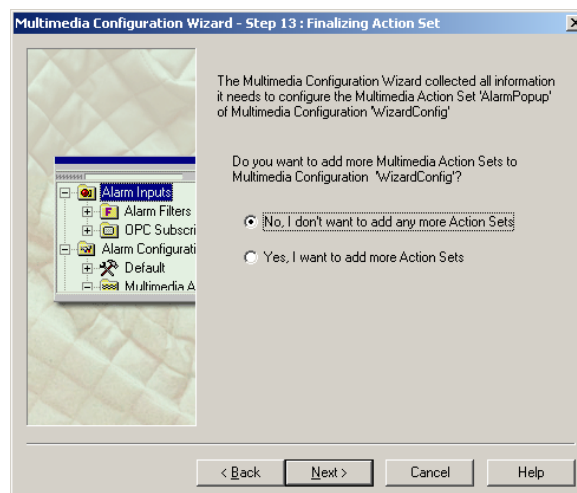


Figure A1.14 - Finalizing the Alarm Configuration

26. You are now done creating a full configuration using the wizard. Click **Finish**, as shown in **Figure A1.15**.

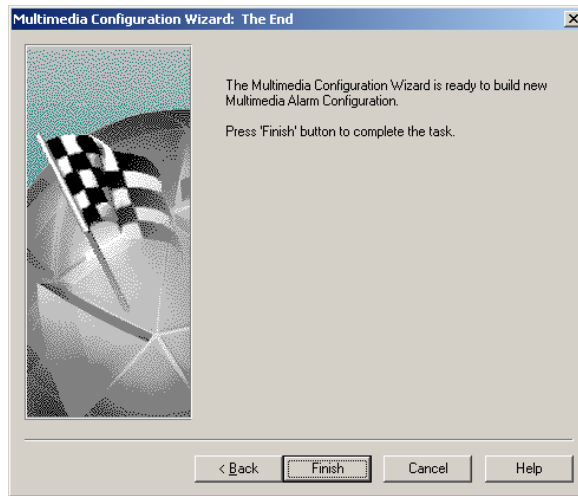


Figure A1.15 - The End of the Wizard

27. Before the wizard closes, you will receive a summary of everything you configured with the wizard. Your summary should look like **Figure A1.16**. Click **OK** to return to the multimedia Configurator.

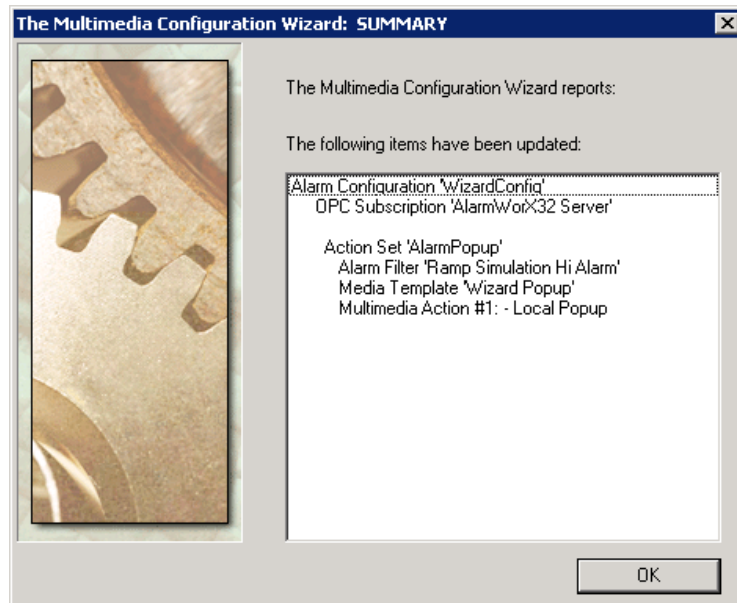


Figure A1.16 - Summary of Wizard Configurations

28. You should now see your new configuration settings in the Configurator. A new alarm configuration named **WizardConfig** should be listed in the tree control with an action set named **AlarmPopup** assigned to it. This action set will refer to the **LocalPopup** multimedia agent, (for which you will find configurations under the **Multimedia Agents → Popup** branch of the tree control), and have the **Ramp Simulation Hi Alarm** filter applied. The LocalPopup agent will have a media template applied named **Wizard Popup**, for which you will find configurations under the **Media Templates** branch of the tree control.

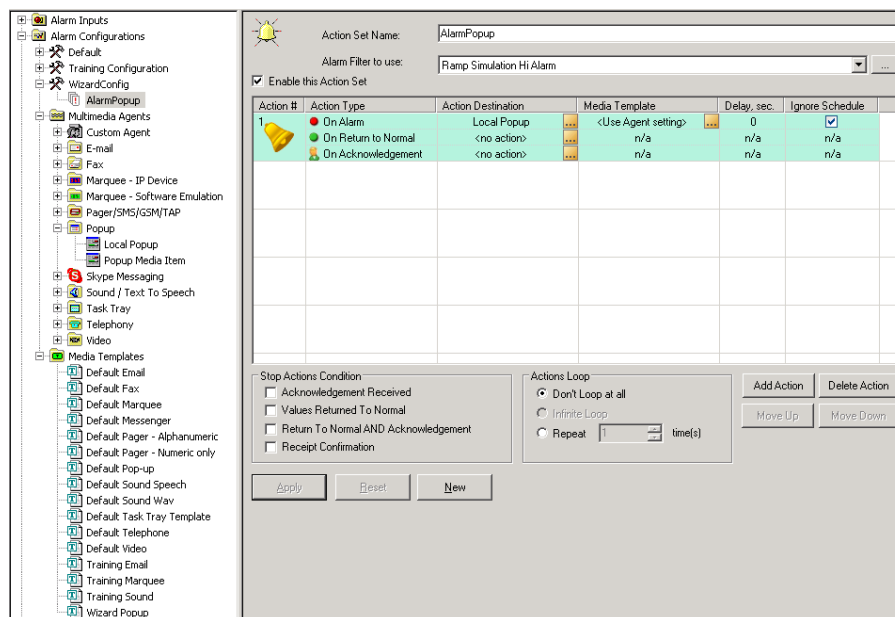


Figure A1.17 - The Completed Configuration

Appendix2: Fax Agent

A2

A.1. Fax Agent

The Fax Agent, shown in Figure A1.1, sends alarm notifications using a fax machine. The template determines the actual message that gets faxed to the number specified, and includes an optional cover page design that can be used for all faxed messages.

Figure A1.1 - Fax Agent

The Fax Agent uses the Microsoft Fax Console, which is configured via the Windows Control Panel. The Fax Console installation is an optional installation in Windows; if it is not installed, you can install it from the Windows CD.

When setting up the Fax Console, it is important to set the dialing rules correctly. To set the dialing rules, go to **Control Panel → Phone and Modem Options**.

The Fax Console includes diagnostic support, which is enabled through **Control Panel → Printers and Faxes**. Select **Fax** from the list of printers, and then right-click and select **Properties**. This opens the configuration dialogs for the fax printer. The **Tracking** tab contains settings that enable support for monitoring the progress of fax requests.

When testing the ICONICS Fax Agent, the first step is to send a sample fax using the Microsoft Fax Console. If this fax does not send, the Fax Console has not been initialized correctly. The following configuration fields are available for the Fax Agent:

- **Media Item Name:** Enter a name for the Fax Agent configuration.
- **Node:** Enter the node name for the computer on which you wish to run the Fax Agent. If this field is left blank, the Fax Agent will be run on the computer that is running the Multimedia Server. Click the **Browse** button to search for a node.
- **Description:** Allows you to add comments to the agent configuration.
- **Media Template:** You must choose a template to be used with the agent. The template determines the actual message that gets sent to fax message recipients. The Configurator includes a template, called **Default Fax**, created for sending fax messages.
- **TEST button:** Sends a test fax based on the configuration settings.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Send To Fax Number:** Enter the fax number here.
- **Retry:** Specifies the number of attempts to send the fax.
- **Retry Delay:** Specifies the number of seconds to wait between attempts to send the fax.
- **Additional Information:** Allows you to add optional information for the recipient and sender of the fax.

- **Send Separate Cover Page:** When this box is checked, the Fax Agent includes a cover page with the fax message. The fax template contains a **Fax Cover Page** field, which specifies a cover page design that will be used for all fax messages sent using the Fax Agent. **Note:** The location of the **Fax Cover Page** field in the fax template does not matter because the cover page is, by default, the first item to be sent in a fax message. However, if several cover pages are selected for a single template, the Fax Agent will use only the first cover page listed.
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new Fax Agent to be configured. You can also add a new Fax Agent by right-clicking the **Fax** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

Appendix3: Hardware Marquee Agent

A3

A.1. Hardware Marquee

The Hardware Marquee Agent, shown in Figure A3.1, sends alarm and event messages to external scrolling marquees, and includes support for multiple (LAN-based) devices.

IPMarquee

Media Item Name:

Description:

Media Template:

Scheduling:

Role: ☐ Enable Alarm Prioritization

Marquee Agent Settings

Device IP Address: Port:

Header Characters (ASCII)

Trailer Characters (ASCII)

Allow seconds between messages sent to the device

Connection Lifetime:

☒ Maximum (keep socket open from first message, until agent closes)

☐ Minimum (open and close socket for each message)

☐ Time restricted (close socket after expiration time): Minutes

Play time(s) Maximum play time sec. (0 if no limits)

Figure A3.1 - Hardware Marquee Agent

The following configuration fields are available for the Hardware Marquee Agent:

- **Media Item Name:** Enter a name for the Hardware Marquee Agent configuration.
- **Description:** Allows you to add comments to the agent configuration.
- **Media Template:** You must choose a template to be used with the agent. The template determines what information is displayed in the marquee message. The Configurator includes a template, called **Default Marquee**, created for sending marquee messages.
- **TEST button:** Displays a test marquee message.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Device IP Address:** Specifies the IP address for the hardware device. You can also specify the **Port** number and the **Delay between Alarms** (in seconds). The **Traditional** mode allows the hardware device to display the entire text string. This mode displays the text string all at once without scrolling. The **Header** and **Trailer** specify a sequence of ASCII characters that determine how the message is displayed. Click the **Edit** button to edit the ASCII special characters.
- **Port:** Specifies the port number for the hardware device.
- **Header and Trailer:** Specify a sequence of ASCII characters that determine how the message is displayed. Click the **Edit** button to edit the ASCII special characters, as shown in Figure A3.2.
- **Delay:** Specifies the number of seconds to wait between alarm messages sent to the hardware device.
- **Connection Lifetime:** Specifies how long the device socket will remain open to receive alarm messages. If you select **Maximum**, the device socket will remain open until the agent closes and no more alarm messages are sent to the hardware device. If you select **Minimum**, the device socket will open and close each time an alarm message is sent to the hardware device. If you select **Time Restricted**, the device socket will close after the specified number of minutes.
- **Play:** Specifies the number of times the marquee message will be displayed.
- **Maximum Play Time:** Sets the maximum play time (in seconds).
- **Apply button:** Saves all changes to the configuration database.

- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new Hardware Marquee Agent to be configured. Note that you can also add a new Hardware Marquee agent by right-clicking the **Marquee - IP Device** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

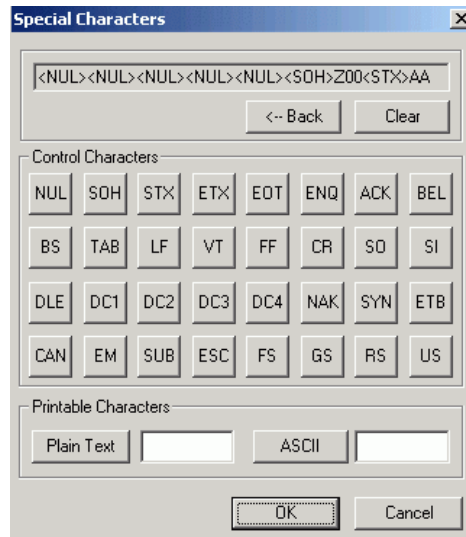


Figure A3.2 - ASCII Special Characters

Appendix4: Pager Agent

A4

A.1. Pager Agent

The Pager Agent, shown in Figure A4.1, allows you to send alarm information using a message to a pager. The Pager Agent sends alarm information to a pager via dial-up modems.

Figure A4.1 - Pager Agent

The following configuration fields are available for the Pager Agent:

- **Media Item Name:** Enter a name for this pager configuration.
- **Description:** Allows you to add comments to the agent configuration.

- **Media Template:** You must choose a template to be used with the Pager Agent. The template determines the actual message that gets sent to configured pagers. You can select whether the message includes the timestamp of the alarm, the tag name that generated the message, the actual alarm message itself, and many other parameters. The Configurator includes a template, called **Default Pager**, created for sending alphanumeric pager messages.
- **TEST button:** Sends a pager message to test your configuration.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Pager Number:** Enter the number of the pager to which you wish to send the message. Use the **General Settings** button in the **Pager/SMS/GSM/TAP** folder to configure pager services, dial-out numbers, modem properties, port settings, etc.
- **Acknowledge Code:** Enter the string you wish to use as the acknowledge code.
- **Use GSM/PCS Service:** Select the GSM/PCS service you wish to use with the Pager Agent from the drop-down list.
- **Use Modem/ISDN Service:** Select a service to use with your modem or ISDN line from the drop-down list.
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new Pager Agent to be configured. Note that you can also add a new Pager Agent by right-clicking the **Pager/SMS/GSM/TAP** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

A.2. Configuring the Pager Agent

1. Configure a modem for your computer by going to the operating system's control panel and following the steps for configuring a modem.
2. Ensure that your modem is working correctly by using HyperTerminal™ or any third-party dial-up software.
3. In the Multimedia Configurator, open the **Alarm Configurations** folder and the **Multimedia Agents** subfolder. Click on **Pager/SMS/GSM/TAP**, and then click on the **General Settings** button located on the right-hand side of the window, as shown in Figure A4.2.

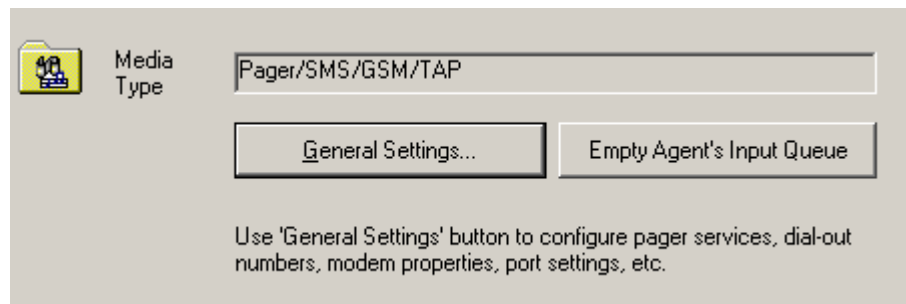


Figure A4.2 - Pager Agent: General Settings

4. Clicking the **General Settings** button launches the **Multimedia Pager TAP/SMS** dialog box, shown in Figure A4.3. Under **Tap/SMS Pager Configuration**, you can choose to enable the TAP log file, TAP acknowledge, the **Multimedia Pager TAP Diagnostic** dialog box, and/or the SMS acknowledge and the **Multimedia Pager SMS Diagnostic** dialog box. The log file is only used for diagnostic utilities (limited to 10 KB).

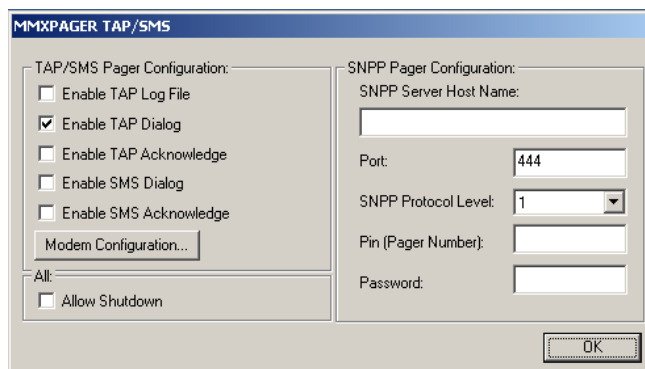


Figure A4.3 - Multimedia Pager TAP/SMS Dialog Box

5. The pager agent can also page out using SNPP. You will need to know your pager service provider's SNPP Server Host Name (usually a URL) and the port number that the server listens on. You can also put in the SNPP Protocol level, the pin number, and the password. The amount of information you need to fill-out depends on your paging service provider.
6. When the display enters runtime mode and the **Use GSM/PCS Service** option is selected in the Pager Agent configuration field, the **Pager SMS Diagnostic** dialog box will open, as shown in Figure A4.4.

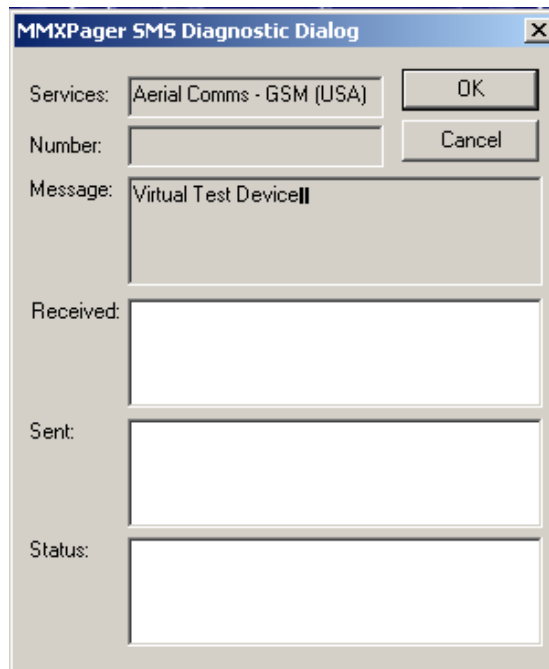


Figure A4.4 - Pager SMS Diagnostic Dialog Box

7. When the display enters runtime mode and the **Use Modem/ISDN Service** option is selected in the Pager Agent configuration field, the **Pager TAP Diagnostic** dialog box will open, as shown in Figure A4.5. Clicking the **Open Log...** button opens the TAP log file (if the log file were enabled in the TAP/SMS dialog box).

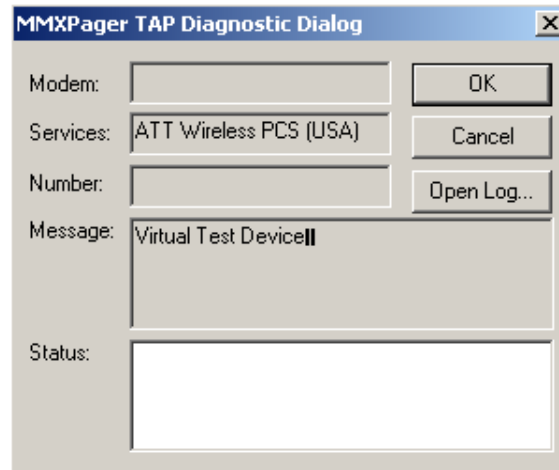


Figure A4.5 - Pager TAP Diagnostic Dialog box

8. Click the **Modem Configuration** button to open the **DERDACK® Message Master™ Configuration Software** dialog box, shown in Figure A4.6. Select whether you wish to use modem/ISDN or GSM/PCS service for paging.

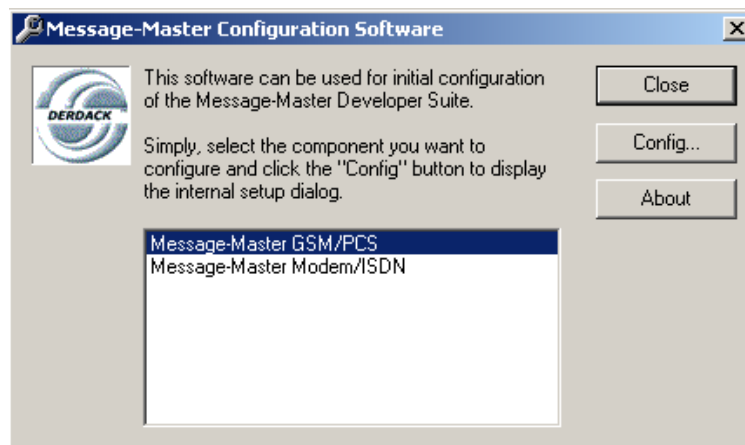


Figure A4.6 - DERDACK Message Master Configuration Software Dialog Box

9. Click the **Config...** button to open the **Settings** dialog box, shown in Figure A4.6. Fill out the information in the each tab with the appropriate information. At any time, you can get help by clicking the **Help** button to launch the Message Master Help documentation.

Note: Figure A4.7 shows the configuration settings for Modem/ISDN configuration. The GSM/PCS configuration settings are slightly different. However, within the United States, the standard is Modem/ISDN. On the **Defined Services** tab, if you create a new service, the country code for the service must be included in parentheses at the end of the service name. When specifying a telephone number for the service, there is a strict protocol for how you enter the number, which must conform to the following format. Parentheses, where shown, are necessary:

+1 (area code) number. Example: +1 (800) 5551234

For international calls, replace the '1' with the appropriate country code. See the Message Master help for more information.

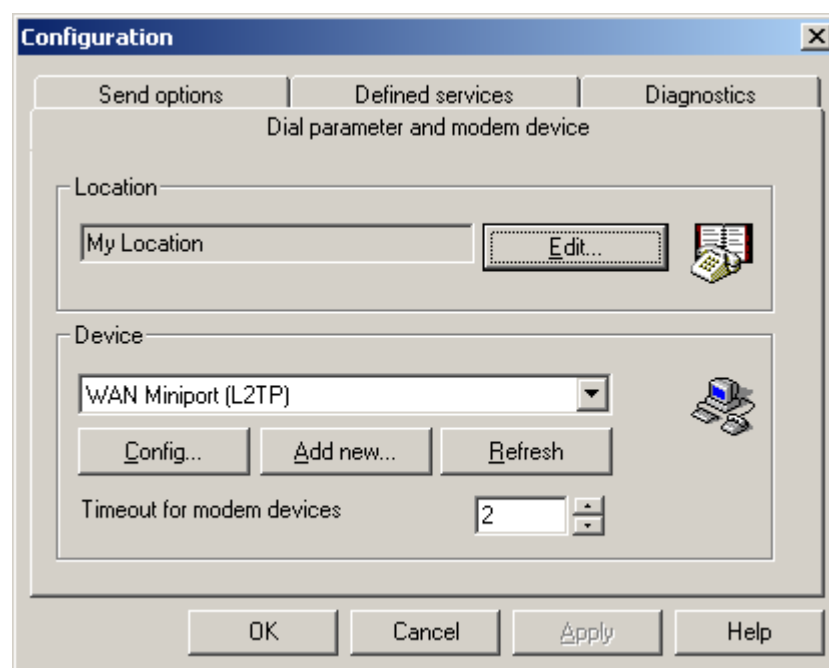


Figure A4.7 - DERDACK Message Master Configuration Settings Dialog Box

Once you are back in the Multimedia Configurator, fill out all of the necessary configuration fields.

Appendix5: Popup Agent

A5

A.1. Popup Agent

The Popup Agent, shown in Figure A5.1, launches an application of your choice (e.g. Internet Explorer) to provide alarm messages, and allows you to open and execute a file on a computer. For example, you can configure a Popup Agent to open Microsoft Internet Explorer and display alarm information within your Web browser so that an HTML Web page appears on your screen whenever a critical problem occurs.

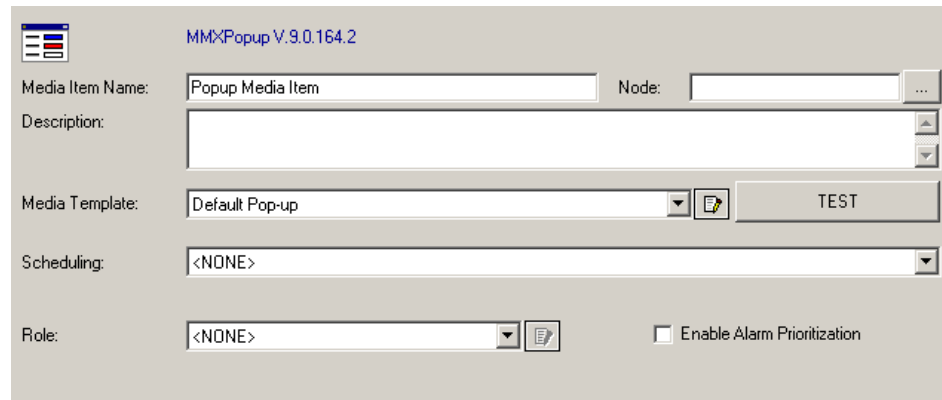


Figure A5.1 - Popup Agent Configuration

Note: The Popup Agent is designed to launch other applications. The intent is that an operator will then close the applications when finished. The agent itself neither closes these applications nor limits the number of applications it will launch. Because of this, it is possible that an unmonitored station, using the Popup Agent, could launch so many applications as to run out of system resources.

The following configuration fields are available for the Popup Agent:

- **Media Item Name:** Enter a name for the Popup Agent configuration.
- **Node:** Enter the node name for the computer on which you wish to run the Popup Agent. If this field is left blank, the Popup Agent will be run on the computer that is running the Multimedia Server. Click the ... button to search for a node.
- **Description:** Allows you to add comments to the agent configuration.

- **Media Template:** You must choose a template to be used with the agent. The template determines the actual message that gets displayed in the popup window. The Configurator includes a template, called **Default Popup**, created for sending messages using popup windows.
- **TEST button:** Displays a test popup window based on your configuration.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new agent to be configured. You can also add a new Popup Agent by right-clicking the **Popup** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

Appendix6: Skype Messaging Agent

A6

A.1. Skype Messaging Agent

Skype is Internet telephony software that offers telephone calling and text messaging over the Internet. The Skype Messaging Agent, shown in Figure A6.1, delivers instant text messages to any Skype account. If you do not have a Skype account, go to www.skype.com and install Skype before using the Skype Messaging Agent. Then you can add names to your list of Skype contacts.

The screenshot displays the MMX Messenger V.9.0.164.2 application window. The interface includes several input fields and buttons for configuring the Skype Messaging Agent. The 'Media Item Name' field is set to 'Skype Message', and the 'Node' field is empty. The 'Description' field is also empty. The 'Media Template' is set to 'Default Messenger', and the 'Scheduling' is set to '<NONE>'. The 'Role' is set to 'Production Floor Managers', and the 'Enable Alarm Prioritization' checkbox is unchecked. The 'Skype Agent Settings' section contains a 'Send To Skype Contact' field set to 'iconics_test' and an 'Acknowledge Code' field set to '123'. At the bottom, there are 'Apply', 'Reset', and 'Add New Media Item' buttons.

Figure A6.1 - Skype Messaging Agent

The following configuration fields are available for the Skype Messaging Agent:

- **Media Item Name:** Enter a name for the Skype Messaging Agent configuration.
- **Node:** Enter the node name for the computer on which you wish to run the Skype Messaging Agent. If this field is left blank, the Skype Messaging Agent will be run on the computer that is running the Multimedia Server. Click the ... button to search for a node.
- **Description:** Allows you to add comments to the agent configuration.
- **Media Template:** You must choose a template to be used with the agent. The template determines the actual message that gets sent to instant message recipients. The Configurator includes a template, called **Default Instant Messenger**, created for sending instant messages.
- **TEST button:** Sends an instant message based on your configuration. To test the Skype Messaging Agent configuration, you need to have two Skype users with permissions on your computer. You can create a shortcut to the Skype application and run the second instance of Skype as a different user if you are using Windows XP.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Send to Skype Contact:** For the Skype Messaging Agent to work properly, Skype must be installed and running on the computer on which the Skype Messaging Agent is installed. The user name specified in the **Send to Skype Contact** field must also be an existing Skype contact in the server computer's messaging client that is currently online.
- **Acknowledge Code:** Enter the string you wish to use as the acknowledge code. (For information about acknowledging alarms using instant messaging, see the "Acknowledging Alarms Using Skype Messaging" section below.)
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new agent to be configured. You can also add a new Skype Messaging Agent by right-clicking the **Skype Messaging** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

Appendix7: Task Tray Agent

A7

Task Tray Agent

The Task Tray Agent, shown in Figure A7.1 delivers a pop-up message to the Windows taskbar notification area, allowing instant alarm notification no matter what the operator is doing.

Figure A7.1 - Task Tray Agent

The following configuration fields are available for the Task Tray Agent:

- **Media Item Name:** Enter a name for the Task Tray Agent configuration.
- **Node:** Enter the node name for the computer on which you wish to run the Task Tray Agent. If this field is left blank, the Task Tray Agent will be run on the computer that is running the Multimedia Server. Click the ... button to search for a node.
- **Description:** Allows you to add comments to the agent configuration.
- **Media Template:** You must choose a template to be used with the agent. The template determines the message text and appearance of the actual Task Tray notification, as shown in Error! Reference source not found..
- **TEST button:** Displays a test Task Tray window based on your configuration.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.

- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new agent to be configured. You can also add a new Task Tray Agent by right-clicking the **Task Tray** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

In the media template that is applied to the Task Tray agent configuration, you can use HTML code to set the colors for the task tray. For example:

```
<A HREF="file://C:/Program Files/ICONICS/GENESIS32/Bin/Gwx32.exe multi.gdf -runtime'">Graphworx file.</A>
```

```
<body bgcolor="#FFFF00"></body>
```

The string `<body bgcolor="#xxxxxx"></body>` uses the hexadecimal value to set the color.

The string `<A HREF="file://C:/Program Files/ICONICS/GENESIS32/Bin/Gwx32.exe multi.gdf -runtime'">Graphworx file.</A>` creates a URL-type link to launch a GraphWorX32 application, as shown in Figure A7.2. Thus, the complete syntax for the link is as follows:

```
<A HREF="file://C:/Program Files/ICONICS/GENESIS32/Bin/Gwx32.exe C:\Program Files\ICONICS\GENESIS32\Examples\test\remove.gdf">Click to launch the preconfigured GraphWorX display</A>
```

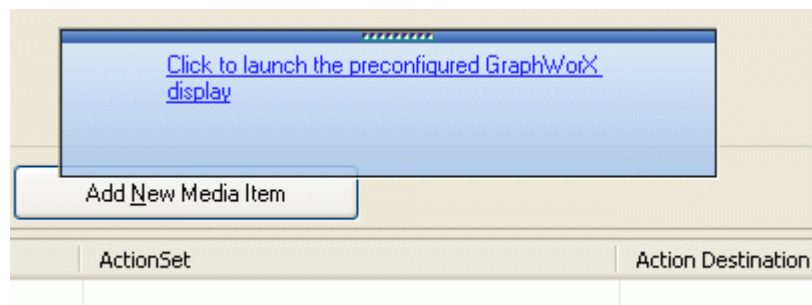


Figure A7.2 - Task Tray Notification message

Appendix8: Telephony Agent

A8

A.1. Telephony Agent

Three separate agents are included under the Telephony folder of the Configurator tree control:

- P.A. Agent
- Call-out Agent
- Call-in Agent

To configure the General Settings of the Telephony Agents, click on the **Telephony** folder in the Multimedia Configurator, as shown in Figure A8.1. If you do not see the **General Settings**, make sure that **Dialog View** is checked on the **View** menu.

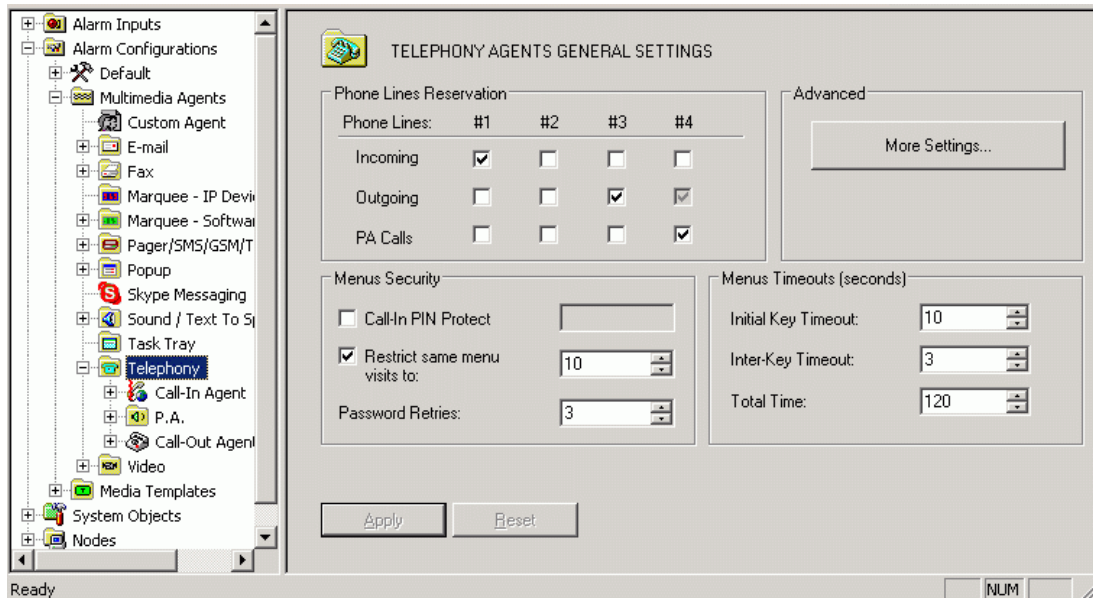


Figure A8.1 - Telephony Agents: General Settings

- **Phone Lines:** For the first four phone lines, you can check which phone lines will be used by the Telephony Agents for incoming, outgoing, and P.A. calls. You should only check phone lines that have physical support (i.e. the phone line is actually plugged into the telephony card in the computer). If you are using more than four phone lines, you can click More Settings to configure additional phone lines in the Advanced Phone Lines Reservation dialog, as shown in Figure A8.2.

Note: The number of phone lines specified must be less than or equal to the actual number of phone lines that will be used. If the number of lines specified in the Configurator is greater than the actual number of lines in use, the Call-in Server will work under the assumption that additional phone lines are available even though the lines do not actually exist. Although up to 20 lines are supported, the number of lines that can be used may be limited by the type of Dialogic board.

Note: The telephony agents currently support up to 20 phone lines. However, the agent has been tested with a maximum of four phone lines.

The dialog box titled "Advanced Phone Lines Reservation" contains a table with 5 columns: Phone Lines, Incoming, Outgoing, Lease Line, and PA Calls. Below the table are several configuration options including checkboxes for connection attempts, message priorities, and timeout settings for data access and phone connections.

Phone Lines	Incoming	Outgoing	Lease Line	PA Calls
#1	☒	☐	☐	☐
#2	☐	☐	☐	☐
#3	☐	☒	☐	☐
#4	☐	☒	☐	☒
#5	☐	☐	☐	☐
#6	☐	☐	☐	☐
#7	☐	☐	☐	☐
#8	☐	☐	☐	☐
#9	☐	☐	☐	☐
#10	☐	☐	☐	☐
#11	☐	☐	☐	☐
#12	☐	☐	☐	☐
#13	☐	☐	☐	☐
#14	☐	☐	☐	☐
#15	☐	☐	☐	☐
#16	☐	☐	☐	☐
#17	☐	☐	☐	☐
#18	☐	☐	☐	☐
#19	☐	☐	☐	☐
#20	☐	☐	☐	☐

TAPI Modem Name:

☒ Attempt to connect on uncertain line state ☒ Give Incoming phone messages priority

☐ Auto Acknowledge successful outgoing messages

Data Access Read Timeout (msec.): Number of rings before hanging up:

Data Access Write Timeout (msec.): Forces delay on playing wav files (msec.):

Tapi Sets Maximum wait time for phone connection (msec.):

OK Cancel

Figure A8.2 - Advanced Phone Lines reservation

- **Incoming Calls:** Specifies which phone lines will be reserved for incoming calls.
- **Outgoing Calls:** Specifies which phone lines will be reserved for outgoing calls.

Any phone lines that are not reserved will be used as general purpose lines (i.e. for either incoming or outgoing calls).

The first time you set up the telephony agent, it is recommended that you use a single phone line to test the configuration. Only after you have successfully tested a single phone line should you experiment with adding multiple phone lines to your configuration.

- **Call-in PIN Protect:** Specify a numeric password or PIN that users must enter prior to each menu in order to progress through the phone menus in the Call-in Agent.

Note: This is different from the general security settings used for logging into the phone system. (The login settings are configured in the Call-in Agent tree control.)

- **Restrict same menu visits to:** Limits the number of times a user can access the same menu through the Call-in Agent. This limits the overall time users can remain in the phone system to prevent users from tying up the phone lines.
- **Password Retries:** Sets the number of times a user will be allowed to enter an incorrect password on the phone keypad.
- **Initial Key Timeout:** Sets the number of seconds the phone will wait for a key press before retry.
- **Inter-Key Timeout:** Sets the number of seconds allowed between key presses on the phone keypad before ending caller input.
- **Total Time:** Sets the total consecutive time (in seconds) that a caller may spend in the same menu before timeout. This includes the time the system uses to process and deliver the text-to-speech messages to the caller.

You may use either a voice modem or a dialogic card to perform the Call-out function. However, in order to use the Call-in functionality, you must have a telephony card installed on the computer on which you are running the Telephony Agents. AlarmWorX32 Multimedia supports Intel® Dialogic® boards. You also need to have an analog phone line connected to the board. (Note: Digital lines are not supported.)

For more information about purchasing and installing Intel Dialogic boards, please visit the Intel Web site at www.intel.com/design/network/products/telecom/index.htm.

Note: ICONICS does not provide support for installation and configuration of Dialogic cards. Please contact your Dialogic vendor for support.

Note: It is a good idea to test the Dialogic card has been installed and configured. Dialogic provides several sample applications that can be used for this purpose. The Voice Horoscope program is a good starting application. To launch it, select **Start → Programs → Dialogic System Software → Dialogic Sample Programs → Voice Horoscope**. Once the program is launched, select **Channels → Open**. The program is now ready to receive phone calls. If the Dialogic card is correctly installed, you should hear a response to a call.

A.2. Call-out Agent

The Call-out Agent, shown in Figure A8.3, sends alarm messages out over the telephone.

MMXCall_In V.9.0.164.0

Media Item Name: Local Phone

Description: This is an example of phone alarm notification.

Media Template: Default Telephone

Scheduling: Full 24-7-365 Schedule

Role: <NONE>

Enable Alarm Prioritization

Phone Agent Settings

Phone Number To Call: 02

Acknowledge Code: 123

Retry: 1 time(s)

Retry Delay: 2 sec.

Apply Reset Add New Media Item TEST

Figure A8.3 - Call-Out Agent

The following configuration fields are available for the Call-out Agent in the Configurator tree control under **Local Phone**. (**Note:** **Local Phone** is an example Call-out Agent configuration.)

- **Media Item Name:** Enter a name for the Call-out Agent configuration.
- **Description:** Allows you to add comments to the agent configuration.
- **Media Template:** You must choose a template to be used with the agent. The template determines the actual message that gets sent to the phone number specified. The Configurator includes a template, called **Default Telephone**, created for sending call-out messages over the phone.
- **TEST button:** Tests your call-out configuration.

- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Phone Number to Call:** Enter the phone number you want the agent to call.
- **Acknowledge Code:** Enter the number you wish to use as the acknowledge code.
- **Retry:** Sets the number of attempted calls to make to the specified phone number before timing out.
- **Retry Delay:** Sets the number of seconds between subsequent phone call retry attempts.
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new Call-out Agent to be configured. Note that you can also add a new Call-out Agent by right-clicking the **Call-out Agent** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

A.3. Call-in Agent

Once you have set the default parameters for the Phone Agents, you are ready to begin configuring the Call-in Agent settings. Click on the Call-in Agent folder under the **Phone** tree control of the Configurator, as shown in Figure A8.4.

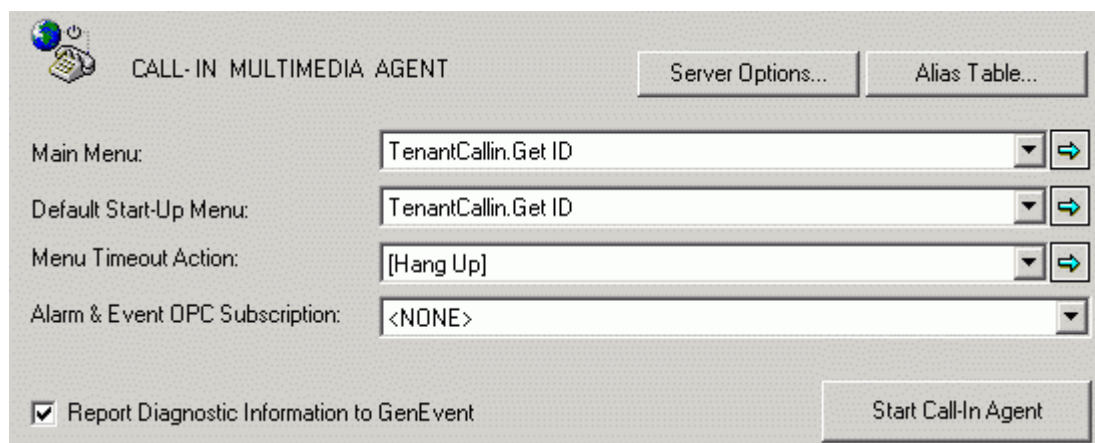


Figure A8.4 - Call-In Agent General Settings

This folder contains the main configuration settings for the Call-in Agent.

1. Under **Main Menu**, select a menu from the drop-down list that you want to use as the main menu for your Call-in system. This is the menu to which callers are returned by default.
2. Under **Default Start-up Menu**, select a menu from the drop-down list that you want to use as the start menu for your Call-in Agent. The default start-up menu will most likely be the same as your main menu.

Note: The drop-down lists under **Main Menu** and **Default Start-up Menu** contain only the top-level menus for each menu group.

3. Under **Menu Timeout Action**, specify what happens after a system timeout occurs. From the drop-down list, select an action (e.g. "repeat," "return to main menu," or "hang up") or a menu that immediately follows a timeout. For example, if a caller does not respond within the initial key timeout period, the system times out and then redirect the caller to the menu or action that you specified.
4. The **Report Diagnostic Information to GenEvent** check box is checked by default. All diagnostic information is reported to the GenEvent Server. This information can be viewed in the current alarm viewer, and provides a visual record of actions taken by the Call-in Agent.
5. The **Alarm & Event OPC Subscription** drop-down box allows you to select an alarm subscription to be used by the Call-in Agent while presenting OPC alarms.

A.4. Call-In Agent Options

Clicking the Server Options button in the Call-in Agent general settings opens the Call-in Agent Options dialog box, shown in Figure A8.5. This dialog box sets the parameters for the Call-in Server.

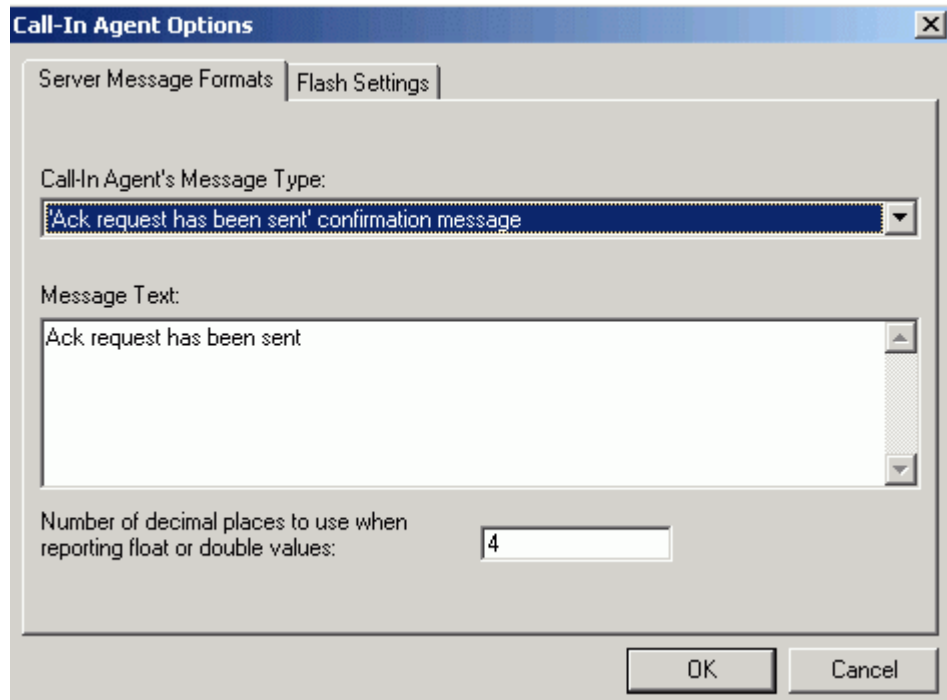


Figure A8.5 - Server Message Formats

The **Server Message Formats** tab allows you to customize predefined messages that the caller hears in certain situations. Use the **Call-In Agent's Message Type** drop-down list to select a particular message type, and then edit the text associated with that message type in the **Message Text** field. For example, you could have a message for the caller when her/she is denied access to a menu saying: "Insufficient security to access this menu."

The **Flash Settings** tab sets the parameters for the **Flash Warning** function in direct action menus, where you can optionally specify a reset value. The reset value is written to the same OPC tag after the specified time interval, resetting the OPC value written by the menu action. When the **Flash Warning** check box is checked in a direct action menu, the system switches, or "flashes", the OPC tag between the tag's current (write) value and its reset value before finally resetting the tag value.

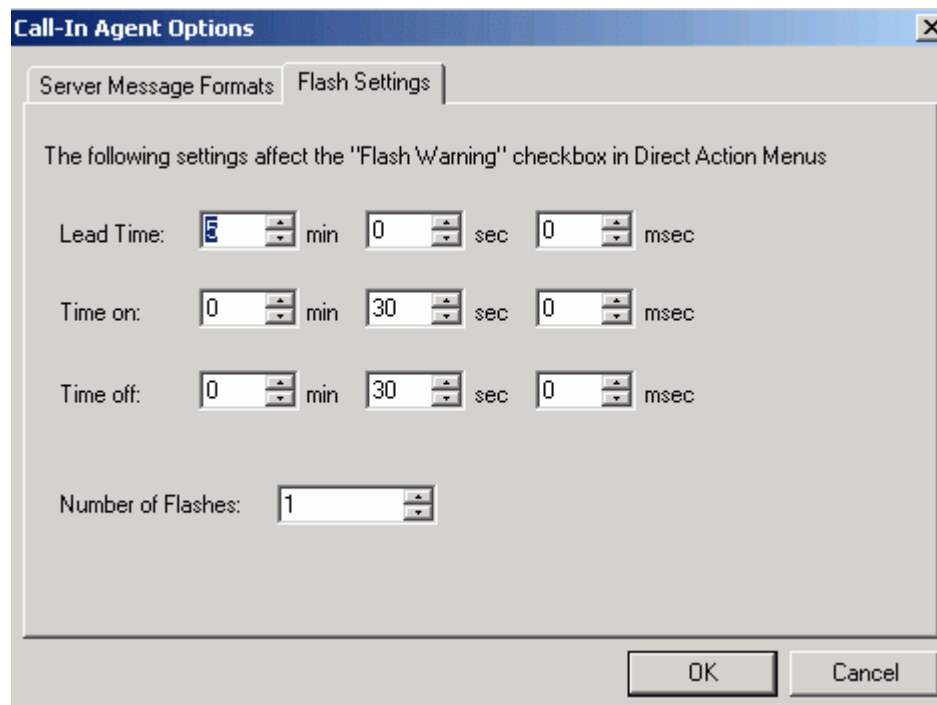


Figure A8.6 - Flash Settings for Direct Action Menu

The **Flash Settings** tab, shown in Figure A8.6, sets the following parameters for the Flash Warning function in direct action menus:

Lead Time: Sets the amount of time before the system starts the flash process. The time is determined by taking the **Reset Time** (found on Direct Action menus) and subtracting the **Lead Time**. For example, if the **Reset Time** is 1 hour and the **Lead Time** is 10 minutes, the flash process will start 10 minutes before the final reset (in this case, 50 minutes after the value was originally set).

Time on: Sets the time period for each warning flash for the write value.

Time off: Sets the time period for each warning flash for the reset value.

Number of Flashes: Specifies how many times the system switches (flashes) between the tag's write value and reset value before resetting the value.

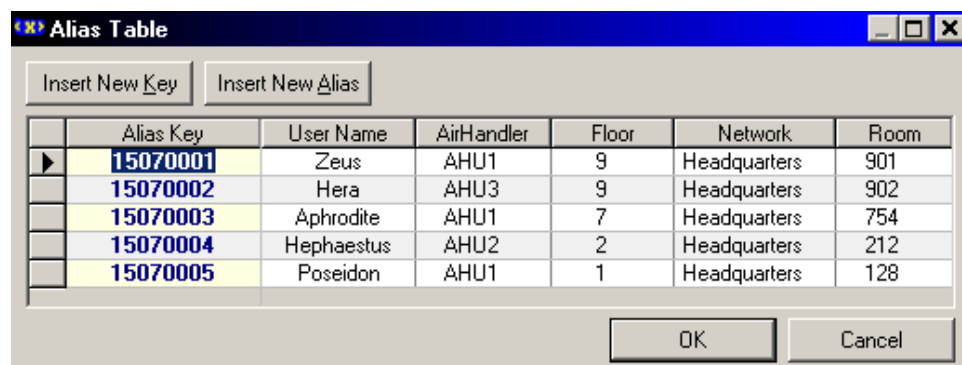
For each setting, you can specify how many minutes, seconds, and milliseconds.

A.5. Alias Table

The Call-in Agent can be configured to use an **alias key** for each user (caller). If using aliases, each caller uses a numeric alias key in the configuration. This is an ID number that the Call-in Agent uses to recognize the caller. Each alias key can be associated with numerous aliases, enabling you to customize settings for each user by associating the caller's alias key with certain parameters, such as which locations in the building the caller can access (e.g. room, floor). Alias names then can be used in Call-In menus to significantly reduce the number of necessary menus.

When a caller dials into the system, the caller can be prompted to enter his or her alias key. If he or she then accesses a menu containing aliases, all aliases get resolved according to the caller's alias key, and the caller gets control over OPC resources determined by his or her alias resolution. If another caller accesses the same menu with a different alias key, he or she would have access to yet another set of OPC points, as specified by his or her alias key in the alias table.

To configure aliases, click the **Alias Table** button in the Call-in Agent general settings. The **Call-in Alias Table** appears, as shown in Figure A8.7. The table contains several columns. The **Alias Key** column lists each numeric alias key. The **UserName** column lists the name of the caller associated with each alias key. The **Alias Key** column and **UserName** column are fixed; neither can be deleted, and each alias key must be associated with a user name. (You can change the keys and user names in the columns, but the columns themselves cannot be deleted.) The remaining columns contain aliases (e.g. **Bldg**, **Floor**, and **Room**) that can be modified or removed as needed.



Alias Key	User Name	AirHandler	Floor	Network	Room
15070001	Zeus	AHU1	9	Headquarters	901
15070002	Hera	AHU3	9	Headquarters	902
15070003	Aphrodite	AHU1	7	Headquarters	754
15070004	Hephaestus	AHU2	2	Headquarters	212
15070005	Poseidon	AHU1	1	Headquarters	128

Figure A8.7 - Alias Table

A **Key-in menu**, such as the **Get ID** menu shown in Figure A8.8, is an example of when a caller would be asked to enter an alias key. The **Enter Alias Key to Resolve Aliases** option must be selected from the drop-down list under **Key-in Action**, as shown in **Error! Reference source not found..** For example, in the **GetID** key-in menu, the **Introduction Phrase** states "please enter your 8 digit ID." Thus, when a caller dials into the system, the caller is prompted to enter his or her alias key. If the system recognizes the caller's alias key, it resolves the user name and all other aliases associated with the alias key.

The Call-in Agent supports both alias login and the standard security login. The alias login uses the **UserName** alias column to log a caller into the agent. This only takes place if the alias key entry is specified in the key-in menu. When the caller accesses this menu and enters an alias key, the system uses the name associated with the **UserName** alias column for login purposes. The standard security login uses the security server password and the alias login **UserName**. The caller first enters an alias key, and then enters a security password. The name associated with the **UserName** alias column is sent to the security server as the login name. The security password entered is used as the login password. The security server will resolve this combination for security login.

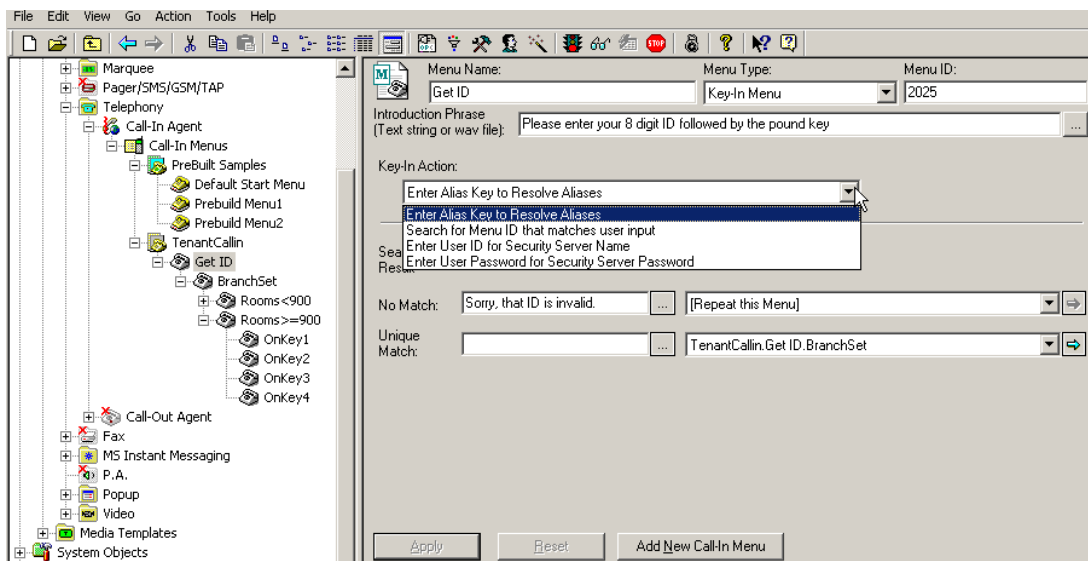


Figure A8.8 - Alias Key in Action

Each menu group may contain one or more Call-in Agent menus or submenus. All menus contain the following general configuration settings at the top of the configuration dialog box, as shown in Figure A8.9.

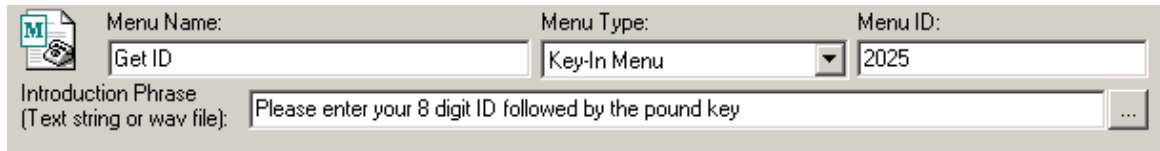


Figure A8.9 - Basic Menu Configuration Settings

- **Menu Name:** Type a name for the menu in this field (maximum of 256 characters).
- **Menu Type:** Each menu contains an extensive configuration interface, which is divided into different menu types. Select from one of the following menu types:
 - * Option Menu
 - * Key-In Menu
 - * Direct Action
 - * Decision Menu
 - * Alarm Menu
- **Menu ID:** The Configurator assigns a unique ID number for each menu based on the **Base ID** number of the group in which the menu was created. Menu IDs can be used as key-in actions for key-in menus.
- **Introduction Phrase:** Enter the message (maximum of 256 characters) that the caller hears upon reaching the menu. The text is automatically converted to speech by the Call-in Agent. If you do not want to use a text message, you can instead select a sound file (.wav). You can also insert an alias name in this text (the alias name appears inside double angle brackets: e.g. <<Floor>>). The Call-in Agent tries to resolve this alias according to the alias key that caller entered earlier in the call-in session.

Note: You can use text-to-speech messages, sound files, and text messages with aliases.

A.6. *Types of Call-In Menus*

When configuring Call-in menus, you can select from the following types of menus, as shown in Figure A8.10.

- **Key-in Menu:** Contains a user-input menu with a string of digits followed by the pound key.
- **Decision Menu:** Gets rerouted to another menu based on value of an OPC tag or expression.
- **Option Menu:** Contains a list of user-configured menu choices.
- **Direct Action:** Specifies a direct, predefined action to take place upon entering the menu.
- **Alarm Menu:** Specifies a multimedia template and an alarm filter.



Figure A8.10 - Selecting Menu Types

For more information on how to configure each type of the Call-In menu, please refer to the AlarmWorX32 Multimedia User Manual located on your installation disc.

A.7. Starting the Call-In Agent

Unlike most our agents, you do not have to create an action set to trigger the Call-in agent when an alarm occurs. The agent, once turned on, will receive all information from the A&E server it subscribes to and return the information to the caller when they call-in. You do not need to start the AlarmWorX32 Multimedia server, however, you do need to start the Call-in Agent Server.

1. Click the **Start Call-in Agent** button on the general settings dialog, as shown in Figure A8.11.

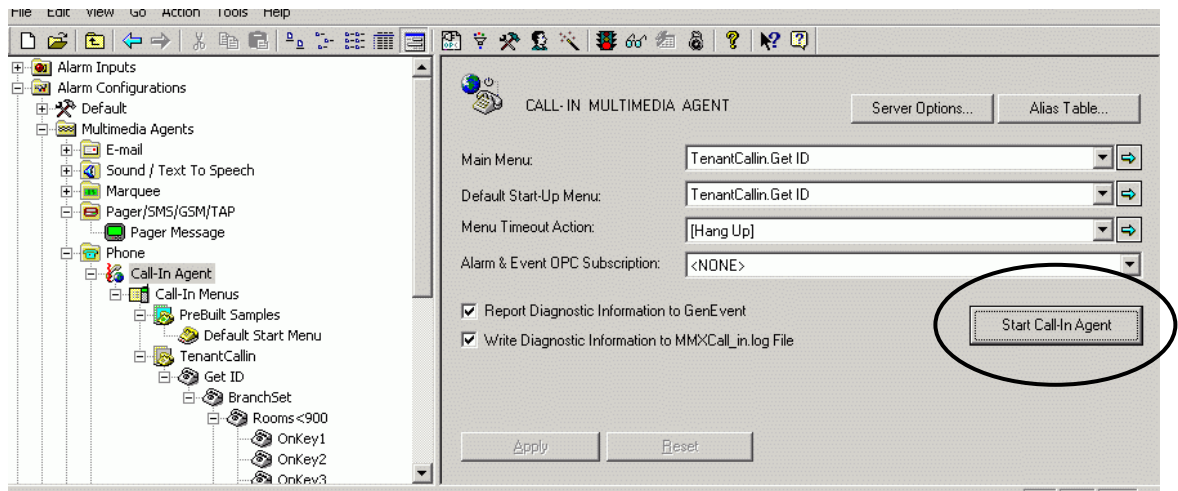


Figure A8.11 - Starting the Call-In Agent

2. As the Call-in Agent loads, a progress window appears, as shown in Figure A8.12. Depending on how fast your computer is, you may or may not see this dialog.

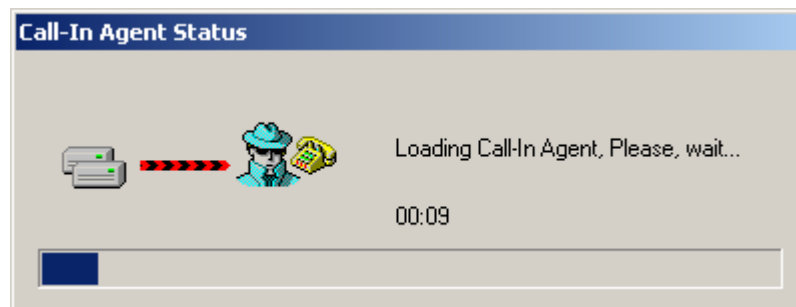


Figure A8.12 - Call-In Agent Loading

3. Once the Call-in Agent is running, you can call the number of the phone line attached to the Dialogic card to dial in to the system. The red mark over the phone icon in the tree control is now removed to indicate that the Call-in Agent is running, as shown in Figure A8.13



Figure A8.13 - Call-In Agent Running

4. After you start the Call in agent, the **Start Call-in Agent** button changes to say **Stop Call-in Agent**.
5. You can click the **Stop Call-in Agent** button on the general settings dialog. As the Call-in Agent shuts down, a progress window appears.

Appendix9: Video Agent

A9

A.1. Video Agent

The Video Agent, shown in Figure A9.1, plays a prerecorded video or a video captured at the moment of the alarm, allowing you to use a video device to send a video or a snapshot to a computer providing alarm information.

MMXVideo V.9.0.164.3

Media Item Name: Video Item Node: ...

Description:

Media Template: Default Video TEST

Scheduling: <NONE>

Role: <NONE> ☐ Enable Alarm Prioritization

Video Agent Settings

Snapshot Node: ...

Play 1 time(s)

Maximum play time 0 sec.
(enter 0 if no limits)

Apply Reset Add New Media Item

Figure A9.1 - Video Agent

The following configuration fields are available for the Video Agent:

- **Media Item Name:** Enter a name for the Video Agent configuration.
- **Node:** Enter the node name for the computer on which you wish to run the Video Agent. If left blank, the Video Agent will be run on the computer that is running the Multimedia Server. Click the ... button to search for a node.
- **Description:** Allows you to add comments to the agent configuration.

- **Media Template:** You must choose a template to be used with the agent. The template determines the actual video file (.avi, .mpg, .mpeg, or .mov) or snapshot (image) file (.bmp, jpg, jpeg, or .gif) that gets displayed. The Configurator includes a template, called **Default Video**, created for sending messages using video.
- **TEST button:** Tests your video configuration settings.
- **Scheduling:** If you are using scheduling, choose from the configured schedules on the drop-down list.
- **Role:** Select a role from the drop-down list.
- **Enable Alarm Prioritization:** When this check box is checked, the multimedia system processes alarms based on the severity level of the alarm. If the check box is not checked, alarms are processed only on a first-in-first-out basis.
- **Snapshot Node:** Enter the node name for the computer on which you wish to run the Video Agent Snapshot. If this field is left blank, the Video Agent Snapshot will be run on the computer running the Multimedia Server. Click the ... button to search for a node.
- **Play:** Plays the video a specified number of times.
- **Maximum Play Time:** Sets a maximum video play time (in seconds).
- **Apply button:** Saves all changes to the configuration database.
- **Reset button:** Clears all recently added information.
- **Add New Media Item:** Adds a new agent to be configured. You can also add a new Video Agent by right-clicking the **Video** folder on the tree control and selecting **New → Media Item** from the pop-up menu.

A.2. General Video Settings

The Multimedia Video Agent allows you to send a video or a video snapshot to a computer providing alarm information. The general settings for video agents may vary depending on which device is used. General settings will only function if you have a video capture device (Web camera) installed on your computer. If no video capture device is found, you will get an error message informing you that the application could not find any video capture devices.

Although many different kinds of video capture devices can be used with the Video Agent, we will use the Logitech® QuickCam® video camera here as an example configuration. This example assumes that the Logitech QuickCam software has already been installed on the system.

Once the video capture device is installed, go to the **Alarm Configurations - Multimedia Agents - Video** folder on the tree control of the Multimedia Configurator. Click on the **General Settings** button, as shown in Figure A9.2. If you do not see the **General Settings** button, make sure that **Dialog View** is checked on the **View** menu.

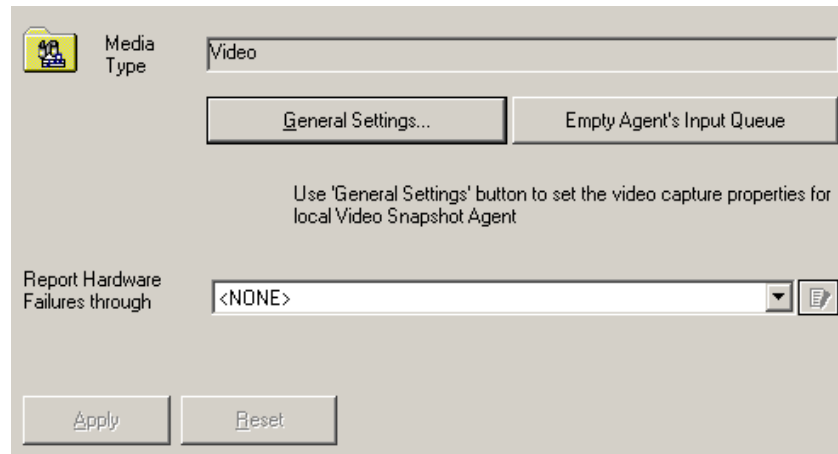


Figure A9.2 - Video Agent General Settings

Clicking **General Settings** opens the **Snapshot Configuration** dialog box, shown in Figure A9.3. The **Snapshot Configuration** dialog box contains the following options:

- **Display:** Allows you to choose video display options.
- **Compression:** Choose a component to use if you wish to compress the video files.
- **Format:** Sets options such as color, mirror, flip, and size.
- **Source:** Configures hardware settings based on the video driver you choose to use.
- **Video Driver:** Choose a video driver to use.
- **Jpeg Settings:** Select the quality level and the option to display in color or grayscale for snapshots.

The general settings for video agents may vary depending on which video capture device is used. General settings will only function if you have a video capture device (Web camera) installed on your computer. If no video capture device is found, you will get an error message informing you that the application could not find any video capture devices.

If you are using a remote node for video capture, you will have to go to the remote node and change the settings for video capture on that remote node. If there is no Multimedia Configurator installed on your video capture node, then you can run the "MMXSnapshot.exe" in the "Bin" directory to set the general settings.

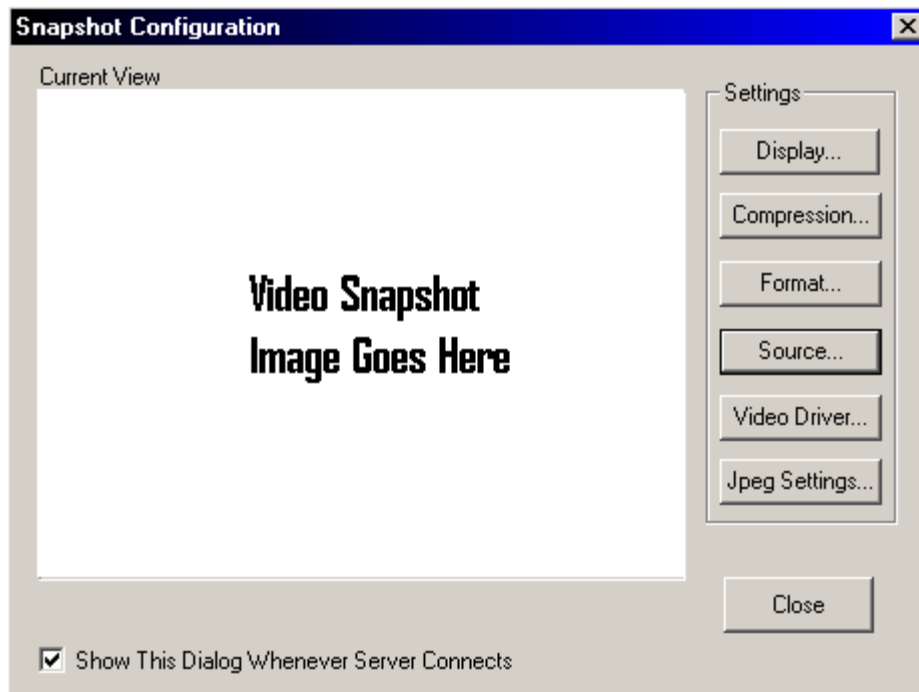


Figure A9.3 - Snapshot Configuration Dialog Box

A.3. Display

Clicking the **Display** button in the **Snapshot Configuration** dialog box allows you to choose display properties for the video capture device. In this case, the display properties are not supported by Logitech QuickCam, and a message appears as shown in Figure A9.4.

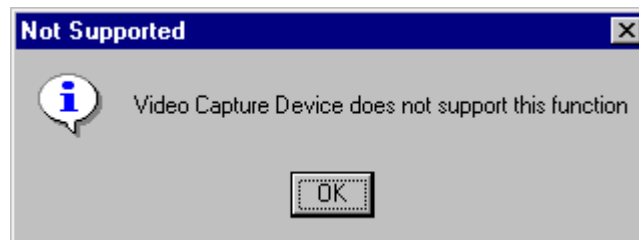


Figure A9.4 - Display Properties Not Supported

A.4. Compression

Clicking the **Compression** button in the **Snapshot Configuration** dialog box allows you to choose a component to use if you wish to compress the video files, as shown in the **Video Compression** dialog box in Figure A9.5. Click the **Configure** button to set the **Compression Control** (smoothness vs. crispness) and **Data Rate** (kilobits per second).

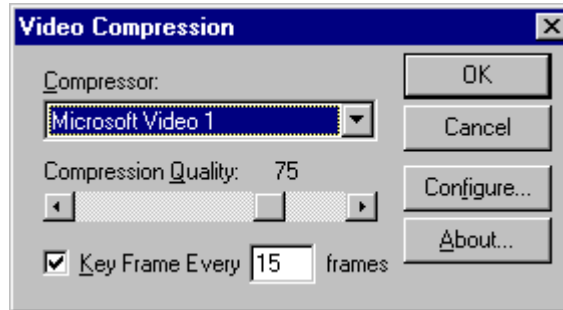


Figure A9.5 - Video Compression Setup

A.5. Format

Clicking the **Format** button in the **Snapshot Configuration** dialog box allows you to set options such as color, mirror, flip, and size, as shown in Figure A9.6. Choose the desired settings, and then click **OK**.

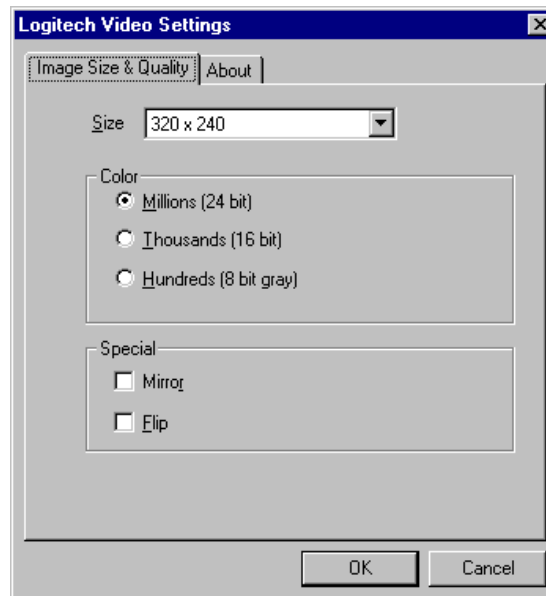


Figure A9.6 - Video Settings: Format

A.6. Source

Clicking the **Source** button in the **Snapshot Configuration** dialog box allows you to configure hardware settings based on the video driver you choose to use. As shown in Figure A9.7, you can specify the brightness, hue, quality, exposure time, and light sensitivity.

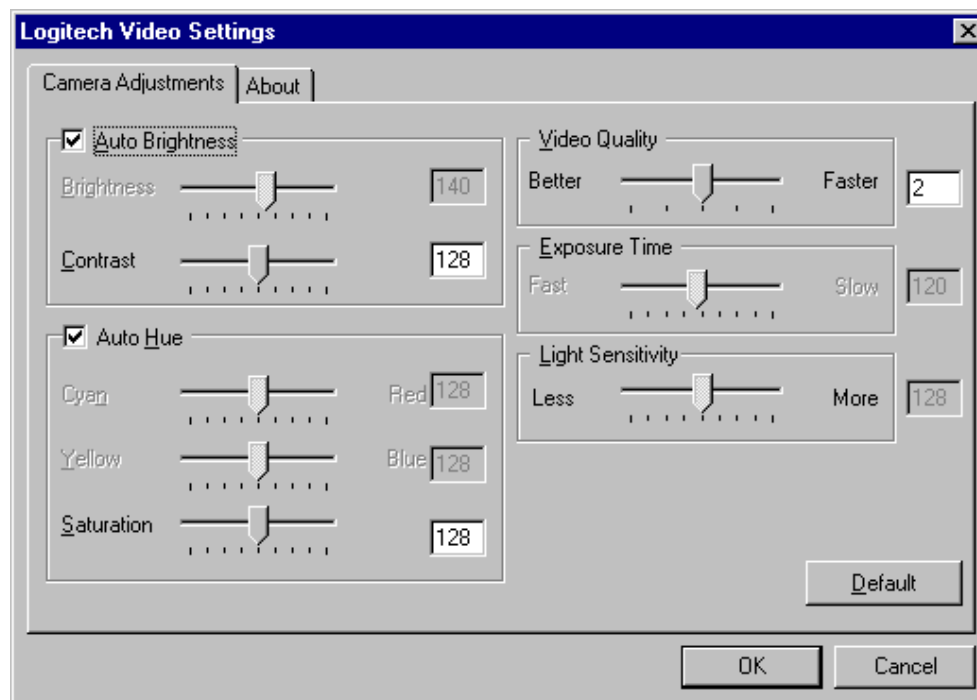


Figure A9.7 - Video Settings: Source

A.7. Video Driver

Clicking the **Video Driver** button in the **Snapshot Configuration** dialog box opens the **Video Capture Selection** dialog box, shown in Figure A9.8. Select the video capture driver from the drop-down list.

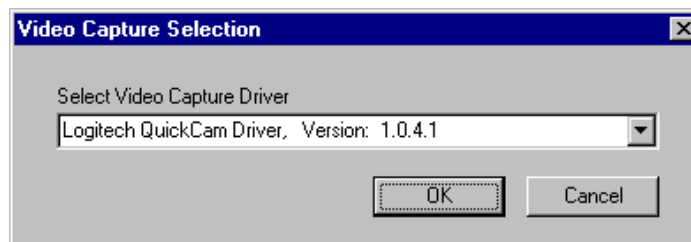


Figure A9.8 - Video Capture Driver Selection

A.8. *JPEG Settings*

Clicking the **Jpeg Settings** button in the **Snapshot Configuration** dialog box allows you to select the quality level and the option to display in color or grayscale for snapshots, as shown in Figure A9.9.

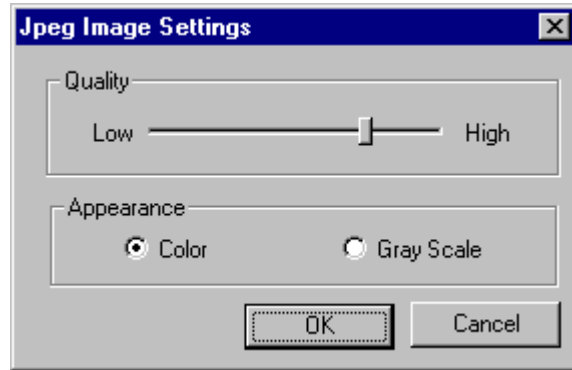


Figure A9.9 - JPEG Image Settings for Video Camera



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