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NOTICES

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- The application is used in accordance with the instructions for use.

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Disposal

This product and its accessories must be disposed of according to local laws and regulations. Do not dispose of this product as unsorted municipal waste. For more specific disposal information see www.welchallyn.com/weee.

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Consumable, disposable or single use products such as, but not limited to, PAPER or ELECTRODES are warranted to be free from defects in workmanship and materials for a period of 90 days from the date of shipment or the date of first use, whichever is sooner.

Reusable product such as, but not limited to, BATTERIES, BLOOD PRESSURE CUFFS, BLOOD PRESSURE HOSES, TRANSDUCER CABLES, Y-CABLES, PATIENT CABLES, LEAD WIRES, MAGNETIC STORAGE MEDIUMS, CARRY CASES or MOUNTS, are warranted to be free from defects in workmanship and materials for a period of 90 days. This warranty does not apply to damage to the Product/s caused by any or all of the following circumstances or conditions:

- a) Freight damage;
- b) Supplies, accessories and internal parts NOT approved by Welch Allyn;
- c) Misapplication, misuse, abuse, and/or failure to follow the Product/s instruction sheets and/or information guides;
- d) Accident;
- e) A disaster affecting the Product/s;
- f) Alterations and/or modifications to the Product/s not authorized by Welch Allyn;
- g) Other events outside of Welch Allyn's reasonable control or not arising under normal operating conditions.

THE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT WITHOUT CHARGE FOR LABOR OR MATERIALS, OR ANY PRODUCT/S FOUND UPON EXAMINATION BY

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USER SAFETY INFORMATION



Means there is the possibility of personal injury to you or others.

Caution: Means there is the possibility of damage to the application.

Provides information to further assist in the use of the application.

NOTE: This manual may contain screen shots and pictures. Any screen shots and pictures are provided for reference only and are not intended to convey actual operating techniques. Consult the actual screen in the host language for specific wording.



Note:

- Reference ELI[™] electrocardiograph user manuals for all warnings.
- Application is designed to operate under: Microsoft Windows Server 2012 R2 (64-bit) Microsoft Windows 10 (64-bit) Microsoft Windows Server 2016 Microsoft Windows Server 2019
- Possible malfunction risks could be associated when installing 3rd party software. Welch Allyn, Inc. cannot verify the compatibility of all possible hardware/software combinations.
- Application is used to exchange data with 3rd party Electronic Health Record (EHR) systems. It is not possible to assure complete compatibility with all possible 3rd party EHR systems and configurations. It is recommended to contact the 3rd party EHR vendor to ensure application has been verified as compatible with a particular installation of their system.



• Reference ELI electrocardiograph user manuals for all cautions.

Notes

• Reference ELI electrocardiograph user manuals for all notes.

EQUIPMENT SYMBOLS AND MARKINGS

Symbol Delineation













CAUTION The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data.

WARNING The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death. In addition, when used on a patient applied part, this symbol indicates defibrillation protection is in the cables. Warning symbols will appear with a grey background in a black and white document.

Do not dispose as unsorted municipal waste. Requires separate handling for waste disposal according to local requirements

Follow instructions/directions for use (DFU) – mandatory action. A copy of the DFU is available on this website. A printed copy of the DFU can be ordered from Hillrom for delivery within 7 calendar days.

Medical Device

Model Identifier

Reorder Number

INTRODUCTION

This service manual contains information about the installation, configuration and maintenance of the MDI (Mortara Device Interface) HL7 interface.

The MDI is a suite of applications that provide interoperability with Electronic Health Record (EHR) systems that exchange medical information using HL7 technology. Supported feature include:

- ADT interface-capture patient demographic information for use on Welch Allyn devices.
- Orders interface-capture ordered procedure information for use on Welch Allyn devices.
- Results reporting interface-provide results of resting ECG, stress, Holter and Cardiac Rehabilitation exams collected by the Welch Allyn devices.



MDI Information Workflow

Figure 1

Figure 1 depicts an ECG workflow using an ELI resting ECG device and ELI Link connected to an information source (Database) that is managed by the MDI HL7 interface to an EHR application. At the time of this publication, only the patient roster (HL7 ADT) workflow is supported by the MDI.

The installation and configuration of ELI Link and supported ELI cardiographs is described in the ELI Link Administration manual.

MDI Installation

The MDI software is provided to a customer as part of the ELI Link Software Installation DVD (P/N 107347)

The customer environment and the nature of the EHR application (local install, hosted, cloud based) will dictate which type of installation topography is prescribed:

- LAN Scenario
- LAN (MDI HL7 Interface) EHR Server Application Hosted Scenario
- MDI HL7 Interface and EHR Server Application Both Hosted Scenario

Refer to the MDI – HL7 Implementation Guide for more detail and considerations on these deployment scenarios.

System Requirements

Operating System Support

- Windows 2012 Server R2 (64-bit)
- Microsoft Windows 10 (64-bit)
- Microsoft Windows Server 2016
- Microsoft Windows Server 2019

Hardware Support

Hardware support for the system should meet the recommended specifications as outlined for the corresponding Windows operating systems. This would include; RAM, CPU and hard drive requirements.

Installation Components

The installation of the MDI software consists of the following software packages:

- Java Runtime Environment (JRE); Java SE Runtime Environment 8u131
- Mirth Interface Engine; mirthconnect-3.4.2.8129.b167
- MDI software

A user with **Administrative** privileges is required to install the MDI application software. Administrator privileges are not required to run the software after installation is complete.

This section will describe the process for installing the MDI instance of SQL database:

1. MDI can be configured to work with a local/remote SQL Server Enterprise or a local instance of SQL Server Express. SQL Server versions supported are 2012 SP4, 2017 and 2019.

Note, the following steps are for the Express editions only.

a. Browse to the folder *SQL Server Installer* on the ELI Link installation DVD (P/N 107347). Launch the desired edition of Microsoft SQL Server Express, by double clicking on the appropriate .exe file as listed:

For Microsoft SQL Server 2012 Express with Tools SP4 installer:

en_sql_server_2012_express_edition_with_tools_with_service_pack_4_x64_100066349.exe

For Microsoft SQL Server 2019:

SQLEXPRADV_x64_ENU_2019.exe

Notes

- Microsoft SQL Server Express 2017 is not provided on the DVD. If desired the executable will have to be download from the Microsoft site.
- When 201x is used in the following steps, x is indicating 2, 7 or 9 displayed depending on the SQL Server version installed (2012, 2017 or 2019).
- b. If prompted *Do you want to allow this app to make changes to your device?* Click **Yes**.
- c. If prompted *Choose Directory For Extracted Files*, select default (directory where .exe file is located). click **Ok**.
- d. SQL Server Installation Center / Installation: Click New SQL Server stand-alone installation or add features to an existing installation
- e. If Microsoft Updates are recommended a dialog comes up asking *Use Microsoft Update to check for updates* (*recommended*). Select the box and click **Next >**.
- f. If prompted *There are no updates for SQL Server found online*. Click **Next >**.
- g. Installation Type, select: Perform a new installation of SQL Server. Click Next >.
- h. If prompted for License Terms. Check *I accept the license terms*. If available, leave *Send feature usage*... unchecked. Click Next >.
- i. SQL Server 201x Setup / Feature Selection, select the features:
 - Database Engine Services
 - Management Tools Basic (only applicable for SQL Server 2012 SP4)

- SQL Client Connectivity SDK

Uncheck all other features. Leave the default settings for the Shared directories. Click Next >.

j. SQL Server 201x Setup / Instance Configuration. Select Named Instance and enter: MDI_ENGINE

Leave all other default settings and click **Next >**.

- k. SQL Server 201x Setup / Server Configuration: Leave *SQL Server Data Engine Startup Type* set for **Automatic** and leave *SQL Server Browser Startup Type* set as **Manual**. Click **Next >**.
- 1. SQL Server 201x Setup / Database Engine Configuration / Server Configuration tab:
 - Set Authentication Mode to: Mixed Mode
 - Set the custom sa password. Example: MdiEngine14
 - Add other users/groups to the SQL Server Administrators list if necessary.
 - Click Next >.
- m. Displayed for SQL Server 2012 version only, SQL Server 2012 Setup / Error Reporting: Uncheck Send Windows and SQL Server Error Reports... Click Next >.
- n. SQL Server 201x Setup / Complete: Verify that all features were installed successfully.
- o. If prompted One or more affected files have operations pending. You must restart your computer after the setup process is completed. Click **OK**.
- p. Click **Close** to exit SQL Server 201x Setup.
- q. Close the SQL Server Installation Center application.

MDI Installation Procedure

Starting the MDI Software Installation

This section describes the installation of the MDI software application. Using the installation DVD, navigate to the "MDI" folder. Click on **Setup.exe**. This will launch the installation of the MDI application as defined in the MDIInstall.msi file.

NOTE: If the MDI application is already installed, you will receive a notice that you must uninstall prior to re-installation.

MDI Application Installation

The user will be presented with the MDI Installation dialog.

Click **Next** to start the installation process.

ġ	MDI		– – X
Welcome to the MDI Se	etup Wizard		Mortara
The installer will guide you through the :	steps required to install ł	MDI on your comp	suter.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.			
	Cancel	< <u>B</u> ack	Next >

This will prompt the user with the "Select Installation Option" dialog. Select COMPLETE INSTALL WITH DATABASE (or Partial install if its an upgrade).

Click Next to proceed.

	PRODUCT INSTALLATION
븅 MDI	– – ×
MDI Installation	Mortara
Please Select Installation Option.	
 Complete Install with Database (Recommended) 	
Partial Install without Database (Files Only)	
Cance	4 < Back Next >

This will prompt the user with the "Select Installation Folder" dialog. DO NOT make any changes to the default settings. The MDI must be installed in the "Mortara Instrument Inc\Mdi" folder for proper operation.

Click **Next** to proceed.

₽	MDI	– – X
Select Installation Folde	ər	Mortara
The installer will install MDI to the following	ng folder.	
To install in this folder, click "Next". To in	nstall to a different folder, enter it b	elow or click "Browse".
Eolder: C:\Mortara Instrument Inc\Mdi\		Browse Disk Cost
Install MDI for yourself, or for anyone w	who uses this computer:	
• <u>E</u> veryone		
⊖ Just <u>m</u> e		
	Cancel < <u>B</u> ack	<u>N</u> ext >

This will prompt the user with the "Confirmation" dialog.

Click **Next** to start the MDI software installation.

If prompted *Do you want to allow this app to make changes to your device?* click **Yes**.

b	MDI	– 🗆 X
Confirm Installatio	ก	Mortara
The installer is ready to install Click "Next" to start the install	MDI on your computer. lation.	
	Cancel <	<mark>≩ack N</mark> ext >

This will display the MDI Installing dialog.

B	MDI	_ 🗆 🗙
Installing MDI		Mortara
MDI is being installed.		
Please wait		
	Cancel < Ba	ack <u>N</u> ext >

If you select the Complete Install option, the Database Connection configuration screen will appear. Enter the SQL Database connection parameters for the ELI Link Database.

Default configurations (based on MDI SQL install): Server Name: Localhost Instance Name: MDI ENGINE DB Username: sa DB Password: MdiEngine14 (or your custom password

Click **Ok** to continue.

When the installation of the MDI software is
complete, the MDI Installation Complete dialog
will appear.

Click **Close** to exit the Installation.

;	Database Connection Configuration			
2	Server Name localhost Ex. localhost or xxx.xxx.xxx.xxx			
	Instance Name Ex. SQLEXPRESS12			
	DB Username sa			
ord)	DB Password			
	ok cancel			
Ş	MDI X			
y Installa	MDI – • × tion Complete			
Installa MDI has bee Click "Close"	mDI x tion Complete n successfully installed. 'to exit.			
Installa MDI has bee Click "Close" Please use \	MDI X tion Complete Image: Complete complete In successfully installed. ************************************			

Once the installation is complete, you may elect to create a shortcut to the MDI Configuration tool. This can be done by creating a new shortcut on the desktop:

륗

- Browse "C:\Mortara Instrument Inc\Mdi\bin\MDI Config.exe". •
- Name of Shortcut: "MDI Configuration". •
- Open Properties Windows for MDI Configuration shortcut and select **Change Icon**. Select **OK** and then browse/select "Mortara.ico" in directory "C:\Mortara Instrument Inc\Mdi\bin\". Click Open and then OK. Select Apply and then OK.



This completes the installation of the MDI application.

MDI Dependent Software Installation Description

This section describes the installation of the software applications that the MDI application is dependent upon as described in <u>Installation Components</u>. Using the installation DVD, navigate to the "MDI-DEPENDENT" folder. Click on **MDI.Dependent.SW.Install.exe**. This will launch the installation application that guides the user in installing the MDI dependent software applications.

NOTE: You must first install the MDI application prior to running the MDI dependent software installation program. This program is dependent upon the .NET Framework 4.5 which is installed as part of the MDI installation if needed.

The MDI Dependent Software Installation Program has the menus as described below:

- ALL install all MDI dependent software applications in a batch mode. This is the option that should be used for the MDI installation, and is described in the following sections of this manual.
- JAVA installs the JAVA Runtime (JRE) software.
- IE installs the HL7 Interface Engine application (i.e. Mirth).
- Exit exits program.

When the user elects to use the "ALL" installation option the installation program will inform the user of the "Start" and "Completion" of all the dependent software modules.

💀 MDI Dependent Software Installation Pr	ogram. Ver 🗕 🗖 🗙	🖷 MDI Dependent Software Installation Program. Ver 🗕 🗖 🗙
ALL JAVA IE Exit		ALL JAVA IE Exit
	x	X
Installing ALL MDI Dependent Softwa	e Components	Installation of ALL MDI Dependent Software Components Completed
	ОК	ОК

The installation program will inform the user of which software application is being installed complete with a "Start Install" and "Installation Complete" messages. If errors are detected during the installation, the user is notified of which application failed to install. The following is an example of those messages for the JAVA installation.



JAVA IE Exit	ALL JAVA IE Exit
×	×
Starting JAVA Runtime (JRE) Software Installation	JAVA Runtime (JRE) Software Installation Completed
ОК	ОК

Java Runtime (JRE) Installation

This section installs the Java Runtime Environment (JRE). The JRE is required to run the Mirth Interface Engine. Note: If prompted *Do you want to allow this app to make changes to your device?* during this installation click **Yes**.

Click **Install** to start the installation.



When the JRE installation has completed, you will be presented with a successfully installed dialog.

Click **Close** to continue.

When the installation of the JAVA software is complete, the user will be prompted to install the Mirth Connect software.



INSTALLATION

Mirth Interface Engine Installation

This section installs the Mirth Connect Interface Engine. The Mirth Interface Engine is required to manage HL7 messaging between the EHR and the MDI database.

Click Next to continue.

NOTE: You must always install (select Next) the Mirth Connect software. If you select Cancel, the MDI installation will fail and the MDI product will be uninstalled.

A license agreement dialog is issued indicating that use of this product shall comply with the Mozilla Public License (MPL 1.1).

Select Accept and click Next to continue.

An installation folder dialog is presented. Use the default installation location.

Click Next to continue.





< Back Next > Cancel

A components selection dialog is presented. Select all components.

Select **All Components** and click **Next** to continue.

😪 Setup - Mirth Connect 3.0.0.6931.b982	
Select Components Which components should be installed?	
Select the components you want to install; clear the componer install. Click Next when you are ready to continue.	nts you do not want to
📝 💤 Mirth Connect Server	
📝 🔥 Mirth Connect Server Manager 😡	
V 💦 Mith Connect CLI 🞯	
< Back	Next > Cancel

A Start Menu dialog is presented. Use the default

settings. Click **Next** to continue.

A Server Settings dialog is presented. Use	the default
settings. Click Next to continue.	

slect Start Menu Folder Where should Setup place the program's shortcuts?	-
Select the Start Menu Folder in which you would like Setup to shortcuts, then click Next,	create the program's
Create a Start Manu Folder	
Milli Connect	
7-20p	
Accessories	10
Administrative Tools	-
ELTLINK	1
Games	
Maintenance	
Notepad++	-
2 Create shortouts for all users	
	Next > Cance

🚼 Setup - Mirth Con	nect 3.0.0.6931.b982		
Server Settings Network Ports			
Web Start Port Administrator Port	8060		
		< Back Next >	Cancel

A Security Settings dialog is presented. Use the default

settings. Click **Next** to continue.

finimum number of upper-case characters 0	
Animum number of lower-case characters 0	
Inimum number of numeric characters	
Inimum number of special characters 0	

Depending on the Windows Firewall setting on the computer that the software is being installed, you may be presented with a Windows Firewall dialog. Select **Private networks** setting.

NOTE: You should not receive this message if you are an Administrative user performing the installation.

Click Allow access to continue.

A Server Settings - Paths dialog is presented. This indicates the location of the Server log files and application data. Use the default settings.

Click **Next** to continue.

erver Settings		
Paths		
Application Data	C:\Program Files (x86)\Mirth Connect\appdata	Browse
Logs	C:\Program Files (x86)\Mirth Connect\logs	Browse

A Server Settings - Service dialog is presented. This allows you to run the Mirth interface engine as a Windows service. Select **Install service** (default).

An Installing dialog will be presented as the Mirth

interface engine software is being installed.

Click **Next** to install the software.



Setup - Mirth Connect 3.0.0.6931.b992

A Completing dialog will be presented when the software installation is complete. Deselect viewing the README file.

Click **Finish** to complete the installation.

If prompted *Do you want to allow this app to make changes to your device?* Click **Yes**.

An "orange M" will be displayed in the desktop tray indicating that the Mirth Interface engine is running.



Configuring Java

This section describes some JAVA settings that are required for proper operation of the Mirth Connect Interface Engine. You will need to open up the Window Control Panel and select the Java (32) item (might be found under Programs). This will display the Java Control Panel.

Temporary Files Cache Setting

From the General tab, select the **Settings** button. This will display the Temporary Files Settings dialog. Ensure that the "Keep temporary files on my computer" checkbox is selected. Then select **OK**.

nporary Files Setting	S	
Keep temporary files	on my computer.	
ocation		
Select the location	where temporary files are	e kept:
iek\AppData\LocalL	ow\Sun\Java\Deploymen	t\cache Change
)isk Space		
Select the compres	sion level for JAR files:	None 🔻
Set the amount of c	lisk space for storing tem	porary files:
		32768 🖈 MB
	Delete Files	Restore Defaults

Allowed Site List Setting

From the Security tab, select the **Edit Site List** button. This will display the Exception Site List dialog. Add the "http://localhost:8080" site. Then select **OK**.

Juva control Faller	
General Update Java Security ,	Advanced
Enable Java content in the brow Security Level	vser Very High
Exception Site List Applications launched from the site appropriate security prompts.	s listed below will be allowed to run after the
1	
Location Umage: Location Location Location Location	
Location	Add Remove
Location Inttp://localhost:8080 Image: The second secon	add Rer onsidered a security risk. sites where available.

Configuring SQL Server Networking

This section configures the SQL Server Express Database Engine for use with the TCP/IP protocol. We will use the SQL Server 201x Express SQL Server Configuration Manager tool (2012, 2017 or 2019 version).

After opening the *SQL Server Configuration Manager* application, you will be presented with a menu containing various network configuration options to be selected.

- SQL Server Network Configuration menu This section enables 1) TCP/IP network protocol for the SQL Server Database Engine and 2) port 1433 for use by the Mirth Interface engine.
 - Protocols for MDI_ENGINE submenu.
 - Enable following communications protocols:
 - Shared Memory
 - TCP/IP
 - Right Click on TCP/IP communications protocol and select Properties.
 - Select the IP Address Tab
 - Select the "IPAII" entry
 - Set the TCP Port to 1433
 - Select Apply and OK

Protocol Name	Status Enabled			
TCP/IP	Enabled			
		TCP/IP Properties		2 🗾
		Protocol IP Addresses		
		TCP Port		1
		H 197 Active	Yes	
		Enabled	No	
		IP Address	fe80::d87b:daf3:94de:fcc9%19	
		TCP Dynamic Ports	0	
		TCP Port		
		E 198		
		Active	Yes	
		Enabled	No	
		IP Address	192.168.30.1	
		TCP Dynamic Ports	0	
		TCP Port		
		E 199		
		Active	Yes	
		Enabled	N0	
		IP Address TCR Departie Party	resu:::bu04/4111:86222:C/30%20	
		TCP Dynamic Ports	,u	
		E man		=
		TCP Dynamic Porte	15376	
		TCP Port	1433	100
	Protocol Name III Shared Mern III Named Pipes III TCP/IP	Protocol Name Status 17"Shared Mem. Enabled 11"Named Pipes Disabled 11"TCP/IP Enabled	Protocol Name Status "Shared Mem. Enabled "Named Pipes Disabled "TCP/IP Properties TCP/IP Properties TCP/IP Properties TCP Int Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active Enabled Birri Active	Protocol Name Status

• SQL Server Services menu

This section enables client applications to access the MDI database over a network.

- This will display a least of services in the right hand pane.
- Right Click on SQL Server Browser service and select Properties. This will display the SQL Server Browser Properties dialog.
- Select the Service tab and ensure the Start Mode is set to Automatic.
- Select the Advanced tab and ensure Active is set to Yes.
- Select Apply followed by OK to save your changes.



OK Cancel Apply Help

• SQL Native Client 11.0 Configuration (32 bit) menu

This section enables a 32 bit application to access the MDI database using the TCP/IP protocol. • Client Protocols submenu.

- Enable following communications protocols:
 - Shared Memory (1)
 - TCP/IP (2)

File Action View Help			
SQL Server Configuration Manager (Local)	Name	Order	Enabled
 SQL Server Services J. SQL Server Network Configuration (32bit) 	Shared Mem	1	Enabled Enabled
 ▷ \$\Box\$. SQL Native Client 11.0 Configuration (32bit) ▷ \$\box\$. SQL Server Network Configuration ▲ \$\Box\$. SQL Native Client 11.0 Configuration ■ \$\Box\$. Client Protocols \$\Box\$. Aliases 	ফ Named Pipes ফ VIA		Disabled Disabled

• SQL Native Client 11.0 Configuration menu

This section enables client applications to access the MDI database using the TCP/IP protocol.

- Client Protocols submenu
 - Enable following communications protocols;
 - Shared Memory (1)
 - TCP/IP (2)

🛶 Sql Server Configuration Manager				
File Action View Help				
🗢 🔿 🖄 📴 🤷 🔒 🛛				
🔞 SQL Server Configuration Manager (Local)	Name	Order	Enabled	
SQL Server Services	Shared Mem	1	Enabled	
▶ 및 SQL Server Network Configuration (32bit)	TCP/IP	2	Enabled	
SQL Native Client 11.0 Configuration (32bit)	To Named Pipes		Disabled	
SQL Server Network Configuration SQL Native Client 11.0 Configuration SQL Native Client 11.0 Configuration SQL Native Client Protocols Aliases	3 ⁻ VIA		Disabled	
R Allases				

• Final SQL Server Configuration Steps

This section describes the steps necessary to make the changes take effect in the SQL Server Database Manager.

- Close the SQL 201x Server Configuration Manager (2012, 2017 or 2019 version).
- Re-start the SQL Server Service; Control Panel, Administrative Tools (may be under System and Security), Services.
 - Select Restart of the SQL Server (MDI_ENGINE).

File Action Vi	iew Help						
(= =) 🗔 🔄	2 🗟 🛛 🖬 🖿 🕨 💷 🕪						
Services (Loca	Services (Local)						
	SQL Server (MDI_ENGINE)	Name	Description	Status	Startup Type	Log On As	1
		SI TSS v1.2.1.41 TCS	TCS service for acc		Automatic	Network Service	
	Stop the service	Smart Card	Manages access to		Manual	Local Service	
	Pause the service	Smart Card Removal Policy	Allows the system		Manual	Local System	
	Restart the service	SMS Agent Host	Provides change a	Started	Automatic (Local System	
		SNMP Trap	Receives trap mess		Manual	Local Service	
	Description:	Software Protection	Enables the downl		Automatic (Network Service	
	Provides storage, processing	SPP Notification Service	Provides Software		Manual	Local Service	
	and controlled access of data,	SQL Active Directory Helper Service	Enables integratio		Disabled	Network Service	
	processing.	SQL Server (CARECENTERMD)	Provides storage,	Started	Automatic	Network Service	
	P	SQL Server (MDI_ENGINE)	Provides storage,	Started	Automatic	NT Service\MSSQL\$MDI_ENGINE	
		SQL Server Active Directory Helper	Start		Disabled	Network Service	
		SQL Server Agent (MDI_ENGINE)	Stop .		Disabled	Network Service	
		SQL Server Browser	Pause .	Started	Automatic	Local Service	
		SQL Server VSS Writer	Resume	Started	Automatic	Local System	
		SSDP Discovery	Restart	Started	Manual	Local Service	
		Storage Service	All Tasks		Manual	Local System	-
< III ►	Extended Standard		Defeat				
Stop and Start ser	vice SQL Server (MDI_ENGINE) o	n Local Computer	Refresh				
			Deservation				

Installing the MDI Services

This section describes how to install and configure the MDI services. This operation only needs to be performed once during the initial installation. The program to install the MDI services is located found in the "bin" folder of the MDI application installation. Open an elevated command prompt (i.e. Run command prompt as Administrator) and then go to the bin folder. Type in RegisterMDIservices.bat.

- Open an elevated DOS (CMD) window
- Change directory to the "bin" folder of the MDI application installation
- Run the RegisterMDIservices.bat

This will install the MDI ADT, Orders and Results services. It will also start the service.

To verify operation, you can open Windows Task Manager, select Services tab and look for the MDIAdtService, MDIOrdersService and MDIResultsService. It should indicate they are Running.

The services are dependent upon the Microsoft SQL Server application to be running. In order to successfully restart the services upon a reboot of the system hosting the MDI HL7 interface, it will be necessary to configure the services with a Delayed Start. This can be done by using:

- Control Panel -> Administrative Tools -> Services. Right click on the services and select Properties.
- In the General tab of the Properties dialog; select the "Startup Type" to be "Automatic (Delayed Start).

🏔 Services (Local)	 Services (Loca 	al)		1 m m m	11.28	Total Control	1.45 392 245	
	MDIAdtService		Name	Description	Status	Startup Type	Log On As	^
	Stop the service		Link-Layer Topolo Machine Debug	Creates a N Supports Io	Started	Manual Automatic	Local Service Local Syste	
	Restart the service		ADIAdtService		Started	Automatic (D	Local Syste	
			🚔 Media Center Exte	Allows Med		Disabled	Local Service	
		MDIAdtService Pro	operties (Local Compute	r)	ſ	2 pled	Local Syste	
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		Service name:	adt			ual	Local Syste	
		Display name:	MDIAdtService			ual	Local Syste	
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		C:\Mortara Instru	iment Inc\mdi\bin\adt.exe			matic	Local Syste	
		Charles hones	Automatic (Datased Cha	-0		uai matic	Local Syste	
		Startup type.	Automatic (Delayed Sta	ng		bled	Network S	
		Help me configur	re service startup options.			pled	Local Service	
		6	Sec. 3			pled	Local Service	
		Service status:	Started			oled	Local Service	
		Start	Stop	Pause	Resume	matic	Local Syste	
	Extended Stand	You can specify from here. Start parameters:	the start parameters that ap	iply when you sta	it the service]		

Configuring Interface Engine

This section configures the Mirth Connect Manager and the Mirth Administrator Account for use with the MDI application. The Mirth Interface Engine is required to manage HL7 messaging between the EHR and MDI applications.

Configuring Mirth Connect Manager

Select the **Show Manager** option by right clicking on the Mirth Interface Engine icon in the desktop tray.



This will present you with the Mirth Connect Server Manager dialog – Service tab. Ensure that "Start Mirth Connect Server Manager on system startup" is selected (default).

lirth	Conn	ect Server Manager
Service	Server	Database Info
9	Start	Starts the Mirth Connect service
R	estart	Restarts the Mirth Connect service
	Stop	Stops the Mirth Connect service
Re	efresh	Refreshes the Mirth Connect service status

Select the **Server** tab. This will present you with the Mirth Connect Server Settings tab. Use the default values indicated in the dialog below.



Select the **Database** tab. This will present you with the Mirth Connect Server Database tab. Configure the Mirth Connect Server to use the MDI IE database using the following settings:

- Type: SQL Server/Sybase
- URL: jdbc:jtds:sqlserver://localhost:1433;databaseName=mdi _ie
- Username: mdiie
- Password: !!20IdM14%A

ervice Server Datab	ase Info			
Web Start Port:	8080	Main Log Level:	ERROR -	
Administrator Port:	8443	Database Log Level:	ERROR 🔻	
Server Memory (mb):	256	Channel Log Level:	DEBUG -	
Log Files:	mirth.log		Refresh	
			View File	

After you have entered in the settings, select **Apply** followed by **OK**. This will dismiss the Show Manager dialog. This will also restart the Mirth Interface engine with the updated server settings. The Mirth Connect Manager (orange M icon in the desktop tray) will indicate success if the Mirth Interface engine is successfully started with the new settings.

If the Mirth Interface engine does not successfully start; the problem is most likely related to:

- SQL Server does not have TCP/IP Enabled
- Port #1433 is not enabled

Reference the SQL Server Express setup section for more detail on configuring these parameters. Also consult the Mirth Interface engine log file (mirth.log) for more detail on the startup failure.

Configuring Interface Engine – Administrator Account

This section configures the Mirth Connect Interface Engine Administrator account. This account is used for the deployment of interfaces and monitoring the status of such interfaces.

Select the "Launch Administrator" option by right clicking on the Mirth Interface Engine icon in the desktop tray.



This will launch a dialog in which you enter the user account to access the Interface Engine administrative tool. Enter the following account information:

- User Name admin
- Password admin



The login will detect if this is the first time you have accessed the Interface Engine administration application. This will present a dialog (which only needs to be done once).

Enter the information as outlined in the dialog with the following user credentials:

- Username admin
- Password admin

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*

Prior to configuring the Mirth Channels it will be necessary to power cycle (restart) the computer hosting this 3rd party software. Once the restart is complete, proceed with the next section.

Launch Mirth Administrator

This section launches the Mirth Connect Interface Engine Administrator application which is used for the deployment of interfaces and monitoring the status of such interfaces.

Select the "Launch Administrator" option by right clicking on the Mirth Interface Engine icon in the desktop tray.



This will launch a dialog in which you enter the user account to access the Interface Engine administrative tool. Enter the following account information:

- User Name admin
- Password admin

Server: Username: Password:	https://localhost:8	443	8
Username: Password:			
Password:			
mirth		[Login Exit
	2.2		
come to Mirt	h Connect		
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The login may detect that this is the first time you have accessed the Interface Engine administration application.

Once again enter the information as outlined in the dialog with the following user credentials:

- User Name admin
- Password admin

Once you have successfully logged into the Interface Engine administrative application, you will be presented with a screen upon which you can perform administrative actions.

Mirth Connect Admin	nistrator - https://localhost:8443 - (3)	0.0.6931)										
Mirth Connect (8)											mir	in connec
	Status		Name		Revà	Last Deployed	Received	Filtered	Queued	Sent	Errored	Connection
Dashboard												
di Users												
🥜 Settings												
Alerts												
Extensions												
Dashboard Tasks	1											
(R. Dalach												
- Nenesn												
Other (2)												
ouler (K)												
() Help												
Visit mithcorp.com												
Report Issue												
S Logout												
	A 49 1 10 1									0.0		A
	0 Deployed Channels								2004	ic (a) currer	t Statistics	Une time statistics
	Server Log Connection Log			Las Televentes								
	[2014-05-04 16:00:47,782] INFO (com.mirth.r	connect.server.Mirth:587]: Running Java HotSpot(TM) Client	VM 1.7.0 60 on Windows 7 (6.1, x86), sqiserver,	with charset windows-1252.								
	[2014-05-04 16:00:47,782] INFO (com.mirth.)	connect.server.Nirth: 586): This product was developed by N	Irth Corporation (http://www.mirthcorp.com) and it	ts contributors (c)2005-2014.								
	[2014-05-04 16:00:47,704] INFO (com.mirth.	connect.server.Nirth:S8S): Mirth Connect 3.0.0.6931 (Built (n September 30, 2013) server successfully started.									
	. X										Log Sa	e: 50 🚽
E Connected to: https://localho	wea443_1_cmr.0.mcs)										1	

Disabling Message Logging – ONLY NEEDED IF USING SQL EXPRESS (for 10GB file size limit)

- From the administrative application, click on the "Dashboard" icon in the left column.
- Left click row over "MORTARA_DB_HL7_ADT_MDI_RECIEVER_FILE" and then right click to select "Start".
- Disable message logging in "MORTARA_DB_HL7_ADT_MDI_RECIEVER_FILE" channel properties to avoid exceeding the 10GB file size limit.

Calmenter and		Edit Channel - MORTARA DR	https://localhost8443 - Mirth Connect Administrat
Hirth Connect	(8)	Sumary Source (Destinators Scripts) Channel Properties Name: [06.947.407.907.9607.9627.97 Detendences: SetData Types Dependences:	Of Crabled Of Crabled Of Crabled Of Crabled Of Crabled
Channel Tasks	۲	Attachment: None Provention	Store Attachments Hessage Pruning Metadata: @Store indefinitely @Prune metadata clder than days
Other Notifications (1 View User API View Client API	(A)	Durable Nessage Delivery: Off Performance: Terring of message content: Tenning content: Remove attachments on completion: Print Remove attachments on completion:	content:
 About Mrth Co Visit mithcorp. 	rmect com	Channel Tags Tag	Add Column Name

Deploying Interface Engine Channels

This section describes how to deploy an HL7 ADT, ORM and ORU channels using the Mirth Connect Interface Engine. For purposes of example we will import the HL7 ADT File Reader channel.

Login to the Mirth Administrator application using the "admin" account. This will display the main Mirth Administrator page.

To deploy a channel, perform the following steps:

- Mirth Connect menu; Select Channels
- Channel Tasks menu; Select Import

This will display the following dialog which allows the user to select a channel file to import. In this case we are selecting the "MORTARA_DB_HL7_ADT_MDI_RECEIVER_FILE.xml" which contains the channel definition for receiving an HL7 ADT message via a file share.

m			Mirth Connect Admin	iistrator - https://localhost:8443 - (3.0.0.6931)		_ 0 3	×
Mirth Connect 🛞	Channels					mirthconne	ct
Dashboard Dashboard Dannels Settings Adents Events Events Estensions	Status Data Type	Name 🛎	Id	D	escription	Rev Δ Last Deploye	d
Linearent Fastes (a) Barfred (b) Barbar (b)				Cpen X Di Beczivez.ami di Seczivez.ami di Seczivez.ami			
				Open Cancel			

Once the channel file has been selected the "Edit Channel" windows will be displayed. It has four tabs; Summary, Source, Destinations, Scripts. Each describes the characteristics of the channel. The following dialog displays the "Source" information for the channel. You can see that the Mirth Interface engine will look for incoming HL7 ADT messages in the "C:\hl7" folder.

		Mirth Connect Administrator - https://localhost:8443 - (3.0.0.6931)	_ D X
Mirth Connect	Edit Channel - MORTARA_DB_H	L7_ADT_MDI_RECEIVER_FILE	mirthconnec
Dachboard	Summary $ angle$ Source \setminus Destinations \setminus Scripts \setminus		
Eastribuard Eastribuard Eastribuard Eastribuard Eastribuard Eastribuard Exents Extensions	Connector Type: File Reader Polling Settings Polling Type: Polling Trequency (ms): S000 Polling Time (daily): D9:25 AM		
	Response Settings	٩	
Save Changes Save Changes Validate Connector Edit Eilter Edit Eilter Edit Transformer (47) Ig Import Connector Export Connector Export Channel	Response: None File Reader Settings Method: file Test Read Directory: cr/hi7/adt (hp:// Filename Filter Pattern: **.hi7		
Other 🛞	Include All Subdirectories: 🚫 Yes 💿 No Ignore . files: 💿 Yes 🚫 No		
 Help About Mirth Connect Visit mirthcorp.com Report Issue Logout 	Anonymous: Yes No Username: Password: Timeout.(ms): 10000		
	Secure Mode: Yes No		

Create a folder on the C drive and labeled hl7. Next, open the hl7 folder and create the following subfolders:

- adt
- orm
- out

Once the channel has been reviewed, Save the channel. This action will display the Mirth - Channels dialog. This dialog presents all the channels that are known to the Mirth Interface engine. You will see the "MDI Receiver" channel in the list. Right click on the MDI Receiver channel and select Deploy Channel. This will start the channel for use.



Connected to: https://localhost:8443 | CDT (UTC -5)

Repeat the steps above to import the ORM and ORU channels.

Once the channels have been deployed the status of the channels will be set to "Started". The following dialog demonstrates the status of "Started" for the MDI Receiver channel. The channel has been expanded to depict the "source" and "destination (ADT dest)" of the channel. In the case of this channel; the ADT destination is defined as a patient record in the MDI Queue database.

m	Mirth Connect Administrator - https://localhost.844	3 - (3.0.0.	6931)					_ 🗆 X
Mirth Connect	Dashboard							mirth connect
· · · · ·	Status Name	Rev A	Last Deployed	Received	Filtered	Queued	Sent	Errored Connection
<u>D</u> ashboard	Started G 44MORTARA_DB_HL7_RESULTS_ORU_OUT	0	2016-12-16 09:34	0	0	0	0	0 o Idle
Channels	Started Source		-	0	0	0	0	0 o Idle
A Users	Started Jestination 1		-	0	0	0	0	0 o Idle
<u>Settings</u>	Started MORTARA DB HL7 ADT MDI RECEIVER FILE	0	2016-12-16 09:34	0	0	0	0	0 o Idle
Alerts	Started Source	-	-	0	0	0	0	0 o Idle
Evencione	Started ADT dest		-	0	0	0	0	0 o Idle
a ciganan	Started B- MORTARA DB HIZ ORDERS ORM IN	0	2016-12-16 09:34	0	0	0	0	0 o Idle
	Started Started			0	0	0	0	0 • Idle
Dashboard Tasks 🚷	Started Started OPM dest		-	0	° N	0	0	0 • Ide
🗟 Dafaath				v	v		v	0 - 100
Wiresi								
Other 🛞								
😡 Help								
(1) About Mirth Connect								
🔬 Visit mirthcorp.com								
🔆 Report Issue								
🌽 Logout								
	3 Deployed Channels					Show	v: (i) Curren	t Statistics 🔿 Lifetime Statistics
	Los Information							
	Log unromador [2016-12-15 14:14:35.744] INEO (com.mitth.connect.server.Mitth:587): Running Java HotSont/TM) Client VM 1-7-0-67 on Windows Server 2012 ((6.2. x86) <	alserver, with charse	t windows-1252				
	[2016-12-15 14:14:35 744] INEO (rom mirth connect server Mirth-S86): This product was developed by Mirth Connection (http://www.mirthconn	com) and its	contributors (c)2005	-2016				
	[2016.12.15.14.14.95.744] INFO (committee control microsoft on microsoft) into produce was developed by microsoft (http://www.microsoft. [2016.12.15.14.14.95.744] INFO (committee contract server Mitthe SSE). Mith Content: 3.0.0.6031 (Built on Serverwher 20. 2012) server excession.	illy started	Contrational (C)2000	. 2010:				
	Leave to the new york of the new communication receiver with management connect states and the definition of 2013) Server Succession [2016.12.15 14:14:21 621] EDDOD (Server 146): WADMING: for anothe verser law SAVDerezioni: Dropowith Webs/Warray and Wel Constructed	ay startdu. Isronartu (se	coccEvtornalDTD ¹ is a	ot recognized !				
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	0 🗙							Log Size: 50 🖋
Connected to: https://localho	:8443 CST (UTC -6)							

Configuring the MDI Application Security

This section describes the configuration of the MDI application security components. The MDI Configuration program is a user interface application that configures the resources used by applications that utilize the MDI interface; e.g. ADT and ELI Link.

This program is located in the "bin" folder of the MDI installation.

Utilize the Security menu when setting application security parameters. This will present you with the Security screen.

🖳 MDI Config	juration T	ool	
Security	ADT	E×it	Help

🖳 Security Configuration		
Security ADT Exit Help		
DATABASE PWD CONFIRM PWD		SAVE
QUEUE PWD		SAVE]
CONFIRM PWD		
ENCRYPTION KEY		SAVE
CONFIRM KEY		Key Help
DATABASE IP ADDRESS		SAVE
	Format: XXXXXXXXXXXX localhost	
CHECK	DATABASE CONNECTION	
DATABASE	Connection Status	

The security screen allows you to modify the passwords for the MDI.API.config file;

• MDI Database and MDI Queue

It allows you to modify the encryption key which is used to encrypt the passwords, and it allows you to modify the TCP/IP address of the machine where the SQL Server database instance is located. Note that the two databases are included in the database instance.

Clicking the "Database" or "Queue" buttons will validate the database connection to the respective database; using the IP Address, encryption key and user account (including the password). Changes are saved to the MDI_API.config file; which is located in the "bin" folder of the MDI installation.

Considerations:

- Passwords cannot contain the '&' ampersand character.
- Encryption Key must be exactly 8 characters and cannot contain the '&' character.
- TCP/IP Address format must be XXX.XXX.XXX.XXX. When saving the IP address, the format is validated.
- TCP/IP address: if all MDI applications (including ELI Link) will be running on the same system, you can use "localhost" as the address.
- Applications that utilize the MDI_API.config file will honor updates to the configuration file in real time:
 - ADT service
 - o ELI Link (on next database connection)

NOTE: If ELI Link is not installed on the same system as the MDI applications; it will need to have the updated configuration file manually copied to the "C:\Mortara Instrument Inc\ELI Link folder.

• The Interface Engine writes ADT messages to the MDI Queue database. The Interface Engine does not use the MDI_API.config file. The user credentials to access the MDI Queue database are included in the channel(s) configuration. If the password is changed for the MDI Queue database, the password must also be updated (manually) for all applicable channels in the Interface Engine.

Configuring ADT Program Parameters

The MDI Configuration program is a user interface application that configures the following resources used by applications that utilize the MDI interface; e.g. ADT and ELI Link.

Utilize the ADT menu when setting ADT program parameters. This will present you with the ADT screen.

ADT Configuration			0.00
Security ADT Exi	t Help CURRENT VALUE	E NEW VALUE	
OPERATION MOD	DE ADT	-	SVF.
POLLING INTERV	AL (SEC) 5		AVE.
PURGING INTER	VAL (DAYS) 365		AVE .
DELETE LOGFILE	INTERVAL 30	s	AVE
(UAYS) MAX LOGELE SD	?E (KB) 500		ur l
ADT TRANSACTIC	ADD (
ADT TRANSACTIC	INS		
A01	ADD (•	
A02	UPDATE	•	
A03	DELETE	•	
A04	ADD [•	
A05	ADD	-	
	UPDATE (
A06			
A06 A07	UPDATE	•	
A06 A07 A08	UPDATE [•	
A06 A07 A08 A09	UPDATE (UPDATE (DELETE (•	
A06 A07 A08 A09 A10	UPDATE (UPDATE (DELETE (ADD		
A06 A07 A08 A09 A10 A11	UPDATE (UPDATE (DELETE (ADD (DELETE (
A06 A07 A08 A09 A10 A11 A11	UPDATE UPDATE DELETE ADD DELETE UPDATE	•	
A06 A07 A08 A09 A10 A11 A12 A13	UPDATE UPDATE DELETE ADD DELETE UPDATE ADD		
A06 A07 A08 A09 A10 A11 A12 A13 A14	UPDATE UPDATE UDELETE ADD DELETE UPDATE UDELETE ADD ADD ADD ADD	• • • •	

Exit Help

🖳 MDI Configuration Tool

Security ADT

The ADT screen allows you to modify the following configuration settings:

- Operation Mode
 - Operation mode can be set to 'ADT, 'Orders' or 'All'.
 - For purpose of supporting the ELI Link Patient Roster; select ADT or ALL.
- Polling Interval
 - This interval (in seconds) determines how often the ADT service will check for patient records in the Queue database.
 - Default value is 5 seconds.
 - Considerations:
 - Value should be entered in a numeric format
 - Value cannot be negative
 - Value cannot have decimal points
- Purging Interval
 - This interval (in days) is used to compute what is called a purging date. This purging date is computed from the current date and then subtracting the # of days indicated in the purging interval. This purging date is then used when checking to purge all patient records from the Database that have a transaction date older than the purging date.
 - The purging operation is performed once every 24 hours.
 - Default value is 365 days.
 - o Considerations
 - o Value should be entered in a numeric format
 - Value cannot be negative
 - o Value cannot have decimal points
- Delete Log File Interval
 - This interval (in days) is used to compute the date in which the ADT log files are eligible for deletion, This deletion date is computed from the current date and then subtracting the # of days indicated in the

deletion interval. This deletion date is then used when checking to delete all ADT log files that have a "update" date older than the deletion date.

- The deletion operation is performed once every 24 hours.
- Default value is 30 days.
- Considerations
 - o Value should be entered in a numeric format
 - Value cannot be negative
 - o Value cannot have decimal points
- Maximum Log File Size
 - The maximum log file size parameter (in kilobytes) is used by the ADT program to determine if a new log file should be allocated for use. If the size of the current log file exceeds the maximum size indicated, the ADT program will allocate a new log file based on the current date.
 - The maximum log file size check is done once every 24 hours. Therefore, it is possible for an actual log file to exceed the maximum indicated.
 - o Default value is 500 kB.
 - Considerations
 - o Value should be entered in a numeric format
 - Value cannot be negative
 - Value cannot have decimal points
- ADT Transactions

ADT Transactions can be customized using the ADT Transactions section of the ADT screen. ADT Event Type Codes A01 – A62 are supported. NOTE: A19 is always disabled. The Interface engine will be configured to filter out ADT Event Type Codes. For those ADT messages that the Interface engine stores to the Queue; the ADT program will process them based on the directive configured in this application.

A01	ADD	•	·
A02	DELETE	-	
A03	UPDATE	ADD	
A04	NOP	UPDATE	
A05	MERGE	MERGE	
A06	DELETE	-	
A07	ADD	-	
A08	ADD	-	
A09	ADD	-	
A10	ADD	-	
A11	ADD	-	
A12	ADD	-	
A13	ADD		
A14	ADD	-	
A15	ADD	-	-
		iii .	

Each ADT Event Type Code is associated with a database transaction type that is applied to the patient records found in the MDI database. The database transaction types are:

- ADD; add patient record
- DELETE; delete patient record (by Facility ID, Account #, MRN)
- UPDATE; update patient record (by Facility ID, Account #, MRN)
- NOP; do nothing
- MERGE; merge patient record (update all patient records by Facility ID, Account #, MRN to new MRN,...)

Changes in the ADT screen are saved to the ADT.config file; which is located in the "bin" folder of the MDI installation. The ADT service will automatically re-initialize based on changes detected in the configuration file. Only the ADT service (program) uses the ADT.config file; no other applications are dependent upon it.

TROUBLESHOOTING

- 1. Port Numbers used by the MDI Application
 - 8080
 - 1433
- 2. Mirth Interface Engine is not running
 - a. Check port #'s 8080 and 1433 are not blocked by a firewall
 - b. Check that the password used by the MDI Interface Engine database is correct
 - c. Validate the connection string to the MDI Interface Engine database
- 3. ADT messages not being processed into the MDI Queue database
 - a. Check that the password used by the MDI Queue database is correct.
 - i. The password must be manually changed in the associated interface engine channel if it has been changed by the MDI Configuration tool.
 - b. Verify that the messages are not filtered out based on HL7 facility ID or service location
- 4. Order messages not being processed into the MDI Queue database
 - a. Check that the password used by the MDI Queue database is correct.
 - i. The password must be manually changed in the associated interface engine channel if it has been changed by the MDI Configuration tool.
 - b. Verify that the messages are not filtered out based on HL7 facility ID, service location or modality
- 5. ADT Service is not running
 - a. Verify the MDI Queue and Database are installed
 - b. Check that the passwords used by the MDI Queue and Database are correct.
 - c. Ensure the ADT service is enabled for Automatic Delayed Start
- 6. ADT messages not being processed by the ADT program
 - a. Verify that the ADT event code type/ADT transaction pair are assigned correctly. View/modify via the MDI Configuration tool.
- 7. Order messages not being updated properly by the ADT program
 - a. Verify that the ADT event code type/order transaction pair are assigned correctly. View/modify via the MDI Configuration tool.
- 8. Client application (e.g. ELI Link) cannot access MDI Database
 - a. Verify that the MDI_API.config file used by client application is the same as that used by the MDI applications
 - i. If the client application is not running on the same computer/system as the MDI application; it will be necessary to copy the MDI_API.config file from the MDI application environment to the appropriate location where the client application is running.
 - If the client application is not running on the same computer/system as the MDI application; ensure that SQL Browsing is enabled on the system running the MDI application.
 - c. Verify that the IP Address defined for accessing the MDI Database is correct
- 9. Database password or encryption key are not working
 - a. Obtain the MDI.API.config file from the customer
 - b. Install the configuration file into the MDI "bin" installation folder on the local support computer
 - c. Open the MDI Configuration tool in the "show password" mode.
 - d. Review the password accounts for the Database and Queue databases. You can

also review the encryption key.

- e. Make modifications as necessary to the password and encryption keys to guarantee that they work.
- f. NOTE: Modify the shortcut to the MDI Configuration tool with the "
 - showpwd" option; "C:\Mortara Instrument Inc\Mdi\bin\MDI Config.exe" -showpwd

Glossary

ADT	HL7 Admit/Transfer/Discharge message
ORM	HL7 General Order Message
ORU	HL7 Result Messages
EHR	Electronic Health Record System
HL7	Health Level Seven. It is a standard that defines the transport of medical information. It is an ASCII format based communications standard. Widely used by healthcare information systems.
Interface Engine	Application that acts as a broker between systems that exchange medical information via HL7. This broker converts HL7 messages into compatible formats for the participating systems.
MDI	Mortara Device Interface. Welch Allyn application that provides HL7 interface capability to Welch Allyn diagnostic devices.
SQL	Structured Query Language. Is a <u>special-purpose programming language</u> designed for managing data held in a <u>relational database management</u> <u>system</u> (RDBMS).