

MAINSPRING® DATA EXPRESS

MDTCSG2 Version 7.0

CareLink Integration Software Installation and Configuration Manual

Caution: Federal law (USA) restricts this device to sale by or on the order of a physician (or a properly licensed practitioner).

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Medtronic, Paceart Optima, CareLink, Mainspring, Medtronic CareLink

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Mainspring Data Express

Mainspring – because like the inner workings of a clock – it is the power source that facilitates the movement of cardiac data within your clinic, and between various departments within your organization.

Mainspring Data Express is a comprehensive solution for your cardiac patients, bringing together device and patient data from the Medtronic CareLink Network, the Paceart Optima System, the CareLink Programmer, your EHR System, and local network.

In order to simplify the process of connecting and sharing demographic, scheduling, and device data between Medtronic applications and electronic health record systems (EHRs), Medtronic has developed Mainspring Data Express. This software application serves as the primary tool to move and share data for device patients. Mainspring Data Express helps to streamline the implementation and on-going maintenance of data movement between applications.

This manual explains the process for installing the Mainspring Data Express software and configuring CareLink Report Export and CareLink EHR Integration.

Mainspring Data Express is an optional component of the CareLink Network and the Paceart Optima System. For more information on configuring the CareLink website refer to the CareLink online Help.

Explanation of symbols

Symbol	Symbol definition
(i)	Consult instructions for use
! USA	For US audiences only
EC REP	Authorized Representative in the European Community
	Manufacturer
LOT	Lot number
REF	Re-order number
	Date of Manufacture
	Do not dispose of this product in the unsorted municipal waste stream. Dispose of this product according to local regulations. See http://recycling.medtronic.com for instructions on proper disposal of this product.
-XX°C +XX°F -XX°F +XX°F	Temperature Limitation
XX% XX%	Humidity Limitation

Symbol	Symbol definition
	Software

Indications

Mainspring Data Express is an optional component of the Medtronic CareLink Network and the Paceart Optima System. Mainspring Data Express can be used to provide data integration between disparate systems, using a defined mapping.

For more information on the Medtronic CareLink Network, refer to the CareLink Network Online Help.

For more information on the Paceart Optima System, refer to the *Paceart Optima System Software User Manual* or the Paceart Optima System Online Help.

Precautions

Mainspring Data Express USBs must be stored within the following conditions:

Storage Environment		
Temperature	-20°C (-4°F) to +45°C (113°F)	
Relative Humidity	20% to 90%	

Mainspring Data Express USBs must be operating in an environment within the following conditions:

Operating Environment		
Temperature	0°C (32°F) to +35°C (95°F)	
Relative Humidity	20% to 90%	

Call customer service or your biomedical department for service and repairs.

Contraindications

No known contraindications.

Mainspring Data Express Authorized Users

Medtronic representatives provide the Mainspring Data Express orientation and training materials at the time of the installation. Users should be familiar with the Mainspring Data Express documents before using Mainspring Data Express.

Technical Support

In the US and Canada, call 1-800-929-4043 and select option 3. For all other countries contact your local Medtronic representative.

Installation Prerequisites

First Time Installation

If you are installing the Mainspring Data Express software for the first time, and not an upgrade, you must complete the following prerequisites before you can install the Mainspring Data Express software.

- Create an External Systems Account on the CareLink Network. For instructions on how to create an External Systems Account, refer to the CareLink Network Online Help.
- Install .Net Framework version 4.5.2 (or newer).
- Install and configure MS Message Queuing.
- If you will be using the EHR Integration feature, install the Java Runtime Environment version 1.6 or higher.

Upgrade Installation

If you are upgrading to a new version of Mainspring Data Express software you must first stop the existing Connected Systems Gateway service.

You do not need to uninstall your existing Mainspring Data Express software. The new version of the software will import any existing configurations. For example, if you have an existing Paceart System-CareLink scheduling integration configuration, the settings will be saved and used in the new version of the Mainspring Data Express software.

Installing and Configuring MS Message Queuing for Windows 7

Membership in the local Administrators group, or equivalent, is the minimum required to complete this procedure.

- 1. Open the Control Panel.
- 2. Select the appropriate action based on your system configuration.
 - Click Programs, and then under Programs and Features, click Turn Windows features on or off.
 - Click Classic View, double-click Programs and Features, and then in the tasks pane, click Turn Windows features on or off.
- 3. Under the Microsoft Message Queue (MSMQ) Server option, check the Microsoft Message Queue (MSMQ) Server Core option. This enables all of the MSMQ Server Core subfeatures.
- 4. Click OK.
- **5.** If you are prompted to restart the computer, click **OK** to complete the installation.

Installing and Configuring MS Message Queuing for Windows 8.1

Membership in the local Administrators group, or equivalent, is the minimum required to complete this procedure.

- 1. From the Charms bar, click Settings.
- 2. Click Control Panel.
- 3. Click Programs, and then under Programs and Features, click Turn Windows features on or off.

- 4. Under the Microsoft Message Queue (MSMQ) Server option, check the Microsoft Message Queue (MSMQ) Server Core option. This enables all of the MSMQ Server Core subfeatures.
- 5. Click OK.
- 6. If you are prompted to restart the computer, click **OK** to complete the installation.

Installing and Configuring MS Message Queuing for Windows Server 2008

Membership in the local Administrators group, or equivalent, is the minimum required to complete this procedure.

- 1. Click Start > Control Panel.
- 2. Double-click Programs and Features.
- Click Turn Windows features on or off.The Server Manager window is displayed.
- Select Add Features in the Features and Summary section.
 The Add Feature Wizard dialog is displayed.
- 5. Under the Message Queuing > Message Queuing Services option, select the Message Queuing Server option.
- 6. Click Next on the Add Feature Wizard dialog box to select features.
- 7. Click Install on the Add Feature Wizard dialog box to confirm your installation selections.
- 8. When the installation is complete, click Close.

Installing and Configuring MS Message Queuing for Windows Server 2008 R2

Membership in the local Administrators group, or equivalent, is the minimum required to complete this procedure.

- 1. Click Start > Programs > Administrative Tools > Server Manager.
- 2. In the Server Manager, click Add Features to start the Add Features Wizard.
- 3. Expand MSMQ, expand MSMQ Services, and then select the Message Queuing Server option.
- 4. Click Next, and then click Install.
- **5.** If you are prompted to restart the computer, click **OK** to complete the installation.

Installing and Configuring MS Message Queueing for Windows Server 2012 and Windows Server 2012 R2

Membership in the local Administrators group, or equivalent, is the minimum required to complete this procedure.

- 1. Launch Server Manager.
- 2. In the Server Manager, click Add Roles and Features to start the Add Roles and Features Wizard.
- 3. Click **Next** until the **Features** page opens.
- 4. Expand Message Queuing, expand Message Queuing Services, and then select the Message Queuing Server option.
- 5. Click Next, and then click Install.
- 6. If you are prompted to restart the computer, click **OK** to complete the installation.

Installing the Java Runtime Environment

If you will be installing the **EHR Integration** feature, you will need to install the Java Runtime Environment version 1.6 or higher.

You do not need to be connected to the internet to install the files.

- 1. Insert the Mainspring Data Express software USB into your disk drive.
- 2. Browse to the USB and double-click on **jre-7u10-windows-i586.exe**. The installation wizard starts.
- Click Install.A progress window is displayed.
- 4. Once the installation is complete, click Close.

Installing .Net 4.5.2 Framework

You must have .Net 4.5.2 Framework (or newer) installed before you install the Mainspring Data Express software.

You do not need to be connected to the internet to install the files.

- 1. Insert the Mainspring Data Express software USB into your disk drive.
- 2. Browse to the USB and double-click on dotNet_452_Setup_web.exe.
- Read the Microsoft license agreement and select I have read and ACCEPT the terms of the License Agreement.
- 4. Click Install.
 - The .Net Framework will install. A progress bar shows the installation progress.
- 5. Once the setup is complete click **Exit**.

Stopping the Connected Systems Gateway Service

Before you install a new version of the Medtronic Mainspring Data Express software you must stop the existing **Connected Systems Gateway** service.

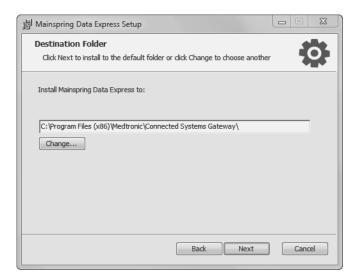
Membership in the local Administrators group, or equivalent, is the minimum required to complete this procedure.

- To stop the Connected Systems Gateway service go to Start > Control Panel > Administrative Tools >
 Services.
- 2. Right-click on the Connected Systems Gateway service and select Stop.

Installing Mainspring Data Express

Complete the items listed in the prerequisites section before you install and configure the Mainspring Data Express software.

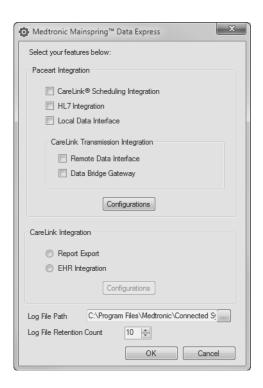
- 1. To start the installation, insert the Mainspring Data Express installation USB into the computer. The setup program will automatically start.
 - If the setup program does not automatically start, you can manually start the installation program by clicking **CSGInstall.exe** on the installation USB.
- 2. Click Next.
- 3. Enter a destination folder. Click Change to change from the default location.
 If you have a previous version of Mainspring Data Express installed, use the same filepath as the previous version.



- 4. Click Next.
- Click Install.A progress bar shows the installing progress.
- Select Launch Medtronic Mainspring Data Express and then click Finish to exit the installation wizard and open the Medtronic Mainspring Data Express window.



7. In the **Medtronic Mainspring Data Express** window, select the features you want to enable, then click **Configurations**. You can select multiple features under **Paceart Integration**, but you can only select one feature under **CareLink Integration**.



The configuration window for the feature you selected is displayed.

8. Make your configuration changes and click **OK**. Refer to the following sections for information on configuring each feature.

The configuration window closes.

9. Click OK to close the Mainspring Data Express window.
If you selected EHR Integration for the first time, the Mirth Connect installer will launch. Follow the installation steps in the Installing and Configuring Mirth Connect section of this document.

If you selected **HL7 Integration** for the first time, the Corepoint Integration Engine installer will launch. Follow the installation steps in the *Installing the Corepoint Integration Engine* section of this document.

CareLink Integration

The CareLink Integration section of Mainspring Data Express has the following features:

- Report Export allows you to save CareLink Network reports to a network location.
- EHR Integration allows you to export patient data from the CareLink Network and integrate into your clinic's Electronic Health Records (EHR) system.

CareLink Report Export

Reports can be exported from CareLink to an external system, like your clinic's Electronic Health Records (EHR) system.

When the Report Export feature is enabled, you can use a default file naming format, or customize the filename format by adding an additional field. You must have full administrative privileges in CareLink to edit the filename format.

To export reports, Mainspring Data Express must be installed and configured, and a CareLink Network Connection between Mainspring Data Express and the CareLink Network must be established.

There is a process to install and configure the **Report Export** feature.

- 1. On the CareLink Network website, create an **External System Account** for Mainspring Data Express. Enable and configure the **Report Export** feature for that **External System Account**. For instructions refer to the CareLink Network Online Help.
- 2. On your network, install and configure Mainspring Data Express (install prerequisites first).
- Enable the Report Export feature in Mainspring Data Express.
- 4. On the CareLink website, export a report from CareLink and ensure that it arrives in the correct location.

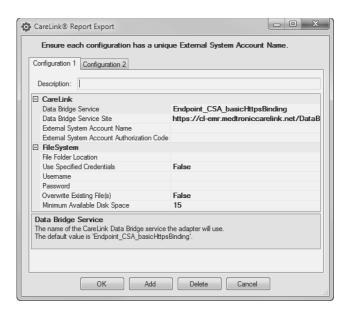
Configuring CareLink Report Export

- To start Mainspring Data Express, go to Start > Programs > Medtronic Mainspring Data Express > Medtronic Mainspring Data Express.
- 2. In the Medtronic Mainspring Data Express window, select Report Export and click Configurations.



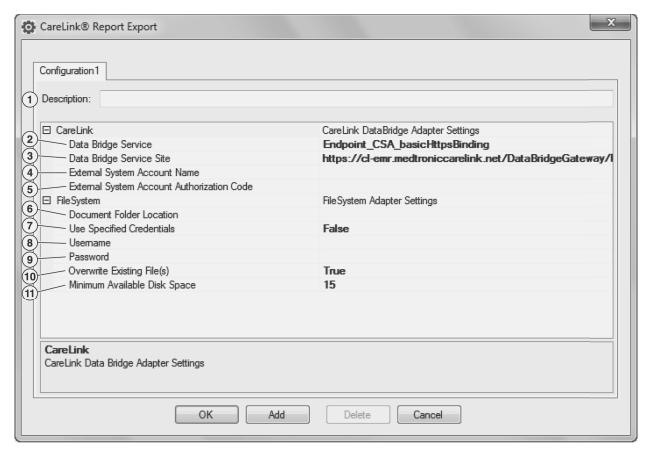
The CareLink Report Export configuration window is displayed.

- 3. On the Configuration1 tab enter the applicable values for your CareLink implementation. Refer to the CareLink Report Export Configuration Values table for more explanation on the fields.
- 4. If you have satellite clinics in CareLink you must have a separate Report Export configuration for each clinic. Click Add to create additional configurations for other clinics.



5. Click OK.

CareLink Report Export Configuration Values



If you have satellite clinics in CareLink you must have a separate configuration for each clinic. Click **Add** to create additional configurations for other clinics. You may have up to 15 configurations. Each configuration must have a unique **External System Account Name**.

This table explains the fields on the CareLink Report Export configuration window.

Callout number	Field name	Explanation
1	Description	An optional field for entering the name of your configuration. Limit 15 configurations.
2	Data Bridge Service	The name of the CareLink reporting service the adapter will use. The default is "Endpoint_CSA_basicHttpsBinding".
3	Data Bridge Service Site	The path of the CareLink Data Bridge Service site that the adapter will use. To connect in the US and Canada select "https://cl-emr.medtroniccarelink.net/DataBridgeGateway/DataBridgeGatewayService.svc" To connect in Europe and Asia select "http://cl-emr.europe.medtroniccarelink.net/DataBridgeGateway/DataBridgeGatewayService.svc"
4	External System Account Name	The account name used to connect to the CareLink system. This account name is created and configured on the External System Accounts tab on the CareLink website.

Callout number	Field name	Explanation
5	External System Account Authorization Code	The authorization code used to connect to the CareLink website. This authorization code is configured on the External System Accounts tab on the CareLink website.
6	File Folder Location	The file destination path where CareLink PDF reports are exported. On the CareLink website this is called the document folder. The file destination path can be specified as a UNC path (\ComputerName\SharedFolder\Reports) or a mapped drive (z: \computer\reports). Using a mapped drive allows you to use a shorter file name but the computer hosting Mainspring Data Express must have the network drive mapped to it.
7	Use Specified Credentials	A "True" value indicates that the Windows Username and Password field values should be used as authentication credentials when accessing the destination path. A "False" value indicates that a username and password are not required to access the destination path. The default is "False".
8	Username	When Use Specified Credentials is "True", this is the Windows username that will be used when accessing the destination file system. The Windows username value should follow the UPN (User Principal Name) format username@domain. For example BSMITH@ENT.
9	Password	When Use Specified Credentials is "True", this is the password associated to the Windows Username that will be used when accessing the destination file system.
10	Overwrite Existing File(s)	A "True" value indicates that the adapter will overwrite an existing file with a new file of the same name. A "False" value indicates that the adapter will not overwrite an existing file with a new file of the same name. The default is "True".
11	Minimum Available Disk Space	The minimum amount of free space in MB on the destination file system required for the adapter to initialize. The default is "15" MB.

Enabling and Verifying Mainspring Report Export

After you install and configure Mainspring Report Export you need to enable the Report Export feature on the CareLink website.

- 1. Log into the CareLink website.
- 2. Click Manage My Clinic > Clinic Profile > External Systems Integration.
- 3. In the Report Export section, select Yes to enable report export.

Note: You can configure the report filename. For more information on configuring the filename refer to the Editing Report Filename for Report Export topic in the CareLink online Help.

- 4. Click Save.
- **5.** After you have enabled the feature, export a sample report from CareLink.
- 6. Browse to the documentation folder location and verify that the sample report was successfully exported.

Troubleshooting Report Export

CareLink Report Export

- Verify that the Mainspring Data Express software prerequisites were installed or configured correctly.
- Verify that you selected the correct Data Bridge Service Site for your geography.
- Verify that the External System Account Name and External System Account Authorization Code match what was created in CareLink on the External System Accounts tab.
- Verify that you've selected True in the Use Specified Credentials field if the report destination requires
 you to enter a Windows username and password. Then verify that the Windows username and password
 were entered correctly in the Username and Password fields.
- Verify that the Connected Systems Gateway service was started.

Mainspring Report Export on CareLink

- Verify that you created an External System Account in CareLink.
- Verify that the created External System Account was configured to include Report Export external system associations.
- Verify that Report Export was enabled on the External System Integration tab of the CareLink website.
- Verify that the Report Export file naming format was configured as desired.

CareLink EHR Integration

CareLink EHR Integration allows you to export patient data from the CareLink Network and import it into your clinic's Electronic Health Records (EHR) system. This feature uses Mirth Connect to route the data exported from the CareLink Network to your EHR.

There is a process to install and configure the Mainspring Report Export feature.

- On the CareLink Network website, create an External System Account for Mainspring Data Express. For that External System Account enable and configure the EHR Integration feature. For instructions refer to the CareLink Network online Help.
- 2. On your network, install and configure the Mainspring Data Express software (install prerequisites first).
- **3.** Enable the **EHR Integration** feature in Mainspring Data Express.
- 4. Install and configure the Mirth Connect software.
- 5. Test your configuration by putting it into **Test** on the CareLink Network and export data. After you have tested your integration, move your configuration to **Production** on the CareLink Network. For instructions refer to the CareLink Network online Help.

Configuring EHR Integration

- 1. To start Mainspring Data Express, go to Start > Programs > Medtronic Mainspring Data Express > Medtronic Mainspring Data Express.
- 2. In the Medtronic Mainspring Data Express window, select EHR Integration and click Configurations.



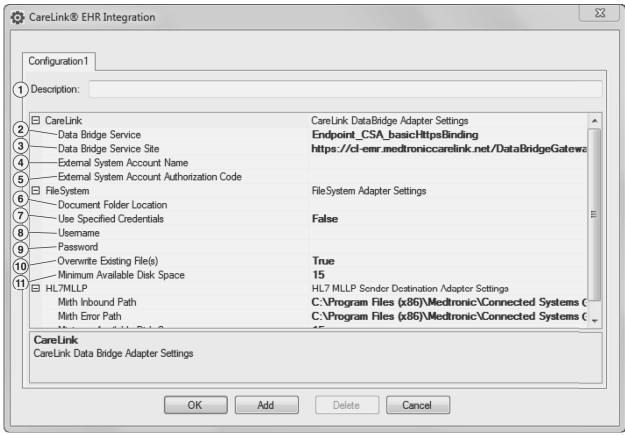
The CareLink EHR Integration configuration window is displayed.

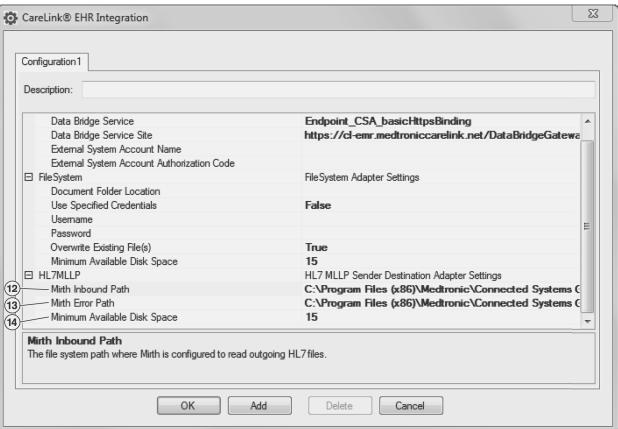
- 3. On the Configuration1 tab enter the applicable values for your CareLink implementation. Refer to the CareLink EHR Integration Configuration Values table for more explanation on the fields.
- 4. If you have satellite clinics in CareLink you must have a separate Report Export configuration for each clinic. Click **Add** to create additional configurations for other clinics.
- 5. Click OK.

You will need to install and configure Mirth Connect.

CareLink EHR Integration Configuration Values

This table explains the fields on the CareLink EHR Integration configuration window.





Callout number	Field name	Explanation
1	Description	An optional field for entering the name of your configuration. Limit 15 configurations.
2	Data Bridge	The name of the CareLink Data Bridge service the adapter will use.
	Service	The default is "Endpoint_CSA_basicHttpsBinding"
3	Data Bridge	The path of the CareLink Data Bridge Service site that the adapter will use.
	Service Site	To connect in the US and Canada select https://cl-emr.medtroniccarelink.net/DataBridgeGateway/DataBridgeGatewayService.svc To connect in Europe and Asia select http://cl-emr.europe.medtroniccarelink.net/DataBridgeGateway/DataBridgeGatewayService.svc
4	External System Account Name	The account name used to connect to the CareLink system. This account name is created and configured on the External System Accounts tab on the CareLink website.
5	External System Account Authorization Code	The authorization code used to connect to the CareLink website. This authorization code is configured on the External System Accounts tab on the CareLink website.
6	Document Folder Location	The file destination path where files will be written. On the CareLink website this is called the document folder. The file destination path can be specified as a UNC path (\\ComputerName\SharedFolder\Reports) or a mapped drive (z:\\computer\reports). Using a mapped drive allows you to use a shorter file name but the computer hosting Mainspring Data Express must have the network drive mapped to it.
7	Use Specified Credentials	A "True" value indicates that the Windows Username and Password field values should be used as authentication credentials when accessing the destination path. A "False" value indicates that a username and password are not required to access the destination path.
		The default is "False".
8	Username	When Use Specified Credentials is "True", this is the Windows username that will be used when accessing the destination file system. The Windows username value should follow the UPN (User Principal Name) format username@domain. For example BSMITH@ENT.
9	Password	When Use Specified Credentials is "True", this is the password associated to the Windows Username that will be used when accessing the destination file system.
10	Overwrite Existing File(s)	A "True" value indicates that the adapter will overwrite an existing file with a new file of the same name. A "False" value indicates that the adapter will not overwrite an existing file with a new file of the same name.
		The default is "True".
11	Minimum Available Disk Space	The minimum amount of free space in MB on the destination file system required for the adapter to initialize.
		The default is "15" MB.
12	Mirth Inbound Path	Specifies a file system path where HL7 messages will be available for Mirth Connect software to use.
13	Mirth Error Path	The file system path where Mirth is configured to write failed HL7 messages.
14	Minimum Available Disk Space	The minimum amount of free space in MB on the file system specified in the Mirth Inbound Path field, required for the adapter to initialize.
		The default is "15" MB.

Installing and configuring Mirth Connect

After you have installed the Mainspring Data Express software and selected the EHR Integration feature, you will need to install and configure Mirth Connect.

The Mirth Connect installation only launches automatically once. If you cancel the installation or need to re-execute the installation, you must first delete the following file to allow the Mirth Connect installation to be launched again:C:\Program Files (x86)\Medtronic\Connected Systems

Gateway\HL7MLLPSubsystem\InstalledorC:\Program Files\Medtronic\Connected Systems

Gateway\HL7MLLPSubsystem\Installed, depending on your operating system. The path is different if the default destination folder was modified.

- 1. In the Welcome to the Mirth Connect Setup Wizard window, click Next.
- Read the license agreement, select I accept the agreement, and then click Next.
- 3. Select the destination directory and click Next.
- 4. Make sure all of the components are selected and then click Next.
- 5. Select the Start menu folder settings and then click Next.
- 6. Configure the network port settings and then click Next.
- 7. Configure your password requirements and then click Next.
- 8. Configure your server settings and then click Next.
- 9. Select Install service and then click Next.
- 10. Click Finish.

Mirth Connect has been installed.

11. In the system tray, right-click on the Mirth Connect Server Manager icon and select Show Manager.



The Mirth Connect Server Manager is displayed.

- 12 In the Mirth Connect Server Manager, click Administrator.
- 13. If a Security Information dialog box appears, click Run.

The Mirth Server Manager is installed.

- **14.** In the **Mirth Connect Login** dialog box, in the **Username** field enter "admin" and in the **Password** field enter "admin".
- 15. Click Login.

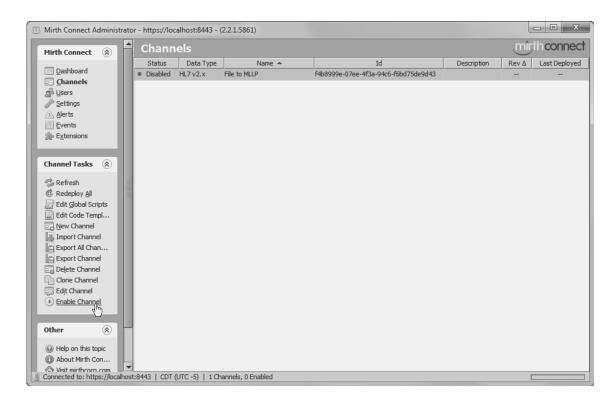
The Welcome to Mirth Connect dialog box is displayed.

- 16. Create and enter a new username and password. Enter the other required information and then click Finish.
- 17. In the Mirth Connect Administrator window, click Channels.
- **18.** In the **Channel Tasks** pane, click **Import Channel**.

An **Open** dialog box is displayed.

19. Select the File to MLLP.xml file located at the default path of C:\Program Files (x86)\Medtronic\Connected Systems Gateway\HL7MLLPSubsystem. The Edit Channel window is displayed.

- 20. Click the Destinations tab.
- 21. Enter the Host Address and Host Port that the HL7 message should be sent to.
- 22. Click Save Changes.
- 23. In the Mirth Connect pane, click Channels.
- **24.** Click the **File to MLLP** channel in the **Channels** pane, and then click **Enable Channel** from the **Channel Tasks** pane.



The channel status is **Enabled**.

25. In the Channel Tasks pane, click Deploy Channel.

The Dashboard shows that the File to MLLP status is "Started".

Troubleshooting EHR Integration

CareLink EHR Integration

- Verify that the Mainspring Data Express software prerequisites were installed or configured correctly.
- Verify that you selected the correct Data Bridge Service Site for your geography.
- Verify that the External System Account Name and External System Account Authorization Code match what was created in CareLink on the External System Accounts tab.
- Verify that you've selected **True** in the **Use Specified Credentials** field if the report destination requires you to enter a Windows username and password. Then verify that the Windows username and password were entered correctly in the **Username** and **Password** fields.
- Verify that the Connected Systems Gateway service was started.

Mirth Connect

- Verify that the File to MLLP status is "Started".
- Verify that the Mirth Connect windows service status is "Started".

Automatically Starting the Connected Systems Gateway After Restart

- 1. After you verify that your implementation was successful you can set this service to automatically connect. Go to Start > Control Panel > Administrative Tools > Services.
- 2. Right-click on the Connected Systems Gateway service and select Properties.
- 3. Select **Automatic** in the **Startup type** field. If you restart your computer this service will automatically restart.
- 4. Click OK.

Log File Configuration

The default location for log files, depending on your operating system will be one of the following locations:

- For 32 bit operating systems the location is C:\Program Files\Medtronic\Connected Systems Gateway\Logs\.
- For 64 bit operating systems the location is C:\Program Files (x86)\Medtronic\Connected Systems Gateway\Logs.

The default log file retention count is 10. You can save up to 99 log files.





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