practice fusion ™
Free, web-based Electronic Health Records

Practice Fusion API Client Installation Guide for Windows

Quickly and easily connect your Results Information System with Practice Fusion's Electronic Health Record (EHR) System

Table of Contents

Introduction to Practice Fusion API Client

Practice Fusion API Client is an application that enables vendors to exchange results with Practice Fusion's Electronic Health Record (EHR) platform. The API client service monitors a specified directory on a computer at the site. Every 20 milliseconds the service scans the directory for Health Level Seven (HL7) files older than one minute. If the service finds a file, it performs some validation of its contents and then attempts to connect to the Practice Fusion Results API using credentials provided by Practice Fusion. If it connects successfully, it then sends the file to the API, which performs further validation. If the file passes the validation checks it is then added to the Practice Fusion database and is accessible to healthcare providers. The client service then moves the file on the lab computer to an archive directory and continues monitoring for other files to process. Files with errors are moved to a third directory so that you can examine them and resolve the problems.

The client also features Practice Fusion API Client User Interface (UI), which enables you to configure the settings that define the behavior of the service, as well as to view statistics about files that have been processed.
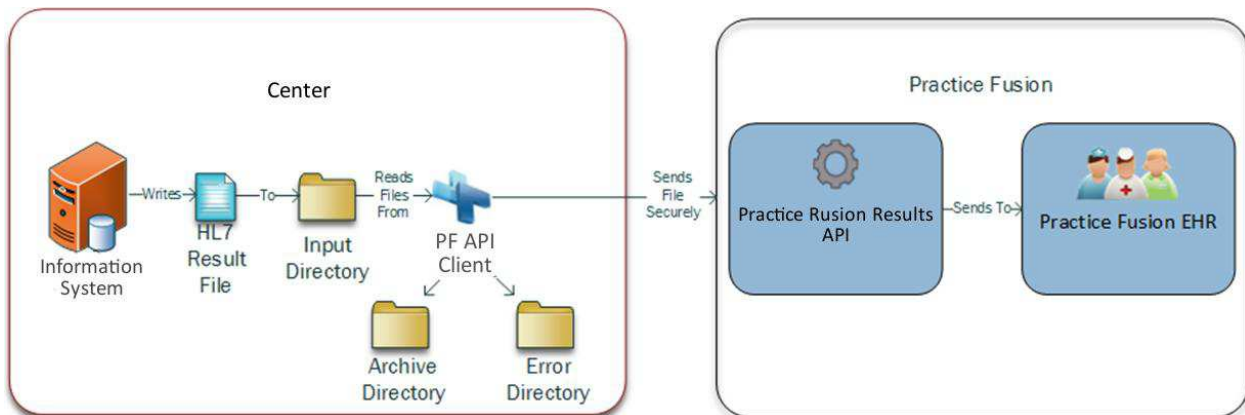
This document describes how to install, configure, and use Practice Fusion API Client.

Note

If you will not be using Practice Fusion API Client and will instead be invoking the Practice Fusion SOAP or RESTful services, refer to the HL7 Results Specification.

![practice fusion™ - Free, web-based Electronic Health Records]

Preparing to Install Practice Fusion API Client

This section contains the following subsections:

- Determining Which Version of Windows You Are Running
- Configuring Folder Permissions
- Verifying and Installing the JRE
- Downloading Practice Fusion
- Installing a File Extraction Program

Determining Which Version of Windows You Are Running

At a couple points throughout this process you will need to know which version of Windows you are running. Do the following to find out:

1. In Windows Explorer, right-click "Computer" and select **Properties** from the menu.

2. Find the **System type** property about halfway down the page and note the value to the right of it; if it reads "64-bit Operating System" you are running 64-bit Windows. If it says "32-bit Operating System" you are running 32-bit Windows.

Figure 1: System Type Property
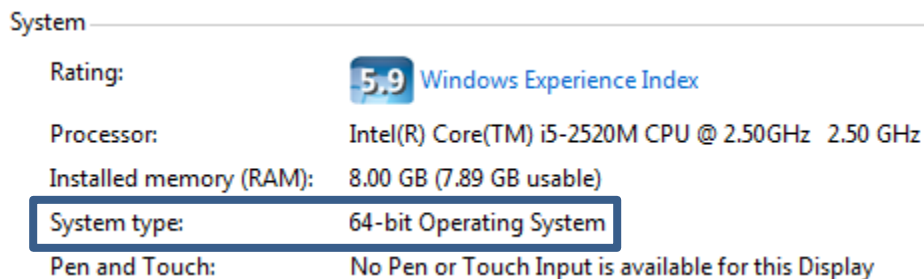
3. Remember which version you are running for later, and close the "Control Panel" window.

Configuring Folder Permissions

The client needs read, write, and execute permissions in the directory where it will read messages from so that it can function. Do the following to create the folder and make sure that it has the necessary permissions:

1. In Windows Explorer, select **File > New > Folder** to create a directories where you want to have the lab client create subdirectories to store the HL7 messages, such as `C:\HL7Messages`.

2. Right-click the directory and select **Properties** from the menu.

3. Click the "Security" tab.

4. Click **Edit**.

5. Confirm that the check boxes for the **Read & execute**, **Read**, and **Write** permissions are all enabled (with a check in them). If any are not enabled, click the check box to enable it.

Figure 5: Required Folder Permissions
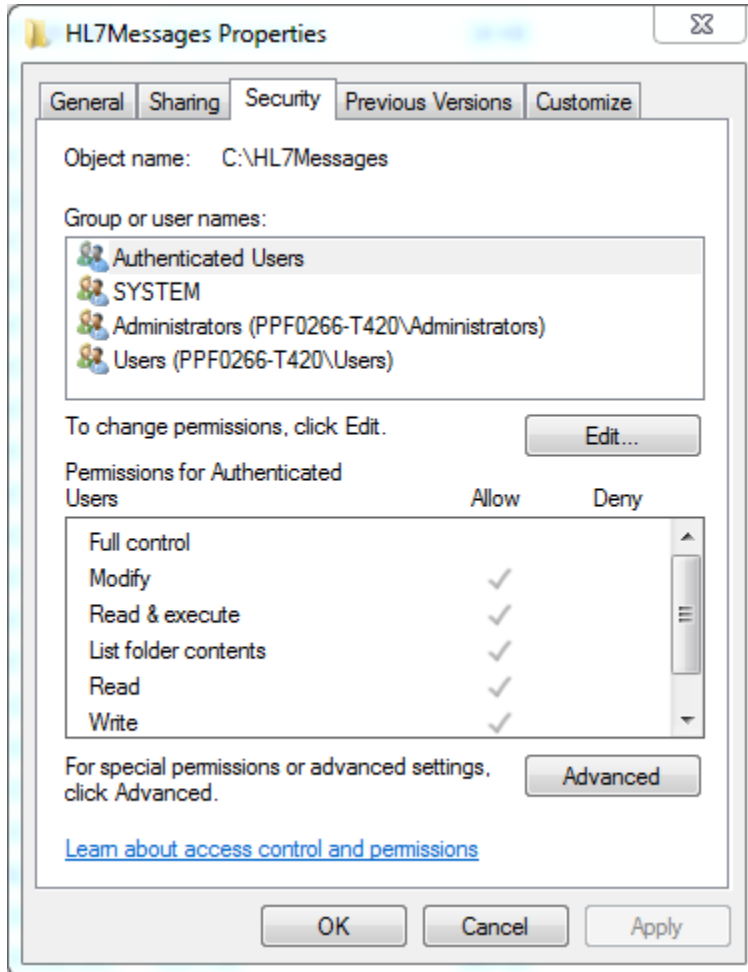
6. Click **OK**.

7. Click **OK**.

Verifying and Installing the JRE

You can install Practice Fusion API Client on any computer with the Java Runtime Environment (JRE) version 6u37 or later installed on it. For a list of operating systems supported for the version 7u11 JRE, navigate to the following address in a browser:

http://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880260.html

Verifying Installation of the JRE

If a supported JRE is already installed, do the following to verify the installation:

1. Select **Start > All Programs > Accessories > Command Prompt**.

2. Type the following at the command line, then press Enter:

```
java –version
```

The command prompt should produce output similar to the following:

```
java version "1.7.0_11"
Java(TM) SE Runtime Environment (build 1.7.0_11-b21)
Java HotSpot(TM) 64-Bit Server VM (build 23.6-b04, mixed mode)
```

If the command prompt does not display such output you must install the JRE.

Installing the JRE

Do the following to install the JRE:

1. Navigate to the following website in an internet browser:
   http://www.oracle.com/technetwork/java/javase/downloads/index.htm

2. Click **Download** underneath "JRE".

3. Click the **Accept License Agreement** radio button.

4. Click the download link for the operating system you're running.

5. If you're running 64-bit Windows click the following link:

Windows x64	31.44 MB	⬇ jre-7u11-windows-x64.exe

6. If you're running 32-bit Windows click the following link:

Windows x86 Offline	30.02 MB	⬇ jre-7u11-windows-i586.exe

7. At the "Java Setup – Welcome" window click **Install**.

   The "Java Setup – Progress" window is displayed while the JRE is installed.

8. At the "Java Setup - Complete" window click **Close**.

After installing a supported JRE, follow the instructions in Verifying Installation of the JRE again. If verification still fails, you might need to follow the steps in Appendix A: Configuring JRE Environment Variables.

Downloading Practice Fusion API Client

Practice Fusion API Client is contained in a compressed file.

If you have not already contacted Practice Fusion's Business Development Team to enter into a partnership agreement, navigate to the following address and submit the form there:

http://www.practicefusion.com/pages/partner-contact-us.html

After the partnership relationship has been established, a business development representative will email you the URL where you can download the compressed file.

Installing a File Extraction Program

You must have software installed that is able to extract the compressed file to continue with installation.

Some Windows systems have the ability to extract a file; to determine if yours does, right-click a compressed file in Windows Explorer, then select **Extract All** from the context menu. If this menu item is not available you can install a program such as 7zip, which is available at the following address:

http://www.7zip.org

Installing Practice Fusion API Client

To install Practice Fusion API Client, you extract the compressed file that contains the application to a directory on your system. This section describes both how to perform a new installation of Practice Fusion API Client and how to upgrade an existing installation.

Table 1: API Client Files and Directories lists the files and directories created by extracting the file.

Table 1: API Client Files and Directories

| File	Description
`labclient-1.18.0.0.jar`	The Java file for the client program
`labclient-ui-1.18.0.0.jar`	The Java file for the client UI
`PFLabClient32.exe`	The executable that starts the client service on 32-bit Windows
`PFLabClient64.exe`	The executable that starts the client service on 64-bit Windows
`PFLabClientUI32.exe`	The executable that starts the user interface for the API client on 32-bit Windows
`PFLabClientUI64.exe`	The executable that starts the user interface for the API client on 64-bit Windows
`\source`	This directory contains the source code for both the client service and the API client UI.

Performing a New Installation of Practice Fusion API Client

Do the following to install Practice Fusion API Client and verify the installation:

1. Create a directory to install the application in, such as `C:\PFLabClient`; configure the directory to have **Read**, **Write**, and **Read & execute** permissions as shown in Figure 2: Security properties of the Practice Fusion API Client installation directory.

Figure 2: Security properties of the Practice Fusion API Client installation directory
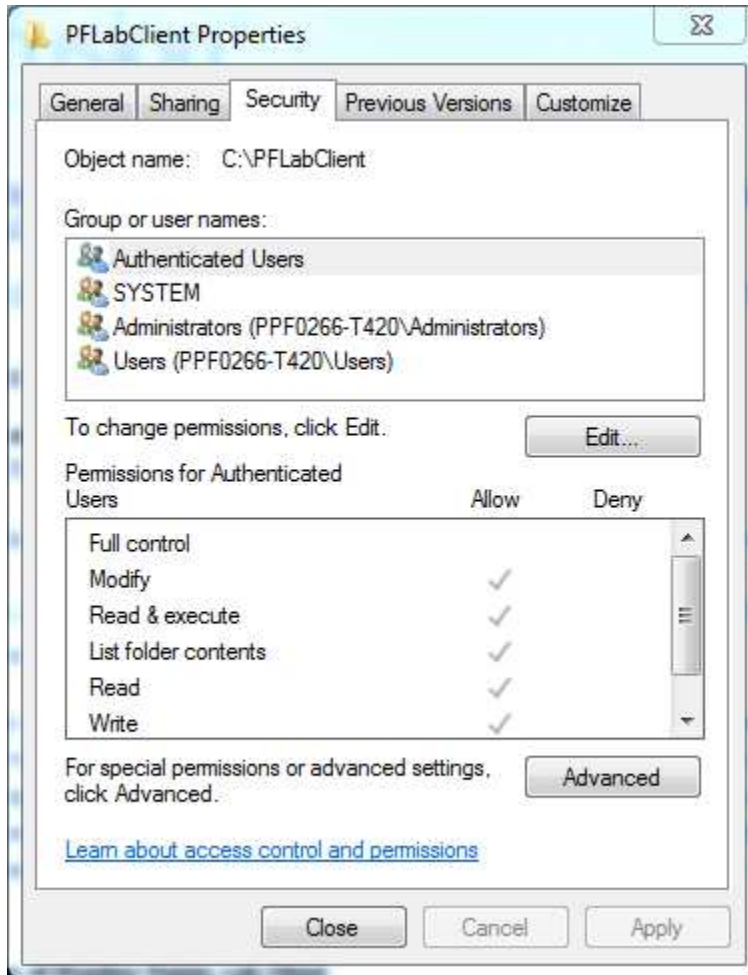
2. Use the program you installed in Installing a File Extraction Program to extract the file you downloaded in Downloading Practice Fusion into the new directory.

3. Proceed to the section titled Starting the API Client UI and Service.

Upgrading an Existing Installation of Practice Fusion API Client

Do the following to upgrade Practice Fusion API Client:

1. Follow the instructions in Stopping the Client Service to stop the service if it is currently running.

2. Delete the contents of the folder where the existing release of Practice Fusion API Client is installed.

3. Follow the instructions in Performing a New Installation of Practice Fusion to install the newer release.

4. Follow the instructions in Starting the API Client UI and confirm that the proper version is displayed in the lower-right-hand corner of the UI.

The upgraded API Client will automatically load your existing configuration from the previous version.

Note

If you are on Windows and have configured Practice Fusion API Client to run as a Windows service, you must restart the service at this time.

Starting the API Client UI and Service

The API client service is the process that monitors a directory for new HL7 messages and the UI is the tool you use to configure the behavior of the service.

Practice Fusion API Client includes an embedded Jetty server used for communication with the API client UI. Access to the server is restricted to local host access for security purposes. The Jetty server requires an open socket port. The default port is 8383 and can be changed as described in Starting the Client Service with a Windows Shortcut if port 8383 is being used by another process.
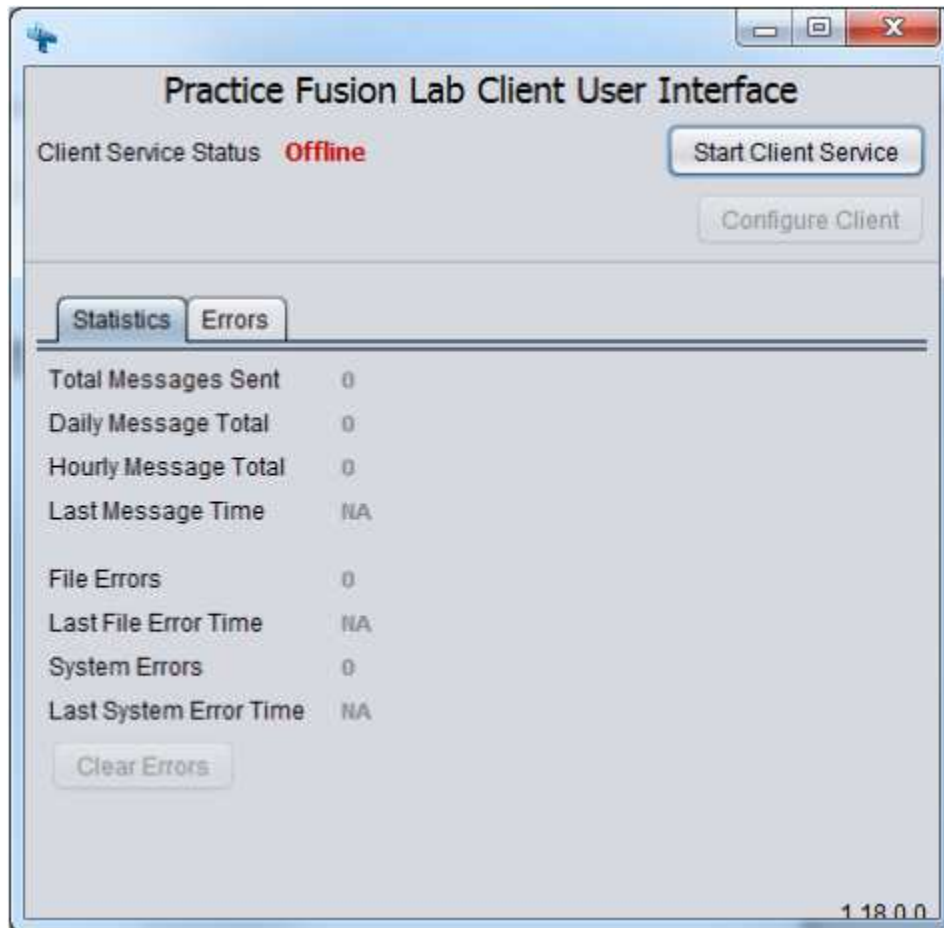
Starting the API Client UI

To start the API client UI in Windows Explorer, navigate to the directory where you extracted the compressed file, then double-click either `PFLabClientUI32.exe` or `PFLabClientUI64.exe` depending on the version of Windows you are running.

The user interface starts. If the client service is running when you start the UI, the **Client Service Status** element reads `Waiting For Configuration`; if it is not running the **Client Service Status** element reads `Offline`.
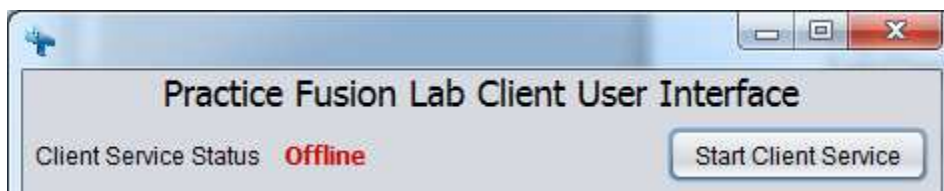
To close the user interface, click **X**.

Starting the API Client Service

To start the client service from the UI, click **Start Client Service**.

Figure 4: "Start Client Service" button

Starting the Client Service with a Windows Shortcut

You can also create a shortcut to the `PFLabClient32.exe` or `PFLabClient64.exe` executable files to start the service. Do the following to modify the shortcut if you need to use a non-default port:

1. Right-click the shortcut and select **Properties** from the context menu.

2. Add the -port option with the desired port number at the end of the value in the **Target** field. For example, to use port 9393 in a 64-bit Windows environment the value in the **Target** field would be as shown in Figure 5: "Shortcut Properties" dialog.

Figure 5: "Shortcut Properties" dialog
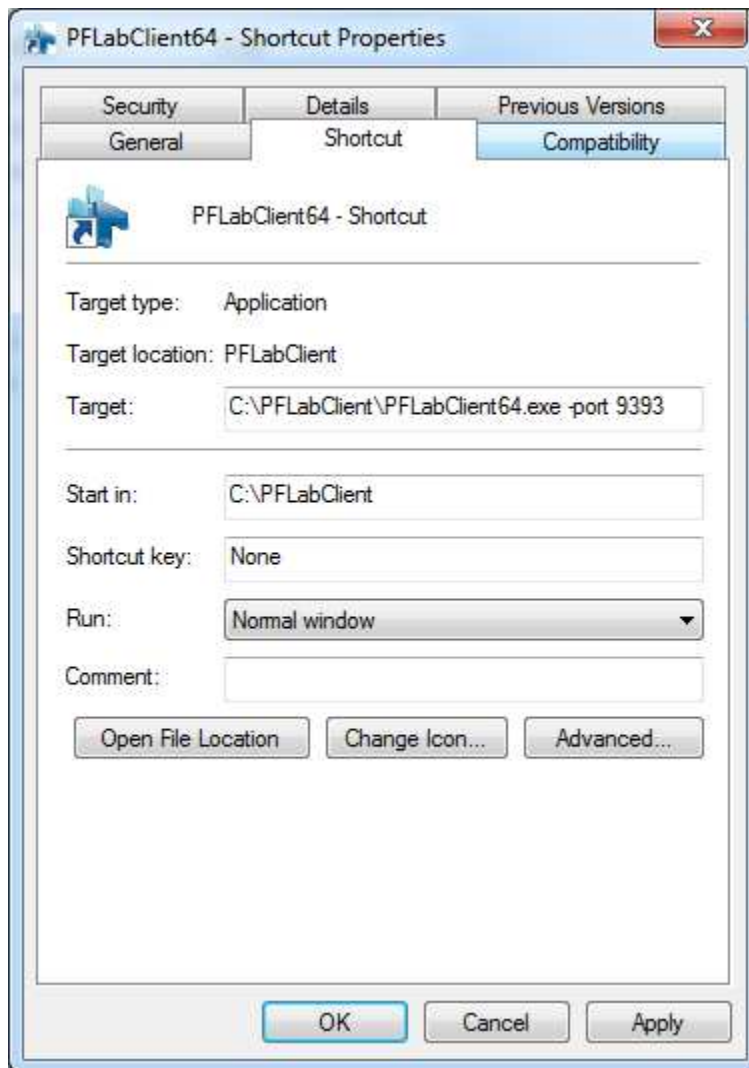

3. Click **OK**.

Waking the Client from Standby

If the client experiences a system error, it enters standby mode and waits for a configurable period of time to resume processing files. To wake the client from standby mode manually instead of waiting for the configured time to pass, click **Wake From Standby** in the UI.

If another system error is encountered the client returns to standby mode.
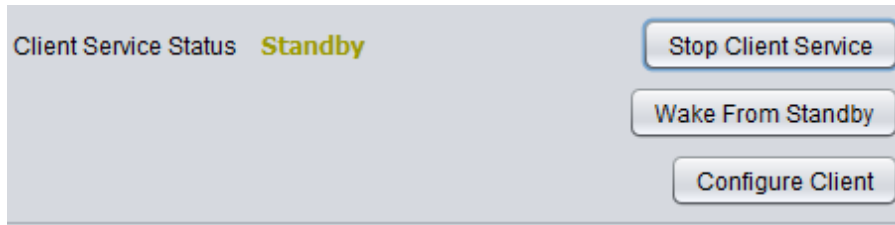
For more information about standby mode and configuring the length of the standby period, see the Practice Fusion API Client Usage Guide.

Stopping the Client Service

To stop the client service, click **Stop Client Service** in the API client UI.

You can also select the `java.exe` or `PFLabClientXX.exe` process of the service in Windows Task Manager, then click **End Process**.

Figure 7: Windows Task Manager

Practice Fusion Results Client Installation Guide for Windows
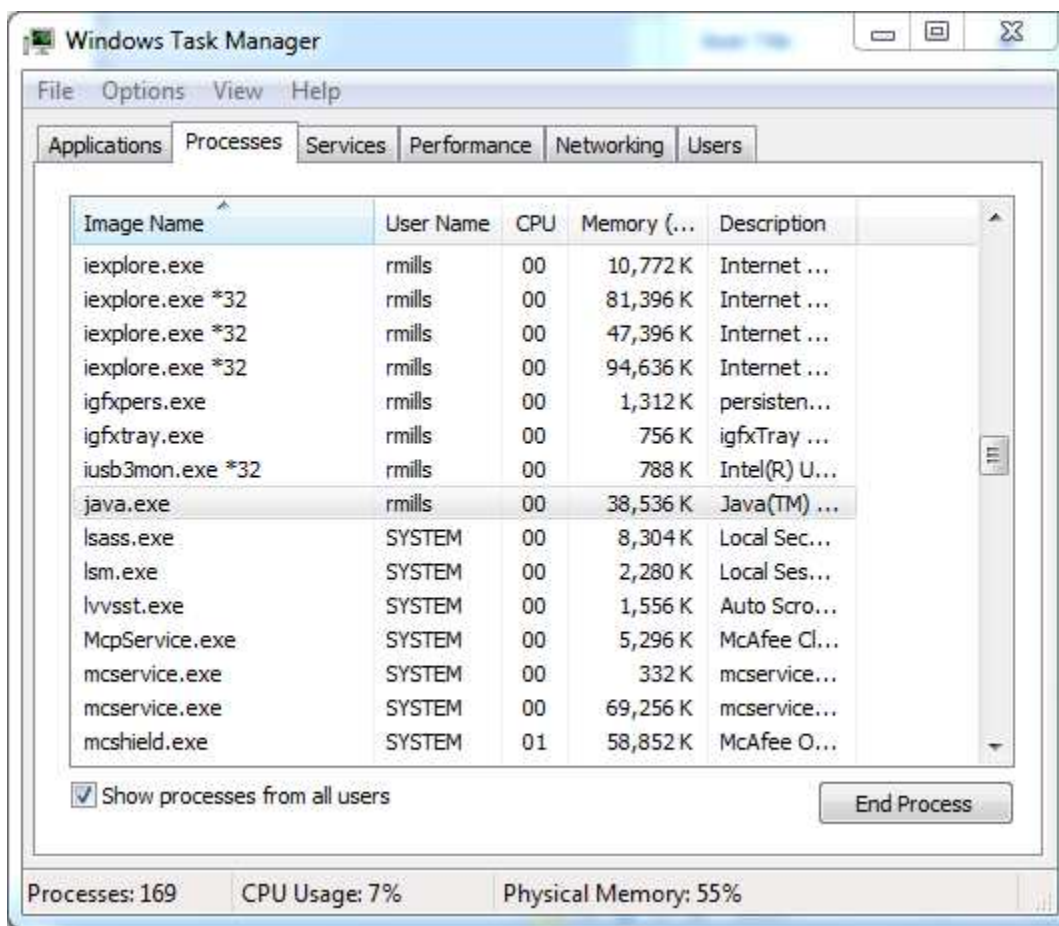
Configuring a Service to Start Practice Fusion API Client

Practice Fusion recommends that you configure the Practice Fusion API Client service to run as a Windows service so you can manage it remotely and have it restart automatically in the event of a failure. You might decide to start and stop the service manually while you are in testing and configure it to run as a service when you go into production.

Do the following to configure Practice Fusion API Client as a Windows service:

1. Select **Start > All Programs > Accessories > System Tools > Task Scheduler**.

2. Select **Action > Create Task** from the menu bar.

3. Do the following at the "Create Task" dialog:

   1. Type `Start Practice Fusion API Client` in the **Name** field.

   2. Click **Change User or Group**.

   3. At the "Select User or Group" dialog, type the name of the user account under which the service should run in the **Enter the object name to select** field.

   4. Click **OK**.

   5. Click the **Run whether user is logged on or not** radio button.

NOTE

   > If you select the SYSTEM user account as shown in the screenshot, the **Run whether user is logged on or not** radio button is disabled.

   6. Click the **Run with highest privileges** checkbox.

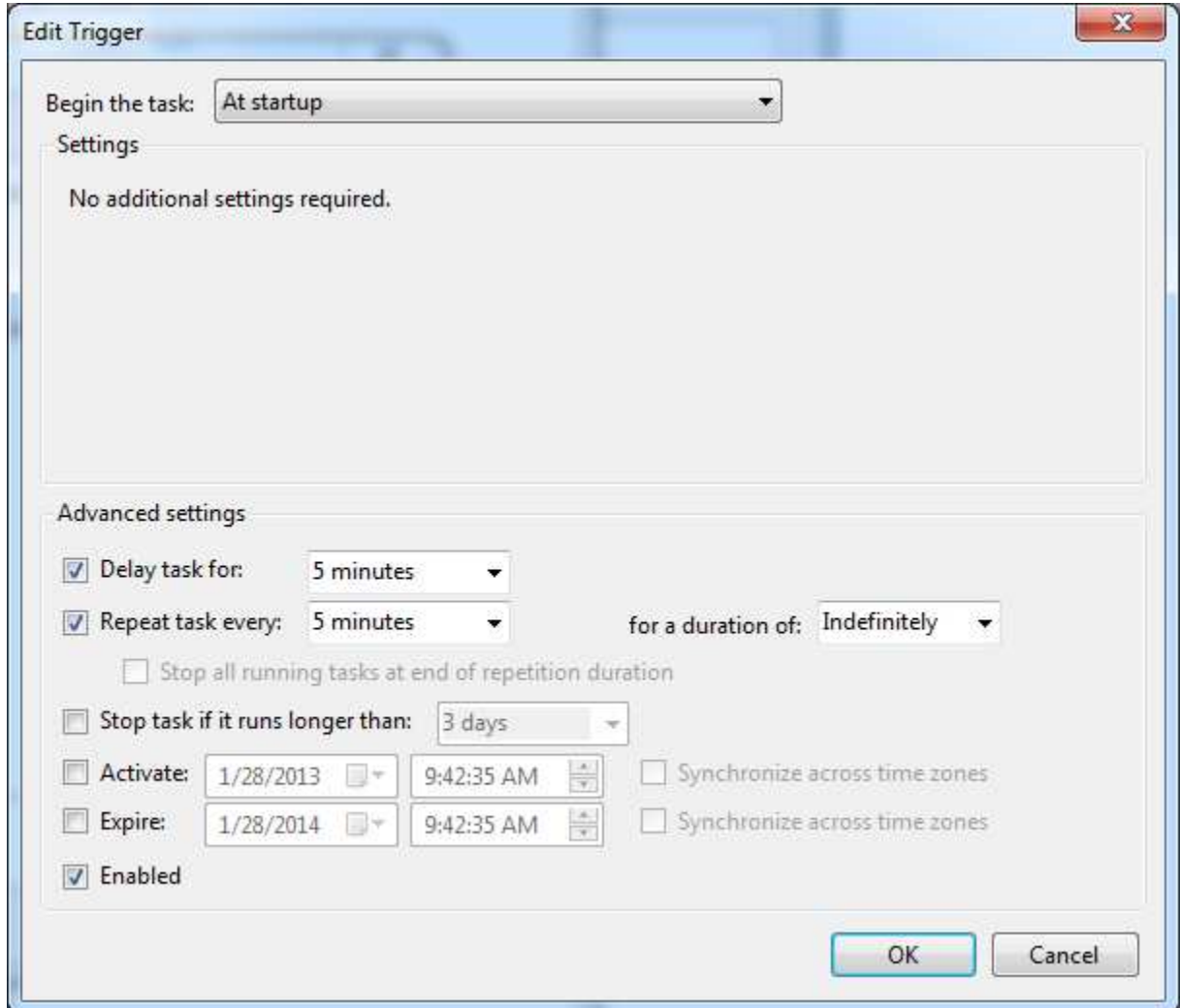**Figure 8: "Create Task" dialog**
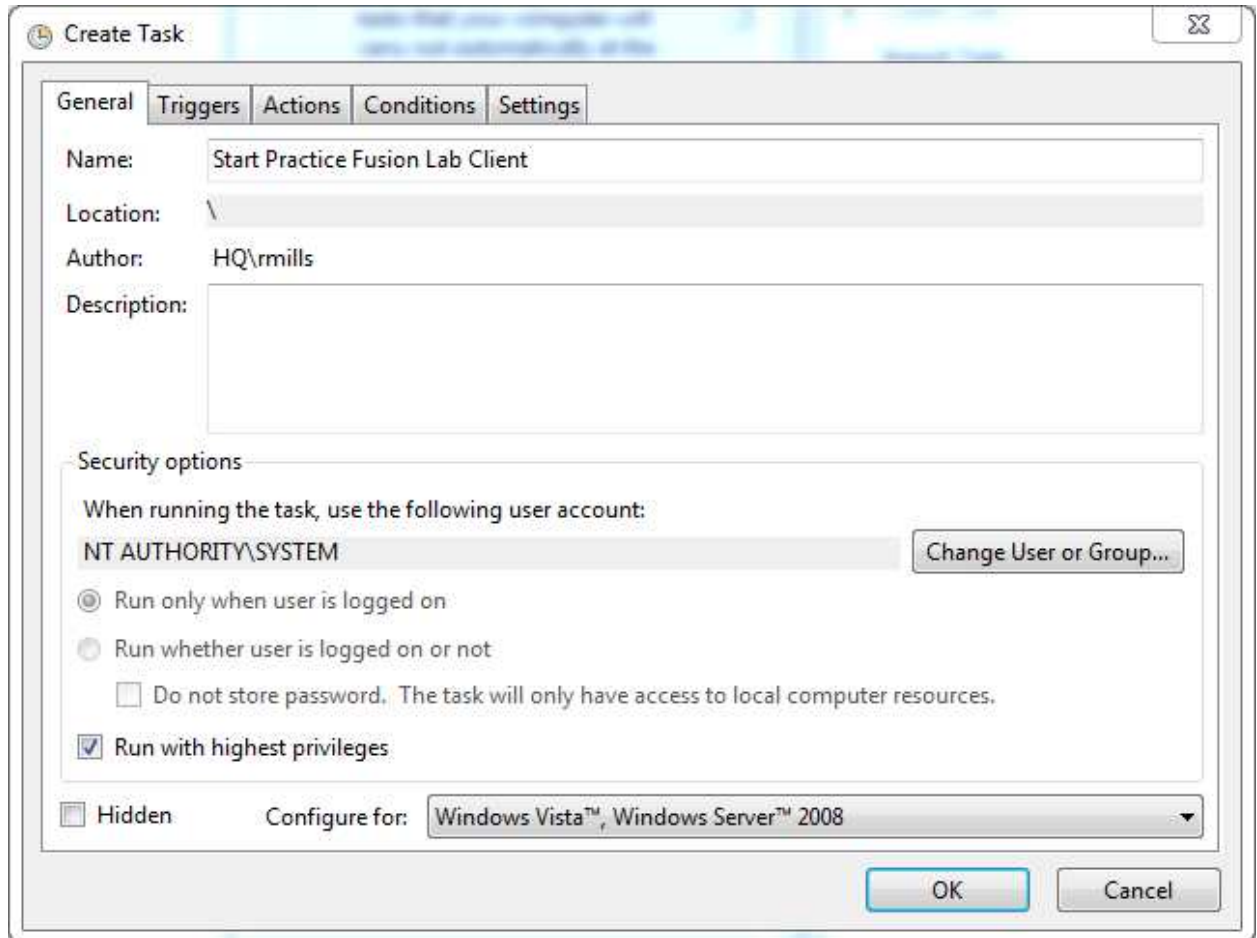
4. Click the "Triggers" tab, click **New**, and do the following:

   1. Select `At startup` from the **Begin the task** drop-down menu.

   2. Select the **Delay task for** check box.

   3. Type `5 minutes` in the **Delay task for** field (it has a drop-down menu, but does not contain the value "5 minutes" by default, so you will have to type it in).

      The delay allows the computer to start in the event of a reboot without Practice Fusion API Client consuming system resources.

   4. Select the **Repeat task every** check box.

   5. Type `5 minutes` in the **Repeat task every** field.

   6. Select `Indefinitely` from the **for a duration of** drop-down menu.

Figure 9: "New Trigger" dialog

7. Click **OK**.

5. When returned to the "Create Task" dialog, click the "Actions" tab, click **New,** and do the following:

   1. Click **New**.

   2. Type the full path and filename of the Practice Fusion API Client executable in the **Program/script** field.

      If the computer is running a 64-bit version of Windows the name of the executable is `PFLabClient64.exe`. If the computer is running a 32-bit version of Windows the name of the executable is `PFLabClient32.exe`.

      For example, if you extracted the compressed application file to the `C:\PFLabClient` directory as suggested in this document and the computer is running the 64-bit version of Windows, you would type the following:

![Practice Fusion - Free, web-based Electronic Health Records]

```
C:\PFLabClient\PFLabClient64.exe
```

3. If you will be running the Practice Fusion API Client service on a port other than the default port 8383, type -port *xxxx* in the **Add arguments (optional)** field, where *xxxx* is the four-digit port number to be used.

Figure 10: "New Action" dialog
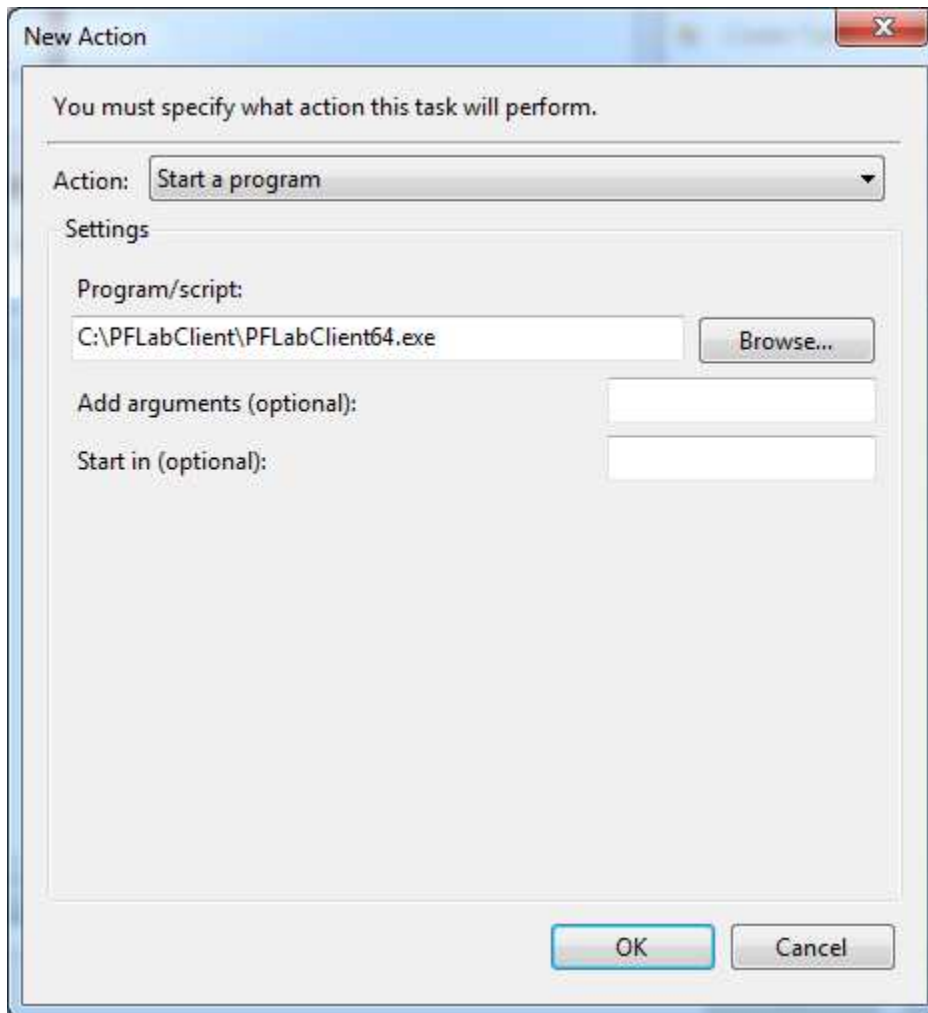
4. Click **OK**.

6. When returned to the "Create Task" dialog, click **OK**.

7. When returned to the "Task Scheduler" window, click **Task Scheduler Library**.
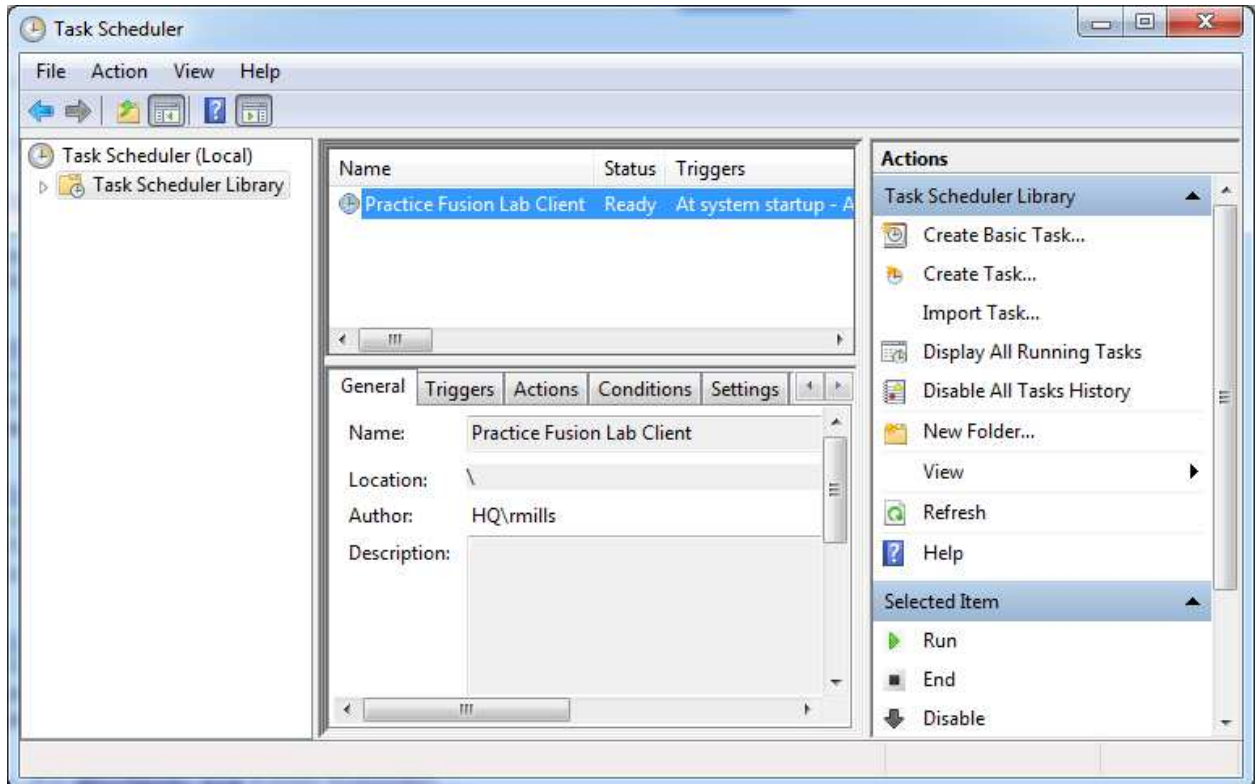
8. Select the task you created and confirm that it is configured with the desired settings.

Note

> Because the service was configured to start when the computer starts, it will not be running at this point. To start the service now, select **Action > Run** from the menu bar.

Configuring and Using the API Client

At this point, follow the instructions in the Practice Fusion API Client Usage Guide to configure the API client and use it to process HL7 messages.

Appendix A: Configuring JRE Environment Variables

Environment variables are strings that contain information about a computer system. On some systems you must configure environment variables about the JRE installation so that Java programs can run.

After installing the JRE, perform the steps in Verifying Installation of the JRE; if the verification fails, you might need to configure the environment variables; do the following on Windows XP or Windows Server 2003 to configure the environment variables:

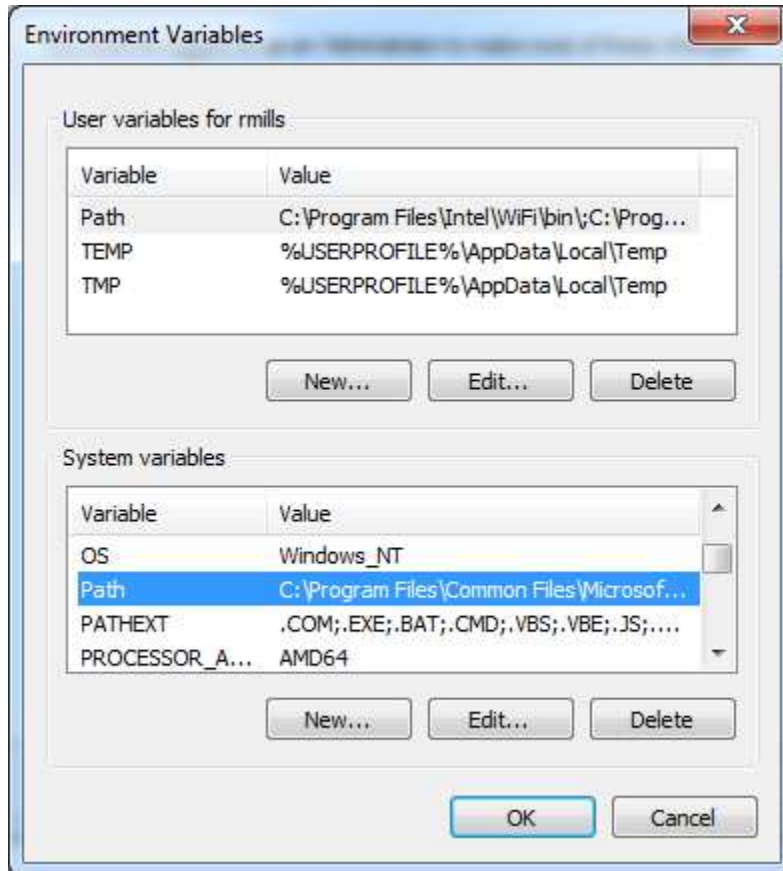1. Determine the path of the `bin` directory of the JRE installation.

    If you accepted the default installation directory it would be `C:\Program Files (x86)\jre7\bin` for the version 7u11 JRE on a 32-bit Windows system.

    If you accepted the default installation directory it would be `C:\Program File\jre7\bin` for the version 7u11 JRE on a 64-bit Windows system.

   If you installed the version 6 JRE the `jre7` segments would be `jre6`.

2. In Windows Explorer, right-click **Computer** or **My Computer** depending on the operating system, then select **Properties** from the context menu.

3. On Windows 7 or Windows Server 2008 click **Advanced System Settings**.

4. Click the "Advanced" tab.

5. Click **Environment Variables**.

6. Select the `Path` entry in the "System variables" list, then click **Edit**.

Figure 12: Environment Variables

7. Press **End**.

8. Type a semicolon followed by the path of the `bin` directory of the JRE installation as discovered in step 1.

Figure 13: Editing the path variable
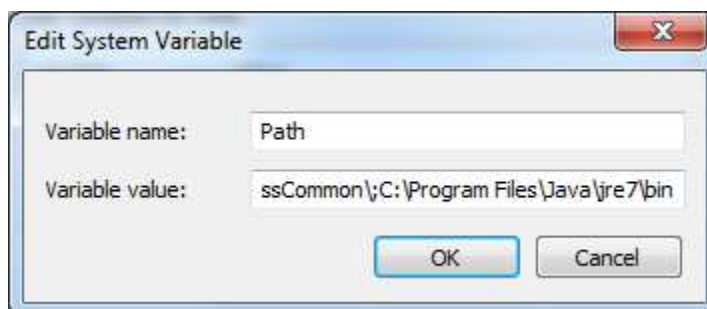
9. Click **OK**.

10. Click **OK**.

11. Click **OK**.

Practice Fusion Results Client Installation Guide for Windows

12. Perform the steps in Verifying Installation of the JRE to confirm that the environment variable has been configured correctly.