Proficy* HMI/SCADA - iFIX

MIGRATION_GUIDE_FIX32_TO_iFIX

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About this Guide

This Help file begins by explaining how to upgrade your FIX32 node to iFIX. After you upgrade, migration tools are provided to help you convert FIX32 or FIX Desktop displays into iFIX pictures. This Help file also contains information on how to use these tools.

Refer to the following sections for more details:

- Understanding the Migration Process
- Project Conversion with the Migration Tools
- Tag Group Converter
- Picture Converter
- Key Macro Migration Tools
- Script Converter
- Historical Pen Group Migration Tools
- Known Issues with Migration Tools
- Glossary of Migration Terms

NOTE: The migration tools do not install with the default iFIX product install. The install program for the migration tools (MigrationToolsInstall.exe) is located on your iFIX product DVD in the Proficy\MigrationTools folder. Once installed, the Migration Tools toolbar can be made available for you to use in the iFIX WorkSpace. For more information, refer to the Installation of the Migration Tools section.

Understanding the Migration Process

The full migration process includes the following steps:

- Preparation for the Migration
- Migration of the Actual FIX32 Install to iFIX
- Project Conversion with the Migration Tools

Refer to the individual sections for more information on each of these steps.

Preparation for the Migration

In order to migrate a FIX32 computer to iFIX, you must first perform the following tasks (in any order):

- Convert recipe files to .RCX (Master text) and .RCY (Control text) files. This step is necessary so that you can later import your recipes into iFIX.

- Export the I/O driver configuration to a .CSV file, so you can later import the configuration to your iFIX node.

- Record the options selected for environmental protection, if it's being used. That way, you can reenter them into iFIX.

- Back up all the required files.

- Export a list of user accounts from the Security Configuration application, if required. This report includes a list of iFIX users, along with the application features configured for each user in your FIX applications. It will help you recreate the same security configuration in iFIX.

- Add passwords to the file with the security configuration, if you exported it.

- Generate a system configuration report. This report includes information that you may need later when you are configuring your SCU. It is also helpful for verifying your system after the migration.

Once you complete these tasks, you can begin the actual migration.

▶ To convert recipe files to .RCX and .RCY files:

1. Start FIX32.
2. If security is enabled, log in with a user account with Administrator rights.
3. Start the FIX32 Recipe Manager, RCP.EXE.
4. Save each master recipe as a .RCX file:
    a. Open the master recipe (.RCM file).
    b. On the File menu, click Save As. The Recipe Mod Log dialog box appears.

    c.   Click Save As. The recipe Save As dialog box appears.

    d.   In the Save File As Type list, click Master text (*.rcx).

    e.   Confirm the location of the RCM folder and that the file name is the same as the original file.

    f.   Click OK.

5.   Save each control recipe as a .RCY file:

    a.   Open the control recipe (.RCC file).

    b.   On the File menu, click Save As. The Recipe Mod Log dialog box appears.

    c.   Click Save As. The recipe Save As dialog box appears.

    d.   In the Save File As Type list, click Control text (*.rcy).

    e.   Confirm the location of the RCC folder and that the file name is the same as the original file.

    f.   Click OK.

6.   Verify that you saved all recipes by inspecting the FIX32\RCC and FIX32\RCM folders.

▶ To export the driver configuration:

1.   Start the current installation of FIX32 (if it is not already running).

2.   If security is enabled, log in with a user account with Administrator rights.

3.   Start the System Configuration Utility (SCU).

4.   On the Configure menu, click SCADA. The SCADA Configuration dialog box appears.

5.   Select an installed driver (other than SIM), and click the Configure button. The Driver Configurator program starts.

6.   Select the first channel, CHANNEL1, in the browser on the left side of the window.

7.   On the File menu, click Save. The Save As dialog box appears.

8.   Leave the default location of FIX32\PDB, and enter a name for the file in the File Name field.

9.   In the Save as Type list, click Text Files (*.CSV).

10. Click Save.

11. Repeat steps 6-10 for each channel of the driver that is currently installed. Note the file names and their location for later use.

12. Repeat steps 5-11 for each I/O driver installed on your system.

13. Exit the SCU.

▶ To record your current environment protection settings:

1.   Start the current installation of FIX32 (if it is not already running).

2.   Open the Draw application.

3.   On the Edit menu, click Environment. The Environment Protection dialog box appears.

4.   Inspect and record the enabled options.

▶ **To back up the required files:**

1. Create a new folder on your computer, separate from the FIX32 folder, for the files you want to save.

2. Copy the entire PDB folder into this new folder. The PDB folder includes the process database and driver configuration files (*.PDB, *.CSV, *.GDB, all driver configuration files).

3. Copy the entire PIC folder, which includes all displays, display templates, tag groups, key macros, layouts, and custom Dynamos (*.ODF, *.ODT, *.ODT, *.TGE, *.KMX, *.LYT, and *.SBL files).

4. Copy the converted master recipe files (*.RCX) in the RCM folder.

5. Copy the converted control recipe files (*.RCY) in the RCC folder.

6. Copy the initialization settings for the Draw and View applications and report files (Draw.ini, View.ini, *.RPT) from the LOCAL folder.

7. Copy the entire HTRDATA folder, which includes all collected historical data.

8. Copy the entire HTR folder, which includes your historical collection preferences.

9. Copy the entire ALM folder, which includes all alarm files and event logs.

10. Copy the entire APP folder, which includes any custom data and configuration files for your iFIX applications.

11. After you copy all of these files, you may want to back up these files to another location, such as a network drive or a removable media, as a safeguard until the migration is complete.

▶ **To export a list of user accounts from the Security Configuration application:**

1. Start the current installation of FIX32 (if it is not already running).

2. If security is enabled, log in with a user account with Administrator rights.

3. Start the System Configuration Utility (SCU).

4. On the Configure menu, click Security to enter the Security Configuration.

5. On the File menu, click Export. The Select File dialog box appears.

6. Browse to the folder that you want to save the file to. By default, this folder is the FIX32\Local folder. Most likely you will want to save this file to the location where you backed up the other FIX files.

7. Use the default name for the .RPT file, which is *Security*.RPT.

8. Click Save.

9. Open this report in a text editor such as Notepad or Wordpad and print a copy.

▶ **To add passwords to the exported file with the security configuration:**

1. Open the exported *Security*.RPT file in a text editor such as Notepad or WordPad.

2. Search the file for the first instance of the word *User:* in the report. For example:

```
User: GUEST

Login-name: GUEST
```

```
Timeout: 00:00:00

Feature: View
```

3. Insert the text *Password:* after the user's login name.

4. Type the user's password after the colon. An example of what this might look like is as follows:

```
User: GUEST

Login-name: GUEST

Password: GUEST

Timeout: 00:00:00

Feature: View
```

5. Scroll down through the report and repeat steps 3 and 4 for each user in the report.

▶ **To generate a system configuration report:**

1. Start the current installation of FIX32 (if it is not already running).

2. If security is enabled, log in with a user account with Administrator rights.

3. Start the System Configuration Utility (SCU).

4. On the File menu, click Report. The Select Report Name dialog box appears.

5. Leave the default name in the File Name field. The default name is the node name.

6. Click Save. A report named *NodeName*.RPT is saved to the Local folder. A message appears when the save is complete.

    NOTE: *NodeName is the name from step 5.*

7   Click OK to continue.

Migration of the Actual FIX32 Install to iFIX

In order to migrate a FIX32 computer to iFIX, you must first perform these tasks, in the order listed:

1. Install iFIX.

2. Update the Database Dynamos, if you want to use your FIX32 Database Dynamos in the iFIX WorkSpace.

3. Install the newest drivers and iFIX product SIMs, if any are available.

4. Copy the backed up files into the appropriate Proficy iFIX product folders.

5. Import the FIX I/O driver configuration information.

6. Verify the I/O driver and database migration.

7. Import the recipe files.

8. Import the security configuration, if required.

9. Reconfigure the application features and passwords for each user, if you imported the security configuration.

10. Enable Environmental Protection, if applicable.

The steps that follow explain how to perform each of the above tasks in more detail.

▶ **To install iFIX software:**

1. Log in to Windows with Administrator privileges. Ensure that there are no iFIX, FIX, or Proficy processes running, and close any other programs that are running.

   NOTE: If you plan to use the integrated Proficy Historian features in iFIX, you must shut down Historian services and licensing prior to installing iFIX and Historian.

2. Insert the iFIX DVD into your DVD drive. The iFIX installation screen appears.

   NOTE: If this screen does not automatically appear, double-click the InstallFrontEnd.exe file on the DVD to display it. A message may appear with a security warning, click Run to proceed.

3. Click the "Install iFIX" link. A message box appears asking you to confirm the install.

4. Click Yes to proceed. The install program starts and the Welcome screen appears.

5. Click Next to continue. The license agreement screen appears.

6. Click "I accept the terms of the license agreement" if you want to continue, and then click Next.

   IMPORTANT: If a previous version of iFIX is detected, you can choose to upgrade iFIX. For iFIX versions before 4.0, you have the choice to upgrade or install iFIX to a completely new folder, without upgrading. If you want to upgrade, it is suggested that you do so using the install at this point in time.

   The Setup Type screen appears.

7. Select an option and click Next:

   - **Complete** – Installs all iFIX components, including options such as FIX Desktop, the Sample System, the Electronic books (e-books), and the My-T-Soft virtual (on screen) keyboard.

   - **Custom** – Installs iFIX and the options that you choose. You are prompted to enter your options after you select an install path.

   - **Typical** – Installs iFIX, the Electronic books (e-books), the Sample System, and the My-T-Soft virtual (on screen) keyboard. FIX Desktop is not installed with this option.

   The Choose Destination Location screen appears.

8. Leave the default C:\Program Files\Proficy\Proficy iFIX path or click Browse to select a **folder.**

NOTES:

- ***If you are upgrading from FIX32, make sure that you choose a location other than the*** *folder that contains your FIX32 software, if it is installed on the same computer.* ***Do not install over a current FIX32 installation****.*

- *If you enter a custom install path, be aware that the path can be no greater than 100 characters long.*

- *If you want to use 6.x drivers, the iFIX compressed install path must be no greater than 64 characters long. iFIX uses the Microsoft compression algorithm to try to fit longer paths within this boundary. Some paths are not compressible to the 64 character maximum length. Please be aware of this. In addition, make sure that the registry key, HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\FileSystem\NtfsDisable 8dot3NameCreation, is not enabled (is set to 0) when the install folder is created. When set to 1, the compression algorithm is disabled. Refer to Microsoft help for more information on the GetShortPathName() compression algorithm.*

- *After installing a 6x driver, the driver is listed in the SCU in the Drivers Available dialog box (which can be accessed from the I/O Driver Name browse button in the SCADA Configuration dialog box). You need to manually add the driver to the Configured I/O Drivers list in the SCADA Configuration dialog box.*

9. Click Next to continue.

   NOTE: *If you selected a Custom install, instead of Complete, the Select Features screen appears. Select the features you want to install, and click Next.*

   The Ready to Install Program screen appears.

10. Click Install. The progress of the installation displays on screen as the files are copied. After a few minutes, when the install finishes copying the files, the Proficy iFIX Configure Wizard dialog box appears.

11. Enter the Node Name, Node Type, and Connectivity Type, if applicable, and then click OK. A message box appears, notifying you that either Proficy Historian is already installed or that is going to be installed.

12. Click OK. If you chose to install Proficy Historian, the Historian installation screen appears. Otherwise, proceed to step 15.

13. If you do not want to install Historian click Cancel and skip to step 15. Otherwise, go to step 14.

   NOTE: *If you choose not to install Historian, the following features will not work:*

   - *iFIX database tags from Database Manager will not automatically be added, updated, or deleted to or from Historian.*

   - *You will not be able to update the Proficy Historian tab of Database Manager blocks.*

   - *Imported or exported database tags will have default values in the Historian field but will not be used.*

- *The FixtoHIst.exe and Historical Datalink features will be installed, but will not work without Proficy Historian.*

14. Install Historian. To do so:

    a. Click Next. The Select Components screen appears.

    b. Choose the components you want to install and click Next. The Windows Firewall screen appears.

       NOTE: If you only want to install collectors on this node, do not install the Historian server; clear the Server check box.

    c. Select Yes and click Next. The Select OPC Servers screen appears.

    d. Select the OPC Servers you want to use and click Next. The Choose the Program Folder screen appears.

    e. Leave the default path or click Browse to select a folder, and then click Next. The Choose the Archive Folder screen appears.

    f. Leave the default path or click Browse to select a folder, and then click Next. The Configuration Review screen appears.

    g. Click Next. The progress of the installation displays on screen as the files are copied. The Setup Complete screen appears.

    h. Click Finish. A message box appears reminding you to manually install the Historian Service Pack 1 and SIM, located on the installation DVD, after iFIX installation completes.

    i. Click OK.

15. When a message box appears requesting that you view the release notes, click Yes. Close the release notes after you finish reviewing them to resume the install. The Setup Complete screen appears.

16. Click Finish.

17. After the install completes:

    - If you have a new key, power off the computer and insert your USB or parallel port key into the appropriate port.

    - If you have an older key that you are updating, use the update file and follow the instructions from GE Intelligent Platforms to update your key.

18. Restart the computer. As the computer restarts, log in to Windows with the same user name (with Administrator rights).

    IMPORTANT: If upgrading from FIX v7 to iFIX with FIX Desktop, do not start iFIX yet. Refer to the Overview of Steps to Upgrade from FIX 7.x section for information on how to proceed.

19. If you installed Historian, proceed to install the required Historian Service Pack and SIM. The SIM provides you with the new version of the Historian toolbar that includes the Configure Historian Server button and the new VisconX button.

▶ **To update the Database Dynamos:**

> Obtain the updates from your Database Dynamos vendor or recompile the Dynamos with the iFIX Database Dynamo Toolkit. For information on the toolkit, contact GE Intelligent Platforms.

▶ **To install the newest drivers and iFIX product SIMs:**

> *IMPORTANT: You must install the most current drivers before you migrate the Process Database (PDB) files from FIX32 to iFIX. This step is necessary so that your FIX32 applications can migrate properly to iFIX.*

1. Obtain the most current Driver CD or the driver update from the GlobalCare Support web site, http://www.ge-ip.com/support.

2. Follow the instructions that came with your driver CD, or the information included with the driver download.

3. Check for the latest patches for the iFIX product. Obtain all applicable iFIX SIMs and add-ons from the GlobalCare Support web site, http://www.ge-ip.com/support.

4. Install these SIMs on top of the installed iFIX product.

5. Do not start iFIX.

▶ **To copy the backed up files into the appropriate Proficy iFIX product folders:**

1. Copy the *.PDB, *.CSV, and *.GDB files from the FIX32 PDB folder into the iFIX PDB folder.

   NOTE: If you installed iFIX to the default location, the iFIX folders are located in this path: C:\Program Files\Proficy\Proficy iFIX.

2. Copy the contents of the FIX32 PIC folder into the iFIX PIC folder.

3. Copy the *.RCX files into the iFIX RCM folder.

4. Copy the *.RCY files into the iFIX RCC folder.

5. Copy the Draw.ini, View.ini, *.RPT files for FI32X into the iFIX Local folder.

6. Copy the contents of the FIX32 HTRDATA folder into the iFIX HTRDATA folder.

7. Copy the contents of the FIX32 HTR folder into the iFIX HTR folder.

8. Copy the contents of the FIX32 ALM folder into the iFIX ALM folder.

9. Copy the contents of the FIX32 APP folder into the iFIX APP folder.

▶ **To import the FIX I/O driver configuration information:**

1. On the Start menu, point to Programs, Proficy HMI SCADA - iFIX, and then System Configuration. The SCU application appears.

2. Verify that the Node name that appears on the main screen is correct. Refer to the *NodeName*.RPT report file if you are unsure of the name.

3. Double-click the Database name to enter the Database Name you want to use. The Database Definition dialog box appears. Ensure it is the same name as the previous project.

4. Click OK. A prompt appears stating that the database does not exist.

5. Select Yes, and use the database anyway.

6. On the Configure menu, click SCADA. The SCADA Configuration dialog box appears.

7. Verify that the required drivers appear in the Configured I/O Drivers list. If required, add the SIM and any other required drivers to the Configured I/O Drivers list.

8. Click OK, and then Yes when prompted.

9. On the File menu, click Save.

10. Close the SCU.

11. On the Start menu, point to Programs, Proficy HMI SCADA - iFIX, and then iFIX. The iFIX Startup screen appears.

12. Make sure the local node name is correct, and click the Start button in this dialog box to start iFIX.

13. When iFIX is running, start the SCU again.

14. On the Configure menu, click SCADA. The SCADA Configuration dialog box appears.

15. Verify each driver configuration is correct by selecting the driver and then clicking the Configure button. The Driver Configurator opens.

    If the driver configuration is correct, you can close the Driver Configurator and proceed to step 24.

    If you need to make changes, you can make the necessary changes, save the file, and proceed to step 24. Otherwise, import the driver configuration by following steps 16-22.

16. Select the first channel, CHANNEL1, in the browser on the left side of the window.

17. On the File menu, click Open. The Open dialog box appears.

18. Select Text Files (*.CSV) from the Save as Type drop-down list.

19. Select the .CSV file for the channel.

20. Click Open.

21. Repeat steps 16-20 for each channel of the driver that is currently displayed.

22. Repeat steps 15-21 for each I/O driver installed on your system.

23. When you finish these tasks for all drivers, click the Save Command on the File menu, and exit the Driver Configurator.

24. Save and Exit the SCU.

▶ To verify the I/O driver and database migration:

1. Start iFIX.

2. Start Mission Control from the iFIX WorkSpace. You can find the button to launch Mission Control in the WorkSpace tree.

3. Examine the information on the I/O Control tab. Ensure that data is being polled. If data is present, advance to step 6.

4. If there is no data present, ensure that the driver is loaded and is running. Exit Mission Control and select System Configuration to start the SCU.

5. On the Configure menu, click SCADA. The SCADA Configuration dialog box appears.

6. Select the I/O driver and verify that the Poll Records are present. If they are not present, repeat the import of the I/O driver configuration files.

7. Maximize the iFIX WorkSpace and then:

   - Start Database Manager from the WorkSpace System Tree.

   - Verify that the I/O addresses for your data blocks are correct.

8. Save and exit Database Manager.

Errors that occur during the database conversion are written to the error log file (dbcvt.err). You can open this file in any text editor. Use this log file to identify the individual tags causing the problems. Be aware that backups of the converted database files appear in the PDB folder with numbered extensions.

▶ **To import the recipe files:**

1. From the iFIX WorkSpace, select the FIX Recipes folder in the system tree.

2. Double-click the New Recipe icon. The Recipe Development utility appears.

3. Open each .RCX file in the iFIX RCM folder and save each file as a .RCM file.

4. Open each .RCY file in the iFIX RCC folder and save each file as a .RCC file.

5. When you are finished, exit the Recipe Development utility.

▶ **To import the security configuration:**

1. Start iFIX (if it is not already running).

2. On the Start menu, point to Programs, Proficy HMI SCADA - iFIX, and then System Configuration. The SCU application appears.

3. On the Configure menu, click Security. The Security Configuration application appears.

4. On the File menu, click Import. The Select File dialog box appears.

5. Browse to the folder to which you copied the backed up .RPT file – the iFIX Local folder.

6. Select the file and click Open. A message box appears warning you that the imported user accounts will not contain passwords.

7. Click Yes to continue. Another message box appears requesting that you replace or add this file to the existing configuration.

8. Click Replace.

   IMPORTANT: *Do not shut down the SCU before moving on to the next set of steps. If you did not add passwords to the user accounts before you migrated, you could possibly lock yourself out, if security is enabled.*

9. Reconfigure the application features and passwords for each user.

▶**To reconfigure the application features and passwords for each user:**

   NOTE: *The SCU should still be open from the previous set of steps.*

1. On the Configure menu, click Security. The Security Configuration application appears.

2. On the Edit menu, click User Accounts.

3. Select a user and click Modify. The User Profile dialog box appears.

4. Enter a new password in the Password field if you want to assign a password.

5. Click the Modify button beneath the Application feature list (the list on the right-side of the window). The Application Feature selection dialog box appears.

6. Add the required features. Click Add All if you want to allow this user to use all application features.

   For information on the names used with each feature and the new features available, refer to the "Reconfigure the Application Features and Passwords for Each User" section of the Getting Started with iFIX ebook. This section can be found in the "Upgrading from FIX 7.x" chapter.

7. Click OK.

8. Click OK to exit the User Profile dialog box.

9. Repeat steps 3-8 for each user listed in the User Accounts dialog box.

10. Click OK to exit the User Accounts dialog box.

11. On the Edit menu, click Group Accounts. The Group Accounts dialog box appears.

12. Select a group and click Modify. The Group Profile dialog box appears.

13. Click Modify in the Application Features section of the dialog box. The Application Feature selection dialog box appears.

14. Add the required features. Click Add All if you want to allow this group to use all application features.

15. Click OK.

16. Click OK to exit the Group Profile dialog box.

17. Repeat steps 12-16 for each group listed in the Group Accounts dialog box.

18. On the File menu, click Save to save the security configuration.

19. On the File menu in the Security Configuration program, click Exit to return to the SCU.

20. Save and exit the SCU.

▶**To enable Environmental Protection:**

1. Start iFIX.

2. Shut down View and the WorkSpace if either is running.

3. If you want to use the Disable Pop-up Menu option, open the FixUserPreferences.ini file in the iFIX Local folder. In the [AppRunPreferences] section, make the following change:

   `PopUpMenu=0`

   When the PopUpMenu=1, then the right-click pop-up menu is not available. When this value is set to 0, the pop-up menu is available in View.

4. To set the other environment settings, open the iFIX WorkSpace.

5. In Classic view, on the WorkSpace menu, click User Preferences.

    -Or-

    In Ribbon view, on the Home tab, in the WorkSpace group, click Settings, and then click User Preferences.

6. Select the Environment Protection tab.

7. Select the Enable Run Time Environment Protection check box. After you enable this setting, the check boxes below become available.

8. Select the options that you want to enable. For details on each of these options, refer to the table in the "Understanding Environment Protection" topic in the Getting Started with iFIX electronic book.

    NOTE: After you enable the environment protection feature in WorkSpace, you must shutdown View (if it is still running) and restart it for the environmental protection settings to apply.

Project Conversion with the Migration Tools

If you created displays in the Draw application, and you want to convert them to pictures you can display in the iFIX WorkSpace, you will find the migration tools helpful. Each migration tool is responsible for migrating a particular component of the FIX system to a corresponding component in iFIX. The migration tools include the following:

- Tag Group Converter – converts FIX Tag Groups to iFIX Tag Groups

- Picture Converter – converts FIX screens to iFIX pictures

- Key Macro Export Tool – Exports FIX Key Macros to a Text file

- Key Macro Converter – Converts Key Macro CSV files into iFIX Key Macros

- Script Converter – converts FIX Command Language into iFIX VBA

- Historical Pen Group Export Tool – Exports FIX Pen Groups into CSV files

- Historical Pen Group Converter – Converts CSV files into iFIX files

You can obtain the migration tool install program on the iFIX product DVD. You can also obtain this install program from the GlobalCare support site or on the GlobalCare Knowledge base CD.

NOTE: The migration tools do not install with the default iFIX product install. The install program for the migration tools (MigrationToolsInstall.exe) is located on your iFIX product DVD in the Proficy\MigrationTools folder. Once installed, the Migration Tools toolbar can be made available for you to use in the iFIX WorkSpace. For more information, refer to the Installation of the Migration Tools section.

For information on how to upgrade your FIX32 software to iFIX, refer to the Understanding the Migration Process section.

The Migration Tools Toolbar

To use the migration tools, display the Migration Tools toolbar in the iFIX WorkSpace. Be aware that this toolbar is only available for display if, after you installed iFIX, you also installed the migration tools.

NOTE: The migration tools do not install with the default iFIX product install. Use the install program for the migration tools (MigrationToolsInstall.exe) on your iFIX product DVD in the Proficy\MigrationTools folder. Once installed, the Migration Tools toolbar is available for you to use in the iFIX WorkSpace. For more information, refer to the Installation of the Migration Tools section.

The Migration Tools toolbar contains seven buttons to assist with the migration of FIX32 applications to iFIX. The toolbar is intended to facilitate the major elements of migration. Each of the buttons on the toolbar relates to a specific migration task.
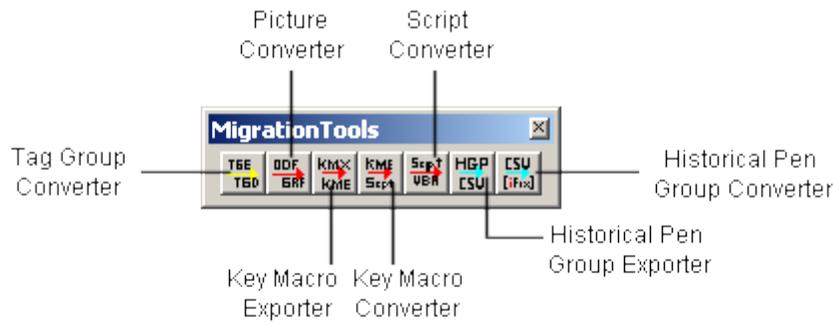
Migration Tools Toolbar

Start with the first button on the left side of the toolbar, and follow the sequence with the next button to the right, and so on. Complete the steps associated with each button, in the order that they appear in the toolbar. If a tool is not required, simply skip the button associated with that function and move on to the next one.

▶ **To view the migration toolbar in the iFIX WorkSpace:**

1. After installing the files, start iFIX.

2. Open the iFIX Workspace.

3. In the WorkSpace system tree, double-click the Project Toolbar Files folder, and then the Toolbars folder.

4. Double-click the MigrationTools item to display the toolbar. The Migration Tools toolbar should now display in the WorkSpace.

Installation of the Migration Tools

The installer for the migration tools (MigrationToolsInstall.exe) is located on your iFIX product DVD in the Proficy\MigrationTools folder. Also located in this folder is a copy of this Help file (MG.chm). This installer requires that iFIX be installed first. You cannot install the migration tools without iFIX.

To use the migration tools after you install them, you need to display the Migrations Tools toolbar. There are no other additional steps, as with previous versions of the migration tools.

▶ **To install the migration tools:**

1. Shut down iFIX if it is running.

2. Insert the iFIX product DVD into your DVD drive, and browse to the Proficy\MigrationTools folder.

3. Double-click the MigrationToolsInstall.exe file. The install wizard appears, displaying the Welcome screen.

4. Click Next to continue. The License Agreement screen appears.

5. Accept the terms of the license and click Next to continue. The Ready to Install screen appears.

6. Click Install. The install process runs. When it completes, a message appears on screen.

7. Click Finish.

Quick Start for Migration Tools

There are seven steps in the migration process. To migrate a picture from FIX to iFIX, follow these steps:

*   **Step 1** is to run the Tag Group Converter; this is the first button on the tool bar. This tool converts FIX32 tag group files (*.tge) into iFIX tag group files (*.tgd).

*   **Step 2** is to run the Picture Converter; this is the first red button on the toolbar. This tool converts FIX32 object data files (*.odf) into iFIX picture files (*.grf).

*   **Step 3** is to run the Key Macro Export Tool; this is the second red button on the toolbar. This tool converts all of the necessary key macro files (*.kmx) into text files (*.txt), so you can later import them into an iFIX picture, as described in step 4. The view.kmx file does not require conversion, since the iFIX User Global file replaces it.

*   **Step 4** is to run the Key Macro Converter; this is the third red button on the toolbar. This tools converts the key macro text (.txt) files and then imports them into an iFIX picture.

*   **Step 5** is to run the Script Converter; this is the fourth red button on the toolbar. This tool converts FIX32 command language scripts into VBA so you can use them in iFIX. This command language code that gets converted includes code from object data files and code added to key macro files. Using the Script Converter is the only way to convert command language scripts into VBA.

*   **Step 6** is to run the Historical Pen Group Export Tool; this is the first blue button on the toolbar. This tool exports all the FIX historical trending and graphs into three .csv files: Pen Groups.csv, Time Groups.csv and Chart Groups.csv, so you can later import them into an iFIX picture, as described in step 7. These files get copied into the HTR folder, which is by default: C:\Program Files\Proficy\Proficy iFIX\HTR.

*   **Step 7** is to run the Historical Pen Group Converter; this is the second blue button on the toolbar. This tool converts the .csv files for FIX historical trending and graphs into an iFIX format, and applies the converted files to the appropriate charts. After doing that, use the Chart Group Wizard in iFIX to recreate the previous FIX32 reports.

*   **Step 8** is to inspect the converted pictures and VBA scripts, and make adjustments, where necessary, to take advantage of iFIX features that were previously unavailable in FIX32.

Tag Group Converter

The Tag Group Converter converts FIX32 .TGE files into iFIX compatible .TGD files. To access the Tag Group Converter, use the first button on the Migration Tools toolbar. The Tag Group Converter is illustrated in the following graphic.
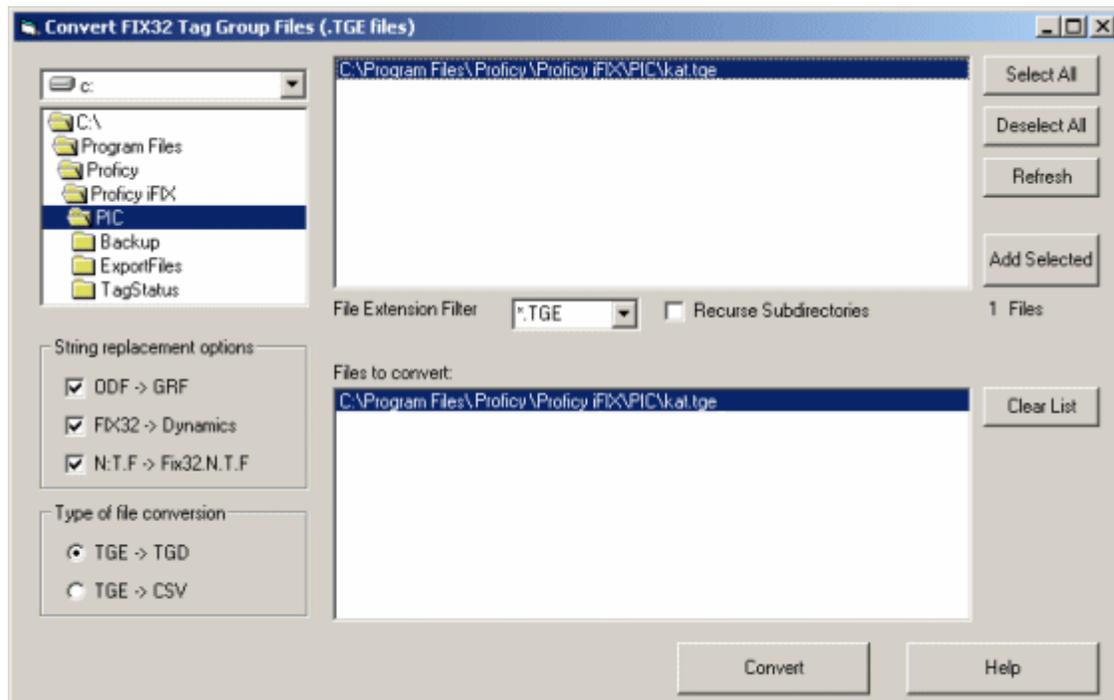
Tag Group Converter Migration Tool

▶ **To convert tag groups with the Tag Group Converter:**

1. On the Migration Tools toolbar, click the Tag Group Converter button [TGE TGD], the first button on the toolbar. The Tag Group Converter appears.

2. Browse to the folder where the FIX32 tag groups that you want to convert are located.

3. Double-click the folder that you browsed to in order open it, or click Refresh, to display the TGE files in the list that appears in the top half of the window.

4. Select a TGE file and click Add Selected. If you want to convert more than one TGE file in the same folder, you can click Select All, and then click Add Selected.

5. The tag group file should appear in the Files to Convert list in the bottom half of the window.

6. In the String Replacement Options area, leave the default, with all options selected. In the Type of Conversion area, select TGE - > TGD.

7. Click Convert. The tag group file is converted, and the .TGD file is placed in the same folder as the original .TGE file.

8. Copy the .TGD file into the iFIX PIC folder, if it is not already there. If you installed iFIX to the default location, this folder is C:\Program Files\Proficy\Proficy iFIX\PIC.

   The tag group file must be located in the C:\Program Files\Proficy\Proficy iFIX\PIC folder for tag group substitutions to work correctly.

Notes on the Tag Group Converter Source Files

The source files for the Tag Group Converter are provided on the GlobalCare web site in case you want to modify this migration tool to do additional tasks. To obtain this source from GlobalCare, access the Developer Download page: http://www.ge-ip.com/support. On the Tag Group Migration page, download the following files:

- **TGEFileConvertSource.zip –** contains the main Tag Group Converter sources files, in Visual Basic 6 format.

- **TagGroupMigratorSource.zip –** contains additional source files in Visual C++ format.

Be aware that this source code is provided as a convenience. Modifications to this project are not supported by GE Intelligent Platforms.

Picture Converter

The Picture Converter converts FIX32 .ODF files into iFIX compatible .GRF files. To access the Picture Converter, use the second button on the Migration Tools toolbar. The Picture Converter is illustrated in the following graphic.
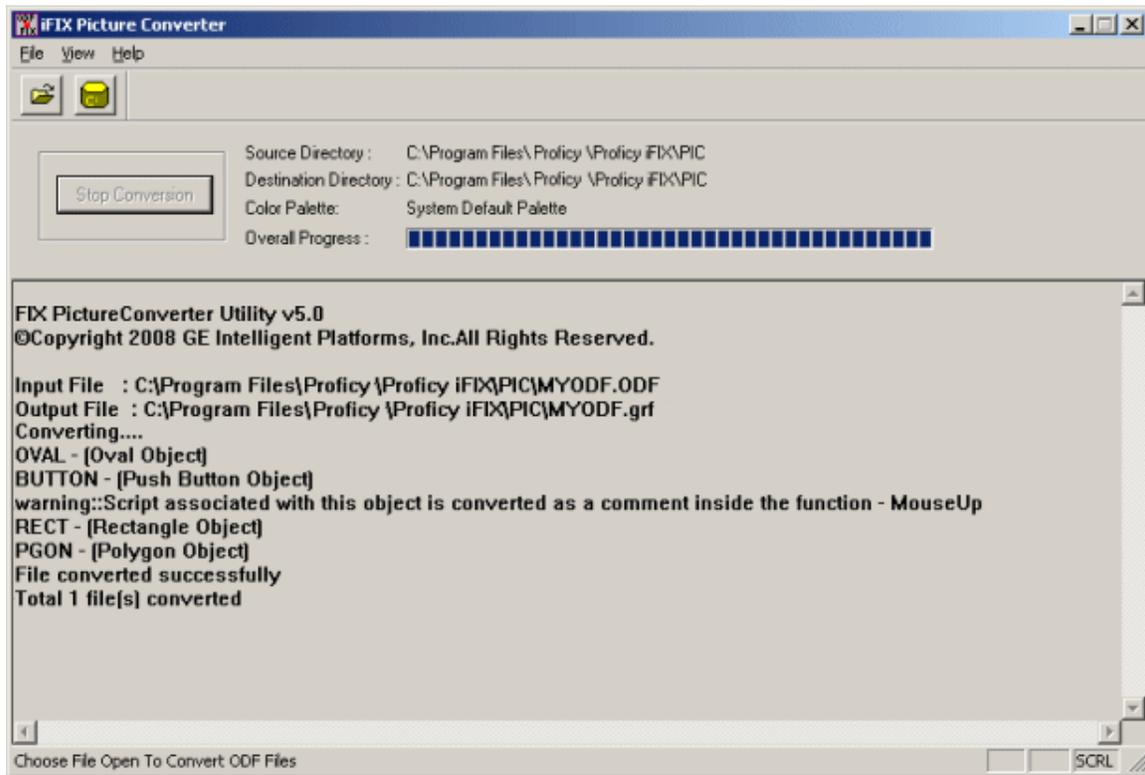
Picture Converter Migration Tool

▶ **To convert pictures:**

1. On the Migration Tools toolbar, click the Picture Converter button ![ODF GRF], the second button on the toolbar. The Picture Converter appears.

2. On the File menu, click Set Destination Directory. Or, you can click the Set Destination Directory button on the toolbar. The Destination Registry dialog box appears.

3. Enter or Browse for the iFIX PIC folder. If you installed iFIX to the default location, the path to this folder is C:\Program Files\Proficy\Proficy iFIX\PIC.

4. Click OK.

5. On the File menu, click Open ODF File to Convert. Or, you can click the Select ODF Files button on the toolbar. The Select Picture Files for Conversion dialog box appears.

6. Select the ODF file(s) for the FIX picture(s) that you want to convert, and click Open. A message box appears requesting a color palette selection.

7. If you have a custom color palette stored as a .PLT file, click Custom to select it. Otherwise, click Default. The picture conversion process begins.

   The overall progress is tracked in the status bar, and messages appear in the bottom half of the screen as the conversion completes. Additionally, error and warning information is written to the PictureName.log file, where PictureName refers to the actual name of the picture file.

Picture Converter Log File

A log file is generated with information about the picture conversion process for each picture that you convert. The log file name is the same as the picture name, but with a.log file extension. The log file is located in the same folder as the picture you converted, in the destination folder.

The log information in this file is the same information that appears in the log window of the Script Converter after it runs.

Key Macro Migration Tools

If you use key macro files (*.kmx) with your FIX picture files (*.odf) or custom key macros in the View environment, you can also migrate these to iFIX. There are two tools available for key macro migration:

- Key Macro Export Tool – to export a key macro (.kmx) file into a text (.txt) file.

- Key Macro Converter – to convert a key macro .txt file into the applicable iFIX format. For a FIX picture, the .txt file is converted into commented FIX32 Command Language script within the iFIX picture file. For View key macros, the .txt file gets imported into the iFIX user globals for the run mode operations.

IMPORTANT: Be aware that when you convert a key macro file associated with a picture, the key macro migration tools assume that the .kmx file that you want to convert has the same file name as the FIX32 picture, but a different file extension. If the key macro and picture file names do not match, you will need to rename one of the files, and reassociate the key macro with the FIX32 picture, before you convert it.

Before using the key macro migration tools, first convert your picture files (*.odf) into iFIX picture files (*.grf) using the Picture Converter migration tool. For more information, refer to the Picture Converter section.

After you run both the Key Macro Export Tools and the Key Macro Converter, you must run the Script Converter migration tool. The Script Converter converts commented FIX32 command language scripts, which the Key Macro Converter generates, into VBA script. For more information, refer to the Script Converter section. After the conversion takes place, the key macros appear in the iFIX Key Macro Editor for each applicable picture.

You should inspect the script behind each of the key macros in the Visual Basic Editor to confirm that they converted properly. You may need to make minor adjustments to some scripts. The comments in the key macro VBA script typically indicate if changes are necessary.

Key Macro Export Tool

The Key Macro Export Tool exports FIX key macros into a text file. To access the Key Macro Export Tool, use the third button on the Migration Tools toolbar. The Key Macro Export Tool is illustrated in the following graphic.
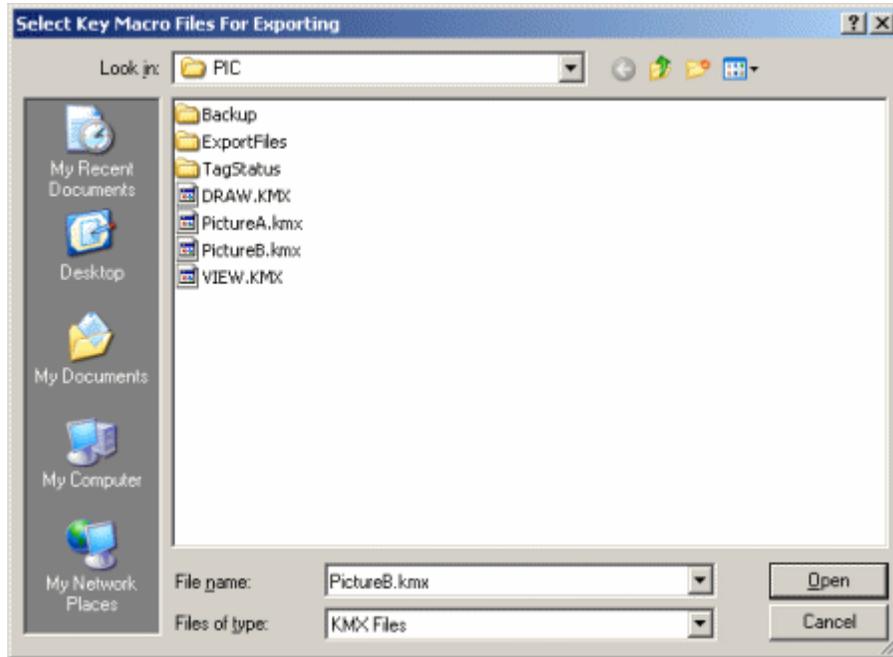
Key Macro Export Tool

▶ **To export key macros to a text file:**

1. Shut down and restart iFIX.

2. On the Migration Tools toolbar, click the Key Macro Export Tool button ![kmx button], the third button on the toolbar. The Key Macro Export Tool appears.

3. Browse to the folder that contains the key macro file (.kmx) that you want to convert and select the file so that its name appears in the File Name field.

4. Click Open. A message box appears when the conversion completes.

5. Click OK.

Key Macro Converter

The Key Macro Converter converts a key macro text file into the applicable iFIX format. For a FIX picture, the text file is converted into commented FIX32 Command Language script within the iFIX picture file. For key macros used in the View environment, the text file (View.txt) gets imported into the iFIX user globals for the run mode operations.

NOTE: The default key macros in the View.txt file are replaced with iFIX user globals. If you want to import custom key macros, you need to import the View.txt file.

To access the Key Macro Converter, use the fourth button on the Migration Tools toolbar. The Key Macro Converter is illustrated in the following graphic.
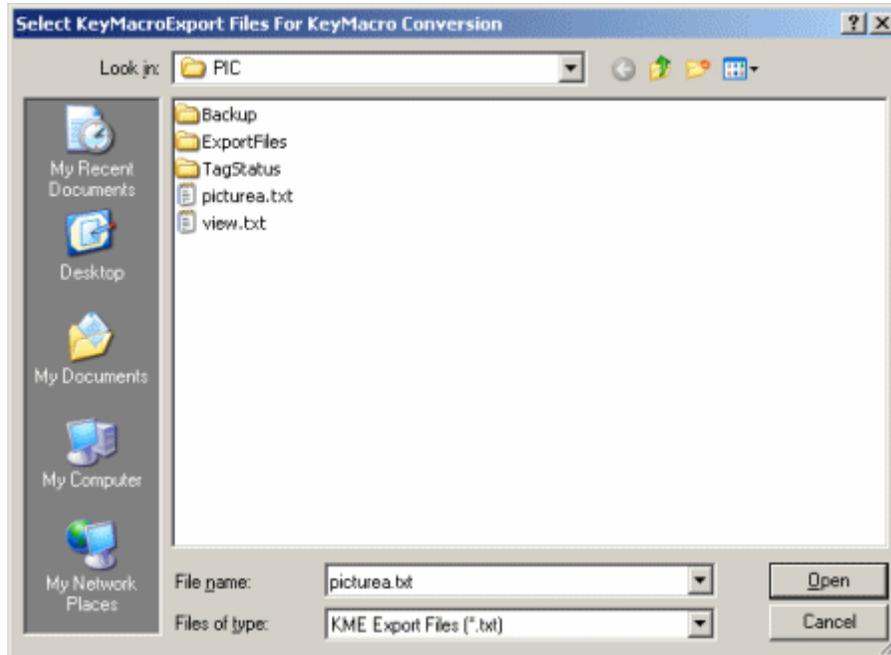
Key Macro Converter Migration Tool

▶ To import a text file containing a picture's key macros:

1. On the Migration Tools toolbar, click the Key Macro Converter button ![KME Sept], the fourth button on the toolbar. The Key Macro Converter appears.

2. Browse to the folder that contains the FIX32 key macros that you want to convert, and select the .txt file.

3. Click Open. A message box appears when the conversion completes.

4. Click OK. A message box appears to indicate the name and location of the log file. The log file usually exists in the same location as the picture. By default, this path is C:\Program Files\Proficy\Proficy iFIX\PIC.

5. Click OK to finish.

▶ To import the key macros from the View environment (View.txt) into the iFIX user globals:

1. On the Migration Tools toolbar, click the Key Macro Converter button ![KME Sept], the fourth button on the toolbar. The Key Macro Converter appears.

2. Browse to the folder that contains the View.kmx file that you want to import into iFIX, and select the file, so that its name appears in the File Name field.

3. Click Open. A message box appears indicating that user globals were detected.

4. Click Yes to continue with the import. A message box appears when the conversion completes.

5. Click OK.

> ***IMPORTANT:*** *Do not try to import the View.txt file more than once in the iFIX user globals. This may put the iFIX WorkSpace in an unstable state.*

Key Macro Converter Log Files

The Key Macro Converter produces log files in the same folder as the converted pictures. These log files include:

- A global file, READ_ME_KeyMacroConvert.csv, is generated with information about the conversion process and a list of the converted picture files.

- A .CSV file for each converted picture with the name: MYPIC_READ_ME_KeyMacroConvert.csv, where MYPIC is the actual name of the picture. This file contains information on the unconverted script commands and warning messages.

You can usually find these logs in the C:\Program Files\Proficy\Proficy iFIX\PIC folder – the PIC path for the default iFIX install folder.

Script Converter

The Script Converter converts FIX32 command language scripts into VBA script format for iFIX. This includes scripts for key macros and pictures that were placed into an intermediary format (comments in VBA code) after you ran the key macro and picture migration tools.

Before using the Script Converter, you must first convert your picture files (*.odf) into iFIX picture files (*.grf) using the Picture Converter migration tool. For more information, refer to the Picture Converter section. Also, if you have any key macros associated with your picture, you must convert them using the key macro migration tools. For more information, refer to the Key Macro Migration Tools section.

The Script Converter scans through the VBA code searching for unconverted FIX command scripts, which are contained as comments in the VBA code within your iFIX picture. When a supported FIX command script is found, it is converted to its equivalent VBA code. The original FIX command script remains as a comment. For a list of supported commands, refer to the How the Supported FIX32 Commands Get Converted section.

The Script Converter currently does not support SQL or WSPROXY commands. For a list of unsupported commands, refer to the FIX32 Command Scripts Not Converted section. The Script Converter leaves these commands marked with comments when it runs. You will later need to modify these scripts manually in the Visual Basic Editor.

Be aware that the Script Converter also does not check for programming errors in the object event procedure in which the old script was placed. After you finish a script conversion, you should review all converted scripts. You may decide to do things differently in VBA than you would do with the FIX command language.

Using the Script Converter

To access the Script Converter, use the fifth button on the Migration Tools toolbar. The Script Converter is illustrated in the following graphic.
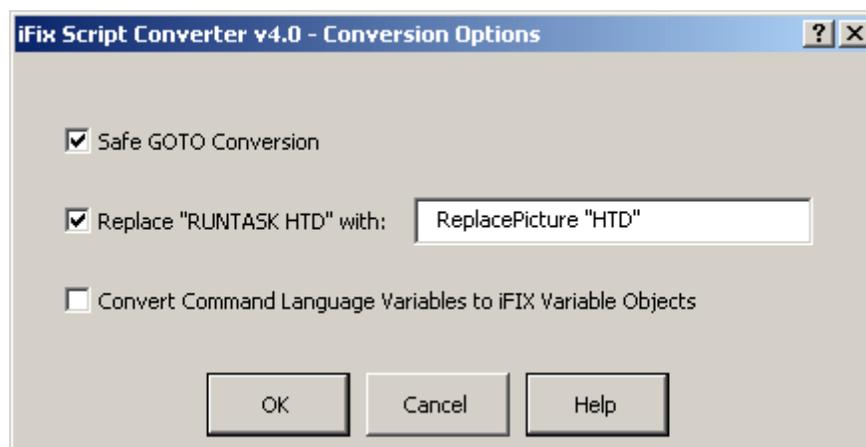
Script Converter Migration Tool

The Script Converter converts commented FIX32 command language scripts, that the Key Macro Converter and Picture Converter generates, into VBA script. After the conversion takes place, the key macros appear in the iFIX Key Macro Editor, for each applicable picture. You additionally may need to import VBA variable picture and global files.

You should inspect the script behind each of the key macros in the Visual Basic editor to confirm that they converted properly. You may need to make minor adjustments to some scripts. The comments in the key macro VBA script indicate if changes are necessary.

▶ **To convert the scripts associated with a picture:**

1. Close all open pictures in the iFIX WorkSpace.

2. On the Migration Tools toolbar, click the Script Converter button , the fifth button on the toolbar. The Script Converter appears.

3. Select the required options. By default, the first two options automatically appear selected. For details on each of these options, refer to the following table.

Option	Descriptions
Safe GOTO Conversion	Selecting this option allows the Script Converter to check for GOTO commands that may cause an infinite loop, which FIX command language originally allowed.
	If the Script Converter encounters such a jump in the VBA code, the GOTO command is commented out.
	This option is selected, by default.
Replace "RUNTASK HTD" with:	Selecting this option allows you to define the replacement for Historical Display application calls within the code.
	The Script Converter uses the text entered in the text box as a replacement for the "RUNTASK HTD" script command.
	This option is selected, by default. ReplacePicture "HTD" is the default replacement. For most applications, the default setting is acceptable.

Option	Descriptions
Convert Command Language Variables to iFIX Variable Objects	If you have animations that use FIX command language variables, and want to use these animations in iFIX without any editing, select this option. With this option selected, FIX Command Language variables are converted to iFIX variable objects. After conversion, look for the variables in the iFIX WorkSpace tree: • The picture variables appear under the Picture name, in the format of p_varName. • The global variables appear in the Global > User folder, in the format of g_varName. If you clear this option, be aware that the VBA variables created by the Script Converter cannot be used to animate objects. Alternatively, you can rewrite the VBA scripts to reference the iFIX object properties that replace the FIX32 global variables in iFIX 4.0. You may want to do this if your scripts contain a lot of variables, as too many variables can effect performance, in some instances. This option is cleared, by default.

4. Click OK.

    If you selected the Convert Command Language to iFIX Variable Objects, a message box appears. This warning displays because some pictures use a large number of FIX variables and creating large numbers of iFIX Variable objects (particularly global variable objects) may affect the system performance.

5. If this message box appears, click Yes to continue, or click No to return to the Script Converter dialog box and remove this option.

    After you have selected the appropriate options and accepted all warnings, the Select Picture Files for Script Conversion dialog box appears.

6. Select the file or files that you want to convert.

    By default, the Script Converter looks for pictures in the PIC path, where you installed iFIX. Typically, this path is C:\Program Files\Proficy\Proficy iFIX\PIC. You can browse to other folders however, but it is recommended that you keep these files in the iFIX PIC folder.

7. Click Open. A message box appears indicating whether the Script Converter created additional modules for script conversion. The files that may be generated include:

    • *PictureName*_**Globals.bas** – contains all of the picture variables, where *PictureName* refers to the actual picture name.

    • **Script_User_Globals.bas**– contains any global variables referenced in the pictures.

    You can later import these files; see the steps below for details.

8. Click OK. A message box appears indicating where the Script Converter log file appears.

9. Click OK. Another message box appears when the conversion completes.

10. Click OK.

11. Review the converted scripts in the Visual Basic Editor. You may want to make adjustments to take advantage of VBA features unavailable to the FIX32 command language.

▶ **To import VBA picture and global variables after the Script Converter runs:**

1. Confirm whether a ScriptConverter_Globals.bas or any *PictureName*_Globals.bas files exist, where *PictureName* is the name of a picture that requires VBA variables.

   These files exist in the folder of the converted pictures. Typically, this path is C:\Program Files\Proficy\Proficy iFIX\PIC.

2. If no files exist, stop here. No imports are required. Otherwise, note the location of these files and continue.

3. If a Script_User_Globals.bas file exists:

   a. Open the iFIX WorkSpace.

   b. In Classic view, on the Workspace menu, click Visual Basic Editor.

      -Or-

      In Ribbon view, on the Home tab, in the WorkSpace group, click Visual Basic Editor.

4. Right-click the Project_User folder in the project explorer, and select Import File. The Import File dialog box appears.

5. Browse and select the Script_User_Globals.bas file and click Open.

6. Save the file when complete.

7. On the File menu, click Close and return to the WorkSpace application.

8. If any *PictureName*_Globals.bas files exist, for each picture listed:

   a. Open the picture in the iFIX WorkSpace.

   b. In Classic view, on the Workspace menu, click Visual Basic Editor.

      -Or-

      In Ribbon view, on the Home tab, in the WorkSpace group, click Visual Basic Editor.

9. In the Visual Basic Editor, on the File menu, click Import File. The Import File dialog box appears.

10. Browse and select the *PictureName*_Globals.bas file associated with the picture.

11. On the File menu, click Close and return to the WorkSpace application.

12. On the File menu, click Save to save the picture.

How the Supported FIX32 Commands Get Converted

The following table lists each FIX32 command script that is converted, and iFIX global subroutine that replaces it.

This FIX32 Command Script...	Is replaced by this iFIX Global Subroutine...
ALARMACK	AcknowledgeAnAlarm([DataPoint As String])
ALARMACKALL	AcknowledgeAllAlarms([Picture As String])
BASEPIC	Application.ActiveDocument.DefaultView
CLOSEDIG	CloseDigitalPoint([DigitalPoint As String])
CLOSEPIC	ClosePicture([Picture As String])
COPY	FileCopy (standard VBA)
DECLARE	Dim (standard VBA)
DELETE	Kill (standard VBA)
DISABLEALARM	DisableAlarm([DataPoint As String])
ENABLEALARM	EnableAlarm([DataPoint As String])
EXIT	Application.Quit
FILEOPEN FILECLOSE FILEREAD FILEWRITE	Open Close Input # Write # *NOTE: These four entries are standard Visual Basic statements, not iFIX global subroutines. See the Visual Basic Reference Help for additional information.*
GETVAL	ReadValue([DataPoint As String])
GOTO	Goto (standard VBA)
IF, ELSE, ENDIF	If, Then, Else, End If (standard VBA)
LOGIN	LogIn()
LOGOUT	System.FixLogout

This FIX32 Command Script...	**Is replaced by this iFIX Global Subroutine...**
MENU	Only some of the menu commands are supported. The supported commands include: • FILE_CLOSE • FILE_EXIT • FILE_OPEN • FILE_PRINT • VIEW_FIT_IN_WINDOW • VIEW_DEFAULT_VIEW • ALARMS_ACKNOWLEDGE_ALL • ALARMS_ACKNOWLEDGE_ONE • COMMANDS_MANUAL_MODE • COMMANDS_AUTO_MODE • COMMANDS_ON_SCAN • COMMANDS_OFF_SCAN
MESSAGE	System.SendOperatorMessage(Text As String,[Nodename As String])
NOTE	MsgBox (standard VBA)
NUMTOSTR	Format (standard VBA) *NOTE: The Format Parameter is ignored.*
OFFSCAN	OffScan([DataPoint As String])
ONSCAN	OnScan([DataPoint As String])
OPENDIG	OpenDigitalPoint([DigitalPoint As String])
OPENPIC	OpenPicture([Picture As String], [PictureAlias AsString], [TopPosition], [LeftPosition])
OPENPIC (with tag group file)	OpenTGDPicture([sPicture As String],[sPicture Alias As String], [fTop], [fLeft], [sTagGroup As String])
PROMPT	InputBox (standard VBA)

This FIX32 Command Script...	Is replaced by this iFIX Global Subroutine...
RAMP	RampValue(RampValue As Double, ByPercent As Boolean, [DataPoint As String])
REPLACEPIC	ReplacePicture(NewPicture As String, [OldPicture As String], [TagGroupFileName As String])
REPLACEPIC (with tag group file)	ReplaceTGDPicture(sNewPicture As String, sTagGroup As String, [sOldPicture As String =""])
ROUND	Int, CInt (standard VBA)
RUNTASK	Shell (standard VBA)
SETAUTO	SetAuto([DataPoint As String])
SETMANL	SetManual([DataPoint As String])
SETNICKNAME	PictureAlias(PictureAlias As String)
SETVAL	WriteValue(Value As String, [DataPoint As String])
STRCAT	+ (standard VBA) *NOTE: The padding character is ignored.*
STRCMP	StrComp (standard VBA)
STRLEN	Len (standard VBA)
STRSTR	InStr (standard VBA)
STRTOK	Mid (standard VBA)
STRTONUM	Val (standard VBA)
TOGGLEDIG	ToggleDigitalPoint([DigitalPoint As String])
TOGGLEMANL	ToggleManual([DataPoint As String])

This FIX32 Command Script...	Is replaced by this iFIX Global Subroutine...
TOGGLESCAN	ToggleScan([DataPoint As String])

The following table lists the FIX32 command scripts that are replaced by a subroutine defined in the ScriptConvertRT.bas file.

This FIX32 Command Script...	Is replaced by this subroutine defined in ScriptConvertRT.bas...
ACOS	ConvertRT_ACos(dblArg As Double)
ASIN	ConvertRT_ASin(dblArg As Double)
ATTRIB	ConvertRT_Attrib(strFile As String, strAttrib As String)
CHECKRIGHTS	ConvertRT_CheckRights(strArea As String, iResult As Integer)
CHFILE	ConvertRT_ChFile(strFile As String, iResult As Integer)
FILELIST	ConvertRT_FileList(strPattern$, strResult$, strTitle$, Optional strShow$)
LOG10	ConvertRT_Log10(dblArg As Double)
PAUSE	ConvertRT_Pause(iPause As Integer)

NOTE: The ScriptConvertRT.bas resides in the iFIX LOCAL folder. If you installed to the default location, the path is C:\Program Files\Proficy\Proficy iFIX\LOCAL. For more information on the ScriptConvertRT.bas file, refer to the steps in the Using the Script Converter section.

FIX32 Command Scripts Not Converted

If a script could not be converted during the conversion process, the script is marked with the comment "NO CONVERSION CURRENTLY AVAILABLE --->" and the Script Converter logs these unconverted commands in the relevant picture log file.

The following FIX32 commands are not converted into iFIX VBA commands:

APPEND	OPENLYT
CRITICAL	PAN
DEBUGOFF	PLAYSOUND
DEBUGON	RESOLVEVARS
ENDCRITICAL	SQL
EXECUTE	SWITCHKMX
FILEPRINT	TOGGLEALARM
FINDLINK	VIEW
LOADKMX	WSPROXY
NULL	ZOOM
OPENBDF	

NOTE: Commands using the FIX Desktop WSPROXY command may not display a comment. Be sure to review any commands using WSPROXY, and update them as appropriate.

Examples of Unconverted Command Script with Comments

The two examples of unconverted command scripts are shown below.

ZOOM Command

This example shows the unconverted ZOOM command. The following code shows how an unconverted FIX32 command script gets commented out in the iFIX VBA.

```
Public Sub CFixPicture_F3()
On Error GoTo ErrorHandler
    'NO CONVERSION CURRENTLY AVAILABLE --->       'ZOOM OVAL MYPIC
```

```
    Exit Sub
ErrorHandler:
    HandleError
End Sub
```

Notice the comment in the above code. When you see comments stating, "No conversion currently available," as in the above example, you should evaluate the code and decide how you want to deal with it in iFIX. All commands in the list that appears in the FIX32 Command Scripts Not Converted section, should have comments like this, except for the WSPROXY command.

WSPROXY Command

This next example shows a VBA script that references WSPROXY. In this instance, the line referencing WSPROXY is red, indicating there is a problem with the code.

```
Private Sub BUTTON_MouseUp(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As
Single, ByVal Y As Single)
On Error GoTo ErrorHandler

    Shell "WSPROXY" + " " + ""REPLACEPIC {C:\Program Files\Proficy\Proficy iFIX\PIC\pic2}
{C:\Program Files\Proficy\Proficy iFIX\PIC\pic1}"", 1 'RUNTASK WSPROXY "REPLACEPIC
{C:\Program Files\Proficy\Proficy iFIX\PIC\pic2} {C:\Program Files\Proficy\Proficy
iFIX\PIC\pic1}"

    Exit Sub
ErrorHandler:
    HandleError
End Sub
```

Examples of Script Conversions

The following sections show two examples of command scripts both before and after the Script Converter runs:

- Example 1: Open Picture Command Conversion
- Example 2: Replace Picture Command Conversion

These examples start with code generated after the Picture Converter runs.

Example 1: Open Picture Command Conversion

After you run the Picture Converter, the command script for this Open Picture command displays like this iFIX VBA code:

Before

```
Private Sub CFixPicture_Initialize()
' Open Picture Command
' SETVAL DEMO:RATE.F_CV 1500
End Sub
```

Run the Script Converter to convert these command scripts to VBA. When complete, the code will look similar to the following:

After

```
Private Sub CFixPicture_Initialize()
On Error GoTo ErrorHandler
' Open Picture Command
    Call WriteValue(1500, Fix32.DEMO.Rate.F_CV) ' SETVAL DEMO:RATE.F_CV 1500
    Exit Sub
ErrorHandler:
    HandleError
End Sub
```

Notice that the old script commands appear commented out, and comments appear to the right of the new VBA commands. Also, the Script Converter adds the iFIX error handling routine, HandleError.

Example 2: Replace Picture Command Conversion

After you run the Picture Converter, the command script for this bitmap's On Up command displays like this iFIX VBA code:

Before Script Converter Runs

```
Private Sub BITMAP9_MouseUp(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As
Double, ByVal Y As Double)
' REPLACEPIC * MAIN
End Sub
```

Run the Script Converter to convert this command script to VBA. When complete, the code will look similar to the following:

Example 2: After Script Converter Runs

```
Private Sub BITMAP9_MouseUp(ByVal Button As Integer, ByVal Shift As Integer, ByVal X As
Double, ByVal Y As Double)
    On Error GoTo ErrorHandler
    ReplacePicture "MAIN" ' REPLACEPIC * MAIN
    Exit Sub
ErrorHandler:
    HandleError
End Sub
```

Notice that the old script commands appear commented out, and comments appear to the right of the new VBA commands. Also, the Script Converter adds the iFIX error handling routine, HandleError.

Script Converter Log Files

The Script Converter produces log files in the same folder as the converted pictures. These log files include:

- A global file, READ_ME_ScriptConvert.csv, is generated with general information about the conversion process.

- A .CSV file for each converted picture with the name:
  MYPIC_READ_ME_ScriptConvert.csv, where MYPIC is the actual name of the picture. This file contains information on the unconverted script commands and warning messages.

READ_ME_ScriptConvert.csv Log File

This log contains the following:

- A list of the converted picture files.

- A list of VBA modules created with picture level variable definitions.

- A list of VBA modules created with global level variable definitions.

The READ_ME_ScriptConvert.csv file is overwritten each time the Script Converter runs.

MYPIC_READ_ME_ScriptConvert.csv Log File

This log contains the following:

- A list of any created VBA variable modules.

- A list of warning messages.

- A list of unconverted script commands.

If you used the default iFIX install path to store your pictures, you can find these logs in the default PIC path, C:\Program Files\Proficy\Proficy iFIX\PIC.

Historical Pen Group Migration Tools

If you use historical display files (*.hgp) in your FIX32 displays, you can also migrate these to iFIX. There are two tools available for historical pen group migration:

- Historical Pen Group Export Tool – Exports FIX pen groups into .CSV files (Chart Groups.csv, Pen Groups.csv, Time Groups.csv).

- Historical Pen Group Converter – Converts the three exported .CSV files into iFIX chart group file(s) that you can apply with the Chart Group Wizard.

Before using the historical pen group migration tools, be sure that you converted your FIX picture files (*.odf) into iFIX picture files (*.grf) using the Picture Converter migration tool. For more information, refer to the Picture Converter section. Additionally, you should run the tag group, key macro and script converters. Refer to the Tag Group Converter, Key Macro Migration Tools, and Script Converter sections for more information.

To use the historical pen group migration tools, you first need to copy the CHART.HGP, PEN.HGP, and TIME.HGP files for your FIX32 displays into the iFIX HTR folder. After you run both historical pen group migration tools, you then need to apply the converted iFIX chart group files to the appropriate charts in your converted pictures.

To view the new charts in run mode from the iFIX WorkSpace, copy the folders from the FIX32 HTRDATA folder into the iFIX HTRDATA folder. By default, this path is C:\Program Files\Proficy\Proficy iFIX\HTRDATA. Do not change the file or folder names.

Historical Pen Group Export Tool

The Historical Pen Group Converter exports FIX pen group information into three .CSV files:

- Chart Groups.csv

- Pen Groups.csv

- Time Groups.csv

These files are copied into the iFIX HTR folder, which by default is the C:\Program Files\Proficy\Proficy iFIX\HTR folder.

To access the Historical Pen Group Export Tool, use the sixth button on the Migration Tools toolbar. The Historical Pen Group Export Tool has no user interface. Clicking the toolbar button starts the export process of FIX32 chart, pen, and time groups. When the conversion is complete, a message box appears. For example, if the conversion succeeds, the following message appears:

```
Export to delimited text files succeeded.
```

▶**To export historical pen group information:**

1. Copy the CHART.HGP, PEN.HGP, and TIME.HGP files for your FIX32 displays into the iFIX HTR folder.

   If you installed iFIX to the default folder, the path is C:\Program Files\Proficy\Proficy iFIX\HTR.

2. On the Migration Tools toolbar, click the Historical Pen Group Export Tool button ⬛, the sixth button on the toolbar. The Historical Pen Group Export Tool appears.

3. Wait for the export to complete. After a few moments, a message box appears.

4. Click OK. The Chart Groups.csv, Pen Groups.csv, and Time Groups.csv files should now appear in the HTR folder, along with the *.HGP files.

Historical Pen Group Converter

Use the Historical Pen Group Converter after you use the Historical Pen Group Export Tool. The Historical Pen Group Converter converts the three exported .CSV files (Chart Groups.csv, Pen Groups.csv, Time Groups.csv).into iFIX chart group file(s) that you can later apply to your converted iFIX pictures with the Chart Group Wizard.

These converted iFIX chart group files are copied into the iFIX HTR folder, which by default is the C:\Program Files\Proficy\Proficy iFIX\HTR folder.

To access the Historical Pen Group Converter, use the seventh button on the Migration Tools toolbar. The Historical Pen Group Converter has no user interface. Clicking the toolbar button starts the conversion process. When the conversion is complete, a message box appears. For example, if the conversion succeeds, the following message appears:

```
Historical Pen Groups Converted
```

▶**To convert historical pen group information:**

1. On the Migration Tools toolbar, click the Historical Pen Group Converter button ⬛, the seventh button on the toolbar. The Historical Pen Group Converter appears.

2. Wait for the conversion to complete. After a few moments, a message box appears.

3. Click OK. Another message box appears informing you where the log file is located.

4. Click OK. A file for each pen group/time group combination is copied to the HTR folder. This path, by default, is C:\Program Files\Proficy\Proficy iFIX\HTR.

   The file is named *PENGROUP*[*TIMEGROUP*].csv, where PENGROUP and TIMEGROUP are the actual pen and time group names. For example, if you have a pen group named HISTORY, and time group also named HISTORY, the file name would be HISTORY[HISTORY].csv.

   NOTE: If a FIX32 pen group name started with a number, the converted file name is prefaced with HGP_. For example: HGP_1TEST[1TEST].csv. This change occurs because a file name starting with a number is not a legal name for an iFIX chart group.

Recreating Charts with the Chart Group Wizard

After you run both historical pen group migration tools, open the iFIX picture, and apply the converted chart group files to the applicable charts. Use the Chart Group Toolbar in the iFIX WorkSpace to perform this task.

▶ **To view the Chart Group Toolbar:**

1. Start iFIX.

2. Open the picture that you want apply the converted chart group to.

3. In Classic view, in the iFIX WorkSpace, on the WorkSpace menu, click Toolbars.

    -Or-

    In Ribbon view, on the Home tab, in the WorkSpace group, click Settings, and then click Toolbars.

4. In the Owner area, select Picture.

5. In the Toolbars area, select the check box next to the ChartGroup Toolbar option.

6. Click Close.

▶ **To apply a converted chart group file:**

1. With the converted picture open in the iFIX WorkSpace, select the chart that you want to apply the converted chart group to.

2. In Classic view, on the Chart Group toolbar, click the Apply Chart Group Wizard to Chart button ![icon], the first button on the toolbar.

    -Or-

    In Ribbon view, on the Tools tab, in the Chart Groups, click Chart Groups, and then click Apply Chart Group Wizard to Chart.

3. Click Apply Chart Group Wizard to Chart, and click OK.

4. In Classic view, on the Chart Group toolbar, click the Apply Chart Group File button ![icon], the second button on the toolbar.

    -Or-

    In Ribbon view, on the Tools tab, in the Chart Groups, in the Chart Groups list, click Apply Chart Group File. The Apply Chart Group File dialog box appears.

5. In the Apply Chart Group File area, select On Picture Open. Otherwise, click On Click of Selected Object.

6. Click Get Chart to retrieve the chart name.

7. In the Chart Group File area, click the browse (...) button next to the file name field. The Chart Group File dialog box appears.

8. Select the appropriate file created when you ran the Historical Pen Group Converter. This file is in the format of "PEN GROUP [TIME GROUP].csv."

9. Click OK.

10. Copy the folders from the FIX32 HTRDATA folder into the iFIX HTRDATA folder. By default, this path is C:\Program Files\Proficy\Proficy iFIX\HTRDATA. Do not change the file or folder names.

    This final step allows you to view the newly converted charts from the iFIX WorkSpace in run mode.

Troubleshooting Historical Pen Group Migration

If your charts do not work properly after the migration, do the following:

*   Check that you copied the files from the FIX32 HTRDATA folder into the iFIX HTRDATA folder. By default, this path is C:\Program Files\Proficy\Proficy iFIX\HTRDATA. Do not change the file or folder names.

*   If your chart uses a fixed start time, make sure that the fixed start time you chose has historical data. Not all of the .CSV files you create have historical data as permutations created for all Pen Groups and Time Groups.

Testing the Chart Migration Process

To test that the conversion process is working, create a Pen Group and Time Group both called HGP TEST in your FIX Historical Display application. Make sure that historical data exists for this group. Run through the whole history group conversion process again, using both the Historical Pen Group Export Tool and then the Historical Pen Group Converter.

A file should be created named "HGP TEST [HGP TEST]. CSV." Using the Chart Group Wizard in the iFIX WorkSpace, recreate this chart in a new picture. If you perform all of these steps and view data in the chart when you switch the iFIX WorkSpace to run mode, then the conversion process is working correctly.

Historical Pen Group Converter Log File

A global file, READ_ME_HistoricalPenConvert.csv, is generated with information about the historical pen group conversion process. The file contains a list of all the converted historical pen files.

Known Issues with Migration Tools

This section details some known issues with the following migration tools:

- Script Converter
- Picture Converter

Script Converter

If a script could not be converted during the conversion process, the script is marked with the comment "NO CONVERSION CURRENTLY AVAILABLE --->" and the Script Converter logs these unconverted commands in the relevant picture log file.

The following FIX32 commands are not converted into iFIX VBA commands:

APPEND	OPENBDF
CRITICAL	OPENLYT
DEBUGOFF	PAN
DEBUGON	PLAYSOUND
ENDCRITICAL	RESOLVEVARS
EXECUTE	SQL
FILEPRINT	SWITCHKMX
FINDLINK	TOGGLEALARM
LOADKMX	VIEW
MENU	WSPROXY
NULL	ZOOM

Other notable items include:

- If you select the Safe GOTO Conversion check box when you run the Script Converter, the GOTO command is commented when exported.
- The NUMTOSTR command is exported without the format parameters.
- The STRCAT command is exported without padding characters.

Picture Converter

Be aware that "Fill" animations in FIX32 do not display their background color properly in the iFIX product after you convert the picture. This is because FIX32 objects use the background style and foreground pattern when filling objects, with the rest of the object being transparent.

iFIX fills objects differently, however. iFIX fills objects with the foreground color; the rest of the object is drawn in the background color.

As a workaround, you can set the FIX32 object to a transparent background before you convert the picture. Be aware, however, there is no workaround if you are using FIX32 patterns and fills on your FIX32 objects.

Glossary of Migration Terms

Base Path – iFIX install path. Stores the entire iFIX executable files. By default this path is to C:\Program Files\Proficy\Proficy iFIX.

Chart Group Wizard (CGW) – A utility in iFIX that stores chart group files as CSV files. This utility is also used to recreate FIX32 charts from the CSV files created by the Historical Pen Group Converter.

Comma Separated Value (CSV) – A widely used text file format that stores two dimensional data. Each line representing an individual record and each of the records split into fields by use of a comma.

GRF – Graphical Resource File used by iFIX to store information about a picture (screen).

Historical Pen Group (HGP) – A series of three files in FIX32 that store the configuration settings for historical charts. These files being Chart, Pen and Time HGP.

Historical Data Path – Stores historical data files from which the historical collect application creates a unique subdirectory in this directory for each node data is being collected for, and names the subdirectory according to the name of the node. By default, for iFIX, the historical data path is set to C:\Program Files\Proficy\Proficy iFIX\HTRDATA.

Historical Path – Stores the configuration files of the Historical Assign and Historical Collect. By default, for iFIX, the historical path is set to C:\Program Files\Proficy\Proficy iFIX\HTR.

Key Macro – A file linking keystrokes to commands.

Key Macro File – Key Macros for FIX32 are stored in a KMX file. This key macro file is associated either with a picture or the View environment.

KME – A transitional text file used to store the exported version of a KMX file. Referred to throughout this document as the key macro text file.

KMX – FIX32 Key Macro file.

Language Path – Stores the iFIX language files. By default, for iFIX, this path is set to C:\Program Files\Proficy\Proficy iFIX\NLS.

Object Definition File (ODF) – FIX32 picture file that stores information about a screen.

Pen – A representation of a floating point value or tag that is displayed in a chart link.

Picture – An iFIX screen object.

Picture Path – Stores picture files, tag group files, macro files and other workspace configuration files. By default, for iFIX, the picture path is set to C:\Program Files\Proficy\Proficy

iFIX\PIC.

Tag Group – Stores placeholders for data sources or text in a picture, allowing the placeholder then to be replaced with an alphanumeric value.

TGE – FIX32 tag group file.

TGD – iFIX tag group file.

User Global – A special picture that contains user-defined variables, color threshold tables and procedures that are globally available to all pictures in iFIX. Stored as a file named "user.fxg."

Visual Basic for Applications (VBA) – A cut down version of Visual Basic allowing application software to be programmed with additional business logic.

View environment – A FIX32 environment allowing key macros to be available globally to all pictures. Stored as the file view.kmx and replaced by the User Global file in iFIX.

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