

ISaGRAF

Getting Started

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Getting Started

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What's next ...

- Take a hands-on tour of the Workbench and play with demos

Walk through an existing project, start a simple project, and create a basic distributed project with detailed instructions in the *Hands On* guide. You access the *Hands On* guide from the Start menu of Windows by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **Help**, then **Tutorial**. For details on these demos, see the “How to Use the Demos” section on page 2.
- Read the release notes

The Readme.txt file relates the significant enhancements and known issues for **ISaGRAF** versions. The Release.txt file lists the bug corrections. You access these files from the start menu by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **ISaGRAF**, then **Readme** or **Release** respectively.
- Consult the documentation

There is a lot more documentation. For more information, see “Documentation Set” on page 5.
- Customize **ISaGRAF** targets

With the PRO Run-time Development Kit (PRDK), set up one of the available target platforms or develop a target for use with any other platform from a new OS template. You can also define network drivers for IXL communication or for data bindings.

With the PRO Input/Output (PIO) development kit (included in the PRDK or available separately), add I/O devices to the **ISaGRAF** kernel. You can also develop "C" functions, function blocks, conversion functions, and I/O devices.

How to Use the Demos

You can execute application simulation demos that accompany **ISaGRAF**. These demos, called *Demo* and *Project1* to *Project5*, were copied on your computer during the installation procedure. For *Demo*, you can walk through an existing project by following detailed instructions provided in the Hands On on-line manual. For all other demos, ICS Triplex ISaGRAF invites you to explore.

To use the Demo demo

1. In the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **ISaGRAF**.

The Workbench starts.

2. Open the PRJLIBRARY.MDB file in the Demo directory.
3. Follow the instructions in the *Walking Through an Existing Project* section in the *Hands On* on-line manual, accessed from the Start menu by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **Help**, then **Tutorial**.

ISaGRAF Overview

ISaGRAF is the environment in which you develop then monitor control applications, made up of resources, i.e., virtual machines at run time. These applications are made up of:

- I/O points and variables
- Control logic in any IEC-61131-3 language

Since the Workbench is connected to the network making up the control system, once resources are developed, they can be downloaded to target nodes. Resources are made up of variables and IO points as well as programs developed using any of the five languages (SFC: Sequential Function Chart (or Grafset), FBD: Function Block Diagram, LD: Ladder Diagram, ST: Structured Text, and IL: Instruction List) of the IEC 61131-3 standard or Flow Chart.

At run time, from the Workbench, you can monitor the state of virtual machines running on their target nodes. You can also choose to run an application in simulation mode.

The PRDK enables the setting up of run-time modules for the available target platforms (Windows NT, VxWorks, QNX, Linux, and RTX) or the development of custom modules for other target platforms. The run-time module, running on a target node using a real-time operating system, is the link to the physical field equipment. This module executes the instructions contained in resources, downloaded from the Workbench. The run-time module holds the virtual machine. The virtual machine, a virtual PLC, reads variables and I/O points, executes your process control application, and writes to variables and I/O points in a cyclic loop.

The PIO enables the addition of I/O devices to the **ISaGRAF** kernel as well as the development of "C" functions, function blocks, and conversion functions. It also enables the development of IXL clients such as the OPC DA server, HiBeam data server, and Workbench for the currently ported target platforms. The Target Definition Builder utility enables the definition of custom items in the Workbench, corresponding to items developed with the PRDK and PIO.

You can receive notification of run-time system events from target nodes (run-time modules) using a logger and viewer.

ISaGRAF OPC DA Server

The ISaGRAF OPC (OLE for Process Control) Data Access server is a software module that standardizes communication to field equipment. A setup program enables you to establish a link between an ISaGRAF OPC DA server and a project created in the Workbench, so that a HMI can have access to the project configuration data. **ISaGRAF** uses the Frontvue HMI by Arc Informatique at www.Frontvue.com.

Note: There can be only one ISaGRAF OPC DA server per computer. An OPC DA server can have many OPC clients.

In the ISaGRAF OPC DA setup program, you provide two parameters:

- The name of the directory, on the development platform, where is kept the project data that a HMI will monitor
- The type of target, for instance, ISaGRAF 3.x or ISaGRAF 4.x

Having a physical path as a parameter has two implications:

- Each time you change the project on which a HMI works, you need to change its ISaGRAF OPC DA server's setup. When changing the setup, you need to stop all OPC clients and wait until the OPC DA server stops, then restart the OPC clients. You can confirm that the OPC DA server is stopped by verifying the absence of ASOPCServer.exe in the Task Manager.
- The computer on which project data is stored must be accessible to all computers running a HMI.

To set up the ISaGRAF OPC DA server

Before setting up the OPC DA server, you need to install it.

1. From the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **OPC DA Server**, then **OPC DA Server**.
2. In the fields of the ISaGRAF OPC DA Setup window, enter the required information then click **OK**.

Documentation Set

This *Getting Started* guide is part of the **ISaGRAF** documentation set; an online copy (in PDF format) can be accessed from the **ISaGRAF** Installation window or from the Start menu of windows, by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **ISaGRAF**, then **Getting Started**. The other components of this set are:

- *User's Guide*, in an online format (HTML) which you access from within the software itself by choosing the Help>Contents command or from the Start menu of windows, by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **Help**, then **Help**.
- *Hands On* guide, in an online format (HTML), walking you through an existing application and guiding you in the development of a simple or distributed application, accessed from the Start menu of windows, by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **Help**, then **Tutorial**.
- *Release Notes* (*Readme.txt* and *Release.txt*), in online format (text), containing the latest information on **ISaGRAF**, are accessed from the Start menu of windows by choosing **Programs**, then **ICS Triplex ISaGRAF**, then **ISaGRAF**, then **Readme** or **Release** respectively.
- *Developer's Guides*, in an online format (HTML), helping you with the development of **ISaGRAF** add-ons: Target Definition Builder, PRDK, and PIO. The PRDK and PIO tools are available separately.

You read PDF (Portable Document Format) documents using Adobe Acrobat Reader 4.0 or later. This software is included on the **ISaGRAF** CD-ROM, in the Acrobat Reader directory.

System Requirements for Development Platforms

Minimum Requirements

To use **ISaGRAF**, you need the following hardware and software:

- A computer with a Pentium or compatible processor, running at 166 MHz (depending on the operating system)
- 64 MB of RAM (depending on the operating system)
- A hard disk with 150 MB of free space (once the operating system is installed)
- A CD-ROM drive on the Windows network, for installation purposes only
- A VGA monitor having at least 800 X 600 pixels screen resolution
- The Windows NT version 4.0 operating system with SP (Service Pack) 6A, Windows 98 SE, Windows 2000 with SP 2 (with Power User privileges), or Windows XP.
- A serial port or the TCP/IP network
- Microsoft Internet Explorer 5.01

Additional Recommendations

For optimal performance, ICS Triplex ISaGRAF recommends the following hardware and software:

- A computer with a Pentium II or compatible processor, running at 450 MHz or higher (depending on the operating system)
- 128 MB of RAM (depending on the operating system)
- A hard disk with 1 GB of free space
- An SVGA monitor
- A TCP/IP network (instead of a serial port)
- The Windows 2000 with SP 2 (with Power User privileges) or Windows XP operating system

Installation on Development Platforms

From the **ISaGRAF** CD-ROM, you can choose to install four items:

- **ISaGRAF**
- **ISaGRAF OPC DA Server**
- Internet Explorer 5.01. Upgrades to versions 5.5 and 6.0 are also available.
- Acrobat Reader, required to view the PDF documents contained in the documentation

After installing **ISaGRAF**, read the release notes included with the product. These are accessed from the Start menu of windows by choosing **Program Files**, then **ICS Triplex ISaGRAF**, then **ISaGRAF**, then **Readme**.

To install ISaGRAF

ICS Triplex ISaGRAF recommends using all default folder destinations.

When upgrading to the latest version, the previous version remains installed. If not using the previous version, you need to uninstall it. Furthermore, when using a hardware key from previous versions, you need to have the dongle reprogrammed to use this latest version.

Note: When installing on Windows 2000 or Windows XP, make sure the file signature verification is not set to block. You access the file signature verification options in the Control Panel by double-clicking System, then on the Hardware tab, clicking **Driver Signing**.

1. If you use Windows NT, Windows 2000, or Windows XP, log in with a user name having administrator rights.
2. Place the **ISaGRAF** CD-ROM in the drive.

3. Do one of the following steps:
 - If autorun is enabled on your computer, proceed to step 4.
 - If autorun is not enabled on your computer, in Windows Explorer, locate the **ISaGRAF** CD-ROM and double-click **Splash.exe** (in the root directory).
4. On the installation window, click once on the **ISaGRAF 4.20 Installation** option.
5. Follow the on-screen instructions.
6. When the installation is complete, restart your computer.

How to License ISaGRAF

The version of **ISaGRAF** you just installed allows you to build control applications.

You can use **ISaGRAF** for a trial period of 30 days before requiring licensing. To have a fully operational version of the product, you need to license it.

You can license **ISaGRAF** using either a hardware or software key. When using a hardware key, a dongle which you place on the parallel or USB port of your computer is delivered pre-programmed with the selected feature set. When using a software key, you need to obtain an authorized license. You license products in the License Manager.

Note: When using a hardware key from previous versions, you need to have the dongle reprogrammed to use this latest version.

ISaGRAF is available in four feature sets:

- Essential, one Workbench and one run-time module running a single virtual machine having either a specific quantity of I/Os ranging between 1 and 4095 or an unlimited quantity
- Multiscan, one Workbench and one run-time module running multiple virtual machines having either a specific quantity of variables ranging between 100 and 50000 or an unlimited quantity
- Distributed, one Workbench and multiple run-time modules running multiple virtual machines having either a specific quantity of variables ranging between 100 and 50000 or an unlimited quantity
- Monitoring, read-only capabilities enabling the downloading and debugging of a target but not editing or building a project. This feature set can view Essential, Multiscan, and Distributed project types.

Although licenses are only valid on a single computer, you can transfer them from one computer to another.

To access the License Manager

- From the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **Licensing**.

Adding Licensing

You can obtain authorized licenses for **ISaGRAF**.

To obtain authorized licenses for ISaGRAF

You need only one set of user codes and registration keys when licensing **ISaGRAF**.

1. On the Add Licensing tab, from the list of available components, select **ISaGRAF**.
2. Click → to move your selection to the list of Selected Components.

You will be prompted to select a feature set: Essential, Multiscan, Distributed, or Monitoring. For the Essential set, you need to indicate a specific quantity of I/Os ranging from 1 to 4095 or 0 for an unlimited quantity. For the Multiscan or Distributed set, you need to indicate a specific quantity of variables ranging from 100 to 50000 or 0 for an unlimited quantity.

A Setup Code, User Code 1, and User Code 2 appear in their respective fields.

3. Send the licensing information:
 - a) Click **Send**.

A pre-addressed email appears holding the setup code and both user codes into which you need to include your contact information and purchase order number. For additional purchases, you need to provide a credit card number.

- b) Include all required information then send the email.

The original setup code and user codes as well as a Registration Key 1 and Registration Key 2 will be returned via e-mail.

4. Upon reception, make sure the setup and user codes are the same as those in the License Manager window, then copy and paste the registration keys in their respective fields.

5. Click **Proceed**.

If licensing is successful, ISaGRAF appears greyed in the Selected Components list.

When licensing is complete, stop then restart ISaGRAF.

Transferring Licensing

You can transfer licensing from one computer to another.

To transfer a license to a new computer

Transferring a license from one computer to another requires creating a license transfer disk, then removing the license from the currently licensed computer and copying it to this transfer disk before it can be installed on the new computer. The floppy disk must be formatted and blank.

1. From the new computer, prepare the license transfer disk:
 - a) Install ISaGRAF.
 - b) Insert a floppy disk in the computer's drive.
 - c) From the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **Licensing**.

- d) On the Transfer License tab, select the drive holding the floppy disk, then click **Create Transfer Disk**.

The license transfer disk is created.

- e) Remove the license transfer disk from the new computer's drive.
2. Transfer the license from the currently licensed computer to the license transfer disk:
 - a) In the currently licensed computer's drive, insert the license transfer disk.
 - b) From the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **Licensing**.
 - c) On the Transfer License tab, select the drive holding the transfer disk, then click **Transfer Licenses to Disk**.

The license is removed from the computer and copied to the license transfer disk.

- d) Remove the license transfer disk from the computer's drive.
3. Install the license on the new computer:
 - a) In the new computer's drive, insert the license transfer disk holding the license.
 - b) From the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **Licensing**.
 - c) On the Transfer Licensing tab, select the drive holding the transfer disk, then click **Complete Transfer**.

The license is transferred to the new computer and **ISaGRAF** is activated.

Removing Licensing

You can remove authorized licenses from a computer.

To remove authorized licenses

1. From the Start menu of Windows, choose **Programs**, then **ICS Triplex ISaGRAF**, then **License Manager**.
2. On the Remove Licensing tab, from the list of licensed components, select the components for which you want to remove licensing.
3. Click **→** to move the components to the list of Selected Components.

A Setup Code, as well as a User Code 1 and User Code 2 appear in their respective fields.

4. Send the licensing information:
 - a) Click **Send**.

A pre-addressed email appears holding the setup code and both user codes and into which you need to include your contact information and order number.

- b) Include all required information then send the email.

A User Code, as well as a Registration Key 1 and Registration Key 2 will be returned via e-mail.

5. Upon reception, enter the user code and both registration keys into their respective fields, then click **Proceed**.

A confirmation code appears in the Confirmation Code field.

6. Reply to the email including the Confirmation Code as well as your name, address, and telephone number.

Technical Support

Contacting Us

For technical support on **ISaGRAF**, visit our web site at <http://www.icstriplexisagraf.com> or contact our location nearest you:

North America

- Send an e-mail to support@icstriplex.ca
- Send a fax to +1 450 674-7344
- Call +1 450 674-7774, press 9 for service in French
- Call toll free +1 877 868-4746, press 9 for service in French
- Write to us:

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