

The I-X Agent Wizard

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Revisions

This documentation is written for I-X version 4.5 or later.

Notes

This document will undergo infrequent changes as the Agent Wizard is currently only considered to be an early prototype.

1 Introduction

The I-X Agent Wizard is currently a relatively simple tool that allows for the easy and fast creation of an I-X agent. The wizard will require only a small number of parameters, such as the name of the agent, before the agent can be created. Upon creation the wizard writes the appropriate set of directories and some basic files. As a result, there will be an executable script (for Windows) from which the agent can be run right away. While this agent will have a user interface, namely an I-X process panel, all the models will be empty.

2 Starting the Agent Wizard

The agent wizard is located in the wizard directory under “<ix-base>/wizard” as an executable jar-file. Under Windows, a simple double click on IXAgentWizard.jar should bring up the wizard.

When the wizard is started, it attempts to find the <ix-base> directory. Usually it will find this directory without problems, but if this fails for some reason, it will ask for it by bringing up a standard dialog. In this case simply tell the wizard where the <ix-base> directory is located. In either case the wizard will confirm the location of the <ix-base> directory by displaying it in the status bar of its main window as shown in figure 1.

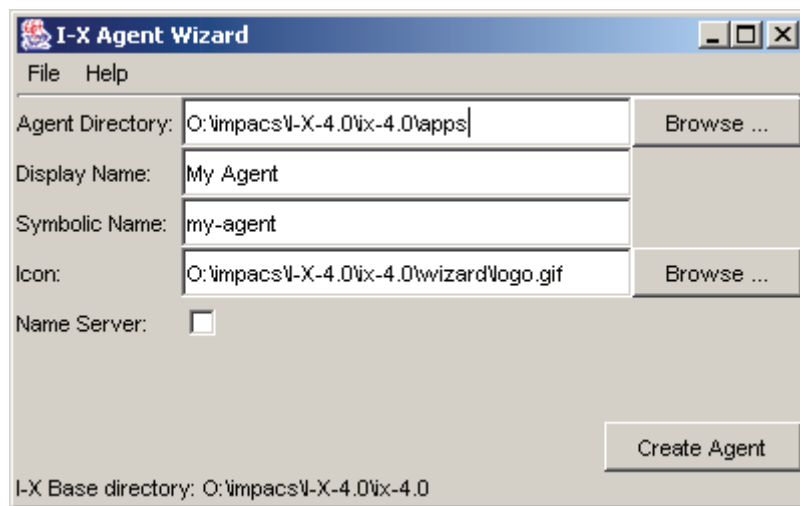


Figure 1: I-X Agent Wizard with <ix-base> directory displayed in status bar

For the installation displayed in figure 1, the <ix-base> directory is “O:\impacs\I-X-4.0\ix-4.0”. The different fields that need to be supplied are initialized with default values here. The significance of these values and how they can be changed is explained next.

3 Specifying the Agent Parameters

To create an I-X agent, four basic parameters need to be specified and it needs to be decided whether the agent should run a name server or not. If there are multiple agents that are part of an application, note that only one of the agents should start a name server.

3.1 The Agent Directory

The agent directory is the base directory for the agent. Usually, applications are created in the apps directory under the <ix-base> directory. Hence, this is the default value for this field. The value can be changed by editing the text field or pressing the “Browse ...” button next to it, which will bring up a standard dialog window.

For most applications it makes sense to create a new directory in which the agents will be created. To do so, press the “Browse ...” button to choose a directory. Instead of selecting an existing directory, create a new directory with a name that corresponds to the application you are building. Make sure this new folder is selected and press “Select” to confirm this choice.

3.2 The Agent Names

There are two names that have to be specified for each agent. The display name is the name that will appear in the user interface (an I-X process panel) as the title of the window. In other words, its purpose is to inform the user of that panel which agent is represented by this panel. Therefore one should choose a descriptive and possibly longer name here. The default value is "My Agent". The symbolic name is used during agent communication to specify the recipients of a message, for example. Therefore this name should be shorter and it must not contain spaces. The default value is "my-agent". It is usually a good idea to have some semantic relationship between the two names to remember which agent is represented by which panel.

3.3 The Agent Icon

Included in each I-X process panel at the bottom right corner is an icon. This icon can be specified as part of the configuration of an agent. The agent wizard allows this icon to be specified here.

3.4 Running a Name Server

For agent communication, each agent will try to register with a name server which should be started by the first agent that is run. Note that only one agent should run a name server. Ticking this box in the agent wizard will create an agent that starts up a name server. If the box is unchecked the script that will be written when the agent is created will not start a name server, but it will attempt to register with a name server that must have been started by another agent.

4 Creating Agents

When all the parameters are specified correctly, the agent can be created by pressing the "Create Agent" button. At this point a number of sub-directories will be created in the directory specified as the agent directory. In these directories a number of files will be written that constitute the agent.

4.1 Re-creating an Agent

If the files which are written as part of the agent creation process already exist in the right location, pressing the "Create Agent" button will overwrite the existing files.

If the agent directory has been changed, a new agent will be created in the new location and the old version will continue to exist in the old location. Also, if the symbolic name of the agent is changed, a new agent will be created. This is because the symbolic name is part of all the files' names that are being created. Thus, changing the symbolic name of an agent creates a set of files with different names, even if the agent directory is the same.

On the other hand, if the display name of an agent or its icon file has been changed, the wizard will overwrite any existing files with the new information. Thus, the agent wizard can not only be used to create new agents, but also to modify existing ones. Note, however, that editing the created files and subsequently using the wizard to change, for example, the icon file, will overwrite all the manual changes done previously.

4.2 Creating Applications with Multiple Agents

Most often, an application will involve multiple agents, not just one. The agent wizard can easily be used to create all the agents that belong to one application, especially if these agents are meant to live in the same directories.

To create multiple agents, simply proceed as described above to create the first agent. Then change the symbolic and display name to those of the second agent. Also, make sure that only one agent has the name server box checked. Then press the "Create Agent" button and a second agent will be created. Repeat this process until all the required agents have been created.