Measurement & Automation Explorer Help for IVI™

January 2007, 370245H-01

This help file contains information on configuring IVI instruments using Measurement & Automation Explorer (MAX).

To navigate this help file, use the **Contents**, **Index**, and **Search** tabs to the left of this window.

For more information about this help file, refer to the following topics:

Conventions—contains the formatting and typographical conventions in this help file

Related Documentation

Important Information

Technical Support and Professional Services

To comment on National Instruments documentation, refer to the National Instruments Web site.

Related Documentation

The following documents contain information that you might find helpful as you use this help file:

- *IVI Class Driver Help for LabVIEW*
- *IVI Class Driver Help for LabWindows™/CVI™*
- *LabWindows™/CVI™ Instrument Driver Developers Guide*
- *National Instruments IVI Driver Help 2.0*

Using Help

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Conventions

This help file uses the following conventions:

»	The » symbol leads you through nested menu items and dialog box options to a final action. The sequence **File»Page Setup»Options** directs you to pull down the **File** menu, select the **Page Setup** item, and select **Options** from the last dialog box.
	This icon denotes a note, which alerts you to important information.
bold	Bold text denotes items that you must select or click on in the software, such as menu items and dialog box options. Bold text also denotes parameter names, emphasis, or an introduction to a key concept.
green	Underlined text in this color denotes a link to a help topic, help file, or Web address.
italic	Italic text denotes variables or cross references. This font also denotes text that is a placeholder for a word or value that you must supply.
monospace	Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories, programs, subprograms, subroutines, device names, functions, operations, variables, filenames, and extensions.

Navigating Help (Windows Only)

To navigate this help file, use the **Contents**, **Index**, and **Search** tabs to the left of this window or use the following toolbar buttons located above the tabs:

- **Hide**—Hides the navigation pane from view.
- **Locate**—Locates the currently displayed topic in the **Contents** tab, allowing you to view related topics.
- **Back**—Displays the previously viewed topic.
- **Forward**—Displays the topic you viewed before clicking the **Back** button.
- **Options**—Displays a list of commands and viewing options for the help file.

Searching Help (Windows Only)

Use the **Search** tab to the left of this window to locate content in this help file. If you want to search for words in a certain order, such as "related documentation," add quotation marks around the search words as shown in the example. Searching for terms on the **Search** tab allows you to quickly locate specific information and information in topics that are not included on the **Contents** tab.

Wildcards

You also can search using asterisk (*) or question mark (?) wildcards. Use the asterisk wildcard to return topics that contain a certain string. For example, a search for "prog*" lists topics that contain the words "program," "programmatically," "progress," and so on.

Use the question mark wildcard as a substitute for a single character in a search term. For example, "?ext" lists topics that contain the words "next," "text," and so on.

Note Wildcard searching will not work on Simplified Chinese, Traditional Chinese, Japanese, and Korean systems.

Nested Expressions

Use nested expressions to combine searches to further refine a search. You can use Boolean expressions and wildcards in a nested expression. For example, "example AND (program OR VI)" lists topics that contain "example program" or "example VI." You cannot nest expressions more than five levels.

Boolean Expressions

Click the ▸ button to add Boolean expressions to a search. The following Boolean operators are available:

- **AND** (default)—Returns topics that contain both search terms. You do not need to specify this operator unless you are using nested expressions.
- **OR**—Returns topics that contain either the first or second term.
- **NOT**—Returns topics that contain the first term without the second term.
- **NEAR**—Returns topics that contain both terms within eight words of each other.

Search Options

Use the following checkboxes on the **Search** tab to customize a search:

- **Search previous results**—Narrows the results from a search that returned too many topics. You must remove the checkmark from this checkbox to search all topics.
- **Match similar words**—Broadens a search to return topics that contain words similar to the search terms. For example, a search for "program" lists topics that include the words "programs," "programming," and so on.
- **Search titles only**—Searches only in the titles of topics.

Printing Help File Topics (Windows Only)

Complete the following steps to print an entire book from the **Contents** tab:

1. Right-click the book.
2. Select **Print** from the shortcut menu to display the **Print Topics** dialog box.
3. Select the **Print the selected heading and all subtopics** option.

    Note Select **Print the selected topic** if you want to print the single topic you have selected in the **Contents** tab.

4. Click the **OK** button.

Printing PDF Documents

This help file may contain links to PDF documents. To print PDF documents, click the print button located on the Adobe Acrobat Viewer toolbar.

Overview-Configuring IVI Instruments Using MAX

To create and configure IVI instruments using Measurement & Automation Explorer (MAX), refer to the following topics:

- [Creating a New Logical Name](#)
- [Configuring a Logical Name](#)
- [Creating a New Driver Session](#)
- [Configuring a Driver Session](#)
- [Creating a New Instrument Driver Software Module](#)
- [Configuring an Instrument Driver Software Module](#)
- [Configuring a Simulation Driver Software Module](#)
- [Creating a New Simulation Driver Session](#)
- [Configuring a Simulation Driver Session](#)

Logical Names

Logical names allow you to define and name multiple driver sessions. You can switch between driver sessions by passing a logical name to the initialize function of a class driver, which identifies the software module and hardware asset to use (example: "SampleDmm"). Application programs written using a class driver use logical names to avoid direct references to software modules and hardware assets.

Creating a New Logical Name

To create a new logical name, complete the following steps:

1. Launch MAX (**Start»Programs»National Instruments»Measurement & Automation**).
2. Expand the IVI Drivers category.
3. Right-click **Logical Names** in the MAX configuration tree.
4. Select **Create New (case-sensitive)**.
5. Replace the default logical name, NewLogicalName, with the new case-sensitive name of your choice.
6. [Configure](#) the new logical name.

Configuring a Logical Name

Logical names allow you to define and name multiple driver sessions. You can switch between driver sessions by passing a logical name to the initialize function of a class driver, which identifies the software module and hardware asset to use (example: "SampleDmm"). Application programs written using a class driver use logical names to avoid direct references to software modules and hardware assets.

To configure the properties of a new logical name or to modify an existing logical name, complete the following steps:

1. Click the appropriate logical name in the MAX configuration tree.
2. Select a driver session from the Driver Session listbox.
3. Enter the description you want to use for the logical name in the Description field.
4. Click **Save IVI Configuration** at the top of the configuration view to save the new logical name configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

Note To view the properties of the driver session you have selected, click **Go To** to the right of the Driver Session listbox.

Driver Session

The driver session listbox contains the list of all driver sessions to which a logical name can refer. By selecting a driver session from the list, you are associating your logical name with a particular set of properties for use by the driver.

Description

Enter or modify the description for the item you are configuring.

Go To

Click **Go To** to display the MAX configuration view of the selected item.

Driver Sessions

A driver session defines a set of properties for use by IVI instrument drivers such as initial settings for attributes, virtual name mappings, simulation settings, and so on.

Creating a New Driver Session

To create a driver session, complete the following steps:

1. Launch MAX (**Start»Programs»National Instruments»Measurement & Automation**).
2. Expand the IVI Drivers category.
3. Right-click **Driver Sessions** in the MAX configuration tree.
4. Select **Create New (case-sensitive)**.
5. Replace the default driver session name, NewDriverSession, with the new case-sensitive name of your choice.
6. [Configure](#) the new driver session.

Configuring a Driver Session

A driver session defines a set of properties for use by IVI instrument driver software modules, such as initial <u>configurable settings</u> for attributes, <u>virtual name mappings</u>, simulation settings, and so on. Multiple driver sessions can exist for each instrument driver software module.

To configure the properties of a new driver session or to modify an existing driver session, complete the following steps:

1. Click the appropriate driver session in the MAX configuration tree.
2. Enter the appropriate configuration information on one or more of the following tabs: General, Hardware, Software, Virtual Names, Initial Settings.
3. After you complete your configuration, click **Save IVI Configuration** at the top of the configuration view to save the new driver session configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

General Tab

1. On the General tab, complete the following fields:
   - **Initialization Options**—Place a checkmark to the left of the options you want to enable:
     - [Cache](#)
     - [Range Check](#)
     - [Record Coercions](#)
     - [Interchange Check](#)
     - [Query Instrument Status](#)
   - [Simulate With](#)
   - [Driver Setup](#)
   - [Description](#)
2. Click **Save IVI Configuration** at the top of the configuration view to save your changes on the General tab. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

To configure additional properties of the driver session, click one of the following tabs: [Hardware](#), [Software](#), [Virtual Names](#), or [Initial Settings](#).

Initialization Options

When you configure a driver session in MAX, you can enable or disable the following initialization options: Cache, Range Check, Record Coercions, Interchange Check, and Query Instrument Status.

Cache

Enable this checkbox to cache the value of attributes. When caching is enabled, the IVI specific driver keeps track of the current instrument settings to avoid sending redundant commands to the instrument.

Range Check

Enable this checkbox if you want the IVI specific driver to validate attribute values and function parameters. Validating attribute values and function parameters is useful for debugging. After validating the program, you can remove the checkmark from this option to disable range checking and maximize performance.

Record Coercions

Enable this checkbox if you want to record a list of all coercions associated with this IVI session. A coercion occurs when an IVI specific driver alters the value that you specified for an attribute or parameter to a value that the specific driver or instrument can accept.

Interchange Check

Enable this checkbox if you want the IVI specific driver to verify the ability to exchange hardware assets in a test system with few or no changes to the test system. When interchange checking is enabled, the driver generates a warning if it encounters a situation in which the application program might not produce the same behavior when used with a different instrument.

Query Instrument Status

Enable this checkbox if you want the IVI specific driver to query the instrument status at the end of each user operation. Querying the instrument status is useful for debugging. After validating the program, you can remove the checkmark from this option to disable status checking and maximize performance. You specify this value for the entire driver session.

Simulate With

This listbox enables you to choose if you want to simulate instrument driver I/O operations. Simulation allows you to develop and use application code even when the instrument is not available.

If you choose to simulate with a specific driver, the specific driver functions do not perform instrument I/O. Instead, the specific driver functions return random simulated values for output parameters that represent instrument data. If you choose to simulate with a class simulation driver, select the simulation driver that matches the class of your specific driver. The simulation driver extends the simulation capabilities built into all specific drivers and allows you to configure the nature of the simulated instrument data interactively.

Driver Setup

Enter the Driver Setup string in this field. Each IVI specific driver defines its own meaning and valid values for the Driver Setup attribute. Many specific drivers use the Driver Setup string to configure instrument specific features at initialization. For example, if a specific driver supports a family of instrument models, the driver can use the Driver Setup attribute to allow you to specify a particular instrument model to simulate. Refer to the documentation for the specific driver for more information regarding the format of the driver specific setup string you should use in the Driver Setup field.

Hardware Tab

On the Hardware tab, do one of the following:

- Select an existing hardware asset from the Hardware Asset table.

or

- Create a new hardware asset by completing the following steps:
    1. Click **Add**.
    2. Enter the name of the new hardware asset in the Name field.
    3. Select a resource descriptor from the drop-down list or enter new resource descriptor information for the new hardware asset in the Resource Descriptor field.
    4. Enter a description for the new hardware asset in the Description field.
    5. Click **Save IVI Configuration** at the top of the configuration view to save the new hardware asset configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

To configure additional properties of the driver session, click one of the following tabs: General, Software, Virtual Names, or Initial Settings.

Hardware Asset

The Hardware Assets table contains the list of all previously configured hardware assets. Select the appropriate hardware asset for this driver session. If the Simulate option under the General tab is checked, select **None** for the hardware asset.

To add a new hardware asset to the list, click **Add**, Enter the name of the instrument in the Name field (for example, fl45), and press <Enter> on the keyboard. Then populate the Resource Descriptor field (for example, GPIB::5::INSTR) and the Description field.

The Hardware Assets table contains the following fields:

- **Name**–Double-click to enter or modify the name of the hardware asset. Check the box next to the name of the default asset.
- **Resource Descriptor**–Select a resource descriptor from the drop-down list or enter a valid resource descriptor for the hardware asset in this box. A resource descriptor is a string, such as a VISA resource descriptor, that specifies the interface and the address of a hardware asset. Examples of valid resource descriptors are listed in the following table.

  Note The resource descriptor list is populated from the **Devices and Interfaces** category. If your device is not listed, go to **Devices and Interfaces** and configure it.

GPIB::22::INSTR
GPIB1::22::5::INSTR
VXI::64::INSTR
ASRL2::INSTR
GPIB::22::INSTR
DAQ::1::INSTR (Traditional DAQ)
PXI1Slot5 (NI-DAQmx)

- **Description**–Double-click to enter or modify the description for the item you are configuring.

Add

Click this button to create and configure a hardware asset.

Remove

Click this button to remove an asset from the Hardware Assets list. Highlight the asset in the list and click **Remove**.

Software Tab

On the Software tab, select a software module from the Software Module listbox.

After you select a software module, the following fields display information about the software module you have selected: <u>Prefix</u>, <u>Prog ID</u>, <u>Module Path</u>, <u>Supported Instrument Models</u>, and <u>Published APIs</u>.

To configure additional properties of the driver session, click one of the following tabs: <u>General</u>, <u>Hardware</u>, <u>Virtual Names</u>, or <u>Initial Settings</u>.

Software Module

The Software Module field contains a list of IVI drivers installed on the system. Select the driver from the list that you would like to use in your application. To view more details about the driver, click **Go To** to display the MAX configuration view.

Prefix

A read-only field that specifies the prefix associated with this instrument driver software module.

Prog ID

A read-only field that specifies the version-independent Prog ID of the installed IVI-COM software module.

Module Path

A read-only field that shows the location and/or name of a file or code module, such as a DLL, for a specific driver.

If this field contains a fully specified path to the instrument driver code module, the file must be available at that location. If the field contains only a filename, then the file must be located in the system search path.

Published APIs

This table displays the published Application Programming Interface (API), which is an API designed for implementation across several software modules and is published independently of any one software module that implements it. One example is an IVI instrument class API.

Supported Instrument Models

A read-only field that displays a list of instrument models supported by this instrument driver software module.

Virtual Names Tab

To create a new virtual name, complete the following steps:

1. Click **Add**.
2. In the Virtual Name field, enter the new virtual name you want to create.
3. Double-click on the Physical Name field and select a mapping from the drop-down list or enter a new mapping directly into the Physical Name field.
4. Click **Save IVI Configuration** at the top of the configuration view to save the new virtual name configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

The new mapping appears in the Virtual Name Mappings table.

Note To remove a virtual name, highlight its name in the Virtual Name Mappings table and click **Remove**.

To configure additional properties of the driver session, click one of the following tabs: General, Hardware, Software, or Initial Settings.

Virtual Name Mappings

This table represents a mapping between the physical name of an instrument and the associated virtual name. To create and configure a new mapping, click the **Add** button. To remove a virtual name mapping, highlight the virtual name and click **Remove**.

The table contains two fields, as follows:

- **Virtual Name**–Enter the virtual name you have chosen in this field. IVI uses virtual names to allow the application program to use one set of names for all possible specific drivers. For example, an IVI specific driver might name channels A, B, and C, while you might choose to name them Chan1, Chan2, and Chan3. In this example, A, B, and C are physical names defined by the software module. Chan1, Chan2, and Chan3 are the corresponding virtual names used by the application program.
- **Physical Name**–Enter the physical name string that is associated with (or mapped to) the virtual name.

Add

Click this button to create and configure a new virtual name mapping. Click **Add** and enter the new virtual name and physical name in the appropriate fields.

Remove

Click this button to remove a virtual name. Highlight the item in the Virtual Name Mappings field and click **Remove**.

Initial Settings Tab

On the Initial Settings tab, you may see one of the following conditions:

- If the Configurable Settings table is enabled, you can add settings to or remove settings from the Initial Settings list. To add settings, highlight a setting in the Configurable Settings list and click **Add** (⌃). You can modify the Value field in the Initial Settings table. To remove settings, highlight a setting in the Initial Settings list and click **Remove** (⌄).

Note If the driver does not define configurable initial settings, the list will be empty.

- If the Configurable Settings table is disabled (grayed out), you can only remove settings from the Initial Settings table. To remove settings, highlight a setting in the Initial Settings list and click **Remove** (⌄).

Configurable Settings

Contains the list of settings for which you can set the initial values. To apply these values at initialization, you must add attributes from the Configurable Settings list to the Initial Settings list using the **Add** (⌃) button.

The table contains the following fields:

- **Name**–A read-only field containing the name of the setting.
- **Type**–A read-only field containing the data type of the attribute of the selected setting.
- **Default Value**–A read-only field containing the default value of the attribute.
- **Required**–A read-only field that specifies whether the setting is required or optional for this driver session. If the setting is required, it cannot be removed.
- **Description**–A read-only field containing the description of the selected initial setting.

Note If the driver does not define configurable initial settings, the list will be empty.

Initial Settings

Contains the list of attribute value settings applied at initialization. Use the **Add** (⌃) button to add settings to this list. Use the **Remove** (⌄) button to remove settings.

The table contains the following fields:

- **Name**–A read-only field containing the name of the setting.
- **Type**–A read-only field containing the data type of the attribute of the selected setting.
- **Value**–Contains the initial value that is applied to the attribute at initialization. You can edit the initial value in this field.
- **Required**–A read-only field that specifies whether the setting is required or optional for this driver session. If the setting is required, it cannot be removed.
- **Description**–A read-only field containing the description of the selected initial setting.

Note Fields marked with an asterisk (*) are editable.

Remove

Click this button to remove items from the Initial Settings table. Highlight the item in the Initial Settings table and click **Remove**.

Instrument Driver Software Modules

An instrument driver software module specifies a code module, such as a DLL, for a specific driver. The class driver uses the code module to communicate with the hardware. The instrument driver software module also specifies the Prefix, Module Path, Prog ID, Supported Instrument Models, and Published API.

Creating a New Instrument Driver Software Module

To create an instrument driver software module, complete the following steps:

1. Launch MAX (**Start»Programs»National Instruments»Measurement & Automation**).
2. Expand the **IVI Drivers** category.
3. Expand the **Advanced** category.
4. Right-click **Instrument Driver Software Modules** in the MAX configuration tree.
5. Select **Create New (case-sensitive)**.
6. Replace the default software module name, NewSoftwareModule, with the new case-sensitive name of your choice.
7. [Configure](#) the new software module.

Configuring an Instrument Driver Software Module

An instrument driver software module is a particular instrument driver software component that is installed and registered on your system.

To configure the properties of a new software module or modify the properties of an existing software module, complete the following steps:

1. Click the appropriate software module in the MAX configuration tree.
2. Enter the appropriate information on the following tabs:
   - General
   - Supported Models
   - Physical Names
   - Configurable Settings
3. After you complete your configuration, click **Save IVI Configuration** at the top of the configuration view to save the new software module configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

To uninstall a software module, complete the following steps:

1. Select **Control Panel»Add or Remove Programs»NI IVI Specific Drivers**.
2. Click **Remove**.
3. In the **Instrument Driver Installation Manager** dialog box, complete the following steps:
   a. Use the **Selections** listboxes to narrow down the list of installed specific drivers.
   b. Select the name of the specific driver you want to remove from the displayed list.
   c. Click **Remove**.
   d. Click **Done**.

General Tab

1. On the General tab, complete the following fields:
   - Prefix (case-sensitive) or Prog ID
   - Module Path
   - Published APIs
2. Click **Save IVI Configuration** at the top of the configuration view to save your changes on the General tab. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

To add a published API, complete the following steps:

1. Click **Add**.
2. Select the name of the published API you want to create from the Name listbox.
3. Double-click to enter the version of the published API in the Version field.
4. Double-click to select the type of the published API from the Type listbox.
5. Click **Save IVI Configuration** at the top of the configuration view to save the Published APIs configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

Note To remove a published API, select the API from the **Published APIs** table and click **Remove**.

To configure additional properties of the instrument driver software module, click one of the following tabs: Supported Models, Physical Names, or Configurable Settings.

Prefix

Specifies the prefix associated with an existing instrument driver software module. If you create a new software module, this field is empty. Enter a prefix for new software modules that you create.

Prog ID

Specifies the version-independent Prog ID of the installed IVI-COM software module. If you create a new software module, this field is empty. Enter a Prog ID for new software modules that you create.

Module Path

Specifies the location and/or name of a file or code module, such as a DLL, for a specific driver. If you create a new software module, this field is empty. Enter the location and/or file name for new software modules that you create.

If this field contains a fully specified path to the instrument driver code module, the file must be available at that location. If the field contains only a filename, then the file must be located in the system search path.

Published APIs

This table displays the published Application Programming Interface (API), which is an API designed for implementation across several software modules and is published independently of any one software module that implements it. One example is an IVI instrument class API.

The table contains the following fields:

- **Name**–Enter the name of the published API you want to add or modify.
- **Version**–Enter the version of the published API you want to add or modify.
- **Type**–Enter the type of the published API you want to add or modify.

Add

Click this button to add a new entry to the Published APIs table.

Remove

Click this button to remove an entry from the list. Select the item from the Published APIs table and click **Remove**.

Supported Models Tab

On the Supported Models tab, list all instrument models supported by this software module. Enter each model name on a separate line. Click **Save IVI Configuration** at the top of the configuration view to save the changes. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

To configure additional properties of the instrument driver software module, click one of the following tabs: General, Physical Names, or Configurable Settings.

Supported Instrument Models

Displays a list of instrument models supported by the instrument driver software module. If you create a new software module, this field appears empty. Enter each model name on a separate line in this field.

Physical Names Tab

To add a physical name, complete the following steps:

1. Click **Add**.

2. Enter the physical name you want to create in the Physical Name field.

3. Double-click to enter a new name or leave the default name in the Repeated Capability Name field.

4. Click **Save IVI Configuration** at the top of the configuration view to save the physical name configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

The new mapping appears in the Physical Names table.

Note To remove a physical name, select the name from the **Physical Names** table and click **Remove**.

To configure additional properties of the instrument driver software module, click one of the following tabs: General, Supported Models, or Configurable Settings.

Physical Names

This table represents a mapping between the physical name of an instrument and the associated repeated capability name.

The table contains the following fields:

- **Physical Name**–Enter the physical name that you want to associate with the repeated capability name.
- **Repeated Capability Name**–Enter the repeated capability name that is published by an IVI driver. The repeated capability is an instrument capability for which you can configure multiple instances independently. Examples of repeated capabilities include channels on an oscilloscope, traces on a spectrum analyzer, and markers on a RF signal generator.

Add

Click this button to create and configure a physical name mapping.

Remove

Click this button to remove a physical name mapping.

Configurable Settings Tab

To add a new configurable setting, complete the following steps:

1. Click **Add**.

2. Enter the appropriate information in the <u>Configurable Settings</u> table.

3. Click **Save IVI Configuration** at the top of the configuration view to save the new configurable setting configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

Note To remove a configurable setting, select it from the **Configurable Settings** table and click **Remove**.

To configure additional properties of the instrument driver software module, click one of the following tabs: <u>General</u>, <u>Supported Models</u>, or <u>Physical Names</u>.

Configurable Settings

This table contains the list of configurable settings published by the software module. The table contains the following fields:

- **Name**–Enter the name of a new configurable setting you want to create.
- **Software Module Key**–Enter a string for the software module to use to identify the internal software element to which the configurable setting applies.
- **Type**–Select the data type of the associated setting.
- **Default Value**–Enter the default value of the setting.
- **Required**–Specify whether the setting is required or optional for this software module.
- **Description**–Enter the description of the selected initial setting.

Add

Click this button to add a configurable setting to the [Configurable Settings](#) table.

Remove

Click this button to remove a configurable setting from the [Configurable Settings](#) table.

Simulation Driver Software Modules

A simulation driver software module is a software component that "plugs in" to the corresponding class driver and performs flexible output data simulation.

Configuring a Simulation Driver Software Module

A simulation driver software module is a software component that "plugs in" to the corresponding class driver and performs flexible output data simulation. A simulation driver software module is not configurable using MAX. You cannot modify, add, or remove a simulation driver software module using MAX.

Prefix

A read-only field that specifies the prefix associated with this simulation driver software module.

Module Path

A read-only field that specifies the location and/or name of a code module, such as a DLL, for a simulation driver.

Published APIs

This table displays the published Application Programming Interface (API), which is an API designed for implementation across several software modules and is published independently of any one software module that implements it. One example is an IVI instrument class API.

The table contains the following fields:

- **Name**–A read-only field that contains the name of the published API.
- **Version**–A read-only field that contains the version of the published API.
- **Type**–A read-only field that contains the type of the published API.

Simulation Driver Sessions

A simulation driver session refers to a particular simulation driver and to the initial attribute settings for that driver. Multiple simulation driver sessions can exist for each simulation driver software module.

Creating a New Simulation Driver Session

To create a driver session, complete the following steps:

1. Launch MAX (**Start»Programs»National Instruments»Measurement & Automation**).
2. Expand the IVI Drivers category.
3. Expand the Advanced category.
4. Right-click **Simulation Driver Sessions** in the MAX configuration tree.
5. Select **Create New (case-sensitive)**.
6. Replace the default Simulation Driver Software Module name, NewSimDriverSession, with the new case-sensitive name of your choice.
7. [Configure](#) the new driver session.

Configuring a Simulation Driver Session

A simulation driver session refers to a particular simulation driver and to the initial attribute settings for that driver. Multiple simulation driver sessions can exist for each simulation driver software module.

To configure the properties of a new simulation driver session or to modify an existing simulation driver session, complete the following steps:

1. Click the appropriate driver session in the MAX configuration tree.
2. Click one or more of the following tabs in the configuration view and enter the appropriate configuration information:
   - General Tab
   - Initial Settings Tab
3. After you complete your configuration, click **Save IVI Configuration** at the top of the configuration view to save the new driver session configuration. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

General Tab

1. On the General tab, complete the following fields:
    - Select a simulation driver from the listbox.
    - Enter or modify the description you want to use for the simulation driver session in the Description field.
2. Click **Save IVI Configuration** at the top of the configuration view to save your changes on the General tab. If you decide not to save your changes, click **Revert** to revert to the previous configuration.

To configure initial settings of the driver session, click the <u>Initial Settings</u> tab.

Simulation Driver Software Module

The Simulation Driver Software Module field contains a list of simulation drivers installed on the system. Select the driver from the list that matches the class of your IVI specific driver. To view more details about the simulation driver, click **Go To** to display the MAX configuration view.

Initial Settings Tab

On the Initial Settings tab, you can copy or remove initial settings.

Copying Settings

To copy settings to the Initial Settings table, highlight the name of a setting in the Configurable Settings table and click **Copy**.

Removing Settings

To remove settings, highlight the name of a setting in the Initial Settings list and click **Remove**.

Note You can modify the value of any initial setting by selecting it in the Initial Settings list and changing the Value field.

To configure additional properties of the driver session, click the General tab.

Initial Settings

Contains a list of attribute value settings applied at initialization. Use **Copy** to copy settings from the Configurable Settings list. Click **Remove** to remove settings from this list.

The table contains the following fields:

- **Name**–A read-only field containing the name of the setting.
- **Type**–A read-only field containing the data type of the attribute of the selected setting.
- **Channel**–Use this field to specify the channel to which you want to apply the initial settings at the initialization. If you would like to apply the initial settings to all channels, leave this field empty.
- **Value**–Contains the initial value that is applied to the attribute at initialization. You can edit the initial value in this field.
- **Description**–A read-only field containing the description of the selected initial setting.

Note Fields marked with an asterisk (*) are editable.

Configurable Settings

Contains the list of settings for which you can set the initial values. To apply these values at initialization, you must copy attributes from the Configurable Settings list to the Initial Settings list using the **Copy** button. The Configurable Settings list includes all attributes of the simulation driver. You can copy an attribute multiple times to set different values for each copy. For more information about using attributes to control simulation, refer to *National Instruments IVI Driver Help*.

The table contains the following fields:

- **Name**–A read-only field containing the name of the setting.
- **Type**–A read-only field containing the data type of the attribute of the selected setting.
- **Default Value**–A read-only field containing the default value of the attribute.
- **Description**–A read-only field containing the description of the selected initial setting.

Copy

Click this button to copy attributes to the Initial Settings table.

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Initial Settings

Contains the list of converted attribute value settings applied at initialization. Use the Remove button to remove settings from the list.

Note The Default Setup data has been replaced by Configurable Initial Settings. Because the Configurable Initial Settings are selected by the software module developer, and are recognized by the software module during initialization, Configurable Initial Settings are only added by the software module when it is installed. Using Configurable Initial Settings is more restrictive than using the Default Setup. The set of attributes available to your driver sessions in the Configurable Initial Settings is restricted to what is published by the driver developer in the software module entry for that driver. You can edit the value of these attributes for your driver session but you cannot add additional attributes to this list of Configurable Initial Settings.

If you need attributes that are not available in the Configurable Initial Settings list, National Instruments recommends that you contact the specific driver supplier.

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