# Converting a DAQmx Task Name Control to a DAQ Assistant Express VI

Complete the following steps to convert a DAQmx task name control to a DAQ Assistant Express VI.

- 1. Place a DAQmx task name control on the front panel.
- 2. Select a task you previously created and saved.
- 3. Right-click the control and select **Convert to Express VI** from the shortcut menu.
- 4. The DAQ Assistant launches, and you can modify the task if you want.
- 5. Click OK.

# **Creating Channels**

You can use the DAQmx global channel control to launch the DAQ <u>Assistant</u>. Complete the following steps to launch the DAQ Assistant and create a new global virtual channel.

- 1. Place a DAQmx global channel control on the front panel.
- 2. Right-click the control and select **Create DAQmx Channel»In MAX** or **Create DAQmx Channel»In Project** from the shortcut menu. If the VI is not in a project, the **In Project** option is grayed out.
- 3. Follow the onscreen instructions to configure the global channel.
- 4. When you save the task and exit the DAQ Assistant, LabVIEW sets the DAQmx global channel control to the name of the channel.

Refer to <u>Taking a Measurement with NI-DAQmx in LabVIEW</u> for a walkthrough of the DAQ Assistant.

After you create a global channel, you can use the DAQmx global channel control to <u>generate code</u> for that global channel.

You also can use MAX to launch the DAQ Assistant and create a channel.

#### **Creating Custom Scales**

You can use a DAQmx scale name control to launch the <u>DAQ Assistant</u>. Complete the following steps to launch the DAQ Assistant and create a new custom scale.

- 1. Place a DAQmx scale name control on the front panel.
- 2. Right-click the control and select **Create DAQmx Scale»In MAX** or **Create DAQmx Scale»In Project**from the shortcut menu. If the VI is not in a project, the **In Project** option is grayed out.
- 3. Follow the onscreen instructions to configure the custom scale.
- 4. When you save the custom scale and exit the DAQ Assistant, LabVIEW sets the DAQmx scale name control to the name of the custom scale.

You also can use MAX to launch the DAQ Assistant and create a custom scale.

# **Creating Tasks**

You can use a DAQmx task name control to launch the <u>DAQ Assistant</u>. Complete the following steps to launch the DAQ Assistant and create a new task.

- 1. Place a DAQmx task name control on the front panel.
- 2. Right-click the control and select **Create DAQmx Task**»In MAX or **Create DAQmx Task**»In Project from the shortcut menu. If the VI is not in a project, the In Project option is grayed out.
- 3. Follow the onscreen instructions to configure the measurement, scaling, timing, and triggering for the task.
- 4. When you save the task and exit the DAQ Assistant, LabVIEW sets the DAQmx task name control to the name of the task.

Refer to <u>Taking a Measurement with NI-DAQmx in LabVIEW</u> for a walkthrough of the DAQ Assistant.

After you create a task, you can use the DAQmx task name control to <u>generate code</u> for that task.

You also can use the <u>DAQ Assistant Express VI</u> or MAX to launch the DAQ Assistant and create a new task.

# **Editing Channels**

You can use the DAQmx global channel control to launch the DAQ Assistant. Complete the following steps to launch the DAQ Assistant from a DAQmx global channel control and edit a previously saved <u>global</u> <u>virtual channel</u>.

- 1. Place a DAQmx global channel control on the front panel.
- 2. Select a global channel you previously created and saved.
- 3. Right-click the control and select **Edit Channel (DAQ Assistant)** from the shortcut menu.
- 4. Follow the onscreen instructions to change the channel configuration.

You also can use MAX to launch the DAQ Assistant and edit previously saved channels.

Refer to <u>Taking a Measurement with NI-DAQmx in LabVIEW</u> for a walkthrough of the DAQ Assistant.

## **Editing Custom Scales**

You can use the DAQmx scale name control to launch the DAQ <u>Assistant</u>. Complete the following steps to launch the DAQ Assistant from a DAQmx scale name control and edit a previously saved custom scale.

- 1. Place a DAQmx scale name control on the front panel.
- 2. Select a custom scale you previously created and saved.
- 3. Right-click the control and select Edit Scale (DAQ Assistant).
- 4. Follow the onscreen instructions to change the custom scale configuration.

You also can use Measurement & Automation Explorer to launch the DAQ Assistant and edit previously saved custom scales.

# **Editing Tasks**

You can use a DAQmx task name control to launch the <u>DAQ Assistant</u>. Complete the following steps to launch the DAQ Assistant from a DAQmx task name control and edit a previously saved task.

- 1. Place a DAQmx task name control on the front panel.
- 2. Select a task you previously created and saved.
- 3. Right-click the control and select **Edit Task (DAQ Assistant)** from the shortcut menu.
- 4. Follow the onscreen instructions to configure the measurement, scaling, timing, and triggering for the task.

You also can use MAX to launch the DAQ Assistant and edit previously saved tasks.

Refer to <u>Taking a Measurement with NI-DAQmx in LabVIEW</u> for a walkthrough of the DAQ Assistant.



**Note** Tasks you create using the <u>DAQ Assistant Express VI</u> do not appear in MAX, meaning they exist only within the application and are not accessible through the DAQmx task came control. To access these tasks through a DAQmx task name control, you must first <u>convert</u> the Express VI to a DAQmx task name constant.

#### **Generating Code for Tasks/Channels**

You can generate code for a task or global channel from a DAQmx task name control or DAQmx global channel control, respectively. Complete the following steps to generate code.

- 1. Place a DAQmx task name control or DAQmx global channel control on the front panel.
- 2. Select the task or channel for which you want to generate code.
- 3. Right-click the control and select **Generate Code** from the shortcut menu. Select one of the following code generation options.
  - **Example**—Generate all the code necessary to run the task or channel, such as VIs needed to read or write samples, VIs to start and stop the task, loops, and graphs. Select this option if the task or channel is specific to your system, and you do not use the task or channel on other systems.
  - **Configuration**—Generate the code associated with the configuration. LabVIEW replaces the I/O constant or control with a subVI that contains VIs and Property Nodes used for channel creation and configuration, timing configuration, and triggering configuration used in the task or channel. Select this option if you need a portable configuration that you can move to another system.
    - Caution Although generated configuration code includes code to create virtual channels and tasks, it does not include code to create scales. If you generate configuration code for deployment of applications that include scales, you must ensure that the scales are configured on the client computer.

Refer to <u>deployment</u> in the *NI-DAQmx Help* for deployment options. Refer to the *Measurement & Automation Explorer Help for NI-DAQmx* for detailed instructions on how to export and import configurations for deployment.

• **Configuration and Example**—Generate configuration

code and example code for the task or channel in one step.

# **Filtering NI-DAQmx Name Controls**

Right-click an NI-DAQmx name control and select **I/O Name Filtering** from the shortcut menu to limit what the control displays and what you can enter in the control. Each NI-DAQmx name control has different filtering options.

- DAQmx device name filtering
- DAQmx global channel filtering
- DAQmx physical channel filtering
- DAQmx scale name filtering
- DAQmx switch filtering
- DAQmx task name filtering
- DAQmx terminal filtering

#### **DAQmx Device Name Filtering**

• Allow Undefined Names—Allows you to enter an arbitrary string, such as the name of a device not installed in the system.

## DAQmx Global Channel Filtering

- **Control Type**—Changes the control to a DAQmx task name control.
- Allow Undefined Names—Allows you to enter an arbitrary string, such as a list of channels or a channel you created programmatically rather than through MAX.
- **Show Invalid Names**—Show names of improperly configured channels. Common causes of an invalid channel are not saving the channel or removing the associated device from the system.
- Allow Multiple Names—Allows you to select multiple channels in the Browse dialog box by pressing the <Ctrl> key or the <Shift> key when you click channel names.
- Include "New..." Option in Browse—Adds a Create New button to the Browse dialog box.
- Limit to Device—Place a checkmark in the checkbox and select a device name to show only channels from that device. Select **Browse** to select multiple devices.
- I/O Type—Select from All, Analog Input, Analog Output, Digital Input, Digital Output, Counter Input, or Counter Output to list only those types of channels.
- **Project Filter**—Select from **Display All**, **Display Project Items**, or **Display MAX Items** to list only those global channels created in LabVIEW Project, MAX, or both.
  - Note If you filter global channel names outside the context of a LabVIEW project, **Display All** and **Display MAX Items** only show global channels created in MAX. **Display Project Items** displays an empty list.

If you filter global channel names within the context of a LabVIEW project, global channels created in MAX which share the same name as a project-based global channel will be disabled and appear grayed out in the list.

## **DAQmx Physical Channel Filtering**

- Allow Undefined Names—Allows you to enter an arbitrary string, such as a <u>list or range</u> of physical channels.
- Allow Multiple Names—Allows you to select multiple physical channels in the **Browse** dialog box by pressing the <Ctrl> key or the <Shift> key when you click physical channel names.
- Limit to Device—Place a checkmark in the checkbox and select a device name to show physical channels from that device only. Select **Browse** to select multiple devices.
- I/O Type—Choose from Analog Input, Analog Output, Digital Input, Digital Output, Counter Input, or Counter Output to list only those types of channels.
- Port/Line Filtering—When I/O Type is Digital Input or Digital Output, you can choose to show Ports Only, Lines Only, or both Lines and Ports.

#### **DAQmx Scale Name Filtering**

- Allow Undefined Names—Allows you to enter an arbitrary string, such as the name of a scale you created programmatically rather than through MAX.
- Include "New..." Option in Browse—Adds a Create New button to the Browse dialog box.
- **Project Filter**—Select from **Display All**, **Display Project Items**, or **Display MAX Items** to list only those scales created in LabVIEW Project, MAX, or both.
  - Note If you filter scale names outside the context of a LabVIEW project, **Display All** and **Display MAX Items** only show scales created in MAX. **Display Project Items** displays an empty list.

If you filter scale names within the context of a LabVIEW project, scales created in MAX which share the same name as a project-based scale will be disabled and appear grayed out in the list.

## **DAQmx Switch Filtering**

- Switch Channels—Display only switch channels in the control.
- Switch Relays—Display only switch relays in the control.
- Allow Multiple Names—Allows you to select multiple relays in the Browse dialog box by pressing the <Ctrl> key or the <Shift> key when you click relay names.
- **Switch Topographies**—Display only switch topographies in the control.
- Allow Undefined Names—Allows you to enter an arbitrary string, such as channels on a device not installed in the system.
- Limit to Device—Place a checkmark in the checkbox and select a device name to show channels, relays, or topologies from that device only. Select **Browse** to select multiple devices.

#### **DAQmx Task Name Filtering**

- **Control Type**—Changes the control to a DAQmx global channel control.
- Allow Undefined Names—Allows you to enter an arbitrary string, such as the name of a task you created programmatically rather than through MAX.
- **Show Invalid Names**—Shows names of improperly configured tasks in the control. Common causes of an invalid task are not saving the task or removing the associated device from the system.
- Include "New..." Option in Browse—Adds a Create New button to the Browse dialog box.
- **Project Filter**—Select from **Display All**, **Display Project Items**, or **Display MAX Items** to list only those tasks created in LabVIEW Project, MAX, or both.
  - Note If you filter task names outside the context of a LabVIEW project, **Display All** and **Display MAX Items** only show tasks created in MAX. **Display Project Items** displays an empty list.

If you filter task names within the context of a LabVIEW project, tasks created in MAX which share the same name as a project-based task will be disabled and appear grayed out in the list.

# **DAQmx Terminal Filtering**

- Allow Undefined Names—Allows you to enter an arbitrary string, such as a comma-delimited list of terminals.
- Allow Multiple Names—Allows you to select multiple terminals in the Browse dialog box by pressing the <Ctrl> key or the <Shift> key when you click terminal names.
- Limit to Device—Place a checkmark in the checkbox and select a device name to show terminals from that device only. Select **Browse** to select multiple devices.
- Include Advanced Terminals—Lists advanced terminals. Advanced terminals are often terminals internal to a device or are terminals rarely used in typical measurement applications.