# NI-Sync Troubleshooting

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## Converting NI-Sync Error Codes to a User-Readable String

Explains an NI-Sync error code with a user-readable string.

1. Place Error Message on the diagram.
2. Wire the session handle of an NI-Sync session to `instrument handle`.
3. Place the Unbundle by Name function on the diagram.
4. Wire the error cluster of an NI-Sync function to `input cluster` of the Unbundle by Name function.
5. Left-click the Unbundle by Name function and select **code**.
6. Wire the output of the Unbundle by Name function to `error code` of Error Message.
7. Wire an indicator to `error message` of Error Message to display an explanation of the error code in string format.

## Displaying the State of a Trigger Line as an Array

You can assess the state of a trigger line by using niSync Properties to display the state of a trigger line.

1. Place niSync Properties on the diagram.
2. Click on niSync Properties, select **Trigger State**, and select the trigger line you would like to evaluate as the first property. You can select the following trigger lines:
   - PXI_Star Line State
   - PXI_Trig Line State
   - PXIe_DStarC Line State
   - PFI Line State
   - PFI_LVDS Line State
   - PXI_Star Peripheral Line State
   - PXIe_DStarB Peripheral Line State
3. Place the Number to Boolean Array function from the Conversion palette (**Data Types** » **Numeric** » **Conversion**) on the diagram. Wire the Number to Boolean Array function to the first parameter of niSync Properties.

4. Wire an indicator to the output of Number to Boolean Array.
   A Boolean array can be placed on the front panel.
5. Resize the array on the front panel so that the number of rows matches the number of lines in the chassis. For example, if you are trying to display the state of PXI_Star lines in a chassis with eight PXI_Star lines, the array should have eight Boolean indicators.

When you run the program, you can display the state of a single or multiple trigger lines. By default, the right-most bit of the binary value corresponds to the first element in the Boolean array. The corresponding Boolean indicator activates when the trigger line is in a high logic state, and deactivates in a low logic state.

**Tip** You can place the Reverse 1D Array function (**Data Types** » **Array**) on the diagram to reverse the Boolean array. This displays the array with the left-most bit of the bitmap as the first element of the array instead of the last.

## Manually Correcting a Time Reference

Manually adjust an external time reference using niSync Properties.

1. Place niSync Properties on the diagram.
2. Wire the instrument handle of the NI-Sync session to `reference`.
3. Select **Time Reference** » **Time Reference Correction** as the first parameter of niSync Properties.
4. Right-click the Time Reference Correction property and select **Change to Write**.
5. Wire a control or constant to Time Reference Correction.
6. Set the offset, in seconds, to apply to the time reference.

## Troubleshooting Clock Terminals

The following techniques can be used to troubleshoot errors you might encounter while routing clock signals and connecting clock terminals.

- Ensure that the source and/or destination terminals you selected are compatible with one another. Refer to Clock Terminal Connections for a list of compatible

clock routes.
- Ensure that the source and/or destination terminals you selected physically exist on your hardware. Refer to your hardware documentation for specific information on its terminals and connections.
- Ensure that the source and/or destination terminals you selected are not already in use by another application. Whenever you use Connect Clock Terminals, you must disconnect the terminal route using Disconnect Clock Terminals before you can use the terminals for another clock route.
- If you receive an error code, connect Error Message to return a readable explanation of the error code.
- Ensure that the clock terminal you are connecting is valid for the module you are using. For example, only time-based timing and synchronization devices can use the BoardClk terminal.

## Troubleshooting External Time References

Use the following techniques to troubleshoot errors you might encounter while setting and locking to an external timer reference.

- Ensure the time reference is available to the device using the Is Time Reference Present? property of niSync Properties.
- Ensure that you set your device to the right external time reference using the Time Reference property.
- Correct for the offset from the time reference using the Time Reference Correction property. You can return the offset using the Offset from Time Reference property.