

# **NIDays**

**THE LabVIEW CONFERENCE**

# Developing a Stand-Alone DAQ System With LabVIEW

Presenter Name Here

# New Stand-Alone NI CompactDAQ

## *Embedded Measurements and Logging*

- >50 I/O modules
- Up to 24-bit, Up to 1MS/s
- Dual-core processor
- 32 GB nonvolatile storage
- 0 to 55 °C operating temp
- 5g shock, 30g vibration
- Windows or Real-Time OS
- LabVIEW and DAQmx

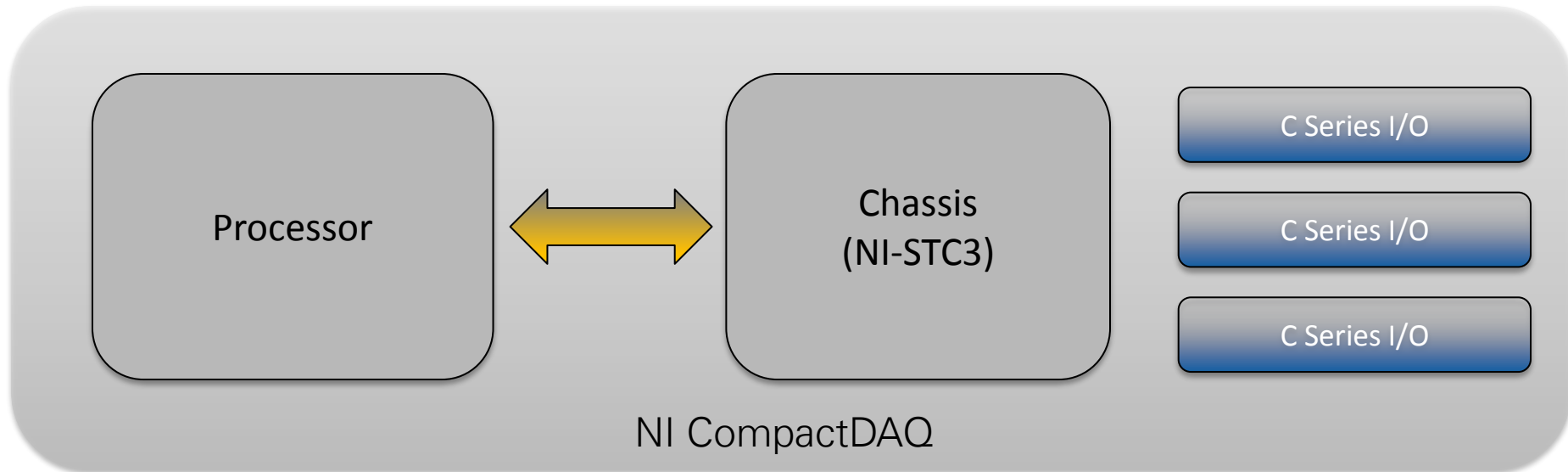


Stand-Alone

High-Performance

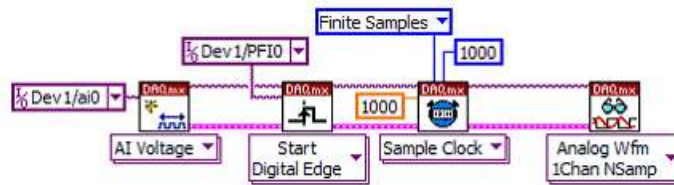
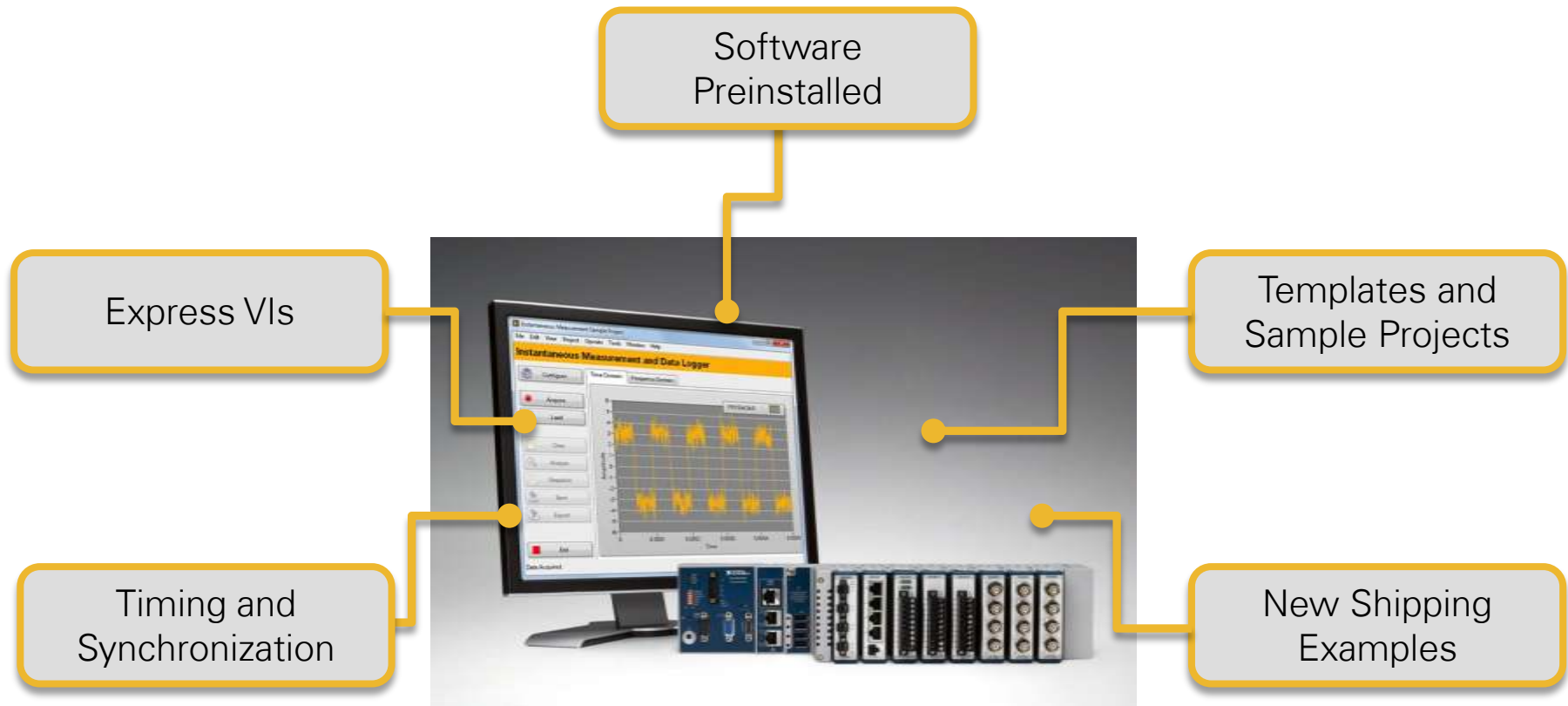
Flexible

# What is Stand-Alone NI CompactDAQ?



# LabVIEW and DAQmx Software

## *Flexible Software Solution*

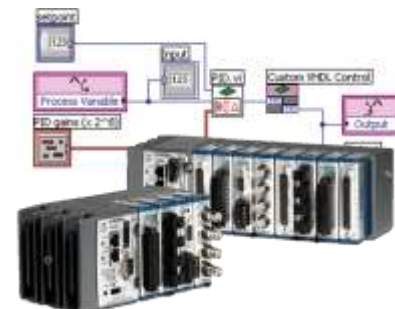
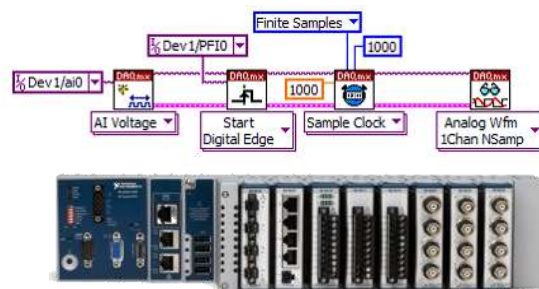


# Data Dashboard for LabVIEW

- Enables remote, portable monitoring of LabVIEW applications
- Available for iPad or Android phones and tablets *free of charge*
- Connect to Shared Variable Engine or LabVIEW Web Services



# When to Choose



	Stand-alone NI CompactDAQ	NI CompactRIO
Data acquisition & logging performance	●	●
Closed-loop control performance	○	●
Ease of programming for high-speed, streaming applications	●	○
Ease of programming for single-point applications	◐	●
Custom timing & signal processing	◐	●



Good



Better

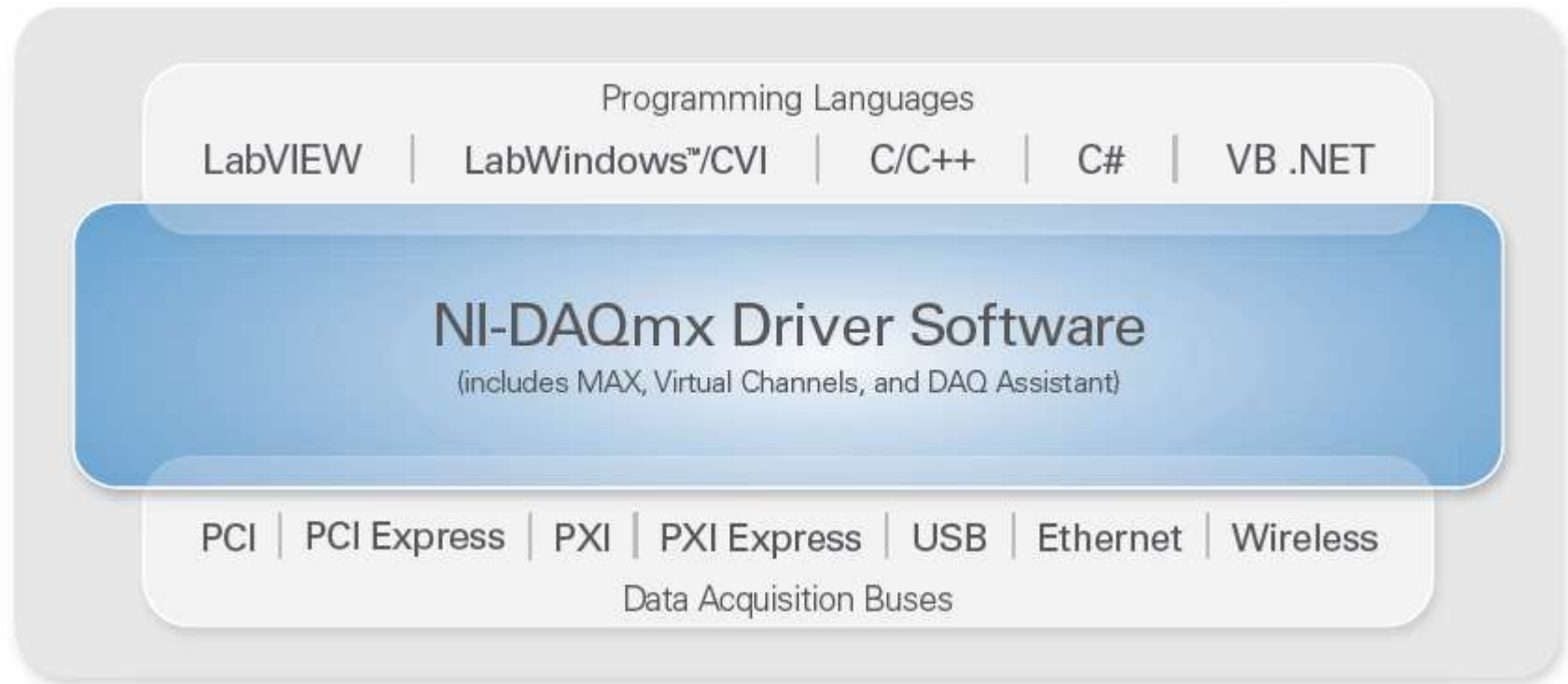


Best

# NI DAQmx

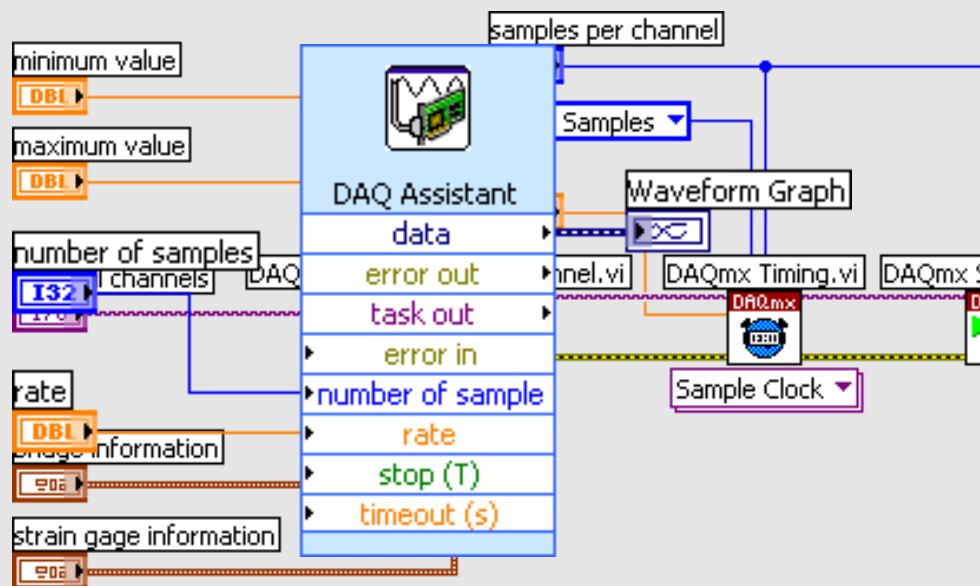


# Flexible NI-DAQmx Driver Software

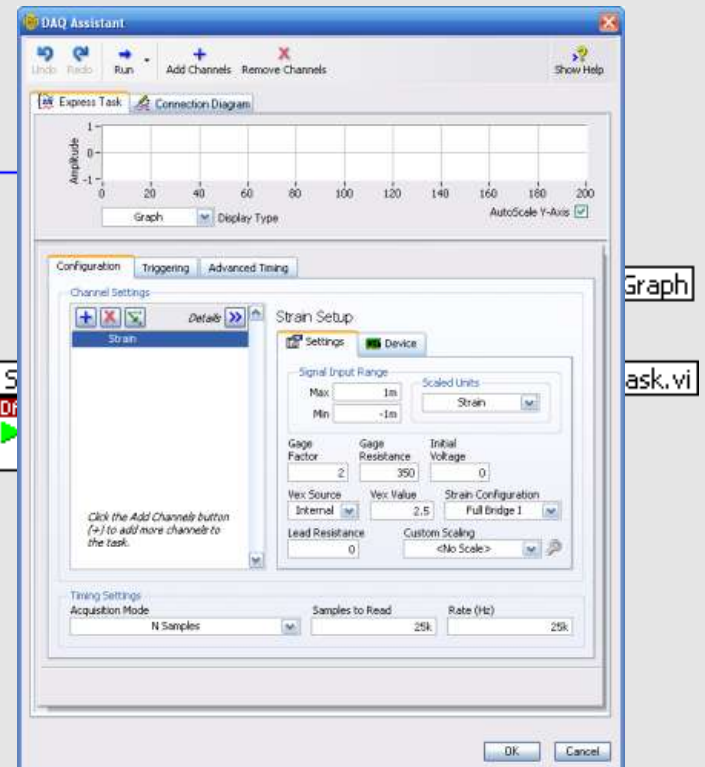


# Configuration and Programming Options

## Configuration

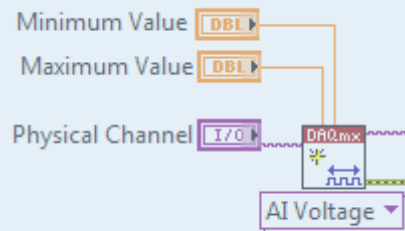


## Programming

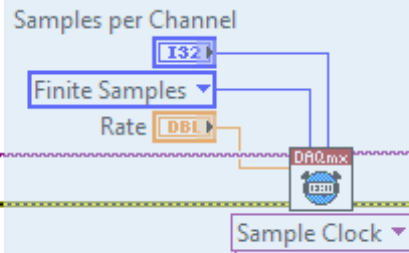


# Programming DAQmx

## Configure Channel



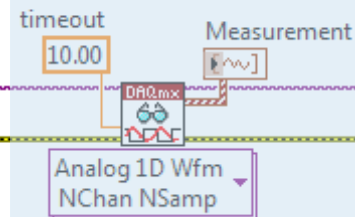
## Configure Timing



## Start



## Read Data

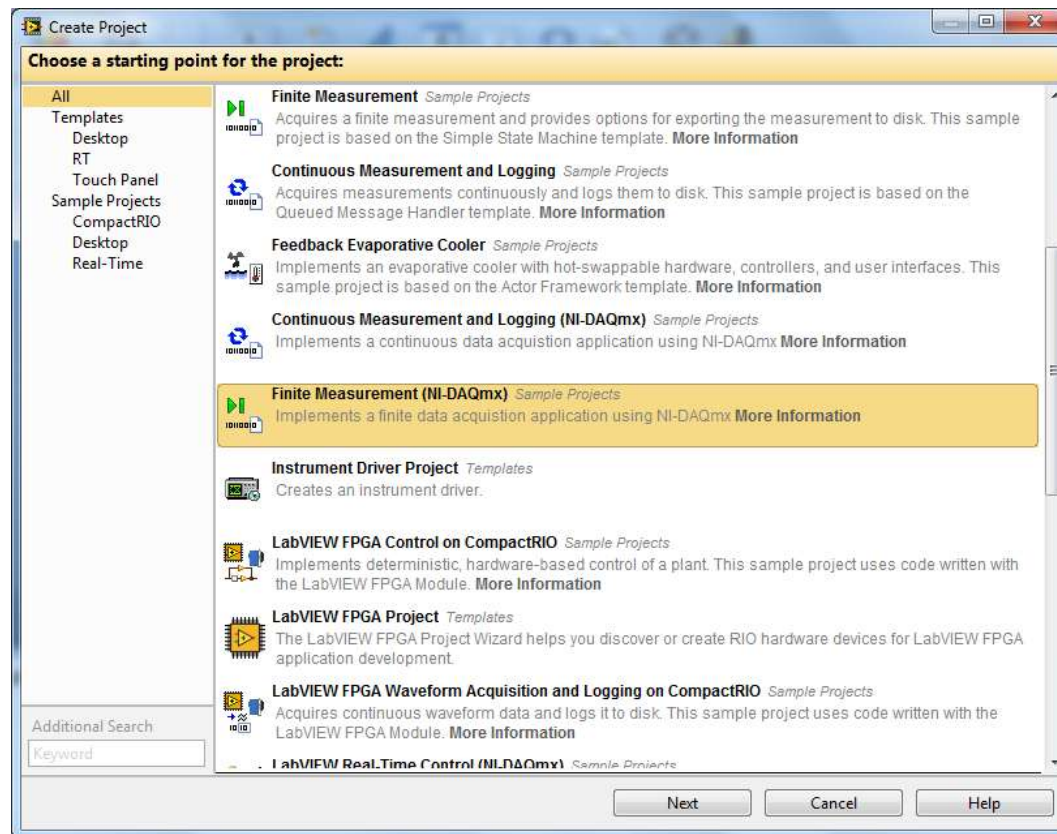


## Clear Task



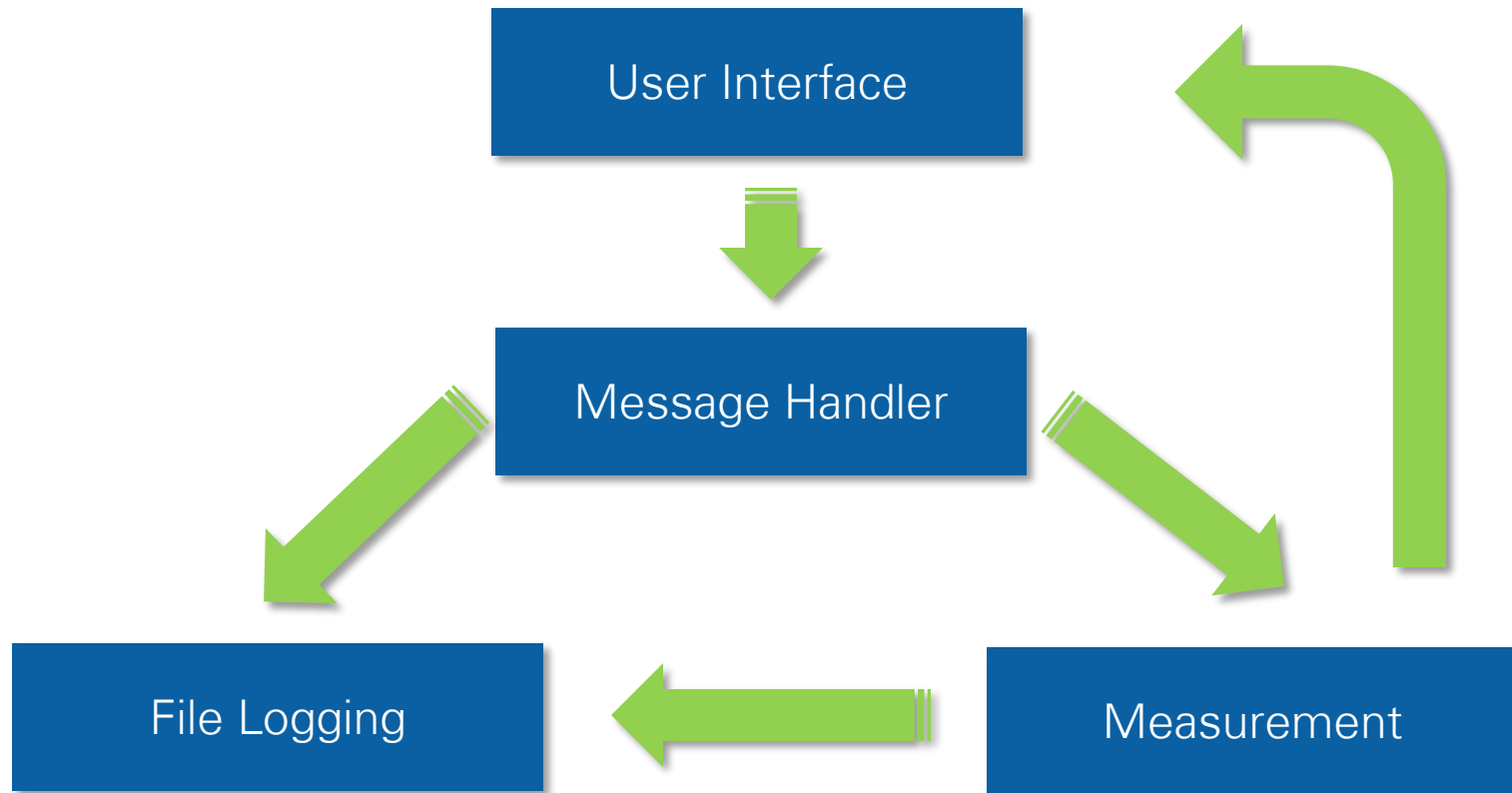
# LabVIEW 2012 Templates

## NI DAQmx Demo



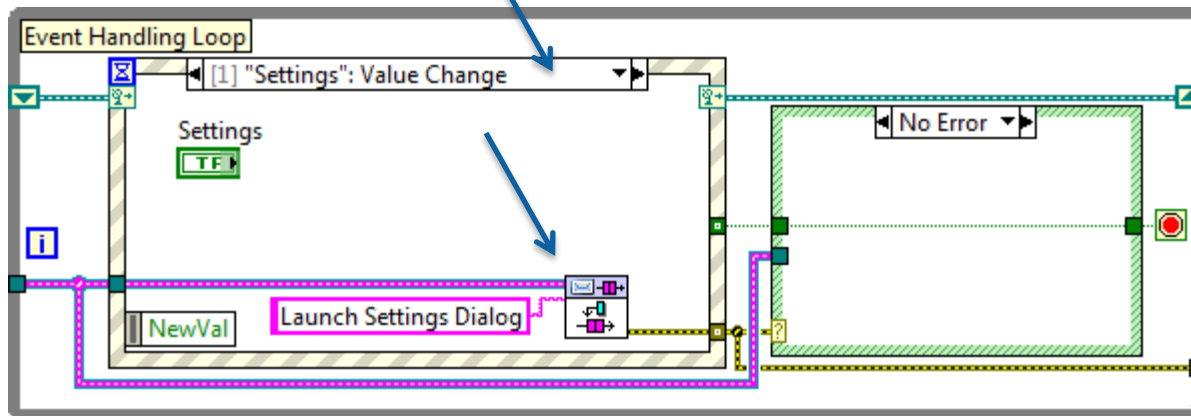
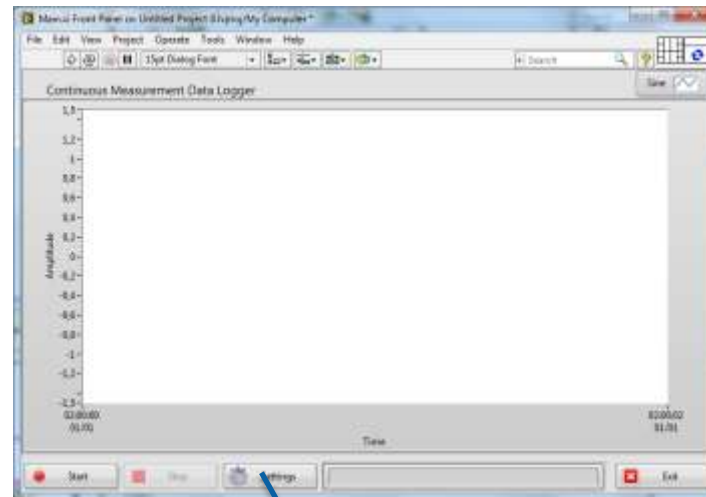
# Creating a Logger with Stand-Alone NI CompactDAQ

# Continuous Measurement Data Logger Architecture



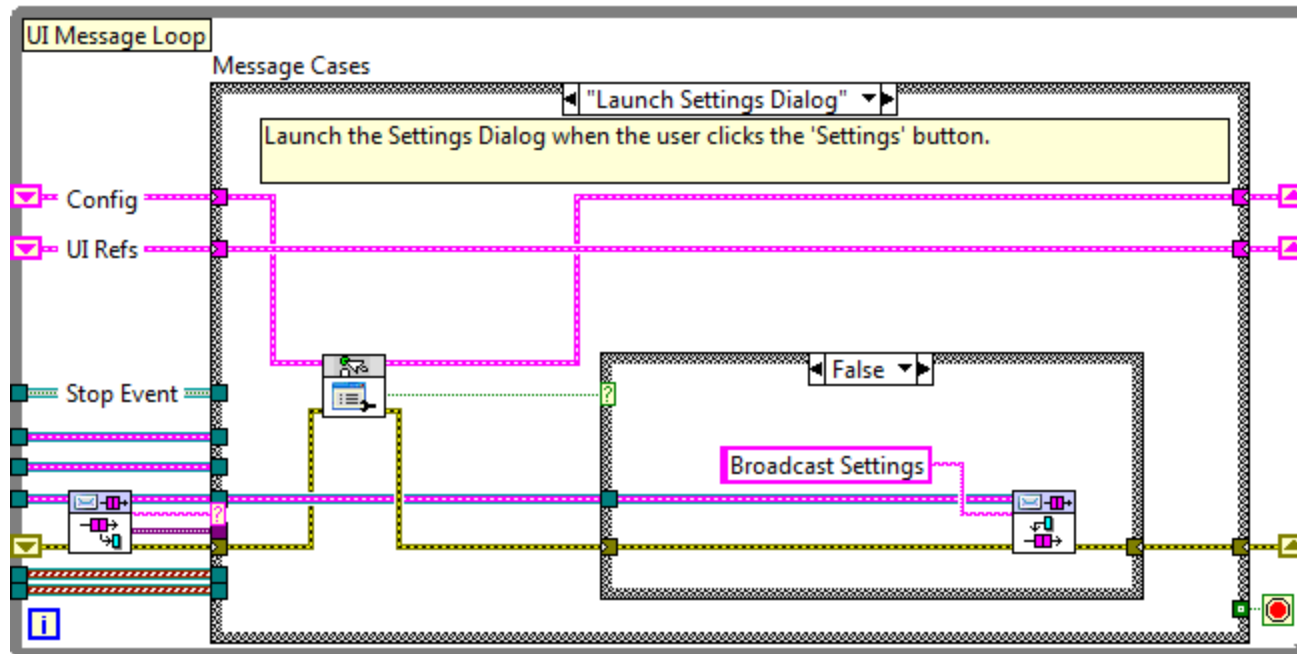
# Continuous Measurement Data Logger Architecture

## User Interface



# Continuous Measurement Data Logger Architecture

## Message Handler

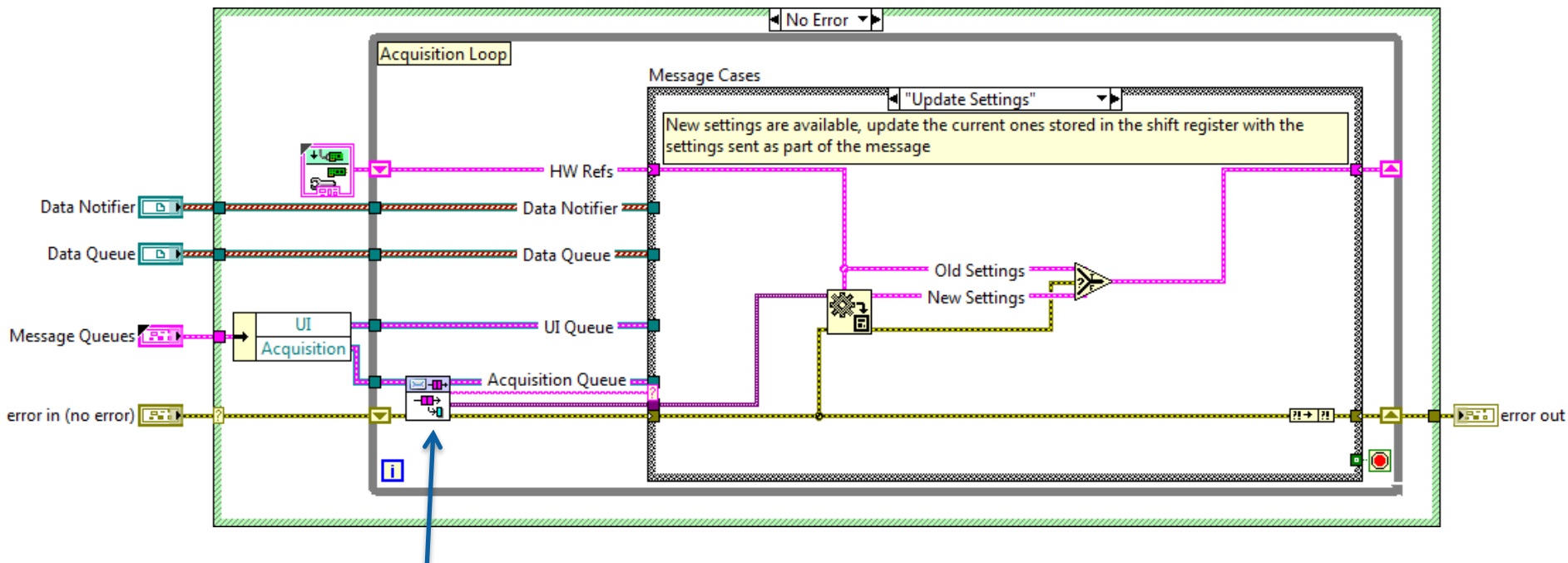




# Continuous Measurement Data Logger Architecture

## Measurement

Acquisition Message Loop.vi



## Message Handler

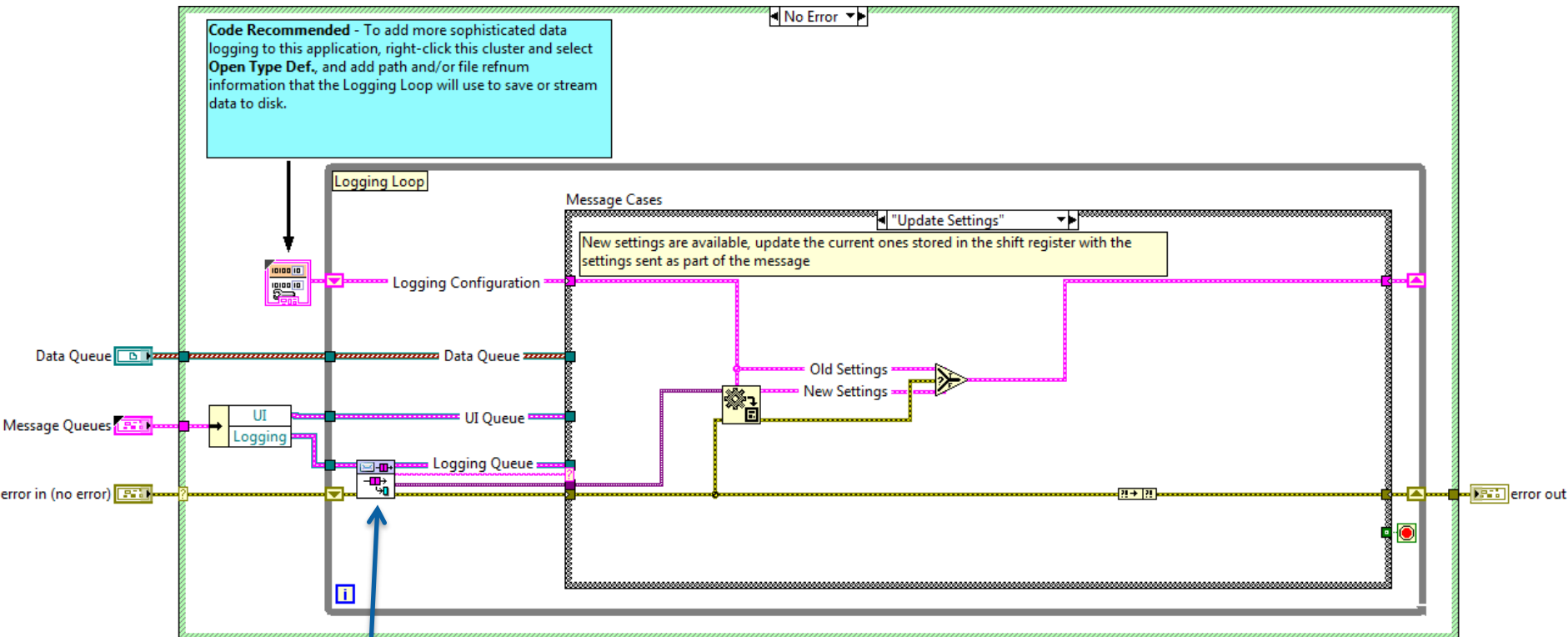
# Continuous Measurement Data Logger Architecture

## File Logging

Logging Message Loop.vi



**Code Recommended** - To add more sophisticated data logging to this application, right-click this cluster and select **Open Type Def.**, and add path and/or file refnum information that the Logging Loop will use to save or stream data to disk.



## Message Handler