Control System Studio: First Steps

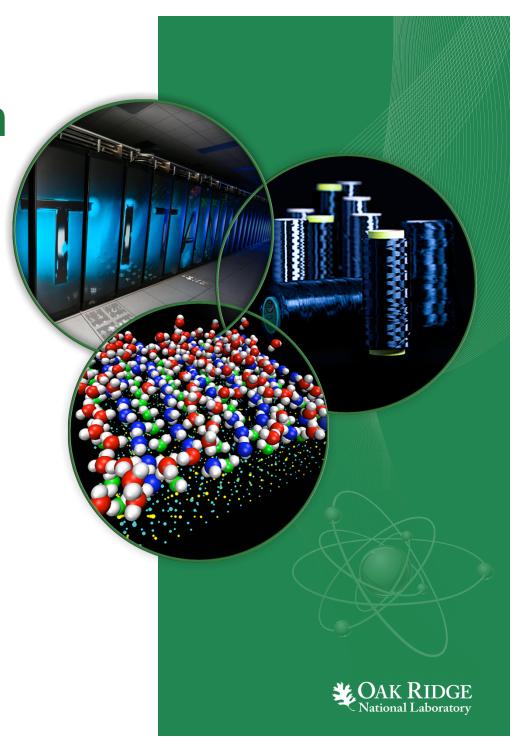
Kay Kasemir

**ORNL/SNS** 

kasemirk@ornl.gov

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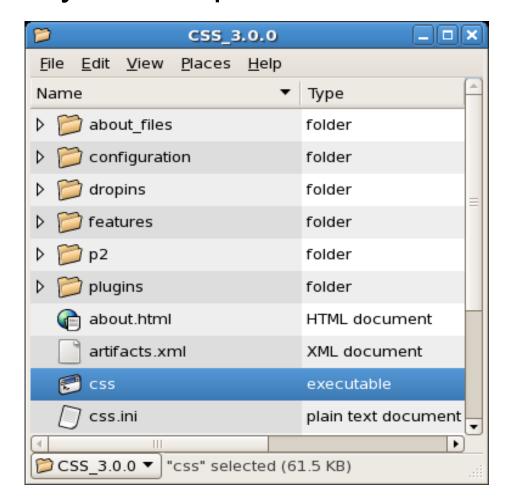


## **Exercise: Start CSS**

#### Precondition:

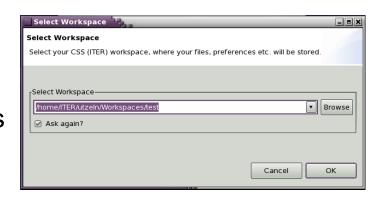
You somehow got CSS onto your computer

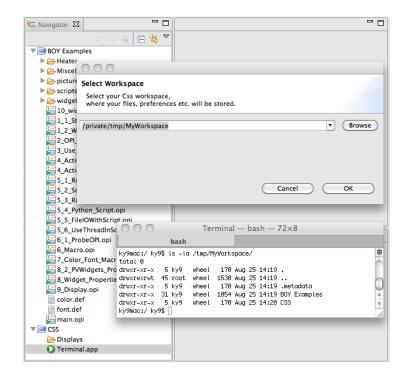
- Start the executable
  - Linux: css
  - Windows: css.exe
  - Mac OS X: css.app



## Workspace

- Workspace
  - Directory where you store files
  - Hidden .metadata directory with settings
- Most versions of CSS prompt for a workspace at startup
  - Check or change later via menu File,
     Switch Workspace
- Run only one instance of CSS per workspace!
  - Each user should have own workspaces
  - One for development, one for operation,

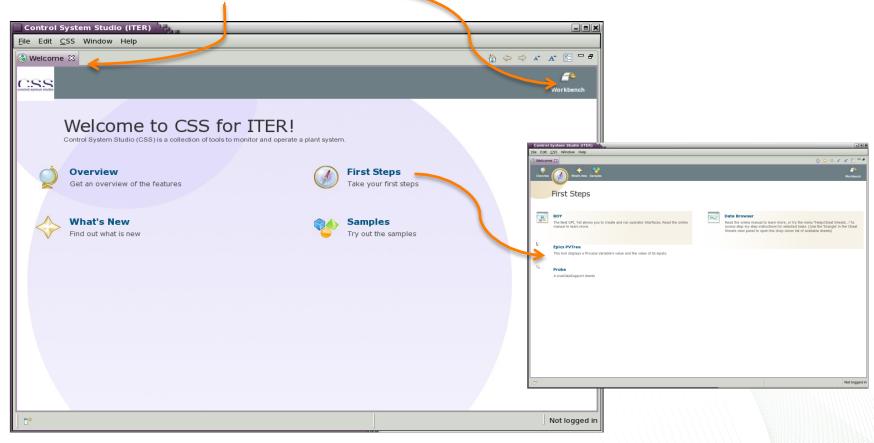




## "Welcome"

 Displayed when CSS opened for the first time (i.e. on a new workspace)

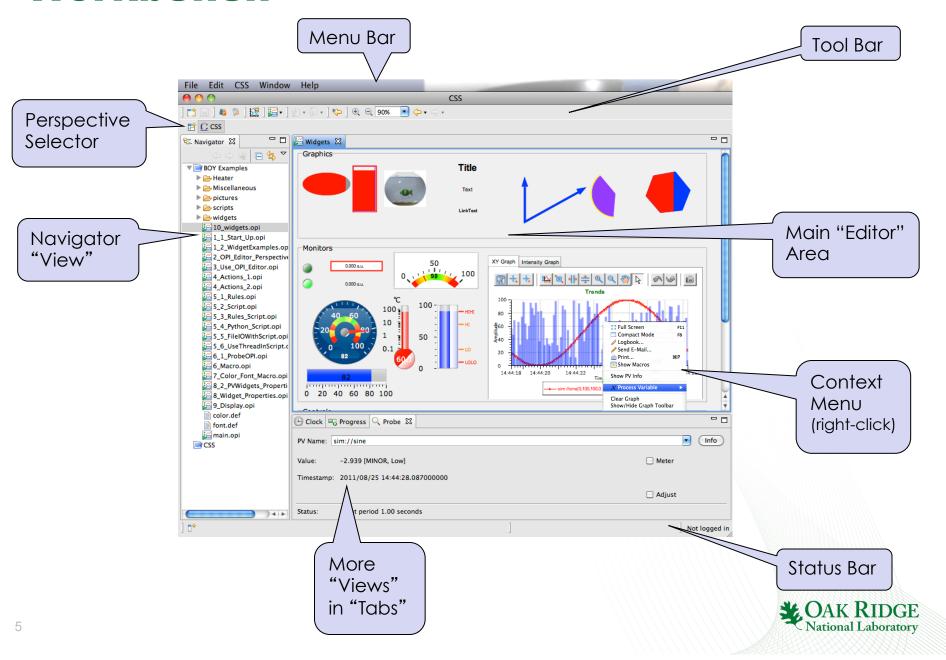
Close here or here



- Re-open: Menu Help, Welcome

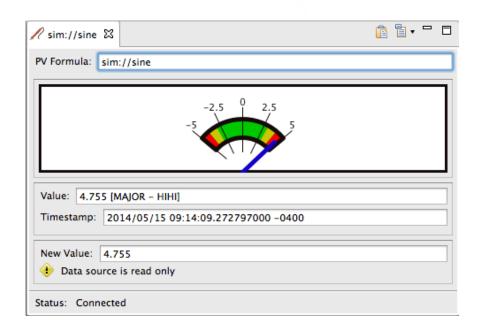


#### Workbench



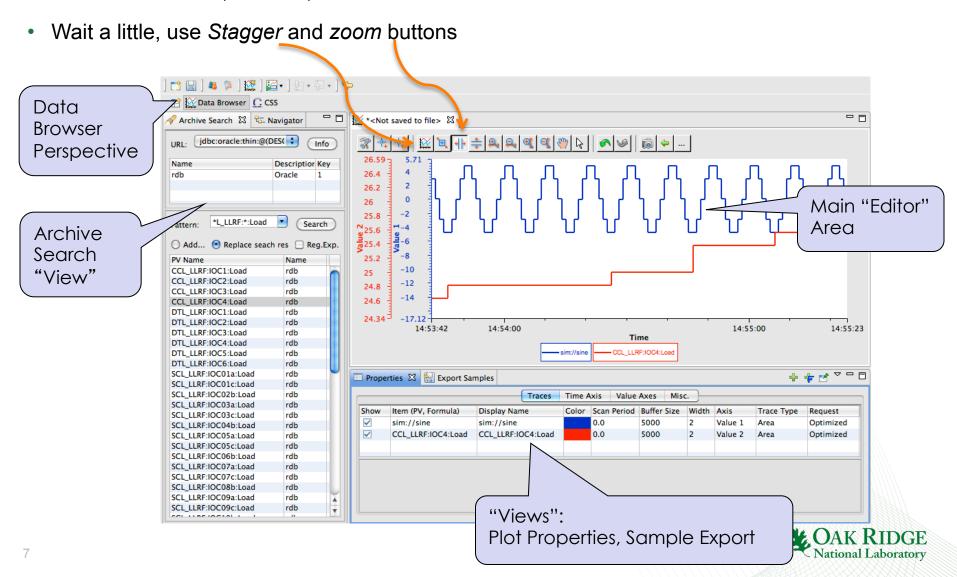
## **Exercise: Probe**

- Menu CSS, Diagnostic Tools, Probe
- Enter PV name "sim://sine"
- Close Probe
- Open it again
- Note previously entered PV in history
- Move Probe to other view area
- Close Probe



## **Exercise: Data Browser**

- Menu CSS, Trends, Data Browser
- Plot context menu, Add PV, "sim://sine"



# **Editors, Views, Perspectives**

## **Editors:** Central Workbench Area

- Text editor, BOY Operator Interface panel, Data Browser plot, ...
  - Associated with a file. "Do you want to save?" when closed.

# Views: Auxiliary panels around Editors

- Probe, Properties, Navigator, ...

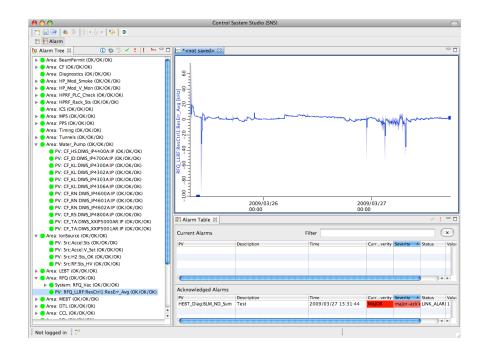
# Perspective: Arrangement of Editors and Views

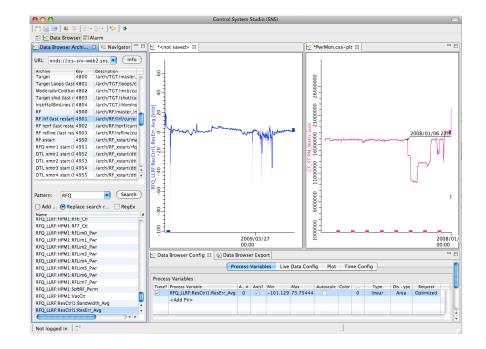
- Size of editor area. Actual editors remain.
- Choice of Views. Views change when switching perspectives.



# **Layout Options**

- Editors, Views can be closed, reopened, repositioned
  - Grab title of panel, move while watching black rectangle indicate possible target locations
  - Arrange 'behind' or 'beside' other panels
- Multiple Perspectives
  - Use Context Menu of Perspective to Name, Save, Close, Restore





# **Editor/View/Perspective Limitations**

Perspectives conserve the location of 'Views'.

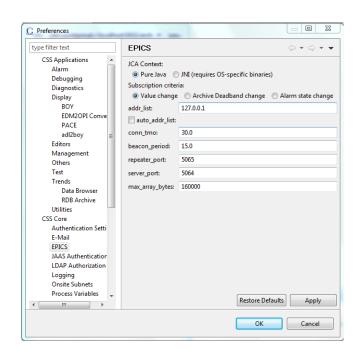
What we would like to "freeze" the display:

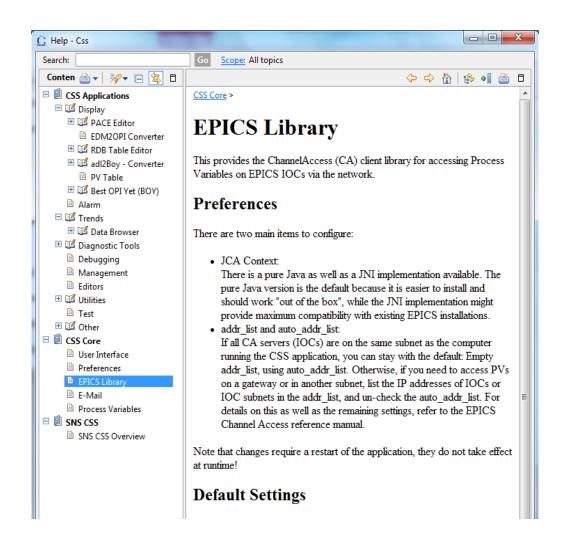
\*.opi, Data Browser, Alarm Panel, ..



# **Exercise: Preferences, Online Help**

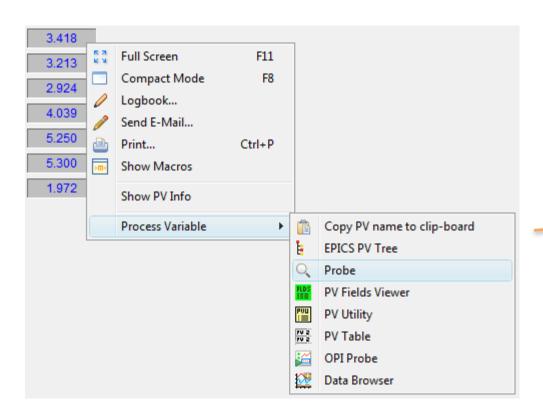
- Menu Edit, Preferences resp. Help, Help Content
- Locate preferences and help for
  - CSS Core, EPICS
  - CSS Applications,
     Trends, Data Browser

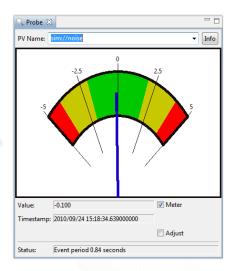




## **CSS PV Exchange**

- PV in <u>any</u> CSS Tool
  - → Context Menu → Select other PV Tools
  - Opens other tool with that PV







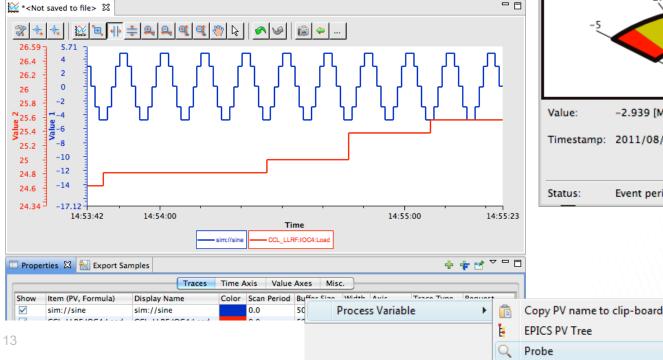
# **Exercise: Probe via PV Exchange**

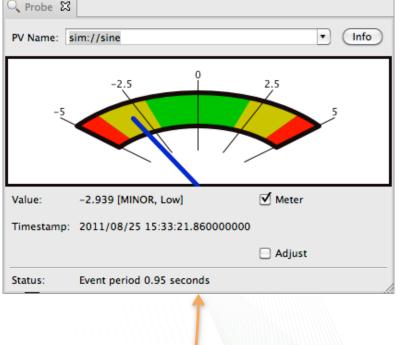
# Open Probe on PV from Data Browser

Properties Panel

Context menu of "sim://sine" trace

Process Variable, Probe





**Exercise: Things to Try** 

EPICS PV Tree 🖾

PV: RFQ LLRF:ResCtrl1:ResErr Avg

▼ PV 'RFQ\_LLRF:ResCtrl1:ResErr\_Avg' (ai) = 2.11

INP 'RFQ\_LLRF:ResCtrl1:ResErr\_Smo' (sub) = 2.214
INPA 'RFQ\_LLRF:ResCtrl1:ResErr' (calc) = 2.037

INPB 'RFQ\_LLRF:FCM1:CtlAmpSet' (ao) = 0.352

▼ INPD 'RFQ\_LLRF:ResCtrl1:Phase\_Df' (ai) = 4.604

INP 'RFQ\_LLRF:ResCtrl1:PhaseFit.VALB' = 5

▼ INPE 'RFQ\_LLRF:ResCtrl1:Phase\_Df.SEVR' (ai) = NO\_ALARM

▼ INP 'RFQ\_LLRF:ResCtrl1:PhaseFit.VALB' (genSub) = 5

INPA 'RFQ\_LLRF:ResCtrl1:Cfg' (mbbi) = I/Q Fit [INVALID, UDF\_ALARM]

INPB 'RFQ\_LLRF:FCM1:Decay\_Wfl' (waveform) = -6

INPA 'RFQ\_LLRF:FCM1:Decay\_WfR' (waveform) = 9825 0820 0715 0602 0620

#### **EPICS PV Tree**

Trace PV links

#### Clock

– What's special about it?

## **Therapist**

When all else fails

