NWSTC

CHPS Job Sheets

A Supplemental Resource for the CHPS Display Configuration Course

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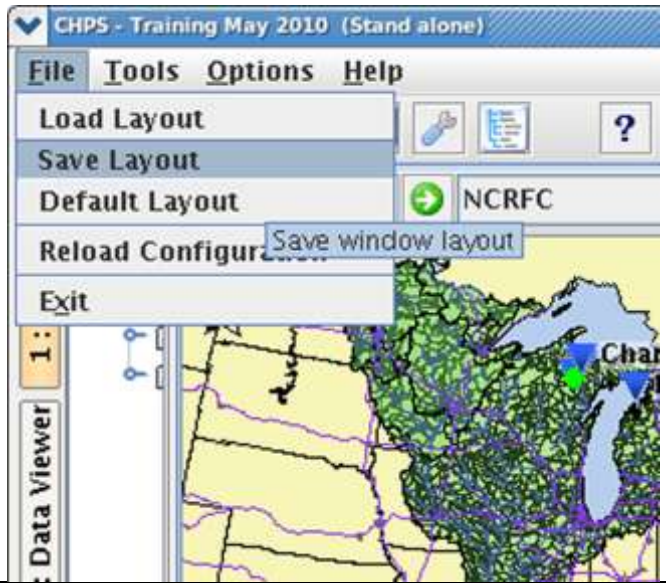
Saving a Display Layout

Objective: Save a user-customized layout (not a configuration change) for future use.

STEP 1 Save a Custom Layout

Step	Action	Notes
1	Open the CHPS Interactive Forecast Display (IFD) using the method in place at your office.	For instance, some RFCs launch from the right-click menu in AWIPS.
2	Arrange the panels by dragging and dropping them into place.	Keep arranging them until you find a layout you like.
3	Save the layout changes by clicking the “File” menu and selecting “Save Layout”. 	

STEP 2 Verify the Results

Step	Action	Notes
1	Relaunch CHPS.	
2	The interface should have the panels where you specified.	

Revert to the default layout by selecting “Default “Layout” from the “File” menu.

Creating a Zoom Extent

Objective: Add a default zoom extent to allow for easy navigation across the map to a particular River Basin (Forecast Group). Before starting this exercise, close all CHPS applications.

STEP 1 Edit Explorer.xml

Step	Action	Notes
1	Navigate to the **/Config/SystemConfigFiles** directory.	
2	**Open** ***Explorer.xml***.	Check the workflow's contents and structure.
3	**Create** a new ***extraExtent*** element underneath the **defaultExtent** element.	Extra zoom extents are displayed in the zoom extents menu in the order in which they are defined in the code.
4	**Assign** the new "*extraExtent*" element: ❑ Id ❑ Name ❑ coordinates	For example: id: XXRFC_ForecastGroup name: Forecast Group left: -85.852 right: -85.215 top: 45.829 bottom: 45.557
5	Save the file.	

STEP 2 Inspect the Results

Step	Action	Notes
1	Restart the CHPS application.	
2	**Check** the changes in the available zoom extents menu on the Explorer Panel. Try the new zoom extent.	

Adding a Background Map

Objective: Add a background map layer. The map layers displayed in CHPS are shapefiles. Before starting this exercise, close all CHPS applications.

STEP 1 Edit Explorer.xml

Step	Action	Notes
1	Copy the new map layer files to the **/Config/MapLayerFiles** directory.	Original locations vary depending on how you acquire the new file.
2	Open the **Explorer.xml** file in the **/Config/SystemConfigFiles** directory.	
3	Search for an existing **esriShapeLayer**. 	
4	Copy and paste the entire **esriShapeLayer** section and adjust as needed.	Set the name and id (for example, “Roads”). Define a shape file name (for example “roads.shp”). Set the line color.
5	Save the **Explorer.xml** file.	

STEP 2 Inspect the Results

Step	Action	Notes
1	Restart the CHPS application.	
2	Inspect the map layers.	

Adding Pre-Configured Displays

Objective: Add a display group to the configuration file.

STEP 1 Analyze DisplayGroups.xml

Step	Action	Notes
1	Open the /Config/SystemConfigFiles/DisplayGroups.xml file.	
2	Compare display groups to the pre-configured displays available through the **Shortcuts** button ("star" icon) in the time series display to ensure they are configured.	
	Compare these to the basin list in the IFD Forecast tree and the pre-configured graphs in the graphs tab.	

STEP 2 Edit DisplayGroups.xml

Step	Action	Notes
1	Navigate to the segment displayGroup section where you are adding a preconfigured display.	
2	Copy an existing display element (including all nested elements).	
3	Paste the data where you wish to add the display.	
4	Rename the display properties.	Change the properties highlighted in the code.
5	Save the file.	

```
<display name="Plot display title">
<subplot>
   <timeSeriesSet>
   <moduleInstanceId>ImportSHEF</moduleInstanceId>
   <valueType>scalar</valueType>
   <parameterId>MAP</parameterId>
   <locationId>NEWN5</locationId>
   <timeSeriesType>external historical</timeSeriesType>
   <timeStep unit="hour" multiplier="6" />
   <readWriteMode>add originals</readWriteMode>
   </timeSeriesSet>
</subplot>
</display>
```

STEP 3 Inspect the Results

Step	Action	Notes
1	Start the CHPS application.	If CHPS is still open, press F5.
2	Open the Time series display from the CHPS Explorer.	
3	Consider the following questions: • Does the new group display correctly? • Did anything change in the IFD Forecasting tree?	
4	Repeat the steps above to add additional plots as needed.	

Configuring GraphGen

Objective: Complete the steps necessary for the GraphGen panel to appear and function within the CHPS IFD.

STEP 1 Check for Required Files

Step	Action	Notes
1	Navigate to the **/Config** directory.	
2	Verify the following PiServiceConfigFile are in the directory noted above: **HEFSGraphGen.xml** **GraphGen.xml**	If any required files are not in the directories, download a copy from the Deltares ftp site (ftp://ftp.wldelft.nl/).
3	Navigate to the **/Config/IdMapFiles** directory.	
4	Verify the following mapping files for the import/export process are in the directory noted above: **IdExportPiService.xml** **IdImportPiService.xml**	

STEP 2 Edit Filters.xml

Step	Action	Notes
1	Navigate to the **/Config/RegionConfigFiles**.	
2	Make backup copies of **Filters.xml**, **LocationSets.xml**, **ThresholdValueSets.xml** and **ModuleInstanceSets.xml**. Example: **cp Filters.xml Filters_previous.xml .**	
3	Open **Filters.xml** and copy an existing filter.	
4	Paste the new filter into **Filters.xml**.	
5	Rename the child foreignKey to your RFC's identifier. **<!-- ADDED FOR GRAPHGEN -->** **<filter id="GraphGen" name="GraphGen">** **<child foreignKey="ABRFC"/>** **</filter>** </filters>	
6	Save the file.	

STEP 3 Edit LocationSets.xml

Step	Action	Notes
1	Navigate to the **/Config/RegionConfigFiles**.	
3	Open **LocationSets.xml** and copy an existing location set.	
4	Paste the new location set into **LocationSets.xml**.	Already defined if your RFC has MEFP configured.
5	Rename the location set id.	
6	Save the file.	

STEP 4 Edit ModuleInstanceSets.xml

Step	Action	Notes
1	Navigate to the **/Config/RegionConfigFiles**.	
3	Open **ModuleInstanceSets.xml** and copy an existing module instance set.	
4	Paste the new module instance set into **ModuleInstanceSets.xml**.	
5	Edit the module instance set id, name, and module instance id.	Must be unique names and ids.
6	Save the file.	

STEP 5 Edit ThresholdValueSets.xml

Step	Action	Notes
1	Navigate to the **/Config/RegionConfigFiles**.	
3	Open **ThresholdValueSets.xml** and copy an existing module instance set.	
4	Paste the new module instance set into **ThresholdValueSets.xml**.	
5	Edit the threshold value set id and value fields as needed.	Must be a unique id.
6	Save the file.	

STEP 6 Inspect the Results

Step	Action	Notes
1	Restart the CHPS application.	
2	Verify the GraphGen panel appears.	

Adding a Location to Topology

Objectives: 1) Add a new location to the Interactive Forecast Display (IFD) topology panel for an existing forecast group. 2) Link display thumbnails to the plot overview panel for the segment.

STEP 1 Add a New Location in the Topology Panel

Step	Action	Notes
1	Navigate to the **/Config/SystemConfigFiles** directory.	
2	Open the **Topology.xml** file.	Locate the section defining the forecast group.
3	Copy and paste an existing node element.	The order segments are defined is the order they display in the topology panel.
4	Save the **Topology.xml** file.	

STEP 2 Link the Plot Overview to the New Segment

Step	Action	Notes
1	Navigate to the **/Config/SystemConfigFiles** directory.	
2	Open the **DisplayGroups.xml** file.	Locate the display group configured for your segment (all configured displays for the segment).
3	Add the new segment **nodeId** to the display group.	The **nodeId** goes directly underneath the **displayGroup** element and before the **display** element.
4	Save the **DisplayGroups.xml** file.	

STEP 3 Inspect the Result

Step	Action	Notes
1	Restart CHPS.	
2	Open the topology display panel.	
3	Click the plot overview tab when the new segment is selected.	
4	Inspect the result.	

XML File Definitions and Locations

The following list contains the subdirectories of the **/Config** directory. The file listing below may not match your RFC's **/Config** directory because some files are optional and others may be RFC specific.

CoefficientSetsFiles directory contains coefficient sets used for the transformation module.

Files	Contents
Flood_Coefficients.xml	Location ID, flood stage, and flood flow for all locations in the HSA
SACSMA_Coefficients.xml	Definition of the maximum values allowable for SACSMA parameters
Ratings.xml	Rating curves for specified locations used for STAGEQ modules

ColdStateFiles holds all cold state files for each segment in the RFC forecast area broken down into segment subdirectories.

Files	Contents
Model_Segment_ UpdateStates Default.zip	Subdirectory for each segment with state information for a particular model

DisplayConfigFiles defines layout of user displays, including What-if scenarios, Grid Display, etc.

Files	Contents
ManualForecastDisplay.xml	Definitions for the state times (e.g., warm state or cold state)
SpatialDisplay.xml	Time series display definitions
SystemMonitorDisplay.xml	Defines the appearance of the system monitor display window
TaskRunDialog.xml	Defines the appearance of the interactive forecast display blocks
WhatIfScenarioFilters.xml	Configuration of time series what-if scenarios may be applied to input data

IconFiles

Files	Contents
Various gifs	Icons used in the displays and button bar for different location types, such as reservoir, gage, etc.

IdMapFiles

Files	Contents
IdExport*module*.xml	File maps internal locations and parameters to locations and parameters as exported to specific module/model (e.g., SACSMA, SNOW17, and LAGK)
IdImport*module*.xml	File maps internal locations and parameters to locations and parameters as exported to specific module/model (e.g., SACSMA, SNOW17, and LAGK)
Id*datatype*.xml	File maps external locations, parameters, and qualifiers from imported datatype message to internal CHPS locations, parameters, and qualifiers (e.g., SHEF, PIXML)

MapLayerFiles

Files	Contents
Rfc_current_basin.shp	Shapefile containing the geometric extent of the polygons used in map displays and spatial interpolation
Rfc_current_basin.shx	Shapefile index referencing the geometric extent and the attributes table used in map displays and spatial interpolation
Rfc_current_basin.dbf	Shapefile attributes table

ModuleConfigFiles

Contents
All the registered module instance files for the CHPS system. Separated into segment and preprocessing subdirectories.

Segment subdirectory

Files	Contents
Module_Segment_operation_Forecast.xml	Module instance definitions for a specific segment
Module_Segment_operation_UpdateStates.xml	Latest warm state updates to the time series data in the module instance

Preprocessing directory

Files	Contents
Forecastgroup_module_Forecast.xml	Definition of the module instance for a specific segment
ForecastGroup_Module_UpdateStates.xml	Definition of the latest warm state updates for time series data in the module instance
Module_PreProcessing_parameter.xml	Handles preprocessing of data for module instance
SetTimes_Forecast.xml	Handles time attributes for forecast runs
SetTimes_LastObserved.xml	Handles time attributes for previous runs

ModuleParFiles

Files	Contents
Model_segment_UpdateStates.xml	External module parameters, separated into subdirectories for each segment

ModuleDataSetFiles subdirectory

Files	Contents
RFC_ColdStates.zip	Zip file holding all ColdState.zip files for all segments and models
CHPS_OHDModels.zip	Updates OHD-binaries by running the Update_models workflow

ReportTemplateFiles subdirectory

Defines HTML template files used in creating HTML reports for use on the web server

RootConfigFiles directory defines the behavior of CHPS on the local machine (not synchronized or available in the database (must be installed locally with system)).

Files	Contents
clientConfig.xml	Client type (OC or SA) definition.
oc_synchConfig.xml	Specification of JMS connections to MC(s) (DO NOT EDIT!).
synchChannels.xml	Displays channels used by an OC and download of configurations.
synchProfiles.xml	Provides fine-tuned control over database synchronization.

RegionConfigFiles – defines regional configuration, including all locations, parameters, etc.

Files	Notes
ColdModuleInstanceStateGroups.xml	Contains data for configuring the cold module instance state groups.
Filters.xml	Contains the definitions of filters in the main map display.
Grids.xml	Contains grid definitions (both regular and irregular).
LocationSets.xml	Groups locations into various sets (e.g., gages, catchments, reservoirs).
Locations.xml	Lists all locations in RFC configuration.
ModifierTypes.xml	Defines which modifiers are available for time series data and parameters.
ModuleConfigProperties.xml	Defines several module strings.
ModuleInstanceDescriptors.xml	Each module instance configured in CHPS must be registered in this configuration file so it is recognized by CHPS.
ModuleInstanceSets.xml	Groups modules together into various sets, easier for processing.
Parameters.xml	Contains all the definitions of all parameters used in CHPS including the list of supported parameters.
Polygons.xml	All geographic properties of polygons are defined in this file, which commonly refers to a shape file.
Qualifiers.xml	Contains definitions of all of the qualifiers applied to parameters used.
Thresholds.xml	Definitions of (unique) thresholds and details for each station in each river basin.
ThresholdValueSets.xml	The grouping of the (selected) thresholds.
ThresholdWarningLevels.xml	Time series (location/parameter) and actual levels information.
TimeSteps.xml	Defines the time step attributes.
Topology.xml	Configuration files for the topology panel and display.
UnitConversionsDescriptors.xml	Defines the unitConversionsDescriptor id.
ValidationRuleSets.xml	Contains definitions of all validation rules. Validation rules allow quality checking of all scalar time series data.
WorkflowDescriptors.xml	Each configured workflow must be registered in this file so CHPS recognizes the workflow.

SystemConfigFiles defines system configuration items including the plug-ins available to the system, definitions, etc.

Files	Contents
DisplayDescriptors.xml	Registers display plug-ins called from the GUI.
DisplayGroups.xml	Defines what plots are connected to each segment as well as the display of those plots.
DisplayInstanceDescriptors.xml	Defines the displays used in CHPS.
Explorer.xml	Defines the main display and configures the system settings.
LocationIcons.xml	Defines the location icons to be used for each site.
ModuleDescriptors.xml	Registers module plug-ins that can be used in workflows.
TimeSeriesDisplayConfig.xml	Layouts of the time series display.

UnitConversionsFiles defines unit conversions between external sources and units used in CHPS.

Files	Notes
displayEnglishUnits.xml	Contains unit conversions from metric and English units.
ExportSHEF.xml	Defines unit conversions for exports from metric units and English units.
ImportEnglishUnits.xml	Defines unit conversions for imports between English units and metric units.
ImportSHEF.xml	Defines unit conversions for imports between English units and metric units.

WorkflowFiles directory

Contains all workflows within an RFC area of responsibility. Subdirectories include “System and preprocessing” and “Forecast groups”.

System and Preprocessing subdirectory

Files	Notes
Amalgamate.xml	Workflow that merges time series data as new data becomes available.
ImportGrids.xml	Workflow activities to import gridded data.
ImportRating.xml	Workflow activities to import ratings.
ImportScalars.xml	Contains workflow activities involving importing scalar data.
Preprocess.xml	Contains workflow activities involving RRS preprocessing for the RFC.
RFC_Forecast.xml	Contains overall workflow activities for the RFC at the system level.
RFC_PreProcessing_Forecast.xml	Contains workflow activities handling preprocessing for the RFC.
RFC_PreProcessing_UpdateStates.xml	Contains workflow activities handling the preprocessing involving update states for the RFC.
RFC_UpdateStates.xml	Contains workflow activities for the RFC involving update states.
RollingBarrel.xml	Contains the workflow to get rid of expired data.

Forecast Group Subdirectory

Files	Notes
ForecastGroup_Forecast.xml	Forecast group level workflow activities
ForecastGroup_UpdateStates.xml	Forecast group update states
ForecastGroup_PreProcessing_Forecast.xml	Forecast group preprocessing activities
ForecastGroup_PreProcessing_UpdateStates.xml	Forecast group update states preprocessing activities
Segment_Forecast.xml	Segment level workflow activities
Segment_Flow_Forecast.xml	Segment level forecast activities
Segment_UpdateStates.xml	Segment level update states activities