NWSTC

CHPS Job Sheets

A Supplemental Resource for the CHPS Advanced Configuration Course

Table of Contents

Adding a New Data Source

Objective: Set up a new data source to feed into CHPS.

Note: Some of the initial steps to setting up a data source involve working with the data source owner and the AWIPS Focal Point. Once the data is received through either the SBN or LDAD, and is sent to the import directory, use the steps below.

If the data is not in a CHPS-compatible format, you also need to set up an adapter before completing this job sheet. For more information on adapters, see the Writing an Adapter Job Sheet.

STEP 1 Create the Import Module

Step	Action	Notes
1	Log onto an AWIPS workstation.	Logging in under your user ID makes it easier to determine who made changes to the system.
2	Navigate to the **import** directory in **ModuleConfigFiles**: **cd /awips/chps_share/sa/<user>/xxrfc/Config/ModuleConfigFiles/import**	Where **xxrfc** is the ID for your office. **Note**: Your base configuration files may be in another location.
3	Following the format of other imports, define the following <general> information: **<importType>** **<directory> (data location)** **backup/failed directory (if you have one)** **locations** **parameters** **qualifiers** **<IdMap> (if needed)**	IDMap is needed to convert the locations/parameters to those usable in FEWS. Step 5 gives details on how to create one.
4	Following the format of other imports, define the following <timeSeriesSet> information: **<moduleInstanceId>** **<valueType>** **<parameterId>** **<locationSetID>** **<timeSeriesType>** **<timeStep>** **<readWriteMode>** **<synchLevel>** **<units>** **<expirytime>**	
5	Once all the variables above are defined, save and close the file.	

STEP 2 Register the Import Module Instance

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **ModuleInstanceDescriptors** file using an XML editor.	
3	Use the following format to add a module instance for your data import: **<moduleInstanceDescriptor id = "ImportYYYY">** **<description> Imports YYYY data </description>** **<moduleId>TimeSeriesImportRun</moduleId>** **</moduleInstanceDescriptor>**	Where **YYYY** is the name or type of data you are importing. For example, ImportSHEF.
4	Save and close the file.	

STEP 3 Add the Module Instance to a Workflow

Step	Action	Notes
1	Navigate to the **WorkflowFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/WorkflowFiles**	
2	Most offices need to navigate one more directory down to find the import workflow files. **cd system+preprocessing**	
3	Use an XML editor to open the import configuration workflow files related to your new source.	Typically the **Import.xml**, **ImportScalars.xml**, and **ImportRatings.xml**.
4	You may or may not have to add the module instance to the file. Here is an example using SHEF: **<activity>** **<runIndependent> true</runIndependent>** **<moduleInstanceId>ImportSHEF</moduleInstanceId>** **</activity>**	
5	Save and close the file.	

STEP 4 Create locationSets (Optional)

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	All locations referenced in one instance.
2	Open the file **LocationSets.xml** using an XML editor.	
3	Group your locations using other locationSets as examples. The format looks like the following: **<locationSet id = "Catchments_ZZZ">** **<locationId>LocA</locationId>** **<locationId>LocB</locationId>** **<locationId>LocC</locationId>** **<locationId>LocD</locationId>** **</locationSet>**	
4	Save and close the file.	

STEP 5 Create IdMaps (If Needed)

Step	Action	Notes
1	Navigate to the **IdMapFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/IdMapFiles**	
2	Open the appropriate IdImport file using an XML editor. For example, the SHEF file would be **IdImportSHEF.xml**.	
3	Define the external parameters and match them to an internal parameter. For example, the SHEF parameters may look like the following: **<parameter external="TAQPM" internal="MAT"/>** **<parameter external="PPQPM" internal="MAP"/>** **<parameter external="TAQFM" internal="FMAT"/>** **<parameter external="PPQFL" internal="FMAP"/>**	Map locationId's, qualifiers, and ensembles as needed.
4	Save and close the file.	

STEP 6 Create a Temporary Display (Optional)

Step	Action	Notes
1	To see the imported data in a temporary display, navigate to the **SystemConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/SystemConfigFiles**	Another option is using F12-J to use the database view.
2	Open the **DisplayGroups.xml** file using an XML editor.	
3	Using another entry as a template, enter the locations associated with the new data you would like to view. Items to define include: **<displayGroup>** **<display name>** **<relativeViewPeriod>** **<timeSeriesSet>** **<moduleInstanceId>** **<valueType>** **<parameterId>** **<locationId>** **<timeSeriesType>** **<timeStep>** **<relativeViewPeriod>** **<readWriteMode>**	
4	Save and close the file.	

STEP 7 Add Filters (Optional)

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	This section is used if you want to use the main map display and filters to access the data.
2	Open the **Filters.xml** file using an XML editor.	
3	Using another entry as a template, enter the locations associated with the new data you would like to view. Items to define include: **<filter name>** **<timeSeriesSet>** **<moduleInstanceId>** **<valueType>** **<parameterId>** **<locationId>** **<timeSeriesType>** **<timeStep>** **<relativeViewPeriod>** **<readWriteMode>** **<synchLevel>**	
4	Save and close the file.	

Note: Do not forget to upload all changes to base configuration files to the Central Database. Do this using the Configuration Manager.

Changing Expiry Times Using XML Editor

Objective: Change expiry times for processes that generate data saved in the database. For this job sheet, we will use a workflow as an example.

STEP 1 Navigate to the Workflow File

Step	Action	Notes
1	Log into an AWIPS workstation.	
2	Navigate to the XML file you wish to edit. For example, navigate to the **WorkflowDescriptors.xml** file in the **RegionConfigFiles** directory by using the following command: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	Where **xxrfc** is the ID for your office. **Note**: Your base configuration files may be in a different location.

STEP 2 Edit the Workflow File

Step	Action	Notes
1	Open the **WorkflowDescriptors.xml** file using your preferred XML editor.	
2	Scroll down to the workflow you wish to change. For example, the <location id>_Forecast workflow.	
3	Change the expiry time using days, hours, or minutes as the unit and an integer as the multiplier.	Default expiry time is usually 30 days.
4	Save and close the file.	

STEP 3 Register the Change in the Database

Step	Action	Notes
1	Navigate to the OC directory: **cd /awips/chps_share/oc/fews**	
2	Launch the Configuration Manager: **./bin/fews.sh xxrfc_oc cm &**	Where **xxrfc** is the ID for your office.
3	Download the current configuration from the Central Database by clicking the “Download” button on the panel.	
4	Select the **WorkflowDescriptors.xml** file and select the Import button. Navigate to your updated file and click **Save**.	
5	Validate the changes and click the “upload” button to send the new file to the Central Database.	
6	Verify the change by running the workflow and using DbVis to check the ExpiryTime registered in the Central Database.	

Adding a New Segment

Objective: Add a new segment to the existing configuration. As you create new files using this job sheet, it is a good idea to keep track of the new files and the directories they are in. This makes registering the workflows and updating the files using the Configuration Manager easier.

Note: Update the shapefile with the new basin boundary

STEP 1 Add a New Site to the Locations.xml and LocationSets.xml Files

Step	Action	Notes
1	Log into an AWIPS workstation.	Follow these procedures using the SA base configuration files.
2	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	Where **xxrfc** is the ID for your office. **Note**: Your configuration files may be in a different location.
3	Open the **Locations.xml** file using your preferred XML editor.	
4	Select a location already defined to copy. Paste the information back into the document.	
5	Update the information you just pasted with your location's **ID**, **latitude** (x), **longitude** (y), and **height** (z).	
6	Save and close the file.	
7	Open the **LocationSets.xml** file using your preferred XML editor.	
8	Add the new site's ID as a locationID in the "locationset" tag.	The ID's are: Gages_<Basin> Catchments_<Basin> Reservoirs_<Basin>
9	Save and close the file.	

STEP 2 Create a Subdirectory for the New Segment

Step	Action	Notes
1	Navigate to the **ModuleParFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/ModuleParFiles**	
2	Create a directory for the new segment. The name of the directory should be the ID. **mkdir <newsegmentID>**	
3	Select an existing directory for a similar site. Copy the contents of the directory into the new segment directory. **cd <newsegmentID>** **scp –dR /awips/chps_share/sa/<user>/xxrfc/Config/ModuleParFiles/<existing segment> .**	
4	Edit the file names with the old segment name to replace the existing segment ID with the new segment ID. **mv SNOW17_<existingsegment>_<existingsegment>_UpdateStates.xml SNOW17_<newsegmentID>_<newsegmentID>_Updatestates.xml**	
5	Open one of the files using your preferred XML editor.	
6	Find all instances of the existing segment ID and replace with the new segment ID. There may also be other pieces of data to replace depending on the type of file.	
7	Save and close the file.	
8	Perform steps 5 through 7 for the rest of the files in the directory.	

STEP 3 Create a ModuleConfigFiles Subdirectory and Contents for the New Segment

Step	Action	Notes
1	Navigate to the **ModuleConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/ModuleConfigFiles**	
2	Create a directory for the new segment. The name of the directory should be the ID. **mkdir <newsegmentID>**	
3	Select an existing directory for a similar site. Copy the contents of the directory into the new segment directory. **cd <newsegmentID>** **scp –dR** **/awips/chps_share/sa/<user>/xxrfc/Config/ModuleConfigFiles** **/<existing segment> .**	
4	Edit the file names with the old segment name to replace the existing segment ID with the new segment ID. **mv ADDSUB_<existingsegment_Routed_Forecast.xml** **ADDSUB_<newsegmentID>_Routed_Forecast.xml**	
5	Open one of the files using your preferred XML editor.	
6	Find all instances of the existing segment ID and replace with the new segment ID.	Replace other parameter values as needed.
7	Save and close the file.	
8	Perform steps 5 through 7 for the rest of the files in the directory.	

STEP 4 Create the Cold States

Step	Action	Notes
1	Navigate to the **ColdStateFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/ColdStatesFiles**	
2	Make a directory for the new segment: **mkdir <newsegmentID>**	
3	Select an existing directory for a similar site. Copy the contents of the directory into the new segment directory. **cd <newsegment>** **scp –dR** **/awips/chps_share/sa/<user>/xxrfc/Config/ColdStateFiles** **/<existing segment> .**	
4	Unzip the individual zip file for an operation. **gunzip <filename.zip>**	
5	Open the XML and text files and change any old ID names to the new segment ID and add necessary data.	
6	When finished editing, save the file under a new name using the old naming scheme and the new segment's ID.	
7	Zip the new segment's operation XML file and text files into a zipped file with the new segment's name and operation following the naming convention.	
8	Delete the XML and text files.	
9	Repeat steps 4 through 8 for each file in the directory.	

STEP 5 Create the Workflow Files

Step	Action	Notes
1	Navigate to the **WorkflowFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/WorkflowFiles/<forecastgroup>**	
2	Copy appropriate flow forecast, forecast, and update states from a similar segment, and rename with your new segment ID. **scp _Forecast.xml <newsegment>_Forecast.xml** **scp _UpdateStates.xml <newsegment>_UpdateStates.xml** **scp _Flow_Forecast.xml <newsegment>_Flow_Forecast.xml**	
3	Open one of the files you just created with your preferred XML editor.	
4	Edit the file to: • remove the old segment ID and replace with the new ID • ensure all module instances relevant to the segment are present • module instances are the correct order	
5	Save and close the file.	
6	Repeat steps 3 through 5 for all the other files you created.	

STEP 6 Register the ModuleConfig and WorkflowFiles

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **ModuleInstanceDescriptors.xml** file using an XML editor.	
3	Add entries for the UpdateStates and Forecast instances. Use other entries as a template or copy and paste an existing entry and modify the ID.	Include an entry for every ModuleConfig you created.
4	Save and close the file.	
5	Open the **WorkflowDescriptors.xml** file using an XML editor.	
6	Locate a segment similar to the new one and copy the entries.	
7	Paste the snippet of code back into the file and change the ID to your new ID. Make sure there is a workflow ID and entry for each workflow file.	
8	Save and close the file.	

STEP 7 Add the New Segment to the Topology Display

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **Topology.xml** file using your preferred XML editor.	
3	Copy an existing section of code.	
4	Scroll through the file and find where your new segment belongs in the "tree".	Order is important!
5	Paste the snippet of code at the place where segment begins. Edit the entry to reflect the correct ID, name, workflow ID, and previous node(s).	
6	Save and close the file.	

STEP 8 Add the New Segment to Polygons.xml

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **Polygons.xml** file using your preferred XML editor.	
3	Add a new <shape locationId> to the list for the new segment.	
4	Save and close the file.	

STEP 9 Update the ModuleInstanceSets

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **ModuleInstanceSets.xml** file using your preferred XML editor.	
3	Add entries in ModuleInstanceSets required for the segment.	
4	Save and close the file.	

STEP 10 Set up the Forecast Plot Display

Step	Action	Notes
1	Navigate to the **SystemConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/SystemConfigFiles**	
2	Open the **DisplayGroups.xml** file using an XML editor.	
3	Copy a similar site and paste it back into the file.	Copy the entire entry.
4	Change all of the new entries to the new segment's ID and make any other necessary edits.	
5	Change the description at the top of the entry.	
6	Save and close the file.	

STEP 11 Test in the Standalone (SA)

Steps	Action	Notes
1	Open an instance of the standalone: **cd /awips/chps_share/sa/<user>/** **./bin/fews.sh xxrfc_sa &**	
2	After the SA boots up, check the error log.	
3	If errors occur with the new segment, open a new window and troubleshoot the issue.	
4	After making adjustments to the configuration to correct the new segment issues, click F5 in the SA.	F5 rereads the configuration files.
5	Use the Workflow Navigator (F12-K) to check for errors.	
6	Repeat steps 3 and 4 until the errors are no longer present.	

STEP 12 Complete Spin-up Runs

Steps	Action	Notes
1	Open an instance of the SA: **cd /awips/chps_share/sa/<user>/** **./bin/fews.sh xxrfc_sa &**	
2	Copy data into the import directories.	
3	Run the Climatology, ImportGrid, ImportScalars, and Preprocess workflows and check the log for errors.	
4	Run the preprocessors needed for the new segment.	
5	Run the new segment either through a forecast group workflow or through the IFD and check for errors.	
6	Does the display appear in the plot?	

STEP 13 Validate the New Configuration

Steps	Action	Notes
1	Using the SA, test the UpdateStates.	
2	Test any other forecast workflow (ESP, etc.) and check for errors.	ESP runs also need historical data.
3	Investigate and resolve any errors in the log.	

STEP 14 Upload the New Configuration

Steps	Action	Notes
1	Open the Configuration Manager: **cd /awips/chps_share/oc/<user>/** **./bin/fews.sh xxrfc_oc cm &**	
2	Follow standard procedure to upload the new configuration changes to the Central Database.	
3	Once the configuration is loaded to the live system, retest the new segment and its related workflows on the live system. Investigate and resolve any errors in the log.	

STEP 15 Add Rating Curve and Data

A rating curve and data need to be added for the new segment. This is usually done by importing the rating curve and data from the data feed. The data should end up in the import (toCHPS) directory for CHPS to pull the information into the system. The process to retrieve the data could vary from office to office.

Optimizing Ensemble Runs

Objective: One way to make ensemble runs more efficient is to spread the task out across multiple forecasting shell servers. This job sheet outlines the steps to split up an ensemble run.

STEP 1 Edit the Workflow Descriptors

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	Where **xxrfc** is the ID for your office. Note: Your base configuration files may be in a different location.
3	Open the **WorkflowDescriptors.xml** file using an XML editor.	
4	For your ensemble run entries as the following variable selecting an appropriate integer: <maxEnsembleParts>**#**</maxEnsembleParts>	Where **#** is the number of instances the task is split into.
5	Add this variable to all ensemble instances you wish to split.	
6	Save and close the file.	

STEP 2 Edit Workflow Mapping in AI

Step	Action	Notes
1	Open the Firefox web browser.	
2	Navigate to the Administration Interface.	For details on accessing AI, see the CHPS System Manager Training.
3	Select the “Workflows and FSSs” link.	
4	Select the “Workflow FSS Mappings” link.	
5	Select an appropriate mapping for the ensemble run sections.	

Setting Time Series to Temporary

Objective: Use this job sheet to mark time series as "temporary". If marked temporary, the time series will only be available during the run that created it. It will not be synched.

STEP 1 Navigate to ModuleConfigFiles

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the XML file you wish to edit. For example, navigate to the **ModuleConfigFiles** and edit one of the module configuration files by using the following command: **cd /awips/chps_share/oc/<user>/xxrfc/<forecastgroup>**	Where **xxrfc** is the ID for your office. **Note**: Your base configuration files may be in a different location.

STEP 2 Edit the Configuration File

Step	Action	Notes
1	Open the file you wish to edit using your preferred XML editor. For example: **ADDSUB_TINC2_TINC2_Forecast.xml**	
2	Scroll down to the instance you wish to make temporary. Find the following section: **<timeSeriesSet>**	
3	Change the <timeSeriesType> to temporary. It should look like the following: **<timeSeriesType>temporary</timeSeriesType>**	
4	You can also assign the synch level for temporary timeSeries to ensure it is not synched. Add the following line in the same section: **<synchLevel>9</synchLevel>**	
5	Save and close the file.	

STEP 3 Register the Changes

Step	Action	Notes
1	Navigate to the OC directory: **cd /awips/chps_share/oc/<user>/xxrfc**	
2	Launch the Configuration Manager: **./bin/fews.sh xxrfc_oc cm &**	Where **xxrfc** is the ID for your office.
3	Download the current configuration from the Central Database by clicking the "Download" button on the panel.	
4	Select the file you changed and select the import button. Navigate to your updated file and click **Save**.	
5	Validate the changes and click the "upload" button to send the new file to the Central Database.	

Configuring Pi-Service

Objective: Install FewsPiService to use as a **backend** process with utilities such as gxsets.

STEP 1 Set up new directories

<table>
<tr><th>Step</th><th>Action</th><th>Notes</th></tr>
<tr><td>1</td><td>Before you begin, verify your Pi-Service number:

<table><tr><th>Location</th><th>Pi #</th></tr><tr><td>nhor</td><td>2001</td></tr><tr><td>ohrfc</td><td>2002</td></tr><tr><td>nerfc</td><td>2003</td></tr><tr><td>marfc</td><td>2004</td></tr><tr><td>serfc</td><td>2005</td></tr><tr><td>wgrfc</td><td>2006</td></tr><tr><td>lmrfc</td><td>2007</td></tr><tr><td>abrfc</td><td>2008</td></tr><tr><td>mbrfc</td><td>2009</td></tr><tr><td>ncrfc</td><td>2010</td></tr><tr><td>nwrfc</td><td>2011</td></tr><tr><td>cbrfc</td><td>2012</td></tr><tr><td>cnrfc</td><td>2013</td></tr><tr><td>aprfc</td><td>2014</td></tr></table></td><td></td></tr>
<tr><td>2</td><td>From an AWIPS workstation, log on to CHPS3.</td><td>Complete on CHPS/6/9.</td></tr>
<tr><td>3</td><td>Navigate to the local directory:

cd /awips/chps_local/</td><td></td></tr>
<tr><td>4</td><td>Create a Pi-Service directory:

mkdir fewspiservices</td><td></td></tr>
<tr><td>5</td><td>Create a RFC subdirectory:

cd fewspiservices
mkdir xxrfc_pi</td><td>Where xxrfc is the ID for your office.</td></tr>
</table>

STEP 2 Populate the Pi-Service Directory

Step	Action	Notes
1	Navigate to the new **xxrfc_oc** directory: **cd xxrfc_pi**	
2	Populate with OC XML files: **scp /awips/chps_share/oc/<user>/xxrfc_oc/*.xml .**	
3	Rename synchConfig file: **mv oc_synchConfig.xml pi_synchConfig.xml**	
4	Populate with property files: **scp /awips/chps_share/oc/<user>/xxrfc_oc/*.properties .**	
5	Rename the oc_global.properties file: **mv oc_global.properties pi_global.properties**	
6	Open the **pi_global.properties** file with an XML editor and edit the following lines: **PiServicePort=20##** **localDataStorePoolDir=/awips/chps_data**	Where **##** are the last two numbers of your RFC PI # from the chart above.
7	Populate with .jar files: **scp /awips/chps_share/oc/<user>/xxrfc_oc/*.jar .**	
8	Add symbolic links to the **fewspiservices** directory: **cd /awips/chps_local/fewspiservices** **ln –s /awips/chps_local/<user>/bin bin** **ln –s /awips/chps_local/java/ jre**	

STEP 3 Create Additional Directories

Step	Action	Notes
1	Navigate to the **chps_data** directory: **cd /awips/chps_data** **mkdir xxrfc_pi**	
2	Change permissions: **chmod 777 xxrfc_pi**	

STEP 4 Create fews_piservice.sh

Step	Action	Notes
1	Navigate to the fewspiservices directory: **cd /awips/chps_local/fewspiservices**	
2	Copy the script from the install directory: **scp /awips/chps_share/install/mar2010/fewspiservices/* .**	
3	Change the fews_piservice.sh permissions: **chmod +x fews_piservice.sh**	
4	Open fews_piservice.sh with an XML editor and change the following: add "**nohup**" at the beginning of line $JAVA_HOME/bin/java/-Xmx512M –cp "$classes" It should look like this: **#Start the mcproxy java process** **nohup $JAVA_HOME/bin/java –Xmx512M -cp "$classes" –Djava.library.path=$BINDIR** **nl.wldelft.fews.system.fewsserver.FewsEnvironmentShell $REGIONHOMEBINDIR >$REGIONHOME/out.log 2> $REGIONHOME/err.log &**	

STEP 5 Run fews_piservice.sh

Step	Action	Notes
1	Open a second shell on CHPS3: ssh fews@chps3 Enter fews password	Opening a second shell is critical.
2	Navigate to the fewspiservices directory: **cd /awips/chps_local/fewspiservices**	
3	Run the script: **./fews_piservice.sh xxrfc_pi start**	Wait for the service to start.
4	Check for the start by looking at the following: **cd /awips/chps_local/fewspiservice/xxrfc/log.txt** and look for the line: Started FewsPiServiceImpl on localHost: <service number>	The service number is the same number in the chart from Step 1.
5	Navigate to the following address in Firefox to see if Pi-Service is running: **http://chps3:<service number> /xxrfc_pi/FewsPiService?wsdl**	The schema representation of the wsdl should appear.
6	If you need to stop the service, use the following command: **./fews_piservice.sh xxrfc_pi stop**	

Adding an Event Action

Event Actions can perform several types of actions – suspend a task, resume a suspended task, enhance a current task, or perform a run once task. Use the following job sheets to complete those tasks.

Suspend a Task

Objective: Create an event action that suspends a task given a log event. Note: This task must already exist in the Admin Interface.

STEP 1 Create a Configuration File

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the directory in which you wish to place your configuration files.	
3	Create a new file using an XML editor. For example: **gedit suspend_event_action.xml** --or-- **vi suspend_event_action.xml**	
4	Include the following: **<?xml version="1.0" encoding="UTF-8"?>** **<actionxml type="task">** **<enhance>** **<tag name="ImportScalars"/>** **<suspend/>** **</enhance>** **</actionxml>**	
5	When finished, save and close the file.	

STEP 2 Upload the Configuration File

Step	Action	Notes
1	In a Firefox web browser, log into the Admin Interface.	
2	Click on the “Workflow and FSSs” tab in the left menu bar, and then click the “Event Action Configuration” sub-link.	
3	Select “Upload Action Configuration”.	
4	Enter an action ID and a description.	The action ID is created during this step.
5	Select the “Browse” button and navigate to the XML file you made in the previous set of steps. Highlight the file and click “open”.	
6	When finished, click “Submit” at the bottom of the page to create your Event Action.	

STEP 3 Map the Configuration File

Step	Action	Notes
1	Log into the Administration Interface.	
2	Click the “Workflows and FSSs” link.	
3	Select “Event and Action Configuration”.	
4	From the “Upload New Action Configuration” option, choose a file containing Event Actions.	

Step	Single Event	Step	Multiple Events
1	From “Workflows and FSSs”, click “Event Action Mappings”.	1	From “Workflows and FSSs”, click “Event Action Mappings”.
2	Select “Create New Event Action Mapping”.	2	Select “Upload Multiple Event Action Mappings from File”.
3	Enter an Event Code in the data entry field.	3	Enter a path and file name in the data entry field, OR click “Browse” to navigate to a file.
4	Select an Action Configuration ID from the drop down menu.	4	Click the “Submit” button.
5	Click the “Submit” button.		

Resume Suspended Task

Objective: Create an Event Action to resume a suspended task, given a log event. Note: This task must already exist in the Admin Interface.

STEP 1 Create a Configuration File

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the directory in which you wish to place your configuration files.	
3	Create a new file using an XML editor. For example: **gedit resume_event_action.xml** --or-- **vi resume_event_action.xml**	
4	Include the following: **<?xml version="1.0" encoding="UTF-8"?>** **<actionxml type="task">** **<enhance>** **<tag name="ImportScalars"/>** **<resume/>** **</enhance>** **</actionxml>**	
5	When finished, save and close the file.	

STEP 2 Upload the Configuration File

Step	Action	Notes
1	In a Firefox web browser, log into the Admin Interface.	
2	Click on the “Workflow and FSSs” tab in the left menu bar, and then click the “Event Action Configuration” sub-link.	
3	Select “Upload Action Configuration”.	
4	Enter an action ID and a description.	The action ID is created during this step.
5	Select the “Browse” button and navigate to the XML file you made in the previous set of steps. Highlight the file and click “open”.	
6	When finished, click “Submit” at the bottom of the page to create your Event Action.	

STEP 3 Map the Configuration File

Step	Action	Notes
1	Log into the Administration Interface.	
2	Click the “Workflows and FSSs” link.	
3	Select “Event and Action Configuration”.	
4	From the “Upload New Action Configuration”, choose a file containing Event Actions.	

Step	Single Event	Step	Multiple Events
1	From “Workflows and FSSs”, click “Event Action Mappings”.	1	From “Workflows and FSSs”, click “Event Action Mappings”.
2	Select “Create New Event Action Mapping”.	2	Select “Upload Multiple Event Action Mappings from File”.
3	Enter an Event Code in the data entry field.	3	Enter a path and file name in the data entry field, OR click “Browse” to navigate to a file.
4	Select an Action Configuration ID from the drop down menu.	4	Click the “Submit” button.
5	Click the “Submit” button.		

Enhance a Task

Objective: Create an Event Action to change the interval of a task, given a log event. Note: This task must already exist in the Admin Interface.

STEP 1 Create a Configuration File

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the directory in which you wish to place your configuration files.	
3	Create a new file using an XML editor. For example: **gedit enhance_event_action.xml** --or-- **vi enhance_event_action.xml**	
4	Include the following: **<?xml version="1.0" encoding="UTF-8"?>** **<actionxml type="task">** **<enhance>** **<tag name="EDEN_FORECAST"/>** **<repeatinterval interval="3600"/>** **</enhance>** **</actionxml>**	
5	When finished, save and close the file.	

STEP 2 Upload the Configuration File

Step	Action	Notes
1	In a Firefox web browser, log into the Admin Interface.	
2	Click on the “Workflow and FSSs” tab in the left menu bar, and then click the “Event Action Configuration” sub-link.	
3	Select “Upload Action Configuration”.	
4	Enter an action ID and a description.	The action ID is created during this step.
5	Select the “Browse” button and navigate to the XML file you made in the previous set of steps. Highlight the file and click “open”.	
6	When finished, click “Submit” at the bottom of the page to create your Event Action.	

STEP 3 Map the Configuration File

Step	Action	Notes
1	Log into the Administration Interface.	
2	Click the “Workflows and FSSs” link.	
3	Select “Event and Action Configuration”.	
4	From the “Upload New Action Configuration”, choose a file containing Event Actions.	

Step	Single Event	Step	Multiple Events
1	From “Workflows and FSSs”, click “Event Action Mappings”.	1	From “Workflows and FSSs”, click “Event Action Mappings”.
2	Select “Create New Event Action Mapping”.	2	Select “Upload Multiple Event Action Mappings from File”.
3	Enter an Event Code in the data entry field.	3	Enter a path and file name in the data entry field, OR click “Browse” to navigate to a file.
4	Select an Action Configuration ID from the drop down menu.	4	Click the “Submit” button.
5	Click the “Submit” button.		

Run One Tasks

Objective: Create an Event Action to run one instance of a task, given a log event. Note: This task must already exist in the Admin Interface.

STEP 1 Create a Configuration File

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the directory in which you wish to place your configuration files.	
3	Create a new file using an XML editor. For example: **gedit oneoff_event_action.xml** --or-- **vi oneoff_event_action.xml**	
4	Include the following: **<?xml version="1.0" encoding="UTF-8"?>** **<actionxml type="task">** **<oneoff>** **<cardinaltime interval="900"** **reference="2004-01-01T00:00:00.000+00:00"/>** **<tag name="EXPORT_CURRENT"/>** **</oneoff>** **</actionxml>**	Cardinal time is the interval after the initial task has run. A reference time is needed to determine when exactly to run the task.
5	When finished, save and close the file.	

STEP 2 Upload the Configuration File

Step	Action	Notes
1	In a Firefox web browser, log into the Admin Interface.	
2	Click on the “Workflow and FSSs” tab in the left menu bar, and then click the “Event Action Configuration” sub-link.	
3	Select “Upload Action Configuration”.	
4	Enter an action ID and a description.	The action ID is created during this step.
5	Select the “Browse” button and navigate to the XML file you made in the previous set of steps. Highlight the file and click “open”.	
6	When finished, click “Submit” at the bottom of the page to create your Event Action.	

STEP 3 Map the Configuration File

Step	Action	Notes
1	Log into the Administration Interface.	
2	Click the “Workflows and FSSs” link.	
3	Select “Event and Action Configuration”.	
4	From the “Upload New Action Configuration”, choose a file containing Event Actions.	

Step	Single Event	Step	Multiple Events
1	From “Workflows and FSSs”, click “Event Action Mappings”.	1	From “Workflows and FSSs”, click “Event Action Mappings”.
2	Select “Create New Event Action Mapping”.	2	Select “Upload Multiple Event Action Mappings from File”.
3	Enter an Event Code in the data entry field.	3	Enter a path and file name in the data entry field, OR click “Browse” to navigate to a file.
4	Select an Action Configuration ID from the drop down menu.	4	Click the “Submit” button.
5	Click the “Submit” button.		

Configuring PCRaster

Objective: Edit the PCRaster module configuration file to create gridded output from CHPS.

STEP 1 Verify the Schemas

Step	Action	Notes
1	Log onto CHPS1.	Also CHPS4/7.
2	Navigate to the directory containing the schemas: **cd /awips/chps_local/schemas**	
3	Ensure **pcRaster.xsd** and **pcrTransformationSets.xsd** are in the directory.	If necessary, download the schemas from the Deltares site. http://fews.wldelft.nl/schemas/version1.0/pcrTransformationSets.xsd http://fews.wldelft.nl/schemas/version1.0/pcRaster.xsd

STEP 2 Verify PcrTransformation Availability

Step	Action	Notes
1	Open an AWIPS terminal window (AWIPS workstation, not logged into a CHPS server).	
2	Navigate to the directory containing the schemas: **cd /awips/chps_share/sa/<user>/xxrfc/Config/SystemConfigFiles**	
3	Add the following lines to the code (if needed): **<moduleDescriptor id="PcrTransformation"> <description>General Transformation Component</description> <className>nl.wldelft.fews.system.plugin.transformation.PcrTransformationController</className> </moduleDescriptor>**	
4	Save and exit.	

STEP 3 Configure the Module Configuration File

Step	Action	Notes
1	Navigate to the **ModuleConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/ModuleConfigFiles**	
2	Open the file containing the PCRaster transformation configuration. For example: **SACSMA_PCRmodel_UpdateStates.xml**	

3	Define the input to the transformation. For example:
	
	`<inputVariable variableId="AEIK" dataType="scalar" convertDatum="false" spatialType="spatial">`
	`<timeSeriesSet>`
	`<moduleInstanceId>ImportAPI_parameters</moduleInstanceId>`
	`<valueType>grid</valueType>`
	`<parameterId>AEIK</parameterId>`
	`<locationId>MARFC_API</locationId>`
	`<timeSeriesType>external historical</timeSeriesType>`
	`<timeStep unit="hour" multiplier="6" />`
	`<cycle unit="hour" />`
	`<relativeViewPeriod unit="hour" start="-96" end="0" startOverrulable="true" />`
	`<readWriteMode>add originals</readWriteMode>`
	`</timeSeriesSet>`
	`</inputVariable>`	

4	Define the output from the transformation. For example:
	
	`<outputVariable variableId="R_out" dataType="scalar" convertDatum="false">`
	`<timeSeriesSet>`
	`<moduleInstanceId>API_PCRmodel_UpdateStates</moduleInstanceId>`
	`<valueType>grid</valueType>`
	`<parameterId>R</parameterId>`
	`<locationId>MARFC_API</locationId>`
	`<timeSeriesType>simulated historical</timeSeriesType>`
	`<timeStep unit="hour" multiplier="6" />`
	`<relativeViewPeriod unit="hour" start="-90" end="0" startOverrulable="true" />`
	`<readWriteMode>add originals</readWriteMode>`
	`<synchLevel>2</synchLevel>`
	`</timeSeriesSet>`
	`</outputVariable>`	

5	Add a tag called <pcrModel> after the variable definitions for the PCRaster code.	

STEP 4 Register the Module

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **ModuleInstanceDescriptors.xml** file using an XML editor.	
3	Add the transformation instance to the file. Use the other instances as an example for the format: **<moduleInstanceDescriptor id= "*module instance name*">** **<moduleId>TransformationModule</moduleId>** **</moduleInstanceDescriptor>**	
4	Save and exit.	

STEP 5 Add the Module to a Workflow

Step	Action	Notes
1	Navigate to the **WorkflowFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/WorkflowFiles**	
2	Open the appropriate XML file for your module.	
3	Add the transformation instance to the file. Use the other instances as an example for the format: **<moduleInstanceDescriptor id= "*module instance name*">** **<moduleId>TransformationModule</moduleId>** **</moduleInstanceDescriptor>**	
4	Enter the module instance using the following example as a format: <activity> <runIndependent>**false**</runIndependent> <moduleInstanceId>**RRS_PreProcessing_Inst_QIN**</moduleInstanceId> </activity>	Substitute the bold text for the behavior and instance for your workflow.
5	Save and exit.	

Note: Run this workflow on the SA to ensure it works and make adjustments if needed. Once you are satisfied with the workflow, upload the configuration changes to the Central Database.

STEP 6 Register the Workflow

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/xxrfc/Config/RegionConfigFiles**	Where **xxrfc** is your office ID.
2	Open the **WorkflowDescriptors.xml** file using an XML editor.	
3	Add the following lines to the file: **<workflowDescriptor id="report" forecast="false" visible="true" autoApprove="false">** **<description>Creates web reports</description>** **</workflowDescriptor>**	Substitute "report" for the file name specified in previous step.
4	When finished, save and close the file.	

STEP 7 Edit the Parameters.xml File

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/<user>/xxrfc/Config/RegionConfigFiles**	
2	Open the **Parameters.xml** file.	
3	Check the units of the variables and constants. If they are not the same as the ones defined in the transformation, make edits to files as needed.	
4	Save and exit.	

Configuring the Report Module

Objective: Set up a Report Module to create output from CHPS to the Internet.

STEP 1 Register the Report Class

Step	Action	Notes
1	Log onto an AWIPS workstation.	
2	Navigate to the **SystemConfigFiles** directory. **cd /awips/chps_share/sa/xxrfc/Config/SystemConfigFiles**	Where **xxrfc** is your office ID.
3	Open the **Moduledescriptors.xml** file and add the following lines (if not already defined): **<moduleDescriptor id>=”Report”>** **<description>General Reporting Component</description>** **<className>nl.wldelft.fews.system.plugin.report.ReportController</className>**	
4	Save and exit.	

STEP 2 Create the Report Module Instance

Step	Action	Notes
1	Navigate to the **ModuleConfigFiles** directory: **cd /awips/chps_share/sa/xxrfc/Config/ModuleConfigFiles**	Where **xxrfc** is your office ID.
2	Create a file for each report you want to generate. For example: **create_report.xml**	
3	Add the following lines to the file you created: **<declarations>** **<templateDir>$REPORT_TEMPLATE_DIR$</templateDir>** **<reportsRootDir>$REPORT_ROOT_DIR$</reportsRootDir>** **<sendToLocalFileSystem>true</sendToLocalFileSystem>** **</declarations>** **<report>** **<template>template.htm</template>** **<outputFileName>report.html</outputFileName>** **</report>** **</reports>**	The **templatedir** and the **reportrootsdir** can point at a directory, the example uses global variables.
4	Save and exit.	

STEP 3 Register the Module Instance

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/xxrfc/Config/RegionConfigFiles**	Where **xxrfc** is your office ID.
2	Open the **ModuleInstanceDescriptors.xml** file and add the following: **<moduleInstanceDescriptor id="create_report">** **<moduleId>Reports</moduleId>** **</moduleInstanceDescriptor>**	Where the moduleInstanceDescriptor is the name of the file from the previous step.
3	Save and exit.	

STEP 4 Create a Workflow File

Step	Action	Notes
1	Navigate to the **WorkflowFiles** directory: **cd /awips/chps_share/sa/xxrfc/Config/WorkflowFiles**	Where **xxrfc** is your office ID.
2	Create a new file or copy a similar existing workflow file. For example: **cp Climate_Export.xml report.xml**	In this example, the new file is called **report.xml**.
3	Enter the components of the file or change the existing code: **<activity>** **<runIndependent>true</runIndependent>** **<moduleInstanceId>create_report</moduleInstanceId>** **</activity>** **</workflow>**	The ModuleInstanceID is the name of the module instance in **create_report.xml**.
4	Save and exit.	

STEP 5 Register the Workflow

Step	Action	Notes
1	Navigate to the **RegionConfigFiles** directory: **cd /awips/chps_share/sa/xxrfc/Config/RegionConfigFiles**	Where **xxrfc** is your office ID.
2	Open the **WorkflowDescriptors.xml** file using an XML editor.	
3	Add the following lines to the file: **<workflowDescriptor id="report" forecast="false" visible="true" autoApprove="false">** **<description>Creates web reports</description>** **</workflowDescriptor>**	Substitute "report" for the file name specified in previous step.
4	When finished, save and close the file.	

STEP 6 Add the Workflow to a Task List

Step	Action	Notes
1	Navigate to the **DisplayConfigFiles** directory: **cd /awips/chps_share/sa/xxrfc/Config/DisplayConfigFiles**	Where **xxrfc** is your office ID.
2	Open the **Taskrundialog.xml** file using an XML editor.	
3	Add the following lines to the file ("MakeReport" is the task name): **<simpleTask name="MakeReport" workflowId="report">** **<relativePeriod unit="hour" start="-24" end="0"/>** **</simpleTask>**	The WorkflowId is the same as the name of the file which contains the workflow.
4	When finished, save and close the file.	

STEP 7 Create a Report

Step	Action	Notes
1	Navigate to the **WorkflowFiles** directory. **cd /awips/chps_share/sa/xxrfc/Config/WorkflowFiles**	Where **xxrfc** is your office ID.
2	Open the **report.xml** file and add the following lines to set up the chart: **<chartFormat id="ChartFormat1">** **<includeTime0>true</includeTime0>** **<includeLegend>false</includeLegend>** **<bottomAxis>** **<format>dd/MM HH:mm</format>** **<centerLabelsBetweenTicks>false</centerLabelsBetweenTicks>** **</bottomAxis>** **</chartFormat>** **<templateDir>$REPORT_TEMPLATE_DIR$</templateDir>** **<reportsRootDir>$REPORT_ROOT_DIR$</reportsRootDir>** **<sendToLocalFileSystem>true</sendToLocalFileSystem>** **<report>** **<inputVariable variableId="OB_H1" variableType="any">** **<timeSeriesSet>** **<moduleInstanceId>ImportAquaView</moduleInstanceId>** **<valueType>scalar</valueType>** **<parameterId>H.meting</parameterId>** **<locationSetId>OB_H.meting</locationSetId>** **<timeSeriesType>external historical</timeSeriesType>** **<timeStep unit="minute" multiplier="5"/>** **<relativeViewPeriod unit="hour" start="-10" end="10"/>** **<readWriteMode>read only</readWriteMode>** **</timeSeriesSet>** **</inputVariable>** **<chart id="chartMainH" formatId="ChartFormat1" width="600" height="300">** **<leftAxisScaleUnit>0.2</leftAxisScaleUnit>** **<timeSeries>OB_H1</timeSeries>** **</chart>** **<template>template.html</template>** **<outputFileName>chartreport.html</outputFileName>** **</report>**	This step creates report (chart) in html format. Use this as a starting point for creating your office's reports.
3	Save and exit the file.	

Note: Work with the CHPS System Manager and AWIPS System Administrator if you wish to send these files to the web.

Writing a General Adapter

Objective: Write a General Adapter to facilitate use of external models in CHPS. The keys to a GA are knowing what you have, and how to translate it so the model can use it. **Note**: This General Adapter does not deal with output.

STEP 1 Edit the ModuleConfig File

Step	Action	Notes
1	Log on to an AWIPS workstation.	
2	Navigate to the appropriate **/Config/ModuleConfigFiles/** subdirectory. For example (your files may be in a different location): **/awips/chps_share/sa/xxrfc/Config/ModuleConfig/Files/analysis**	Where **xxrfc** is the ID for your office. Create new files in segment subdirectories if the adapter is segment-specific.
3	Locate the General Adapter file. For example: **LAGK_UpdateStates.xml**	
4	Copy the file and give it an appropriate name. For example: **cp LAGK_UpdateStates.xml newadapter.xml**	Indicate the purpose of the adapter in the file name.
5	Navigate to the **/Config/ModuleConfigFiles** directory.	
6	Move the **newadapter.xml** file to the correct directory. **mkdir newadapter**	If the directory does not exist, create one.
7	Edit the **newsegment_adapter.xml** file. Update the file with a new: • Description of adapter • Root, work, import, export, dumpfile, and dump directories • Name of the executable script	
8	Save the file and exit.	

STEP 2 Edit the Executable Script

Step	Action	Notes
1	Log on to an AWIPS workstation.	
2	Navigate to the **<rootDir>** specified in the general section of the file.	
3	Make edits to the script as needed.	
4	Save the file and exit.	

STEP 3 Edit the oc_global.properties.xml File (Optional)

Step	Action	Notes
1	Log onto to an AWIPS workstation.	
2	Navigate to the **/Config/RootConfigFiles** directory.	
3	Make edits to the **oc_global.properties** file as needed.	Edits depend on items specified in the Module Configuration file.
4	Save the file and exit.	

Adding a Model

Objective: Add a new forecast model. This job sheet does not mention a specific model because this information can be used to add any model.

STEP 1 Create New Files and Directories

Step	Action	Notes
1	Log on to an AWIPS workstation.	
2	Navigate to the **/Config/ModuleConfigFiles** directory. For example (your files may be in a different location): **/awips/chps_share/sa/xxrfc/Config/ModuleConfig**	
3	Create a sub directory to contain all module configuration files for the new workflow.	Only for a new segment. Name it with the site's ID.
4	Copy the desired model for an existing site to the new directory.	
5	Rename it with the model name and the location ID.	
6	Check all the input and output time series.	
7	Change the moduleInstanceId's and location IDs as appropriate for your forecast group and site.	Do this for each time series.
8	Verify the directories the model uses exist.	Directories specified in the General Section.
9	Analyze the state export and note the moduleInstanceId used to identify the states.	

STEP 2 Register the New Module

Step	Action	Notes
1	Navigate to the location of your **/Config/RegionConfigFiles** directory.	
2	Open the file **ModuleInstanceDescriptors.xml** file.	
3	Locate the entries for another location with the model you wish to add. Each is a part of a group of module instances (one each for the forecast and update state run).	
4	Create groups for the module instances and update states. For example: **_Forecast, _UpdateStates**	
5	Add an entry under the new group for the new model's module instances (one each for the Forecast and the UpdateStates).	
6	In the same way, register the moduleInstanceId used to identify the state to be exported.	

STEP 3 Add Initial States

Step	Action	Notes
1	Navigate to the **/ColdStateFiles** directory.	
2	Copy an existing segment's subdirectory. For example: **cp tsmn2 <newsegment>**	Name it with the site's ID.
3	Navigate to the new directory. For example: **cd tsmn2**	
4	Rename and adjust the contents as needed.	

STEP 4 Add Model Parameters

Step	Action	Notes
1	Navigate to the **/Config/ModuleParFiles** directory.	
2	Create a subdirectory. For example: **mkdir tsmn2**	Only for a new segment. Name it with the site's ID.
3	Copy the XML file with the model parameters to the new subdirectory in **/Config/ModuleParFiles**.	
4	Review the contents of the file.	

STEP 5 Check the IdMap Files

Step	Action	Notes
1	Identify the IdMaps referenced in the General Section of the GA.	
2	Navigate to the **/Config/IdMapFiles** directory.	
3	Check the IdMaps. Make adjustments to import and export the model data.	

STEP 6 Update the Workflow

Step	Action	Notes
1	Navigate to the **/Config/WorkflowFiles** directory.	
2	Open the **Flow_Forecast.xml** file for the catchment.	
3	Add the new activity, and remove all other activities.	

STEP 7 Run the New Workflow

Step	Action	Notes
1	Reload the configuration (F5).	
2	Open the manual forecast and run the new workflow.	
3	Use the Workflow Navigator to check the results of the model.	
4	Investigate and resolve any errors noted in the log.	

STEP 8 Update the Display Groups

Step	Action	Notes
1	Navigate to **/Config/SystemConfigFiles** directory.	
2	Open the **DisplayGroups.xml** file for editing.	
3	Add a Display to the pre-configured displays for your forecast group.	