

Test Case HydroGen
for
Contract DG133W-05-CQ-1067
Advanced Weather Interactive Processing System (AWIPS)
Operations & Maintenance

AWP.TE.SWCTR/TO10-0002

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Change History

Revision	Date	Affected Pages	Explanation of Change
Draft	21 Nov. 2008	ALL	Initial Draft
1	16 Jan. 2009	ALL	Result of NWS comments and PDT.
2	6 Feb. 2009	iii, 3	Result of DT

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1.0 SCOPE

See TO10 Software Test Plan.

2.0 APPLICABLE DOCUMENTS

2.1 Source Documents

- None

2.2 Reference Documents

- Legacy NWS Test Cases: OHD HydroGen-DCS3397-OB8.1.
- Software Test Plan for the Advanced Weather Interactive Processing System Project, Contract #DG133W-05-CQ-1067, January 2009.
- Rational RequisitePro.

3.0 TEST CASE DESCRIPTION

This test case demonstrates the creation of the XML file and a hydrograph for a point using HydroGen.

3.1 Assumptions, Constraints and Preconditions

- TO10 software has been installed successfully.
- EDEX and pgAdmin III are running.
- Actions, Results, and Requirements highlighted in gray indicate requirements and/or capabilities to be included in the scope of future task orders. They are included here for purposes of continuity and traceability with the original AWIPS I test case documents.

3.2 Recommended Hardware

See TO10 Software Test Plan.

3.3 Test Inputs

Section 4.0 contains the test procedures for this test case. Sections 2.2 – 2.9 of the TO10 Software Test Plan contain general test inputs applicable to all TO10 test cases. *Grayed* out test step(s) indicate functionality not yet delivered.

3.4 Test Outputs

The results outlined in section 4.0 are met.

4.0 TEST SCENARIO

Step #	Action	Result	Pass/Fail
<p>Note: This test case will need to be revised as the HydroGen application is created (e.g., entering the correct directory paths, optional use of pgAdmin III).</p>			
1.	Open a terminal window.	A terminal window opens.	
2.	<p>Setup environment variables by executing the following commands:</p> <pre>export db_name=<database> [Enter] (e.g., hd_ob81xxx) export PGHOST=<database host> [Enter] (e.g., dx1) export PGUSER=pguser [Enter]</pre> <p>OR</p> <p>Open the pgadmin3 database tool and connect to the hydro database.</p>	<p>The environment variables are set to those specifics input.</p> <p>OR</p> <p>The pgadmin3 GUI is displayed on the screen.</p>	
3.	<p>Identify candidate test stations and SHEF codes for generating a hydrograph by executing the following query:</p> <pre>psql -d <database> -c "select distinct (lid) from fcstheight where pe='HG' and ts='FF' and lid in (select lid from rating group by 1 having count(*) > 0);"</pre> <p>OR execute the query within the quotations above in the pgadmin3 SQL Query Tool.</p> <p>Note: Select one station in this list for use in the rest of the test case.</p>	A list of stations will be given.	
4.	<p>Perform the query below inserting the select station's LID from the previous step for <station_id>:</p> <pre>Psql -d <database> -c "select * from HgStation where lid='<station_id>';"</pre>	<p>Note the lid,pe, and ts for the selected station. For the rest, the lid will be referred to as <lid>,the pe as <pe> and the ts as <ts>. If you are able to find a station, Skip to Step 7.</p> <p>If you are unable to find a station that exists in both lists, then pick a location id from the list generated in Step 2, and not its lid.</p>	
5.	Identify one type source for the selected station in the height table by performing this query:	Query generated.	

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	Psql -d <database> -c "select distinct (ts) from Height where lid='<lid>';"		
6.	Insert a record for the selected location into the HgStation table: psql -d <database> -c "insert into HgStation value ('<lid>', 'HG', '<obs ts>', 'FE');"	A record with the specified value is inserted into the HgStation table.	
7.	For the station, insert an observation that is below the rating curve by executing the following query: psql -d <database> -c "select * from height where lid = '<lid>' and pe='HG' and ts='<obs ts> order by obstime desc;"	Query is generated, from the output list of observation, select the observation for which the obstime column is the most recent (should be at the top). For this observation note its value as <old stage> and its obstime as <obstime>.	
8.	Perform the query below: psql -d <database> -c "select * from rating where lid='<lid> order by stage asc;'"	Query is generated, based on the output list of rating curve points, choose a stage below the smallest stage value (which should be the first one output). This stage will be referred to as <new stage>.	
9.	Put the stage chosen in Step 8 into the observation chosen in Step 7 by perform the following query: psql -d <database> -c "update height set value=<new stage> where lid='<lid>' and ts='<obs ts>' and obstime='<obstime>';"	The observation chosen in Step 7 will change such that its value is that chosen in Step 8. Perform the query in next step (step 10) to verify.	
10.	psql -d <database> -c "select * from height where lid='<lid>' and pe='<pe>' and ts='<ts>' order by obstime desc;"	The number in the value column of the first row returned should be the stage value which you selected in step8.	
11.	Collect information from the location table for use in subsequent test case steps. Issue the following query: Psql -d <database> -c Select hsa, rfc, rb From location Where lid='<lid>;'	Note the returned values for the columns as <hsa>, <rfc>, and <rb>, respectively. They are used in the next step.	
12.	Start HydroGen by issuing the following command	A window with the title of "Filter IDs" displays.	

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	<p>on a workstation: /awips/hydroapps/HydroGen/bin/start_hg_bless [Enter]</p>		
13.	<p>From the HSAs list in the window, select <hsa>. From the RFCs list, select <rfc>. From the RBs list, select <rb> and click the "Done" button.</p>	<p>The window closes and output is sent to stdout. The first line of the output starts with, "executing: <DIRECTORY>. The execution finishes after a few seconds. Hydro</p> <p>If your AWIPS localization is not for the site for whom you are currently running HydroGen, you may see a handleOUP.pl error. Click OK if this is seen.</p> <p>You may also see a prompt for ldad@ls1 password. Hit CTRL-C to break out at this point</p>	
14.	<p>Edit the data in the test database to be for a duration other than instantaneous by executing the following queries:</p> <pre>psql -d <database> -c "update height set dur=1006 where lid = '<lid>' and pe='<pe>';"</pre> <pre>psql -d <database> -c "update fcsheight set dur = 1006 where lid = '<lid>' and pe = '<pe>' and ts = 'FF';"</pre>	<p>Data in the database for the two tables are edited so that the dur column is equal to '1006'.</p>	
15.	<p>Ensure the hg.cfg file is set up to generate hydrographs for the selected forecast point:</p> <pre>cd /awips/hydroapps/HydroGen/input [Enter]</pre> <pre>view hg.cfg [Enter]</pre>	<p>The file hg.cfg is displayed. Please verify tokens are correct for your site.</p>	
16.	<p>Edit the hg.cfg file as follows if there are discrepancies:</p> <p>Replace "xxx" with "<wfo>" after the equal sign in the lines setting the values for wfoXMLlist, wfoHGlist, wfoHistoryList, and wfo. Be sure to set it to be all caps for the wfo line.</p> <p>Set the value for DBname to be equal to <database></p>	<p>The hg.cfg file updates.</p>	

Step #	Action	Result	Pass/Fail
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	<p>Comment out the lines setting rb, ldad, and webserver, by inserting a '#' at the beginning of the lines.</p> <p>Insert the following two lines at the end of the file: Fdo = "<space bar>TEST DISCLAIMER<space bar>" [Enter] Title = "TEST TITLE" [Enter]</p>		
17.	<p>Execute HydroGen to generate an XML file and a hydrograph for the chosen forecast point:</p> <p>cd /awips/hydroapps/HydroGen/bin [Enter]</p> <p>./run_hg_genXML</p>	<p>HydroGen executes. After completion, files are placed in each of these two directories:</p> <p>/awips/hydroapps/HydroGen/output/oax/xml</p> <p>/awips/hydroapps/HydroGen/output/oax/images</p>	
18.	<p>In the images directory, open up the file that has a name that includes the station's lid. Type:</p> <p>Display <file_name></p> <p>Verify the following:</p> <ul style="list-style-type: none"> • It should be a hydrograph with a NOAA water mark in the background. • In the graphic, a box in the upper left corner of the plot area should contain within it the phrase "TEST DISCLAIMER" in green. • In the graphic, the title, located at the top of the graphic, should say "TEST TITLE". • If the graphic is produced, this requirement is verified, since the duration for the data was changed from 0 to 1006. 	Verified.	
19.	<p>In the xml directory, open up the file that has a name that includes the station's lid and look at the entry for the changed observation. The easiest way to find the entry is to search for <new stage>. The flow value corresponding to the <new stage> value should be -999.</p>	Verified.	
20.	<p>Undo the changes made in Step 7 and 13 by executing the following queries:</p>	The original duration code and observed value are recovered.	

Step #	Action	Result	Pass/Fail
<p>Note: This test case will need to be revised as the HydroGen application is created (e.g., entering the correct directory paths, optional use of pgAdmin III).</p>			
	<pre>psql -d <database> -c "update height set dur = 0 where lid = '<lid>', and pe = '<pe>';" psql -d <database> -c "update fcsheight set dur=0 where lid='<lid>' and pe='<pe>' and ts='FF';" "psql -d <database> -c update height set value=<old stage> where lid='<lid>' and ts='<obs ts>' and obstime='<obstime>';"</pre>		
21.	Exit the terminal or your pgadmin3 session	Terminal exits.	
<p>End of HydroGen Test</p>			

5.0 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)

Number	Description	Test Step(s)
SYSR3113	The AWIPS system shall integrate the HydroGen capability.	1-21