

Test Case for Alarm Alert/Rate of Change Checker,

MPE FieldGen, Flood Event Archiver

for

Contract DG133W-05-CQ-1067

**Advanced Weather Interactive Processing System (AWIPS)
Operations & Maintenance**

AWP.TE.SWCTR/TO10-0025

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Change History

Revision	Date	Affected Pages	Explanation of Change
Draft	21 Nov. 2008	ALL	Initial Draft
1	16 Nov. 2009	ALL	Result of Gov't comments and PDT
2	6 Feb. 2009	2	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: Baseline_HYDRO_WHFS_Hydroview (OB8.3); Baseline_HYDRO_WHFS_Hydroview_OB8.1; Baseline_HYDRO_PointData.Control; Checkout_4.4.2_Hydroview_OB8.1.
- Software Test Plan for the Advanced Weather Interactive Processing System Project, Contract #DG133W-05-CQ-1067, January 2009.
- The Silver Spring NWS AWIPS I test bed application.
- Rational RequisitePro.

3.0 TEST CASE DESCRIPTION

This test case demonstrates that the Rate of Change (ROC) Checker successfully computes the rate of change for a specified time series of observational data. The ROC value is checked against three ROC thresholds: QC, alarm, and alert.

3.1 Assumptions, Constraints, and Preconditions

- TO10 software has been installed successfully.
- CAVE, EDEX and pgAdmin III are running.
- No data for the selected site to be tested has been ingested or is purged.
- Four files of canned river stage data are available to be ingested; this data shall allow the user to test the three ROC thresholds.
- 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.
- Test data set available on workstation for editing.

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.

3.4 Test Outputs

The results outlined in section 4.0 are met.

4.0 TEST SCENARIO

Step #	Action	Result	Pass/Fail
Alarm Alert/Rate of Change Checker			
1.	Review the system logs to ensure the quartz scheduler is correctly firing off the ROCC script. Open a terminal on one of the servers. cd /awips/ade/edex/logs	The user is placed at the logs prompt.	
2.	Grep the latest log for whfs by performing the following operation at the prompt. grep run_alarm_whfs *.log more	The lines of code from the log containing whfs display.	
3.	Check the log for the following: ScriptService: run_alarm_whfs execution successful	You'll note similar entries such as: INFO 2009-01-10 02:27:03,796 [DefaultQuartzScheduler_Worker-4] ProcessBuilder: run_alarm_whfs log location: /awips/edex/bin/./data/hdf5/hydroapps/whfs /local/data/log/misc/alarm_whfs.log INFO 2009-01-10 02:27:03,797 [DefaultQuartzScheduler_Worker-4] ScriptService: run_alarm_whfs execution successful This indicates that the required script for ROCC is correctly running.	
4.	Note the time of the info messages. There should be messages every 10 minutes showing the successful execution of the script.	Messages are found showing that the timer is correctly firing and running the script every 10 minutes.	
5.	Using an SQL query review the ABRN1 station entry located in the loctdataimits table. Ensure the data agrees as follows: "ABRN1";"HG";0;"01-01";"12-31";0;38;0;28;2;20;1.8;22;1.9;;;; If not, manually update the table.	The test entries are successfully loaded. These values are needed to successfully test the QC and ROCC functions.	
6.	Open the testAlarmAlert1.shf test data file to be dropped into the SHEF decoder. Open a terminal on one of the servers. cd /awips/storage/ROC_QC File. Review the process and procedures; they are repeated below as test steps. Keep the file open.	Test process to be used is noted.	

7.	Change 1: Change all dates in the dataset (.A) to match the current date. Dates are in the format of mmdd and appear between ABRN1 and Z in the data below.	Changes are made to the test data set.	
8.	Change 2: Change the hour of the first two data sets to match the current hour. Starting at the third data set, modify all subsequent data set times to be an hour behind the previous data set. Times are in the format of hhmm and appear between the DH and /HG in the data below.	Changes are made to the test data set.	
9.	Save the file with the changes.	File is successfully saved.	
10.	Clean out the alert alarm val table by running the following SQL: Delete from alertalarmval		
11.	Ingest the file. Copy the file to: /awips/ade/edex/data/sbn/shef Monitor (list) the shef endpoint until the file disappears.	File is picked up for ingesting.	
12.	Rejected Data test. Open the IHFS DB and query the rejecteddata table.	The following entry should appear (with DTG entered earlier): ABRN1 0114 Z DH1800/HG 100.0. This SHEF obs will fail quality control testing, will be rejected, and will be inserted into the rejecteddata table and will not appear in the height table. Observe a record with a lid column of ABRN1 and a value column of 100.	
13.	Upper Range Alarm test. Open the IHFS DB and query the alertalarmval table.	The following entry should appear (with DTG entered earlier): ABRN1 0114 Z DH1800/HG 23.9 The obs exceeds the upper alarm range limit for the ABRN1 site and will be inserted into the alertalarmval table. Observe a record with a lid column of ABRN1, a value column of 23.9, and an aa_categ column of alarm.	

14.	Upper Range Alert test. Open the IHFS DB and query the alertalarmval table.	The following entry should appear (with DTG entered earlier): ABRN1 0114 Z DH1800/HG 20.9. The obs exceeds the upper alert range limit for the ABRN1 site and will be inserted into the alertalarmval table. Observe a record with a lid column of ABRN1, a value column of 20.9, and an aa_categ column of alert.	
15.	Rate of Change (ROC) Alert Test. Open the IHFS DB and query the alertalarmval table. Note: May need to wait up to 10 minutes to ensure the run_alarm_whfs script executed.	The following entry should appear (with DTG entered earlier): ABRN1 0114 Z DH1800/HG 2.12. The obs remains within the range limits for the ABRN1 site but will exceed the rate of change alert level and be inserted into the alertalarmval table. Observe a record with a lid column of ABRN1, a value column of 2.12, an aa_categ column of alert, and an aa_check column of roc.	
16.	ROC Alarm. Open the IHFS DB and query the alertalarmval table.	The following entries should appear (with DTG entered earlier): ABRN1 0114 Z DH1500/HG 4.0. The obs remain within the range limits for the ABRN1 site but will exceed the rate of change alarm level and be inserted into the alertalarmval. Observe a record with a lid column of ABRN1, a value column of 4, an aa_categ column of alarm, and an aa_check column of roc.	
End of Alarm Alert/Rate of Change Checker Test			
Begin MPE FieldGen Test			
17.	At 15 minutes past each hour MpeFieldgenSrv executes in edex. Check the logs by: cd /awips/ade/edex/logs	User placed at edex logs location.	
18.	Perform the following search: grep MpeFieldGenSrv <current log>	MpeFieldGenSrv executes once per hour at approximately hh:15.	
19.	Open CAVE. Open MPE.	MPE perspective displays.	

20.	Under the 'PrecpFields' menu select 'Radar Mosaic' Note: If no precip data is available, open pgamdin III. Query the 'rwresult' table in the IHFS database.	Verify that the mosaic displays.	
End of MPE FieldGen Test			
Begin Flood Event Archiver Test			
21.	Open the edex logs directory. cd /awips/ade/edex/logs	User is placed at the logs directory.	
22.	Search the edex logs for the execution of the flood event archiver script. grep floodseq <latest log>	An entry will be found in the log at approximately 0630Z saying the "run_floodseq execution successful". The ScriptService will run each day at 0630Z to execute the flood archiver script.	
23.	Examine the run_floodseq log. cd /awips/ade/edex/data/hdf5/hydroapps/whfs/local/data/log/floodseq	User is placed at the floodseq directory.	
24.	List the directory.	Depending on the time since the last installation, one or more floodseq_auto files will exist.	
25.	Open the latest log. Scroll through the log.	A listing of the stage locations processed appears.	
26.	Query the 'riverstat' table in the IHFS database for several of the stations listed in the log that has data such as pe=HG and fs=xx where xx is a numerical value.	Values found in the db match the log. Check the fs column to see that they match.	
End of Flood Event Archiver Test			

5.0 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)

Number	Description	Test Step(s)
SYSR3101	AWIPS system shall implement Rate of Change Checking.	1-16
SYSR3167	The AWIPS system shall implement the Rate-of-change checker application.	1-16
SYSR3115	The AWIPS system shall implement the Flood Event Archiver.	21-26

6.0 SQL SCRIPTS

Script 1:

```
INSERT INTO height (lid, pe, dur, ts, extremum, obstime, value, shef_qual_code, quality_code,
revision, product_id, producttime, postingtime) VALUES ('WHGM7', 'HG', 0, 'RZ', 'Z',
CURRENT_TIMESTAMP(0), 100, 'Z', 1879048191, 0, 'KLSXRR3LSX',
CURRENT_TIMESTAMP(0), CURRENT_TIMESTAMP(0));
INSERT INTO height (lid, pe, dur, ts, extremum, obstime, value, shef_qual_code, quality_code,
revision, product_id, producttime, postingtime) VALUES ('WHGM7', 'HG', 0, 'RZ', 'Z',
CURRENT_TIMESTAMP(0) - interval '30 minutes', 5.5999999999999996, 'Z', 1879048191, 0,
'KLSXRR3LSX', CURRENT_TIMESTAMP(0) - interval '30 minutes',
CURRENT_TIMESTAMP(0) - interval '30 minutes');
```

Script 2:

```
SELECT * FROM alertalarmval WHERE aa_check = 'roc' AND value = '100';
```