Test Case AWIPS II System Monitor

for

Contract DG133W-05-CQ-1067

Advanced Weather Interactive Processing System (AWIPS)
Operations & Maintenance

AWP.TE.SWCTR/AWIPS II System Monitor

DRAFT

Prepared for:

U.S. Department of Commerce
NOAA/NWS Acquisition Management Division
SSMC2, Room 11220
1325 East-West Highway
Silver Spring, MD 20910

Prepared by:

Raytheon Company
STC Office
6825 Pine Street
Omaha, NE 68106

8 April 2009

This document includes data that shall not be duplicated, used, or disclosed – in whole or in part – outside the Government for any purpose other than to the extent provided in contract DG133W-05-CQ-1067. However, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in all sheets.

HARD COPY UNCONTROLLED

Submitted By:

_____ _____

Test Engineer Date

Approved By:

_____ _____

Program Manager Date

_____ _____

Mission Assurance Quality Date

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Change History

Revision	Date	Affected Pages	Explanation of Change
Draft	8 April	ALL	Initial Draft

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Table of Contents

Page

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

1.0 SCOPE

See TO11 Software Test Plan.

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

2.0 APPLICABLE DOCUMENTS

2.1 Source Documents

- Running Sun's JConsole (provided with slice 1 delivery)

2.2 Reference Documents

- AWIPS II Software Test Plan for the Advanced Weather Interactive Processing System Project, Contract #DG133W-05-CQ-1067, January 2009.
- The Silver Spring NWS AWIPS 1 test bed application.

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

3.0 TEST CASE DESCRIPTION

This test case demonstrates the ability to monitor the AWIPS II system using Jconsole. In addition, the ability of AWIPS II to execute CRON jobs is demonstrated.

3.1 Assumptions, Constraints, and Preconditions

- TO11 software has been installed successfully.
- Jconsole installed and available
- Data has been ingested.

3.2 Recommended Hardware

See AWIPS II 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 AWIPS II Software Test Plan contain general test inputs applicable to all TO11 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.

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

4.0 TEST SCENARIO

Step #	Action	Result	Pass/Fail
1.	Launch a terminal window.	Terminal window is at user prompt.	
2.	ssh –X root@awips-<int1> where <server>(e.g. lx[1-5]	You are prompted for password.	
3.	Enter password and select 'return'.	User is logged into the selected server.	
4.	At the prompt enter 'jconsole'. Note: case sensitive.	The JConsole: 'New Connection' dialog appears within the Java Monitoring & Management Console perspective.	
5.	In the dialog select 'Local Process:' and 'org.tanukisoftware.wrapper.WrapperSimpleAp'. Then select 'Connect'.	The user opens into the Overview tab. A display of 6 tabs appear: Overview, Memory, Threads, Classes, VM Summary, MBeans. In the default Overview perspective, the user is automatically monitoring 4 processes: Heap Memory Usage, Threads, Classes, and CPU Usage.	
6.	Select 'Memory' tab.	The Heap Memory Usage graph displays. The user can monitor system memory usage over various time ranges. Other Charts can be monitored as well (Charts dropdown menu).	
7.	Select 'Threads' tab.	User can monitor the number of threads over various time ranges.	
8.	Select 'Classes' tab.	User can monitor Number of Loaded Classes over various time ranges.	
9.	Select 'VM Summary' tab.	User can monitor virtual memory usage.	
10.	Select MBeans	The MBeans tab opens. A list of plug-ins, consumers, endpoints, processors, and routes appears.	
11.	Select 'org.apache.camel'.	Contents list of AWIPS II plug-ins display.	
12.	Scroll down and select 'routes'.	List of AWIPS II plug-in routes appear.	
13.	Select acars-camel, and then'acarsingestRoute'.	A selection for Attributes, Operations, and Notifications appear.	

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Step #	Action	Result	Pass/Fail
14.	Expand attributes by highlighting and opening using the left mouse button.	An Attribute Values table displays. Values for the following processes located under the Name column appear: Description, EndpointUri, FirstExchangeCompletionTime, FirstExhangeFailureTime, LastExchangeCompletionTime, LastExchangeFailureTime, MaxProcessingTimeMills, MeanProcessingTImeMils, MinProcessingTimeMills, NumCompleted, NumExchanges, NumFailed, and TotalProcessingTImeMills.	
15.	Select 'Refresh'.	Table values update. Note: May take up to a minute before refresh values are noted. Also dependent upon data flow.	
16.	Continue to expand each route down the line. Note that these values provide the most useful information about the plug-ins. Use table 1, Routes section, to document Pass/Fail.	As with the acars ingest data, an Attribute Value table displays for each route. Each route contains the same attribute values (Name column) to be monitored as described in step 14 results.	N/A
17.	Select 'org.apache.activemq.	A folder named localhost appears.	
18.	Expand the localhost folder.	A tab called Broker appears as well as the following folders: Connection, Connector, Queue, Subscription, and Topic.	
19.	Expand Queue.	A list of queues appear. They are: Ingest.Alphanumeric, Ingest.Bufr, Ingest.Generic, Ingest Mesowest, Ingest.Radar, Ingest.Warning, activeTable, edex.MpeFieldGenSrv, edex.VtecSrv, edex.VtecSrvingest, edex.spcWatch, gfeCacheListener, ingest.text, manualSmartinit, smartinitAggregator, stageNotification, and subscriptions.	

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Step #	Action	Result	Pass/Fail
20.	Select Ingest.AplhaNumeric.	Two selections appear: Attributes and Operations.	
21.	Expand attributes by highlighting and opening using the left mouse button.	An Attribute Values table displays. Values for the following processes located under the Name column appear: AverageEnqueueTime, ConsumerCount, CursorFull, CursorMemoryUsage, CursorPercentUsage, DequeueCount, DispatchCount, EnqueueCount, InFlightCount, MaxAuditDepth, MaxEnqueueTime, MaxPageSize, MaxProducersToAudit, MemoryLimit, MemoryPercentUsage, MemoryUsagePortion, MinEnqueueTime, Name, ProducerCount, ProducerFlowControl, QueueSize, Subscriptions, and UseCache.	
22.	Select 'Refresh'.	Table values update. Note: Refresh depends upon data flow.	
23.	Continue to expand each Queue down the line. Use table 1, Routes section, to document Pass/Fail.	As with the IngestAlphaNumeric queue, an Attribute Value table displays for each queue. Each queue contains the same attribute values (Name column) to be monitored as described in step 21 results.	N/A
End of System Monitor Test			
Begin CRON Test			
CRON Test Example 1			
24.	At 15 minutes past each hour the CRON job MpeFieldgenSrv executes in edex. Check the logs by: cd /awips/ade/edex/logs	User placed at edex logs location.	

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Step #	Action	Result	Pass/Fail
25.	Perform the following search: grep MpeFieldGenSrv <current log>	MpeFieldGenSrv executes once per hour at approximately hh:15. CRON jobs can be established and executed within AWIP II.	
26.	Open CAVE. Open MPE.	MPE perspective displays.	
27.	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.	
CRON Test Example 2			
28.	Open the edex logs directory. cd /awips/ade/edex/logs	User is placed at the logs directory.	
29.	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. CRON jobs can be established and executed within AWIPS II.	
30.	Examine the run_floodseq log. cd /awips/ade/edex/data/hdf5/hydroapps/whfs/local/data/log/floodseq	User is placed at the floodseq directory.	
31.	List the directory.	Depending on the time since the last installation, one or more floodseq_auto files will exist.	
32.	Open the latest log. Scroll through the log.	A listing of the stage locations processed appears.	
End of CRON Test			

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Table 1 Processes Monitored Using Jconsole. The following key processes can be monitored using Jconsole.

Camel Processes	
Routes	**Test Passed Y/N**
activetable-camel	
airep-camel	
alarm-Whfs-context	
binlightning-camel	
bufrmos-camel	
bufrua-camel	
camel	
ccfp-camel	
dissemination-camel	
dpa-camel	
dqcPreproc-context	
floodseqWhfs-camel	
gfe-camel	
gfe-camel-server	
goessounding-camel	
gib-camel	
ihfsDbPurge-contest	
logFilePurger-context	
mesowest-camel	
modelsounding-camel	
mpeFieldGen-context	
mpeHpeFilePurger-context	
obs-camel	
pirep-camel	
poessounding-camel	
pointDataWhfs-context	
profiler-camel	
purge-camel	
qpf-camel	
radar-camel	
recco-camel	
redbook-camel	
sat-camel	
script-runner-camel	
sfcobs-camel	
shef-camel	
subscription-camel	
taf-camel	
text-camel	

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED

Camel Processes	
textdbsrv-camel	
uengine-camel	
utility-camel	
vtec-camel	
warning-camel	
ActiveMQ Processes	
Routes	
Ingest.Bufr	
Ingest.Generic	
Ingest.Radar	
Ingest.Warning	
activeTable	
edex.MpeFieldGenSrv	
edex.VtecSrv	
edex.VtecSrv.rsp	
edex.VtecSrvIngest	
edex.spcWatch	
gfeCacheListener	
Ingest.text	
manualSmartInit	
smartInitAggregator	
stageNotification	
subscriptions	

DRAFT

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this document.
HARD COPY UNCONTROLLED