AWIPS SOFTWARE INSTALLATION INSTRUCTION NOTE 39
(for Electronic Systems Analysts)
Maintenance, Logistics, & Acquisition Division
W/OPS1: FJZ

SUBJECT : Maintenance Release OB1.1

PURPOSE : To provide installation instructions for Maintenance Release OB1.1

PATCH NUMBER : MROB11_SEC_A100340

AUTHORIZATION : The authority for this modification note is Request for Change AB378

AFFECTED SITES : All AWIPS sites must install this maintenance release.

VERIFICATION STATEMENT : The Maintenance Release OB1.1 installation procedures were tested and verified at TBDW (NGIT, VA), BOX (Boston WFO, MA), GSP (Greenville WFO, SC), ILN (Cincinnati WFO, OH), LUB (Lubbock WFO, TX), PBP (Pacific Region Headquarters, HI), REV (Reno WFO, NV), RLX (Charleston WFO, WV), TBW (Tampa WFO, FL), and TOP (Topeka WFO, KS).

PREINSTALLATION: REQUIREMENTS ROB1 must be installed.

EFFECT ON OTHER: INSTRUCTIONS File this note in EHB-13, Series II, section 3.1. Discard all previous software installation instructions, prior to Build OB1 (AWIPS Software Installation Instruction Note 37) in section 3.1.

TIME REQUIRED : Approximately 15 minutes for the maintenance release, 25 minutes for the localization script, and about 60 to 90 minutes for the push script

SECURITY LEVEL : root

TECHNICAL SUPPORT : For questions or problems regarding these installation instructions or installing this Release, please contact the NCF at 301-713-9344**.**

A. MROB11 Patch Summary

1. Implement HPC "delta" grids into AWIPS - CONUS sites only (DR# 12167 - FSL_A100311)
2. PATH problem with awipsusr. Xhost+ prevents D2D from starting on LX (DR# 12157 - SEC_A100314)
3. MSAS filling up /tmp directory (DR# 12068 - FSL_A100308)
4. Climate processes can hang if recordClimate dies on the DS (DR# 12025 - MDL_A100316)
5. LSR spotter ingest failure. LSR GUI writes to /data/fxa (DR# 11971, 12310 - MDL_A100307)
6. Updated files for LDAD not pushed to DS2 (DR# 12132, 12164 - NGIT_A100317)
7. Skew-T and Hodograph print improperly (Linux only) (DR# 12002 - FSL_A100315)
8. Record Climate product has incorrect hour format in mass media header (DR# 12211 - MDL_A100318)
9. Modify LAPS cloud analysis for GOES12 Satellite (DR# 12224 - FSL_A100323)
10. All directories are not showing up in WFO Archiver Setup GUI (DR# 12237 - NGIT_A100324)
11. Sendmail Security patch needs to be reinstalled on all sites (DR# 12286 - NGIT_A100327)
12. PX O/S process (megamom) creates numerous mail messages to root (DR #12292 - NGIT_A100329)
13. PX RAID monitor utility not included within Red Hat software (DR #12266 - NGIT_A100331)
14. SPD radar product not on the AWIPS text workstation (DR# 12357 - FSL_A100330)
15. WWA VTEC fixes; (DR# 12336, 12337 - MDL_A100332)
16. Time-matching issue with Z/SRM all-tilt option (DR# 12388 - FSL_A100333)
17. LAPS perl script using high CPU on AS2 (DR# 12419 - FSL_A100335)
18. Add BOXSTAT functionality to PXs for monitoring performance (DR# 12095)

B. ROB11 Detailed Description

1. Implement HPC "delta" grids into AWIPS - CONUS sites only (DR# 12167 - FSL_A100311)

   The following parameters have been implemented for IOC (i.e., available within AWIPS by CONUS ORD). These would be produced for days 4 through 7 at the 20-km resolution on grid 212.
   - Max Temp - once per day
   - Min Temp - once per day
   - 12 hr Pop - twice per day
   - Wind Speed - twice per day (once per day to start, twice per day by ORD)
   - Wind Direction - twice per day (once per day to start, twice per day by ORD)
   - Sky Cover - twice per day (once per day to start, twice per day by ORD)

2. PATH problem with awipsusr. Xhost+ prevents D2D from starting on LX (DR# 12157 - SEC_A100314) Since Red Hat builds 'wish' with security turned on, D-2D will not start up if the awipsusr's PATH lists the 'RH-native wish' ahead of the 'AWIPS-delivered wish' AND if awipsusr has executed an 'xhost +'. This patch will fix fxa's .environs file such that ${PATH} will be placed after '/usr/local/tcltk/bin' in the PATH statement. This forces the AWIPS wish to be referenced ahead of /usr/bin/wish. This release will also fix /awips/fxa/bin/fxa.environs.

3. MSAS filling up /tmp directory (DR# 12068 - FSL_A100308)
   Sites are having /tmp filling up due to MSAS creating /tmp/MSAS_files to store QC data. Fixes for a performance DR (8180 and 8184) changed writes from the /data/fxa partition to a locally mounted partition /tmp. The performance seems to have been improved, but /tmp is not big enough for all of the data being written from some sites such as VHW. This is a function of the number of local stations being QC'd by MSAS. Local partition /data/co has been extended to 250MB and MSAS writes have been redirected to /data/co/MSAS_files/filtered1.

4. Climate processes can hang if recordClimate dies on the DS (DR# 12025 - MDL_A100316)
   - The recordClimate program is a persistent process running on the DS. It creates a pair of pipe files through which it is fed new data by the climate program when daily climate runs. If the recordClimate process dies or is killed, then the remsh'd and parent climate processes that are trying to send data via the pipe files get hung up, because the script that is supposed to detect whether recordClimate is still running, before trying to send data to the pipes, has an error. In extreme cases, this could result in the DS running out of available processes if the hung processes are not killed.
   - The script 'startRecordClimate.pl' fails to set the umask value to "000" before launching recordClimate process. If recordClimate is restarted outside its normal place in the 'startIngest.ds1' script, the default fxa umask value of 022 results in the pipe files having no write permissions for awipsusr and textdemo. If climate is run manually, or if the climate cron run user notifications are acknowledged, then recordClimate's pipe files cannot be written to by the non-fxa climate process, and if a climate record occurs, recordClimate will not be run to generate a product and user notification. This will not cause a hangup of any processes.
   - The script that launches the climate build_f6 program erroneously deletes the recordClimate pipe files, also disabling recordClimate from producing its output products from that point forward, but not causing it to hang.

5. LSR spotter ingest failure. LSR GUI writes to /data/fxa (DR# 11971, 12310 - MDL_A100307)
   - If the lat/lon of a spotter is too close to the lat/lon of a city centroid, the acos() function in a FORTRAN utility can not handle it and the LSR GUI will not start -up.
   - With the advent of LINUX pre-processors, some of the directory architecture has changed. For visibility to all platforms, files are not allowed to be written directly to /data/fxa. This restriction can keep the LSR GUI from launching.

6. Updated files for LDAD not pushed to DS2 (DR# 12132, 12164 - NGIT_A100317)
   - Updated LDAD files were not pushed to DS2 during the OB1 install. This will cause functionality problems when failed over to DS2.
   - After localization is run to set up hylafax to automatically fax the requested PIL, the entry will appear in ds:/data/fxa/trigger. These products will have extra spaces appended if the PIL is less than 9 characters. Therefore, only 9 character PILs would automatically fax.

7. Skew-T and Hodograph print improperly (Linux only) (DR# 12002 - FSL_A100315)
   Sites have reported that since 5.2.2, the prints of Hodographs and Skew-Ts do not work correctly. The circles would not appear on the hodograph and there was a grey box extending into the Skew-T area. This was the case for both printers and all workstations. This release fixes the Linux workstations only by inserting extra flush and color set commands in the logic that creates the blanking box around the hodograph.

8. Record Climate product has incorrect hour format in mass media header (DR# 12211 - MDL_A100318) The RER products generated by the recordClimate program erroneously use the 24-hr clock for the time values, even though the AM/PM indicator is present (e.g. shows a time of 1334 PM instead of 0134 PM).

9. Modify LAPS cloud analysis for GOES12 satellite (DR# 12224 - FSL_A100323)
   The LAPS visible satellite ingest requires different calibration values for GOES8 and GOES12. To avoid distortion of visible satellite data used in LAPS, the 'cloud.nl' file will be modified to tell LAPS algorithms not to use visible satellite data, since that data may be erroneous. The 'cloud.nl' file is a file accessed at runtime. The GOES12 satellite will replace GOES8 around April 1, 2003.

10. All directories are not showing up in WFO Archiver Setup GUI (DR# 12237 - NGIT_A100324) Not all of the directories in /data/fxa are showing up in the Setup GUI for the Archiver. Specifically, any directory that is a symbolic link to another directory on a PX is not listed.

11. Sendmail Security patch needs to be reinstalled on all sites (DR# 12286 - NGIT_A100327) Recent CIRT security issues with 'sendmail' require that all platforms at a site have sendmail either patched (HP) or disabled (Linux).

12. PX O/S process (megamom) creates numerous mail messages to root (DR #12292 - NGIT_A100329) The 'megamon' utility was a valid monitoring tool for the Dell 1650 hardware. With the introduction of the Dell 2650s and the latest Red Hat Advance Server software, the root mail logs are filling up reporting an error for "Battery Backup Module PRESENT but Battery Backup Pack is Missing." The utility is obsolete and should not be running with the PERC3/DC RAID controller card.

13. PX RAID monitor utility not included within Red Hat software (DR #12266 - NGIT_A100331) The RAID monitor utility needs to be installed separately from the Red Hat Advance Server software release. This new software allows the user to correct RAID configuration issues without requiring a VGA monitor connected to the PX. This utility will also be used the NCF/ITO to monitor the health of the RAID arrays.

14. SPD radar product not on the AWIPS text workstation (DR# 12357 - FSL_A100330)
The Supplemental Precip Data product is ingested on AWIPS, but cannot be viewed on the text workstation. The product is selectable via the text workstation browser, but there is no product displayed.

15. WWA VTEC fixes; 10-1701 compliant (DR# 12336, 12337 - MDL_A100332)
- DR# 12336 -> Missing "Z" in VTEC string for new WCN products.
The solution separated the 'Z' and the '/' in text construction.
- DR# 12337 -> Extra/blank line when VTEC is not generated. An extra line (equivalently a blank line) is being generated between the UGC and the county/zone fields if the VTEC line is not activated/generated. The solution added code to check if both vtec_sig and vtec_phenom were set.

16. Time-matching issue with Z/SRM all-tilt option (DR# 12388 - FSL_A100333)
When calling up the Z/SRM product for all tilts, it was discovered that the SRM is matched with the Z from a tilt below (e.g., 0.5Z matches with 1.5 SRM). The solution added a couple of methods in DataTime that explicitly take into account the overrides that occur for the time components in the case of a space load. The function now uses methods in DataTime that formalize the override of space load to do the main time sorting and matching. Also, modified the routine that calculates delta times to ignore the artificial one-minute offsets which are common in redbook graphics.

17. LAPS perl script using high CPU on AS2 (DR# 12419 - FSL_A100335)
Periodically, a laps perl script issued from the fxa cron will hang on as2 consuming a high amount of CPU time. This will continue to consume CPU time indefinitely. Each time the problem has occurred, it involved the wind3d portion of laps. The logs were actually zero bytes in length in /data/logs/fxa/<yymmdd>/laps.

18. Add BOXSTAT functionality to PXs for monitoring performance (DR# 12095)
This utility is required to monitor performance on the Linux platforms similar to data gathered by MeasureWare on the HP platforms.

C. Pre-Installation Procedure

1. ROB1 must be installed.

NOTE:	5.2.2.2 sites should first install Release OB1, wait at least 24-hour, then install Maintenance Release OB1.1.

2. Check http://www.ops1.nws.noaa.gov/awips_softwre.htm web page for a lessons learned document for this release.
3. Logout of all the D2D sessions on BOTH HP workstations and Linux platforms.
4. Logout of all the Text Workstations.

This completes the pre-Installation procedure.

D. Maintenance Release Download and DS1 Installation Procedure

NOTE:	NGIT has pushed all install related files to the `/data/local/ROB1.1` directory.

1. At a HP workstation, open a telnet window and log into ds1 as **root** by typing:

   `rlogin ds1-<site> -l root`

2. Change to the /data/local/ROB1.1 directory by typing:

   `cd /data/local/ROB1.1`

3. Create a script output log file by typing:

   `script -a ROB1.1.out`

4. Uncompress the release bundle by typing:

   `zcat ROB1.1.tar.Z | tar xvf -`

5. Run installation script by typing:

   `./installROB1.1`

6. Stop the output script by typing:

   `./stopscript`

This completes the maintenance release download and DS1 installation procedure

E. Post Installation Configuration Checkout Procedure

1. Check the `.out` file for any files that may not have been removed or copied correctly. Check for `cannot write: Text file busy`.

   `grep busy ROB1.1.out`

   If any files were not removed correctly, delete them manually.

This completes the post installation configuration checkout procedure.

Note:	1. Users can login D2Ds and the workstations at this time.
	2. Part F (Localization and Push Script Procedure) can be performed on another day. The procedure takes 1.5 to 2 hours to complete.

F. Localization and Push Script Procedure

1. Following the localization steps, users should log out of ALL sessions and back into their workstation. This will enable the latest localization changes.

CRITICAL NOTE:

The ROB1.1 localization will overwrite the local RPS lists (i.e., *.storm and *.clear-air) in `/data/fxa/radar/lists` with those created from `/awips/fxa/data` (i.e., KXXX.storm and KXXX.clear-air). This is a result of the '-auxFiles' argument which does a copy/replace using the KXXX.storm and KXXX.clear-air RPS Lists in `ds:/awips/fxa/data` and replaces all .storm and .clear-air RPS Lists in `ds:/data/fxa/radar/lists`. These are the default RPS Lists that are used when a radar changes VCP modes, which ultimately create the .current RPS List. This is also where the national merge takes place between the .storm or .clear-air RPS List and the national RPS List in `/data/fxa/nationalData` ONLY for the radars that are doing national radar WAN reporting.

Prior to performing the localization, the site should preserve the local radar lists as follows:

1. For the sites with ONLY ONE dedicated radar connection the workaround is simple. From ds1:

   ```
   cd /data/fxa/radar/lists
   cp -p <RADAR>.storm /awips/fxa/data/KXXX.storm
   cp -p <RADAR>.clear-air /awips/fxa/data/KXXX.clear-air
   ```

   Repeat the copy to ds2, using 'rcp -p'.

   This will replace the KXXX RPS List in `/awips/fxa/data` with the new default RPS List. Any future -auxFiles localizations will recopy the existing contents of `/data/fxa/radar/lists`. If sites change the default RPS Lists in `/data/fxa/radar/lists`, it is **important** to copy it to the appropriate KXXX RPS List in `/awips/fxa/data`, otherwise, another -auxFiles will erase the changes in `/data/fxa/radar/lists`.

2. For sites with multiple dedicated radar connections (TCP/IP and x.25) the workaround is as follows:

   Place the TCP/IP (ORPGCommsMgr - the ones using a max product count of 65 in the portInfo.txt) connection RPS Lists in the localization/SITE directory as <SITE>-<RADAR>.storm and <SITE>-<RADAR>.clear-air. The -auxFiles replaces the KXXX RPS Lists in the `/data/fxa/radar/lists` with the RPS List in the localization/SITE directory. Sites should not put the 8-bit radar data into the x.25 dedicated radar RPS Lists. This will cause Narrowband load shedding.

2. To implement HPC “delta” grids for CONUS sites (page 2, item #1), the following steps need to be performed after the installation:

   a. On DS1, execute the following "forced" localization:

```
su - fxa
cd /awips/fxa/data/localization/scripts
  ./mainScript.csh f -grids -auxFiles
exit
```

   b. After a successful localization, execute the following "push" script.

```
su - root
cd /data/local/ROB1.1
script -a push_localization_ROB1.1.out
./push_localization_ROB1.1
./stopscript
exit
```

3. Users should log out and back into ALL of their workstation sessions at this time.

This completes the localization and push script procedure.

REPORTING MODIFICATION

Report the completed software installation using the Engineering Management Reporting System (EMRS) according to the instructions in the NWS Instruction 30-2104, Maintenance Documentation, Part 4, and Appendix F. A sample EMRS report is attached. As an additional guide, use the information in the table below.

Block #	Block Type	Information
5	Description	Install AWIPS Maintenance Release OB1.1 (patch # MROB11_SEC_A100340) I.A.W. AWIPS Software Installation Instruction Note 39
7	Equipment Code	AWIPS
8	Serial Number	001
15	Comments	Installed Maintenance Release OB1.1 (patch # MROB11_SEC_A100340) I.A.W. AWIPS Software Installation Instruction Note 39
17a	Mod. No.	S39

Signature Not Verified

Mark S. Paese

Digitally signed by Mark S. Paese
DN: cn=Mark S. Paese, o=DOC/NOAA/NWS, c=US
Date: 2003.04.24 14:02:13 -04'00'

Mark S. Paese
Director, Maintenance, Logistics, and Acquisition Division

Attachment - Sample EMRS Report

Attachment - Sample EMRS Report

A26 Detail Form - ESCM2, SILVER SPRING, MD :: EMRS ANALYST - Microsoft Internet Explorer

New A26 | Commit A26 | Place on Hold | Copy A26 | Delete A26 | Detail Report | Preference | Document Summary | Help

GENERAL INFORMATION

NEW RECORD | WFO* DVN | Document No.* DVN3041 001

1. Open Date	Open Time	2. Op Initials	3. Response Priority	4. Close Date	Close Time
04/17/2003	08:00	WSH	Immediate / Low / Routine / Not Applicable	04/17/2003	10:00

5. Maintenance Description 432 characters left AWIPS

Install AWIPS Maintenance Release OB1.1 (patch # MROB11 SEC A10C340)

EQUIPMENT INFORMATION

6. Station ID*	7. Equipment Code	8. Serial Number	9. TM	10. AT	11. How Mal
DVN	AWIPS	C01	M	M	999

Alert: Time Remaining: (For Block 12 use only)

13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING

ASN	Vendor Part No. (New Part)	Serial Number (Old Part)	Serial Number (New Part)	New Row
				Delete Row

14. WORKLOAD INFORMATION

a. Routine		b. Non Routine		c. Travel		d. Misc		e. Overtime	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
						2	00		

MISCELLANEOUS INFORMATION

15. Maintenance Comments 654 characters left

Installed AWIPS Maintenance Release OB1.1 I.A.W. AWIPS Software Installation Instruction Note 39

16. Tech Initials WSO

17. SPECIAL PURPOSE REPORTING INFORMATION

a. Mod No.	b. Mod Act/Deact Date	c. Block C	d. Trouble Ticket No.	e. Block E
S39	04/17/2003			

Commit A26 | Place on Hold | Copy A26 | New A26 | Cancel

Done | Internet