

## AWIPS SOFTWARE INSTALLATION NOTE 75

Operations Division  
W/OPS12: KS

**SUBJECT:** AWIPS Release OB8.3

**PURPOSE:** Provides installation instructions and related information for the software release.

**SITES AFFECTED:** All Weather Forecast Offices (WFO), River Forecast Centers (RFC), regional headquarters and National Centers for Environmental Prediction (NCEP).

**AUTHORIZATION:** The authority for this note is Request for Change (RC) 11232.

**VERIFICATION STATEMENT:** This procedure was tested and verified on test platforms at the National Headquarters in Silver Spring, MD (NMTW, NMTR, and NHOR), and the following operational platforms: Central Region Headquarters in Kansas City, MO (BCQ); Southern Region Headquarters in Ft. Worth, TX (EHU); Eastern Region Headquarters in Bohemia, NY (VUY); Alaska Region Headquarters in Anchorage, AK (VRH); Pacific Region Headquarters in Honolulu, HI (PBP), Weather Forecast Offices (WFO) Boulder, CO (BOU); Pueblo, CO (PUB), Santa Teresa, NM (EPZ); Midland, TX (MAF); Phoenix, AZ (PSR); Taunton, MA (BOX); Gray, ME (GYX); State College, PA (CTP); Tucson, AZ (TWC); Northwest River Forecast Center in Portland, OR (PTR), and the Radar Operations Center in Norman, OK (OSFW).

**ESTIMATED COMPLETION DATE:** All sites should complete installation by September 30, 2008. The installation date must be scheduled on the NWS Oracle AWIPS Schedule calendar.

**TIME REQUIRED:** Pre-installation procedures take about 2 hours, but the RFC database dump could take an additional 10 hours.  
Main installation procedures: 2-3 hours.  
Post installation procedures take about 1 hour, but the RFC database restore could take an additional 10 hours.

**ACCOMPLISHED BY:** Electronic Systems Analysts (ESA) or their designee.

**EQUIPMENT AFFECTED:** AWIPS

**SPARES AFFECTED:** None.

**PARTS/MATERIALS REQUIRED:** AWIPS OB8.3 Software Installation DVD.  
RHEL5 Rescue CD.

**SOURCE OF PARTS/MATERIALS:** Raytheon

**DISPOSITION OF REMOVED PARTS/MATERIALS:** Not Applicable.

**TOOLS AND TEST EQUIPMENT  
REQUIRED:**

None.

**DOCUMENTS AFFECTED:**

File this note in EHB-13, Section 3.1. Discard all previous software installation instructions prior to Build OB8.1 (AWIPS Software Installation Instruction Note 68) in Section 3.1.

**PROCEDURE:**

These instructions are written for both RFC and WFO systems. As a result, some instructions may only be applicable to RFC systems, WFO systems or individual sites. Each step or section is clearly marked. **All steps are required unless otherwise directed in the instructions.**

Script log output files for this release are available at [https://www.ops1.nws.noaa.gov/Secure/awips\\_software.htm](https://www.ops1.nws.noaa.gov/Secure/awips_software.htm)

**TECHNICAL ASSISTANCE:**

For questions or problems pertaining to this note, contact the Network Control Facility (NCF) at (301) 713-9344 and ask for OB8.3 installation support.

**REPORTING INSTRUCTIONS:**

Report the completed modification using the Engineering Management Reporting System (EMRS) according to the instructions in [EHB-4, Maintenance Documentation](#), Part 4, and Appendix F. Include the following information on the EMRS report:

Maintenance Description (block 5): **Install AWIPS Release OB8.3**

Equipment Code (block 7): **AWIPS**

Serial Number (block 8): **001**

Maintenance Comments (block 15): **Installed Release OB8.3 I.A.W. AWIPS Software Installation Instruction Note 75.**

Mod No. (block 17a): **S75**

A sample EMRS report is provided as attachment **G**.

Mark S. Paese  
Director, Operations Division

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Attachment B - Main Installation Instructions  
Attachment C - WarnGen Template Changes  
Attachment D - NDM Files Updated in OB8.3  
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## ATTACHMENT A - Pre-Installation Instructions

The identity of the system can be determined by checking the `$SITE_TYPE` variable. Each AWIPS also has a unique site name, which can be determined by checking the `$SITE_IDENTIFIER` variable.

### A.1 General Information

The OB8.3 installation includes new software at all sites.

#### A.1.1 Prerequisites

The OB8.3 release contains a number of significant prerequisites. These activities require considerable advance planning to complete prior to the installation.

- AWIPS OB8.2.1 Maintenance Release installation (as per AWIPS Software Installation Instruction Note 73) must be completed before proceeding with the OB8.3 installation.
- The site and its neighboring sites that share Inter Site Coordination (ISC) must configure the ISC information according to <http://www.nws.noaa.gov/os/vtec/ISC.html>
- Primary and secondary backup sites must have installed at least OB8.2.1.1 for IFPS service backup to work.
- Transition to the new Linux Local Data and Dissemination (LDAD) servers must be completed. The old HP LDAD server cannot be used for operations after the OB8.3 installation.
- Tier 1 (download and basic processing) of the new Flash Flood Monitoring and Prediction shapefiles must be completed in order for the FFMP application to work.
- Tier 2 (Quality Control of basin names) of FFMP must be completed before using the new WarnGen Calls To Action (CTA) statements that include basin names in a warning.

#### A.1.2 Preferred Sequence for Ongoing Hardware/Software Installations

There are a number of system modification procedures (AX and XT replacement) that are scheduled during the first half of the deployment period of OB8.3. The preferred installation sequence is to complete the OB8.3 installation after the System Modification Notes. If the OB8.3 release is completed prior to the hardware replacement, then additional action (as noted in the System Modification Notes) will be required in order to update the replacement hardware.

#### A.1.3 WarnGen Information (WFO Systems Only)

The only significant changes for the WarnGen application in OB8.3 are logic and template changes associated with producing an automated list of drainage basins in all WarnGen hydrologic products. However, the OB8.3 templates should not be used until Tier 2 of the FFMP shapefile project has been completed. Legacy (vintage OB8.2) customized WarnGen templates may be used until the completion of Tier 2. At that point, changes can be merged into customized templates. Additional information about the changes in the templates is included in Attachment C. This attachment should be provided to the WarnGen focal point at each WFO.

#### A.1.4 Database Upgrade Information

Postgres will be upgraded from 7.4.8 to 8.2.6 in section B.2, step 1. All local applications which use the Postgres libraries will need to be recompiled.

### A.1.5 Remove Test Software

As a general rule, sites testing software via ATAN should remove the software before the upgrade. For example, the Marine Weather Warning software, ATAN 891, needs to be removed.

## A.2 Pre-Installation Procedures

Complete Sections A.2.1 through A.2.9 prior to beginning the core installation in Attachment B.

### A.2.1 Coordinate Installation Date

Coordinate the installation with backup sites, uplink sites, hub site pairs, and Center Weather Service Units (CWSU), as applicable.

1. AWIPS will be unavailable for operational use during the installation. Coordinate with backup sites to arrange for service backup as needed.
2. Weather Wire uplink sites must ensure that the backup Weather Wire site(s) are not upgrading to this release concurrently. Contact the AWIPS Regional Focal Point to request assistance with this coordination.
3. Wide area network (WAN) hub sites must ensure that the corresponding hub site pair is not concurrently doing similar upgrades. Hub site pairs are BOX/CTP, EAX/TSA, MPX/ILN, FFC/LIX, STO/PQR and SLC/FWD. Contact the AWIPS Regional Focal Point to request assistance with this coordination.
4. Sites with connections to CWSUs must coordinate the installation of this release with those sites, since there will be a disconnection during the release installation.

### A.2.2 Download Files from the NOAA1 Server

Download the required OB8.3 National Data Management (NDM) files and other files that will be used in the installation. These files are placed in a safe directory until the main install day. Attachment D contains a list of the files downloaded in this step.

1. From a Linux Workstation, open a terminal window and log into **DX1** as `root`.
2. As user `root` from **DX1**, type the following commands:  

```
mv /local/install/* /tmp
mkdir -p /data/local/nationalData
chown fxa:fxalpha /data/local/nationalData
chmod 775 /data/local/nationalData
cd /data/local/nationalData
mv /data/local/nationalData/* /tmp
```

**NOTE:** For the following `sftp` command, type **yes** to any system prompts about adding the RSA key.

```
sftp ftpawips@165.92.25.137 (Type in password !SAWIPS4 when
```

```

                                prompted)
cd pub/ndm/OB83
mget *                                (5 files are downloaded)
cd ../../maps/currentBaseline/faa
mget *                                (16 files are downloaded)
exit
chown fxa:fxalpha *
chmod 775 *
```

**NOTE:** If the site has made localized changes to any of the NDM files listed in Attachment D, it is necessary to merge modifications into the downloaded files before the day of the install. Send changes that are applicable to Fran Curnow ([frances.curnow@noaa.gov](mailto:frances.curnow@noaa.gov)).

### A.2.3 Update RiverStat Table

Postgres is upgraded from 7.4.8 to 8.2.6 in OB8.3. There are some bad date values in the RiverStat table, which must be set to NULL prior to the Postgres update. Complete the following to update the table.

As user postgres from **DX1**, type the following commands:

```

export PGUSER=pguser
psql hd_ob82xxx          (Where xxx is Site ID)
UPDATE RiverStat SET ratedat = NULL where ratedat = '5881610-07-12';
UPDATE RiverStat SET rrevise = NULL where rrevise = '5881610-07-12';
\q
```

### A.2.4 (RFC Systems Only) Backup Changed Hydrologic Files

The following list of files on the **AX** server will be overwritten during the installation of the Hydrologic Deterministic Verification Software. If local modifications have been made to these files, save a copy and then manually merge in the changes after the install (section B.3.7):

```

/rfc_arc/verify/app-defaults/IVP_SYSTEM_FILE.txt
/rfc_arc/verify/app-defaults/IVPBB_SYSTEM_FILE.txt
/rfc_arc/verify/app-defaults/IVPRUNINFO_SYSTEM_FILE.txt
/rfc_arc/verify/input/oper/buildpairs_template.bat
/rfc_arc/verify/input/oper/natlstat_pairs_template.above.bat
/rfc_arc/verify/input/oper/natlstat_pairs_template.below.bat
/rfc_arc/verify/input/oper/natlstats_template.bat
```

In addition, the following file on **DX1** is overwritten:

```

/awips/hydroapps/lx/rfc/nwsrfs/ifp/scripts/fcst_script
```

### A.2.5 Activate High Resolution Scatterometer Ocean Winds

High Resolution Scatterometer Ocean Winds are a new product in OB8.3. By default, this data will not be ingested into the system due to its large size. Therefore, sites that do not need the ocean data can skip to the next section.

The `acqPatternAddOns.txt` file must be modified to set up ingest of this data. Review the image in Attachment F to select the area or areas of interest.

As user `fxa` on **DX1**, edit `/data/fxa/customFiles/LLL-acqPatternAddOns.txt`, where `LLL` is the localization ID. If the file does not exist, create it. Add the following line where appropriate, replacing the `#` with the areas selected above.

```
POINT          ^JSXX0[#].*    /ispan/bufr/Ascat
```

For example, if Area 1 and Area 2 were selected, then the entry would appear as follows:

```
POINT          ^JSXX0[12].*  /ispan/bufr/Ascat
```

Save the file and exit.

### A.2.6 (RFC Systems Only) Backup AX Database

Postgresql will be upgraded on the RAX from 7.4.8 to 8.2.6. As part of this upgrade, the database needs to be wiped out and recreated, so a database dump file is necessary to complete this process. Since this process will take 2-12 hours, it is suggested to start these steps at the end of the day prior to the install, and let it run overnight.

1. As user `root` from **AX**, type the following commands:

```
vacuumdb -f -a -U postgres (command may take some time to run)
```

```
df -h /data
```

```
du -sch /data/pgdata
```

If the amount of available space in `/data` is not at least twice the amount of space used by the `/data/pgdata` directory, then **DO NOT PROCEED**. Call the NCF and request OB8.3 installation support for alternate arrangements on backing up the postgres database.

If there is adequate space in `/data`, then continue with the following step.

2. Stop decoders and verify the decoders have stopped before proceeding. As user `root` from **AX**, type the following commands:

```
su - oper
```

```
/rfc_arc/scripts/decoders/stop_raw_decoder
```

```
/rfc_arc/scripts/decoders/stop_processed_decoder
```

Wait about 5 minutes, then use the next command to check the status.

```
/rfc_arc/scripts/decoders/status_decoders
```

Repeat the command in 5 minute intervals if the decoders have not stopped. Verify the decoders have stopped before proceeding.

3. Remove the crons and begin the database dump. As user `oper` from **AX**, type the following commands:

```
/usr/bin/crontab -r
```

```
exit (returns to root)
```

```
pg_dumpall -U postgres > /data/pgdb_rax.sql
```

The dumpall command can take up to 12 hours depending on the amount of data.

Proceed with the remaining pre-installation instructions.

### A.2.7 Check Software Installation DVD

Verify that the installation DVD is mountable and readable. Due to recent issues with bad sectors on the installation medium, a more thorough check is used in this release. If any errors are encountered mounting the DVD or reading files using the commands, contact the NCF at (301) 713-9344, and request OB8.3 install support.

1. Insert the AWIPS OB8.3 Software DVD into the DX1 DVD-ROM drive.
2. As user `root` from **DX1**, type the following commands to mount and check the DVD:

```
mount /dev/cdrom
```

```
cd /media/cdrecorder
```

```
dd if=/dev/cdrom of=/dev/null (Takes about 10 minutes.)
```

Verify records in is equal to records out.

Keep the DVD in the DVD-ROM drive through the LDAD Security patch section (A.2.9).

### A.2.8 Verify LDAD Mode

The LDAD servers must be in Mode B for this installation. A short cut to determine the mode is a simple hostname query.

As user `root` from **DX1**, type the following command exactly as written:

```
ssh ls1 hostname
```

Verify the output returns `ls2-<SITE ID>`. If the output is `ls1-<SITE ID>`, then the system is still in Mode A and must be switched to Mode B.

If the system is in Mode A, then login to LS2 and type **switchmode** at the prompt.

### A.2.9 Install LDAD Security Patches

This release includes the patches to bring the new LDAD servers up-to-date. Install time should take about an hour, and must be done prior to the installation steps in Attachment B. The patching will not affect any users logged into the system, nor affect any processes running on the LDAD servers.

1. As user `root` from **DX1**, type the following commands:

```
cd /media/cdrecorder
```

```
script -a -f /local/install/installPatchesLS_OB83.out
./installPatchesLS_OB83
```

The procedure should take about 60 minutes. The following log files are available for review:

```
/data/fxa/INSTALL/ob83_sec_patches/ls2-patch.ob83.log
/data/fxa/INSTALL/ob83_sec_patches/ls3-patch.ob83.log
```

Check the progress by running the `tail -f` command on the log. When the log output message *Installation of security RPMs complete* displays, the install has successfully completed.

If either log file shows any errors, or indicate the patching process did not perform completely, contact the NCF.

2. Once the procedure has successfully completed, exit the output script, eject the DVD, and store until installation day.

As user `root` from **DX1**, type the following commands:

```
exit
cd /
eject /dev/cdrom
```

The pre-install steps are complete. On the scheduled install day, proceed to Attachment B for the main installation.

## ATTACHMENT B - Main Installation Instructions

### B.1 Preparation Instructions for the OB8.3 Software Upgrade

#### B.1.1 Time to Complete Install

It generally takes 2 to 3 hours to complete the installation scripts.

#### B.1.2 Notify the NCF

Before starting the installation, open a trouble ticket with the NCF by calling (301) 713-9344. If problems are encountered during the install, contact the NCF and ask for OB8.3 install support.

#### B.1.3 Prepare AWIPS for Software Upgrade

1. Initiate service backup, if needed.
2. Terminate all D2D sessions and logout of the **LX** workstations.
3. Logout of all text workstations, and terminate any local and AWIPS applications open.
4. **(PACE sites)** Switch off PACE input during the installation.
5. **(ASOS sites)** Prevent ASOS from dialing into LDAD by turning off the dial-in phone lines on the LDAD.
6. **(Radar sites)** Send a message indicating radar unavailability during the installation.
7. Sites with data feeds to the FAA should contact the FAA to notify them of the installation.
8. Weather Wire uplink sites should contact Dyncorp, and ensure a backup uplink site is not expected to be in service backup.
9. Sites with a CWSU connection should request that the CWSU logout of their D2D application. Unplug the wire to the CWSU.
10. If any directories are NFS-mounted from a local device to AWIPS devices, unmount them from each AWIPS device to prevent problems with Red Hat package installations. Do not turn off the local device without first unmounting its directories from AWIPS devices.
11. Login to any workstation as `root`, open a terminal window, and login to **DX1** (as `root`).
12. Run the script to move the NDM files into the proper location.

As user `root` on **DX1**, type:

```
script -a -f /local/install/moveob83files.out  
cd /data/local/nationalData  
./moveob83files.sh (Takes < 1 minute.)  
exit
```

13. **(WFO Systems Only)** Check FFMP shapefiles. The FFMP instructions requested placement of the FFMP shapefiles in the holding directory until installation day. Verify the shapefiles are either in the holding or active directory. If the shapefiles are not in either directory, or questions arise on exactly what files are needed, check with the service hydrologist or hydro focal point.

As user `root` on **DX1**, type:

```
ls -l /data/fxa/nationalData/FFMP_*
```

If the shapefiles are present, verify correct ownership and permissions and then proceed to step 15. Ownership is `fxa:fxalpha` and permissions are `775`.

```
ls -l /data/local/FFMP_*
```

If the shapefiles are present, then proceed to step 14 to relocate to the active directory.

14. **(WFO Systems Only)** Check and move FFMP shapefiles into the proper location.

As user `root` on **DX1**, type:

```
ls -l /data/local/FFMP_*
```

```
chown fxa:fxalpha /data/local/FFMP_*
```

```
chmod 775 /data/local/FFMP_*
```

```
mv /data/local/FFMP_* /data/fxa/nationalData
```

15. Insert the OB8.3 AWIPS Software DVD into the **DX1** DVD drive.

16. As user `root` on **DX1**, type the following command to mount the DVD:

```
mount /dev/cdrom
```

## B.2 Installation Procedure for the OB8.3 Software Upgrade

This section is the core installation. Complete each step as directed.

1. Execute the following script to install AWIPS application software updates. Ignore any `signature: NOKEY` warnings from the FSI installation.

As user `root` on **DX1**, type:

```
script -a -f /local/install/installLinuxOB83.out
```

```
cd /media/cdrecorder
```

```
./installLinux_OB83
```

(Takes 70 to 90 minutes.)

```
exit
```

2. Check the postgres restore log for errors.

As user `root` on **DX1**, type:

```
grep -E "ERROR|FATAL" /local/install/OB83pload.out
```

Ignore any `ERROR: cannot delete from a view` messages. If any other `ERROR` or `FATAL` messages are returned, contact the NCF and ask for OB8.3 installation support before

continuing.

3. Start the security patch installation script. This will start parallel installations in the background on all hosts (except LS2 and LS3) for the security patches. Processes will be monitored in step 8 for completion.

As user `root` on **DX1**, type:

```
script -a -f /local/install/installPatchesOB83.out
cd /media/cdrecorder
./installPatches_OB83          (Takes 1 to 3 minutes to kick off other scripts)
exit
```

4. Execute the following script to install the Hydrology software. Ignore any `chmod` messages.

As user `root` on **DX1**, type:

```
script -a -f /local/install/installOHOB83.out
cd /media/cdrecorder
./installOH_OB83              (Takes 2 to 3 minutes; RFC systems 3 to 6 minutes)
exit
```

5. **(WFO Systems only)** Execute the ADAPT and NWRWAVES scripts. Ignore `climate_HP.tar.gz` and `wwa_hp.tar.gz` error messages. Since the two scripts are short, use one output file for both scripts.

As user `root` on **DX1**, type:

```
script -a -f /local/install/installAPTNRWOB83.out
cd /media/cdrecorder
./installADAPT_OB83          (Takes < 1 minute.)
cd NWRWAVES
./installNWRWAVES.sh        (Takes < 1 minute.)
exit
```

6. Execute the AX script to update the Archive Server.

As user `root` on **DX1**, type:

```
script -a -f /local/install/installAXOB83.out
cd /media/cdrecorder
./installAX_OB83            (Takes 10 to 15 minutes; only a few seconds at WFOs)
exit
```

7. **(Select systems only)** Execute the NMAP script.

**NOTE:** Only the following sites should install the NMAP software: ACR, AFC, AFG, AJK, ALR, BCQ, EHU, FWR, GUM, HFO, KRF, MFL, MSR, NHCR, NHCW, NHDA, NHOR, NHOW, ORN, PBP, RHA, SJU, SPCW, TAR, TBDR, TIR, TUA, VHW, VRH, VUY, WNAW, WNOR, and WNOW.

As user `root` on **DX1**, type:

```
script -a -f /local/install/installNMAPOB83.out
cd /media/cdrecorder
./installNMAP_OB83                    (Takes 5 to 10 minutes.)
exit
```

8. Check the status of the security patch installation script that was started in step 3. It will take approximately 15 minutes for the security patches to be installed on all hosts. The logs for each machine are located in `/data/fixa/INSTALL`. As user `root` on **DX1**, type:

```
cd /media/cdrecorder
./monitorPatches_OB83
```

Repeat the command in 5 minute intervals until all hosts report completed.

**CAUTION**

**Do not proceed until all hosts report completed.**

9. Execute the post-install script. As user `root` on **DX1**, type:

```
script -a -f /local/install/postinstallOB83.out
cd /media/cdrecorder
./postinstall_OB83                    (Takes 20 to 25 minutes.)
exit
```

**NOTE:** The GFE Core script in OB8.3 has a new requirement for sites that have site IDs different from the localization IDs (such as National Centers, Test Systems and Regional Headquarters). Those sites must add the site ID as a second parameter to the script command. For example, Southern Region Headquarters has a localization ID of FWD and a site ID of EHU. In this case, the correct command to be used is

```
./masterGFEInstall FWD EHU
```

10. Execute the GFE Core script. Sites other than WFOs and RFCs must review the note above. As user `root` on **DX1**, type:

```
script -a -f /local/install/gfeCOREOB83.out
```

```
cd /media/cdrecorder/gfe
./masterGFEInstall LLL      (LLL is the localization ID in upper case.)
exit                          (Takes 5 to 10 minutes. RFC Systems < 4 minutes)
```

11. (WFO Systems only) Execute the IFPS install script. As user `root` on **DX1**, type:

```
script -a -f /local/install/installIFPSOB83.out
cd /media/cdrecorder/ifps
./installIFPS                    (Takes about 5 minutes)
exit
```

12. (WFO Systems only) Execute the AVNFPS script. As user `root` on **DX1**, type:

```
script -a -f /local/install/installAVNFPSOB83.out
cd /media/cdrecorder
./installAVNFPS.sh /media/cdrecorder      (Takes 5 minutes)
exit
```

13. Unmount the DVD from the DX1 DVD-ROM drive. As user `root` on **DX1**, type:

```
cd /
eject /dev/cdrom
```

14. Remove the DVD from the DX1 CD-ROM drive.

## B.3 Post Install

### B.3.1 Reboot DX1 and DX2 Servers

Due to possible Notification Server issues with long uptimes, the DX1 and DX2 servers should be rebooted at least once every 200 days.

1. Reboot DX1. As user `root` on **DX1**, type:

```
shutdown -r now
exit          (Returns to Linux Workstation.)
```

Verify DX1 has rebooted before proceeding. One way is to observe the boot process on the KVM monitor.

2. Reboot DX2. As user `root` on **DX1**, type:

```
ssh dx2 "shutdown -r now"
```

Verify DX2 has rebooted before proceeding. One way is to ping DX2 from DX1.

- Use the `hb_stat` command to verify the packages are running on the correct server. If not, login to the server the package should run on and execute `hb_swap xxxapps`, where `xxx` is the server name (e.g., from DX2, run `hb_swap dx2apps` to move the package onto DX2).

### B.3.2 Reboot LDAD Servers

A new kernel (2.6.9-55.EL) was installed on both LDAD servers, so each device needs to be rebooted to complete the installation. Review Attachment E and contact the NCF if any problems occur during the reboot process.

- Reboot LS2. As user `root` on **DX1**, type:

```
ssh ls2 "shutdown -r now"
```

Verify LS2 has rebooted before proceeding. One way is to ping LS2 from LS3.

- Reboot LS3. As user `root` on **DX1**, type:

```
ssh ls3 "shutdown -r now"
```

Verify LS3 has rebooted before proceeding.

- Use the `hb_stat` command to verify the packages are running on LS2. If not, contact the NCF for assistance.

### B.3.3 (Sites with Console Replacement Systems [CRS] Only) Generate CRS Keys

Starting with OB8.3, messages will be sent to the CRS system via ssh. In order to facilitate this communication, AWIPS ssh keys for the `fxa` user must be installed on the CRS system.

**Caution**

**Without the correct configuration, NWR messages in AWIPS will not be sent to CRS**

An `installCRSssh` script has been developed to perform this task. The script will prompt for the root password on the CRS systems twice. The script assumes the root password is the same on `0mp` and `5mp`. If the passwords are different, then either change the root password on the CRS system to match, or contact the NCF for assistance.

The script will then copy over the `fxa` key to `0mp` and `5mp`. It will also copy back the `rsa` key for `0mp` and `5mp`, and install it in the `known_hosts` on each AWIPS device. As user `root` on **DX1**, type the following commands:

```
script -a -f /local/install/installCRSkeys.out
```

```
cd /home/awipsadm/ssh
```

```
./installCRSssh.sh
```

(Takes about 2 minutes.)

```
exit
```

Verify the script worked correctly. As user `fxa` on **DX1**, type the following commands:

```
ssh crs@0mp ls
```

```
ssh crs@5mp ls
```

The commands should succeed without being prompted to either enter `yes` or a password.

The commands should work on any device as user `fxa`. If problems are encountered, contact the NCF for assistance.

**NOTE:** If any keys are ever regenerated, such as running `VerifySshKeys.sh`, or VIP keys on CRS, then the `installCRSssh.sh` script must be run again.

For future maintenance of the AWIPS to CRS connection, provide the root password of `0mp` and `5mp` to the NCF.

### B.3.4 Restore the System

Complete or review the following steps to return the system to full operation.

1. Permit users to logon to AWIPS.
2. **(PACE sites)** Turn the PACE input back on.
3. **(ASOS sites)** Turn on the dial-in phone lines to allow ASOS to access LDAD.
4. **(Radar sites)** Send a message regarding the return to service of the radar.
5. Baseline crons (such as the `px1cron`) were delivered during the install. Verify crons such as `climate` are set to the proper run time.
6. Start the Mozilla browser and verify that servers and processes are processing normally.
7. Verify that radar products are being stored locally. Sites that send radar products should verify radar products are disseminated via the WAN by checking the following site:  
<http://weather.noaa.gov/monitor/radar>
8. Restore the CWSU connection, if applicable, and relay to CWSU staff of system availability.
9. Local devices can be reconnected to AWIPS as needed.

### B.3.5 Notify the NCF

Contact the NCF and close the trouble ticket that was opened for the installation.

### B.3.6 (WFO Systems Only) Update Customized WarnGen Templates

Once Tier 2 of the FFMP shapefiles project has been completed, changes associated with producing an automated list of drainage basins in all WarnGen hydrologic products can be merged into customized WarnGen templates. Additional information is included in Attachment C.

### B.3.7 (RFC Systems Only) Restore Changes Made to Hydrologic Files

The Hydrologic Deterministic Verification Software installation included updated files. If local changes were saved in section A.2.4, merge the local changes into the new files.

### B.3.8 Check WHFS Crons

The OHD cron tables are defined for the DX1 and PX1 servers. During the installation, the OHD cron table for PX1 was saved off and replaced with OB8.3 baseline crons. The pre-OB8.3 version of `whfs_crontab_px1` in `/awips/hydroapps/whfs/local/bin` was saved to `whfs_crontab_px1.ob82` and the `whfs_crontab_px1.baseline` was copied to `whfs_crontab_px1`. Several new entries were added to the PX1 crontab, but no changes were made to the DX1 crontab. It is recommended to compare the differences between the `.ob82` copy and the new cron and resolve any local differences as deemed appropriate.

New entries in PX1 baseline cron table:

`DHRgather` (WFO only, optional at RFCs)

`DSPgather` (WFO only, optional at RFCs)

`purge_hpe_files` (WFO only, optional at RFCs)

### B.3.9 Run Backup Localization

A backup localization needs to be run (as user `fxa`) on each workstation before WarnGen can be used in backup mode. An example of the command to use is:

```
cd /awips/fxa/data/localization/scripts
./mainScript.csh f -WS BBB LLL
```

(Where `BBB` is the backup site and `LLL` is the local site ID.)

### B.3.10(RFC Systems only) Restore AX database

Restoration of the database could take anywhere from 2-12 hours, so it is suggested to run the `psql` command at the end of the install, and let it run overnight.

As `root` on **AX**, type the following command:

```
psql -U postgres -f /data/pgdb_rax.sql template1 &> /data/OB83raxdbload.out
```

After the command completes, run a conversion and then start up the decoders and crons:

```
su - oper
cd /awips/hydroapps/lx/rax_conversion
./auto_convert
/rfc_arc/scripts/decoders/start_raw_decoder
/rfc_arc/scripts/decoders/start_processed_decoder
/usr/bin/crontab /rfc_arc/crons/adb_oper_crons
```

### B.3.11 Review FFMP Users Guide

For FFMP to recognize new data sources, (e.g. the High-resolution Precipitation Estimator also available in AWIPS OB8.3), follow the Add Data Source instructions found in the FFMP OB8.3 users guide <http://www.nws.noaa.gov/mdl/ffmp/FFMPA-Guide-Users-OB83.pdf>

**B.3.12 Provide Comments (optional)**

Send any comments, problems, or suggestions for improvements to the installation instructions to Sanford Garrard [sanford.garrard@noaa.gov](mailto:sanford.garrard@noaa.gov) of the AWIPS Support Branch at NWS Headquarters in Silver Spring, MD.

## ATTACHMENT C - WarnGen Template Changes

### C.1 Overview

This attachment should be provided to the WarnGen focal point at each WFO.

The only significant changes for the WarnGen application in OB8.3 are logic and template changes associated with producing an automated list of drainage basins in all WarnGen hydrologic products.

However, the OB8.3 templates should not be used until Tier 2 of the FFMP shapefile project has been completed. Legacy (vintage OB8.2) customized WarnGen templates may be used until the completion of Tier 2. At that point, changes can be merged into customized templates.

### C.2 Templates Delivered

The following templates are delivered to `/data/fga/nationalData`:

```
wwa_dam_break.preWWA
wwa_flflood_sta.preWWA
wwa_ffw.preWWA
wwa_ffw_svr.preWWA
wwa_flflood_sta_county.preWWA
wwa_flood_wrn.preWWA
wwa_flood_sta.preWWA
wwa_flood_adv.preWWA
wwa_flood_adv_sta.preWWA
```

### C.3 Changes Between OB8.2.1 and OB8.3 WarnGen Templates

The following templates delivered in OB8.3 have extensive changes in logic compared to OB8.2.1 templates:

```
wwa_dam_break.preWWA
wwa_flflood_sta.preWWA
```

If customized versions of the above templates are used, the best implementation strategy would be to save the customized version of the templates, copy the OB8.3 baseline version from `/data/fga/nationalData` to `/data/fga/customFiles`, then add the site specific customizations in `/data/fga/customFiles`. The template changes add logic for placing generic and specific pre-defined dam information in dam break products. The logic changes are extensive therefore it is not feasible to list them in this document.

The following templates delivered in OB8.3 have only one change compared to OB8.2.1 templates:

```
wwa_ffw.preWWA
wwa_ffw_svr.preWWA
wwa_flflood_sta_county.preWWA
wwa_flood_wrn.preWWA
wwa_flood_sta.preWWA
wwa_flood_adv.preWWA
```

```
wwa_flood_adv_sta.preWWA
```

If customized versions of the above templates are used, the best implementation strategy would be to make the following change to site specific templates in `/data/fxa/customFiles`. The OB8.2.1 templates have the following logic commented out to disable the automated list of drainage basins in flood products:

```
//{= automated list of drainages |  
//THIS INCLUDES THE FOLLOWING STREAMS AND DRAINAGES...&  
//<AREA |file=wwa_basins |area=wwa_counties |output_field=1 |format=list>.  
//}
```

To enable the automated list of drainage basins, remove the comment (`//`) at the beginning of the above four lines. The resulting logic follows:

```
{= automated list of drainages |  
THIS INCLUDES THE FOLLOWING STREAMS AND DRAINAGES...&  
<AREA |file=wwa_basins |area=wwa_counties |output_field=1 |format=list>.  
}
```

After making the above template changes, localization needs to be run (as user `fxa`) on each workstation before WarnGen can be used. The following commands should be used:

```
cd /awips/fxa/data/localization/scripts  
./mainScript.csh -wwa
```

**ATTACHMENT D - NDM Files Downloaded in OB8.3**

The following National Data Management (NDM) files are downloaded from the NOAA1 server for the OB8.3 installation:

dataInfo.manual  
depictInfo.manual  
productButtonInfo.txt  
pirepsTable.txt  
moveob83files.sh

The following FAA shapefiles are downloaded from the NOAA1 server for the OB8.3 installation:

airport.lpi  
artcc.dbf  
artcc.shp  
artcc.shx  
fix.lpi  
jAirways.dbf  
jAirways.shp  
jAirways.shx  
navaid.lpi  
sua.dbf  
sua.shp  
sua.shx  
vAirways.dbf  
vAirways.shp  
vAirways.shx  
volcanoes.lpi

## ATTACHMENT E - Known Issues and Workarounds for the Kernel Installation

Attach a keyboard and monitor to the device in order to monitor or perform a Linux Rescue procedure.

### E.1 Devices Hanging

Occasionally a device will hang during the Kernel upgrade. Periodically monitor the progress of the machines (every 10 minutes is recommended). If any machine hangs, reboot and the installation should resume.

### E.2 Kernel Panic

Occasionally a device fails to start-up after the post-install reboot, because the new kernel did not install properly. A message of *kernel panic* displays on the screen. If this happens, contact the NCF immediately.

### E.3 GRand Unified Bootloader (GRUB) prompt only

If the system fails to boot even before the Red Hat picture shows up, (for example, if there is only a `grub` prompt on a black screen and nothing else), use the following procedure to get a usable shell on the system

1. Put the RHEL5 Rescue CD into the CD drive of the failed machine and reboot. By default the machine should boot from the CD and Red Hat logo and a `boot` prompt displays on the screen. If the system still tries to boot from the hard drive, contact the NCF about how to boot from the CD.
2. When the `boot` prompt displays, type **linux rescue** and press **Enter**. This boots the system into rescue mode instead of installation mode.
3. Once inside rescue mode, the rescue process asks about which language to use during the rescue process. By default, English should be chosen, press **Enter** to continue.
4. The rescue process then asks for the keyboard type being used. By default, US should be selected, press **Enter** to continue.
5. The prompt, *Do you want to start the network interface on this system?* displays. By default, *Yes* is highlighted. However, choosing *Yes* may crash the system, so press the right arrow key (→) to highlight **No**, and press **Enter** to continue.
6. The prompt, *The rescue environment will now attempt to find your Linux installation and mount it under the directory /mnt/sysimage ...* displays and asks if the user wants to continue, mount the file system as read-only, or skip this step. By default **Continue** should be highlighted. Press **Enter** to continue.
7. The rescue process tries to find partitions and mount them properly. Once successful, the message, *Your system has been mounted under /mnt/sysimage* displays. Press **Enter** to get a shell. If it cannot find the proper partitions containing Red Hat Enterprise Linux, usually it is due to disk failure. Contact NCF for assistance if this occurs.

8. A running shell should now be on the machine. Consult the following actions to determine what needs to occur on this system to proceed.

- If the device is a PX server, run the following commands:

```
chroot /mnt/sysimage
grub
root (hd0,1)
setup (hd0)
quit
```

**NOTE:** `hd0` is `hd(zero)`, not the alphabet `O`.

**Reboot the device.** If this method does not resolve the problem, contact the NCF for further assistance.

- If the device is any other box besides the PX servers, run the following commands:

```
chroot /mnt/sysimage
grub-install hd0
exit
```

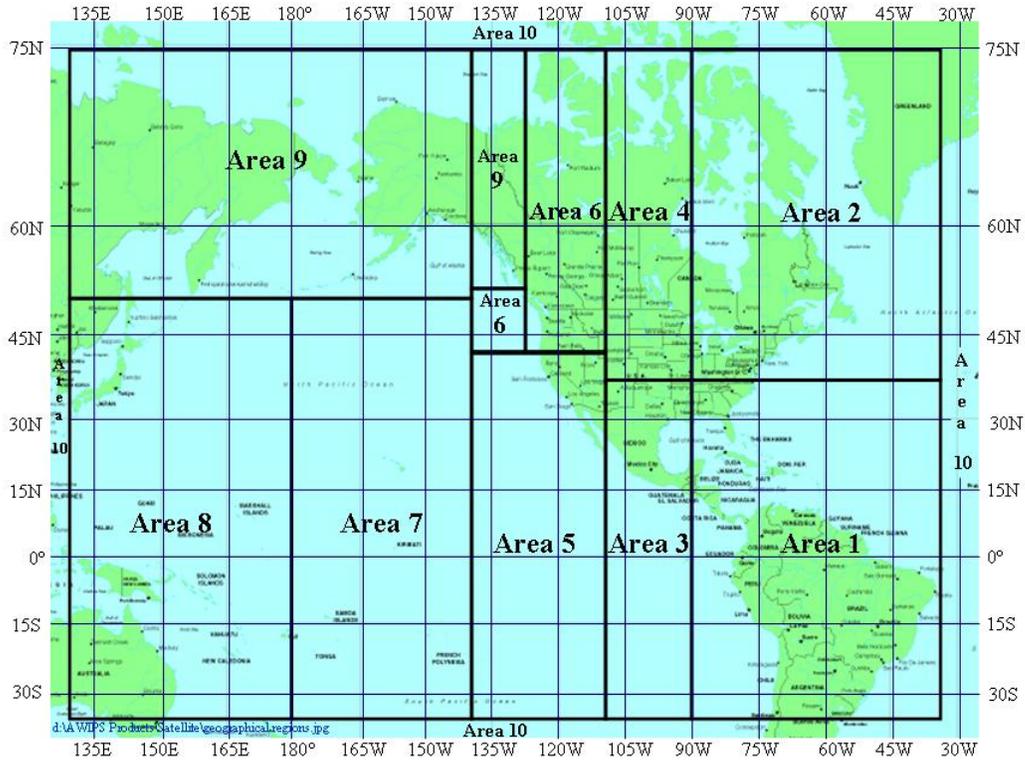
**NOTE:** `hd0` is `hd(zero)`, not the alphabet `O`.

**Reboot the device.** If this method does not resolve the problem, contact the NCF for further assistance.

9. Once the fixes are completed, type `exit` and press **Enter**.

### ATTACHMENT F - Regions for Scatterometer Ocean Winds

The Ten Geographical Regions for NESDIS BUFR Products in AWIPS



ATTACHMENT G - Sample EMRS Report

---

**GENERAL INFORMATION**

NEW RECORD      WFO\*       Document No.\*

1. Open Date:       Open Time:       2. Op Initials:       3. Response Priority:  Immediate     Low  
 Routine     Not Applicable      4. Close Date:       Close Time:

5. Maintenance Description:  characters left      AWIPS

---

**EQUIPMENT INFORMATION**

6. Station ID\*       7. Equipment Code\*       8. Serial Number:       9. TM:       10. AT:       11. How Mal:

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)	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="New Row"/>
				<input type="button" value="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
<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text" value="6"/> <input type="text" value="0"/>	<input type="text"/> <input type="text"/>

---

**MISCELLANEOUS INFORMATION**

15. Maintenance Comments:  characters left      [Attachments](#)

16. Tech Initials:

Contract Maintenance Disclaimer

---

**17. SPECIAL PURPOSE REPORTING INFORMATION**

a. Mod No.       b. Mod Act/Deact Date:       c. Block C:       d. Trouble Ticket No.:       e. USOS Outage Doc No.:      

---

**18. Work Order Information:**

Work Accomplished by:

Region Headquarters       Electronics       WFO/Office       Facilities  
 Maintenance Contractor

Est. Cost or Bid: \$       Req. Completion Date:

Contractor Maintenance Time: Hours  Minutes