AWIPS SOFTWARE INSTALLATION NOTE 65, REVISION A
Maintenance, Logistics, and Acquisition Division
W/OPS12: KS

SUBJECT:	AWIPS Release OB7.2
PURPOSE:	Provides installation instructions and related information for the software release.
SITES AFFECTED:	All Advance Weather Interactive Processing System (AWIPS) sites.
AUTHORIZATION:	The authority for this note is Request for Change 9989.
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); Pacific Region Headquarters in Honolulu, HI (PBP); Alaska Region Headquarters in Anchorage, AK (VRH); Weather Forecast Offices (WFO) Billings, MT (BYZ); Lubbock, TX (LUB); Caribou, ME (CAR); Hastings, NE (GID); Midland, TX (MAF); Detroit, MI (DTX); Omaha, NE (OAX); Melbourne, FL (MLB); and Wilmington, NC (ILM); Northwest River Forecast Center (RFC), Portland, OR (PTR); and the Radar Operations Center in Norman, OK (OSFW).
ESTIMATED COMPLETION DATE:	April 15, 2007. The installation date must be scheduled on the NWS Oracle AWIPS Schedule calendar.
TIME REQUIRED:	Approximately 3 to 4 hours for WFO systems and 5 to 7 hours for RFC systems. Additional time is required at RFC systems for the Archive Server (AX) system backup and restore.
ACCOMPLISHED BY:	Electronic Systems Analysts (ESA) or their designee. WarnGen focal points will have an opportunity to customize WarnGen templates in B.2.1.2.
EQUIPMENT AFFECTED:	AWIPS
SPARES AFFECTED:	None.
PARTS/MATERIALS REQUIRED:	WFO systems will receive one AWIPS Software DVD.
	RFC systems will receive one AWIPS Software DVD and one operating system (OS) DVD.
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 OB6 (AWIPS Software Installation Instruction Note 60) 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.**
	Attachment A is to be completed by RFC systems only. Due to the length of time required, there are some steps with archive data backup that should be completed up to one week before beginning Attachment C.
	Attachment B is to be completed by WFO systems only and is to be completed at least one day before beginning Attachment C. Sites that customize WarnGen templates should allow additional time to make local changes.
TECHNICAL ASSISTANCE:	For questions or problems pertaining to this note, contact the Network Control Facility (NCF) at (301) 713-9344 and ask for OB7.2 installation support.
REPORTING INSTRUCTIONS:	Report the completed modification using the Engineering Management Reporting System (EMRS) according to the instructions in <u>EHB-4, Maintenance Documentation</u>, Part 4, and Appendix F. Include the following information on the EMRS report:
	Maintenance Description (block 5): **Install AWIPS Release OB7.2**
	Equipment Code (block 7): **AWIPS**
	Serial Number (block 8): **001**
	Maintenance Comments (block 15): **Installed Release OB7.2 I.A.W. AWIPS Software Installation Instruction Note 65, Revision A.**
	Mod No. (block 17a): **S65A**
	A sample EMRS report is provided as attachment **G**.

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

Attachment A - Pre-Installation Instructions for RFC Systems
Attachment B - Pre-Installation Instructions for WFO Systems
Attachment C - Main Installation Instructions for Both RFC and WFO systems
Attachment D - WarnGen Template Changes
Attachment E - NDM and Hydro files Updated in OB7.2
Attachment F - Known Issues and Workarounds for AX Upgrade
Attachment G - Sample EMRS Report

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ATTACHMENT A - Pre-Installation Instructions for RFC Systems

NOTE: Attachment A is to be completed on RFC systems only.

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.

Sites that are WFO systems should proceed to Attachment B.

A.1   General Information
The OB7.2 installation includes new software for AWIPS major build OB7.2 at all sites and an operating system (OS) upgrade for the RFC systems AX. The RFC systems AX was the only Linux box that was not upgraded in OB7.1.

A.1.1   Prerequisites
AWIPS major release OB7.1 must be installed prior to beginning this installation.

A.1.2   Prepare for DS Decommissioning
One of the requirements for decommissioning the DS1 and DS2 data servers includes moving all local applications off of the servers. Sites should plan to have all local applications ported to an appropriate Linux server by February 28, 2007. Use the following guidance to assist in porting and relocating any remaining local applications or files on the DS1 and DS2 servers.

- Programs should be placed in `/awips/dev` on the NAS.

- Local data required by the applications, should be placed in `/data/local/localdata`.

- To facilitate backups, a soft link will be created from `/awips/dev/localdata` to `/data/local/localdata` during the main installation of OB7.2

- If an application is not a persistent process, run it from a workstation.

- Persistent processes should be distributed logically according to the AWIPS application they are most affiliated with. For example, querying databases should be placed on DX1, radar on DX2, decoders on DX3, GFE/IFPS on DX4, FFMP on PX1, AVNFPS on PX2, etc.

- Special resource balancing (e.g., CPU, network) should be considered to minimize system impact if a persistent process runs on any of the servers.

- Cron jobs, which are used for persistent processes (i.e., keeping them alive) or for running routine processes, should use the heartbeat setup on the appropriate servers (e.g., DXs, PXs or RPs). In `/etc/ha.d/cron.d` there are **SITE***xxx***cron** files where the cron entries can be placed, so it will fail over if the box goes down, where *xxx* is the primary box where the application will reside (e.g., **SITEdx1cron**). If DX1 goes down, this file will be loaded into DX2's cron job. This file would need to be modified on both pairs.

A.2   Pre-Installation Procedures
The AX's OS is upgraded during the release. As a result, all archived data must be moved to the NAS prior to installation. Since it could take a significant amount of time to move the data, complete section A.2.1 up to one week before the main installation day. Section A.2.9 turns off the decoder and performs a backup of the database (8 to 13 hours), which must be completed on the day before

the main install. The remaining subsections should be completed at least one day prior to beginning the main installation in Attachment C.

A.2.1   Prepare Archive Server (AX) for OS Upgrade

Complete sections A.2.1.1 through A.2.1.4 at least one week before the main upgrade.

A.2.1.1 Reboot AX

1. Contact the NCF prior to rebooting.

2. In order to mitigate any potential issues with the OS installation, reboot the AX a minimum of one week prior to the day of installation. The reboot will reinitialize the memory and remove hung or persistent processes that may interfere with the OS upgrade.

A.2.1.2 Copy RHEL4u2 Files to the NAS

Copy the RHEL4u2 files from the DVD to the NAS in preparation for installation. This section takes approximately 15 minutes to complete.

3. Insert the RAX RHEL4u2 Upgrade DVD into the DX1 DVD-ROM drive.

4. As user root from DX1, type the following commands:

    `mount /dev/cdrom`

    `mv /data/fxa/install_root /data/fxa/install_root.preOB72`

    `mv /data/fxa/backup_root /data/fxa/backup_root.preOB72`

    `mkdir -p /data/fxa/install_root`

    `cp -R /media/cdrecorder/RHEL4u2/* /data/fxa/install_root`

    (The copy command takes about 13 minutes.)

    `eject /dev/cdrom`

5. Remove the DVD from the DX1 DVD-ROM drive and store.

A.2.1.3 Copy rax_conversion to the NAS

Copy the `rax_conversion` script from the DVD to the NAS in preparation for installation. This section takes approximately 3 minutes to complete.

1. Insert the AWIPS OB7.2 Software Installation DVD into the DX1 DVD-ROM drive.

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

    `mount /dev/cdrom`

    `cp -R /media/cdrecorder/awips/hydroapps/lx/rax_conversion /awips/hydroapps/lx`

    `chmod -R 777 /awips/hydroapps/lx/rax_conversion`

    `chown -R oper:fxalpha /awips/hydroapps/lx/rax_conversion`

    `eject /dev/cdrom`

3. Remove the DVD from the DX1 DVD-ROM drive and store until installation day.

A.2.1.4 Backup flat files

Back up flat files on a year by year basis. The length of time required depends on how many years are input to the script and how much data is in those directories. Back up each year up to, but not including, the current year (2007).

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

    rsh nas1 vol create ax_backup aggr0 225g

    rsh nas1 exportfs -i -o sec=sys,rw,root=ax /vol/ax_backup

    ssh ax

    cd /data/fxa/install_root/scripts

    dos2unix *

    ./backup_flatfiles.sh *YYYY YYYY … YYYY*

    where *YYYY* represents each year to be backed up. All sites have directory structure starting with 1990. Start with the year the site began to archive files and enter each year up to, but not including, the current year. For example, if Northwest RFC began archiving in 2001, then the command should look like: `./backup_flatfiles.sh 2001 2002 2003 2004 2005 2006`. This script can take a significant amount of time to complete if there is a large amount of data.

2. Once the backup is complete, type the following:

    cd /mnt/nas/flatfiles

    ls -l

    Verify files with a `.tgz` extension in `/mnt/nas/flatfiles` exist for each year in `/data/flatfiles`.

A.2.2   Create or Update Database for Historical Data Browser

The Historical Data Browser (HDB) application requires an `ob7_histdata` database in Postgres to work properly in OB7.2. Use the following section to check the database and convert from Informix if needed.

A.2.2.1 Check and Update HDB database in Postgres

Verify if the database exists in Postgres.

1. As user `oper` from **DX1,** type the following command:

    psql –l

2. Check for databases ending in `_histdata` (e.g., `ob6_histdata`, `ob7_histdata`). Depending on the results of the search, choose the appropriate action:

    • If no matches are found, proceed to A.2.2.2 to convert the Informix version of `histdata` to Postgres.

    • If `ob7_histdata` is matched, then no changes are needed. Proceed to A.2.3.

    • If `ob6_histdata` (or older) is matched, then use the alter database command to change the name of the database. Use another database, such as `template1` to make the change and substitute the actual name (`ob6_histdata`, etc) for the variable `$oldname`.

3. As user `oper` from **DX1,** type the following commands:

    psql –U postgres template1

    alter database $oldname data rename to ob7_histdata

    \q

A.2.2.2 Convert Informix Version of HDB Database to Postgres

This section contains information and instructions to create the HDB database in Postgres from the Informix version.

> **NOTE:**   If the Informix database is unavailable, contact the HSD RFC Support Team for assistance.

1. From **DS1**, access the Informix database as user `oper` and export the `histdata` database.

    dbexport histdata

2. Once the export is complete, move the resulting `histdata.exp` directory to `/awips/hydroapps/lx/rfc/idma/pgdb/database`.

3. As user `oper` from **DX1,** type the following commands:

    cd /awips/hydroapps/lx/rfc/idma/pgdb

    chmod 775 logs

    chmod 775 database

    chmod 775 scripts

    cd scripts

    rm create_index.sql

    rm grant.sql

    rm create_tables.sql

    cp -p /home/hrl/create_scripts.tar.Z .

    cp –p ../database/histdata.exp .

    zcat create_scripts.tar.Z | tar xvf –

    ./create_files.sh histdata.sql

    This script creates the `create_index.sql,` `grant.sql,` and `create_tables.sql` files.

4. Create the database by typing the following command and arguments on one line:

    ./create_psql_db ob7_histdata
    /awips/hydroapps/lx/rfc/idma/pgdb/database/histdata.exp
    /awips/hydroapps/lx/rfc/idma/pgdb/scripts
    /awips/hydroapps/lx/rfc/idma/pgdb/logs

There are about 16 to 18 tables created in the Postgres `histdata` database.

A.2.2.3 Check New Database

Verify the new database exists and has the correct tables.

1. As user `oper` from **DX1,** type the following command:

    psql –l

2. Check for the `ob7_histdata` database.

    ```
    dx1-nmtr:oper:\1$ psql -l
              List of databases
        Name        |   Owner   | Encoding
    ------------    +----------+-----------
     ob7_histdata  |   oper    | SQL_ASCII
    ...
    ```

3. Check for correct information on the new `ob7_histdata` Postgres database.

    psql ob7_histdata

    select count(*) from ncdc_td3200_sta;

    There should be an identical number of rows returned by this query on the Postgres database as is returned by the same query on the Informix database. Repeat this process for all tables. All tables should have an identical number of rows in Postgres and Informix.

4. Additionally, check
    `/awips/hydroapps/lx/rfc/idma/pgdb/logs/ob7_histdata.psql.out`

    There should be no errors reported in this file. If errors are reported, contact the HSD RFC Support Team.

5. If the procedure needs to be repeated, first drop the database (using `dropdb ob7_histdata`) before running `create_psql_db`.

A.2.3   Download National Data Management Files and Hydro Files

Download the required OB7.2 National Data Management (NDM) files and Hydro files prior to proceeding with the installation. These files are placed in a safe directory until the main install day. Attachment E contains a list of the files downloaded in this step.

1. From a Linux Workstation, open a terminal window and log on to the **DX1** as `root`.

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

    rm –f /local/install/*

    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/OB72

mget *   (6 files are downloaded.)

cd ../../ohd/OB72

mget *   (6 files are downloaded.)

exit

chown fxa:fxalpha *

chmod 777 r*n*

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

A.2.4   Download Shape Files for Distributed Hydrologic Model

New map overlays are available in OB7.2 for the Distributed Hydrologic Model. The overlays are Fine-scale Rivers (rv*), Coarse-scale Rivers (rs*), River Forecast Group Boundaries (fg*), and River Flow Direction Map. Retrieve the overlays by downloading the equivalent shape files from the NOAA1 server. The shape files for Fine-scale, Coarse-scale and River Forecast Group are the same for all RFC systems. However, the set of shape files for River Flow Direction is site-specific.

Site Specific files for River Flow Direction overlay:

KRF: mb* TUA: ab* RHA: ma* TAR: ne* FWR: wg* ORN: lm* TIR: oh* ALR: se* PTR: nw* STR: cb* MSR: nc* RSA: cn* ACR: not available

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

cd /data/fxa/nationalData

sftp ftpawips@165.92.25.137   (Type in password **!SAWIPS4** when prompted.)

cd pub/maps

mget rv*   (3 fine-scale rivers shape files are downloaded.)

mget rs*   (3 coarse-scale rivers shape files are downloaded.)

cd fg

mget fg*   (3 forecast group boundaries shape files are downloaded.)

cd ../flowDirection

mget xx*   (Replace *xx* with site specific file names, e.g. mb for KRF)

```
exit
```

chown fxa:fxalpha rv* rs* fg* *xx**   (Replace *xx* with site names, as above)

chmod 664 rv* rs* fg* *xx**   (Replace *xx* with site names, as above)

A.2.5   Check Disk Space and Permissions
The installation requires a certain amount of available disk space and permissions to complete.

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

df –h /data/fxa

```
Filesystem              Size    Used    Avail   Use%   Mounted on

nas1:/vol/data_fxa      65G     34G     32G     51%    /data/fxa
```

2. Verify at least 3G of space is available. If there is insufficient space, contact the Network Control Facility (NCF) at 301 713-9344 and request OB7.2 Install support.

A.2.6   Add Environment Variable
Define the XAPPLRESDIR environment variable to point to the X11 app-defaults file.

1. As user `oper` from **DX1,** type the following command:

cd /awips/hydroapps/lx/public/bin

2. Edit the `awips.profile` file and add the following line at the bottom of the file.

export XAPPLRESDIR=/usr/X11R6/lib/X11/app-defaults/

3. Save and exit.

A.2.7   Check Satellite Depict Keys
In OB7.2, both the `eastSatDepictInfo.template` and `westSatDepictInfo.template` are updated. Sites that have override files (for custom color curves, etc.) in `/data/fxa/customFiles` or `dx1:/awips/fxa/data/localization/XXX` (where *XXX* is localization ID) must save a copy and remove (deactivate) them prior to install day. Customized changes may be restored to the new baseline files after the upgrade.

A.2.8   Complete Ghost Procedure

NOTE: The following procedure only applies to sites that use ghost to backup workstation images for restoration. The temporary modification is needed prior to starting the AX OS upgrade. Other sites should skip this pre-installation step.

Edit the `/etc/fstab` file by commenting out the line referencing the `/dev/md0` mounting to `/ghost`:

From: /dev/md0   /ghost vfat user,auto,owner,rw

To: **#**/dev/md0   /ghost vfat user,auto,owner,rw

Any ghost image backups that are no longer needed should also be removed to save time during the backup.

A.2.9   Backup Database

This section must be completed on the day prior to installation day, and will take between 8 and 13 hours to complete.

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

   su - oper

   cd /awips/hydroapps/lx/rax_conversion/unloadScripts

   /rfc_arc/scripts/decoders/stop_raw_decoder

   /rfc_arc/scripts/decoders/stop_processed_decoder

   ./main_unload.script

2. Check `/awips/hydroapps/lx/rax_conversion/unloadScripts/verifyNumRecordsDir/verify.log` for errors.

3. Check `/awips/hyrdoapps/lx/rax_conversion/unloadScripts/unl_dir` and verify files have been unloaded.

4. As user `root` from **AX**, type the following command:

   cd /rfc_arc/bin

   Check for directory `ofsshef`. If it exists, remove it by completing the following command:

   rm –rf ofsshef

5. **exit**   (returns to `root` on AX)

The pre-install steps are complete. Proceed to Attachment C on the scheduled day of installation.

ATTACHMENT B - Pre-Installation Instructions for WFO Systems

NOTE: Attachment B is to be completed on WFO Systems only.

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.

Sites that are RFC systems should proceed to Attachment C after completing Attachment A.

B.1   General Information
The OB7.2 installation includes new software for AWIPS major build OB7.2 at all sites and an OS upgrade for the RFC systems AX. The WFO systems AX was upgraded in OB7.1.

B.1.1   Prerequisites
AWIPS major release OB7.1 must be installed prior to beginning this installation.

B.1.2   Coordinate Installation Dates
Coordinate the installation with backup sites, uplink sites, hub site pairs, and Center Weather Service Units (CWSU) as applicable.

The AWIPS system will be unavailable for operational use during the installation. Coordinate with backup sites to arrange for service backup as needed.

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.

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.

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.

B.1.3   Prepare for Data Servers (DS) Decommissioning
One of the requirements for decommissioning the DS1 and DS2 data servers includes moving all local applications off of those servers. Sites should plan to have all local applications ported to an appropriate Linux server by February 28, 2007. Use the following guidance to assist in porting and relocating any remaining local applications or files on the DS1 and DS2 servers.

- Programs should be placed in /awips/dev on the NAS.

- Local data required by the applications, should be placed in /data/local/localdata.

- To facilitate backups, a soft link will be created from /awips/dev/localdata to /data/local/localdata during the main installation of OB7.2

- If an application is not a persistent process, run it from a workstation.

- Persistent processes should be distributed logically according to the AWIPS application they are most affiliated with. For example, querying databases should be placed on DX1, radar on DX2, decoders on DX3, GFE/IFPS on DX4, FFMP on PX1, AVNFPS on PX2, etc.

- Special resource balancing (e.g., CPU, network) should be considered to minimize system impact if a persistent process runs on any of the servers.

- Cron jobs, which are used for persistent processes (i.e., keeping them alive) or for running routine processes, should utilize the heartbeat setup on the appropriate servers (e.g., DXs, PXs or RPs). In /etc/ha.d/cron.d there are **SITE***xxx***cron** files where the cron entries can be placed, so it will fail over if the box goes down, where *xxx* is the primary box where the application will reside (e.g. **SITEdx1cron**). If DX1 goes down, this file will be loaded into DX2's cron job. This file would need to be modified on both pairs.

B.2   Pre-Installation Procedures

Section B.2.1 should be completed several days in advance to allow the WarnGen focal point the opportunity to make changes to WarnGen templates. The remainder of the pre-installation procedures should be completed at least one day prior to beginning the main installation in Attachment C.

B.2.1   Prepare WarnGen Application

There are 15 updated templates (along with 2 new templates) delivered in OB7.2. The complete list of WarnGen templates is in Attachment D. Many of these templates are hydro related in preparation for the upcoming hydrologic VTEC activation. Because of OB7.2 WarnGen logic changes, it cannot be guaranteed that pre-OB7.2 templates will operate in OB7.2. Therefore, the WarnGen focal points are given the opportunity to merge customized changes into the new templates prior to the main installation day.

If the WarnGen focal point is not able to merge customized changes into the templates prior to the installation day, the install will activate the baseline version of those templates.

B.2.1.1 Create Directory and Download Templates

1. From a Linux Workstation, open a terminal window and log on to the **DX1** as root.

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

   mkdir /data/fxa/warngenOB72

   chmod 777 /data/fxa/warngenOB72

   cd /data/fxa/warngenOB72

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/warngen/OB72

   mget *   (15 templates plus warngen script are downloaded.)

   exit

   chown fxa:fxalpha *

   chmod 777 warngenOB72prep.csh

B.2.1.2 Customize Updated WarnGen Templates

This section should be completed by the WarnGen focal point.

Additional instructions and information on customizing the OB7.2 WarnGen templates are located in the **OB7.2 WarnGen WFO Implementation Instructions** at the AWIPS System Administration web page: https://www.ops1.nws.noaa.gov/Secure/awips_install.htm

Complete any customizations prior to the main install day. If the WarnGen focal point is not able to merge customized changes into the templates prior to the installation day, the install will activate the baseline version of those templates.

B.2.2   Download National Data Management Files and Hydro Files

Download the required OB7.2 National Data Management (NDM) files and Hydro files prior to proceeding with the installation. These files are placed in a safe directory until the main install day. Attachment E contains a list of the files downloaded in this step.

1. From a Linux Workstation, open a terminal window and log on to the **DX1** as `root`.

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

    rm –f /local/install/*

    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/OB72

    mget *   (6 files are downloaded.)

    cd ../../ohd/OB72

    mget *   (6 files are downloaded.)

    exit

    chown fxa:fxalpha *

    chmod 777 r*n*

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

B.2.3 Check Disk Space and Permissions

The installation requires a certain amount of available disk space and permissions to complete. If there is insufficient space, contact the Network Control Facility (NCF) at 301 713-9344 and request OB7.2 Install support.

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

    `df –h /data/fxa`

    ```
    Filesystem              Size    Used    Avail   Use%   Mounted on

    nas1:/vol/data_fxa      65G     34G     32G     51%    /data/fxa
    ```

2. Verify at least 3G of space is available.

3. As user root from **DX4**, type the following command:

    `df –P /awips/GFESuite`

    ```
    Filesystem     1024-blocks    Used    Available   Capacity    Mounted on

    nas1:          36700160     4846880   31853280    14%        /awips/GFESuite
    ```

4. Verify at least 1500000 1024 blocks are available.

5. As user `root` from **DX4**, type the following commands:

    `cd /awips`

    `ls –l`

    ```
    ...
    drwxr-xr-x  11 ifps     fxalpha 4096 Nov 15 17:02 GFESuite
    ...
    ```

6. Look for the `GFESuite` directory, then verify and/or correct the ownership as `ifps:fxalpha` and permissions are set to 755.

B.2.4 Verify SSH Connectivity

The installation requires ssh connectivity for `root` and `ifps` across DX1 and DX2. If there are connectivity problems, contact the Network Control Facility (NCF) at 301 713-9344 and request OB7.2 Install support.

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

`ssh dx2`

`ssh dx1`

`su – ifps`

`ssh dx2`

`ssh dx1`

`exit`   (Repeat 5 times to return to **DX1** as `root`)

B.2.5   Update GFE Configuration

The mexwx for GFE is being retired in OB7.2. Therefore, references to MOS products in `localConfig.py` must be removed.

1. As user `ifps` from **DX4**, type the following command:

    cd /awips/GFESuite/primary/etc/SITE

2. Edit the `localConfig.py` file as needed to remove all references to GFSMOS, MAVMOS, METMOS, MEXMOS, FWCMOS and HPCStn.

B.2.6   Check Satellite Depict Keys

In OB7.2, both the `eastSatDepictInfo.template` and `westSatDepictInfo.template` are updated. Sites that have override files (for custom color curves, etc.) in `/data/fxa/customFiles` or `dx1:/awips/fxa/data/localization/`*XXX* (where *XXX* is localization ID) must save a copy and remove (deactivate) them prior to install day. Customized changes may be restored to the new baseline files after the upgrade.

B.2.7   Check Software Installation DVD

Verify that the installation DVD is mountable and readable. If any errors are encountered mounting the DVD or reading files using the commands, contact the NCF at (301) 713-9344, and request OB7.2 Install support.

1. Insert the AWIPS OB7.2 Software Installation DVD into the DX1 DVD-ROM drive.

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

    mkdir -p /mnt/cdrom1

    mount /dev/hda /mnt/cdrom1

    cat /mnt/cdrom1/installLinux_OB72

    cat /mnt/cdrom1/Release_ID

    eject /mnt/cdrom1

3. Remove the DVD from the DX1 DVD-ROM drive and store until installation day.

The pre-install steps are complete. Proceed to Attachment C on the scheduled day of installation.

ATTACHMENT C - Main Installation Instructions for both RFC and WFO Systems

C.1   Installation Procedure for the OB7.2 Software Upgrade

C.1.1   Time to Complete Install

It will take approximately 3 to 4 hours for WFO systems and 5 to 7 hours for RFC systems to complete the installation.

C.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 OB7.2 install support.

C.1.3   RFC Systems AX OS Installation (RFC Systems only)

> **NOTE**:   Section C.1.3 is for RFC systems only. For WFO systems, skip to section C.1.4.

C.1.3.1 Backup Flat Files on RFC AX

Section A.2.1.4 included instructions for backing up flat files for all years prior to the current year. This section backs up flat files for the current year and preserves the directory structure for subsequent years. It is important to enter all years to 2015, since that information is needed in C.2.5.3 Restore Flat Files.

1. Log into any workstation as `root`, open a terminal window, and log in to **DX1** (as `root`).

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

    ssh ax

    cd /data/fxa/install_root/scripts

    ./backup_flatfiles.sh 2007 2008 2009 2010 2011 2012 2013 2014 2015

3. Verify files with a `.tgz` extension in `/mnt/nas/flatfiles` exist for each year in `/data/flatfiles`.

C.1.3.2 Backup System Files and Prepare for the OS Install

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

    cd /data/fxa/install_root/scripts

    ./makeInstance.pl   (Takes < 1 minute.)

    ./backUpSystems.pl   (Takes about 10 minutes.)

    This script starts additional processes on the AX. Therefore, the reappearance of the command prompt does not mean the backup step is complete.

2. After 10 minutes has elapsed, type the following command to verify proper backup.

    ./bkpstat.pl

3. Look for the following message indicating successful completion:

    `This run of BackUpSystems.pl completed successfully for all hosts.`

Although the backup usually completes in 10 minutes, in some cases it does take longer. If the `bkpstat.pl` output indicates that the backup is not yet complete, wait a few minutes and try it again. The `bkpstat.pl` script can be run repeatedly without causing any problems.

If the backup has not completed within 20 minutes or errors are encountered, contact the NCF and ask for OB7.2 install support.

Once the backup has completed successfully, proceed to section C.1.3.3.

C.1.3.3 OS Installation for RFC AX

This section will upgrade the AX to RHEL4u2 and will take about 70 minutes to complete.

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

    `cd /data/fxa/install_root/scripts`

    `. env.sh`   (There is one space between the `.` and `env.sh` commands.)

    `./kickOne.pl ax-``xxx`   (replace *xxx* with site ID)

2. Connect a monitor, keyboard and mouse to the AX to monitor the status of the OS upgrade.

3. If the monitor displays an error message referencing NFS and the inability to mount directories from the NAS, reboot the AX and the install should proceed upon reboot.

Once the OS install has completed, proceed to C.1.3.4.

C.1.3.4 OS Post-install for RFC AX

After the OS install is complete, log onto the AX and restore the system files.

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

    `mkdir –p /local/install`

    `script –a –f /local/install/postinstall_raxOB72.out`

    `cd /data/fxa/install_root/scripts`

    `./postinstall_rax.sh`   (Takes about 10 minutes.)

2. **`exit`**

C.1.4   Prepare AWIPS System for Software Upgrade (All Systems)

1. Initiate service backup, if needed.

2. Terminate all D2D sessions and log out of the **LX** workstations.

3. Log out of all text workstations, and terminate any local and AWIPS applications open.

4. (PACE sites) Switch off PACE input during the installation.

5. (Radar sites) Send a message indicating radar unavailability during the installation.

6. Sites with data feeds to the FAA should contact the FAA to notify them of the installation.

7. Weather wire uplink sites should contact Dyncorp, and ensure a backup uplink site is not expected to be in service backup.

8. Sites with a CWSU connection should request that the CWSU log out of their D2D application. Unplug the wire to the CWSU.

9. Log into any workstation as `root`, open a terminal window, and log in to **DX1** (as `root`).

10. Run the script to move the Nationally Managed Data (NMD) data files into the proper location.

    `script –a –f /local/install/moveob72files.out`

    `cd /data/local/nationalData`

    `./moveob72files.sh`   (Takes < 1 minute)

11. **`exit`**

C.1.5   Complete WarnGen OB7.2 Template Activation (WFO Systems Only)

After OB7.2 is installed, WarnGen version OB7.2 templates must be used. Because of changes in OB7.2 WarnGen templates and OB7.2 WarnGen logic changes, it cannot be guaranteed that pre OB7.2 templates (legacy templates) will operate in OB7.2.

NOTE: The `warngenOB72prep.csh` script removes the WarnGen custom templates (listed in Attachment D) from `/data/fxa/customFiles`. Those templates are backed up in directory `dx1:/data/fxa/warngenOB71`. They are replaced with customized OB7.2 templates (if they exist), or baseline OB7.2 templates. This includes WarnGen templates for service backup sites.

---

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

    `script -a -f /local/install/warngenOB72.out`

    `ll /data/fxa/warngenOB72/ready`

2. Ensure the WarnGen focal point has placed the customized templates, if any, in the `ready` directory. Otherwise, baseline OB7.2 templates will be used in the main localization.

    `cd /data/fxa/warngenOB72`   (Takes < 1 minute)

    `./warngenOB72prep.csh`

    The script asks the following question:

    ```
    ALL OB7.2 EQUIVALENT WARNGEN TEMPLATES WILL BE REMOVED FROM
    /data/fxa/customFiles. Proceed? (y/n)
    ```

3. Respond **y** to continue.

4. **`exit`**

C.1.6   Install OB7.2 Software

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

1. Insert the OB7.2 AWIPS Software DVD into **DX1** DVD drive.

2. Mount the DVD.

3. As user `root` on **DX1**, type the following commands:

    `mkdir -p /mnt/cdrom1`

    `mount /dev/hda /mnt/cdrom1`

    `cd /mnt/cdrom1`

---

4. Execute the preinstall script. Ignore any kill error messages.

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

    `script –a –f /local/install/preinstallOB7-2.out`

    `./preinstall_OB72`   (Takes 5 to 10 minutes.)

    `exit`

5. Execute the following script to install AWIPS application software updates.

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

    `script –a –f /local/install/installLinuxOB7-2.out`

    `cd /mnt/cdrom1`

    `./installLinux_OB72`   (Takes about 60 minutes.)

    `exit`

6. Execute the following script to install the Hydrology software.

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

    `script –a –f /local/install/installOHOB7-2.out`

    `cd /mnt/cdrom1`

    `./installOH_OB72`   (Takes 1 to 5 minutes.)

    `exit`

8. (WFO Systems Only) Execute the ADAPT script. Ignore `climate_HP.tar.gz` and `wwa_hp.tar.gz` error messages.

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

    `script –a –f /local/install/installADAPTOB7-2.out`

    `cd /mnt/cdrom1`

    `./installADAPT_OB72`   (Takes 1 to 2 minutes.)

    `exit`

9. (Select systems only) Execute the NMAP script. The script installs NMAP version 5.9.4.

> **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/installNMAPOB7-2.out`

    `cd /mnt/cdrom1`

    `./installNMAP_OB72`   (Takes 2 to 5 minutes.)

exit

10. Execute the post-install script. This script includes updated security patches.

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

    script –a –f /local/install/postinstallOB7-2.out

    cd /mnt/cdrom1

    ./postinstall_OB72   (Takes 65 to 85 minutes.)

    exit

11. Execute the AX script to update the AX.

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

    script –a –f /local/install/installAXOB7-2.out

    cd /mnt/cdrom1

    ./installAX_OB72   (Takes up to 2 minutes.)

    exit

12. (WFO Systems Only) Execute the GFE Climo script. The script takes 2 to 6 minutes to complete.

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

    script –a –f /local/install/gfeClimoOB7-2.out

    cd /mnt/cdrom1/gfeClimo

    ./masterGFEInstall_Climo *XXX*   (*XXX* is localization ID in upper case.)

    exit

13. (WFO Systems Only) Execute the GFE Core script. The script takes 5 to 10 minutes to complete.

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

    script –a –f /local/install/gfeOB7-2.out

    cd /mnt/cdrom1/gfe

    ./masterGFEInstall *XXX*   (*XXX* is localization ID in upper case.)

    exit

14. (WFO Systems Only) Execute the IFPS install script.

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

    script –a –f /local/install/installIFPSOB7-2.out

    cd /mnt/cdrom1/ifps

    ./installIFPS   (Takes 5 to 10 minutes.)

    exit

15. (WFO Systems Only) Execute the AVNFPS script to install version 3.3 of AVNFPS.

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

   `script –a –f /local/install/installAVNFPSOB7-2.out`

   `cd /mnt/cdrom1`

   `./installAVNFPS.sh /mnt/cdrom1`   (Takes 1 to 3 minutes.)

   `exit`

16. Unmount the DVD from the DX1 DVD-ROM drive.

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

   `cd /`

   `eject /mnt/cdrom1`

17. Remove the DVD from the DX1 DVD-ROM drive.

C.2   Post Install

C.2.1   Install the Updated Kernel
The new kernel (2.6.9-42.19) replaces the current kernel (2.6.9-37) on all servers and workstations.

1. Run the installation script. As user `root` on **DX1**, type the following commands:

   `script –a –f /local/install/install_rpms_kernel.out`

   `cd /data/local/kernel_42`

   `./install_rpms_kernel.sh`   (Takes 10 to 15 minutes.)

   `exit`

2. Run the verify script to confirm that the 42 kernel has been installed. As user `root` on **DX1**, type the following commands:

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

   `./verify_install_kernel.sh`   (Takes 2 to 4 minutes)

   `exit`

   `grep –i warning /local/install/verify_kernel.out`

3. Examine the output for warnings. If any are found, contact the NCF for assistance.

4. Manually reboot all of the LX and XT workstations to load the new kernel. Verify all LX and XT workstations have rebooted before continuing. If problems are encountered, contact the NCF for assistance.

5. Reboot the servers. The NCF can perform the reboots if requested. Otherwise, reboot the even servers and AX, odd servers, and then manually restore the apps packages as described in the OB7.2 System Manager's Manual. All devices must be rebooted before closing the OB7.2 install trouble ticket.

C.2.2   Restore the System

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

1. Permit users to log back on to AWIPS.

2. (PACE sites) Turn the PACE input back on.

3. (Radar sites) Send a message regarding the return to service of the radar.

4. Baseline crons (such as the px1cron) were delivered during the install. Verify crons such as climate are set to the proper run time.

5. Start the Mozilla browser and verify that servers and processes are processing normally.

6. Verify that radar products are being stored locally. Sites that send radar products should verify radar products are disseminated via the Wide Area Network (WAN) by checking the following site: http://weather.noaa.gov/monitor/radar

7. Restore the CWSU connection, if applicable, and relay to CWSU staff of system availability.

C.2.3   Merge Changes into Updated AppLauncher

During the installation, the `local.conf` file in `/awips/fxa/data/appLauncher` was updated on each machine. The OB7.1 version was saved in `/awips/fxa/data/appLauncher/local.conf.rpmsave`. Merge any local changes into the latest version and copy to each workstation as needed.

C.2.4   Hydro Post Install Procedures

C.2.4.1 Rename PRISM Files

In OB7.2, the naming convention for the PRISM files has changed from `PRISM_XX` (*XX* is 01 for Jan, etc.) to `prism_mean_precip_<site-id>_mmm` where site ID is given by the `mpe_site_id` token and *mmm* is the lowercase month (jan, feb, etc.) Complete the following commands to convert to the new format:

As user `oper` on **LX1**, type the following commands:

```
cd /data/local/nationalData

cp -p rename_prism_files /awips/hydroapps/precip_proc/bin

/awips/hydroapps/precip_proc/bin/rename_prism_files
```

C.2.4.2 Install Local Topography Data Files (CONUS WFO and RFC Systems)

A new topography overlay feature for HydroView and MPE Editor is available in OB7.2. The data is also used in the MPE/Daily QC temperature grid computations. This file must be localized based on the defined MPE rectangular data by running the supplied script. (Topography information is not available for Alaska, Hawaii, Guam, and Puerto Rico.)

1. As user `oper` on **LX1**, type the following commands:

```
cd /data/local/nationalData

mv run_create_topo /awips/hydroapps/precip_proc/bin

mv read_topo.LX /awips/hydroapps/precip_proc/bin

mv topo* /awips/hydroapps/whfs/local/data/geo
```

`/awips/hydroapps/precip_proc/bin/run_create_topo`

The utility script reads the MPE geographic definition that is contained in the office's local configuration and then extracts the data from the respective files (`topoea`, `toponw`, `toposw`) for the defined area. The result is written to `/awips/hydroapps/whfs/local/data/geo`.

2. After the local topographic file is created and the proper display is verified through HydroView, remove the `topoea`, `toponw`, and `toposw` files from the `/awips/hydroapps/whfs/local/data/geo` directory. These files occupy about 70 MB of space and are no longer needed after the utility script runs successfully.

C.2.4.3 Check WHFS Crons (WFO Systems Only)

The OHD cron tables are defined for the DX1 and PX1 servers. During the installation, the OHD cron tables were saved off and replaced with OB7.2 baseline crons. For example, the pre-OB7.2 version of `whfs_crontab_px1` in `/awips/hydroapps/whfs/local/bin` was saved to `whfs_crontab_px1.ob6` 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 `.ob6` copy and the new cron and resolve any local differences as deemed appropriate.

New entries in PX1 baseline cron table:

`run_obsfcst_monitor`

`run_pdc_pp`

`process_qpe_mosaic` (WFO only)

`run_dqc_preprocessor` (RFC only - commented out by default)

`run_freezing_level` (RFC only - commented out by default)

C.2.4.4 Configure RFC Crons (RFC Systems Only)

Review the PX `.baseline` crontab file in `/awips/hydroapps/whfs/local/bin` and include the `run_obsfcst_monitor` and `run_pdc_pp` entries in the operational crontab. These jobs perform the new observed and forecast comparisons of river data, and perform the point data control (pdc) pre-processing (pp) needed for the new time step function in HydroView. Refer to the OB7.2 Release Notes for additional information.

C.2.4.5 Historical Data Browser (RFC Systems Only)

Set up the following tokens in the `$APPS_DEFAULTS_SITE` file to correctly reference the location in which the Historical Data Browser (hdb) is installed and the name of the DB to which it refers.

As user `root` on **DX1**, edit `/awips/hydroapps/.Apps_defaults_site` and add the following tokens:

`hdb_dir        :    /awips/hydroapps/lx/rfc/hdb`

`hdb_db_name    :    ob7_histdata`

The value for the `hbd_dir` token should be the directory where the hdb application is installed at this installation. The script `runhdb`, which runs the application, expects to find the executable under `$hdb_dir/bin/RELEASE`.

The value for the `hdb_db_name` token should be changed in subsequent releases as the name of the database changes.

C.2.4.6 Modify VTEC Retention Parameters (WFO Systems Only)

The event tracking operations of RiverPro require VTEC event information to be stored for at least one year. The retention period, which can be locally configured, is probably currently set to one month only. To change the retention period to one year, follow these steps:

1. Start the HydroBase application.

2. Select the main menu option **Data Ingest|Purge Parameters**; this displays the **Data Purge Parameters** window.

3. In this window, select the row with the table name of **vtecevent**, from the scrolled list in the top half of the window.

4. In the text boxes just below this list, enter 9000 for the data hours for both the host area and the backup areas. The value of 9000 is 375 days, just over one year.

5. Select **Update** just below these text boxes. The entries in the scrolled list row should update accordingly.

6. Repeat steps 3-5 with the **vtecpractice** table.

7. Select **Close** at the bottom of the window to close this window.

8. Exit the HydroBase application.

C.2.5   FFMP and SNOW Cleanup and Localization (WFO Systems Only)

The postgres database was down during the main localization. Therefore, a necessary Flash Flood Monitoring and Prediction (FFMP) file was not created correctly because the localization could not access the hydro database. In addition, the `snow` and `safeseas` localizations ran before the Release ID was updated. Perform the following steps to rerun localization and reinitialize the FFMP and SNOW applications, as well as the SAFESEAS application at WFO Systems with maritime responsibilities.

1. As user `fxa` on **DX1**, run the forced localization for the site by typing:

    cd /awips/fxa/data/localization/scripts

    ./mainScript.csh f –scan –snow –safeseas

2.   Stop the FFMPprocessor on PX1:

    ssh px1

    stopFFMPprocessor

3.   Re-start the FFMPprocessor on PX1:

    startFFMPprocessor

4.   Stop the SNOWprocessor on PX1:

    stopSNOWprocessor

5.   Re-start the SNOWprocessor on PX1:

    startSNOWprocessor

6.   (Maritime WFO Systems Only) Stop the SAFESEASprocessor on PX1:

   stopSSprocessor

7.   (Maritime WFO Systems Only.) Re-start the SAFESEASprocessor on PX1:

   startSSprocessor

   exit

NOTE: After completing these localization procedures, the FFMP application will not function until the processor has built up data. For example, only after a minimum of 30 minutes have passed since completion of the localization procedures, the application will be able to display the 30 minute data.

C.2.6   Restore AX data (RFC Systems Only)

C.2.6.1 Restore Ghost Mount

NOTE: The following section applies to sites that use ghost to backup for workstation images for restoration. Other sites should proceed to C.2.6.2.

Edit the `/etc/fstab` file by removing the comment (# symbol) from the line referencing the `/dev/md0` mounting to `/ghost`

From: `#/dev/md0    /ghost    vfat       user,auto,owner,rw`

To: `/dev/md0    /ghost    vfat       user,auto,owner,rw`

C.2.6.2 Restore Database
This section can take from 2 to 13 hours, depending on the amount of data. It is suggested to perform this section at the end of the day and allow it to run overnight.

1.   As user `root` on **AX**, type:

   su – oper

   cd /awips/hydroapps/lx/rax_conversion/loadScripts

   export PGHOST=ax

   export PGUSER=postgres

   export PATH=$PATH:.

   main_load adb_ob72xxx   (where *xxx* is localization ID)

2.   Check the `/awips/hydroapps/lx/rax_conversion/loadScripts/verifyLoad.log` for errors.

C.2.6.2.1 Run Vacuum Script
Run the `run_vacuumdb` script manually. It will then run automatically by cron every three hours.

As user `oper` on **AX**, type the following command:

```
cd /rfc_arc/scripts/dbadmin
./run_vacuumdb
exit
```

C.2.6.2.2 Start Decoders

As user `oper` on **AX**, type:

```
/rfc_arc/scripts/decoders/start_raw_decoder
```

```
/rfc_arc/scripts/decoders/start_processed_decoder
```

```
/awips/hydroapps/lx/rax_conversion/cleanupOldFiles/oldFilesCleanUp.sh
```

C.2.6.3 Restore Flat Files

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

```
ssh ax
```

```
cd /data/fxa/install_root/scripts
```

```
./restore_flatfiles.sh YYYY [YYYY … YYYY]
```

where *YYYY* is the year, e. g., `./restore_flatfiles.sh 2005 2006 2007`.

```
su – oper
```

```
cd /rfc_arc/scripts/flatfiles
```

```
export PATH=$PATH:.
```

```
./mkdir-adb.tsk1.2006
```

```
./mkdir-adb.tsk2.2006
```

```
exit              (returns to DX1 as root)
```

CAUTION

Complete the following two steps only after the flat files have been restored completely and correctly.

```
rsh nas1 vol offline /vol/ax_backup
```

```
rsh nas1 vol destroy /vol/ax_backup
```

C.2.7 Notify the NCF

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

C.2.8 Run Backup Localizations (WFO Systems Only)

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 be used 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)

C.2.9 Configure Simpact Bootup Parameters

The Simpacts are currently configured to use information from the DS servers when rebooting. In preparation for DS decommissioning, complete the following procedure to change the configuration to the DX servers.

1. Insert the AWIPS OB7.2 Software Installation DVD into the DX1 DVD-ROM drive.

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

```
mount /dev/cdrom
```

```
/media/cdrecorder/setup_freeway.sh
```

```
ypcat hosts | grep dx1f | awk '{print $1}'
```

Write down the `dx1f` IP address for use below.

```
telnet cpsync1-xxx        (xxx is site ID)
```

Username is `freeway`. Password is `password`.

3. Select **3) Modify Configuration**

4. Select **2) Modify Boot Parameters**

5. Press **Enter** until **Boot Server Name** is displayed (8 times).

6. After the current setting is displayed, type in **dx1f-xxx** (*xxx* is site ID) and press **Enter.**

7. The next setting is **Boot Server Inet Address**. After the current setting is displayed, type in the IP address of the `dx1f` server and press **Enter**.

8. Press **Enter** until **Save Modifications** is displayed (5 times).

9. Type **yes** and press **Enter** to save the modifications.

10. The modifications will print to the screen. Verify the changes and then press **Enter**.

11. Select **1) Return to Interactive Menu**

12. Select **6) Logout**   (Returns to **DX1**)

```
telnet cpsync2-ccc        (xxx is site ID)
```

Username is `freeway`. Password is `password`.

13. Select **3) Modify Configuration**

14. Select **2) Modify Boot Parameters**

15. Press **Enter** until **Boot Server Name** is displayed (8 times).

16. After the current setting is displayed, type in **dx1f-ccc** (*xxx* is site ID) and press **Enter.**

17. The next setting is **Boot Server Inet Address**. After the current setting is displayed, type in the IP address of the `dx1f` server and press **Enter**.

18. Press **Enter** until **Save Modifications** is displayed (5 times).

19. Type **yes** and press **Enter** to save the modifications.

20. The modifications will print to the screen. Verify the changes and then press **Enter**.

21. Select **1) Return to Interactive Menu**

22. Select **6) Logout**   (Returns to **DX1**)

```
sed -i 's/yes/no/g' /etc/xinetd.d/gssftp

service xinetd restart

ssh dx2

sed -i 's/yes/no/g' /etc/xinetd.d/gssftp

service xinetd restart
```

NOTE: The following error messages can be ignored when resetting the `freeway` user password on DX2 and DX1:

```
BAD PASSWORD: it is based on a dictionary word

NIS password could not be changed.
```

---

passwd freeway   (type **password** twice to reset password)

exit   (Returns to **DX1**)

passwd freeway   (type **password** twice to reset password)

cd /

eject /dev/cdrom

23. Remove the DVD from the DX1 DVD-ROM drive.

ATTACHMENT D - WarnGen Template Changes

The following WarnGen script and templates are downloaded in the pre-install step and delivered in OB7.2

`warngenOB72prep.csh`

`wwa_dam_break.preWWA`

`wwa_ffw.preWWA`

`wwa_ffw_svr.preWWA`

`wwa_flflood_sta_county.preWWA`

`wwa_flflood_sta.preWWA`

`wwa_flood_adv.preWWA`

`wwa_flood_adv_sta.preWWA`

`wwa_flood_sta.preWWA`

`wwa_flood_wrn.preWWA`

`wwa_svr.preWWA`

`wwa_mar_wx_sta.preWWA`

`wwa_mws_nosmw.preWWA`

`wwa_specmarine.preWWA`

`wwa_svrwx_sta_county.preWWA`

`wwa_tor.preWWA`

The following templates (Extreme Wind Warning) are new in OB7.2 and are placed in `/data/fxa/nationalData` at the 47 sites who are authorized to use them.

`wwa_eww.preWWA`

`wwa_eww_svs.preWWA`

ATTACHMENT E - NDM and Hydro Files Updated in OB7.2

The following National Data Management (NDM) files are downloaded from the NOAA1 server for the OB7.2 installation.

`dataInfo.manual`

`depictInfo.manual`

`productButtonInfo.txt`

`modelBufrStationInfo.txt`

`satSpecificInfo.txt`

`moveob72files.sh`

The following Hydro files are downloaded from the NOAA1 server for the OB7.2 installation.

`rename_prism_files`

`run_create_topo`

`read_topo.LX`

`topoea`

`toponw`

`toposw`

ATTACHMENT F - Known Issues and Workarounds for AX Upgrade

F.1   OS Upgrade: Mounting Directories

If the message *That directory could not be mounted from server* displays during the OS upgrade, press **Enter** 4 times. If the same error message appears again, press **Enter** 4 more times. If the system keeps prompting about this error message, contact the NCF for assistance.

F.2   OS Upgrade: Devices Hanging

Occasionally a device will hang during the OS upgrade. Periodically monitor the progress of the machines (every 10 minutes is recommended). For the AX, it is necessary to connect an external monitor to the device to monitor the progress of the OS upgrade. If any machine hangs, reboot and the installation should resume.

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, use the following procedure to recover.

Follow the **Rescue Procedure** below to get a usable shell on the system.

1. Change to the boot directory:

    cd /mnt/sysimage/boot

2. Type the following command:

    ls -l vmlinuz-2.6.9-37.EL initrd-2.6.9-37.EL.img

3. Pay close attention to the sizes of those files.

4. Get into the rescue directory by typing **cd rescue** and repeat step 2.

5. Compare the sizes of the files in step 2 to the sizes of the same files in step 4. The vmlinuz files should be the exact same sizes. The sizes of the initrd files may vary from machine to machine, but the difference should be as small as a few bytes to a few hundred bytes. If the difference of the two initrd files is much larger than that, the initrd file on the system is likely corrupted. For example, in the two cases encountered during testing, the differences of the sizes of the two initrd files were about 100,000 bytes (100 kb).

6. If that occurs, run the following command:

    cp -f initrd-2.6.9-37* ../

    This copies the correct initrd file from the rescue directory to the boot directory. Reboot to see if the error is fixed. If it still fails, contact the NCF for assistance.

7. If the two initrd files have similar sizes, then this is not the issue. Contact the NCF install support for further assistance.

8. 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), follow the **Rescue Procedure** listed above to get a shell on the system, and 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.

F.3   OS Upgrade: Language Selection

If the following prompt appears:

```
SELECT LANGUAGE:   English
```

Then the kickStart configuration file (`ks.cfg`) was not read into the installation scripts. This file is located in `/data/fxa/install_root/awipsConfig/ks.cfg.ax-`*[siteID]*

Copy the correct `ks.cfg` file for the device in question to a floppy disk. This can be accomplished by mounting a floppy to a workstation.

For example: If the problem occurs on AX-NHOR

1. Place a floppy in an LX box.

2. As user `root` type:

    mount /mnt/floppy

    cp -p /data/fxa/install_root/awipsConfig/ks.cfg.ax-nhor /mnt/floppy/ks.cfg

    cd /

    umount /mnt/floppy

3. With the rescue CD in the AX, reboot the device into Linux rescue mode.

4. Place the floppy into the AX diskette drive.

5. At the boot prompt in Linux rescue mode, type **linux ks=floppy**

6. The device should then start to upgrade. Call the NCF and ask for install support if any problems arise during these procedures.

F.4   OS: AX Hanging After Rebooting

During the reboot process, if the AX hangs at:

```
Loading MS-DOS
```

1. Boot into Linux rescue mode with the recovery CD.

2. Type:

    chroot /mnt/sysimage

    grub

3. At the `grub>` prompt, type **root (hd0,1)**

4. After the output information about the file system referencing ext2fs and drive 0xfd displays, type **setup (hd0)**

5. References to various grub levels display, and the first instance displays *NO*. This is normal. At the `grub>` prompt type **quit**

6. At the shell prompt, type **reboot**

---

7. During the reboot process remove the CD from the drive before the system boots up completely.

    As with any of the above procedures, call the NCF install support staff if assistance is needed with these procedures.

F.5   OS: Rescue Procedure

The purpose of this procedure is to get a usable shell on the system and mount the file system mounted so that further rescue tasks can be performed as required in the workarounds above.

Put the Rescue CD i

1. nto the CD (or DVD) drive of the failed machine and reboot. By default the machine should boot from CD and the Redhat 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 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 above workarounds to determine what needs to occur on this system to proceed.

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

ATTACHMENT G - Sample EMRS Report

New A26   Commit A26   Place on Hold   Copy A26   Delete A26   Detail Report   Document Summary   Create USOS   Help

GENERAL INFORMATION

NEW RECORD   WFO* OTX ▼   Document No.* OTX70221000

1. Open Date	Open Time	2. Op Initials	3. Response Priority	4. Close Date	Close Time
02/21/2007	08:00	WSH	○ Immediate ○ Low ⊙ Routine ○ Not Applicable	02/21/2007	12:00

5. Maintenance Description   473   characters left   AWIPS

Install AWIPS Release OB7.2

EQUIPMENT INFORMATION

6. Station ID*	7. Equipment Code*	8. Serial Number	9. TM	10. AT	11. How Mal
OTX ▼	AWIPS ▼	001 ▼	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
						4			

MISCELLANEOUS INFORMATION

15. Maintenance Comments   665   characters left

Installed AWIPS Release OB7.2, I.A.W. AWIPS Software Installation Note 65, Revision A

16. Tech Initials
DLW ▼

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.	
S65A	02/21/2007			▼	Expand

Commit A26   Place on Hold   Copy A26   New A26   Cancel

Done   Internet   ⊕ 100% ▼