

ENGINEERING HANDBOOK 13 SERIES II SECTION 2.0

AWIPS SYSTEM ADMINISTRATION NOTE 5 for Electronics Systems Analysts

SUBJECT: Advanced Weather Interactive Processing System (AWIPS) Site Preparation and A/B Switch Changeover Procedure

PURPOSE: To allow the site to switch the 56 Kbps and 14.4 Kbps data rates between the radar product generation operational position (RPGOP) and the AWIPS.

SECURITY LEVEL: root/fxa

BACKGROUND: The NEXRAD Modification Note 45 describes the installation of the A/B switch and gives detailed instructions on the following AWIPS procedures:

- Creating the "portInfo.56k" and "portInfo.144k" files.
- Verifying/creating the routing product set (RPS) lists for AWIPS.
- Editing the 56 Kpbs and 14.4 Kbps activation scripts.
- Procedure to switch the 56 Kpbs and 14.4 Kbps line between AWIPS and the RPGOP.

Since many of the procedures in the NEXRAD Modification Note 45 also include instructions for the AWIPS data rate switch procedures, this note reviews the site preparation instructions and provides guidelines for the Electronics Systems Analyst or the AWIPS focal point on the process of switching the 56 Kbps and 14.4 Kbps between AWIPS and the RPGOP.

I. SITE PREPARATION

A. Creating "portinfo.56k" and "portinfo.144k" files

In order for AWIPS to support the logical port assignment for the 56 Kbps and 14.4 Kbps lines, it is necessary to copy the "portInfo.txt" file to the "portInfo.56k" and "portInfo.144k" files.

Procedure

1. Log in to a Telnet window and logon to ds1 as **root/fxa**.
2. Change to the "portInfo.txt" directory.
cd /awips/fxa/data/localizationDataSets/<siteID>
3. Verify that the "portInfo.txt" file exists in the directory.
ll port*
4. Copy the "portInfo.txt" file to create the "portInfo.56k" and "portInfo.144k" files in the /awips/fxa/data directory.
cp -p portInfo.txt /awips/fxa/data/portInfo.56k
cp -p portInfo.txt /awips/fxa/data/portInfo.144k
5. Change directory and list the directory to verify that the changes were saved.
cd /awips/fxa/data

ll port*

This completes the "portInfo.xxx" files create procedure.

B. Editing the "portInfo.56k and"portInfo.144k" Files

After the "portInfo.56k" and "portInfo.144k" files have been created, it is necessary to change the content of the file to reflect the correct port assignment and maximum amount of products allowed in the RPS list.

Procedure

1. Set the terminal environment to vt100.
setenv TERM vt100
2. Open the vi editor to edit the "portInfo.56k" file.
vi portInfo.56k
3. The listing should be similar to the one shown below.

3 0 303 KWLX 20

4. The group of numbers and characters in the "portInfo.xxx" are identified as follows:

| | | | | |
|-------------|----------------------|------------------|-------------|--------------------------------|
| 3 | 0 | 303 | KWLX | 20 |
| Port Number | Simpact Board Number | Radar Decimal ID | Radar ID | Maximum Number of RPS Products |

5. Move the cursor to the port number position and change it from **3** to **0** (port typically used for the 56 Kbps data rate). Then move the cursor to the maximum number of RPS products and change the number from **20** to **50** (**r** for replace, **i** for insert, and **x** for delete).
6. Press **Esc** then **:wq!**.
7. Now view the "portInfo.144k" file.
cat portInfo.144k
8. Verify the first group is a **3** (port typically used for the 14.4 Kbps data rate), and the fifth group is a **31** (signifying the maximum RPS products for a 14.4 Kbps data rate). If necessary, edit the "portInfo.144k" file to make the appropriate changes. Follow the edit procedures given in steps 2 and 5.
9. Verify the changes were saved by typing:
cat portinfo.56k or **cat portInfo.144k**

Type **exit** to exit from fxa user.

10. This completes the "portInfo.xxxx" edit procedure.

C. Verify/Create the RPS Lists

AWIPS currently has three default RPS lists: KXXX.clear-air, KXXX.storm, and KXXX.current. Two actions occur when the radar switches between the precipitation and clear air modes:

- The AWIPS software invokes the RPS lists

- The AWIPS software loads the ".storm" and ".clear-air" RPS lists into the ".current" list.

Selecting one of two data rates (56 Kbps 14.4 Kbps) imposes the same RPS lists activities on both the AWIPS and the RPGOP. Therefore, the same operational considerations given to the RPGOP must be given to the AWIPS. The site should construct and save RPS lists appropriate for the intended data rate. Instructions to standardize and optimize the RPS lists between the RPGOP and AWIPS are as follows:

Procedure

1. From the D2D menu bar, select the appropriate radar button (i.e., KEAX).
2. Move down the list and select **Applications** then **RPS List Editor**.
3. Select **File, New**, then **Add** to create new RPS lists.
4. With the mouse, select the product characteristics and click the **OK** button when finished.
5. Each time a new list is created, select **Save as....** and save the lists with a descriptive filename (i.e. 14.4k_clear-air, 14.4k_precip, 14.4k_vcp11, 56k_clear-air, 56k_precip).



For the script to work properly, the following RPS lists must be created.

| | | |
|---------------|----------------|-----------------|
| 56k_clear-air | 56k_precip | 14.4k_clear-air |
| 14.4k_precip | KXXX.clear-air | KXXX.storm |

6. An example of an RPS list selection window is shown in the table below. **Note**, the RPS list is site dependent and may not include all the files listed below.

| Open |
|-----------------|
| KXXX.clear-air |
| KXXX.storm |
| KXXX.current |
| 14.4k_clear-air |
| 14.4k_precip |
| 14.4k_vcp11 |
| 56k_clear-air |
| 56k_precip |
| 56k_vcp11 |

7. Log in to a Telnet windows and log on to ds1 as **awipsusr**.
8. Type the following commands:

```
cd /data/fxa/rps-lists<Enter>
chmod 775 14.4k*<Enter>
chmod 775 56*<Enter>
chmod 775 K*<Enter>
chown fxa:fxalpha 14.4k*<Enter>
chown fxa:fxalpha 56k*<Enter>
chown fxa:fxalpha K*<Enter>
```

9. Type **exit** to exit from AWIPS user.

NOTE

The *wfo56k* and the *wfo144k* scripts will automatically copy the appropriate RPS lists into the correct directories.

This completes the verification and/or creation of the RPS lists procedure.

56 KBPS LINE ACTIVATION SCRIPT

General

A sample 56 Kbps activation script is shown below. Before the script is run, it is necessary to edit the script to change site dependent descriptors. The instructions below apply to both the 56 Kbps and 14.4 Kbps activation scripts. All site dependent descriptors have been annotated in bold (LWX or KLWX) below.

Procedure

1. Call the Network Control Facility (NCF) at (301) 713-1284 and ask them to FTP the following files:

For AWIPS Build 4.0.X sites: wfo56k, wfo144k

For AWIPS Build 4.1 sites: wfo56k.41, wfo144k.41

2. Log on to ds1 as **root/fxa** user.
 3. Type **cd /awips/fxa/bin** to change to the location of the scripts.
 4. Type **ll wfo*** to verify the files are present.
 5. Type **vi wfo56k** to start the vi editor.
 6. Type **:1,\$s/LWX/<local siteid>/g** then **<Enter>**.
 7. If the radar ID is different than the site ID, type **:1,\$s/KLWX/<local radarid>/g**. Otherwise skip to step 8.
 8. Cursor down to line 16 to add or subtract workstations to match the site configuration.
 9. Save the changes by pressing **Esc** and **:wq!** then **<Enter>**.
 10. Repeat the edit procedures for the 14.4 Kbps activation script.
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56 Kbps Line Activation Script for AWIPS Build 4.0.X

```
#!/bin/sh
# This script is to activate the 56k line
export FXA_HOME=/awips/fxa
export LOG_DIR=/data/logs/fxa
echo
echo "Running as 'whoami'"
echo
echo "Making a copy of the portInfo.txt file"
cp /awips/fxa/data/localizationDataSets/LWX/portInfo.txt
/awips/fxa/data/localizationDataSets/LWX/portInfo.sav
echo ""
echo "Stopping the Radar"
/awips/fxa/bin/stopRadar
echo "Copying the 56k portInfo.txt file to all other devices"

for i in as1 as2 ds2 ws1 ws2 ws3 ws4 ws5
do
echo $i
rcp -p /awips/fxa/data/portInfo.56k
$i:/awips/fxa/data/localizationDataSets/LWX/portInfo.txt
done
echo
echo "Activating the portInfo.txt and
default RPS lists on the DS"
cp /awips/fxa/data/portInfo.56k
/awips/fxa/data/localizationDataSets/LWX/portInfo.txt
cp /awips/fxa/data/portInfo.56k
/awips/fxa/data/localization/LWX/LWX-portInfo.txt
cp /data/fxa/rps-lists/56_clear-air
/data/fxa/radar/lists/KLWX.clear-air
cp /data/fxa/rps-lists/56_precip
/data/fxa/radar/lists/KLWX.storm
echo "Starting Radar"
/awips/fxa/bin/startRadar
clear
echo "You are now ready to turn the A/B
switch to the 56 Kbps position "
```

← Add or subtract workstations as necessary

NOTE

The differences between a Build 4.0.X script and a Build 4.1 script are the *.rps* extensions in the "56_clear-air" and "56_precip" file names in lines 26 and 27. The Build 4.1 script will have the following changes.

```
cp /data/fxa/rps-lists/56_clear-air.rps
/data/fxa/radar/lists/KLWX.clear-air
cp /data/fxa/rps-lists/56_precip.rps /data/fxa/radar/lists/KLWX.storm
```

14.4 Kbps Line Activation Script for AWIPS Build 4.0.X

Site dependent changes must also be performed on the 14.4 Kbps activation script. Follow the edit

change procedures outlined for the 56 Kbps activation script. Type **wfo144k** or **wfo144k.41** to run the script.

```
#!/bin/sh
# This script is to activate the 14.4k line
export FXA_HOME=/awips/fxa
export LOG_DIR=/data/logs/fxa
echo
echo "Running as 'whoami'"
echo
echo "Making a copy of the portInfo.txt file"
cp /awips/fxa/data/localizationDataSets/LWX/portInfo.txt
/awips/fxa/data/localizationDataSets/LWX/portInfo.sav
echo ""
echo "Stopping the Radar"
/awips/fxa/bin/stopRadar
echo "Copying the 14.4k portInfo.txt file to all other devices"

for i in as1 as2 ds2 ws1 ws2 ws3 ws4 ws5
do
echo $i
rcp -p /awips/fxa/data/portInfo.144k
$i:/awips/fxa/data/localizationDataSets/LWX/portInfo.txt
done
echo
echo "Activating the portInfo.txt and
default RPS lists on the DS"
cp /awips/fxa/data/portInfo.144k
/awips/fxa/data/localizationDataSets/LWX/portInfo.txt
cp /awips/fxa/data/portInfo.144k
/awips/fxa/data/localization/LWX/LWX-portInfo.txt
cp /data/fxa/rps-lists/14.4_clear-air
/data/fxa/radar/lists/KLWX.clear-air
cp /data/fxa/rps-lists/14.4_precip
/data/fxa/radar/lists/KLWX.storm
echo "Starting Radar"
/awips/fxa/bin/startRadar
clear
echo "You are now ready to turn the A/B
switch to the 14.4 Kbps position "
```

← Add or subtract workstations as necessary

NOTE

The differences between a Build 4.0.X script and a Build 4.1 script are the *.rps* extensions in the "56_clear-air" and "56_precip" file names in lines 26 and 27. The Build 4.1 script

will have the following changes.

```
cp /data/fxa/rps-lists/56_clear-air.rps /data/fxa/radar/lists/KLWX.clear-air
cp /data/fxa/rps-lists/56_precip.rps /data/fxa/radar/lists/KLWX.storm
```

II. 56 KBPS and 14.4 KBPS LINE SWITCH PROCEDURES

A. RPGOP TO AWIPS

1. Open the radar status message dialogue box to monitor the messages between AWIPS and the RPG.
2. At the Unit Control Position (UCP) Applications Terminal, disconnect the RPGOP dedicated line as follows:

At the UCP, enter:

U,C,D,1

At the AWIPS dedicated line enter: **U,C,D,<Line # of the AWIPS/PUP dedicated narrowband line>**

3. Verify that AWIPS registers the disconnect in the D2D radar status window.
4. On AWIPS, open an XTERM window and enter the following sequence of commands:
rlogin ds1 (as root)
su fxa
cd /awips/fxa/bin
wfo56k or (wfo56k.41)

5. At the RPGOP applications terminal, perform a disconnect of the RPGOP dedicated line to the Principal User Processing group (PUP) by entering:

C,C,D,1

6. At the PUP applications terminal enter:

S,C

7. Verify that the line is disconnected. The status of line 1 should read "DSA DSC" (disabled, disconnected).

8. At the PUP applications terminal, modify the PUP extended adaptation APUP/RPGOP flag to that of an APUP by entering:

AD,***,***,5,0**

- a. Modify offset 00 from 0001 to **0000**.
- b. Press **<Return>** and **F1** to designate APUP and save the changes.

NOTE

With the adaptation set for the RPGOP flag (0001) at the higher data rate, the PUP sends a 10K buffer to the RPG. Setting the flag for an APUP at the 9.6 Kbps rate causes the PUP to send a 1K buffer. Failure to modify the APUP/RPGOP setting to correspond with the reduced data rate will result in *RPG Read Buffer Overflow Errors*.

Do not use PUP applications terminal "Control Shutdown" C,S<I or N><Return> option. Use of this option will cause the line which was disconnected in steps 5 and 6, to return to an enabled state.

9. At the PUP system console, terminate the RPGOP system software by entering:

PUPDOWN

10. Move the 56 Kbps switch to the "56K to AWIPS" position.

11. Move the 14.4 Kbps dedicated switch to the "14.4K to RPGOP" position.

| Switch | Position | Connection |
|---------------------|----------------|---------------------------------|
| 56 Kbps | 56K to AWIPS | AWIPS to 56K dedicated RPG feed |
| 14.4 Kbps Dedicated | 14.4K to RPGOP | 14.4K dedicated to RPGOP |

12. At the PUP system console, restart the PUP applications and write the extended adaptation change made in step 8 by entering:

PUPUP

13. At the PUP system console, replace the RPS lists "A" and "B" with the appropriate 14.4 Kbps adaptation RPS list as discussed in the NEXRAD Modification Note 45, Attachment 2, *Precursory System Manager Requirements RPGOP*.

14. At the PUP applications terminal, enter a RPGOP 14.4 Kbps dedicated line connect command by typing:

C,C,C,2

15. To review the status enter:

S,C

16. At the UCP applications terminal, enter a RPGOP to AWIPS dedicated line connect command by typing:

U,C,C,1

U,C,C,<Line # of the AWIPS/PUP dedicated narrowband line>

17. On AWIPS D2D radar status dialogue box, verify that the radar line is connected, and ensure that the appropriate RPS list (KXXX.clear-air or KXXX.storm) has been loaded.

NOTE

If either the RPGOP or AWIPS lines fail to connect, a disconnect/connect command must be issued from the UCP applications terminal by entering:

U,C,D,<Line # of the AWIPS/PUP dedicated narrowband line>

followed by a

U,C,C,<Line # of the AWIPS/PUP dedicated narrowband line>

If a connect message is not displayed, perform the appropriate command shown in the table below or call the NCF at 301-713-1284.

| For Simpact Board | Ports | Command |
|-------------------|-------------|------------------|
| 0 | 0, 1, and 3 | icpReset0 |
| 1 | 4 and 6 | icpReset1 |

B. AWIPS to RPGOP

1. Open the radar status message dialogue box to monitor the messages between AWIPS and the RPG.

2. At the UCP applications terminal, disconnect the RPGOP dedicated line as follows:

a. At the UCP, enter:

U,C,D,1

b. At the AWIPS dedicated line, enter:

U,C,D,<Line # of the AWIPS/PUP dedicated narrowband line>

3. Verify that AWIPS registers the disconnect.

4. On AWIPS, open an XTERM window and enter the following sequence of commands:

rlogin ds1 (as root)

su fxa

cd /awips/fsa/bin

./wfo144k

5. At the RPGOP applications terminal, perform a disconnect of the RPGOP dedicated line to the PUP by entering:

C,C,D,2

6. At the PUP applications terminal verify that the line is disconnected ("DSA DSC" [disabled, disconnected]) by entering:

S,C

7. At the PUP applications terminal, modify the PUP extended adaptation APUP/RPGOP flag to that of an APUP by entering:

AD,***,***,5,0**

- a. Modify offset 00 from 0000 to 0001 to designate RPGOP.
- b. Press <Return> and **F1** to designate APUP, and save the changes.
- c. At the PUP system console, terminate the RPGOP system software by entering:

PUPDOWN



Do not use PUP applications terminal "Control Shutdown" C,S<I or N><Return> option. Use of this option will cause the line which was disconnected in steps 5 and 6, to return to an enabled state.

- 8. Move the 56 Kbps switch to the "56K to RPGOP" position.
- 9. Move the 14.4 Kbps dedicated switch to the "14.4K to AWIPS" position.

| Switch | Position | Connection |
|---------------------|----------------|----------------------------------|
| 56 Kbps | 56K to RPGOP | RPGOP to 56 K dedicated RPG feed |
| 14.4 Kbps Dedicated | 14.4K to AWIPS | 9.6 K dedicated to AWIPS |

10. At the PUP system console, restart the PUP applications and write the extended adaptation change made in step 8 by entering:

PUPUP

11. At the PUP system console, replace the RPS lists "A" and "B" with the appropriate 14.4 Kbps adaptation RPS list as discussed in the NEXRAD Modification Note 45, Attachment 2, *Precursory System Manager Requirements RPGOP*.

12. At the PUP applications terminal, enter a RPGOP 14.4 Kbps dedicated line connect command by typing:

C,C,C,1

13. To review the status enter:

S,C

14. At the UCP applications terminal, enter an RPGOP to AWIPS dedicated line connect command by typing:

U,C,C,1

U,C,C,<Line # of the AWIPS/PUP dedicated narrowband line>

15. On AWIPS D2D radar status dialogue box, verify the radar line is connected and ensure that the appropriate RPS list (KXXX.clear-air or KXXX.storm) has been loaded.



If either the RPGOP or AWIPS lines fail to connect, a disconnect/connect command must be issued from the UCP applications terminal by entering:

U,C,D,<Line # of the AWIPS/PUP dedicated narrowband line>

followed by a

U,C,C,<Line # of the AWIPS/PUP dedicated narrowband line>

If a connect message is not displayed, perform the appropriate command shown in the table below or call the NCF at (301) 713-1284.

| For Simpac Board | Ports | Command |
|------------------|-------------|-----------|
| 0 | 0, 1, and 3 | icpReset0 |
| 1 | 4 and 6 | icpReset1 |

C. Point of Contact

For questions pertaining to this note, please contact Franz J.G. Zichy, at 301-713-1833 ext. 128 or his pager number at 301-610-1710.

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Back to [Engineering Handbook Homepage](#)