

## APPENDIX C

# CRS SOFTWARE INSTALLATION PROCEDURE

### C-1 - Software Version 12.0 Installation from CD-ROM

1. If the CRS application is running, go to the Main Processor (MP) console and close the application by selecting **Stop System** from the *System* menu. Wait until CRS is down (*red down arrow* indicator in the *Status Monitor* window), then select the **Exit to UNIX** option from the *System* menu item. The *CRS login* menu will be displayed.
2. Ensure that all processors (MPs and FEPs) are *powered on* and *on-line* (accessible over the local area network).
3. If the OMP was rebooted, at the *Login GUI* window, **login** as the **root** user. Click the **KDE Desktop Application Starter** icon (the big **K Wheel** icon) in the lower left part of the *KDE Desktop* panel.
4. Click the **SCO Control Center** pop-up menu selection.

**NOTE:** 1. You also may start the *SCO Control Center* by clicking on the **SCO Admin** icon on the *KDE Desktop panel* (the **Swiss Army Knife** icon).

5. Select and double-click the **Software\_Management** menu selection.
6. Double-click the **Applications Installer** menu selection.
7. Insert the CD-ROM into the CD drive of the selected installation MP, then select **CD-ROM\_1** from the *Install from:* prompt in the upper half of the *Application Installer* window. If files are not automatically read, click **Update View**.
8. After the CRS application package icons (**crsopsais**, **crsopsfpm** and **crsopsmpm**) are displayed immediately below the *Install from* prompt, select **crsopsais**, and click **Install**.

**NOTE:** 2. **crsopsfpm** and **crsopsmpm** can only be installed indirectly through **crsopsais**.

9. Respond to the prompts displayed in the *Add Application: crsopsais* and *auto-install* terminal windows.

**NOTE:** 3. The *Add Application: crsopsais* window and the *auto-install* window are used to display the installation activity log as well as the prompts to the installation operator. The log information and the prompt sequences vary depending on the responses to the prompts.

**NOTE:** 4. In some small percentage of installations, the procedure erroneously halts following the completion of the installation on OMP. No further messages are received and the software is not installed on 5MP or any of the FEPs. If this occurs, terminate the installation, shutdown OMP, and repeat Section C-1.

## C-2 - Installation Prompts

**NOTE:** 1. The installation prompts that follow assume a typical configuration (OMP, 5MP, 1FEP, and 4BKUP).

2. The prompt sequence begins with *prompt p1*. Unless otherwise indicated, prompts occur in sequence (*p1 ... p11*).

*p1 Build [version] installation options*

- a) all processors (OMP 5MP 1FEP 4BKUP | 5MP OMP 1FEP 4BKUP)
- f) front-end processors (1FEP 4BKUP)
- m) MPs (OMP 5MP | 5MP OMP)
- s) specific processor
- x) exit

Make sure that installation default option a is selected to load the software on all processors. Press **<Enter>** to select installation option.

If it is determined that the IP addresses in `/etc/inet/hosts` (preinstalled by the CRS software contractor at the factory) are not correct, then prompt *p2* is displayed.

*p2* If this is a hard drive replacement, press **<Enter>** to accept the default option to create a generic system configuration file (*default:y*) prompt.  
*Enter your CRS site ID* (e.g., DLH or NRC1):

Enter the correct local site ID. Entry of a valid site ID results in a comparison of a set of expected IP addresses and the actual IP addresses in `/etc/inet/hosts` on all accessible (online) CRS processors. Differences between expected and actual IP addresses are displayed and logged. The entry of an invalid site ID results in prompt *p2* again. If only the **<Enter>** key is pressed, the *p3* prompt will be displayed. Otherwise, the *p4* prompt will be displayed.

*p3 Display a list of all valid CRS site IDs? (default: y)*

**NOTE:** 2.(cont.) An affirmative (y) response to this prompt will result in the display of a list of all valid CRS site IDs and associated site locations (city, state, region). The list is presented in “pages” via the *UNIX* utility “pg”. The RETURN key or ‘+’ displays the next page, the <-> key displays the previous page, and <q> results in the display of prompt p2. A negative (n) response results in the display of prompt p2.

*p4 Clean out (reset) log files? (default: y)*

An affirmative (y) response to this prompt will result in the resetting of all the CRS application software log files on all the processors in the configuration. A negative response (n) will result in no changes to the CRS log files on any of the processors. It is normally good practice to clean the log files when a new software release is installed.

*p5 Change CRS system date and time? (default: n)*

An affirmative (y) response to this prompt will result in a sequence of additional prompts beginning with p5. The entered date will be used to change the date and time on all the processors. A negative response (n) will result in no changes to the current system date and time (displayed prior to the prompt), and the next prompt will be p10.

*p6 Enter year (e.g., 1997):*

*p7 Enter month (e.g., 01<=mm<=12):*

*p8 Enter day (e.g., 01<=dd<=31):*

*p9 Enter hour (e.g., 00<=HH<23):*

*p10 Enter minute (e.g., 00=MM<=59):*

*p11 Build [version] will be installed on the following processors:*

*[OMP | 5MP | 1FEP | 4BKUP ...]*

*with the following options:*

**NOTE:** 2.(cont.) *Detected configuration is typical*

*[OMP / 5MP] remains CRS master (and X-window client) [OMP / 5MP]  
remains CRS shadow (and X-window server)*

*Log files will be cleaned (reset on [5MP OMP 1FEP 4BKUP])*

*Proceed with Build [version] installation? (default: y)*

An affirmative (y) response to this prompt results in the installation of the CRS application software with the appropriate constraints indicated. A negative (n) response results in the display of a *Message* dialog window with the text: *User does not have permission to install packages pkgadd.* **OK** terminates the installation.

**NOTE:** 3. The master and shadow states that exist on the MPs at the time of installation are preserved, if possible. Otherwise, the installation scripts determine new MP states, based on the old MP states, whether software is being installed on them and/or they are online.

**NOTE:** 4. The installation process will take approximately 15 to 20 minutes.

### C-3 - Post-Installation Caveats and Conventions

Software is installed to CRS processors in a predefined sequence (MPs, then FEPs). When the software has successfully been installed on a processor other than the installation MP, that processor is automatically shut down (and restarted).

Because the FEPs share a single console (monitor and keyboard), only one of the FEPs, the one to which the console is physically connected through the switch box, starts itself automatically, following the shutdown. The startup sequence on an FEP that is not connected to a keyboard pauses while waiting for an <F1> key to be struck at the keyboard. To complete the startup sequence for an FEP that is "stuck" waiting for the <F1> key to be struck, connect (via the switch box) the keyboard to the FEP, verify it is waiting (prompt message on the monitor), and press the <F1> key.

**NOTE:** 1. The FEP startup sequence problem may be resolved by performing the procedure in Appendix B of the CRS Maintenance Manual.

While the installation is in progress, many messages are displayed in the *auto-install log* window on the console.

Messages are of three types: ERROR, INFO and WARNING. Most of these messages are also written to the installation log file (*/crs/install.log*)

All *ERROR* and *WARNING* messages from the installation log file are displayed in the *auto-install log* window at the completion of installation, in accordance with the following template:

Installation ERRORS

[ERROR messages from the installation log file | None ]

[Refer to the installation procedures for further assistance]

Installation WARNING

[WARNING messages from the installation log file | None].

**NOTE: 2.** Inspection of the */crs/install.log* file, after installation of the CRS Build 9.0 software, may result in the following message:

```
UX:lpadmin: WARNING: "/dev/term/a02s" is accessible by others.  
This warning can be ignored.
```

1. Press **<Enter>** to continue. The system displays the following:

```
Continue [0MP | 5MP] shutdown? (Default: y)
```

**NOTE: 3.** A shut down is MANDATORY after CRS software has been installed on an MP to ensure that the installation MP [0MP | 5MP] and the other MP [0MP | 5MP] are functionally synchronized as CRS master and CRS shadow.

2. Press **<Enter>**.

**NOTE: 4.** If there are no ERROR or WARNING messages (i.e., None), the reference to the installation procedures is not displayed. The *auto-install log* window displays until the operator responds to the prompt. An affirmative response results in the automatic shut down and restart of the installation MP.

A negative response results in the disappearance of the prompt and the *auto-install log* window unless the state (master or shadow) of the installation MP has been changed, in which case the prompt *shutting down to synchronize MP functionality* informs the operator that the installation MP will be shutdown regardless (shutdown occurs when the operator strikes any key).

ERROR and WARNING messages must be resolved before attempting to start the system!

## C-4 - Logging and the Installation Log File

Results of the installation are logged into the *auto-install* window and into a log file (`/crs/install.log`). Logged messages are of three types: ERROR, INFO, and WARNING. INFO messages can be ignored. ERROR and WARNING messages are summarized in the *auto-install* window at the completion of the installation. They must be resolved before the system is started.

All logged messages have the following format:

```
date: script: type: [...] on PROC
  where date   = DDD MMM dd hh:mm:ss LLL YYYY
                DDD  day of week abbreviation (e.g., Thu = Thursday)
                MMM  month of year abbreviation (e.g., Sep=September)
                dd   numeric day of month (e.g., 1<dd<31)
                hh   hour of the day in military format (e.g., 00<hh<23)
                mm   minute of the hour (e.g., 00<mm<59)
                ss   second of the minute (e.g., 00<ss<59)
                LLL  local standard time (e.g., PDT = Pacific Daylight Time)
                YYYY calendar year

  script = name of shell script in which message is generated
  type   = ERROR | INFO | WARNING
  [...]  = text describing a condition of the type indicated
  PROC   = processor (e.g., OMP, 5MP, 3FEP, 4BKUP) on which condition
           described by the text occurred
```

## C-5 – Modify the MMI to Remove Unwanted Messages And Reboot the System

**NOTE:** 1. If the CRS Software Installation is being performed because of the replacement of a MP or FEP hard drive, the default passwords on the new drive must be replaced. Please follow the procedures in Appendix A of the System Administration Manual to replace the passwords. If the CRS Software Installation is being performed because of the replacement of a MP hard drive, the SCODADMIN License Manager must be run to remove the spurious unregistered license errors from the MMI. Please perform the following steps to run the SCODADMIN License Manager. If, however, the CRS Software Installation is being performed because of a FEP hard drive replacement or for any other reason, this section may be skipped.

1. If not already logged into CRS as admin, do so now.
2. On OMP open a *UNIX shell* window from the *Maintenance* menu.
3. Log in as the *root* user:

```
OMP{admin} su -  
Enter the root password.
```

4. Enter the following command to display the SCOADMIN License Manager window:

```
scoadmin license
```

5. The following 3 licenses will be displayed:

```
* Merge 4 Desktop Edition (highlighted in black)  
SCO Advanced File and Print Server  
Unixware 7 Business Edition
```

The first two licenses are DEMO licenses and are unregistered. They need to be removed.

6. Press the tab key once to move the cursor to *Host* on the top line.
7. Press the right arrow key to move the cursor to *License* and press the *<Enter>* key to display the *License* pulldown menu.
8. Press the down arrow key to select *Remove* and press the *<Enter>* key.
9. A confirmation message will be displayed. Press the left arrow key to select *OK* and press the *<Enter>* key.
10. The remaining two licenses will be displayed. Repeat steps 5 through 8 to remove the SCO Advanced File and Print Server license.
11. Press the tab key once to move the cursor to *Host* on the top line and press the *<Enter>* key.
12. Press the down arrow key to select *Exit* and press the *<Enter>* key to exit the License Manager window.
13. Type **rsh 5MP /sbin/shutdown -y -i0 -g0** to begin the shutdown process on 5MP. 5MP will shut down, and the last message on the 5MP terminal will prompt the user to press any key to start the system.

14. Type **cd /** to change to the root directory on OMP.
15. Type **/sbin/shutdown -y -i0 -g0** to begin the shutdown process on OMP.  
OMP will shut down, and the last message on the OMP terminal will prompt the user to press any key to start the system.
16. Press **<ENTER>** on the OMP terminal to boot the OMP. Repeat this on 5MP.
17. After a minute or so, both MPs will reboot completely and display the OMP CRS login window. Please log into both terminals as admin user.

## C-6 - Installation of SSH Keys

- NOTE:** 1. If the CRS Software Installation is being performed because of the replacement of either of the MP hard drives, this section must be executed. The SSH keys on the hard drive have been destroyed and must be re-established. If, however, the CRS Software Installation is being performed for any other reason, the directories containing the keys still exist. Therefore, this section may be skipped.
- NOTE:** 2. This procedure requires the AWIPS Key Files on a DOS formatted diskette. These should be produced by the AWIPS Focal Point prior to running this procedure (Section C-6.1). IF AWIPS continues to use ftp to transmit messages to CRS (ssh and sftp have **not** been installed on AWIPS), a blank DOS formatted 1.44 mb diskette will be needed (Section C-6.2). One or the other of these diskettes will be used in this procedure and be referred to in this document as the keyfile diskette.
- NOTE:** 3. When the VIP is restarted following the installation of the VIP 4.0 Build, authentication key pairs (public and private) are installed. These keys will be used for sftp transactions between the MPs and VIP.
- NOTE:** 4. The fixkey script is used in the following steps to copy keys to and from the keyfile diskette and the MPs and VIP. The steps that follow instruct the installer to open up UNIX shells on the VIP, 5MP, and 0MP respectively and start the fixkey script on all three processors. After each of the three processors have been set up to start copying the keys, the fixkey script will instruct the user to wait to make sure that the following five steps are performed in the proper order:
- #1. The diskette is placed in the 0MP diskette drive. If AWIPS public key files are present, they are copied to 0MP. If they are present, there can be as many as nine. If they are not present, the script displays a warning message to that effect. The 0MP host and crs user keys are copied to the diskette.
  - #2. Step 1 is repeated for 5MP.
  - #3. The diskette is placed in the VIP diskette drive. The 0MP and 5MP host and crs user keys are copied to the VIP. The VIP host and crs user keys are copied to the diskette. The VIP fingerprint report is copied to the diskette.
  - #4. The diskette is placed in the 0MP diskette drive. The VIP host and crs user keys are copied to 0MP. The 0MP fingerprint report is copied to the diskette.
  - #5. Step 4 is repeated for 5MP.

**NOTE: 4(Cont.)**

Once the setup for the keyfiles is complete, the scripts can be started in the order described above.

**NOTE: 5.** The fingerprint report files shall be retained as a record of the authentication key generation. The keyfile diskette should be labeled, dated, and initialed. It should be stored in a secure manner in a locked container that is consistent with the DOC password hard copy storage requirements.

**C-6.1 - Installation of SSH Keys If AWIPS Has the SFTP Capability Installed**

**NOTE: 1.** AWIPS will not have the sftp capability when CRS Build 12.0/VIP4.0 is implemented. Until AWIPS uses sftp to transmit messages to CRS, section C-6.2 must be used instead of this section. However, this section will have to be performed when AWIPS adds the sftp capability. The keyfile diskette must have the AWIPS Key Files already installed on it. Once AWIPS is using the sftp capability to transmit messages to CRS, this section must always be performed when a MP hard drive is being replaced. Section C-6.2 must only be performed if AWIPS is not using the sftp capability to transmit messages to CRS.

1. If not already logged in as "crs" on the VIP, login as "crs". Click on the Konsole icon (fourth from the lower left in the display) to display a UNIX shell screen. Enter the following commands at the prompt:
2. **su - <Enter>** and type in the appropriate root password.

**NOTE: 2.** Make sure you do not press the <Enter> key to start copying the keys until this has been done for 0MP and 5MP (script steps #1 and #2 respectively).

**3. fixkeysv.sh <Enter>**

This will start the fixkey script described in Note 4 of Section C-6 above. The following message will be displayed on the screen:

*Ready for Step #3 of fixkeysv.sh procedure running on system VIP.  
This procedure sets up ssh configuration/key files in CRS/VIP.  
If you did not want to run fixkeysv.sh use the CNTL-C key to exit.*

*First - did you complete Step #2 with the floppy on the 5mp computer?  
At Step #3 place the keyfile diskette in the VIP floppy drive and press  
ENTER:*

**\*\*\* CAUTION: DO NOT PRESS THE <ENTER> KEY \*\*\***

**NOTE:** 3. The VIP is now set up to start the copying of the keys. **Make sure you do not press the <Enter> key to start the process until this has been done for 0MP and 5MP (script steps #1 and #2 respectively).**

4. **[CTRL][CTRL]** This will move the video display, mouse, and keyboard to the 5MP.

**NOTE:** 4. The operator will open two UNIX shells. One will be used to run the fixkey script on 0MP. The other one will remote shell to 5MP to run the fixkey script there.

5. On the *CRS Main Menu*, click on the *Maintenance* menu and then click on *UNIX Shell* to open a UNIX Shell. Repeat this to open a second UNIX Shell. Position the two shells so that one is in the top half of the window and the second is in the bottom half.
6. Click on the bottom UNIX Shell and enter the following commands at the prompt:
7. **rsh 5mp <Enter>** This will remote shell to 5MP.
8. **su - <Enter>** and enter the root password.

**NOTE:** 5. Make sure you do not press the <Enter> key to start copying the keys until this has been done for 0MP (script step #1).

9. **/etc/config/fixkeys.sh <Enter>**

This will start the fixkey script described in Note 4 of Section C-6 above. The following message will be displayed on the screen:

*Ready for Step #2 of fixkeys.sh procedure running on system 5MP.  
This procedure sets up ssh configuration/key files in CRS/VIP.  
If you did not want to run fixkeys.sh use the DELETE key to exit.*

*First - did you complete Step #1 with the floppy on the 0mp computer?  
At Step #2 place the keyfile diskette in the 5MP floppy drive and press  
ENTER:*

**\*\*\* CAUTION: DO NOT PRESS THE <ENTER> KEY \*\*\***

**NOTE:** 6. The 5MP is now set up to start the copying of the keys. **Make sure you do not press the <Enter> key to start the process until this has been done for 0MP (script step #1).**

10. Leave the 5MP UNIX Shell by clicking on the UNIX Shell in the top half of the window.

This is the OMP window. Enter the following commands at the prompt:

11. **su - <Enter>** and type in the appropriate root password.

**NOTE:** 7. Make sure you do not press the **<Enter>** key to start copying the keys until the keyfile diskette has been inserted into the Omp diskette drive.

12. **/etc/config/fixkeys.sh <Enter>**

This will start the fixkey script described in Note 4 of Section C-6 above. The following message will be displayed on the screen:

*Step #1 of fixkeys.sh procedure running on system OMP.  
This procedure sets up ssh configuration/key files in CRS/VIP.  
If you did not want to run fixkeys.sh use the DELETE key to exit.*

*If you have AWIPS keyfiles they should already be on your  
dos format keyfile diskette. and then when you are ready for Step #1,  
At Step #1 place the keyfile diskette in the OMP floppy drive and press  
ENTER:*

**NOTE:** 8. All three processors are now set up to start the copying of the keys. You will proceed in the order (script steps #1 - #5) described above. The previous warnings to not press the **<Enter>** key allow for an orderly and proper installation. Any problems and/or operator errors in the following steps will cause the installation to be aborted.

13. Insert the keyfile diskette in the OMP diskette drive and press the **<Enter>** key to perform script step #1. The following message will be displayed on the screen:

*Step #1 in progress.  
Deleting any awips.pub files not on the floppy already in /crs/.ssh.  
CRS fixkeys.sh OMP Step #1 - awips pub file/s found, moved to /crs/.ssh .  
Step #1 completed - now move the keyfile diskette to the  
5mp computer floppy drive for Step #2.  
When ready for Step #4 after 5mp and vip steps,  
At Step #4 replace the keyfile diskette in the OMP floppy drive and  
Press ENTER:*

In this case, skip to step 15. However, if AWIPS does not have ssh and sftp installed, there will be no awips key files on the keyfile diskette. Therefore,

14. Remove the keyfile diskette from the OMP diskette drive and insert it into the 5MP diskette drive. Leave the OMP UNIX Shell by clicking on the 5MP Unix Shell and press the **<Enter>** key to perform script step #2. These messages display on the screen:

*Step #2 in progress.*

*Deleting any awips.pub files not on the floppy already in /crs/.ssh.*

*CRS fixkeys.sh 5MP Step #2 - awips pub file/s found, moved to /crs/.ssh .*

*Step #2 completed - now move the keyfile diskette to the vip computer floppy drive for Step #3.*

*When ready for Step #5 after the vip Step #3,*

*At Step #5 replace the keyfile diskette in the 5MP floppy drive and press ENTER.*

15. Remove the keyfile diskette from the 5MP diskette drive and insert it into the VIP diskette drive. Press **[CTRL] [CTRL]** to return the video display, mouse, and keyboard to the VIP and press the **<Enter>** key to perform script step #3. The following message will be displayed on the screen:

*Step #3 in progress*

*CRS VIP fixkeysv.sh - 0mp pub file found.*

*CRS VIP fixkeysv.sh - 5mp pub file found.*

*CRS VIP fixkeysv.sh - 0mpostrsa.pub file found.*

*CRS VIP fixkeysv.sh - 5mpostrsa.pub file found.*

*Fixing /home/crs/.ssh/authorized\_keys for 0mp and 5mp.*

*Fixing /etc/ssh/ssh\_known\_hosts with OMP 5MP host info.*

*0mp host rsa pub key: /home/crs/.ssh/fprnt.VIP*

*5mp host rsa pub key: /home/crs/.ssh/fprnt.VIP*

*Stopping sshd*

*Starting sshd*

*Step #3 complete. VIP ssh key configuration done.*

*Remove floppy and take to 0mp for Step #4.*

*End fixkeysv.sh script Step III done, fingerprint report in /home/crs/.ssh/fprnt.VIP.*

16. Press **[CTRL] [CTRL]** to return the video display, mouse, and keyboard to the MP.
17. Click on the 0MP UNIX Shell and move the keyfile diskette to the 0MP diskette drive. Press the **<Enter>** key to perform script step #4. The following message will be displayed on the screen:

*Step #4 in progress.*

*CRS 0MP fixkeys.sh - vip.pub file found.*

*CRS 0MP fiskeys.sh - vipostrsa.pub file found.*

*Configuring AWIPS/CRS/VIP keydata on 0MP.*

*Fixing /crs/.ssh/authorized\_keys for awips and vip.*

*UX:LS: ERROR: Cannot access /crs/.ssh/awips\*.pub: No such file or directory  
 Fixing /usr/local/etc/ssh\_known\_hosts with vip host info.  
 OMP fingerprint report in /crs/.ssh/fprnt.OMP.  
 After Step #4 on Omp move floppy to 5mp for Step #5*

*Step #4 complete. OMP ssh key configuration done.*

The error message will only occur if no AWIPS key file is found on the diskette.

18. Click on the 5MP UNIX Shell and move the keyfile diskette to the 5MP diskette drive. Press the **<Enter>** key to perform script step #5. The following message will be displayed on the screen:

*Step #5 in progress.  
 CRS 5MP fixkeys.sh - vip.pub file found.  
 CRS 5MP fiskeys.sh - viphostrsa.pub file found.  
 Configuring AWIPS/CRS/VIP keydata on 5MP.  
 fixing /crs/.ssh/authorized\_keys for awips and vip.  
 UX:LS: ERROR: Cannot access /crs/.ssh/awips\*.pub: No such file or directory  
 Fixing /usr/local/etc/ssh\_known\_hosts with vip host info.  
 5MP fingerprint report in /crs/.ssh/fprnt.5MP.  
 Last step.  
 Step #5 complete. 5MP ssh key configuration done.*

The error message will only occur if no AWIPS key file is found on the diskette.

19. Verify all the key files have been saved on the keyfile diskette by typing the following:

```
mdir a: >>temp.txt <Enter>
cat temp.txt
```

The following files should be displayed (with different date/time stamps):

Directory for A:/  
 \_\_\_\_\_

```
Omp      pub    59706-16-2004  9:04  Omp.pub
0MPHOS~1 PUB    218 06-16-2004    9:04  0mphostrsa.pub
stp1                    006-16-2004  9:04  stp1
vip      pub    602 06-16-2004  14:14  vip.pub
5mp      pub    59706-16-2004  9:14  5mp.pub
5MPHOS~1 PUB    218 06-16-2004    9:14  5mphostrsa.pub
stp2                    006-16-2004  9:14  stp2
VIPHOS~1 PUB    223 06-16-2004  14:15  viphostrsa.pub
stp3                    006-16-2004  14:15  stp3
fprnt   VIP    861 06-16-2004  14:15  fprnt.VIP
fprnt   OMP    66706-16-2004    9:19  fprnt.OMP
stp4                    006-16-2004  9:19  stp4
```

stp0		65	06-16-2004	9:20	stp0
fprnt	5MP	66606-16-2004		9:20	fprnt.5MP
stp5		006-16-2004		9:20	stp5

In addition to the files listed above, there will be OMP and 5MP AWIPS keyfiles.

20. **Remove keyfile diskette and label it, date it, and initial it. Store it in a locked, safe place in accordance with the DOC password security policy.** Type the following commands to close the 5MP UNIX Shell:
  21. **exit <Enter>** To exit root user.
  22. **exit <Enter>** To exit 5MP.
  23. **exit <Enter>** To close shell.
  24. Click on the 0MP UNIX Shell and enter the following commands to close it:
    25. **exit <Enter>** To exit root user.
    26. **exit <Enter>** To close shell.
  27. Press **[CTRL] [CTRL]** to return the video display, mouse, and keyboard to the VIP. Enter the following commands to close the VIP UNIX shell:
    28. **exit <Enter>** To exit root user.
    29. **exit <Enter>** To close shell.

**NOTE:** 9. To ensure proper SFTP file transfer from AWIPS to CRS, sites must have their AWIPS System Administrator create the appropriate known\_hosts file on AWIPS. Generally, this is accomplished by performing a manual sftp command of a dummy file from AWIPS to both 0MP and 5MP. The appropriate AWIPS documentation should be consulted before doing this.

### C-6.2 - Installation of SSH Keys If AWIPS Does Not Have the SFTP Capability Installed

**NOTE:** 1. AWIPS will not have the sftp capability when CRS Build 12.0/VIP4.0 is implemented. This section must be performed until AWIPS starts using the sftp capability to transmit messages to CRS. The keyfile diskette must be a blank diskette.

1. If not already logged in as "crs" on the VIP, login as "crs". Click on the Konsole icon (fourth from the lower left in the display) to display a UNIX shell screen. Enter the

following commands at the prompt:

2. **su - <Enter>** and type in the appropriate root password.

**NOTE:** 2. Make sure you do not press the <Enter> key to start copying the keys until this has been done for OMP and 5MP (script steps #1 and #2 respectively).

3. **fixkeysv.sh <Enter>**

This will start the fixkey script described in Note 4 of Section C-6 above. The following message will be displayed on the screen:

*Ready for Step #3 of fixkeysv.sh procedure running on system VIP.  
This procedure sets up ssh configuration/key files in CRS/VIP.  
If you did not want to run fixkeysv.sh use the CNTL-C key to exit.*

*First - did you complete Step #2 with the floppy on the 5mp computer?  
At Step #3 place the keyfile diskette in the VIP floppy drive and press  
ENTER:*

**\*\*\* CAUTION: DO NOT PRESS THE <ENTER> KEY \*\*\***

**NOTE:** 3. The VIP is now set up to start the copying of the keys. **Make sure you do not press the <Enter> key to start the process until this has been done for OMP and 5MP (script steps #1 and #2 respectively).**

4. **[CTRL] [CTRL]** This will move the video display, mouse, and keyboard to the 5MP.

**NOTE:** 4. The operator will open two UNIX shells. One will be used to run the fixkey script on OMP. The other one will remote shell to 5MP to run the fixkey script there.

5. On the *CRS Main Menu*, click on the *Maintenance* menu and then click on *UNIX Shell* to open a UNIX Shell. Repeat this to open a second UNIX Shell. Position the two shells so that one is in the top half of the window and the second is in the bottom half.
6. Click on the bottom UNIX Shell and enter the following commands at the prompt:
7. **rsh 5mp <Enter>** This will remote shell to 5MP.
8. **su - <Enter>** and enter the root password.

**NOTE:** 5. Make sure you do not press the <Enter> key to start copying the keys until this has

been done for OMP (script step #1).

9. `/etc/config/fixkeys.sh` <Enter>

This will start the fixkey script described in Note 4 of Section C-6 above. The following message will be displayed on the screen:

*Ready for Step #2 of fixkeys.sh procedure running on system 5MP.  
This procedure sets up ssh configuration/key files in CRS/VIP.  
If you did not want to run fixkeys.sh use the DELETE key to exit.*

*First - did you complete Step #1 with the floppy on the Omp computer?  
At Step #2 place the keyfile diskette in the 5MP floppy drive and press  
ENTER:*

**\*\*\* CAUTION: DO NOT PRESS THE <ENTER> KEY \*\*\***

**NOTE: 6.** The 5MP is now set up to start the copying of the keys. **Make sure you do not press the <Enter> key to start the process until this has been done for OMP (script step #1).**

10. Leave the 5MP UNIX Shell by clicking on the UNIX Shell in the top half of the window. This is the OMP window. Enter the following commands at the prompt:

11. `su -` <Enter> and type in the appropriate root password.

**NOTE: 7.** Make sure you do not press the <Enter> key to start copying the keys until the keyfile diskette has been inserted into the Omp diskette drive.

12. `/etc/config/fixkeys.sh` <Enter>

This will start the fixkey script described in Note 4 of Section C-6 above. The following message will be displayed on the screen:

*Step #1 of fixkeys.sh procedure running on system OMP.  
This procedure sets up ssh configuration/key files in CRS/VIP.  
If you did not want to run fixkeys.sh use the DELETE key to exit.*

*If you have AWIPS keyfiles they should already be on your  
dos format keyfile diskette. and then when you are ready for Step #1,  
At Step #1 place the keyfile diskette in the OMP floppy drive and press  
ENTER:*

**NOTE: 8.** All three processors are now set up to start the copying of the keys. You will

proceed in the order (script steps #1 - #5) described above. The previous warnings to not press the **<Enter>** key allow for an orderly and proper installation. Any problems and/or operator errors in the following steps will cause the installation to be aborted.

13. Insert the keyfile diskette in the OMP diskette drive and press the **<Enter>** key to perform script step #1. The following message will be displayed on the screen:

*Step #1 in progress.*

*Deleting any awips.pub files not on the floppy already in /crs/.ssh.*

*WARNING: The AWIPS keyfile not found. You will have no AWIPS SFTP.*

*This is only proper if your AWIPS has not yet implemented ssh.*

*When AWIPS has ssh and a keyfile this procedure must be rerun.*

*At that time the files should be on the keyfile floppy as awips#.pub*

*- for example awips1.pub. Multiple files each with a single public*

*key are allowed - the floppy may have awips1.pub and awips2.pub.*

*Please see your CRS/VIP Software Installation Procedure for further information.*

*Remaining CRS/VIP key installation without AWIPS will proceed if you press ENTER. Otherwise use DELETE/CNTRL -C to stop fixkeys procedure on all boxes and start again with a corrected floppy.*

**NOTE:** 9. This section is only performed if AWIPS is not using the sftp capability to transfer messages to CRS. Therefore, do not be concerned with this warning message. It is normal and to be expected.

14. Press **<Enter>** to resume copying the keyfiles. The following message will be displayed on the screen:

*Step #1 completed - now move the keyfile diskette to the 5mp computer floppy drive for Step #2.*

*When ready for Step #4 after 5mp and vip steps,*

*At Step #4 replace the keyfile diskette in the OMP floppy drive and press ENTER:*

15. Remove the keyfile diskette from the OMP diskette drive and insert it into the 5MP diskette drive. Leave the OMP UNIX Shell by clicking on the 5MP Unix Shell and press the **<Enter>** key to perform script step #2. These messages display on the screen:

*WARNING: The AWIPS keyfile not found. You will have no AWIPS SFTP.*

*This is only proper if your AWIPS has not yet implemented ssh.*

*When AWIPS has ssh and a keyfile this procedure must be rerun.*

*At that time the files should be on the keyfile floppy as awips#.pub*

*- for example awips1.pub. Multiple files each with a single public*

*key are allowed - the floppy may have awips1.pub and awips2.pub.*

*Please see your CRS/VIP Software Installation Procedure for further information.*

*Remaining CRS/VIP key installation without AWIPS will proceed if you press ENTER. Otherwise use DELETE/CNTRL -C to stop fixkeys procedure on all boxes and start again with a corrected floppy.*

**NOTE:** 10. This section is only performed if AWIPS is not using the sftp capability to transfer messages to CRS. Therefore, do not be concerned with this warning message. It is normal and to be expected.

16. Press **<Enter>** to resume copying the keyfiles. The following message will be displayed on the screen:

*Step #2 completed - now move the keyfile diskette to the vip computer floppy drive for Step #3.*

*When ready for Step #5 after the vip Step #3,  
At Step #5 replace the keyfile diskette in the 5MP floppy drive and press ENTER:*

17. Remove the keyfile diskette from the 5MP diskette drive and insert it into the VIP diskette drive. Press **[CTRL] [CTRL]** to return the video display, mouse, and keyboard to the VIP and press the **<Enter>** key to perform script step #3. The following message will be displayed on the screen:

*Step #3 in progress  
CRS VIP fixkeysv.sh - 0mp pub file found.  
CRS VIP fixkeysv.sh - 5mp pub file found.  
CRS VIP fixkeysv.sh - 0mphostrsa.pub file found.  
CRS VIP fixkeysv.sh - 5mphostrsa.pub file found.  
Fixing /home/crs/.ssh/authorized\_keys for 0mp and 5mp.  
Fixing /etc/ssh/ssh\_known\_hosts with OMP 5MP host info.  
0mp host rsa pub key: /home/crs/.ssh/fprnt.VIP  
5mp host rsa pub key: /home/crs/.ssh/fprnt.VIP  
Stopping sshd  
Starting sshd  
Step #3 complete. VIP ssh key configuration done.  
Remove floppy and take to 0mp for Step #4.  
End fixkeysv.sh script Step III done, fingerprint report in  
/home/crs/.ssh/fprnt.VIP.*

18. Press **[CTRL] [CTRL]** to return the video display, mouse, and keyboard to the MP.
19. Click on the 0MP UNIX Shell and move the keyfile diskette to the 0MP diskette drive. Press the **<Enter>** key to perform script step #4. The following message will be displayed on the screen:

*Step #4 in progress.*  
*CRS OMP fixkeys.sh - vip.pub file found.*  
*CRS OMP fiskeys.sh - viphostrsa.pub file found.*  
*Configuring AWIPS/CRS/VIP keydata on OMP.*  
*Fixing /crs/.ssh/authorized\_keys for awips and vip.*  
*UX:LS: ERROR: Cannot access /crs/.ssh/awips\*.pub: No such file or directory*  
*Fixing /usr/local/etc/ssh\_known\_hosts with vip host info.*  
*OMP fingerprint report in /crs/.ssh/fprnt.OMP.*  
*After Step #4 on Omp move floppy to 5mp for Step #5*  
*Step #4 complete. OMP ssh key configuration done.*

20. Click on the 5MP UNIX Shell and move the keyfile diskette to the 5MP diskette drive. Press the **<Enter>** key to perform script step #5. The following message will be displayed on the screen:

*Step #5 in progress.*  
*CRS 5MP fixkeys.sh - vip.pub file found.*  
*CRS 5MP fiskeys.sh - viphostrsa.pub file found.*  
*Configuring AWIPS/CRS/VIP keydata on 5MP.*  
*Fixing /crs/.ssh/authorized\_keys for awips and vip.*  
*UX:LS: ERROR: Cannot access /crs/.ssh/awips\*.pub: No such file or directory*  
*Fixing /usr/local/etc/ssh\_known\_hosts with vip host info.*  
*5MP fingerprint report in /crs/.ssh/fprnt.5MP.*  
*Last step.*  
*Step #5 complete. 5MP ssh key configuration done.*

21. Verify all the key files have been saved on the keyfile diskette by typing the following:

```

mdir a: >>temp.txt <Enter>
cat temp.txt

```

The following files should be displayed (with different date/time stamps):

Directory for A: /

```

Omp      pub    59706-16-2004  9:04  Omp.pub
0MPHOS~1 PUB    218 06-16-2004   9:04  0mphostrsa.pub
stp1                    006-16-2004  9:04  stp1
vip      pub    602 06-16-2004  14:14  vip.pub
5mp      pub    59706-16-2004  9:14  5mp.pub
5MPHOS~1 PUB    218 06-16-2004   9:14  5mphostrsa.pub
stp2                    006-16-2004  9:14  stp2
VIPHOS~1 PUB    223 06-16-2004  14:15  viphostrsa.pub
stp3                    006-16-2004  14:15  stp3
fprnt   VIP    861 06-16-2004  14:15  fprnt.VIP
fprnt   OMP    66706-16-2004   9:19  fprnt.OMP

```

stp4		006-16-2004	9:19	stp4
stp0		65 06-16-2004	9:20	stp0
fpnt	5MP	66606-16-2004	9:20	fpnt.5MP
stp5		006-16-2004	9:20	stp5

22. **Remove keyfile diskette and label it, date it, and initial it. Store it in a locked, safe place in accordance with the DOC password security policy.** Type the following commands to close the 5MP UNIX Shell:

23. **exit <Enter>** To exit root user.

24. **exit <Enter>** To exit 5MP.

25. **exit <Enter>** To close shell.

26. Click on the 0MP UNIX Shell and enter the following commands to close it:

27. **exit <Enter>** To exit root user.

28. **exit <Enter>** To close shell.

29. Press **[CTRL] [CTRL]** to return the video display, mouse, and keyboard to the VIP.  
Enter the following commands to close the VIP UNIX shell:

30. **exit <Enter>** To exit root user.

31. **exit <Enter>** To close shell.