

## APPENDIX H

### Creating the SCO UNIXWARE 7.1.1 Emergency Recovery Disks & Tapes

**Note:** Creating the emergency recovery disks and tapes can take up to 3 hours to complete. And NO users can be logged on while they are being created (some file systems are unmounted during the process). Restoring the system from the disks & tapes can also take up to 3 hours to complete. Both procedures require interaction at the console by the SA. The SA must answer questions at various times and replace disks & tapes when prompted, so this process can not be setup in the server's crontab to be run 'automatically'. Recommend this process be run on a weekly basis. It should be run *at least* once a month. Remember, the information on the disks & tapes will be your 'starting point'. After you restore from them, the SA will still have to restore the AFMIS databases from the last full system backup. The rest of this document will consist of two parts; the first will walk you through the creation of the emergency recovery disks & tapes. The second will discuss how to restore from those disks & tapes.

#### Part One: Creating Emergency Recovery Disks & Tapes

1. Make sure all users have logged off the AFMIS UNIX server. Switch from the graphical environment to the system console, by pressing <Ctrl><Alt><Esc>. Log in to the system console as *root* user (you may have to press the enter key to get the “**Console Login:**” prompt to appear). At the root prompt, type “**shutdown -y -g0 -i1**”. This will bring the system into single-user mode. Log in to the system console as *root* user.
2. You will use the format command to create two formatted diskettes. Make sure both are not write protected and label each diskette with the name of the system, date created, and their name and number. Insert the first diskette into the diskette drive. Type “**format -v /dev/rdisk/f03ht**” and press enter. The diskette will be formatted (takes about a minute), then remove the diskette and replace with the second diskette and repeat the command “**format -v /dev/rdisk/f03ht**” and press enter.
3. At the root prompt, type “**/sbin/emergency\_disk -d /home diskette1**” and press enter. When prompted, insert the first formatted diskette into the drive and press enter. Creating each emergency recovery disk can take up to 15 minutes. When prompted, “**Please enter the medium to use for emergency\_rec (default ctape1)?**” press the enter key to accept default. When prompted, remove the first diskette, insert the second diskette and press enter. After the process has completed (you see the root prompt), remove the second diskette from the drive. Make sure that both diskettes are write-protected and store in a secure location. You now have completed the creation of the two emergency recovery diskettes.

4. The creation of the emergency recovery dat tape will require the file “**emergency\_rec**”. SEC-LEE has modified this script so that it works correctly with the COMPAQ 1600 Proliant hard drives. You will have to contact the Customer Assistance Office (CAO) at DSN 687-1051 to obtain this file. After receipt of the emergency\_rec script, you will have to transfer (ftp) the file to the AFMIS UNIX server. File should be placed in the **/sbin** directory. The size of the file should be **26554** bytes. Ensure the file has permissions of “**544**”, owned by “**root**” and group is “**sys**”. Recommend using dat tapes with a large capacity such as the Sony DDS-3 (DGD125P). Native capacity is 12 GB uncompressed and 24 GB compressed. Tape length is 125meters/410feet.
5. Make sure all users have logged off the AFMIS UNIX server. If you are already in single user mode skip to **step 6** below. Other wise, make sure all users have logged off the AFMIS UNIX server. Switch from the graphical environment to the system console, by pressing <Ctrl><Alt><Esc>. Log in to the system console as *root* user (you may have to press the enter key to get the “**Console Login:**” prompt to appear). At the root prompt, type “**shutdown -y -g0 -i1**”. This will bring the system into single-user mode. Log in to the system console as *root* user.
6. You will need 1 dat tape to perform the emergency recovery tape backup. Make sure tape is not write protected and label dat tape with the name of the system and the date created. At the root prompt, type “**/sbin/emergency\_rec -e ctape1**” and press enter. You will then be prompted to insert the dat tape. Insert the dat tape into the dat drive and **wait** until the light(s) have stopped flashing on the dat tape drive. Press enter to process the dat tape. The creation of the emergency dat tape can take up to 3 hours to complete. You’ll notice a percent complete message displayed on your screen as the system is backed up. After the process has completed (100 percent), remove the dat tape, write protect it, and then store it in a secure location. At the root prompt, type “**shutdown -y -g0 -i6**” to reboot the system. You have now completed the creation of the emergency recovery dat tape.

### **Part Two: Restoring Emergency Recovery Disks & Tapes**

1. If your system will not boot, your system software is corrupted beyond repair, or your hard disk has been reformatted or replaced, you can use your emergency recovery media and incremental backups to restore your system. Before attempting to restore the system, ensure that your motherboard, hard disks, memory, and peripherals are in good working order. While this recovery procedure restores all the system software, applications, and data on the recovery media to your hard disk, it does not ensure proper operation of the system hardware.
2. To recover the system: Insert the first emergency recovery diskette in the floppy diskette drive, and then reboot your system. If you mistakenly inserted the second

diskette, replace with the first diskette and reboot. The system will load software from the first diskette. When prompted, remove the first diskette, insert the second diskette and press enter. Your hard drive will be analyzed and if it ok, you should see a message stating, “**Your hard drive is sane**”. Press enter to continue. After several minutes, you will be presented with the Emergency Recovery main menu.

3. Use the up or down arrow keys or the <Tab> key to select “**Restore Disk(s)**” and then press enter. You will be prompted to insert the first dat tape. Insert the emergency dat tape that you created from Part One (Creating Emergency Recovery Disks & Tapes) into the dat drive and **wait** until the light(s) have stopped flashing on the dat tape drive. Press enter to process the dat tape. This process can take up to 3 hours to complete.
4. After the restore process has completed you will see a message stating, “**Disk(s) is (are) successfully restored**”. Press enter to continue. You will return to the Emergency Recovery main menu. Select option “**Reboot**” and press enter. You will see a message stating, “**\*\*\*\*Make sure the boot drive diskette or CD-ROM is empty\*\*\*\***”. Remove the second emergency recovery diskette from the floppy drive & the dat tape from the dat tape drive. Press enter to continue. System will reboot.
5. You may notice error messages similar to the following: “UX: initprivs: WARNING: File `file` fails validation: entry ignored or UX: initprivs: WARNING: X entries ignored in `~/etc/security/tcb/privs`”. This is because the date stamp for the inode was changed during the restore process. If you don’t see any of these messages while rebooting your system, skip to step 6. Otherwise, you can fix these errors after your system boots up, by logging in as *root* and entering the following command at a root prompt, “`/etc/security/tools/setpriv -x`” and press enter.
6. You will have to restore your AFMIS databases. Restore the database files that were backed-up by your most recent `ajk71u.x01`. If the End-of-Day/End-of-Month function encounters a fatal error during execution, the CAO should be contacted. If necessary, the system administrator may have to restore the database(s) from their last good full system backup.
  - a. Log on the system as "afmis".
    - (1) `afmis> ajk72u.x01` Press <Enter>
    - (2) If an error occurs while attempting to place the contents of the tape on the hard disk, DO NOT CONTINUE. Contact CAO at DSN 687.1051. Otherwise skip to step (3) below.
    - (3) Select option "B" (Restore AHC, TISA, DFO, and EOD) from menu displayed. Press <Enter>
    - (4) You will see a message that says, “RESTORE AHC, TISA, AND DFO END OF DAY TO `/informix/backup/tisa /informix/backup/ahc /Informix/backup/dfo`”.

- (5) Then you will see a message that says, “PLEASE MOUNT END OF DAY TAPE AND HIT RETURN TO RESTORE FILES”. Press the <Enter> key to continue.

IF YOU GET MESSAGE “FILES ALREADY EXIST” AND YOU ARE PROMPTED TO OVERRIDE FILES, YOU SHOULD ANSWER “NO” TO MESSAGE AND CHECK THE DATE OF THE FILES IN THE AFFECTED DIRECTORY (IES). THEN RESTART THE PROCESS, THEN ANSWER PROMPT “YES” TO OVEWRITE. IF FILES ARE CURRENT PROCEED TO STEP 11.

- (6) You will see a message that say, “PLEASE WAIT...” After the databases are restored (may take several minutes), you will return to the afmis prompt (afmis>). Next you will verify database files have been restored to “/informix/backup”.

- (7) afmis> cd /informix/backup Press <Enter>  
(8) afmis> ls -l tisa Press <Enter>  
(9) afmis> ls -l ahc Press <Enter>  
(10) afmis> ls -l dfo Press <Enter>  
(11) afmis> cd \$DBDIR/afmis.dbs Press <Enter>  
(12) afmis> lc Press <Enter>  
(13) afmis> rm -rf \* Press <Enter>  
(14) afmis> lc Press <Enter>  
(15) afmis> cd \$DFODBDIR/afmisdb.dbs Press <Enter>  
(16) afmis> lc Press <Enter>  
(17) afmis> rm -rf \* Press <Enter>  
(18) afmis> lc Press <Enter>  
(19) afmis> cd \$AHCDBDIR/ahc.dbs Press <Enter>  
(20) afmis> rm -rf \* Press <Enter>  
(21) afmis> lc Press <Enter>  
(22) afmis> cd \$EODBKUP/dfo Press <Enter>  
(23) afmis> find . -print | cpio -pvd \$DFODBDIR/afmisdb.dbs Press  
<Enter>. If an error occurs while copying the database, DO NOT  
CONTINUE. Contact CAO at DSN 687.1051. Otherwise skip to step (24)  
below.  
(24) afmis> cd \$EODBKUP/tisa Press <Enter>  
(26) afmis> find . -print | cpio -pvd \$DBDIR/afmis.dbs Press <Enter>  
(27) afmis> cd \$EODBKUP/ahc Press <Enter>  
(28) afmis> find . -print | cpio -pvd \$AHCDBDIR/ahc.dbs Press  
<Enter>  
(29) afmis> cd \$DBDIR/afmis.dbs Press <Enter>  
(30) afmis> ls -l \* Press <Enter>  
(31) afmis> chgrp informix \* Press <Enter>  
(32) afmis> chmod 666 \* Press <Enter>  
(33) afmis> ls -l Press <Enter>  
(34) afmis> cd \$DFODBDIR/afmisdb.dbs Press <Enter>

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(35) afmis> ls -l *           Press <Enter>
(36) afmis> chgrp informix *  Press <Enter>
(37) afmis> chmod 666 *      Press <Enter>
(38) afmis> ls -l           Press <Enter>
(39) afmis> cd $AHCDBDIR/ahc.dbs Press <Enter>
(40) afmis> ls -l *         Press <Enter>
(41) afmis> chgrp informix *  Press <Enter>
(42) afmis> chmod 666 *      Press <Enter>
(43) afmis> ls -l *         Press <Enter>

```

You now have completed the restoration of your system using the Emergency Recovery diskettes and tapes.

b. To get your report log back in sequence you need to create the following SQL using "vi", if it does not currently exist:

```

{maxrpt.sql}
SELECT MAX(rpt_num) from rcl

```

Type isql afmis maxrpt Press <Enter>

Record report number retrieved by the SQL on a piece of paper.

```

For example: (max)
              189946
              1 row(s) retrieved

```

afmis> cd \$AFMIS/reports Press <Enter>

afmis> Remove all reports with number greater than the maximum report number recorded. (Report naming convention is R##### or R#####.Z where "#####" is a number.)

afmis> ls -lt | pg Press <Enter>

afmis> The report number displayed at the top of the list should match the maximum report number recorded. If not, repeat steps 19 through 21.

afmis> cd \$HOME/bin dbadmin/sql < chk.out Press <Enter>

afmis> cd isql afmis CHKTABLE >> chk.out Press <Enter>