Back–up Utilities

Restoring files and directories – archive file option

- Using the *restore i* option can be even quicker if you used the *a* option when you took the dump.

- The same option can be used to restore, for example:-

catfish# ***ufsrestore   iva   /etc/arch21_12_98***

Verify volume and initialize maps

Media block size is 126

Dump   date: Fri Nov 07 12:50:41 1998

Dumped from: the epoch

Level 0 dump of / on catfish:/dev/dsk/c0t3d0s0

Label: none

Extract directories from tape

Initialize symbol table.

ufsrestore >

¤   Specify required restore commands as previously shown.

- When you type *extract*, the tape will be requested.

ufsrestore > ***extract***

Extract requested files

Mount volume **1**

then enter volume name (default: /dev/rmt/0) ***return***

- The restore will now be performed.

Back–up Utilities

Restoring entire file systems - user data slices

- This is also straightforward – as long as you know which tapes to restore from.

- Let's take */export/home* as an example to start with (/ comes later!)

  ¤   1. Ensure you are running in single user mode

  *   If coming down from multi-user mode make sure that */export/home* is not mounted. Use the *umount* command.

  ¤   2. Clean up the file system to be restored (assuming one already exists)

  *   CAREFUL – IT DESTROYS ALL DATA!

plum# *newfs   /dev/dsk/c0t3d0s7*

newfs: construct a new file system /dev/rdsk/c0t3d0s7: (y/n)? *y*

/dev/rdsk/c0t0d0s7:   34980 sectors in 44 cylinders of 15 tracks, 53 sectors

    17.9MB in 3 cyl groups (16 c/g, 6.51MB/g, 3008 i/g)

super-block backups (for fsck -F ufs -o b=#) at:

 32, 12816, 25600,

plum#

First Alternative

Back–up Utilities

Restoring entire file systems (cont'd)

* 3. **fsck** the filesystem

fsck   /dev/dsk/c0t3d0s7

* 4. mount the filesystem

plum# *mount   /dev/dsk/c0t3d0s7   /mnt*

* 5. *cd* to the mount point. <u>Very</u> important!

cd /mnt

* All you should see there is the *lost+found* directory.

  * You will always have in your Solaris system the blank directory */mnt* which can be used for these temporary mounts.

* 6. Load the level 0 dump tape at the correct point (see *mt* command if necessary), and type:–

topcat # *ufsrestore   rv*

(or use the appropriate tape device for your system)

* 7. Add incremental dumps if necessary using the same command.

* 8. Remove the *ufsrestore* command temporary file *restoresymtable*.

* 9. *fsck* once more

* ...... job done!

Back–up Utilities

Restoring the root filesystem - / or /usr

- This presents a slight problem, owing to the absence of the Solaris system itself.

- There is a solution:

  * Boot CD-UNIX from the Solaris distribution media or the network (if available), into single-user mode.

- NOTE: Before actually reloading, you may wish to re-slice your disk (if it was repaired or replaced).

- The start of this example should look very familiar!

OK ***boot   cdrom   -s***

               or..

OK ***boot   net   -s***

- The -s option prevents windows from starting, and provides a simple command-line prompt.

- Once fully booted, you are now running CDUnix - note -

  * Most file systems are on the CDRom.

  * */tmp, /dev* and */devices* are in memory.

  * All Hard Disk slices are off-line.

First Alternative

Back–up Utilities

Restoring the root file system

- You now need to create you new root file system on the hard disk *c0t3d0s0* slice, and mount it.

newfs   /dev/rdsk/c0t3d0s0

newfs: construct a new file system /dev/rdsk/c0t3d0s0: (y/n)? *y*

/dev/rdsk/c0t3d0s0:   34980 sectors in 44 cylinders of 15 tracks, 53 sectors

    17.9MB in 3 cyl groups (16 c/g, 6.51MB/g, 3008 i/g)

super-block backups (for fsck -F ufs -o b=#) at:

 32, 12816, 25600,

mount   /dev/dsk/c0t3d0s0   /mnt

       *   /mnt* already exists on CDUnix as a convenient mount point.

cd   /mnt

- Now load the most recent level 0 dump tape and restore the actual files...

- The above *mount* and *cd* commands are vitally important to ensure your restore goes into the correct location!

ufsrestore   rf   /dev/rmt/0

    ¤   The *v* option could be used if you prefer to see all the file and directory names as they are being restored - we recommend against this!

- Now restore any incremental dumps in the same way.

Back–up Utilities

Restoring the root file system

¤   Output sample from *ufsrestore...*

Verify volume and initialize maps
Media block size is 126
Dump   date: Sun May 16 08:43:34 1998
Dumped from: the epoch
Level 0 dump of / on plum:/dev/dsk/c0t3d0s0
Label: none
Begin level 0 restore
Initialize symbol table.
Extract directories from tape
Calculate extraction list.
Warning: ./lost+found: File exists
Make node ./export
Make node ./export/home
Make node ./export/exec
Make node ./export/exec/kvm

> • **A great deal of output is generated by the ufsrestore, concluding ...**

Create hard link ./etc/rc1.d/K64rfs->./etc/init.d/rfs
Create hard link ./etc/rc0.d/K65rfs->./etc/init.d/rfs
Create hard link ./etc/rc2.d/K40rumounts->./etc/init.d/rumounts
Create hard link ./etc/rc1.d/K60rumounts->./etc/init.d/rumounts
Create hard link ./etc/rc0.d/K60rumounts->./etc/init.d/rumounts
Create hard link ./kernel/sys/rfs->./kernel/fs/rfs
Create hard link ./kernel/sys/nfs->./kernel/fs/nfs
Create hard link ./sbin/rc6->./sbin/rc0
Create hard link ./sbin/rc5->./sbin/rc0
Create hard link ./sbin/jsh->./sbin/sh
Set directory mode, owner, and times.
Check the symbol table.
Check pointing the restore
#

Back–up Utilities

Restoring the root file system

¤   The file system is now back on the hard disk slice - but **<u>in the case of the root slice only</u>** we may need to take one further action:-

¤   If this is a new disk, or has not previously been used to boot a Solaris 8 system, the bootblock software will not exist, so we may have to install it. (The *newfs* and *restore* should not harm an existing boot block, but it might be a wise precaution to put it back, just in case!)

¤   If we fail to do so, we won't be able to boot from the disk we have just restored - we would have to boot from CD Unix all over again!

¤   It's done like this:

*# **/usr/sbin/installboot   /usr/platform**/sun4m**/lib/fs/ufs/bootblk** \
/dev/rdsk/c0t3d0s0*

    *   Where   *sun4m*   is   the   appropriate   platform identification. (*sun4u* for Ultras)

•   Concluding actions **<u>for all slices</u>**:

    *   Umount the restored file system

    *   Check it, and reboot from it!

*# **cd**   **/***

*# **umount**   **/mnt***

*# **fsck**   **/dev/rdsk/c0t3d0s0***

*# **init**   **6***

Back–up Utilities

The mt command

plum# *mt -f /dev/rmt/0 rewind*

      *   rewind 1/4" tape

plum# *mt rew*

      *   Rewind default tape (also the 1/4" tape on most systems - but be careful of previous Sun operating systems where the default was 1/2" tape!)

plum# *mt -f /dev/rmt/0n fsf 3*

      *   Skip the next three files (tape marks, to be exact)

- There are a number of other options to *mt*, but most of them only apply to some of the more intelligent types of drives (the 1/4" cartridge drives can't actually do a lot!)

offline	Unload the tape
eom	Position after last data on tape
erase	Clear the whole tape
status	Report on drive condition

- Like *tar, mt* uses the environment variable TAPE.

- If you are doing a lot of tape work, why not change the default device into the no rewind version?

plum# *export TAPE=/dev/rmt/0n*