# Backup & Recovery

선 기 호

썬 교육사업부 강사

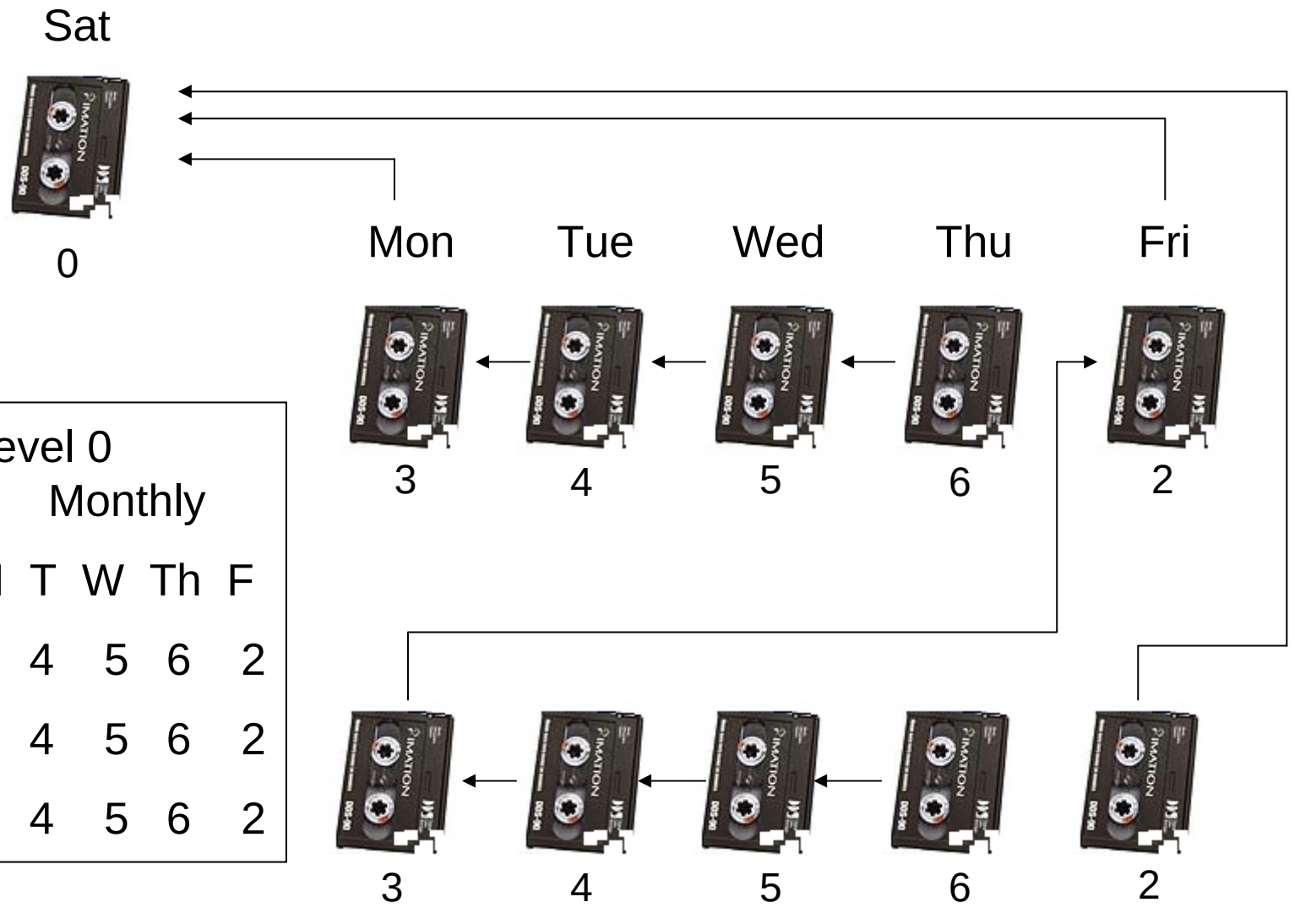
http://www.suntraining.co.kr

**Sun Microsystems Korea**

# Importance of Regular File System Backup

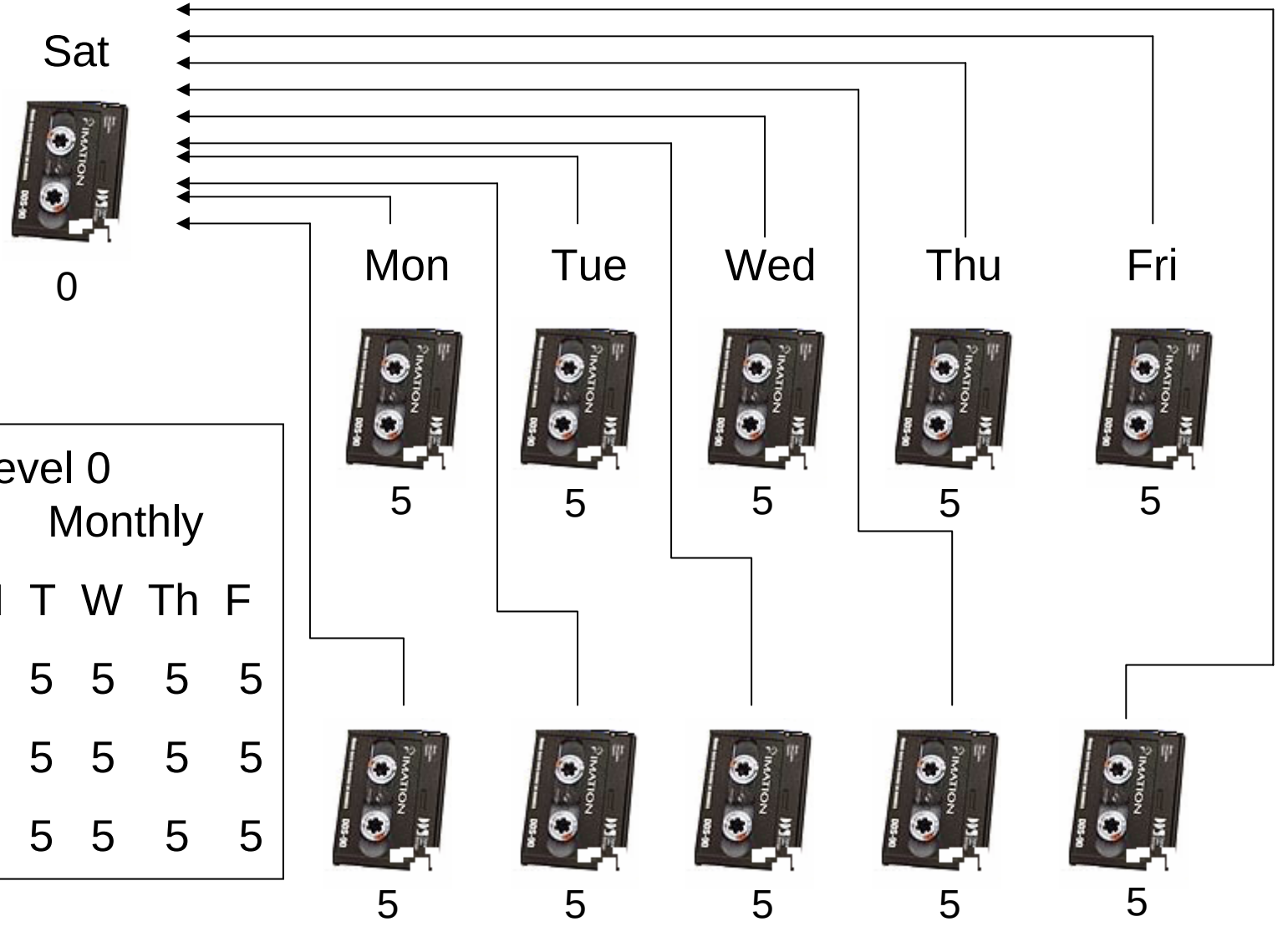
- Accidental deletion of files
- Hardware failures
- Problems when reinstalling or upgrading a system
- System crashes
- Natural disasters

# Sample Backup strategy




| Level 0 Monthly | | | | |
|---|---|---|---|---|
| M | T | W | Th | F |
| 3 | 4 | 5 | 6 | 2 |
| 3 | 4 | 5 | 6 | 2 |
| 3 | 4 | 5 | 6 | 2 |

# Sample Backup strategy




| Level 0 Monthly | | | | |
|---|---|---|---|---|
| M | T | W | Th | F |
| 5 | 5 | 5 | 5 | 5 |
| 5 | 5 | 5 | 5 | 5 |
| 5 | 5 | 5 | 5 | 5 |

# What is Backup level

1. Command
   #ufsdump 0uf /dev/rdsk/c0t0d0s0 /dev/rmt/0
2. Option
   0 (full backup)
   1-9(incremental backup)
3. Files
   #Cat /etc/dumpdates
   /dev/rdsk/c0t2d0s6 0 Fri Jun 2 19:12:27 2003
   /dev/rdsk/c0t2d0s0 0 Fri Jun 2 20:44:02 2003

# Introduction of Backup Utilities

1.tar - Creates and extracts files from a tape device or file archive

```
#tar  cvf   /dev/rmt/0  /usr
#tar   tvf   /dev/rmt/0
#tar   xvf  /dev/rmt/0
#tar   rvhf /dev/rmt/0 /export/home
#tar   cvf  file.tar  .
```

# Introduction of Backup Utilities

2.cpio - Copies and extracts files from a file archive or tape device

```
#find  .   | cpio -ocv  -O  /dev/rmt/0
#find  .  -mtime -7 | cpio  -ocv  > /dev/rmt/0
#cpio  -icv -I  /dev/rmt/0
#cpio  -ivt  <  /dev/rmt/0
```

# Introduction of Backup Utilities

3.dd-copies the specified input file to the specified output

with possible conversions

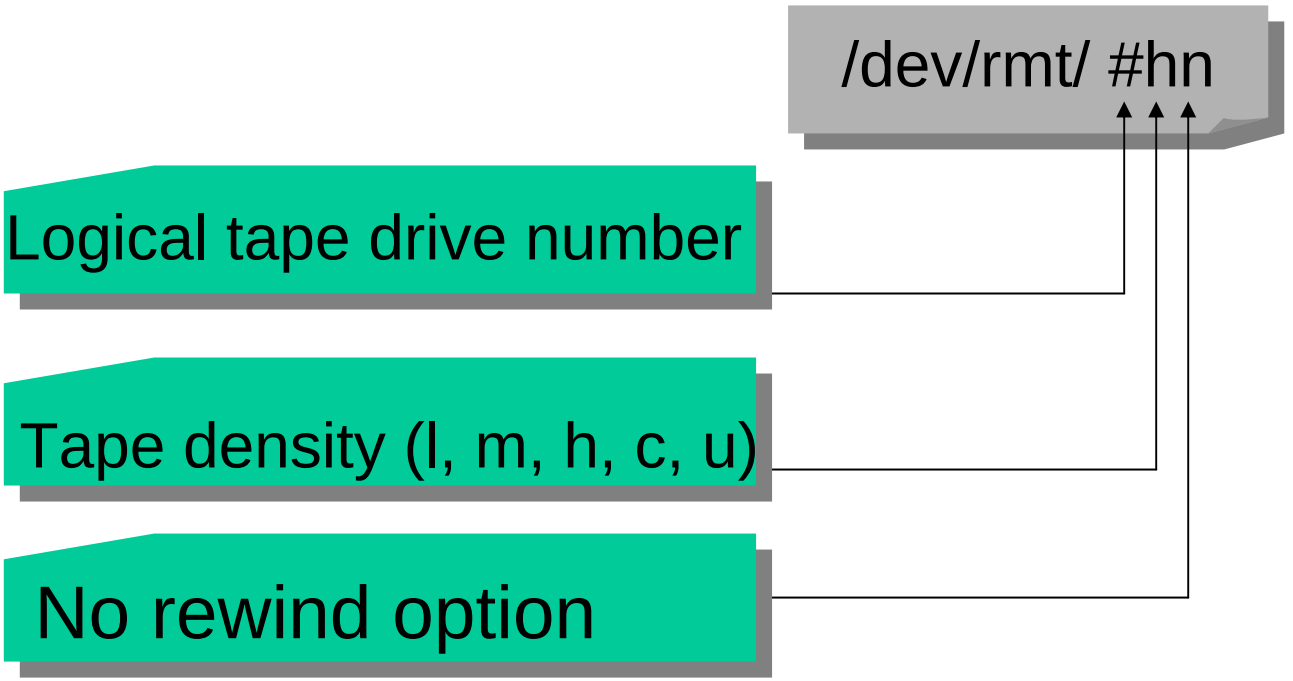
```
#dd  if=/dev/rdsk/c0t0d0s3  of=/dev/rmt/0  bs=512
```

4.Remote Backup

```
#tar cvf - . | (cd destin_dir; tar xvf -)
#tar cvf - . | rsh host_name dd of=/dev/rmt/0
#rsh host_name dd if=/dev/rmt/0 | tar xvf -
```

# Logical Tape Device Names

All tape devices have logical device names that are used to reference the device on the command line.



# Tape device management Command

#mt -f /dev/rmt/0 status

#mt -f /dev/rmt/0n eom

#mt -f /dev/rmt/0 rewind

#mt -f /dev/rmt/0 erase

#mt -f /dev/rmt/0 offline

#mt -f /dev/rmt/0n fsf  [count]

#mt -f /dev/rmt/0n bsf  [count]

#mt -f /dev/rmt/0n nfsf [count]

#mt -f /dev/rmt/0n nbsf [count]

# Determining the Number of Tapes

To determine the size of the file system to be backed up to tape.

```
# ufsdump  0S  Filesystem_name
   <number reported>
    or
 # ufsdump 3S   Filesystem_name
  <number reported>
```

# Backing Up to Tape

#/usr/sbin/shutdown –y –g300 “System is being shutdown for backup”

#umount /export/home

#fsck /export/home

#ufsdump 0uf /dev/rmt/0 /export/home

# Restoring File Systems

Use the ufsrestore command to restore file systems that were backed up using the ufsdump command.

The reason why a file system might need to be restored

- Rebuilding a damaged file system
- Reinstallation or upgrade of the Solaris Operating Environment software
- Reorganizing file systems on existing or new disks

# Restoring File Systems

Command Format

```
# ufsrestore  option  device_name

# ufsrestore  rvf   /dev/rmt/0
# ufsrestore  tvf   /dev/rmt/0
# ufsrestore  ivf   /dev/rmt/0
# ufsrestore  xvf  /dev/rmt/0
```

# Restoring the /(root) File system

To restore the /(root) file system, boot from the Solaris CD-ROM, and then run ufsrestore.

1. Insert the solaris 8 Software 1 of 2 CD-ROM, and

   bot the CD-ROM with the single-user mode option

   ok boot cdrom -s

2. Create the new file system structure

   # newfs /dev/rdsk/c0t0d0s0

3. Mount the file system to an empty mount point directory, /a, and change to that directory

   # mount /dev/dsk/c0t0d0s0 /a

# Restoring the /(root) File system

4. Restore the /(root) file system from its backup tape

```
# ufsrestore  rf  /dev/rmt/0
```

5. Remove the restoresymtable file

```
# rm  restoresymtable
```

6. Install the bootblk in Sectors 1-15 of the boot disk.

Change to the directory containing the bootblk, and

Run the installboot command.

```
# cd  /usr/platform/`uname –m`/lib/fs/ufs
```

# Restoring the /(root) File system

7. Umount the new file system
   # cd /
   # umount a
8. Use the fsck command to check the restored file system
   # fsck /dev/rdsk/c0t0d0s0
9. Reboot the system
   # init 6
10. Perform a full backup of the file system
    # ufsdump 0uf /dev/rmt/0 /dev/rdsk/c0t0d0s0

# Increasing Size of the /var File system

```
# init S
# format
# newfs  /dev/rdsk/c0t1d0s3
# mount  /dev/dsk/c0t1d0s3  /mnt
# cd   /var
# tar  cvf  -  .  | (cd  /mnt;tar  xvf  - )
# vi  /etc/vfstab
/dev/dsk/c0t1d0s3  /dev/rdsk/c0t1d0s3  /var  ufs  1
no –
#rm  -r  /var/*
#init 6
```

선 기 호
ghsun@suned.co.kr