NAME

ufsdump, dumpdates – incremental dump format

SYNOPSIS

#include <sys/types.h>
#include <sys/inode.h>
#include <protocols/dumprestore.h>

/etc/dumpdates

DESCRIPTION

Tapes used by **ufsdump**(1M) and **ufsrestore**(1M) contain:

- a header record
- two groups of bit map records
- a group of records describing directories
- a group of records describing files

The format of the header record and of the first record of each description as given in the include file **<protocols/dumprestore.h>** is:

```
#define TP_BSIZE            1024
#define NTREC               10
#define HIGHDENSITYTREC     32
#define CARTRIDGETREC       63
#define TP_NINDIR           (TP_BSIZE/2)
#define TP_NINOS            (TP_NINDIR / sizeop (long))
#define LBLSIZE             16
#define NAMELEN             64

#define NFS_MAGIC           (int) 60012
#define CHECKSUM            (int) 84446

union u_data {
        char  s_addrs[TP_NINDIR];
        long  s_inos[TP_NINOS];

union u_spcl {
        char  dummy[TP_BSIZE];
        struct s_spcl {
                long            c_type;
                time_t          c_date;
                time_t          c_ddate;
                long            c_volume;
                daddr_t         c_tapea;
                ino_t           c_inumber;
                long            c_magic;
                long            c_checksum;
                struct dinode   c_dinode;
                long            c_count;
                union           u_data c_data;
                char            c_label[LBLSIZE];
```

```
                long            c_level;
                char            c_filesys[NAMELEN];
                char            c_dev[NAMELEN];
                char            c_host[NAMELEN];
                long            c_flags;
                long            c_firstrec;
                long            c_spare[32];
        } s_spcl;
} u_spcl;

#define spcl u_spcl.s_spcl
#define c_addr c_data.s_addrs
#define c_inos cdata.s_inos

#define TS_TAPE             1
#define TS_INODE            2
#define TS_ADDR             4
#define TS_BITS             3
#define TS_CLRI             6
#define TS_END              5
#define TS_EOM              7

#define DR_NEWHEADER        1
#define DR_INODEINFO        2
#define DR_REDUMP           4
#define DR_TRUELIC          8
#define DUMPOUTFMT          "%-24s %c %s"
#define DUMPINFMT           "%24s %c %[^\n] \n"
```

The constants are described as follows:

TP_BSIZE Size of file blocks on the dump tapes. Note that **TP_BSIZE** must be a multiple of **DEV_BSIZE**.

NTREC Default number of **TP_BSIZE** byte records in a physical tape block, changeable by the **b** option to **ufsdump**(1M).

HIGHDENSITYNTREC
Default number of **TP_BSIZE** byte records in a physical tape block on 6250 BPI or higher density tapes.

CARTRIDGETREC
Default number of **TP_BSIZE** records in a physical tape block on cartridge tapes.

TP_NINDIR Number of indirect pointers in a **TS_INODE** or **TS_ADDR** record. It must be a power of 2.

TP_NINOS The maximum number of volumes on a tape. Used for tape labeling in **hsmdump** and **hsmrestore** (available with Online:Backup 2.0 optional software package SUNWhsm).

LBLSIZE The maximum size of a volume label. Used for tape labeling in **hsmdump** and **hsmrestore** (available with Online:Backup 2.0 optional software package SUNWhsm).

NAMELEN The maximum size of a host's name.

NFS_MAGIC All header records have this number in **c_magic**.

CHECKSUM Header records checksum to this value.

The **TS_** entries are used in the **c_type** field to indicate what sort of header this is. The types and their meanings are as follows:

TS_TAPE Tape volume label.

TS_INODE A file or directory follows. The **c_dinode** field is a copy of the disk inode and contains bits telling what sort of file this is.

TS_ADDR A subrecord of a file description. See **s_addrs** below.

TS_BITS A bit map follows. This bit map has a one bit for each inode that was dumped.

TS_CLRI A bit map follows. This bit map contains a zero bit for all inodes that were empty on the file system when dumped.

TS_END End of tape record.

TS_EOM floppy EOM — restore compat with old dump

The flags are described as follows:

DR_NEWHEADER
New format tape header.

DR_INFODEINFO
Header contains starting inode info.

DR_REDUMP Dump contains recopies of active files.

DR_TRUEINC Dump is a "true incremental".

DUMPOUTFMT Name, incon, and ctime (date) for printf.

DUMPINFMT Inverse for scanf.

The fields of the header structure are as follows:

s_addrs An array of bytes describing the blocks of the dumped file. A byte is zero if the block associated with that byte was not present on the file system; otherwise, the byte is non-zero. If the block was not present on the file lsystem, no block was dumped; the block will be stored as a hole in the file. If there is not sufficient space in this record to describe all the blocks in a file, **TS_ADDR** records will be scattered through the file, each one picking up where the last left off

s_inos The starting inodes on tape.

c_type The type of the record.

c_date The date of the previous dump.

c_ddate The date of this dump.

c_volume The current volume number of the dump.

c_tapea The logical block of this record.

c_inumber The number of the inode being dumped if this is of type **TS_INODE**.

c_magic This contains the value **MAGIC** above, truncated as needed.

c_checksum This contains whatever value is needed to make the record sum to **CHECKSUM**.

c_dinode This is a copy of the inode as it appears on the file system.

c_count The count of bytes in **s_addrs**.

u_data c_data The union of either **u_data c_data** The union of either **s_addrs** or **s_inos**.

c_label Label for this dump.

c_level Level of this dump.

c_filesys Name of dumped file system.

c_dev Name of dumped service.

c_host Name of dumped host.

c_flags Additional information.

c_firstrec First record on volume.

c_spare Reserved for future uses.

Each volume except the last ends with a tapemark (read as an end of file). The last volume ends with a **TS_END** record and then the tapemark.

The dump history is kept in the file **/etc/dumpdates**. It is an ASCII file with three fields separated by white space:

- The name of the device on which the dumped file system resides.
- The level number of the dump tape; see **ufsdump**(1M).
- The date of the incremental dump in the format generated by **ctime**(3C).

DUMPOUTFMT is the format to use when using **printf**(3S) to write an entry to **/etc/dumpdates**; **DUMPINFMT** is the format to use when using **scanf**(3S) to read an entry from **/etc/dumpdates**.

SEE ALSO

ufsdump(1M), **ufsrestore**(1M), **ctime**(3C), **printf**(3S), **scanf**(3S), **types**(5)