

New Technology File System

Chirag Parmar (00005004)

Vikas Jain (00D05003)



NTFS Overview



- ✦ Boot – Boot information (16 sectors)
- ✦ MFT – Master File Table
- ✦ MFTMirr – Copy of MFT's first 16 records
- ✦ Data – Data blocks



Master File Table

\$MFT	MFT itself
\$MFTmirr	Copy of MFT's first 16 records
\$LogFile	Journaling log file
\$Volume	Volume information
\$AttrDef	List of standard file attributes
\$.	Root directory
\$Bitmap	Volume freespace map
\$Boot	Boot sector
\$Quota	User quota information
\$Upcase	The table of accordance between capital and small letters



Files

- ★ A record in MFT
- ★ MFT record has
 - File name
 - Standard Information
 - Security Information
 - Data position on the disk OR actual data stream
- ★ A file can have multiple data streams



Directories

- ★ A special file storing reference to other files
- ★ It contains
 - File name
 - Base attributes
 - Reference to element in MFT
- ★ File names organized as a binary tree



Other features

- ★ Long file names with unicode character set
- ★ Journaling files system
- ★ Provides compression
- ★ Provides encryption
- ★ Supports hard links



References

- ★ Inside NTFS, Mark Russinovich,
<http://www.winntmag.com/Articles/ArticleID/3455/pg/1/1.html>
- ★ NTFS File system, Dmitry Mikhailov,
<http://www.digit-life.com/articles/ntfs/>
- ★ <http://www.ntfs.com/>
- ★ <http://linux-ntfs.sourceforge.net/>

