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PROFESSIONAL SERVICES TECH NOTE #060

Lock command

The Concept

Shared storage allows users and applications to share files. To reduce conflicts when making changes to files the concept of locks were created. There are two types of locks: file lock and byte range lock. A file lock prevents users and applications from doing anything but reading a file. A byte-range lock allows users and applications to collaborate on a file by permitting only one user or application to make changes to a specific section of a file. CIFS calls file locks opportunistic locks (oplocks). Oplocks reduce network traffic by allowing clients to read-ahead more data into memory and flush changes to disk less frequently. NFS and CIFS handle locks very differently. CIFS explicitly denies access whereas NFS only suggests access be denied. The SecureShare functionality of Data ONTAP ensures they follow the same rules, preventing conflicts or data corruption.

Examples

```
fas1> lock status -p cifs -h (shows locks sorted by host)
CIFS host=172.18.2.107(VKUMAR-VPC) owner=administrator state=GRANTED mode=Read-
denyN oplock=None fsid=0x0e1d66f7 fileid=0x000000d3
path=\word.doc(/vol/vol10/share1/word.doc)

fas1> lock status -p cifs -o (shows locks sorted by user/owner)
CIFS owner=root host=10.34.17.49(FLOYD-XP) pid=65279 offset=2147483539 len=1
excl=yes state=GRANTED fsid=0x0e1d66f7 fileid=0x000000d3
path=\word.doc(/vol/vol10/share1/word.doc)
```

What It Means To You

Systems running the CIFS protocol have oplocks turned on by default for every qtree. NetApp recommends only turning oplocks off when a database application recommends turning them off or when a volume or qtree holds critical data that cannot afford any possibility of data loss.

Use the **lock** command to determine which app/user is keeping a file locked so you can allow others to access the file. The **lock** command is useful for troubleshooting when a client is violating locks and overwriting file data (more common with older versions of Windows and Unix and applications designed for direct-attached storage).

More Information

Read the Tech Report - SecureShare: Guaranteed Multiprotocol File Locking
<http://media.netapp.com/documents/tr-3024.pdf>

Lock command Manual Pages
http://now.netapp.com/NOW/knowledge/docs/ontap/rel733/html/ontap/cmdref/man1/na_lock.1.htm

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