



PROFESSIONAL SERVICES TECH NOTE #018

maxfiles command

The Concept

All data, whether file or block-based, resides in 4KB blocks on disk. A group of related blocks make up a file. To accommodate different file sizes, the WAFL filesystem describes each file with reference pointers called inodes. The inodes for every volume are tracked in an inode table. When a volume is created, WAFL assumes the volume will contain a mix of large and small files and creates an inode table with one inode for every 32KB up to the first 1TB of space. Volumes larger than 1TB or which contain many small files (<32KB in size) can run out of inodes before they run out of usable blocks. The solution is to increase the available number of inodes by using the **maxfiles** command.

Examples

```
fas1> df -i <volname> = the -i flag displays total inodes and number of inodes being used
fas1> maxfiles <volname> <total inodes + 20%> = add 20% more inodes
fas1> maxfiles <volname> = displays new max number of files and current file count in volume
```

What It Means To You

Before the inodes run out, the system generate error messages recommending using **maxfiles** to add inodes. When there are no available inodes, clients will receive a write failure which looks like a volume full error. There are some performance tradeoffs and the number of inodes can never be decreased which is why NetApp recommends increasing inodes by 20% at a time.

More Information

What is an inode? <https://now.netapp.com/Knowledgebase/solutionarea.asp?id=kb9120>

See the Data ONTAP System Management Guide for more on the maxfiles command:

http://now.netapp.com/NOW/knowledge/docs/ontap/rel7261/html/ontap/smg/provisioning/task/t_oc_prov_vol-files-increasing.html

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