

# Increasing the size of the NTFS Change Journal

The default size for the NTFS change journal is around 1 MB which is too small for large servers with many (1 million+) files.

To query the current value, run the following command as an Administrator: **fsutil usn queryjournal C:** (replace C: with the desired drive).

The result will look something like this:

```
Usn Journal ID   : 0x01cae79a4530d62e
First Usn       : 0x0000000000000000
Next Usn        : 0x0000000000000108
Lowest Valid Usn : 0x0000000000000000
Max Usn         : 0x00000ffffff0000
Maximum Size    : 0x000000000100000
Allocation Delta : 0x0000000000040000
```

Take the hex value Maximum Size and convert it to decimal to get the current CJ size in bytes. I.e. 100,000 hex = 1,048,576 = 1 MB.

To increase the CJ size for a particular volume, run the following command (set the Maximum Size to at least 32 MB and the AllocationDelta to an 8th of that) i.e: **fsutil usn createjournal m=33554432 a=4194304 C:**

Repeat for all large drives you want to back up. Confirm the setting is active by querying the journal size again.

The table below includes the various figures needed to change the CJ to different amounts.

Files	Maximum Size (m) in bytes	AllocationDelta (a) in bytes	m (MB)	m (hex)	a (hex)
400 000	536 870 912	67 108 864	512	2000000	400000
600 000	805 306 368	100 663 296	768	3000000	600000
800 000	1 073 741 824	134 217 728	1 024	4000000	800000
1 000 000	1 342 177 280	167 772 160	1 280	5000000	A00000
1 200 000	1 610 612 736	201 326 592	1 536	6000000	C00000
1 400 000	1 879 048 192	234 881 024	1 792	7000000	E00000
1 600 000	2 147 483 648	268 435 456	2 048	8000000	100000
1 800 000	2 415 919 104	301 989 888	2 304	9000000	120000
2 000 000	2 684 354 560	335 544 320	2 560	A000000	140000

2 200 000	2 952 790 016	369 098 752	2 816	B000000 0	160000 00
2 400 000	3 221 225 472	402 653 184	3 072	C000000 0	180000 00
2 600 000	3 489 660 928	436 207 616	3 328	D000000 0	1A0000 00
2 800 000	3 758 096 384	469 762 048	3 584	E000000 0	1C0000 00
3 000 000	4 026 531 840	503 316 480	3 840	F000000 0	1E0000 00
3 200 000	4 294 967 296	536 870 912	4 096	1000000 00	200000 00

Reference:

[http://technet.microsoft.com/en-us/library/cc788042\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc788042(WS.10).aspx)

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