

Benchmarking filesystems and PostgreSQL shared buffers

Ext3 journal mode

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	277.3	197.3	156.1	262.9	171.7	164.8
Run 1	252.4	157.7	120.1	238.5	151.1	115.2
Run 2	269.0	138.3	133.8	239.3	131.8	126.8
Run 3	286.9	148.5	124.0	237.3	142.7	113.6
Average	269.4	148.2	125.9	238.4	141.9	118.5

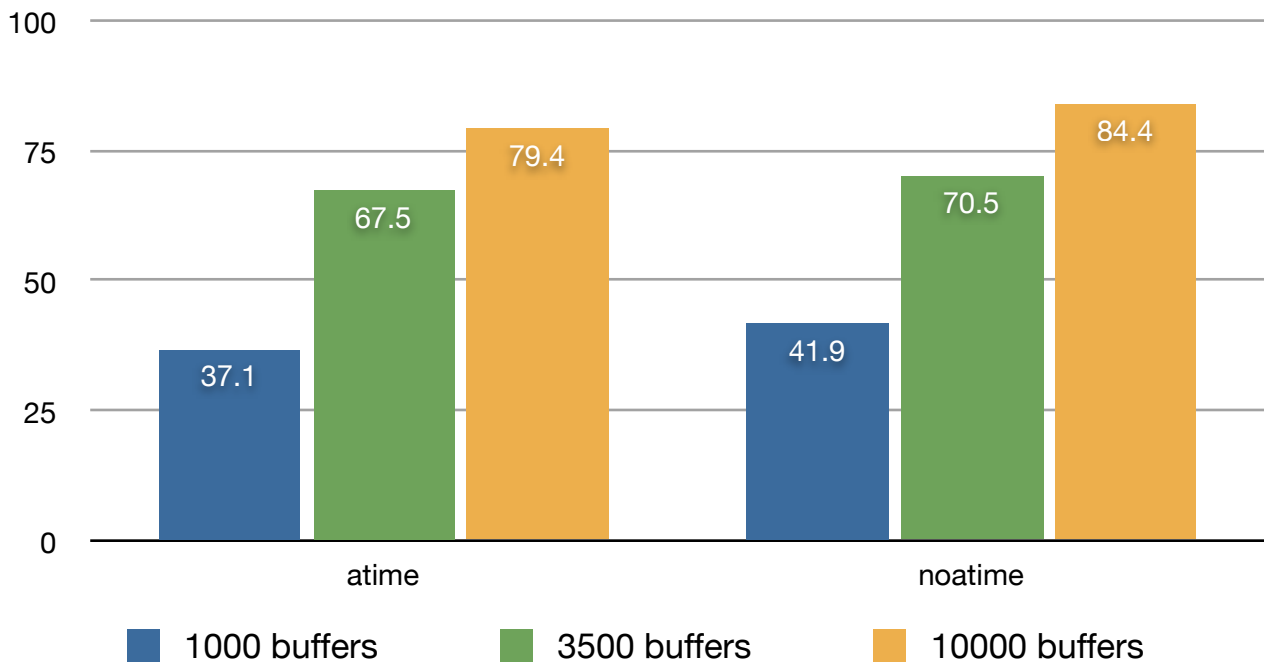
Duration (seconds)

	atime	noatime
1000 buffers	269.4	238.4
3500 buffers	148.2	141.9
10000 buffers	125.9	118.5

Performance (requests per second)

	atime	noatime
1000 buffers	37.1	41.9
3500 buffers	67.5	70.5
10000 buffers	79.4	84.4

Ext3 performance in "journal" mode (requests per second)



Benchmarking filesystems and PostgreSQL shared buffers

Ext3 ordered mode

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	262.3	156.0	122.3	260.7	146.5	121.8
Run 1	241.5	137.8	108.5	240.9	138.4	106.1
Run 2	252.1	133.7	107.8	239.4	149.0	109.5
Run 3	244.3	140.1	108.7	250.2	135.6	105.1
Average	246.0	137.2	108.4	243.5	141.0	106.9

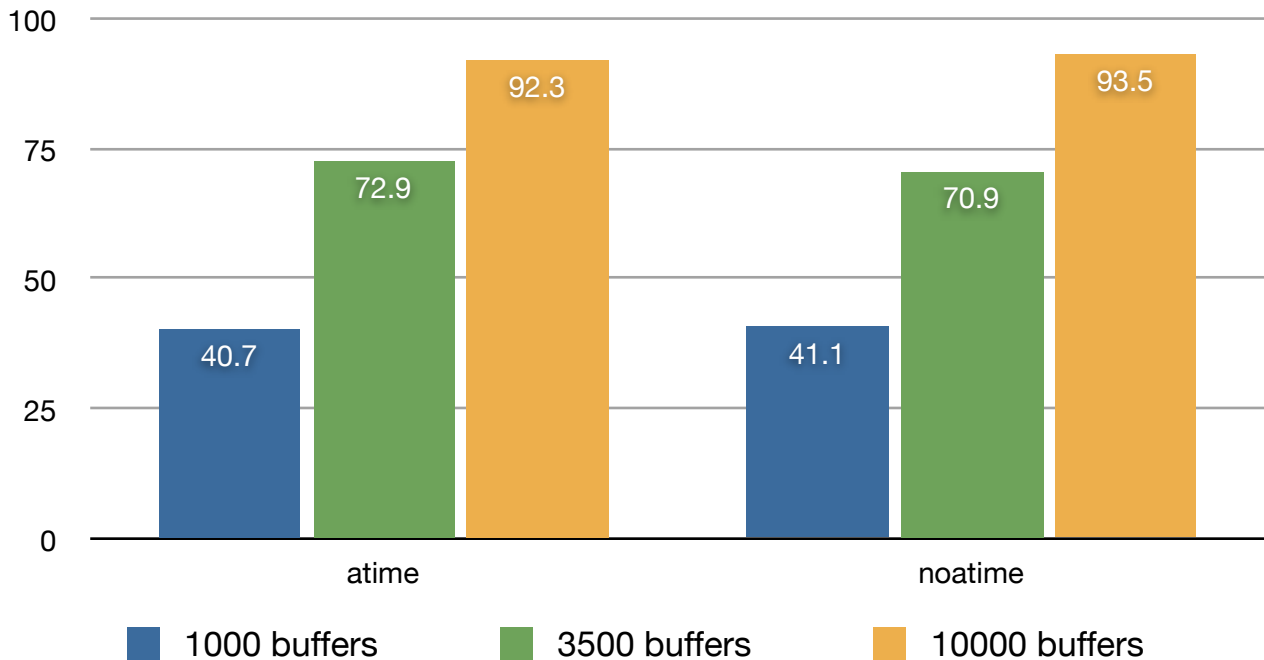
Duration (seconds)

	atime	noatime
1000 buffers	246.0	243.5
3500 buffers	137.2	141.0
10000 buffers	108.4	106.9

Performance (requests per second)

	atime	noatime
1000 buffers	40.7	41.1
3500 buffers	72.9	70.9
10000 buffers	92.3	93.5

Ext3 performance in "ordered" mode (requests per second)



Benchmarking filesystems and PostgreSQL shared buffers

Ext3 writeback mode

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	187.3	123.1	120.4	167.1	119.5	130.1
Run 1	180.1	109.3	103.5	163.5	104.4	100.3
Run 2	179.1	113.1	105.7	163.2	110.1	103.0
Run 3	177.9	107.8	103.7	165.8	106.5	109.1
Average	179.0	110.1	104.3	164.2	107.0	104.1

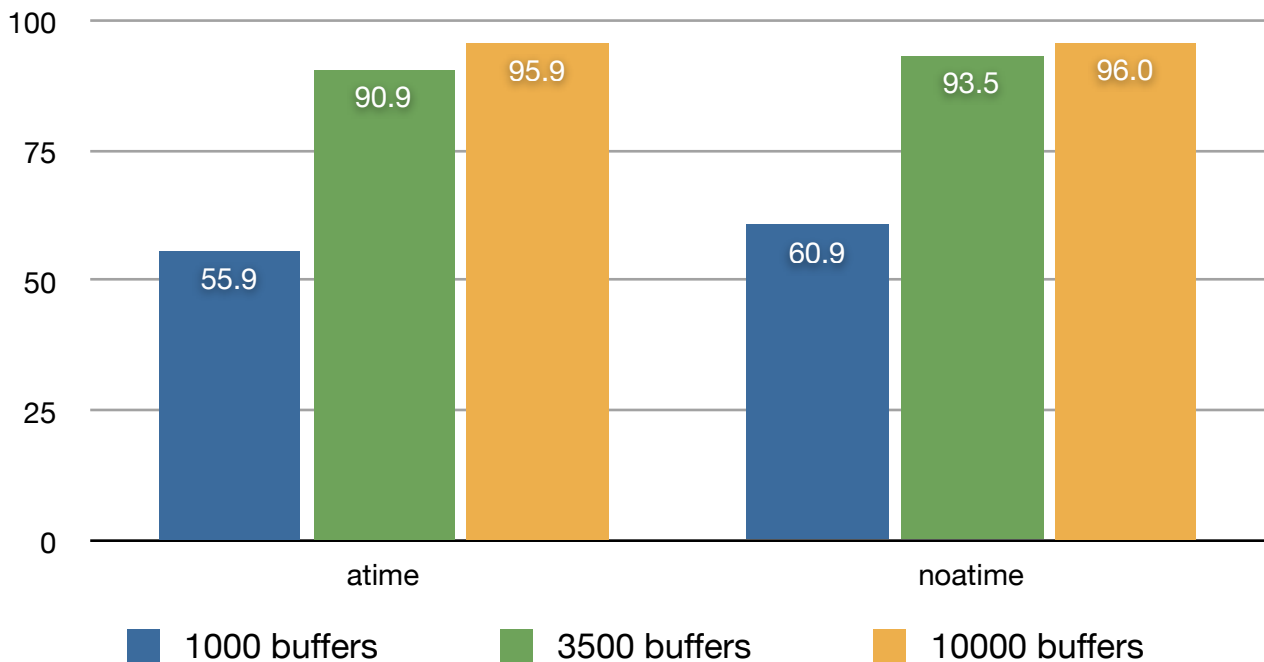
Duration (seconds)

	atime	noatime
1000 buffers	179.0	164.2
3500 buffers	110.1	107.0
10000 buffers	104.3	104.1

Performance (requests per second)

	atime	noatime
1000 buffers	55.9	60.9
3500 buffers	90.9	93.5
10000 buffers	95.9	96.0

Ext3 performance in "writeback" mode (requests per second)



Benchmarking filesystems and PostgreSQL shared buffers

ReiserFS

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	164.8	119.9	113.7	189.6	116.4	112.5
Run 1	164.4	107.9	102.2	169.9	104.4	100.6
Run 2	164.6	111.8	105.1	168.5	108.5	106.6
Run 3	163.0	112.1	102.3	174.1	104.4	101.7
Average	164.0	110.6	103.2	170.8	105.8	103.0

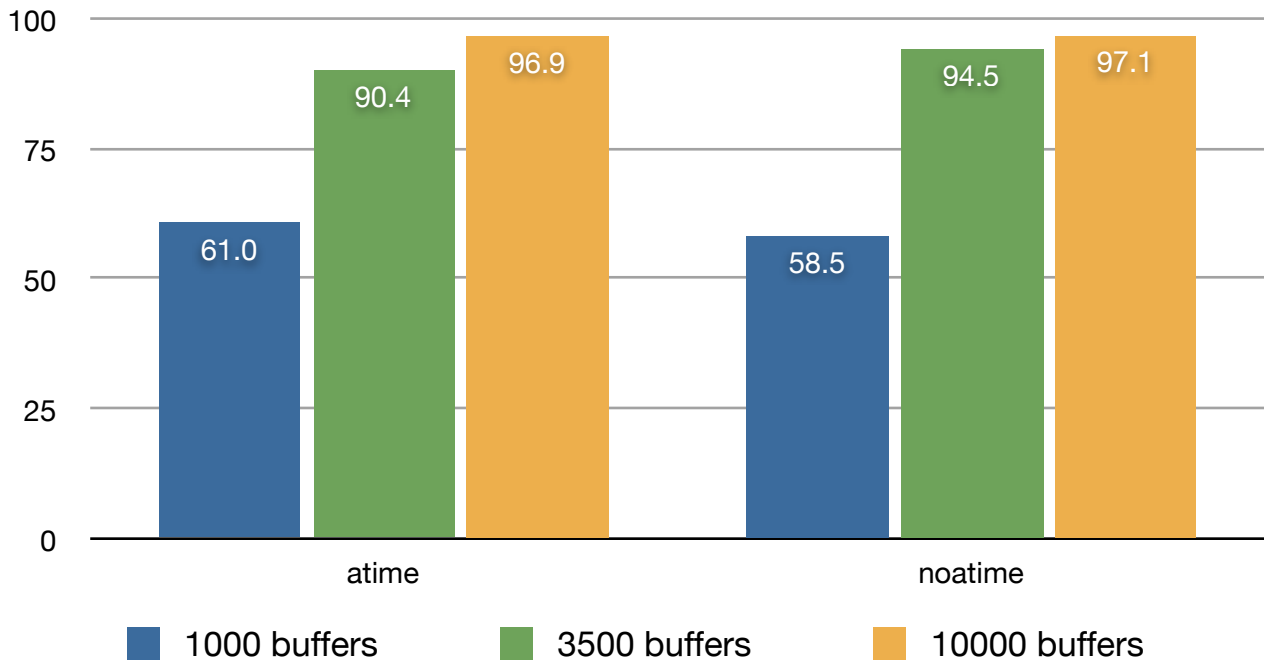
Duration (seconds)

	atime	noatime
1000 buffers	164.0	170.8
3500 buffers	110.6	105.8
10000 buffers	103.2	103.0

Performance (requests per second)

	atime	noatime
1000 buffers	61.0	58.5
3500 buffers	90.4	94.5
10000 buffers	96.9	97.1

ReiserFS performance (requests per second)



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JFS

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	160.4	118.4	115.0	178.5	119.7	115.5
Run 1	164.1	105.4	104.3	169.6	104.8	103.9
Run 2	159.7	109.6	101.5	169.4	114.0	105.5
Run 3	168.0	104.3	101.3	173.6	105.7	107.6
Average	163.9	106.4	102.4	170.9	108.2	105.7

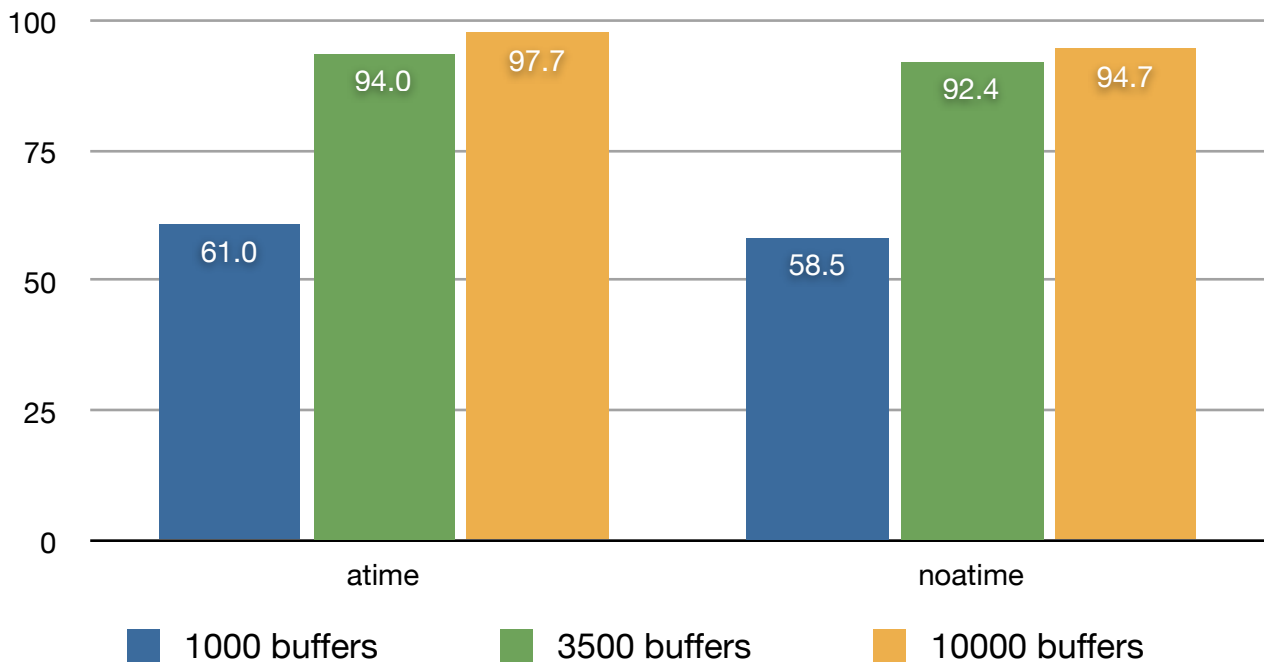
Duration (seconds)

	atime	noatime
1000 buffers	163.9	170.9
3500 buffers	106.4	108.2
10000 buffers	102.4	105.7

Performance (requests per second)

	atime	noatime
1000 buffers	61.0	58.5
3500 buffers	94.0	92.4
10000 buffers	97.7	94.7

JFS performance (requests per second)



Benchmarking filesystems and PostgreSQL shared buffers

XFS

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	162.7	122.6	129.2	170.4	123.1	117.1
Run 1	156.6	103.3	103.9	160.8	113.0	100.2
Run 2	155.4	106.6	101.8	164.9	108.2	101.9
Run 3	157.6	109.0	101.8	163.1	105.2	101.3
Average	156.5	106.3	102.5	162.9	108.8	101.1

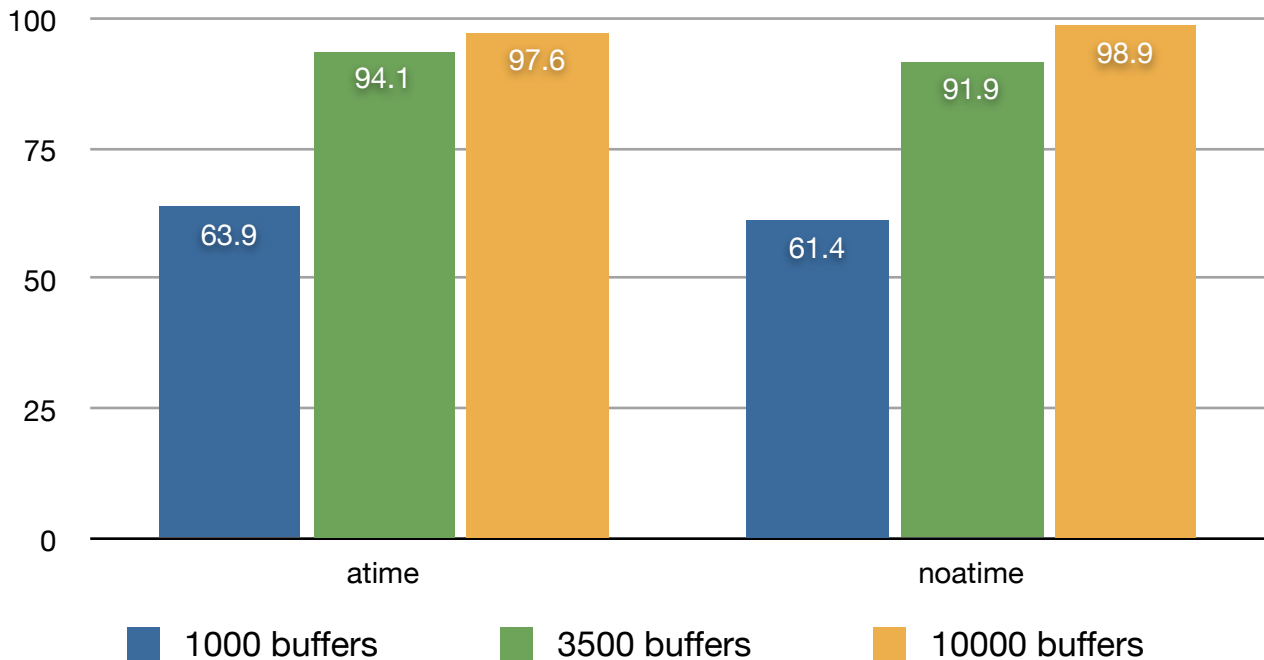
Duration (seconds)

	atime	noatime
1000 buffers	156.5	162.9
3500 buffers	106.3	108.8
10000 buffers	102.5	101.1

Performance (requests per second)

	atime	noatime
1000 buffers	63.9	61.4
3500 buffers	94.1	91.9
10000 buffers	97.6	98.9

XFS performance (requests per second)



Benchmarking filesystems and PostgreSQL shared buffers

XFS + APC (Advanced PHP Cache)

Raw data (seconds)

	atime 1000	atime 3500	atime 10000	noatime 1000	noatime 3500	noatime 10000
Warmup	160.0	116.3	110.8	162.1	115.1	113.9
Run 1	154.2	94.3	91.8	154.8	94.1	90.3
Run 2	156.6	101.9	95.3	153.6	97.3	93.1
Run 3	159.1	95.7	93.4	159.9	93.9	91.6
Average	156.6	97.3	93.5	156.1	95.1	91.7

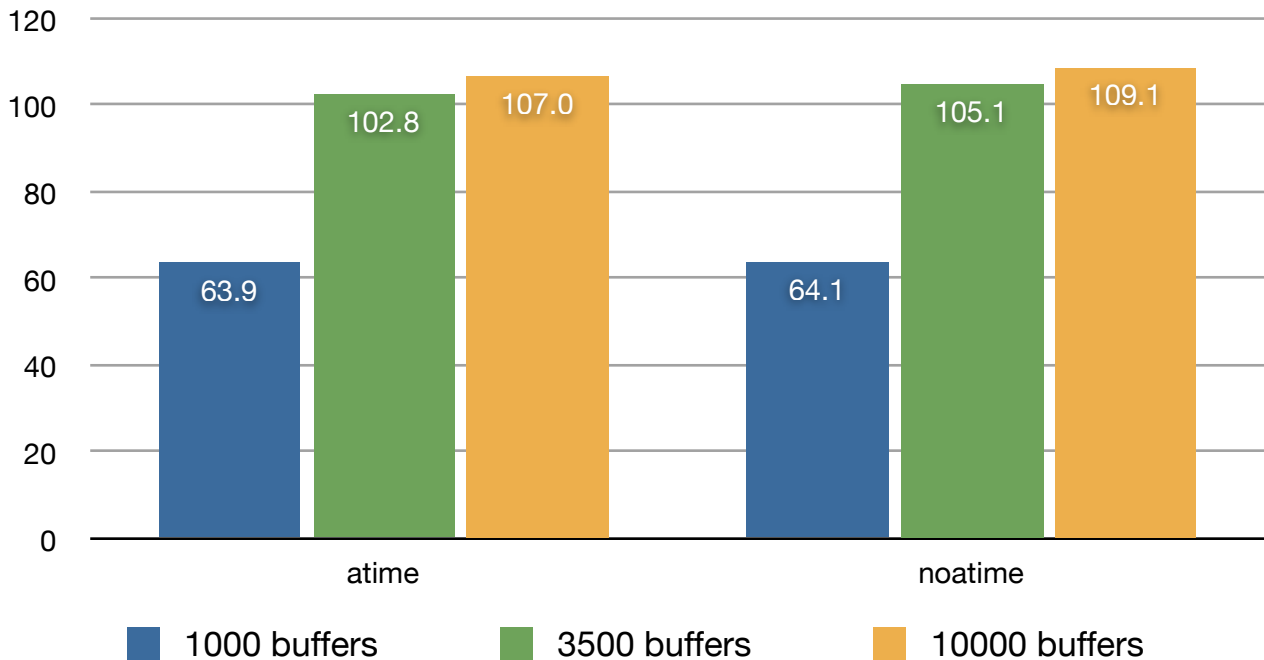
Duration (seconds)

	atime	noatime
1000 buffers	156.6	156.1
3500 buffers	97.3	95.1
10000 buffers	93.5	91.7

Performance (requests per second)

	atime	noatime
1000 buffers	63.9	64.1
3500 buffers	102.8	105.1
10000 buffers	107.0	109.1

XFS + APC performance (requests per second)



Benchmarking ext3 and PostgreSQL shared buffers

atime comparison

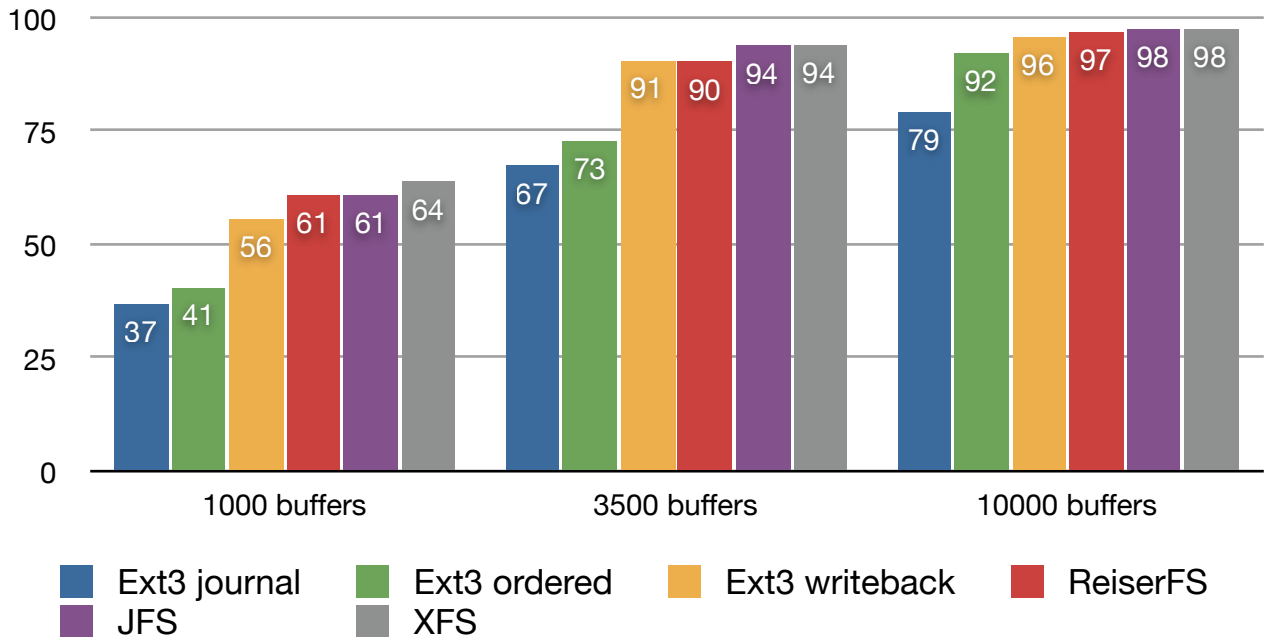
Duration (seconds)

	1000 buffers	3500 buffers	10000 buffers
Ext3 journal	269.4	148.2	125.9
Ext3 ordered	246.0	137.2	108.4
Ext3 writeback	179.0	110.1	104.3
ReiserFS	164.0	110.6	103.2
JFS	163.9	106.4	102.4
XFS	156.5	106.3	102.5

Performance (requests per second)

	1000 buffers	3500 buffers	10000 buffers
Ext3 journal	37.1	67.5	79.4
Ext3 ordered	40.7	72.9	92.3
Ext3 writeback	55.9	90.9	95.9
ReiserFS	61.0	90.4	96.9
JFS	61.0	94.0	97.7
XFS	63.9	94.1	97.6

Performance using "atime" (requests per second)



Benchmarking ext3 and PostgreSQL shared buffers

noatime comparison

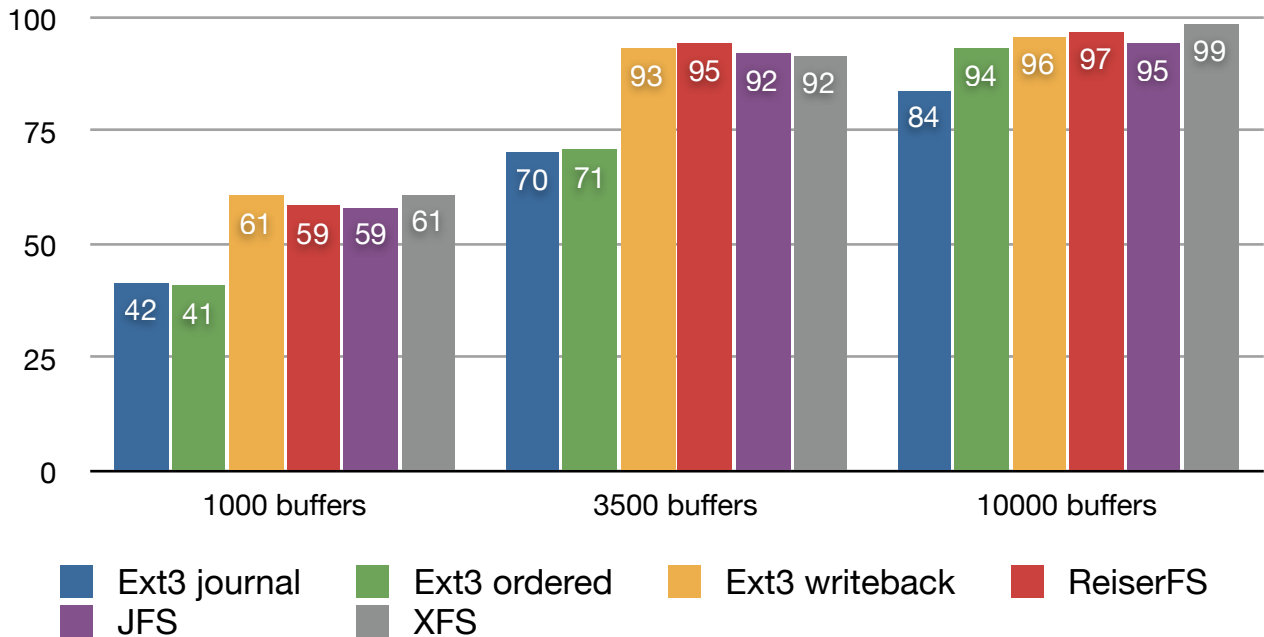
Duration (seconds)

	1000 buffers	3500 buffers	10000 buffers
Ext3 journal	238.4	141.9	118.5
Ext3 ordered	243.5	141.0	106.9
Ext3 writeback	164.2	107.0	104.1
ReiserFS	170.8	105.8	103.0
JFS	170.9	108.2	105.7
XFS	162.9	108.8	101.1

Performance (requests per second)

	1000 buffers	3500 buffers	10000 buffers
Ext3 journal	41.9	70.5	84.4
Ext3 ordered	41.1	70.9	93.5
Ext3 writeback	60.9	93.5	96.0
ReiserFS	58.5	94.5	97.1
JFS	58.5	92.4	94.7
XFS	61.4	91.9	98.9

Performance using "noatime" (requests per second)



Benchmarking ext3 and PostgreSQL shared buffers

1000 buffers comparison

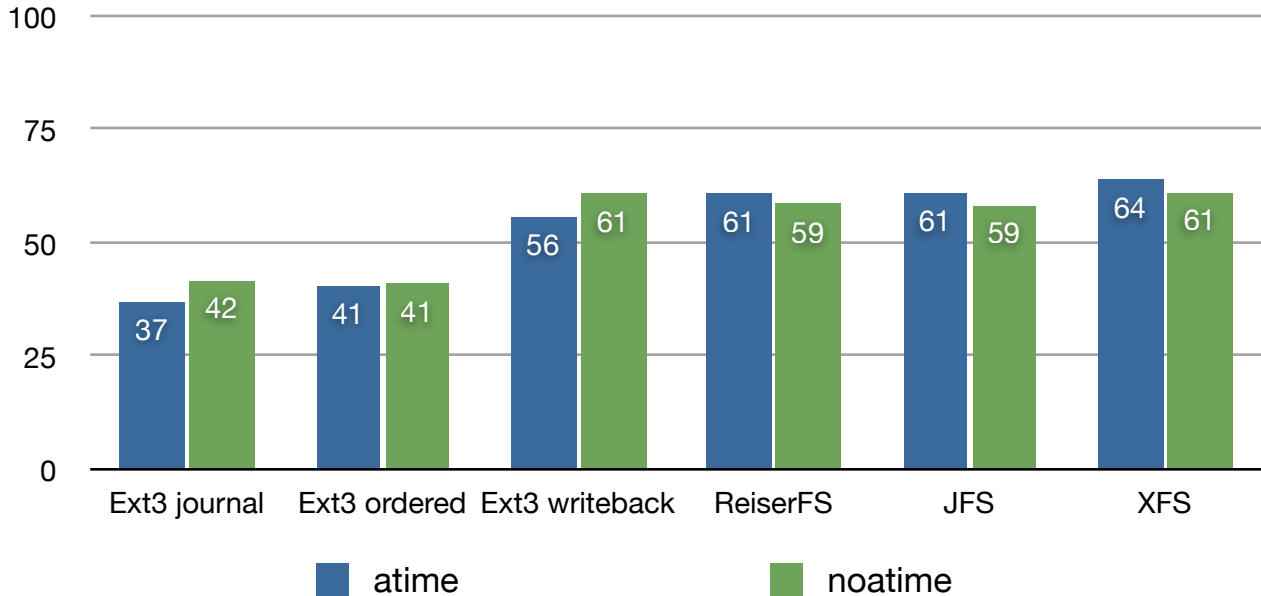
Duration (seconds)

	atime	noatime
Ext3 journal	269.4	238.4
Ext3 ordered	246.0	243.5
Ext3 writeback	179.0	164.2
ReiserFS	164.0	170.8
JFS	163.9	170.9
XFS	156.5	162.9

Performance (requests per second)

	atime	noatime
Ext3 journal	37.1	41.9
Ext3 ordered	40.7	41.1
Ext3 writeback	55.9	60.9
ReiserFS	61.0	58.5
JFS	61.0	58.5
XFS	63.9	61.4

Performance using 1000 shared buffers (requests per second)



Benchmarking ext3 and PostgreSQL shared buffers

3500 buffers comparison

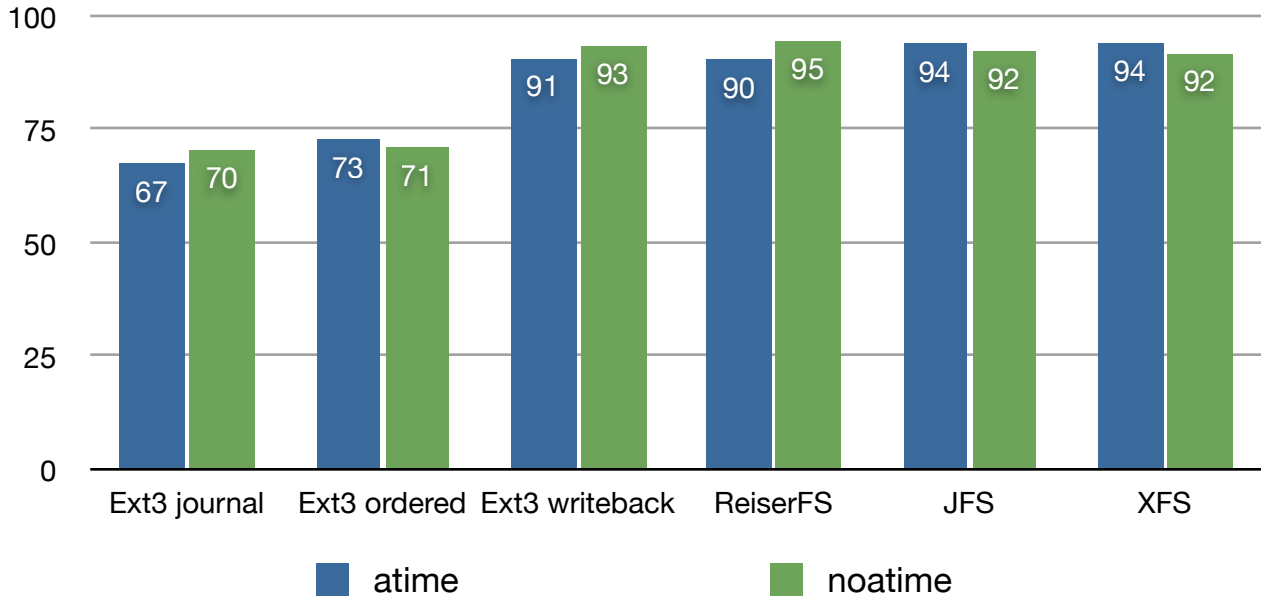
Duration (seconds)

	atime	noatime
Ext3 journal	148.2	141.9
Ext3 ordered	137.2	141.0
Ext3 writeback	110.1	107.0
ReiserFS	110.6	105.8
JFS	106.4	108.2
XFS	106.3	108.8

Performance (requests per second)

	atime	noatime
Ext3 journal	67.5	70.5
Ext3 ordered	72.9	70.9
Ext3 writeback	90.9	93.5
ReiserFS	90.4	94.5
JFS	94.0	92.4
XFS	94.1	91.9

Performance using 3500 shared buffers (requests per second)



Benchmarking ext3 and PostgreSQL shared buffers

10000 buffers comparison

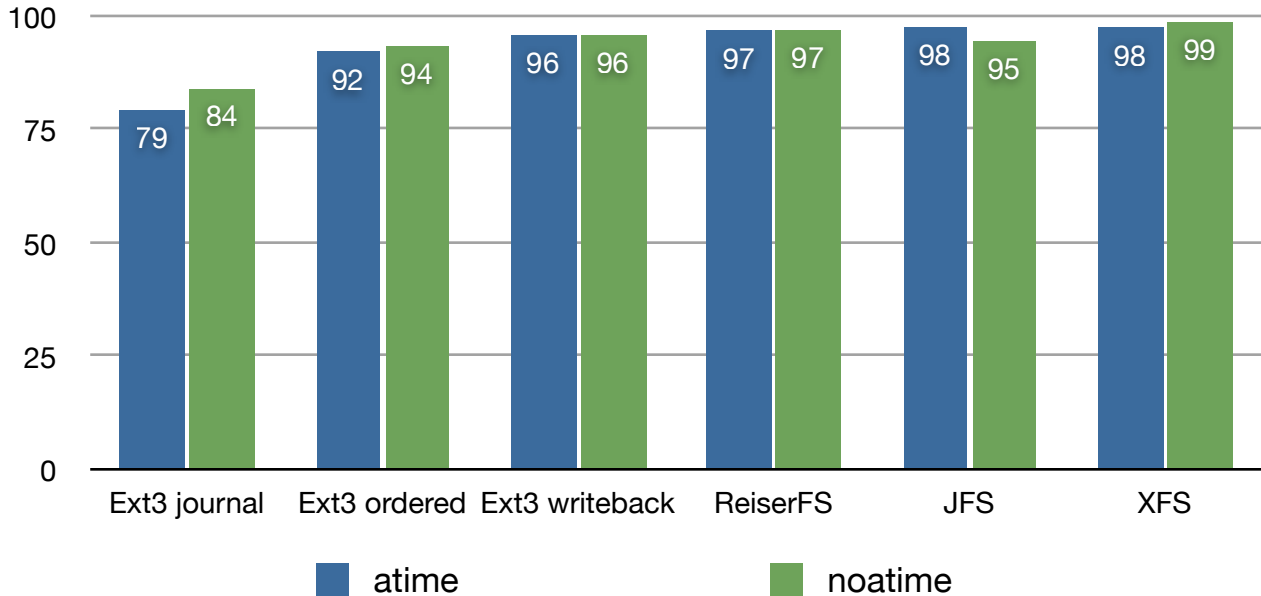
Duration (seconds)

	atime	noatime
Ext3 journal	125.9	118.5
Ext3 ordered	108.4	106.9
Ext3 writeback	104.3	104.1
ReiserFS	103.2	103.0
JFS	102.4	105.7
XFS	102.5	101.1

Performance (requests per second)

	atime	noatime
Ext3 journal	79.4	84.4
Ext3 ordered	92.3	93.5
Ext3 writeback	95.9	96.0
ReiserFS	96.9	97.1
JFS	97.7	94.7
XFS	97.6	98.9

Performance using 10000 shared buffers (requests per second)



Benchmarking ext3 and PostgreSQL shared buffers

XFS APC "atime" comparison

Duration (seconds)

	No APC	APC
1000 buffers	156.5	156.6
3500 buffers	106.3	97.3
10000 buffers	102.5	93.5

Performance (requests per second)

	No APC	APC
1000 buffers	63.9	63.9
3500 buffers	94.1	102.8
10000 buffers	97.6	107.0

Performance using XFS "atime" and APC (requests per second)

