Appendix A - Analysis Results (Tables and Graphs)

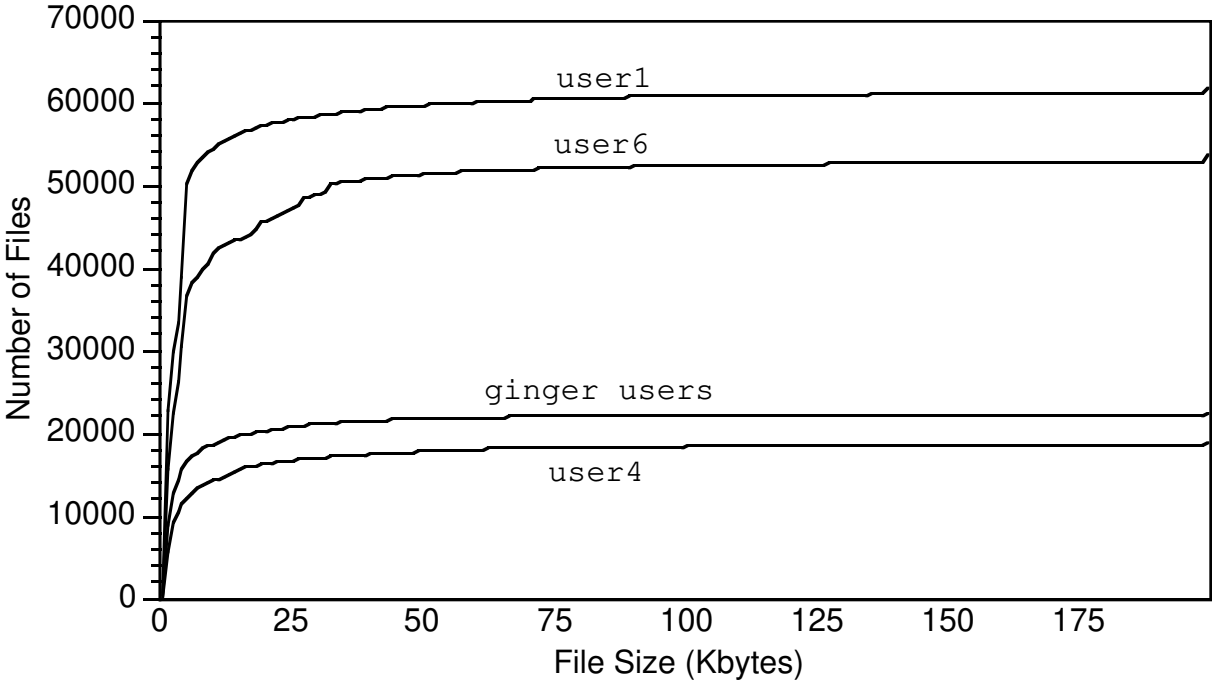
Day Num.	User1		User4		User6		Ginger Users		pcs		X11		local	
	day	date	day	date	day	date	day	date	day	date	day	date	day	date
1	Mon	8/19	Mon	8/19	Mon	8/19	Wed	9/4	Mon	8/19	Tue	8/20	Mon	8/19
2	Tue	8/20	Tue	8/20	Tue	8/20	Thu	9/5	Tue	8/20	Wed	8/21	Tue	8/20
3	Wed	8/21	Wed	8/21	Wed	8/21	Fri	9/6	Wed	8/21	Thu	8/22	Wed	8/21
4	Thu	8/22	Thu	8/22	Thu	8/22	Sat	9/7	Thu	8/22	Fri	8/23	Thu	8/22
5	Sat	8/24	Sat	8/24	Fri	8/23	Sun	9/8	Sat	8/24	Sat	8/24	Fri	8/23
6	Sun	8/25	Sun	8/25	Sat	8/24	Mon	9/9	Sun	8/25	Sun	8/25	Sat	8/24
7	Mon	8/26	Mon	8/26	Sun	8/25	Tue	9/10	Mon	8/26	Mon	8/26	Sun	8/25
8	Tue	8/27	Tue	8/27	Mon	8/26	Wed	9/11	Tue	8/27	Tue	8/27	Mon	8/26
9	Wed	8/28	Wed	8/28	Tue	8/27	Thu	9/12	Wed	8/28	Thu	8/29	Tue	8/27
10	Fri	8/30	Fri	8/30	Wed	8/28	Fri	9/13	Thu	8/29	Fri	8/30	Wed	8/28
11	Sat	8/31	Sat	8/31	Fri	8/30	Sat	9/14	Fri	8/30	Sat	8/31	Thu	8/29
12	Sun	9/1	Sun	9/1	Sat	8/31	Sun	9/15	Sat	8/31	Sun	9/1	Fri	8/30
13	Mon	9/2	Mon	9/2	Sun	9/1	Mon	9/16	Sun	9/1	Mon	9/2	Sat	8/31
14	Tue	9/3	Tue	9/3	Mon	9/2	Tue	9/17	Mon	9/2	Tue	9/3	Mon	9/2
15	Wed	9/4	Thu	9/5	Tue	9/3	Wed	9/18	Tue	9/3	Wed	9/4	Tue	9/3
16	Thu	9/5	Fri	9/6	Wed	9/4	Thu	9/19	Wed	9/4	Thu	9/5	Wed	9/4
17	Fri	9/6	Sat	9/7	Fri	9/6	Fri	9/20	Sat	9/7	Fri	9/6	Thu	9/5
18	Sun	9/8	Mon	9/9	Sat	9/7	Sat	9/21	Mon	9/9	Sat	9/7	Fri	9/6
19	Mon	9/9	Thu	9/12	Sun	9/8	Sun	9/22	Tue	9/10	Sun	9/8	Sat	9/7
20	Tue	9/10	Sat	9/14	Mon	9/9	Mon	9/23	Thu	9/12	Mon	9/9	Sun	9/8
21	Thu	9/12	Sun	9/15	Tue	9/10	Tue	9/24	Sat	9/14	Tue	9/10	Mon	9/9
22	Sat	9/14	Mon	9/16	Thu	9/12	Wed	9/25	Mon	9/16	Thu	9/12	Thu	9/12
23	Sun	9/15	Tue	9/17	Sat	9/14	Thu	9/26	Tue	9/17	Fri	9/13	Fri	9/13
24	Mon	9/16	Wed	9/18	Sun	9/15	Fri	9/27	Wed	9/18	Sun	9/15	Sun	9/15
25	Tue	9/17	Thu	9/19	Mon	9/16	Sat	9/28	Thu	9/19	Mon	9/16	Mon	9/16
26	Thu	9/19	Sun	9/22	Tue	9/17	Sun	9/29	Fri	9/20	Tue	9/17	Tue	9/17
27	Sun	9/22	Mon	9/23	Wed	9/18	Mon	9/30	Sun	9/22	Wed	9/18	Wed	9/18
28	Mon	9/23	Tue	9/24	Thu	9/19	Tue	10/1	Mon	9/23	Thu	9/19	Thu	9/19
29	Tue	9/24	Wed	9/25	Sun	9/22	Wed	10/2	Tue	9/24	Fri	9/20	Fri	9/20
30	Wed	9/25	Thu	9/26	Mon	9/23	Thu	10/3	Wed	9/25	Sat	9/21	Sun	9/22
31	Thu	9/26	Sat	9/28	Tue	9/24	Fri	10/4	Sat	9/28	Sun	9/22	Mon	9/23
32	Sat	9/28	Sun	9/29	Wed	9/25	Sat	10/5	Sun	9/29	Mon	9/23	Tue	9/24
33	Sun	9/29	Mon	9/30	Thu	9/26	Mon	10/7	Tue	10/1	Tue	9/24	Wed	9/25
34	Mon	9/30	Tue	10/1	Sat	9/28	Tue	10/8	Wed	10/2	Wed	9/25	Thu	9/26
35	Tue	10/1	Wed	10/2	Sun	9/29	Wed	10/9	Thu	10/3	Thu	9/26	Fri	9/27
36	Wed	10/2	Thu	10/3	Mon	9/30	Thu	10/10	Fri	10/4	Fri	9/27	Sun	9/29
37	Thu	10/3	Sat	10/5	Tue	10/1	Fri	10/11	Sat	10/5	Sun	9/29	Mon	9/30
38	Sat	10/5	Sun	10/6	Wed	10/2	Sat	10/12	Sun	10/6	Mon	9/30	Tue	10/1
39	Sun	10/6	Mon	10/7	Thu	10/3	Sun	10/13	Wed	10/9	Tue	10/1	Wed	10/2
40	Mon	10/7	Tue	10/8	Sat	10/5	Mon	10/14	Fri	10/11	Thu	10/3	Thu	10/3
41	Tue	10/8	Wed	10/9	Sun	10/6	Tue	10/15	Sat	10/12	Fri	10/4	Fri	10/4
42	Wed	10/9	Thu	10/10	Mon	10/7	Wed	10/16	Sun	10/13	Sun	10/6	Sun	10/6

Table 3: Dates of File Activity Captured in Traces (continued on next page)

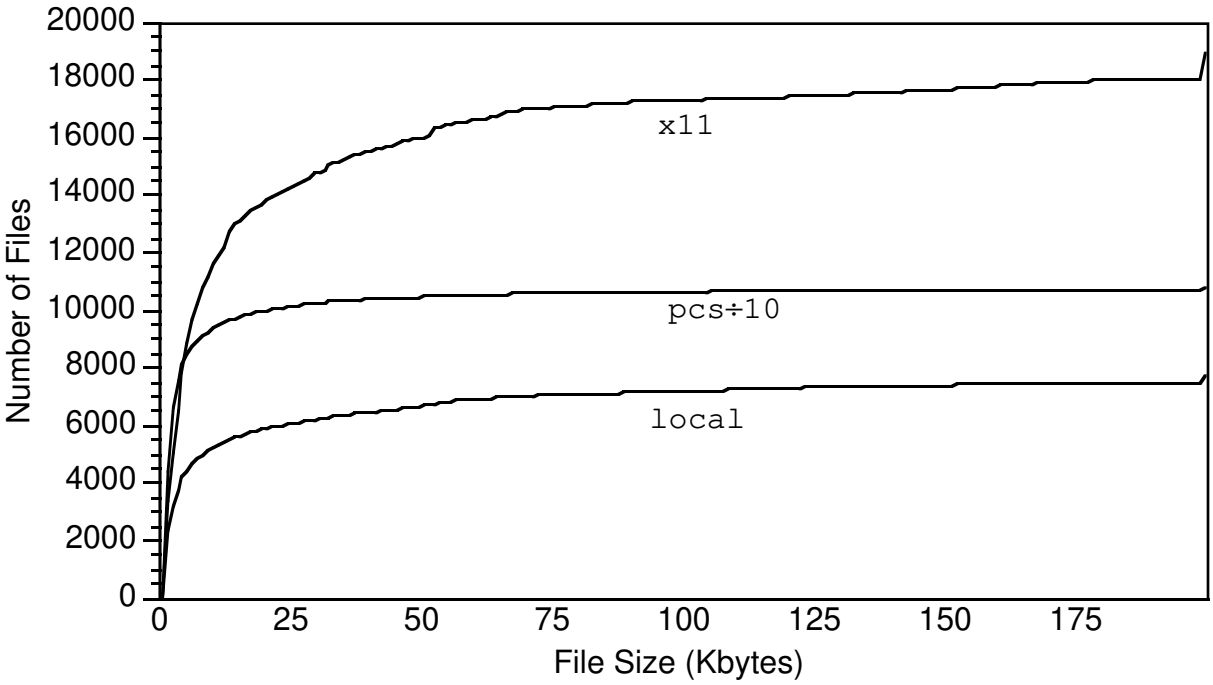
Day Num.	User1		User4		User6		Ginger Users		pcs		X11		local	
	day	date	day	date	day	date	day	date	day	date	day	date	day	date
43	Thu	10/10	Sat	10/12	Tue	10/8	Thu	10/17	Mon	10/14	Tue	10/8	Mon	10/7
44	Sat	10/12	Sun	10/13	Wed	10/9	Fri	10/18	Wed	10/16	Wed	10/9	Tue	10/8
45	Sun	10/13	Mon	10/14	Sat	10/12	Sat	10/19	Thu	10/17	Thu	10/10	Wed	10/9
46	Mon	10/14	Wed	10/16	Sun	10/13	Sun	10/21	Fri	10/18	Fri	10/11	Fri	10/11
47	Wed	10/16	Thu	10/17	Mon	10/14	Tue	10/22	Sat	10/19	Sat	10/12	Sun	10/13
48	Thu	10/17	Fri	10/18	Wed	10/16	Wed	10/23	Mon	10/21	Sun	10/13	Mon	10/14
49	Fri	10/18	Sat	10/19	Thu	10/17	Thu	10/24	Tue	10/22	Mon	10/14	Wed	10/16
50	Sat	10/19	Tue	10/22	Fri	10/18	Fri	10/25	Wed	10/23	Wed	10/16	Thu	10/17
51	Mon	10/21	Wed	10/23	Sat	10/19	Sat	10/26	Thu	10/24	Thu	10/17	Fri	10/18
52	Tue	10/22	Thu	10/24	Tue	10/22	Sun	10/27	Fri	10/25	Fri	10/18	Sat	10/19
53	Wed	10/23	Fri	10/25	Wed	10/23	Mon	10/28	Sat	10/26	Sat	10/19	Sun	10/21
54	Thu	10/24	Sun	10/27	Thu	10/24	Tue	10/29	Sun	10/27	Sun	10/21	Wed	10/23
55	Fri	10/25	Mon	10/28	Fri	10/25	Wed	10/30	Mon	10/28	Wed	10/23	Thu	10/24
56	Sun	10/27	Tue	10/29	Sun	10/27	Thu	10/31	Tue	10/29	Thu	10/24	Fri	10/25
57	Mon	10/28	Wed	10/30	Mon	10/28	Fri	11/1	Wed	10/30	Fri	10/25	Sat	10/26
58	Tue	10/29	Thu	10/31	Tue	10/29	Sat	11/2	Thu	10/31	Sat	10/26	Mon	10/28
59	Wed	10/30	Fri	11/1	Wed	10/30	Sun	11/3	Fri	11/1	Sun	10/27	Tue	10/29
60	Thu	10/31	Sat	11/2	Thu	10/31	Mon	11/4	Sat	11/2	Mon	10/28	Wed	10/30
61	Fri	11/1	Mon	11/4	Fri	11/1	Tue	11/5	Tue	11/5	Tue	10/29	Thu	10/31
62	Sat	11/2	Tue	11/5	Sat	11/2	Wed	11/6	Wed	11/6	Wed	10/30	Fri	11/1
63	Mon	11/4	Wed	11/6	Mon	11/4	Thu	11/7	Thu	11/7	Thu	10/31	Sat	11/2
64	Tue	11/5	Fri	11/8	Tue	11/5	Fri	11/8	Fri	11/8	Fri	11/1	Sun	11/3
65	Wed	11/6	Sat	11/9	Wed	11/6	Sat	11/9	Sat	11/9	Sat	11/2	Tue	11/5
66	Thu	11/7	Mon	11/11	Thu	11/7	Sun	11/10	Mon	11/11	Tue	11/5	Wed	11/6
67	Fri	11/8	Tue	11/12	Fri	11/8	Mon	11/11	Tue	11/12	Wed	11/6	Thu	11/7
68	Sat	11/9	Wed	11/13	Sat	11/9	Tue	11/12	Wed	11/13	Thu	11/7	Fri	11/8
69	Mon	11/11	Thu	11/14	Mon	11/11	Wed	11/13	Thu	11/14	Fri	11/8	Sat	11/9
70	Tue	11/12	Fri	11/15	Tue	11/12	Thu	11/14	Fri	11/15	Sat	11/9	Sun	11/10
71	Wed	11/13	Sat	11/16	Wed	11/13	Fri	11/15	Sat	11/16	Sun	11/10	Mon	11/11
72	Thu	11/14	Sun	11/17	Thu	11/14	Sat	11/16	Sun	11/17	Mon	11/11	Tue	11/12
73	Fri	11/15	Mon	11/18	Fri	11/15	Sun	11/17	Tue	11/19	Tue	11/12	Wed	11/13
74	Sat	11/16	Tue	11/19	Sat	11/16	Mon	11/18	Wed	11/20	Wed	11/13	Thu	11/14
75	Mon	11/18	Wed	11/20	Sun	11/17	Tue	11/19	Thu	11/21	Thu	11/14	Fri	11/15
76	Tue	11/19	Thu	11/21	Mon	11/18	Wed	11/20	Sat	11/23	Fri	11/15	Sat	11/16
77	Wed	11/20			Wed	11/20	Thu	11/21	Sun	11/24	Sat	11/16	Sun	11/17
78	Thu	11/21			Thu	11/21	Fri	11/22			Sun	11/17	Wed	11/20
79					Sun	11/24	Sat	11/23			Tue	11/19	Thu	11/21
80					Mon	11/25					Wed	11/20	Sat	11/23
81											Thu	11/21	Sun	11/24
82											Fri	11/22		
83											Sat	11/23		
84											Sun	11/24		

Table 3: Dates of File Activity Captured in Traces (continued from page 1)

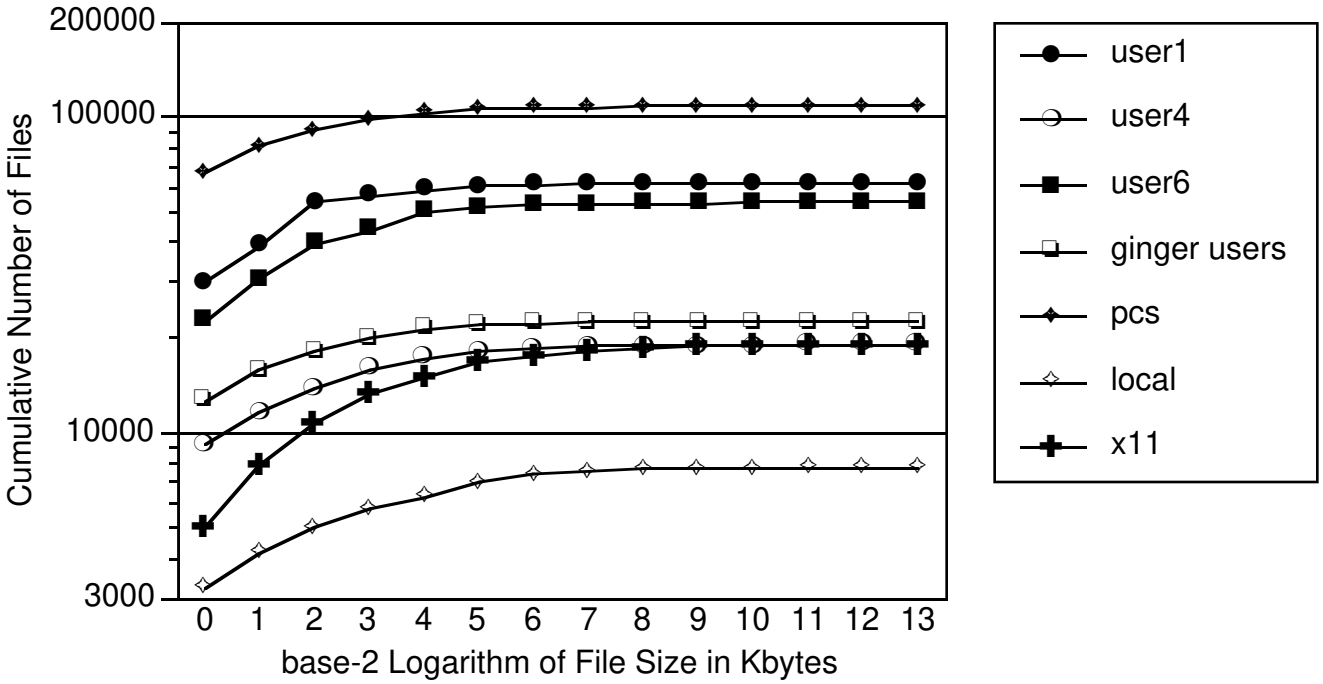
Cumulative File Size Distributions – User Disks



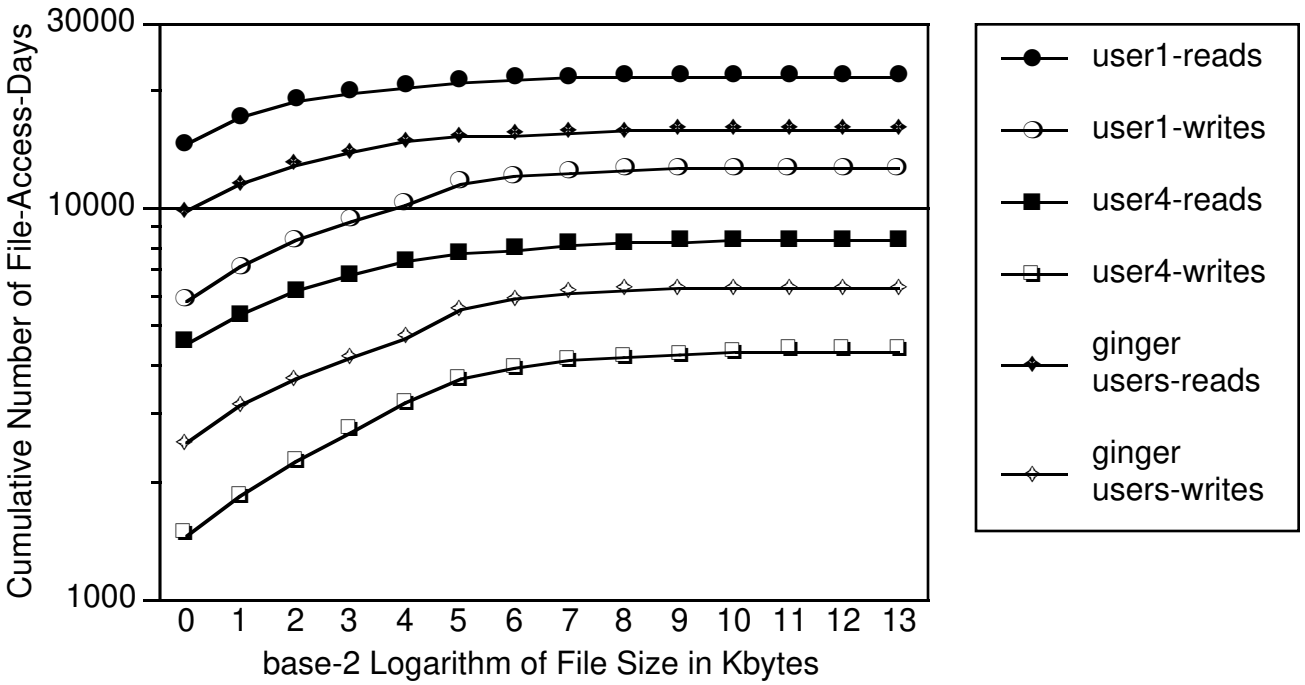
Cumulative File Size Distributions – "non-user" Disks



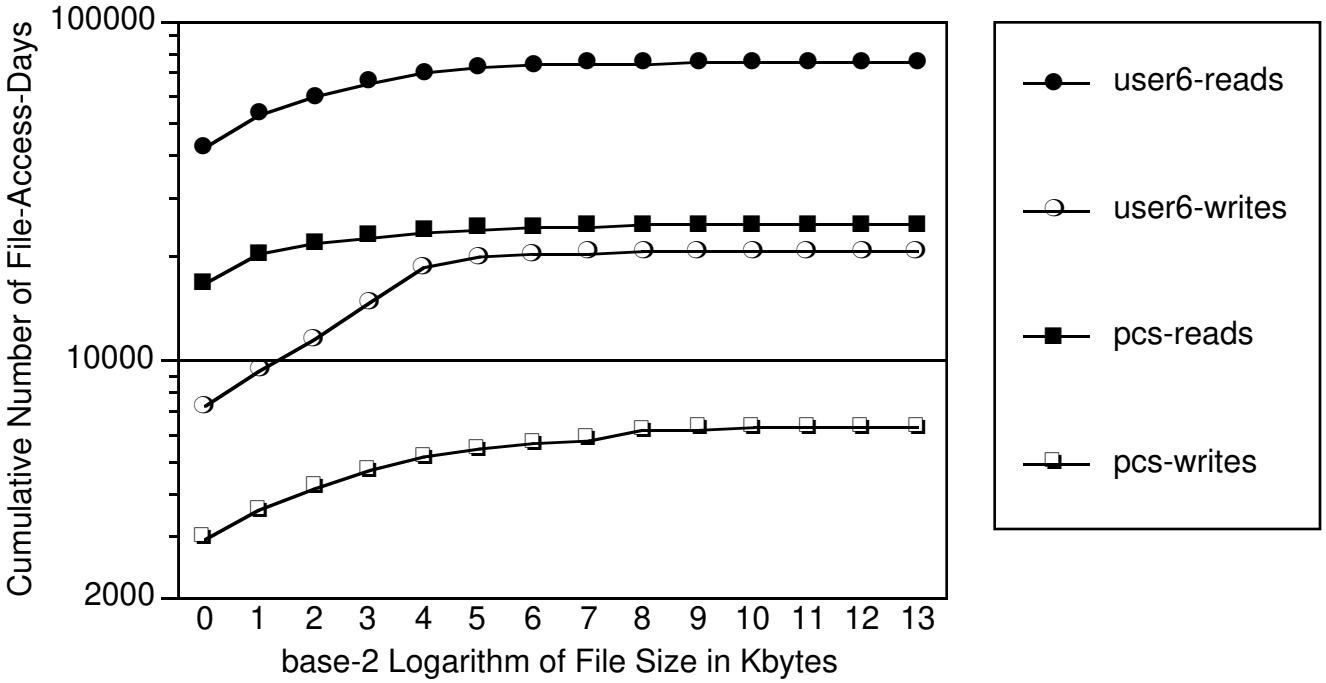
Cumulative File Size Distributions – All Disks (log-log scale)



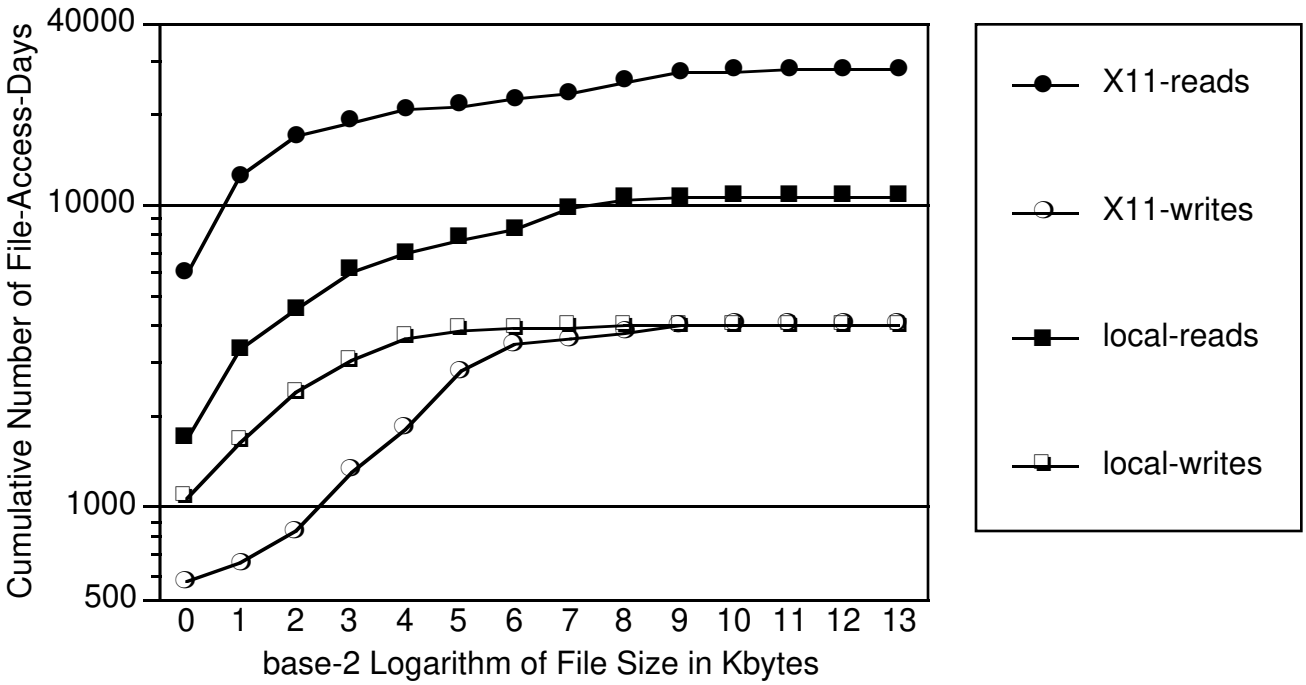
Cumulative File Size Distributions Weighted by Access (log-log)



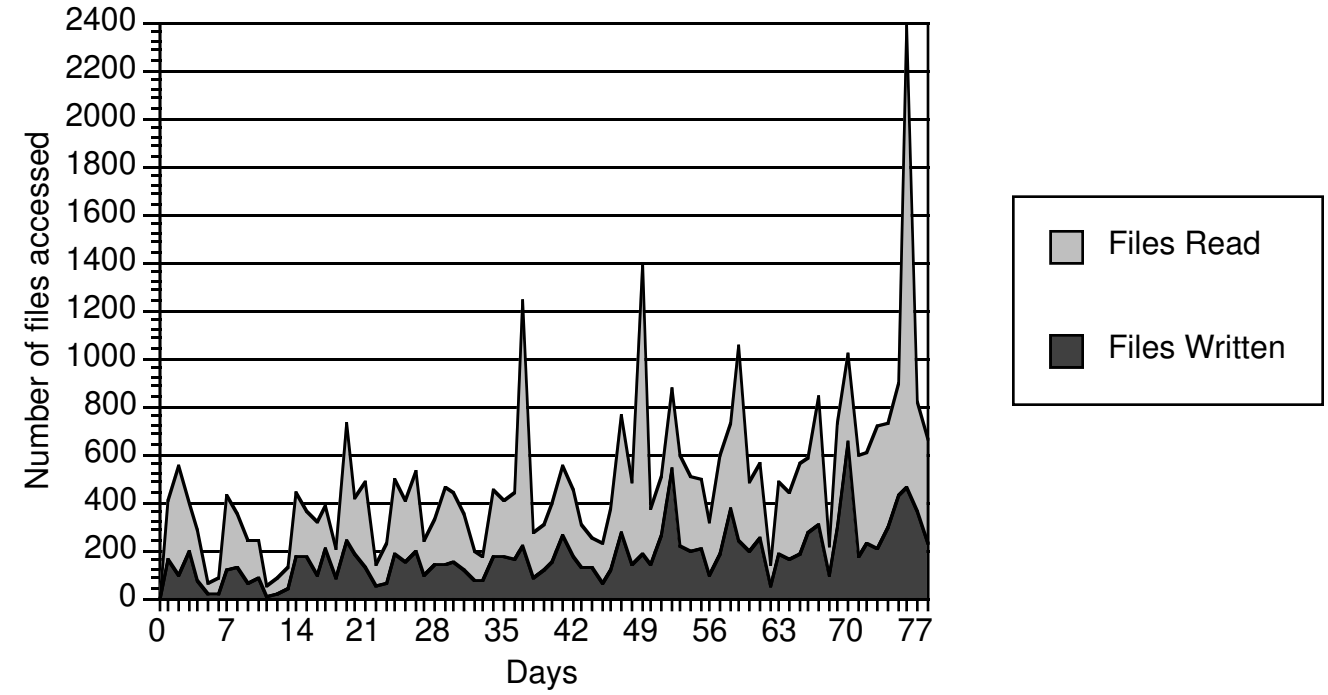
Cumulative File Size Distributions Weighted by Access (log-log)



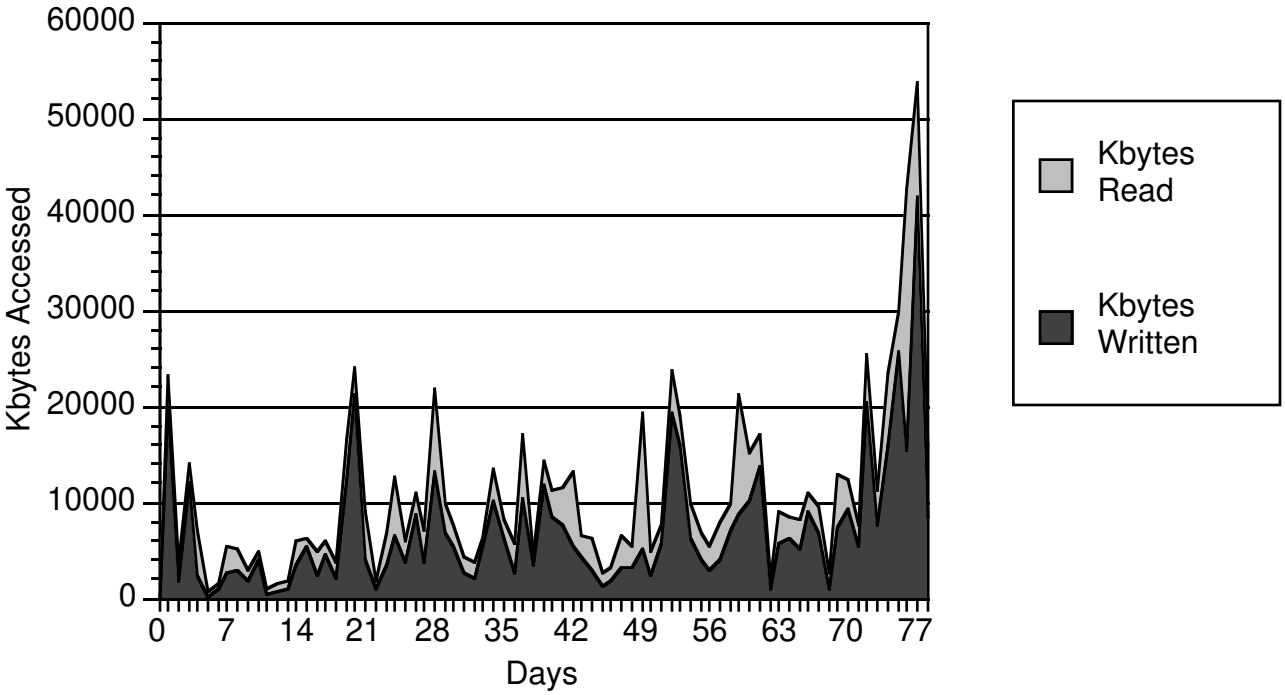
Cumulative File Size Distributions Weighted by Access (log-log)



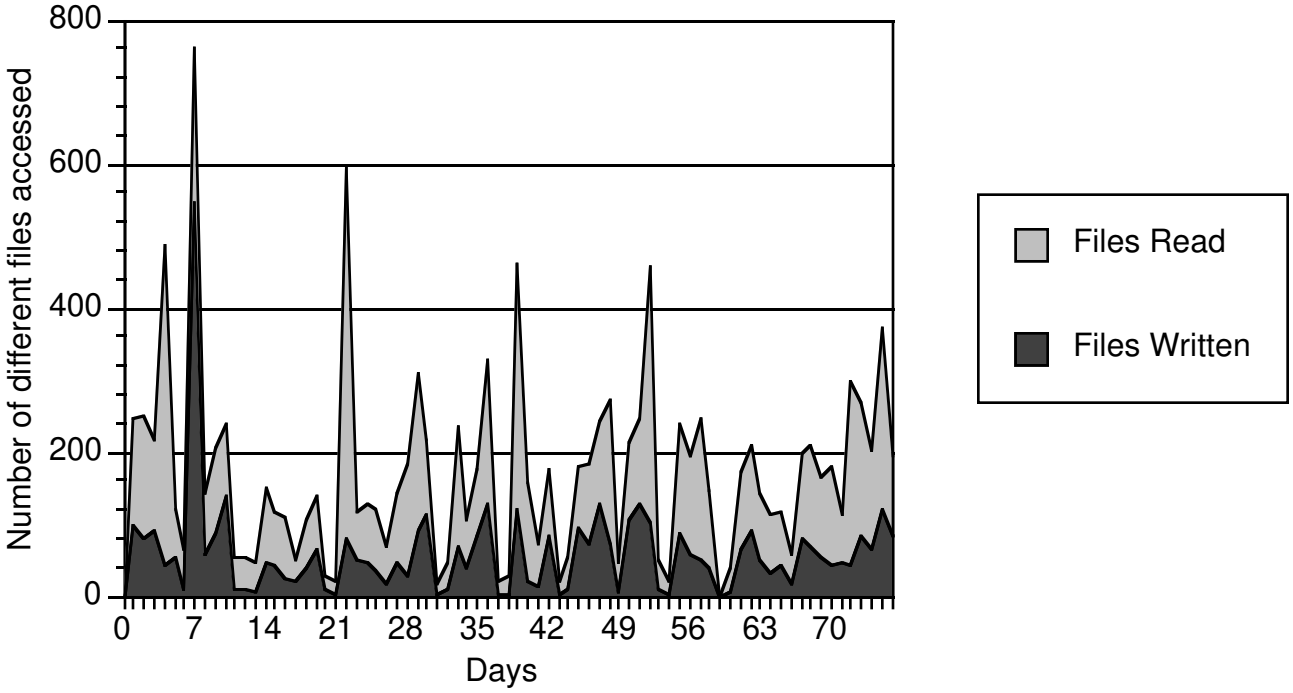
Sprite User1 - Files Accessed vs. Days



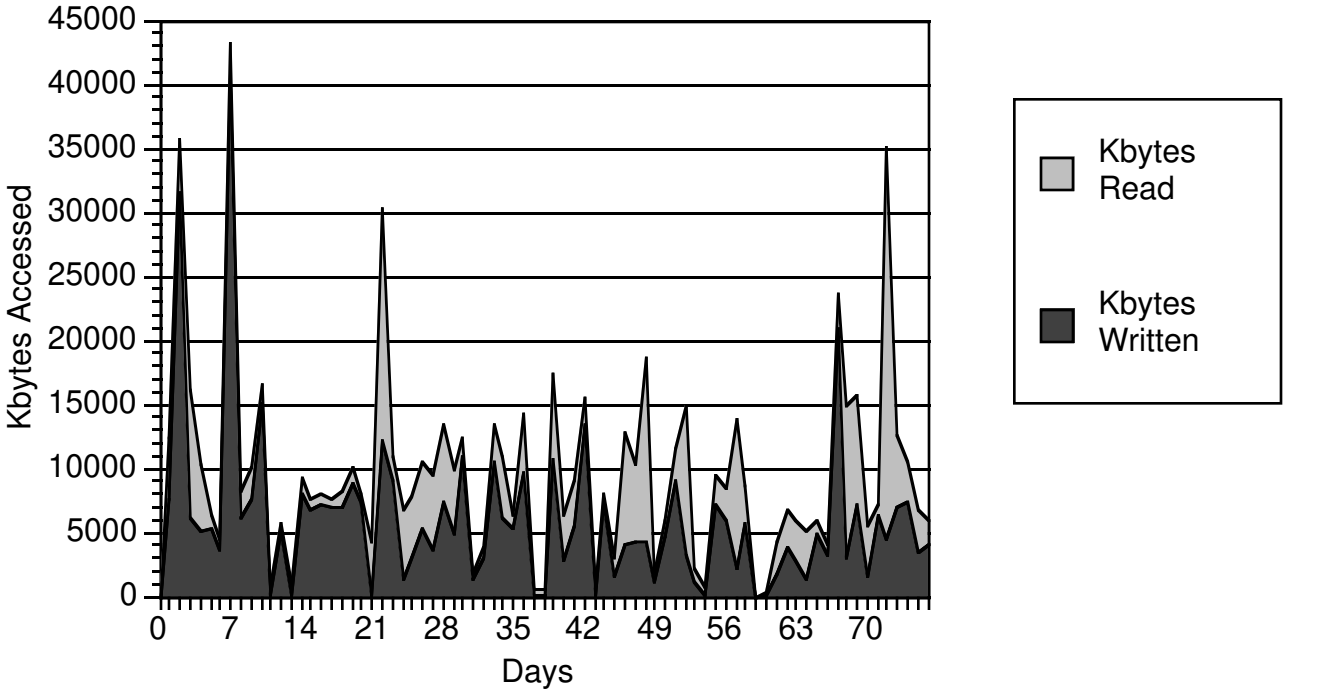
Sprite User1 - Kbytes Accessed vs. Days

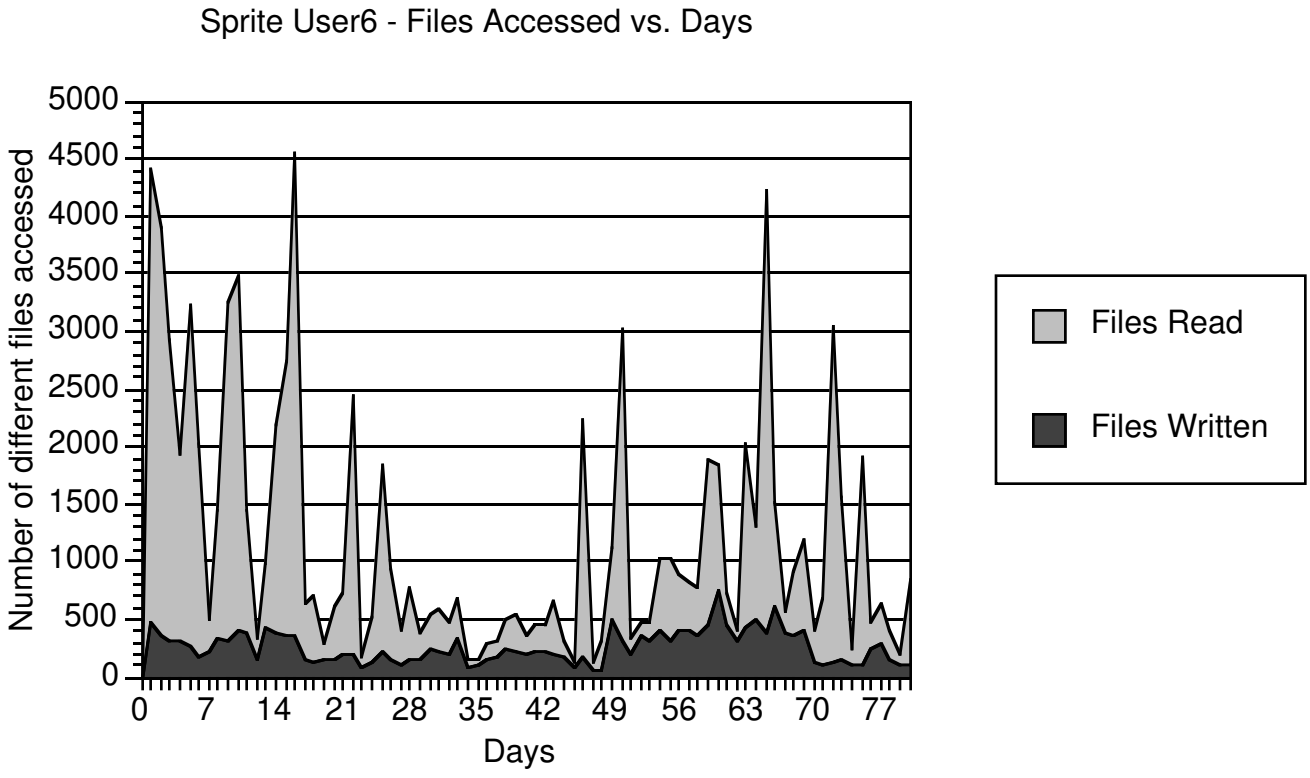


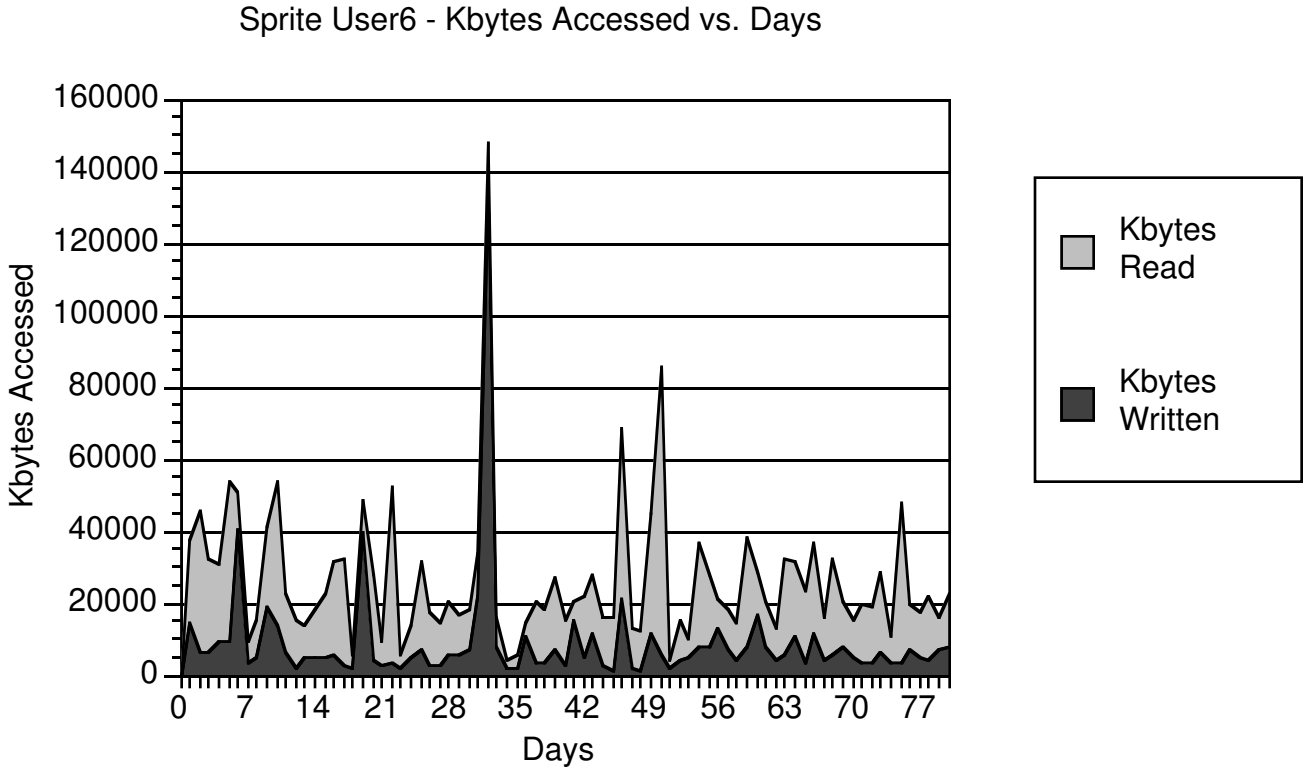
Sprite User4 - Files Accessed vs. Days

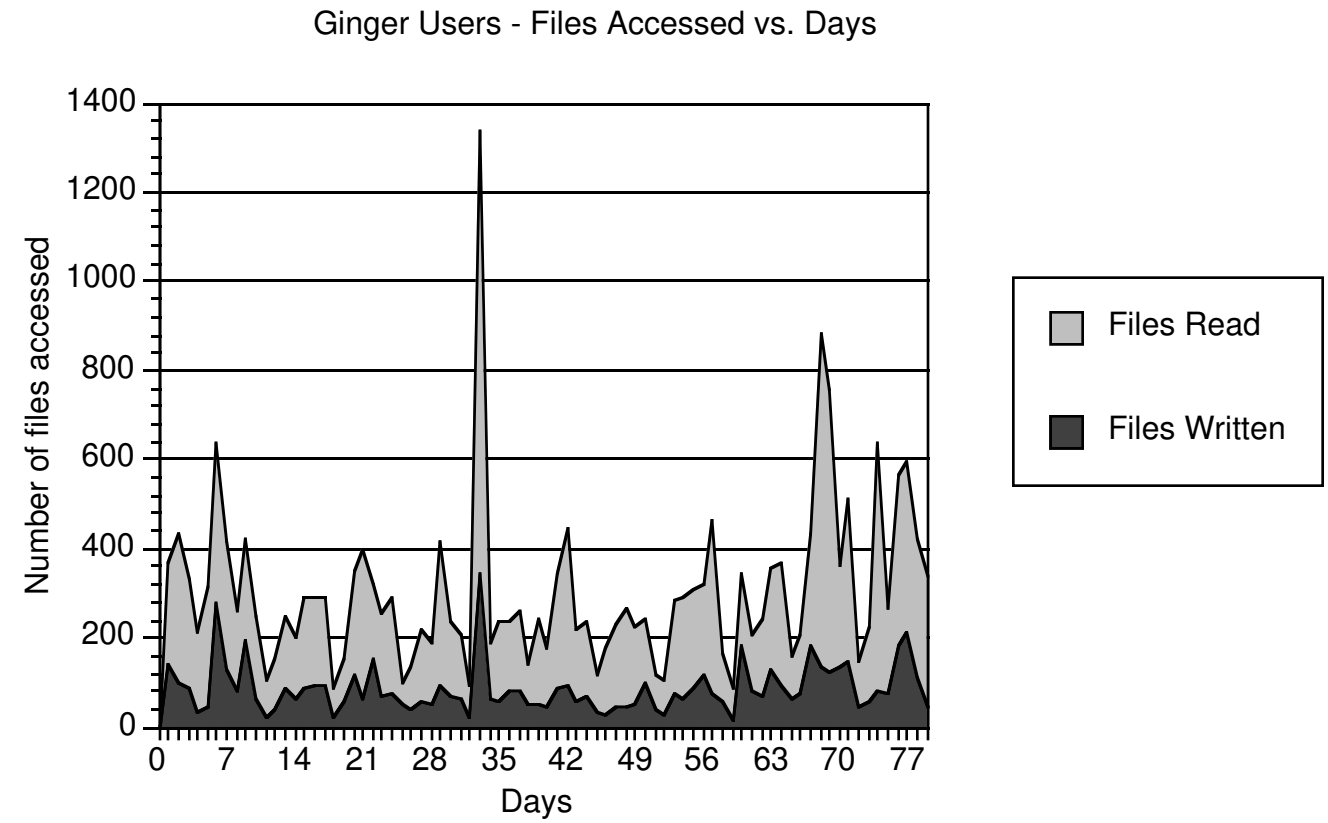


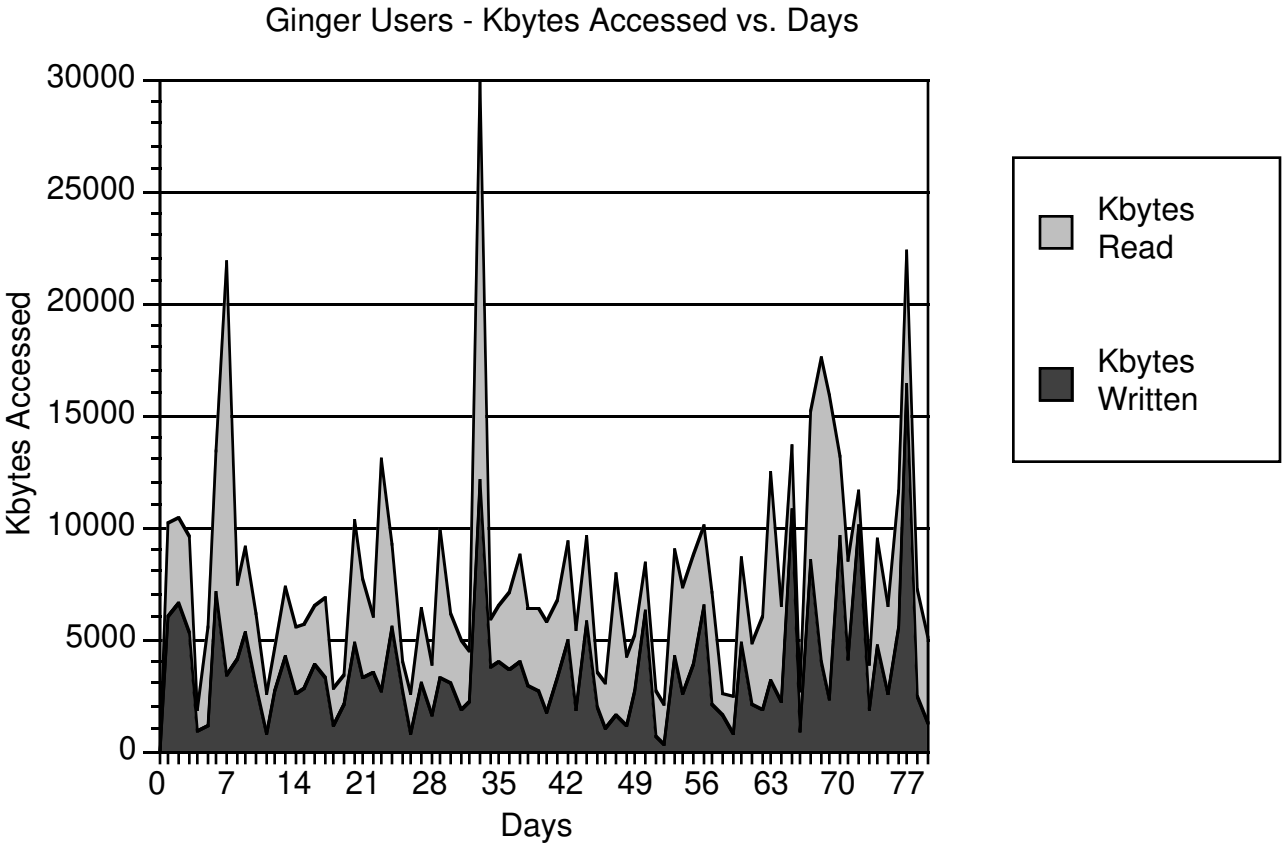
Sprite User4 - Kbytes Accessed vs. Days

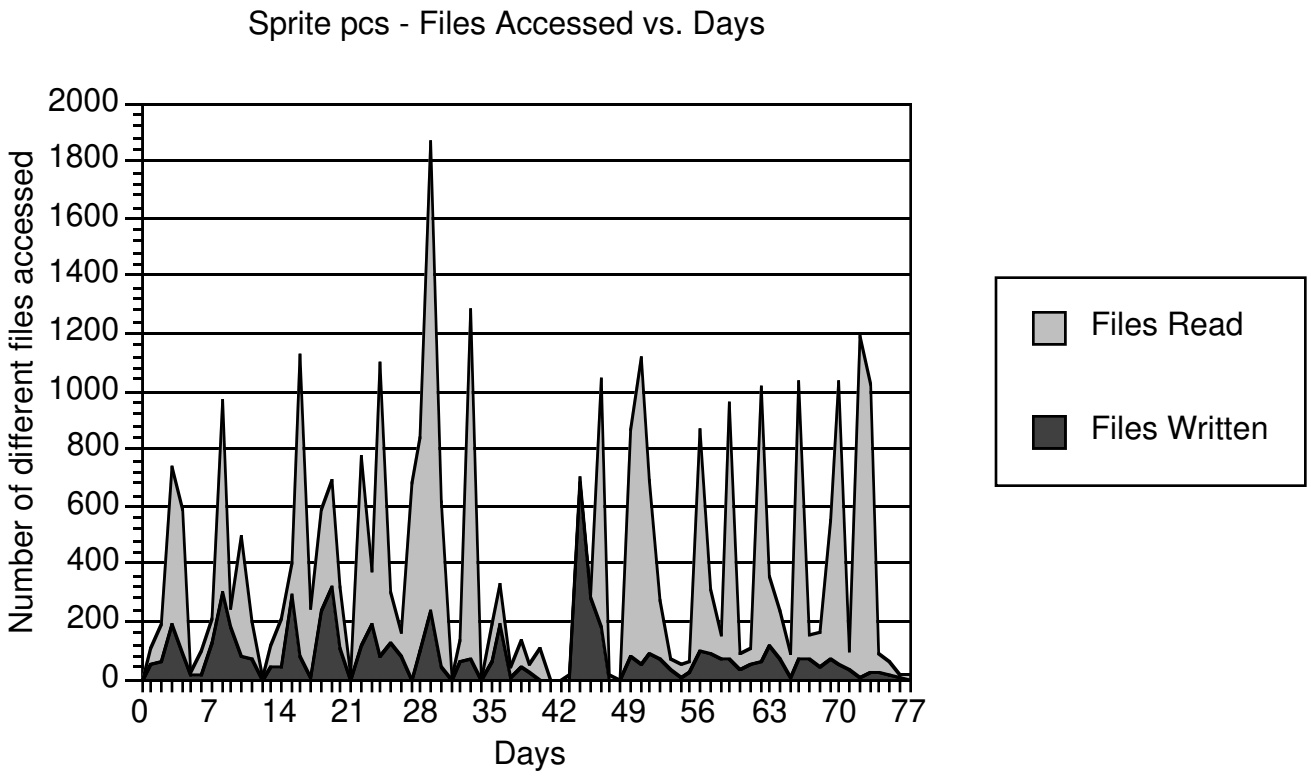


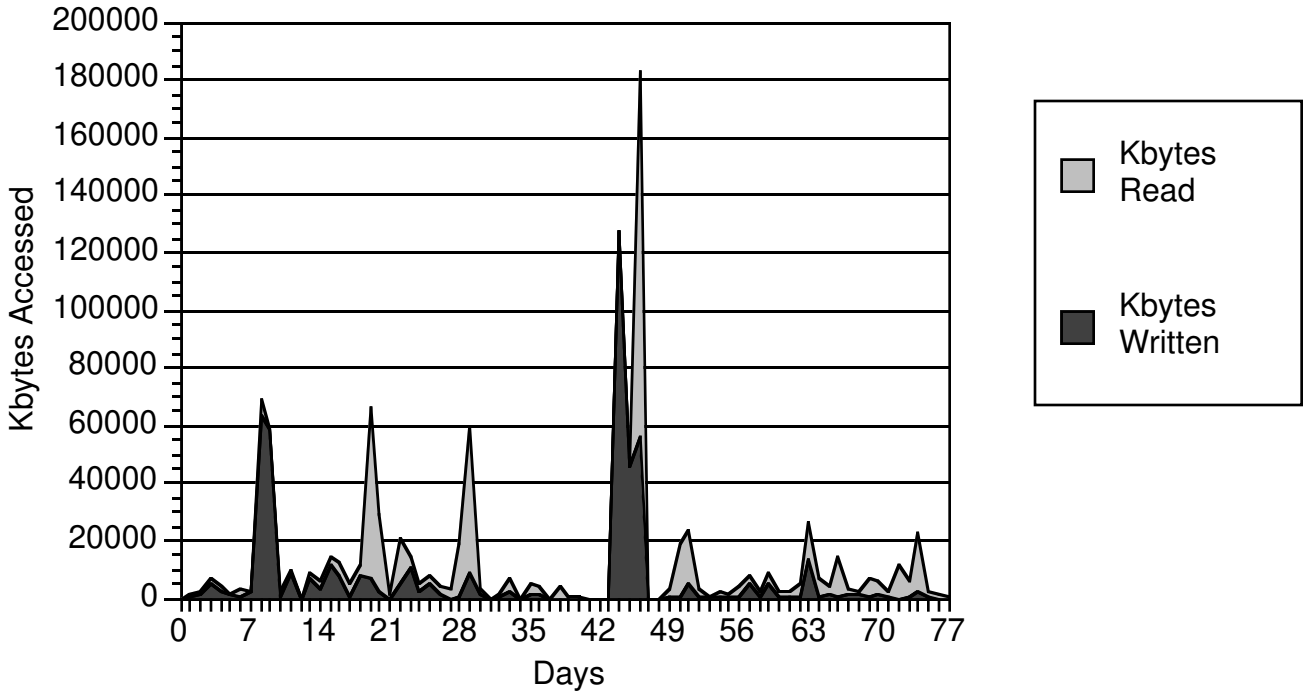

Sprite User6 - Files Accessed vs. Days
Number of different files accessed
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
7
14
21
28
35
42
49
56
63
70
77
Days
Files Read
Files Written

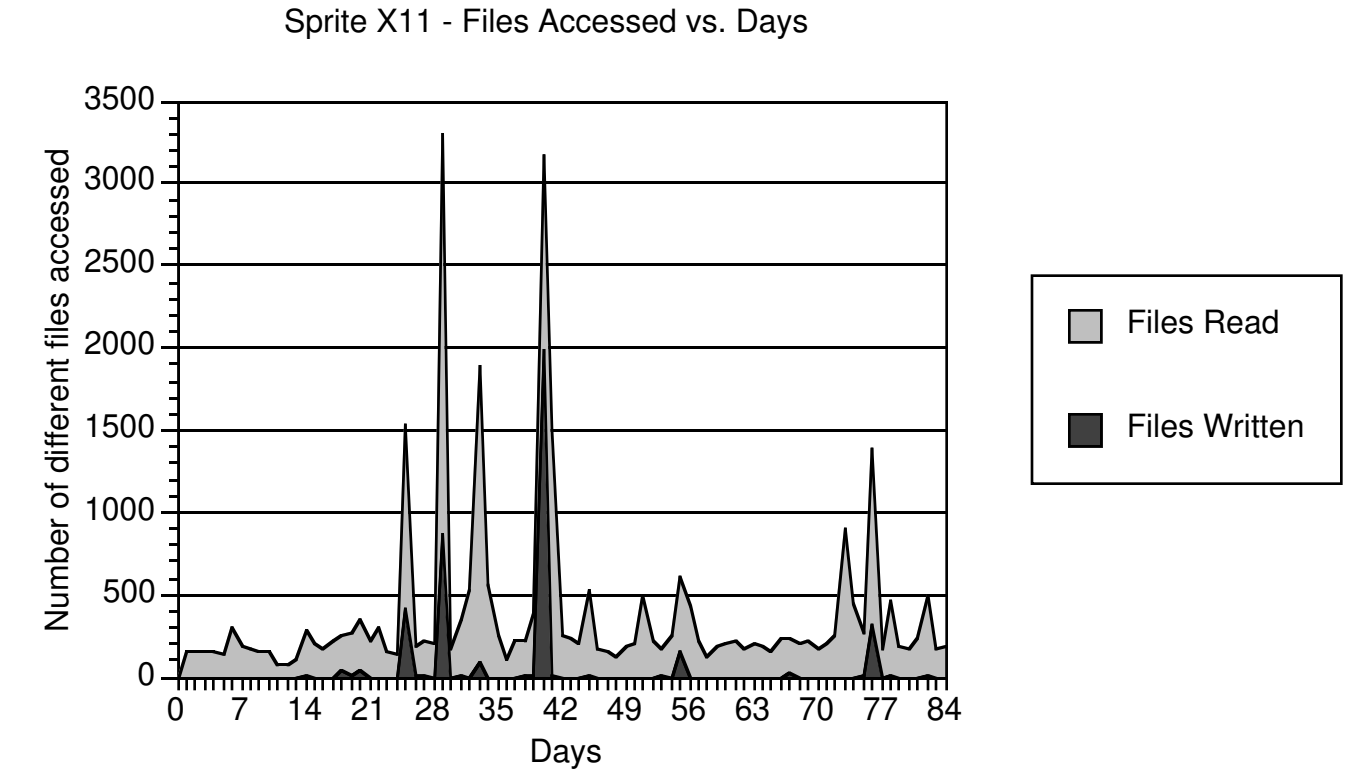

Sprite User6 - Kbytes Accessed vs. Days
Kbytes Accessed
160000
140000
120000
100000
80000
60000
40000
20000
0
0
7
14
21
28
35
42
49
56
63
70
77
Days
Kbytes Read
Kbytes Written

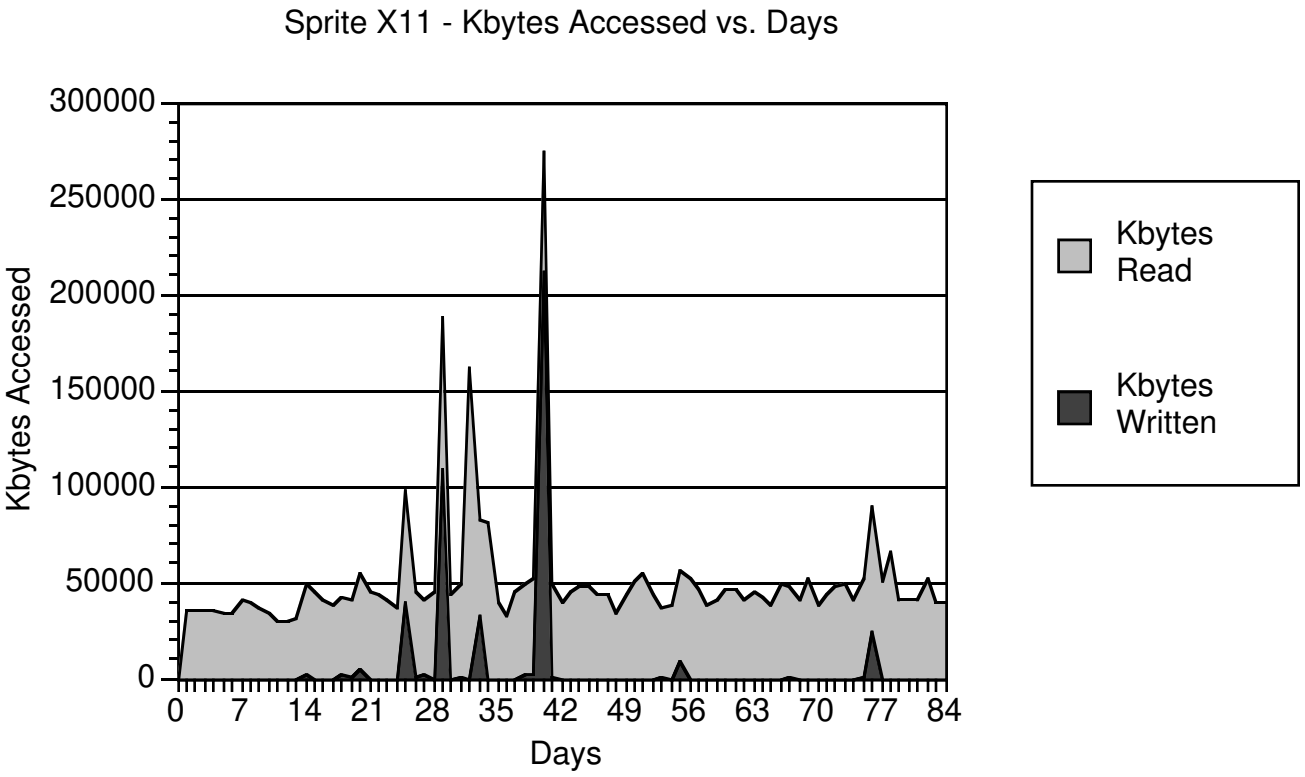

Ginger Users - Files Accessed vs. Days
Number of files accessed
1400
1200
1000
800
600
400
200
0
0 7 14 21 28 35 42 49 56 63 70 77
Days
Files Read
Files Written

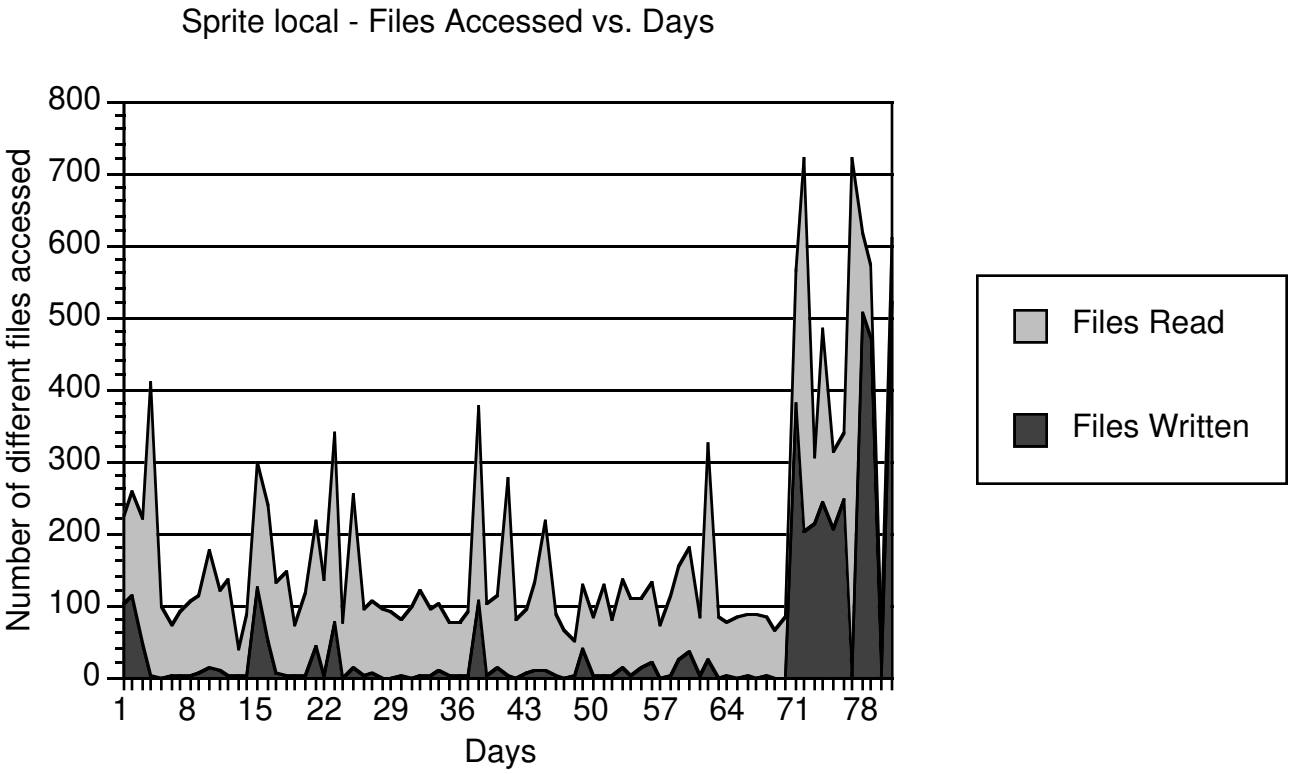

Ginger Users - Kbytes Accessed vs. Days
Kbytes Accessed
30000
25000
20000
15000
10000
5000
0
0 7 14 21 28 35 42 49 56 63 70 77
Days
Kbytes Read
Kbytes Written

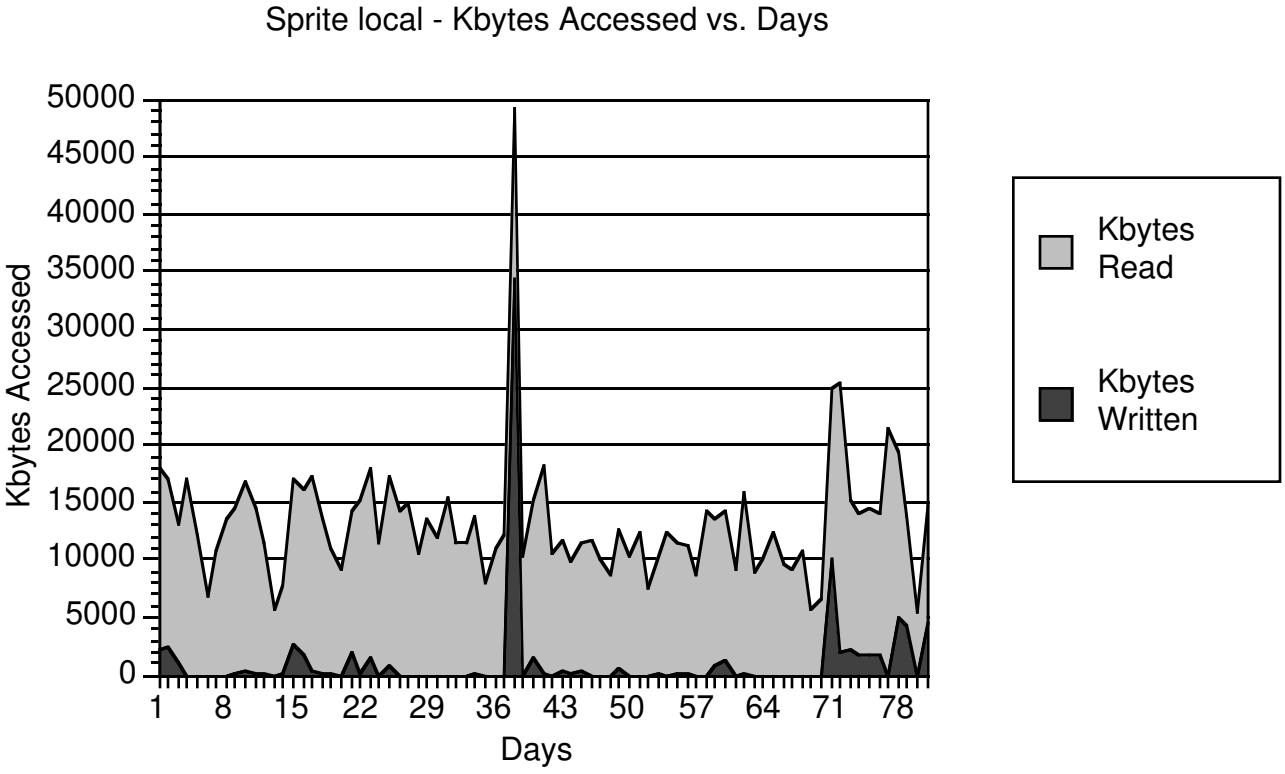

Sprite pcs - Files Accessed vs. Days
Number of different files accessed
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0 7 14 21 28 35 42 49 56 63 70 77
Days
Files Read
Files Written


Sprite pcs - Kbytes Accessed vs. Days
Kbytes Accessed
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
0 7 14 21 28 35 42 49 56 63 70 77
Days
Kbytes Read
Kbytes Written

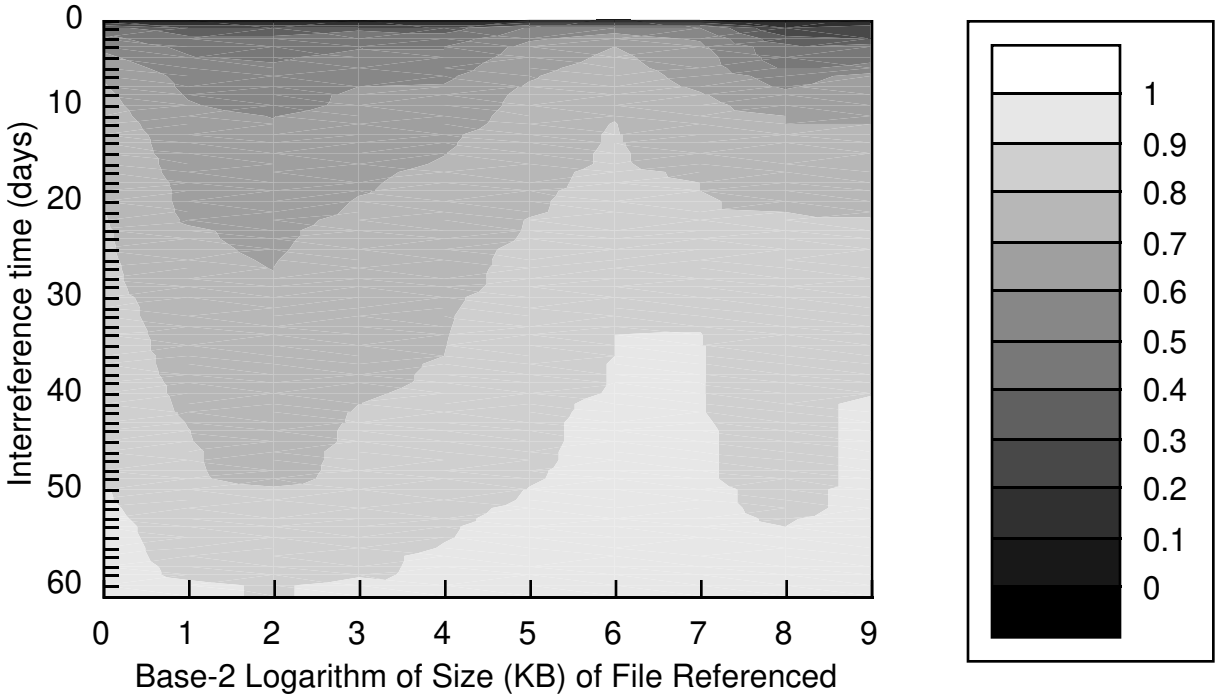

Sprite X11 - Files Accessed vs. Days
Number of different files accessed
3500
3000
2500
2000
1500
1000
500
0
0 7 14 21 28 35 42 49 56 63 70 77 84
Days
Files Read
Files Written


Sprite X11 - Kbytes Accessed vs. Days
Kbytes Accessed
300000
250000
200000
150000
100000
50000
0
0 7 14 21 28 35 42 49 56 63 70 77 84
Days
Kbytes Read
Kbytes Written

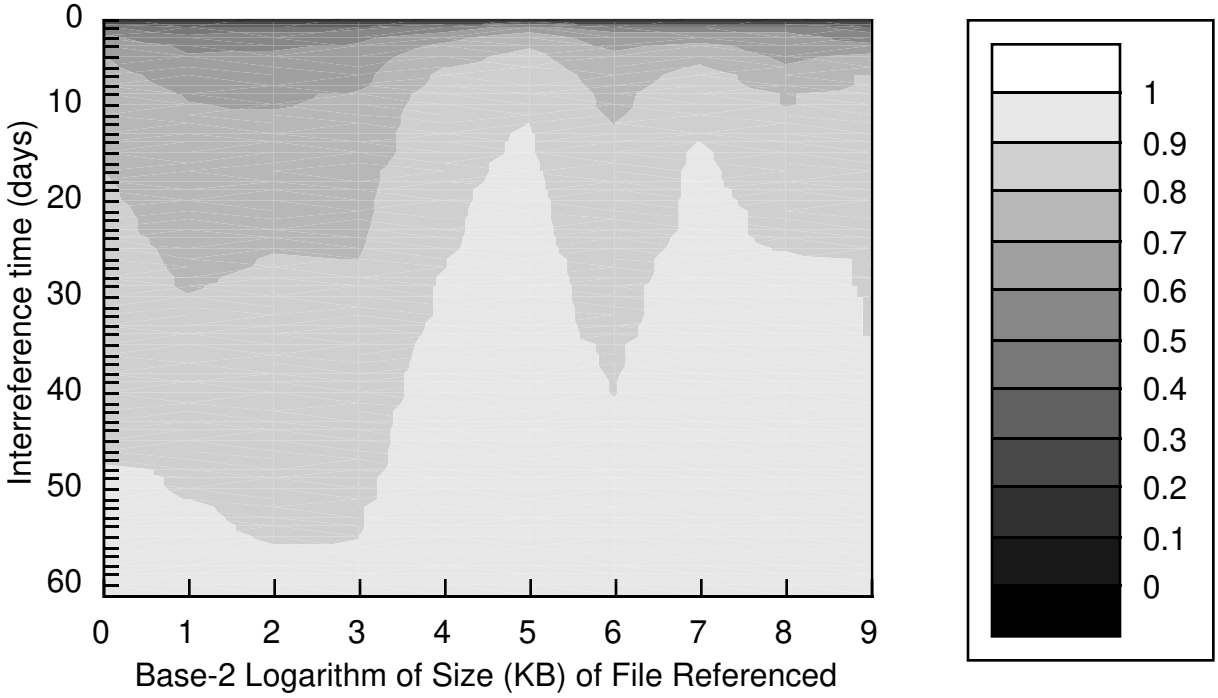

Sprite local - Files Accessed vs. Days
Number of different files accessed
800
700
600
500
400
300
200
100
0
1
8
15
22
29
36
43
50
57
64
71
78
Days
Files Read
Files Written


Sprite local - Kbytes Accessed vs. Days
Kbytes Accessed
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
1
8
15
22
29
36
43
50
57
64
71
78
Days
Kbytes Read
Kbytes Written

Sprite User1 – File Interreference Distributions – Reads

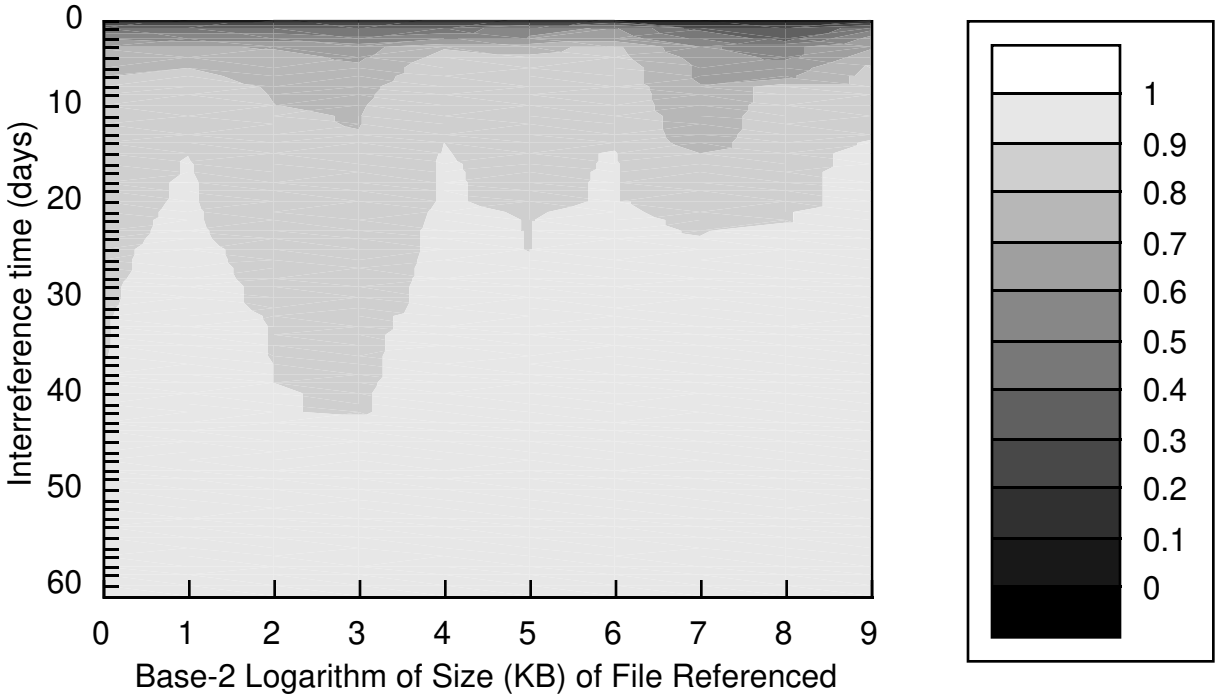


Sprite User1 – File Interreference Distributions – Writes

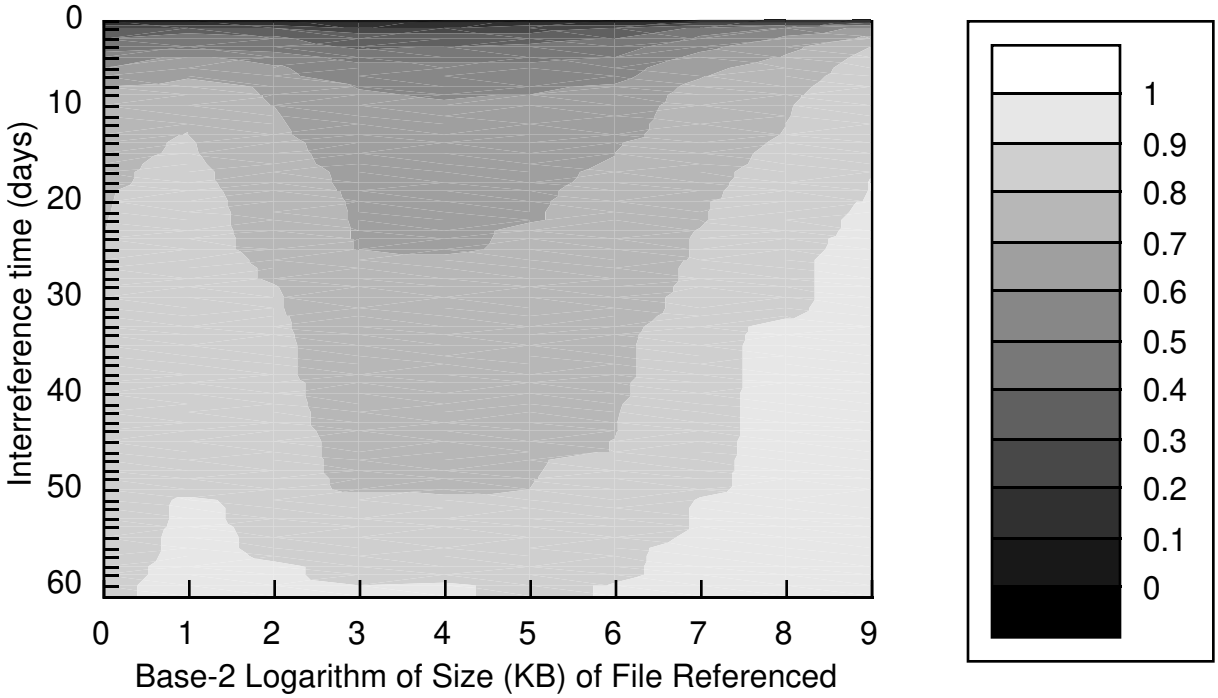


Sprite User4 – File Interreference Distributions – Reads

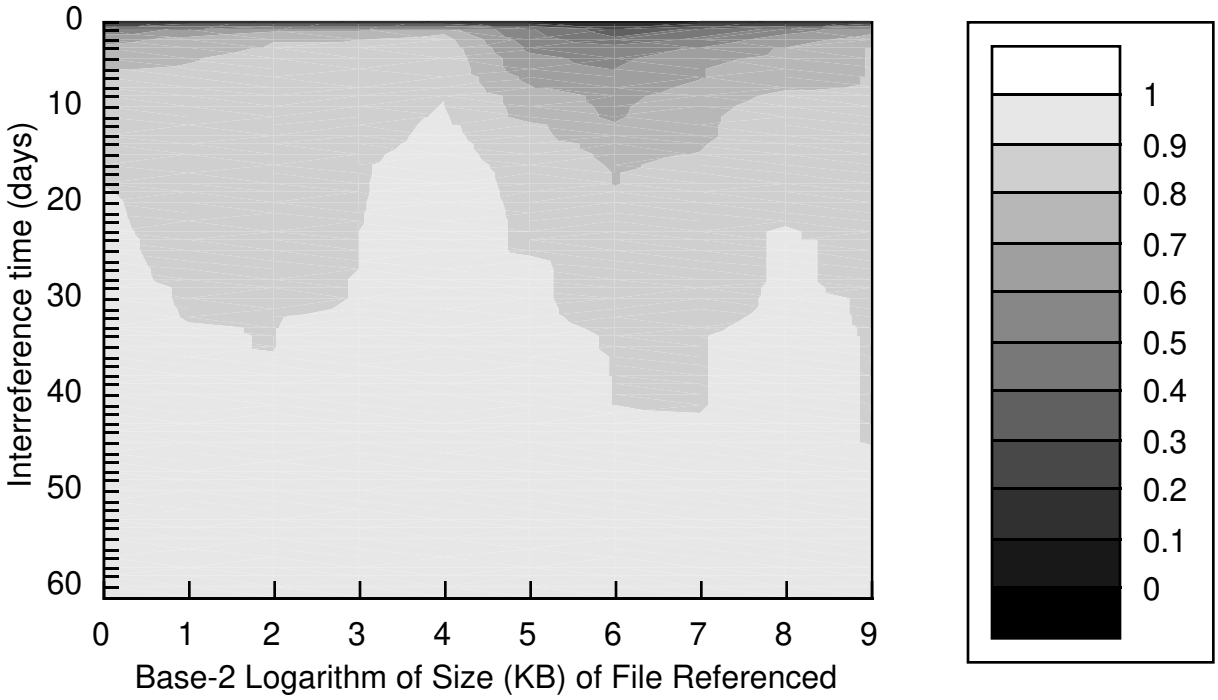
Sprite User4 – File Interreference Distributions – Writes



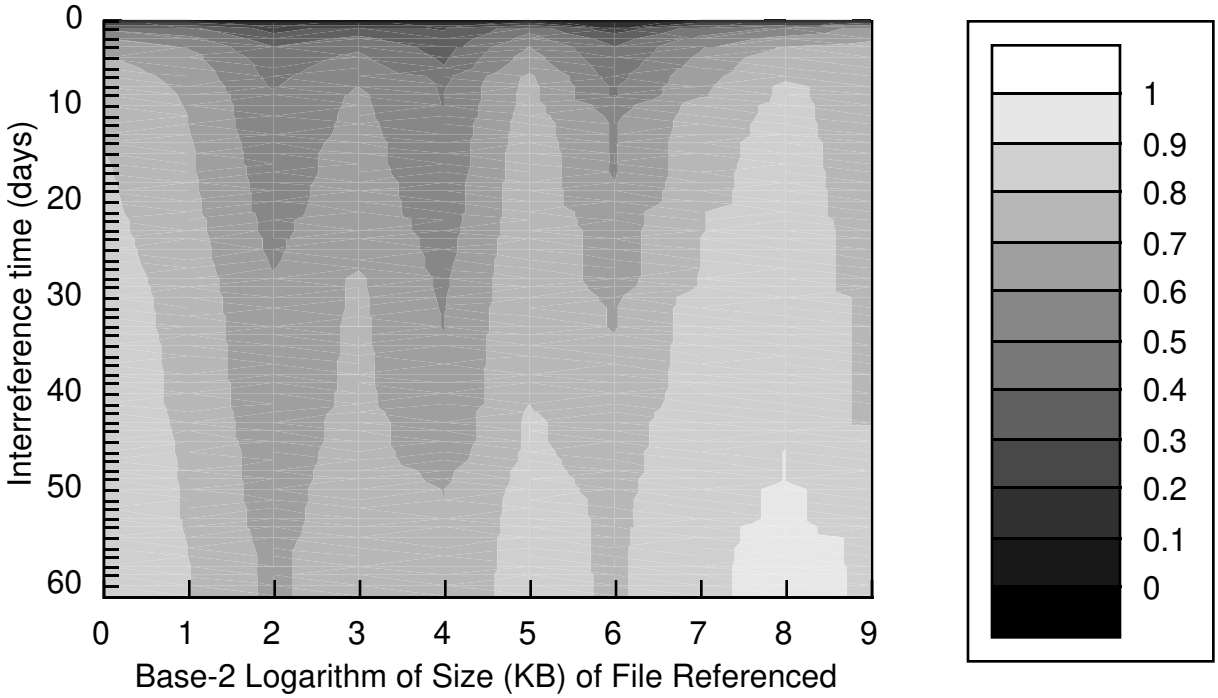
Sprite User6 – File Interreference Distributions – Reads



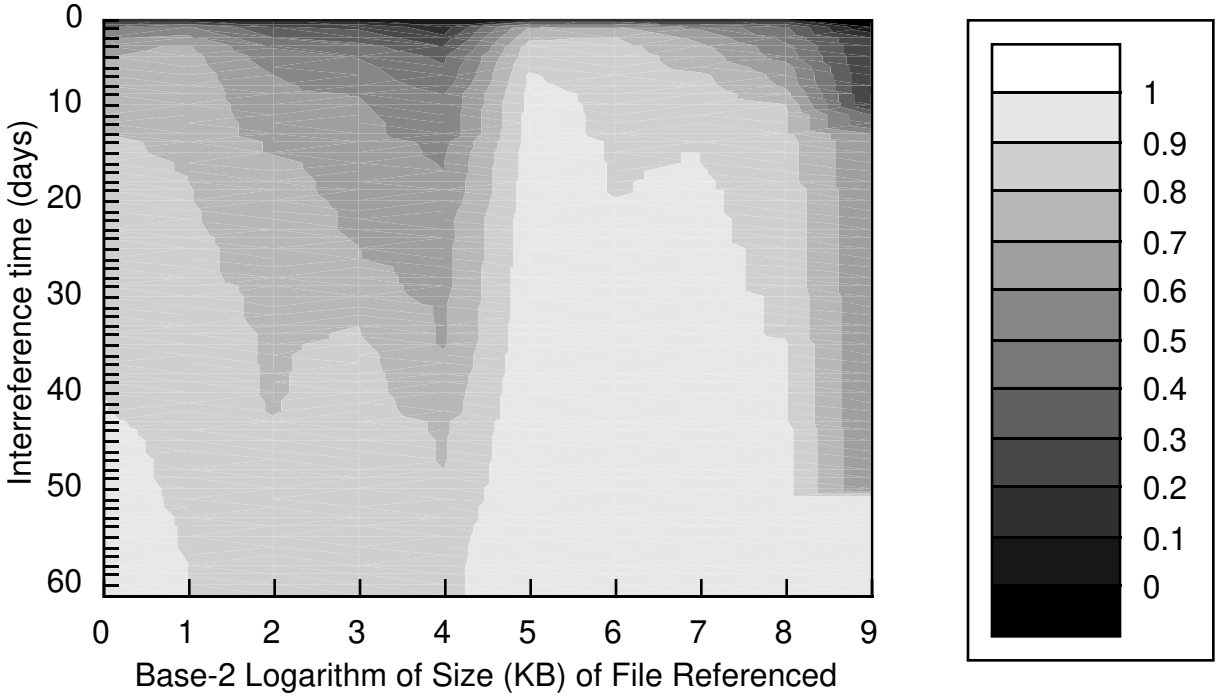
Sprite User6 – File Interreference Distributions – Writes

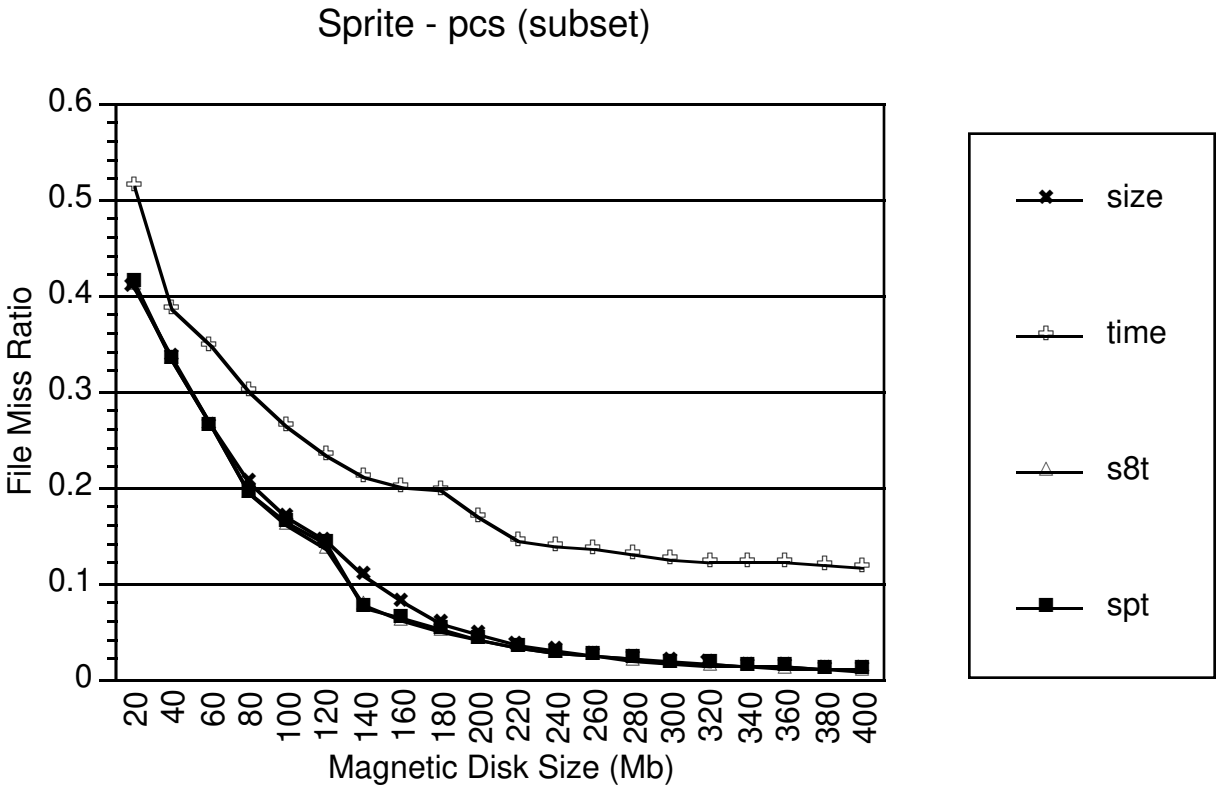


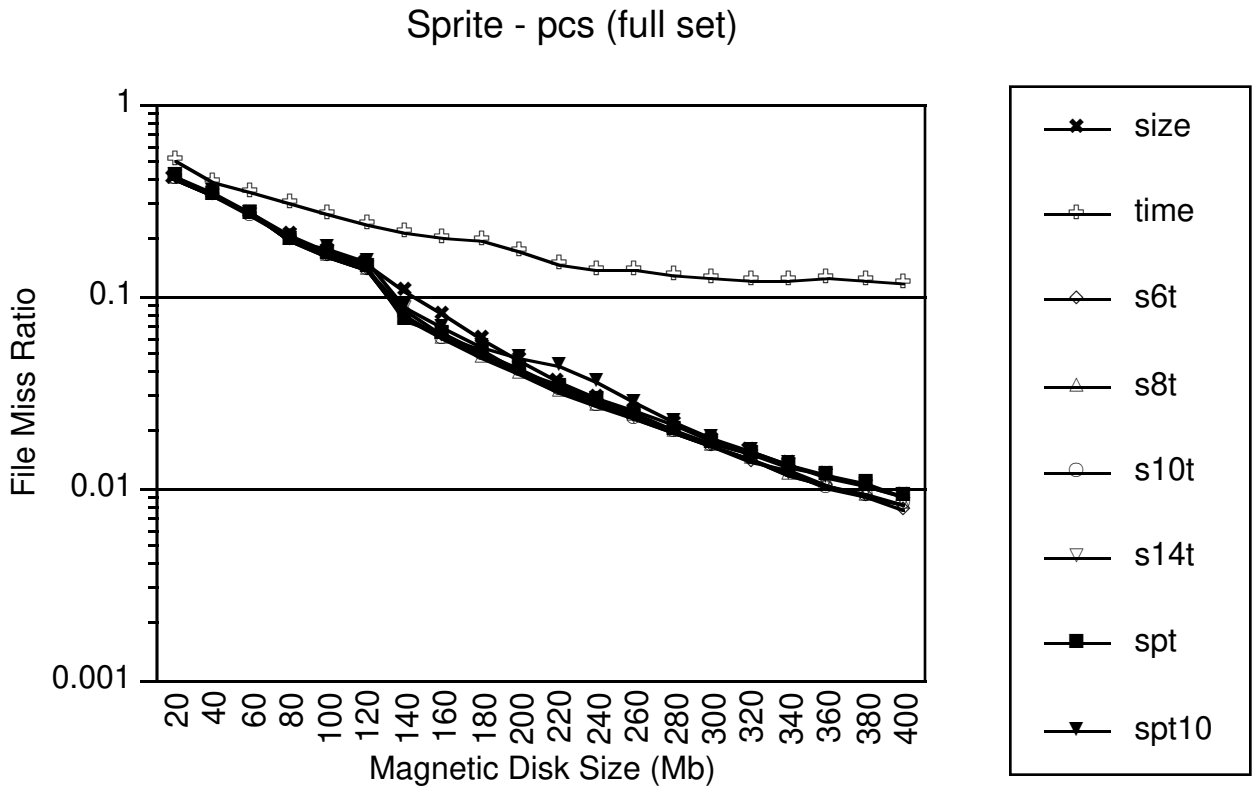
Ginger Users – File Interreference Distributions – Reads



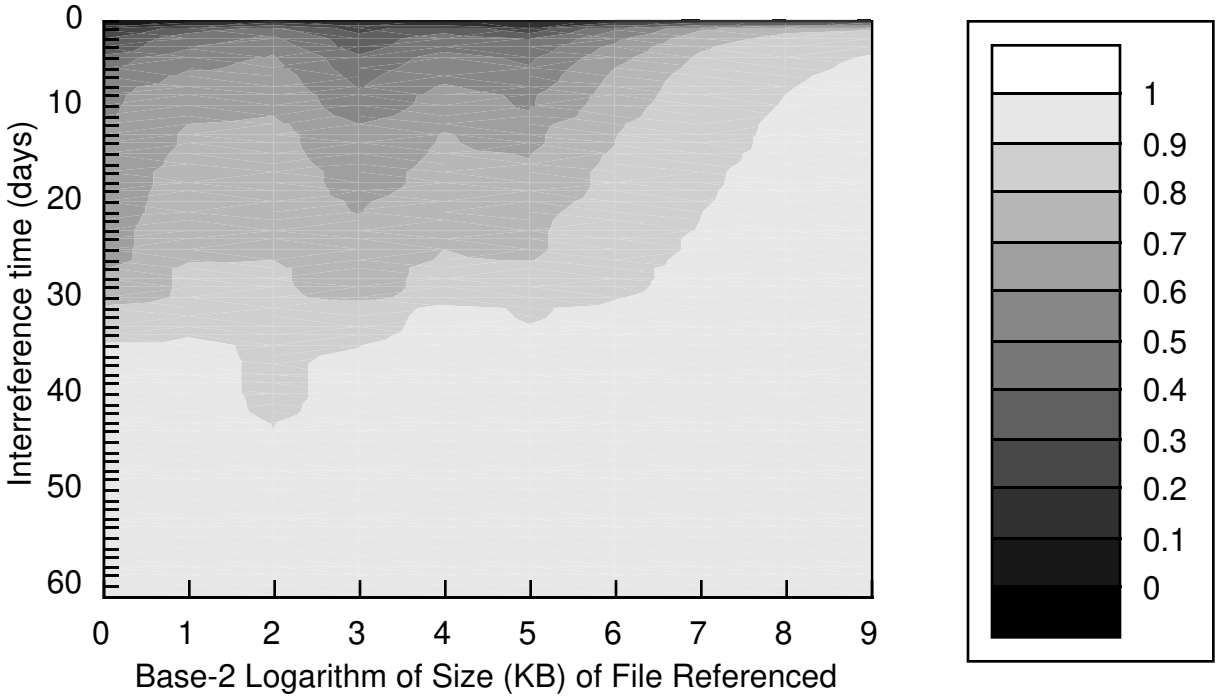
Ginger Users – File Interreference Distributions – Writes



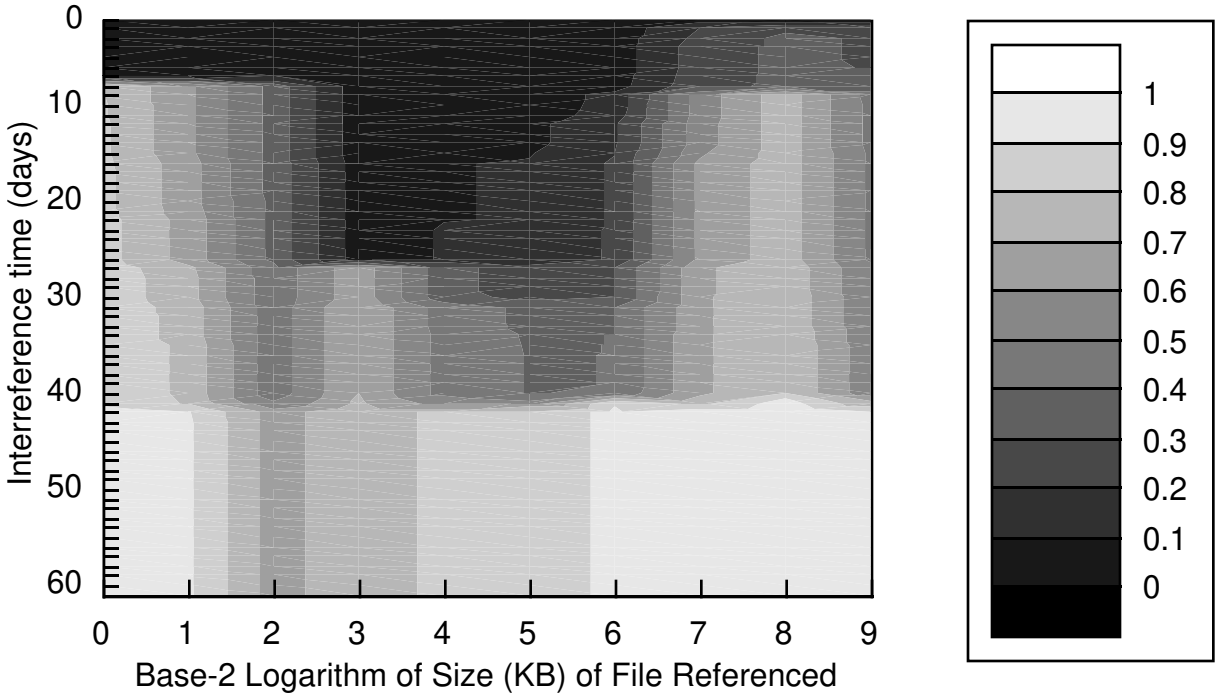

Sprite - pcs (subset)
File Miss Ratio
0.6
0.5
0.4
0.3
0.2
0.1
0
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s8t
spt


Sprite - pcs (full set)
File Miss Ratio
1
0.1
0.01
0.001
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s10t
s14t
spt
spt10

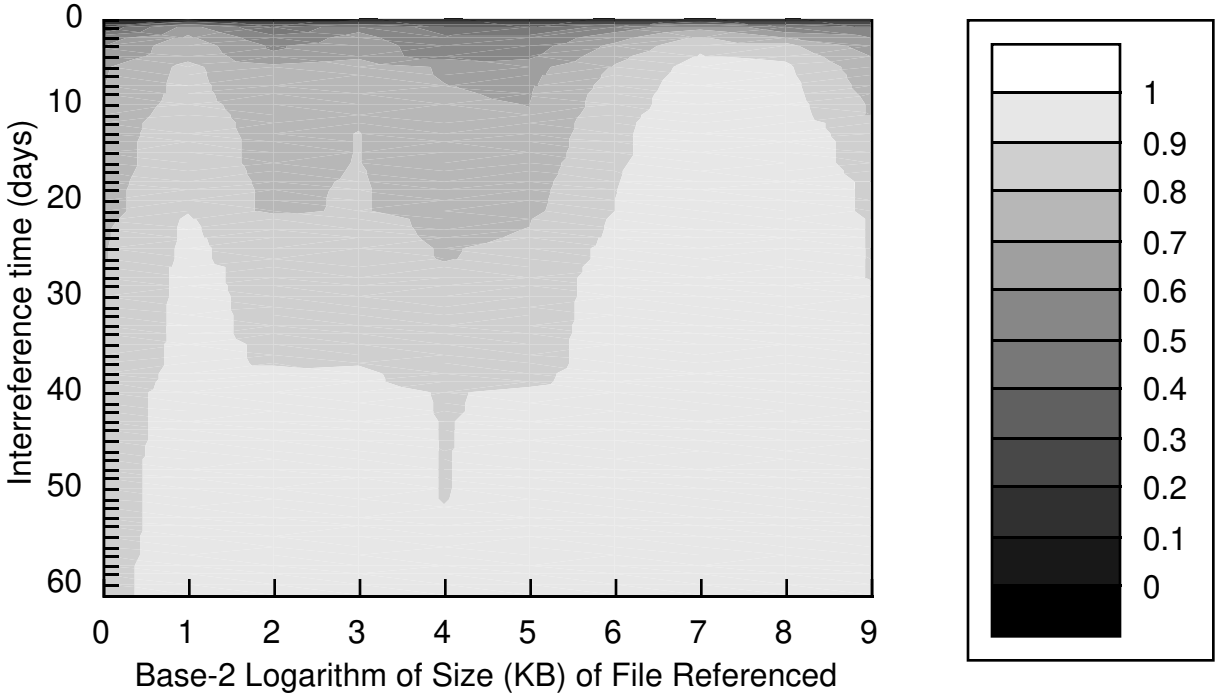
X11 – File Interreference Distributions – Reads



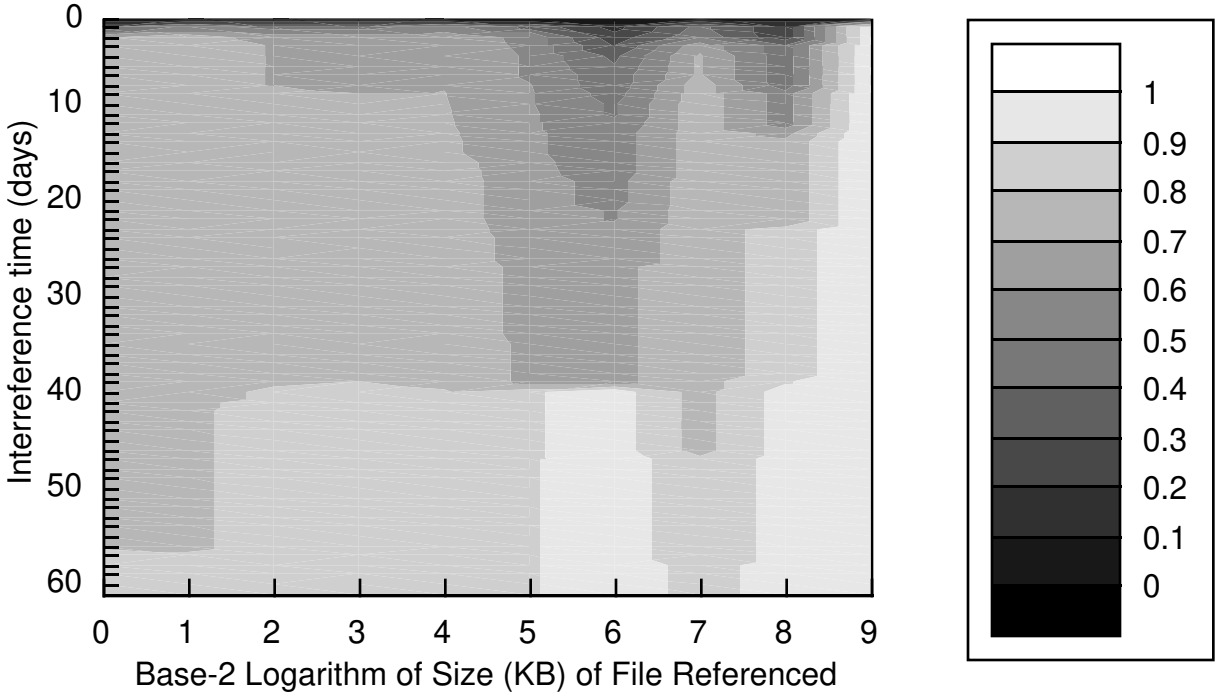
X11 – File Interreference Distributions – Writes

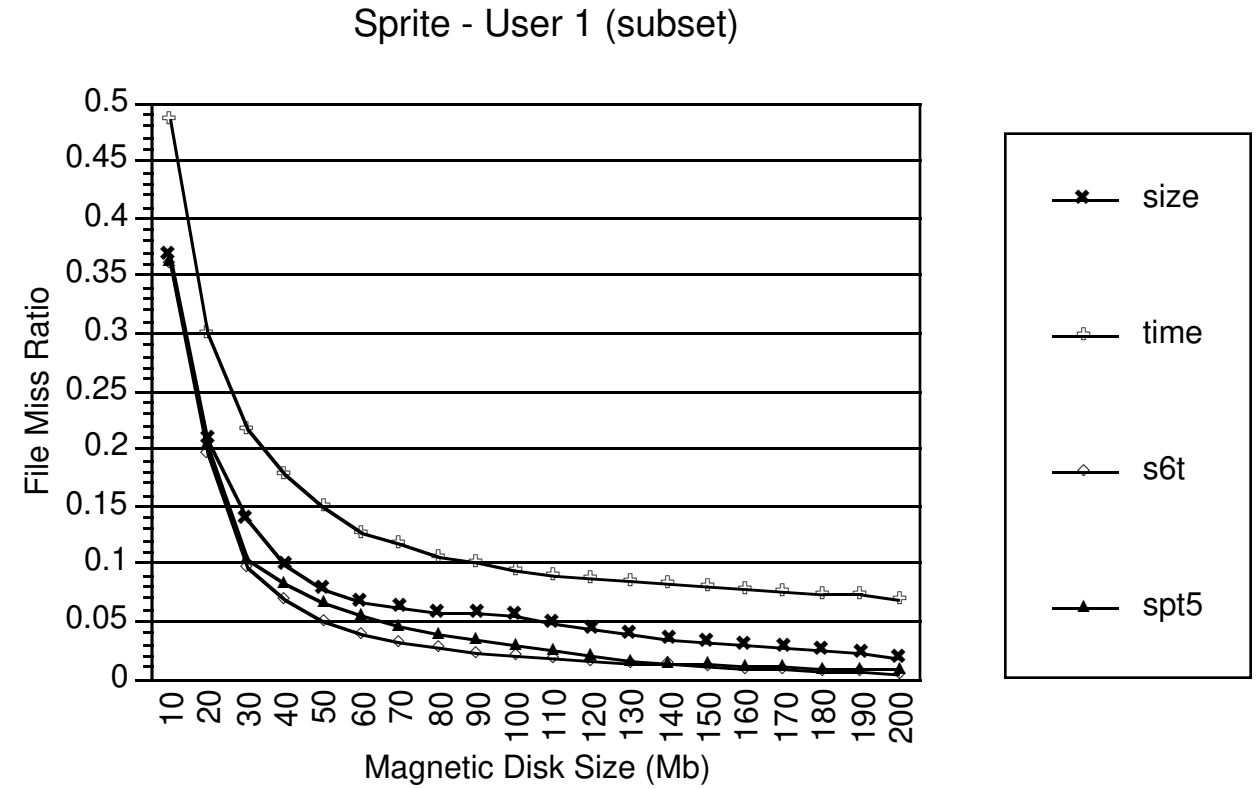


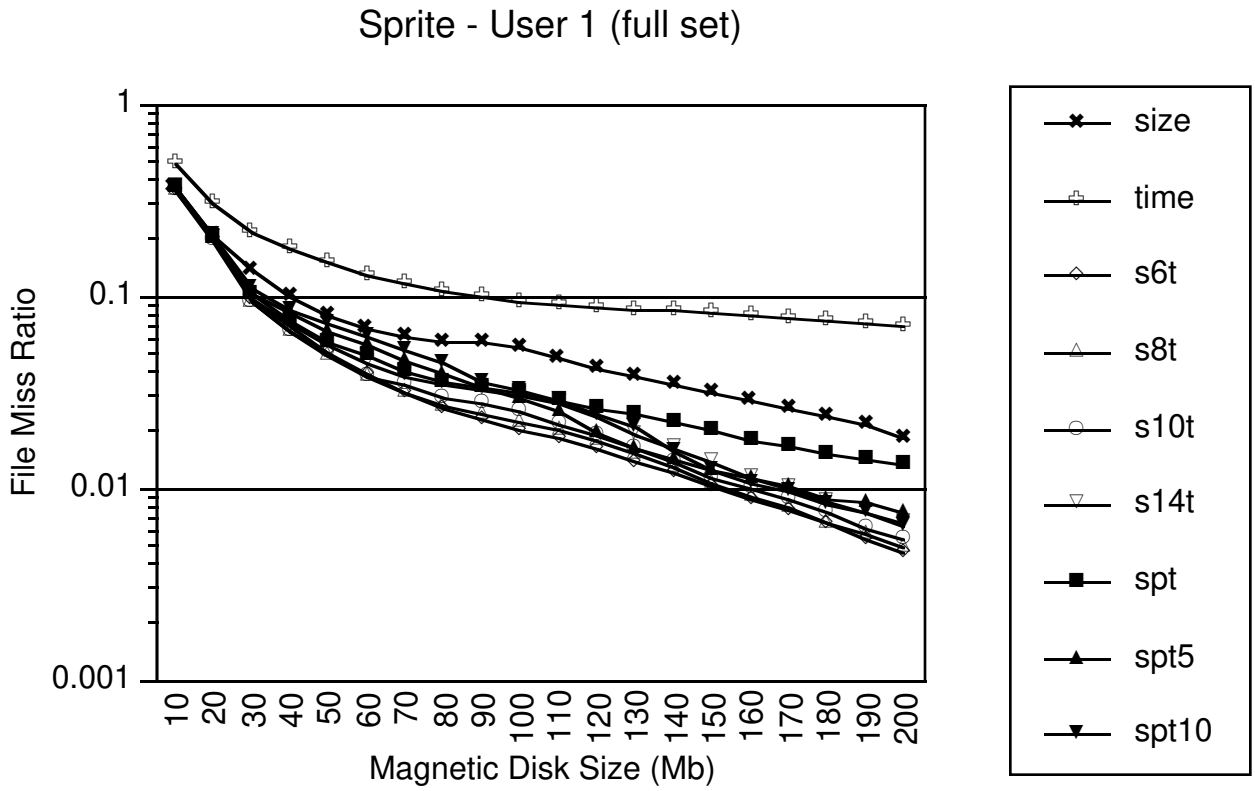
Sprite local – File Interreference Distributions – Reads

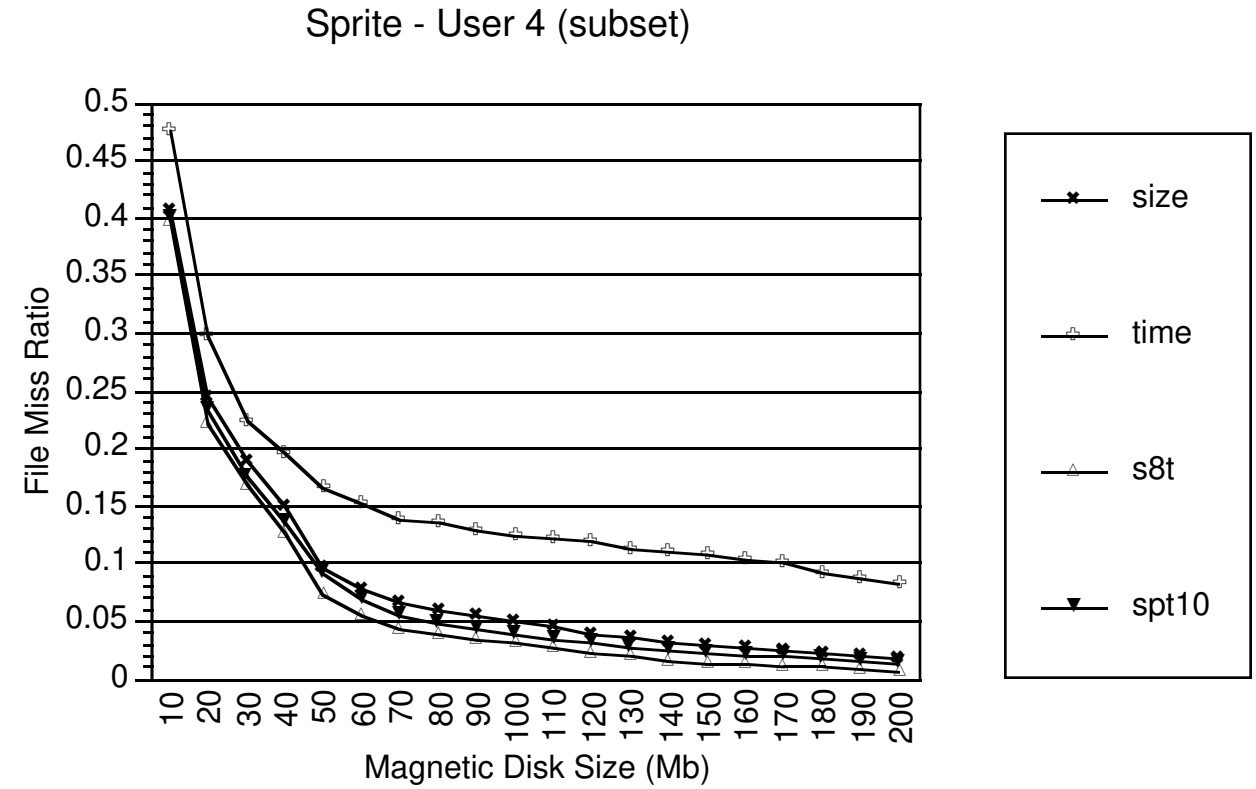


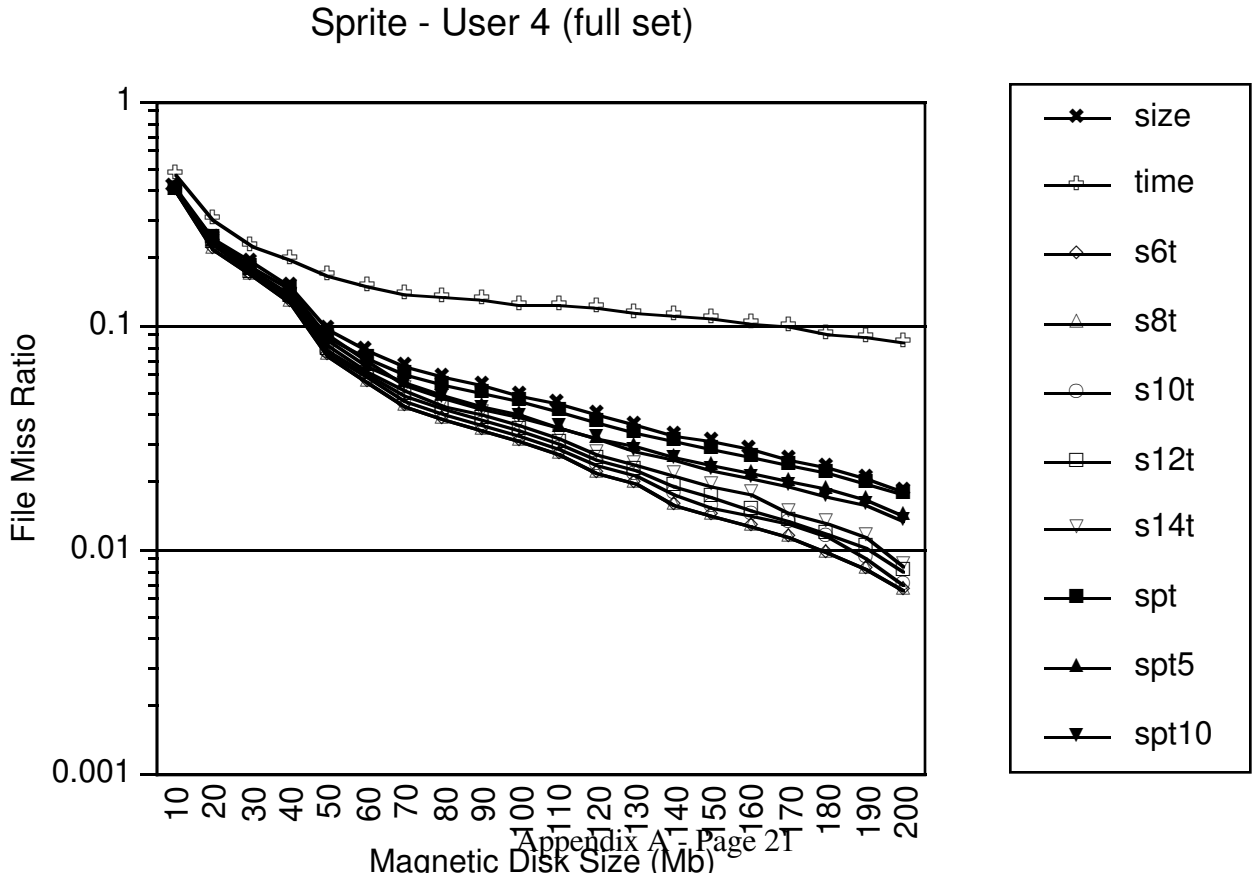
Sprite local – File Interreference Distributions – Writes

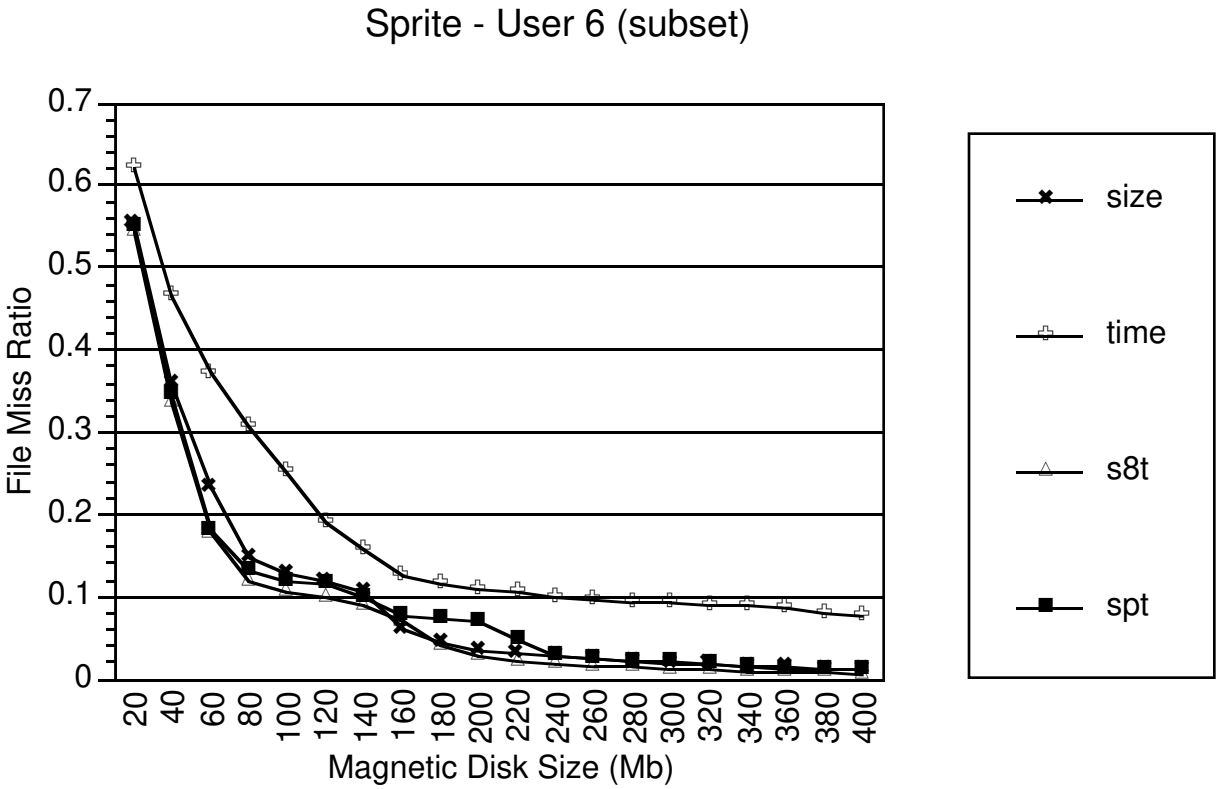


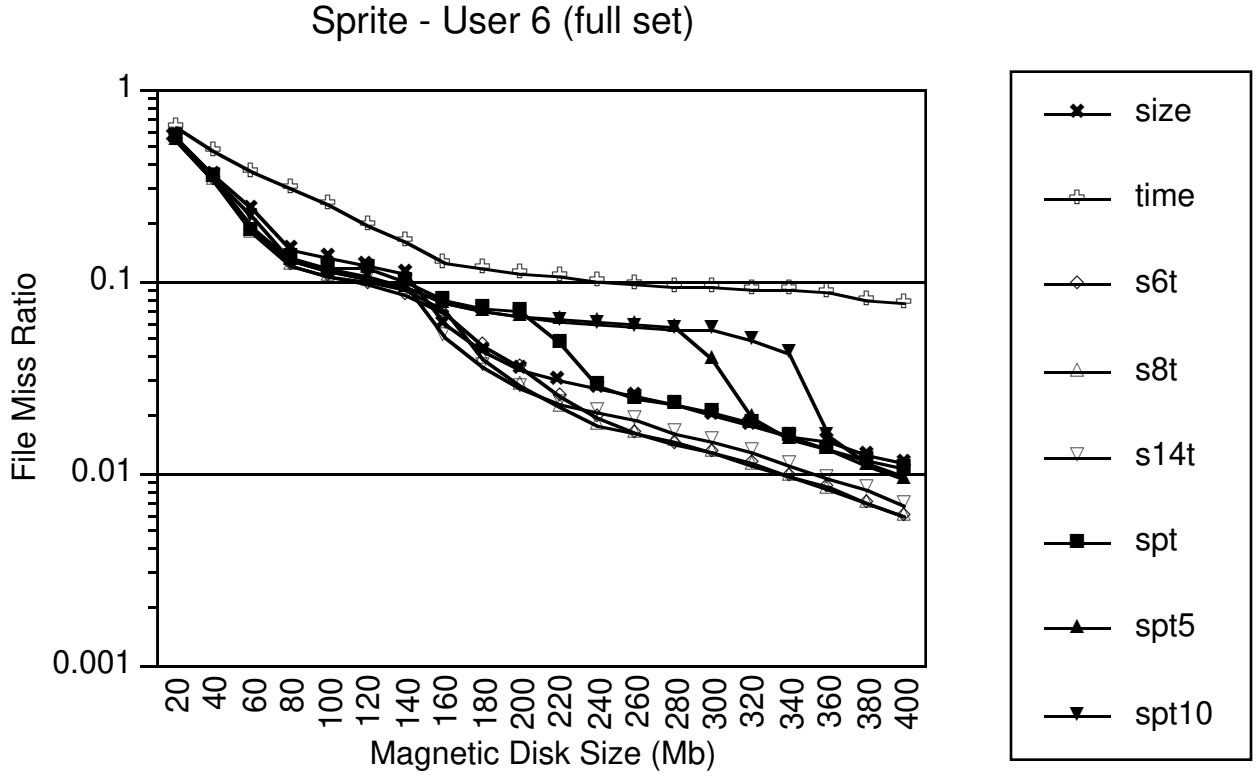

Sprite - User 1 (subset)
File Miss Ratio
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Magnetic Disk Size (Mb)
size
time
s6t
spt5

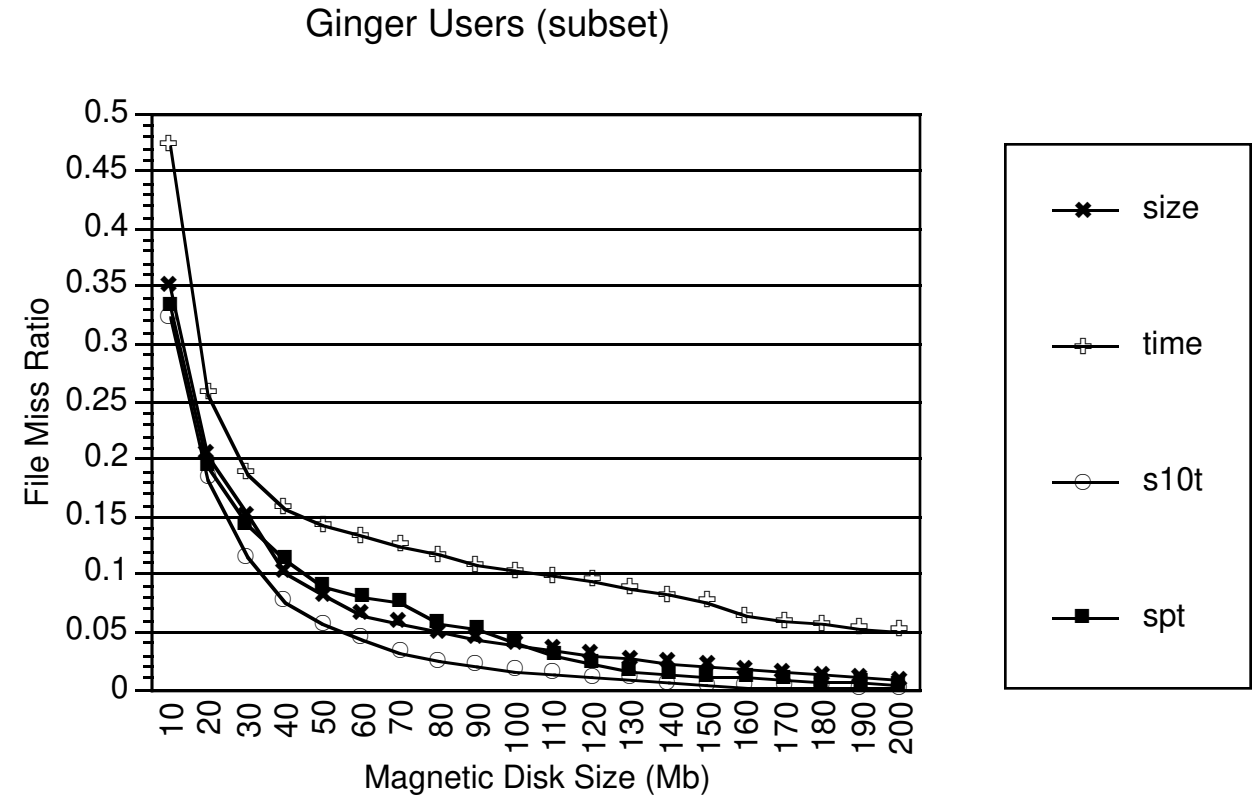

Sprite - User 1 (full set)
File Miss Ratio
1
0.1
0.01
0.001
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s10t
s14t
spt
spt5
spt10

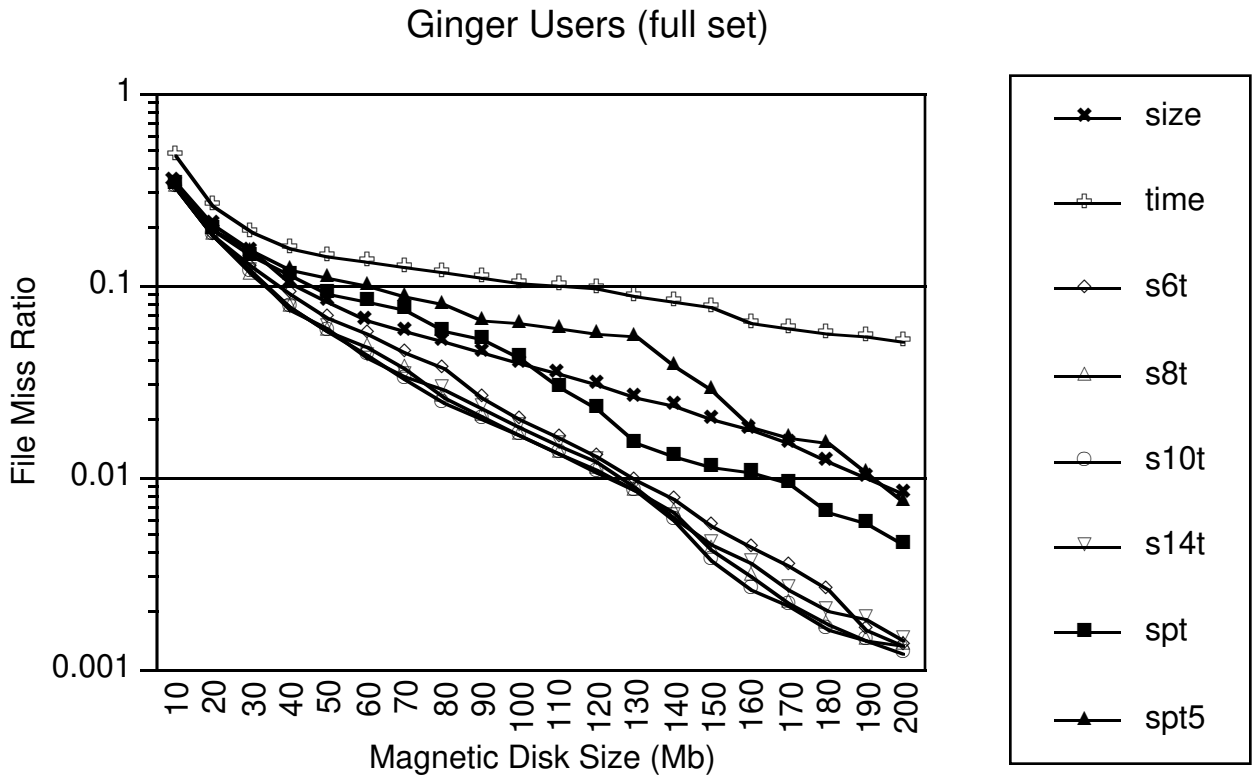

Sprite - User 4 (subset)
File Miss Ratio
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Magnetic Disk Size (Mb)
size
time
s8t
spt10

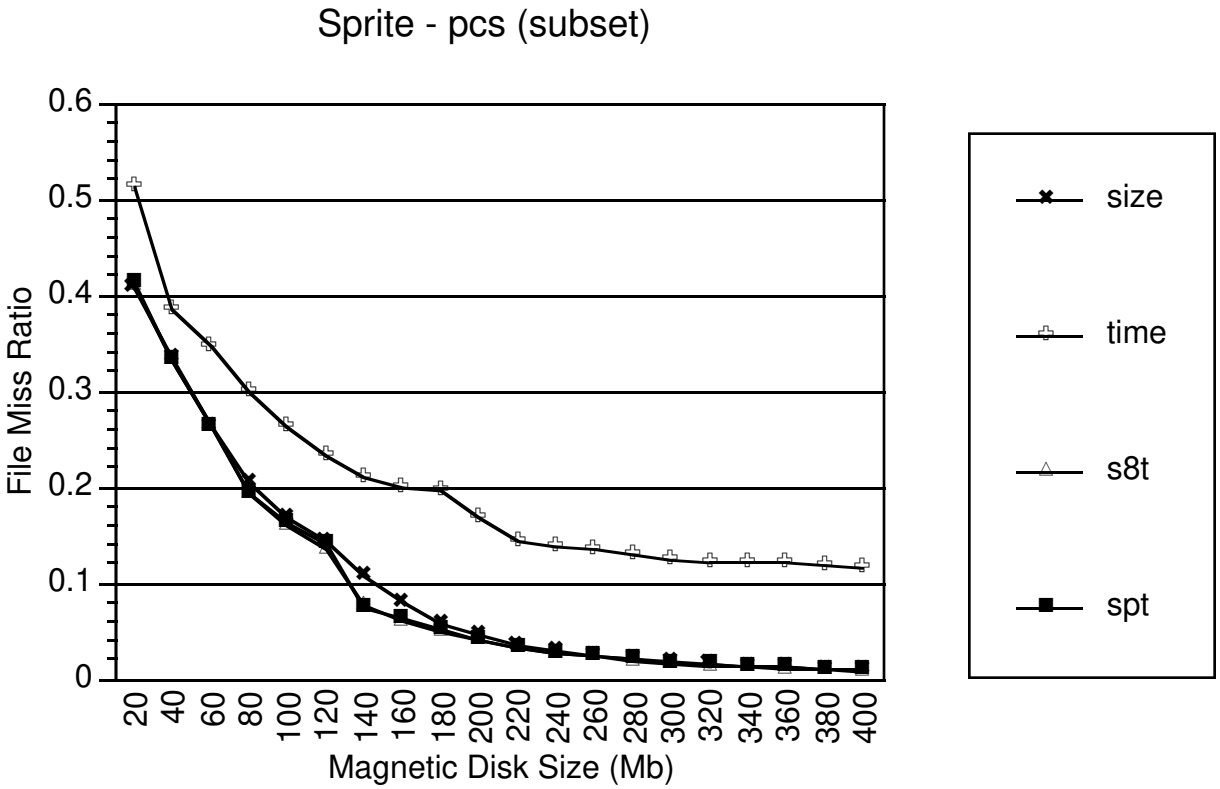

Sprite - User 4 (full set)
File Miss Ratio
1
0.1
0.01
0.001
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s10t
s12t
s14t
spt
spt5
spt10

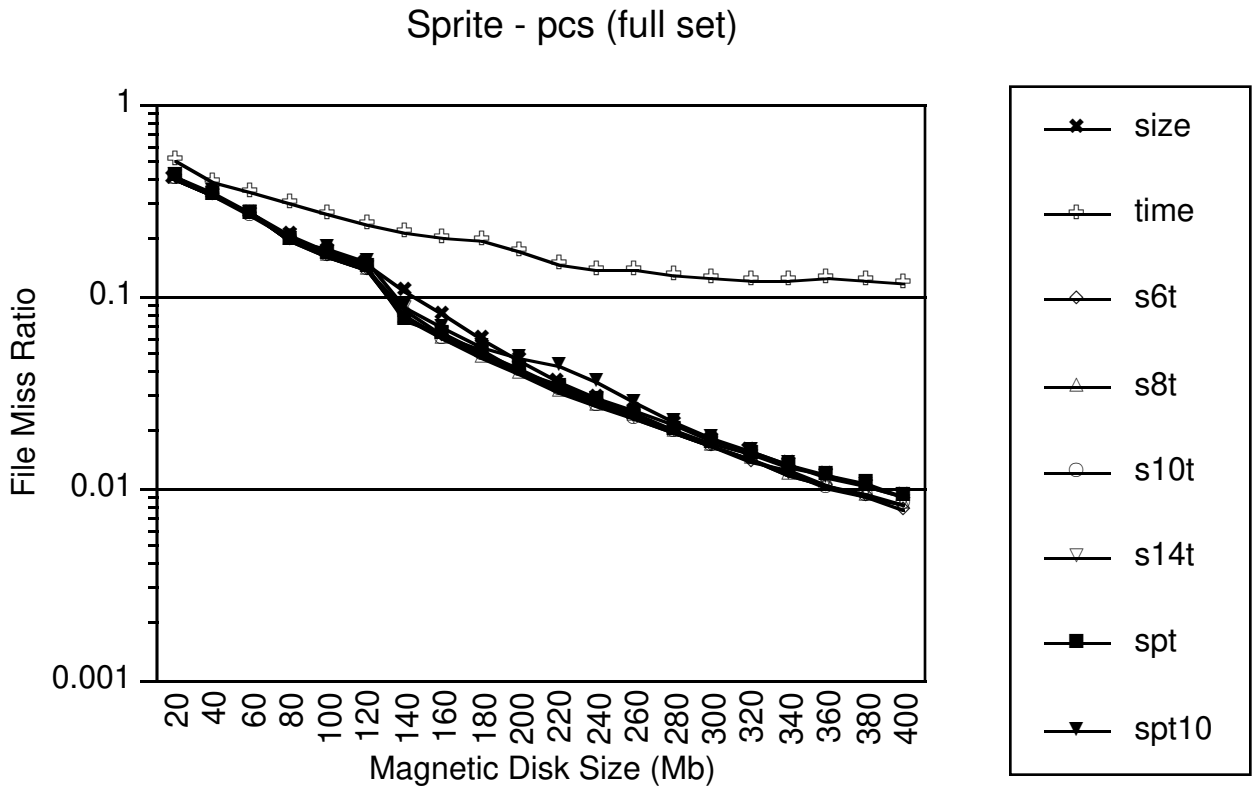

Sprite - User 6 (subset)
File Miss Ratio
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s8t
spt

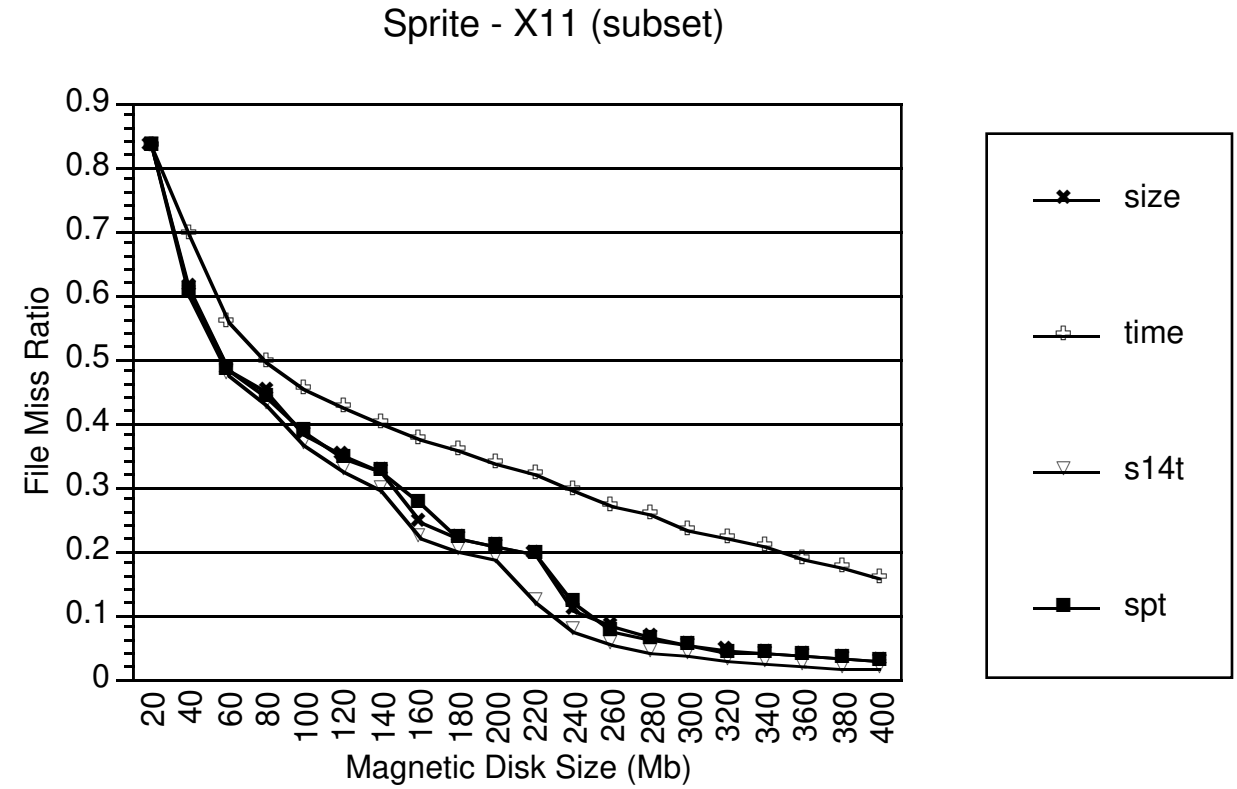

Sprite - User 6 (full set)
File Miss Ratio
1
0.1
0.01
0.001
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s14t
spt
spt5
spt10

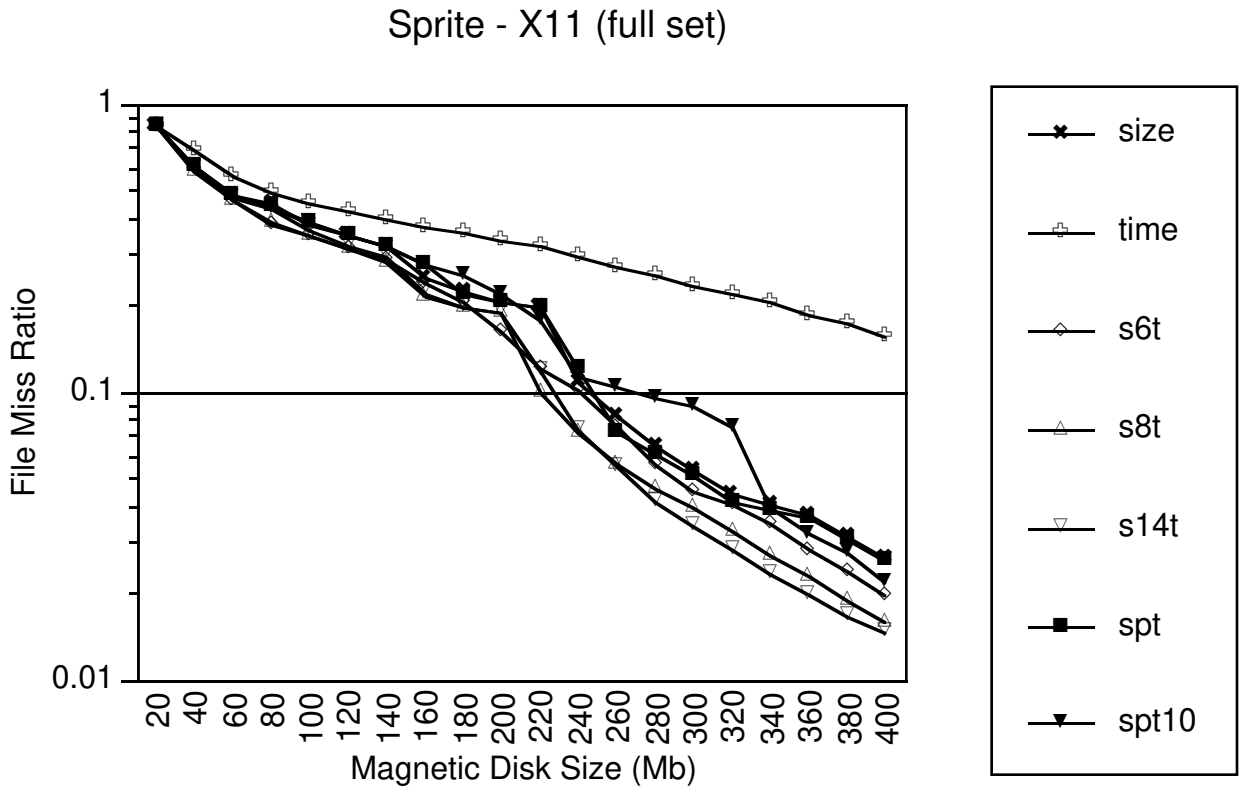

Ginger Users (subset)
File Miss Ratio
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Magnetic Disk Size (Mb)
size
time
s10t
spt

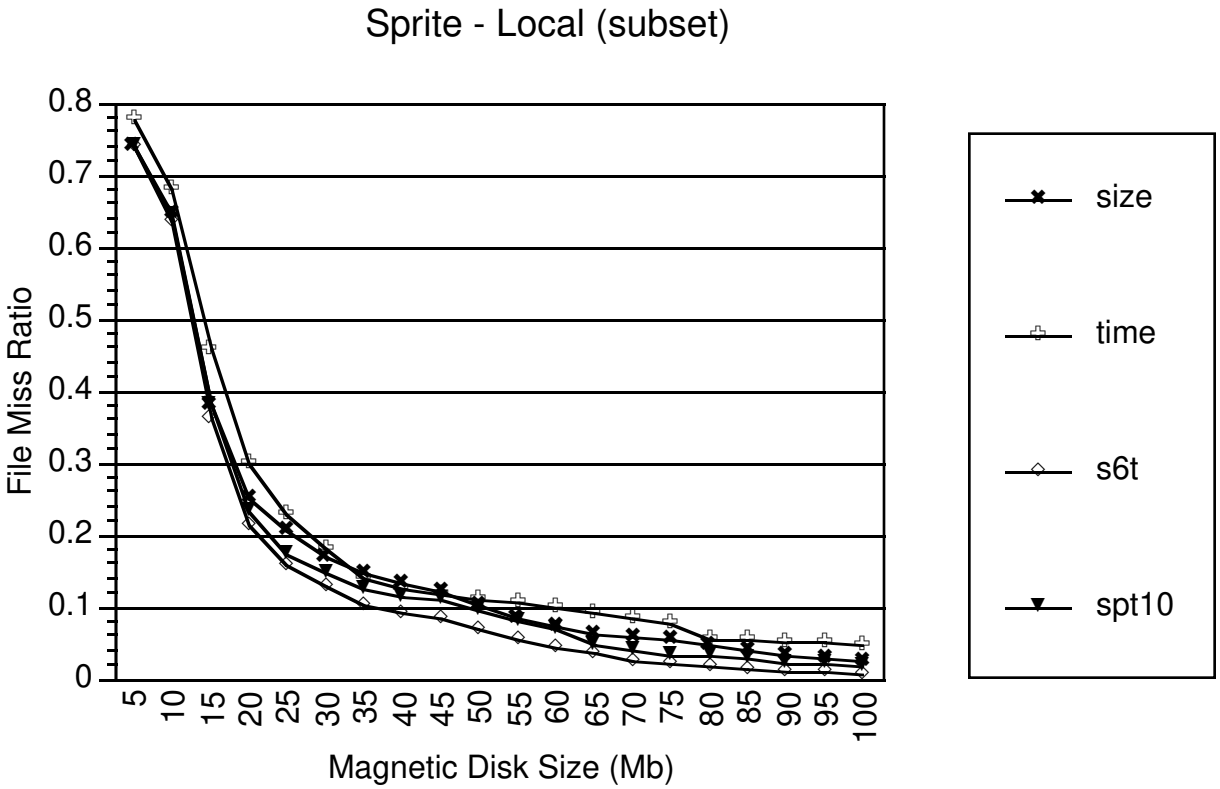

Ginger Users (full set)
File Miss Ratio
1
0.1
0.01
0.001
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s10t
s14t
spt
spt5

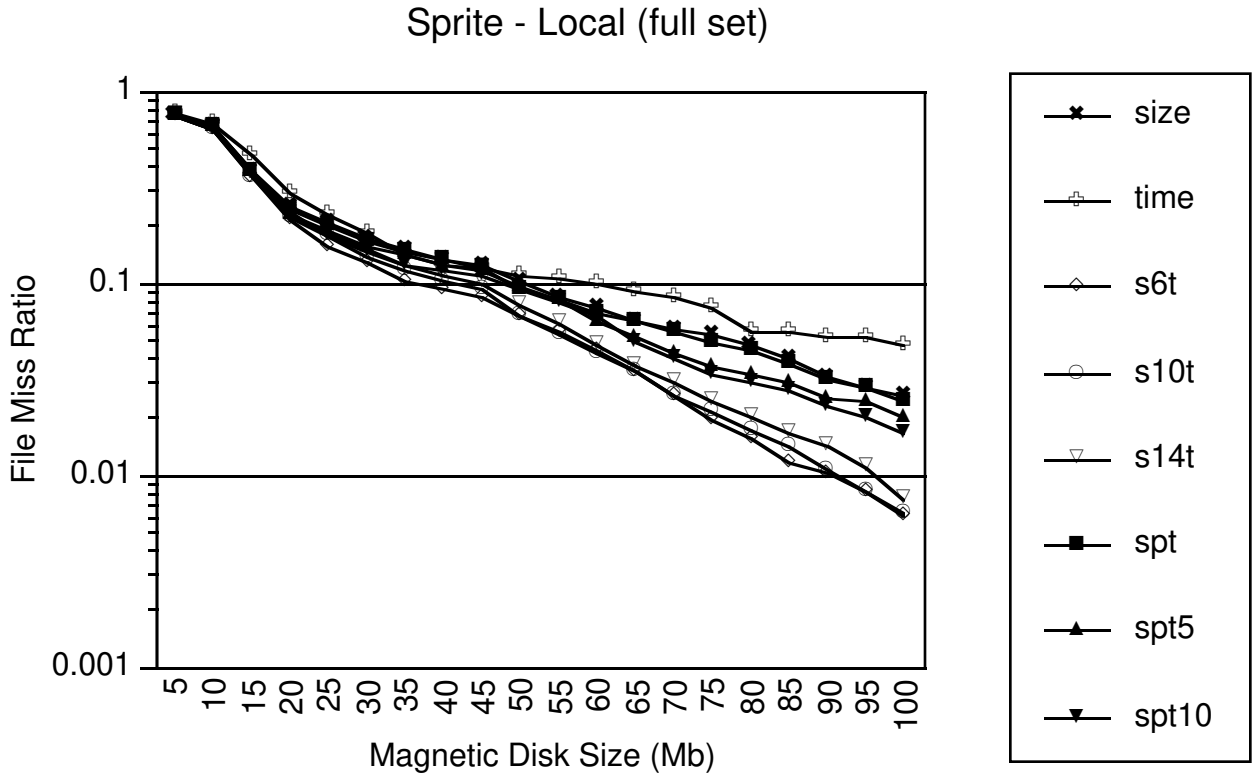

Sprite - pcs (subset)
File Miss Ratio
0.6
0.5
0.4
0.3
0.2
0.1
0
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s8t
spt


Sprite - pcs (full set)
File Miss Ratio
1
0.1
0.01
0.001
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s10t
s14t
spt
spt10


Sprite - X11 (subset)
File Miss Ratio
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s14t
spt


Sprite - X11 (full set)
File Miss Ratio
1
0.1
0.01
20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
Magnetic Disk Size (Mb)
size
time
s6t
s8t
s14t
spt
spt10


Sprite - Local (subset)
File Miss Ratio
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Magnetic Disk Size (Mb)
size
time
s6t
spt10


Sprite - Local (full set)
File Miss Ratio
1
0.1
0.01
0.001
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Magnetic Disk Size (Mb)
size
time
s6t
s10t
s14t
spt
spt5
spt10