

Figure 1. Timing (a) and efficiency (b) graphs for 1500x1500 Diffusion Equation, saving a set of eleven 17-19 megabyte files.

Table 1 (a). Timing Data for 1500x1500 Diffusion.

<i>Processors</i>	<i>ASCII (19 MB files)</i>	<i>Binary (17 MB files)</i>	<i>NetCDF (17 MB files)</i>	<i>PnetCDF (17 MB files)</i>	<i>No I/O</i>
1	157	127	185	122	102
2	105	74	135	64	53
4	79	50	110	36	26
8	67	37	98	24	13
16	60	30	91	28	7
32	58	28	87	37	4
64	56	27	86	64	3

Table 1 (b). Efficiency Data for 1500x1500 Diffusion.

<i>Processors</i>	<i>ASCII (19 MB files)</i>	<i>Binary (17 MB files)</i>	<i>NetCDF (17 MB files)</i>	<i>PnetCDF (17 MB files)</i>	<i>No I/O</i>
2	0.75	0.86	0.69	0.95	0.96
4	0.5	0.64	0.42	0.85	0.98
8	0.29	0.53	0.24	0.96	0.98
16	0.16	0.26	0.13	0.27	0.91
32	0.08	0.14	0.07	0.1	0.8
64	0.04	0.07	0.03	0.03	0.53

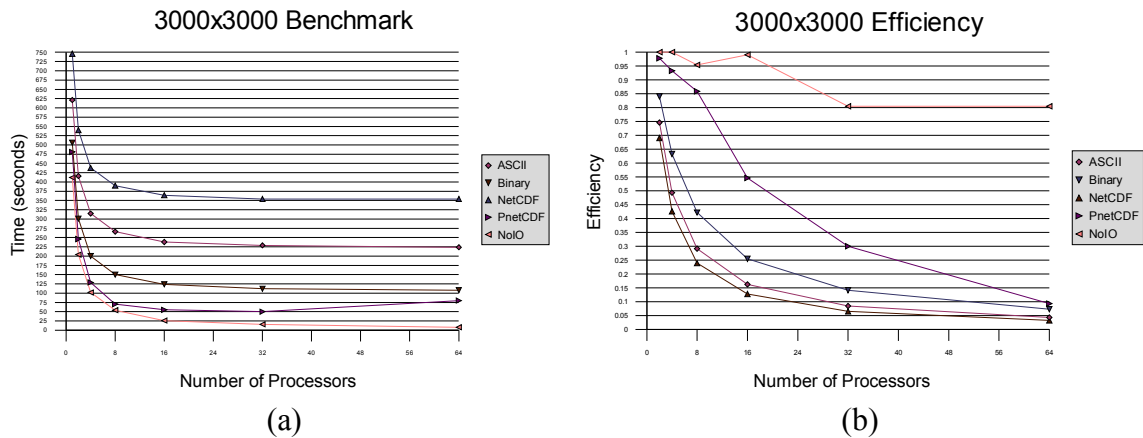


Figure 2. Timing (a) and efficiency (b) graphs for 3000x3000 Diffusion Equation, saving a set of eleven 69-77 megabyte files.

Table 2 (a): Timing Data for 3000x3000 Diffusion

<i>Processors</i>	<i>ASCII (77 MB files)</i>	<i>Binary (69 MB files)</i>	<i>NetCDF (69 MB files)</i>	<i>PnetCDF (69 MB files)</i>	<i>No I/O</i>
1	621	506	746	481	412
2	416	301	540	246	204
4	315	200	438	129	102
8	266	150	390	70	54
16	238	124	364	55	26
32	229	112	354	50	16
64	224	108	354	80	8

Table 2 (b): Efficiency Data for 3000x3000 Diffusion

<i>Processors</i>	<i>ASCII (77 MB file)</i>	<i>Binary (69 MB files)</i>	<i>NetCDF (69 MB files)</i>	<i>PnetCDF (69 MB files)</i>	<i>No I/O</i>
2	0.75	0.84	0.69	0.98	1.01
4	0.49	0.63	0.43	0.93	1.01
8	0.29	0.42	0.24	0.86	0.95
16	0.16	0.26	0.13	0.55	0.99
32	0.08	0.14	0.07	0.3	0.8
64	0.04	0.07	0.03	0.09	0.8

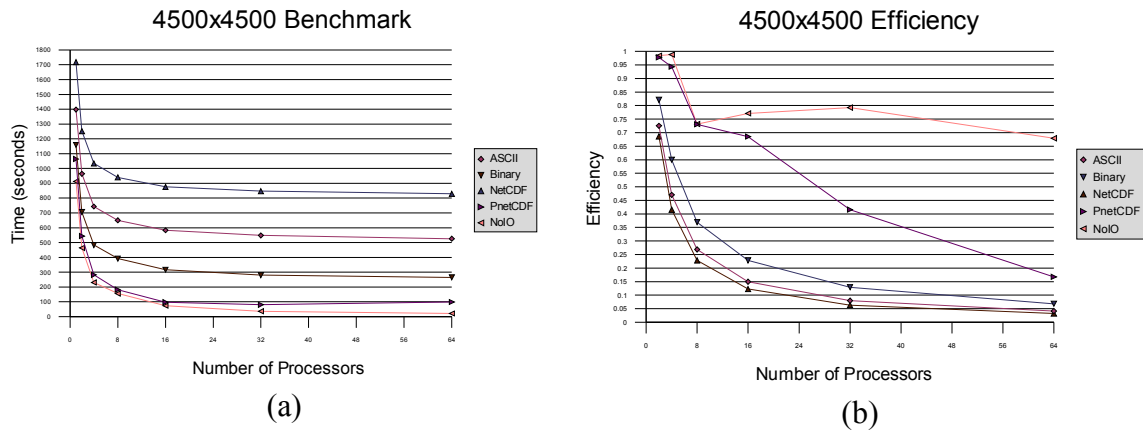


Figure 3. Timing (a) and efficiency (b) graphs for 4500x4500 Diffusion Equation, saving a set of eleven 154-174 megabyte files.

Table 3 (a): Timing Data for 4500x4500 Diffusion

<i>Processors</i>	<i>ASCII (174 MB files)</i>	<i>Binary (155 MB files)</i>	<i>NetCDF (154 MB files)</i>	<i>PnetCDF (154 MB files)</i>	<i>No I/O</i>
1	1398	1159	1718	1064	913
2	964	706	1252	544	464
4	743	483	1034	282	231
8	650	392	940	182	156
16	583	317	876	97	74
32	548	280	847	80	36
64	526	265	829	99	21

Table 3 (b): Efficiency Data for 4500x4500 Diffusion

<i>Processors</i>	<i>ASCII (174 MB files)</i>	<i>Binary (155 MB files)</i>	<i>NetCDF (154 MB files)</i>	<i>PnetCDF (154 MB files)</i>	<i>No I/O</i>
2	0.73	0.82	0.69	0.98	0.98
4	0.47	0.6	0.42	0.94	0.99
8	0.27	0.37	0.23	0.73	0.73
16	0.15	0.23	0.12	0.69	0.77
32	0.08	0.13	0.07	0.42	0.79
64	0.04	0.07	0.03	0.17	0.68

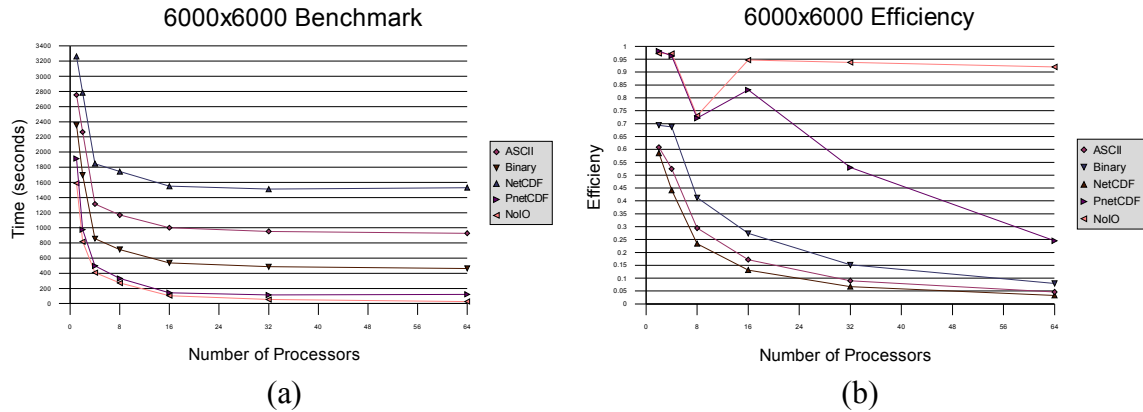


Figure 4. Timing (a) and efficiency (b) graphs for 6000x6000 Diffusion Equation, saving a set of eleven 275-309 megabyte files.

Table 4 (a): Timing Data for 6000x6000 Diffusion

<i>Processors</i>	<i>ASCII (309 MB files)</i>	<i>Binary (275 MB files)</i>	<i>NetCDF (275 MB files)</i>	<i>PnetCDF (275 MB files)</i>	<i>No I/O</i>
1	2754	2356	3262	1914	1590
2	2265	1698	2784	975	818
4	1314	857	1847	497	409
8	1169	714	1742	332	272
16	1001	538	1550	144	105
32	953	486	1511	113	53
64	929	464	1531	122	27

Table 4 (b): Efficiency Data for 6000x6000 Diffusion

<i>Processors</i>	<i>ASCII (309 MB files)</i>	<i>Binary (275 MB files)</i>	<i>NetCDF (275 MB files)</i>	<i>PnetCDF (275 MB files)</i>	<i>No I/O</i>
2	0.61	0.69	0.59	0.98	0.97
4	0.52	0.69	0.44	0.96	0.97
8	0.29	0.41	0.23	0.72	0.73
16	0.17	0.27	0.13	0.83	0.95
32	0.09	0.15	0.07	0.53	0.94
64	0.05	0.08	0.03	0.25	0.92