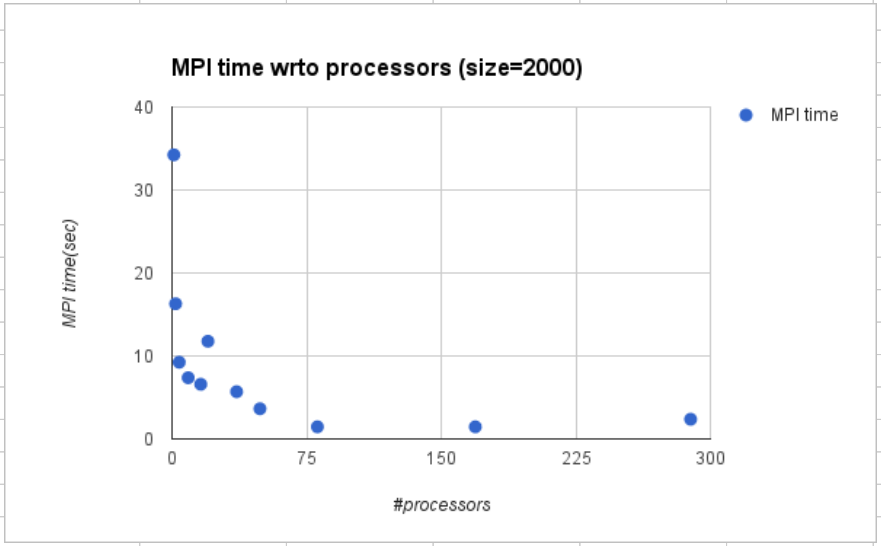
performance analysis study (lxlogin5.lrz.de)						
Size	serial time(sec)	grid dimension	#processor	MPI time(sec)	speedup	efficiency
3000	118.102	1 X 1	1	76.5918	1.541966634	1.541966634
	118.102	2 X 1	2	37.5593	3.1444143	1.57220715
	118.102	2 X 2	4	21.3492	5.531916887	1.382979222
	118.102	3 X 3	9	17.4781	6.757141795	0.7507935327
	118.102	4 X 4	16	15.867	7.443246991	0.4652029369
	118.102	5 X 4	20	26.3032	4.490024027	0.2245012014
	118.102	6 X 6	36	14.8062	7.976523348	0.221570093
	118.102	7 X 7	49	11.0061	10.73059485	0.2189917317
	118.102	9 X 9	81	5.96457	19.80058915	0.2444517178
	118.102	13 X 13	169	6.60304	17.88600402	0.1058343433
	118.102	17 X 17	289	8.60037	13.73219989	0.04751626261
2000	62.6418	1 X 1	1	34.2421	1.829379623	1.829379623
	62.6418	2 X 1	2	16.2914	3.845083909	1.922541955
	62.6418	2 X 2	4	9.24359	6.776782614	1.694195653
	62.6418	3 X 3	9	7.37498	8.493826424	0.9437584915
	62.6418	4 X 4	16	6.58865	9.507531892	0.5942207432
	62.6418	5 X 4	20	11.7729	5.32084703	0.2660423515
	62.6418	6 X 6	36	5.69298	11.00334096	0.3056483599
	62.6418	7 X 7	49	3.63687	17.22409654	0.3515121744
	62.6418	9 X 9	81	1.4612	42.87010676	0.5292605773
	62.6418	13 X 13	169	1.46115	42.87157376	0.2536779512
	62.6418	17 X 17	289	2.37234	26.40506841	0.09136701873
1250	23.034	1 X 1	1	12.512	1.840952685	1.840952685
	23.034	2 X 1	2	4.99054	4.615532588	2.307766294
	23.034	2 X 2	4	2.62577	8.77228394	2.193070985
	23.034	3 X 3	9	2.2329	10.3157329	1.146192545
	23.034	4 X 4	16	1.24307	18.52992993	1.158120621
	23.034	5 X 4	20	3.22002	7.153371718	0.3576685859
	23.034	6 X 6	36	1.0172	22.64451435	0.6290142876
	23.034	7 X 7	49	0.540927	42.58245567	0.8690297076
	23.034	9 X 9	81	0.306934	75.04544951	0.926487031
	23.034	13 X 13	169	0.700922	32.86242977	0.1944522472
	23.034	17 X 17	289	1.13697	20.25910974	0.07010072574
500	2.29717	1 X 1	1	1.22649	1.872962682	1.872962682
	2.29717	2 X 1	2	0.651036	3.528483832	1.764241916
	2.29717	2 X 2	4	0.302923	7.583346263	1.895836566
	2.29717	3 X 3	9	0.178099	12.89827568	1.433141742
	2.29717	4 X 4	16	0.10359	22.1755961	1.385974756
	2.29717	5 X 4	20	0.15082	15.23120276	0.7615601379
	2.29717	6 X 6	36	0.107402	21.38852163	0.5941256008
	2.29717	7 X 7	49	0.086527	26.54859177	0.5418079953

size=2000	
#processors	MPI time
1	34.2421
2	16.2914
4	9.24359
9	7.37498
16	6.58865
20	11.7729
36	5.69298
49	3.63687
81	1.4612
169	1.46115
289	2.37234



	2.29717	9 X 9	81	0.086629	26.51733253	0.3273744757
	2.29717	13 X 13	169	0.268138	8.567118424	0.05069300843
	2.29717	17 X 17	289	0.616672	3.725108323	0.01288964818
	0.166802	1 X 1	1	0.105718	1.57780132	1.57780132
	0.166802	2 X 1	2	0.053455	3.120419044	1.560209522
	0.166802	2 X 2	4	0.028053	5.945959434	1.486489858
	0.166802	3 X 3	9	0.015513	10.75240121	1.194711246
	0.166802	4 X 4	16	0.010085	16.53961329	1.03372583
200	0.166802	5 X 4	20	0.01801	9.261632426	0.4630816213
	0.166802	6 X 6	36	0.017329	9.625598707	0.2673777419
	0.166802	7 X 7	49	0.015328	10.88217641	0.2220852328
	0.166802	9 X 9	81	0.03881	4.297912909	0.0530606532
	0.166802	13 X 13	169	0.141477	1.179004361	0.00697635716
	0.166802	17 X 17	289	0.324533	0.5139754663	0.00177846182
	0.023101	1 X 1	1	0.020641	1.119180272	1.119180272
	0.023101	2 X 1	2	0.007739	2.985010983	1.492505492
	0.023101	2 X 2	4	0.004695	4.920340788	1.230085197
	0.023101	3 X 3	9	0.003645	6.337722908	0.7041914342
	0.023101	4 X 4	16	0.003052	7.569134993	0.4730709371
100	0.023101	5 X 4	20	0.006368	3.627669598	0.1813834799
	0.023101	6 X 6	36	0.007508	3.076851359	0.08546809329
	0.023101	7 X 7	49	0.007804	2.960148642	0.06041119677
	0.023101	9 X 9	81	0.029722	0.7772357177	0.00959550268
	0.023101	13 X 13	169	0.155375	0.1486790024	0.00087975741
	0.023101	17 X 17	289	0.237973	0.09707403781	0.00033589632
	0.003787	1 X 1	1	0.003499	1.082309231	1.082309231
	0.003787	2 X 1	2	0.002655	1.426365348	0.7131826742
	0.003787	2 X 2	4	0.001294	2.926584235	0.7316460587
	0.003787	3 X 3	9	0.001495	2.533110368	0.2814567075
	0.003787	4 X 4	16	0.001921	1.971369079	0.1232105674
50	0.003787	5 X 4	20	0.003971	0.9536640645	0.04768320322
	0.003787	6 X 6	36	0.004723	0.8018208766	0.02227280213
	0.003787	7 X 7	49	0.004384	0.8638229927	0.01762904067
	0.003787	9 X 9	81	0.026823	0.1411848041	0.00174302227
	0.003787	13 X 13	169	0.106754	0.0354740806	0.00020990580
	0.003787	17 X 17	289	0.173267	0.02185644122	0.00007562782
	0.000683	1 X 1	1	0.000242	2.82231405	2.82231405
	0.000683	2 X 1	2	0.000575	1.187826087	0.5939130435
	0.000683	2 X 2	4	0.00066	1.034848485	0.2587121212
10	0.000683	3 X 3	9	0.000334	2.04491018	0.2272122422
	0.000683	4 X 4	16	0.000479	1.425887265	0.08911795407
	0.000683	5 X 4	20	0.001542	0.4429312581	0.02214656291
	0.000683	6 X 6	36	0.001498	0.455941255	0.01266503486

	0.000683	7 X 7	49	0.001498	0.455941255	0.00930492357								
	0.000683	9 X 9	81	0.020912	0.0326606733	0.00040321818								
	0.000683	13 X 13	169	0.070417	0.00969936237	0.00005739267								
	0.000683	17 X 17	289	0.149058	0.00458210897	0.00001585504								

computational time analysis(lxlogin5.lrz.de)				
grid = 6 X 6, processor count = 36				
size	serial time(sec)	MPI time(sec)	speedup	efficiency
3000	118.102	14.8062	7.976523348	0.221570093
2000	62.6418	5.69298	11.00334096	0.3056483599
1250	23.034	1.0172	22.64451435	0.6290142876
500	2.29717	0.107402	21.38852163	0.5941256008
200	0.166802	0.017329	9.625598707	0.2673777419
100	0.023101	0.007508	3.076851359	0.08546809329
50	0.003787	0.004723	0.8018208766	0.02227280213
10	0.000683	0.001498	0.455941255	0.01266503486