

OSG Scalability Testing

Job startup rate

GRAM5a2, osg-gw-5.t2.ucsd.edu (Opteron 275)

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Description

This page contains the results of the scalability tests ran against a GRAM5 alpha 2 CE.

The tested machine was osg-gw-5.t2.ucsd.edu, with an Opteron 275 CPU.

The test involved a simple sleep job. The client had Condor-G v7.3.1, with the GRID_MONITOR disabled. The client was on the same LAN as the CE.

Submitting 5000 jobs with small files, CE has 2.8k slots.

The test was performed in August 2009.

Comments

GRAM5 alpha 5 seems to have still some problems. File transfer works only for a few files; then it get stuck; this is why loadtest_condor could not be used for testing.

Another minor problem was the inability to cancel a large amount jobs; when attempting to remove 4k jobs, the CE essentially refused to execute.

Results at a glance

Rate	Max observed	Typical
Condor-G to Globus submission	~470/min	~360/min
Condor-G noticing jobs starting	~170/min	~50/min
Condor-G noticing jobs terminating	~170/min	~50/min
Limiting one	~170/min	~50/min

Detailed results

Test1 – Sleep 30 mins

Command used:

Submit of sleep 1800

Resources used:

Reached 2.8k running jobs.
Was able to keep 2.8k running jobs.

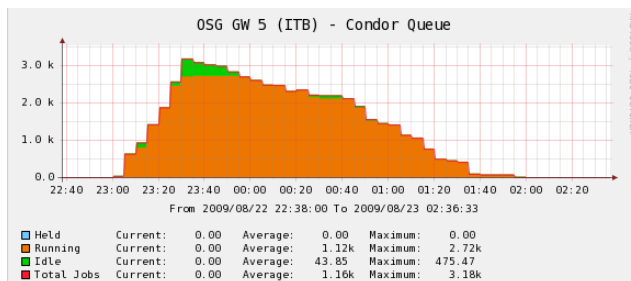


Figure 1: Running jobs on CE - test 1

Detailed rates:

Hourly					
08/22 22	SB:	4999	GB:	0	ST: 0 TM: 0
08/22 23	SB:	0	GB:	5000	ST: 1094 TM: 101
08/23 00	SB:	0	GB:	0	ST: 929 TM: 1181
08/23 01	SB:	0	GB:	0	ST: 1858 TM: 2149
08/23 02	SB:	0	GB:	0	ST: 1119 TM: 1568

Over 10 mins					
08/22 22:5	SB:	4999	GB:	0	ST: 0 TM: 0
08/22 23:0	SB:	0	GB:	4723	ST: 109 TM: 0
08/22 23:1	SB:	0	GB:	277	ST: 403 TM: 0
08/22 23:2	SB:	0	GB:	0	ST: 235 TM: 0
08/22 23:3	SB:	0	GB:	0	ST: 142 TM: 1
08/22 23:4	SB:	0	GB:	0	ST: 136 TM: 9
08/22 23:5	SB:	0	GB:	0	ST: 69 TM: 91
08/23 00:0	SB:	0	GB:	0	ST: 15 TM: 27
08/23 00:1	SB:	0	GB:	0	ST: 13 TM: 27
08/23 00:2	SB:	0	GB:	0	ST: 252 TM: 223
08/23 00:3	SB:	0	GB:	0	ST: 209 TM: 275
08/23 00:4	SB:	0	GB:	0	ST: 220 TM: 306
08/23 00:5	SB:	0	GB:	0	ST: 220 TM: 323
08/23 01:0	SB:	0	GB:	0	ST: 82 TM: 94
08/23 01:1	SB:	0	GB:	0	ST: 412 TM: 326
08/23 01:2	SB:	0	GB:	0	ST: 332 TM: 394
08/23 01:3	SB:	0	GB:	0	ST: 368 TM: 421
08/23 01:4	SB:	0	GB:	0	ST: 283 TM: 454
08/23 01:5	SB:	0	GB:	0	ST: 381 TM: 460
08/23 02:0	SB:	0	GB:	0	ST: 438 TM: 467
08/23 02:1	SB:	0	GB:	0	ST: 407 TM: 466
08/23 02:2	SB:	0	GB:	0	ST: 207 TM: 473
08/23 02:3	SB:	0	GB:	0	ST: 67 TM: 162

Test 2 – Sleep 30s

Command used:

Submit sleep 30

Resources used:

Reached 500 running jobs.
Was able to keep 400 running jobs.

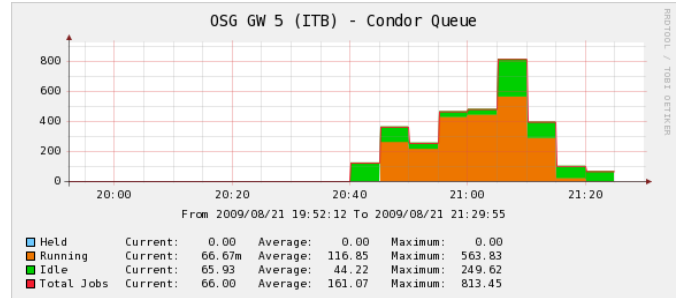


Figure 2: Running jobs on CE - test 2

Detailed rates:

Hourly

08/21 20 SB:	4999	GB:	5000	ST:	1101	TM:	1096
08/21 21 SB:	0	GB:	0	ST:	3899	TM:	3904

Over 10 mins

08/21 20:3 SB:	4999	GB:	0	ST:	0	TM:	0
08/21 20:4 SB:	0	GB:	3597	ST:	294	TM:	119
08/21 20:5 SB:	0	GB:	1403	ST:	807	TM:	977
08/21 21:0 SB:	0	GB:	0	ST:	294	TM:	299
08/21 21:1 SB:	0	GB:	0	ST:	1394	TM:	1382
08/21 21:2 SB:	0	GB:	0	ST:	1737	TM:	1743
08/21 21:3 SB:	0	GB:	0	ST:	461	TM:	466
08/21 21:4 SB:	0	GB:	0	ST:	13	TM:	14

Test 3 – Sleep 3h

Command used:

Submit sleep 10800.

Resources used:

Reached 2.8k running jobs.
Was able to keep 2.8k running jobs.

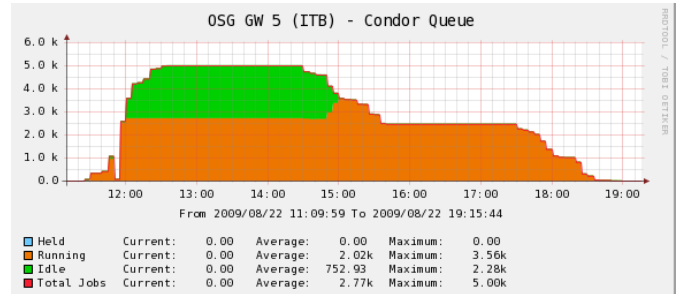


Figure 3: Running jobs on CE - test 3

Detailed rates:

Hourly

08/22 11 SB:	4999	GB:	5000	ST:	456	TM:	0
08/22 12 SB:	0	GB:	0	ST:	2260	TM:	0
08/22 14 SB:	0	GB:	0	ST:	57	TM:	266
08/22 15 SB:	0	GB:	0	ST:	2063	TM:	1259
08/22 16 SB:	0	GB:	0	ST:	164	TM:	1015
08/22 17 SB:	0	GB:	0	ST:	0	TM:	248
08/22 18 SB:	0	GB:	0	ST:	0	TM:	2212

Over 10 mins

08/22 11:2 SB:	4999	GB:	80	ST:	0	TM:	0
08/22 11:3 SB:	0	GB:	4144	ST:	12	TM:	0
08/22 11:4 SB:	0	GB:	776	ST:	278	TM:	0
08/22 11:5 SB:	0	GB:	0	ST:	166	TM:	0
08/22 12:0 SB:	0	GB:	0	ST:	359	TM:	0
08/22 12:1 SB:	0	GB:	0	ST:	669	TM:	0
08/22 12:2 SB:	0	GB:	0	ST:	478	TM:	0
08/22 12:3 SB:	0	GB:	0	ST:	686	TM:	0
08/22 12:4 SB:	0	GB:	0	ST:	68	TM:	0

08/22	14:3	SB:	0	GB:	0	ST:	0	TM:	104
08/22	14:4	SB:	0	GB:	0	ST:	0	TM:	24
08/22	14:5	SB:	0	GB:	0	ST:	57	TM:	138
08/22	15:0	SB:	0	GB:	0	ST:	442	TM:	121
08/22	15:1	SB:	0	GB:	0	ST:	525	TM:	15
08/22	15:2	SB:	0	GB:	0	ST:	410	TM:	95
08/22	15:3	SB:	0	GB:	0	ST:	31	TM:	482
08/22	15:4	SB:	0	GB:	0	ST:	178	TM:	406
08/22	15:5	SB:	0	GB:	0	ST:	477	TM:	140
08/22	16:0	SB:	0	GB:	0	ST:	86	TM:	535
08/22	16:1	SB:	0	GB:	0	ST:	0	TM:	470
08/22	16:2	SB:	0	GB:	0	ST:	23	TM:	8
08/22	16:3	SB:	0	GB:	0	ST:	53	TM:	1
08/22	16:4	SB:	0	GB:	0	ST:	2	TM:	1
08/22	17:3	SB:	0	GB:	0	ST:	0	TM:	244
08/22	17:4	SB:	0	GB:	0	ST:	0	TM:	2
08/22	17:5	SB:	0	GB:	0	ST:	0	TM:	2
08/22	18:1	SB:	0	GB:	0	ST:	0	TM:	495
08/22	18:2	SB:	0	GB:	0	ST:	0	TM:	584
08/22	18:3	SB:	0	GB:	0	ST:	0	TM:	569
08/22	18:4	SB:	0	GB:	0	ST:	0	TM:	538
08/22	18:5	SB:	0	GB:	0	ST:	0	TM:	26