

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 in Italy (190ms RTT to 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	~480/min	~480/min
Condor-G noticing jobs starting	~34/min	~25/min
Condor-G noticing jobs terminating	~30/min	~17/min
Limiting one	~30/min	~17/min

Detailed results

Test1 – Sleep 30 mins

Command used:

Submit of sleep 1800

Resources used:

Reached 2.8k running jobs.

Was able to keep 1k running jobs.

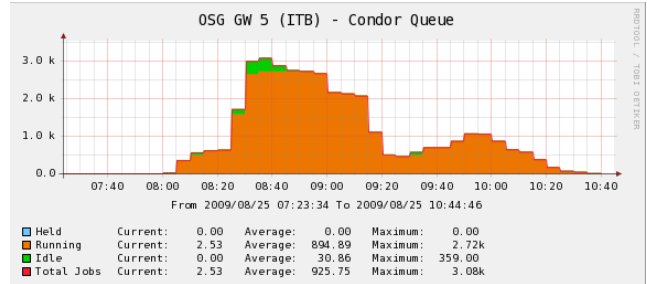


Figure 1: Running jobs on CE - test 1

Detailed rates:

Hourly				
08/25 16	SB: 4999	GB: 0	ST: 0	TM: 0
08/25 17	SB: 0	GB: 5000	ST: 586	TM: 135
08/25 18	SB: 0	GB: 0	ST: 571	TM: 612
08/25 19	SB: 0	GB: 0	ST: 1169	TM: 1229
08/25 20	SB: 0	GB: 0	ST: 979	TM: 1178
08/25 21	SB: 0	GB: 0	ST: 1281	TM: 1303
08/25 22	SB: 0	GB: 0	ST: 414	TM: 415

Over 10 mins				
08/25 16:5	SB: 4999	GB: 0	ST: 0	TM: 0
08/25 17:0	SB: 0	GB: 507	ST: 38	TM: 0
08/25 17:1	SB: 0	GB: 4493	ST: 97	TM: 0
08/25 17:2	SB: 0	GB: 0	ST: 238	TM: 0
08/25 17:4	SB: 0	GB: 0	ST: 100	TM: 19
08/25 17:5	SB: 0	GB: 0	ST: 113	TM: 116
08/25 18:0	SB: 0	GB: 0	ST: 30	TM: 74
08/25 18:1	SB: 0	GB: 0	ST: 0	TM: 19
08/25 18:2	SB: 0	GB: 0	ST: 90	TM: 207
08/25 18:3	SB: 0	GB: 0	ST: 93	TM: 90
08/25 18:4	SB: 0	GB: 0	ST: 127	TM: 152
08/25 18:5	SB: 0	GB: 0	ST: 231	TM: 70
08/25 19:0	SB: 0	GB: 0	ST: 203	TM: 249
08/25 19:1	SB: 0	GB: 0	ST: 199	TM: 202
08/25 19:2	SB: 0	GB: 0	ST: 203	TM: 209
08/25 19:3	SB: 0	GB: 0	ST: 215	TM: 216
08/25 19:4	SB: 0	GB: 0	ST: 153	TM: 154
08/25 19:5	SB: 0	GB: 0	ST: 196	TM: 199
08/25 20:0	SB: 0	GB: 0	ST: 223	TM: 227
08/25 20:1	SB: 0	GB: 0	ST: 186	TM: 189
08/25 20:2	SB: 0	GB: 0	ST: 156	TM: 165
08/25 20:3	SB: 0	GB: 0	ST: 186	TM: 228
08/25 20:4	SB: 0	GB: 0	ST: 120	TM: 216
08/25 20:5	SB: 0	GB: 0	ST: 108	TM: 153
08/25 21:0	SB: 0	GB: 0	ST: 265	TM: 276
08/25 21:1	SB: 0	GB: 0	ST: 201	TM: 213
08/25 21:2	SB: 0	GB: 0	ST: 206	TM: 205
08/25 21:3	SB: 0	GB: 0	ST: 193	TM: 195
08/25 21:4	SB: 0	GB: 0	ST: 212	TM: 211
08/25 21:5	SB: 0	GB: 0	ST: 204	TM: 203
08/25 22:0	SB: 0	GB: 0	ST: 203	TM: 204
08/25 22:1	SB: 0	GB: 0	ST: 202	TM: 201
08/25 22:2	SB: 0	GB: 0	ST: 9	TM: 10

Comments:

Condor-G marked 127 jobs as held. The error message was:

"Globus error 94: the jobmanager does not accept new requests (shutting down)"

Test 2 – Sleep 30s

Command used:

Submit sleep 30

Resources used:

Reached 1k running jobs.

Was able to keep 1k running jobs.

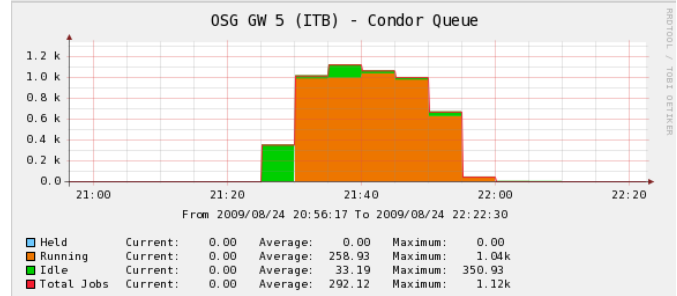


Figure 2: Running jobs on CE - test 2

Detailed rates:

Hourly			
08/25 05 SB:	4999 GB:	0 ST:	0 TM:
08/25 06 SB:	0 GB:	5000 ST:	486 TM:
08/25 07 SB:	0 GB:	0 ST:	979 TM:
08/25 08 SB:	0 GB:	0 ST:	1773 TM:
08/25 09 SB:	0 GB:	0 ST:	1345 TM:
08/25 10 SB:	0 GB:	0 ST:	417 TM:

Over 10 mins			
08/25 05:5 SB:	4999 GB:	0 ST:	0 TM:
08/25 06:0 SB:	0 GB:	101 ST:	0 TM:
08/25 06:1 SB:	0 GB:	4899 ST:	203 TM:
08/25 06:2 SB:	0 GB:	0 ST:	81 TM:
08/25 06:3 SB:	0 GB:	0 ST:	141 TM:
08/25 06:5 SB:	0 GB:	0 ST:	61 TM:
08/25 07:0 SB:	0 GB:	0 ST:	256 TM:
08/25 07:1 SB:	0 GB:	0 ST:	246 TM:
08/25 07:2 SB:	0 GB:	0 ST:	203 TM:
08/25 07:3 SB:	0 GB:	0 ST:	38 TM:
08/25 07:4 SB:	0 GB:	0 ST:	236 TM:
08/25 07:5 SB:	0 GB:	0 ST:	0 TM:
08/25 08:0 SB:	0 GB:	0 ST:	350 TM:
08/25 08:1 SB:	0 GB:	0 ST:	340 TM:
08/25 08:2 SB:	0 GB:	0 ST:	355 TM:
08/25 08:3 SB:	0 GB:	0 ST:	231 TM:
08/25 08:4 SB:	0 GB:	0 ST:	190 TM:
08/25 08:5 SB:	0 GB:	0 ST:	307 TM:
08/25 09:0 SB:	0 GB:	0 ST:	155 TM:
08/25 09:1 SB:	0 GB:	0 ST:	263 TM:
08/25 09:2 SB:	0 GB:	0 ST:	257 TM:
08/25 09:3 SB:	0 GB:	0 ST:	170 TM:
08/25 09:4 SB:	0 GB:	0 ST:	245 TM:
08/25 09:5 SB:	0 GB:	0 ST:	255 TM:
08/25 10:0 SB:	0 GB:	0 ST:	216 TM:
08/25 10:1 SB:	0 GB:	0 ST:	201 TM:

Comments:

Condor-G marked 1006 jobs as held. The error message was:

"Globus error 94: the jobmanager does not accept any new requests (shutting down)"

Test 3 – Sleep 3h

Command used:

Submit sleep 10800.

Resources used:

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

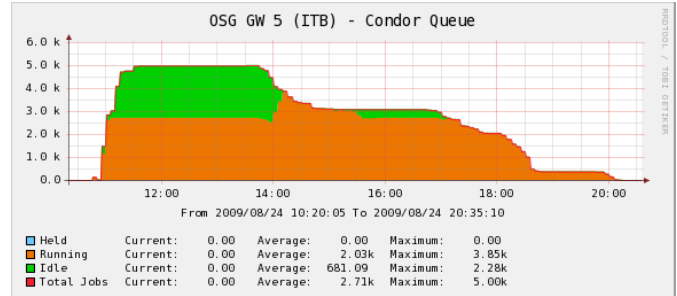


Figure 3: Running jobs on CE - test 3

Detailed rates:

Hourly							
08/24 19 SB:	4999	GB:	4984	ST:	142	TM:	0
08/24 20 SB:	0	GB:	16	ST:	1008	TM:	0
08/24 21 SB:	0	GB:	0	ST:	1566	TM:	0
08/24 22 SB:	0	GB:	0	ST:	0	TM:	5
08/24 23 SB:	0	GB:	0	ST:	177	TM:	311
08/25 00 SB:	0	GB:	0	ST:	10	TM:	1014
08/25 01 SB:	0	GB:	0	ST:	474	TM:	559
08/25 02 SB:	0	GB:	0	ST:	1373	TM:	509
08/25 03 SB:	0	GB:	0	ST:	250	TM:	934
08/25 04 SB:	0	GB:	0	ST:	0	TM:	1151
08/25 05 SB:	0	GB:	0	ST:	0	TM:	515

Over 10 mins							
08/24 19:3 SB:	4999	GB:	0	ST:	0	TM:	0
08/24 19:4 SB:	0	GB:	142	ST:	0	TM:	0
08/24 19:5 SB:	0	GB:	4842	ST:	142	TM:	0
08/24 20:0 SB:	0	GB:	16	ST:	84	TM:	0
08/24 20:1 SB:	0	GB:	0	ST:	31	TM:	0
08/24 20:2 SB:	0	GB:	0	ST:	258	TM:	0
08/24 20:3 SB:	0	GB:	0	ST:	173	TM:	0
08/24 20:4 SB:	0	GB:	0	ST:	233	TM:	0
08/24 20:5 SB:	0	GB:	0	ST:	229	TM:	0
08/24 21:0 SB:	0	GB:	0	ST:	224	TM:	0
08/24 21:1 SB:	0	GB:	0	ST:	102	TM:	0
08/24 21:2 SB:	0	GB:	0	ST:	239	TM:	0
08/24 21:3 SB:	0	GB:	0	ST:	115	TM:	0
08/24 21:4 SB:	0	GB:	0	ST:	498	TM:	0
08/24 21:5 SB:	0	GB:	0	ST:	388	TM:	0
08/24 22:4 SB:	0	GB:	0	ST:	0	TM:	1
08/24 22:5 SB:	0	GB:	0	ST:	0	TM:	4
08/24 23:0 SB:	0	GB:	0	ST:	0	TM:	5
08/24 23:1 SB:	0	GB:	0	ST:	0	TM:	12
08/24 23:2 SB:	0	GB:	0	ST:	11	TM:	18
08/24 23:3 SB:	0	GB:	0	ST:	58	TM:	37
08/24 23:4 SB:	0	GB:	0	ST:	66	TM:	170
08/24 23:5 SB:	0	GB:	0	ST:	42	TM:	69
08/25 00:0 SB:	0	GB:	0	ST:	10	TM:	266
08/25 00:1 SB:	0	GB:	0	ST:	0	TM:	163
08/25 00:2 SB:	0	GB:	0	ST:	0	TM:	140
08/25 00:3 SB:	0	GB:	0	ST:	0	TM:	163
08/25 00:4 SB:	0	GB:	0	ST:	0	TM:	139
08/25 00:5 SB:	0	GB:	0	ST:	0	TM:	143
08/25 01:0 SB:	0	GB:	0	ST:	0	TM:	65
08/25 01:1 SB:	0	GB:	0	ST:	0	TM:	154
08/25 01:2 SB:	0	GB:	0	ST:	0	TM:	153
08/25 01:3 SB:	0	GB:	0	ST:	149	TM:	40
08/25 01:4 SB:	0	GB:	0	ST:	143	TM:	108
08/25 01:5 SB:	0	GB:	0	ST:	182	TM:	39
08/25 02:0 SB:	0	GB:	0	ST:	217	TM:	66
08/25 02:1 SB:	0	GB:	0	ST:	216	TM:	96
08/25 02:2 SB:	0	GB:	0	ST:	220	TM:	77
08/25 02:3 SB:	0	GB:	0	ST:	228	TM:	63
08/25 02:4 SB:	0	GB:	0	ST:	240	TM:	101
08/25 02:5 SB:	0	GB:	0	ST:	252	TM:	106
08/25 03:0 SB:	0	GB:	0	ST:	162	TM:	119
08/25 03:1 SB:	0	GB:	0	ST:	86	TM:	139
08/25 03:2 SB:	0	GB:	0	ST:	2	TM:	65
08/25 03:3 SB:	0	GB:	0	ST:	0	TM:	108
08/25 03:4 SB:	0	GB:	0	ST:	0	TM:	239
08/25 03:5 SB:	0	GB:	0	ST:	0	TM:	264
08/25 04:0 SB:	0	GB:	0	ST:	0	TM:	251
08/25 04:1 SB:	0	GB:	0	ST:	0	TM:	172
08/25 04:2 SB:	0	GB:	0	ST:	0	TM:	171

08/25	04:3	SB:	0	GB:	0	ST:	0	TM:	169
08/25	04:4	SB:	0	GB:	0	ST:	0	TM:	158
08/25	04:5	SB:	0	GB:	0	ST:	0	TM:	230
08/25	05:0	SB:	0	GB:	0	ST:	0	TM:	244
08/25	05:1	SB:	0	GB:	0	ST:	0	TM:	262

Comments:

Condor-G marked 2 jobs as held.