

OSG Scalability Testing

Job startup rate

GT2, osg-gw-5.t2.ucsd.edu (Opteron 275), OSG 1.0.0

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Description

This page contains the results of the scalability tests ran against a GT2 CE.

The tested machine was osg-gw-5.t2.ucsd.edu, with an Opteron 275 CPU. OSG CE version 1.0.0.

The testing suite was loadtest_condor v1_0_0. The client had Condor-G v7.3.1. The client was in Pisa, Italy (190ms network RTT).

Submitting 5000 jobs with small files, CE has 2.5k slots.

The test was performed in August 2009.

Results at a glance

| Rate | Alone | Combined |
|------------------------------------|---------|----------|
| Condor-G to Globus submission | ~15/min | ~7/min |
| Condor-G noticing jobs starting | ~15/min | ~7/min |
| Condor-G noticing jobs terminating | ~11/min | ~3.5/min |
| Limiting one | ~11/min | ~3.5/min |

The results seem to depend on network congestion. Nightly rates were much better than daily ones.

Detailed results

Test 1 – Sleep 30s

Command used:

```
loadtest_condor.sh -type grid gt2 osg-gw-5.t2.ucsd.edu:/jobmanager-condor -req  
"(condor_submit=(+SleepSlot 'TRUE'))" -end fixed 30 -jobs 5000 -cluster 100 -in infle 100 -out outfile  
123
```

Resources used:

Reached 20 running jobs.

Was able to keep 5 running jobs.

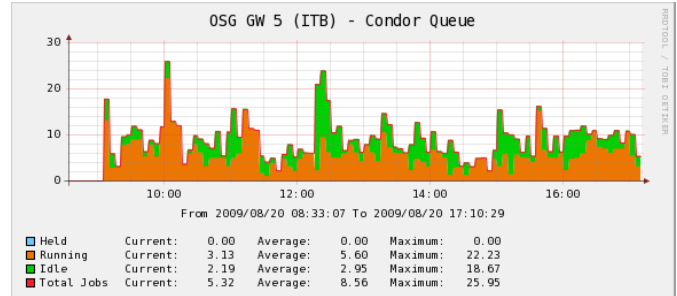


Figure 1: Running jobs on CE - test 1

Detailed rates:

| Hourly | | | | | |
|--------------|------|-----|-----|-----|-----|
| 08/20 18 SB: | 5000 | GB: | 459 | ST: | 442 |
| 08/20 19 SB: | 0 | GB: | 383 | ST: | 390 |
| 08/20 20 SB: | 0 | GB: | 353 | ST: | 348 |
| 08/20 21 SB: | 0 | GB: | 363 | ST: | 365 |
| 08/20 22 SB: | 0 | GB: | 452 | ST: | 448 |
| 08/20 23 SB: | 0 | GB: | 524 | ST: | 518 |
| 08/21 00 SB: | 0 | GB: | 622 | ST: | 624 |
| 08/21 01 SB: | 0 | GB: | 646 | ST: | 638 |

| Over 10 mins | | | | | |
|----------------|------|-----|-----|-----|-----|
| 08/20 18:0 SB: | 1077 | GB: | 41 | ST: | 1 |
| 08/20 18:1 SB: | 3309 | GB: | 100 | ST: | 131 |
| 08/20 18:2 SB: | 614 | GB: | 78 | ST: | 72 |
| 08/20 18:3 SB: | 0 | GB: | 73 | ST: | 72 |
| 08/20 18:4 SB: | 0 | GB: | 75 | ST: | 76 |
| 08/20 18:5 SB: | 0 | GB: | 92 | ST: | 90 |
| 08/20 19:0 SB: | 0 | GB: | 77 | ST: | 70 |
| 08/20 19:1 SB: | 0 | GB: | 70 | ST: | 77 |
| 08/20 19:2 SB: | 0 | GB: | 63 | ST: | 62 |
| 08/20 19:3 SB: | 0 | GB: | 65 | ST: | 70 |
| 08/20 19:4 SB: | 0 | GB: | 61 | ST: | 56 |
| 08/20 19:5 SB: | 0 | GB: | 47 | ST: | 55 |
| 08/20 20:0 SB: | 0 | GB: | 69 | ST: | 60 |
| 08/20 20:1 SB: | 0 | GB: | 54 | ST: | 65 |
| 08/20 20:2 SB: | 0 | GB: | 62 | ST: | 64 |
| 08/20 20:3 SB: | 0 | GB: | 55 | ST: | 42 |
| 08/20 20:4 SB: | 0 | GB: | 57 | ST: | 55 |
| 08/20 20:5 SB: | 0 | GB: | 56 | ST: | 62 |
| 08/20 21:0 SB: | 0 | GB: | 52 | ST: | 52 |
| 08/20 21:1 SB: | 0 | GB: | 59 | ST: | 53 |
| 08/20 21:2 SB: | 0 | GB: | 57 | ST: | 60 |
| 08/20 21:3 SB: | 0 | GB: | 61 | ST: | 56 |
| 08/20 21:4 SB: | 0 | GB: | 75 | ST: | 76 |
| 08/20 21:5 SB: | 0 | GB: | 59 | ST: | 68 |
| 08/20 22:0 SB: | 0 | GB: | 66 | ST: | 58 |
| 08/20 22:1 SB: | 0 | GB: | 95 | ST: | 97 |
| 08/20 22:2 SB: | 0 | GB: | 86 | ST: | 93 |
| 08/20 22:3 SB: | 0 | GB: | 66 | ST: | 69 |
| 08/20 22:4 SB: | 0 | GB: | 73 | ST: | 66 |
| 08/20 22:5 SB: | 0 | GB: | 66 | ST: | 65 |
| 08/20 23:0 SB: | 0 | GB: | 81 | ST: | 80 |
| 08/20 23:1 SB: | 0 | GB: | 80 | ST: | 85 |
| 08/20 23:2 SB: | 0 | GB: | 82 | ST: | 79 |
| 08/20 23:3 SB: | 0 | GB: | 71 | ST: | 71 |
| 08/20 23:4 SB: | 0 | GB: | 97 | ST: | 93 |
| 08/20 23:5 SB: | 0 | GB: | 113 | ST: | 110 |
| 08/21 00:0 SB: | 0 | GB: | 104 | ST: | 105 |
| 08/21 00:1 SB: | 0 | GB: | 102 | ST: | 97 |
| 08/21 00:2 SB: | 0 | GB: | 106 | ST: | 114 |
| 08/21 00:3 SB: | 0 | GB: | 103 | ST: | 92 |
| 08/21 00:4 SB: | 0 | GB: | 108 | ST: | 99 |
| 08/21 00:5 SB: | 0 | GB: | 99 | ST: | 117 |
| 08/21 01:0 SB: | 0 | GB: | 97 | ST: | 99 |
| 08/21 01:1 SB: | 0 | GB: | 102 | ST: | 106 |
| 08/21 01:2 SB: | 0 | GB: | 110 | ST: | 106 |
| 08/21 01:3 SB: | 0 | GB: | 104 | ST: | 109 |
| 08/21 01:4 SB: | 0 | GB: | 124 | ST: | 108 |
| 08/21 01:5 SB: | 0 | GB: | 109 | ST: | 110 |

Test 2 – Sleep 3h

Command used:

```
loadtest_condor.sh -type grid gt2 osg-gw-5.t2.ucsd.edu:/jobmanager-condor -req
"(condor_submit=(+SleepSlot 'TRUE'))" -end fixed 10800 -jobs 5000 -cluster 100 -in infile 100 -out
outfile 123
```

Resources used:

Reached 2.0k running jobs.
Was able to keep 1k running jobs.

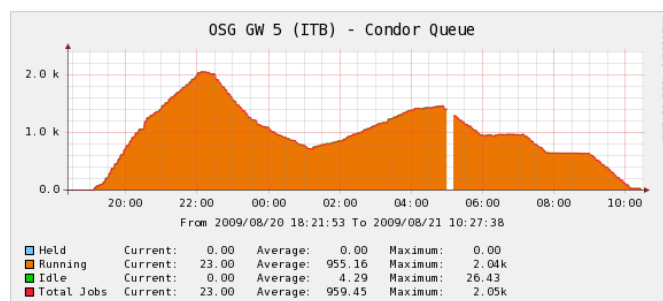


Figure 2: Running jobs on CE - test 2

Detailed rates:

| Hourly | | | | Over 10 mins | | | |
|---|--|--|--|--------------|--|--|--|
| 08/21 04 SB: 5000 GB: 704 ST: 647 TM: 1 | 08/21 04:0 SB: 1700 GB: 43 ST: 22 TM: 1 | | | | | | |
| 08/21 05 SB: 0 GB: 697 ST: 724 TM: 0 | 08/21 04:1 SB: 2092 GB: 54 ST: 64 TM: 0 | | | | | | |
| 08/21 06 SB: 0 GB: 565 ST: 565 TM: 0 | 08/21 04:2 SB: 1208 GB: 121 ST: 88 TM: 0 | | | | | | |
| 08/21 07 SB: 0 GB: 319 ST: 340 TM: 88 | 08/21 04:3 SB: 0 GB: 169 ST: 170 TM: 0 | | | | | | |
| 08/21 08 SB: 0 GB: 188 ST: 184 TM: 91 | 08/21 04:4 SB: 0 GB: 157 ST: 142 TM: 0 | | | | | | |
| 08/21 09 SB: 0 GB: 264 ST: 259 TM: 138 | 08/21 04:5 SB: 0 GB: 160 ST: 161 TM: 0 | | | | | | |
| 08/21 10 SB: 0 GB: 397 ST: 397 TM: 212 | 08/21 05:0 SB: 0 GB: 154 ST: 155 TM: 0 | | | | | | |
| 08/21 11 SB: 0 GB: 448 ST: 452 TM: 228 | 08/21 05:1 SB: 0 GB: 135 ST: 171 TM: 0 | | | | | | |
| 08/21 12 SB: 0 GB: 528 ST: 510 TM: 266 | 08/21 05:2 SB: 0 GB: 139 ST: 129 TM: 0 | | | | | | |
| 08/21 13 SB: 0 GB: 410 ST: 428 TM: 215 | 08/21 05:3 SB: 0 GB: 127 ST: 133 TM: 0 | | | | | | |
| 08/21 14 SB: 0 GB: 8 ST: 5 TM: 87 | 08/21 05:4 SB: 0 GB: 73 ST: 79 TM: 0 | | | | | | |
| 08/21 15 SB: 0 GB: 472 ST: 477 TM: 267 | 08/21 05:5 SB: 0 GB: 69 ST: 57 TM: 0 | | | | | | |
| 08/21 16 SB: 0 GB: 0 ST: 0 TM: 558 | 08/21 06:0 SB: 0 GB: 117 ST: 118 TM: 0 | | | | | | |
| 08/21 17 SB: 0 GB: 0 ST: 0 TM: 655 | 08/21 06:1 SB: 0 GB: 102 ST: 103 TM: 0 | | | | | | |
| 08/21 18 SB: 0 GB: 0 ST: 0 TM: 371 | 08/21 06:2 SB: 0 GB: 78 ST: 84 TM: 0 | | | | | | |
| | 08/21 06:3 SB: 0 GB: 89 ST: 91 TM: 0 | | | | | | |
| | 08/21 06:4 SB: 0 GB: 99 ST: 90 TM: 0 | | | | | | |
| | 08/21 06:5 SB: 0 GB: 80 ST: 79 TM: 0 | | | | | | |
| | 08/21 07:0 SB: 0 GB: 124 ST: 129 TM: 0 | | | | | | |
| | 08/21 07:1 SB: 0 GB: 42 ST: 59 TM: 22 | | | | | | |
| | 08/21 07:2 SB: 0 GB: 43 ST: 36 TM: 18 | | | | | | |
| | 08/21 07:3 SB: 0 GB: 37 ST: 37 TM: 20 | | | | | | |
| | 08/21 07:4 SB: 0 GB: 39 ST: 44 TM: 14 | | | | | | |
| | 08/21 07:5 SB: 0 GB: 34 ST: 35 TM: 14 | | | | | | |
| | 08/21 08:0 SB: 0 GB: 30 ST: 33 TM: 14 | | | | | | |
| | 08/21 08:1 SB: 0 GB: 30 ST: 26 TM: 11 | | | | | | |
| | 08/21 08:2 SB: 0 GB: 30 ST: 36 TM: 16 | | | | | | |
| | 08/21 08:3 SB: 0 GB: 34 ST: 28 TM: 18 | | | | | | |
| | 08/21 08:4 SB: 0 GB: 29 ST: 30 TM: 16 | | | | | | |
| | 08/21 08:5 SB: 0 GB: 35 ST: 31 TM: 16 | | | | | | |
| | 08/21 09:0 SB: 0 GB: 50 ST: 29 TM: 22 | | | | | | |
| | 08/21 09:1 SB: 0 GB: 39 ST: 62 TM: 19 | | | | | | |
| | 08/21 09:2 SB: 0 GB: 38 ST: 35 TM: 24 | | | | | | |
| | 08/21 09:3 SB: 0 GB: 36 ST: 41 TM: 19 | | | | | | |
| | 08/21 09:4 SB: 0 GB: 45 ST: 45 TM: 24 | | | | | | |
| | 08/21 09:5 SB: 0 GB: 56 ST: 47 TM: 30 | | | | | | |
| | 08/21 10:0 SB: 0 GB: 52 ST: 59 TM: 29 | | | | | | |

| | | | | |
|----------------|-------|--------|---------|-----|
| 08/21 10:1 SB: | 0 GB: | 94 ST: | 86 TM: | 41 |
| 08/21 10:2 SB: | 0 GB: | 67 ST: | 57 TM: | 36 |
| 08/21 10:3 SB: | 0 GB: | 62 ST: | 72 TM: | 39 |
| 08/21 10:4 SB: | 0 GB: | 57 ST: | 58 TM: | 32 |
| 08/21 10:5 SB: | 0 GB: | 65 ST: | 65 TM: | 35 |
| 08/21 11:0 SB: | 0 GB: | 66 ST: | 66 TM: | 33 |
| 08/21 11:1 SB: | 0 GB: | 83 ST: | 78 TM: | 43 |
| 08/21 11:2 SB: | 0 GB: | 72 ST: | 67 TM: | 36 |
| 08/21 11:3 SB: | 0 GB: | 69 ST: | 82 TM: | 40 |
| 08/21 11:4 SB: | 0 GB: | 82 ST: | 79 TM: | 37 |
| 08/21 11:5 SB: | 0 GB: | 76 ST: | 80 TM: | 39 |
| 08/21 12:0 SB: | 0 GB: | 86 ST: | 78 TM: | 44 |
| 08/21 12:1 SB: | 0 GB: | 96 ST: | 107 TM: | 44 |
| 08/21 12:2 SB: | 0 GB: | 72 ST: | 63 TM: | 37 |
| 08/21 12:3 SB: | 0 GB: | 86 ST: | 95 TM: | 46 |
| 08/21 12:4 SB: | 0 GB: | 96 ST: | 91 TM: | 50 |
| 08/21 12:5 SB: | 0 GB: | 92 ST: | 76 TM: | 45 |
| 08/21 13:0 SB: | 0 GB: | 89 ST: | 96 TM: | 45 |
| 08/21 13:1 SB: | 0 GB: | 78 ST: | 71 TM: | 39 |
| 08/21 13:2 SB: | 0 GB: | 94 ST: | 101 TM: | 46 |
| 08/21 13:3 SB: | 0 GB: | 72 ST: | 79 TM: | 40 |
| 08/21 13:4 SB: | 0 GB: | 77 ST: | 81 TM: | 45 |
| 08/21 14:0 SB: | 0 GB: | 0 ST: | 0 TM: | 0 |
| 08/21 14:4 SB: | 0 GB: | 3 ST: | 5 TM: | 40 |
| 08/21 14:5 SB: | 0 GB: | 5 ST: | 0 TM: | 47 |
| 08/21 15:0 SB: | 0 GB: | 83 ST: | 68 TM: | 43 |
| 08/21 15:1 SB: | 0 GB: | 86 ST: | 85 TM: | 45 |
| 08/21 15:2 SB: | 0 GB: | 88 ST: | 79 TM: | 45 |
| 08/21 15:3 SB: | 0 GB: | 95 ST: | 87 TM: | 50 |
| 08/21 15:4 SB: | 0 GB: | 93 ST: | 105 TM: | 44 |
| 08/21 15:5 SB: | 0 GB: | 27 ST: | 53 TM: | 40 |
| 08/21 16:0 SB: | 0 GB: | 0 ST: | 0 TM: | 45 |
| 08/21 16:1 SB: | 0 GB: | 0 ST: | 0 TM: | 96 |
| 08/21 16:2 SB: | 0 GB: | 0 ST: | 0 TM: | 104 |
| 08/21 16:3 SB: | 0 GB: | 0 ST: | 0 TM: | 108 |
| 08/21 16:4 SB: | 0 GB: | 0 ST: | 0 TM: | 105 |
| 08/21 16:5 SB: | 0 GB: | 0 ST: | 0 TM: | 100 |
| 08/21 17:0 SB: | 0 GB: | 0 ST: | 0 TM: | 104 |
| 08/21 17:1 SB: | 0 GB: | 0 ST: | 0 TM: | 107 |
| 08/21 17:2 SB: | 0 GB: | 0 ST: | 0 TM: | 111 |
| 08/21 17:3 SB: | 0 GB: | 0 ST: | 0 TM: | 111 |
| 08/21 17:4 SB: | 0 GB: | 0 ST: | 0 TM: | 111 |
| 08/21 17:5 SB: | 0 GB: | 0 ST: | 0 TM: | 111 |
| 08/21 18:0 SB: | 0 GB: | 0 ST: | 0 TM: | 104 |
| 08/21 18:1 SB: | 0 GB: | 0 ST: | 0 TM: | 111 |
| 08/21 18:2 SB: | 0 GB: | 0 ST: | 0 TM: | 60 |
| 08/21 18:3 SB: | 0 GB: | 0 ST: | 0 TM: | 34 |
| 08/21 18:4 SB: | 0 GB: | 0 ST: | 0 TM: | 50 |
| 08/21 18:5 SB: | 0 GB: | 0 ST: | 0 TM: | 12 |