

Dealing with real resources

Wednesday Afternoon, 3:00 pm

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OSG Campus Grids

University of Nebraska – Lincoln



What have we seen?

- If you do a condor_status on glidein:

glidein_18928@red-	LINUX	X86_64	Unclaimed	Benchmark	0.880	7933	0+00:00:04
monitor_15002@red-	LINUX	X86_64	Owner	Idle	0.880	793	0+00:01:06
monitor_18449@red-	LINUX	X86_64	Owner	Idle	0.880	793	0+00:00:04
monitor_18928@red-	LINUX	X86_64	Owner	Idle	0.880	793	0+00:00:04
Total Owner Claimed Unclaimed Matched Preempting Backfill							
INTEL/LINUX	15	8	0	7	0	0	0
X86_64/LINUX	27	14	2	11	0	0	0
Total	42	22	2	18	0	0	0

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```
glidein_18928@red- LINUX      X86_64 Unclaimed Benchmar 0.880 7933 0+00:00:04
monitor_15002@red- LINUX      X86_64 Owner      Idle    0.880 793 0+00:01:06
monitor_18449@red- LINUX      X86_64 Owner      Idle    0.880 793 0+00:00:04
monitor_18928@red- LINUX      X86_64 Owner      Idle    0.880 793 0+00:00:04
```

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What have we seen?

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- What does this mean?
- 15 nodes what are 32bit
- 27 nodes that are 64bit

Different Architectures

- OSG computers come in 2 major architectures:
 - X86_64 – Dominant, 64 bit platform
 - 32bit – Very few, but
- Executables have problems on the different architectures.

Different Architectures

- ✓ 32bit application -> 32 bit architecture
- ✓ 32bit application -> 64 bit architecture
- ✓ 64bit application -> 64 bit architecture
- **64bit application -> 32 bit architecture**
- Be smart when you compile and run executables (more in exercise)

Sites that preempt

- Remember we had all these sites



Sites that preempt

- What happens if 1 kills your job?



Sites that preempt

- What if a site goes away?



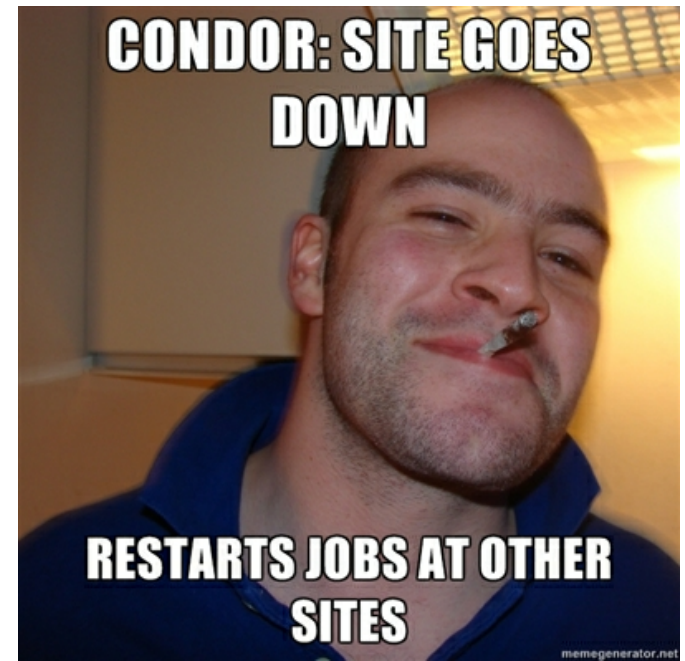
Sites that preempt

- What if a site goes away?



What happens in GlideinWMS?

- With GlideinWMS, the jobs stick around.
- Condor will send the jobs to other remaining sites.
- GGC
(Good Guy Condor?)



Troubleshooting Resources

Wednesday Afternoon, 4:00 pm

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Goals

- For this section, I want to cover some common troubleshooting techniques
- These techniques are widely used by grid users and administrators.

What has happened?

- Jobs stay idle?
- Jobs go on hold?
- Jobs fail on worker nodes?

Jobs on Idle

- There are some tools to help with finding why jobs are not running.
- First, check if any available resources are available:

```
$ condor_status
```

Jobs on Idle

- There are some tools to help with finding why jobs are not running.
- Next, check if the condor knows why your job isn't running

```
$ condor_q -better-analyze 10.0
```



Jobs on Idle

- There are some tools to help with finding why jobs are not running.
- Hum... so your jobs should run, ok now what?
- Look in the job's log file, has it ran already? Failing?



Jobs on Hold

- You see your job on hold in the queue

```
$ condor_q
```

```
-- Submitter: osg-ss-glidein.chtc.wisc.edu : <128.104.100.57:53209> : osg-ss-glidein.chtc.wisc.edu
```

ID	OWNER	SUBMITTED	RUN_TIME	ST	PRI	SIZE	CMD
347.0	mhaytmyr	6/26 11:01	0+00:00:06	H	0	0.0	run-blast.sh yeast
404.0	wliu	6/26 13:32	0+00:00:36	I	0	0.0	blast.sh

```
2 jobs; 1 idle, 0 running, 1 held
```



Jobs on Hold

- What is the hold reason?

```
$ condor_q 347 -format '%s\n' 'HoldReason'  
Error from glidein_8812@iut2-c159.iu.edu: STARTER at 149.165.225.159 failed to  
receive file /var/lib/condor/execute/dir_7087/glide_fZ7141/execute/dir_18801/  
query1: FILETRANSFER:1:No plugin table defined (request was https://  
twiki.grid.iu.edu/twiki/bin/viewfile/Education/OSGSS2012CondorBLAST/query1)
```

Jobs on Hold

- Each case is different

```
$ condor_q 347 -format '%s\n' 'HoldReason'  
Error from glidein_8812@iut2-cl59.iu.edu: STARTER at 149.165.225.159 failed to  
receive file /var/lib/condor/execute/dir_7087/glide_fZ7141/execute/dir_18801/  
query1: FILETRANSFER:1:No plugin table defined (request was https://  
twiki.grid.iu.edu/twiki/bin/viewfile/Education/OSGSS2012CondorBLAST/query1)
```

- In this case, the user put in their submit file:

```
transfer_input_files = https://twiki.grid.iu.edu/twiki/bin/viewfile/Education/  
OSGSS2012CondorBLAST/query1
```

- The Glidein at IU cannot download from http

Jobs failing on Worker Nodes

- How to find jobs are failing on worker nodes?
 - If the output does not match what you expect.
 - If the jobs seem to be running ‘too fast’

Jobs failing on Worker Nodes

- First, can you see anything useful in the output/error:

```
universe = vanilla
...
output = out
error = err
...
queue
```

- Next, we have to try some further debugging

Jobs failing on Worker Nodes

- If you are running a wrapper script, can force output on every step

```
#!/bin/sh
```



```
#!/bin/sh -x
```

- It then outputs every step to the stderr, or 'error' in your submit file.

Jobs failing on Worker Nodes

- Condor can also send you to the worker node using `condor_ssh_to_job`
- **HUGE!!!!**
- Will see in exercises

Questions?

- Questions? Comments?
 - Feel free to ask me questions later:
Alain Roy <roy@cs.wisc.edu>
- Upcoming sessions
 - 9:45-10:30
 - Hands-on exercises
 - 10:30 – 10:45
 - Break
 - 10:45 – 12:15
 - More!