



Open Science Grid

# Troubleshooting Your Jobs

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**The grid is  
your oyster!**



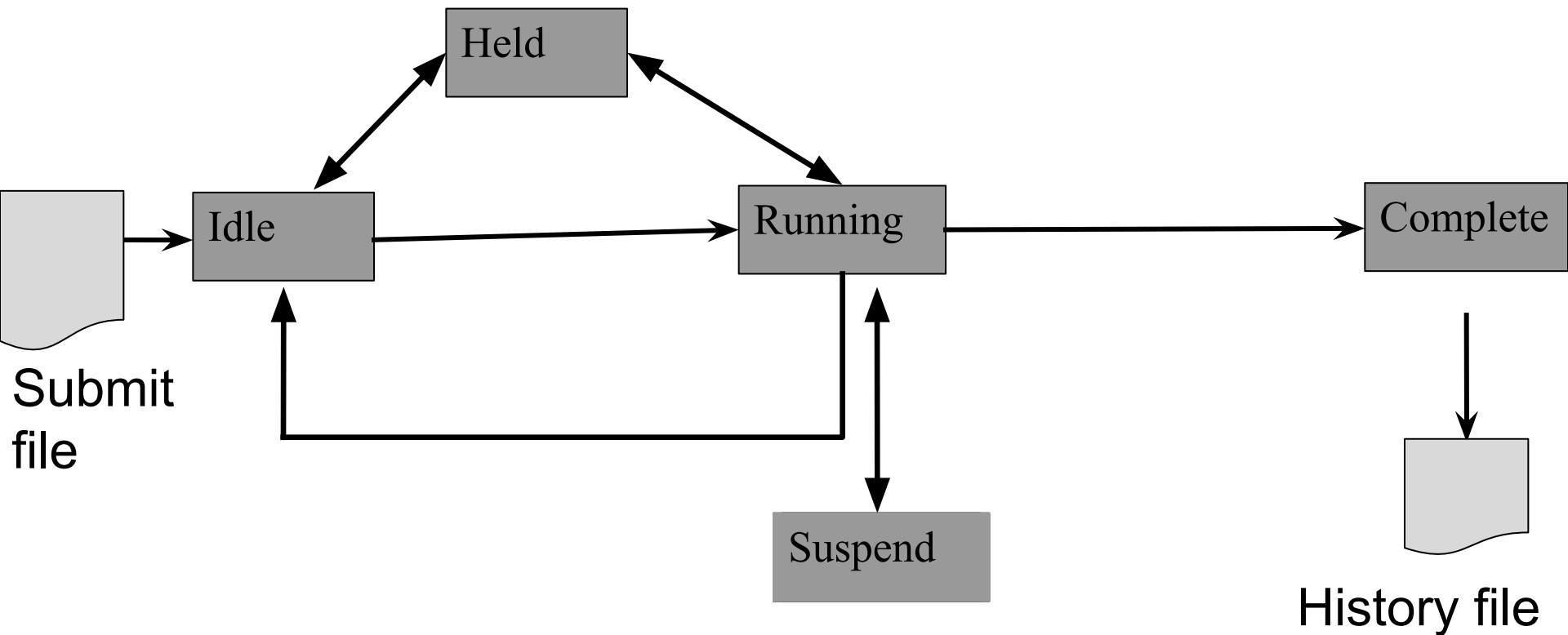


# The grid is your oyster!

...if your workflow isn't broken.

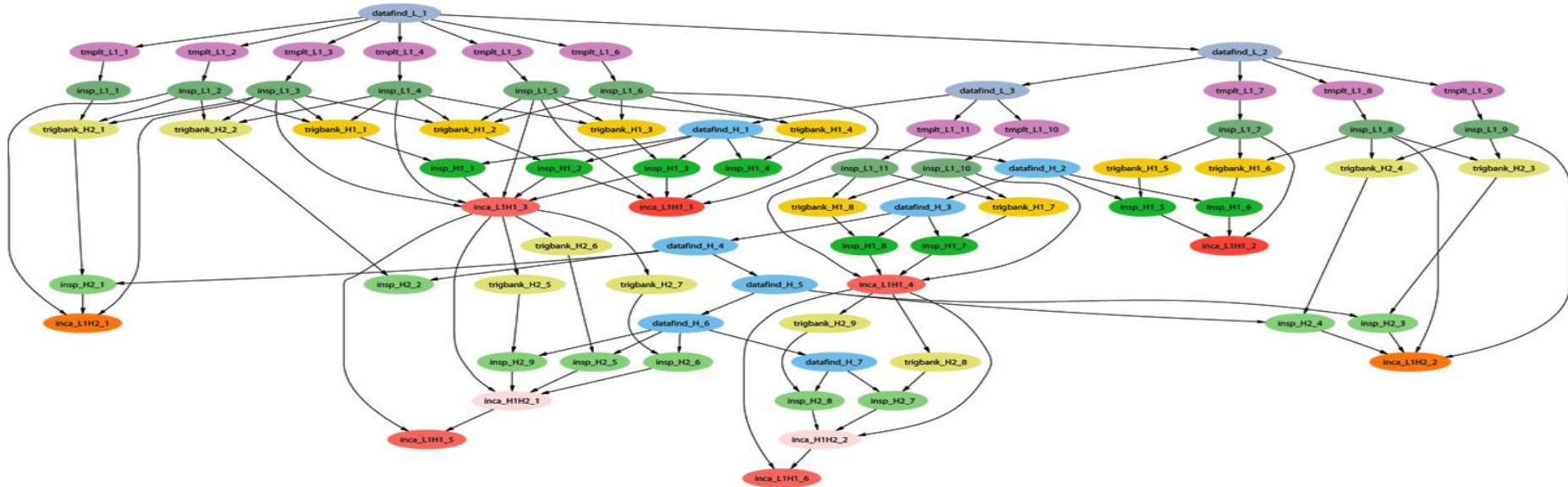


# General Troubleshooting



# General Troubleshooting

## LIGO Example of a LIGO Inspiral DAG



# Keys to Troubleshooting

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- Identify the problem and break it into sub-problems
- Know where to find more information:
  - condor\_q and its options
  - Output, error, log, and rescue files
  - Google
  - Local support
  - User school list
  - [htcondor-users@cs.wisc.edu](mailto:htcondor-users@cs.wisc.edu)
  - [user-support@opensciencegrid.org](mailto:user-support@opensciencegrid.org)



Open Science Grid

# Common Issues

# Why can't I submit my job?

---

```
$ condor_submit sleep.sh
```

```
Submitting job(s)
```

```
ERROR: on Line 2 of submit file:
```

```
ERROR: Failed to parse command file (line 2).
```



# Why can't I submit my job?

---

```
$ condor_submit sleep.sh
```

```
Submitting job(s)
```

```
ERROR: on Line 2 of submit file:
```

```
ERROR: Failed to parse command file (line 2).
```

**Huh?** You've tried to submit something that wasn't your submit file.

**Solution:** Submit your .sub file!

# Why can't I submit my job?

---

```
$ condor_submit sleep.sub
```

```
Submitting job(s)
```

- ERROR: Can't open "/cloud/login/blin/school/inptu\_data" with flags 00 (No such file or directory)
- Submitting job(s)No 'executable' parameter was provided
- ERROR: I don't know about the 'vanila' universe.
- ERROR: Executable file /bin/slep does not exist

# Why can't I submit my job?

```
$ condor_submit sleep.sub
```

Submitting job(s)

- ERROR: Can't open "/cloud/login/blin/school/inptu\_data" with flags 00 (No such file or directory)
- Submitting job(s)No 'executable' parameter was provided
- ERROR: I don't know about the 'vanila' universe.
- ERROR: Executable file /bin/slep does not exist

**Huh?** There are typos in your submit file.

**Solution:** Fix your typos! Condor can only catch a select few of them.

# Why can't I submit my DAG?

---

**Errors appears in \*dagman.out files instead of STDOUT or STDERR:**

07/25/16 17:14:42 From submit: Submitting job(s)

07/25/16 17:14:42 From submit: **ERROR: Invalid log file:**  
**"/home/blin/sleep/sleep.log" (No such file or directory)**

07/25/16 17:14:42 failed while reading from pipe.

07/25/16 17:14:42 Read so far: Submitting job(s)**ERROR: Invalid log file:**  
**"/home/blin/sleep/sleep.log" (No such file or directory)**

07/25/16 17:14:42 **ERROR: submit attempt failed**

# What are my jobs up to?

---

```
$ condor_q -help status
```

```
JobStatus codes:
```

```
1 I IDLE
```

```
2 R RUNNING
```

```
3 X REMOVED
```

```
4 C COMPLETED
```

```
5 H HELD
```

```
6 > TRANSFERRING_OUTPUT
```

```
7 S SUSPENDED
```

# Why are my jobs idle?

```
$ condor_q -better 29486
```

```
[...]
```

The Requirements expression for job 29486.000 reduces to these conditions:

Slots

```
Step Matched Condition
```

```
-----
```

```
[1]      8348 Target.OpSysMajorVer == 6
[7]     10841 TARGET.Disk >= RequestDisk
[9]                1 TARGET.Memory >= RequestMemory
[11]    10852 TARGET.HasFileTransfer
```

# Why are my jobs still running?

```
$ condor_q -nobatch
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?...>
```

ID	OWNER	SUBMITTED	RUN_TIME	ST	PRI	SIZE	CMD
14665.0	blin	7/25 18:19	0+23:00:03	R	0	0.3	sleep.sh

**Solution:** Use ``condor_ssh_to_job <job ID>`` to open an SSH session to the worker node running your job.  
Non-OSG jobs only!

# Why are my jobs held?

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17 15:13:42
```

ID	OWNER	HELD_SINCE	HOLD_REASON
19.0	blin	7/14 15:07	Error from fermicloud113.fnal.gov: Failed to execute '/cloud/login/blin/school/sleep.sh': (errno=13: 'Permission denied')
14662.0	blin	7/25 18:05	Error from slot1_12@e163.chtc.wisc.edu: Failed to execute '/var/lib/condor/execute/slot1/dir_3090825/condor_exec.exe': (errno=8: 'Exec format error')



# Why are my jobs held?

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17 15:13:42
```

```
  ID      OWNER      HELD_SINCE  HOLD_REASON
19.0    blin          7/14 15:07  Error from fermicloud113.fnal.gov: Failed
to execute '/cloud/login/blin/school/sleep.sh': (errno=13: 'Permission
denied')
14662.0  blin          7/25 18:05  Error from slot1_12@e163.chtc.wisc.edu:
Failed to execute
'/var/lib/condor/execute/slot1/dir_3090825/condor_exec.exe': (errno=8: 'Exec
format error')
```

**Huh?** Condor couldn't run your executable.

**Solution:** Set the executable bit on your executable (`chmod +x <filename>`) and/or add the missing shebang line at the top of the executable, e.g. `#!/bin/bash`.

# Why are my jobs held?

---

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17 15:13:42
```

ID	OWNER	HELD_SINCE	HOLD_REASON
29494.0	blin	7/16 17:31	Failed to initialize user log to /home/blin/foo/bar/test-000.log or /home/blin/foo/./test.dag.nodes.log

# Why are my jobs held?

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17 15:13:42
```

ID	OWNER	HELD_SINCE	HOLD_REASON
29494.0	blin	7/16 17:31	Failed to initialize user log to /home/blin/foo/bar/test-000.log or /home/blin/foo/./test.dag.nodes.log

**Huh?** Condor couldn't read job or DAG log files

**Solution:** Ensure existence/write permissions for each folder in the specified path or choose a new location for your files!

# Why are my jobs held?

---

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17  
15:13:42
```

```
  ID      OWNER      HELD_SINCE  HOLD_REASON  
19.0    blin          7/14 15:07  Error from fermicloud113.fnal.gov:  
Failed to execute '/cloud/login/blin/school/sleep.sh': invalid  
interpreter (/bin/bash) specified on first line of script (errno=2:  
'No such file or directory')
```

# Why are my jobs held?

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17  
15:13:42
```

```
  ID      OWNER      HELD_SINCE  HOLD_REASON  
19.0     blin         7/14 15:07  Error from fermicloud113.fnal.gov:  
Failed to execute '/cloud/login/blin/school/sleep.sh': invalid  
interpreter (/bin/bash) specified on first line of script (errno=2:  
'No such file or directory')
```

**Huh?** There are carriage returns (^M) in your executable.

**Solution:** Use ``dos2unix`` or ``vi -b <filename>`` to see and delete the carriage returns (use 'x' to delete).

# Why are my jobs held?

---

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17  
15:13:42
```

ID	OWNER	HELD_SINCE	HOLD_REASON
19.0	blin	7/14 15:07	Error from slot1_1@e026.chtc.wisc.edu: Job has gone over memory limit of 1 megabytes. Peak usage: 1 megabytes.

# Why are my jobs held?

---

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17  
15:13:42
```

```
  ID      OWNER      HELD_SINCE  HOLD_REASON  
19.0    blin        7/14 15:07  Error from  
slot1_1@e026.chtc.wisc.edu: Job has gone over memory limit of 1  
megabytes. Peak usage: 1 megabytes.
```

**Huh?** You've used too many resources.

**Solution:** Request more!

# Why are my jobs held?

Edit your jobs on the fly with `condor_qedit` and `condor_release`:

1. `condor_qedit <job ID> <resource> <value>`
  - a. `condor_qedit <job ID> RequestMemory <mem in MB>`
  - b. `condor_qedit -const 'JobStatus =?= 5' RequestDisk <disk in KiB>`
  - c. `condor_qedit -const 'Owner =?= "blin"' RequestCpus <CPUs>`
2. `condor_release <job ID>`

Or remove your jobs, fix the submit file, and resubmit:

1. `condor_rm <job ID>`
2. Add `request_disk`, `request_mem`, or `request_cpus` to your submit file
3. `condor_submit <submit file>`



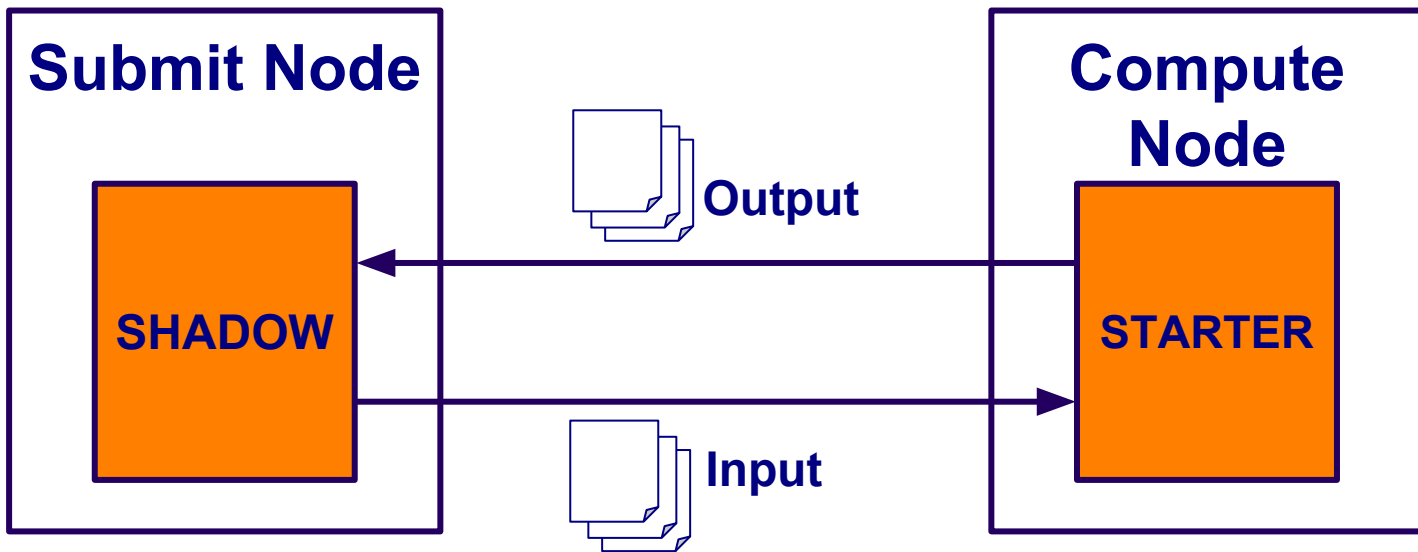
# Why are my jobs held?

---

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17 15:13:42  
 24.0   blin           7/14 16:12 Error from learn.chtc.wisc.edu: STARTER at  
128.104.100.52 failed to send file(s) to <128.104.100.43:64130>: error  
reading from /var/lib/condor/execute/dir_24823/bar: (errno 2) No such file or  
directory; SHADOW failed to receive file(s) from <128.104.100.52:10507>
```

# Why are my jobs held?



# Why are my jobs held?

```
$ condor_q -held
```

```
-- Schedd: learn.chtc.wisc.edu : <128.104.100.43:9618?... @ 07/18/17 15:13:42
  24.0   blin           7/14 16:12 Error from learn.chtc.wisc.edu: STARTER at
128.104.100.52 failed to send file(s) to <128.104.100.43:64130>: error
reading from /var/lib/condor/execute/dir_24823/bar: (errno 2) No such file or
directory; SHADOW failed to receive file(s) from <128.104.100.52:10507>
```

**Huh?** Your job did not create the files that you specified in `transfer_output_files`.

**Solution:** Check for typos in `transfer_output_files`, job runtime, add debugging information to your code.

# Why are my jobs held?

---

```
$ condor_q -af holdreason
```

```
Error from slot1_1@glidein_90499_320684397@node022.local: STARTER at  
192.168.1.22 failed to send file(s) to <128.104.100.31:9618>; SHADOW at  
128.104.100.31 failed to write to file  
/home/blin/location/output/location.5164.0.out: (errno 2) No such file or  
directory
```

# Why are my jobs held?

---

```
$ condor_q -af holdreason
```

```
Error from slot1_1@glidein_90499_320684397@node022.local: STARTER at  
192.168.1.22 failed to send file(s) to <128.104.100.31:9618>; SHADOW at  
128.104.100.31 failed to write to file  
/home/blin/location/output/location.5164.0.out: (errno 2) No such file or  
directory
```

**Huh?** HTCCondor couldn't write output files

**Solution:** On your submit server, make sure that the directories exist and can be written to

# Why are my jobs held?

	Failed to READ	Failed to WRITE
SHADOW	Input files don't exist or cannot be read on the submit server	Could not write output files to your submit server (missing or incorrect permissions on directories)
STARTER	Files in <code>transfer_output_files</code> were not created on the execute server	Something's wrong with the execute server [1] Contact your HTCondor admin!

[1] (Advanced) Avoid problematic execute servers on subsequent job executions with `max_retries`, `periodic_release`, and [job\\_machine\\_attrs](#)

# My jobs completed but...

---

## The output is wrong:

1. Check \*.log files for return codes or unexpected behavior: short runtimes, using too much or too few resources
2. Check \*.err and \*.out for error messages.
3. Submit an interactive job: ``condor_submit -i <submit file>`` and run the executable manually.
  - a. If it succeeds, does your submit file have the correct args? If yes, try adding `'GET_ENV=True'` to your submit file.
  - b. If it fails, there is an issue with your code or your invocation!

# Troubleshooting DAGs

---

1. Check `*.rescue*` files (which DAG nodes failed)
2. Check `*.dagman.out` (errors with job submission)
3. Check `*.nodes.log` (return codes, PRE/POST script failures).
4. If PRE/POST scripts failed, run them manually to see where they failed.



# Troubleshooting Exercise



**petshop bones**

@direlog

Follow



'programming' is a delightful pastime in which you debug for hours only to discover the real problem is: you can't read, and you can't count

6:56 PM - 16 Jul 2017

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# Questions?