OSG HTCondor-CE Security Drill

We conducted a drill to verify we could determine both who ran a given job, and whether a given user had run any jobs at a site, when using the HTCondor-CE software as the OSG Compute Element.

We were looking to verify that we could both identify the credential used to submit a particular job running on a worker node at a site, as well as determine if a given credential was used to submit any jobs to a site.

The drill was conducted by submitting test jobs to the Nebraska Red cluster and asking the admin staff there to identify the submitted job by pid, or identify jobs by DN.

### Test 1

The first test was to identify any jobs submitted by a specified credential.

The process to identify the job is to first, find a condor-ce jobs corresponding to the credential. Then, find the condor job id that the job was run as, and then get information about where the job ran.

The test job was designed to send back various general information about the node it was on in its job output, and sleep for a given amount of time.

test-1h.sh

#!/bin/bash

nap=1800

turns=8

wget -O- --no-check-certificate -q "https://pepperjack.fnal.gov:8443/cgi-bin/checkin?p=$$&h=$(hostname)" || exit

i=0

while [[ $i -lt $turns ]]

do

i=$((i+1))

echo "This is a test job running on $(hostname)"

echo "whoami:"

id

echo "It is now $(date)"

echo "df:"

df

echo "w:"

w

echo "ifconfig:"

ifconfig

echo "env:"

env

echo "sleep for $nap, $i"

sleep $nap

echo "-----------------------------------------------------"

done

The test job was submitted with the following submit file:

test-1h.submit

universe = grid

grid\_resource = condor red.unl.edu red.unl.edu:9619

executable = test-1h.sh

output = out/test-1h.out.$(Cluster).$(Process)

error = out/test-1h.err.$(Cluster).$(Process)

log = out/test-1h.log.$(Cluster).$(Process)

ShouldTransferFiles = YES

WhenToTransferOutput = ON\_EXIT

use\_x509userproxy = true

queue

After the job was submitted, a request was sent to the red.unl.edu admins asking to identify any jobs submitted with the certificate used to generate the voms-proxy used to submit the test job.

On the HTCondor-CE, the DN for the test certificate, ‘/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816’, was found in the AuditLog. Here we find the Cluster ID (CID) which corresponds to the submitted job. Looking for lines about the proxy, we can see there were two jobs submitted.

12/09/14 14:40:29 (cid:3028275) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/09/14 14:40:34 (cid:3028521) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/09/14 14:40:39 (cid:3028523) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/09/14 14:40:39 (cid:3028523) proxy identity: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816

12/09/14 14:40:39 (cid:3028523) proxy subject: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816/CN=proxy/CN=limited proxy

12/09/14 14:40:39 (cid:3028523) proxy full fqan: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL

12/09/14 14:40:39 (cid:3028525) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

…

12/10/14 08:35:36 (cid:3392866) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/10/14 08:35:42 (cid:3392913) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/10/14 08:35:53 (cid:3392944) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/10/14 08:35:53 (cid:3392944) proxy identity: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816

12/10/14 08:35:53 (cid:3392944) proxy subject: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816/CN=proxy/CN=limited proxy

12/10/14 08:35:53 (cid:3392944) proxy full fqan: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL

12/10/14 08:35:53 (cid:3392985) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/10/14 08:35:57 (cid:3392993) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

…

# grep 3028523 AuditLog\*

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) Command=SPOOL\_JOB\_FILES\_WITH\_PERMS, peer=<131.225.80.77:22570>

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) Transferring files for jobs 1137434.0

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) spoolJobFiles(): started worker process

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) Received proxy for job 1137434.0

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy path: /var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0/x509up\_u9945

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy expiration: 1418200611

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy identity: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy subject: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816/CN=proxy/CN=limited proxy

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy email: kevinh@fnal.gov

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy vo name: mis

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy first fqan: /mis/Role=NULL/Capability=NULL

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy full fqan: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) Transfer completed

# grep 3392944 AuditLog

12/10/14 08:35:53 (cid:3392944) Command=SPOOL\_JOB\_FILES\_WITH\_PERMS, peer=<131.225.80.77:24922>

12/10/14 08:35:53 (cid:3392944) AuthMethod=GSI, AuthId=/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL, CondorId=mis@users.opensciencegrid.org

12/10/14 08:35:53 (cid:3392944) Transferring files for jobs 1139016.0

12/10/14 08:35:53 (cid:3392944) spoolJobFiles(): started worker process

12/10/14 08:35:53 (cid:3392944) Received proxy for job 1139016.0

12/10/14 08:35:53 (cid:3392944) proxy path: /var/lib/condor-ce/spool/9016/0/cluster1139016.proc0.subproc0/x509up\_u9945

12/10/14 08:35:53 (cid:3392944) proxy expiration: 1418265154

12/10/14 08:35:53 (cid:3392944) proxy identity: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816

12/10/14 08:35:53 (cid:3392944) proxy subject: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816/CN=proxy/CN=limited proxy

12/10/14 08:35:53 (cid:3392944) proxy email: kevinh@fnal.gov

12/10/14 08:35:53 (cid:3392944) proxy vo name: mis

12/10/14 08:35:53 (cid:3392944) proxy first fqan: /mis/Role=NULL/Capability=NULL

12/10/14 08:35:53 (cid:3392944) proxy full fqan: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL

12/10/14 08:35:53 (cid:3392944) Transfer completed

The account mapping was logged from the gums query:

09 Dec 2014 14:40:29,326 [INFO ]: GridID[/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu] - Mapped on host '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu' the user '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816' / '/mis/Role=NULL/Capability=NULL' to 'Account[user=mis]' 09 Dec 2014 14:40:39,254 [INFO ]: GridID[/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu] - Mapped on host '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu' the user '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816' / '/mis/Role=NULL/Capability=NULL' to 'Account[user=mis]' 10 Dec 2014 08:35:36,783 [INFO ]: GridID[/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu] - Mapped on host '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu' the user '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816' / '/mis/Role=NULL/Capability=NULL' to 'Account[user=mis]' 10 Dec 2014 08:35:53,004 [INFO ]: GridID[/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu] - Mapped on host '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=red.unl.edu' the user '/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816' / '/mis/Role=NULL/Capability=NULL' to 'Account[user=mis]'

More details about both jobs were discovered in the JobRouter and Scheduler logs on the gateway. The Job Router will show how the HTCondor-CE CID is mapped to the local Condor CID. (showing just first job for brevity):

# grep 1137434 \*

AuditLog.20141208T180000:12/09/14 14:40:34 (cid:3028521) Submitting new job 1137434.0

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) Transferring files for jobs 1137434.0

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) Received proxy for job 1137434.0

AuditLog.20141208T180000:12/09/14 14:40:39 (cid:3028523) proxy path: /var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0/x509up\_u9945

AuditLog.20141208T180000:12/09/14 15:23:04 (cid:3042763) Transferring files for jobs 1137434.0

AuditLog.20141208T180000:12/09/14 15:23:09 (cid:3042806) Set Attribute for job 1137434.0, LeaveJobInQueue = false

AuditLog.20141208T180000:12/09/14 15:23:09 (cid:3042806) Set Attribute for job 1137434.0, CurrentTime = time()

JobRouterLog:12/09/14 14:40:52 JobRouter (src=1137434.0,route=Local\_Condor): found candidate job

JobRouterLog:12/09/14 14:40:52 Initializing Directory: curr\_dir = /var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0

JobRouterLog:12/09/14 14:40:52 Initializing Directory: curr\_dir = /var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0.tmp

JobRouterLog:12/09/14 14:40:52 JobRouter (src=1137434.0,route=Local\_Condor): claimed job

JobRouterLog:12/09/14 14:40:52 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): submitted job

JobRouterLog:12/09/14 14:40:52 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): submitted job has not yet appeared in job queue mirror or was removed (submitted 0 seconds ago)

JobRouterLog:12/09/14 14:41:06 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): updated job status

JobRouterLog:12/09/14 14:52:21 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): updated job status

JobRouterLog:12/09/14 15:07:20 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): updated job status

JobRouterLog:12/09/14 15:22:29 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): updated job status

JobRouterLog:12/09/14 15:22:29 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): found target job finished

JobRouterLog:12/09/14 15:22:29 (1137434.0) Writing terminate record to user logfile

JobRouterLog:12/09/14 15:22:29 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): finalized job

JobRouterLog:12/09/14 15:22:29 Initializing Directory: curr\_dir = /var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0

JobRouterLog:12/09/14 15:22:29 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): yielded job (done=1)

JobRouterLog:12/09/14 15:22:29 JobRouter (src=1137434.0,dest=4188380.0,route=Local\_Condor): Cleaned up and removed routed job.

JobRouterLog:12/09/14 15:25:55 JobRouter (src=1137434.0,dest=4188380.0): job mirror synchronized; removing job from internal 'retirement' status

SchedLog.old:GlobalJobId = "red.unl.edu#1137434.0#1418157634"

SchedLog.old:Iwd = "/var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0"

SchedLog.old:ClusterId = 1137434

SchedLog.old:12/09/14 14:40:40 Job 1137434.0 released from hold: Data files spooled

SchedLog.old:ClusterId = 1137434

SchedLog.old:GlobalJobId = "red.unl.edu#1137434.0#1418157634"

SchedLog.old:Iwd = "/var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0"

Condor\_ce\_history provided more details:

# condor\_ce\_history 1137434.0

ID OWNER SUBMITTED RUN\_TIME ST COMPLETED CMD

1137434.0 mis 12/9 14:40 0+00:30:04 C 12/9 15:22 test-1h.sh

# condor\_ce\_history -l 1137434.0

MaxHosts = 1

Managed = "ScheddDone"

User = "mis@users.opensciencegrid.org"

JobFinishedHookDone = 1418160430

OnExitHold = false

CoreSize = 0

LastHoldReason = "Spooling input data files"

WantRemoteSyscalls = false

MyType = "Job"

Rank = 0.0

CumulativeSuspensionTime = 0

MinHosts = 1

ReleaseReason = "Data files spooled"

PeriodicHold = false

PeriodicRemove = ( StageInFinish > 0 ) =!= true && time() > QDate + 28800

Err = "\_condor\_stderr"

ProcId = 0

EnteredCurrentStatus = 1418158341

NumJobStarts = 0

JobUniverse = 5

StageOutStart = 1418160184

In = "/dev/null"

SUBMIT\_TransferOutputRemaps = "\_condor\_stdout=out/test-1h.out.487.0;\_condor\_stderr=out/test-1h.err.487.0"

Requirements = true

ClusterId = 1137434

WhenToTransferOutput = "ON\_EXIT"

CompletionDate = 1418160132

x509UserProxyVOName = "mis"

BufferSize = 524288

Environment = ""

TargetType = "Machine"

LeaveJobInQueue = false

x509UserProxyExpiration = 1418200611

JobNotification = 0

Owner = "mis"

CommittedTime = 0

x509userproxy = "x509up\_u9945"

QDate = 1418157623

JobLeaseDuration = 1200

TransferIn = false

ExitStatus = 0

RootDir = "/"

NumJobMatches = 1

JobCurrentStartDate = 1418158328

CurrentHosts = 0

GlobalJobId = "red.unl.edu#1137434.0#1418157634"

RemoteSysCpu = 1.0

TotalSuspensions = 0

x509UserProxyFirstFQAN = "/mis/Role=NULL/Capability=NULL"

WantCheckpoint = false

RoutedToJobId = "4188380.0"

ManagedManager = ""

x509userproxysubject = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816"

PeriodicRelease = false

NumCkpts\_RAW = 0

Out = "\_condor\_stdout"

ShouldTransferFiles = "YES"

DiskUsage = 1

JobRunCount = 1

CumulativeSlotTime = 0

CommittedSlotTime = 0

LocalUserCpu = 0.0

JobStartDate = 1418158330

ExitBySignal = false

StreamErr = false

NumSystemHolds = 0

NumRestarts = 0

RequestDisk = DiskUsage

JobPrio = 0

NumCkpts = 0

BufferBlockSize = 32768

StageInStart = 1418157639

ImageSize = 300

DiskUsage\_RAW = 1

CommittedSuspensionTime = 0

x509UserProxyEmail = "kevinh@fnal.gov"

Cmd = "test-1h.sh"

LocalSysCpu = 0.0

LastHoldReasonCode = 16

Iwd = "/var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0"

TransferInputSizeMB = 0

SubmitterId = "pepperjack.fnal.gov"

StageOutFinish = 1418160184

LastSuspensionTime = 0

ExecutableSize\_RAW = 1

BytesSent = 28538.0

TransferOutputRemaps = undefined

ExitCode = 0

JobStatus = 4

ExecutableSize = 1

ShadowBday = 1418158328

ImageSize\_RAW = 300

RemoteWallClockTime = 1804.0

OnExitRemove = true

Arguments = ""

KillSig = "SIGTERM"

SpooledOutputFiles = ".site.ad"

SUBMIT\_x509userproxy = "/tmp/x509up\_u9945"

StreamOut = false

CurrentTime = time()

BytesRecvd = 8330.0

RequestMemory = ifthenelse(MemoryUsage =!= undefined,MemoryUsage,( ImageSize + 1023 ) / 1024)

NiceUser = false

RemoteUserCpu = 0.0

RequestCpus = 1

SUBMIT\_Cmd = "/home/kevinh/condor\_ce\_drill/test-1h.sh"

SUBMIT\_Iwd = "/home/kevinh/condor\_ce\_drill"

WantRemoteIO = true

x509UserProxyFQAN = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL"

StageInFinish = 1418157639

LastJobStatus = 2

From the HTCondor-CE jobRouter log we can see the corresponding Condor job id this ran as, and we can use that to get details about the job that actually ran:

# condor\_history 4188380

ID OWNER SUBMITTED RUN\_TIME ST COMPLETED CMD

4188380.0 mis 12/9 14:40 0+00:30:04 C 12/9 15:22 test-1h.sh

# condor\_history -l 4188380

MaxHosts = 1

MemoryUsage = ( ( ResidentSetSize + 1023 ) / 1024 )

AccountingGroup = "other.mis"

User = "mis@unl.edu"

JobFinishedHookDone = 1418160132

remote\_SMPGranularity = 1

OnExitHold = false

MachineAttrCpus0 = 1

LastHoldReason = "Spooling input data files"

WantRemoteSyscalls = false

MyType = "Job"

Rank = 0.0

CumulativeSuspensionTime = 0

MinHosts = 1

ReleaseReason = "Data files spooled"

PeriodicHold = false

PeriodicRemove = false

Err = "\_condor\_stderr"

ProcId = 0

EnteredCurrentStatus = 1418160132

remote\_NodeNumber = 1

BlockWriteKbytes = 0

Remote\_JobUniverse = 5

NumJobStarts = 1

RoutedJob = true

AutoClusterAttrs = "JobUniverse,LastCheckpointPlatform,NumCkpts,\_condor\_RequestCpus,\_condor\_RequestDisk,\_condor\_RequestMemory,RequestCpus,RequestDisk,RequestMemory,Draining,JobStart,LastDrainStartTime,null,QueueAge,RemoteGroup,SubmitterGr

oup,x509userproxyfirstfqan,x509userproxysubject,DynamicSlot,PartitionableSlot,Slot1\_TotalTimeClaimedBusy,Slot1\_TotalTimeUnclaimedIdle,Owner,Slot1\_ExpectedMachineGracefulDrainingCompletion,Slot1\_JobStarts,Slot1\_SelfMonitorAge,MOUNTS\_OK,Dis

kUsage,Requirements,Rank,NiceUser,ConcurrencyLimits"

JobUniverse = 5

AutoClusterId = 6385

RoutedBy = "jobrouter-ce"

In = "/dev/null"

SUBMIT\_TransferOutputRemaps = "\_condor\_stdout=out/test-1h.out.487.0;\_condor\_stderr=out/test-1h.err.487.0"

Requirements = ( TARGET.Memory >= RequestMemory ) && ( IS\_GLIDEIN =!= true || TARGET.GLIDECLIENT\_Group =?= "T2Overflow" ) && ( TARGET.Arch == "X86\_64" ) && ( TARGET.OpSys == "LINUX" ) && ( TARGET.Disk >= RequestDisk ) && ( TARGET.HasFileT

ransfer )

ClusterId = 4188380

NumPids = 0

WhenToTransferOutput = "ON\_EXIT"

LastMatchTime = 1418158328

remote\_queue = ""

CompletionDate = 1418160132

RecentBlockWrites = 0

x509UserProxyVOName = "mis"

Environment = "HOME=/grid\_home/mis OSG\_GRID='/etc/osg/wn-client/' OSG\_SQUID\_LOCATION='red-squid1.unl.edu:3128' OSG\_SITE\_READ='None' OSG\_APP='/opt/osg/app' OSG\_GLEXEC\_LOCATION='/usr/sbin/glexec' OSG\_DATA='UNAVAILABLE' OSG\_HOSTNAME='red.unl

.edu' OSG\_STORAGE\_ELEMENT='True' OSG\_SITE\_NAME='Red' GLOBUS\_LOCATION='/usr' OSG\_WN\_TMP='/tmp' OSG\_SITE\_WRITE='None' OSG\_DEFAULT\_SE='srm.unl.edu' OSG\_JOB\_CONTACT='red.unl.edu/jobmanager-condor' "

StartdPrincipal = "execute-side@matchsession/129.93.182.4"

TargetType = "Machine"

LeaveJobInQueue = false

x509UserProxyExpiration = 1418200611

RouteName = "Local\_Condor"

RecentStatsLifetimeStarter = 1200

WantIOProxy = true

JobNotification = 0

Owner = "mis"

CommittedTime = 1804

x509userproxy = "x509up\_u9945"

QDate = 1418157652

JobLeaseDuration = 1200

PILOT\_AD\_FOUND = false

RecentBlockWriteKbytes = 0

TransferIn = false

ExitStatus = 0

ProportionalSetSizeKb\_RAW = 290

PILOT\_AD\_FRESH = false

RootDir = "/"

NumJobMatches = 1

JobCurrentStartDate = 1418158328

CurrentHosts = 0

GlobalJobId = "red.unl.edu#4188380.0#1418157652"

RemoteSysCpu = 1.0

TotalSuspensions = 0

JobState = "Exited"

x509UserProxyFirstFQAN = "/mis/Role=NULL/Capability=NULL"

remote\_cerequirements = "CondorCE == 1"

WantCheckpoint = false

LastJobLeaseRenewal = 1418160131

LastRemoteHost = "slot1@red-d8n4.unl.edu"

TerminationPending = true

LastRejMatchTime = 1418158267

x509userproxysubject = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816"

JobDuration = 1801.292485

PeriodicRelease = false

StatsLifetime = 1801

LastPublicClaimId = "<129.93.182.4:51689>#1409070498#16550#..."

NumCkpts\_RAW = 0

orig\_environment = ""

StarterIpAddr = "<129.93.182.4:35202>"

Out = "\_condor\_stdout"

ShouldTransferFiles = "YES"

BlockReads = 0

DiskUsage = 47

JobRunCount = 1

CumulativeSlotTime = 1804.0

CommittedSlotTime = 1804.0

ProportionalSetSizeKb = 300

LocalUserCpu = 0.0

RecentBlockReads = 0

JobStartDate = 1418158330

InputRSL = ifThenElse(GlobusRSL =?= null,[ ],eval\_rsl(GlobusRSL))

ExitBySignal = false

StreamErr = false

NumRestarts = 0

NumSystemHolds = 0

RequestDisk = DiskUsage

OrigMaxHosts = 1

ResidentSetSize\_RAW = 0

JobPrio = 0

NumCkpts = 0

RoutedFromJobId = "1137434.0"

ImageSize = 300

StatsLifetimeStarter = 1801

DiskUsage\_RAW = 47

CommittedSuspensionTime = 0

x509UserProxyEmail = "kevinh@fnal.gov"

Cmd = "test-1h.sh"

Iwd = "/var/lib/condor-ce/spool/7434/0/cluster1137434.proc0.subproc0"

LastHoldReasonCode = 16

LocalSysCpu = 0.0

BlockReadKbytes = 0

GridResource = undefined

TransferInputSizeMB = 0

SubmitterId = "pepperjack.fnal.gov"

RecentStatsLifetime = 1200

RecentBlockReadKbytes = 0

ExecutableSize\_RAW = 1

LastSuspensionTime = 0

LastRejMatchReason = "PREEMPTION\_REQUIREMENTS == False "

BytesSent = 28538.0

TransferOutputRemaps = undefined

osg\_environment = "OSG\_GRID='/etc/osg/wn-client/' OSG\_SQUID\_LOCATION='red-squid1.unl.edu:3128' OSG\_SITE\_READ='None' OSG\_APP='/opt/osg/app' OSG\_GLEXEC\_LOCATION='/usr/sbin/glexec' OSG\_DATA='UNAVAILABLE' OSG\_HOSTNAME='red.unl.edu' OSG\_STORAG

E\_ELEMENT='True' OSG\_SITE\_NAME='Red' GLOBUS\_LOCATION='/usr' OSG\_WN\_TMP='/tmp' OSG\_SITE\_WRITE='None' OSG\_DEFAULT\_SE='srm.unl.edu' OSG\_JOB\_CONTACT='red.unl.edu/jobmanager-condor'"

ExitCode = 0

JobStatus = 4

ExecutableSize = 1

MachineAttrSlotWeight0 = 1

ImageSize\_RAW = 296

RemoteWallClockTime = 1804.0

OnExitRemove = true

KillSig = "SIGTERM"

Arguments = ""

SpooledOutputFiles = ".site.ad"

SUBMIT\_x509userproxy = "/tmp/x509up\_u9945"

StreamOut = false

ResidentSetSize = 0

CurrentTime = time()

RequestMemory = 2500

BytesRecvd = 8330.0

NiceUser = false

RemoteUserCpu = 0.0

NumShadowStarts = 1

RequestCpus = 1

SUBMIT\_Cmd = "/home/kevinh/condor\_ce\_drill/test-1h.sh"

SUBMIT\_Iwd = "/home/kevinh/condor\_ce\_drill"

JobPid = 4806

WantRemoteIO = true

x509UserProxyFQAN = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL"

LastJobStatus = 2

JobCurrentStartExecutingDate = 1418158330

BlockWrites = 0

**Test Two**

The second test was to verify that a given job on a given worker node can be traced back to the credential used to submit that job. To do this, a test job was submitted that when ran reported its pid and the hostname it was running on. This information was submitted to the admins of the condor-ce and they were asked to trace it to the credential used to submit it.

The procedure here was to find the condor job id for the pid on the given worker node, from there find the corresponding condor-ce job, which can then give more information on who submitted the job to the site.

First, on the worker node, the starter log contained entries for the given pid, which will point us to the corresponding job ID:

12/18/14 10:20:48 (pid:140796) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

12/18/14 10:20:48 (pid:140796) \*\* condor\_starter (CONDOR\_STARTER) STARTING UP

12/18/14 10:20:48 (pid:140796) \*\* /usr/sbin/condor\_starter

12/18/14 10:20:48 (pid:140796) \*\* SubsystemInfo: name=STARTER type=STARTER(8) class=DAEMON(1)

12/18/14 10:20:48 (pid:140796) \*\* Configuration: subsystem:STARTER local:<NONE> class:DAEMON

12/18/14 10:20:48 (pid:140796) \*\* $CondorVersion: 8.3.1 Aug 09 2014 PRE-RELEASE-UWCS $

12/18/14 10:20:48 (pid:140796) \*\* $CondorPlatform: X86\_64-CentOS\_6.5 $

12/18/14 10:20:48 (pid:140796) \*\* PID = 140796

12/18/14 10:20:48 (pid:140796) \*\* Log last touched 12/18 10:20:00

12/18/14 10:20:48 (pid:140796) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

12/18/14 10:20:48 (pid:140796) Using config source: /etc/condor/condor\_config

12/18/14 10:20:48 (pid:140796) Using local config sources:

12/18/14 10:20:48 (pid:140796) /etc/condor/config.d/01-red

12/18/14 10:20:48 (pid:140796) /etc/condor/config.d/02-red-worker

12/18/14 10:20:48 (pid:140796) /etc/condor/config.d/05-red-external

12/18/14 10:20:48 (pid:140796) /etc/condor/config.d/09-el6

12/18/14 10:20:48 (pid:140796) /etc/condor/config.d/09-pilot-ads

12/18/14 10:20:48 (pid:140796) /etc/condor/config.d/60condor-qmf.config

12/18/14 10:20:48 (pid:140796) /etc/condor/condor\_config.local

12/18/14 10:20:48 (pid:140796) config Macros = 154, Sorted = 153, StringBytes = 5899, TablesBytes = 5640

12/18/14 10:20:48 (pid:140796) CLASSAD\_CACHING is OFF

12/18/14 10:20:48 (pid:140796) Daemon Log is logging: D\_ALWAYS D\_ERROR

12/18/14 10:20:48 (pid:140796) DaemonCore: command socket at <129.93.182.168:32920>

12/18/14 10:20:48 (pid:140796) DaemonCore: private command socket at <129.93.182.168:32920>

12/18/14 10:20:48 (pid:140796) Communicating with shadow <129.93.239.129:42369?noUDP>

12/18/14 10:20:48 (pid:140796) Submitting machine is "red.unl.edu"

12/18/14 10:20:48 (pid:140796) setting the orig job name in starter

12/18/14 10:20:48 (pid:140796) setting the orig job iwd in starter

12/18/14 10:20:48 (pid:140796) Job has WantIOProxy=true

12/18/14 10:20:48 (pid:140796) Chirp config summary: IO true, Updates true, Delayed updates true.

12/18/14 10:20:48 (pid:140796) Initialized IO Proxy.

12/18/14 10:20:48 (pid:140796) Done setting resource limits

12/18/14 10:20:48 (pid:140796) File transfer completed successfully.

12/18/14 10:20:49 (pid:140796) Job 4213562.0 set to execute immediately

12/18/14 10:20:49 (pid:140796) Starting a VANILLA universe job with ID: 4213562.0

12/18/14 10:20:49 (pid:140796) IWD: /var/lib/condor/execute/dir\_140796

12/18/14 10:20:49 (pid:140796) Output file: /var/lib/condor/execute/dir\_140796/\_condor\_stdout

12/18/14 10:20:49 (pid:140796) Error file: /var/lib/condor/execute/dir\_140796/\_condor\_stderr

12/18/14 10:20:49 (pid:140796) Using wrapper /usr/local/bin/condor\_nfslite\_job\_wrapper.sh to exec /var/lib/condor/execute/dir\_140796/condor\_exec.exe

12/18/14 10:20:49 (pid:140796) Running job as user mis

12/18/14 10:20:50 (pid:140796) Create\_Process succeeded, pid=140813

12/18/14 10:20:50 (pid:140796) Limitting memory usage to 2621440000 bytes

12/18/14 10:20:50 (pid:140796) Limitting memsw usage to 135157059584 bytes

From here the Condor job classad can be looked up:

# condor\_q -name red.unl.edu -l 4213562.0

MaxHosts = 1

MemoryUsage = ( ( ResidentSetSize + 1023 ) / 1024 )

AccountingGroup = "other.mis"

User = "mis@unl.edu"

remote\_SMPGranularity = 1

OnExitHold = false

MachineAttrCpus0 = 1

LastHoldReason = "Spooling input data files"

WantRemoteSyscalls = false

MyType = "Job"

Rank = 0.0

CumulativeSuspensionTime = 0

MinHosts = 1

ReleaseReason = "Data files spooled"

PeriodicHold = false

PeriodicRemove = false

Err = "\_condor\_stderr"

ProcId = 0

EnteredCurrentStatus = 1418919647

remote\_NodeNumber = 1

BlockWriteKbytes = 0

Remote\_JobUniverse = 5

NumJobStarts = 1

RoutedJob = true

AutoClusterAttrs = "JobUniverse,LastCheckpointPlatform,NumCkpts,\_condor\_RequestCpus,\_condor\_RequestDisk,\_condor\_RequestMemory,RequestCpus,RequestDisk,RequestMemory,Draining,JobStart,LastDrainStartTime,null,QueueAge,RemoteGroup,SubmitterGr

oup,x509userproxyfirstfqan,x509userproxysubject,DynamicSlot,PartitionableSlot,Slot1\_TotalTimeClaimedBusy,Slot1\_TotalTimeUnclaimedIdle,Owner,Slot1\_ExpectedMachineGracefulDrainingCompletion,Slot1\_JobStarts,Slot1\_SelfMonitorAge,MOUNTS\_OK,Dis

kUsage,Requirements,Rank,NiceUser,ConcurrencyLimits"

JobUniverse = 5

AutoClusterId = 17730

RoutedBy = "jobrouter-ce"

In = "/dev/null"

SUBMIT\_TransferOutputRemaps = "\_condor\_stdout=out/test-1h.out.492.0;\_condor\_stderr=out/test-1h.err.492.0"

Requirements = ( TARGET.Memory >= RequestMemory ) && ( IS\_GLIDEIN =!= true || TARGET.GLIDECLIENT\_Group =?= "T2Overflow" ) && ( TARGET.Arch == "X86\_64" ) && ( TARGET.OpSys == "LINUX" ) && ( TARGET.Disk >= RequestDisk ) && ( TARGET.HasFileT

ransfer )

ClusterId = 4213562

NumPids = 2

PublicClaimId = "<129.93.182.168:43965>#1418764603#602#..."

WhenToTransferOutput = "ON\_EXIT"

LastMatchTime = 1418919647

remote\_queue = ""

CompletionDate = 0

RecentBlockWrites = 0

x509UserProxyVOName = "mis"

Environment = "HOME=/grid\_home/mis OSG\_GRID='/etc/osg/wn-client/' OSG\_SQUID\_LOCATION='red-squid.unl.edu:3128' OSG\_SITE\_READ='None' OSG\_APP='/cvmfs/oasis.opensciencegrid.org' OSG\_GLEXEC\_LOCATION='/usr/sbin/glexec' OSG\_DATA='UNAVAILABLE' OS

G\_HOSTNAME='red.unl.edu' GLOBUS\_LOCATION='/usr' OSG\_STORAGE\_ELEMENT='True' OSG\_SITE\_NAME='Red' OSG\_WN\_TMP='/tmp' PATH='/bin:/usr/bin:/sbin:/usr/sbin' OSG\_DEFAULT\_SE='srm.unl.edu' OSG\_SITE\_WRITE='None' "

StartdPrincipal = "execute-side@matchsession/129.93.182.168"

TargetType = "Machine"

LeaveJobInQueue = JobStatus == 4

x509UserProxyExpiration = 1418961906

RouteName = "Local\_Condor"

RecentStatsLifetimeStarter = 601

WantIOProxy = true

JobNotification = 0

Owner = "mis"

CommittedTime = 0

x509userproxy = "x509up\_u9945"

QDate = 1418918788

JobLeaseDuration = 1200

RecentBlockWriteKbytes = 0

TransferIn = false

ExitStatus = 0

StartdIpAddr = "<129.93.182.168:43965>"

ProportionalSetSizeKb\_RAW = 280

RootDir = "/"

NumJobMatches = 1

JobCurrentStartDate = 1418919647

CurrentHosts = 1

GlobalJobId = "red.unl.edu#4213562.0#1418918788"

RemoteSysCpu = 0.0

TotalSuspensions = 0

JobState = "Running"

x509UserProxyFirstFQAN = "/mis/Role=NULL/Capability=NULL"

remote\_cerequirements = "CondorCE == 1"

WantCheckpoint = false

LastJobLeaseRenewal = 1418921249

x509userproxysubject = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816"

PeriodicRelease = false

StatsLifetime = 610

NumCkpts\_RAW = 0

orig\_environment = ""

StarterIpAddr = "<129.93.182.168:32920>"

Out = "\_condor\_stdout"

ShouldTransferFiles = "YES"

BlockReads = 17

DiskUsage = 25

JobRunCount = 1

CumulativeSlotTime = 0

CommittedSlotTime = 0

ProportionalSetSizeKb = 300

LocalUserCpu = 0.0

RecentBlockReads = 17

JobStartDate = 1418919650

InputRSL = ifThenElse(GlobusRSL =?= null,[ ],eval\_rsl(GlobusRSL))

ExitBySignal = false

StreamErr = false

DelegatedProxyExpiration = 1418961906

NumSystemHolds = 0

NumRestarts = 0

TransferringInput = false

ResidentSetSize\_RAW = 272

RequestDisk = DiskUsage

OrigMaxHosts = 1

JobPrio = 0

NumCkpts = 0

RoutedFromJobId = "1161766.0"

StatsLifetimeStarter = 610

ImageSize = 275

RemoteHost = "slot1@red-d17n8.unl.edu"

DiskUsage\_RAW = 24

CommittedSuspensionTime = 0

x509UserProxyEmail = "kevinh@fnal.gov"

Cmd = "test-1h.sh"

LocalSysCpu = 0.0

LastHoldReasonCode = 16

Iwd = "/var/lib/condor-ce/spool/1766/0/cluster1161766.proc0.subproc0"

BlockReadKbytes = 672

GridResource = undefined

TransferInputSizeMB = 0

RecentStatsLifetime = 601

SubmitterId = "pepperjack.fnal.gov"

RecentBlockReadKbytes = 672

ServerTime = 1418921281

LastSuspensionTime = 0

ExecutableSize\_RAW = 1

BytesSent = 0.0

osg\_environment = "OSG\_GRID='/etc/osg/wn-client/' OSG\_SQUID\_LOCATION='red-squid.unl.edu:3128' OSG\_SITE\_READ='None' OSG\_APP='/cvmfs/oasis.opensciencegrid.org' OSG\_GLEXEC\_LOCATION='/usr/sbin/glexec' OSG\_DATA='UNAVAILABLE' OSG\_HOSTNAME='red.

unl.edu' GLOBUS\_LOCATION='/usr' OSG\_STORAGE\_ELEMENT='True' OSG\_SITE\_NAME='Red' OSG\_WN\_TMP='/tmp' PATH='/bin:/usr/bin:/sbin:/usr/sbin' OSG\_DEFAULT\_SE='srm.unl.edu' OSG\_SITE\_WRITE='None'"

TransferOutputRemaps = undefined

JobStatus = 2

ShadowBday = 1418919647

ExecutableSize = 1

MachineAttrSlotWeight0 = 1

ImageSize\_RAW = 272

OnExitRemove = true

Arguments = ""

KillSig = "SIGTERM"

KillSig = "SIGTERM"

RemoteSlotID = 1

SUBMIT\_x509userproxy = "/tmp/x509up\_u9945"

ResidentSetSize = 275

StreamOut = false

CurrentTime = time()

BytesRecvd = 8441.0

RequestMemory = 2500

RemoteUserCpu = 0.0

NiceUser = false

NumShadowStarts = 1

TransferQueued = false

RequestCpus = 1

SUBMIT\_Cmd = "/home/kevinh/condor\_ce\_drill/test-1h.sh"

SUBMIT\_Iwd = "/home/kevinh/condor\_ce\_drill"

JobPid = 140813

WantRemoteIO = true

x509UserProxyFQAN = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL"

JobCurrentStartExecutingDate = 1418919649

LastJobStatus = 1

BlockWrites = 0

From here, the HTCondor-CE job this was routed from can be looked up:

# condor\_ce\_q -l 1161766.0

MaxHosts = 1

Managed = "External"

User = "mis@users.opensciencegrid.org"

CoreSize = 0

LastHoldReason = "Spooling input data files"

WantRemoteSyscalls = false

MyType = "Job"

Rank = 0.0

CumulativeSuspensionTime = 0

MinHosts = 1

ReleaseReason = "Data files spooled"

PeriodicRemove = ( StageInFinish > 0 ) =!= true && time() > QDate + 28800

Err = "\_condor\_stderr"

ProcId = 0

EnteredCurrentStatus = 1418919664

NumJobStarts = 0

JobUniverse = 5

In = "/dev/null"

SUBMIT\_TransferOutputRemaps = "\_condor\_stdout=out/test-1h.out.492.0;\_condor\_stderr=out/test-1h.err.492.0"

Requirements = true

ClusterId = 1161766

WhenToTransferOutput = "ON\_EXIT"

CompletionDate = 0

x509UserProxyVOName = "mis"

BufferSize = 524288

Environment = ""

TargetType = "Machine"

LeaveJobInQueue = JobStatus == 4

x509UserProxyExpiration = 1418961906

JobNotification = 0

Owner = "mis"

CommittedTime = 0

x509userproxy = "x509up\_u9945"

QDate = 1418918756

JobLeaseDuration = 1200

TransferIn = false

ExitStatus = 0

RootDir = "/"

NumJobMatches = 1

JobCurrentStartDate = 1418919647

CurrentHosts = 0

GlobalJobId = "red.unl.edu#1161766.0#1418918767"

RemoteSysCpu = 0.0

ScheddBday = 1418919118

TotalSuspensions = 0

x509UserProxyFirstFQAN = "/mis/Role=NULL/Capability=NULL"

WantCheckpoint = false

RoutedToJobId = "4213562.0"

ManagedManager = "jobrouter-ce"

x509userproxysubject = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816"

NumCkpts\_RAW = 0

Out = "\_condor\_stdout"

ShouldTransferFiles = "YES"

DiskUsage = 1

JobRunCount = 1

CumulativeSlotTime = 0

CommittedSlotTime = 0

LocalUserCpu = 0.0

JobStartDate = 1418919650

ExitBySignal = false

StreamErr = false

NumSystemHolds = 0

NumRestarts = 0

RequestDisk = DiskUsage

JobPrio = 0

NumCkpts = 0

BufferBlockSize = 32768

StageInStart = 1418918772

ImageSize = 275

DiskUsage\_RAW = 1

CommittedSuspensionTime = 0

x509UserProxyEmail = "kevinh@fnal.gov"

Cmd = "test-1h.sh"

LocalSysCpu = 0.0

LastHoldReasonCode = 16

Iwd = "/var/lib/condor-ce/spool/1766/0/cluster1161766.proc0.subproc0"

TransferInputSizeMB = 0

SubmitterId = "pepperjack.fnal.gov"

ServerTime = 1418921505

LastSuspensionTime = 0

ExecutableSize\_RAW = 1

BytesSent = 0.0

TransferOutputRemaps = undefined

JobStatus = 2

ExecutableSize = 1

ShadowBday = 1418919647

ImageSize\_RAW = 275

RemoteWallClockTime = 0.0

Arguments = ""

KillSig = "SIGTERM"

SUBMIT\_x509userproxy = "/tmp/x509up\_u9945"

StreamOut = false

CurrentTime = time()

RequestMemory = ifthenelse(MemoryUsage =!= undefined,MemoryUsage,( ImageSize + 1023 ) / 1024)

BytesRecvd = 8441.0

RemoteUserCpu = 0.0

NiceUser = false

RequestCpus = 1

SUBMIT\_Cmd = "/home/kevinh/condor\_ce\_drill/test-1h.sh"

SUBMIT\_Iwd = "/home/kevinh/condor\_ce\_drill"

WantRemoteIO = true

StageInFinish = 1418918772

x509UserProxyFQAN = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Kevin Hill 816,/mis/Role=NULL/Capability=NULL"

LastJobStatus = 1

The test was repeated with a job submitted via GlideinWMS. In this case, the pid reported by the test job was a child of the Glidein process. The procedure was about the same, except first the Glidein parent process of the running job pid must be found on the worker node:

condor 33524 0.0 0.0 106044 8208 ? Ss 12:43 0:00 \\_ condor\_starter -f -a slot1\_22 red.unl.edu

osg 33624 0.0 0.0 22624 1892 ? SNs 12:43 0:00 | \\_ /bin/bash /var/lib/condor/execute/dir\_33524/condor\_exec.exe -v std -name v3\_0 -entry CMS\_T2\_US\_Nebraska\_Red -clientname osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.ma

osg 41988 0.0 0.0 22352 1584 ? SN 12:43 0:00 | \\_ /bin/bash /var/lib/condor/execute/dir\_33524/glide\_GwK1Qg/main/condor\_startup.sh glidein\_config

osg 43014 0.0 0.0 102396 8144 ? SN 12:43 0:00 | \\_ /var/lib/condor/execute/dir\_33524/glide\_GwK1Qg/main/condor/sbin/condor\_master -f -pidfile /var/lib/condor/execute/dir\_33524/glide\_GwK1Qg/condor\_master2.p

osg 43016 0.3 0.0 26248 8084 ? SN 12:43 0:12 | \\_ condor\_procd -A /var/lib/condor/execute/dir\_33524/glide\_GwK1Qg/log/procd\_address -L /var/lib/condor/execute/dir\_33524/glide\_GwK1Qg/log/ProcLog -R 100

osg 43017 0.0 0.0 103224 9032 ? SN 12:43 0:03 | \\_ condor\_startd -f

osg 45648 0.0 0.0 102680 8368 ? SN 12:43 0:00 | \\_ condor\_starter -f xd-login.opensciencegrid.org

osg 45659 0.0 0.0 22236 1476 ? SN 12:44 0:00 | \\_ /bin/bash /var/lib/condor/execute/dir\_33524/glide\_GwK1Qg/execute/dir\_45648/condor\_exec.exe

osg 38860 0.0 0.0 4076 516 ? SN 13:44 0:00 | \\_ sleep 1800

From here, the pid of the Glidein pilot process can be found in the starter log on the worker node and we can find the HTCondor job id:

12/18/14 12:43:25 (pid:33524) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

12/18/14 12:43:25 (pid:33524) \*\* condor\_starter (CONDOR\_STARTER) STARTING UP

12/18/14 12:43:25 (pid:33524) \*\* /usr/sbin/condor\_starter

12/18/14 12:43:25 (pid:33524) \*\* SubsystemInfo: name=STARTER type=STARTER(8) class=DAEMON(1)

12/18/14 12:43:25 (pid:33524) \*\* Configuration: subsystem:STARTER local:<NONE> class:DAEMON

12/18/14 12:43:25 (pid:33524) \*\* $CondorVersion: 8.3.1 Aug 09 2014 PRE-RELEASE-UWCS $

12/18/14 12:43:25 (pid:33524) \*\* $CondorPlatform: X86\_64-CentOS\_6.5 $

12/18/14 12:43:25 (pid:33524) \*\* PID = 33524

12/18/14 12:43:25 (pid:33524) \*\* Log last touched 12/18 12:42:21

12/18/14 12:43:25 (pid:33524) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

12/18/14 12:43:25 (pid:33524) Using config source: /etc/condor/condor\_config

12/18/14 12:43:25 (pid:33524) Using local config sources:

12/18/14 12:43:25 (pid:33524) /etc/condor/config.d/01-red

12/18/14 12:43:25 (pid:33524) /etc/condor/config.d/02-red-worker

12/18/14 12:43:25 (pid:33524) /etc/condor/config.d/05-red-external

12/18/14 12:43:25 (pid:33524) /etc/condor/config.d/09-el6

12/18/14 12:43:25 (pid:33524) /etc/condor/config.d/09-pilot-ads

12/18/14 12:43:25 (pid:33524) /etc/condor/config.d/60condor-qmf.config

12/18/14 12:43:25 (pid:33524) /etc/condor/condor\_config.local

12/18/14 12:43:25 (pid:33524) config Macros = 154, Sorted = 153, StringBytes = 5900, TablesBytes = 5640

12/18/14 12:43:25 (pid:33524) CLASSAD\_CACHING is OFF

12/18/14 12:43:25 (pid:33524) Daemon Log is logging: D\_ALWAYS D\_ERROR

12/18/14 12:43:25 (pid:33524) DaemonCore: command socket at <129.93.183.110:52252>

12/18/14 12:43:25 (pid:33524) DaemonCore: private command socket at <129.93.183.110:52252>

12/18/14 12:43:25 (pid:33524) Communicating with shadow <129.93.239.129:19943?noUDP>

12/18/14 12:43:25 (pid:33524) Submitting machine is "red.unl.edu"

12/18/14 12:43:25 (pid:33524) setting the orig job name in starter

12/18/14 12:43:25 (pid:33524) setting the orig job iwd in starter

12/18/14 12:43:25 (pid:33524) Job has WantIOProxy=true

12/18/14 12:43:25 (pid:33524) Chirp config summary: IO true, Updates true, Delayed updates true.

12/18/14 12:43:25 (pid:33524) Initialized IO Proxy.

12/18/14 12:43:26 (pid:33524) Done setting resource limits

12/18/14 12:43:26 (pid:33524) File transfer completed successfully.

12/18/14 12:43:26 (pid:33524) Job 4214063.0 set to execute immediately

12/18/14 12:43:26 (pid:33524) Starting a VANILLA universe job with ID: 4214063.0

12/18/14 12:43:26 (pid:33524) IWD: /var/lib/condor/execute/dir\_33524

12/18/14 12:43:26 (pid:33524) Output file: /var/lib/condor/execute/dir\_33524/\_condor\_stdout

12/18/14 12:43:26 (pid:33524) Error file: /var/lib/condor/execute/dir\_33524/\_condor\_stderr

12/18/14 12:43:26 (pid:33524) Using wrapper /usr/local/bin/condor\_nfslite\_job\_wrapper.sh to exec /var/lib/condor/execute/dir\_33524/condor\_exec.exe -v std -name v3\_0 -entry CMS\_T2\_US\_Nebraska\_Red -clientname osg-flock-grid-iu-edu\_OSG\_gWMSF

12/18/14 12:43:26 (pid:33524) Running job as user osg

12/18/14 12:43:26 (pid:33524) Create\_Process succeeded, pid=33624

12/18/14 12:43:26 (pid:33524) Limitting memory usage to 2621440000 bytes

12/18/14 12:43:26 (pid:33524) Limitting memsw usage to 135223062528 bytes

12/18/14 12:43:26 (pid:33524) Unable to set OOM control to 1 for starter: 22 Invalid argument

Now the classAd for the Condor job can be queried, and we can find the HTCondor-CE job id this was routed from:

# condor\_q -name red.unl.edu 4214063.0 -l

MaxHosts = 1

GlideinSlotsLayout = "fixed"

MemoryUsage = ( ( ResidentSetSize + 1023 ) / 1024 )

GlideinFactory = "OSGGOC"

GlideinCredentialIdentifier = "907675"

AccountingGroup = "other.osg"

User = "osg@unl.edu"

remote\_SMPGranularity = 1

OnExitHold = false

MachineAttrCpus0 = 1

LastHoldReason = "Spooling input data files"

WantRemoteSyscalls = false

MyType = "Job"

Rank = 0.0

CumulativeSuspensionTime = 0

MinHosts = 1

ReleaseReason = "Data files spooled"

PeriodicHold = false

PeriodicRemove = false

Err = "\_condor\_stderr"

ProcId = 0

EnteredCurrentStatus = 1418928204

remote\_NodeNumber = 1

BlockWriteKbytes = 0

Remote\_JobUniverse = 5

NumJobStarts = 1

RoutedJob = true

AutoClusterAttrs = "JobUniverse,LastCheckpointPlatform,NumCkpts,\_condor\_RequestCpus,\_condor\_RequestDisk,\_condor\_RequestMemory,RequestCpus,RequestDisk,RequestMemory,Draining,JobStart,LastDrainStartTime,null,QueueAge,RemoteGroup,SubmitterGr

oup,x509userproxyfirstfqan,x509userproxysubject,DynamicSlot,PartitionableSlot,Slot1\_TotalTimeClaimedBusy,Slot1\_TotalTimeUnclaimedIdle,Owner,Slot1\_ExpectedMachineGracefulDrainingCompletion,Slot1\_JobStarts,Slot1\_SelfMonitorAge,MOUNTS\_OK,Dis

kUsage,Requirements,Rank,NiceUser,ConcurrencyLimits"

JobUniverse = 5

AutoClusterId = 18026

RoutedBy = "jobrouter-ce"

In = "/dev/null"

SUBMIT\_TransferOutputRemaps = "\_condor\_stdout=/usr/local/share/gfactory/clientlogs/user\_feosgflock/glidein\_v3\_0/entry\_CMS\_T2\_US\_Nebraska\_Red/job.1787996.7.out;\_condor\_stderr=/usr/local/share/gfactory/clientlogs/user\_feosgflock/glidein\_v3\_

0/entry\_CMS\_T2\_US\_Nebraska\_Red/job.1787996.7.err"

Requirements = ( TARGET.Memory >= RequestMemory ) && ( IS\_GLIDEIN =!= true || TARGET.GLIDECLIENT\_Group =?= "T2Overflow" ) && ( TARGET.Arch == "X86\_64" ) && ( TARGET.OpSys == "LINUX" ) && ( TARGET.Disk >= RequestDisk ) && ( TARGET.HasFileT

ransfer )

ClusterId = 4214063

NumPids = 8

PublicClaimId = "<129.93.183.110:59131>#1417811779#3732#..."

WhenToTransferOutput = "ON\_EXIT"

LastMatchTime = 1418928204

remote\_queue = ""

CompletionDate = 0

RecentBlockWrites = 0

x509UserProxyVOName = "osg"

Environment = "HOME=/grid\_home/osg OSG\_GRID='/etc/osg/wn-client/' OSG\_SQUID\_LOCATION='red-squid.unl.edu:3128' OSG\_SITE\_READ='None' OSG\_APP='/cvmfs/oasis.opensciencegrid.org' OSG\_GLEXEC\_LOCATION='/usr/sbin/glexec' OSG\_DATA='UNAVAILABLE' OS

G\_HOSTNAME='red.unl.edu' GLOBUS\_LOCATION='/usr' OSG\_STORAGE\_ELEMENT='True' OSG\_SITE\_NAME='Red' OSG\_WN\_TMP='/tmp' PATH='/bin:/usr/bin:/sbin:/usr/sbin' OSG\_DEFAULT\_SE='srm.unl.edu' OSG\_SITE\_WRITE='None' "

StartdPrincipal = "execute-side@matchsession/129.93.183.110"

TargetType = "Machine"

LeaveJobInQueue = JobStatus == 4

x509UserProxyExpiration = 1419274261

RouteName = "Local\_Condor"

RecentStatsLifetimeStarter = 1200

WantIOProxy = true

JobNotification = 0

Owner = "osg"

CommittedTime = 0

x509userproxy = "credential\_osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main\_907675"

QDate = 1418924658

JobLeaseDuration = 1200

RecentBlockWriteKbytes = 0

TransferIn = false

ExitStatus = 0

StartdIpAddr = "<129.93.183.110:59131>"

ProportionalSetSizeKb\_RAW = 19012

RootDir = "/"

NumJobMatches = 1

JobCurrentStartDate = 1418928204

GlideinWebBase = "http://glidein.grid.iu.edu/glidefactory//stage/glidein\_v3\_0"

CurrentHosts = 1

GlobalJobId = "red.unl.edu#4214063.0#1418924658"

RemoteSysCpu = 15.0

TotalSuspensions = 0

JobState = "Running"

x509UserProxyFirstFQAN = "/osg/Role=NULL/Capability=NULL"

remote\_cerequirements = "CondorCE == 1"

WantCheckpoint = false

LastJobLeaseRenewal = 1418931520

x509userproxysubject = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=pilot/osg-flock.grid.iu.edu"

PeriodicRelease = false

GlideinLogNr = "20141218"

StatsLifetime = 3314

NumCkpts\_RAW = 0

orig\_environment = ""

StarterIpAddr = "<129.93.183.110:52252>"

Out = "\_condor\_stdout"

ShouldTransferFiles = "IF\_NEEDED"

BlockReads = 24

DiskUsage = 35000

GlideinWorkDir = "Condor"

JobRunCount = 1

CumulativeSlotTime = 0

CommittedSlotTime = 0

ProportionalSetSizeKb = 20000

LocalUserCpu = 0.0

RecentBlockReads = 0

JobStartDate = 1418928206

InputRSL = ifThenElse(GlobusRSL =?= null,[ ],eval\_rsl(GlobusRSL))

ExitBySignal = false

StreamErr = false

TransferringInput = false

DelegatedProxyExpiration = 1419263462

NumSystemHolds = 0

NumRestarts = 0

ResidentSetSize\_RAW = 12904

OrigMaxHosts = 1

RequestDisk = DiskUsage

JobPrio = 0

NumCkpts = 0

RoutedFromJobId = "1161981.0"

StatsLifetimeStarter = 3314

ImageSize = 20000

RemoteHost = "slot1@red-d22n10.unl.edu"

DiskUsage\_RAW = 33710

CommittedSuspensionTime = 0

GlideinSecurityClass = "frontend"

Cmd = "glidein\_startup.sh"

LocalSysCpu = 0.0

LastHoldReasonCode = 16

Iwd = "/var/lib/condor-ce/spool/1981/0/cluster1161981.proc0.subproc0"

BlockReadKbytes = 248

GlideinFrontendName = "OSG\_Flock:frontend"

GridResource = undefined

TransferInputSizeMB = 0

RecentStatsLifetime = 1200

SubmitterId = "schedd\_glideins4@glidein.grid.iu.edu"

RecentBlockReadKbytes = 0

ServerTime = 1418932137

LastSuspensionTime = 0

ExecutableSize\_RAW = 75

GlideinName = "v3\_0"

BytesSent = 0.0

osg\_environment = "OSG\_GRID='/etc/osg/wn-client/' OSG\_SQUID\_LOCATION='red-squid.unl.edu:3128' OSG\_SITE\_READ='None' OSG\_APP='/cvmfs/oasis.opensciencegrid.org' OSG\_GLEXEC\_LOCATION='/usr/sbin/glexec' OSG\_DATA='UNAVAILABLE' OSG\_HOSTNAME='red.

unl.edu' GLOBUS\_LOCATION='/usr' OSG\_STORAGE\_ELEMENT='True' OSG\_SITE\_NAME='Red' OSG\_WN\_TMP='/tmp' PATH='/bin:/usr/bin:/sbin:/usr/sbin' OSG\_DEFAULT\_SE='srm.unl.edu' OSG\_SITE\_WRITE='None'"

TransferOutputRemaps = undefined

TransferOutput = ""

GlideinProxyURL = "OSG"

JobStatus = 2

ShadowBday = 1418928204

ExecutableSize = 75

MachineAttrSlotWeight0 = 1

GlideinEntryName = "CMS\_T2\_US\_Nebraska\_Red"

ImageSize\_RAW = 19040

OnExitRemove = true

KillSig = "SIGTERM"

Arguments = "-v std -name v3\_0 -entry CMS\_T2\_US\_Nebraska\_Red -clientname osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main -schedd schedd\_glideins4@glidein.grid.iu.edu -proxy OSG -factory OSGGOC -web http://glidein.grid.iu.edu/glidefactory//sta

ge/glidein\_v3\_0 -sign b07077888b419dfcb97c27307dbccb577b316dad -signentry 716a04b6d4de9095d16a890e028d61b32b1ca1f0 -signtype sha1 -descript description.eccfck.cfg -descriptentry description.eashWx.cfg -dir Condor -param\_GLIDEIN\_Client osg

-flock-grid-iu-edu\_OSG\_gWMSFrontend.main -submitcredid 907675 -slotslayout fixed -clientweb http://osg-flock.grid.iu.edu/vofrontend/stage -clientsign 428e9f59740375b3596fc6afffdfaa8071b82796 -clientsigntype sha1 -clientdescript descriptio

n.ec4gi0.cfg -clientgroup main -clientwebgroup http://osg-flock.grid.iu.edu/vofrontend/stage/group\_main -clientsigngroup 1f11ec241b7e9f597bc8cccaf536d2bdbeec98a6 -clientdescriptgroup description.ec3jmf.cfg -param\_CONDOR\_VERSION 8.dot,2.do

t,x -param\_GLIDEIN\_CLAIM\_WORKLIFE 604800 -param\_GLIDEIN\_Job\_Max\_Time 36000 -param\_GLIDECLIENT\_ReqNode glidein.dot,grid.dot,iu.dot,edu -param\_GLIDEIN\_Glexec\_Use NEVER -param\_MIN\_DISK\_GBS 1 -param\_GLIDECLIENT\_Rank 1 -param\_GLIDEIN\_Monitorin

g\_Enabled False -param\_OSG\_GLIDEIN\_VERSION 56 -param\_CONDOR\_ARCH default -param\_UPDATE\_COLLECTOR\_WITH\_TCP False -param\_USE\_MATCH\_AUTH True -param\_CONDOR\_OS rhel6 -param\_GLIDEIN\_Report\_Failed NEVER -param\_GLIDEIN\_Collector osg.minus,flock.

dot,grid.dot,iu.dot,edu.colon,9700.minus,9999 -cluster 1787996 -subcluster 7"

RemoteSlotID = 1

SUBMIT\_x509userproxy = "/usr/local/share/gfactory/clientproxies/user\_feosgflock/glidein\_v3\_0/credential\_osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main\_907675"

ResidentSetSize = 15000

StreamOut = false

CurrentTime = time()

CmdHash = "CmdMD5-7a27272894713c8a06445863287026a2"

BytesRecvd = 61666.0

RequestMemory = 2500

RemoteUserCpu = 23.0

NiceUser = false

NumShadowStarts = 1

TransferQueued = false

RequestCpus = 1

SUBMIT\_Cmd = "/usr/local/share/gfactory/glideinsubmit/glidein\_v3\_0/glidein\_startup.sh"

SUBMIT\_Iwd = "/usr/local/share/gfactory/glideinsubmit/glidein\_v3\_0"

JobPid = 33624

WantRemoteIO = true

x509UserProxyFQAN = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=pilot/osg-flock.grid.iu.edu,/osg/Role=NULL/Capability=NULL"

JobCurrentStartExecutingDate = 1418928206

GlideinClient = "osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main"

LastJobStatus = 1

BlockWrites = 0

After this we can look up the classAd for the HTCondor-CE job this was routed from:

# condor\_ce\_q -l 1161981.0 [62/1809]

MaxHosts = 1

GlideinSlotsLayout = "fixed"

GlideinFactory = "OSGGOC"

GlideinCredentialIdentifier = "907675"

Managed = "External"

User = "osg@users.opensciencegrid.org"

CoreSize = 0

LastHoldReason = "Spooling input data files"

WantRemoteSyscalls = false

MyType = "Job"

Rank = 0.0

CumulativeSuspensionTime = 0

MinHosts = 1

ReleaseReason = "Data files spooled"

PeriodicRemove = ( StageInFinish > 0 ) =!= true && time() > QDate + 28800

Err = "\_condor\_stderr"

ProcId = 0

EnteredCurrentStatus = 1418928232

NumJobStarts = 0

JobUniverse = 5

In = "/dev/null"

SUBMIT\_TransferOutputRemaps = "\_condor\_stdout=/usr/local/share/gfactory/clientlogs/user\_feosgflock/glidein\_v3\_0/entry\_CMS\_T2\_US\_Nebraska\_Red/job.1787996.7.out;\_condor\_stderr=/usr/local/share/gfactory/clientlogs/user\_feosgflock/glidein\_v3\_

0/entry\_CMS\_T2\_US\_Nebraska\_Red/job.1787996.7.err"

Requirements = true

ClusterId = 1161981

WhenToTransferOutput = "ON\_EXIT"

CompletionDate = 0

x509UserProxyVOName = "osg"

BufferSize = 524288

Environment = ""

TargetType = "Machine"

LeaveJobInQueue = JobStatus == 4

x509UserProxyExpiration = 1419263462

JobNotification = 0

Owner = "osg"

CommittedTime = 0

x509userproxy = "credential\_osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main\_907675"

QDate = 1418924613

JobLeaseDuration = 1200

TransferIn = false

ExitStatus = 0

RootDir = "/"

NumJobMatches = 1

JobCurrentStartDate = 1418928204

GlideinWebBase = "http://glidein.grid.iu.edu/glidefactory//stage/glidein\_v3\_0"

CurrentHosts = 0

GlobalJobId = "red.unl.edu#1161981.0#1418924619"

RemoteSysCpu = 15.0

TotalSuspensions = 0

x509UserProxyFirstFQAN = "/osg/Role=NULL/Capability=NULL"

WantCheckpoint = false

RoutedToJobId = "4214063.0"

ManagedManager = "jobrouter-ce"

x509userproxysubject = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=pilot/osg-flock.grid.iu.edu"

GlideinLogNr = "20141218"

NumCkpts\_RAW = 0

Out = "\_condor\_stdout"

ShouldTransferFiles = "IF\_NEEDED"

DiskUsage = 75

GlideinWorkDir = "Condor"

JobRunCount = 1

CumulativeSlotTime = 0

CommittedSlotTime = 0

LocalUserCpu = 0.0

JobStartDate = 1418928206

ExitBySignal = false

StreamErr = false

NumSystemHolds = 0

NumRestarts = 0

RequestDisk = DiskUsage

JobPrio = 0

NumCkpts = 0

BufferBlockSize = 32768

StageInStart = 1418924626

ImageSize = 20000

DiskUsage\_RAW = 75

CommittedSuspensionTime = 0

GlideinSecurityClass = "frontend"

Cmd = "glidein\_startup.sh"

LocalSysCpu = 0.0

LastHoldReasonCode = 16

Iwd = "/var/lib/condor-ce/spool/1981/0/cluster1161981.proc0.subproc0"

GlideinFrontendName = "OSG\_Flock:frontend"

TransferInputSizeMB = 0

SubmitterId = "schedd\_glideins4@glidein.grid.iu.edu"

ServerTime = 1418932200

LastSuspensionTime = 0

ExecutableSize\_RAW = 53

GlideinName = "v3\_0"

BytesSent = 0.0

TransferOutputRemaps = undefined

TransferOutput = ""

GlideinProxyURL = "OSG"

JobStatus = 2

ExecutableSize = 75

ShadowBday = 1418928204

GlideinEntryName = "CMS\_T2\_US\_Nebraska\_Red"

ImageSize\_RAW = 20000

RemoteWallClockTime = 0.0

Arguments = "-v std -name v3\_0 -entry CMS\_T2\_US\_Nebraska\_Red -clientname osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main -schedd schedd\_glideins4@glidein.grid.iu.edu -proxy OSG -factory OSGGOC -web http://glidein.grid.iu.edu/glidefactory//sta

ge/glidein\_v3\_0 -sign b07077888b419dfcb97c27307dbccb577b316dad -signentry 716a04b6d4de9095d16a890e028d61b32b1ca1f0 -signtype sha1 -descript description.eccfck.cfg -descriptentry description.eashWx.cfg -dir Condor -param\_GLIDEIN\_Client osg

-flock-grid-iu-edu\_OSG\_gWMSFrontend.main -submitcredid 907675 -slotslayout fixed -clientweb http://osg-flock.grid.iu.edu/vofrontend/stage -clientsign 428e9f59740375b3596fc6afffdfaa8071b82796 -clientsigntype sha1 -clientdescript descriptio

n.ec4gi0.cfg -clientgroup main -clientwebgroup http://osg-flock.grid.iu.edu/vofrontend/stage/group\_main -clientsigngroup 1f11ec241b7e9f597bc8cccaf536d2bdbeec98a6 -clientdescriptgroup description.ec3jmf.cfg -param\_CONDOR\_VERSION 8.dot,2.do

t,x -param\_GLIDEIN\_CLAIM\_WORKLIFE 604800 -param\_GLIDEIN\_Job\_Max\_Time 36000 -param\_GLIDECLIENT\_ReqNode glidein.dot,grid.dot,iu.dot,edu -param\_GLIDEIN\_Glexec\_Use NEVER -param\_MIN\_DISK\_GBS 1 -param\_GLIDECLIENT\_Rank 1 -param\_GLIDEIN\_Monitorin

g\_Enabled False -param\_OSG\_GLIDEIN\_VERSION 56 -param\_CONDOR\_ARCH default -param\_UPDATE\_COLLECTOR\_WITH\_TCP False -param\_USE\_MATCH\_AUTH True -param\_CONDOR\_OS rhel6 -param\_GLIDEIN\_Report\_Failed NEVER -param\_GLIDEIN\_Collector osg.minus,flock.

dot,grid.dot,iu.dot,edu.colon,9700.minus,9999 -cluster 1787996 -subcluster 7"

KillSig = "SIGTERM"

SUBMIT\_x509userproxy = "/usr/local/share/gfactory/clientproxies/user\_feosgflock/glidein\_v3\_0/credential\_osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main\_907675"

StreamOut = false

CurrentTime = time()

CmdHash = "CmdMD5-7a27272894713c8a06445863287026a2"

BytesRecvd = 61666.0

RequestMemory = ifthenelse(MemoryUsage =!= undefined,MemoryUsage,( ImageSize + 1023 ) / 1024)

RemoteUserCpu = 23.0

NiceUser = false

RequestCpus = 1

SUBMIT\_Cmd = "/usr/local/share/gfactory/glideinsubmit/glidein\_v3\_0/glidein\_startup.sh"

SUBMIT\_Iwd = "/usr/local/share/gfactory/glideinsubmit/glidein\_v3\_0"

WantRemoteIO = true

StageInFinish = 1418924626

x509UserProxyFQAN = "/DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=Services/CN=pilot/osg-flock.grid.iu.edu,/osg/Role=NULL/Capability=NULL"

LastJobStatus = 1

GlideinClient = "osg-flock-grid-iu-edu\_OSG\_gWMSFrontend.main"

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**Conclusion**

These tests show that HTCondor-CE provides adequate traceability for both credentials and jobs. We were able to locate credential DNs for jobs submitted both directly and via GlideinWMS. Determining the user that submitted the job to the GlideinWMS system would still require getting more information from the Glidein Factory.

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