

TROUBLESHOOTING APACHE CLOUDSTACK



Status

Job failed due to exception Unable to create
a deployment for VM[Userli-2-9-VM]

Close

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\ Working @ Schuberg Philis since 2010

\ Mission Critical

\ +3 year IaaS team

\ Part of the initial CS vs OS

\ Started with CloudStack 2.2.14

The screenshot displays the CloudStack Management Console interface. The left sidebar contains a navigation menu with the following items: Dashboard, Instances, Storage, Network, Templates, Accounts, Domains, Events, System, and Configuration. The main content area is titled 'Dashboard' and shows system-wide capacity for the 'test zone'. It includes several progress bars and data points:

- Public IP Addresses:** Allocated: 5/10
- Private IP Addresses:** Allocated: 2/10
- Memory Allocated:** Allocated: 2.88 GB/14.65 GB
- CPU Allocated:** Allocated: 3.00 GHZ/15.98 GHZ
- Primary Storage Allocated:** Allocated: 54.86 GB/4.95 TB
- Primary Storage Used:** Used: 771.75 GB/1.24 TB
- Secondary Storage Used:** Used: 771.75 GB/1.24 TB

Below the capacity section, there are two alert panels. The 'General Alerts' panel shows two alerts:

- Monitoring - Console Proxy:** 07/26/2011 13:50:08. VM (name: v-2-VM, id: 2) stopped unexpectedly on host id:1, availability zone id:1, pod id:1.
- Monitoring - VM:** 07/26/2011 13:50:08. Unable to restart s-1-VM which was running on host name: xenserver0(id:1), availability zone: test-zone, pod: test-pod.

The 'Host Alerts' panel is partially visible on the right side of the screen.

AGENDA

\ Reading the logs

\ Understanding System VMs

\ Use the source, Luke!

\ DB API, hands off?

\ Employee Cloud

\ Questions

\ Side notes

- Have you worked with ACS?
- CloudStack 4.4.1
- XenServer 6.2.0 SP1
- Default log settings

READING THE LOGS

\Less is more <=>

- `less /var/log/cloudstack/management/management-server.log`

\Keep management server ids at hand

- `select * from cloud.mshost where removed is null;`

\Stack traces

- Look at the first instead of the last

\Search for API key

\Log4j 1.2 EnhancedPatternLayout

- `/etc/cloudstack/management/log4j-cloud.xml`

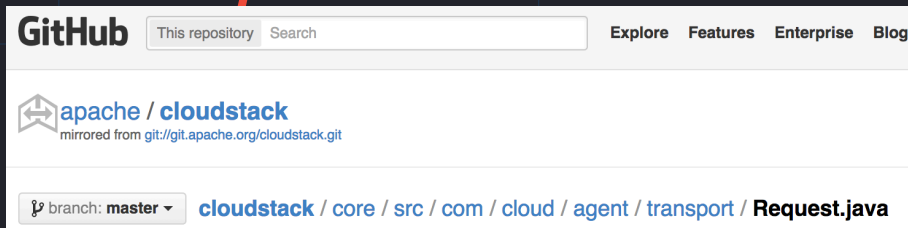
READING THE LOGS

\(Date, Time), Log priority

\Class

- Will match a .java file in the source

DEBUG [c.c.a.t.Request]



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apache / cloudstack
mirrored from [git://git.apache.org/cloudstack.git](https://git.apache.org/cloudstack.git)

branch: master cloudstack / core / src / com / cloud / agent / transport / Request.java

```
DEBUG [c.c.a.t.Request]
  (Work-Job-Executor-6:ctx-96c7e2f1
    job-41/job-42 ctx-07642023)
    Seq 1-1126181381819334783:
      Executing: { Cmd , MgmtId: 8796760836157, via:
        [{"com.cloud.agent.api.StartCommand": {"
```

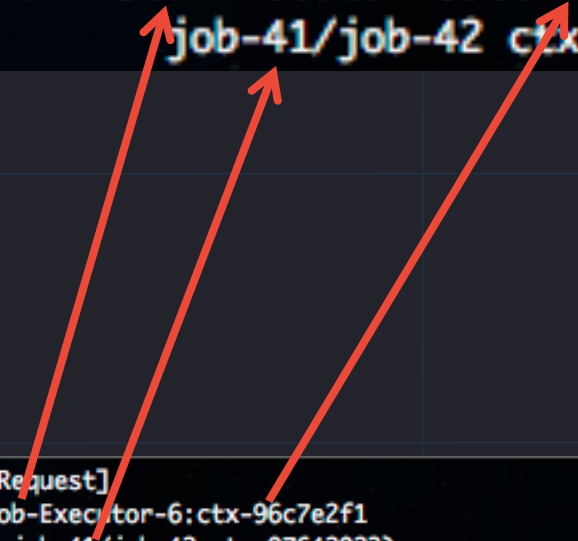
READING THE LOGS

\ Thread Name

\ Thread context

\ Optional Job id

```
DEBUG [c.c.a.t.Request]
      (Work-Job-Executor-6:ctx-96c7e2f1
      job-41/job-42 ctx-07642023)
```



```
DEBUG [c.c.a.t.Request]
      (Work-Job-Executor-6:ctx-96c7e2f1
      job-41/job-42 ctx-07642023)
      Seq 1-1126181381819334783:
      Executing: { Cmd , MgmtId: 8796760836157, via:
      [{"com.cloud.agent.api.StartCommand": {"
```

READING THE LOGS

\ When forwarding commands

- Host_id-Sequence_nr
- MgmtId
 - Can be the other server
- Via
- Command

```
Seq 1-1126181381819334783:  
  Executing: { Cmd , MgmtId: 8796760836157, via: 1(localh  
    [{"com.cloud.agent.api.StartCommand":{"vm":{"id"
```

```
DEBUG [c.c.a.t Request]  
  (Work-Job-executor-6:ctx-96c7e2f1  
    job-41/job-42 ctx-07642023)  
    Seq 1-1126181381819334783:  
      Executing: { Cmd , MgmtId: 8796760836157, via:  
        [{"com.cloud.agent.api.StartCommand":{"
```

READING THE LOGS

Find the first call

- API call
- API key
- Name

Thread name and first context

Async creates a job

```
DEBUG [c.c.a.ApiServlet] (catalina-exec-2:ctx-e5bb3224) ===START=== 10.0.2.2 -- GET command=deployVirtualMachine&response=
DEBUG [c.c.n.NetworkModelImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Service SecurityGroup is not supported in the net
DEBUG [c.c.v.UserVmManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Allocating in the DB for vm
DEBUG [c.c.v.VirtualMachineManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Allocating entries for VM: VM[Userli-2-9-VM]
DEBUG [c.c.v.VirtualMachineManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Allocating nics for VM[Userli-2-9-VM]
DEBUG [o.a.c.e.o.NetworkOrchestrator] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Allocating nic for vm VM[Userli-2-9-VM] in
DEBUG [c.c.n.NetworkModelImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Service SecurityGroup is not supported in the net
DEBUG [c.c.v.VirtualMachineManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Allocating disks for VM[Userli-2-9-VM]
DEBUG [c.c.v.VirtualMachineManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Allocation completed for VM: VM[Userli-2-9-VM]
DEBUG [c.c.v.UserVmManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Successfully allocated DB entry for VM[Userli-2-9-VM]
DEBUG [c.c.n.NetworkModelImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Service SecurityGroup is not supported in the net
DEBUG [c.c.n.NetworkModelImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) Service SecurityGroup is not supported in the net
DEBUG [o.a.c.f.j.i.AsyncJobManagerImpl] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) submit async job-41, details: AsyncJobVO
DEBUG [c.c.a.ApiServlet] (catalina-exec-2:ctx-e5bb3224 ctx-4b65b42a) ===END=== 10.0.2.2 -- GET command=deployVirtualMachine
```


READING THE LOGS

\ Find the first call

\ Thread name and first context

\ Might creates a job

\ Picked up by...

```
INFO [o.a.c.f.j.i.AsyncJobMonitor] (API-Job-Executor-5:ctx-afa47203 job-41) Add job-41 into job monitoring
DEBUG [o.a.c.f.j.i.AsyncJobManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41) Executing AsyncJobVO {id:41,
DEBUG [c.c.n.NetworkModelImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Service SecurityGroup is not support
DEBUG [c.c.n.NetworkModelImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Service SecurityGroup is not support
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Deploy avoids pods: [],
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) DeploymentPlanner alloc
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Trying to allocate a hos
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Is ROOT volume READY (p
DEBUG [c.c.d.FirstFitPlanner] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Searching all possible resources unde
```

```
DEBUG [o.a.c.s.a.LocalStoragePoolAllocator] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) LocalStoragePoolAll
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Trying to find a pot
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Checking if host: 1
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Host: 1 can access p
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Found a potential ho
DEBUG [c.c.d.DeploymentPlanningManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Returning Deployment
DEBUG [o.a.c.f.j.i.AsyncJobManagerImpl] (API-Job-Executor-5:ctx-afa47203 job-41 ctx-8fbaf4e1) Sync job-42 execution or
```

```
DEBUG [o.a.c.f.j.i.AsyncJobManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42) Executing AsyncJobVO {id:42
DEBUG [c.c.v.VmWorkJobDispatcher] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42) Run VM work job: com.cloud.vm.VmW
DEBUG [c.c.v.VmWorkJobHandlerProxy] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Execute VM work jo
DEBUG [c.c.c.CapacityManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) VM state transitted
DEBUG [c.c.v.VirtualMachineManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Successfully t
DEBUG [c.c.v.VirtualMachineManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Trying to depl
DEBUG [c.c.v.VirtualMachineManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) advanceStart:
DEBUG [c.c.v.VirtualMachineManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Deploy avoids
```

READING THE LOGS

\ Thread name and first context

\ Sending...

- Track sequence id
- Keep an eye on MgmtID

\ Executing...

```
DEBUG [c.c.n.r.VirtualNetworkApplianceManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Reapplying dhcp entries as a part of domR VM[Domain]
DEBUG [c.c.n.r.VirtualNetworkApplianceManagerImpl] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Reapplying vm data (userData and metaData) entries
DEBUG [c.c.a.t.Request] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Seq 1-1126181381819334765: Sending { Cmd , MgmtId: 8796760836157, via: 1(localhost) }
DEBUG [c.c.a.t.Request] (Work-Job-Executor-6:ctx-96c7e2f1 job-41/job-42 ctx-07642023) Seq 1-1126181381819334765: Executing: { Cmd , MgmtId: 8796760836157, via: 1(localhost) }
DEBUG [c.c.a.m.DirectAgentAttache] (DirectAgent-55:ctx-650662e4) Seq 1-1126181381819334765: Executing request
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) 1 The VM r-10-VM is in starting state.
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Created VM 8edf80d7-acb4-e98c-7c64-945fe0349231 for r-10-VM
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) PV args are -- quiet console=hvc0%template=domP%name=r-10-VM%eth2ip=192.168.23.102%eth2mask=255.255.255.0
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) VBD 5807adbb-862d-af35-010d-afe3fc0d6112 created for com.cloud.agent.api.to.DiskTO@3eb2629e
```

UNDERSTANDING SYSTEM VMS

\ssh to SVM

- From hypervisor
- Port 3922
- /root/.ssh/id_rsa.cloud

\xensource.log, SMlog and cloud/vmops.log

\XAPI call to vmops plugin

```
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) 2. The VM r-10-VM is in Running state.
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Ping command port, 169.254.2.17:3922
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Trying to connect to 169.254.2.17 attempt 0 of 100
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Trying to connect to 169.254.2.17 attempt 1 of 100
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Trying to connect to 169.254.2.17 attempt 2 of 100
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Trying to connect to 169.254.2.17 attempt 3 of 100
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Trying to connect to 169.254.2.17 attempt 4 of 100
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Trying to connect to 169.254.2.17 attempt 5 of 100
DEBUG [c.c.h.x.r.CitrixResourceBase] (DirectAgent-55:ctx-650662e4) Ping command port succeeded for vm r-10-VM
```

```
localhost xapi: [debug|localhost.localdomain|1755 INET 0.0.0.0:80|host.call_plugin R:f69b54d3(main)'; plugin = 'vmops'; fn = 'pingdomr'; args = [ port: 3922; host: 169.254.2.17 ]
localhost xapi: [debug|localhost.localdomain|1973 INET 0.0.0.0:80|host.call_plugin R:8f935a8c(main)'; plugin = 'vmops'; fn = 'pingdomr'; args = [ port: 3922; host: 169.254.2.17 ]
localhost xapi: [debug|localhost.localdomain|1974 INET 0.0.0.0:80|host.call_plugin R:151f24b1(main)'; plugin = 'vmops'; fn = 'pingdomr'; args = [ port: 3922; host: 169.254.2.17 ]
localhost xapi: [debug|localhost.localdomain|2080 INET 0.0.0.0:80|host.call_plugin R:edf353a7(main)'; plugin = 'vmops'; fn = 'pingdomr'; args = [ port: 3922; host: 169.254.2.17 ]
localhost xapi: [debug|localhost.localdomain|2194 INET 0.0.0.0:80|host.call_plugin R:e1038e2c(main)'; plugin = 'vmops'; fn = 'pingdomr'; args = [ port: 3922; host: 169.254.2.17 ]
localhost xapi: [debug|localhost.localdomain|2195 INET 0.0.0.0:80|host.call_plugin R:d79226d6(main)'; plugin = 'vmops'; fn = 'pingdomr'; args = [ port: 3922; host: 169.254.2.17 ]
```

USE THE SOURCE, LUKE!

\GitHub

- <https://github.com/apache/cloudstack>

\Eclipse for Java EE

- <https://cwiki.apache.org/confluence/display/CLOUDSTACK/Using+Eclipse+With+CloudStack>

\DevCloud4

- <https://github.com/imduffy15/devcloud4>

DB API, HANDS OFF!

\Read only!

\Unless...

- After code review
- Bug solution also changes db

\Why?

- Change state => data mismatch
- Incorrect value => ACS start fails
- DB data is not always leading
- Effects of DB change can stick around

\Marvin and CloudMonkey

- And find a way out without DB change

EMPLOYEE CLOUD

- \ Realistic workload
- \ Use as UAT environment
- \ To reproduce bugs and workarounds
- \ Technology test ground

QUESTIONS?

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