

# Chapter 2: Implementing High Availability with Apache ZooKeeper

The screenshot shows the Mesos web interface. On the left, there is a sidebar with the following information:

- Cluster: MesosCentOS7
- Server: 10.10.0.70:5050
- Version: 1.1.0
- Built: 4 months ago by centos
- Started: 6 hours ago
- Elected: 6 hours ago

Below the sidebar, there are sections for Agents, Tasks, and Resources.

**Agents**

State	Count
Activated	0
Deactivated	0

**Tasks**

State	Count
Staging	0
Starting	0
Running	0
Killing	0
Finished	0
Killed	0
Failed	0
Lost	0
Orphan	0

**Resources**

	CPUs	GPUs	Mem	Disk
Total	0	0	0 B	0 B
Used	0	0	0 B	0 B
Offered	0	0	0 B	0 B
Idle	0	0	0 B	0 B

**Active Tasks**

ID	Name	State	Started	Host
No active tasks.				

**Completed Tasks**

ID	Name	State	Started	Stopped	Host
No completed tasks.					

**Orphan Tasks**

ID	Name	State	Started	Stopped	Host
No orphan tasks.					

The screenshot shows the Mesos web interface with the 'Agents' tab selected. It displays a table of agents with the following columns: ID, Host, CPUs (Allocated / Total), GPUs (Allocated / Total), Mem (Allocated / Total), Disk (Allocated / Total), Registered, and Re-Registered.

ID	Host	CPUs (Allocated / Total)	GPUs (Allocated / Total)	Mem (Allocated / Total)	Disk (Allocated / Total)	Registered	Re-Registered
...aae9-777abd5a1e75-50	centos7073	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	4 minutes ago	
...aae9-777abd5a1e75-51	centos7074	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	4 minutes ago	
...aae9-777abd5a1e75-52	centos7075	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	4 minutes ago	
...aae9-777abd5a1e75-53	centos7076	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	3 minutes ago	
...aae9-777abd5a1e75-54	centos7077	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	3 minutes ago	
...aae9-777abd5a1e75-56	centos7078	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	just now	
...aae9-777abd5a1e75-55	centos7079	0 / 2	0 / 0	0 B / 2.7 GB	0 B / 30.6 GB	2 minutes ago	

Mesos Frameworks Agents Offers MesosUbuntu16

7c801a2f-d744-41dc-8c76-9f6d9b9fa31

Cluster: MesosUbuntu16  
 Server: 10.10.0.92:5050  
 Version: 1.1.0  
 Built: a week ago by dtblomquist  
 Started: 5 hours ago  
 Elected: 5 hours ago

LOG

Agents

Activated	0
Deactivated	0

Tasks

Staging	0
Starting	0
Running	0
Killing	0
Finished	0
Killed	0
Failed	0
Lost	0
Orphan	0

Resources

	CPUs	GPUs	Mem	Disk
Total	0	0	0 B	0 B
Used	0	0	0 B	0 B
Offered	0	0	0 B	0 B
Idle	0	0	0 B	0 B

Active Tasks

ID	Name	State	Started	Host
No active tasks.				

Completed Tasks

ID	Name	State	Started	Stopped	Host
No completed tasks.					

Orphan Tasks

ID	Name	State	Started	Stopped	Host
No orphan tasks.					

Mesos Frameworks Agents Offers MesosUbuntu16

Mesos Agents

Agents

Find...

ID	Host	CPUs (Allocated / Total)	GPUs (Allocated / Total)	Mem (Allocated / Total)	Disk (Allocated / Total)	Registered	Re-Registered
...b57f-796ba1a24992-52	ubuntu1695	0 / 1	0 / 0	0 B / 2.9 GB	0 B / 29.8 GB	a minute ago	a minute ago

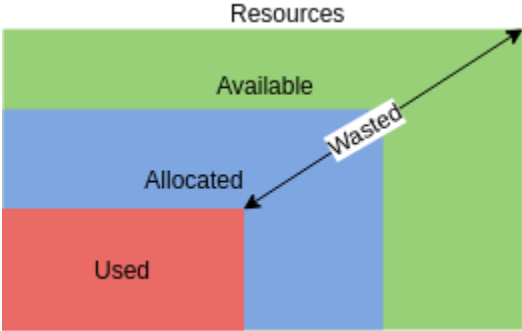
Mesos Frameworks Agents Offers Mesos, Ubuntu, 16

Agents

Find

ID	Host	CPUs (Allocated / Total)	GPUs (Allocated / Total)	Mem (Allocated / Total)	Disk (Allocated / Total)	Registered	Re-Registered
...8571-7880a1a24992-82	ubuntu1695	0 / 1	0 / 0	0 B / 2.9 GB	0 B / 29.8 GB	15 minutes ago	15 minutes ago
...8571-7880a1a24992-85	ubuntu1696	0 / 1	0 / 0	0 B / 2.9 GB	0 B / 29.8 GB	13 minutes ago	13 minutes ago
...8571-7880a1a24992-86	ubuntu1697	0 / 1	0 / 0	0 B / 2.9 GB	0 B / 29.8 GB	13 minutes ago	13 minutes ago
...8676-98a00b94c1-S1	ubuntu1698	0 / 1	0 / 0	0 B / 2.9 GB	0 B / 29.8 GB	a minute ago	
...8571-7880a1a24992-84	ubuntu1699	0 / 1	0 / 0	0 B / 2.9 GB	0 B / 29.8 GB	12 minutes ago	12 minutes ago

# Chapter 3: Running and Maintaining Mesos



# Chapter 4: Understanding the Scheduler API

Mesos Frameworks Agents Offers

Master Frameworks

### Active Frameworks

Find...

ID ▼	Host	User	Name	Role	Principal	Active Tasks	CPUs	GPUs	Mem	Disk	Max Share	Registered	Re-Registered
...a4d1-051dd308f08-0000	orion	root	simple_framework	*		0	1	0	244 MB	34.3 GB	100%	a minute ago	-
...b428-d78c6c4a9c69-0000	mesos-playground	root	marathon	*		0	0	0	0 B	0 B	0%	a minute ago	-

### Inactive Frameworks

Find...

ID ▼	Host	User	Name	Role	Principal	Active Tasks	CPUs	GPUs	Mem	Disk	Max Share	Registered	Re-Registered
------	------	------	------	------	-----------	--------------	------	------	-----	------	-----------	------------	---------------

### Completed Frameworks

ID ▼	Host	User	Name	Role	Principal	Registered	Unregistered
------	------	------	------	------	-----------	------------	--------------

### Outstanding Offers

Find...						
ID ▼	Framework	Host	CPUs	GPUs	Mem	Disk
...a4d1-051fdd308f08-O19	<a href="#">simple_framework</a>	<a href="#">10.10.10.10</a>	1	0	244 MB	34.3 GB

# Chapter 5: Managing Containers

```
Viewing: Processes For: whole machine
Source: Live System Filter: (mesos.task.id!= ) and (evt.type!=switch)
PID CPU USER TH VIRT RES FILE NET Command
12229 0.50 root 10 807M 32M 0 0.00 mesos-executor --launcher_dir=/usr/libe
12270 0.00 root 1 43M 10M 0 0.00 python -m SimpleHTTPServer 31044
12271 0.00 root 1 43M 10M 0 0.00 python -m SimpleHTTPServer 31235
12227 0.00 root 10 807M 32M 0 0.00 mesos-executor --launcher_dir=/usr/libe
12268 0.00 root 1 4M 700K 0 0.00 sh -c echo "OK" > index.html && python
12269 0.00 root 1 4M 700K 0 0.00 sh -c echo "OK" > index.html && python

F1Help F2Views F4Filter F5Echo F6Dig F7Legend F8Actions F9Sort F12Spectro CTRL+F Search 1/6(16.7%)
```

```
Viewing: sysdig output For: proc.pid=12271 PAUSED
Source: Live System Filter: (mesos.task.id!= ) and ((evt.type!=switch) and proc.pid=12271)
172813 12:53:25.155993204 1 python (12271) > fstat fd=5(<f>/var/lib/mesos/slaves/e1119c1a-1812-4ecc-af95-
172814 12:53:25.155995440 1 python (12271) < fstat res=0
172815 12:53:25.156009524 1 python (12271) > sendto fd=4(<4t>10.10.10.10:46644->10.10.10.10:31235) size=1
172816 12:53:25.156020550 1 python (12271) < sendto res=19 data=Content-Length: 3..
172818 12:53:25.156051186 1 python (12271) > sendto fd=4(<4t>10.10.10.10:46644->10.10.10.10:31235) size=4
172819 12:53:25.156062779 1 python (12271) < sendto res=46 data=Last-Modified: Wed, 05 Oct 2016 12:22:24
172820 12:53:25.156075510 1 python (12271) > sendto fd=4(<4t>10.10.10.10:46644->10.10.10.10:31235) size=2
172821 12:53:25.156084987 1 python (12271) < sendto res=2 data=..
172822 12:53:25.156100257 1 python (12271) > fstat fd=5(<f>/var/lib/mesos/slaves/e1119c1a-1812-4ecc-af95-
172823 12:53:25.156101461 1 python (12271) < fstat res=0
172824 12:53:25.156103100 1 python (12271) > read fd=5(<f>/var/lib/mesos/slaves/e1119c1a-1812-4ecc-af95-6
172825 12:53:25.156108052 1 python (12271) < read res=3 data=OK.
172826 12:53:25.156109121 1 python (12271) > read fd=5(<f>/var/lib/mesos/slaves/e1119c1a-1812-4ecc-af95-6
172827 12:53:25.156110001 1 python (12271) < read res=0 data=
172828 12:53:25.156122874 1 python (12271) > sendto fd=4(<4t>10.10.10.10:46644->10.10.10.10:31235) size=3
172829 12:53:25.156250926 1 python (12271) < sendto res=3 data=OK.
172830 12:53:25.156258918 1 python (12271) > read fd=5(<f>/var/lib/mesos/slaves/e1119c1a-1812-4ecc-af95-6
172831 12:53:25.156260804 1 python (12271) < read res=0 data=
172832 12:53:25.156269336 1 python (12271) > close fd=5(<f>/var/lib/mesos/slaves/e1119c1a-1812-4ecc-af95-
172833 12:53:25.156271681 1 python (12271) < close res=0
172834 12:53:25.156326594 1 python (12271) > shutdown fd=4(<4t>10.10.10.10:46644->10.10.10.10:31235) how=
172835 12:53:25.156342081 1 python (12271) < shutdown res=0
172837 12:53:25.156355231 1 python (12271) > close fd=4(<4t>10.10.10.10:46644->10.10.10.10:31235)
172838 12:53:25.156356613 1 python (12271) < close res=0
172839 12:53:25.156388645 1 python (12271) > select
179255 12:53:25.657125111 1 python (12271) < select res=0
179256 12:53:25.657194499 1 python (12271) > select

F1Help F2View As CTRL+F Search p Pause Bak Back c Clear CTRL+G Goto 119/146(100.0%)
```

# Chapter 7: Job Scheduling with Metronome

Webhook Tester

Send webhooks to:  Copy New URL

#1 POST 217.96.206.26  
2019-11-29 23:57:25

#2 POST 217.96.206.26  
2019-11-29 23:58:25

#3 POST 217.96.206.26  
2019-11-29 23:59:25

#4 POST 217.96.206.26  
2019-11-29 23:59:42

#5 POST 217.96.206.26  
2019-11-29 23:59:52

#6 POST 217.96.206.26  
2019-11-29 23:59:54

#7 POST 217.96.206.26  
2019-11-29 23:59:59

#8 POST 217.96.206.26  
2019-11-29 23:59:59

#9 POST 217.96.206.26  
2019-11-29 23:59:59

#10 POST 217.96.206.26  
2019-11-29 23:59:59

#11 POST 217.96.206.26  
2019-11-29 23:59:57

#12 POST 217.96.206.26  
2019-11-29 23:59:57

#13 POST 217.96.206.26  
2019-11-29 23:59:54

**URL** http://webhook.site/8791e9d7-e228-43c7-9402-8c78f5284396

**IP/Host** webhook.site (217.96.206.26)

**Headers**

- connection: close
- content-type: application/x-www-form-urlencoded
- content-length: 439
- accept: \*/\*
- user-agent: curl/7.47.0
- host: webhook.site

```
{
  "latencies":{
    "total":1505696414,
    "mean":6022785,
    "50th":4345069,
    "95th":10679498,
    "99th":36085475,
    "max":52079119
  },
  "bytes_in":{
    "total":698000,
    "mean":2792
  },
  "bytes_out":{
    "total":0,
    "mean":0
  },
  "duration":4979999916,
  "wait":3675459,
  "requests":250,
  "rate":50.20080405961196,
  "success":1,
  "status_codes":{
    "200":250
  },
  "errors":null
}
```



## Chapter 8: Continuous Integration with Jenkins

Getting Started

# Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

```
/var/lib/jenkins/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

Continue



# Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

## Install suggested plugins

Install plugins the Jenkins community finds most useful.

## Select plugins to install

Select and install plugins most suitable for your needs.

## Getting Started

# Create First Admin User

Username:

Password:

Confirm password:

Full name:

E-mail address:

Jenkins 2.32.1

[Continue as admin](#)

[Save and Finish](#)

## Getting Started







# Jenkins is ready!

You've skipped creating an admin user. To log in, use the username: 'admin' and the administrator password you used to access the setup wizard.

Your Jenkins setup is complete.

[Start using Jenkins](#)

Jenkins 2.32.1

-  [New Item](#)
-  [People](#)
-  [Build History](#)
-  [Manage Jenkins](#)
-  [My Views](#)
-  [Credentials](#)

 [add description](#)

## Welcome to Jenkins!

Please [create new jobs](#) to get started.

### Build Queue

No builds in the queue.

### Build Executor Status

- 1 Idle
- 2 Idle

- Back to Dashboard
- Manage Jenkins
- Update Center

Updates Available Installed **Advanced**

### HTTP Proxy Configuration

Server

Port

User name

Password

No Proxy Host

### Upload Plugin

You can upload a .hpi file to install a plugin from outside the central plugin repository.

File:  mesos.hpi

### Update Site

URL:

Update information obtained: 3 min 25 sec ago

- New Item
- Queue
- Build History
- Manage Jenkins
- My Views
- Credentials

**Build Queue**  
No builds in the queue

**Build Executor Status**  
1 idle  
2 idle

Home directory

System Message

# of executors: 2

Labels:

Usage: Use this node as much as possible

Quiet period: 5

SCM checkout retry count: 0

Environment variables

Test connection

System clock time format: %d-%b-%Y %H:%M:%S

Elapsed time format: %d-%b-%Y %H:%M:%S

Administrative reactor's configuration

Administrative reactor...

Jenkins Location

Jenkins URL: http://10.10.10.10:8080

System Admin e-mail address: address not configured yet: root@jenkins-

GitHub

GitHub Servers: Add GitHub Server

Administrative reactor...

GitHub Enterprise Servers

Add

Global Pipeline Libraries

Shorthand libraries available to any pipeline jobs running on the system. These libraries will be loaded, meaning they run without "sandbox" restrictions and may use IO.

Save Apply

Enable BuildStep Action

Git plugin

Global Config user name Value

Global Config user email Value

Create new accounts base on author/committer's email

Subversion

Subversion-Intelligence Version: 3.4

Exclusion regexp name

Extended E-mail Notification

SMTP server

Default user E-mail suffix

Default Content Type: Plain Text (postfix)

Use Use-ID Email Header

Add Precedence Bulk Email Header

Default the copies

Emergency route

Exclude Recipients

Default Subject: \$PROJECT\_NAME - Build # \$BUILD\_NUMBER - \$

Maximum Attachment Size

Default Content: \$PROJECT\_NAME - Build # \$BUILD\_NUMBER - \$BUILD\_STATUS

Check console output at \$BUILD\_URL to view the results

Default Post-ward script

Additional proxy classpath: Add

Enable Debug Mode

Content Taken Reference

Default Triggers...

E-mail Notification

SMTP server

Default user e-mail suffix

Test configuration by sending test e-mail

Cloud

Provisioner (postman:port): 10.10.10.10:5000

Description

Framework Name: Jenkins Scheduler

Role: \*

Slave username

Framework credentials: None

Jenkins URL: http://10.10.10.10:8080

Connected to Mesos successfully

Advanced

Test Connection

Admin view

Add a new cloud

