

Explore the Riak db

1. deploy the riak db on ec2

```
Terminal Shell Edit View Window Help
longnguyen — root@ip-172-30-0-76:/home/ec2-user — ssh -i longnguyen-mac.pem ec2-user@ec2-52-32-168-109.us-west-2.compute.amazonaws.com — 179x46

[root@ip-172-30-0-76 ec2-user]# riak start
!!!!
!!!! WARNING: ulimit -n is 1024; 65536 is the recommended minimum.
!!!!
[root@ip-172-30-0-76 ec2-user]#
[root@ip-172-30-0-76 ec2-user]#
[root@ip-172-30-0-76 ec2-user]# ulimit -n 65536
[root@ip-172-30-0-76 ec2-user]#
[root@ip-172-30-0-76 ec2-user]#
[root@ip-172-30-0-76 ec2-user]# riak ping
pong
[root@ip-172-30-0-76 ec2-user]#
[root@ip-172-30-0-76 ec2-user]# riak-admin status | grep ring
ring_creation_size : 64
ring_members : ['riak@127.0.0.1']
ring_num_partitions : 64
ring_ownership : <<["riak@127.0.0.1",64]>>
rings_reconciled : 0
rings_reconciled_total : 0
[root@ip-172-30-0-76 ec2-user]#
```

2. learn how to config the db

```
Terminal Shell Edit View Window Help
longnguyen — root@ip-172-30-0-76:/home/ec2-user — ssh -i longnguyen-mac.pem ec2-user@ec2-52-32-168-109.us-west-2.compute.amazonaws.com — 179x46

## Default: /usr/lib64/riak/lib
##
## Acceptable values:
## - the path to a directory
platform_lib_dir = /usr/lib64/riak/lib

##
## Default: /var/log/riak
##
## Acceptable values:
## - the path to a directory
platform_log_dir = /var/log/riak

## Enable consensus subsystem. Set to 'on' to enable the
## consensus subsystem used for strongly consistent Riak operations.
##
## Default: off
##
## Acceptable values:
## - on or off
strong_consistency = on

## listener.http.<name> is an IP address and TCP port that the Riak
## HTTP interface will bind.
##
## Default: 127.0.0.1:8098
##
## Acceptable values:
## - an IP/port pair, e.g. 127.0.0.1:10011
listener.http.internal = 0.0.0.0:8098

## listener.protobuf.<name> is an IP address and TCP port that the Riak
## Protocol Buffers interface will bind.
##
## Default: 127.0.0.1:8087
##
## Acceptable values:
## - an IP/port pair, e.g. 127.0.0.1:10011
listener.protobuf.internal = 127.0.0.1:8087

## The maximum length to which the queue of pending connections
## may grow. If set, it must be an integer > 0. If you anticipate a
## huge number of connections being initialized *simultaneously*, set
## this number higher.
##
```

3. remote connect from local laptop

```
Terminal Shell Edit View Window Help
longnguyen — ~ — bash — 179x46

root@ip-172-30-0-76:/home/ec2-user — ssh -i longnguyen-mac.pem ec2-user@ec2-52-32-168-109.us-we... ~ — bash

Long-MBP:~ longnguyen$ curl -v http://52.32.168.109:8098/types/default/props
* Trying 52.32.168.109...
* Connected to 52.32.168.109 (52.32.168.109) port 8098 (#0)
> GET /types/default/props HTTP/1.1
> Host: 52.32.168.109:8098
> User-Agent: curl/7.43.0
> Accept: */*
>
< HTTP/1.1 200 OK
< Vary: Accept-Encoding
< Server: MochiWeb/1.1 WebMachine/1.10.8 (that head fake, tho)
< Date: Fri, 15 Apr 2016 16:33:13 GMT
< Content-Type: application/json
< Content-Length: 447
<
* Connection #0 to host 52.32.168.109 left intact
{"props":{"allow_mult":false,"basic_quorum":false,"big_vclock":50,"chash_keyfun":{"mod":"riak_core_util","fun":"chash_std_keyfun"},"dvv_enabled":false,"dw":"quorum","last_write_wi":false,"linkfun":{"mod":"riak_kv_wm_link_walker","fun":"mapreduce_linkfun"},"n_val":3,"notfound_ok":true,"old_vclock":86400,"postcommit":[],"pr":0,"precommit":[],"pw":0,"r":"quorum","rw":"quorum","small_vclock":50,"w":"quorum","write_once":false,"young_vclock":20}}Long-MBP:~ longnguyen$
Long-MBP:~ longnguyen$
```

4. create VPC for team #10

The screenshot shows the AWS VPC Management Console. The left sidebar contains navigation links for VPC Dashboard, Virtual Private Cloud, Your VPCs, Subnets, Route Tables, Internet Gateways, DHCP Options Sets, Elastic IPs, Endpoints, NAT Gateways, Peering Connections, Security, Network ACLs, and Security Groups. The main content area displays a list of VPCs with columns: Name, VPC ID, State, VPC CIDR, DHCP options set, Route table, Network ACL, and Tenancy. The 'Team #10 VPC' (vpc-6862bf0c) is selected. Below the list, the details for 'vpc-6862bf0c (10.0.0.0/16) | Team #10 VPC' are shown, including Summary, Flow Logs, and Tags tabs. The Summary tab is active, displaying VPC ID, State, VPC CIDR, DHCP options set, Route table, Network ACL, Tenancy, DNS resolution, DNS hostnames, and ClassicLink DNS Support.

Name	VPC ID	State	VPC CIDR	DHCP options set	Route table	Network ACL	Tenancy
pub-vpc	vpc-99a74efd	available	172.30.0.0/16	dopt-fc687c9e	rtb-d95a98bd	acl-2a1fed4e	Default
oregon-vpc	vpc-f00a6395	available	10.0.0.0/16	dopt-fc687c9e	rtb-54413031	acl-7d096018	Default
	vpc-7a5f6b1f	available	172.30.0.0/16	dopt-fc687c9e	rtb-bfe7ddda	acl-75043210	Default
	vpc-d13400b4	available	172.30.0.0/16	dopt-fc687c9e	rtb-e9cd78c	acl-5bfcdcb3e	Default
Team #10 VPC	vpc-6862bf0c	available	10.0.0.0/16	dopt-fc687c9e	rtb-b0f14ad4	acl-5664c832	Default
helloworld	vpc-4edc992b	available	10.0.0.0/16	dopt-fc687c9e	rtb-a6185ac3	acl-27f98142	Default
team #2	vpc-8623f1e2	available	172.30.0.0/16	dopt-fc687c9e	rtb-885fe6ec t...	acl-53f95437	Default

vpc-6862bf0c (10.0.0.0/16) | Team #10 VPC

Summary | Flow Logs | Tags

VPC ID: vpc-6862bf0c | Team #10 VPC
State: available
VPC CIDR: 10.0.0.0/16
DHCP options set: dopt-fc687c9e
Route table: rtb-b0f14ad4
Network ACL: acl-5664c832
Tenancy: Default
DNS resolution: yes
DNS hostnames: yes
ClassicLink DNS Support: no

5. create 3 subnet on 3 different AZ for team #10

The screenshot shows the AWS VPC Management Console. The left sidebar contains navigation links for VPC Dashboard, Virtual Private Cloud, Your VPCs, Subnets, Route Tables, Internet Gateways, DHCP Options Sets, Elastic IPs, Endpoints, NAT Gateways, Peering Connections, Security, Network ACLs, and Security Groups. The main content area displays a list of subnets with columns: Name, Subnet ID, State, VPC, CIDR, Available IPs, and Availability Zone. The 'Team #10 subnet c' (subnet-68030831) is selected. Below the list, the details for 'subnet-68030831 (10.0.2.0/24) | Team #10 subnet c' are shown, including Summary, Route Table, Network ACL, Flow Logs, and Tags tabs. The Route Table tab is active, displaying the route table 'rtb-b0f14ad4' with a table of Destination and Target.

Name	Subnet ID	State	VPC	CIDR	Available IPs	Availability Zone
	subnet-761b4401	available	vpc-d13400b4 (172.30.0.0/16)	172.30.1.0/24	251	us-west-
public 1	subnet-ea8d7e8e	available	vpc-99a74efd (172.30.0.0/16) pub-vpc	172.30.0.0/24	247	us-west-
Team #10 subnet a	subnet-2a15b04e	available	vpc-6862bf0c (10.0.0.0/16) Team #10 VPC	10.0.0.0/24	251	us-west-
Team #10 subnet b	subnet-9751afe1	available	vpc-6862bf0c (10.0.0.0/16) Team #10 VPC	10.0.1.0/24	251	us-west-
Team #10 subnet c	subnet-68030831	available	vpc-6862bf0c (10.0.0.0/16) Team #10 VPC	10.0.2.0/24	251	us-west-

subnet-68030831 (10.0.2.0/24) | Team #10 subnet c

Summary | **Route Table** | Network ACL | Flow Logs | Tags

Edit

Route Table: rtb-b0f14ad4

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	igw-7686ac13

6. create 3 riak nodes

Safari File Edit View History Bookmarks Develop Window Help

us-west-2.console.aws.amazon.com

CMPE 281 - Team Project - Heroku Shopping Cart &... EC2 Management Console Running a Cluster Adding / Removing Nodes

AWS Services Edit cmpe281_2016 @ 0603-4069-... Oregon Support

EC2 Dashboard Events Tags Reports Limits

INSTANCES

Instances

Spot Requests Reserved Instances Scheduled Instances Commands Dedicated Hosts

IMAGES

AMIs Bundle Tasks

ELASTIC BLOCK STORE

Volumes Snapshots

NETWORK & SECURITY

Security Groups Elastic IPs

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public D
Team #10 riak a	i-e6180c21	t2.small	us-west-2a	terminated	2/2 checks ...	None	ec2-54-1
Team #10 riak a	i-b3180c74	t2.small	us-west-2a	running	2/2 checks ...	None	ec2-54-1
Team #10 riak b	i-99efcf41	t2.small	us-west-2b	running	2/2 checks ...	None	ec2-54-1
Team #10 riak c	i-e8829b32	t2.small	us-west-2c	running	2/2 checks ...	None	ec2-54-1

team#2 i-b2ecbb5a t2.micro us-west-2b running 2/2 checks ... None ec2-54-1

Description Status Checks Monitoring Tags

Instance ID i-b3180c74 Public DNS ec2-54-186-180-98.us-west-2.compute.amazonaws.com

Instance state running Public IP 54.186.180.98

Instance type t2.small Elastic IP -

Private DNS ip-10-0-0-148.us-west-2.compute.internal Availability zone us-west-2a

Private IPs 10.0.0.148 Security groups Team #10 default security group. view rules

Secondary private IPs VPC ID vpc-6862bf0c Scheduled events No scheduled events

AMI ID amzn-ami-hvm-2016.03.0.x86_64-gp2

Feedback English

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7. create a 3node - riak ring

```
root@ip-10-0-0-148:/home/ec2-user — ssh -i riak.pem ec2-user@e... root@ip-10-0-0-148:/home/ec2-user — ssh -i riak.pem ec2-user@e... root@ip-10-0-2-172:/home/ec2-user — ssh -i riak.pem ec2-user@ec...
_ | ( _ | _ )
_ | \ _ | _ | Amazon Linux AMI

https://aws.amazon.com/amazon-linux-ami/2016.03-release-notes/
[ec2-user@ip-10-0-0-148 ~]$ ^C
[ec2-user@ip-10-0-0-148 ~]$ sudo su
[root@ip-10-0-0-148 ec2-user]# riak-admin status | grep ring
ring_creation_size : 64
ring_members : ['riak@10.0.0.148','riak@10.0.1.73','riak@10.0.2.172']
ring_num_partitions : 64
ring_ownership : <<["{'riak@10.0.2.172',21},{'riak@10.0.1.73',21},{'riak@10.0.0.148',22}]">>
rings_reconciled : 0
rings_reconciled_total : 60
```