

Create a new security group by the name "cassandra-ports"

← → ↻ console.aws.amazon.com/ec2/v2/home?region=us-east-1#CreateSecurityGroup:

aws

Services ▾

vocstartsoft/user859235=diego.bettega.901@gmail.com @ 2801-57... ▾ N. Virginia ▾ Support ▾

EC2 > Security Groups > Create security group

Create security group [Info](#)

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name [Info](#)

cassandra-ports

Name cannot be edited after creation.

Description [Info](#)

Open multiple ports for cassandra to communicate

VPC [Info](#)

vpc-a915fed4 ▾

Inbound rules [Info](#)

Type [Info](#)

Custom TCP ▾

Protocol [Info](#)

TCP

Port range [Info](#)

1024 - 65500

Source [Info](#)

Custom ▾

Q

172.31.0.0/16 X

Description - optional [Info](#)

Delete

Add rule

Outbound rules [Info](#)

Type [Info](#)

All traffic ▾

Protocol [Info](#)

All

Port range [Info](#)

All

Destination [Info](#)

Custom ▾

Q

Description - optional [Info](#)

Delete

Feedback

English (US) ▾

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Create a new security group by the name "cassandra-ports"

console.aws.amazon.com/vpc/home?region=us-east-1#vpcs:

aws

Services

New VPC Experience

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VPC Dashboard

Filter by VPC:

Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

Carrier Gateways

DHCP Options Sets

Elastic IPs

Managed Prefix Lists

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

SECURITY

Network ACLs

Security Groups

VIRTUAL PRIVATE NETWORK (VPN)

Customer Gateways

Virtual Private Gateways

Site-to-Site VPN Connections

Client VPN Endpoints

TRANSIT GATEWAYS

Transit Gateways

Transit Gateway Attachments

🔔

vocstartsoft/user859235=diego.bettega.901@gmail.com @ 2801-57...

N. Virginia

Support

🔄

Actions

Create VPC

1

⚙️

Your VPCs (1/2) Info

Filter VPCs

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR (Network Border Group)	IPv6 pool
<input checked="" type="checkbox"/>	-	vpc-a915fed4	Available	172.31.0.0/16	-	-
<input type="checkbox"/>	ECS helloworld-cluster - VPC	vpc-0b92c2a779e326af6	Available	10.0.0.0/16	-	-

vpc-a915fed4

DetailsCIDRsWith flow logsTags

Details

VPC ID

vpc-a915fed4

Tenancy

Default

Default VPC

Yes

Owner ID

280157415142

State

Available

DHCP options set

dopt-9a42d6e0

IPv4 CIDR

172.31.0.0/16

DNS hostnames

Enabled

Route table

rtb-679deb19

IPv6 pool

-

DNS resolution

Enabled

Network ACL

acl-46d5873b

IPv6 CIDR (Network Border Group)

-

Feedback

English (US)

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Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

← → ↺

console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:

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Events

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Placement Groups

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Key Pairs

New

Network Interfaces

Instances (1/1)

Info

🔄

Connect

Instance state ▾

Actions ▾

Launch instances ▾

🔍 Filter instances

< 1 > ⚙️

<input checked="" type="checkbox"/>	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm Status	Availability zone ▾	Public IPv4 DNS ▾	Public IPv4 ... ▾	Elastic Ip ▾
<input checked="" type="checkbox"/>	node-1	i-0bab7d884b0ab2648	<div>Running</div> 🔍	t2.small	<div>2/2 checks ...</div>	No alarms <div>+</div>	us-east-1a	ec2-54-175-79-28.co...	54.175.79.28	-

Instance: i-0bab7d884b0ab2648 (node-1)

Details

Security

Networking

Storage

Status Checks

Monitoring

Tags

▼ Instance summary

Info

Instance ID	Public IPv4 address	Private IPv4 addresses
<div>i-0bab7d884b0ab2648 (node-1)</div>	<div>54.175.79.28 open address</div>	<div>172.31.84.122</div>
Instance state	Public IPv4 DNS	Private IPv4 DNS
<div>Running</div>	<div>ec2-54-175-79-28.compute-1.amazonaws.com open address</div>	<div>ip-172-31-84-122.ec2.internal</div>
Instance type	Elastic IP addresses	VPC ID
t2.small	-	<div>vpc-a915fed4</div>
IAM Role	Subnet ID	
-	<div>subnet-0e8d282f</div>	

▼ Instance details

Info

Platform	AMI ID	Monitoring
<div>Ubuntu (Inferred)</div>	<div>ami-ec1a8593</div>	<div>disabled</div>
Platform details	AMI name	Termination protection

Feedback

English (US) ▾

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Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

```
diego.bettega@LDNMBL-LW1046Q4 MINGW64 ~
$ cd Desktop/Machine\ Learning\ PGP\ CC\Project 4
bash: cd: too many arguments

diego.bettega@LDNMBL-LW1046Q4 MINGW64 ~
$ cd Desktop/Machine\ Learning\ PGP\ CC\

diego.bettega@LDNMBL-LW1046Q4 MINGW64 ~/Desktop/Machine Learning/PGP CC
$ cd Project\ 4

diego.bettega@LDNMBL-LW1046Q4 MINGW64 ~/Desktop/Machine Learning/PGP CC/Project 4
$ chmod 400 project4.pem

diego.bettega@LDNMBL-LW1046Q4 MINGW64 ~/Desktop/Machine Learning/PGP CC/Project 4
$ ssh -i project4.pem ubuntu@54.175.79.28
load pubkey "project4.pem": invalid format
The authenticity of host '54.175.79.28 (54.175.79.28)' can't be established.
ECDSA key fingerprint is SHA256:YVxVqFvBRSKV04kp3X5v219SDzJYgnHEqb2NM4tw0o.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.175.79.28' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.0-1047-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

110 packages can be updated.
1 update is a security update.

*** System restart required ***
Last login: Sun Jan 28 15:55:31 2018 from 106.200.196.203
ubuntu@ip-172-31-84-122:~$ java -version
java version "1.8.0_92"
Java(TM) SE Runtime Environment (build 1.8.0_92-b14)
Java HotSpot(TM) 64-Bit Server VM (build 25.92-b14, mixed mode)
ubuntu@ip-172-31-84-122:~$ python -V
Python 2.7.12
ubuntu@ip-172-31-84-122:~$ cd /opt/
ubuntu@ip-172-31-84-122:/opt$ ls -al
total 24
drwxr-xr-x  6 ubuntu ubuntu 4096 Jan 28  2018 .
drwxr-xr-x 23 root    root   4096 Oct 24  14:58 ..
drwxrwxr-x 10 ubuntu ubuntu 4096 Jan 28  2018 apache-cassandra-3.11.1
drwxr-xr-x  8 ubuntu ubuntu 4096 Dec 20  2017 jdk1.8.0_161-CassHasIssuesWith161
drwxr-xr-x  8 ubuntu ubuntu 4096 Apr  1  2016 jdk1.8.0_92
drwxrwxr-x  2 ubuntu ubuntu 4096 Jan 28  2018 softwares
ubuntu@ip-172-31-84-122:/opt$ cd apache-cassandra-3.11.1/conf/
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_CLUSTER_NAME=GL-Cluster=g' cassandra.yaml
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_IP_ADDRESS=172.31.84.122=g' cassandra.yaml
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_SEED_LIST=172.31.84.122=g' cassandra.yaml
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_DATACENTER=dc1=g' cassandra-rackdc.properties
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_RACK=r1=g' cassandra-rackdc.properties
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1$ cd bin
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/bin$
```

Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

```
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/bin$ nodetool status
Datacenter: dc1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
-- Address            Load          Tokens       Owns (effective)  Host ID                               Rack
UN  172.31.84.122      103.82 KiB    256          100.0%            ae3309c7-2f76-4335-a1eb-fadff531384d  r1

ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/bin$
```

Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

← → ↺ console.aws.amazon.com/ec2/v2/home?region=us-east-1#ChangeSecurityGroups:instanceId=i-0bab7d884b0ab2648

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☰

EC2 > Instances > i-0bab7d884b0ab2648 > Change security groups

Change security groups Info

Amazon EC2 evaluates all the rules of the selected security groups to control inbound and outbound traffic to and from your instance. You can use this window to add and remove security groups.

Instance details

Instance ID

i-0bab7d884b0ab2648 (node-1)

Network interface ID

eni-08835a4b34beec51

Associated security groups

Add one or more security groups to the network interface. You can also remove security groups.

🔍 Select security groups

Add security group

Security groups associated with the network interface (eni-08835a4b34beec51)

Security group name	Security group ID	
launch-wizard-1	sg-07a6e532924cbce80	Remove
cassandra-ports	sg-02c27aa3a81f7624f	Remove

Cancel

Save

Feedback

English (US) ▾

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Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

← → ↺

console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:

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Placement Groups New

Key Pairs New

Network Interfaces

✔️ Security groups for eni-023283b59c18d29c4 changed successfully ✕

Instances (3) Info

🔄 Connect Instance state ▾ Actions ▾ Launch instances ▾

🔍 Filter instances

<input type="checkbox"/>	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm Status	Availability zone ▾	Public IPv4 DNS ▾	Public IPv4 ... ▾	Elastic Ip ▾
<input type="checkbox"/>	node-1	i-0bab7d884b0ab2648	✔️ Running 🔍 🔍	t2.small	✔️ 2/2 checks ...	No alarms +	us-east-1a	ec2-54-175-79-28.co...	54.175.79.28	–
<input type="checkbox"/>	node-2	i-0cb2b9778339a6c2e	✔️ Running 🔍 🔍	t2.small	✔️ 2/2 checks ...	No alarms +	us-east-1b	ec2-34-234-86-7.com...	34.234.86.7	–
<input type="checkbox"/>	node-3	i-015406c25d9e30061	✔️ Running 🔍 🔍	t2.small	✔️ 2/2 checks ...	No alarms +	us-east-1c	ec2-3-81-114-193.co...	3.81.114.193	–

Select an instance above

Feedback English (US) ▾

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Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

```
Hyper
MINGW64/c/Users/diego.bettega/Desktop/Machine Learning/PGP CC/Project 4
MINGW64/c/Users/diego.bettega/Desktop/Machine Learning/PGP CC/Project 4
MINGW64/c/Users/diego.bettega/Desktop/Machine Learning/PGP CC/Project 4

diego.bettega@LDNMBL-LN104604 MINGW64 ~
$ cd Desktop/Machine\ Learning/PGP\ CC/

diego.bettega@LDNMBL-LN104604 MINGW64 ~/Desktop/Machine Learning/PGP CC
$ cd Project\ 4/

diego.bettega@LDNMBL-LN104604 MINGW64 ~/Desktop/Machine Learning/PGP CC/Project 4
$ ssh -i project4.pem ubuntu@34.234.86.7
load pubkey "project4.pem": invalid format
The authenticity of host '34.234.86.7 (34.234.86.7)' can't be established.
ECDSA key fingerprint is SHA256:nXSk1LR3VRR2KLQUC2y*W09uL2rhkSqVDFNGuitE.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '34.234.86.7' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.0-1047-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

234 packages can be updated.
159 updates are security updates.

*** System restart required ***
Last login: Sun Jan 28 15:55:31 2018 from 106.200.196.203
ubuntu@ip-172-31-28-233:~$ cd /opt/apache-cassandra-3.11.1/conf/
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_CLUSTER_NAME=GL-Cluster=g' cassandra.yaml
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_IP_ADDRESS=[LOCAL IP here]=g' cassandra.yaml
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_IP_ADDRESS=[LOCAL IP here]=g' cassandra.yaml
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_IP_ADDRESS=172.31.28.233=g' cassandra.yaml
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_SEED_LIST=172.31.04.122=g' cassandra.yaml
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_DATACENTER=dc1=g' cassandra-rackdc.properties
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ sed -i 's=MOD_RACK=r2=g' cassandra-rackdc.properties
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/conf$ cd ../bin/
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/bin$ ./cassandra
ubuntu@ip-172-31-28-233:/opt/apache-cassandra-3.11.1/bin$ Java HotSpot(TM) 64-Bit Server VM warning: Cannot open file /opt/apache-cassandra-3.11.1/logs/gc.log due to No such file or directory

CompilerOracle: dontinline org/apache/cassandra/db/Columns$Serializer.deserializeLargeSubset (Lorg/apache/cassandra/io/util/DataInputPlus;Lorg/apache/cassandra/db/Columns;I)Lorg/apache/cassandra/db/Columns;
CompilerOracle: dontinline org/apache/cassandra/db/Columns$Serializer.serializeLargeSubset (Ljava/util/Collection;ILorg/apache/cassandra/db/Columns;ILorg/apache/cassandra/io/util/DataOutputPlus;I)V
CompilerOracle: dontinline org/apache/cassandra/db/Columns$Serializer.serializeLargeSubsetSize (Ljava/util/Collection;ILorg/apache/cassandra/db/Columns;I)I
CompilerOracle: dontinline org/apache/cassandra/db/commitlog/AbstractCommitLogSegmentManager.advanceAllocatingFrom (Lorg/apache/cassandra/db/commitlog/CommitLogSegment;I)V
CompilerOracle: dontinline org/apache/cassandra/db/transform/BaseIterator.tryGetMoreContents ()Z
CompilerOracle: dontinline org/apache/cassandra/db/transform/StoppingTransformation.stop ()V
```


Create 3 EC2 instances (t2-small) using the 7 step workflow & Follow the steps to configure Cassandra

```
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/bin$ nodetool status
Datacenter: dc1
=====
Status=Up/Down
|/ State=Normal/Leaving/Joining/Moving
--  Address            Load           Tokens         Owns (effective)  Host ID                               Rack
UN  172.31.17.12        108.4 KiB      256            69.0%             be196f73-a41d-4756-a69d-8697b5397a53  r2
UN  172.31.84.122       165.2 KiB      256            63.9%             ae3309c7-2f76-4335-a1eb-fadff531384d  r1
UN  172.31.40.232       15.47 KiB      256            67.2%             90cb0b09-58c1-446b-aa7f-0e52beb99ab4  r3

ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/bin$
```

```
ubuntu@ip-172-31-84-122:/opt/apache-cassandra-3.11.1/bin$ cqlsh 172.31.84.122 -u cassandra -p cassandra
Connected to GL-Cluster at 172.31.84.122:9042.
[cqlsh 5.0.1 | Cassandra 3.11.1 | CQL spec 3.4.4 | Native protocol v4]
Use HELP for help.
cassandra@cqlsh> CREATE KEYSPACE IF NOT EXISTS starfleet WITH replication = {'class':'NetworkTopologyStrategy', 'dc1':3};
cassandra@cqlsh> CREATE TABLE starfleet.user (
...   user_id VARCHAR,
...   location VARCHAR,
...   display_name VARCHAR,
...   first_name VARCHAR,
...   last_name VARCHAR,
...   PRIMARY KEY (user_id, location)
... );
cassandra@cqlsh> INSERT INTO starfleet.user (user_id,location,display_name,first_name,last_name)
...   VALUES ('u1','earth1','Kirk','William','Shatner');
cassandra@cqlsh> INSERT INTO starfleet.user (user_id,location,display_name,first_name,last_name)
...   VALUES ('u2','vulcan','Spock','Leonard','Nimoy');
cassandra@cqlsh> select * from starfleet.user;

 user_id | location | display_name | first_name | last_name
-----+-----+-----+-----+-----
    u2   |  vulcan  |      Spock   |  Leonard   |  Nimoy
    u1   |  earth1  |      Kirk    |  William   |  Shatner

(2 rows)
cassandra@cqlsh> 
```

```
(2 rows)
cassandra@cqlsh> ALTER KEYSPACE "system_auth" WITH REPLICATION = {'class':'NetworkTopologyStrategy', 'dc1':3};
cassandra@cqlsh> select * from starfleet.user where user_id='u2;;
... select * from starfleet.user where user_id='u2;
SyntaxException: line 2:44 mismatched input 'u2' expecting EOF (... starfleet.user where user_id='u2;;select * from starfleet.user where user_id='[u2]...)
cassandra@cqlsh> select * from starfleet.user where user_id='u2';

user_id | location | display_name | first_name | last_name
-----+-----+-----+-----+-----
u2 | vulcan | Spock | Leonard | Nimoy

(1 rows)
cassandra@cqlsh> consistency;
Current consistency level is ONE.
cassandra@cqlsh> consistency all;
Consistency level set to ALL.
cassandra@cqlsh> select * from starfleet.user where user_id='u2';

user_id | location | display_name | first_name | last_name
-----+-----+-----+-----+-----
u2 | vulcan | Spock | Leonard | Nimoy

(1 rows)
cassandra@cqlsh> []
```

```
ubuntu@ip-172-31-17-12:/opt/apache-cassandra-3.11.1/bin$ nodetool stopdaemon
WARN 16:54:48,791 Small commitlog volume detected at /opt/cassandra-data/commitlog; setting commitlog_total_space_in_mb to 1969. You can override this in cassandra.yaml
WARN 16:54:48,797 Small cdc volume detected at /opt/cassandra-data/cdc_raw; setting cdc_total_space_in_mb to 984. You can override this in cassandra.yaml
WARN 16:54:48,802 Only 5.196GiB free across all data volumes. Consider adding more capacity to your cluster or removing obsolete snapshots
Cassandra has shutdown.
ubuntu@ip-172-31-17-12:/opt/apache-cassandra-3.11.1/bin$
```

```
ubuntu@ip-172-31-40-232:/opt/apache-cassandra-3.11.1/bin$ nodetool status
Datacenter: dc1
=====
Status=Up/Down
// State=Normal/Leaving/Joining/Moving
--  Address            Load           Tokens         Owns (effective)  Host ID                               Rack
DN   172.31.17.12        120.34 KiB     256            100.0%            be196f73-a41d-4756-a69d-8697b5397a53  r2
UN   172.31.84.122       141.79 KiB     256            100.0%            ae3309c7-2f76-4335-a1eb-fadff531384d  r1
UN   172.31.40.232       91.59 KiB      256            100.0%            90cb0b09-58c1-446b-aa7f-0e52beb99ab4  r3
```

```
(1 rows)
cassandra@cqlsh> select * from starfleet.user where user_id='u2';
NoHostAvailable:
cassandra@cqlsh> consistency quorum;
Consistency level set to QUORUM.
cassandra@cqlsh> select * from starfleet.user where user_id='u2';

 user_id | location | display_name | first_name | last_name
-----+-----+-----+-----+-----
      u2 |  vulcan  |      Spock  |  Leonard  |   Nimoy

(1 rows)
cassandra@cqlsh> █
```