

Document DB: saves as json data

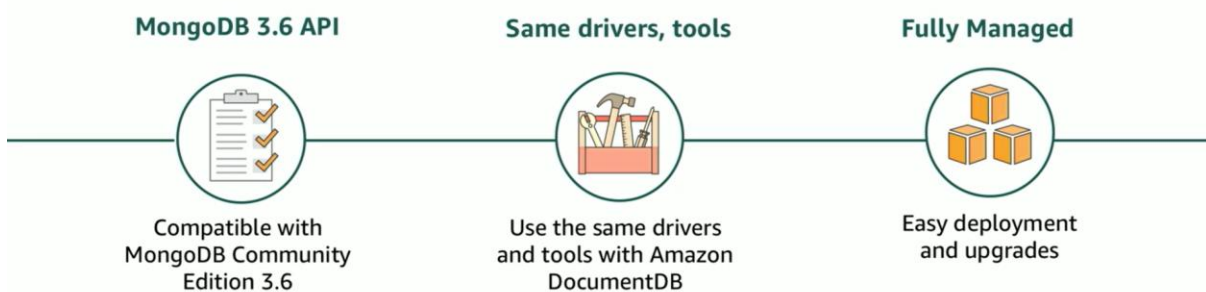
Mongodb is used

```
JSON
1  [
2    {
3      "year" : 2013,
4      "title" : "Turn It Down, Or Else!",
5      "info" : {
6        "directors" : [ "Alice Smith", "Bob Jones"],
7        "release_date" : "2013-01-18T00:00:00Z",
8        "rating" : 6.2,
9        "genres" : ["Comedy", "Drama"],
10       "image_url" : "http://ia.media-imdb.com/images/N/09ERWU7F5797AJ7LU8HN09AMUJ",
11       "plot" : "A rock band plays their music at high volumes, annoying the neigh",
12       "actors" : ["David Matthewman", "Jonathan G. Neff"]
13     }
14   },
15   {
16     "year": 2015,
17     "title": "The Big New Movie",
18     "info": {
19       "plot": "Nothing happens at all.",
20       "rating": 0
21     }
22   }
23 ]
```

Use case: content management vedios images comments

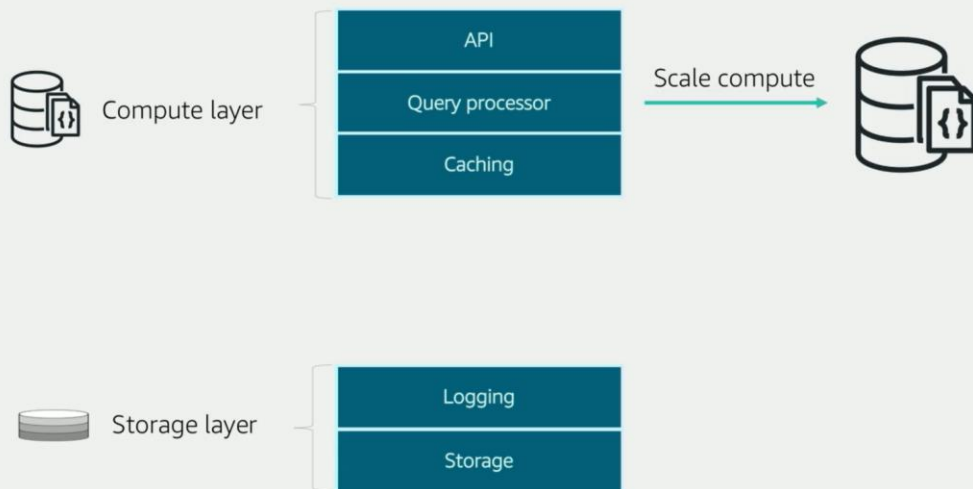
Real time operations

Fast, scalable, fully managed
MongoDB-compatible database service



Decouple compute and storage

aws training and certification



Read Consistency

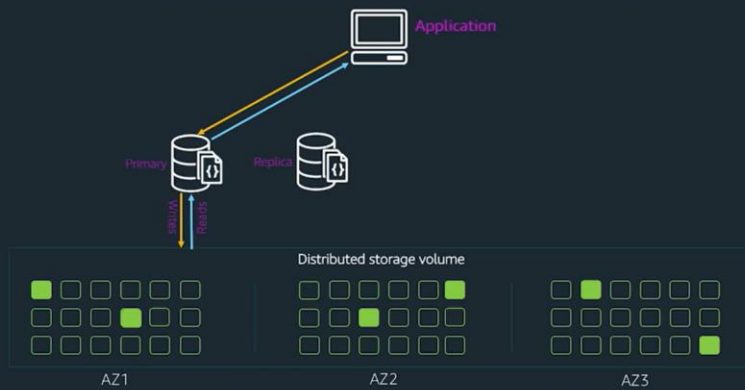
aws training and certification

Primary reads are read-after-write consistent



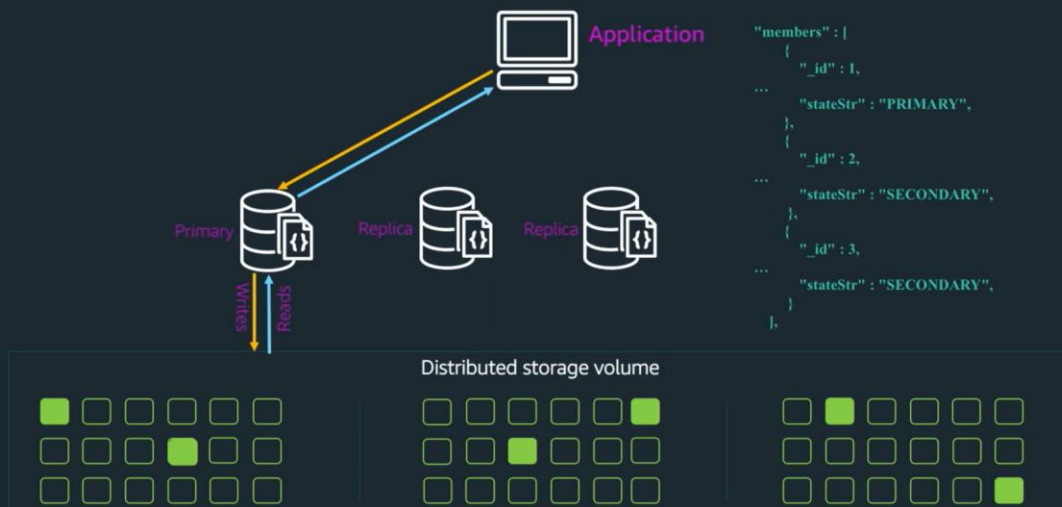
Replica set emulation

aws training and certification



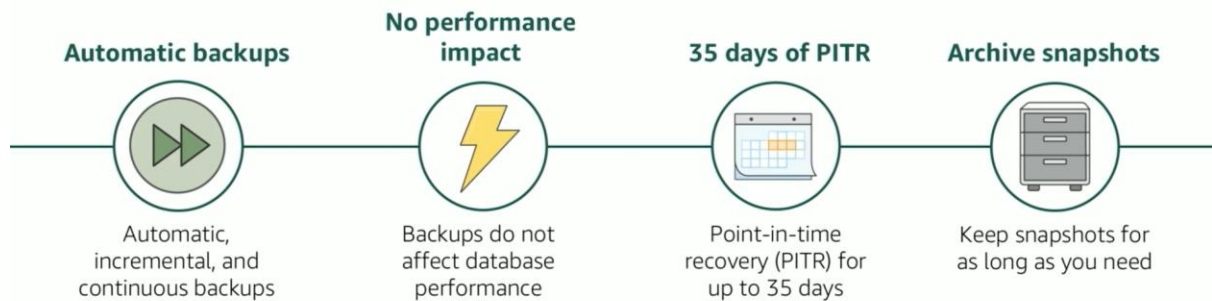
Replica set emulation

aws training and certification

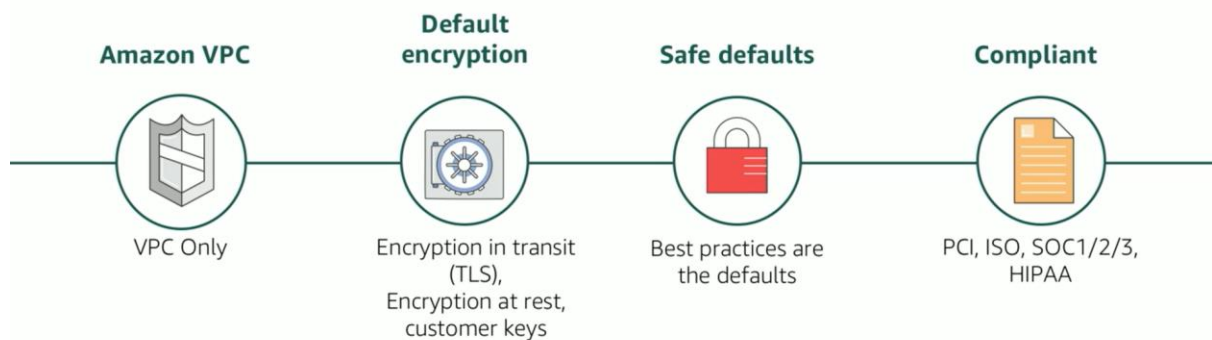


```
"members": [  
  {  
    "_id": 1,  
    "stateStr": "PRIMARY",  
  },  
  {  
    "_id": 2,  
    "stateStr": "SECONDARY",  
  },  
  {  
    "_id": 3,  
    "stateStr": "SECONDARY",  
  },  
]
```

Backup and recovery



Security and compliance



Cluster sizing: Availability



- Multi-AZ Deployment
- Read replica count

Availability Goal	Total Instances	Replicas	AZs
99%	1	0	1
99.9%	2	1	2
99.99%	3	2	3

<https://aws.amazon.com/architecture/well-architected/>



3:25 / 14:04



6 replicas

Cluster sizing: Durability



Data is durable even with a single node



3:44 / 14:04



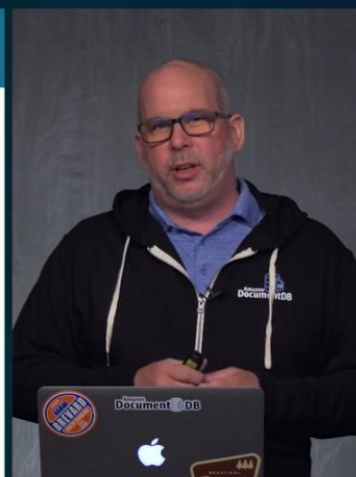
Cluster sizing: Performance



- vCPU count
- Working set memory (2/3 of RAM)
- Read velocity
- Write velocity

db.r5 – Current Generation Memory-Optimized Instance Classes

Class	vCPU	Memory (GiB)	Network Performance
r5.large	2	16	Up to 10Gbps
r5.xlarge	4	32	Up to 10Gbps
r5.2xlarge	8	64	Up to 10Gbps
r5.4xlarge	16	128	Up to 10Gbps
r5.12xlarge	48	384	10Gbps
r5.24xlarge	96	768	25Gbps



Cluster sizing: Recovery



- PITR window
- Backup retention
- Manual backups

Backup

Backup retention period [Info](#)

A period between 1 and 35 days in which you can perform a point-in-time restore and for which automated backups are retained.

1 day

Backup window

The daily time range (in UTC) during which automated backups are created.

Start time

00

:

00

UTC

Duration

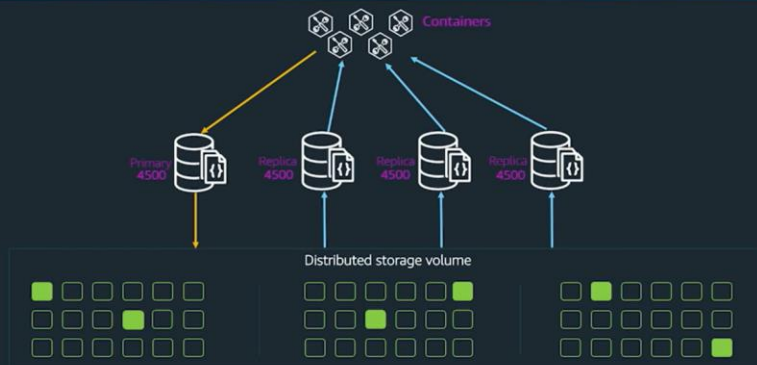
0.5

hours



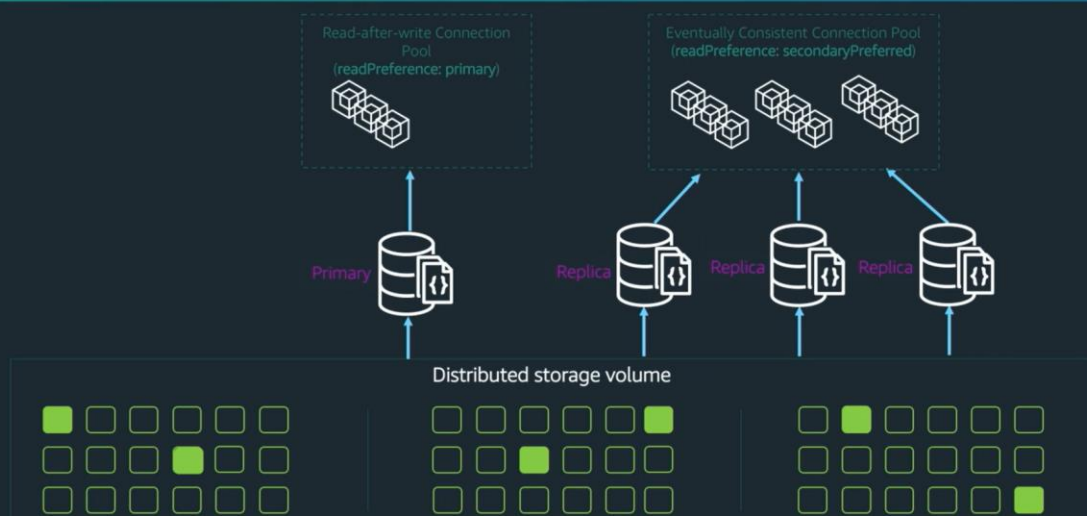
Connection limits

aws training and certification



Multiple pool approach for consistency

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5:54 / 14:04



TLS connections

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Connecting with TLS Enabled

To view a code example for programmatically connecting to a TLS-enabled Amazon DocumentDB cluster, choose the appropriate tab for the language that you want to use.

Python | Node.js | PHP | Go | **Java** | C# / .NET | mongo shell

When connecting to a TLS-enabled Amazon DocumentDB cluster from a Java application, your program must use the AWS-provided Certificate Authority file to validate the connection. To use the AWS RDS CA certificate, do the following:

1. Download the Amazon RDS CA file from <https://s3.amazonaws.com/rds-downloads/rds-combined-ca-bundle.pem>.
2. Create a keystore with the CA certificate contained in the file by performing the following commands. Be sure to change the <keystorePassword> to something else.

```
keytool -importcert -trustcacerts -file rds-combined-ca-bundle.pem -alias rds -keystore rds-ca-
```

6:14 / 14:04

Automated scaling

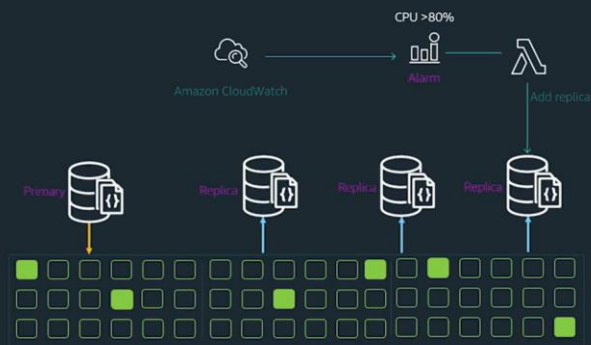
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7:12 / 14:04

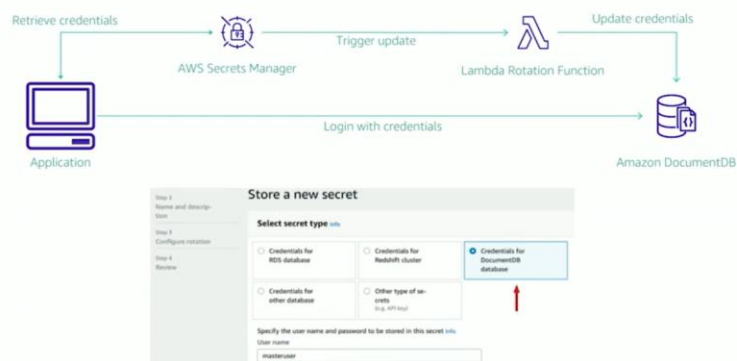
Automated scaling

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Secrets manager integration

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3 things to remember

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Scaling is easy



Replication doesn't copy data

Backups are easy



No-effort PITR

Starting is easy



Create a cluster in minutes



AWS DocumentDB Console

us-east-1.console.aws.amazon.com/docdb/home?region=us-east-1#cluster-create

Services Resource Groups

Amazon DocumentDB

DocumentDB > Clusters > Create cluster

Create Amazon DocumentDB cluster

Configuration

Cluster identifier [Info](#)
Specify a unique cluster identifier.

Instance class [Info](#)

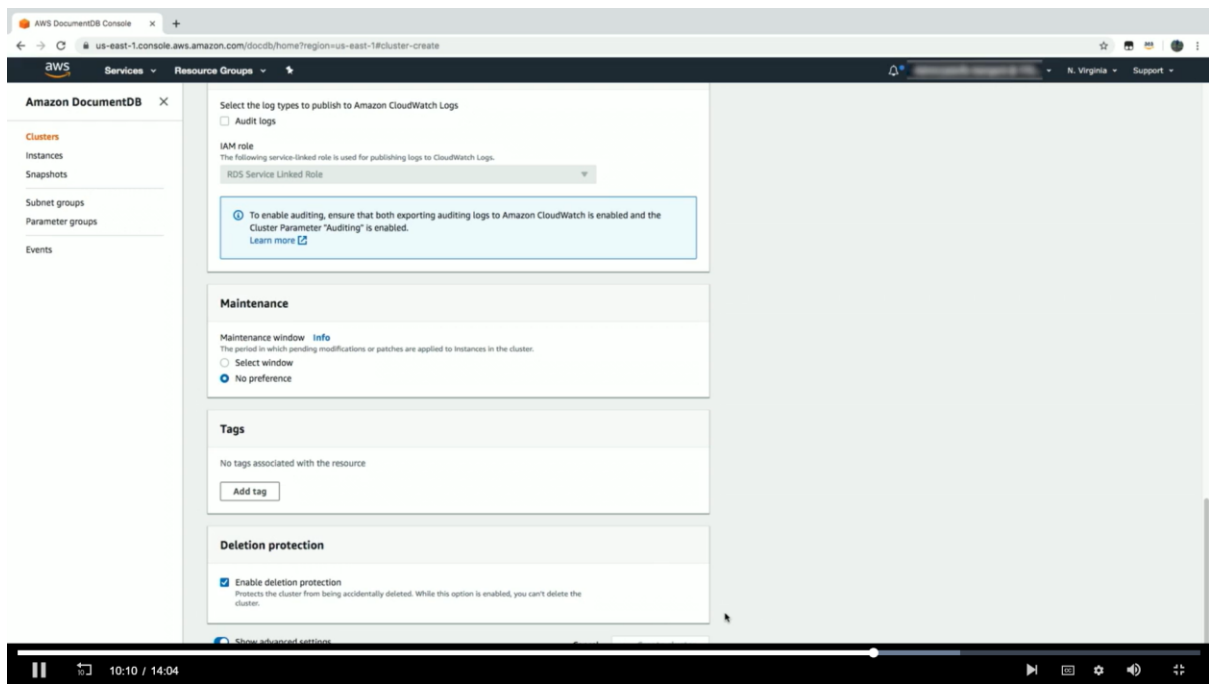
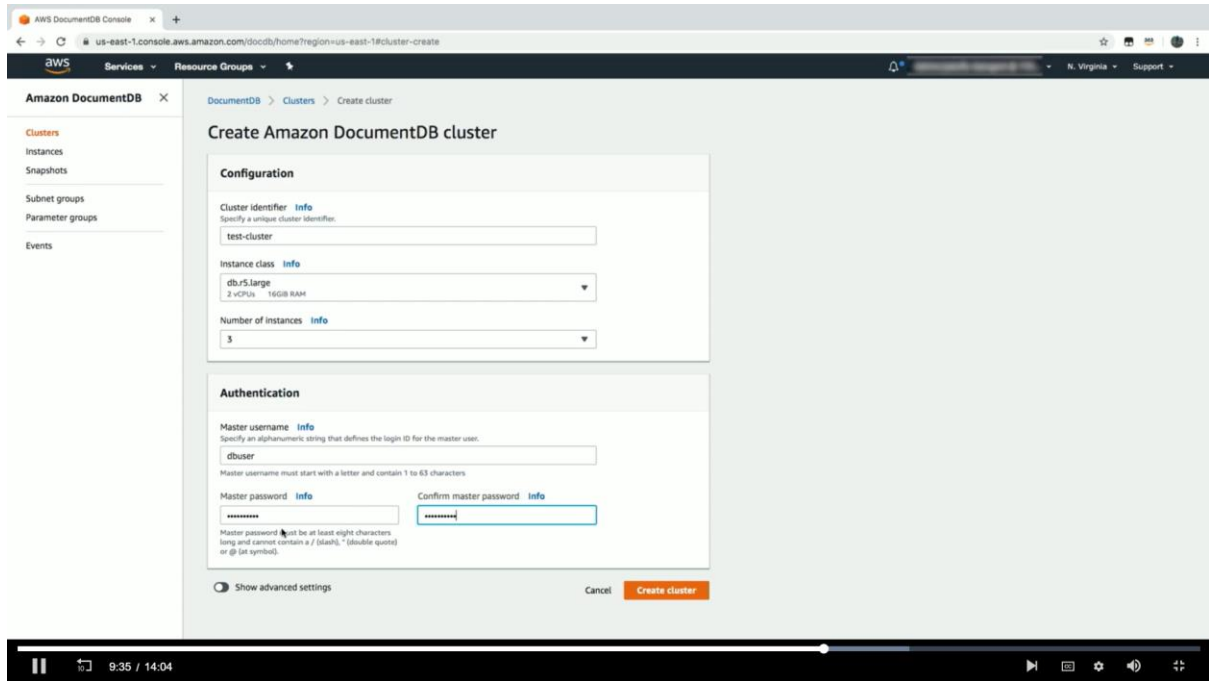
2 vCPUs 16GB RAM

Number of instances [Info](#)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Create cluster

9:09 / 14:04



```
ec2-user@ip-172-31-81-35 ~]$ mongo --ssl --host demo-cluster.cluster-cr6m5dl7bisa.us-east-1.docdb.amazonaws.com:27017
--sslCAFile rds-combined-ca-bundle.pem --username dbuser --password _
```

```
ec2-user@ip-172-31-81-35 ~]$ mongo --ssl --host demo-cluster.cluster-cr6m5dl7bisa.us-east-1.docdb.amazonaws.com:27017
--sslCAFile rds-combined-ca-bundle.pem --username dbuser --password _
{
  "_id" : 0,
  "name" : "demo-cluster.cr6m5dl7bisa.us-east-1.docdb.amazonaws.com:27017",
  "health" : 1,
  "state" : 2,
  "stateStr" : "SECONDARY",
  "uptime" : 899064
},
{
  "_id" : 1,
  "name" : "demo-cluster3.cr6m5dl7bisa.us-east-1.docdb.amazonaws.com:27017",
  "health" : 1,
  "state" : 2,
  "stateStr" : "SECONDARY",
  "uptime" : 899064
},
{
  "_id" : 2,
  "name" : "demo-cluster2.cr6m5dl7bisa.us-east-1.docdb.amazonaws.com:27017",
  "health" : 1,
  "state" : 1,
  "stateStr" : "PRIMARY",
  "self" : true,
  "uptime" : 899064
}
],
"ok" : 1
}
rs0:PRIMARY> show dbs
archive 21.972GB
test 0.000GB
rs0:PRIMARY> user_
```

AWS DocumentDB Console

us-east-1.console.aws.amazon.com/docdb/home?region=us-east-1#cluster-details/demo-cluster

Amazon DocumentDB

Clusters

Instances

Snapshots

Subnet groups

Parameter groups

Events

Cluster instances (3)

Filter cluster instances

Create

Instance	Role	Cluster parameter group status
demo-cluster	reader	In-sync
demo-cluster2	writer	In-sync
demo-cluster3	reader	In-sync

Recent events (0)

Filter events

Time

Message

Tags (0)

Filter Tags

Key

Value

13:12 / 14:04

AWS DocumentDB Console

us-east-1.console.aws.amazon.com/docdb/home?region=us-east-1#cluster-add-instances/demo-cluster

Amazon DocumentDB

DocumentDB > Clusters > Add Instances

Add instances to: demo-cluster

Instance settings

You can create up to 16 instances for a cluster (one primary and 15 replicas). 'demo-cluster' cluster currently has 3/16 instances.

Instance Identifier [Info](#) Instance class [Info](#) Promotion tier [Info](#)

reporting- db.r5.large No preference Remove

Specify a unique instance identifier. Cannot end with a hyphen.

Add additional instance

You can create 12 more instances.

Cancel Create

13:20 / 14:04

us-east-1.console.aws.amazon.com/docdb/home?region=us-east-1#cluster-add-instances/demo-cluster

ServicesResource Groups

Amazon DocumentDB

ClustersInstancesSnapshotsSubnet groupsParameter groupsEvents

DocumentDB > Clusters > Add instances

Add instances to: demo-cluster

Instance settings

You can create up to 16 instances for a cluster (one primary and 15 replicas).
"demo-cluster" cluster currently has 5/16 instances.

Instance identifier

reporting-replica

Info

Instance class

db.r5.large

Info

Promotion tier

No preference

Info

Remove

Specify a unique instance identifier.

Add additional instance

You can create 12 more instances.

CancelCreate

FeedbackEnglish (US)

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