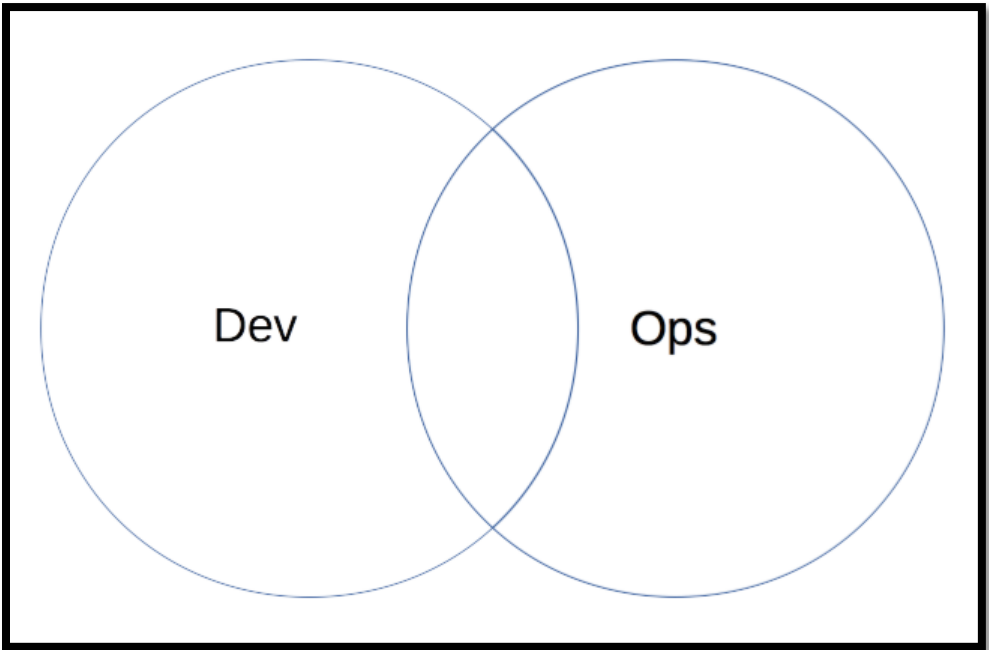
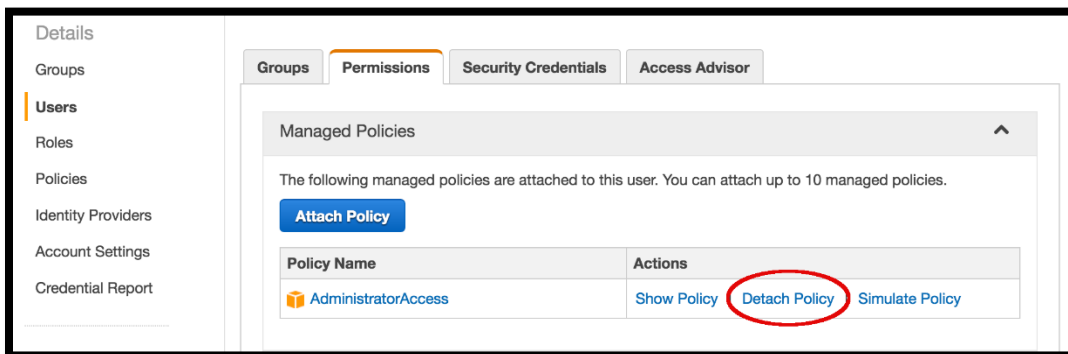
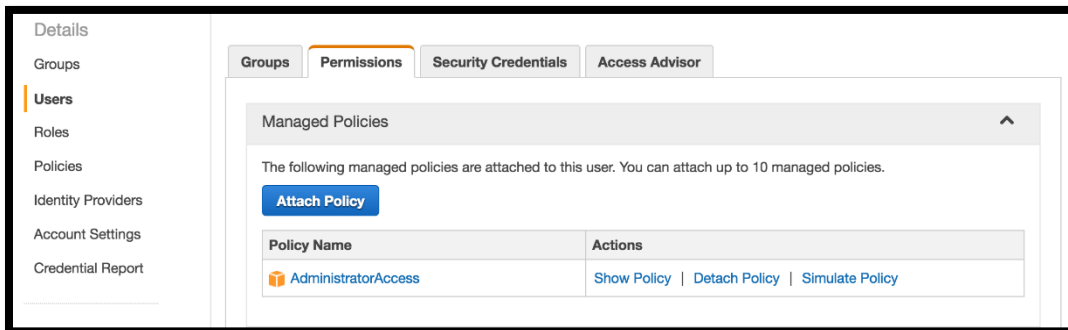
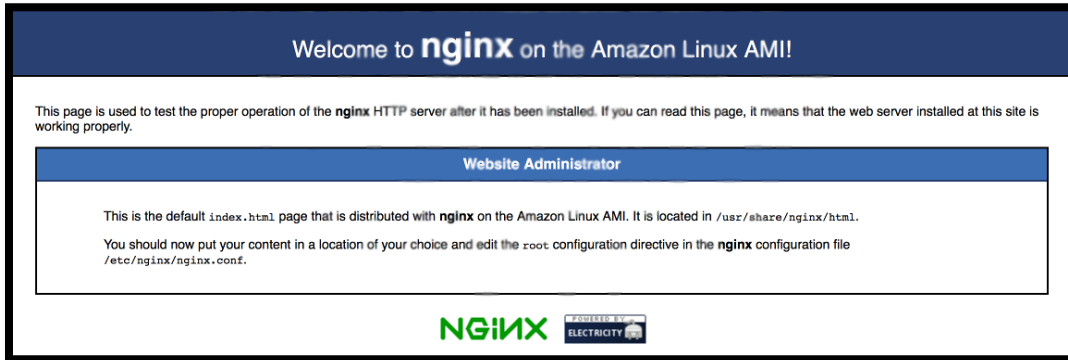


Chapter 1: What is DevOps and Should You Care?





Chapter 3: Bringing Your Infrastructure Under Configuration Management

The screenshot shows the 'Permissions' tab in the AWS IAM console. It features a navigation bar with 'Groups', 'Permissions', 'Security Credentials', and 'Access Advisor'. The main content area is titled 'Managed Policies' and includes a sub-header 'Managed Policies' with an upward arrow. Below this, a message states: 'The following managed policies are attached to this user. You can attach up to 10 managed policies.' A blue button labeled 'Attach Policy' is positioned above a table. The table has two columns: 'Policy Name' and 'Actions'. One policy is listed: 'AWSCodeCommitFullAccess' with an icon, and its actions are 'Show Policy', 'Detach Policy', and 'Simulate Policy'. At the bottom, there is a section for 'Inline Policies' with a downward arrow.

Policy Name	Actions
AWSCodeCommitFullAccess	Show Policy Detach Policy Simulate Policy

The screenshot shows the 'Security Credentials' tab in the AWS IAM console. It features a navigation bar with 'Groups', 'Permissions', 'Security Credentials', and 'Access Advisor'. The main content area is titled 'SSH keys for AWS CodeCommit' with an upward arrow. Below this, a message states: 'Use SSH public keys to authenticate to AWS CodeCommit repositories. [Learn more about SSH keys.](#)' A blue button labeled 'Upload SSH public key' is positioned above a table. The table has four columns: 'SSH Key ID', 'Uploaded', 'Status', and 'Actions'. One key is listed with ID 'APKAIE5WK2C77RP7I2EQ', uploaded on '2016-06-11 21:06 UTC+0100', and status 'Active'. Its actions are 'Make Inactive', 'Show SSH Key', and 'Delete'. Above the table, there are sections for 'Access Keys' and 'Sign-In Credentials', both with downward arrows.

SSH Key ID	Uploaded	Status	Actions
APKAIE5WK2C77RP7I2EQ	2016-06-11 21:06 UTC+0100	Active	Make Inactive Show SSH Key Delete

terraform-elb-...us-east-1.elb.amazonaws.com



Hello from 10.0.3.197 running PHP 5.3.29 on Amazon 2016.
I come with 1 x Intel(R) Xeon(R) CPU E5-2676 v3 @ 2.40GHz and 491 MB of memory.

PHP License

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Chapter 4: Build, Test, and Release Faster with Continuous Integration

Getting Started

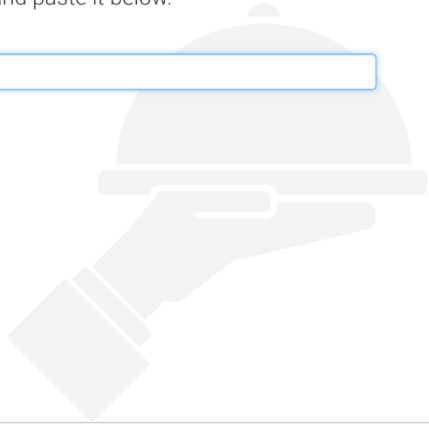
Unlock Jenkins

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.

Create First Admin User

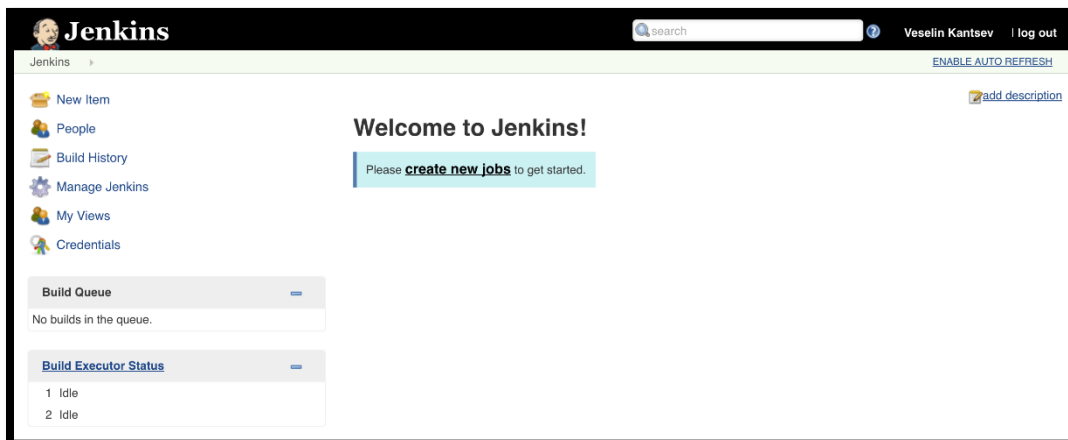
Username:	<input type="text" value="veselin"/>
Password:	<input type="password" value="....."/>
Confirm password:	<input type="password" value="....."/>
Full name:	<input type="text" value="Veselin Kantsev "/>
E-mail address:	<input type="text" value="veselin@kantsev.com"/>

Getting Started

Jenkins is ready!

Your Jenkins setup is complete.

Start using Jenkins



The screenshot shows the Jenkins web interface. At the top left is the Jenkins logo and name. A search bar is located at the top center. On the top right, the user name 'Veselin Kantsev' and a 'log out' link are visible. Below the header is a navigation menu with items: 'New Item', 'People', 'Build History', 'Manage Jenkins', 'My Views', and 'Credentials'. The main content area features a 'Welcome to Jenkins!' message with a call to action: 'Please create new jobs to get started.' To the right of this message are links for 'ENABLE AUTO REFRESH' and 'add description'. Below the message are two expandable sections: 'Build Queue' (showing 'No builds in the queue.') and 'Build Executor Status' (showing two executors in an 'Idle' state).

Jenkins

search

Veselin Kantsev | log out

Jenkins

ENABLE AUTO REFRESH

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


?

Enter an item name


* Required field

**Freestyle project**


This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

**Pipeline**


Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

**Multi-configuration project**


Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

**External Job**

This type of job allows you to record the execution of a process run outside Jenkins, even on a remote machine. This is designed so that you can use Jenkins as a dashboard of your existing automation system. See [the documentation for more details](#).

**Folder**

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

**Multibranch Pipeline**

Creates a set of Pipeline projects according to detected branches in one SCM repository.

General | Build Triggers | Advanced Project Options | Pipeline

Pipeline name:

Description:

[Plain text] [Preview](#)

Discard old builds ?

Strategy:

Days to keep builds:

if not empty, build records are only kept up to this number of days

Max # of builds to keep:

if not empty, only up to this number of build records are kept

[Advanced...](#)

GitHub project ?

This project is parameterized ?

Throttle builds ?

Execute concurrent builds if necessary ?

Quiet period ?

Build Triggers

Trigger builds remotely (e.g., from scripts) ?

Build after other projects are built ?

Build periodically ?

Build when a change is pushed to GitHub ?

Poll SCM ?

Schedule:

Would last have run at Wednesday, July 20, 2016 8:10:40 PM UTC; would next run at Wednesday, July 20, 2016 8:15:40 PM UTC.

Ignore post-commit hooks ?

Pipeline

Definition

Pipeline script from SCM

SCM Git

Repositories

Repository URL

Credentials [Add](#)

[Advanced...](#)

[Add Repository](#)

Branches to build

Branch Specifier (blank for 'any')

[Add Branch](#)

Repository browser

Additional Behaviours [Add](#)

Script Path

[Pipeline Syntax](#)

Jenkins > demo_pipeline > ENABLE AUTO REFRESH

Pipeline demo_pipeline

[add description](#)

[Recent Changes](#)

Stage View

Average stage times:
(Average full run time: ~13s)

	Checkout Git repo	Run tests	Build RPM	Update YUM repo	Check YUM repo
#11 Jul 24 17:45 1 commits	4s	2s	2s	2s	2s
#10 Jul 24 17:43 1 commits	5s	2s	2s	3s	1s failed

Permalinks

- [Last build \(#11\), 12 hr ago](#)
- [Last stable build \(#11\), 12 hr ago](#)
- [Last successful build \(#11\), 12 hr ago](#)
- [Last failed build \(#10\), 12 hr ago](#)
- [Last unsuccessful build \(#10\), 12 hr ago](#)
- [Last completed build \(#11\), 12 hr ago](#)

Build History [trend](#)

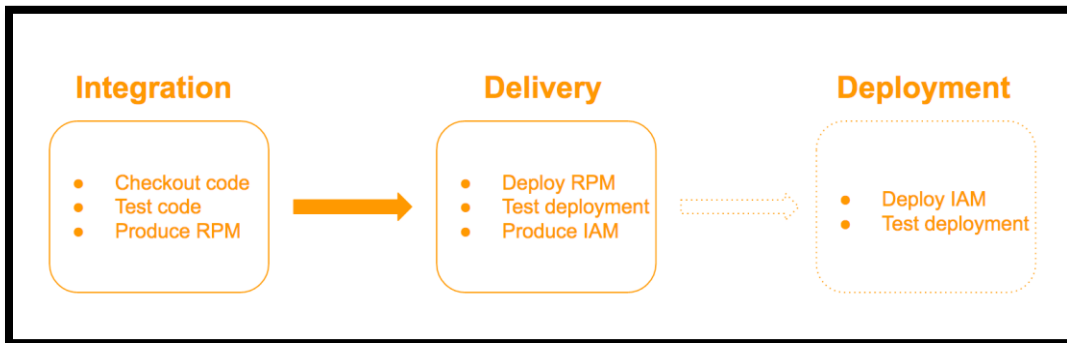
find

- #11** Jul 24, 2016 4:45 PM
- #10** Jul 24, 2016 4:43 PM

- [Changes](#)
- Console Output**
- [Edit Build Information](#)
- [Delete Build](#)
- [Git Build Data](#)
- [No Tags](#)
- [Replay](#)

Page generated: Jul 25, 2016 5:39:11 AM UTC. REST API. Jenkins vnr. 2.7.1

Chapter 5: Ever-Ready to Deploy Using Continuous Delivery

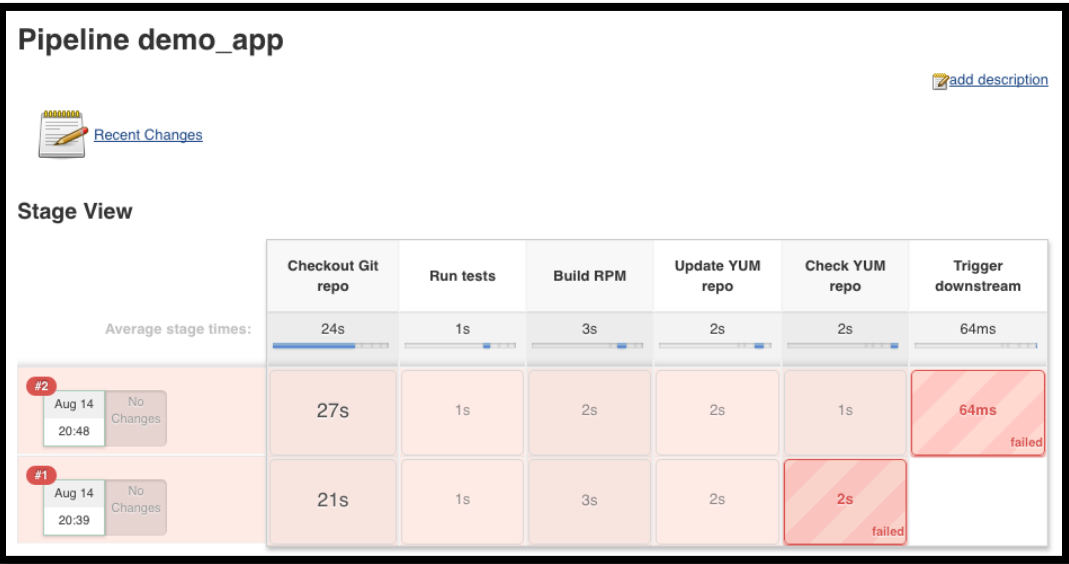
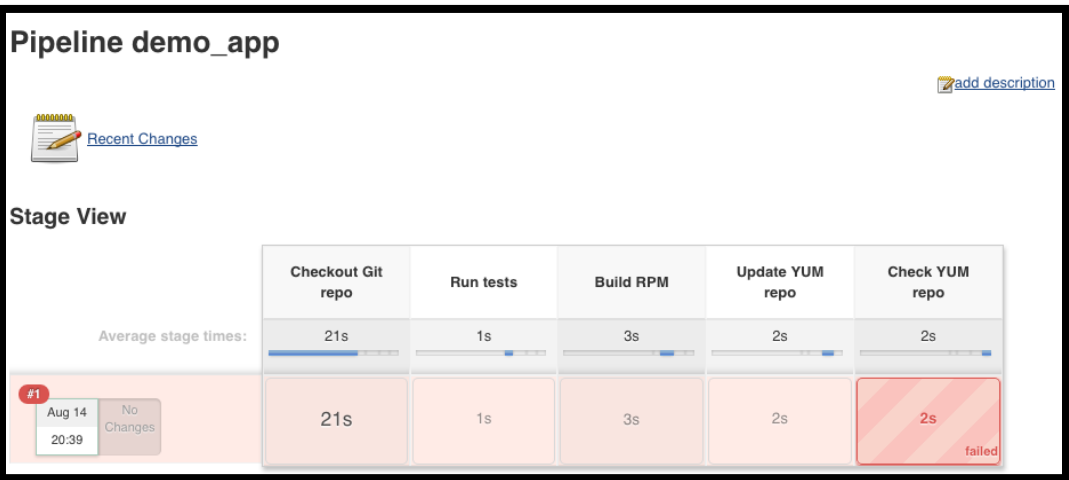



add description

S	W	Name ↓	Last Success	Last Failure	Last Duration
	☀	demo_app	N/A	N/A	N/A

Icon: [S](#) [M](#) [L](#)






[Legend](#) [RSS for all](#) [RSS for failures](#) [RSS for just latest builds](#)







Jenkins

Jenkins >


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

S	W	Name ↓	Last Success
		demo_app	N/A


Icon: [S](#) [M](#) [L](#)

Enter an item name

» Required field



Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



Pipeline
Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

General **Build Triggers** Advanced Project Options Pipeline

Poll SCM

Discard old builds

Strategy **Log Rotation**

Days to keep builds

if not empty, build records are only kept up to this number of days

Max # of builds to keep

if not empty, only up to this number of build records are kept

Advanced...

Do not allow concurrent builds

GitHub project

This project is parameterized

String Parameter

Name

Default Value

Description

[Plain text] [Preview](#)

Add Parameter

Throttle builds

Quiet period

Trigger builds remotely (e.g., from scripts)

Pipeline

Definition

SCM

Repositories

Repository URL

Credentials

Branches to build

Branch Specifier (blank for 'any')

Repository browser

Additional Behaviours

Script Path

[Pipeline Syntax](#)

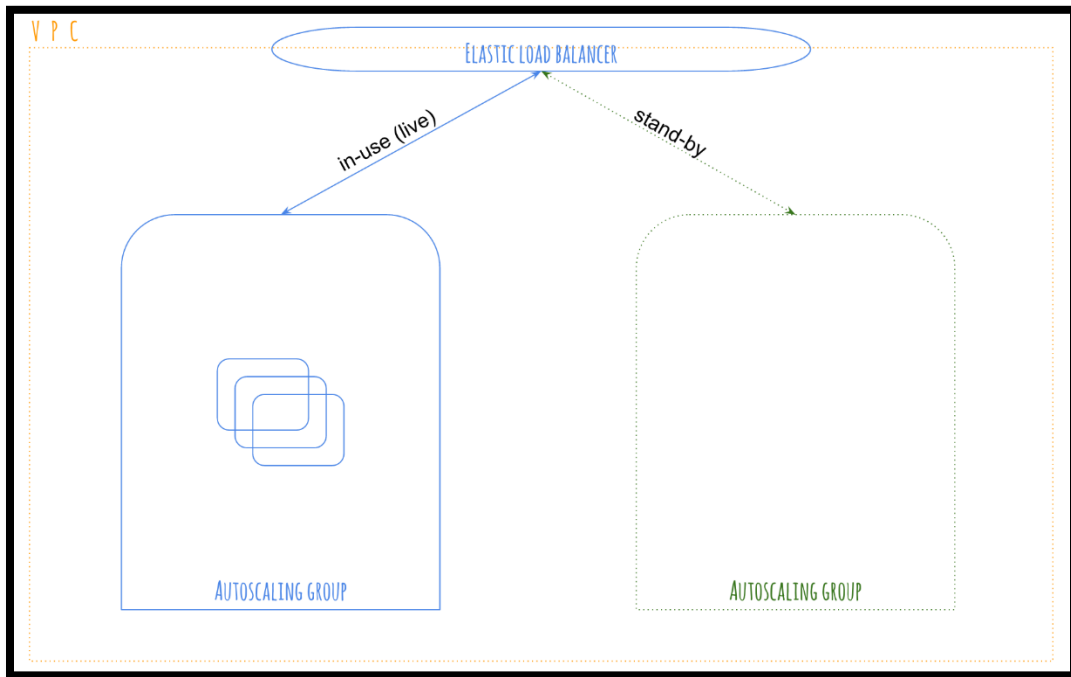
[add description](#)

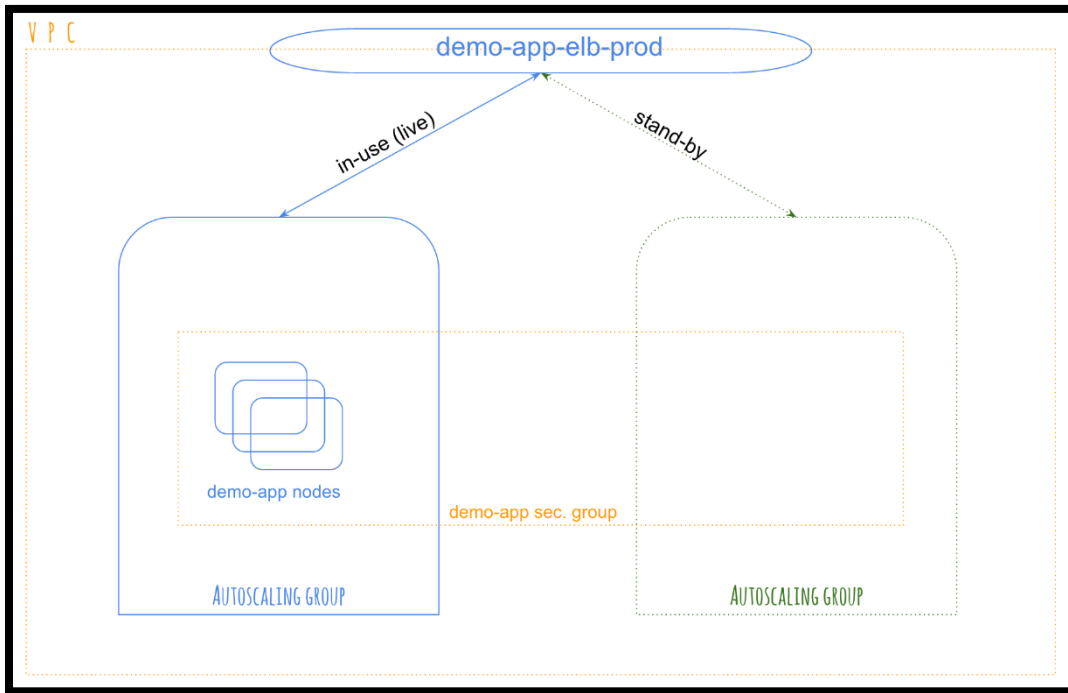
S	W	Name ↓	Last Success	Last Failure	Last Duration
		demo-app-cdelivery	N/A	N/A	N/A
		demo_app	N/A	21 min - #2	37 sec

Icon: [S](#) [M](#) [L](#)

[Legend](#)
[RSS for all](#)
[RSS for failures](#)
[RSS for just latest builds](#)

Chapter 6: Continuous Deployment - A Fully Automated Workflow





[ENABLE AUTO REFRESH](#)

[add description](#)

All [+](#)

S	W	Name ↓	Last Success	Last Failure	Last Duration	
		demo-app	N/A	N/A	N/A	
		demo-app-cdelivery	N/A	N/A	N/A	







Icon: [S](#) [M](#) [L](#)

[Legend](#)
[RSS for all](#)
[RSS for failures](#)
[RSS for just latest builds](#)

Enter an item name

demo-app-cdeployment

» Required field

- 
Freestyle project
 This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.
- 
Pipeline
 Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.
- 
External Job
 This type of job allows you to record the execution of a process run outside Jenkins, even on a remote machine. This is designed so that you can use Jenkins as a dashboard of your existing automation system.
- 
Multi-configuration project
 Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.
- 
Folder
 Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.
- 
Multibranch Pipeline
 Creates a set of Pipeline projects according to detected branches in one SCM repository.

if you want to create a new item from other existing, you can use this option:

OK Copy from Type to autocomplete

General Build Triggers Advanced Project Options Pipeline

GitHub project

This project is parameterized

String Parameter X ?

Name ?

Default Value ?

Description ?

[Plain text] [Preview](#)

Add Parameter ▾

Pipeline

Definition

SCM

Repositories

Repository URL

Credentials

Branches to build

Branch Specifier (blank for 'any')

Repository browser

Additional Behaviours

Script Path

[Pipeline Syntax](#)

[add description](#)

S	W	Name ↓	Last Success	Last Failure	Last Duration
		demo-app	N/A	N/A	N/A
		demo-app-cdelivery	N/A	N/A	N/A
		demo-app-cdeployment	N/A	N/A	N/A

Icon: [S](#) [M](#) [L](#)

[Legend](#)
[RSS for all](#)
[RSS for failures](#)
[RSS for just latest builds](#)

Auto Scaling Group: demo-app-blue

Details Activity History Scaling Policies Instances Monitoring Notifications Tags Scheduled Actions

Cancel Save

Launch Configuration placeholder_launch_config

Load Balancers demo-app-elb-prod

Target Groups

Desired 3

Min 1

Max 5

Health Check Type EC2

Health Check Grace Period 300

Availability Zone(s) us-east-1b, us-east-1c

Subnet(s) subnet-b6e2049b(10.0.2.0/24) | Private | x us-east-1b
subnet-f327f1ba(10.0.4.0/24) | Private | x us-east-1c

Default Cooldown 300

Placement Group

Suspended Processes

Create Auto Scaling group Actions

Filter: Filter Auto Scaling groups... 1 to 2 of 2 Auto Scaling Groups

Name	Launch Configuration	Instances	Desired	Min	Max	Availability Zones	Default Cooldown	Health Check
<input checked="" type="checkbox"/> demo-app-blue	placeholder_launch_co...	3	3	1	5	us-east-1b, us-east-1c	300	300
<input type="checkbox"/> demo-app-green	placeholder_launch_co...	0	0	0	0	us-east-1b, us-east-1c	300	300

Auto Scaling Group: demo-app-blue

Details Activity History Scaling Policies Instances Monitoring Notifications Tags Scheduled Actions

Edit

Launch Configuration placeholder_launch_config

Load Balancers demo-app-elb-prod

Target Groups

Desired 3

Min 1

Max 5

Health Check Type EC2

Health Check Grace Period 300

Availability Zone(s) us-east-1b, us-east-1c

Subnet(s) subnet-b6e2049b, subnet-f327f1ba

Default Cooldown 300

Placement Group

Suspended Processes

Create Auto Scaling group Actions

Filter:

1 to 2 of 2 Auto Scaling Groups

Name	Launch Configuration	Instances	Desired	Min	Max	Availability Zones	Default Cooldown	Health Check
demo-app-blue	placeholder_launch_co...	3	3	1	5	us-east-1b, us-east-1c	300	300
demo-app-green	demo-app-ami-bb3a50...	1	0	0	1	us-east-1b, us-east-1c	300	300

Auto Scaling Group: demo-app-green

Details Activity History Scaling Policies Instances Monitoring Notifications Tags Scheduled Actions

Actions

Filter: Any Health Status Any Lifecycle State

1 to 1 of 1 Instances

Instance ID	Lifecycle	Launch Configuration Name	Availability Zone	Health Status	Protected from
i-14bf3a8d	Standby	demo-app-ami-bb3a50ac-1472997125	us-east-1c	Healthy	

Create Auto Scaling group Actions

Filter:

1 to 2 of 2 Auto Scaling Groups

Name	Launch Configuration	Instances	Desired	Min	Max	Availability Zones	Default Cooldown	Health Check
demo-app-blue	placeholder_launch_co...	0	0	0	0	us-east-1b, us-east-1c	300	300
demo-app-green	demo-app-ami-063b511...	3	3	1	5	us-east-1b, us-east-1c	300	300

Auto Scaling Group: demo-app-green

Details Activity History Scaling Policies Instances Monitoring Notifications Tags Scheduled Actions

Edit

Launch Configuration demo-app-ami-063b5111-1472998795

Load Balancers demo-app-elb-prod

Target Groups

Desired	3	Availability Zone(s)	us-east-1b, us-east-1c
Min	1	Subnet(s)	subnet-b6e2049b,subnet-f327f1ba
Max	5	Default Cooldown	300
Health Check Type	EC2	Placement Group	
Health Check Grace Period	300	Suspended Processes	

Chapter 7: Metrics, Log Collection, and Monitoring



kibana Discover Visualize Dashboard Settings

Indices Advanced Objects Status About

Index Patterns

Warning No default index pattern. You must select or create one to continue.

Configure an index pattern

In order to use Kibana you must configure at least one index pattern. Index patterns are used to identify the Elasticsearch index to run search and analytics against. They are also used to configure fields.

Index contains time-based events
 Use event times to create index names [DEPRECATED]

Index name or pattern
Patterns allow you to define dynamic index names using * as a wildcard. Example: logstash-*

Do not expand index pattern when searching (Not recommended)

By default, searches against any time-based index pattern that contains a wildcard will automatically be expanded to query only the indices that contain data within the currently selected time range.

Searching against the index pattern `logstash-*` will actually query elasticsearch for the specific matching indices (e.g. `logstash-2015.12.21`) that fall within the current time range.

Time-field name

Status

Up since 2016-10-09 21:02:16

Build info

branch	master
buildDate	20161006-09:57:11
buildUser	root@5b0b04dd4730
goVersion	go1.6.3
revision	a705ae888279dfb10021822f95f3ed7eec13f791
version	0.5.0-beta.0

Config

```
global:  
  smtp_smarthost: 'localhost:25'  
  smtp_from: 'alertmanager@example.org'
```

Prometheus Alerts Graph Status ▾ Help

Runtime Information

Uptime	2016-10-09 20:14:44.970371246 +0000 UTC
--------	-----------------------------------------

Build Information

Version	1.2.0
Revision	522c93361459686fe3687f5ffe68c2ee34ea5c8e
Branch	master
BuildUser	root@c8088ddaf2a8
BuildDate	20161007-12:53:55
GoVersion	go1.6.3

Prometheus Alerts Graph Status ▾ Help

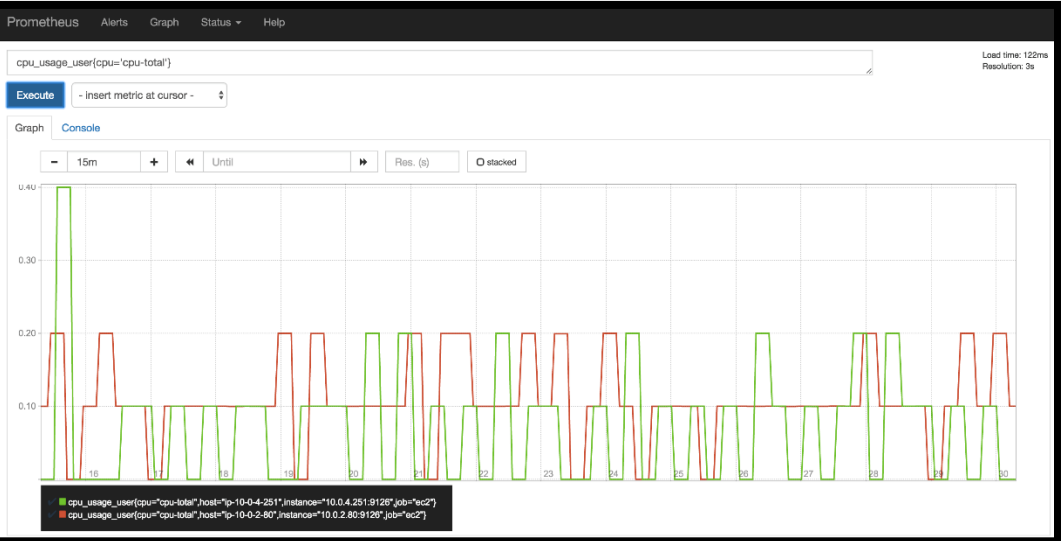
Targets

ec2

Endpoint	State	Labels	Last Scrape	Error
http://10.0.2.80:9126/metrics	UP	none	6.309s ago	
http://10.0.4.251:9126/metrics	UP	none	1.802s ago	

prometheus

Endpoint	State	Labels	Last Scrape	Error
http://localhost:9090/metrics	UP	none	3.088s ago	





Log in

Sign up

User

admin

Password

.....

Log in

[Forgot your password?](#)



Edit data source

Config

Dashboards

Name	prometheus	Default	<input checked="" type="checkbox"/>
Type	Prometheus		

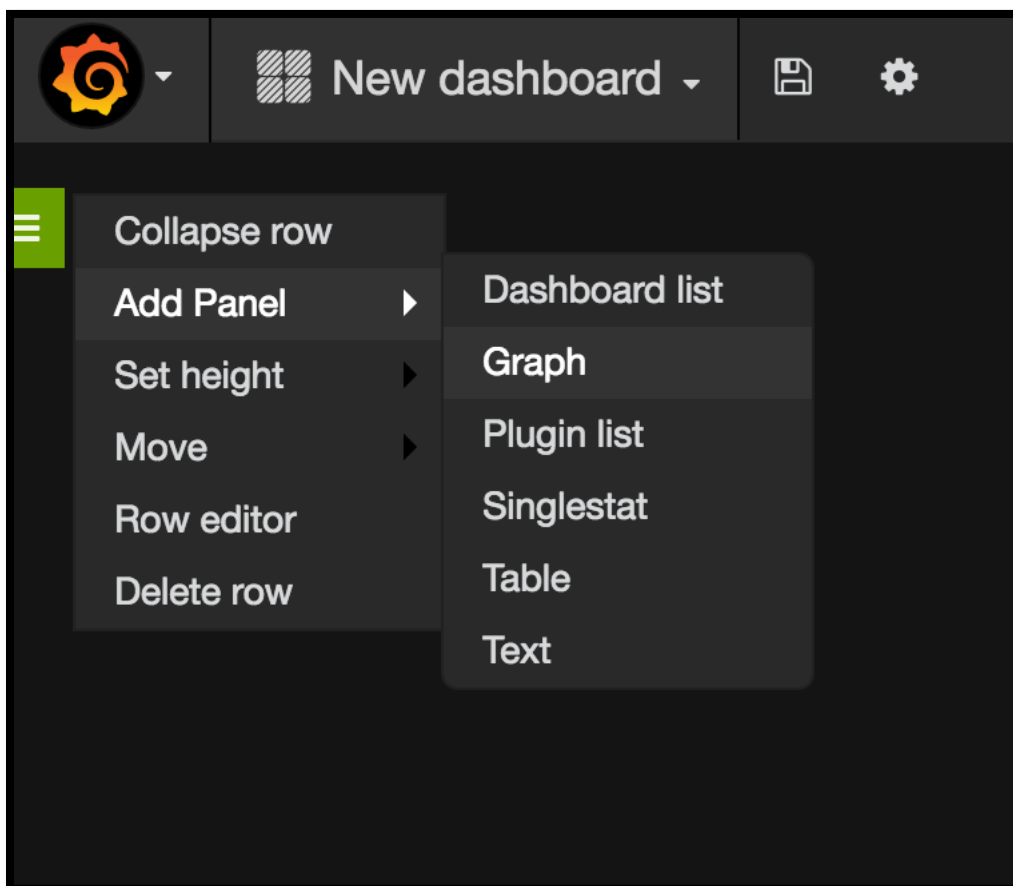
Http settings

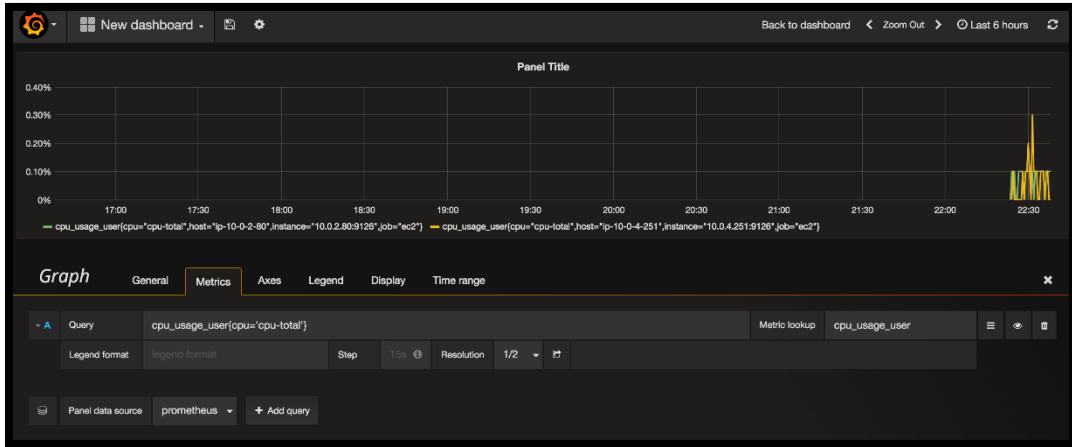
Url	http://localhost:9090	
Access	proxy	
Http Auth	Basic Auth <input type="checkbox"/>	With Credentials <input type="checkbox"/>

Save & Test

Delete

Cancel





Prometheus Alerts Graph Status Help

Targets

ec2

Endpoint	State	Labels	Last Scrape	Error
http://10.0.2.80:9126/metrics	UP	none	7.53s ago	
http://10.0.4.251:9126/metrics	DOWN	none	17.962s ago	context deadline exceeded

prometheus

Endpoint	State	Labels	Last Scrape	Error
http://localhost:9090/metrics	UP	none	3.842s ago	

Alerts

Keepalive (1 active)

```
ALERT Keepalive
IF up == 0
FOR 1m
ANNOTATIONS {description="{{labels.instance}} of job {{labels.job}} has been down for more than 1 minute.", summary="Instance {{labels.instance}} down"}
```

Labels	State	Active Since	Value
<code>alertname="Keepalive"</code> <code>instance="10.0.4.251:9126"</code> <code>job="ec2"</code> <code>monitor="code-lab-monitor"</code>	FIRING	2016-10-15 15:17:22.803 +0000 UTC	0

High_disk_space_usage (0 active)

```
ALERT High_disk_space_usage
IF disk_used_percent > 20
FOR 1m
ANNOTATIONS {description="{{labels.instance}} has a disk_used value of {{ $value }}% on {{ labels.path }}", summary="High disk space usage on {{ labels.instance }}"}
```


Alertmanager SILENCES ALERTS STATUS

FILTER

Receivers Hide silenced

team-X-mails

alertname = 'KeepALive'

Source Instance = "10.0.4.251:9126" Job = "ec2" monitor = "codeLab-monitor" Since Today at 4:18 PM SILENCE

Jenkins Veselin | log out

Jenkins > Jenkins' own user database

Back to Dashboard Manage Jenkins Create User

Users

These users can log into Jenkins. This is a sub set of [this list](#), which also contains auto-created users who really just made some commits on some projects and have no direct Jenkins access.

User Id	Name
prometheus	Prometheus
veselin	Veselin

Configure Global Security

Enable security

TCP port for JNLP agents: Fixed: Random: Disable:

Disable remember me:

Access Control

Security Realm

- Delegate to servlet container
- Jenkins' own user database
- Allow users to sign up
- LDAP
- Unix user/group database

Authorization

- Anyone can do anything
- Legacy mode
- Logged-in users can do anything
- Matrix-based security

User/group	Overall	Credentials	Agent	Job
prometheus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
veselin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

User/group to add: Add

Project-based Matrix Authorization Strategy

General | Source Code Management | Build Triggers | Build Environment | Build | Post-build Actions

Name: alertname

Default Value:

Description:

[Plain text] [Preview](#)

String Parameter [X] ?

Name: alertcount

Default Value:

Description:

[Plain text] [Preview](#)

String Parameter [X] ?

Name: instance

Default Value:

Description:

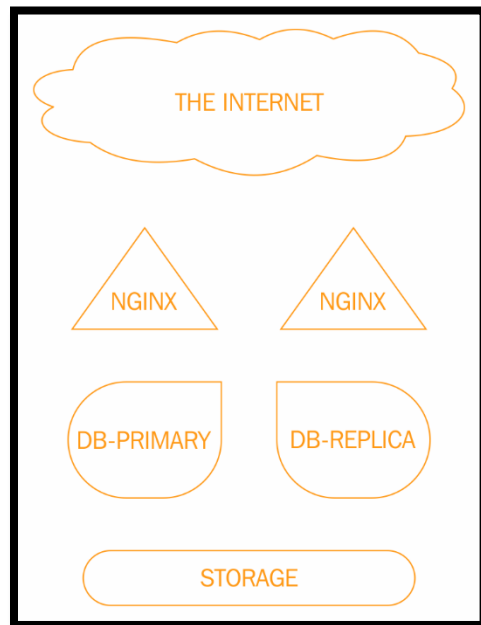
[Plain text] [Preview](#)

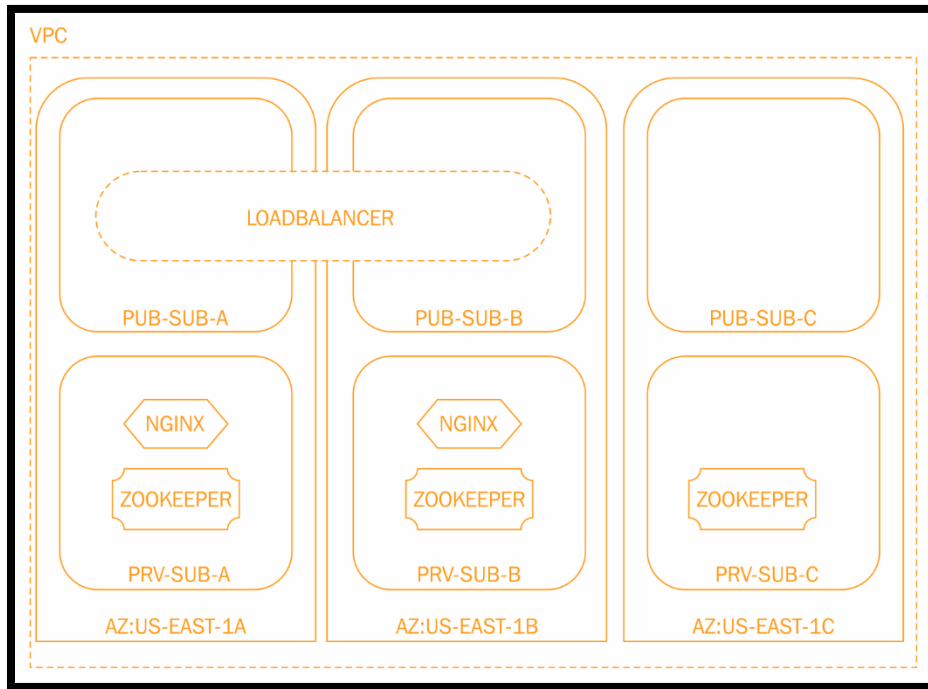
String Parameter [X] ?

Name: labels

[Save](#) [Apply](#)

Chapter 8: Optimize for Scale and Cost





EC2 Dashboard

- Events
- Tags
- Reports
- Limits**
- INSTANCES
 - Instances
 - Spot Requests
 - Reserved Instances
 - Scheduled Instances
 - Dedicated Hosts
- IMAGES
 - AMIs
 - Bundle Tasks
- ELASTIC BLOCK STORE
 - Volumes
 - Snapshots

EC2 Service Limits

Amazon EC2 provides different resources that you can use, such as instances and volumes. When you create your AWS account, AWS sets limits for these resources on a per-region basis. This page lists your EC2 service limits in US East (N. Virginia).

Instance Limits

Name	Current Limit	Action
Running On-Demand EC2 instances ⓘ	20	Request limit increase
Running On-Demand c1.medium instances	20	Request limit increase
Running On-Demand c1.xlarge instances	20	Request limit increase
Running On-Demand c3.2xlarge instances	20	Request limit increase
Running On-Demand c3.4xlarge instances	20	Request limit increase
Running On-Demand c3.8xlarge instances	20	Request limit increase
Running On-Demand c3.large instances	20	Request limit increase

Create Scheduled Action ✕

Name

Auto Scaling Group test-asg

Provide at least one of Min, Max and Desired Capacity

Min

Max

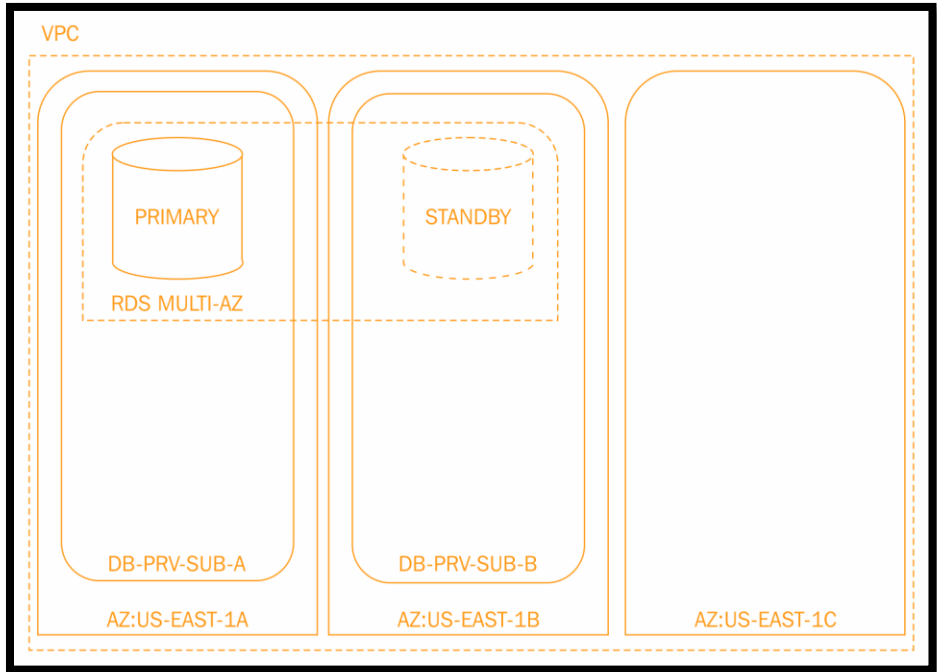
Desired Capacity

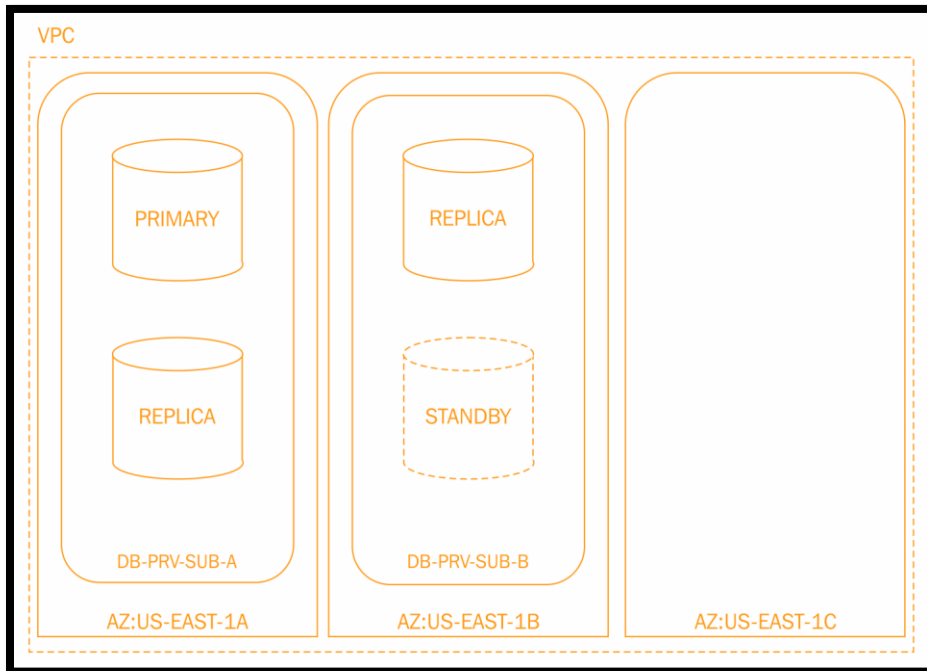
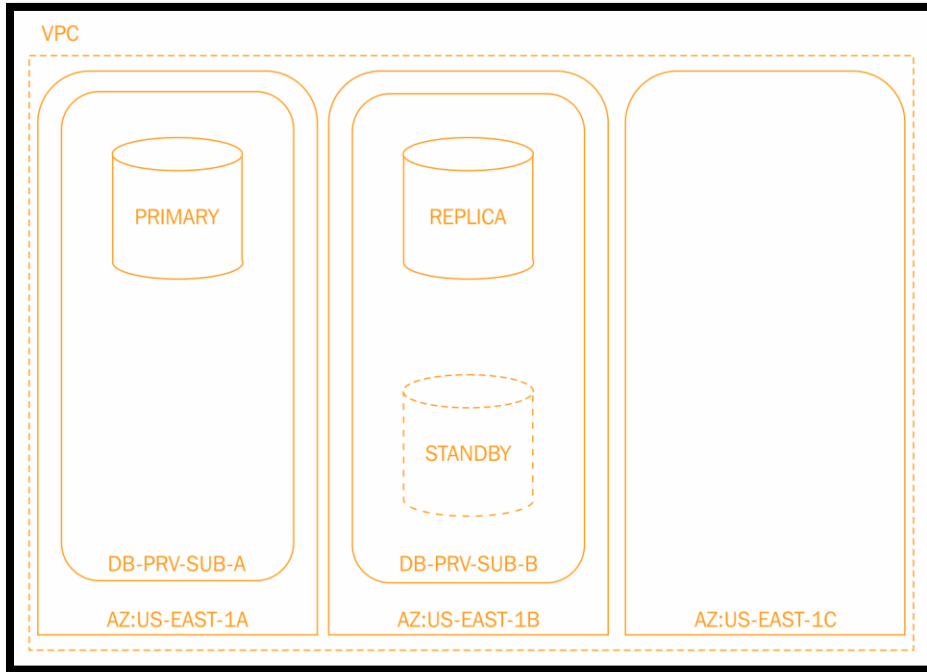
Recurrence **Every day** ▼
(Cron) 0 0 * * *

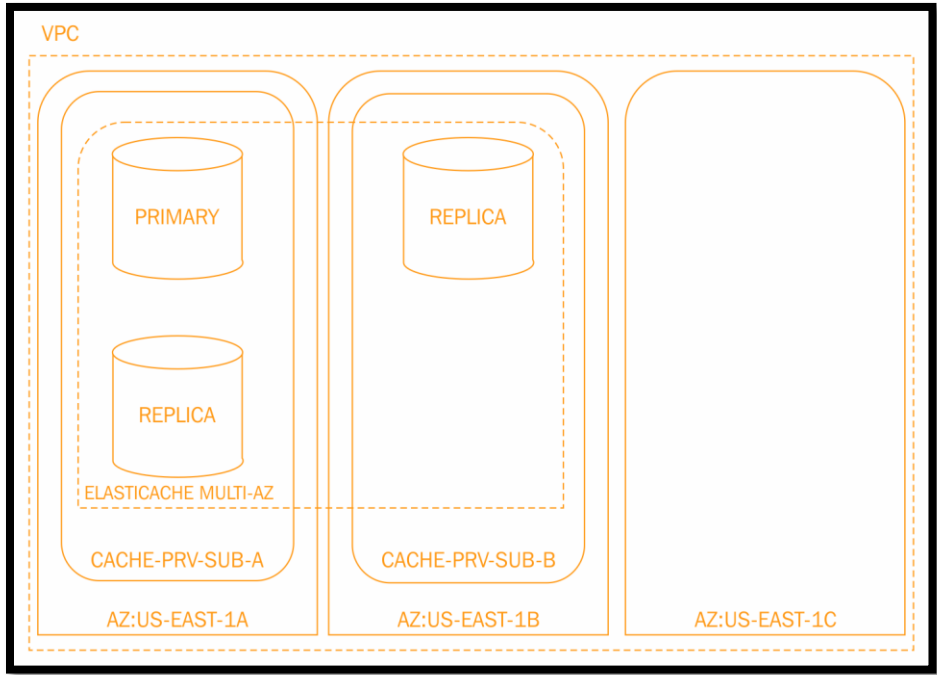
Start Time : : **UTC** Specify the start time in UTC
The first time this scheduled action will run

End Time [Set End Time](#)

[Cancel](#) [Create](#)







Bucket: test-bucket-jduxne
Region: US Standard
Creation Date: Sun Nov 20 15:32:53 GMT+000 2016
Owner: veselin

▶ Permissions

▶ Static Website Hosting

▶ Logging

▶ Events

▶ Versioning

▶ Lifecycle

▶ Cross-Region Replication

▶ Tags

▶ Requester Pays

▼ Transfer Acceleration

[Amazon S3 Transfer Acceleration](#) makes data transfers into and out of Amazon S3 buckets as much as 300% faster, and only charges if there is a performance improvement. Simply enable this feature for buckets you want to accelerate and update the bucket name in your applications. Please visit the [Speed Comparison Tool](#) to view estimated performance improvements by region.

[Enable](#)

- Permissions

- Static Website Hosting

- Logging

- Events

- Versioning

- ▼ Lifecycle

You can manage the lifecycle of objects by using [Lifecycle rules](#). Lifecycle rules enable you to automatically transition objects to the [Standard - Infrequent Access](#) Storage Class, and/or archive objects to the [Glacier](#) Storage Class, and/or remove objects after a specified time period. Rules are applied to all the objects that share the specified prefix.

Versioning is not currently enabled on this bucket.

You can use Lifecycle rules to manage all versions of your objects. This includes both the Current version and Previous versions.

[+ Add rule](#)

Lifecycle Rules x

Step 1: Choose Rule Target

Step 2: Configure Rule

Step 3: Review and Name

Lifecycle rules will help you manage your storage costs by controlling the lifecycle of your objects. Create Lifecycle rules to automatically transition your objects to the Standard - Infrequent Access Storage Class, archive them to the Glacier Storage Class, and remove them after a specified time period.

Choose different options below to see what works best for your use case. No rule will take effect until you activate them at the end of this wizard.

Action on Objects

Transition to the Standard - Infrequent Access Storage Class Days after the object's creation date

Standard - Infrequent Access has a 30-day minimum retention period and a 128KB minimum object size. Lifecycle policy will not transition objects that are less than 128KB. Refer [here](#) to learn more about Standard - Infrequent Access.

Archive to the Glacier Storage Class Days after the object's creation date

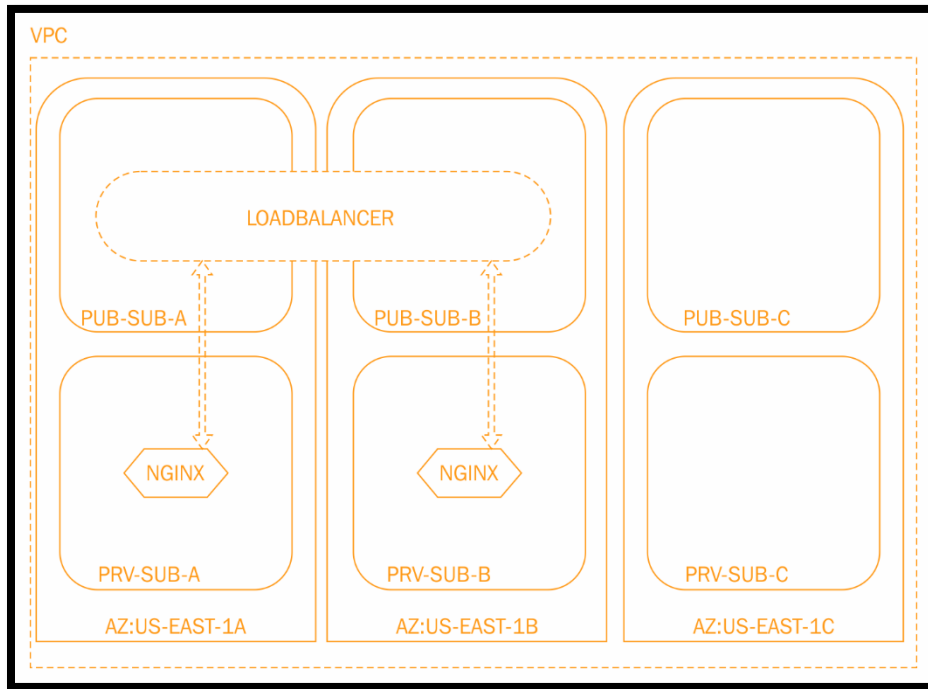
This rule could reduce your storage costs. Refer [here](#) to learn more about Glacier pricing. Note that objects archived to the Glacier Storage Class are [not immediately accessible](#).

Permanently Delete Days after the object's creation date

Action on Incomplete Multipart Uploads

End and Clean up Incomplete Multipart Uploads Days after an upload initiation date

This rule will end and clean up multipart uploads that are not completed within a predefined number of days after initiation. [Learn more](#).



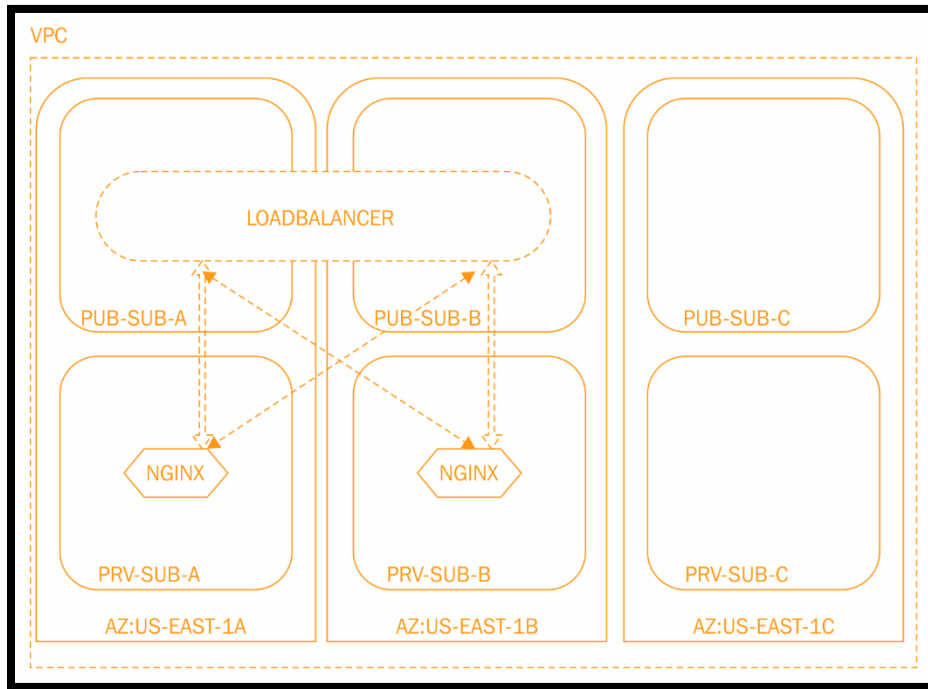
Filter: ✕ 1 to 1 of 1

Name	DNS name	State	VPC ID	Availability Zones
test-elb-classic	test-elb-classic-805647377.u...		vpc-a3704cc4	us-east-1b, us-east-1c

[Edit security groups](#)

Attributes

- Idle timeout:** 60 seconds [Edit idle timeout](#)
- Access logs:** Disabled [Configure Access Logs](#)
- Cross-Zone Load Balancing:** Disabled [Change Cross-zone Load Balancing setting](#)



Select a delivery method for your content. ?

Web

Create a web distribution if you want to:

- Speed up distribution of static and dynamic content, for example, .html, .css, .php, and graphics files.
- Distribute media files using HTTP or HTTPS.
- Add, update, or delete objects, and submit data from web forms.
- Use live streaming to stream an event in real time.

You store your files in an origin - either an Amazon S3 bucket or a web server. After you create the distribution, you can add more origins to the distribution.

[Get Started](#)

RTMP

Create an RTMP distribution to speed up distribution of your streaming media files using Adobe Flash Media Server's RTMP protocol. An RTMP distribution allows an end user to begin playing a media file before the file has finished downloading from a CloudFront edge location. Note the following:

- To create an RTMP distribution, you must store the media files in an Amazon S3 bucket.
- To use CloudFront live streaming, create a web distribution.

[Get Started](#)

[Cancel](#)

Create Distribution



Origin Settings

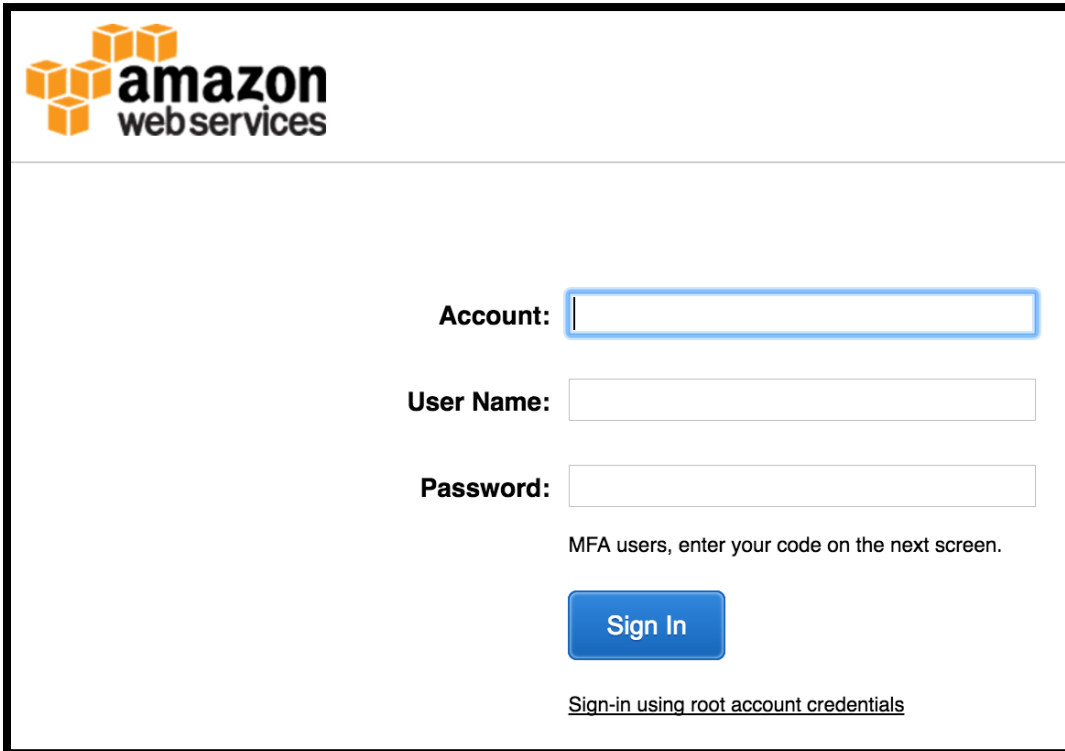
Origin Domain Name	<input type="text"/>					
Origin Path	<ul style="list-style-type: none">— Amazon S3 Buckets —test-bucket-jdluxne.s3.amazonaws.com— Elastic Load Balancers —test-elb-1073804160.us-east-1.elb.amazonaws.com					
Origin ID	test-elb-1073804160.us-east-1.elb.amazonaws.com					
Origin Custom Headers	<table><thead><tr><th>Header Name</th><th>Value</th></tr></thead><tbody><tr><td><input type="text"/></td><td><input type="text"/></td></tr></tbody></table>	Header Name	Value	<input type="text"/>	<input type="text"/>	
Header Name	Value					
<input type="text"/>	<input type="text"/>					

Default Cache Behavior Settings

Path Pattern	Default (*)	
Viewer Protocol Policy	<input checked="" type="radio"/> HTTP and HTTPS <input type="radio"/> Redirect HTTP to HTTPS <input type="radio"/> HTTPS Only	
Allowed HTTP Methods	<input checked="" type="radio"/> GET, HEAD <input type="radio"/> GET, HEAD, OPTIONS <input type="radio"/> GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE	
Cached HTTP Methods	GET, HEAD (Cached by default)	
Forward Headers	None (Improves Caching) ▼	
Object Caching	<input checked="" type="radio"/> Use Origin Cache Headers <input type="radio"/> Customize	

[Learn More](#)

Chapter 9: Secure Your AWS Environment



The image shows a screenshot of the AWS sign-in page. At the top left is the Amazon Web Services logo, consisting of the word "amazon" in a bold, lowercase font above the word "web services" in a smaller, lowercase font, with a cluster of orange cubes to the left. Below the logo is a horizontal line. The main content area contains three input fields: "Account:" followed by a blue-outlined text box, "User Name:" followed by a white text box, and "Password:" followed by a white text box. Below these fields is the text "MFA users, enter your code on the next screen." followed by a blue "Sign In" button. At the bottom, there is a link that says "Sign-in using root account credentials".

Account:

User Name:

Password:

MFA users, enter your code on the next screen.

[Sign In](#)

[Sign-in using root account credentials](#)



Sign In or Create an AWS Account

What is your email (phone for mobile accounts)?

E-mail or mobile number:

- I am a new user.**
- I am a returning user
and my password is:**

Sign in using our secure server



[Forgot your password?](#)

AWS Services

Veselin Kantsev | N. Virginia | Support

Amazon Web Services

Compute

- EC2**
Virtual Servers in the Cloud
- EC2 Container Service**
Run and Manage Docker Containers
- Elastic Beanstalk**
Run and Manage Web Apps
- Lambda**
Run Code without Thinking about Servers
- Server Migration**
Migrate on-premises servers to AWS

Storage & Content Delivery

- S3**
Scalable Storage in the Cloud
- CloudFront**
Global Content Delivery Network
- Elastic File System**
Fully Managed File System for EC2
- Glacier**
Archive Storage in the Cloud

Developer Tools

- CodeCommit**
Store Code in Private Git Repositories
- CodeDeploy**
Automate Code Deployments
- CodePipeline**
Release Software using Continuous Delivery

Management Tools

- CloudWatch**
Monitor Resources and Applications
- CloudFormation**
Create and Manage Resources with Templates
- CloudTrail**
Track User Activity and API Usage
- Config**
Track Resource Inventory and Changes
- OpsWorks**
Automate Operations with Chef
- Service Catalog**
Create and Use Standardized Products

Internet of Things

- AWS IoT**
Connect Devices to the Cloud

Game Development

- GameLift**
Deploy and Scale Session-based Multiplayer Games

Mobile Services

- Mobile Hub**
Build, Test, and Monitor Mobile Apps
- Cognito**
User Identity and App Data Synchronization
- Device Farm**
Test Android, iOS, and Web Apps on Real Devices in the Cloud
- Mobile Analytics**
Collect, View and Export App Analytics
- SNS**
Push Notification Service

My Account

- Billing & Cost Management
- Security Credentials**
- Sign Out

[Create a Group](#) [Tag Editor](#)

Additional Resources

[Getting Started](#)
Read our documentation or view our training to learn more about AWS.

[AWS Console Mobile App](#)
View your resources on the go with our AWS Console mobile app, available from Amazon Appstore, Google Play, or iTunes.

Dashboard

Search IAM

Details

Groups

Users

Roles

Policies

Identity Providers

Account Settings

Credential Report

Encryption Keys

Your Security Credentials

Use this page to manage the credentials for your AWS account. To manage credentials for AWS Identity and Access Management (IAM) users, use the [IAM Console](#). To learn more about the types of AWS credentials and how they're used, see [AWS Security Credentials](#) in AWS General Reference.

+	Password
+	Multi-Factor Authentication (MFA)
+	Access Keys (Access Key ID and Secret Access Key)
+	CloudFront Key Pairs
+	X.509 Certificates
+	Account Identifiers

Dashboard

Search IAM

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▼ Password Policy

A password policy is a set of rules that define the type of password an IAM user can set. For more information about password policies, go to [Managing Passwords](#) in Using IAM.

Modify your existing password policy below.

Minimum password length:

- Require at least one uppercase letter ⓘ
- Require at least one lowercase letter ⓘ
- Require at least one number ⓘ
- Require at least one non-alphanumeric character ⓘ
- Allow users to change their own password ⓘ
- Enable password expiration ⓘ

Password expiration period (in days):

- Prevent password reuse ⓘ

Number of passwords to remember:

- Password expiration requires administrator reset ⓘ

Apply password policy
Delete password policy

Roles

Policies

Identity Providers

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Credential Report

Encryption Keys

▼ Security Token Service Regions

You can enable additional regions from which you can request temporary credentials. Activate only the regions you intend to use. [Learn More](#).

Regions ⇅	Status ⇅	Actions ⇅
US East (N. Virginia)	Always Active ⓘ	
US East (Ohio)	Inactive	Activate
US West (N. California)	Inactive	Activate
US West (Oregon)	Inactive	Activate
EU (Ireland)	Active	Deactivate
EU (Frankfurt)	Inactive	Activate
Asia Pacific (Singapore)	Inactive	Activate
Asia Pacific (Tokyo)	Inactive	Activate
Asia Pacific (Sydney)	Inactive	Activate
Asia Pacific (Seoul)	Inactive	Activate
Asia Pacific (Mumbai)	Inactive	Activate
South America (Sao Paulo)	Inactive	Activate

Dashboard

Search IAM

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Encryption Keys

Groups | Permissions | **Security Credentials** | Access Advisor

Access Keys

Use access keys to make secure REST or Query protocol requests to any AWS service API. For your protection, you should never share your secret keys with anyone. In addition, industry best practice recommends frequent key rotation. [Learn more about Access Keys](#)

[Create Access Key](#)

Access Key ID	Created	Last Used	Last Used Service	Last Used Region	Status	Actions
AKIAJ4FSLWKQUNLEEPYQ	2016-11-05 15:00 UTC	N/A	N/A	N/A	Active	Make Inactive Delete

Sign-In Credentials

User Name	test	Manage Password
Password	No	
Last Used	N/A	
Multi-Factor Authentication Device	No	Manage MFA Device
Signing Certificates	None	Manage Signing Certificates

SSH keys for AWS CodeCommit

Groups

Users

Roles

Policies

Identity Providers

Account Settings

Credential Report

Encryption Keys

IAM Resources

Users: 1 Roles: 0

Groups: 1 Identity Providers: 0

Customer Managed Policies: 0

Security Status 5 out of 5 complete.

- Activate MFA on your root account ▼
- Create individual IAM users ▼
- Use groups to assign permissions ▼
- Apply an IAM password policy ▼
- Rotate your access keys ▼

Create Key in US East (N. Virginia)

Step 1: Create Alias and Description

Step 2: Define Key Administrative Permissions

Step 3: Define Key Usage Permissions

Step 4: Preview Key Policy

Create Alias and Description

Provide an alias and a description for this key. These properties of the key can be changed later. [Learn more.](#)

Alias (required)

Description

▼ **Advanced Options**

Key Material Origin KMS External
[Help me choose](#)

Create Key in US East (N. Virginia)

[Step 1: Create Alias and Description](#)

Step 2: Define Key Administrative Permissions

Step 3: Define Key Usage Permissions

Step 4: Preview Key Policy

Define Key Administrative Permissions

▼ **Key Administrators**

Choose the IAM users and roles that can administer this key through the KMS API. You may need to add additional permissions for the users or roles to administer this key from this console. [Learn more.](#)

Showing 1 results

	Name ↕	Path ↕	Type ↕
<input checked="" type="checkbox"/>	veselin	/	User

▼ **Key Deletion**

Allow key administrators to delete this key. ⓘ

Create Key in US East (N. Virginia)

[Step 1: Create Alias and Description](#)

[Step 2: Define Key Administrative Permissions](#)

Step 3: Define Key Usage Permissions

Step 4: Preview Key Policy

Define Key Usage Permissions

▼ **This Account**

Choose the IAM users and roles that can use this key to encrypt and decrypt data from within applications and when using AWS services integrated with KMS. [Learn more.](#)

Showing 1 results

	Name ↕	Path ↕	Type ↕
<input checked="" type="checkbox"/>	veselin	/	User

▶ **External Accounts**

Dashboard

Search IAM

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Policies

Identity Providers

Account Settings

Credential Report

Encryption Keys

Your master key was created successfully. Alias: ebs_test_key

Create key Key actions

Filter: US East (N. Virginia) ebs Showing 1 results

Alias	Key ID	Status	Creation Date
<input type="checkbox"/> ebs_test_key	419af381-2254-4569-a7dc-a93b5...	Enabled	2016-11-06 16:17 UTC

Create Volume

Volume Type

Size (GiB) (Min: 1 GiB, Max: 16384 GiB)

IOPS (Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS)

Throughput (MB/s)

Availability Zone

Snapshot ID

Encryption Encrypt this volume

Master Key

Key Details

Description	Default ma	(default) aws/ebs	er key is defined
Account	This accou	ebs_test_key	

Upload Create Folder Actions

Search by prefix None Properties Transfers

All Buckets / yum-repo-zxc

Name	Storage Class	Size	Last Modified
repodata	--	--	--
rpm	--	--	--

2 items selected

Bucket: yum-repo-zxc
Selected: 2

Details

For all selected items:

Storage Class: Standard Standard - Infrequent Access Reduced Redundancy
Standard storage will now be used

Server Side Encryption: None AES-256
AES-256 encryption will now be used

Save Cancel

Upload Create Folder Actions

Search by prefix None Properties Transfers

All Buckets / yum-repo-zxc / rpm / demo-app

Name	Storage Class	Size
demo-app-34a4537.rpm	Standard	1.8 KB
demo-app-822939d.rpm	Standard	1.7 KB
demo-app-8f5cd17.rpm	Standard	1.8 KB
demo-app-98f94a3.rpm	Standard	1.7 KB
demo-app-b652cee.rpm	Standard	1.7 KB
demo-app-be31fcd.rpm	Standard	1.8 KB
demo-app-c30551c.rpm	Standard	1.7 KB
demo-app-c30c424.rpm	Standard	1.7 KB
demo-app-d739a49.rpm	Standard	1.8 KB

Object: demo-app-34a4537.rpm

Bucket: yum-repo-zxc
Folder: demo-app
Name: demo-app-34a4537.rpm
Link: <https://s3.amazonaws.com/yum-repo-zxc/rpm/demo-app/demo-app-34a4537.rpm>
Size: 1847
Last Modified: Sun Nov 06 17:45:17 GMT-000 2016
Owner: veselin
ETag: 201975bf048c0653831d5480db48c921
Expiry Date: None
Expiration Rule: N/A

Details

Storage Class: Standard Standard - Infrequent Access Reduced Redundancy

Server Side Encryption: None AES-256

Save Cancel

Create VPC Actions

test

<< 1 to 1 of 1 VPC >>

Name	VPC ID	State	VPC CIDR	DHCP options set	Route table	Network ACL	Tenancy
test-vpc	vpc-a3704cc4	available	10.0.0.0/16	dopt-61bf9404	rtb-c04ed0a6	acl-79ba4d1f	Default

vpc-a3704cc4 (10.0.0.0/16) | test-vpc

Summary Flow Logs Tags

You can create flow logs on your resources to capture IP traffic flow information for the network interfaces for your resources. [Learn more about flow logs.](#)

Create Flow Log

Flow Log ID	Filter	CloudWatch Logs Group	IAM Role ARN	Creation Time	Status	Inherited From
No Flow Logs found						

CloudWatch > Log Groups

Create Metric Filter Actions

Filter: Log Group Name Prefix

Log Groups	Expire Events After	Metric Filters
<input type="checkbox"/> wongabonga	Never Expire	0 filters

Turn on CloudTrail

Trail name*

Apply trail to all regions Yes No ⓘ

Create a new S3 bucket Yes No

S3 bucket* ⓘ

Log file prefix ⓘ
Location: /AWSLogs/977840686258/CloudTrail/us-east-1

Enable log file validation Yes No ⓘ

Send SNS notification for every log file delivery Yes No ⓘ

* Required field

Cancel **Turn On**

API activity history

Trails

▼ S3

Create a new S3 bucket Yes No

S3 bucket* ⓘ

Log file prefix ⓘ
Location: /AWSLogs/977840686258/CloudTrail/us-east-1

Encrypt log files Yes No ⓘ

Create a new KMS key Yes No

KMS key* ⓘ
KMS key and S3 bucket must be in the same region.

Enable log file validation Yes No ⓘ

Send SNS notification for every log file delivery Yes No ⓘ

* Required field

Cancel Save

API activity history

The following list includes the last 7 days of API activity for [supported services](#). The list only includes API activity for **create**, **modify**, and **delete** API calls. For read-only API activity, go to your Amazon S3 bucket or CloudWatch Logs.

You can filter the list using the available attributes, and you can choose an event to see more detail about the event. [Learn more.](#)

Filter: Enter lookup value Time range:


Event time	User name	Event name	Resource type	Resource name
▶ 2016-11-08, 09:16:03 ...	veselin	UpdateTrail	CloudTrail Trail and 2 ...	test_trail and 3 more
▶ 2016-11-08, 09:16:02 ...	veselin	PutBucketPolicy	S3 Bucket	cloudtrail-xmdjwp
▶ 2016-11-08, 09:15:21 ...	veselin	UpdateTrail	CloudTrail Trail and 2 ...	arn:aws:cloudtrail:us-e...
▶ 2016-11-08, 09:15:20 ...	veselin	PutBucketPolicy	S3 Bucket	cloudtrail-xmdjwp
▶ 2016-11-08, 09:13:07 ...	veselin	CreateTrail	CloudTrail Trail and 1 ...	test_trail and 2 more
▶ 2016-11-08, 09:13:07 ...	veselin	StartLogging	CloudTrail Trail	test_trail
▶ 2016-11-08, 09:13:07 ...	veselin	PutBucketPolicy	S3 Bucket	cloudtrail-xmdjwp
▶ 2016-11-08, 09:13:06 ...	veselin	CreateBucket	S3 Bucket	cloudtrail-xmdjwp
▶ 2016-11-08, 09:09:53 ...	veselin	ConsoleLogin		

Dashboard

- Cost Optimization
- Performance
- Security
- Fault Tolerance
- Preferences


Trusted Advisor Dashboard

Cost Optimization




0 ✓ 0 ⚠ 0 !

Performance




1 ✓ 0 ⚠ 0 !

Security



3 ✓ 0 ⚠ 0 !

Fault Tolerance




0 ✓ 0 ⚠ 0 !

Dashboard

- Cost Optimization
- Performance
- Security**
- Fault Tolerance
- Preferences

Security



3 ✓ 0 ⚠ 0 !

Security Checks

- IAM Use** Refreshed: a minute ago
Previous status: Green

Checks for your use of AWS Identity and Access Management (IAM).
At least one IAM user has been created for this account.
- MFA on Root Account** Refreshed: a minute ago
Previous status: Green

Checks the root account and warns if multi-factor authentication (MFA) is not enabled.
MFA is enabled on the root account.
- Security Groups - Specific Ports Unrestricted** Refreshed: a minute ago
Previous status: Green

Checks security groups for rules that allow unrestricted access (0.0.0.0/0) to specific ports.
0 of 0 security group rules allow unrestricted access to a specific port.

Set up AWS Config

Step 1: Settings

Step 2: AWS Config rules

Step 3: Review

All resources

Record all resources supported in this region ⓘ

Include global resources (e.g., AWS IAM resources) ⓘ

Specific types

Amazon S3 bucket*

Your bucket receives configuration history and configuration snapshot files, which contain details for the

Create a bucket

Choose a bucket from your account

Choose a bucket from another account ⓘ

Bucket name* /

Amazon SNS topic

Stream configuration changes and notifications to an Amazon SNS topic.

AWS Config role*

Grant AWS Config read-only access to your AWS resources so that it can record configuration information to Amazon S3 and Amazon SNS.

Create a role

Choose a role from your account

Role name*

Set up AWS Config

Step 1: Settings

Step 2: AWS Config rules

Step 3: Review

AWS Config rules ⓘ

AWS Config can check the configuration of your resources against rules that you define. Choose one or more of the following rules to get started. After setting up AWS Config, you can customize these rules, set up other rules provided by AWS Config, or create your own rules.

Learn more about [AWS Config rules](#) and [pricing details](#).

<p>s3-bucket-versioning-enabled</p> <p>Checks whether versioning is enabled for your S3 buckets.</p> <p><input type="checkbox"/> Add</p>	<p>cloudtrail-enabled</p> <p>Checks whether AWS CloudTrail is enabled in your AWS account.</p> <p><input checked="" type="checkbox"/> Add</p>	<p>eip-attached</p> <p>Checks whether all EIP addresses allocated to a VPC are attached to EC2 instances or in-use ENIs.</p> <p><input type="checkbox"/> Add</p>
<p>encrypted-volumes</p> <p>Checks whether EBS volumes that are in an attached state are encrypted.</p> <p><input checked="" type="checkbox"/> Add</p>	<p>root-account-mfa-enabled</p> <p>Checks whether the root user of your AWS account requires multi-factor authentication for console sign-in.</p> <p><input checked="" type="checkbox"/> Add</p>	

AWS Config

Rules Status ⓘ

Resources
Settings

Rules represent your desired configuration settings. AWS Config evaluates whether your resource configurations comply with relevant rules and summarizes the results in the following table.

[Add rule](#) ↻

Rule name	Compliance	Edit rule
cloudtrail-enabled	1 noncompliant resource(s)	
restricted-ssh	1 noncompliant resource(s)	
root-account-mfa-enabled	Compliant	
encrypted-volumes	No resources in scope	

EC2 SecurityGroup sg-946652ee Manage resources ⓘ

on November 09, 2016 10:05:01 PM GMT (UTC+00:00)

←

09th November 2016 9:15:53 PM
09th November 2016 10:05:01 PM
→
Now

📅 1 Change

▼ **Changes** 1

Configuration Changes 1

Field	From	To
Configuration.IpPermissions.0		▼ Object ipProtocol: "tcp" fromPort: 22 toPort: 22 ▼ userIdGroupPairs: Array [0] [] ▼ ipRanges: Array [1] 0: "0.0.0.0/0" ▼ prefixListIds: Array [0] []

Chapter 10: AWS Tips and Tricks

The screenshot shows the AWS VPC Dashboard for a VPC with ID vpc-a3704cc4 (10.0.0.0/16). The 'Route Tables' section is active, displaying a list of three route tables. The selected route table is 'rtb-c04ed0a6', which is the main route table for the VPC and has 0 subnets associated with it. Below the list, the 'Routes' tab is selected, showing a single route with destination 10.0.0.0/16, target 'local', status 'Active', and 'Propagated' set to 'No'.

Name	Route Table ID	Explicitly Associat	Main	VPC
private	rtb-f4fd199	2 Subnets	No	vpc-a3704cc4 (10.0.0.0/16) test-vpc
public	rtb-d04fd1ba	2 Subnets	No	vpc-a3704cc4 (10.0.0.0/16) test-vpc
rtb-c04ed0a6	rtb-c04ed0a6	0 Subnets	Yes	vpc-a3704cc4 (10.0.0.0/16) test-vpc

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No

The screenshot shows the 'EC2 Service Limits' page in the AWS console. It provides information about the limits for various EC2 resources in the US East (N. Virginia) region. The 'Instance Limits' section is expanded, showing a table of limits for different instance types. Each entry includes the instance type, the current limit (all are 20), and a link to request a limit increase.

Name	Current Limit	Action
Running On-Demand EC2 instances	20	Request limit increase
Running On-Demand c1.medium instances	20	Request limit increase
Running On-Demand c1.xlarge instances	20	Request limit increase
Running On-Demand c3.2xlarge instances	20	Request limit increase
Running On-Demand c3.4xlarge instances	20	Request limit increase
Running On-Demand c3.8xlarge instances	20	Request limit increase
Running On-Demand c3.large instances	20	Request limit increase

EC2 Dashboard

Launch Instance Connect Actions

search : promjenkins Add filter

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
test-promjenkins	i-0b31106a77efa4ee0	t2.small	us-east-1b	stopped	None	

- Connect
- Get Windows Password
- Launch More Like This
- Instance State
- Instance Settings
- Image
- Networking
- CloudWatch Monitoring
- Add/Edit Tags
- Attach to Auto Scaling Group
- Change Instance Type
- Change Termination Protection
- View/Change User Data
- Change Shutdown Behavior
- Get System Log
- Get Instance Screenshot
- Modify Instance Placement

Instance: i-0b31106a77efa4ee0 (test-promjenkins)

Description Status Checks Monitoring Tags