

**Project in AWS
Practice Lab**

Creating AWS Tags and Resource Groups

Andra-Diana Popescu

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ABOUT THIS LAB

To simplify the management of AWS resources such as EC2 instances, you can assign metadata using tags. Resource groups can then use these tags to automate tasks on large numbers of resources at one time. They serve as a unique identifier for custom automation, to break out cost reporting by department, and much more. In this hands-on lab, you will create a project-level tag and assign it to multiple resources at once, before creating a resource group based on the tag.

LEARNING OBJECTIVES

- Create and Assign Project-Level Tags to Resources
- Create Resource Groups from the Assigned Tags
- Test Resource Groups through AWS CloudWatch

AWS Documentation about Tagging, Cost Allocation, Resource Groups and Systems Manager:

<https://docs.aws.amazon.com/tag-editor/latest/userguide/tagging.html>

<https://d1.awsstatic.com/whitepapers/aws-tagging-best-practices.pdf>

<https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/cost-alloc-tags.html#allocation-what>

<https://docs.aws.amazon.com/ARG/latest/userguide/resource-groups.html>

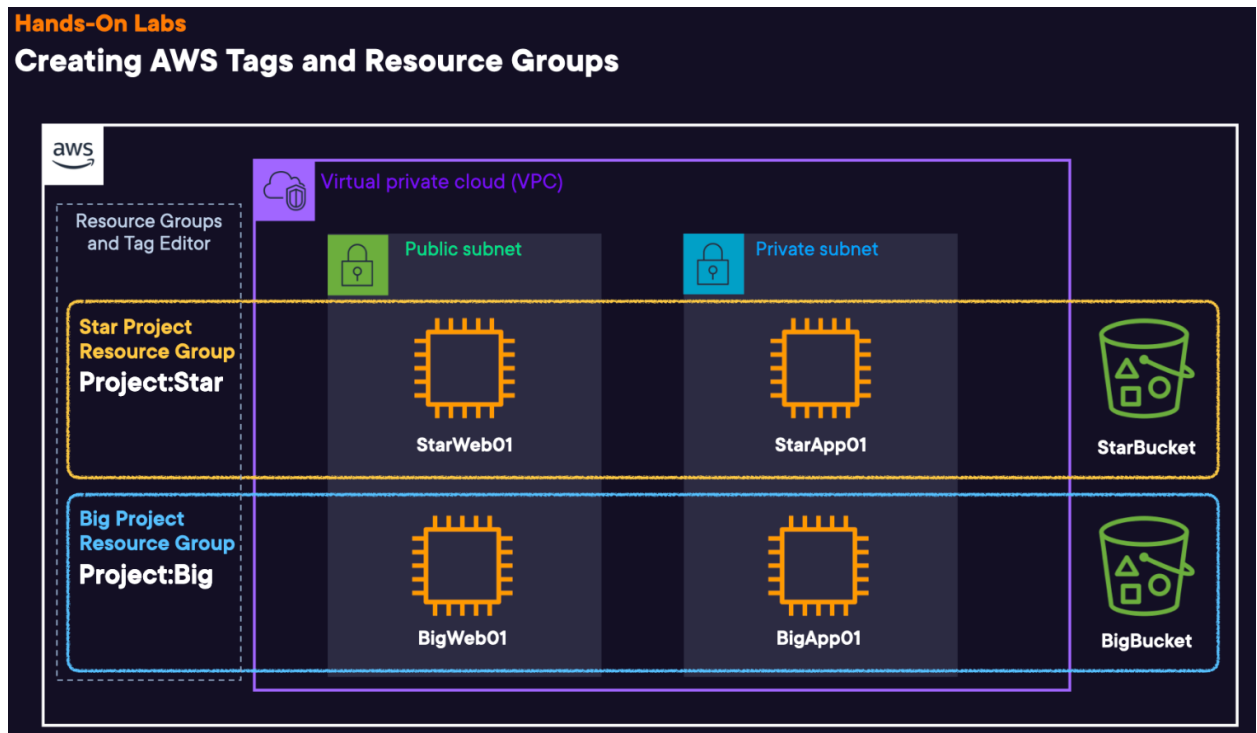
<https://docs.aws.amazon.com/systems-manager/latest/userguide/what-is-systems-manager.html>

Source: <https://learn.acloud.guru/course/certified-solutions-architect-associate/>

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Lab Diagram



We have the AWS account in **us-east-1** Region. In this lab, you'll be provided with a VPC with both public and private subnets. In the subnets, there'll be two applications, one called **Star** and one called **Big**, each with a web and app player and an S3 bucket.

Your first task will be to go into the Resource Groups and Tag Editor console and assign project level tags to the resources. After that, you'll create resource groups using the project tags you've just created. Then finally, we'll go into the CloudWatch and test the functionality of the resource groups by looking at the metric overviews for these applications.

Log in to your AWS account



Sign in as IAM user

Account ID (12 digits) or account alias

Type Account ID

IAM user name

Type IAM user name

Password

☐ Remember this account

Sign in

Sign in using root user email

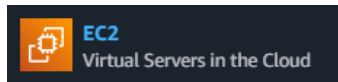
[Forgot password?](#)



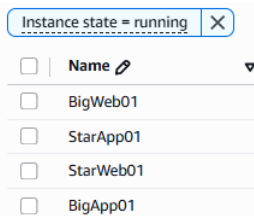
1. Create and Assign Project-Level Tags to Resources

1.1. Review of the Pre-configured Resources

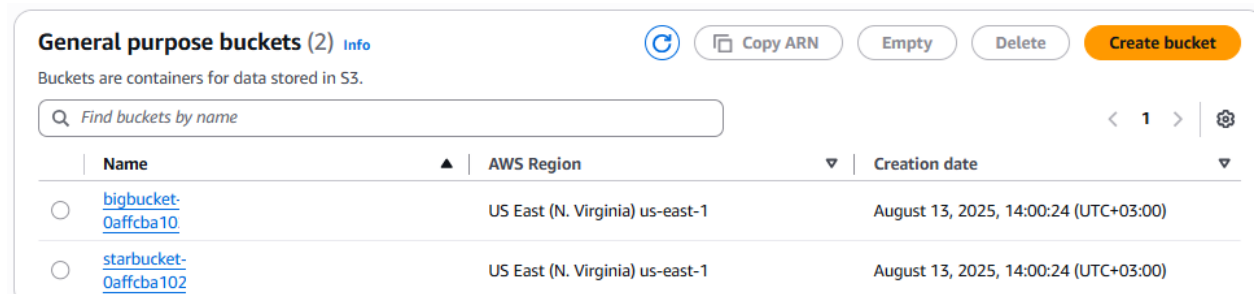
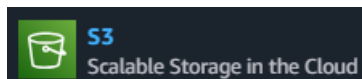
1. Once you are logged in to the AWS Management Console, navigate to **EC2 → Instances**.



2. Notice the instances listed.

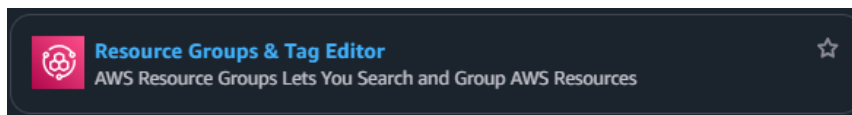


3. In the search bar, enter S3, and open it in a new tab. You will see two buckets with *starbucket* and *bigbucket* in the names.

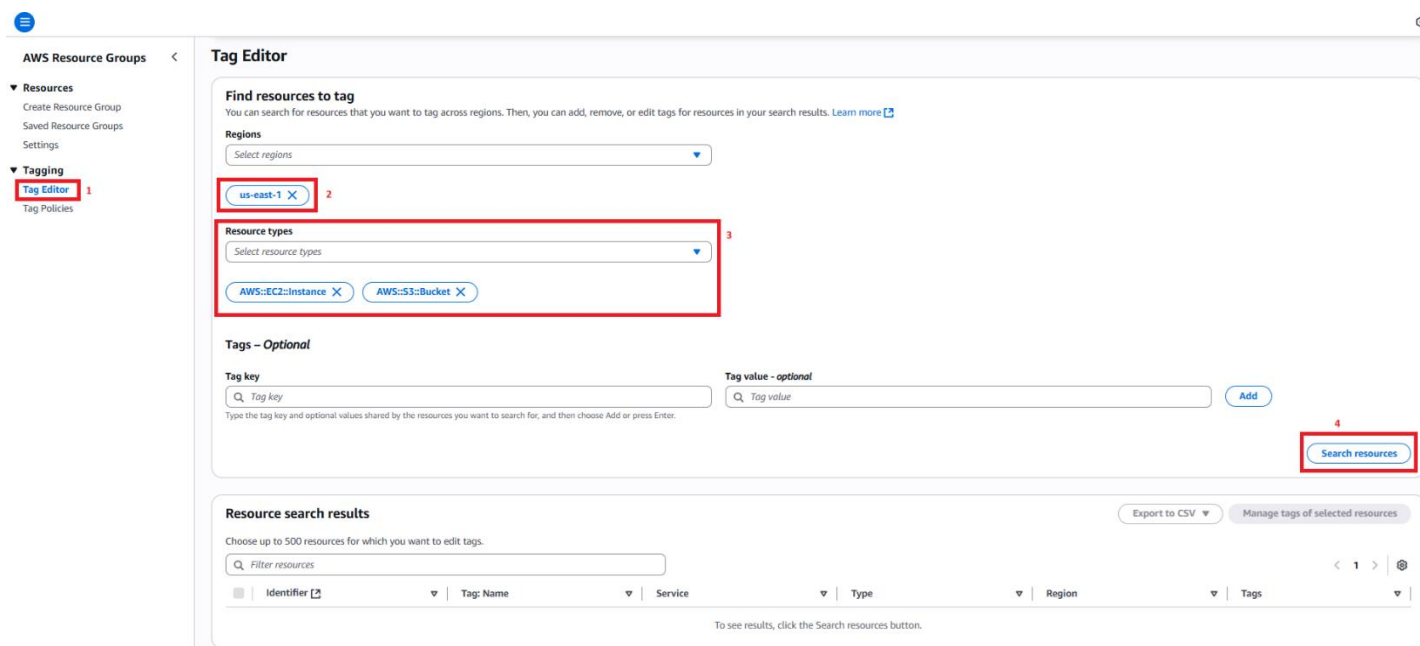


1.1.1. Module 1 Tagging: Star Project

1. In a new browser tab, navigate to **Resource Groups & Tag Editor**.



2. Click **Tag Editor** in the left-hand menu.
3. In the **Find resources to tag** section, set the following values:
 - a. **Regions:** Select **us-east-1**.
 - b. **Resource types:**
 - i. Enter and select **AWS::EC2::Instance**.
 - ii. Enter and select **AWS::S3::Bucket**.
4. Click **Search resources**. The resources are displayed.

A screenshot of the AWS Tag Editor interface. The left-hand menu shows "Tag Editor" highlighted with a red box and a "1" next to it. The main area is titled "Tag Editor" and contains a "Find resources to tag" section. In this section, the "Regions" dropdown is set to "us-east-1" (highlighted with a red box and a "2" next to it). The "Resource types" dropdown is set to "AWS::EC2::Instance" and "AWS::S3::Bucket" (highlighted with a red box and a "3" next to it). Below this, there are fields for "Tag key" and "Tag value - optional". At the bottom right of the "Find resources to tag" section, the "Search resources" button is highlighted with a red box and a "4" next to it. Below the search section is the "Resource search results" section, which shows a table of resources.

Resource search results (6)							
Choose up to 500 resources for which you want to edit tags.							
<input type="text" value="Filter resources"/>							
<input type="checkbox"/>	Identifier	Tag: Name	Service	Type	Region	Tags	
<input type="checkbox"/>	i-05	BigApp01	EC2	Instance	us-east-1	5	
<input type="checkbox"/>	i-06	StarWeb01	EC2	Instance	us-east-1	5	
<input type="checkbox"/>	i-08	BigWeb01	EC2	Instance	us-east-1	5	
<input type="checkbox"/>	i-09	StarApp01	EC2	Instance	us-east-1	5	
<input type="checkbox"/>	bigbucket-7206	(not tagged)	S3	Bucket	us-east-1	4	
<input type="checkbox"/>	starbucket-7206	(not tagged)	S3	Bucket	us-east-1	4	

- Resource search results (3 selected of 6)

Export 6 resources to CSV

Manage tags of selected resources

Choose up to 500 resources for which you want to edit tags.

3 matches

star ✕

Clear filters

<input checked="" type="checkbox"/>	Identifier	Tag: Name	Service	Type	Region	Tags
<input checked="" type="checkbox"/>	i-06d47	StarWeb01	EC2	Instance	us-east-1	5
<input checked="" type="checkbox"/>	i-095f0	StarApp01	EC2	Instance	us-east-1	5
<input checked="" type="checkbox"/>	starbucket-72	(not tagged)	S3	Bucket	us-east-1	4

6. Click **Manage tags** of selected resources.

Resource search results (3 selected of 6)

Choose up to 500 resources for which you want to edit tags.

Export 6 resources to CSV

Manage tags of selected resources

	Identifier	Tag: Name	Service	Type	Region	Tags
<input type="checkbox"/>	i-0511	BigApp01	EC2	Instance	us-east-1	5
<input checked="" type="checkbox"/>	i-06d4	StarWeb01	EC2	Instance	us-east-1	5
<input type="checkbox"/>	i-08ac	BigWeb01	EC2	Instance	us-east-1	5
<input checked="" type="checkbox"/>	i-095f	StarApp01	EC2	Instance	us-east-1	5
<input type="checkbox"/>	bigbucket-7	(not tagged)	S3	Bucket	us-east-1	4
<input checked="" type="checkbox"/>	starbucket-2065	(not tagged)	S3	Bucket	us-east-1	4

- Page 7 of 14

Manage tags

Selected resources (3)

View the tags for the editable resources you selected.

Identifier	Tag: Name	Service	Type	Region	Tags
i-06d47	StarWeb01	EC2	Instance	us-east-1	5
i-095f0	StarApp01	EC2	Instance	us-east-1	5
starbucket-72065a	(not tagged)	S3	Bucket	us-east-1	4

Edit tags of all selected resources

Overwrite existing tags or add new tags to the editable resources that you selected.

Tag key	Tag value - optional
Name	<input type="text" value="Selected resources have different tag values"/>
	<small>Enter a new tag value or choose an existing value.</small>
UserId	<input type="text" value="24 49"/>
Project ²	Star ³
Add tag ¹	Remove tag

[Cancel](#) [Previous](#) [Review and apply tag changes](#) ⁴

Apply tag changes to all 3 selected resources

Review the following tag changes and then choose Apply.

▼ The following tags will be applied to all 3 selected resources.

Tag key	Tag value
Project	Star

[Apply changes to all selected](#) [Cancel](#)

Note: This has populated our 3 resources with the **Project Star** tag. Let's confirm this through S3.

9. Navigate to the S3 browser tab, click on the **starbucket** bucket → **Properties** tab.

10. Scroll down to **Tags**, and you should see **Project** under **Key**, with **Star** as the **Value**.

starbucket-72065a [info](#)

[Objects](#) [Metadata](#) [Properties](#) [Permissions](#) [Metrics](#) [Management](#) [Access Points](#)

Bucket overview

AWS Region
US East (N. Virginia) us-east-1

Amazon Resource Name (ARN)
[arn:aws:s3::starbucket-72065a](#)

Creation date
August 13, 2025, 16:28:55 (UTC+03:00)

Bucket Versioning [Edit](#)

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Bucket Versioning
Disabled

Multi-factor authentication (MFA) delete

An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. [Learn more](#)

Disabled

Tags (5) [Edit](#)

You can use bucket tags to track storage costs and organize buckets. [Learn more](#)

Key	Value
Project	Star
aws:cloudformation:stack-name	cfst-4204-cefcccd2 a9e8
aws:cloudformation:logical-id	StarBucket
aws:cloudformation:stack-id	arn:aws:cloudformation:us-east-1:4204-ce :stack/cfst-4204-ce
UserId	24 49

1.1.2. Module 2 Tagging: Big Project

1. Navigate back to the **Resource Groups Management** browser tab.
2. With the same Region and resource types selected from the previous step, click **Search resources** again.
3. In the **Resource search results** section, set the following values:
 - a. In the **Filter resources** search window, enter **big**, and press **Enter**.
 - b. Select **all** of the instances.
4. Click **Manage tags of selected resources**.

Resource search results (3 selected of 6)

Choose up to 500 resources for which you want to edit tags. 1

Filter resources 3 matches

big Clear filters

2	Identifier	Tag: Name	Service	Type	Region	Tags
<input checked="" type="checkbox"/>	i-051	BigApp01	EC2	Instance	us-east-1	5
<input checked="" type="checkbox"/>	i-08a	BigWeb01	EC2	Instance	us-east-1	5
<input checked="" type="checkbox"/>	bigbucket-206	(not tagged)	S3	Bucket	us-east-1	4

5. In the **Edit tags of all selected resources** section, click **Add tag**, and set the following values:
 - a. **Tag key**: Enter **Project**.
 - b. **Tag value**: Enter **Big**.
6. Click **Review and apply tag changes** → **Apply changes to all selected**.

Manage tags

Selected resources (3)

View the tags for the editable resources you selected.

Filter resources

Identifier	Tag: Name	Service	Type	Region	Tags
i-051	BigApp01	EC2	Instance	us-east-1	5
i-08a	BigWeb01	EC2	Instance	us-east-1	5
bigbucket-720	(not tagged)	S3	Bucket	us-east-1	4

Edit tags of all selected resources

Overwrite existing tags or add new tags to the editable resources that you selected.

Tag key

Name

Tag value - optional

Selected resources have different tag values

Enter a new tag value or choose an existing value.

24 19

Project 2

Big 3

Add tag 1

Cancel Previous Review and apply tag changes 4

Apply tag changes to all 3 selected resources

Review the following tag changes and then choose Apply.

▼ The following tags will be applied to all 3 selected resources.

Tag key	Tag value
Project	Big

Apply changes to all selected

Cancel

Note: This has successfully populated the web, the app and the S3 bucket with the additional tag of **Project Big**.

2. Create Resource Groups from the Assigned Tags

2.1. Create the **Big-Project-Resource-Group** Resource Group

1. In the left-hand menu, select **Create Resource Group**.
2. For **Group type**, select **Tag based**.

AWS Resource Groups > Saved resource groups > Create new group

AWS Resource Groups

- ▼ Resources
 - Create Resource Group
 - Saved Resource Groups
 - Settings
- ▼ Tagging
 - Tag Editor
 - Tag Policies

Create query-based group

Group type
Select a group type to define a group based on resource types and tags, or create a group based on your existing CloudFormation stack.

☒ **Tag based**
Group resources by specifying tags that are shared by the resources.

☐ **CloudFormation stack based**
Create a resource group based on an existing CloudFormation stack. The group will have the same logical structure as the stack.

3. In the **Grouping criteria** section, **All supported resource types** should already be selected.
4. In the **Tags** field, select the following:
 - a. **Tag key**: Select **Project**.
 - b. **Optional tag value**: Select **Big**.
5. Click **Preview group resources**.

Grouping criteria

Define a group based on resource types and tags.

Resource types

Select resource types

All supported resource types

Tags

Tag key

Project

Tag value - optional

Big

Add

Preview group resources

6. Ensure the three group resources show up in the **Group resources** section.
7. In the **Group details** section, enter a **Group name** of **Big-Project-Resource-Group**.

8. Click **Create group**.

Group resources (3) Export 3 resources to CSV

Q Filter resources

Identifier	Tag: Name	Service	Type	Region	Tag: Proje	Tags
i-0511	BigApp01	EC2	Instance	us-east-1	Big	5
i-08ac	BigWeb01	EC2	Instance	us-east-1	Big	5
bigbucket-206	(not tagged)	S3	Bucket	us-east-1	Big	5

Group details

Group name ¹

Big-Project-Resource-Group

Maximum 300 characters. Must contain only letters, numbers, hyphens, underscores, and periods.

Group description - optional

Type a description

Maximum 1024 characters. It can only contain letters, numbers, hyphens, underscores, dots, and spaces.

► **Group tags - Optional**

The tags specified here will not be applied to group resources, but only the resource group itself.

Cancel Create group ²

This has assigned now all those resources under the **Big Project** resource group. Let's do the same thing for **Star Project**.

AWS Resource Groups > Saved resource groups > Big-Project-Resource-Group

AWS Resource Groups

- Resources
 - Create Resource Group
 - Saved Resource Groups
 - Settings
- Tagging
 - Tag Editor
 - Tag Policies

The resource group "Big-Project-Resource-Group" has been successfully created in the current region (us-east-1).

Big-Project-Resource-Group Edit Delete

Group details

Group name
Big-Project-Resource-Group

Group ARN
[arn:aws:resource-groups:us-east-1::group/Big-Project-Resource-Group](#)

Group type and grouping criteria

Group type
Tag based

Resource types
[All supported resource types](#)

Tags
[Project: Big](#)

Group resources (3) Export 3 resources to CSV

Q Filter resources

Identifier	Tag: Name	Service	Type	Region	Tag: Proje	Tags
i-05	BigApp01	EC2	Instance	us-east-1	Big	5
i-08	BigWeb01	EC2	Instance	us-east-1	Big	5
bigbucket-220n	(not tagged)	S3	Bucket	us-east-1	Big	5

2.2. Create the *Star-Project-Resource-Group* Resource Group

1. In the left-hand menu, select **Create Resource Group**.
2. For **Group type**, select **Tag based**.

[AWS Resource Groups](#) > [Saved resource groups](#) > Create new group

AWS Resource Groups

- Resources
 - Create Resource Group
 - Saved Resource Groups
 - Settings
- Tagging
 - Tag Editor
 - Tag Policies

Create query-based group

Group type
Select a group type to define a group based on resource types and tags, or create a group based on your existing CloudFormation stack.

☒ **Tag based**
Group resources by specifying tags that are shared by the resources.

☐ **CloudFormation stack based**
Create a resource group based on an existing CloudFormation stack. The group will have the same logical structure as the stack.

- In the **Grouping criteria** section, **All supported resource types** should already be selected.
- In the **Tags** field, select the following:
 - Tag key:** Select **Project**.
 - Optional tag value:** Select **Star**.
- Click **Preview group resources**.

Grouping criteria
Define a group based on resource types and tags.

Resource types
Select resource types

[All supported resource types](#)

Tags

Tag key: Project

Tag value - optional: Star

[Add](#)

[Preview group resources](#)

- Ensure the three group resources show up in the **Group resources** section.
- In the **Group details** section, enter a **Group name** of **Star-Project-Resource-Group**.
- Click **Create group**.

Group resources (3) [Export 3 resources to CSV](#)

Filter resources

Identifier	Tag: Name	Service	Type	Region	Tag: Proje	Tags
i-06i	StarWeb01	EC2	Instance	us-east-1	Star	6
i-09i	StarApp01	EC2	Instance	us-east-1	Star	6
starbucket-72065	(not tagged)	S3	Bucket	us-east-1	Star	5

Group details

Group name
Star-Project-Resource-Group
Maximum 500 characters. Must contain only letters, numbers, hyphens, underscores, and periods.

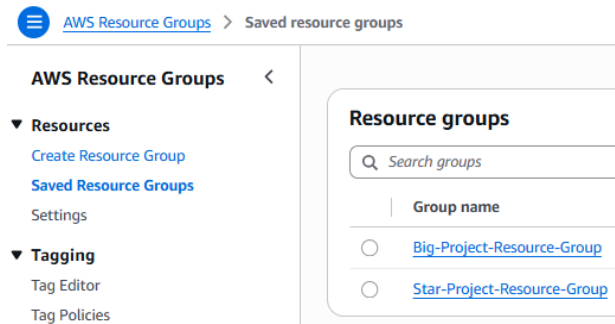
Group description - optional
Type a description
Maximum 1024 characters. It can only contain letters, numbers, hyphens, underscores, dots, and spaces.

Group tags - Optional
The tags specified here will not be applied to group resources, but only the resource group itself.

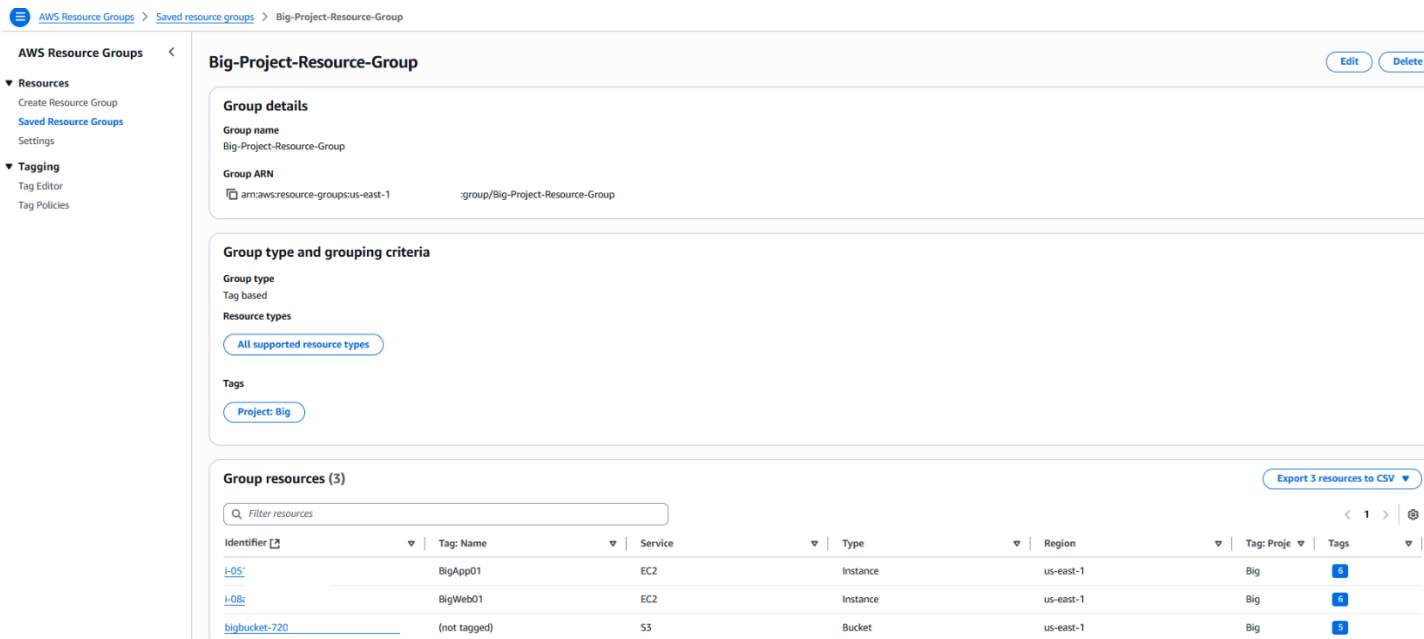
[Cancel](#) [Create group](#)

2.3. View the Saved Resource Groups

1. In the left-hand menu, select **Saved Resource Groups**.



2. Click **Big-Project-Resource-Group**. Here, you should see all the resources in your **Big-Project-Resource-Group** group.



3. Test Resource Groups through AWS CloudWatch

1. In a new browser tab, navigate to **CloudWatch**.



2. Under **Overview**, click on the **Filter by resource group** dropdown menu and select either the **Big-Project-Resource-Group** or the **Star-Project-Resource-Group**.

CloudWatch

CloudWatch Overview info

Overview

Big-Project-Resource-Group

Get started with CloudWatch View

You don't have any alarms, metrics or default dashboards.

Set alarms on any of your metrics to receive notification when your metric crosses your specified threshold.

Create alarms

Create and name any CloudWatch dashboard to display it here.

Create a default dashboard

Log groups

Log Anomalies

Live Tail

Logs Insights

Contributor Insights

- Review the resource-group-level statistics. We have the ability to see the statistics for the entire infrastructure the application runs on.

