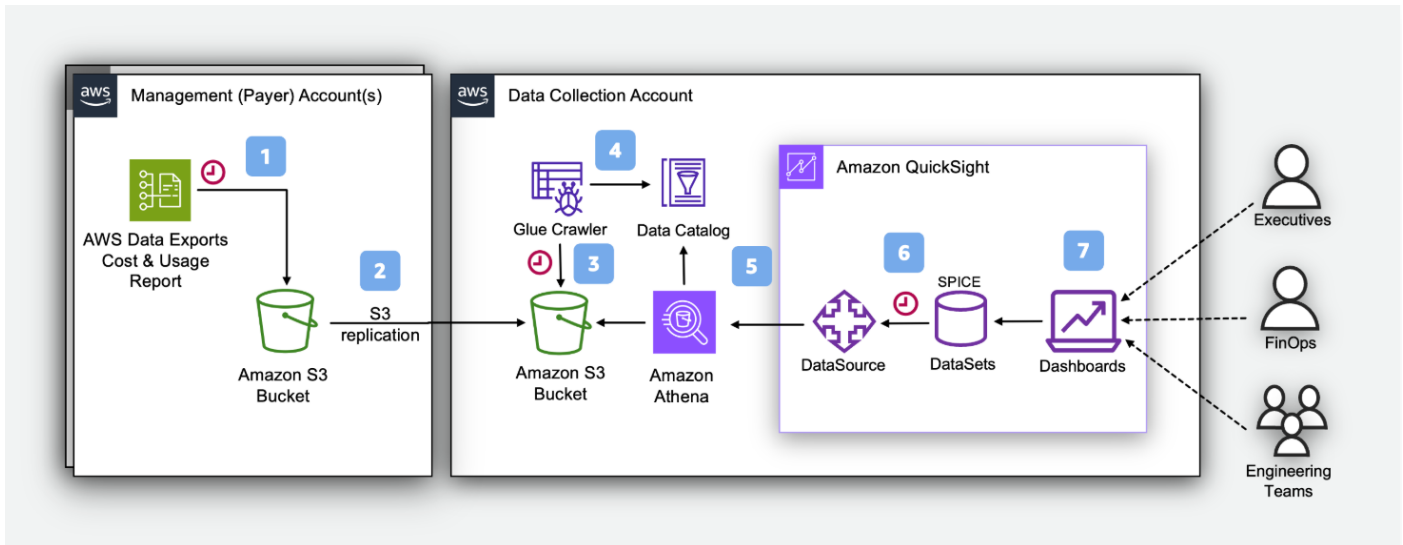


Create AWS Cloud Intelligence Dashboard



➤ Understand the flow of Cloud Intelligence Dashboard -

1. Daily Cost Report Delivery

- The AWS Cost & Usage Report (CUR) is sent every day to an Amazon S3 bucket in the management account.

2. Data Replication

- This report is automatically copied to another S3 bucket in the data collection account.

3. Daily Data Crawling

- An AWS Glue crawler runs once a day to find new or updated cost and usage data in the S3 bucket.

4. Updating the Data Catalog

- The Glue crawler updates a table in the Glue Data Catalog with the latest information about the data.

5. Querying Data with Athena

- Amazon Athena reads the cost and usage data from the S3 bucket using the structure defined in the Glue Data Catalog.

6. Using Athena Data in QuickSight

- Amazon QuickSight uses Athena as a data source to create datasets for analysis. Most datasets are stored in QuickSight's SPICE engine and updated daily.

7. Accessing Dashboards

- Dashboards in QuickSight display cost and usage data, either directly from Athena or from cached SPICE datasets.

8. User Access to Dashboards

- Teams or individuals can access these dashboards through QuickSight, using AWS IAM permissions or single sign-on (SSO) via a SAML provider.

Follow the below steps to Implement Dashboard

Step 1 – Create S3 Bucket in Data Collection AWS Account

Prepared by – Atish Sonawane

► **Account snapshot** - updated every 24 hours All AWS Regions View Storage Lens dashboard

Storage lens provides visibility into storage usage and activity trends. Metrics don't include directory buckets. [Learn more](#)

General purpose buckets | Directory buckets

General purpose buckets (1) Info All AWS Regions

Buckets are containers for data stored in S3. Copy ARN Empty Delete Create bucket

Find buckets by name

Name	AWS Region	IAM Access Analyzer	Creation date
aws-usage-report-dashboard	US East (N. Virginia) us-east-1	View analyzer for us-east-1	December 30, 2024, 23:04:20 (UTC+05:30)

Step 2 – Configure bucket policy under the permission menu

Edit bucket policy Info

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

Bucket ARN
arn:aws:s3::aws-usage-report-dashboard

Policy

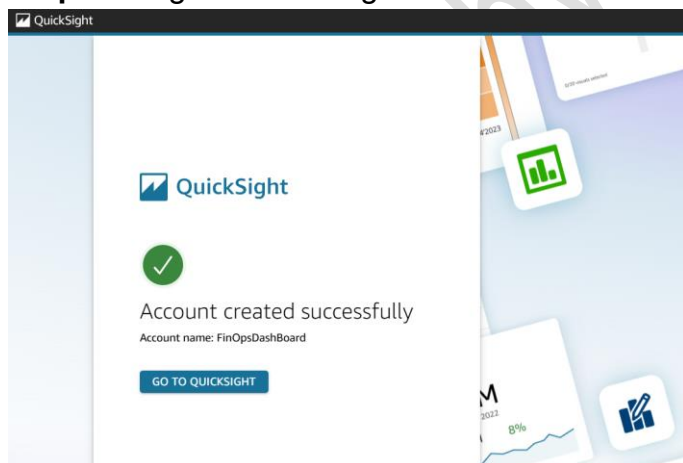
```

1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "AllowCURServiceAccess",
6       "Effect": "Allow",
7       "Principal": {
8         "Service": "billingreports.amazonaws.com"
9       },
10      "Action": "s3:PutObject",
11      "Resource": "arn:aws:s3::aws-usage-report-dashboard/*",
12      "Condition": {
13        "StringEquals": {
14          "aws:SourceAccount": "590183893026"
15        }
16      }
17    }
18  ]
19 }
20

```

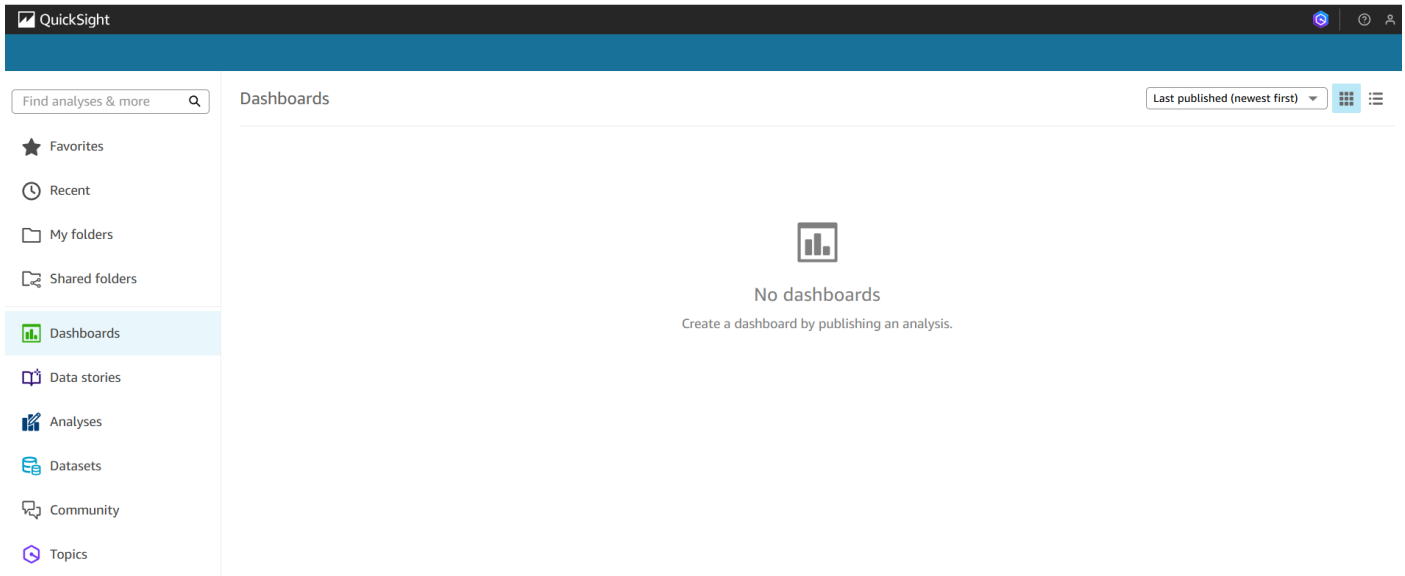
Note – Replace Bucket Name and AWS Account ID

Step 3 – Sign-In QuickSight in Data Collection AWS Account



Note – Select created S3 Bucket

Step 4 – Verify No Dashboard available under QuickSight



Step 5 – Create a Stack in Data Collection Account using the below link

Link-

https://console.aws.amazon.com/cloudformation/home#/stacks/create/review?&templateURL=https://aws-managed-cost-intelligence-dashboards.s3.amazonaws.com/cfn/data-exports-aggregation.yaml&stackName=CID-DataExports-Destination¶m_ManageCUR2=yes¶m_ManageCOH=no¶m_DestinationAccountId=REPLACE%20WITH%20DATA%20COLLECTION%20ACCOUNT%20ID¶m_SourceAccountIds=PUT%20HERE%20PAYER%20ACCOUNT%20IDS

CloudFormation > **Stacks** > Create stack

Quick create stack

Template
 Template URL
<https://aws-managed-cost-intelligence-dashboards.s3.amazonaws.com/cfn/data-exports-aggregation.yaml>
 Stack description
 AWS Billing Data Export Aggregation v0.1.5

Provide a stack name
 Stack name

 Stack name can include letters (A-Z and a-z), numbers (0-9), and dashes (-).

Parameters
 Parameters are defined in your template and allow you to input custom values when you create or update a stack.

Common Parameters Configuration
Destination (Data Collection) Account Id
 AWS Account Id where DataExport will be replicated to (Where you deploy CID Quicksight Dashboards or Data Collection)

Resource Prefix
 Prefix used for all named resources, including S3 Bucket. Must be the same in destination and source stacks

CUR 2.0

CloudFormation > Stacks > Create stack

CloudFormation

Stacks
StackSets
Exports

Infrastructure Composer
IaC generator

Hooks overview **New**
Hooks **New**

▼ **Registry**
Public extensions
Activated extensions
Publisher

Spotlight

Feedback

Cost Optimization Recommendations
NOTE: you must have Cost Optimization Hub Enabled
no

Parameters needed in Destination (Data Collection) Account only
Source Account Ids (Comma separated list)
Ex: 12345678912,98745612312,... If you install all in the same account (Source=Destination) please put Destination Account Id first in the list.
Enter String

Technical Parameters. Please do not change.
Enable Split Cost Allocation Data (SCAD) in CUR 2.0
Whether to enable Split Cost Allocation Data (Scad). Set this to 'No', if you experience performance issues due to dataset size.
yes

RolePath
Path for roles where PermissionBoundaries can limit location
/

CUR 2.0 Granularity. Do not change.
Changing of this parameter will require redeployment of this Stack, purging of data in Destination and then additional Backfill request. HOURLY is a recommended option unless your AWS invoice is more than \$50M (in this case contact your TAM when installing).
HOURLY

Permissions - optional
Specify an existing AWS Identity and Access Management (IAM) service role that CloudFormation can assume.
IAM role - optional
Choose the IAM role for CloudFormation to use for all operations performed on the stack.
IAM role name Sample-role-name Remove

Capabilities

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Note – Replace Data Collection Account ID and Source ID
(You can add multiple source account IDs by using comma separated)

aws CloudFormation > Stacks > CID-DataExports-Destination

CloudFormation

Stacks
Stack details
Drifts
StackSets
Exports

Infrastructure Composer
IaC generator

Hooks overview **New**
Hooks **New**

▼ **Registry**
Public extensions
Activated extensions
Publisher

Spotlight

Feedback

Stacks (1)
Filter status
Filter by stack name Active
View nested
Stacks
CID-DataExports-Destination
2024-12-31 22:11:41 UTC+0530
CREATE_COMPLETE

CID-DataExports-Destination

Stack info **Events - updated** Resources Outputs Parameters Template Change sets Git sync

Delete Update Stack actions Create stack

Table view Timeline view - new

Events (48)
View root cause

Timestamp	Logical ID	Status	Detailed status	Status reason
2024-12-31 22:12:22 UTC+0530	CID-DataExports-Destination	CREATE_COMPLETE	-	-
2024-12-31 22:12:20 UTC+0530	CURTable	CREATE_COMPLETE	-	-
2024-12-31 22:12:20 UTC+0530	COHTable	CREATE_COMPLETE	-	-
2024-12-31 22:12:20 UTC+0530	CURTable	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:12:20 UTC+0530	COHTable	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:12:19 UTC+0530	CURTable	CREATE_IN_PROGRESS	-	-
2024-12-31 22:12:19 UTC+0530	COHTable	CREATE_IN_PROGRESS	-	-
2024-12-31 22:12:19 UTC+0530	CURCrawler	CREATE_COMPLETE	-	-
2024-12-31 22:12:18 UTC+0530	COHCrawler	CREATE_COMPLETE	-	-
2024-12-31 22:12:18 UTC+0530	CURCrawler	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:12:18 UTC+0530	COHCrawler	CREATE_IN_PROGRESS	-	Resource creation Initiated

Step 6 – Create a Stack in Data Collection Account using the below link
Link-

https://console.aws.amazon.com/cloudformation/home#/stacks/create/review?&templateURL=http%3A%2F%2Faws-managed-cost-intelligence-dashboards.s3.amazonaws.com%2Fcfn%2Fdata-exports-aggregation.yaml&stackName=CID-DataExports-Source¶m_ManageCUR2=yes¶m_ManageCOH=no¶m_DestinationAccountId=REPLACE%20WITH%20DATA%20COLLECTION%20ACCOUNT%20IDS¶m_SourceAccountIds=

CloudFormation > Stacks > Create stack

Quick create stack

Template

Template URL
https://aws-managed-cost-intelligence-dashboards.s3.amazonaws.com/cfn/data-exports-aggregation.yaml

Stack description
AWS Billing Data Export Aggregation v0.1.5

Provide a stack name

Stack name
CID-DataExports-Source

Stack name can include letters (A-Z and a-z), numbers (0-9), and dashes (-).

Parameters

Parameters are defined in your template and allow you to input custom values when you create or update a stack.

Common Parameters Configuration

Destination (Data Collection) Account Id
AWS Account Id where DataExport will be replicated to (Where you deploy CID Quickstart Dashboards or Data Collection)
590183893026

Resource Prefix
Prefix used for all named resources, including S3 Bucket. Must be the same in destination and source stacks
cid

CUR 2.0
yes

FOCUS

CloudFormation > Stacks > Create stack

Parameters needed in Destination (Data Collection) Account only

Source Account Ids (Comma separated list)
Ex: 12345678912,98745612312... If you install all in the same account (Source=Destination) please put Destination Account Id first in the list.
Enter String

Technical Parameters. Please do not change.

Enable Split Cost Allocation Data (SCAD) in CUR 2.0
Whether to enable Split Cost Allocation Data (SCAD). Set this to 'No', if you experience performance issues due to dataset size.
yes

RolePath
Path for roles where PermissionBoundaries can limit location
/

CUR 2.0 Granularity. Do not change.
Changing of this parameter will require redeployment of this Stack, purging of data in Destination and then additional Backfill request. HOURLY is a recommended option unless your AWS invoice is more than \$50M (in this case contact your TAM when installing).
HOURLY

Permissions - optional
Specify an existing AWS Identity and Access Management (IAM) service role that CloudFormation can assume.

IAM role - optional
Choose the IAM role for CloudFormation to use for all operations performed on the stack.
IAM role name: Sample-role-name Remove

Capabilities

The following resource(s) require capabilities: [AWS::IAM::ManagedPolicy, AWS::IAM::Role]
This template contains Identity and Access Management (IAM) resources. Check that you want to create each of these resources and that they have the minimum required permissions. In addition, they have custom names. Check that the

Note – Only Replace Data Collection Account ID

CloudFormation > Stacks > CID-DataExports-Source

CID-DataExports-Source

Stack info | **Events - updated** | Resources | Outputs | Parameters | Template | Change sets | Git sync

Table view | Timeline view - new

Events (23)

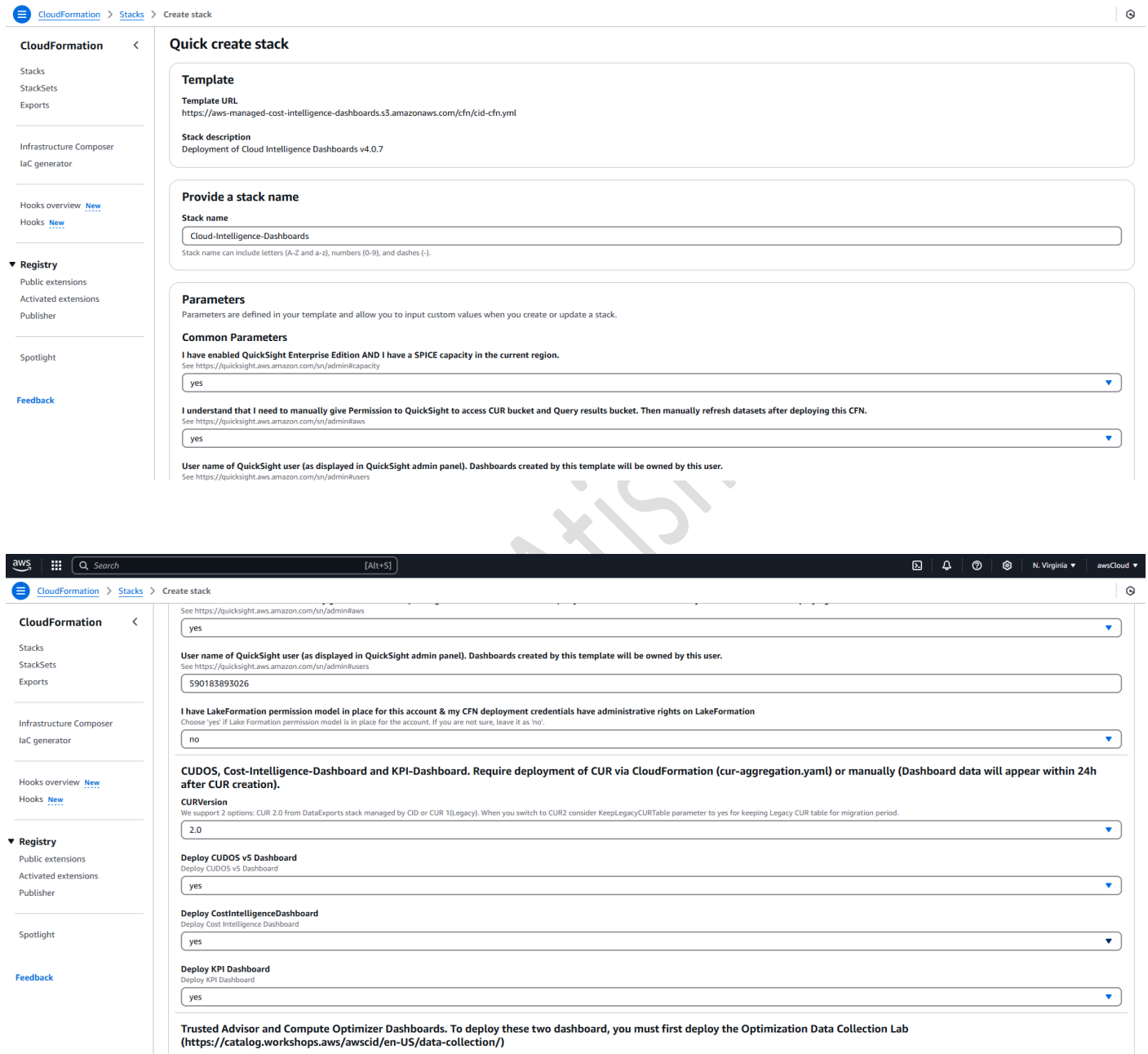
Search events

Timestamp	Logical ID	Status	Detailed status	Status reason
2024-12-31 22:19:39 UTC+0530	CID-DataExports-Source	CREATE_COMPLETE	-	-
2024-12-31 22:19:37 UTC+0530	LocalCUR2viaCFN	CREATE_COMPLETE	-	-
2024-12-31 22:19:37 UTC+0530	LocalCUR2viaCFN	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:19:36 UTC+0530	LocalCUR2viaCFN	CREATE_IN_PROGRESS	-	-
2024-12-31 22:19:35 UTC+0530	SourceS3BucketPolicy	CREATE_COMPLETE	-	-
2024-12-31 22:19:35 UTC+0530	SourceS3BucketPolicy	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:19:33 UTC+0530	SourceS3BucketPolicy	CREATE_IN_PROGRESS	-	-
2024-12-31 22:19:33 UTC+0530	SourceS3	CREATE_COMPLETE	-	-
2024-12-31 22:19:32 UTC+0530	CidLambdaAnalyticsExecutorForDataExports	CREATE_COMPLETE	-	-
2024-12-31 22:19:32 UTC+0530	CidLambdaAnalyticsExecutorForDataExports	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:19:28 UTC+0530	CidLambdaAnalyticsExecutorF	CREATE_IN_PROGRESS	-	-

Step 7 – Deployed the Cloud Intelligence Dashboard on the Data collection account using stack
Prepared by – Atish Sonawane

Link -

https://console.aws.amazon.com/cloudformation/home#/stacks/create/review?templateURL=https://aws-managed-cost-intelligence-dashboards.s3.amazonaws.com/cfn/cid-cfn.yml&stackName=Cloud-Intelligence-Dashboards¶m_DeployCUDOSv5=yes¶m_DeployKPIDashboard=yes¶m_DeployCostIntelligenceDashboard=yes



The screenshot shows the AWS CloudFormation console's 'Quick create stack' wizard. The left sidebar contains navigation links for CloudFormation, Stacks, and Create stack. The main content area is divided into sections for Template, Provide a stack name, Parameters, and Common Parameters. The Template section shows the URL for the 'Cloud-Intelligence-Dashboards' template. The Provide a stack name section shows the stack name 'Cloud-Intelligence-Dashboards'. The Parameters section includes several dropdown menus for 'I have enabled QuickSight Enterprise Edition AND I have a SPICE capacity in the current region.', 'I understand that I need to manually give Permission to QuickSight to access CUR bucket and Query results bucket. Then manually refresh datasets after deploying this CFN.', 'User name of QuickSight user (as displayed in QuickSight admin panel). Dashboards created by this template will be owned by this user.', 'I have LakeFormation permission model in place for this account & my CFN deployment credentials have administrative rights on LakeFormation', 'CUDOS, Cost-Intelligence-Dashboard and KPI-Dashboard. Require deployment of CUR via CloudFormation (cur-aggregation.yaml) or manually (Dashboard data will appear within 24h after CUR creation).', 'CURVersion', 'Deploy CUDOS v5 Dashboard', 'Deploy CostIntelligenceDashboard', 'Deploy KPI Dashboard', and 'Trusted Advisor and Compute Optimizer Dashboards. To deploy these two dashboard, you must first deploy the Optimization Data Collection Lab (https://catalog.workshops.aws/awscid/en-US/data-collection/)'. The 'yes' option is selected for all parameters.

CloudFormation > Stacks > Create stack

Quick create stack

Template

Template URL
<https://aws-managed-cost-intelligence-dashboards.s3.amazonaws.com/cfn/cid-cfn.yml>

Stack description
Deployment of Cloud Intelligence Dashboards v4.0.7

Provide a stack name

Stack name
Cloud-Intelligence-Dashboards

Stack name can include letters (A-Z and a-z), numbers (0-9), and dashes (-).

Parameters

Parameters are defined in your template and allow you to input custom values when you create or update a stack.

Common Parameters

I have enabled QuickSight Enterprise Edition AND I have a SPICE capacity in the current region.
See <https://quicksight.aws.amazon.com/sn/admin#capacity>

yes

I understand that I need to manually give Permission to QuickSight to access CUR bucket and Query results bucket. Then manually refresh datasets after deploying this CFN.
See <https://quicksight.aws.amazon.com/sn/admin#aws>

yes

User name of QuickSight user (as displayed in QuickSight admin panel). Dashboards created by this template will be owned by this user.
See <https://quicksight.aws.amazon.com/sn/admin#users>

590183893026

I have LakeFormation permission model in place for this account & my CFN deployment credentials have administrative rights on LakeFormation
Choose 'yes' if Lake Formation permission model is in place for the account. If you are not sure, leave it as 'no'.

no

CUDOS, Cost-Intelligence-Dashboard and KPI-Dashboard. Require deployment of CUR via CloudFormation (cur-aggregation.yaml) or manually (Dashboard data will appear within 24h after CUR creation).

CURVersion
We support 2 options: CUR 2.0 from DataExports stack managed by CID or CUR 1(Legacy). When you switch to CUR2 consider KeepLegacyCURTable parameter to yes for keeping Legacy CUR table for migration period.

2.0

Deploy CUDOS v5 Dashboard
Deploy CUDOS v5 Dashboard

yes

Deploy CostIntelligenceDashboard
Deploy Cost Intelligence Dashboard

yes

Deploy KPI Dashboard
Deploy KPI Dashboard

yes

Trusted Advisor and Compute Optimizer Dashboards. To deploy these two dashboard, you must first deploy the Optimization Data Collection Lab (<https://catalog.workshops.aws/awscid/en-US/data-collection/>)

Note – For the required Dashboards mark as a 'yes'

CloudFormation > Stacks > Cloud-Intelligence-Dashboards

CloudFormation

Stacks

Stack details

StackSets

Exports

Infrastructure Composer

laC generator

Hooks overview [New](#)

Hooks [New](#)

▼ **Registry**

Public extensions

Activated extensions

Publisher

Spotlight

[Feedback](#)

Stacks (2)

Filter status: Active

View nested

Stacks

- Cloud-Intelligence-Dashboards
 - 2024-12-31 22:25:58 UTC+0530
 - CREATE_COMPLETE
 - CID-DataExports-Destination
 - 2024-12-31 22:11:41 UTC+0530
 - CREATE_COMPLETE

Cloud-Intelligence-Dashboards

Stack info | **Events - updated** | Resources | Outputs | Parameters | Template | Change sets | Git sync

Table view | Timeline view - new

Events (61)

Search events

Timestamp	Logical ID	Status	Detailed status	Status reason
2024-12-31 22:30:45 UTC+0530	Cloud-Intelligence-Dashboards	CREATE_COMPLETE	-	-
2024-12-31 22:30:43 UTC+0530	KPIDashboard	CREATE_COMPLETE	-	-
2024-12-31 22:30:43 UTC+0530	KPIDashboard	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:30:28 UTC+0530	CUDOSv5Dashboard	CREATE_COMPLETE	-	-
2024-12-31 22:30:28 UTC+0530	CUDOSv5Dashboard	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:29:31 UTC+0530	CUDOSv5Dashboard	CREATE_IN_PROGRESS	-	-
2024-12-31 22:29:31 UTC+0530	KPIDashboard	CREATE_IN_PROGRESS	-	-
2024-12-31 22:29:30 UTC+0530	CostIntelligenceDashboard	CREATE_COMPLETE	-	-
2024-12-31 22:29:30 UTC+0530	CostIntelligenceDashboard	CREATE_IN_PROGRESS	-	Resource creation Initiated
2024-12-31 22:28:25 UTC+0530	CostIntelligenceDashboard	CREATE_IN_PROGRESS	-	-

Step 8 – Check Athena service where the Database will create with the schema

Amazon Athena > Query editor

Data

Data source: AwsDataCatalog

Catalog: None

Database: cid_cur

Tables and views: [Create](#)

Filter tables and views

Tables (0)

Views (14)

- account_map
- compute_savings_plan_eligible_spending
- ec2_running_cost
- hourly_view
- kpi_ebs_snap
- kpi_ebs_storage_all
- kpi_instance_all
- kpi_instance_mapping
- kpi_s3_storage_all

Query 1

SQL Ln 1, Col 1

Run Explain Cancel Clear Create

Query results | Query stats

Results

Search rows

No results

Run a query to view results

Step 9 – Dashboard links are available under the Outputs of Cloud Intelligence Dashboard Stack

CloudFormation > Stacks > Cloud-Intelligence-Dashboards

CloudFormation

Stacks

Stack details

StackSets

Exports

Infrastructure Composer

laC generator

Hooks overview [New](#)

Hooks [New](#)

▼ **Registry**

Public extensions

Activated extensions

Publisher

Spotlight

Stacks (2)

Filter status: Active

View nested

Stacks

- Cloud-Intelligence-Dashboards
 - 2024-12-31 22:25:58 UTC+0530
 - CREATE_COMPLETE
 - CID-DataExports-Destination
 - 2024-12-31 22:11:41 UTC+0530
 - CREATE_COMPLETE

Cloud-Intelligence-Dashboards

Stack info | Events - updated | Resources | **Outputs** | Parameters | Template | Change sets | Git sync

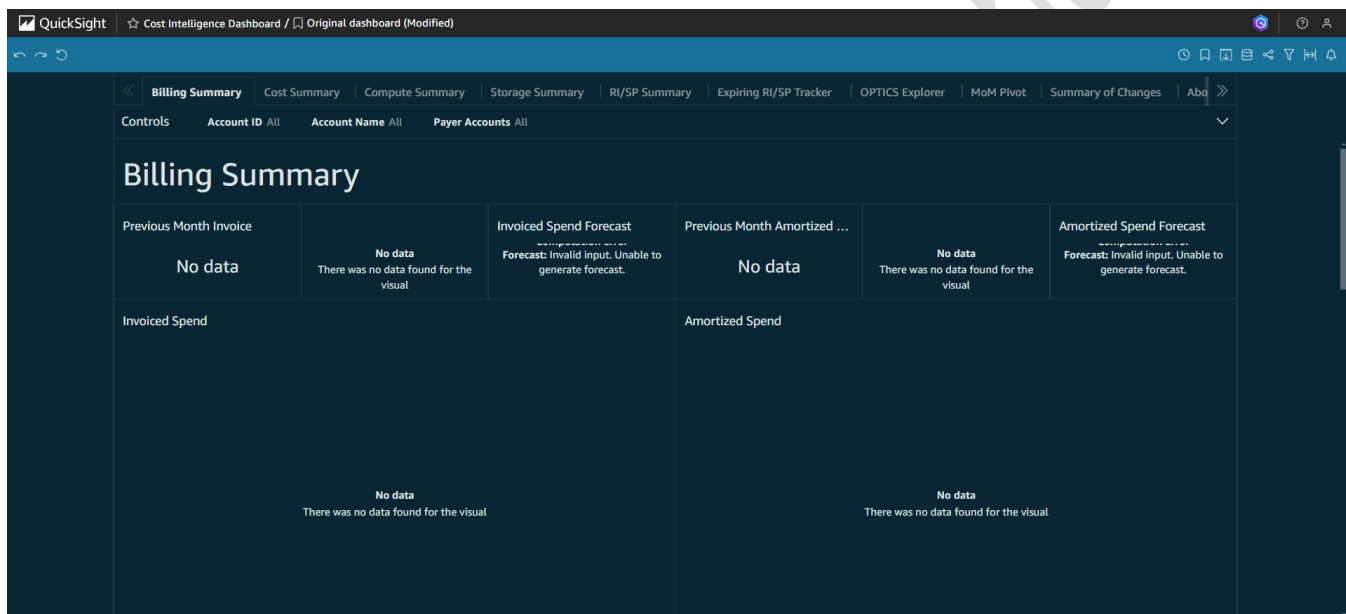
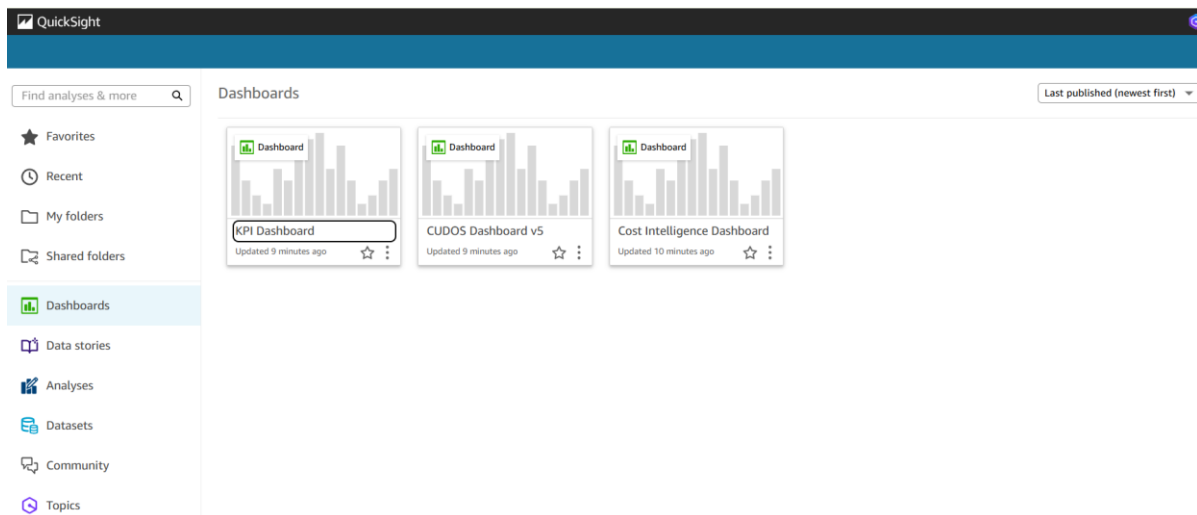
Delete Update Stack actions Create stack

Outputs (4)

Search outputs

Key	Value	Description	Export name
CidExecArn	arn:aws:lambda:us-east-1:590183893026:function:CidCustomResourceDashboard	Technical Value - CidExecArn	cid-CidExecArn
CostIntelligenceDashboardURL	https://us-east-1-quickstart-aws.amazon.com/sn/dashboard/cost-intelligence-dashboard	URL of CostIntelligenceDashboard	-
CUDOSv5DashboardURL	https://us-east-1-quickstart-aws.amazon.com/sn/dashboard/cudos-v5	URL of CUDOS Dashboard v5	-
KPIDashboardURL	https://us-east-1-quickstart-aws.amazon.com/sn/dashboard/kpi-dashboard	URL of KPIDashboard	-

Step 10 – You can directly go to the QuickSight and check whether the Dashboard added or not



Note – Data will be updated after 24-48 hours.