AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

STG213

Extend storage observability with S3 Storage Lens and Amazon CloudWatch

Mark Kalus (he/him)
Principal Product Manager, Amazon S3
AWS

Pino Suliman (he/him)
Senior Product Manager, Amazon S3
AWS

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Agenda

Amazon S3 Storage Lens recap

Amazon CloudWatch publishing feature New

Pricing and configuration

Use cases

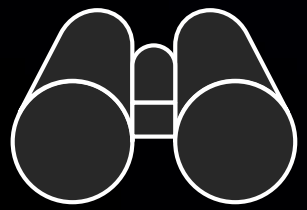
Integrated partners

Key takeaways

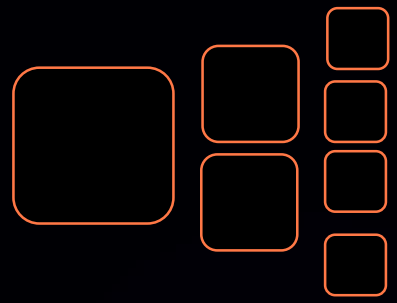
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Origins of S3 Storage Lens

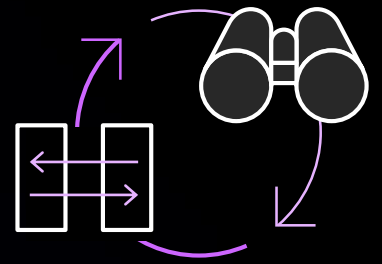
Customers were asking for 3 things



Visibility



Granularity



Actionability

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

S3 Storage Lens overview



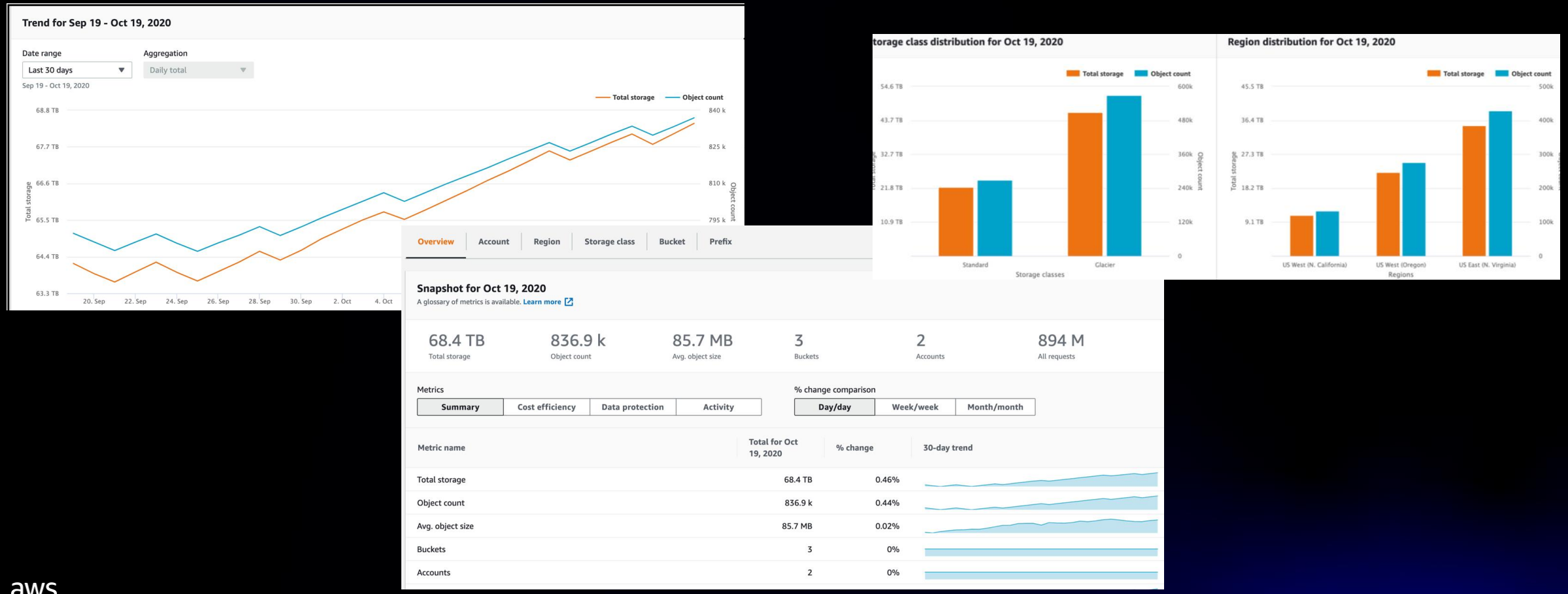
Launched November 2020

1. Interactive dashboard experience in the S3 console – free to all customers
2. Organization-wide visibility
3. Drill-down by Region, storage class, bucket, and prefix
4. Granular usage & activity metrics
5. Recommendations for cost efficiency & data protection best practices

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

1. Interactive dashboard experience

Auto-configured dashboards, with interactive charting



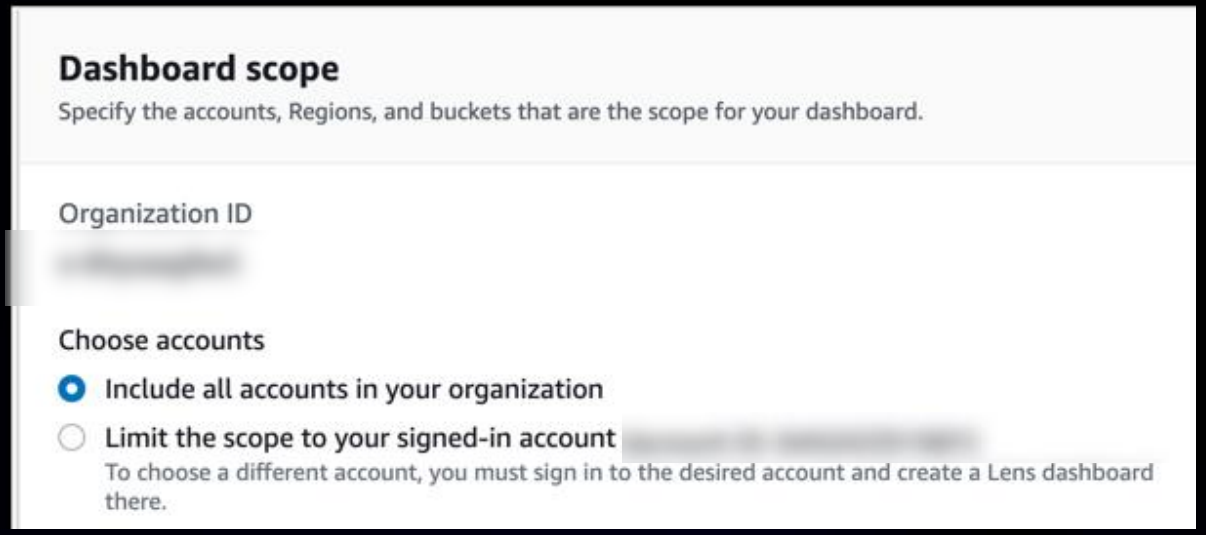
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

2. Organization-wide visibility

Storage Lens provides a consolidated view of storage across tens or hundreds of accounts, or a single account

AWS Organizations-level dashboard

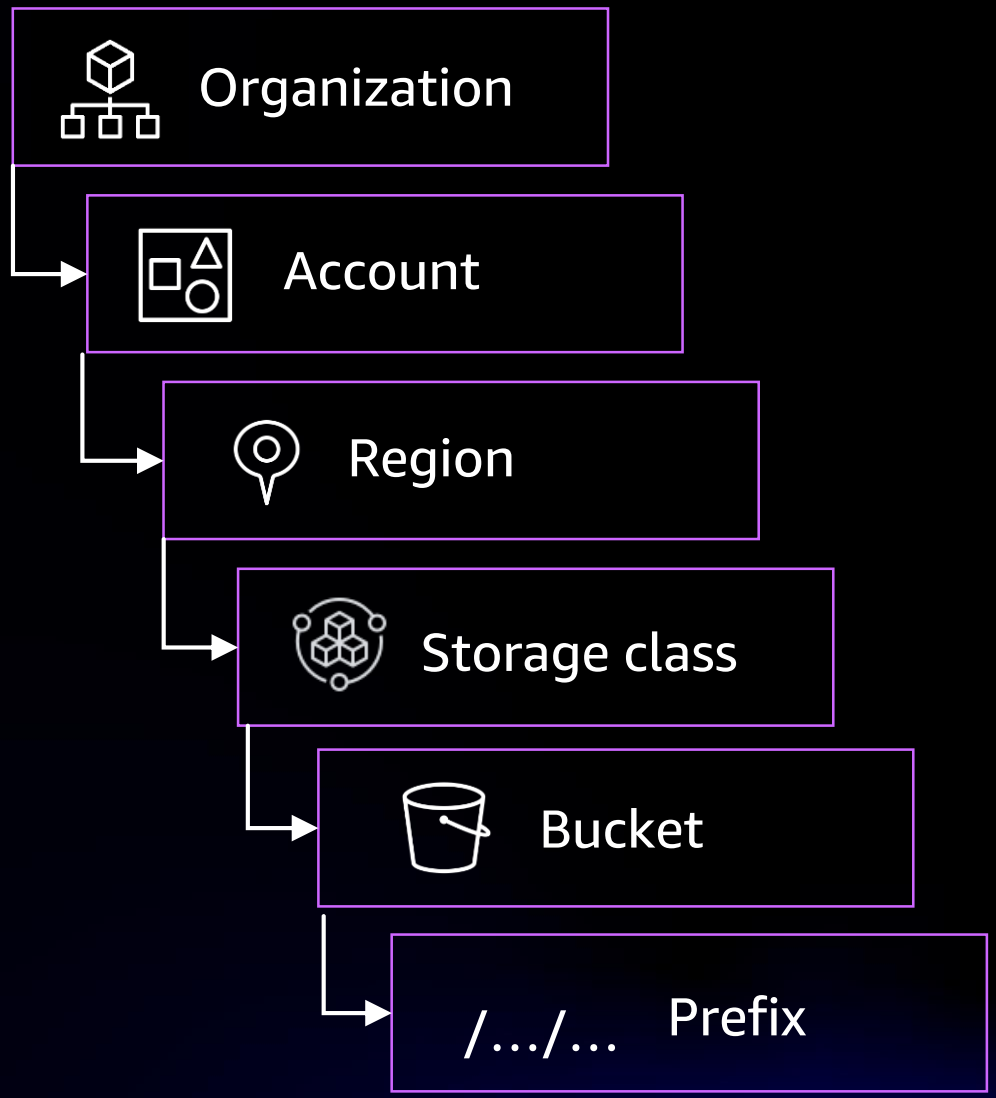
Account-level dashboard



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

3. Drill-down dimensions

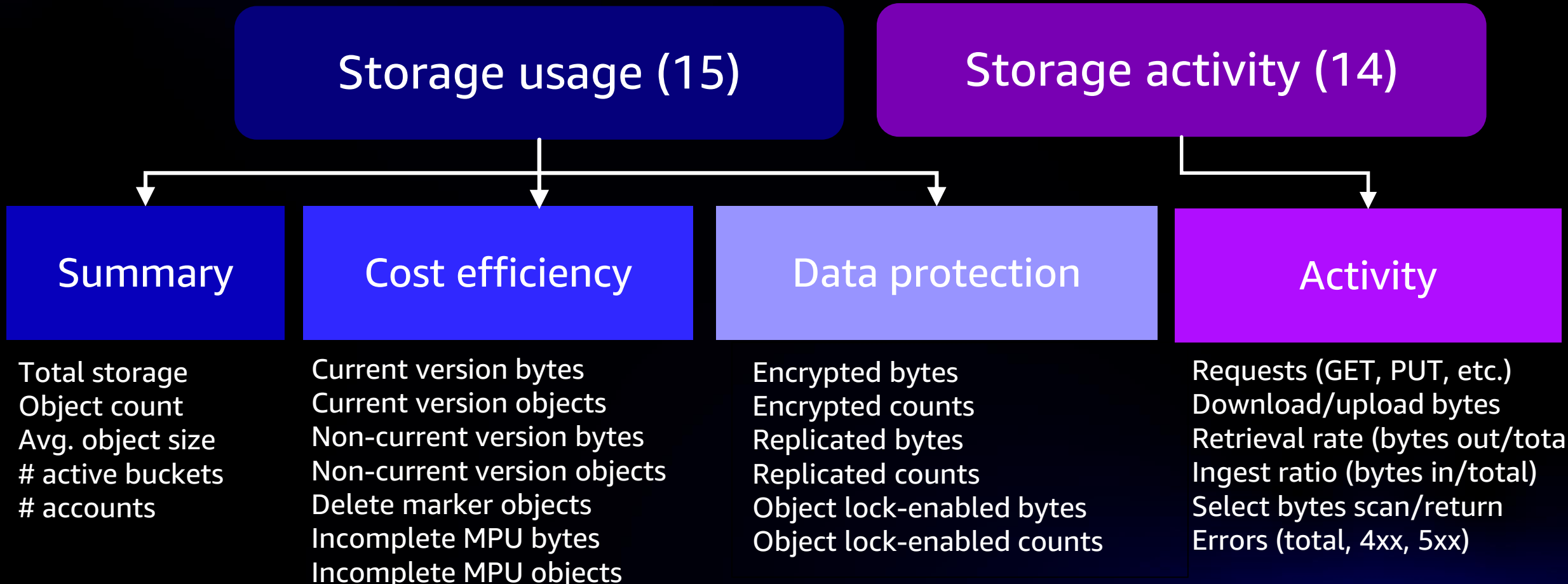
- Drill-down from org or account level to more granular details
- S3's first and only prefix-level reporting



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

4. Granular metrics

29 metrics in total, offering detailed view into storage footprint



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

5. Recommendations

Outliers



5.2M requests are an outlier based on 30-day trend

Cost efficiency



Your incomplete MPU bytes increased 22% in the last 7 days

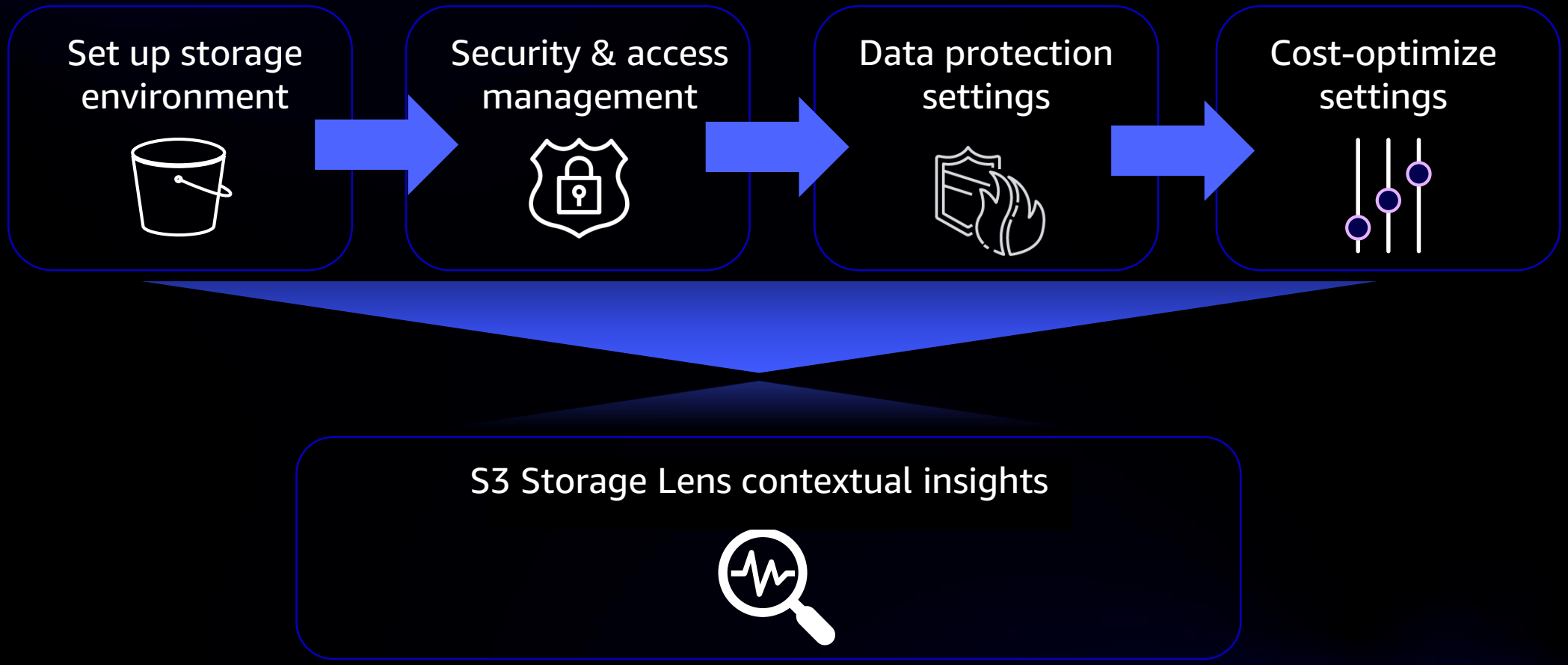
Data protection



35% of your objects are unencrypted

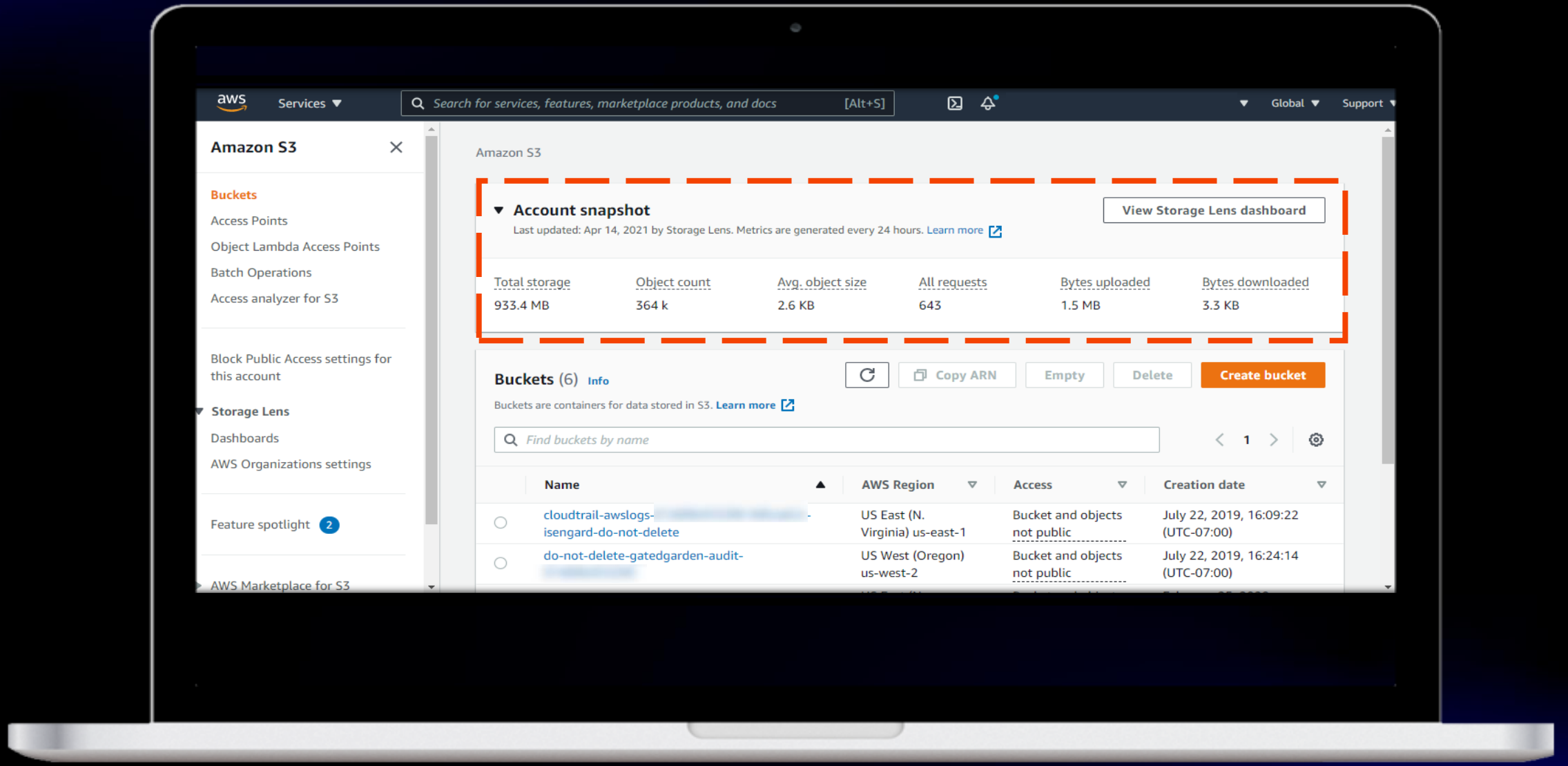
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Integrated S3 console experience



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

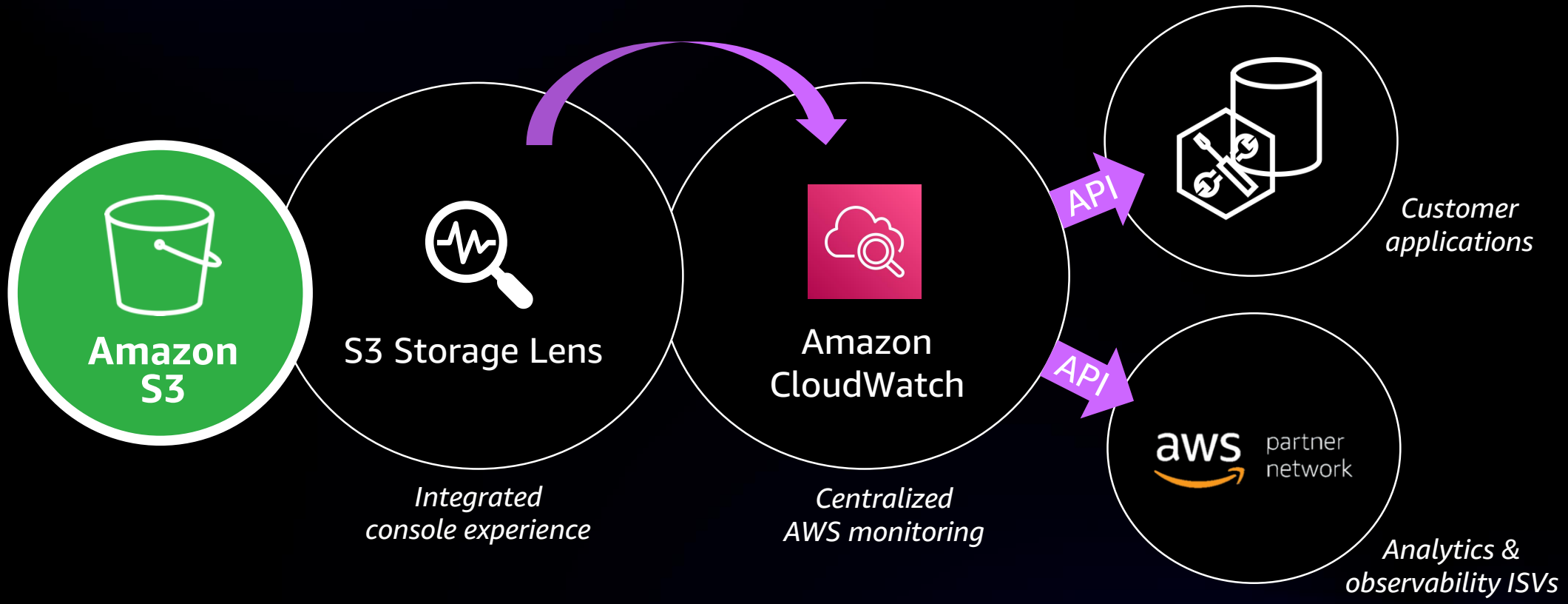
Integrated S3 console experience



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Introducing Amazon CloudWatch publishing for S3 Storage Lens

New

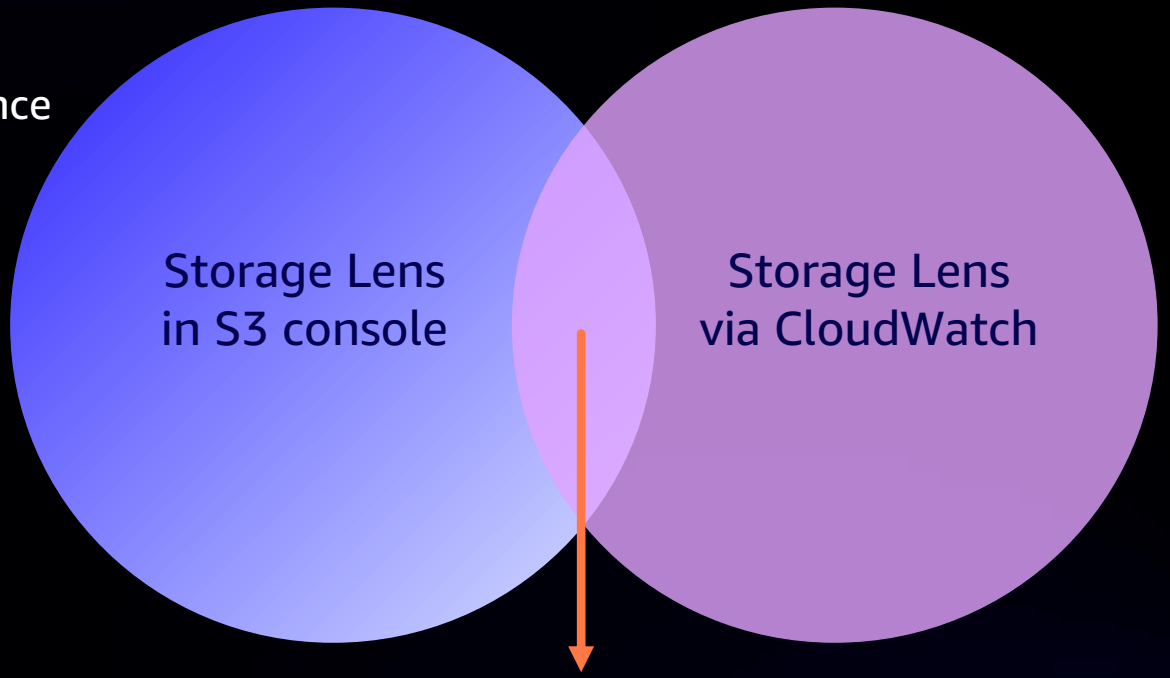


© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

S3 Storage Lens + Amazon CloudWatch

2 options for accessing S3 Storage Lens metrics

- Integrated console experience
- Preconfigured dashboard
- Prefix-level insights
- Recommendations



- 29 usage & activity metrics
- 15-month historical trends
- Interactive charting

New

- Unified, cross-service views
- Customization options
- Alarms & triggered actions
- API access, AWS Partners

aws

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Pricing and configuration

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Storage Lens pricing

- CloudWatch metrics charges covered by Storage Lens
- Other CloudWatch features billed by CloudWatch (e.g. alarms, dashboards, and API calls)

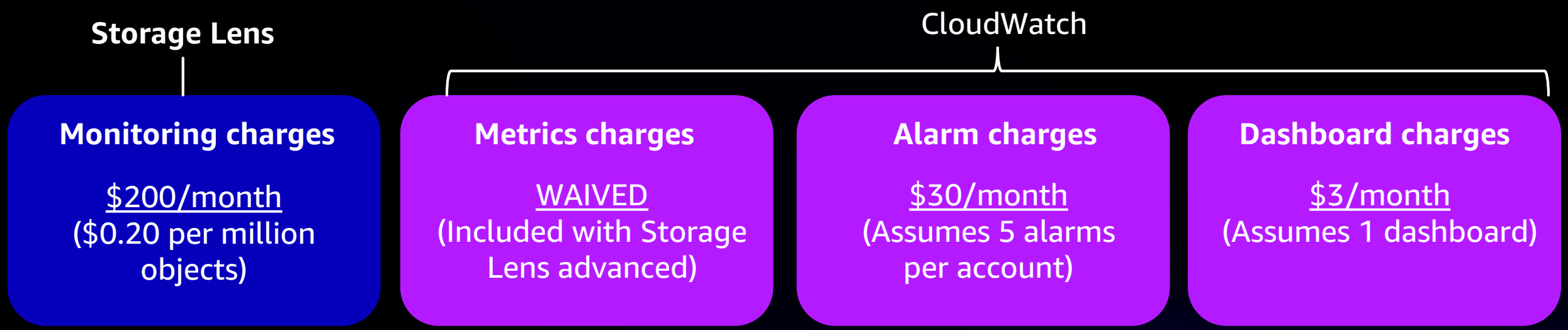
	Free metrics	Advanced metrics
Metrics	Usage (15)	Usage (15) + Activity (14)
Granularity	Lowest level = bucket	Lowest level = prefix
Historical data	14-days	15-months
Recommendations	n/a	Included
New *CloudWatch publishing*	n/a	Included (metrics only)
Pricing	**FREE**	**$0.20 per mil. objects/mo**

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Pricing example

Customer with 1B objects across 20 accounts

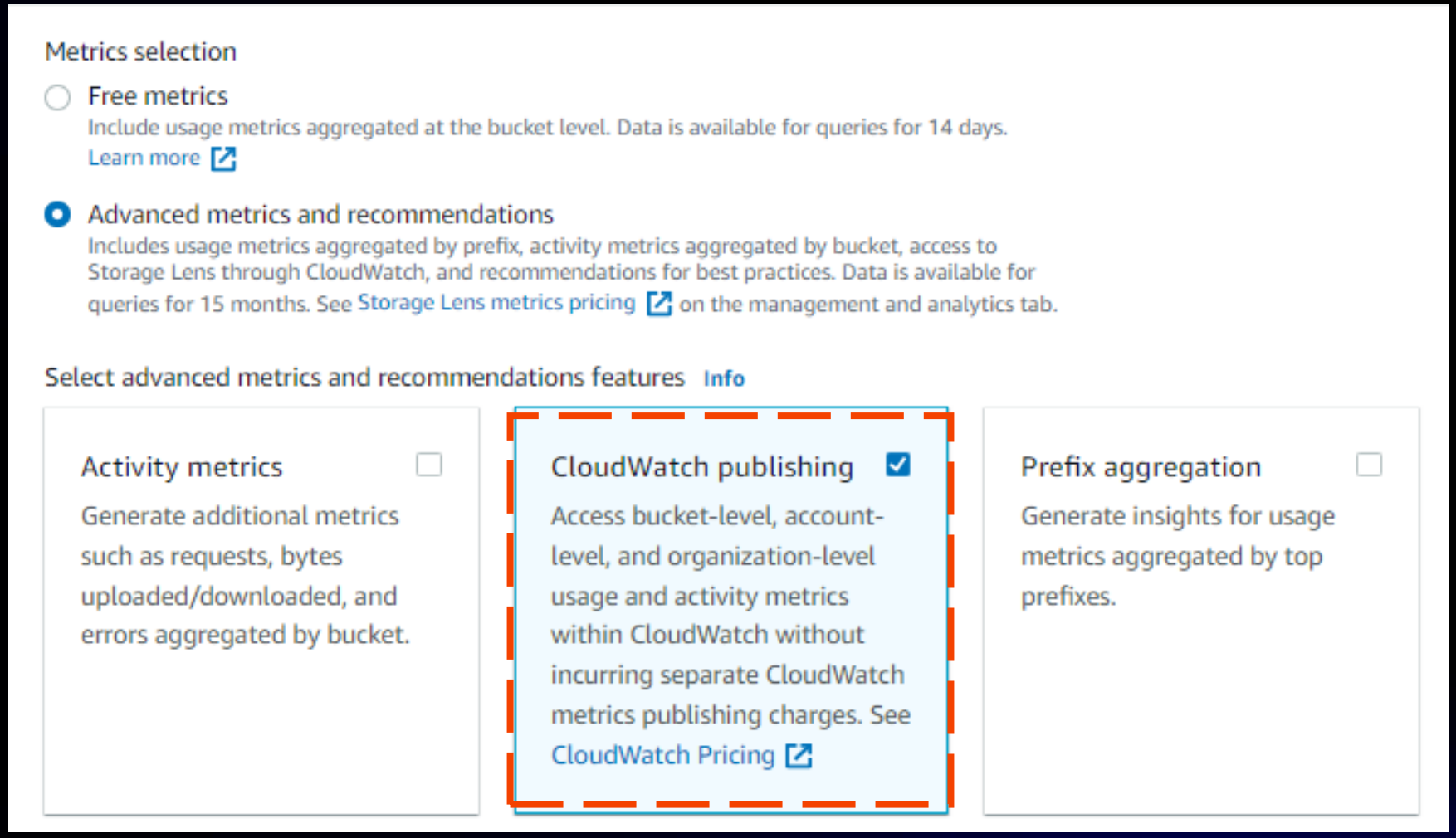
- Total cost of Storage Lens + CloudWatch = $233 / month
- CloudWatch metrics charges WAIVED



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Enable CloudWatch publish option

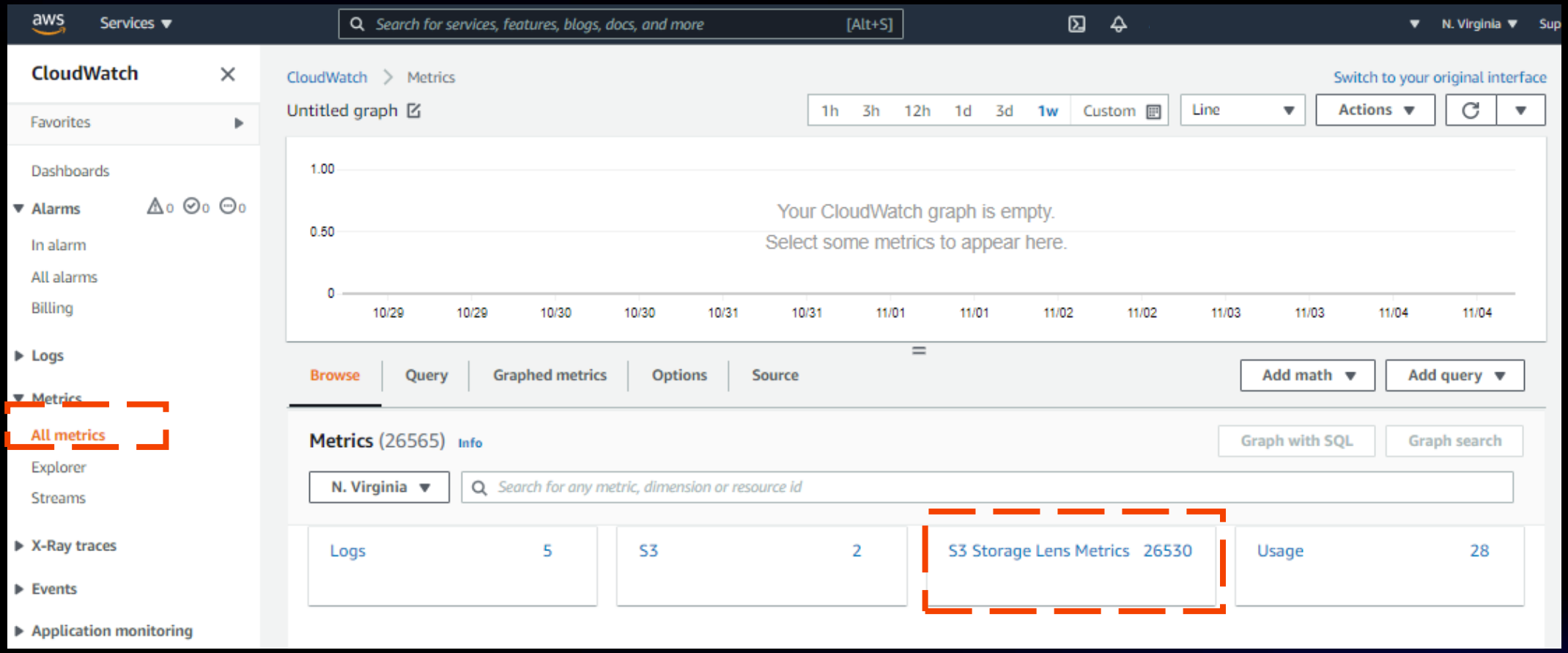
- Optional feature enabled per S3 Storage Lens dashboard
- Upgrade to S3 Storage Lens advanced is required



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

New S3 Storage Lens namespace

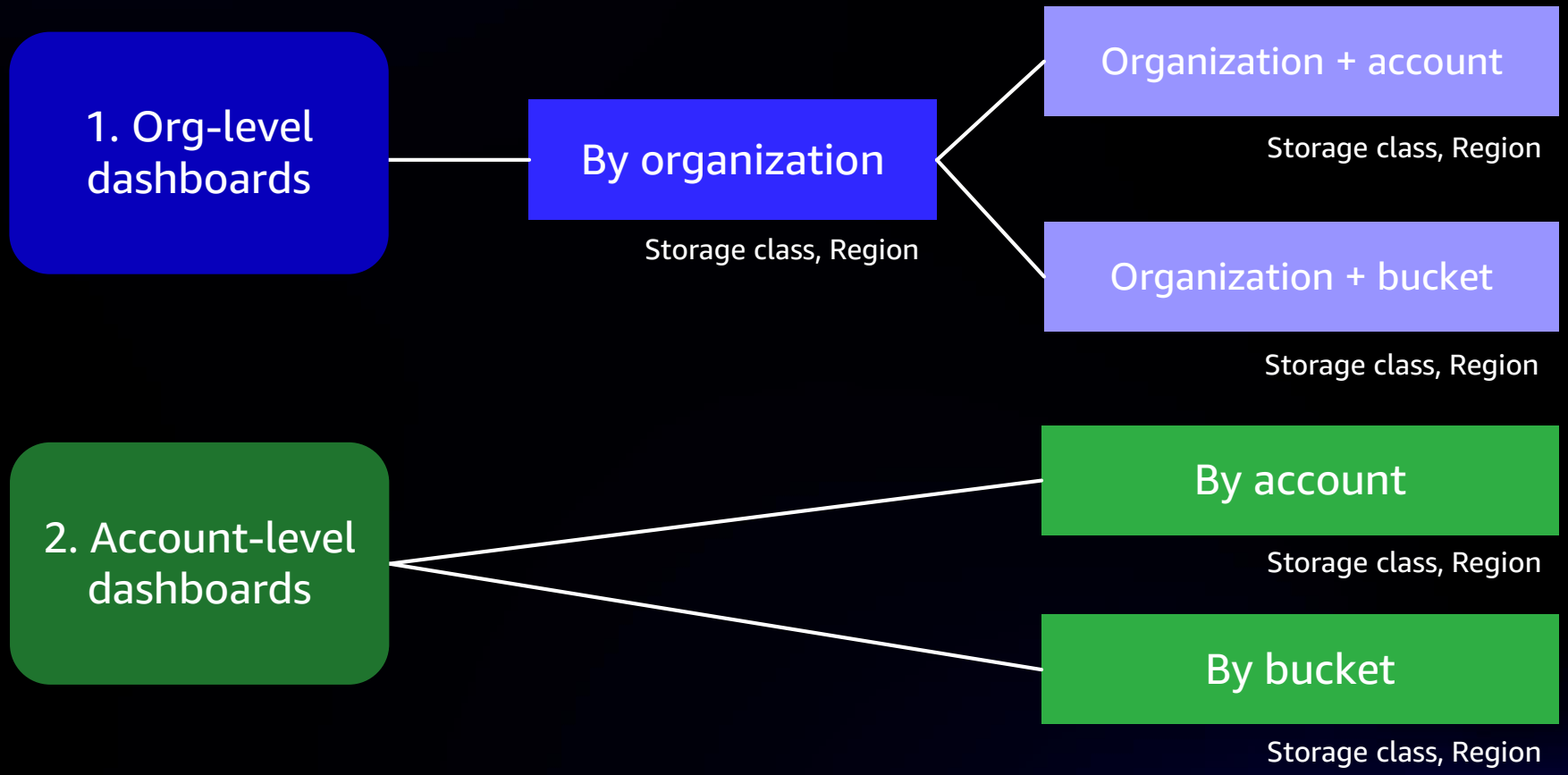
New namespace in CloudWatch called **S3 Storage Lens Metrics**



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

CloudWatch dimensions

29 Storage Lens metrics emitted at **5** levels of granularity



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Metrics comparison

Compare capabilities of existing S3 CloudWatch metrics

S3 CloudWatch metrics

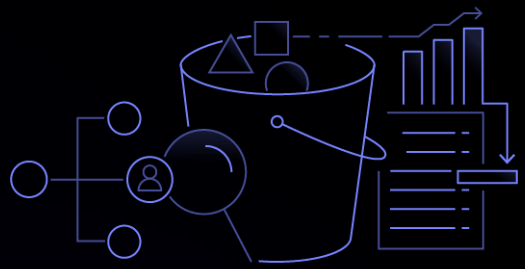


18 metrics

- One-minute refresh for intra-day monitoring
- 2 latency metrics

S3 Storage Lens metrics

New



29 metrics

- Daily refresh for long-term trending
- Additional usage metrics (+13 metrics)
- Storage class granularity
- Org-level summarization

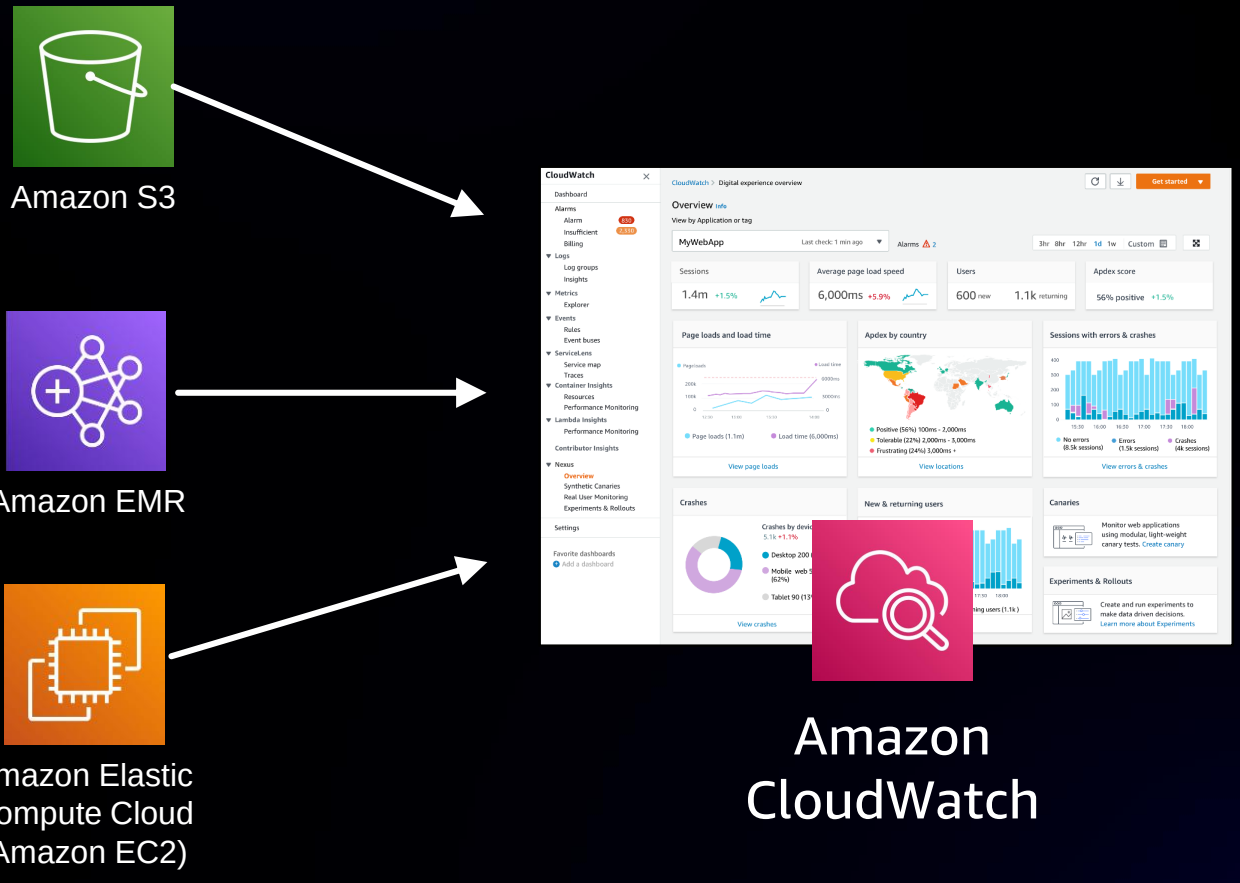
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use cases

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use case 1: Centralized dashboards

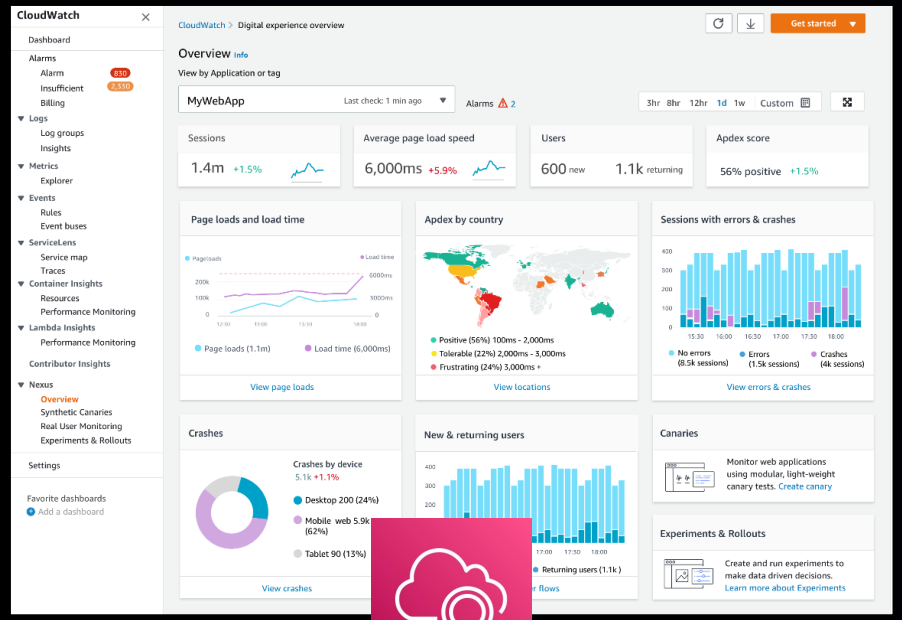
Create unified, cross-service dashboards



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use case 2: Shareable dashboards

Share dashboards with anyone, including non-IAM users



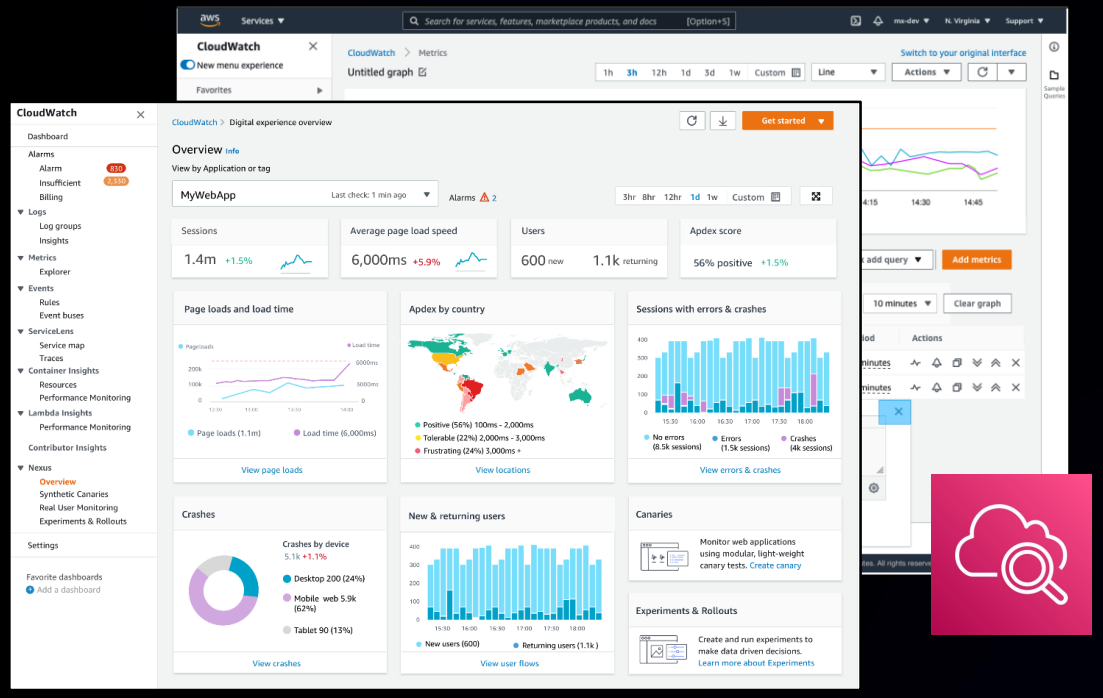
Amazon CloudWatch

- Share data with stakeholders and teams with no access to your AWS account
- Share by email address, publicly, or using SSO

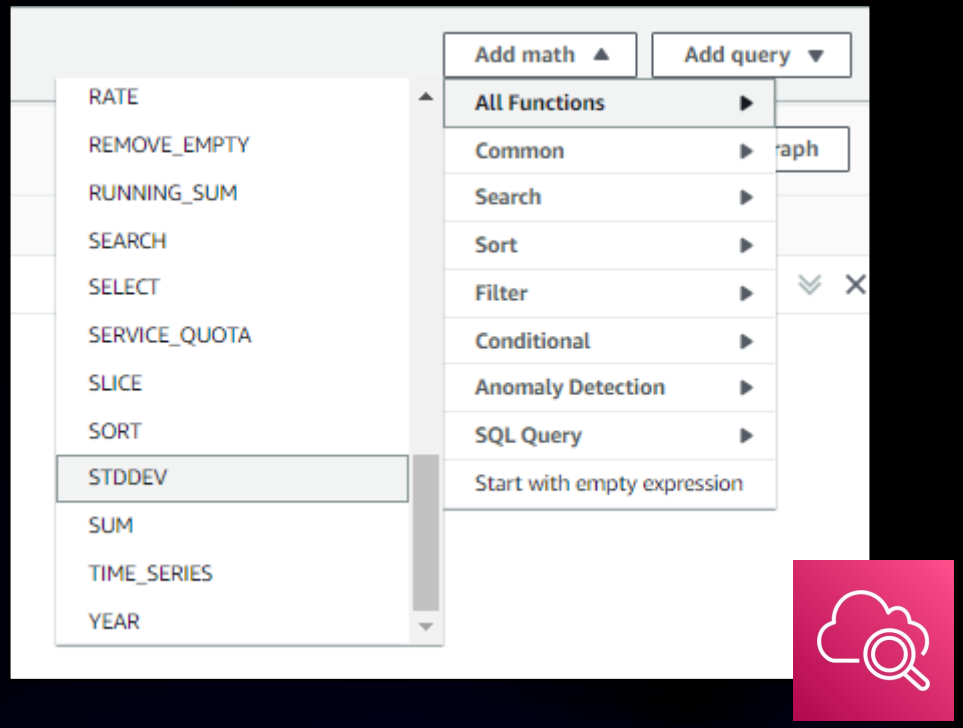
© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use case 3: Customized observability

Flexibility is built-in to CloudWatch to customize as needed



Customizable dashboard layouts



Metrics math – custom expressions

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

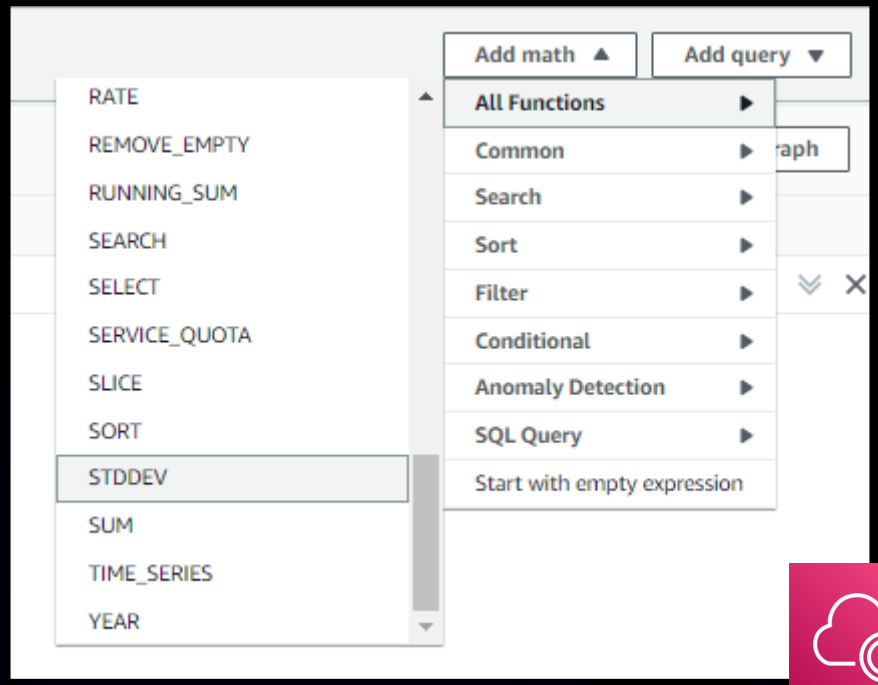
Use case 3: Customized observability

Flexibility is built-in to CloudWatch to customize as needed

% Non-Current Version Objects $= \frac{Sum(NonCurrentVersionObjectCount)}{Sum(ObjectCount)}$

% Retrieval Rate $= \frac{Sum(BytesDownloaded)}{Sum(StorageBytes)}$

% Ingest Ratio $= \frac{Sum(BytesUploaded)}{Sum(StorageBytes)}$

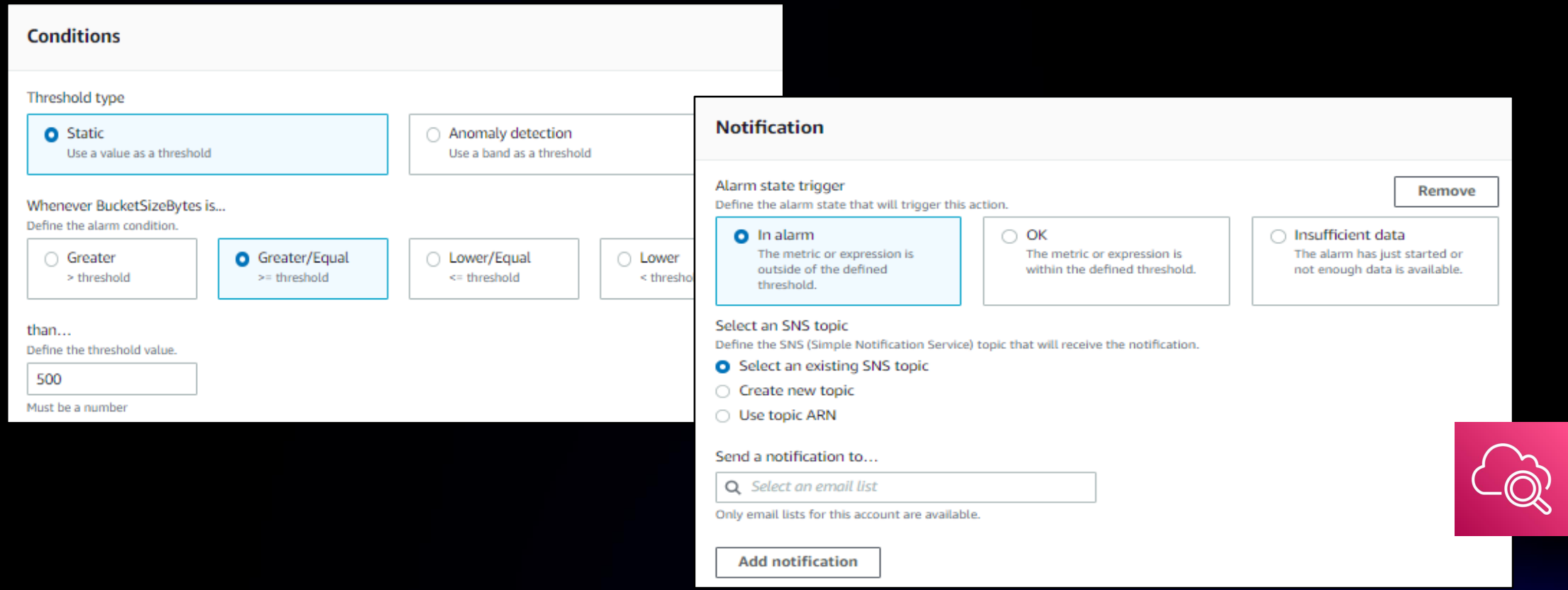


Metrics math – Custom expressions

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use case 4: Alarms and triggered actions

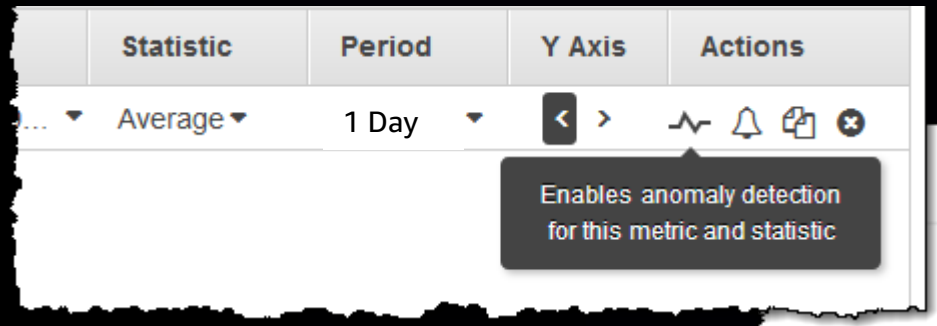
Receive proactive notifications for critical Storage Lens metrics

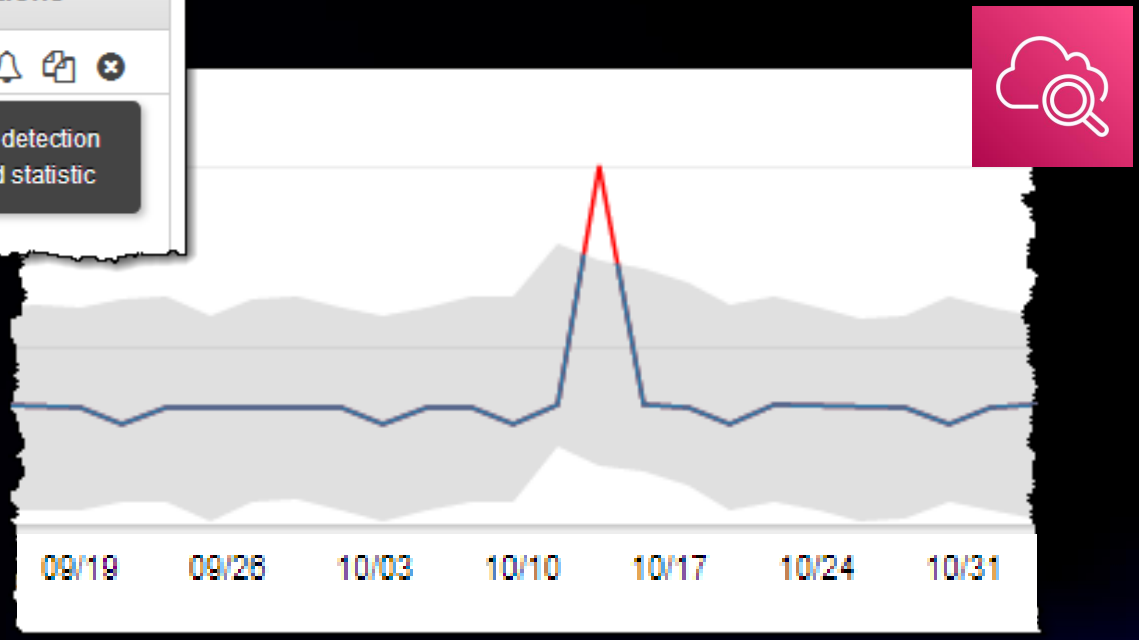


© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use case 4: Anomaly detection

Use machine learning to detect anomalous storage patterns





Typical use cases:

- Storage bytes
- Object counts
- Non-current versions

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Use case 5: API access

Use CloudWatch Get Metrics APIs to develop custom applications with S3 Storage Lens metrics



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Pre-integrated AWS Partners New

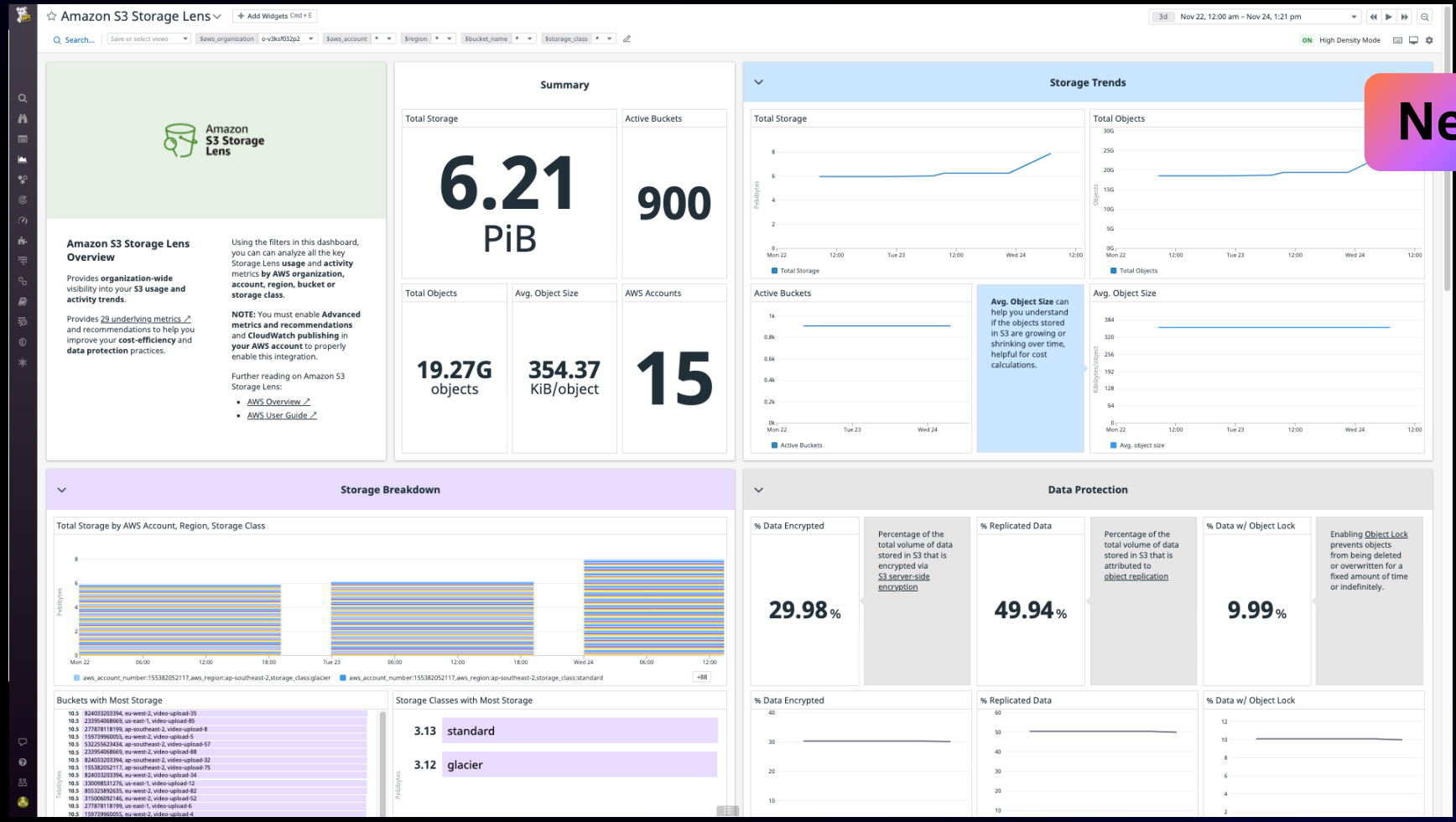
Access your Storage Lens metrics now via these partners:



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Partner showcase

DATADOG

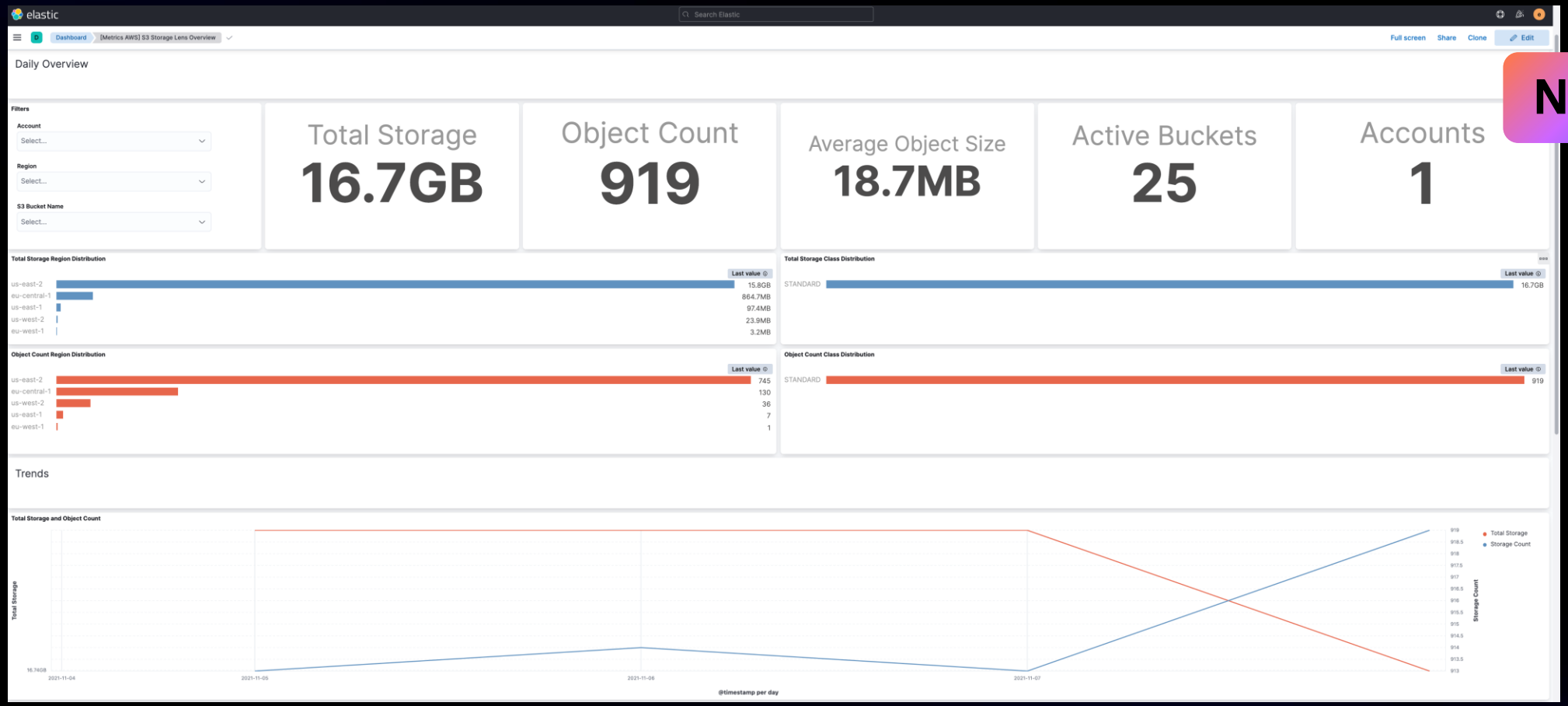


New

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Partner showcase

elastic



New

aws

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Key takeaways

1.	Enable	Optional feature per S3 Storage Lens dashboard
2.	Pricing	Metrics charges included with S3 Storage Lens advanced No double-charging for metrics
3.	Features	Apply CloudWatch features like alarms, anomaly detection, metrics math, and custom/shareable dashboards
4.	API	Access S3 Storage Lens metrics via CloudWatch API to streamline custom applications or enable AWS Partners

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Thank you!

Mark Kalus

Pino Suliman

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.