

2022

ESG 高峰會 環境、社會、治理

雲端儲存與 永續資訊

戴敏育 副教授
國立臺北大學 資訊管理研究所



雲端儲存與永續資訊

Cloud Storage and Sustainability Information

Time: 2022/6/25 (Sat.) 9:40-10:15

Place: 台北世貿一館1樓B區 ESG沙龍 (B536)

戴敏育 副教授

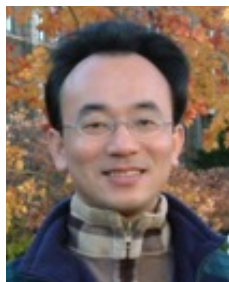
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Institute of Information Management, National Taipei University

<https://web.ntpu.edu.tw/~myday>

2022-06-25





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(Min-Yuh Day, Ph.D.)

aws educate | Cloud Ambassador

2020 Cohort

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中央研究院 資訊科學研究所 訪問學人
國立臺灣大學 資訊管理 博士

Publications Co-Chairs, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2013-)

Program Co-Chair, IEEE International Workshop on Empirical Methods for Recognizing Inference in Text (IEEE EM-RITE 2012-)

Publications Chair, The IEEE International Conference on Information Reuse and Integration for Data Science (IEEE IRI)



Outline

- **永續資訊雲端架構**
- **AWS Serverless 架構**
- **AWS 雲端儲存 (S3: Simple Storage Service)**
- **AWS Hands-on :
Using S3 Service for XBRL Cloud Storage**
- **結論**

永續資訊揭露與 XBRL 應用之研究

永續報告XBRL雲端架構之研究

2022/02- 2022/06

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Gartner Magic Quadrant for Cloud Infrastructure and Platform Services



Amazon Web Services

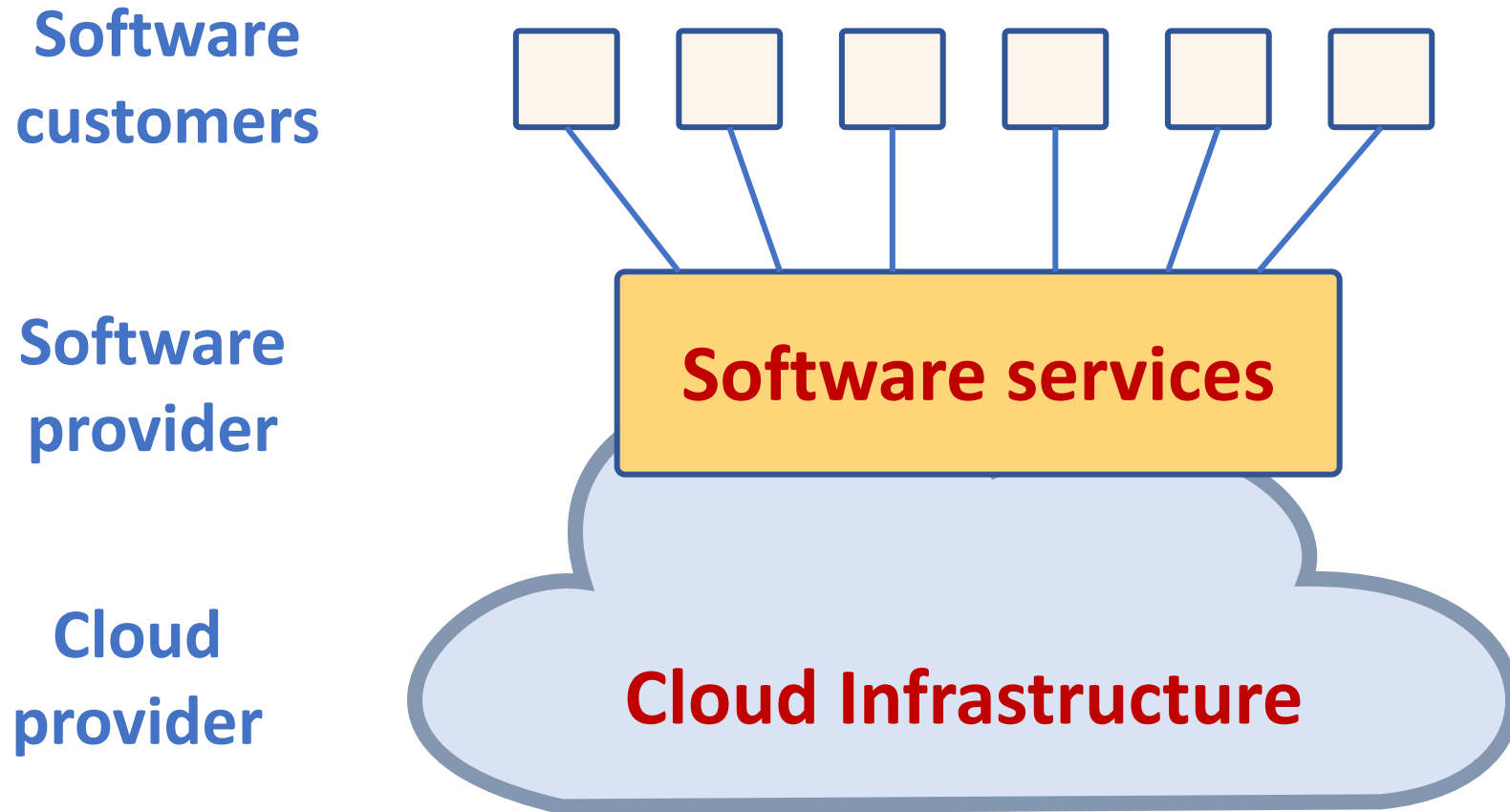
Microsoft

Google

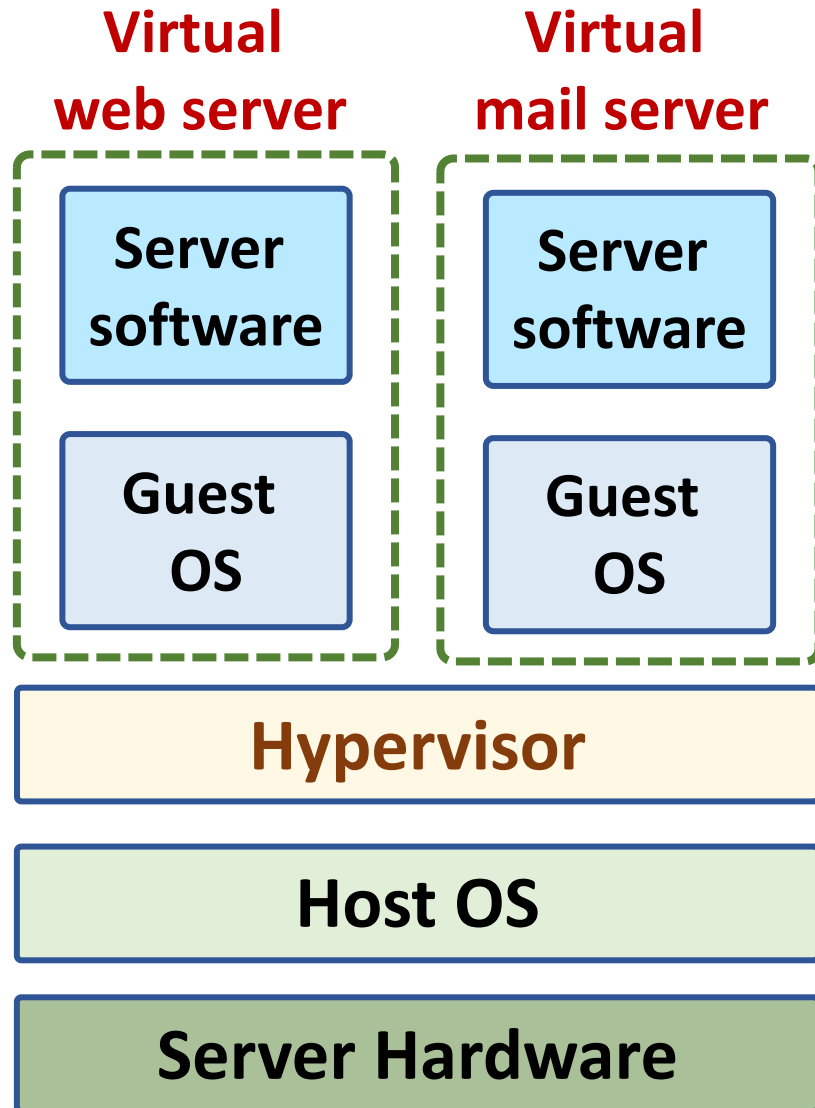
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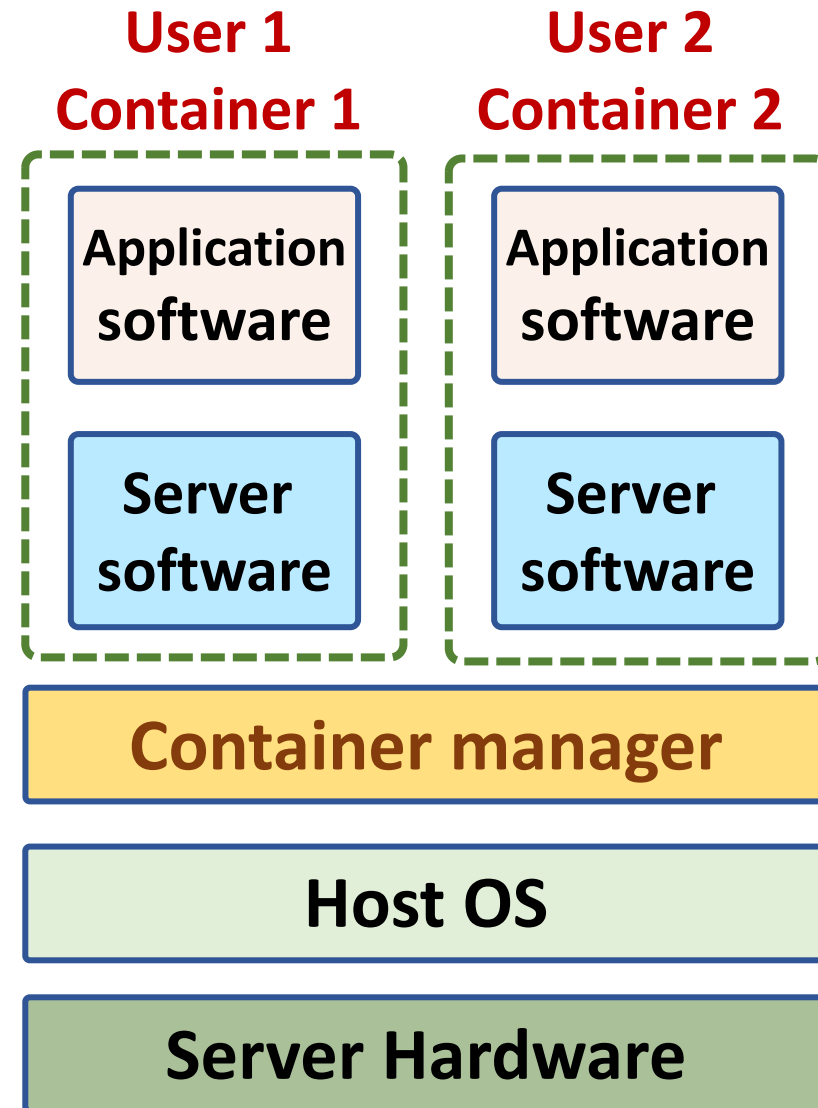
Software as a service



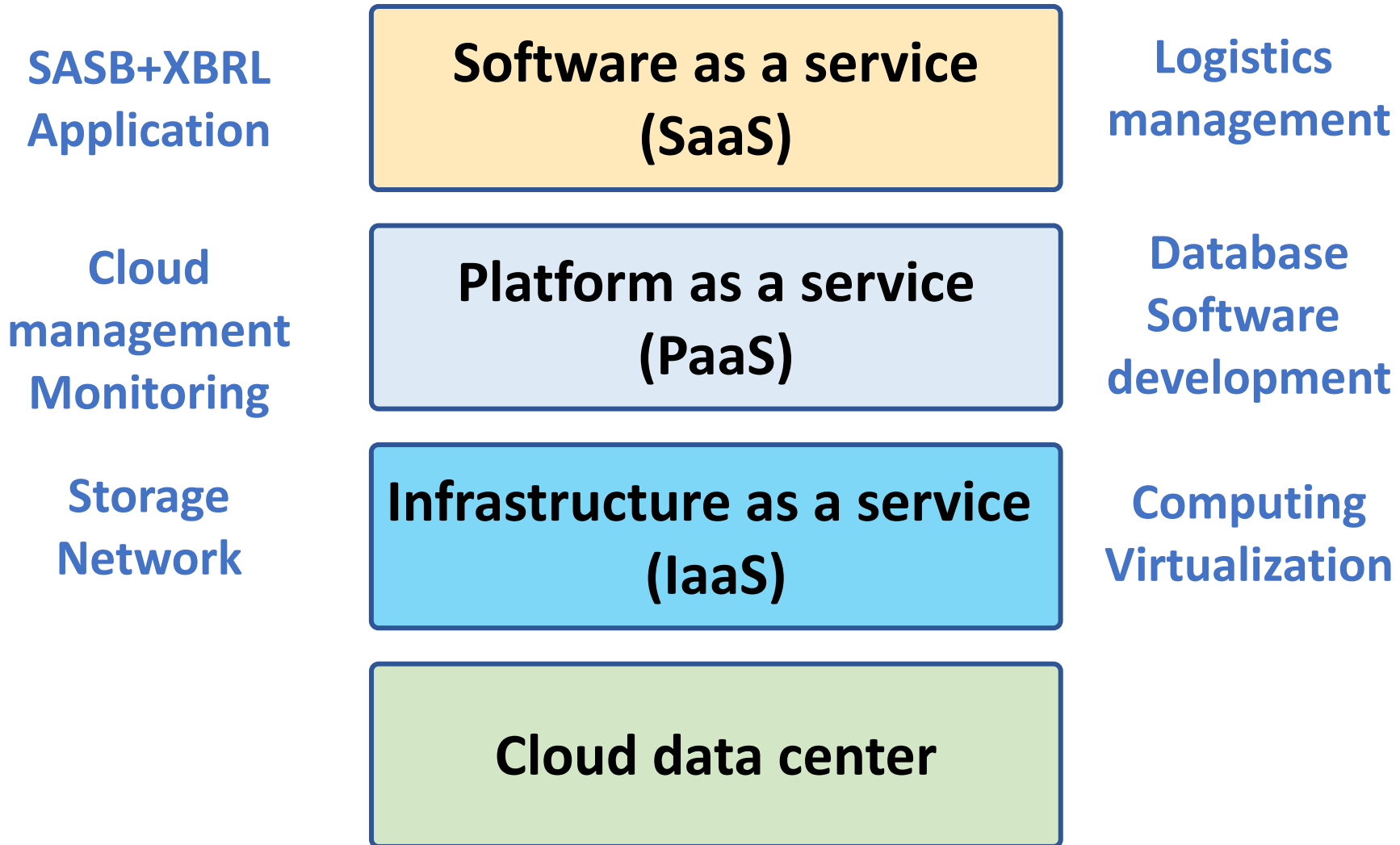
VM



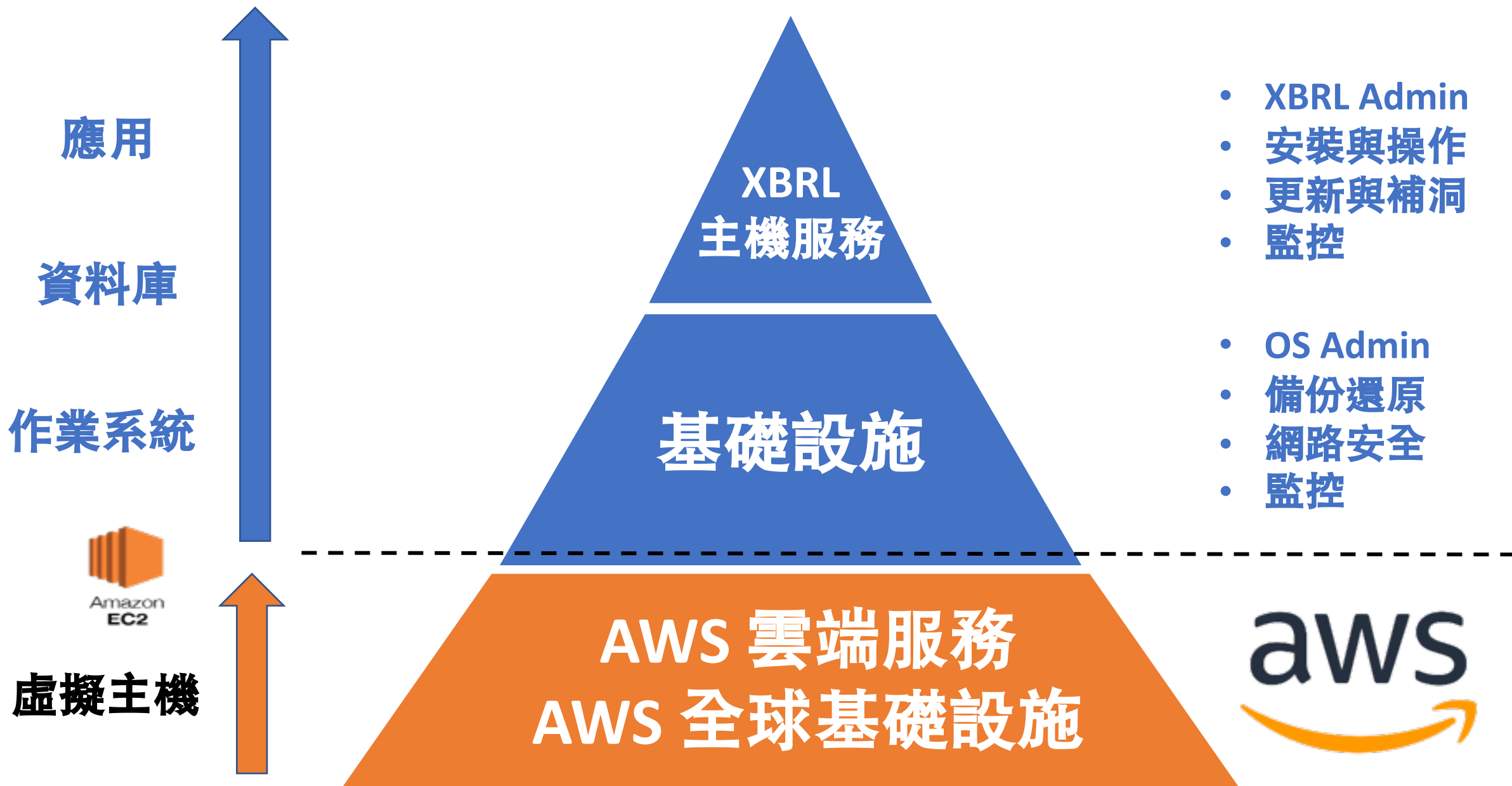
Container



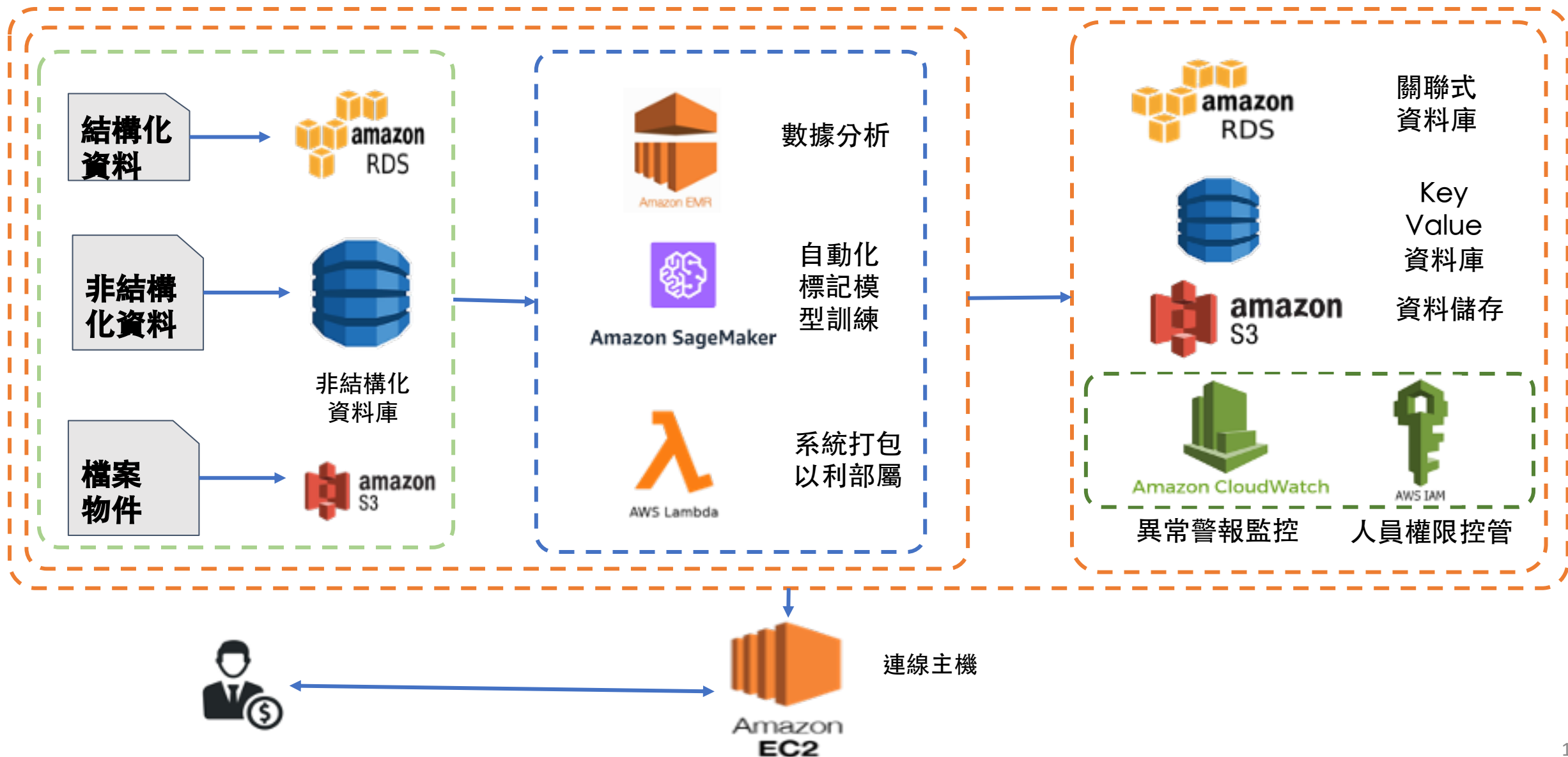
Everything as a service



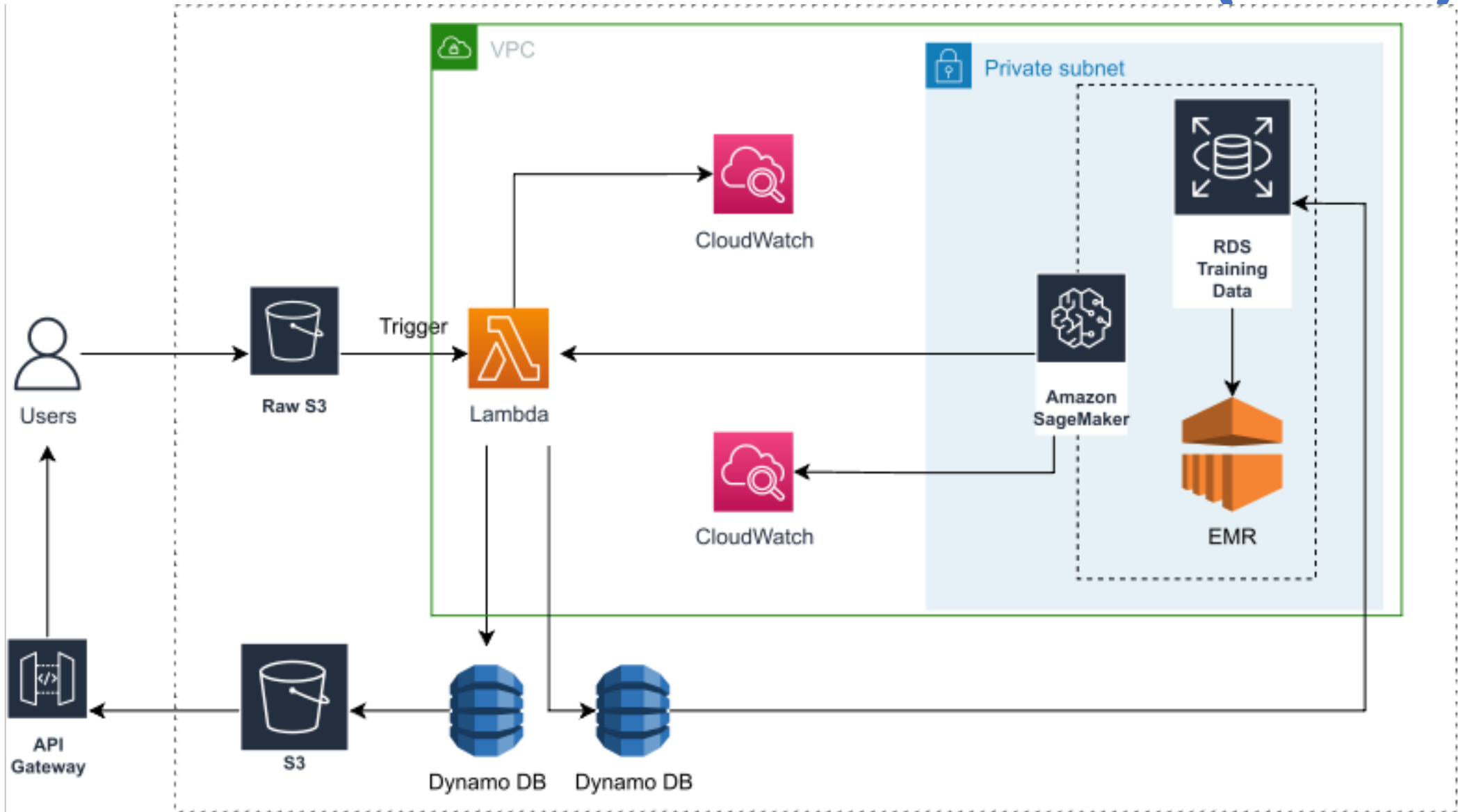
在 AWS 雲端管理 XBRL 服務



永續報告 XBRL 雲端架構圖



永續報告 XBRL 雲端架構圖 (AWS)



永續報告 XBRL雲端 Sequence Diagram (AWS)



EMR



Amazon RDS



Amazon SageMaker



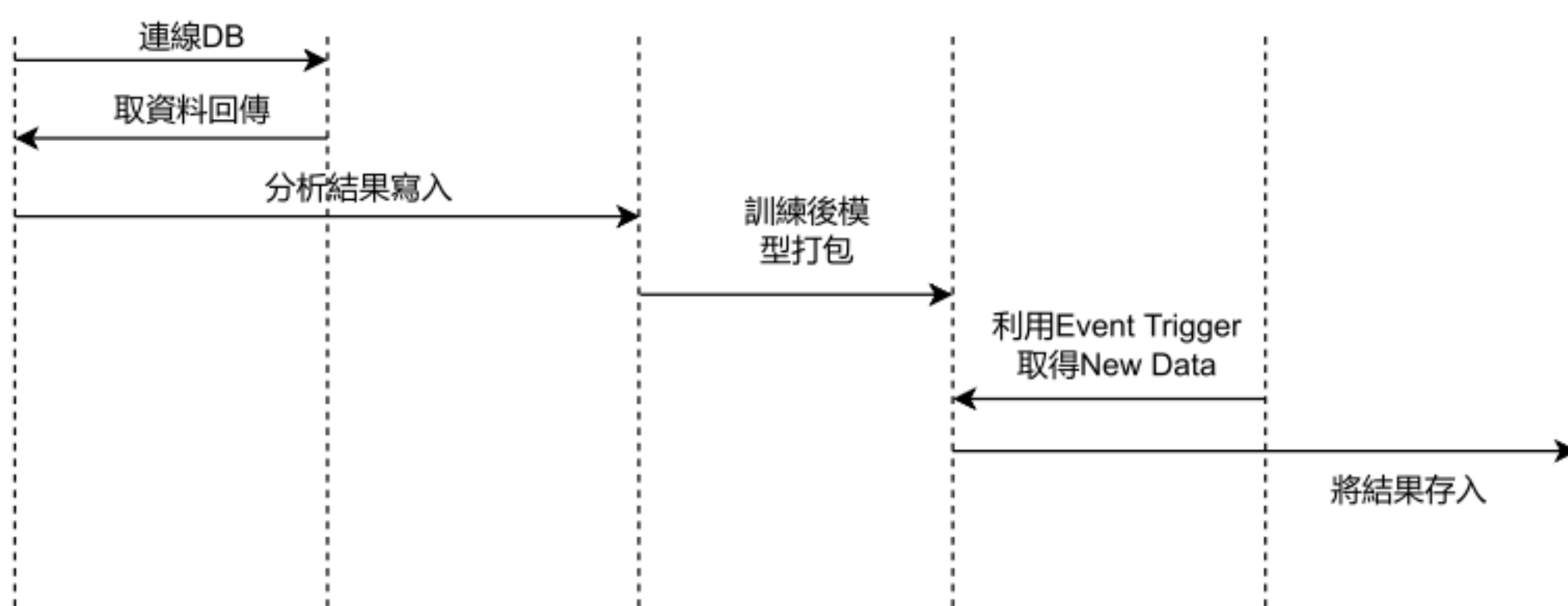
Lambda



Raw S3



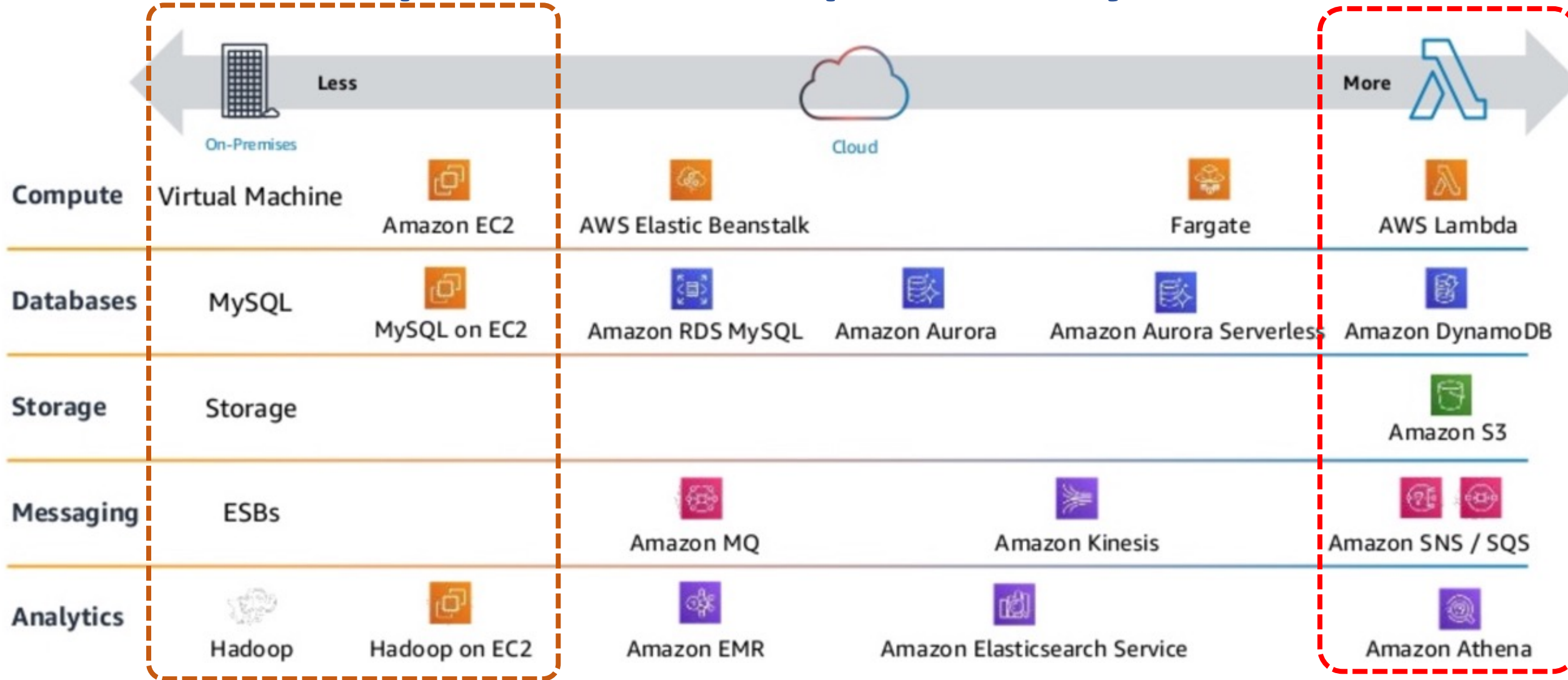
Result S3





AWS Serverless Architecture

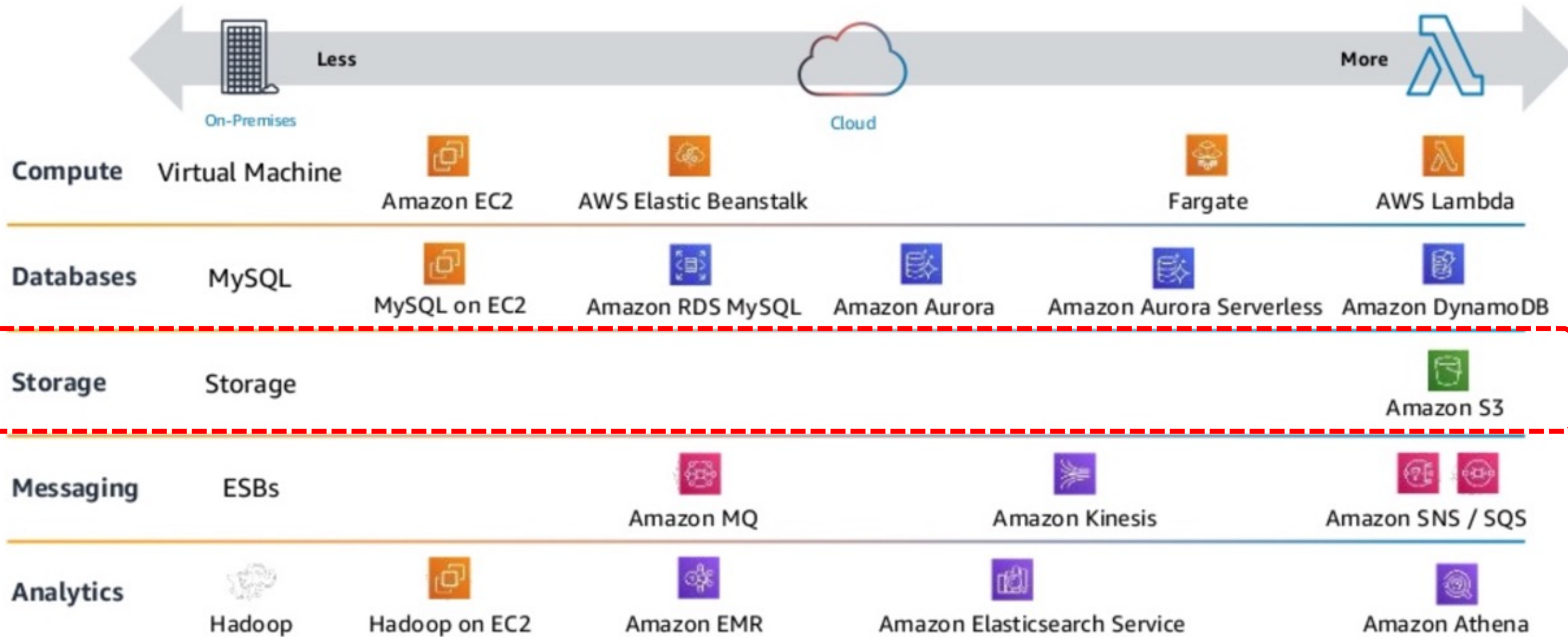
AWS Operational Responsibility Models





AWS Serverless Architecture

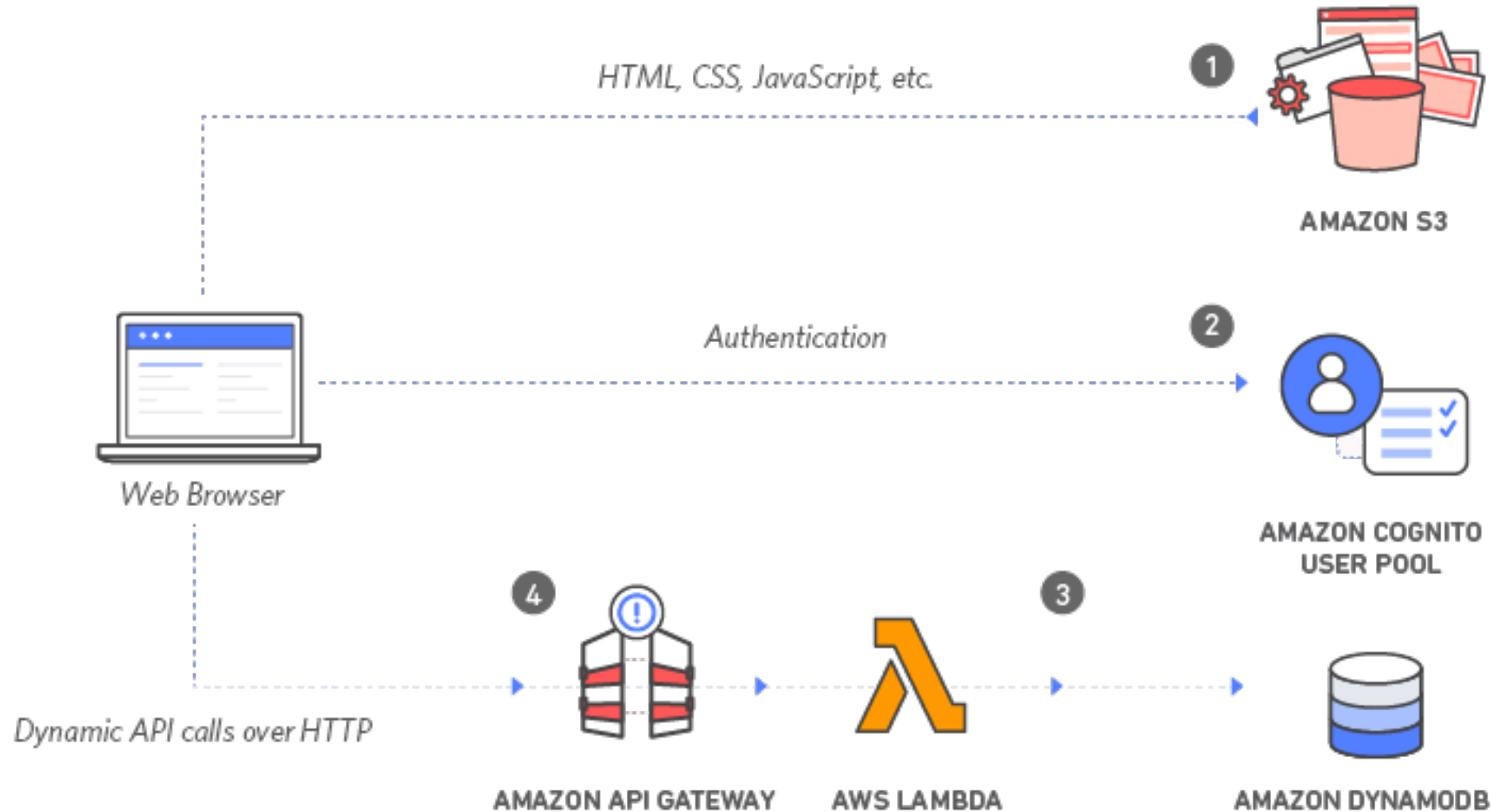
Cloud Storage: Amazon S3





Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito





Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

1





Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

1

Static Web Hosting

Amazon S3 hosts static web resources including HTML, CSS, JavaScript, and image files which are loaded in the user's browser.

HTML, CSS, JavaScript, etc.

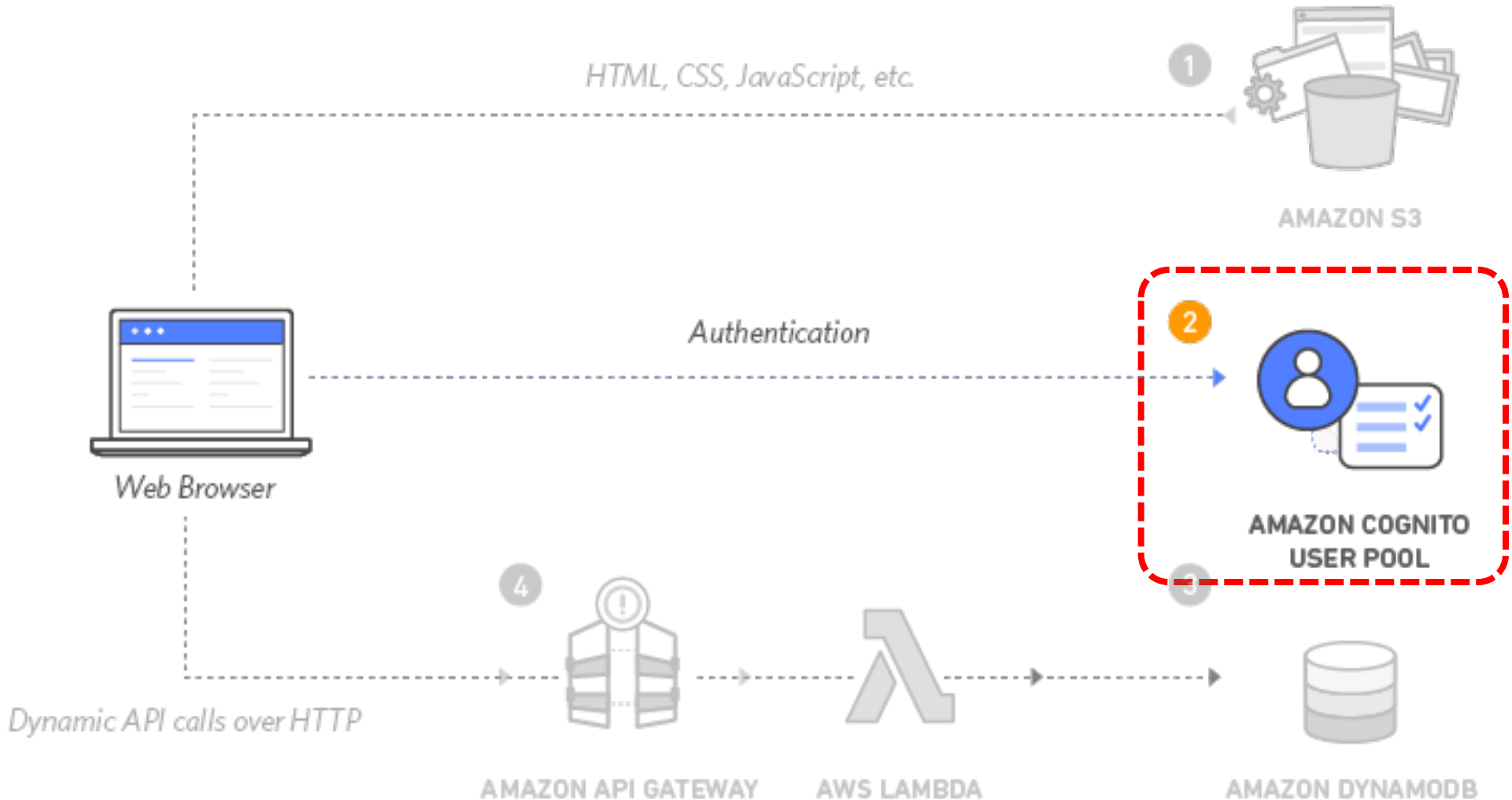




Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

2





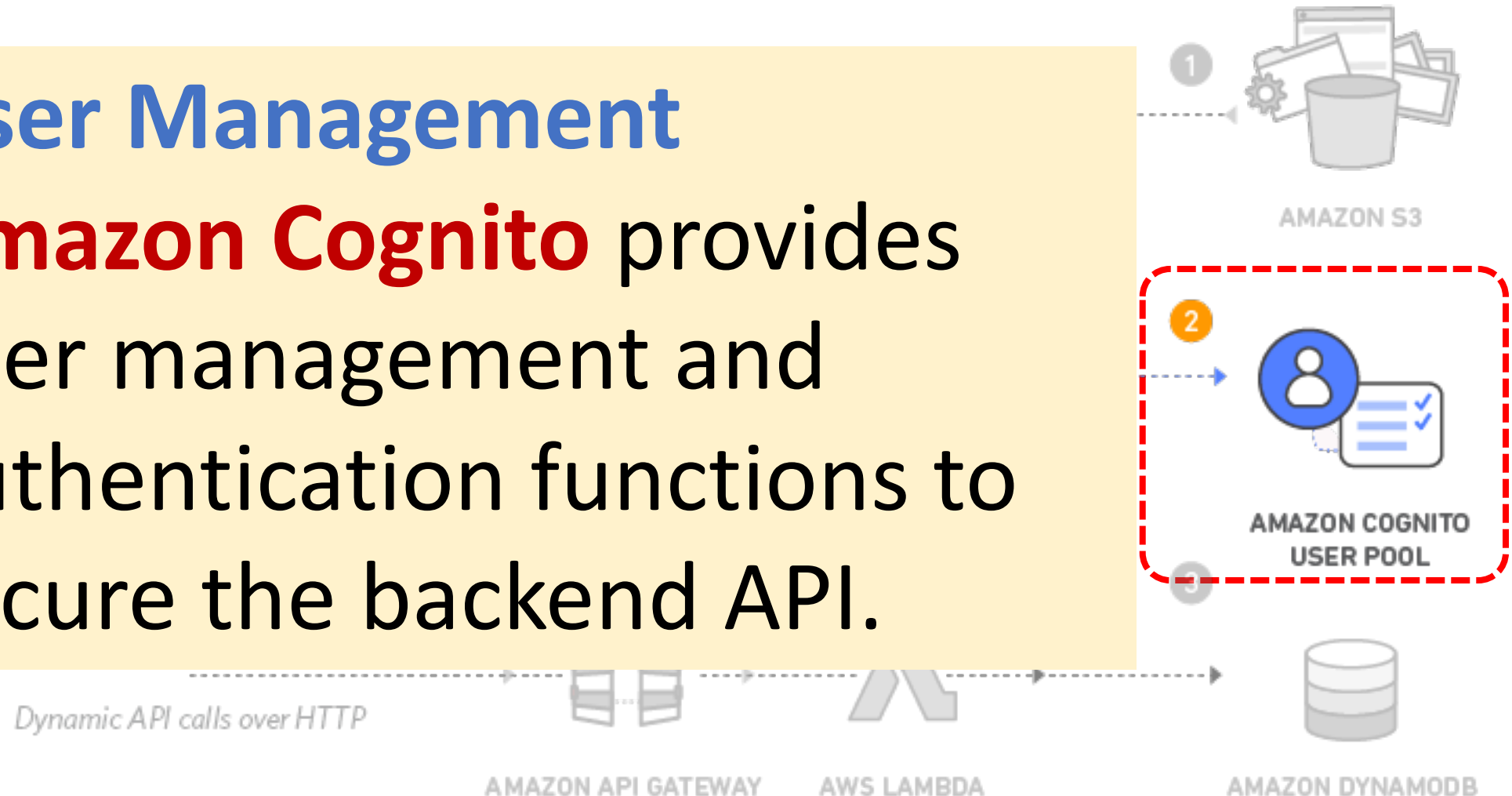
Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

2

User Management

Amazon Cognito provides user management and authentication functions to secure the backend API.

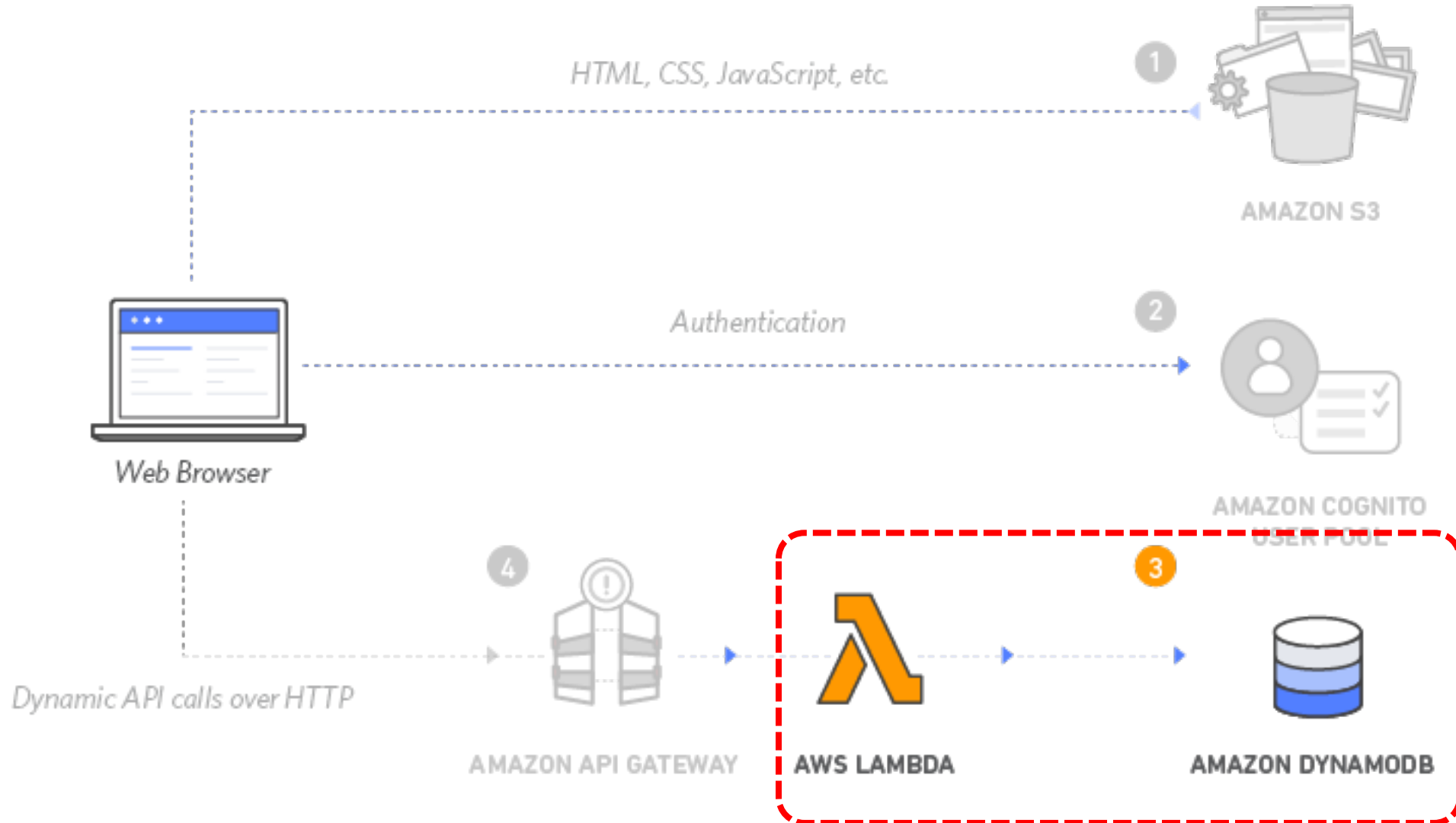




Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

3





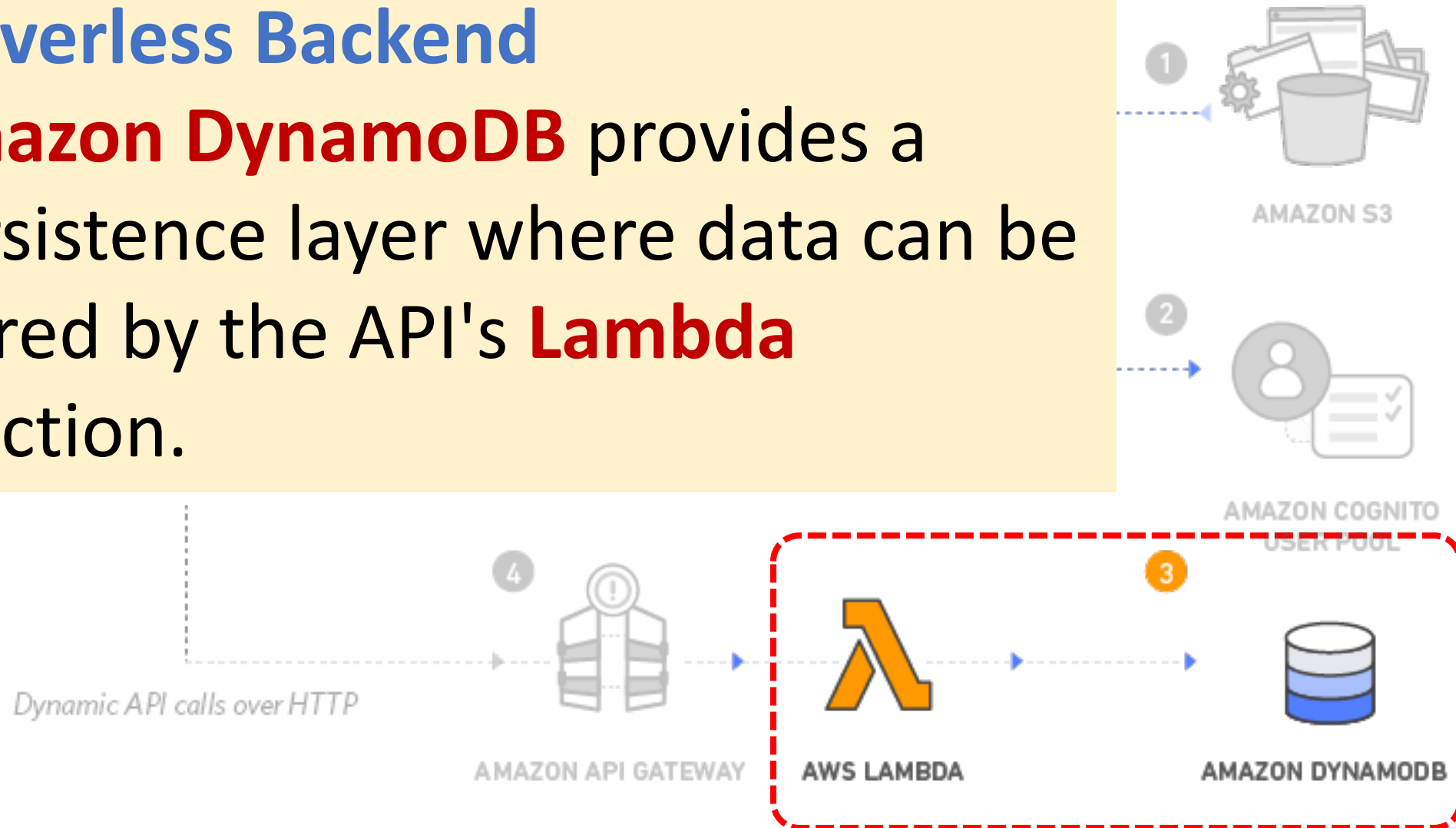
Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

3

Serverless Backend

Amazon DynamoDB provides a persistence layer where data can be stored by the API's **Lambda** function.

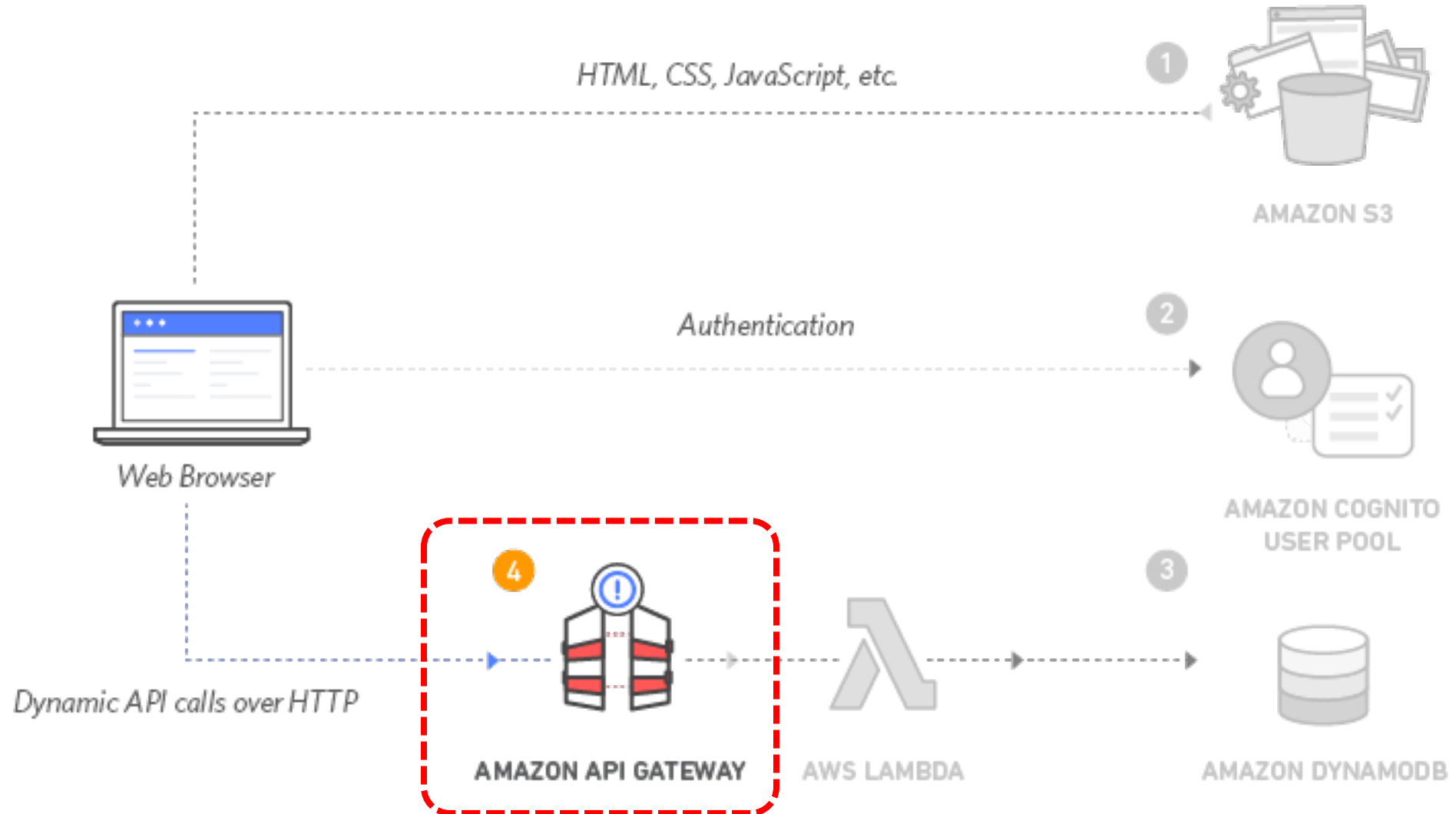




Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

4





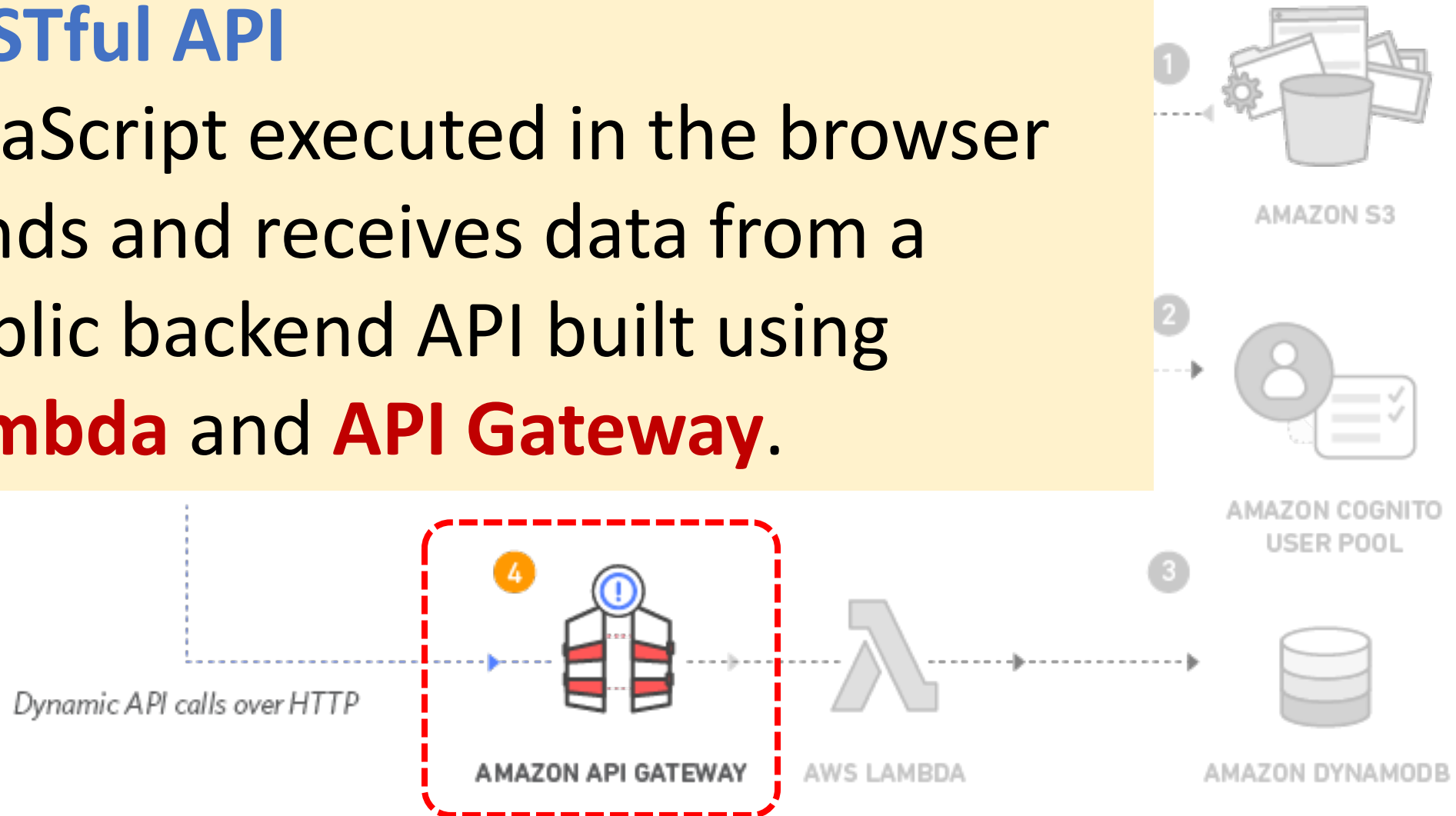
Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway, Amazon DynamoDB, and Amazon Cognito

4

RESTful API

JavaScript executed in the browser sends and receives data from a public backend API built using **Lambda** and **API Gateway**.





Build a Serverless Web Application

with Amazon S3, AWS Lambda, Amazon API Gateway,
Amazon DynamoDB, and Amazon Cognito

5 Terminate resources

Resource Cleanup

You will terminate an **Amazon S3** bucket, an **Amazon Cognito** User Pool, an **AWS Lambda** function, an **IAM** role, a **DynamoDB** table, a **REST API**, and a **CloudWatch** Log.

It is a best practice to **delete resources** you are no longer using to avoid unwanted charges.

Amazon S3: Simple Storage Service

aws

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Amazon S3 [Overview](#) Features Storage classes Pricing Security Resources FAQs

« Storage

Amazon S3

Object storage built to retrieve any amount of data from anywhere

5 GB of S3 standard storage
for 12 months with the [AWS Free Tier](#)

[Get Started with Amazon S3](#) [Connect with an Amazon S3 specialist](#)

- Scale storage resources to meet fluctuating needs with 99.999999999% (11 9s) of data durability.
- Store data across Amazon S3 storage classes to reduce costs without upfront investment or hardware refresh cycles.
- Protect your data with unmatched security, compliance, and audit capabilities.
- Easily manage data at any scale with robust access controls, flexible replication tools, and organization-wide visibility.

<https://aws.amazon.com/s3/>

Amazon S3: Simple Storage Service



AWS 雲端儲存 – Amazon S3

- 是一種物件儲存服務
- 提供可擴展性、資料可用性、安全性及效能。
- 可用於建置資料湖，雲端原生應用程式和行動應用程式，以及備份和還原關鍵資料

Amazon S3 與 AWS 服務結合應用

- **資料處理**：使用 AWS Lambda 函數，自動處理標準 S3 GET 請求的輸出，便可講S3與其Lambda 函數做串接
- **儲存管理與監控**：可利用AWS Cloudwatch 來追蹤 AWS S3 儲存資源的操作狀態
- **存取管理**：可結合 IAM，做將存取權授與其他使用，並建置存取控制清單 (ACL)，用來使個別物件可供授權使用者使用
- **安全性**：使用 VPC 端點從 Amazon Virtual Private Cloud (Amazon VPC) 和內部部署連接至 S3 資源，針對上傳資料，Amazon S3 同時支援伺服器端加密 (具有三個金鑰管理選項) 和用戶端加密



AWS Hands-on : Using S3 Service for XBRL Cloud Storage

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

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

Services Search for services, features, blogs, docs, and more [Option+S] N. Virginia voclabs/user1323818=Min-Yuh_Day @ 6420-3836-5284

The new AWS Console Home will replace your existing experience soon. Starting June 2022, the new AWS Console Home will replace your current experience. Switch now to customize your Console Home and view valuable insights. [Learn more](#) or [let us know what you think](#). [Switch now](#)

AWS Management Console

AWS services

Recently visited services

- CloudFront
- CloudShell
- S3
- EC2

All services

Build a solution
Get started with simple wizards and automated workflows.

[Launch a virtual machine](#) [Build a web app](#)

New AWS Console Home
See valuable insights for your account and services with the new customizable Console Home experience. [Learn more](#) [Switch now](#)

Stay connected to your AWS resources on-the-go

AWS Console Mobile App now supports four additional regions. Download the AWS Console Mobile App to your iOS or Android mobile device. [Learn more](#)

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot displays the AWS Academy interface. On the left is a dark sidebar with navigation icons for Account, Dashboard, Courses, Calendar, Inbox (with a '4' notification), History, and Help (with a '10' notification). The main content area shows a breadcrumb trail: AICv1Sem1E... > Modules > Module 5 - C... > Lab 5 - CloudFront. Below this is a header bar with 'AWS' (with a green dot), a timer at '01:53', and buttons for 'Start Lab', 'End Lab', 'AWS Details', 'Readme', and a close icon. The central focus is a 'Cloud Access' window with a 'Close' button in the top right. This window contains the following information:

- Cloud Access**
- AWS CLI:** [Show]
- Cloud Labs**
 - Remaining session time: 01:52:11(113 minutes)
 - Session started at: 2022-05-05T20:14:17-0700
 - Session to end at: 2022-05-05T22:14:17-0700
- Accumulated lab time: 00:07:49 (8 minutes)
- No running instance
- SSH key** [Show] [Download PEM] [Download PPK]
- AWS SSO** [Download URL]

At the bottom of the window is a table with the following data:

AWSAccountId	642038365284
Region	us-east-1

At the bottom of the main interface are 'Previous' and 'Next' navigation buttons.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Task 1. Create an S3 bucket using the AWS CLI

4. Choose the **Services** menu, locate the **Developer Tools** services, and select **CloudShell**.

If a welcome pop-up window appears, choose **Close**.

AWS CloudShell is a browser-based shell that gives you command line access to your AWS resources in the selected AWS Region.

5. Copy and paste the following code into a text editor:

```
cd ~  
aws s3api create-bucket --bucket (bucket-name) --region us-east-1
```

```
cd ~  
aws s3api create-bucket --bucket sasb-xbrl-2330 --region us-east-1
```

6. In the code that you copied, replace (**bucket-name**) with a unique Domain Name System (DNS)-compliant name for your new bucket.

7. Run the updated code in the CloudShell terminal.

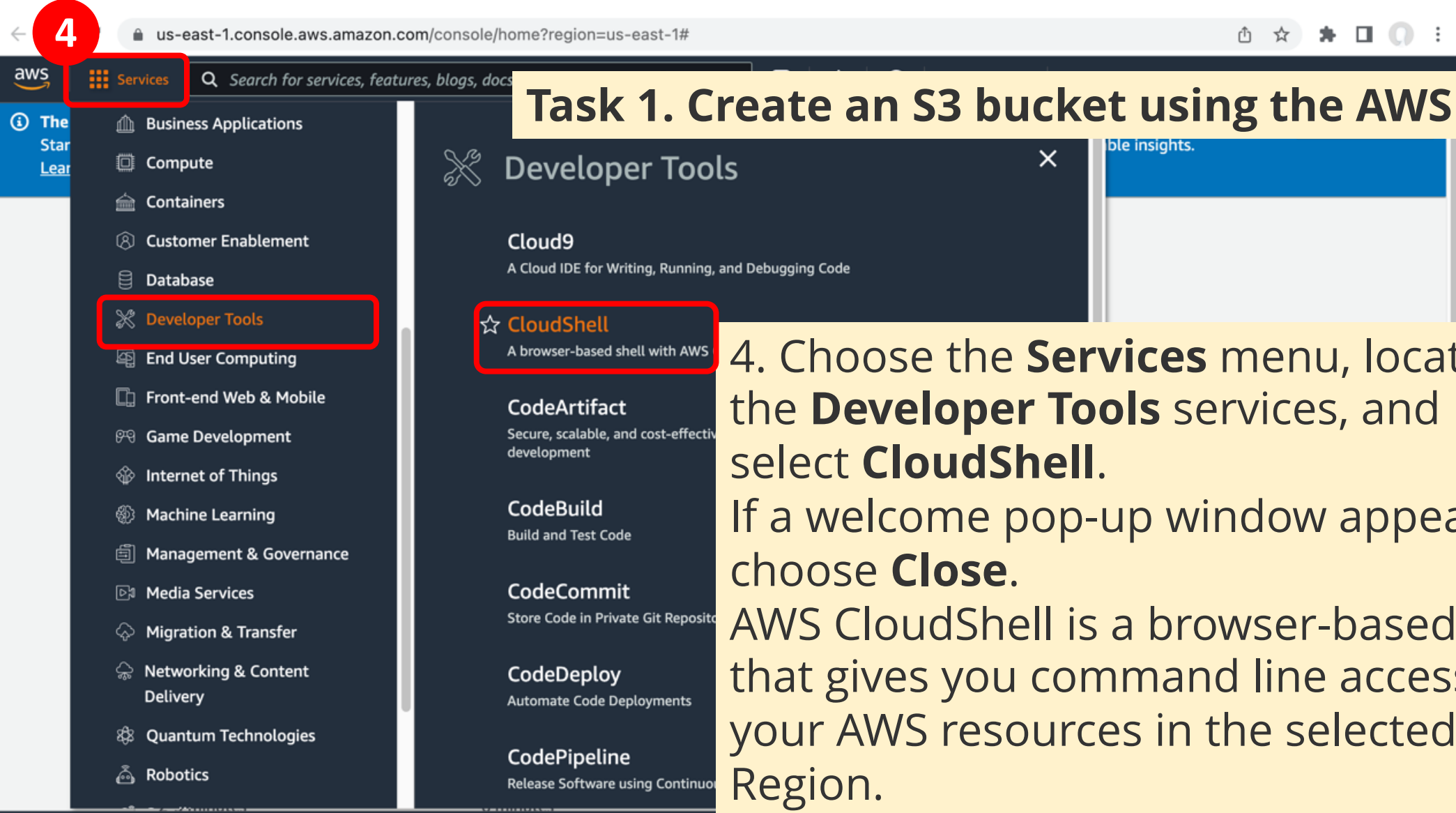
If a pop-up window appears, choose **Paste**.

The output should look similar to the following:

```
{  
  "Location": "/mylabbucket12345"  
}
```

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

4



Task 1. Create an S3 bucket using the AWS CLI

4. Choose the **Services** menu, locate the **Developer Tools** services, and select **CloudShell**. If a welcome pop-up window appears, choose **Close**. AWS CloudShell is a browser-based shell that gives you command line access to your AWS resources in the selected AWS Region.

https://console.aws.amazon.com/cloudshell/home?region=us-east-1

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

← → ↻ us-east-1.console.aws.amazon.com/cloudshell/home?region=us-east-1#

aws Services Search for services, features, blogs, docs, and more [Option+S] N. Virginia voclabs/user1323818=Min-Yuh_Day @ 6420-3836-5284

Creating the environment...




AWS CloudShell

us-east-1

If the arrow keys aren't working correctly, you can use the mouse to navigate. Don't show this message again

Welcome to AWS CloudShell

AWS CloudShell is a browser-based shell that gives you command-line access to your AWS resources in the selected AWS region. AWS CloudShell comes pre-installed with popular tools for resource management and creation. You have the same credentials as you used to log in to the console. [Learn more](#)

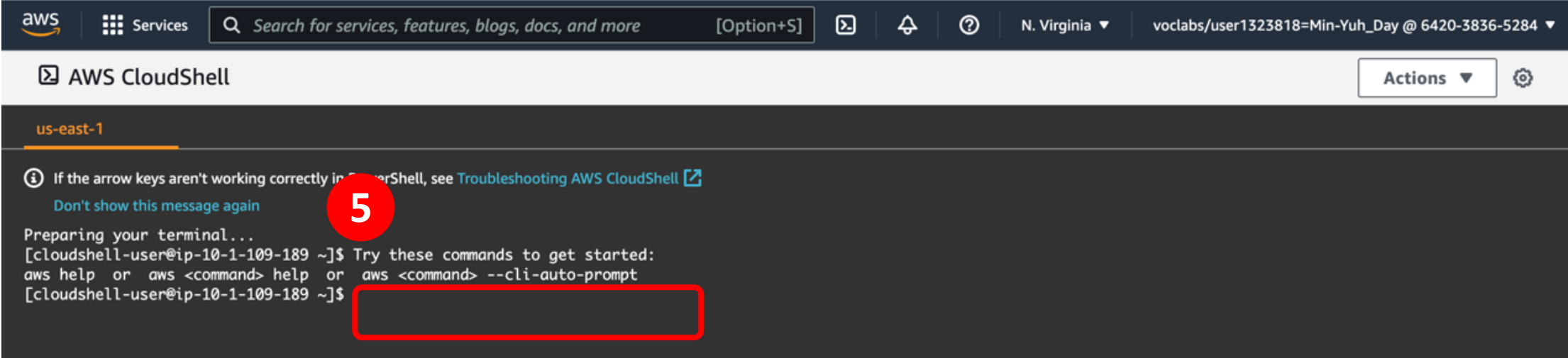
 <p>Pre-installed tools</p> <p>AWS CLI, Python, Node.js and more</p>	 <p>Storage included</p> <p>1 GB of storage free per AWS region</p>	 <p>Saved files and settings</p> <p>Files saved in your home directory are available in future sessions for the same AWS region</p>
--	---	---

Do not show again Close

Feedback Looking for language selection? Find it in the new Unified Settings

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage



The screenshot shows the AWS CloudShell interface. The terminal output includes a message about arrow keys, a red circle with the number 5, and the following text:

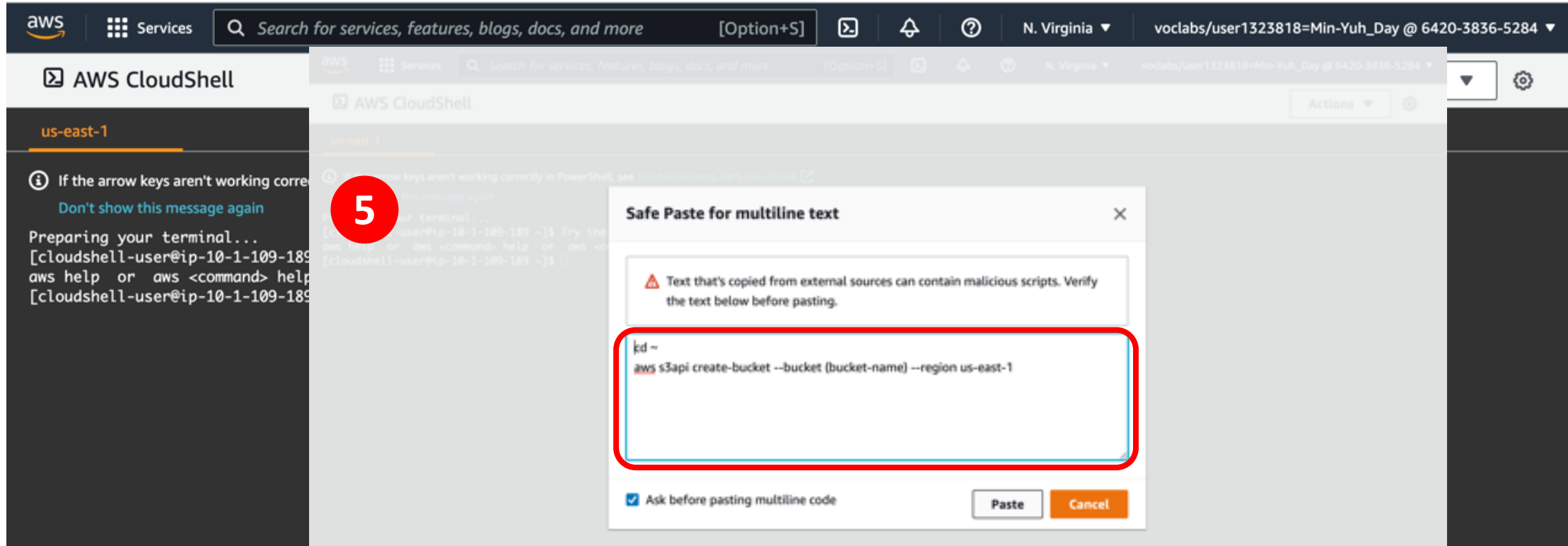
```
Preparing your terminal...  
[cloudshell-user@ip-10-1-109-189 ~]$ Try these commands to get started:  
aws help or aws <command> help or aws <command> --cli-auto-prompt  
[cloudshell-user@ip-10-1-109-189 ~]$
```

A red box highlights the terminal prompt `[cloudshell-user@ip-10-1-109-189 ~]$`.

5. Copy and paste the following code into a text editor:

```
cd ~  
aws s3api create-bucket --bucket (bucket-name) --region us-east-1
```

AWS Hands-on : Using S3 Service for XBRL Cloud Storage



The screenshot shows the AWS CloudShell interface. A terminal window is open, and a dialog box titled "Safe Paste for multiline text" is displayed. The dialog box contains a warning message: "Text that's copied from external sources can contain malicious scripts. Verify the text below before pasting." Below the warning, the following code is pasted and highlighted with a red box:

```
cd ~  
aws s3api create-bucket --bucket (bucket-name) --region us-east-1
```

At the bottom of the dialog box, there is a checkbox labeled "Ask before pasting multiline code" which is checked, and two buttons: "Paste" and "Cancel".

5. Copy and paste the following code into a text editor:

```
cd ~
```

```
aws s3api create-bucket --bucket (bucket-name) --region us-east-1
```

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS CloudShell interface. A terminal window is open with the following text:

```
us-east-1  
[cloudshell-user@ip-10-1-109 ~]$  
aws help or aws <command> help or aws <command> help  
[cloudshell-user@ip-10-1-109 ~]$
```

A "Safe Paste for multiline text" dialog box is displayed in the foreground. It contains a warning message: "Text that's copied from external sources can contain malicious scripts. Verify the text below before pasting." Below the warning, the following text is pasted into the dialog:

```
cd ~  
aws s3api create-bucket --bucket mydaylabbucket20220506 --region us-east-1
```

A red circle with the number 6 highlights the pasted text. At the bottom of the dialog, there is a checkbox labeled "Ask before pasting multiline code" which is checked. To the right of the checkbox are two buttons: "Paste" and "Cancel". A red circle with the number 7 highlights the "Paste" button.

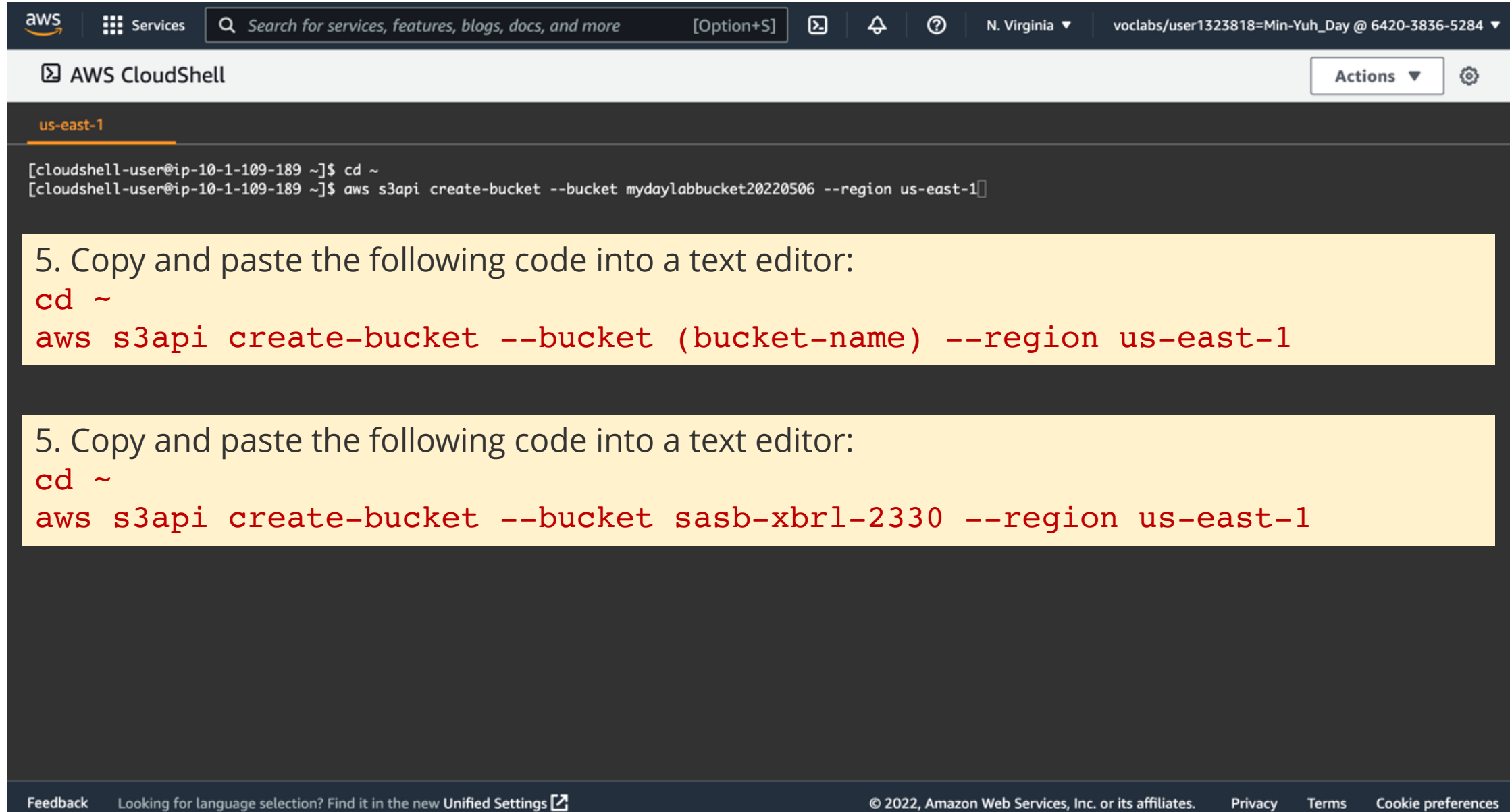
5. Copy and paste the following code into a text editor:

```
cd ~  
aws s3api create-bucket --bucket (bucket-name) --region us-east-1
```

5. Copy and paste the following code into a text editor:

```
cd ~  
aws s3api create-bucket --bucket sasb-xbrl-2330 --region us-east-1
```

AWS Hands-on : Using S3 Service for XBRL Cloud Storage



The screenshot shows the AWS CloudShell interface. At the top, there's a navigation bar with the AWS logo, 'Services', a search bar, and a dropdown menu for 'N. Virginia'. Below that, the 'AWS CloudShell' header is visible. The terminal window shows the following commands and output:

```
[cloudshell-user@ip-10-1-109-189 ~]$ cd ~  
[cloudshell-user@ip-10-1-109-189 ~]$ aws s3api create-bucket --bucket mydaylabbucket20220506 --region us-east-1
```

Two yellow callout boxes provide instructions and code for creating an S3 bucket:

5. Copy and paste the following code into a text editor:
`cd ~
aws s3api create-bucket --bucket (bucket-name) --region us-east-1`

5. Copy and paste the following code into a text editor:
`cd ~
aws s3api create-bucket --bucket sasb-xbrl-2330 --region us-east-1`

At the bottom of the CloudShell interface, there is a footer with 'Feedback', a link to 'Unified Settings', and copyright information for Amazon Web Services, Inc. or its affiliates, along with links for 'Privacy', 'Terms', and 'Cookie preferences'.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

aws Services Search for services, features, blogs, docs, and more [Option+S] N. Virginia voclabs/user1323818=Min-Yuh_Day @ 6420-3836-5284

AWS CloudShell

us-east-1

```
[cloudshell-user@ip-10-1-109-189 ~]$ cd ~
[cloudshell-user@ip-10-1-109-189 ~]$ aws s3api create-bucket --bucket mydaylabbucket20220506 --region us-east-1
{
  "Location": "/mydaylabbucket20220506"
}
[cloudshell-user@ip-10-1-109-189 ~]$
```

6 (bucket-name)
sasb-xbrl-2022q1-2330

7

5. Copy and paste the following code into a text editor:

```
cd ~
aws s3api create-bucket --bucket sasb-xbrl-2330 --region us-east-1
```

6. In the code that you copied, replace **(bucket-name)** with a unique Domain Name System (DNS)-compliant name for your new bucket.

7. Run the updated code in the CloudShell terminal.
If a pop-up window appears, choose **Paste**.
The output should look similar to the following:

```
{
  "Location": "/mylabbucket12345"
}
```


AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Task 2. Add a bucket policy

In this task, you will add a bucket policy through the AWS CLI to make the content publicly available.

8. In the console, choose the **Services** menu, locate the **Storage** section, and choose **S3**.

9. Choose the name of the bucket that you just created.

10. Choose the **Permissions** tab.

11. In the **Bucket policy** section, choose **Edit**.

12. To grant public read access for your website, copy and paste the following bucket policy into the policy editor.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadForGetBucketObjects",
      "Effect": "Allow",
      "Principal": "*",
      "Action": [
        "s3:GetObject"
      ],
      "Resource": [
        "arn:aws:s3:::example-bucket/*"
      ]
    }
  ]
}
```

13. In the policy, replace **example-bucket** with the name of your bucket.

14. At the bottom of the page, choose **Save changes**.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS Management Console interface. At the top, the 'Services' menu is highlighted with a red box and a red circle containing the number 8. Below the menu, the 'Storage' section is highlighted with a red box and a red circle containing the number 8. Within the 'Storage' section, the 'S3' service is highlighted with a red box and a red circle containing the number 8. The S3 service is described as 'Scalable Storage in the Cloud'.

8. In the console, choose the **Services** menu, locate the **Storage** section, and choose **S3**.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Amazon S3

Search for services, features, blogs, docs, and more [Option+S]

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Successfully created bucket "sasb-xbri-2022q1-2330"
To upload files and folders, or to configure additional bucket settings choose [View details](#).

Replicate your data to any storage class to save on storage costs. [Get started](#)

Amazon S3 > Buckets

Account snapshot [View Storage Lens dashboard](#)
Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

Buckets (1) [Info](#) [Refresh](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)

Buckets are containers for data stored in S3. [Learn more](#)

Find buckets by name

Name	AWS Region	Access	Creation date
<input type="radio"/> sasb-xbri-2022q1-2330	US East (N. Virginia) us-east-1	<u>Bucket and objects not public</u>	June 24, 2022, 13:25:57 (UTC+08:00)

9. Choose the name of the bucket that you just created.

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Amazon S3 > Buckets > sasb-xbrl-2330

sasb-xbrl-2330 [Info](#)

Objects | Properties | **Permissions** | Metrics | Management | Access Points

10 10. Choose the **Permissions** tab

Objects (0)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

[Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#)

[Create folder](#) [Upload](#)

[Settings](#)

Name	Type	Last modified	Size	Storage class
No objects				
You don't have any objects in this bucket.				

[Upload](#)

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS Management Console interface for an Amazon S3 bucket named 'sasb-xbrl-2330'. The breadcrumb navigation at the top indicates the path: Amazon S3 > Buckets > sasb-xbrl-2330. The main content area displays the bucket name 'sasb-xbrl-2330' with an 'Info' link. Below the bucket name are several tabs: 'Objects', 'Properties', 'Permissions', 'Metrics', 'Management', and 'Access Points'. The 'Permissions' tab is highlighted with a red box and a red circle containing the number '10'. A yellow highlight box contains the text '10. Choose the Permissions tab'. Below the tabs, the 'Permissions overview' section is visible, showing 'Access' settings where 'Objects can be public' is indicated. The 'Block public access (bucket settings)' section is also visible, with an 'Edit' button. The left sidebar shows the 'Amazon S3' navigation menu with options like 'Buckets', 'Access Points', 'Object Lambda Access Points', 'Multi-Region Access Points', 'Batch Operations', 'Access analyzer for S3', 'Storage Lens', 'Dashboards', 'AWS Organizations settings', 'Feature spotlight', and 'AWS Marketplace for S3'. The bottom of the console shows a footer with 'Feedback', 'Looking for language selection? Find it in the new Unified Settings', and copyright information for Amazon Web Services, Inc. or its affiliates.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot displays the AWS Management Console interface for the Amazon S3 service. The left-hand navigation pane shows the 'Amazon S3' section with various options like Buckets, Access Points, and Storage Lens. The main content area is titled 'Permissions overview' and includes sections for 'Access' (Objects can be public), 'Block public access (bucket settings)', and 'Bucket policy'. The 'Bucket policy' section is highlighted with a red border, and the 'Edit' button is circled in red. A red arrow points from the top right towards the 'Edit' button. A yellow callout box contains the text '11. In the Bucket policy section, choose Edit.' A red circle with the number '11' is also present next to the 'Edit' button.

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Amazon S3

Buckets

- Access Points
- Object Lambda Access Points
- Multi-Region Access Points
- Batch Operations
- Access analyzer for S3

Block Public Access settings for this account

▼ **Storage Lens**

- Dashboards
- AWS Organizations settings

Feature spotlight 3

▶ AWS Marketplace for S3

Permissions overview

Access

Objects can be public

Block public access (bucket settings)

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to all your S3 buckets and objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

Edit

Block all public access

⚠ Off

▶ Individual Block Public Access settings for this bucket

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](#)

11 Edit Delete

11. In the **Bucket policy** section, choose **Edit**.

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

11

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](#)

Edit Delete

11. In the **Bucket policy** section, choose **Edit**.

No policy to display. [Copy](#)

Feedback Looking for language selection? Find it in the new [Unified Settings](#)

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

12

Edit bucket policy [Info](#)

Bucket policy
The bucket policy, written in JSON, provides access to the objects stored in the bucket. [Learn more](#)

[Policy examples](#) [Policy generator](#)

Bucket ARN
`arn:aws:s3:::sasb-xbrl-2022q1-2330`

Policy

```
1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "Statement1",
6       "Principal": {},
7       "Effect": "Allow",
8       "Action": [
9         "s3:GetObject"
10      ],
11      "Resource": [
12        "arn:aws:s3:::example-bucket/*"
13      ]
14    }
15  ]
16 }
```

12. To grant public read access for your website, copy and paste the following bucket policy into the policy editor.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadForGetBucketObjects",
      "Effect": "Allow",
      "Principal": "*",
      "Action": [
        "s3:GetObject"
      ],
      "Resource": [
        "arn:aws:s3:::example-bucket/*"
      ]
    }
  ]
}
```


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Amazon S3

Buckets

- Access Points
- Object Lambda Access Points
- Multi-Region Access Points
- Batch Operations
- Access analyzer for S3

Block Public Access settings for this account

Storage Lens

- Dashboards
- AWS Organizations settings

Feature spotlight 3

AWS Marketplace for S3

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](#)

Policy examples
Policy generator

Bucket ARN
arn:aws:s3:::sasb-xbrl-2022q1-2330

Policy

```

1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid":
6         "PublicReadForGetBucketObject",
7       "Effect": "Allow",
8       "Principal": "*",
9       "Action": [
10        "s3:GetObject"
11      ],
12      "Resource": [
13        "arn:aws:s3:::example-bucket/*"
14      ]
15    }
16  ]

```

13

Edit statement **PublicReadForGetBucket** Remove

1. Add actions

Choose a service

Included

S3

Available

AMP

API Gateway

API Gateway V2

Access Analyzer

Feedback
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13. In the policy, replace **example-bucket** with the name of your bucket.

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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](#)

[Policy examples](#) [Policy generator](#)

Bucket ARN
 ☐ arn:aws:s3:::sasb-xbrl-2022q1-2330

Policy

```

1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "PublicReadForGetBucketObjects",
6       "Effect": "Allow",
7       "Principal": "*",
8       "Action": [
9         "s3:GetObject"
10      ],
11      "Resource": [
12        "arn:aws:s3:::sasb-xbrl-2022q1-2330/*"
13      ]
14    }
15  ]
16 }
  
```

13. In the policy, replace **example-bucket** with the name of your bucket.

PublicReadForGetBucket Remove

```

1 {
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadForGetBucketObjects",
      "Effect": "Allow",
      "Principal": "*",
      "Action": [
        "s3:GetObject"
      ],
      "Resource": [
        "arn:aws:s3:::sasb-xbrl-2330/*"
      ]
    }
  ]
}
  
```

Account

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS IAM console interface. On the left is a navigation sidebar for Amazon S3. The main content area displays a JSON policy configuration. At the bottom of the configuration area, there is a red error box with the message: "Unexpected error" and "Network Failure - verify permissions to access-analyzer:ValidatePolicy in IAM to use policy validation." Below the error box, a yellow callout box contains the instruction: "14. At the bottom of the page, choose **Save changes**." The "Save changes" button is highlighted with a red box and the number "14" in a red circle.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS Management Console interface. At the top, there's a navigation bar with the AWS logo, a search bar, and user information. A green notification banner at the top indicates 'Successfully edited bucket policy.' The main content area shows the 'Permissions' tab for the bucket 'sasb-xbrl-2330'. A red 'Publicly accessible' badge is present. Below the tabs, the 'Permissions overview' section shows 'Access' with a red warning icon and the word 'Public'. The 'Block public access (bucket settings)' section is also visible, providing information about public access and a 'Learn more' link.

Amazon S3 > Buckets > sasb-xbrl-2330

sasb-xbrl-2330 [Info](#)

Publicly accessible

Objects | Properties | **Permissions** | Metrics | Management | Access Points

Permissions overview

Access

Public

Block public access (bucket settings)

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to all your S3 buckets and objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Amazon S3 > Buckets > sasb-xbrl-2330

17 **Objects** Properties Permissions Metrics Management Access Points

17. In the console, choose the **Objects** tab.

Objects (0)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

18 **Upload**

18. Upload the SASB_TC-SC_TSMC.xmlfile to your bucket. Choose **Upload**.

Name	Type	Last modified	Size	Storage class
No objects				

You don't have any objects in this bucket.

Upload

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Amazon S3 > Buckets > sasb-xbrl-2330 > Upload

Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**.

Files and folders (0)
All files and folders in this table will be uploaded.

Remove **18** Add files Add folder

Find by name

Name	Folder	Type
No files or folders		
You have not chosen any files or folders to upload		

Destination

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18 Upload **SASB_TC-SC_TSMC.xml** file to your bucket. Choose **Upload**. Drag and drop Upload **SASB_TC-SC_TSMC.xml** file onto the upload page. An alternative is to choose **Add files**, navigate to the file, and choose **Open**.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS S3 console interface for an upload operation. The breadcrumb navigation indicates the path: Amazon S3 > Buckets > sasb-xbrl-2330 > Upload. The main heading is "Upload" with an "Info" link. Below the heading, there is a dashed box containing the instruction: "Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**." Below this, a section titled "Files and folders (1 Total, 64.0 B)" contains a table with one file listed. A red circle with the number "18" is placed over the file name "SASB_TC-SC_TSMC.xml" in the table. To the right of the table, there are buttons for "Remove", "Add files", and "Add folder". Below the table, there is a "Destination" section showing the path "s3://mydaylabbucket20220506". At the bottom left, there is a "Feedback" link and a note about language selection.

Name	Folder	Type	Size
SASB_TC-SC_TSMC.xml	-	text/html	64.0 B

18 Upload Upload **SASB_TC-SC_TSMC.xml** file to your bucket. Choose **Upload**. Drag and drop the Upload **SASB_TC-SC_TSMC.xml** file onto the upload page. An alternative is to choose **Add files**, navigate to the file, and choose **Open**.

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<input type="checkbox"/>	Name ▲	Folder ▼	Type ▼	Size ▼
<input type="checkbox"/>	SASB_TC-SC_TSMC.xml	-	text/xml	10.7 KB

Destination

Destination
[s3://sasb-xbrl-2330](#)

► Destination details
Bucket settings that impact new objects stored in the specified destination.

19 ▼ Permissions
Grant public access and access to other AWS accounts.

Access control list (ACL)

Grant basic read/write permissions to other AWS accounts. [Learn more](#)

ⓘ AWS recommends using S3 bucket policies or IAM policies for access control. [Learn more](#)

Access control list (ACL)
● Choose from predefined ACLs

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Permissions
Grant public access and access to other AWS accounts.

Access control list (ACL)
Grant basic read/write permissions to other AWS accounts. [Learn more](#)

AWS recommends using S3 bucket policies or IAM policies for access control. [Learn more](#)

Access control list (ACL)
 Choose from predefined ACLs
 Specify individual ACL permissions

Predefined ACLs
 Private (recommended)
Only the object owner will have read and write access.
 Grant public-read access
Anyone in the world will be able to access the specified objects. The object owner will have read and write access. [Learn more](#)

20

20. Under **Predefined ACLs**, select **Grant public-read access**.

Properties
Specify storage class, encryption settings, tags, and more.

Cancel Upload

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS S3 console interface for uploading files to a bucket. The page is titled 's3.console.aws.amazon.com/s3/upload/mydaylabbucket20220506?region=us-east-1'. The main content area is divided into sections for 'Access control list (ACL)', 'Predefined ACLs', and 'Properties'. The 'Predefined ACLs' section is highlighted with a yellow background and contains the following text: '20. Under **Predefined ACLs**, select **Grant public-read access**. A warning message similar to **Granting public-read access is not recommend** appears below the setting you selected.' Below this, a red box highlights the 'Grant public-read access' option, which is selected. A warning message is displayed below it: 'Granting public-read access is not recommended. Anyone in the world will be able to access the specified objects. Learn more'. A red box highlights the checkbox next to the text 'I understand the risk of granting public-read access to the specified objects.', which is checked. Below this, a yellow background contains the text: '21. Below the warning, check the box next to **I understand...**'. At the bottom of the page, a red box highlights the 'Upload' button, which is highlighted with a yellow background and contains the text: '22. At the bottom of the page, choose **Upload**.' The footer of the page includes 'Feedback', 'Looking for language selection? Find it in the new Unified Settings', '© 2022, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

20. Under **Predefined ACLs**, select **Grant public-read access**. A warning message similar to **Granting public-read access is not recommend** appears below the setting you selected.

21. Below the warning, check the box next to **I understand...**

22. At the bottom of the page, choose **Upload**.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

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Upload succeeded
View details below.

Upload: status

23 Close

24. Choose **Close**.

i The information below will no longer be available after you navigate away from this page.

Summary

Destination s3://sasb-xbrl-2330	Succeeded ✔ 1 file, 64.0 B (100.00%)	Failed ⊘ 0 files, 0 B (0%)
------------------------------------	---	-------------------------------

Files and folders | Configuration

Files and folders (1 Total, 64.0 B)

Find by name < 1 >

Name	Folder	Type	Size	Status	Error
------	--------	------	------	--------	-------

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AWS Hands-on : Using S3 Service for XBRL Cloud Storage

The screenshot shows the AWS S3 console interface. At the top, there's a navigation bar with the AWS logo, 'Services' menu, a search bar, and user information. A green notification banner at the top left states 'Upload succeeded' with a checkmark icon and a link to 'View details below.' Below this, a light blue box contains an information icon and the text: 'The information below will no longer be available after you navigate away from this page.'

The main content area is titled 'Summary' and contains a table listing the uploaded file:

Name	Type	Last modified	Size	Storage class
<input type="checkbox"/> SASB_TC-SC_TSMC.xml	xml	June 24, 2022, 18:27:24 (UTC+08:00)	10.7 KB	Standard

Below the table, there are two tabs: 'Files and folders' (selected) and 'Configuration'. Under the 'Files and folders' tab, there's a search bar labeled 'Find by name' and a pagination control showing '< 1 >'. A second table, which is highlighted with a red border in the image, shows the upload details:

Name	Folder	Type	Size	Status	Error
<input type="checkbox"/> SASB_TC-SC_TSMC.xml		xml	64.0 B	✔ Succeeded	-

At the bottom of the console, there's a footer with 'Feedback', a link to 'Unified Settings', and copyright information: '© 2022, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

AWS Hands-on : Using S3 Service for XBRL Cloud Storage

Amazon S3 > Buckets > sasb-xbrl-2330

sasb-xbrl-2330 [Info](#)

Publicly accessible

Objects | Properties | Permissions | Metrics | Management | Access Points

Objects (1)

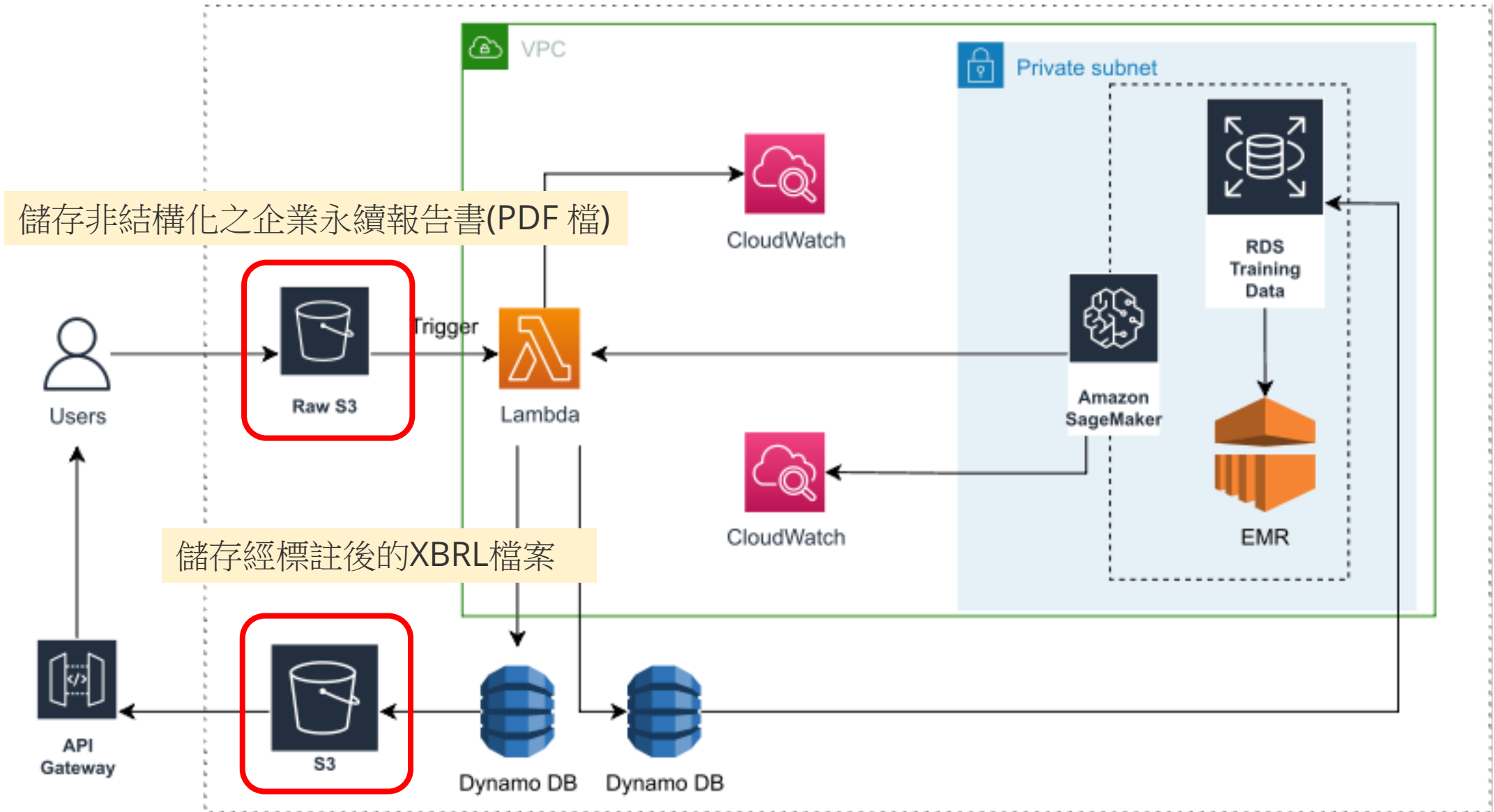
Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

[Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#) [Actions](#) [Create folder](#) [Upload](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	SASB_TC-SC_TSMC.xml	xml	June 24, 2022, 18:27:24 (UTC+08:00)	10.7 KB	Standard

The **SASB_TC-SC_TSMC.xml** file appears in the **Objects** list.

永續報告 XBRL 雲端架構圖 (AWS)



永續報告 XBRL 雲端儲存

- Amazon S3可做為資料前處理的**非結構化企業永續報告書 (.pdf)**的儲存以及**經標註後的XBRL**的檔案儲存。
- 雲端儲存不僅可以將資料拓展給其他經授權的使用者使用，同時亦可以講低本地端的暫存空間，減少其基礎設施的儲存與成本。
- **未來趨勢與研究方向**：預計將Amazon S3串聯AWS其他服務(e.g. Lambda, API Gateway) 做為後續部屬完善整個雲端架構之用，並同時根據不同使用者的權限做好更有效的存取控制。

References

- <https://aws.amazon.com/certification/>
- <https://www.aws.training/>
- <https://aws.amazon.com/training/awsacademy/>
- <https://aws.amazon.com/education/awseducate/>
- **AWS Academy Introduction to Cloud: Semester 1**
 - <https://awsacademy.instructure.com/courses/18745>
- **AWS Certified Cloud Practitioner**
 - <https://aws.amazon.com/certification/certified-cloud-practitioner/>
- **AWS Certified Solutions Architect – Associate**
 - <https://aws.amazon.com/certification/certified-solutions-architect-associate/>
- **AWS Cloud Practitioner Essentials (Second Edition)**
 - <https://aws.amazon.com/training/course-descriptions/cloud-practitioner-essentials/>
- **Architecting on AWS**
 - <https://aws.amazon.com/training/course-descriptions/architect/>

Q & A

雲端儲存與永續資訊

Cloud Storage and Sustainability Information

Time: 2022/6/25 (Sat.) 9:40-10:15

Place: 台北世貿一館1樓B區 ESG沙龍 (B536)

戴敏育 副教授

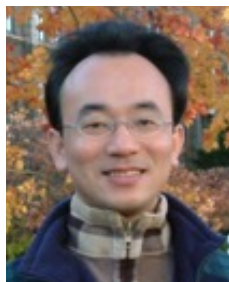
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2022-06-25



意見調查

Thank You

QR code

(本會收到您的投影片後，將會加上問卷QR碼)