

大師開講：綠色金融永續發展論壇

永續資訊數位申報技術

Sustainability Information Digital Reporting Technology

Time: 2022/10/28 (Fri.) 16:30-16:45

Place: 台北世貿一館1樓 財金館研討會專區 (攤位編號：A0334)

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2022-10-28





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aws educate | Cloud Ambassador

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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

- **永續資訊數位申報技術**
- **為什麼使用雲端技術**
- **AWS Serverless Architecture**
- **永續報告 XBRL 雲端架構**

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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為什麼使用雲端技術？ (Why Cloud Technology ?)

- 需要高度可用且可擴展的基礎架構來有效運營和管理增長
- 確保可擴展性以支持公司發展並建立可信架構
以支持未來從本地到雲的遷移
- 節省基礎設施成本

Gartner Magic Quadrant for Cloud Infrastructure and Platform Services



Amazon Web Services

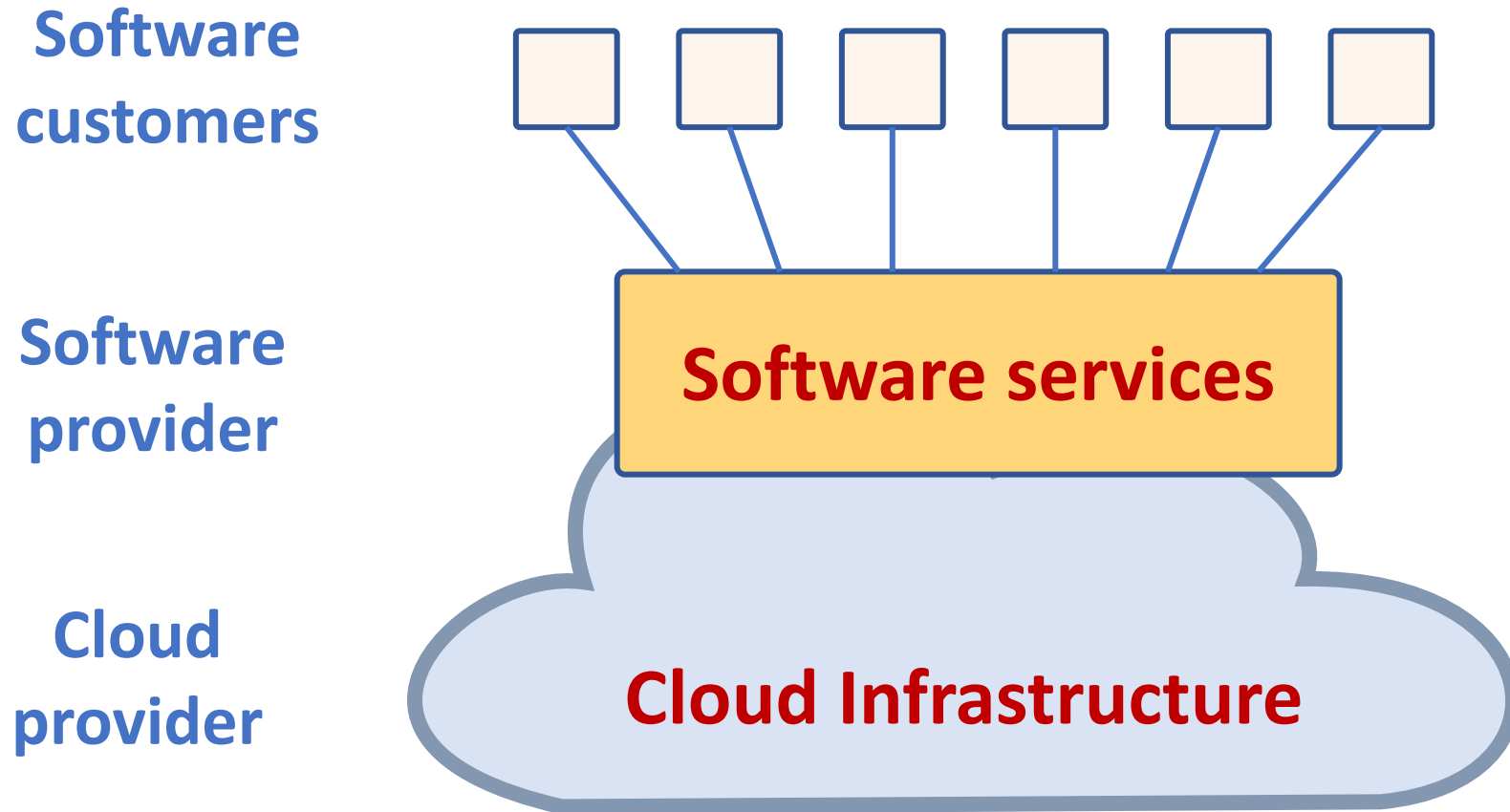
Microsoft

Google

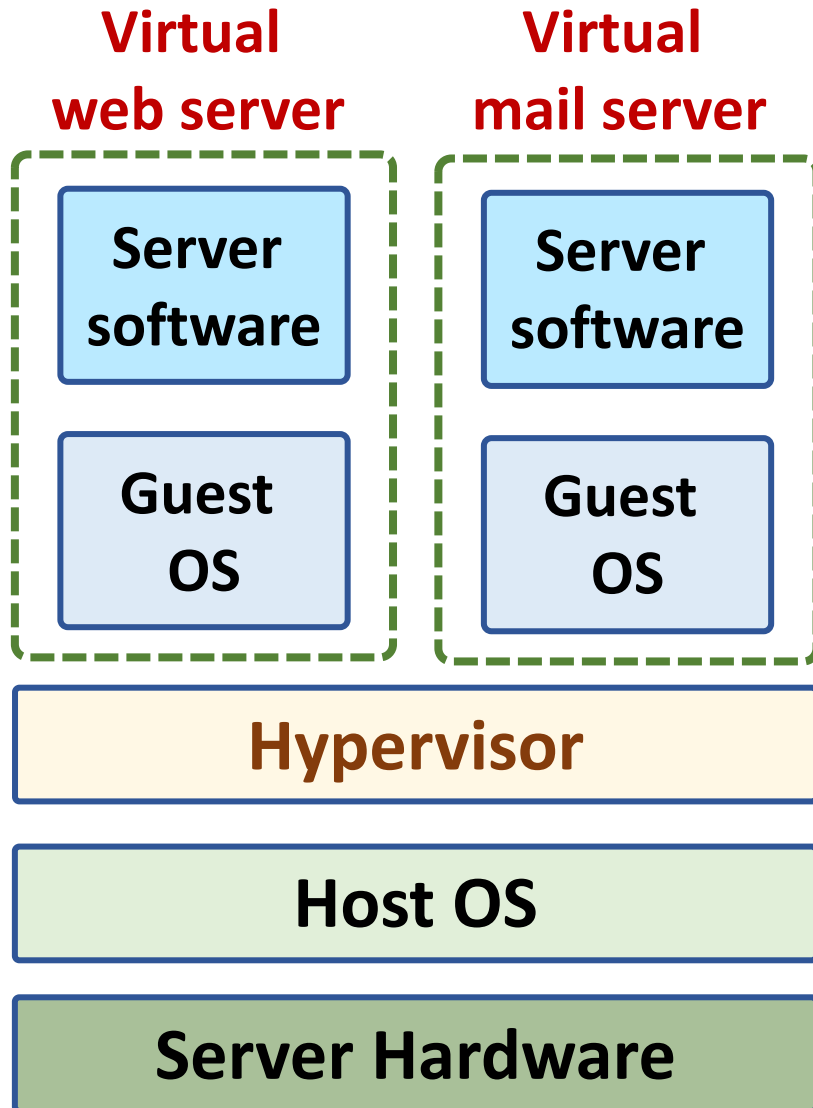
As of July 2021 © Gartner, Inc
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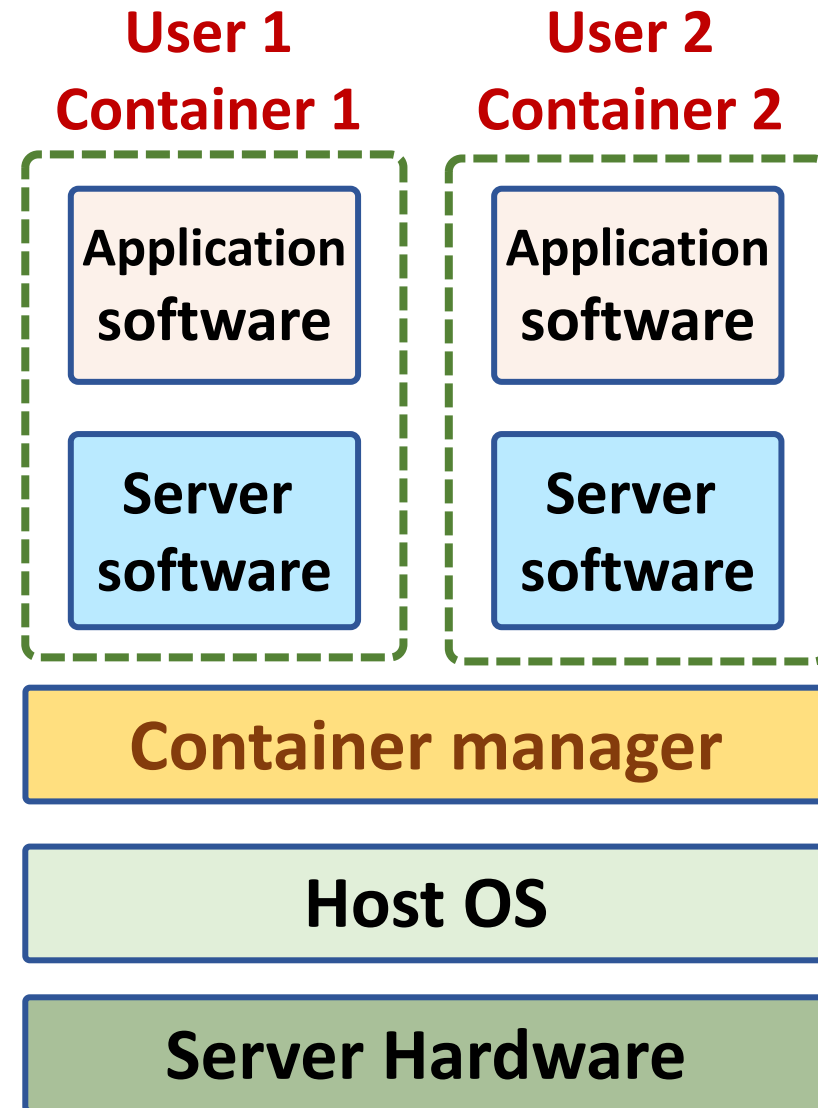
Software as a service



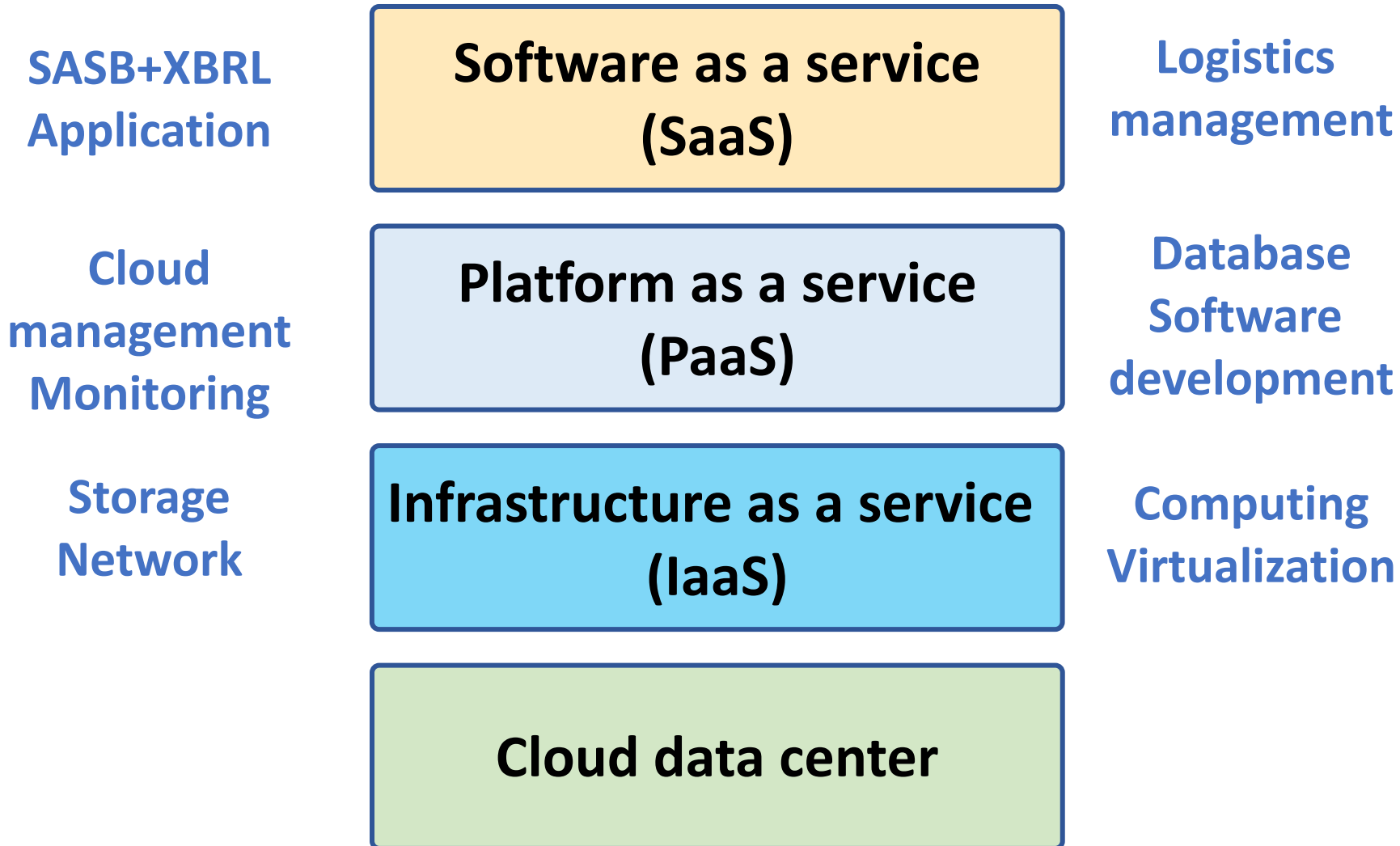
VM



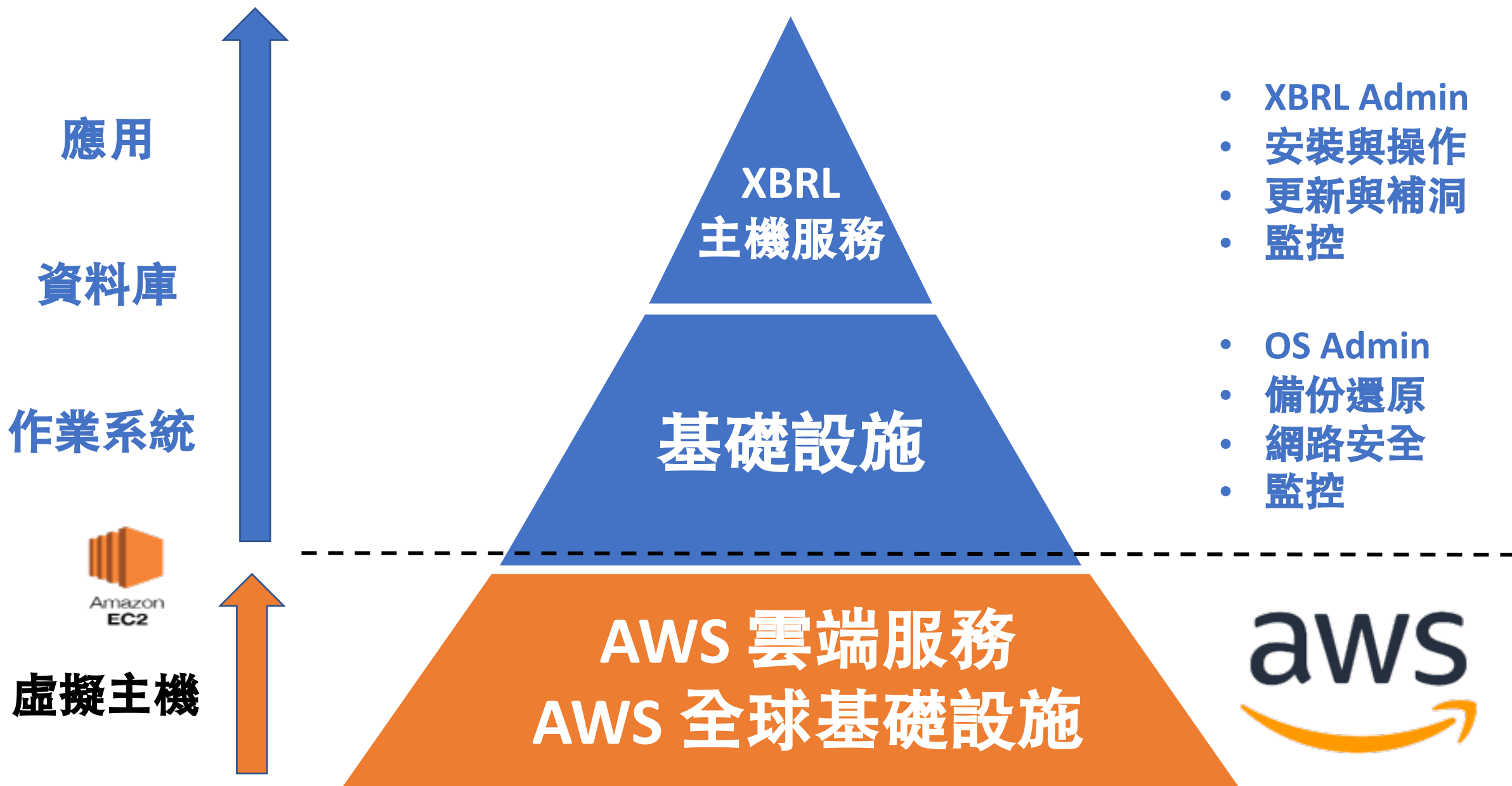
Container



Everything as a service



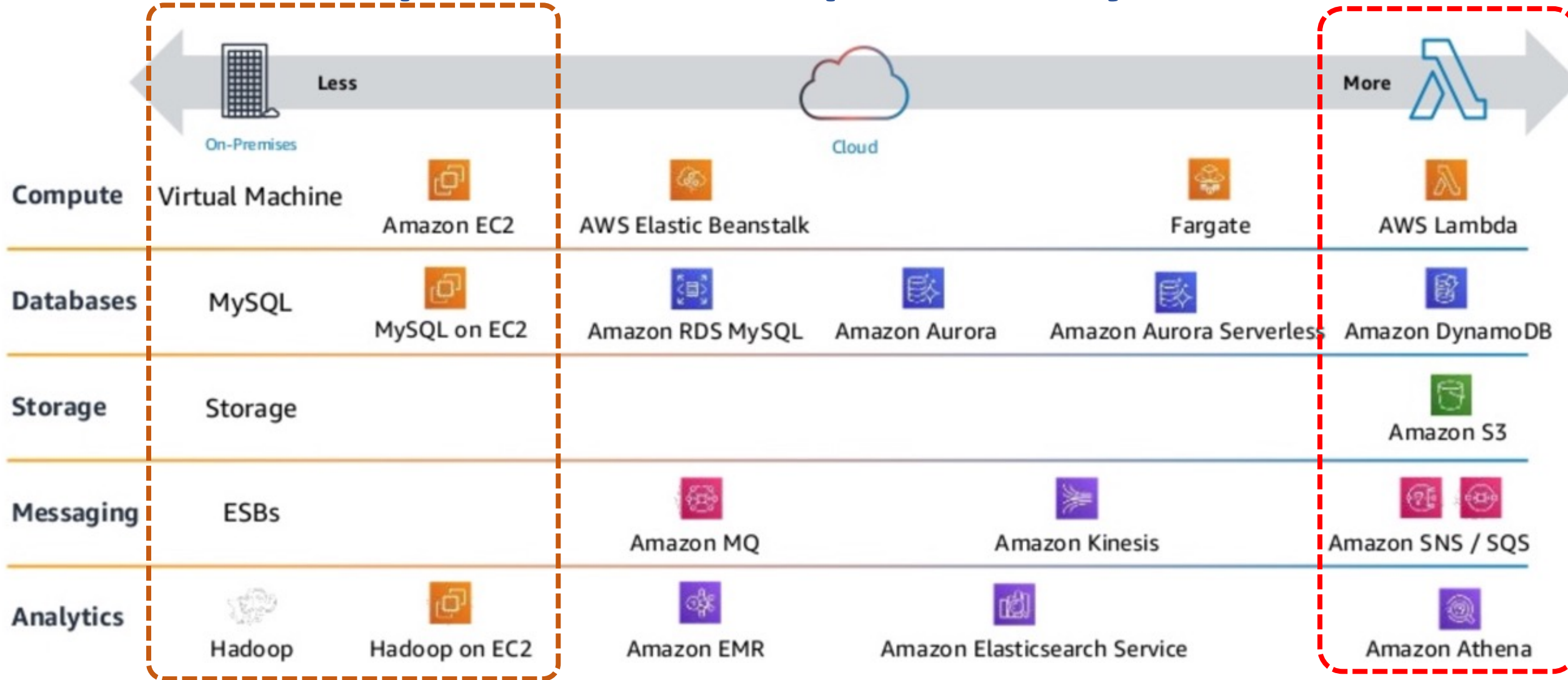
在 AWS 雲端管理 XBRL 服務





AWS Serverless Architecture

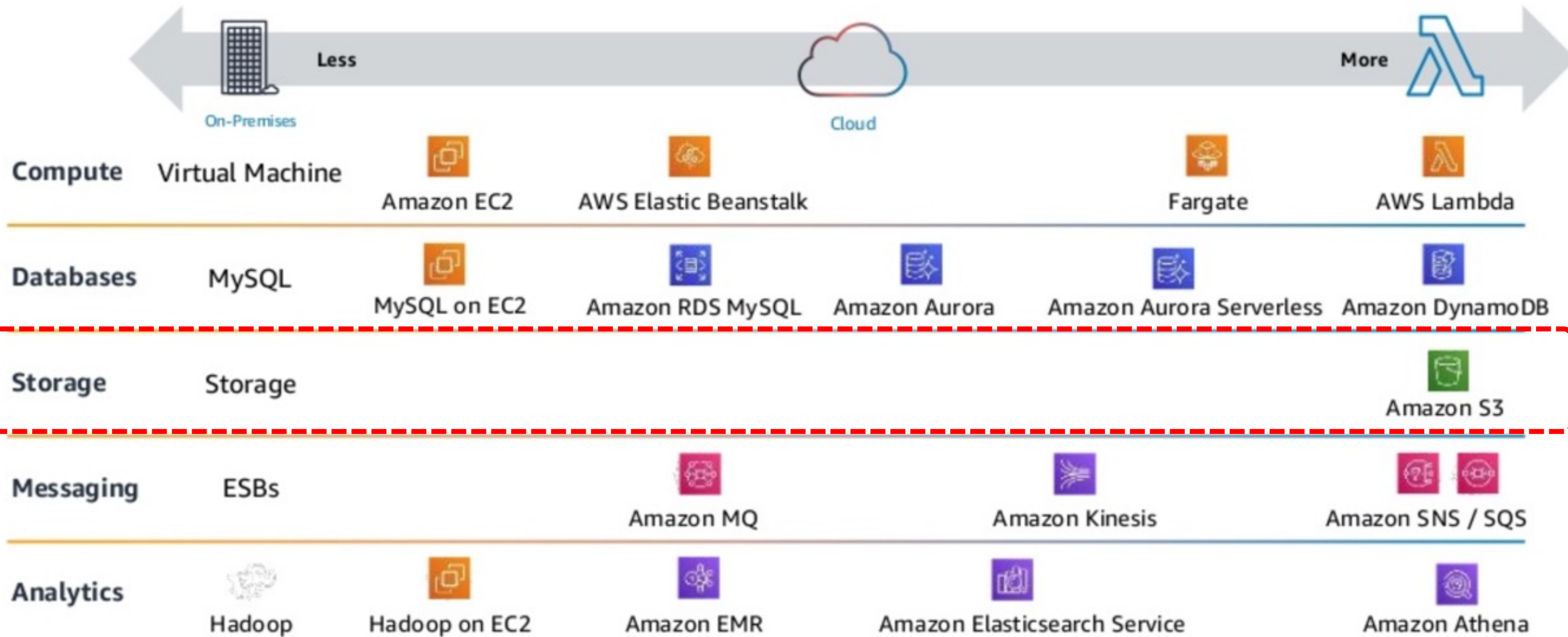
AWS Operational Responsibility Models





AWS Serverless Architecture

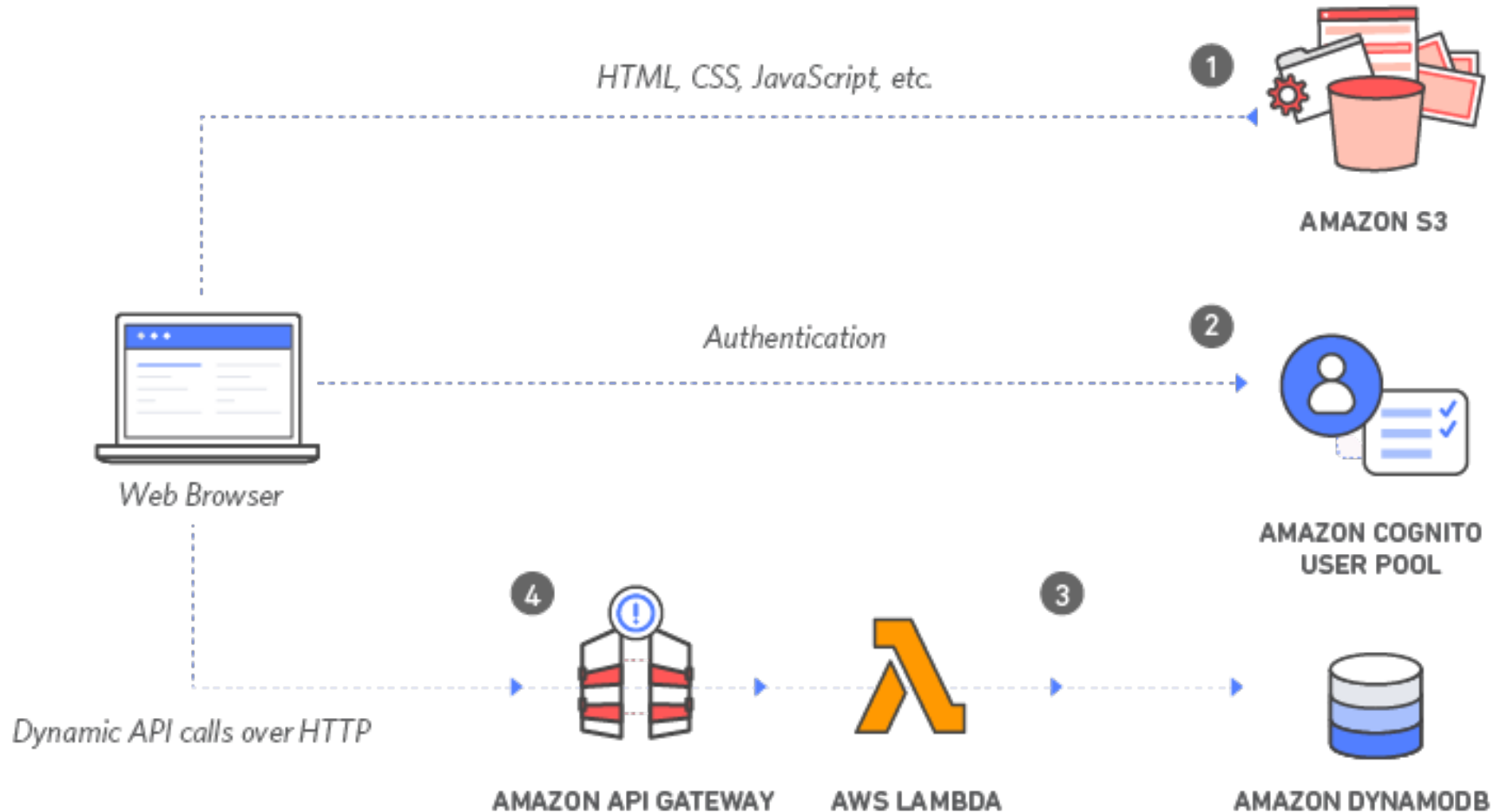
Cloud Storage: Amazon S3





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.

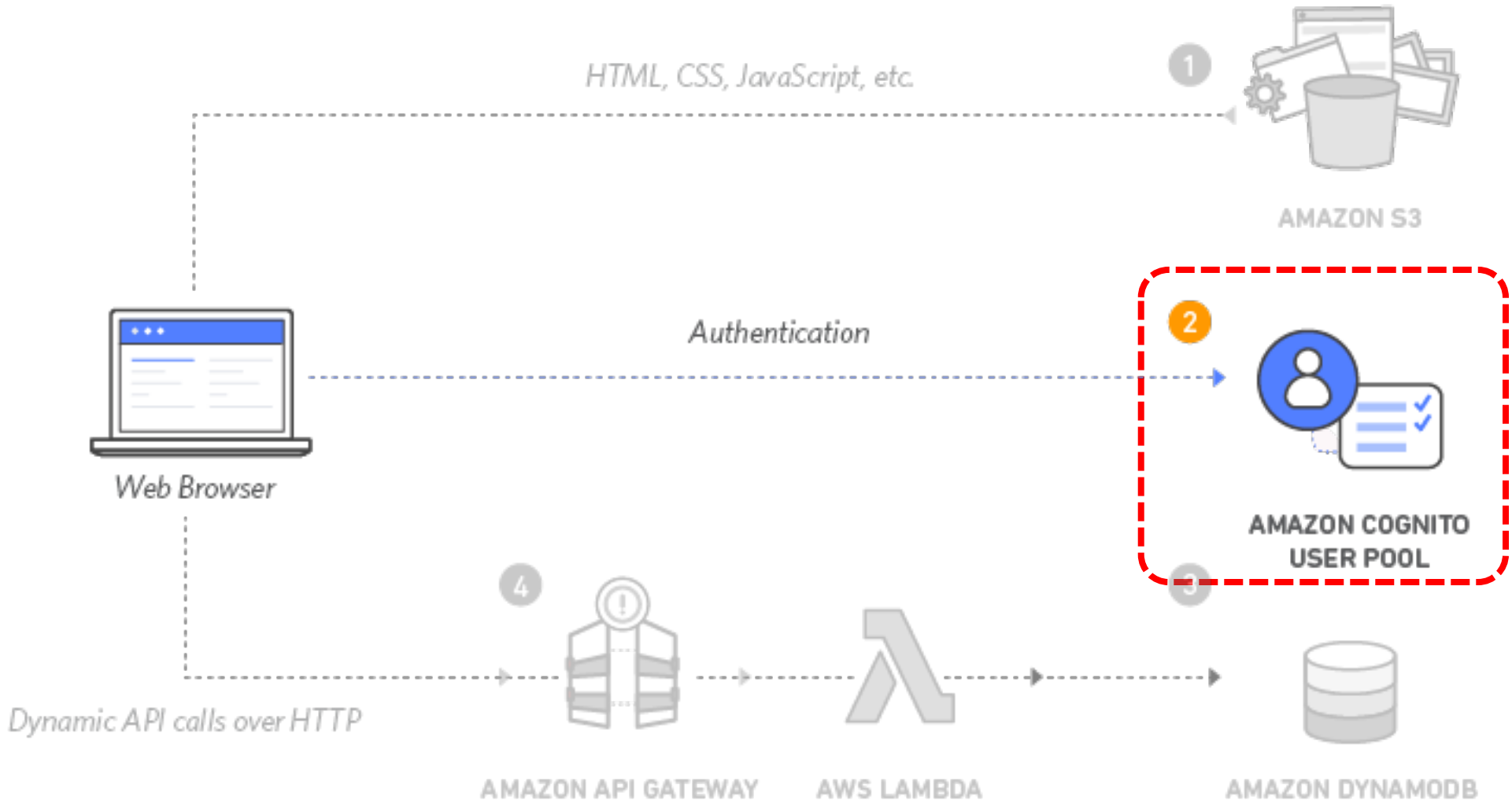




Build a Serverless Web Application

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

2





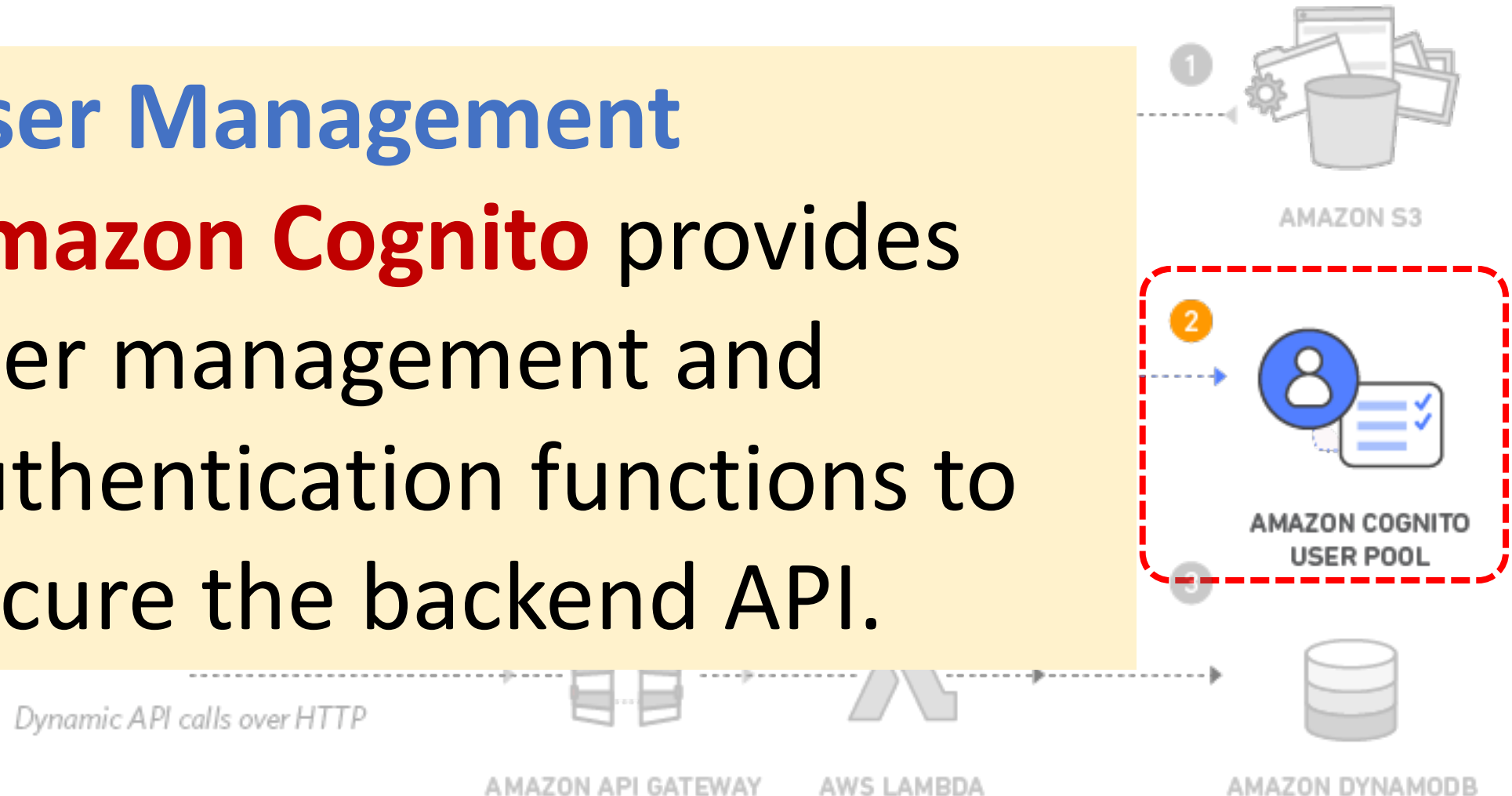
Build a Serverless Web Application

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2

User Management

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

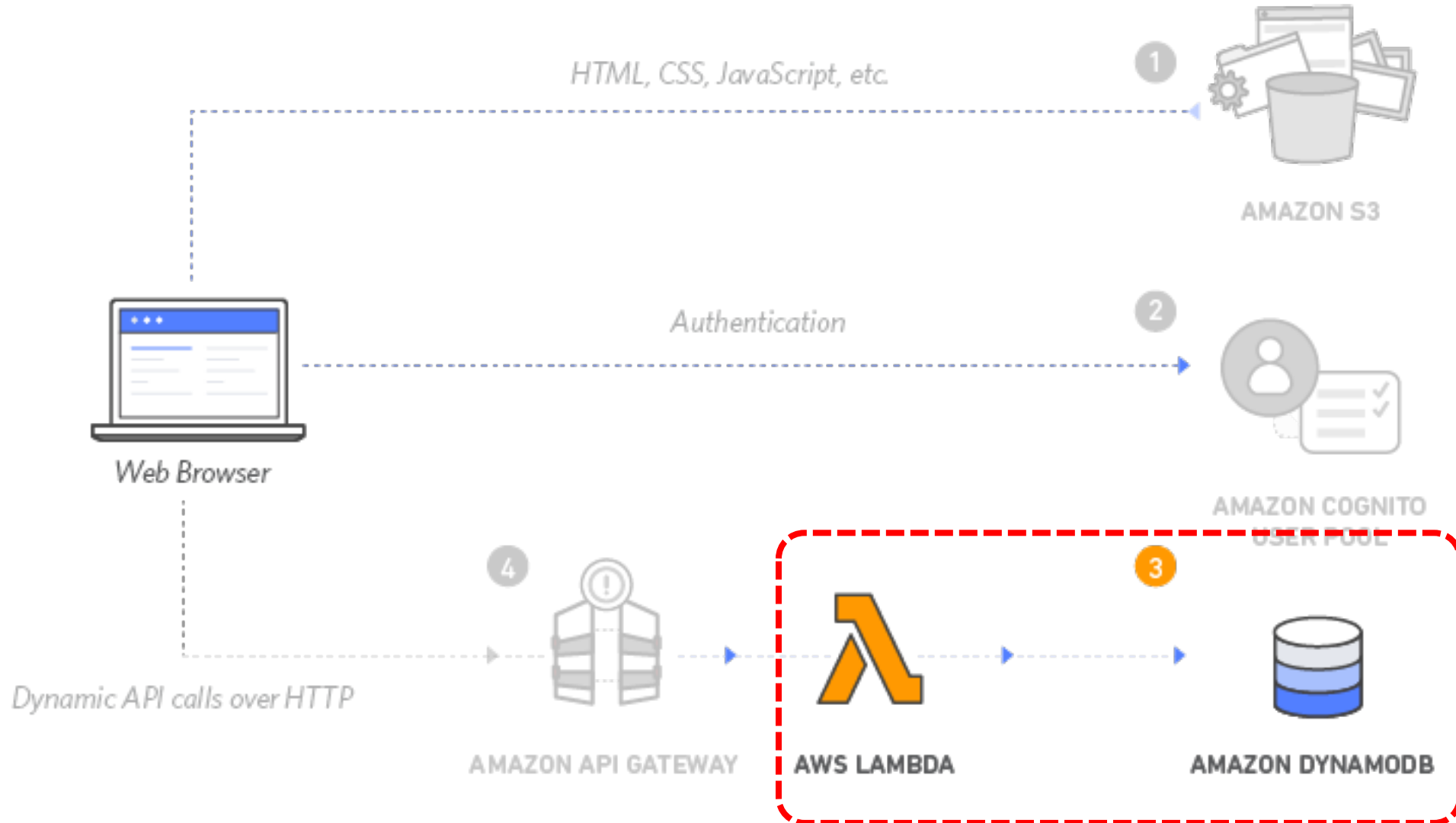




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3





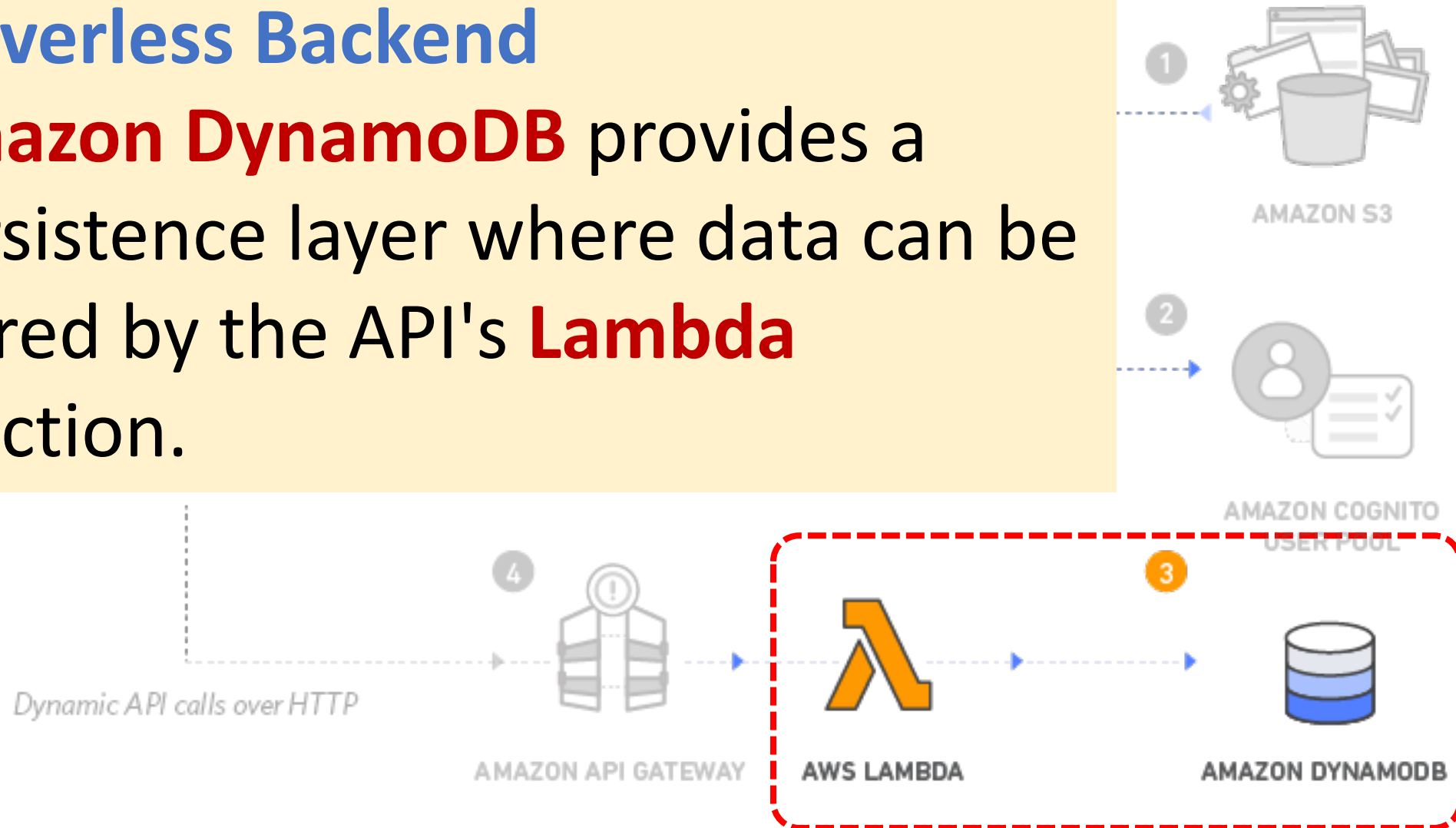
Build a Serverless Web Application

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.

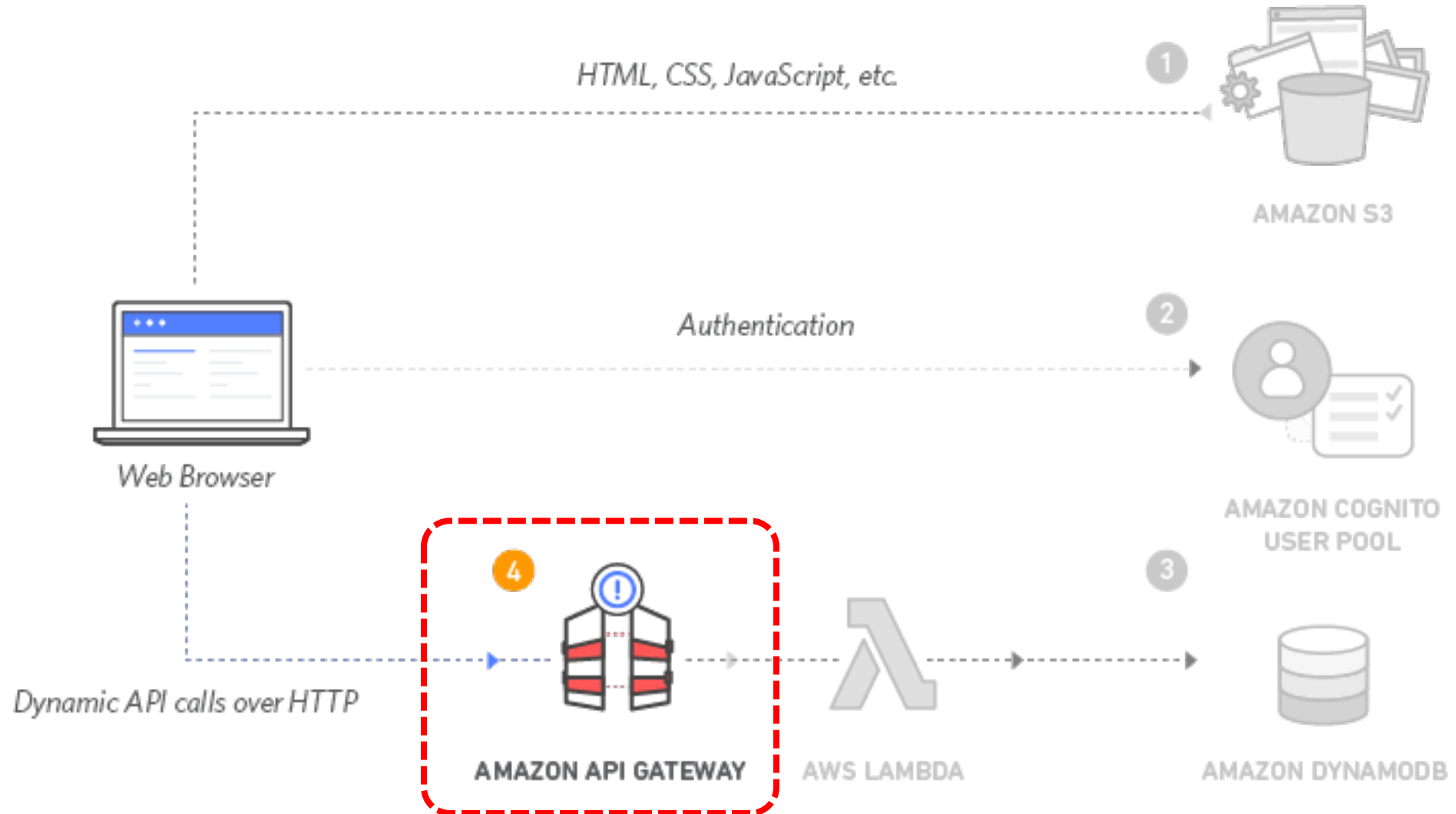




Build a Serverless Web Application

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

4





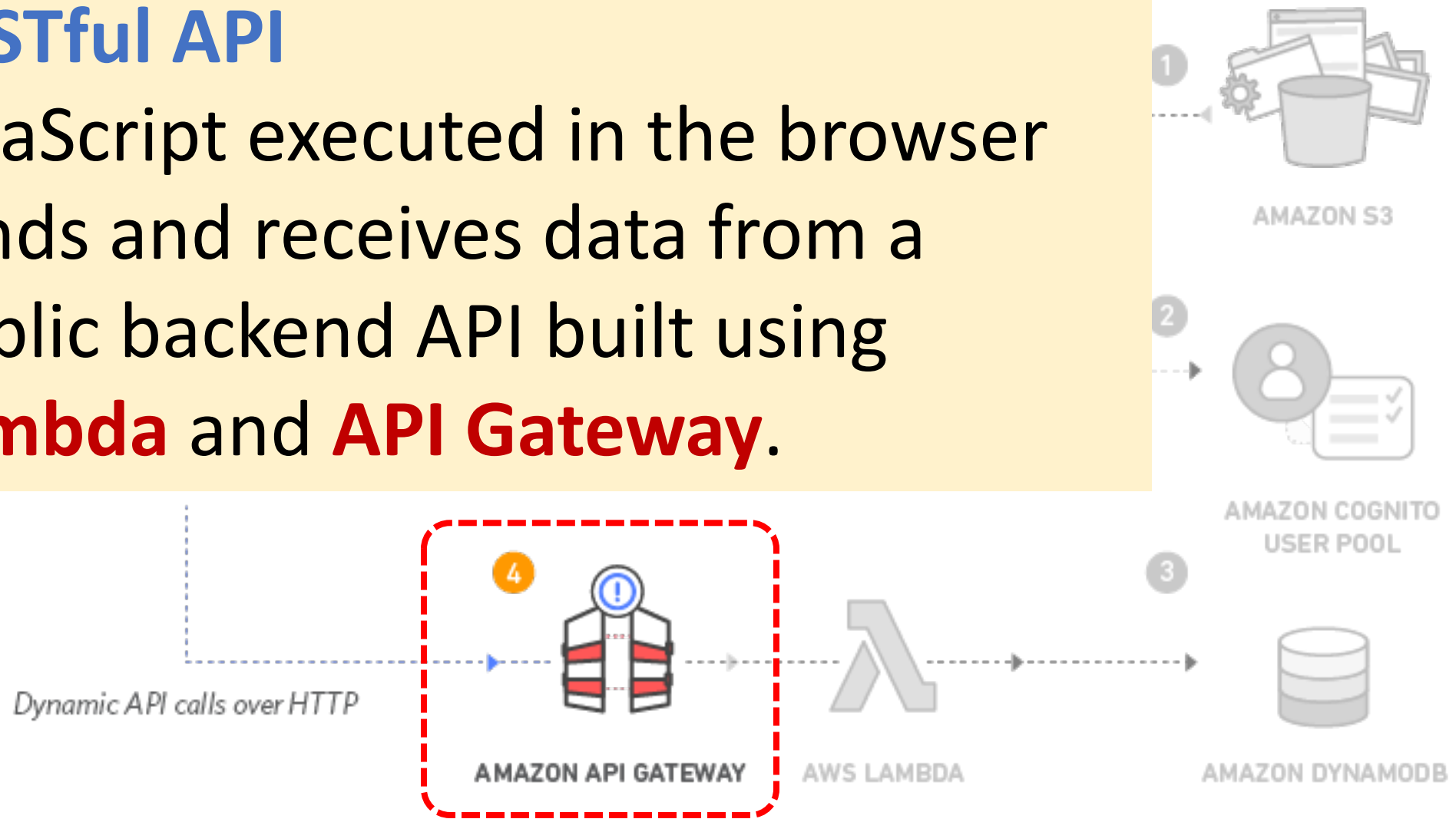
Build a Serverless Web Application

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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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« 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



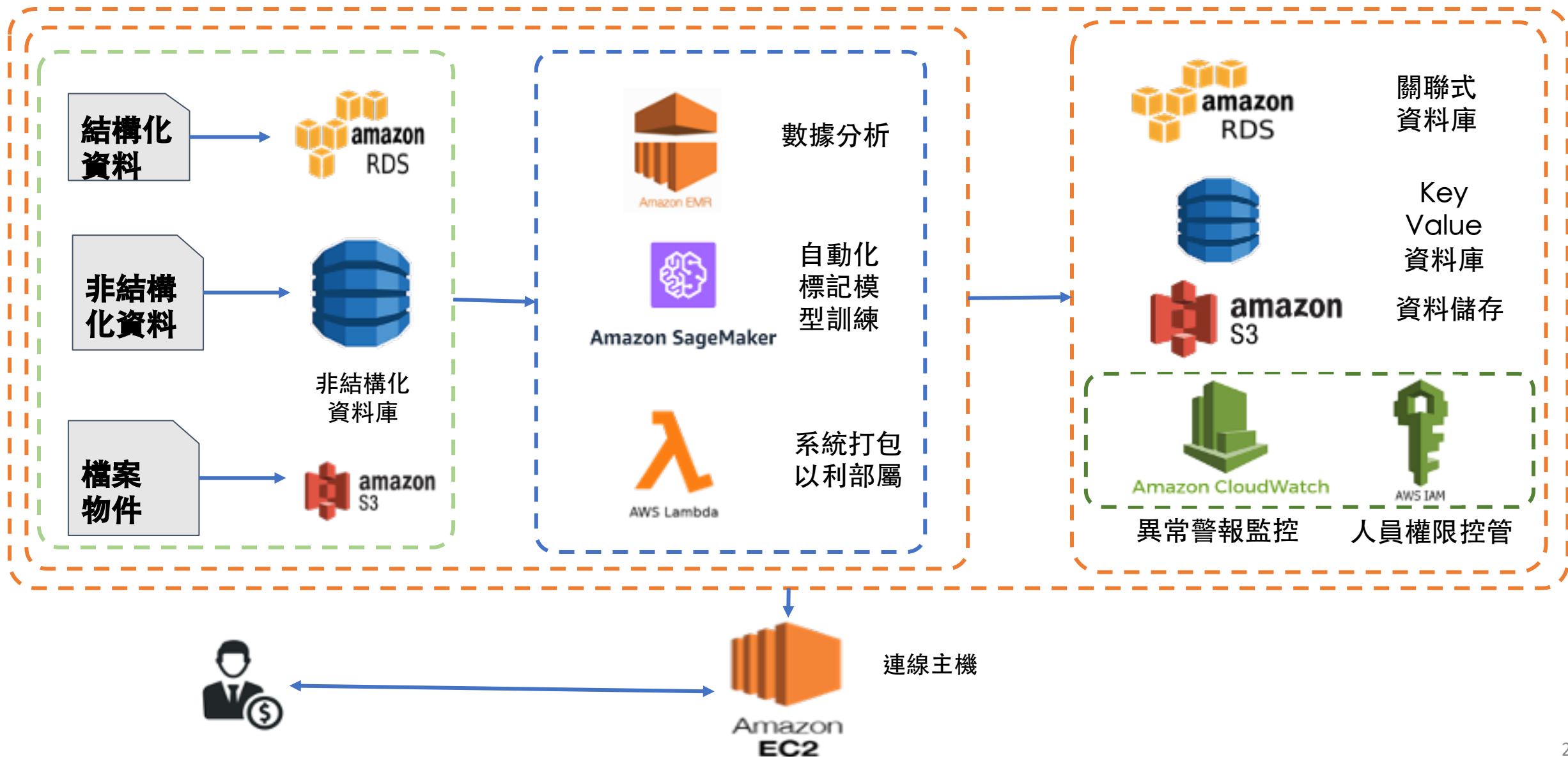
AWS 雲端儲存 – Amazon S3

- 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

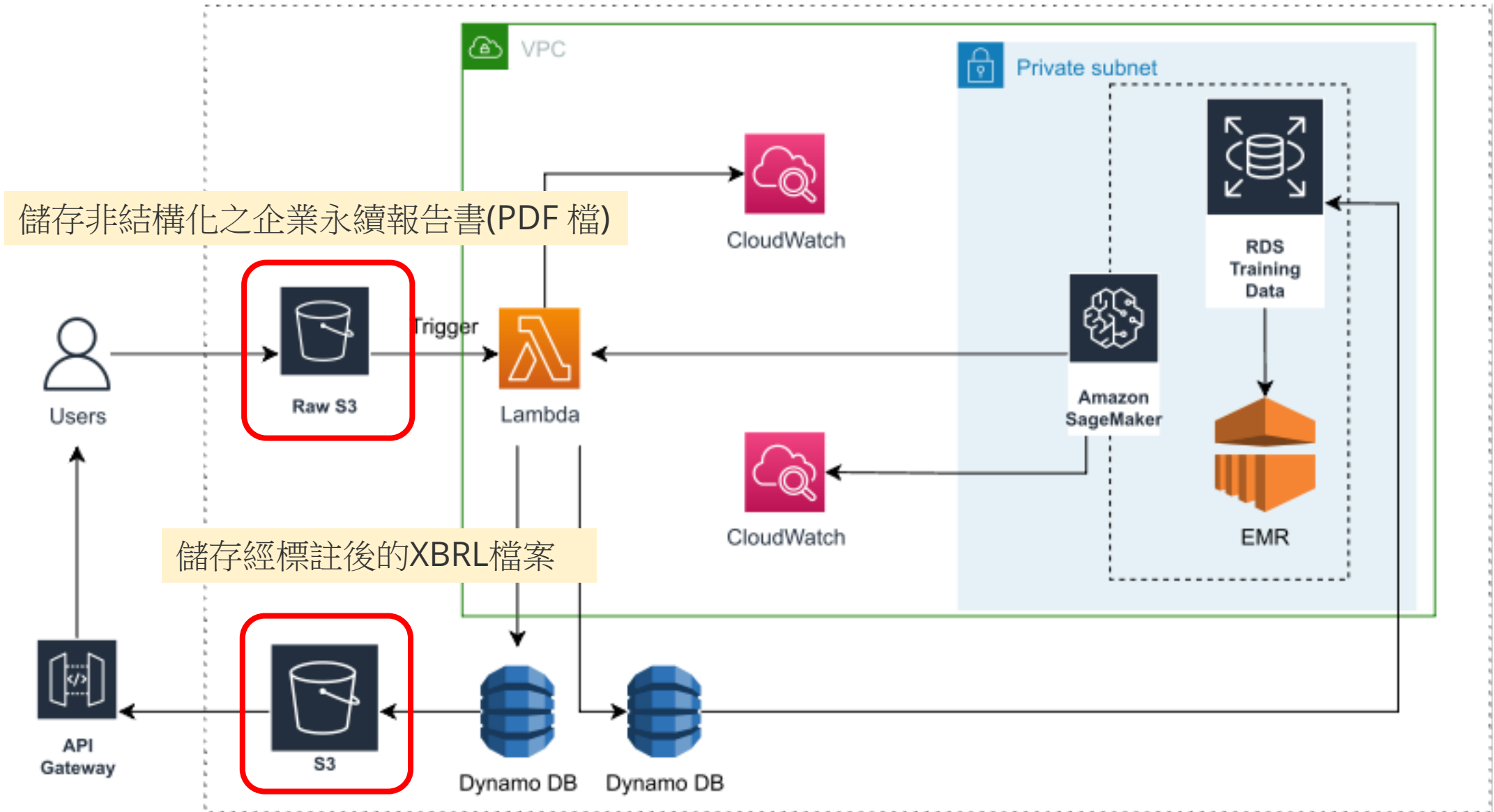
Amazon S3 與 AWS 服務結合應用

- **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

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 雲端架構趨勢

As-Is

- 各系統獨立操作，無法將其統整串連。
- 存取資料較為龐大，占用過多本地端資源與存取空間。
- 改版部屬不易，且流程繁雜
- 未能自動化監測其系統運作異常，對於人員存取限制較為模糊。

To-Be

- 串聯各項雲端基礎建設服務，將系統整合，並加強權限控管與自動化監測機制。
- 運用雲端服務，簡化整體部屬流程。
- 將資料庫從地端遷移至雲端，能有效性監控與管理，並減少地端資源存取空間。

永續報告 XBRL 雲端架構建立

- 以AWS 雲端服務為例，建構一個完整的永續報告XBRL雲端架構，從結構化與非結構化的永續資訊，自動化標記 (Amazon SageMaker) 轉 XBRL 或 iXBRL 存取至雲端資料庫 (Amazon RDS)，並供使用者分析(Amazon EMR)、瀏覽、更新與修改等，同時強化資料庫的存取控制權限 (Amazon IAM)，並監測異常 (Amazon CloudWatch) 使用。
- **未來趨勢與研究方向**：結合Web 3.0 技術，發展建立於雲端區塊鏈上的雲端架構，以去中心化技術建立永續報告XBRL 公開透明且不可竄改之資料庫。

Summary

- **永續資訊數位申報技術**
- **為什麼使用雲端技術**
- **AWS Serverless Architecture**
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Q & A

永續資訊數位申報技術

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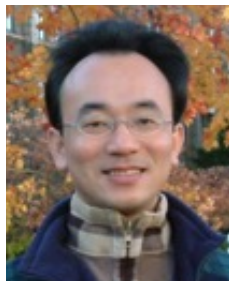
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2022-10-28



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