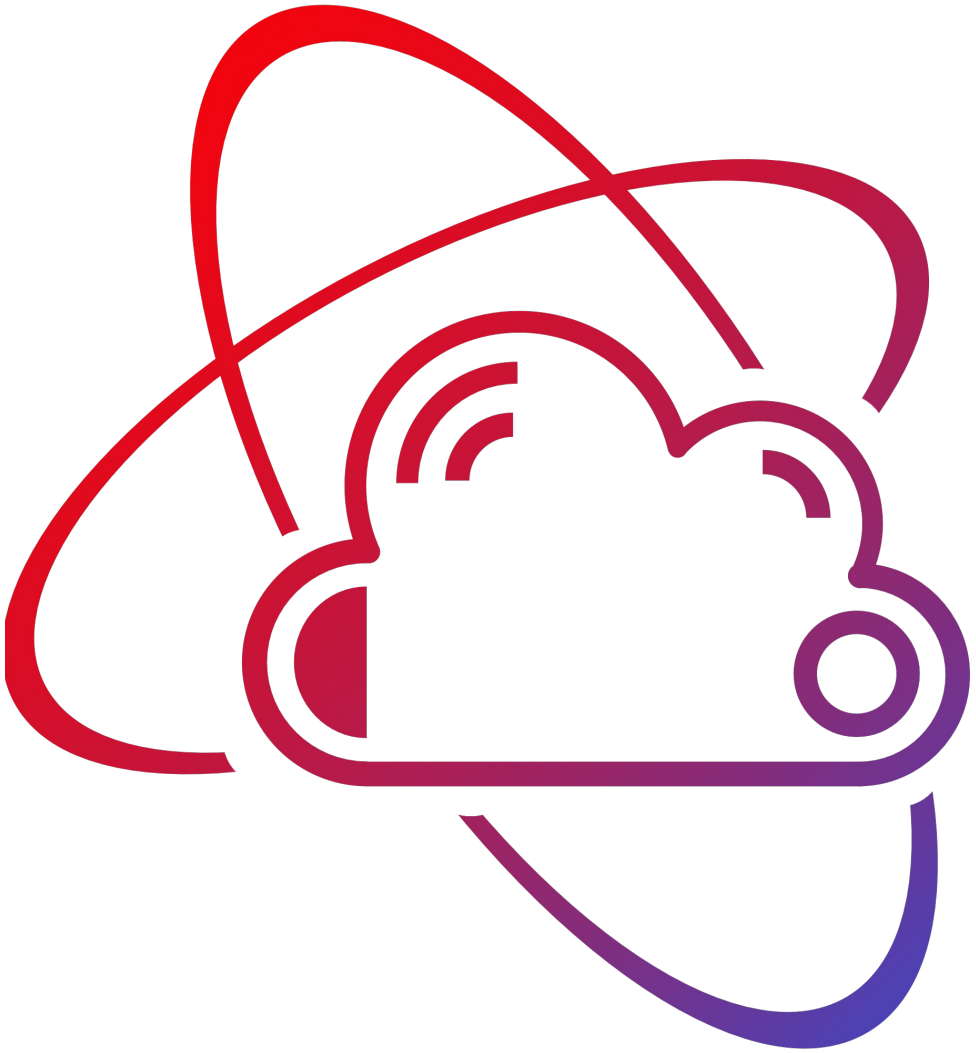
Cloud Computing Architecture

Amazon RDS



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Acknowledgement of Country

We respectfully acknowledge the Wurundjeri People of the Kulin Nation, who are the Traditional Owners of the land on which Swinburne's Australian campuses are located in Melbourne's east and outer-east, and pay our respect to their Elders past, present and emerging.

We are honoured to recognise our connection to Wurundjeri Country, history, culture, and spirituality through these locations, and strive to ensure that we operate in a manner that respects and honours the Elders and Ancestors of these lands.

We also respectfully acknowledge Swinburne's Aboriginal and Torres Strait Islander staff, students, alumni, partners and visitors.

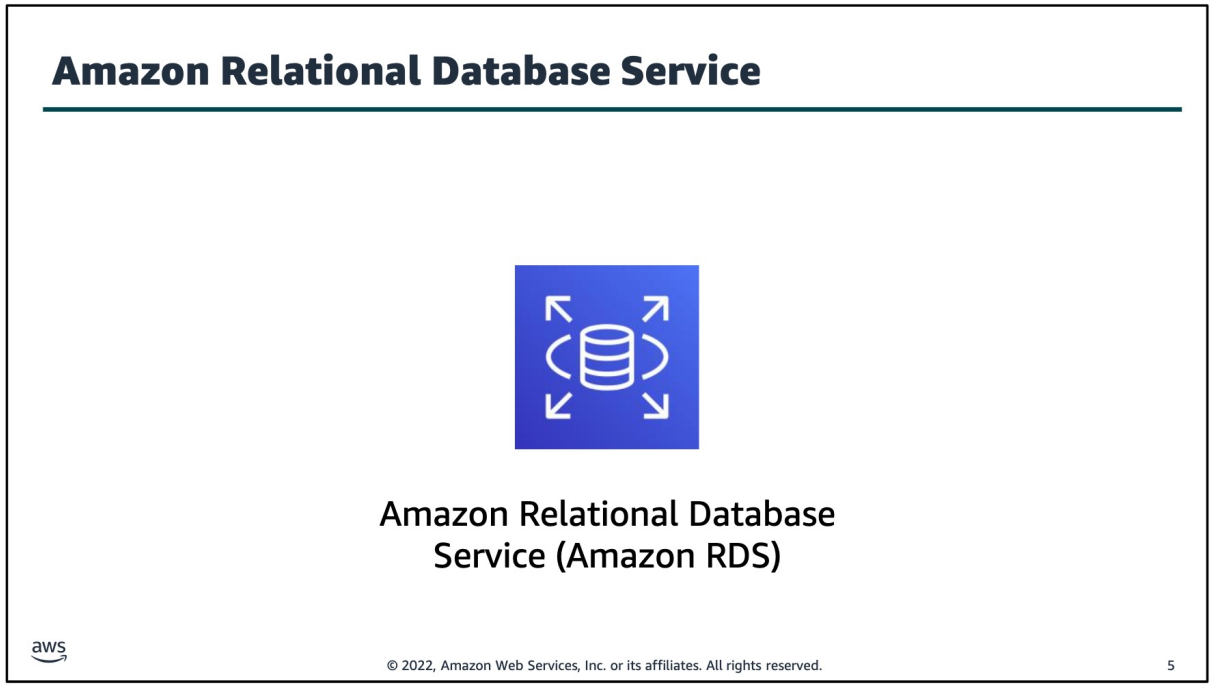
We also acknowledge and respect the Traditional Owners of lands across Australia, their Elders, Ancestors, cultures, and heritage, and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

In this Presentation:

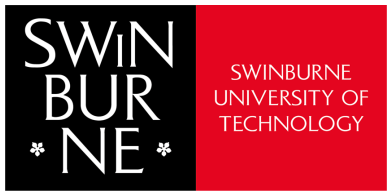
– Introduction to Amazon RDS

– RDS Architectures

– RDS Use Cases



Introduction to Amazon RDS



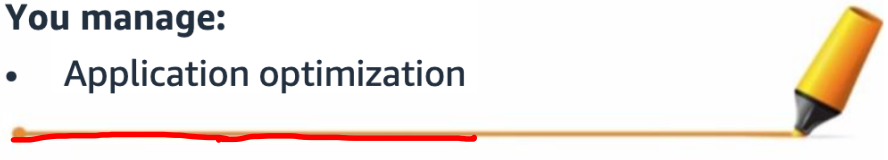
Amazon RDS

Managed service that sets up and operates a relational database in the cloud.

Managed services responsibilities

You manage:

- Application optimization



AWS manages:

- OS installation and patches
- Database software installation and patches
- Database backups
- High availability
- Scaling
- Power and racking and stacking servers
- Server maintenance

Amazon RDS

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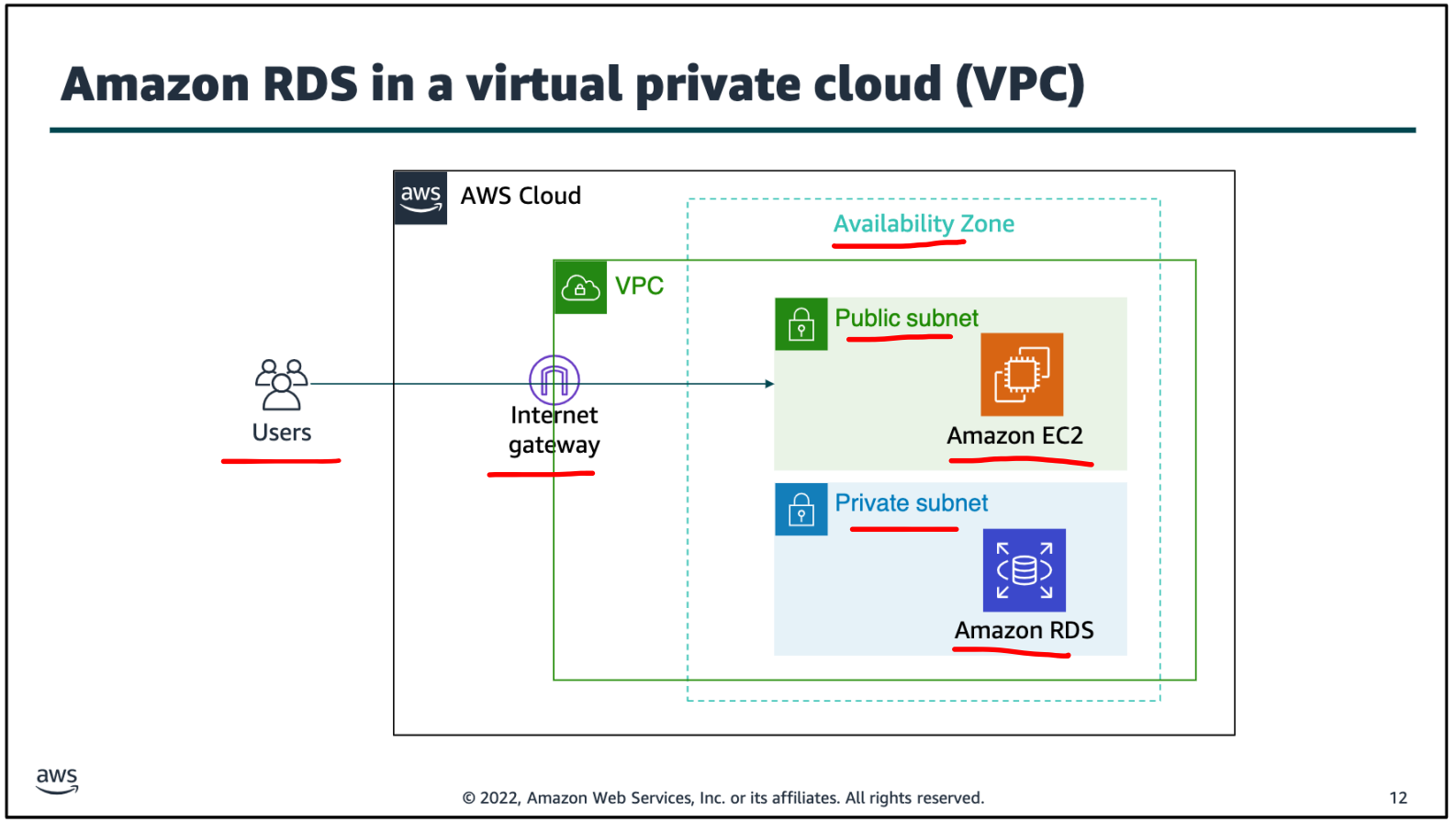
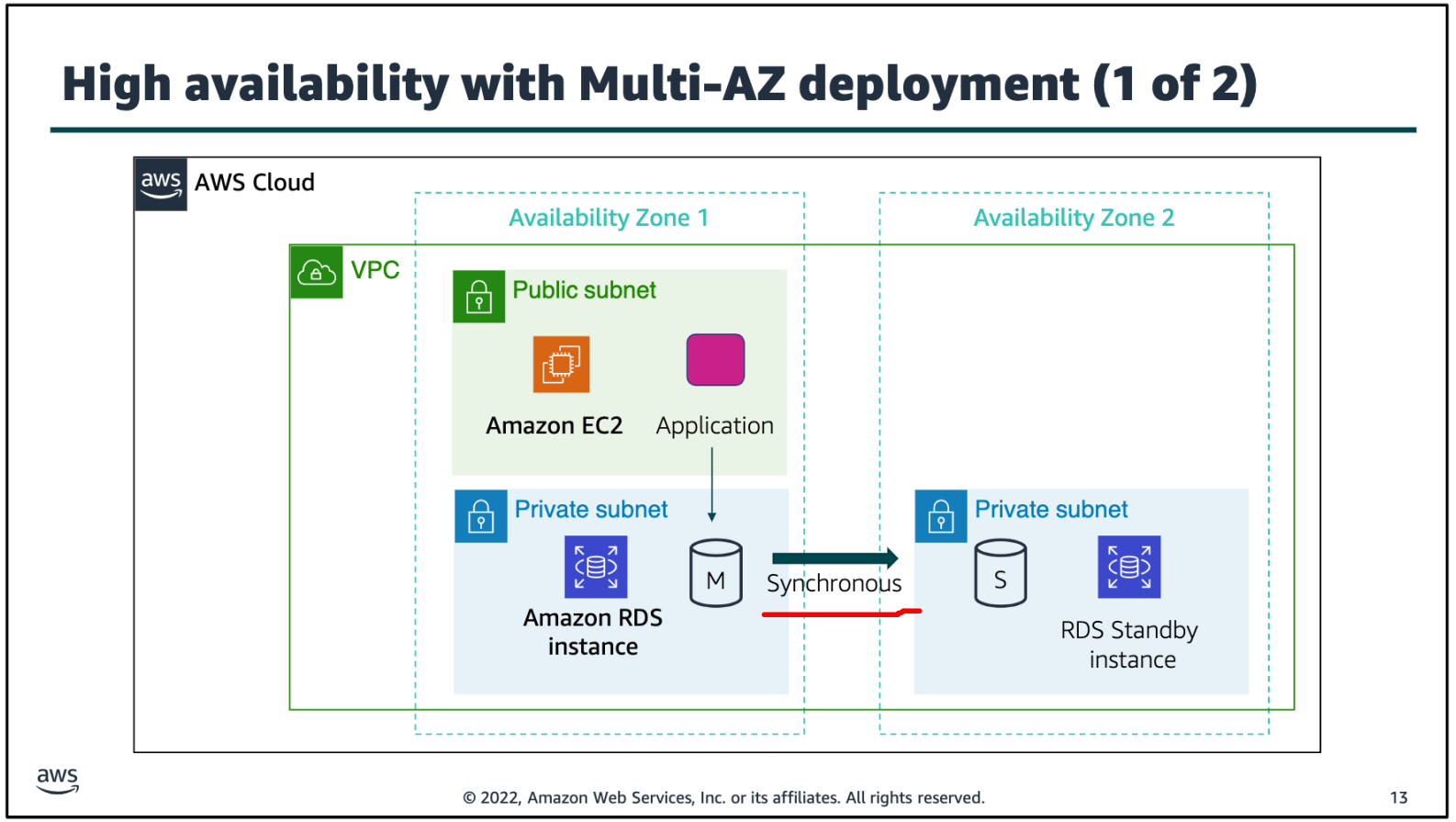
RDS Architectures

Amazon RDS: RDS Architectures




High availability with Multi-AZ deployment (1 of 2)
AWS Cloud
Availability Zone 1
Availability Zone 2
VPC
Public subnet
Amazon EC2
Application
Private subnet
Amazon RDS instance
M
Synchronous
Private subnet
S
RDS Standby instance
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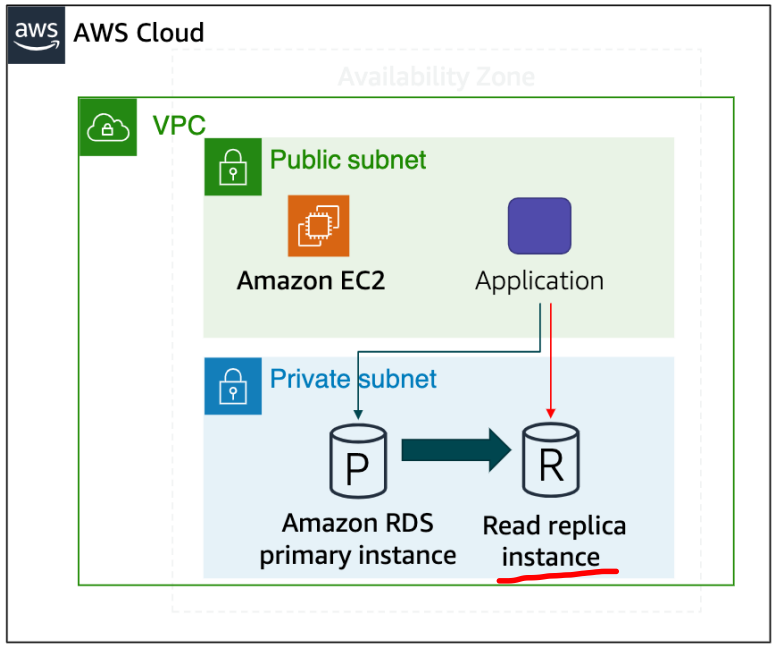
Amazon RDS read replicas

Features

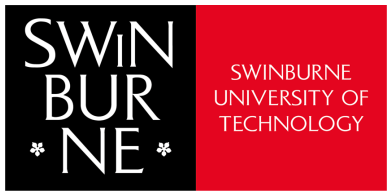
- Offers asynchronous replication
- Can be promoted to primary if needed

Functionality

- Use for read-heavy database workloads
- Offload read queries



RDS Use Cases



When to Use Amazon RDS

Use Amazon RDS when your application requires:

- Complex transactions or complex queries
- A medium to high query or write rate – Up to 30,000 IOPS (15,000 reads + 15,000 writes)
- No more than a single worker node or shard
- High durability

- **Do not use Amazon RDS when your application requires:**
  - Massive read/write rates (for example, 150,000 write/second)
  - Sharding due to high data size or throughput demands
  - Simple GET or PUT requests and queries that a NoSQL database can handle
  - Relational database management system (RDBMS) customization

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Amazon RDS: RDS Use Cases

Use cases

Web and mobile applications	✓ High throughput ✓ Massive storage scalability ✓ High availability
Ecommerce applications	✓ Low-cost database ✓ Data security ✓ Fully managed solution
Mobile and online games	✓ Rapidly grow capacity ✓ Automatic scaling ✓ Database monitoring

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Want to learn more?

Check out:

AWS Academy – ACF Module 8: Databases - RDS

AWS Documentation