Appendix

Appendix 1: Amazon RDS – Case study

Blackboard provides cutting-edge education technologies and services that allow millions of people to learn in classrooms, universities, and businesses around the world. Blackboard Learn, the company's flagship offering, is a robust learning management system that comes in three flavors: on-premises, hosed and professionally operated software as a service (SaaS).

That's why it chose to migrate to the open-source PostgreSQL database running on Amazon Relational Database Service (Amazon RDS). This required an initial investment to carry over optimizations from one platform to another, but the company expects the move to pay off by eliminating licensing fees and reducing management overhead. "In a managed-hosting environment, when the database goes down, it requires manual intervention, and it's a major event," says Reinhold Staudinger, chief architect at Blackboard. "With Amazon RDS, it's handled automatically. That will drive our total costs down significantly over time." (Staudinger, n.d.)

Adopting Amazon RDS has provided additional advantages beyond cost savings. When the company wanted to offer customers read-only access to real-time data, it found that Amazon RDS already had the feature built-in. Staudinger says, "Using Read Replicas in Amazon RDS, we empower customers to access transactional data without significantly increasing our computational workload." (Staudinger, n.d.)

Appendix 2: Microsoft AZURE – Case study

Xerox Corporation ported an on-premise enterprise print capability to a public cloud environment. This capability allowed mobile users to find printers with their smartphones and route printouts. As the on-premise version leveraged Microsoft SQL Server for the database component, Xerox selected Microsoft SQL Azure for cloud storage. This approach allowed them to reuse their prior investments in SQL Server-based technology and .NET and minimize the technical challenges of porting a cloud-based environment.38 They were also able to minimize their skills-based challenges because the development team was trained

on Microsoft products. Xerox used SQL Azure for “user account information, job information, device information, print job metadata, and other such data,” but the actual print files were stored in Azure Blob Storage, not SQL Azure.39 Azure Blob Storage had different pricing and characteristics than SQL Azure. For example, unlike SQL Azure, Blob Storage was not limited to 10 GB (Web edition) or 50 GB (Business edition). (windowsazure.com, n.d.)

Appendix 3: MongoDB- Case study

Barclays is a transatlantic consumer, corporate, and investment bank offering products and services across personal, corporate, and investment banking, credit cards, and wealth management. To replace three decades of relational databases in numerous use cases throughout the bank, Barclays built a Centre of Excellence for its non-relational database of choice: MongoDB. The CoE was created in a strategic partnership with MongoDB to help to drive adoption and define best practices across its global organization. Barclays already sees increased agility, scalability, and cost-efficiencies from this transformative project. (MongoDB, 2018)

Appendix 4: Amazon DynamoDB – Case study

"When IMDb launches features to our over 110MM monthly unique users worldwide, we want to be prepared for rapid growth (1000x scale) and for customers to use our software in exciting and different ways," said H.B. Siegel, CTO, IMDb. "To ensure we could scale quickly, we migrated IMDb’s popular 10 star rati1startedem to DynamoDB. We evaluated several technologies and chose DynamoDB because it is a high-performance database system that scales seamlessly and is fully managed. This saves us a ton of development time and allows us to focus our resources on building better products for our customers while still feeling confident in our ability to handle growth." (aws.amazon.com, n.d.)