ISEM 501-90 Information and Communications Technologies
Wednesday June 7, 2017

Agenda:

1. Assignment : Chapters 3 and 4

2. Case Study: Amazon Web Services

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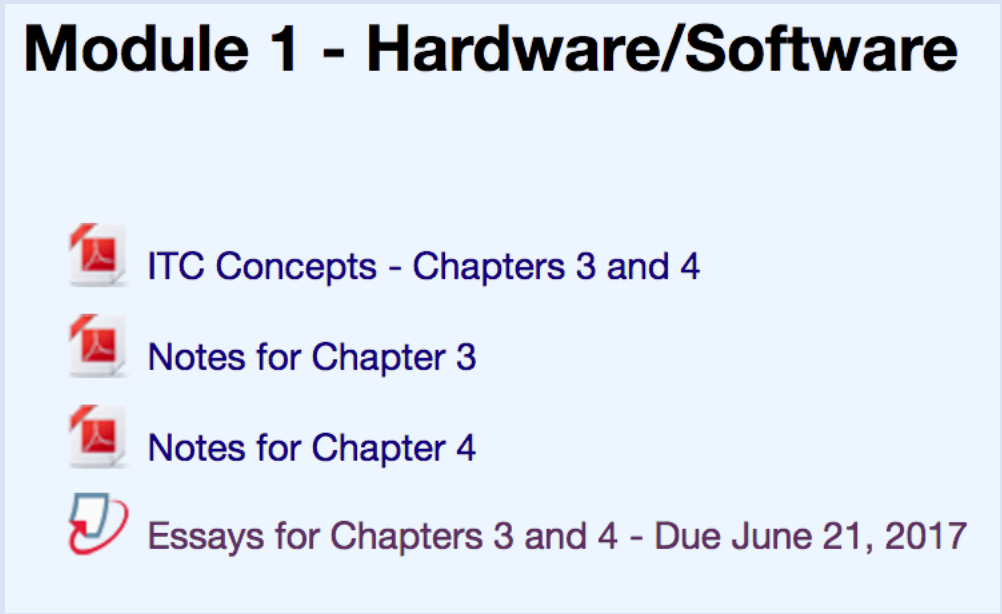
Class Notes

AWS Real Time Bidding

Assignment 1: Chapters 3 and 4

Download these 3 PDFs

Essays due June 21, 2017



Essay Instructions (See Moodle Page)

Summary:

Instructions

You are to write **two (2)** essays for this assignment, picking from the topics listed below.

You must pick one hardware topic, and one software topic.

Remember to follow the format for essays EXACTLY, and to include references for the work you researched and used for additional information.

CHAPTER 3: Hardware

(PICK ONE HARDWARE QUESTION ONLY)

1. Refer to Figure 3.1 in the text. Has this architecture changed in 10 years? Where have the most advances been made? What is limiting advances in each component?

2. Refer to Table 3.3. What storage technologies have been introduced since this chart was produced? What is your prediction for the next 5-10 years for storage?

3. Update Table 3.4 to include current Types of Computer Systems. What is your prediction for the next 5-10 years for computer systems?

4. Update Figure 3.3 to show the latest Intel chips. How much did each of the Pentium processors cost when they were introduced?. What is your prediction for the next 5-10 years for CPUs?

5. Refer to Table 3.2, showing various types of memory. What memory technologies have been introduced since this chart was produced? What is your prediction for the next 5-10 years for memory?

CHAPTER 4: Software

(PICK ONE SOFTWARE QUESTION ONLY)

1. Identify the most common software you use at work and and home. How did you choose it? What features do you like/dislike? What criteria do you use when judging software?

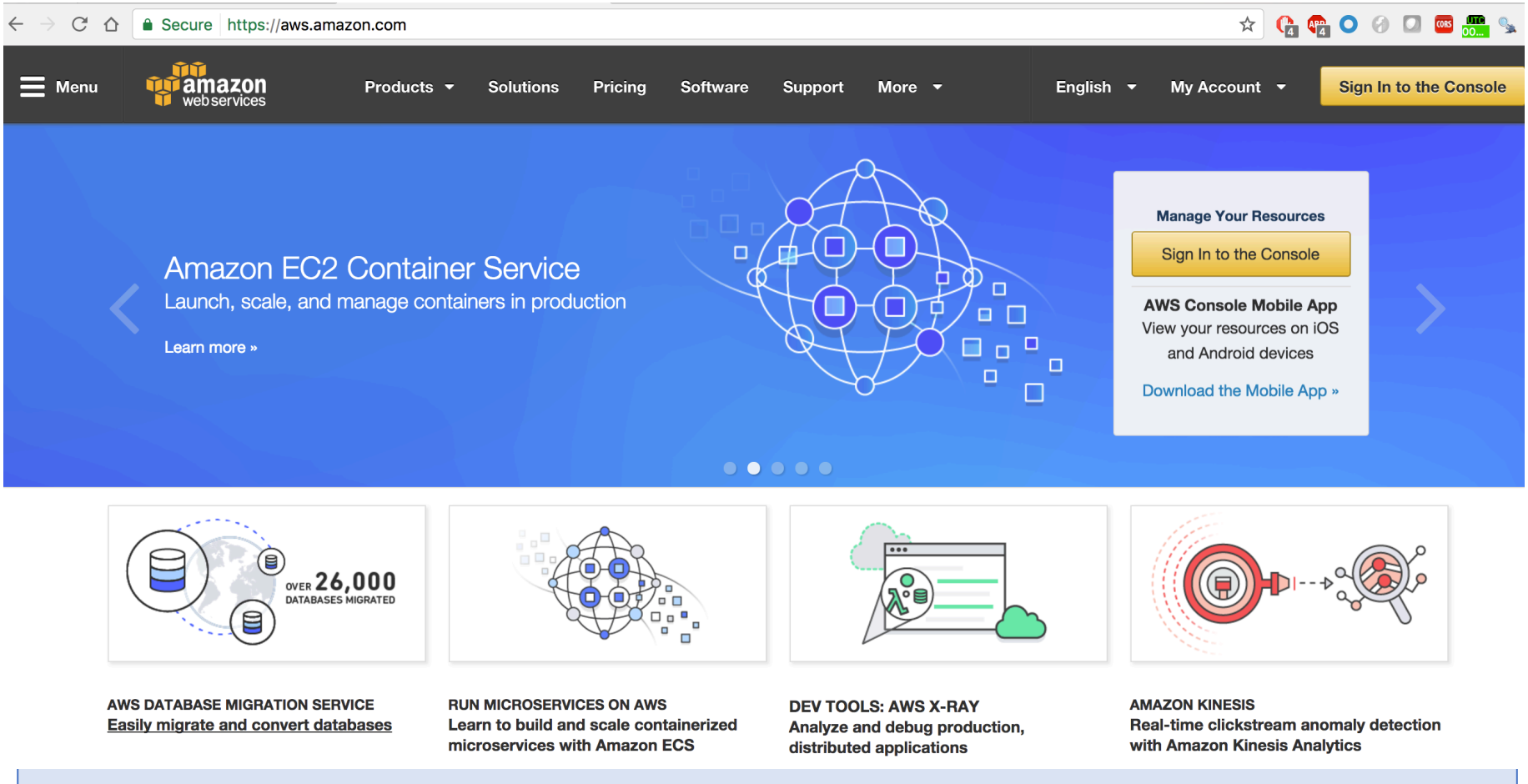
2. Update Table 4.5, ranking the example software by popularity. Note which software packages are no longer used, and add new ones. Are there new types of software (column 1) that did not exist when the article was written 10 years ago?

3. Update Table 4.9, and give examples of programming languages. What is your prediction for the next 5-10 years?

4. The chapter does not discuss security issues such as viruses and break-ins. Identify and discuss the major security problems that have been in the news over the last 10 years.

Note: You will upload ONE document that contains BOTH essays.

Case Study – AWS: Amazon Web Services



Abstract

Abstract

Amazon Web Services (AWS) is a flexible, cost-effective, easy-to-use, global cloud computing platform. The AWS cloud delivers a comprehensive portfolio of secure and scalable cloud computing services in a self-service, pay-as-you-go model, with zero capital expense needed to manage your real-time bidding platform. This whitepaper helps architects, engineers, advertisers, and developers understand real-time bidding (RTB) and the services available in AWS that can be used for RTB. This paper will showcase the RTB platform reference architecture used by customers today, as well as provide additional resources to get started with building an RTB platform on AWS.

https://d0.awsstatic.com/whitepapers/Building_a_Real_Time_Bidding_Platform_on_AWS_v1_Final.pdf

Conclusion

Conclusion

Real-time bidding is a growing trend that has many different components required to effectively deliver intelligent real-time purchasing of media. The AWS platform is a perfect fit for each component of the RTB platform due to the global reach and breadth of services. An RTB architecture on AWS allows you to get the real-time performance necessary for RTB as well as reduce the overall cost and complexity involved in running an RTB platform. The result is a flexible big data

architecture that is able to scale along with your business on the AWS global infrastructure. Deploying on AWS offloads a significant amount of the complexity of operating a scalable real-time infrastructure, so that you can focus on what differentiates you from your competitors and focus on making the best possible bidding strategies for your customers.

Terms

Student	Term to look up
Alkanti, Hemanth Reddy	Elastic
Alshurafa, Aman	Latency
Bandaru, Nishanth	AWS
Bhasale, Satyajeet Mukesh	RTB
Chaudhari, Mitul Rameshbhai	Spot Instances
Chen, Dandan	Reserved Instances
Huang, Xiaofei	scalable
Jiang, Yuanqing	S3
Jonnalagadda, Kiran Raj	VPC
Kikani, Darshak Madhubhai	DynamoDB
Kolesnyk, Yuliya	Online advertising
Liang, Jiayin	granular
Liu, Yingchen	impression
Maddipatla, Ramprasad	ecosystem
Parupudi, Ishwarya	ad-exchange
Peddolla, Praveen Kumar	third-party data providers
Qiang, Jiaqing	Bid Traffic
Ranghavajhala, Praveen	Analysis Traffic
Ren, Yuejiao	tracking pixels
Saxena, Abhinav	AWS Lambda
Singh, Manmohan	data repository
Soni, Bhavneet	replication
Soundaram, Vijay Kumar	machine learning
Trivedi, Tapan	multi-tenant
Vaddadi, Ashwini Kumar	EC2
Voore, Santosh Karthik	scalable
Wu, Jieying	S3
Zhang, Cuiping	VPC
Zhang, Jiahe	DynamoDB
Zou, Xiuji	AWS Lambda

Structure

Contents

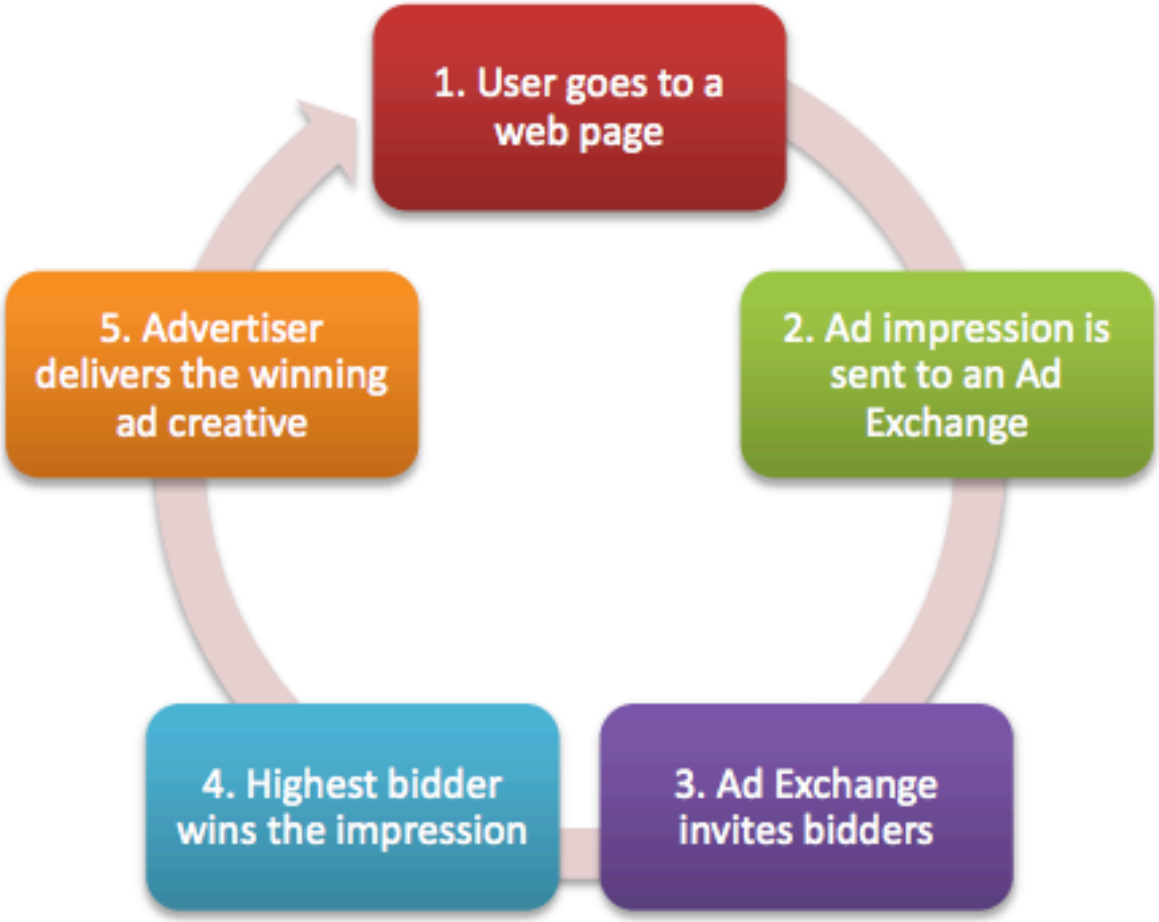


Figure 1: Real Time Bidding Process

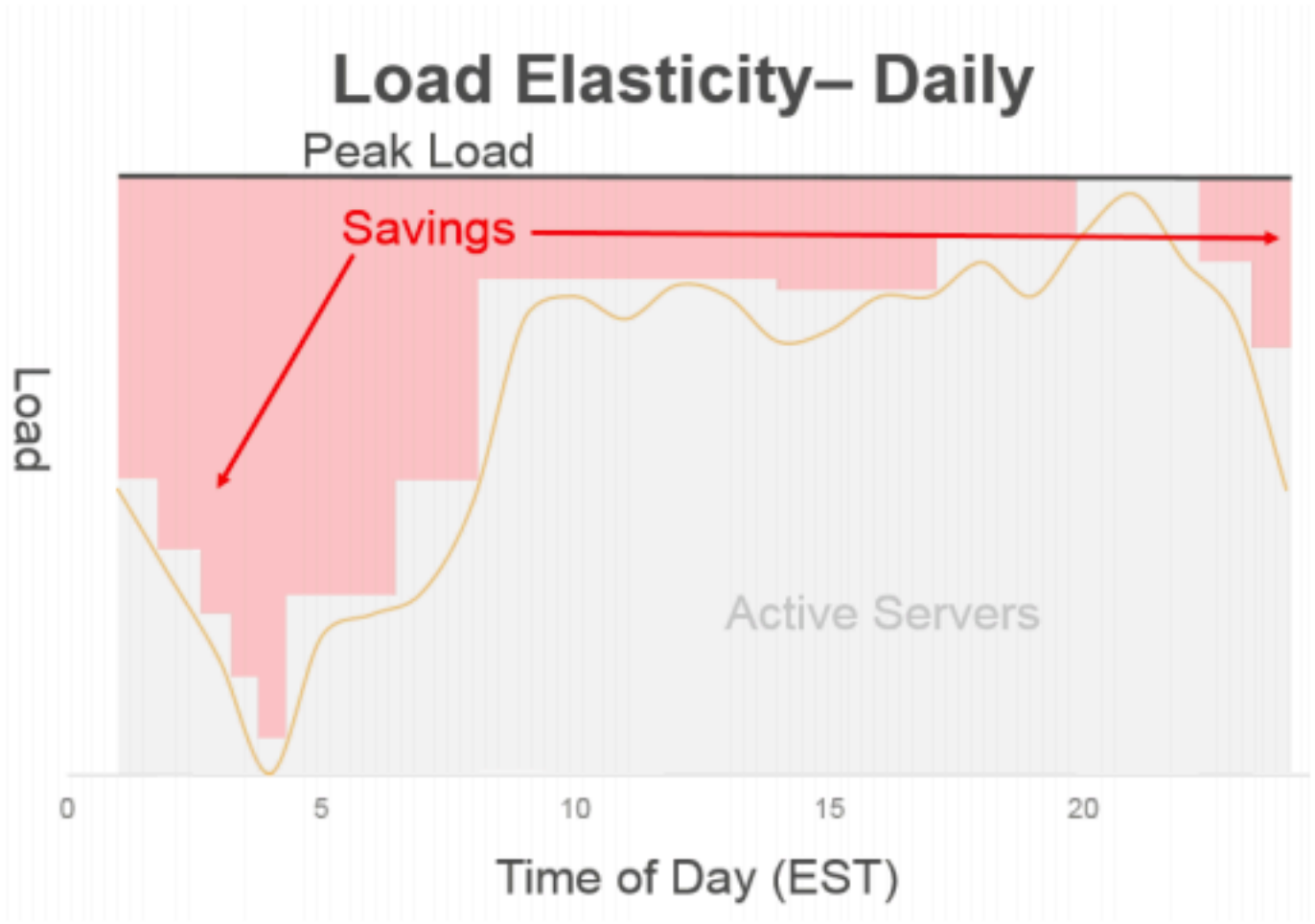


Figure 2: Daily Load Pattern for RTB

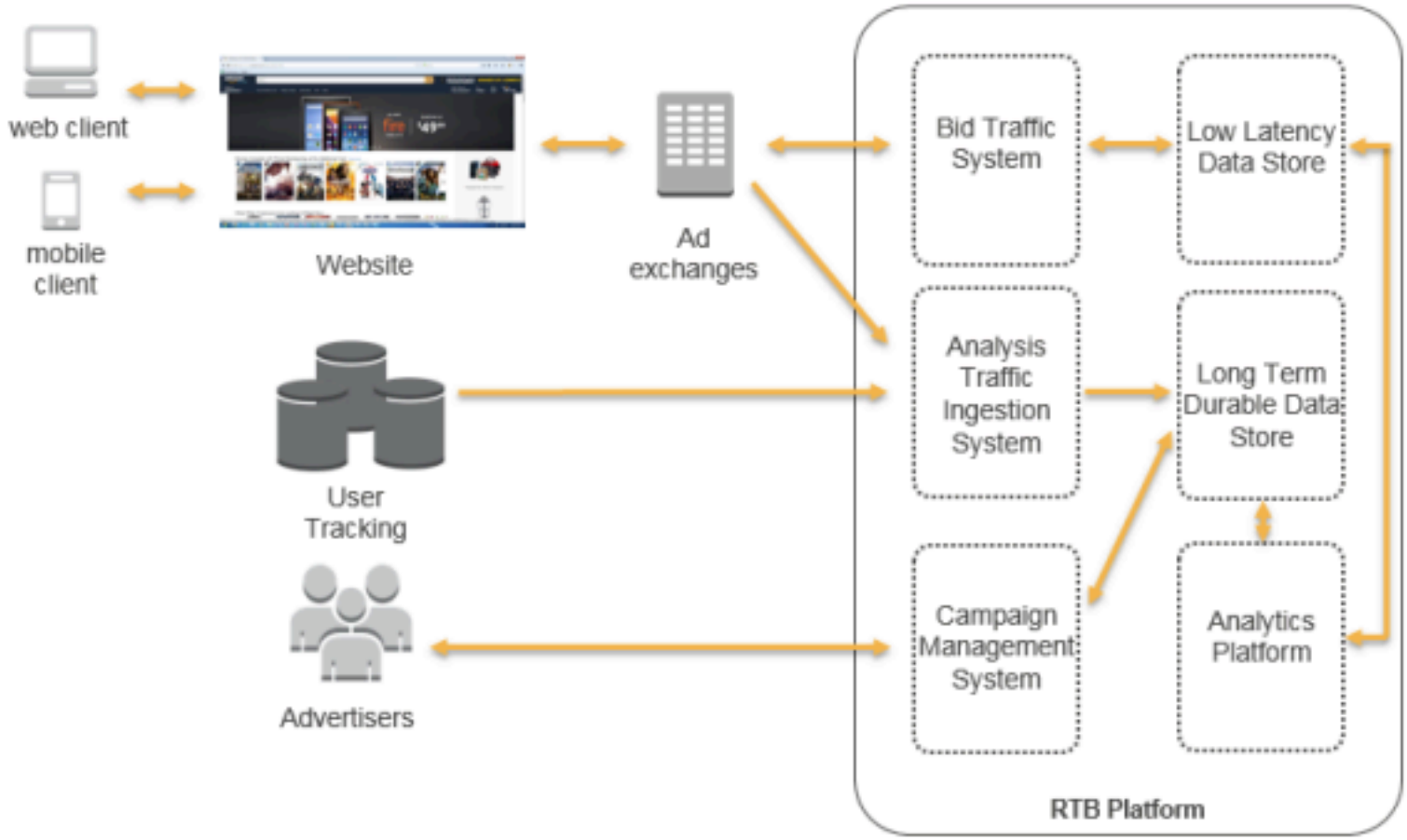


Figure 3: RTB Platform Components

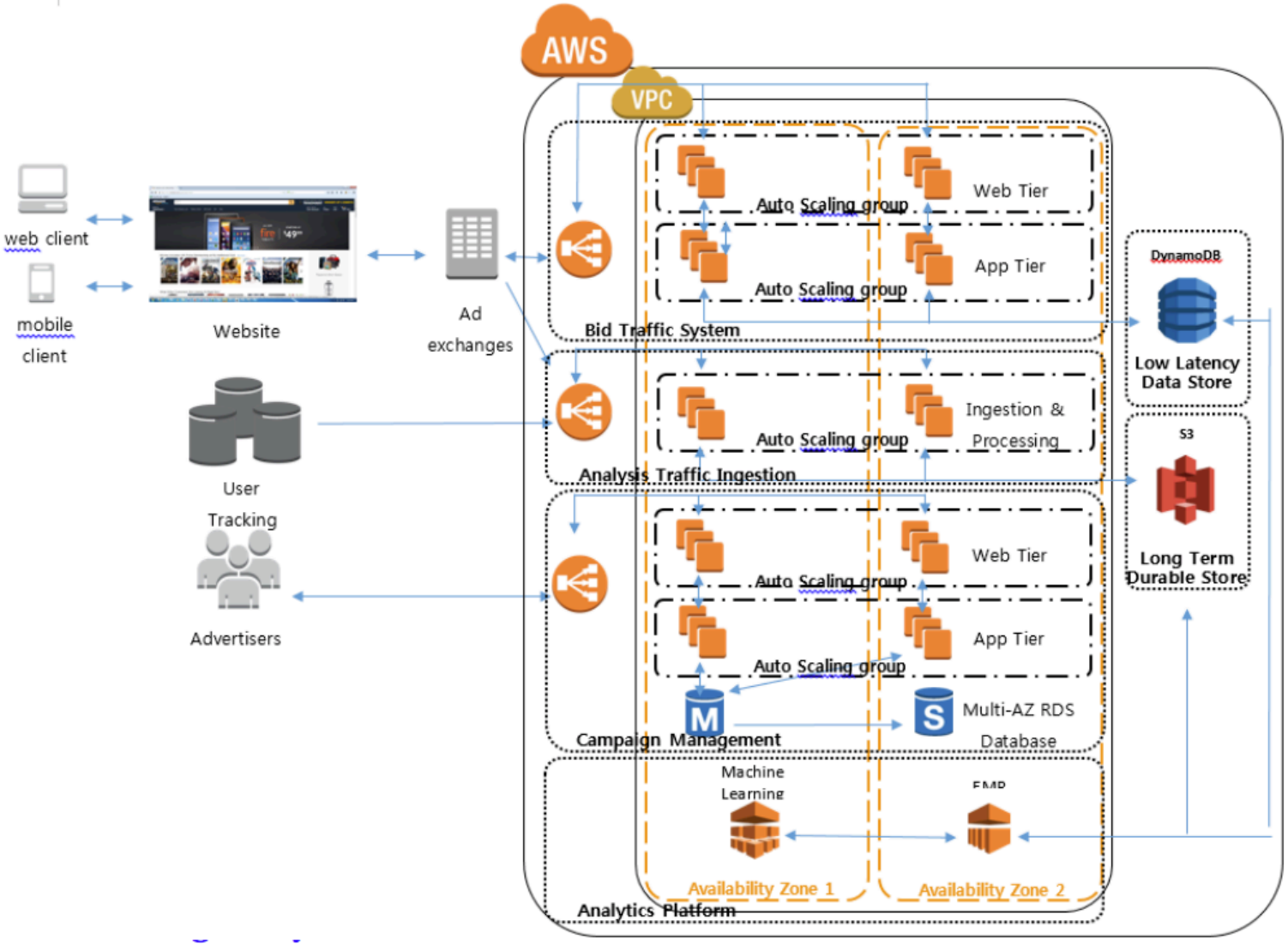


Figure 5: Example Reference Architecture

Contributors

The following individuals and organizations contributed to this document:

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- Marco Pedroso, software engineer, A9
- Erik Swensson, solutions architect manager, Amazon Web Services
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- Vlad Vlasceanu, solutions architect, Amazon Web Services

Further Reading

For additional help, please consult the following sources:

- IAB Real Time Bidding Project
- Beating the Speed of Light with Your Infrastructure on AWS
- Deploying an RTBkit on AWS with a CloudFormation Template

Notes

[1] US Programmatic ad spend to double by 2016 eMarketer analysis

[2] US Programmatic digital display ad spending 2014-2017 eMarketer analysis2014-2017

[3] US Programmatic ad spend to double by 2016 eMarketer analysis