

# Lecture #13

Campus	Lecture Date	Lecture Recording Availability Date
Boston	08/03/2019	N/A
Online	N/A	08/03/2019

## Agenda

- Review [Assignment #07](#) [../..assignments/07/]
- Last day to drop a full summer class with a W grade is 08/11/2019
- Final Exam on 08/17/2019
- Load Balancing
- Content Delivery Network (CDN)
- High Availability
  - Availability Zones
  - Auto Scaling
- Securing Cloud Infrastructure
  - Operating System
  - Network
  - AWS Account
  - Virtual Private Cloud

- Securing Your Application
  - SQL Injection
  - Cross Site Scripting (XSS)
  - Cross-Site Request Forgery (CSRF)
- Privacy
- Discuss [Assignment #08](#) [../../assignments/08/]

## Slides

- [Load Balancing, Auto Scaling, Regions, Availability Zones, and CDN](#) [https://northeastern-my.sharepoint.com/:b:/g/personal/tejasparikh\_northeastern\_edu/ET-a9fKQZP9NgeyWmSLS1T4BNHN7cedlUSdMy-1CaW8G0w?e=Hbi5ec]
- [Cloud & Application \(In\)security](#) [https://northeastern-my.sharepoint.com/:b:/g/personal/tejasparikh\_northeastern\_edu/EQ59f8d0bU5GvJ8bpJsPsfwBmzJPtRE1gsLD5vTe2yd5cQ?e=AbpHbs]

## JMeter

- JMeter Lab recoring from previous semesters are available in Tegrity.

## Reading

### JMeter

- [JMeter User Manual](#) [https://jmeter.apache.org/usermanual/index.html]
- [How To Use Apache JMeter To Perform Load Testing on a Web Server](#) [https://www.digitalocean.com/community/tutorials/how-to-use-apache-jmeter-to-perform-load-testing-on-a-web-server]

## Auto Scaling & Load Balancing

- [AWS AutoScaling](https://aws.amazon.com/autoscaling/) [https://aws.amazon.com/autoscaling/]
- [Auto Scaling in the Amazon Cloud - Netflix](http://techblog.netflix.com/2012/01/auto-scaling-in-amazon-cloud.html) [http://techblog.netflix.com/2012/01/auto-scaling-in-amazon-cloud.html]
- [AWS Elastic Load Balancing](https://aws.amazon.com/elasticloadbalancing/) [https://aws.amazon.com/elasticloadbalancing/]
- [Classic Load Balancer](https://aws.amazon.com/elasticloadbalancing/classicloadbalancer/) [https://aws.amazon.com/elasticloadbalancing/classicloadbalancer/]
- [Application Load Balancer](https://aws.amazon.com/elasticloadbalancing/applicationloadbalancer/) [https://aws.amazon.com/elasticloadbalancing/applicationloadbalancer/]
- [Netflix Software Based Load Balancer \(Zuul\)](https://github.com/Netflix/zuul) [https://github.com/Netflix/zuul]
- <https://f5.com/glossary/load-balancer> [https://f5.com/glossary/load-balancer]

## Infrastructure at Scale

- [How Twitter Handles 3,000 Images Per Second](http://highscalability.com/blog/2016/4/20/how-twitter-handles-3000-images-per-second.html) [http://highscalability.com/blog/2016/4/20/how-twitter-handles-3000-images-per-second.html]
- [The Infrastructure Behind Twitter: Scale](https://blog.twitter.com/2017/the-infrastructure-behind-twitter-scale) [https://blog.twitter.com/2017/the-infrastructure-behind-twitter-scale]
- [Caching at Reddit](https://redditblog.com/2017/1/17/caching-at-reddit/) [https://redditblog.com/2017/1/17/caching-at-reddit/]
- [How Uber Manages A Million Writes Per Second Using Mesos And Cassandra Across Multiple Datacenters](http://highscalability.com/blog/2016/9/28/how-uber-manages-a-million-writes-per-second-using-mesos-and.html) [http://highscalability.com/blog/2016/9/28/how-uber-manages-a-million-writes-per-second-using-mesos-and.html]
- [Instant Messaging at LinkedIn: Scaling to Hundreds of Thousands of Persistent Connections on One Machine](https://engineering.linkedin.com/blog/2016/10/instant-messaging-at-linkedin--scaling-to-hundreds-of-thousands-) [https://engineering.linkedin.com/blog/2016/10/instant-messaging-at-linkedin--scaling-to-hundreds-of-thousands-]
- [Big Data in Real-Time at Twitter](https://www.slideshare.net/nkallen/q-con-3770885) [https://www.slideshare.net/nkallen/q-con-3770885]

- <https://redditblog.com/2017/04/13/how-we-built-rplace/>  
[https://redditblog.com/2017/04/13/how-we-built-rplace/]

## High Availability & Fault Tolerance Testing

- [Netflix Chaos Monkey](https://github.com/Netflix/chaosmonkey) [https://github.com/Netflix/chaosmonkey]
- [Netflix Simian Army](https://github.com/Netflix/SimianArmy/wiki) [https://github.com/Netflix/SimianArmy/wiki]

## SSL

- [Let's Encrypt](https://letsencrypt.org/) [https://letsencrypt.org/]
- [An Introduction to Let's Encrypt](https://www.digitalocean.com/community/tutorials/an-introduction-to-let-s-encrypt)  
[https://www.digitalocean.com/community/tutorials/an-introduction-to-let-s-encrypt]
- [Why HTTPS for Everything?](https://https.cio.gov/everything/) [https://https.cio.gov/everything/]
- [The HTTPS-Only Standard](https://https.cio.gov/) [https://https.cio.gov/]
- [Server Name Indication](https://en.wikipedia.org/wiki/Server_Name_Indication) [https://en.wikipedia.org/wiki/Server\_Name\_Indication]

## Security

- [Netflix Security Monkey](https://github.com/Netflix/security_monkey) [https://github.com/Netflix/security\_monkey]
- [97 Things Every Programmer Should Know: Collective Wisdom from the Experts](http://programmer.97things.oreilly.com/wiki/index.php/Contributions_Appearing_in_the_Book)  
[http://programmer.97things.oreilly.com/wiki/index.php/Contributions\_Appearing\_in\_the\_Book]
- [Open Web Application Security Project \(OWASP\)](https://www.owasp.org/index.php/Main_Page)  
[https://www.owasp.org/index.php/Main\_Page]
- [Common Vulnerabilities and Exposures](https://cve.mitre.org/) [https://cve.mitre.org/]
- [The Ten Commandments of Ethical Hacking](http://www.dummies.com/programming/networking/obeying-the-ten-commandments-of-ethical-hacking/)  
[http://www.dummies.com/programming/networking/obeying-the-ten-commandments-of-ethical-hacking/]







