



System Summary: Netflix

Bala Vignesh Bala Subramanian

Course: COMP 655

Professor: Sean McCulloch

Franklin University Summer 2020

Agenda

History
Pricing
Devices
Competition
Distributed
Personalization
References
Questions



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History

Since 1997

Begining

Stats

Subscribers

Netflix, Inc. is an American media-services provider and production company headquartered in Los Gatos, California, founded in 1997 by Reed Hastings and Marc Randolph in Scotts Valley, California.

History

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Subscribers

Netflix Statistics

61 million domestic Netflix subscribers vs 106.1 million international

85% of US streaming subscribers subscribe to Netflix

159 million US Netflix viewers (2019)

Netflix say average users watches two hours per day

Bird Box most-viewed original film in 2019, (80 million views)

Stranger Things most-viewed original series in 2019 (64 million views)

Total Netflix 2019 revenue \$20.2 billion

50% of Netflix revenue from UCAN

2019 Netflix net revenue \$1.9 billion

Netflix market cap \$163 billion (March 2020)

Netflix debt \$12.4 billion (September 2019)

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Stats

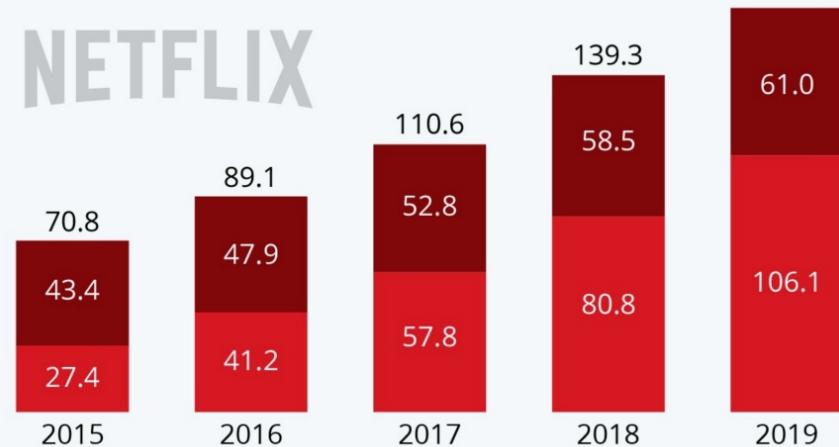
Subscribers

Netflix's International Expansion

Netflix's paid streaming subscribers at the end of the respective year (in millions)

■ International ■ USA

NETFLIX



Source: Netflix



statista

As of April 2020, Netflix had over 182 million paid subscriptions worldwide, including 69 million in the United States

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Pricing



Current



Hike

	Basic	Standard	Premium
Monthly price after free month ends on 6/30/20	\$8.99	\$12.99	\$15.99
HD available	✗	✓	✓
Ultra HD available	✗	✗	✓
Screens you can watch on at the same time	1	2	4
Watch on your laptop, TV, phone and tablet	✓	✓	✓
Unlimited movies and TV shows	✓	✓	✓
Cancel anytime	✓	✓	✓
First month free	✓	✓	✓



Pricing



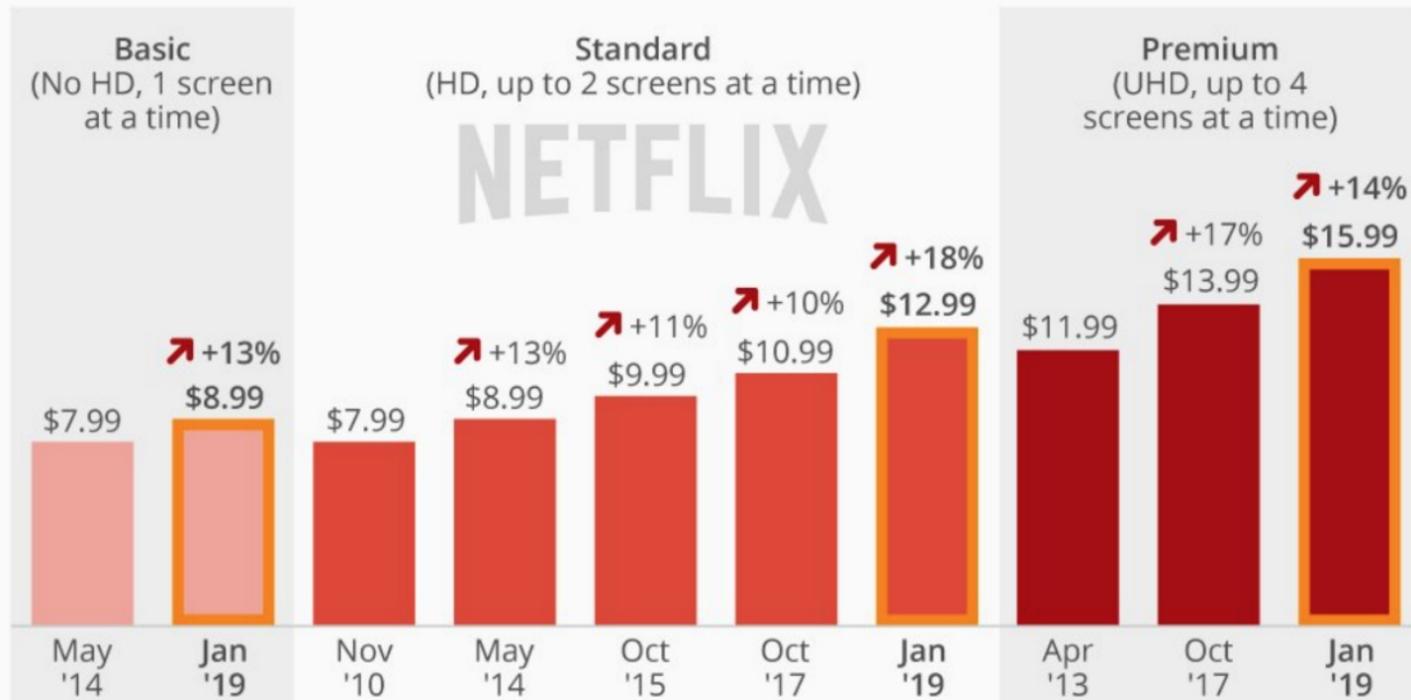
Current



Hike

A Brief History of Netflix Price Hikes

Changes in price of a Netflix subscription in the United States*



* for new customers; existing customers are usually moved to the new pricing model at a later time



Sources: Company announcements, press reports

statista



Pricing



Current



Hike



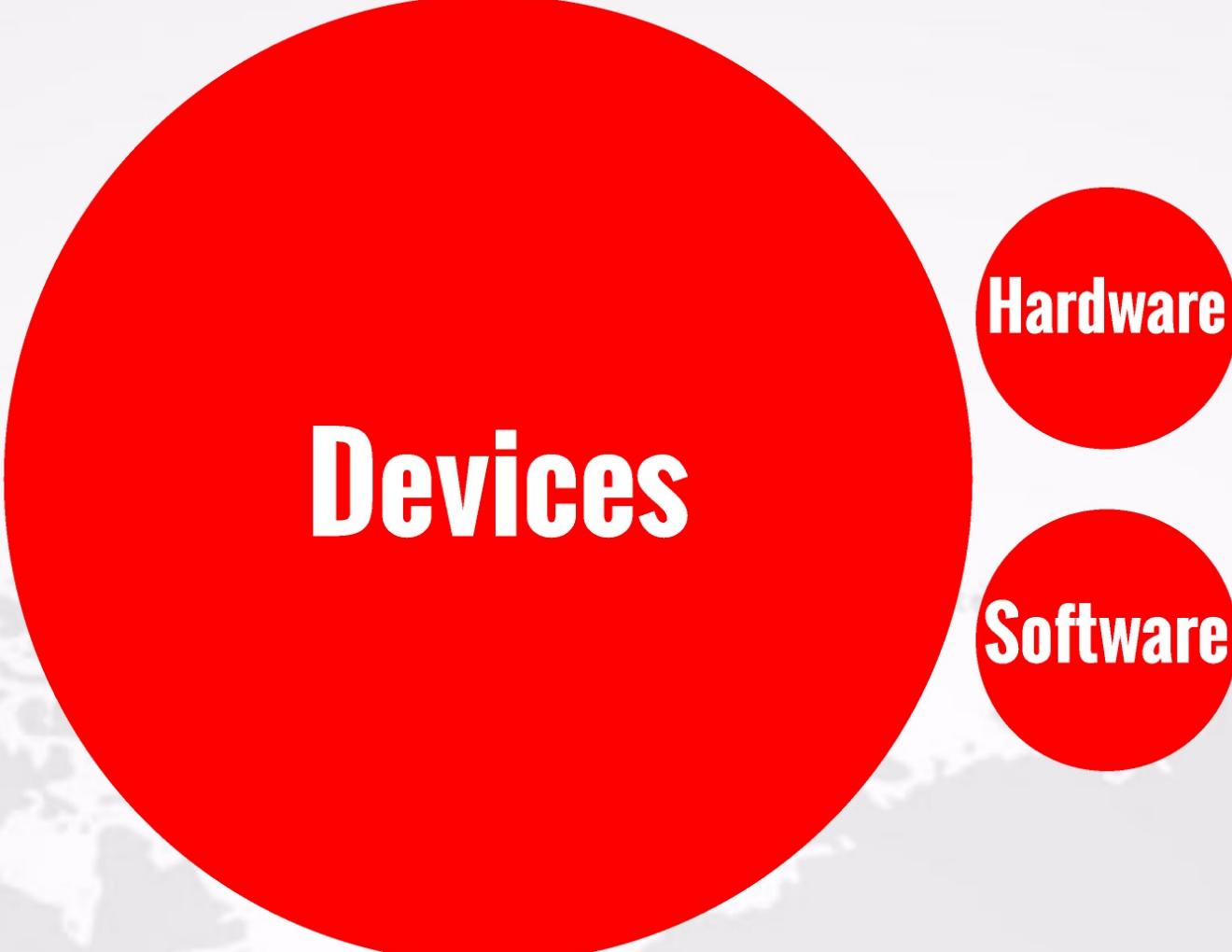
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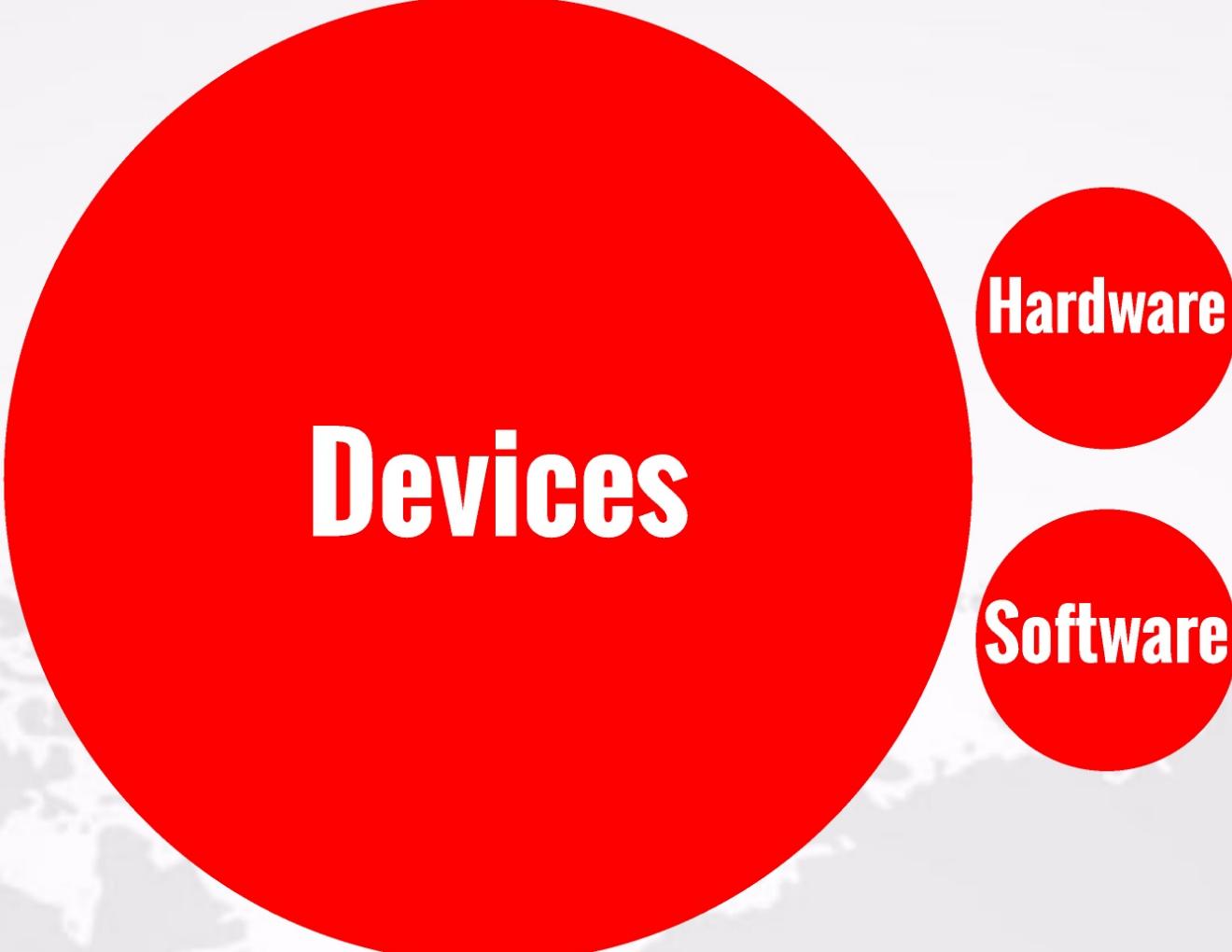
Devices

Hardware

Software



NETFLIX

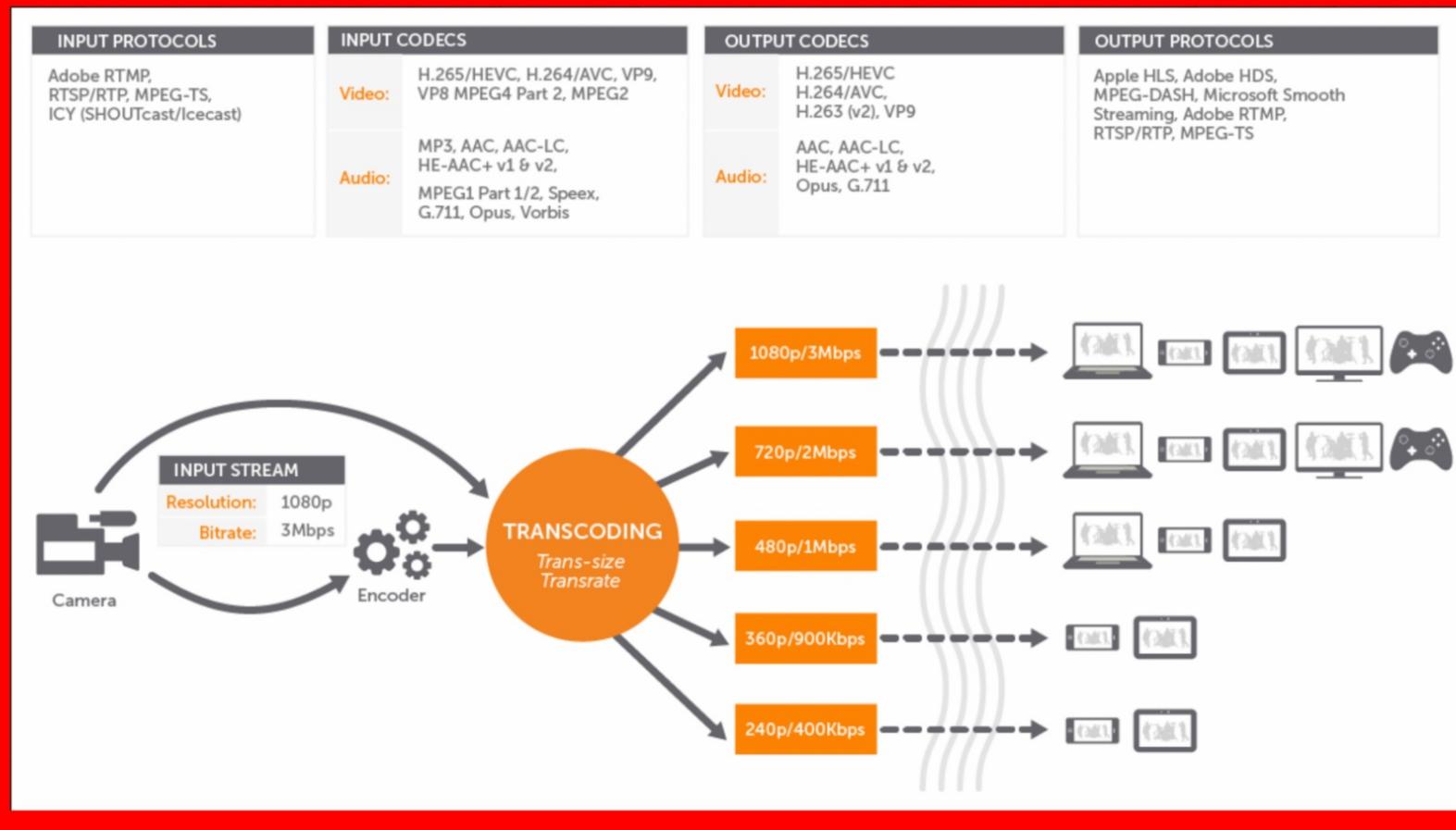


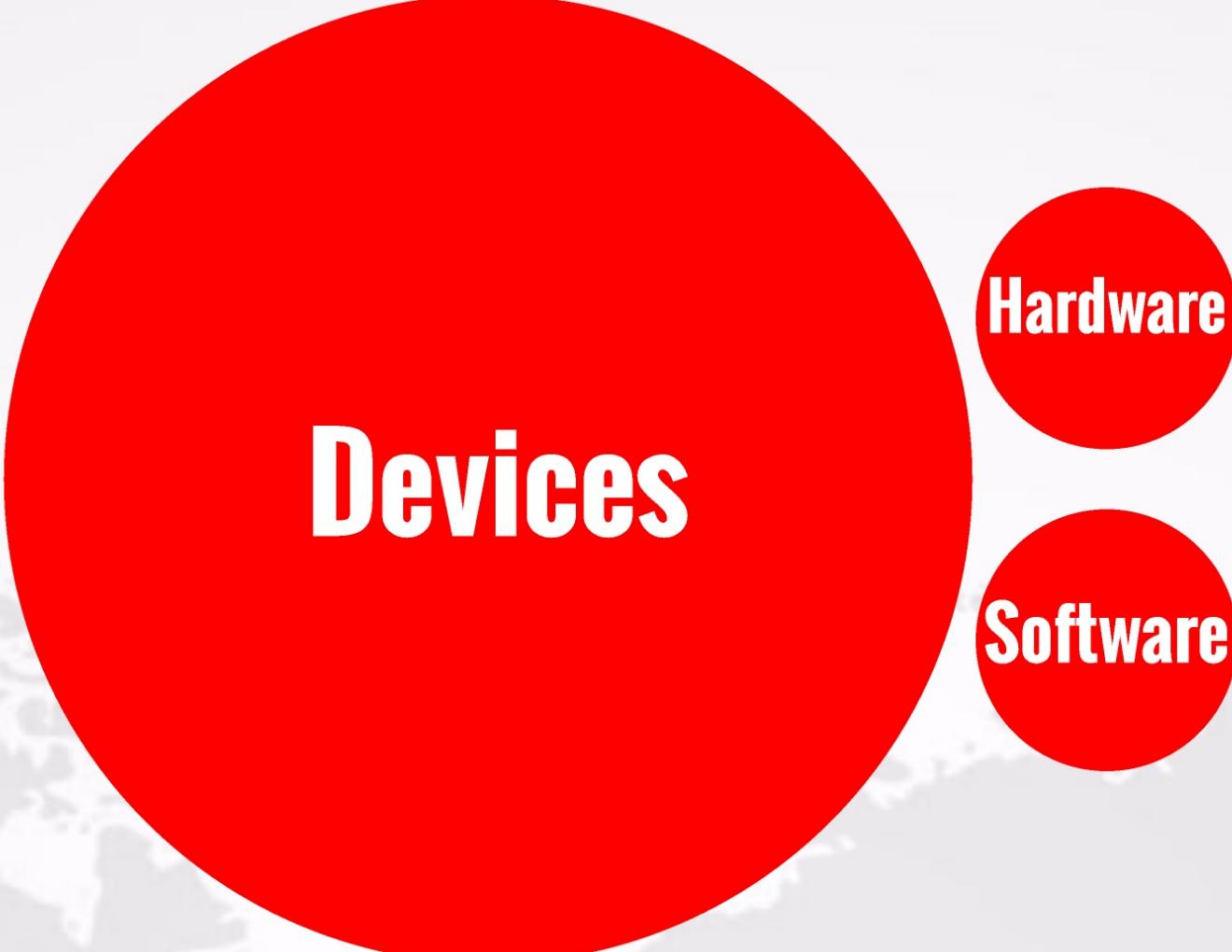
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Movie is made available to users, Netflix must convert the video into a format that works best for your device. This process is called transcoding





Devices

Hardware

Software



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Competitors



Major

% of
Americans

NETFLIX COMPETITORS STATS

Name	Founded	Headquarters	Employees
Prime Video	2006	Seattle, WA, USA	14 K
Hulu	2007	Santa Monica, CA, USA	2 K
Disney+	2019	Burbank, CA, USA	223 K
YouTube TV	2017	San Bruno, CA, USA	5 K
HBO on Demand	2010	New York, NY, USA	2 K
Sling TV	2015	Meridian, CO, USA	1.1 K
Crunchyroll	2006	San Francisco, CA, USA	328
Apple TV+	2019	Cupertino, CA, USA	137 K
Twitch	2011	San Francisco, CA, USA	1.5 K
Sony Crackle	2004	San Francisco, CA, USA	9.5 K

Competitors



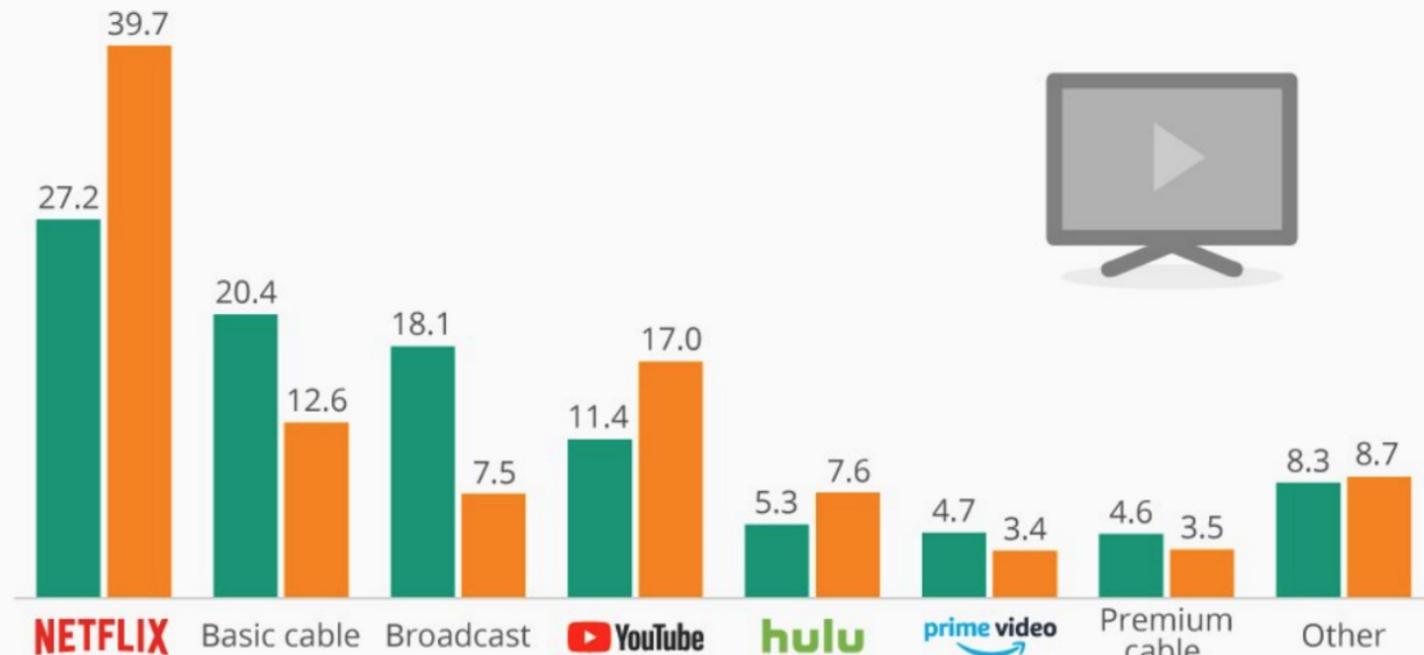
Major

% of
Americans

Netflix Is Americans' Platform of Choice for TV Content

% of Americans who prefer to watch video content on TV on the following platforms

■ All respondents ■ Age 18–34



Based on a 2018 survey of 2,500 U.S. consumers

Source: Cowen & Co.

statista

Competitors



Major

% of
Americans



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Testing

System

Gateway

Eco System

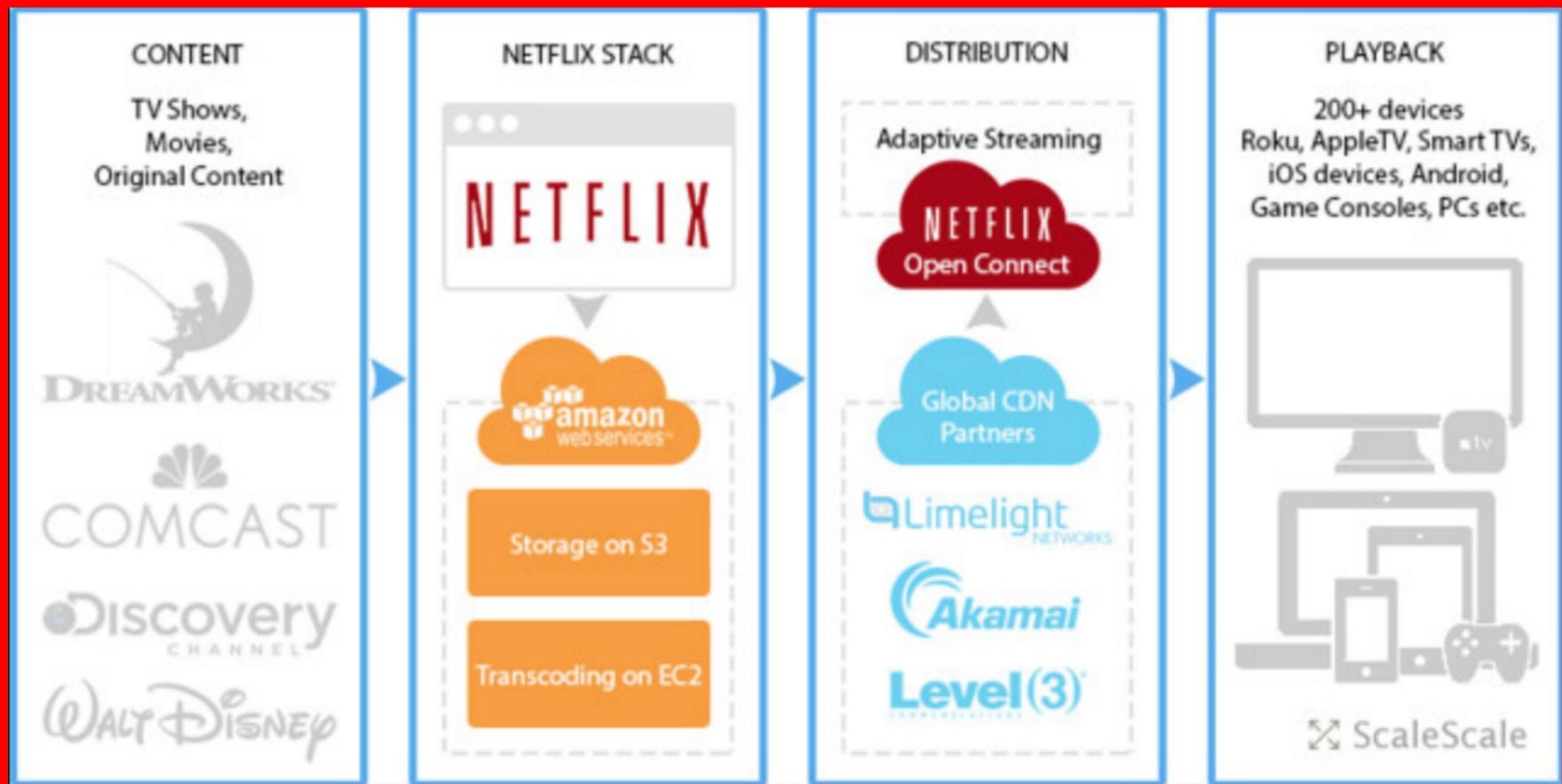
CDN

Distributed

Distributed Architecture



Where are You?



Testing

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Where are You?



Netflix ecosystem

- 100s of microservices
- 1000s of daily production changes
- 10,000s of instances
- 100,000s of customer interactions per minute
- 1,000,000s of customers
- 1,000,000,000s of metrics
- 10,000,000,000 hours of streamed
- 10s of operations engineers**

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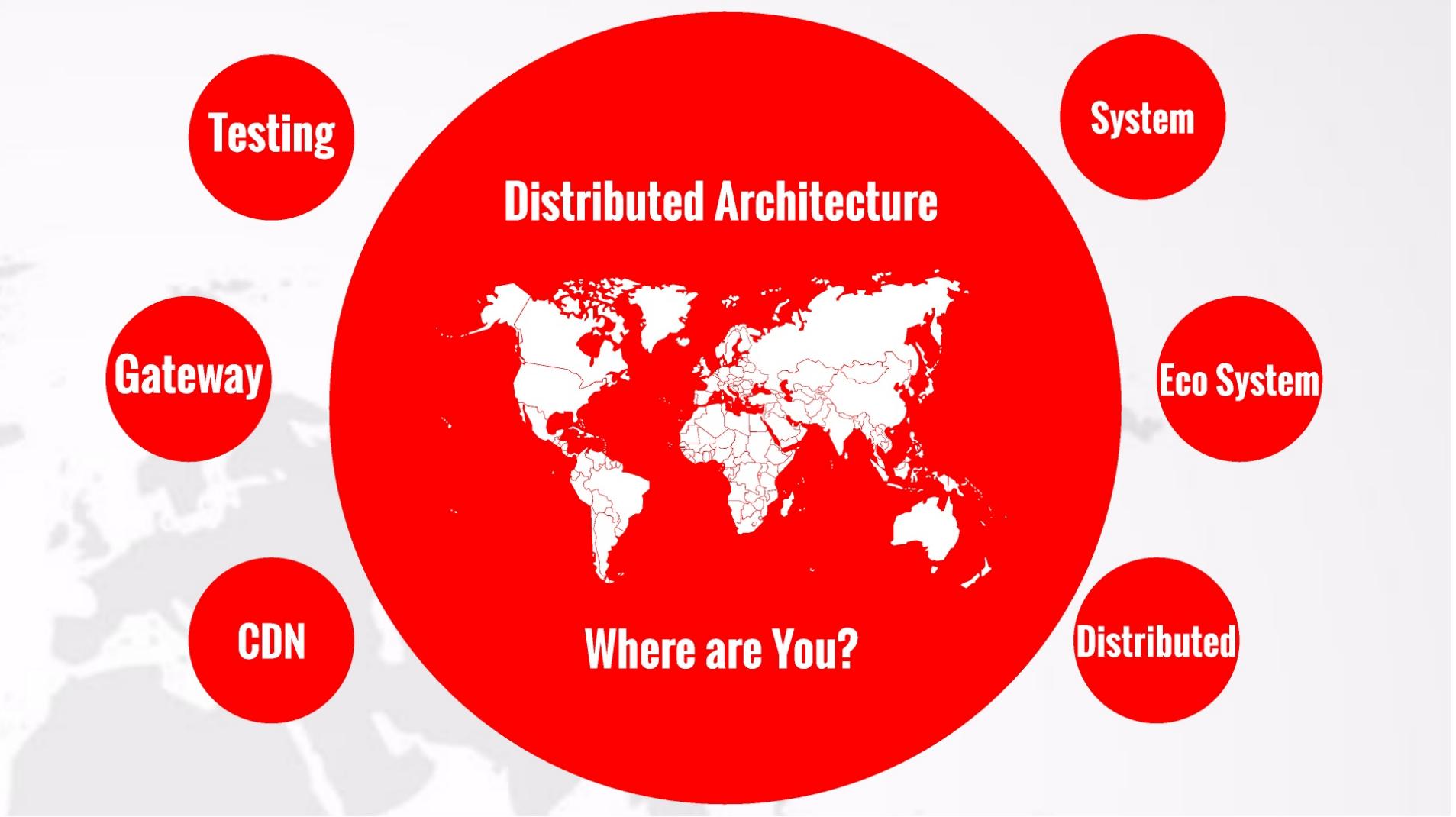
Distributed Architecture



Where are You?







Testing

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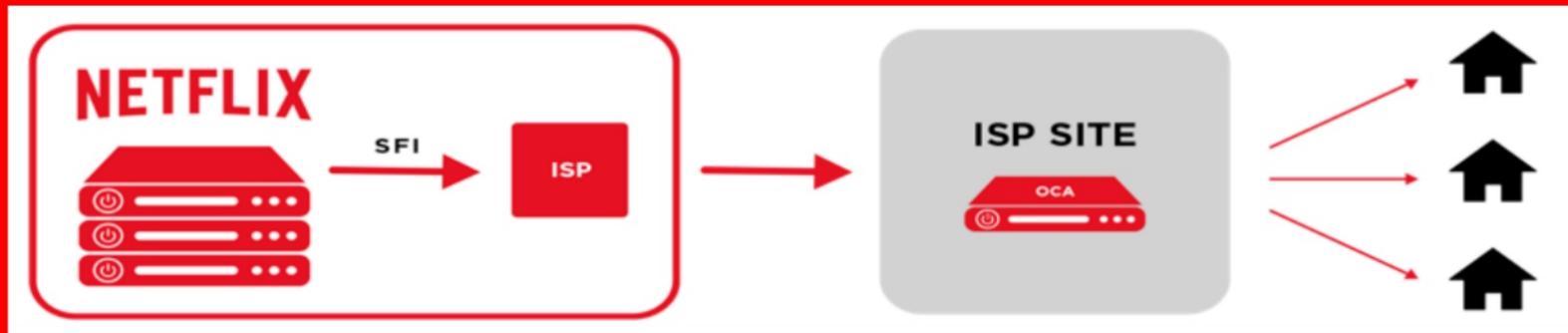
CDN

Distributed Architecture

Where are You?

CDN - Netflix Open Connect

Netflix Open Connect is a Content Delivery Network (CDN) responsible for serving 100% of the video traffic.



With the help of CDNs, Netflix moved the content closer to end users and delivering from multiple servers located at the edge of the Internet. This technology will help scale mass-distributed content efficiently.

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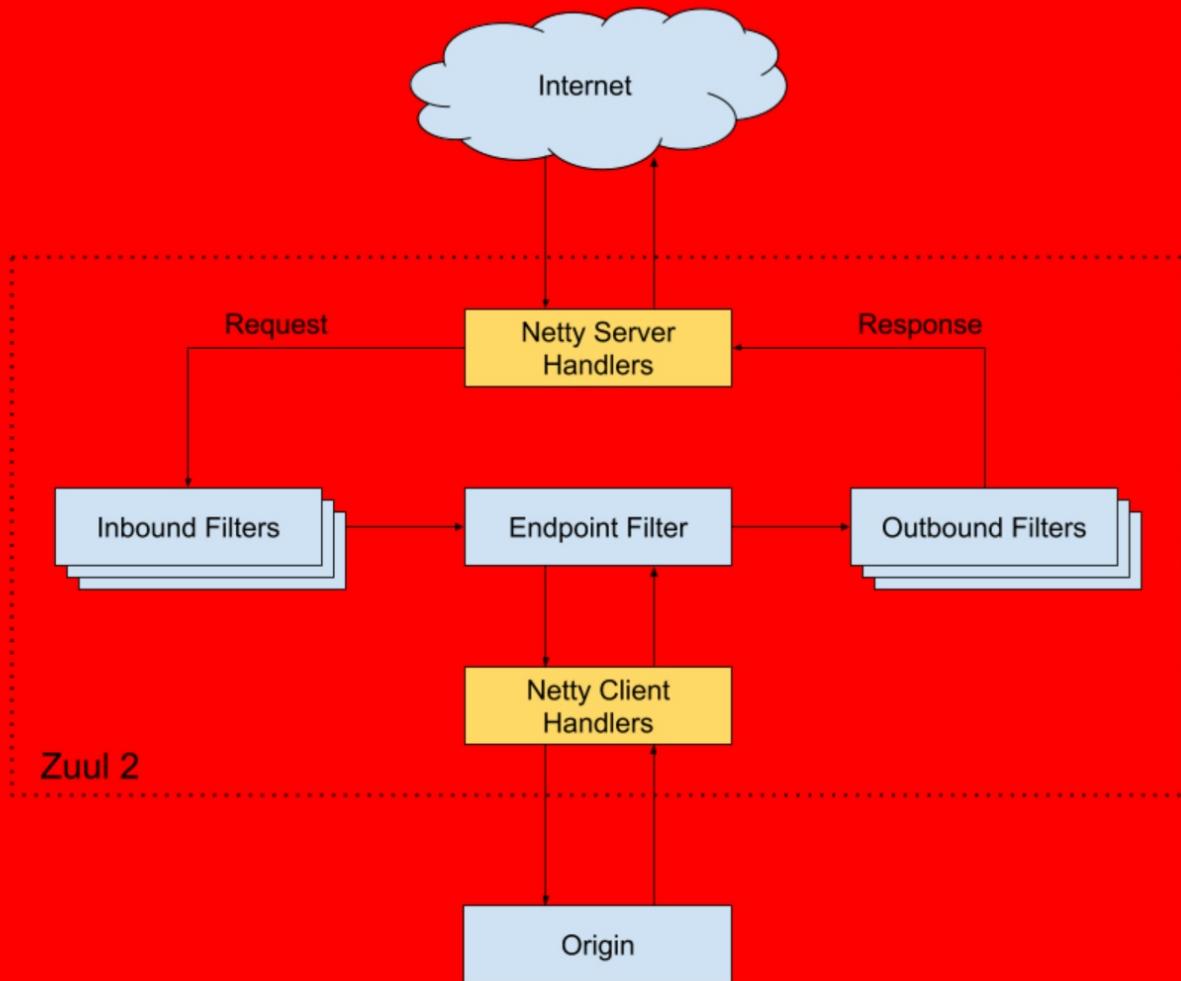
Distributed Architecture



Where are You?

Gateway - Netflix Zuul

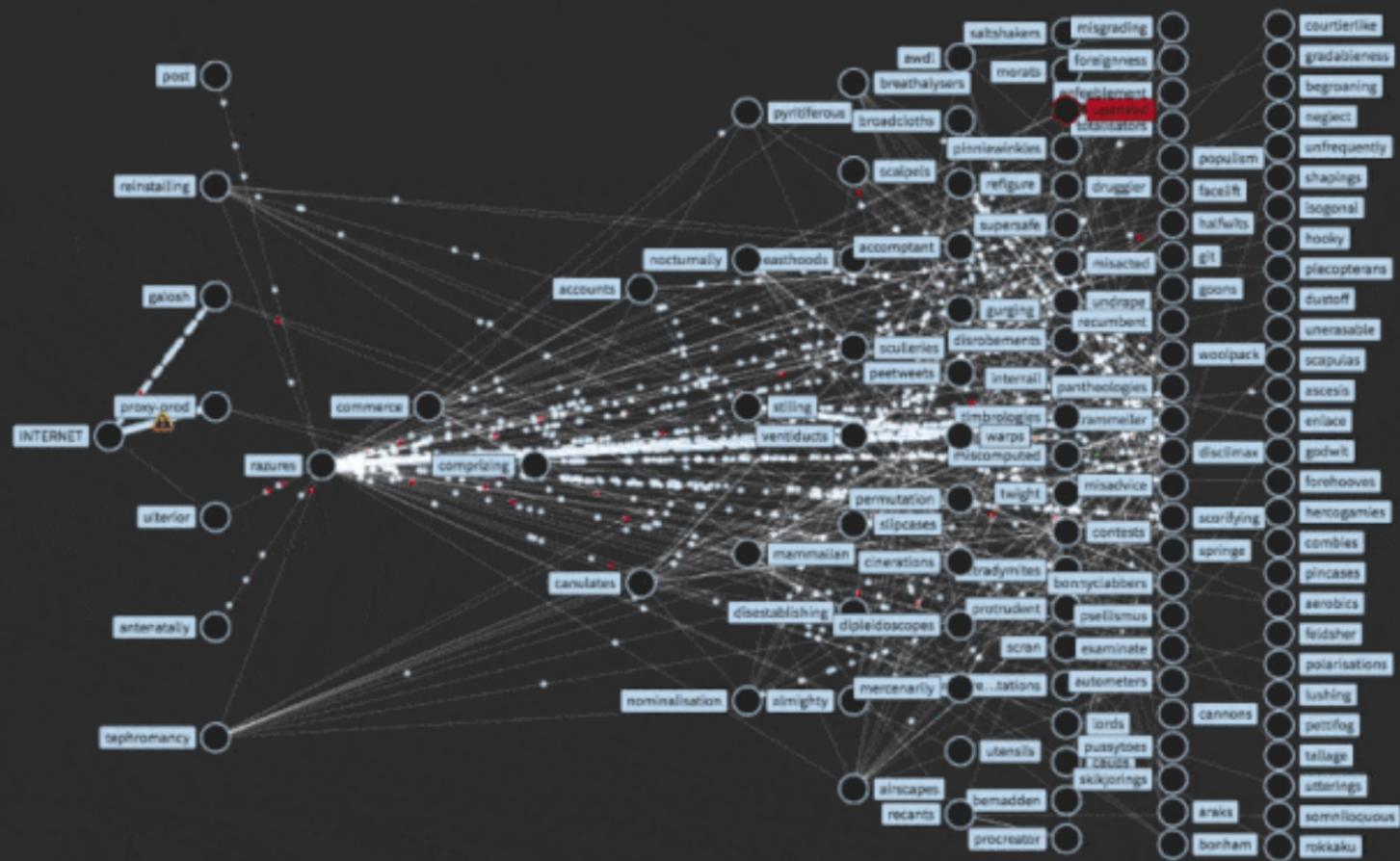
Netflix Zuul is the front door for all requests from devices and web sites to the backend of the Netflix streaming application. As an edge service application, Zuul is built to enable dynamic routing, monitoring, resiliency and security. It also has the ability to route requests to multiple Amazon Auto Scaling Groups as appropriate.



Server Protocols

HTTP/2 — full server support for inbound HTTP/2 connections

Mutual TLS — allow for running Zuul in more secure scenarios



Testing

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Distributed Architecture



Where are You?

Distributed Testing - Simian Army

The cloud is all about redundancy and fault-tolerance. Since no single component can guarantee 100% uptime

Simian Army consists of services (Monkeys) in the cloud for generating various kinds of failures, detecting abnormal conditions, and testing our ability to survive them. The goal is to keep our cloud safe, secure, and highly available

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Personalisation

Recommendations should be relevant to the tastes of the subscriber and also to be fresh and responsive to the actions taken, such as watching a show, adding to their list, or rating;

Home Page

Ranking

Artwork

NETFLIX [Browse](#) [DVD](#)

Search [Joshua](#)

Top Picks for Joshua

Trending Now

Because you watched Narcos

New Releases

48.

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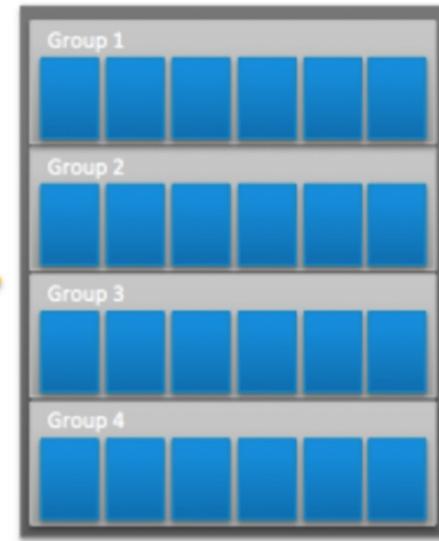
Artwork



Personalized
Rating
Prediction

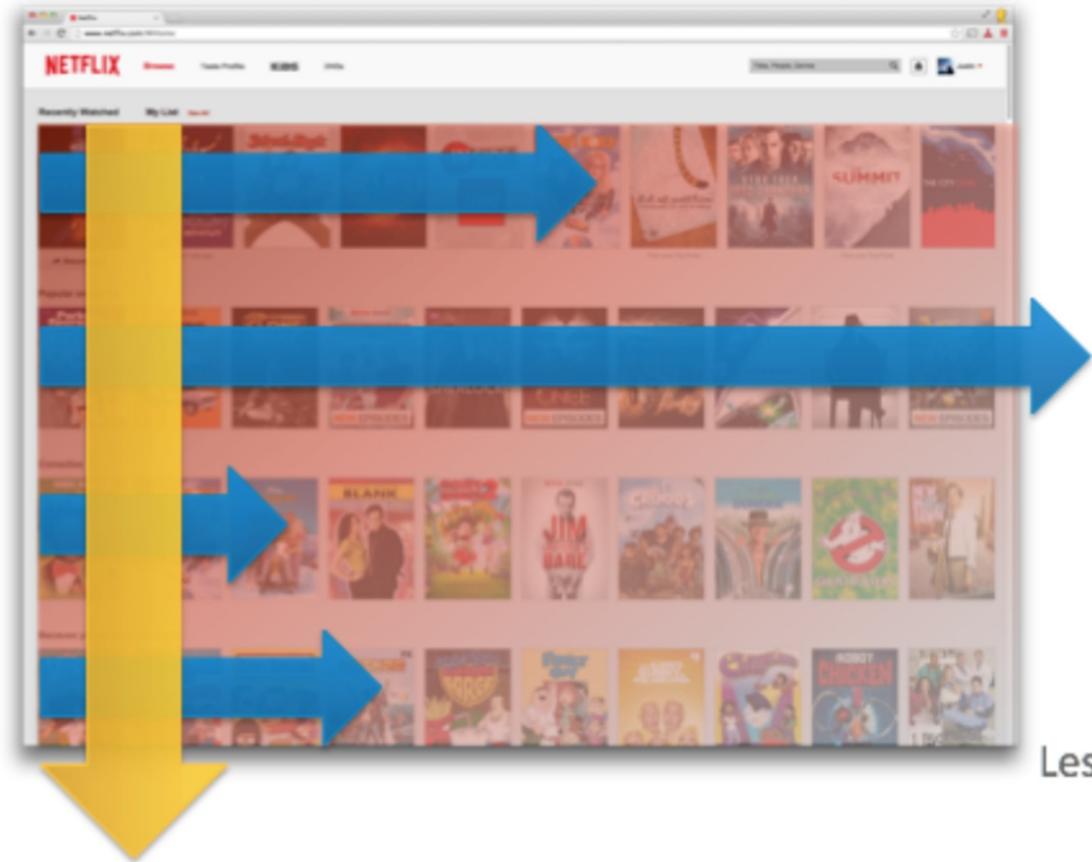


Personalized
Ranking



Personalized
Page
Generation

More likely
to see



Less likely

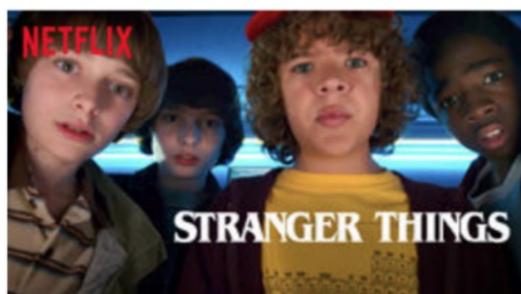
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Questions?





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