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# Riot Games teams up with AWS to Reimagine Esports

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19CSE447 – Cloud Computing  
Case Study

# CLOUD GAMING



# What is Cloud Gaming?

- A type of online gaming that runs video games on remote servers and streams them directly to a user's device
- Other terms - **gaming on demand or gaming-as-a-service**
- Game streaming lets users use company's server that acts like a high-powered PC for processing power

# Why do we need cloud gaming?

- One of the main challenges of traditional gaming is the hardware requirements to play games
- Cloud Gaming eliminates the requirement of specific hardware to run the game and eliminates investing in high-end gaming products like gaming laptops or consoles to play games
- Allows users to play games on demand, everywhere and across devices
- Shifts the computing power requirements towards remote data centers into the cloud

# Disadvantage of Cloud gaming

## 1. Bandwidth issues

While cloud gaming comes with endless benefits, it does also require a large amount of bandwidth. Cloud gaming is similar to streaming services such as Netflix and YouTube, except that it's specifically for video games. Like Netflix, cloud gaming requires a lot of bandwidth, so it's best suited for users who have a high-speed Internet connection.

## 2. High latency levels

Cloud gaming has a latency of around 100ms, while local hardware has a latency of around 15-30ms, given that you have a great internet connection. This means that while cloud gaming is a great experience, it is not quite as smooth as local hardware.



# AWS AND RIOT GAMES

# What is Riot Games?

- Riot Games, Inc. is an American video game developer, publisher and esports tournament organizer based in Los Angeles, California.
- Found in 2006
- Games by Riot – **Valorant, League of Legends, Legends of Runeterra, Teamfight Tactics.**

# Riot Games team up with AWS

- Riot Games have teamed up with AWS to transform the way of gaming for a fast, smooth and seamless experience.
- Riot is the first company to use AWS's data analytics integration for esports broadcasts.
- Riot uses AWS Cloud Artificial Intelligence (AI), Cloud Machine Learning (ML), Cloud Deep Learning (DL), and other AWS Services like **EKS, S3, Glue, Hadoop – EMR, Athena, EC2 chef, Cloud front, Direct Connect, AWS MSK, Kinesis.**



# Covers Large Fanbase

- Riot games has a vision of bringing esports to fans no matter where they live, how they watch, or what language they speak, The solution is **AWS**
- Riot games introduces **Project Stryker** - a series of cloud first remote broadcast ventures (RBC) that leverages AWS technologies
- 50,000 square-foot facility in **Dublin** and a second facility in the **Greater Seattle** area that will come online later this year that produce and support live content anywhere in the world at any time of day

# Project Stryker

- They are remote broadcast centers that will receive live broadcast feeds from competitions to **produce, broadcast, and translate** content for millions of esports fans around the world.
- Help productions create unique shows across a variety of languages bringing the **global esports experience** closer to home.
- **Project Stryker** facilities are powered by **Amazon Web Services (AWS)**

# Riot and AWS relation

- AWS provides multiple services to support the expansion of Riot games and to create a large fanbase
- AWS is now a sponsor for Riot Games' global esports events
  - **LoL Esports**
  - **VALORANT Champions Tour**
  - **Wild Rift Esports**
- Riot games and AWS are also developing social impact programs to improve inclusivity and more access to the esports environment

# AWS Outpost



- AWS outpost is a fully managed solution that delivers **AWS infrastructure and services** to on premisis and edge locations
- Can run some AWS services locally and connect to a broad range of services available in the local AWS Region
- Helps in **rapid deployment** of game servers
- This is mainly used to reduce latency in workload
- Reduces latency by **10 to 20 ms**
- This is an huge advantage because latency is a huge disadvantage in online gaming

# AWS and First ever AWS esports stats powered by AWS

- In order to enlighten and educate spectators on important data elements that are assisting a team in winning, Riot and AWS will offer "**Stats powered by AWS**" throughout esports broadcasts.
- These stats will appear before, during, and after Riot's various worldwide esports broadcasts.
- Voting by fans will determine which esports statistics are created first and made public during broadcasts of the **League of Legends World Championship** this autumn and **VALORANT Champions** in September 2022.

# Rankings of the top pro teams using AWS

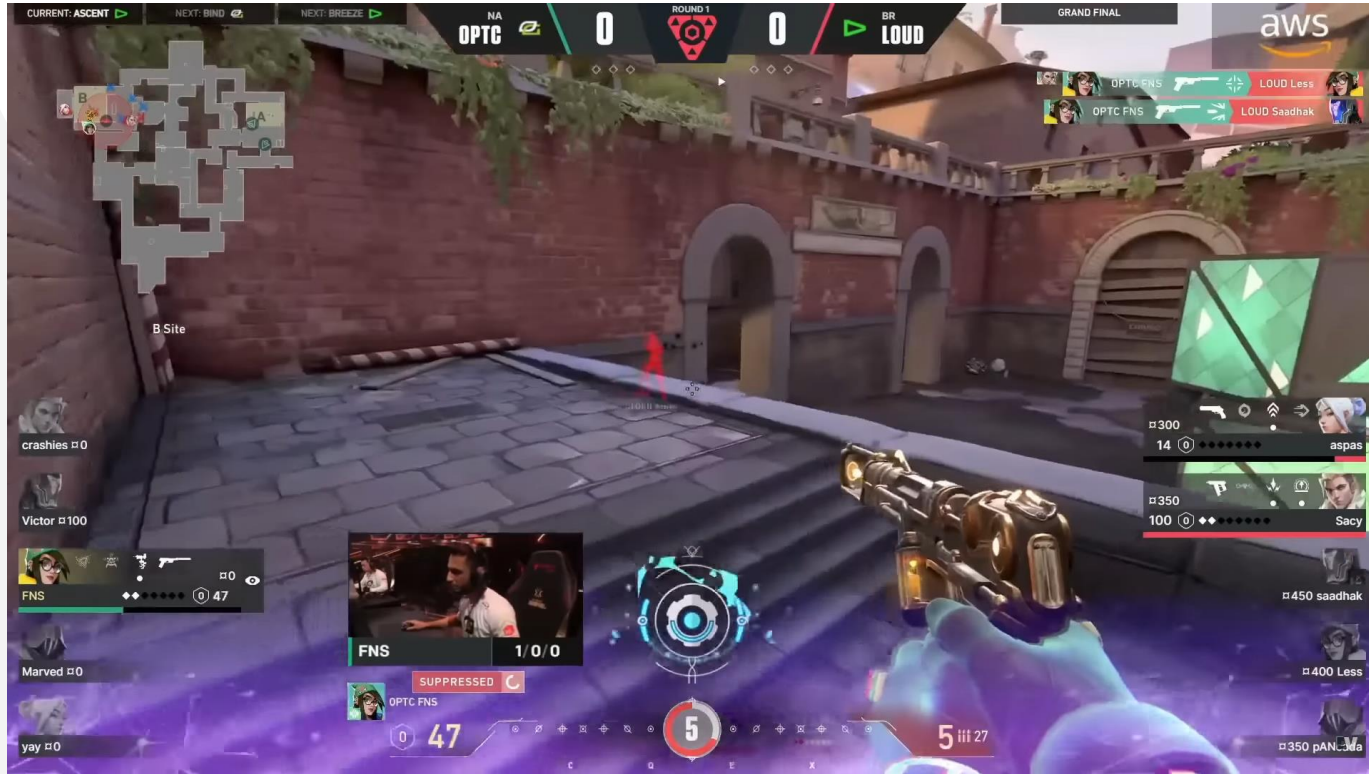
## Global power rankings

- Riot will introduce "**AWS Global Power Rankings**" which will analyse competitive gameplay using AWS analytics capabilities.
- As a result, during game play, rankings of the best professional teams in LoL Esports, VCT, and Wild Rift Esports will be generated in close to **real-time**.

# Pick'em powered by AWS

- Throughout the competitive season, esports fans can take part in bracket challenges and compete for rewards by properly picking the teams who advance to each championship event.
- **Pick'em** powered by AWS" will bring new ways for fans to select teams based on tournament statistics and compete for rewards. It is built on AWS's machine learning technology.

# Streaming of Riot's VCT game to audience around the world using AWS





# Streaming of Riot's VCT game to audience around the world using AWS

The screenshot shows a Valorant match in progress. The top of the screen displays the score: TGRD 0 vs 0 OPTC, with a round timer of 0:06. The map is B Lobby. The bottom of the screen shows the player rosters for both teams.



**THE GUARD**  
3,350

Player	K/D/A	Abilities	Weapon	Health
Sayaplayer	0 / 0 / 0	[Icons]	[Pistol]	-800 / 100
neT	0 / 0 / 0	[Icons]	[Pistol]	-600 / 200
valyn	0 / 0 / 0	[Icons]	[Pistol]	-800 / 0
trent	0 / 0 / 0	[Icons]	[Pistol]	-800 / 0













**OPTIC GAMING**  
3,700

Player	K/D/A	Abilities	Weapon	Health
FNS	0 / 0 / 0	[Icons]	[Pistol]	-700 / 100
Marved	0 / 0 / 0	[Icons]	[Pistol]	-800 / 0
crashies	0 / 0 / 0	[Icons]	[Pistol]	-800 / 0
yay	0 / 0 / 0	[Icons]	[Pistol]	-800 / 0

# Streaming of Riot's VCT game to audience around the world using AWS

CURRENT: ASCENT  NEXT: ICEBOX  ROUND 8 TGRD 4 3 OPTC PATCH: 4.04 verizon

**TGRD TIMEOUT**

		valyn	9 / 3 / 4	6 / 4 / 0	FNS		
		JonahP	5 / 6 / 3	6 / 5 / 3	Victor		
		Sayaplayer	4 / 5 / 1	4 / 5 / 2	crashies		
		neT	3 / 4 / 3	4 / 6 / 0	yay		
		trent	3 / 4 / 3	2 / 4 / 2	Marved		

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20

## Streaming of Riot's LoL game to audience around the world using AWS



## Streaming of Riot's LoL game to audience around the world using AWS





THANK YOU