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Making Low-Latency Multiplayer Gaming Possible Everywhere

Deliver responsive multiplayer gaming anywhere in the world and burst through existing development barriers

Multiplayer Gaming – the Future

The best games pull players into immersive worlds. To achieve that level of experience, online play needs to have minimal latency to be as responsive to player input as possible. To build richer immersive in-game experiences that garner a loyal following, developers need freedom to create without distractions such as hardware management.

Cloud computing helps game companies to focus on creating and delivering new experiences, instead of managing hardware. It enables teams to run online game sessions closer to their players and build games closer to their artists.

AWS takes cloud gaming further, with a unified set of tools that spans the entire game production pipeline – from development, to testing, to development in AWS Regions and on AWS Outposts to achieve low millisecond latency play. With Outposts, developers have a consistent hybrid experience, with the same set of AWS services, APIs and tools to learn across a global digital estate. With AWS Outposts, game companies can extend this truly consistent hybrid experience anywhere in the world. Online game servers can run close enough to players to deliver very low latency. Workloads can run locally but burst seamlessly to the Region when more capacity is needed. Multiplayer games run well in Regions, but they are not everywhere and today's high-end multiplayer experiences require very low latency all the time.

Outposts is a fully managed service, with installation and management handled by AWS – enabling you to focus on developing quality games instead of managing infrastructure.

If you're already running your applications on Intel® Xeon® servers on-premises and benefitting from Intel software optimizations and tuning for enterprise applications, you'll enjoy the same robust performance on Outposts as well as the AWS Cloud.

In this eBook, learn more about how AWS Outposts can help you deliver the next great game development and capture a new generation of demanding online players.

Video Games Continue to Increase in Popularity

1 Billion
players

A billion more people are playing video games today than five years ago.[1] They are playing in many different ways including on PC, consoles from multiple generations, mobile devices, and in the cloud.

$3.2 Billion
by 2023

More and more games are being streamed via cloud services. Streaming services are forecast to create a $3.2 billion market by 2023.[2]

$1 Billion
revenue

Global eSports revenues surpassed $1 billion for the first time in 2020.[3] Esports competitions need low-latency performance in order to provide a level playing field.

40% online gaming

Demand for online multiplayer is increasing. Most US gamers now spend at least 40% of their gaming time playing online titles.[4]

Gaming Challenges

As multiplayer game companies look for further growth opportunities, keeping a seamless customer experience is paramount. To achieve this, there are some specific key challenges to address:

Fast and smooth in-game experience

These are the most critical aspect of gameplay among all gamers today, not just eSports players.[5] But even if game application servers are deployed in multiple AWS Regions, players in locations far from the server will not experience the same low-latency benefits.

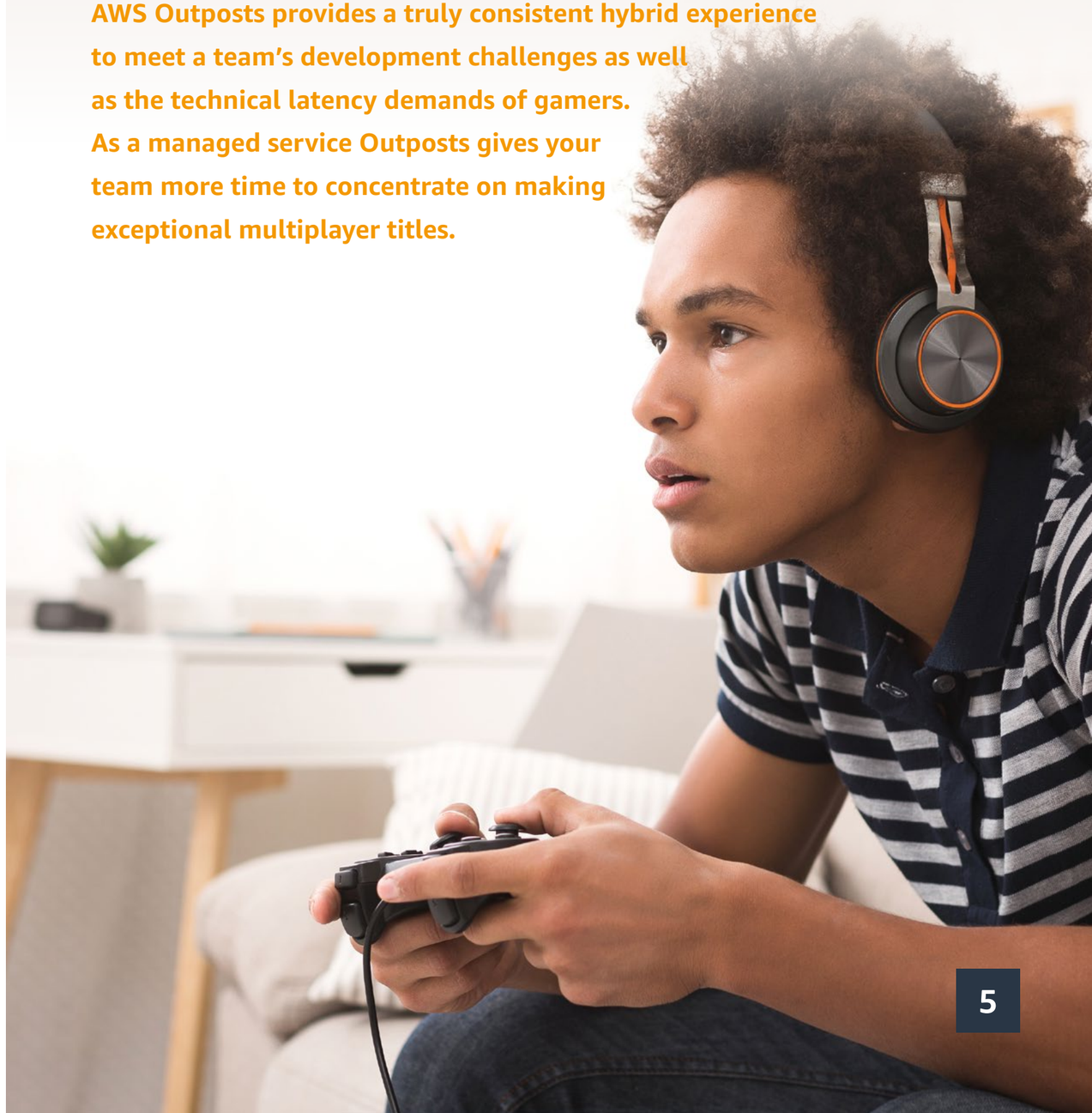
Teams' competing development priorities

Teams need to be able to focus on developing unique games, not 'undifferentiated heavy lifting' (IT work that doesn't add value).

Growing developer demands

As games get bigger and target more platforms, build processes require more compute and storage resources. Better workflow comes from removing such undifferentiated heavy lifting, which means it's a faster and smoother path to deployment.

AWS Outposts provides a truly consistent hybrid experience to meet a team's development challenges as well as the technical latency demands of gamers. As a managed service Outposts gives your team more time to concentrate on making exceptional multiplayer titles.



What are AWS Outposts?

AWS Outposts is a fully managed service that offers the same AWS infrastructure, AWS services, APIs, and tools to virtually any data center, colocation space, or on-premises facility for a truly consistent hybrid experience.

An Outpost is an industry-standard 42U rack. It's installed, managed, monitored, and patched by AWS, allowing you to focus on creating amazing games.

AWS Services run Locally on Outposts

Run AWS compute and storage, and other AWS services on Outposts.

- **Intel-powered EC2 instance types**
  General purpose, compute optimized, memory optimized, graphics optimized, and I/O optimized, powered by Intel® Xeon® Scalable processors
- **Storage**
  Elastic Block Store (EBS) and Amazon S3 for AWS Outposts
- **Containers**
  Amazon Elastic Kubernetes Service (EKS) and Amazon Elastic Container Service (ECS, a fully managed container orchestration service)
- **Amazon Relational Database Service**
  Amazon RDS enables the set up, operation and scale up of relational databases in the cloud (ElastiCache is available in all AWS regions)
- **Application Load Balancing**
  ALB provides advanced request routing for web traffic
- **Analytics**
  With Amazon EMR you can set up, deploy, manage, and scale Apache Hadoop, Apache Hive, Apache Spark, and Presto clusters
- **Amazon Virtual Private Cloud**
  VPC provisions a logically isolated section of the AWS Cloud

Applications can also make use of other AWS services available in the Region associated with your Outposts rack.

How does AWS Outposts Help?

With AWS Outposts, game companies can benefit from:

- **Ability to deploy game servers near to gamers**
  AWS Outposts racks are installed in locations you choose, anywhere in the world.

- **A truly consistent hybrid cloud experience**
  Use the same services, APIs, and tools on premises as in the cloud. Easily migrate workloads between Outposts and Regions with consistent performance in each location.

- **Easily scale development resources**
  Run critical and latency-sensitive workloads on Outposts. Workloads can burst seamlessly to the AWS Region, with no limits on capacity.

- **Outpost validated partner offerings**
  Protect and enrich the player experience by integrating with Outposts Partner offerings, like Veritas, Pure Storage, Sisense, CyberArk, AppDynamics, ScyllaDB and Confluent, that have been validated on AWS.

Use Case: Reduce Cloud Gaming Latency

Problem – Latency too high (servers far from gamers)

Your new online multiplayer game is taking off in several emerging markets – but your nearest multiplayer servers are thousands of miles away. You want to give players there a fun experience. But they can't compete on a level playing field, because latency is preventing them from reacting quickly to in-game events. Players can be vocal about the problem in online communities and if play isn't smooth and immersive your game's success could be limited by that.

Solution – Deploy close to players on AWS Outposts

You deploy your game on AWS Outposts at locations close to players, enabling low-latency multiplayer sessions and other benefits:

- **You choose the locations**
  AWS Outposts can be deployed in virtually any data center, colocation space or on-premises facility in the world.

- **Migration is easy**
  Workloads that run in the AWS Region usually require only a few changes and can be moved to AWS Outposts within a few hours.

- **Access what AWS Regions offer**
  AWS Outposts is a highly suited hardware solution for this use case. It provides the same services, APIs, and tools as in AWS Regions. Outposts' compute is powered by Intel® Xeon® Scalable processors which are designed with Intel® Mesh Architecture, maximizing performance while enabling consistent, low latencies.

- **Fully managed service**
  AWS manages, monitors, and updates your Outposts racks for you. It's easier than deploying standard servers and as reliable as you expect AWS to be.

Which Type of Storage do you Need?

Amazon EBS

AWS Outposts can be configured with EBS storage in tiers up to 55TB. So, you have as much storage as you need for workloads such as Perforce version control. Outposts provides snapshot and restore capabilities and lets you increase volume size without any performance impact. All EBS volumes and snapshots on Outposts are fully encrypted by default.

Amazon S3

Amazon's object storage (S3) is now available with AWS Outposts too. Using S3 APIs developers can store and retrieve data in the same way they would access or use data in a regular AWS Region. When configuring an Outpost you can add 48TB or 96TB of S3 storage capacity, and you can create up to 100 buckets on each Outpost.

Next Steps

The global video games market continues to grow bigger and more competitive, with billions of players who expect fast online experiences. Game development also keeps getting more resource intensive. With AWS Outposts you can focus on creating unique experiences, scale to meet new demands easily, and solve latency challenges by deploying multiplayer servers anywhere.

1. Engage

Reach out to your account team or fill out our online form: https://aws.amazon.com/contact-us Alternatively, go into the AWS Management Console.

2. Choose

Select your size and then order the Outpost rack configuration that best suits. Custom configuration is available.

3. Install and Launch

AWS will install and deliver your configuration. Use standard AWS APIs or Management Console to launch and run AWS resources locally.

Learn more
https://aws.amazon.com/outposts

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Intel® Xeon® Scalable processors