Improbable Grows to a Complete Cloud-based Multiplayer Games Tech Company, Expands Existing Partnership with Google Cloud

Google Cloud supports Improbable and the SpatialOS multiplayer platform through rapid company growth and game studio launches

Sunnyvale, California — November 21, 2019 — Google Cloud today announced an extended partnership with Improbable, the multiplayer game specialists and creators of SpatialOS, the unique cloud-based platform for the development and management of any kind of online multiplayer game.

Building on an existing strategic relationship, this extended partnership will see Improbable and Google Cloud work together to improve solutions and reduce cost and risk for multiplayer game developers. The partners will also work together to help Google Cloud customers making multiplayer games explore how SpatialOS can reduce their risk and speed up gameplay iteration, testing and improvement, even for challenging and innovative game designs.

Since announcing its first partnership with Google Cloud in 2016, Improbable has grown from around 100 employees to more than 500, and raised more than \$550m in funding. In 2019 Improbable announced the opening of Improbable Game Studios, with three wholly-owned game studios based in the UK, the US and Canada working on games using SpatialOS.

Developers using SpatialOS build games using their preferred combination of both Improbable and third-party tools and engines. These games are then run on the cloud, using SpatialOS' hosting, online services and multiserver networking layer.

This enables developers to reduce their project's risk by iterating on gameplay faster, designing and experimenting more flexibly, and launching with a managed solution for online games.

SpatialOS leverages the effectively limitless computational power of the cloud by allowing game worlds and gameplay systems to be seamlessly distributed across multiple cores and servers. Using this multiserver architecture, developers can rapidly build, test, debug, launch, redesign and scale multiplayer games – from action-packed, session-based Battle Royale experiences to huge, experimental virtual worlds, shared by thousands of players at once.

Improbable uses Google Cloud to provide the computational power underlying the SpatialOS platform, providing cost and efficiency benefits to developers:

- Increasing reliability and reducing risk: SpatialOS integrates closely with Google Compute Engine, gaining the advantage of GCE's rapid provisioning of virtual machines for multiserver game development and operating environments. This empowers developers to make games available for playtesting guickly and iterate rapidly based on feedback.
 - Google Cloud Platform's fast networking I/O and in-memory storage enable stable, low-latency gameplay even in fast-moving games running on SpatialOS. Google Cloud Storage and Cloud CDN also enable rapid downloading of assets into the game world and redundant storage of game snapshots.
- A shared commitment to open development: Improbable uses and contributes to key Google Cloud Platform open-source
 projects, including gRPC to coordinate SpatialOS' microservices and Kubernetes for container management allowing
 games to scale rapidly and efficiently with demand.
- Matching players quickly and accurately: Improbable is adding support for Open Match, an open-source customizable matchmaking framework co-created by Google Cloud and Unity. Adding Open Match as an option alongside SpatialOS' native matchmaking services increases the options available to game developers for matching players of equivalent skills. Increasing developers' range of integrated tools helps them to build great games with the tools of their choice.
- Improving operational efficiencies: Improbable leverages Google Drive and Google's office applications to help run the
 company's internal operations. It also uses BigQuery to underpin its game analytics service, allowing game studios to
 track events within games and generate insights.

Improbable is also working with Google in other gaming-related areas, such as a launch partnership with the Google Stadia gaming service, announced at GDC in March 2019. The multiserver game world management and networking of SpatialOS and the streaming technology of Stadia are complementary technologies, using the cloud to deliver new gaming experiences without computational or hardware limitations.

"We were initially attracted to Google Cloud for the quality of its network and infrastructure, and through the course of our

partnership have seen that our values and our visions for games are aligned," said Lincoln Wallen, CTO, Improbable. "Whether we are supporting game developers or building our own games, Google Cloud ensures scalability and access to computational power, while empowering our team to deliver better experiences to SpatialOS users."

"Improbable has moved from proving its technology to supporting and simplifying development across the range of online multiplayer games, and Google Cloud is proud to be a part of that ongoing journey," said Thomas Remy, UKI Head of Telecommunications, Media & Entertainment, Google Cloud. "Everyday, our cloud technology enables Improbable to more efficiently scale their technology, drive innovation in game development and build and test the next generation of cloud-based games."

About Google Cloud

Google Cloud provides organizations with leading infrastructure, platform capabilities and industry solutions, along with expertise, to reinvent their business with data-powered innovation on modern computing infrastructure. We deliver enterprise-grade cloud solutions that leverage Google's cutting-edge technology to help companies operate more efficiently, modernize for growth and innovate for the future. Customers in more than 150 countries turn to Google Cloud as their trusted partner to solve their most critical business problems.

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