Product Brief

Cloud & Communication Service Providers
Graphics

Intel® Server GPU

intel.

Data center graphics for high-density cloud gaming and media streaming.

Cloud service providers (CSPs) and communication service providers (CoSPs) are looking for ways to capture business benefits from the explosive growth of high-intensity media and gaming. They are striving to build infrastructure that increases the density of streams supported per server, while ensuring high quality and availability.

The Intel® Server GPU, based on Intel's Xe architecture, offers these benefits to service providers, while keeping total cost of ownership (TCO) low. This discrete graphics solution is purpose-built for the needs of differentiating services in the visual cloud era and can be paired with Intel Xeon® Scalable processors to help providers rapidly scale out new offerings to meet customer demands.

The GPU can help reduce CapEx in terms of equipment and facilities costs, and it also includes architectural efficiencies that reduce power consumption to help lower OpEx. Additionally, by enabling a standards-based hardware and software development environment, it can provide further advantages by unifying the graphics landscape across usages and performance levels.

Building on years of experience with data center graphics—including the Intel Xeon processor E3 v5 with Intel Iris™ Pro Graphics and Intel Visual Compute Accelerator 2—Intel delivers a new generation of architecture benefits to service providers. The new Intel Server GPU can support around 20 Android games per GPU, depending on the specific game title and server configuration.[1] With 96 independent execution units per GPU, large-scale memory and I/O resources, and a highly efficient pipeline, this product is purpose-built to accelerate rendering and media processing for a variety of visual cloud workloads.

Based on a low-power system-on-chip (SoC) design, the Intel Server GPU offers flexibility and scalability to address varied system requirements. The H3C XG310 graphics card is one configuration that can help providers increase density. This card is a single-slot, full height, 3/4 length, PCIe Gen3 x16 form factor and is powered by four Intel Server GPUs. It includes 32 GB of low power DDR4 memory at a TDP of 150 W and is passively cooled, allowing airflow in both directions for flexible server chassis design. With support for up to four XG310 PCIe cards (sixteen GPUs) per system, the Intel Server GPU platform is a truly scalable solution offering density, scalability, and efficiency that help address data center needs.

Intel Server GPU provides a high density of streams per server, across codecs, with low power consumption.

View the latest performance data.

Hardware Specifications

Package Dimensions		28mm x 34mm
Package Type		FCBGA
Thermal Package Design Power (TDP)		23 Watts
Graphics Engine Operating Frequency	**Boost**	1.1 GHz
	Base	0.9 GHz
CPU Interface		PCIe Gen3 x16
EUs		96
Shader Model		6.5
OpenGL		4.1
Internal Thermal Sensor		Yes
L3 Cache Size		16 MB
Use Condition (Reliability)		Server/Enterprise
Operating Life (Reliability)		5 Years, up to 80% Active
Supply Life (Availability)		Extended Supply Life
Memory	**Operating Frequency (max)**	2133 MHz / 4267 MT/s
	Configuration Type	128-bit wide, 8 GB, LPDDR4, 68.25 GB/s

Software Stack

Intel's leadership and domain expertise in Android development includes being a top contributor to Android OS, second only to Google itself. Intel also has leadership expertise in media codecs, networking innovation, and scalable cloud-native solutions. The open-source software for media workloads and licensed software stack for Android cloud gaming is founded on a rich set of drivers and support for various APIs. The ecosystem also draws on Intel's long-standing investments in graphics and media drivers.

Media Acceleration Library		Intel Media SDK
Media Framework		FFmpeg
Containers		KVM Docker
OS Support		Linux
Media Codecs	**Encode and Decode**	AVC, HEVC, MPEG2, VP9
	Decode	AV1
Android Compatibility		Android in Container (AIC)
		Intel Optimized Android OS, supports up to Android Pie (9.0)
Android NDK App Compatibility		Intel® Bridge Technology
Game Frame Serving Software		Intel Cloud Rendering (ICR)

Find out more on the Intel Server GPU at **www.intel.com/servergpu**

Explore how H3C is using the Intel Server GPU

Learn more about Intel's Visual Cloud Solutions at **www.intel.com/visualcloud**