Samsung Achieves 305Gbps on Its 5G SA Core

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Samsung Electronics announced a significant performance breakthrough on its 5G SA Core, in collaboration with Intel. The two companies achieved a 5G SA Core data processing capacity of 305Gbps (Gigabits per second) per server and latency improvement in a mobile network environment with commercial features enabled.

This superior performance of Samsung's 5G SA Core was accomplished using the 2nd generation Intel® Xeon® Scalable processor and the Intel® Ethernet Network Adapter E810 with Enhanced Dynamic Device Personalization (DDP).

The capacity of 305Gpbs is equivalent to hosting more than 200,000 users that are live-streaming standard definition (SD) videos simultaneously.

The resulting performance advancement will not only help increase cost-efficiency for 5G Core network deployments, but also help accelerate the delivery of next-generation, high-capacity networks. This will foster more immersive 5G use cases that require much higher data volume processing with low latency. These include augmented reality (AR), virtual reality (VR) and vehicle-to-everything (V2X), experiences, which can be enjoyed without impact to performance through greater capacity.

Normally, data processing requires a complex path using multiple cores, including packet distribution, transmission, and processing cores. With the Intel Ethernet Network Adapter E810 with Enhanced DDP, the data distribution and transmission functions are better optimized across the network adapter and the CPU cores, resulting in higher performance. Samsung and Intel were able to implement a simplified system configuration and boost packet processing and overall network performance.

“Through close collaboration with Intel, we were able to achieve an industry-leading performance with our 5G SA Core,” said Sohyong Chong, Senior Vice President and Head of Core Software R&D, Networks Business at Samsung Electronics. “Samsung’s cloud-native 5G SA Core, through its highly flexible and scalable design, will enable our customers to launch 5G services more swiftly and cost-effectively.”

“The transition to 5G Standalone Core is essential to achieve the full potential of 5G,” said Alex Quach, Vice President and General Manager, Wireline and Core Network Division, Intel Corporation. “This milestone achieved with Samsung is a verification of how strong industry collaboration and the use of innovative technologies can enhance performance to accelerate this transition and pave the way to new network and edge services.”

For more complete information on the performance results, refer to our white paper: Samsung Achieves 305Gpbs on 5G UPF Core Utilizing Intel Architecture.

Samsung has pioneered the successful delivery of 5G end-to-end solutions including chipsets, radios, and core network technologies. The company supports 5G commercial services in the world’s leading markets, including Korea, the U.S. and Japan. In addition, the company is rapidly expanding its global footprint to new markets including Canada and New Zealand.

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