Bringing 5G edge architectures to Legacy Networks with White Box Platform providing Full Network Functionality and User Plane Traffic Offload at Cell Site Edge

Virtualized Media Breakout Controller (vMBC)

Mavenir's vMBC provides a cost-effective, highly scalable solution for Mobile Network Operators (MNOs) to improve QoS, simplify and cost reduce User Plane services, & implement their own Internet connectivity gateway at the network edge whilst maintaining existing control plane architectures and vendors.

Innovative Architecture

The vMBC employs a service-based, horizontal architecture consisting of independent interface, service logic, database, and management modules. This approach to functional virtualization optimizes performance and efficiency. Key aspects of delivering user plane services over a virtualized platform include overcoming the non-real-time nature of the x86 hardware processing pipeline and providing alternative solutions to traditional interrupt-driven packet processing approaches. By using batch-based packet processing models and poll-mode-based drivers, faster memory access and packet processing is achieved. This allows operators to service a user plane that provides deterministic packet forwarding using a combination of synchronous run-to-completion and inline asynchronous threads, thereby maximizing throughput levels.

Mavenir vMBC

The vMBC optimizes S-GW and P-GW functionality while eliminating the overhead of double forwarding. Service providers can use the vMBC to augment and extend their existing gateway products while minimizing user plane latency. For example, service providers can place the vMBC in a highly distributed and secure way, while improving user experiences with high throughput and low data latency.

This innovative architecture enables the platform to manifest as a virtualized SAE-GW. In this manner, the vMBC architecture can be used to deliver user plane-focused distribution or expansion based on specific operator requirements. The Mavenir gateway product family consists of vPGW, vSGW vRouter, and vFirewall.