



Virtual ActiveLogic

Hyperscale data plane for next generation telco networks

ActiveLogic, Sandvine's hyperscale data plane, delivers a complete solution suitable for any access and network type, including 5G. Aside from being access agnostic and cloud-ready, ActiveLogic provides operators additional deployment options: virtual as well as COTS-based on Sandvine's [iQ platforms](#). As the key piece of Sandvine's Application and Network Intelligence (ANI) Portfolio, ActiveLogic enables operators to complete the transition to an automation-ready network, where they can take advantage of a suite of automation-based use cases.

It offers operators machine learning-powered advanced traffic classification, hyperscale performance, and key features:

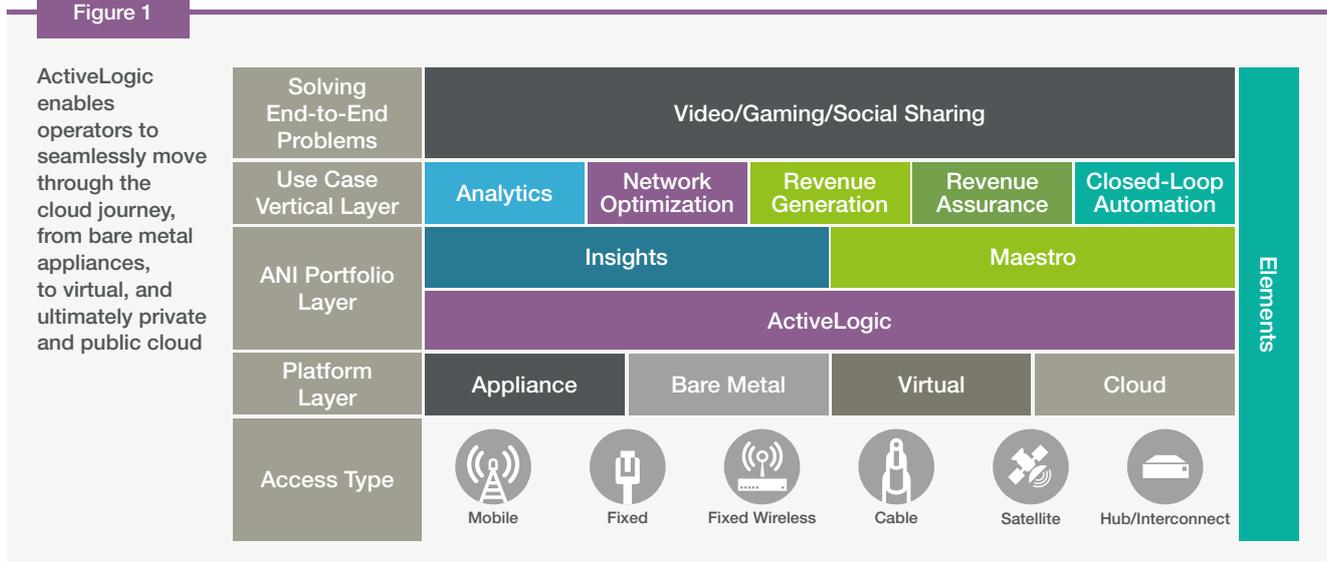
- Real-time dynamic LiveView query engine and elements
- Policy-based traffic management capabilities
- Advanced packet queuing
- Flow-based metrics
- Enrichment databases
- Advanced traffic steering

Please refer to the [ActiveLogic Datasheet](#) for more information.

KEY BENEFITS

- Optimizes performance based upon the latest x86 architecture
- Scales effortlessly with additional CPU and memory on virtual machine
- Simplifies high availability and enables high-scale deployments with FlowSync
- Supports key hypervisors on the market – KVM and ESXi
- Improves hardware resource utilization with Non-uniform memory access (NUMA) support
- Delivers equivalent functionality to bare metal ActiveLogic deployments

Figure 1

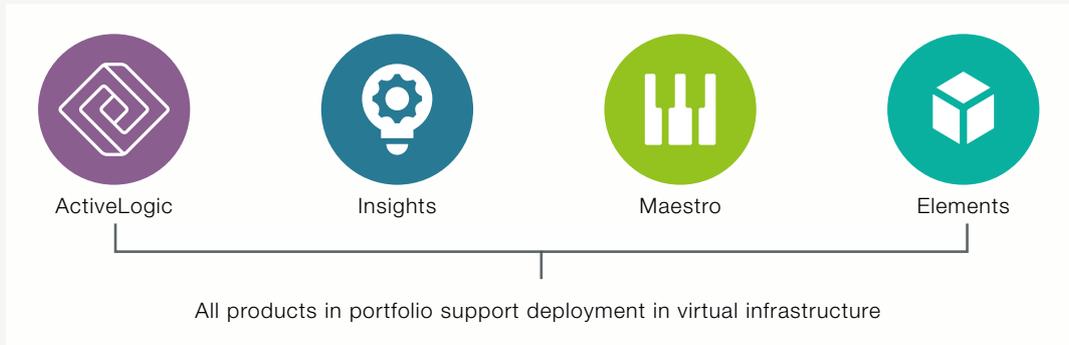


The platform layer of Sandvine's ANI Portfolio consists of bare metal COTS appliances, virtual machines, and cloud. These platforms provide required physical or virtual resources to deliver ANI solutions and use cases.

All products in the ANI Portfolio (**Figure 2**) can be deployed in a virtual environment, including Sandvine's data plane, which doesn't compromise performance versus the typical deployment option – bare metal. Sandvine delivers ANI products as QCOW2 (QEMU Copy-On-Write Version 2) or OVA (Open Virtualization Format Archive) images.

Figure 2

Sandvine's ANI Portfolio



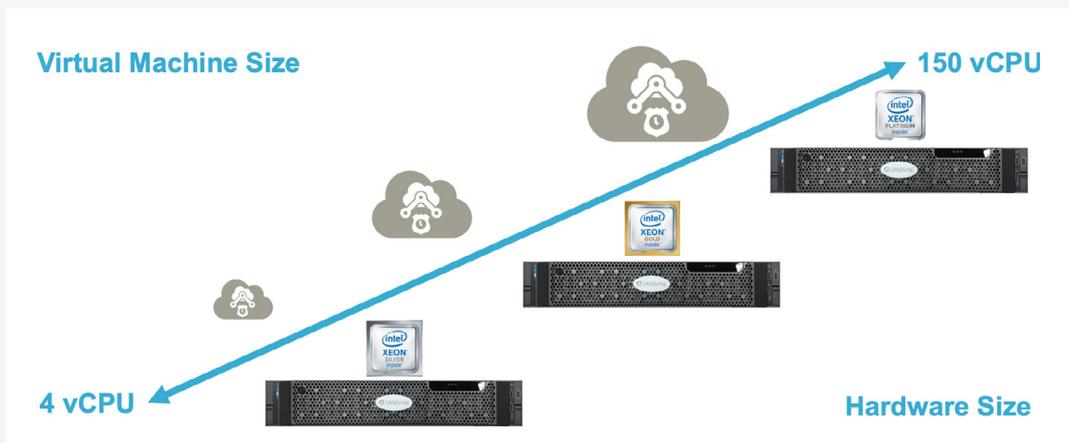
This datasheet focuses on virtual ActiveLogic deployments.

Sandvine's ActiveLogic data plane was initially designed to be deployed in virtualized environments – it does not rely on any proprietary hardware and natively supports the latest x86 CPU architectures. ActiveLogic also supports latest Intel CPU generations but can work at the same time on any CPU starting from Sandy Bridge generation.

Sandvine ActiveLogic horizontally scales from extra-small to extra-large configurations with ease. For flexibility, it allows optimal utilization of most COTS hardware available on the market and properly dimensioned virtual infrastructure (**Figure 3**).

Figure 3

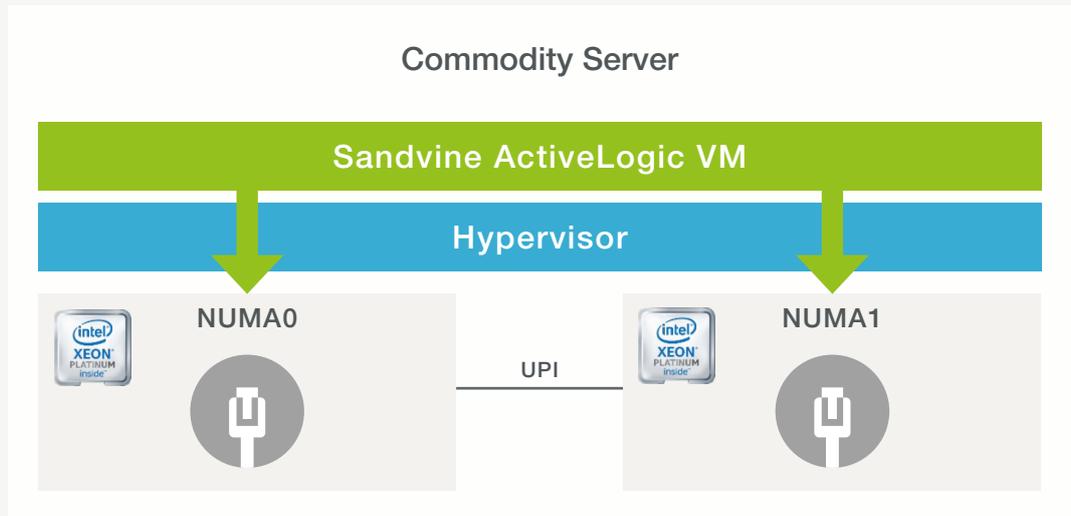
Sandvine's virtual scale and dimension



Sandvine ActiveLogic supports NUMA-awareness and is able to scale beyond single NUMA node. This feature allows ActiveLogic to operate better with underlying hypervisor hardware, avoid bottlenecks, and achieve better performance when deployed virtually (**Figure 4**).

Figure 4

Sandvine's NUMA awareness



To maximize flexibility, Sandvine natively supports DPDK drivers, enabling the use of various Network Interface Card (NICs) types and vendors. Sandvine selects and validates popular NICs and tunes ActiveLogic accordingly, ensuring maximum out-of-box DPDK performance.

Virtual ActiveLogic Performance

ActiveLogic is highly optimized for virtual deployments. **Figure 5** summarizes performance tests results for a typical large and extra-large deployment.

Figure 5

ActiveLogic Virtual Performance

	ActiveLogic XL	ActiveLogic XXL
Intel(R) Xeon(R) Platinum 8168 CPU @ 2.70GHZ	46 vCPU	92 vCPU
RAM	178 Gb	400 Gb
Storage	80 Gb	200 Gb
Mellanox CX-5 En NIC	2x100G	4X100G
Hypervisor type and version	QEMU/KVM version 2.11	
Hardware type	Dell R740 with Intel(R) Xeon(R) Platinum CPU	
Hypervisor settings	HugePages, CPU pinning and SRIOV interfaces	
Total throughput	Up to 90 Gbps	Up to 160 Gbps
Concurrent active connections	2,000,000	4,000,000

Disclaimer: The exact performance numbers may vary depending on system configuration, hardware configuration, hypervisor settings, and traffic parameters.

ABOUT SANDVINE

Sandvine's cloud-based Application and Network Intelligence portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues. For more information visit <http://www.sandvine.com> or follow Sandvine on Twitter @Sandvine.



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