# △ AppLogic NETWORKS
## Virtual ActiveLogic

## 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
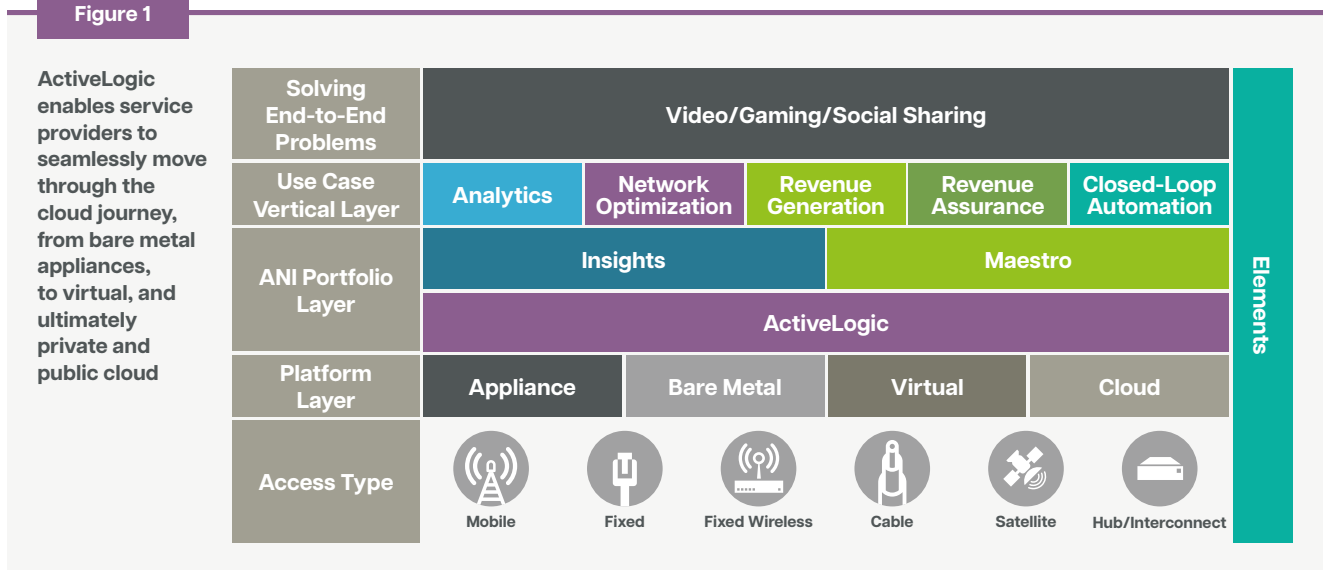- Delivers equivalent functionality to bare metal ActiveLogic deployments

ActiveLogic, AppLogic Networks' 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 service providers additional deployment options: virtual as well as COTS-based on AppLogic Networks' iQ platforms. As the key piece of AppLogic Networks' Application and Network Intelligence (ANI) Portfolio, ActiveLogic enables service providers to complete the transition to an automation-ready network, where they can take advantage of a suite of automation-based use cases.

It offers service providers 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.

**Figure 1**

ActiveLogic enables service providers to seamlessly move through the cloud journey, from bare metal appliances, to virtual, and ultimately private and public cloud
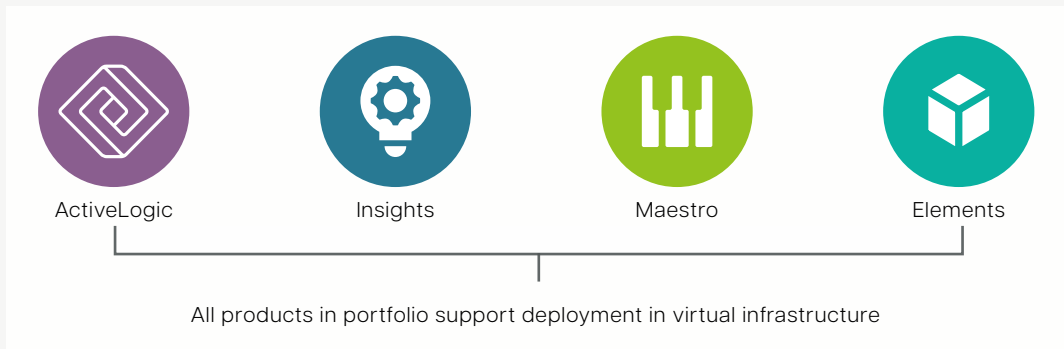


The platform layer of AppLogic Networks' ANI Portfolio consists of bare metal COTS appliances, virtual machines, and cloud. These platforms provide required physical or virtual resources to deliver ANI solutions and use cases.

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

**Figure 2**

**AppLogic Networks' ANI Portfolio**



ActiveLogic    Insights    Maestro    Elements

All products in portfolio support deployment in virtual infrastructure

This datasheet focuses on virtual ActiveLogic deployments.

AppLogic Networks' 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.

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**

**AppLogic Networks' virtual scale and dimension**



Virtual Machine Size    150 vCPU

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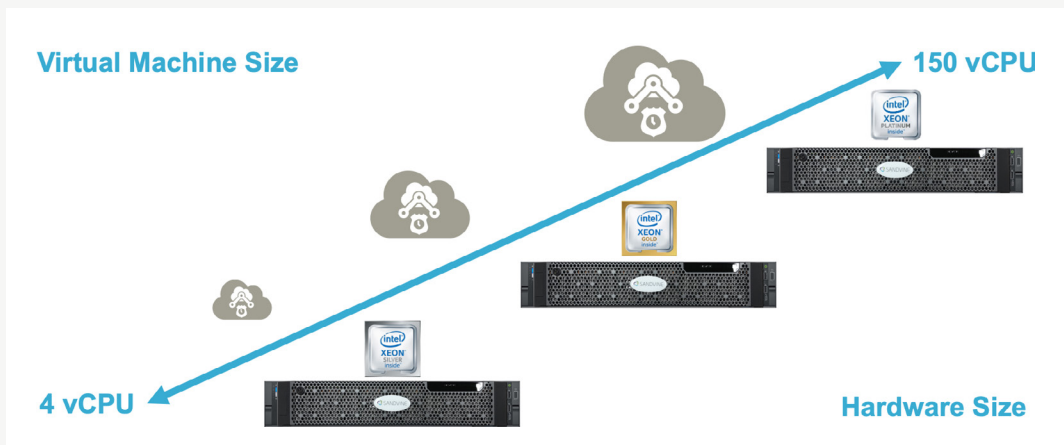
ActiveLogic supports NUMA-awareness and is able to scale beyond single NUMA node. This feature allows ActiveLogic to operate better with underlying hypervisor hardware, avoid bottlenecks, and achieve better performance when deployed virtually (**Figure 4).**

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

**Figure 4**

**AppLogic Networks' NUMA awareness**
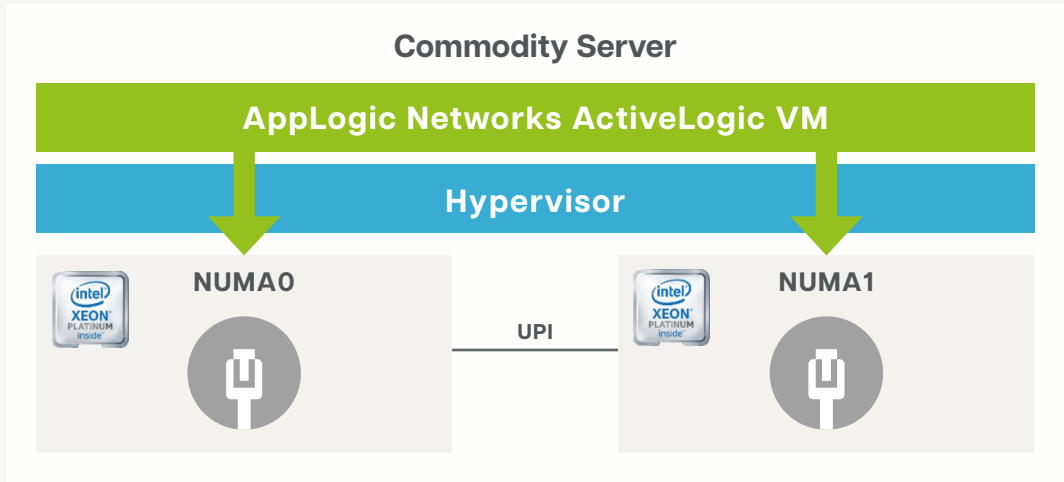


**Virtual ActiveLogic Performance**

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 APPLOGIC NETWORKS**

AppLogic Networks' cloud-based App QoE 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 https://www.applogicnetworks.com or follow AppLogic Networks on X @AppLogic Networks.

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