



Power a more intelligent network

KEMP SDN Adaptive, powered by the HP VAN SDN Controller

The changing nature of networks

Network traffic densities are increasing—constantly. The adoption of Software-Defined Network (SDN) technology is on the rise for the powerful control it offers over network infrastructure. It’s a matter of time before it becomes a part of mainstream adoption. There will be a transitional period in which elements of SDN are used alongside traditional networking technologies and newer overlay solutions. As SDN adoption continues, Application Delivery Controller (ADC) or load balancers will play a critical role in providing the required intelligence for flexible and increasingly effective network deployments.

In traditional networks there is no end-to-end visibility of network paths, and applications are not always routed optimally. The KEMP Adaptive Load Balancer App, integrated with the HP Virtual Application Network (VAN) SDN Controller solution, solves this problem by making available critical flow-pattern data. This way applications can be routed dynamically across the most optimal server and switching infrastructure.

Greater efficiency

The KEMP-HP combined SDN solution enables:

- Application visibility to network

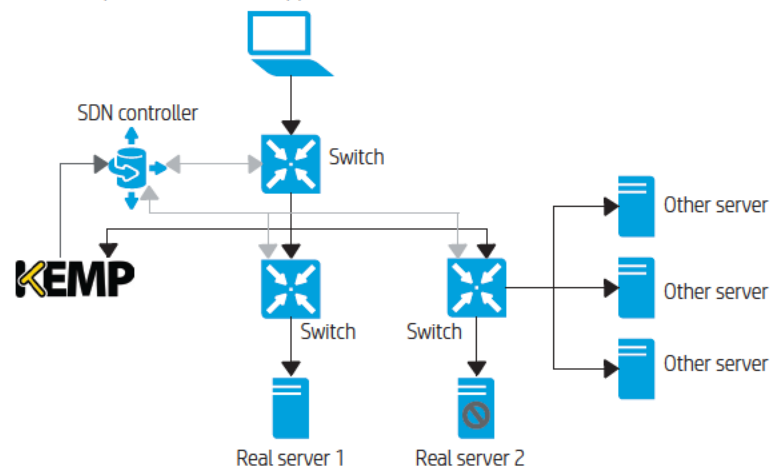
- Network data being “pulled” by ADC
- Adaptive High Availability load balancing
- Dynamic application delivery

The principles of SDN are focused on the lower layers of the network, and load balancers operate chiefly at L4–L7. This puts load balancers in a prime location to bridge the gap that exists between the application and the network to influence the SDN controller. Upper layer intelligence can be “pushed” to the SDN controller from the KEMP ADC, helping it to make better decisions.

Inversely, circuit information can be “pulled” from the SDN controller across the North Bound Interface (NBI). This allows the ADC to make better application load balancing decisions by aggregating its native application intelligence with the information provided by the SDN controller. The solution focuses on the latter as a first step to SDN Adaptive Load Balancing.

An important augmentation benefit of the KEMP-HP combined SDN solution is to improve performance of a new application across existing infrastructure. The KEMP adaptive load balancer apps’ RESTful API allows for third-party innovation within the HP VAN topology, so that customized solutions can be tailored to specific enterprise network needs.

Figure 1. KEMP adaptive load balancer application



A closer look at the KEMP-HP combined SDN solution

The SDN controller has direct access to the lower layer circuit and the flow metrics that the ADC does not see. LoadMaster has visibility of the upper layer application-level information (request load time, SSL TPS, application response throughput, etc.) In this initial phase of integration, LoadMaster pulls information across the NBI, extending its visibility by adding the circuit information received from the controller.

The application instance target responds appropriately to the health query that LoadMaster is executing. In case of congestion, the load balancer is made aware of it by the controller. The load balancer's algorithm will then choose the next appropriate target that has the quickest performing end-to-end path.

The HP SDN ecosystem—enabling intelligent load balancing decisions

In a non-SDN environment, the LoadMaster is a layer 4–7 device and has no visibility of the lower layer conditions of the individual switching infrastructure. In the HP SDN environment the LoadMaster pulls network statistical information from the HP VAN Controller and utilizes it to make more intelligent load balancing decisions on behalf of clients attempting to access application services. By pulling that information from the HP VAN Controller, the LoadMaster has much better information to make load balancing decisions.

HP and KEMP—a winning partnership

KEMP, the price-to-performance leader in Application Delivery software, has grown through its ability to facilitate 99.999 percent availability for crucial business process applications across a wide range of platforms. These include a bare metal load-balancer OS via HP ProLiant servers. KEMP's expanding support for our ADC OS across bare metal, purpose-built hardware, virtualized, and cloud-based platforms, allows its ADC technology to be delivered wherever customers choose, across hybrid architectures with enterprise-class performance. KEMP is also one of the most application-centric ADCs, with load-balancer configuration templates to help optimize Microsoft® Exchange, SharePoint®, Lync® and many other enterprise apps.

“KEMP Technologies is focused on providing dynamic application delivery value throughout the HP ecosystem. Working with the HP VAN SDN Controller, we are able to enhance our ability to inform the entire VAN SDN service chain about the health, availability and security of enterprise workload applications.”

—Peter Melerud, EVP-Product

The HP SDN architecture spans the infrastructure, control, and application software layers, making the network easier to manage, with maximum agility.

The HP VAN SDN Controller platform, paired with network infrastructure supporting the industry-standard OpenFlow protocol, provides centralized control of a programmable, end-to-end network. This is designed to dynamically adjust to your evolving business needs. The platform's reliability, consistent APIs, and rich features, empower KEMP LoadMaster to deliver greater network efficiency, advanced security, Quality of Service management, and rapid application or service delivery.

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