WEI INSIGHTS TECH BRIEF

NETWORK INFRASTRUCTURE AND THE ARCHITECTURE APPROACH OF A CLOUD FIRST NETWORK

We live in a world today where everything computes and everything is connected. It is a world of constants: constant connectivity, constant data streams, constant innovation as well as constant disruption. Thanks to this digital evolution, we are creating a new elevated world made up of billions of touch points in which memory driven computing shapes the future, creating endless possibilities.[1] This new digital era is made possible thanks to the pervasive presence of the cloud. The cloud is the essential sphere of the equation to harness the necessary scalability, redundancy and flexibility required to compete in this new global digital economy.

The cloud is a generic paraphrase that represents many types of cloud technologies. In order to meet the demands of different types of workloads, there are different types of cloud solutions that distinguish themselves through different architectures and services. Because of this, the majority of enterprises now configure cloud interoperability. In fact, according to IDC, over 90% of enterprises will utilize multiple cloud services and platforms by 2020.[2] The reason is simple, IT leaders are realizing that by matching workloads with the optimal hosting environment improves IT efficiency and achieves better cost models.

The push to the cloud has created the necessity to create cloud first networks for today's enterprise. At the same time, companies must continue to maintain their existing on-premises infrastructure that still consumes most of their costs. It is also, where many of their mission critical enterprise applications must still reside at present. Because of this, the new enterprise model is derived around Hybrid IT, a new ecosphere in which the public cloud, private cloud and traditional IT coalesce together. This achieved state of balance gives companies the best of both worlds. According to Gartner, "Organizations that adopt hybrid infrastructure will optimize costs and increase efficiency.[3]

NEW SYSTEMS AND TECHNOLOGIES

The nirvana state of workload balance that Hybrid IT brings to the enterprise cannot be implemented with legacy technology and traditional topologies. Today's hybrid infrastructures require new technologies such as Software Defined Networking (SDN) and Hyperconverged Infrastructures (HCI). SDN introduces a new speed class to the network, in which routing decisions, policies and infrastructure deployments are implemented in near instant fashion. HCI brings forth the adaptability to expand infrastructure to accommodate expanding workloads

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with greater ease and simplify the administration and maintenance of the network at large.

HPE recognized early on that it must seek new technologies and ideas in order to remain an innovational leader for its customers. To better position itself in the cloud-centric market that is far outpacing the growth of traditional datacenter networking, HPE partnered with Arista. Arista is acknowledged as a pioneer, delivering software-driven cloud networking solutions for large data center storage and computing environments. They are recognized by Gartner as a "leader" in its 2017 Magic Quadrant for Data Center. Due to its reputation for award winning platforms that boast speeds from 10 to 100 GBps, Arista has shipped more than 15 million cloud networking ports.[4] Through its partnership with Arista, HPE is able to continue to provide best-of-breed networking solutions for companies moving beyond traditional legacy restricted solutions that will complement the HPE suite of compute, storage and cloud offerings.

HOW ARISTA'S NETWORKING SOLUTIONS ARE PAVING THE WAY FOR NETWORK INFRASTRUCTURE TRANSFORMATION

Do not think that the cloud diminishes the importance of the network itself. Far from it. In fact, the network will become a competitive differentiator for cloud providers and enterprises building out their own private or hybrid clouds.[5] Arista network products are built upon hardware platforms designed to deliver the high-speed exchanges for all types of traffic. However, today's network platforms are no longer built on hardware alone. In order to be a cloud first network, the supportive infrastructure must emulate the agility of the cloud itself. This can only be accomplished through the flexible, adroit and responsive nature of software itself. In order to serve the cloud first networks of today, Arista has integrated Software Defined Cloud Networking (SDCN) into their solutions. SDCN incorporates the functionality of automation, self-servicing provisioning and linear scaling. Arista offers data plane controller functionality that can centrally distribute and manage foundational network protocols such as LACP, OSPF, ECMP and BGP. The complete culmination of capabilities that Arista solutions deliver allows Arista switches to instantaneously react to change events anywhere within your network topology without traffic interruption or time costly congestions. This combination of acting independently and cooperatively in cohesion is the intelligent network ecosystem that enterprises need today.

HOW ARISTA'S NETWORKING SOLUTIONS CAN FIT INTO YOUR ENTERPRISE ENVIRONMENT

Legacy networking software stacks have struggled to adapt to the changing cloud-based networking requirements. The silo-dominated enterprises of yesteryear are slowly fading into oblivion as companies strive for a more integrated approach to achieve greater efficiencies, TCO and ROI. IT needs products that can assimilate within their existing infrastructures in simple fashion. The Arista EOS+ platform allows the network to be easily integrated with compute, storage and applications, leveraging the programmatic foundations of EOS®. Workload-based provisioning and monitoring can now be integrated with the network, ensuring that provisioning of the network elements keeps up with the frenetic pace of change in today's data center.[6] This natural ability to adapt is also complimented by a simple approach to migration and upgrade paths that promises investment protection without expensive forklift upgrades.

HPE and Arista high-performance, ultra-low latency solutions can scale from a few racks to some of the largest SAP and Hadoop deployments of thousands of devices. Its best-in-class software foundation supports the new type of architecture that mission-critical workloads and applications are contingent upon. Arista switches are purpose built to address the dense virtualized multi-tenancy environments of today's cloud topologies. Besides the incorporation of SDN within its products, Arista integrates with HPE storage solutions such as HPE StoreVirtual and HPE 3PAR StoreServ

flash storage offerings, as well as HPE ProLiant, Blade, and Apollo server to enable software defined storage architectures.

THE FEATURES AND BENEFITS OF ARISTA SOLUTIONS

Just like in the classic 80's movie, Top Gun, "the need for speed" is omnipresent for cloud integrators. While Arista accounted for the largest share of 100Gbe data switch shipments last year, speed is realized in more ways than just port speed. Their signature products are designed from the ground up for optimum wire speed performance at layers two, three and four. This is accomplished by features such as:

- Deterministic 350 ns latency
- Ultra deep buffers for high performance storage applications
- Industry-leading predictable and deterministic performance (lowest latency and jitter)
- Multi-cast scalability
- Highly programmable with Arista EOS® extensible Operating System

Their leaf spine architecture provide increased port scale and the ability to enable 1 GB to 100 GB of transfer speed for today and the future proof support of 400 GB tomorrow. It also incorporates a self-healing architecture of high availability for link, path, device and network wide redundancy.

SUMMARY

HPE and Arista bring together a collaborative partnership that can accommodate all of your workloads in a consistent manner with the flexibility to move them across the hybrid IT spectrum — private cloud, public cloud and traditional IT, and achieve the right mix as business demands change. It is a truly powerful partnership, bonded together in order to deliver you the powerful cloud first network to differentiate you from your competitors. Welcome to the new world of networking.

TALK TO WEI TODAY

Talk to an IT partner that lives and breathes data center modernization everyday. Contact WEI to discuss your data center modernization initiatives.

1. A World Where Everything Computes, HPC and Oxford Economics Research https://www.youtube.com/watch?v=ytLyVRcGN6c
2. IDC FutureScape: Worldwide Cloud 2018 Predictions https://www.idc.com/research/viewtoc.jsp?containerId=US42014717
3. Gartner Says a Massive Shift to Hybrid Infrastructure Services Is Underway https://www.gartner.com/newsroom/id/3666917
4. https://www.arista.com/en/company/company-overview
5. https://www.networkcomputing.com/data-centers/why-network-critical-digital-transformation/593352781
6. https://www.networkworld.com/article/3201043/private-cloud/arista-s-new-solutions-sets-the-standard-for-cloud-scale.html

ABOUT WEI

WEI is an innovative, full service, customer centric IT solutions provider.

Why WEI? Because we care. *Because we go further.*

At WEI, we're passionate about solving your technology problems and helping you drive your desired business outcomes. We believe in challenging the status quo and thinking differently. There are a lot of companies that can take today's technology and create a great IT solution for you. But we do more. We go further. And we have the customer, vendor and industry awards to prove it. WEI is a premier technology partner, who always puts our customers first while providing the most innovative solutions for over 25 years.

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