

HPE DELIVERS SIMPLE AND FLEXIBLE NETWORK AUTOMATION AT SCALE

HPE COMPOSABLE FABRIC

EXECUTIVE SUMMARY

Network automation, much like artificial intelligence (AI), seems to be a topic of high interest among information technology (IT) professionals today. On the surface, automation is poised to deliver enterprise value for a number of reasons. Some of the advantages include faster application delivery to lines of business (LOBs), instantaneous network device provisioning, closed loop troubleshooting and remediation, and simplified policy management. Organizations, large and small, will likely proceed with caution in the short-term, automating mundane and less mission-critical operations as network administrators become more comfortable with the technology and tools. However, automation long-term will eliminate the dependency on key operations personnel's "tribal" knowledge, as well as free up time for more value-added LOB support.

In order to facilitate adoption, automating network functions must be simple, scalable and, ideally, allow IT staffs to understand the network as a whole versus a collection of switching and routing devices under the legacy command line interface (CLI) network management paradigm of the past. An approach to network design and infrastructure deployment that encompasses both a fabric and composability element should deliver a holistic solution.

Fabric generally refers to a networking solution in which connected devices are managed and operated as a single entity. In a sophisticated network fabric, data can be easily distributed across many available paths rather than being relegated to a select pre-defined few and that path selection can be influenced or controlled by the operator. The benefit in this scenario is typically a better match of network resources to data connectivity needs. On the other hand, composability can benefit automation and efficiency by delivering the promise of value-added support through its ability to "compose" the right resources when and where they are needed. Composability, from a fabric perspective, is an enabler.

A composable fabric understands that it is responsible for bringing together the right compute and storage resources at the right time and place based on workload and

application needs and leveraging the fabric to orchestrate the connectivity of those resources. It also can be told what is needed in terms of the quality and security of that connectivity. LOBs need to leverage the necessary infrastructure resources to access the applications that will improve individual productivity and overall competitiveness. A composable fabric has the ability to intelligently facilitate the integration of automation into application deployment by expressing the need for the required resources.

It is extremely difficult to automate networks given that most have an underlying framework based on CLI and static configuration files. Hewlett Packard Enterprise (HPE) is taking a different approach in deploying automation by fitting a given workload on the optimal network path with a composable fabric. This paper explores HPE's ability to make automating network functions simple and scalable. Enterprises that are exploring network automation should consider HPE given its historic leadership in composable infrastructure, the completeness of its solution portfolio - both organically developed and through acquisition - and service offerings that have a demonstrated track record in supporting successful deployments.

HPE'S VISION FOR COMPOSABLE FABRIC

Composability Leadership and the Acquisition of Plexxi

HPE has invested in composable infrastructure for a considerable time and can claim many proof points along its journey from the introduction of Synergy, SimpliVity, HPE Composable Rack and its acquisition of Plexxi in June 2018. Plexxi is a crucial lynchpin in not only strengthening HPE's software-defined portfolio but also in extending its capabilities. The resulting server network fabric can tailor or balance bandwidth to match workload need. Additional benefits include the following capabilities:

- Unify the data center by bringing a cloud experience on premise;
- Expand the scalability of HPE's prior acquisition of SimpliVity that delivers an integrated hyperconverged platform that supports both infrastructure and data services;
- Widen Synergy's composable infrastructure reach into VMware environments by creating an automated network experience for the inter-frame connectivity layer (sometimes deployed as an "end-of-row" switch for Synergy frames);
- Extend HPE's market leading composable infrastructure capabilities to rack-mount servers with HPE Composable Rack using ProLiant DL;
- Provide improved flexibility as a highly integrated fabric to any combination of compute and storage, leveraging the native software-defined data center

integrations provided by HPE Composable Fabric, thus providing the same benefits to the enterprise data center.

A Deeper Dive into HPE Composable Fabric

Intent-based networking promises to bring a closed-looped approach to connectivity with the capacity to monitor performance, identify issues and fix problems automatically without manual intervention. Its name also implies the ability for IT staffs to define the outcomes the network should provide and apply the aforementioned automation tools to achieve that end. HPE Composable Fabric leverages the underlying technology platform developed by Plexxi to deliver a software-based, highly agile networking topology that puts application delivery at the forefront of the data center and includes the following benefits:

- Intelligent automation of compute resource connectivity that facilitates the ability to provide isolated path access for critical workloads;
- Consolidated management and visualization user interfaces leveraging deep API level integration with environments such as VMware for broad network visibility, troubleshooting and remediation;
- The potential for significant operating expense (OpEx) savings resulting from simplified network operations, higher uptime and improved flexibility for workload placement resulting in efficiency improvements;
- The ability to scale from a single rack to an entire data center with fully linear growth, extending the pooling of resources instantly between compute clusters and across data centers.

HPE Service Offerings that Speed Deployment

In addition to its hardware portfolio and software-defined tools, HPE claims to be a leader among its core competitors with respect to consumption-based services. Much like composability, these services allow customers to “pay as they go” and treat infrastructure as a utility while also taking the accounting expense advantage. At its most recent signature HPE Discover event, CEO Antonio Neri announced the company’s bold intention to offer “Everything as a Service” by 2022. This even further extends an already impressive HPE services offering that includes Pointnext and GreenLake.

HPE Pointnext assists with the design, implementation and ongoing support and management of HPE Composable Fabric, removing the dependence on purpose-built, proprietary, big infrastructure providers. The value lies in HPE’s ability to act as a one-

stop shop. HPE Pointnext services aim to assist customers with a number of challenges, such as collaborative design, analytics and management, multi-vendor workload optimization for both on-prem and cloud deployment, and other professional services that help “de-risk” the composable transformation journey.

HPE’s GreenLake consumption-based IT solutions deliver desired outcomes, much like the promise of today’s intent-based networking topologies, with hardware, software, and expertise available on-premise or in the cloud. HPE claims that this simplifies the IT experience, provides robust management control, and equates to faster time-to-value. Providing such services as a utility is powerful, given enterprise IT staffs cannot only focus on more value-added activities for the various lines of business supported, but also leverage a capital expenditure model that has the capability to free investment for other business initiatives.

WHY CONSIDER HPE COMPOSABLE FABRIC

Automation is fraught with challenges, and enterprises seek guidance regarding not only which tasks to automate but to what degree it should be applied. A solution that is simple to deploy and manage, is complete, and that provides visibility stands a high probability of adoption. HPE claims a proven track record in deploying composable infrastructure, and its Composable Fabric solution is another offering that rounds out its portfolio. Ultimately, customer deployments serve as proof points. Consequently, we will examine two by evaluating the core customer challenge, environmental consideration and eventual outcome with HPE Composable Fabric.

Customer Testimonials

A communications service provider (CSP) recently turned to HPE Composable Fabric based on its management simplicity and improved performance. Implementation was realized in hours vs weeks with the ability for one IT professional to unbox the installation kit and enable the respective ports through an intuitive user interface. The CSP also reported its ease of ongoing management given the ability to monitor, turn up ports, and provision and deploy machines without the need for coordination with other teams within the organization. An added benefit was the remediation of prior network latency issues, improving the performance of critical workloads.

A major automobile manufacturer was struggling to maximize the flow of network traffic and improve networking provisioning operations. Through the deployment of HPE Composable Fabric, the customer realized improved performance for latency and

bandwidth-sensitive workloads in a strategic research and development environment. The application of automation has also proved to deliver applications faster and eliminate the need for IT staff intervention.

CALL TO ACTION

Automation promises to bring unprecedented scale, agility and significant reduction in OpEx to organizations of all sizes. A myriad of solutions is available from which to choose, but the decision is often unclear. Many solutions are built upon a mix of both monolithic infrastructure and new web scale microservices architecture. Others may only automate a portion of workflows or prove difficult to manage without centralized control. HPE Composable Fabric brings all of the necessary elements together in a unique, differentiated manner that intelligently routes specific workloads to an optimal network pathway. We, therefore, recommend consideration of the HPE Composable Fabric, based on the completeness of its solution portfolio and service offerings that have a demonstrated track record in supporting successful customer deployments, to any enterprise exploring network automation.

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