

Holistic Effort Aims to Operationalize Network Function Virtualization

KGPCo Companies' Solution Innovation Center (SIC) incorporates solutions from Dell EMC, Intel, and other stakeholders to overcome the challenges of network function virtualization (NFV) integration

Service providers are under tremendous pressure to manage the exponential growth of data flowing through their networks while also keeping costs under control and providing more and improved services to customers. These service providers have spent several years conducting research and running proofs of concept (POCs) to turn the promise of NFV into commercial reality. The struggles found in these POCs have highlighted the need and opportunity for a concerted, holistic effort to help providers realize the full benefits of NFV.

KGPCo—a recognized leader in advanced supply chain, distribution, and solution integration services for MSO and tier 1, 2, and 3 service providers—is working with stakeholders across the industry, including Dell EMC and Intel, to operationalize NFV. As part of that effort, KGPCo is expanding its world-class SIC to provide the latest technical resources, including operationalized reference architectures, as well as consulting services and NFV training.

The promise and realities of NFV

Four years ago, the NFV initiative was introduced with high expectations—finally, providers would be able to overcome market challenges with a flexible, cost-effective, scalable, and secure network solution.

In the years that followed, providers devoted considerable resources to POCs and other efforts that sought to operationalize NFV, generally without success. Specifically, providers have struggled with technical issues including:

- The ETSI reference architecture offers a functional specification, but integration details are left as an exercise for the broader community.
- At the platform layer, providers must choose between alternative platform architectures and multiple distributions of virtualization layer software from a host of vendors.
- Virtualized network function developers are challenged by a lack of standardized onboarding practices and tools.
- There are no standards-based benchmarking definitions, methods, procedures, or tools.

Because of these challenges, network operators are effectively being forced to serve as solution integrators, a role for which they lack the appropriate skill sets, resources, and time. A better solution is for the supply chain to step forward in a coordinated effort to tackle the complex challenges of NFV migration.



KGPCo Solution Innovation Center

The KGPCo SIC, with key stakeholders including Dell EMC and Intel, provides remote technical and consulting services to support customers through the challenging and critical transition to NFV.

Lab as a Service (LaaS)/ Test as a service (TaaS)

- NFV component integration readiness screening and interoperability testing
- Solution-functional validation and benchmarking

Consulting services

- Integration and interoperability testing strategy and planning
- Solution engineering
- NFV/solution-defined networking (SDN) training

Coordinated support at KGP SIC

At its growing SIC, KGPCo is helping service providers transition from their legacy hardware and software products to NFV-based solutions. Regardless of size and technical capability, service providers can find value within the wide and growing range of services and offerings at the SIC, which provides world-class lab and testing services for NFV.

One of the unique features of the SIC is that it is a cooperative effort based on KGPCo's recognition that NFV migration challenges cannot be solved by a single company or institution. KGPCo works with standards bodies and service providers, and features reference architectures and other products and solutions from stakeholders including Dell EMC and Intel. This holistic effort provides the combined expertise and experience required to solve the systemic challenges of NFV migration and integration.

Together, companies at the SIC are working to operationalize NFV with solutions that have an open architecture and are modular/interoperable, cloud-centric, scalable, predictable, and easy to use. The initial focus is on providing operationalized reference designs at the network function virtualization infrastructure (NFVI), or platform layer. Having a robust, predictable, reliable, and high-performing NFVI is essential to deliver operational solutions higher in the ETSI reference architecture.

Already, the SIC lab has the first set of NFVI platform reference designs featuring:

- **Dell EMC/Intel/VMware**
- **Dell EMC/Intel/Mirantis OpenStack***
- **Dell EMC/Intel/Red Hat OpenStack* (including Intel®/Red Hat Ceph Storage)**

Additional diverse configurations are planned, which will further support service providers in their drive toward achieving the full benefits of NFV deployments.

About KGPCo

KGPCo is a family of companies and a diverse and growing organization enabling network transformation. Together, BlueStream and KGP Logistics are one of the country's largest single-source value-added suppliers of supply chain services, communications equipment, and integrated solutions to the telecommunications industry. In combination with BlueStream's comprehensive suite of communication network management, engineering, and implementation services and the KGP Logistics' national logistics network, and a dynamic portfolio of manufacturer partnerships, KGPCo is uniquely positioned to provide a comprehensive array of products and services to the communications market.

Learn more

Contact your local KGPCo sales representative to learn more about the Solution Innovation Center.

Intel® NFV Solutions

Given the incredible amount of change required to achieve NFV and SDN adoption, Intel collaborates closely with partners including KPG, Dell EMC, and service providers to help address end-to-end solution needs. The Intel® Network Builders program connects ISV, OEM, and systems integration partners to service providers, facilitating collaboration from trial to deployment.

Using industry-standard servers that are tuned for running carrier-grade workloads, service providers are assured of a proven, cost-effective architectural foundation that spans all the way from the core of their data center to the edge of their networks. Intel also remains a catalyst of open source innovation, with dedicated teams working on open source projects and industry standards. This work, coupled with reference architectures based on Intel® platforms, helps accelerate the industry and end user efforts in network transformation.

Intel solutions include:

Intel® architecture (processors, network interface controllers (NICs), switch silicon, etc.)	Open network reference architectures	Virtualization technologies such as DPDK
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Dell EMC NFV solutions

Dell EMC provides three distinct benefits for NFV:

- One-hundred percent open and standards-based: Aligned to ETSI, OPNFV, and Linux* Foundation, and built on industry-standard Intel® x86 servers combined with industry-leading open networking platforms, and a rich set of open interfaces for maximum interoperability, manageability, and investment protection.
- Scalability in any direction: Scale easily—up, down, or out—to accommodate a wide range of design goals, service capabilities, and environmental conditions. Ideal for small, unstaffed points of presence, central office environments, or hyperscale data centers.
- Maximum choice and flexibility: Includes a broad and diverse NFV partner ecosystem that supports prevalidated virtual network function ISV partners. Since content security policies require different VNF workloads for different use cases, Dell EMC delivers maximum choice and flexibility in the variety of NFV-based services providers hope to deliver.

