Optimizing your Network with N6 LAN Consolidation

Executive Overview

Service providers need to differentiate their services to attract subscribers and generate new revenue streams and that means delivering new services and functionality within the N6/S/Gi portion of the network. The F5 solution optimizes your full-featured, flexible, and high-performance network architecture, providing customers with a better quality of experience.

Multiple point products in N6/S/Gi networks increase costs, complexity, and deployment times. The F5 N6/S/Gi-LAN solution offers a simpler resolution to complexity issues that can dramatically improve efficiency, scale network services more cost-effectively, and enhance performance to optimize, secure, and monetize the network.

Business Challenges

5G is built on a containerized, cloud-native infrastructure. The move to cloud-native architectures provides an opportunity to correct the device sprawl that occurred with 3G/4G on the S/Gi-LAN and migrate to a best-of-suite approach. Service providers who choose a multi-vendor best-of-breed approach risk increasing the complexity of their 5G network architectures as a result of challenges with vendor interoperability. Interoperability issues can also reduce the benefits associated with virtualizing service provider networks, introducing additional points of failure into the system and making it difficult to scale. As a result, service providers could be faced with increases in both CapEx and OpEx, as well as delayed delivery of new services to subscribers, leading to loss of new revenue streams and lowered subscriber quality of experience (QoE). This is exactly why consolidating is crucial; it allows service providers to build a fast, flexible, high-performance network with improved opportunities for value-added services and new revenue streams.
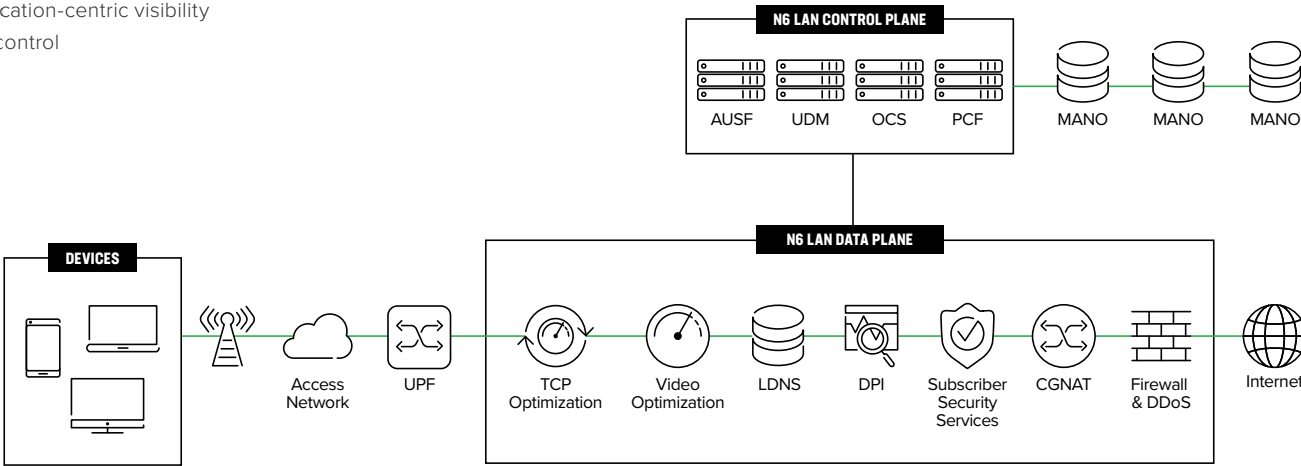

Figure 1: Services offered on the N6 LAN

Real-time, per subscriber traffic visibility is ideal for properly managing your network. Per subscriber traffic insight enables increased network automation. This, in turn, makes it possible to implement network and content optimization techniques such as video traffic management and TCP optimization that improve end user satisfaction. This improved visibility also improves security with CGNAT, diverting DDoS attacks and supplying advanced firewalls.

How F5 Helps

MULTIPLE POINT
PRODUCTS IN N6/S/GI
NETWORKS INCREASE
COSTS, COMPLEXITY,
AND DEPLOYMENT TIMES.
THE F5 N6/S/GI-LAN
SOLUTION OFFERS A
SIMPLER RESOLUTION
TO COMPLEXITY ISSUES
THAT CAN DRAMATICALLY
IMPROVE EFFICIENCY,
SCALE NETWORK SERVICES
MORE COST-EFFECTIVELY,
AND ENHANCE PERFORMANCE
TO OPTIMIZE, SECURE,
AND MONETIZE THE
NETWORK.

A containerized and consolidated N6 LAN solution from F5 helps you build a cost-effective model, improving time to market for new services and decreasing network complexity. F5's containerized network functions (CNFs) are a core component within an efficient, virtual N6 LAN, providing solutions such as virtual policy enforcement, virtual firewall, and virtual Application Delivery Controller (ADC) services and many more, offering the widest range of services on the N6 LAN to date.
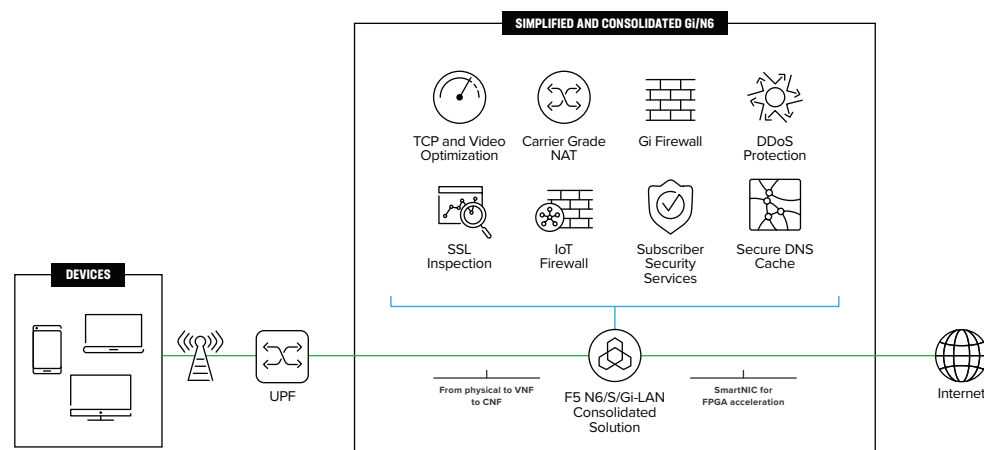

Figure 2: F5's N6/S/Gi-LAN consolidated solution lowers CPU needs and simplifies automation, reducing CapEx and OpEx

F5's N6 LAN solution allows dynamic service chaining based on real-time subscriber and application awareness, and delivers secure N6 LAN. By deploying a shared set of commercial, off-the-shelf (COTS) hardware to run various functions, a service provider can reduce hardware costs and deploy multiple services dynamically. This cloud model allows you to deliver services more efficiently based on real-time network conditions. Because you can launch new services without any network downtime, you also increase service agility. A containerized N6 LAN lets you innovate, improve subscriber QoE, and lower costs, resulting in up to 60% savings on total cost of operation (TCO).
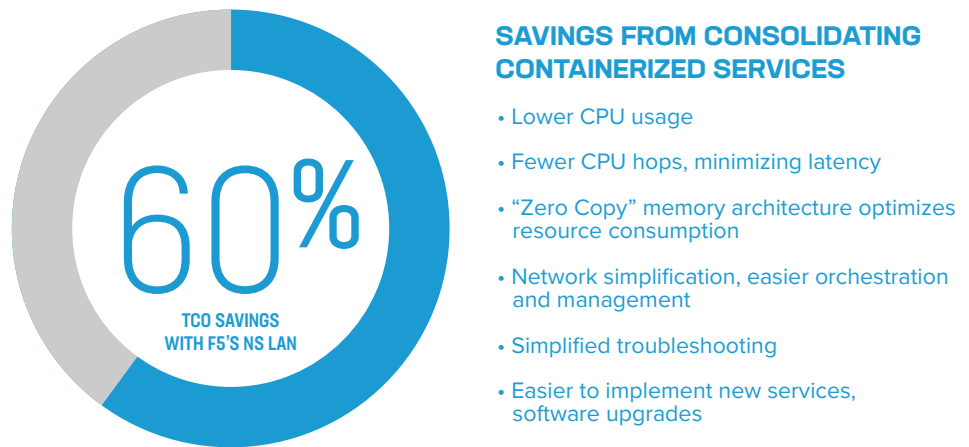
60%

**TCO SAVINGS
WITH F5'S NS LAN**

**SAVINGS FROM CONSOLIDATING
CONTAINERIZED SERVICES**

- Lower CPU usage

- Fewer CPU hops, minimizing latency

- "Zero Copy" memory architecture optimizes
  resource consumption

- Network simplification, easier orchestration
  and management

- Simplified troubleshooting

- Easier to implement new services,
  software upgrades

Figure 3: A breakdown of TCO savings with containerized N6 LAN

The N6/S/Gi solution offers best-of-suite performance and scalability, consolidating services into a single framework. This consolidation simplifies configuration and enables management of network resources, benefiting your organization:

- Provide a unified platform with multiple critical network services within an open architecture that future-proofs the network.

- Gain unprecedented scalability with a high-capacity platform that delivers dramatically lower capital and operating costs for a lower TCO.

- Simplify network architecture significantly by limiting device sprawl.

- Deliver unmatched performance with fewer network hops and TCP optimization.

- Significantly increase operational flexibility with F5 iRules® scripting and an any-service-on-any-blade architecture.

- Enable service chaining for more efficient and cost-effective VAS.

- Improve security at scale throughout the network architecture.

- Enable NFV and cloud-based services via virtualization, abstraction, programmability, and orchestration capabilities.

Business Benefits

F5 solutions enable service providers to optimize, secure, and monetize their networks. By using the F5 unified platform to deliver network services, service providers can:

- Significantly reduce their cost structures by lowering capital and operating costs.
- Dramatically simplify the service delivery architecture, boosting service velocity with a unified platform.
- Gain key NFV capabilities to virtualize and dynamically scale services.
- Monetize the network via content-aware and subscriber-aware services.
- Optimize the network with sophisticated reporting and analytics.
- Provide unparalleled security, ensuring customer trust

F5 solutions also enables greater subscriber and application visibility and control to support the creation of new revenue opportunities.

Summary

F5 offers service providers a flexible, programmable solution that has the intelligence to deliver the right services in the right location to optimize the availability and performance of both network and applications. Having integrated services enables service providers to use a single vendor, a single architecture, and one flexible solution to deliver the services demanded by subscribers today, while streamlining the addition of services in the future. This unified service offering also enables service providers to improve network efficiency, deliver services more cost-effectively and securely, and enhance service performance.

F5's solutions enable service providers to optimize and simplify the service delivery architecture, offer greater security in their core network and data centers, and monetize Layer 4-7 network and application services with application and subscriber intelligence. Overall, the F5 N6/S/Gi solution supports service provider needs to reduce costs, increase revenues, and improve the quality of experience for customers.

To learn more about F5's N6/S/Gi solution, contact F5 Sales.