F5 Synthesis for Service Providers: Scaling in Three Dimensions

Lori MacVittie, 2014-19-02

#MWC14 #SDAS #NFV #SDN It's not just about changing the economy of service scale, it's about operations, too.

Estimates based on reports from Google put the number of daily activations of new Android phones at 1.3 Million.

Based on reported data from Apple, there are 641 new applications per day added to the App Store.

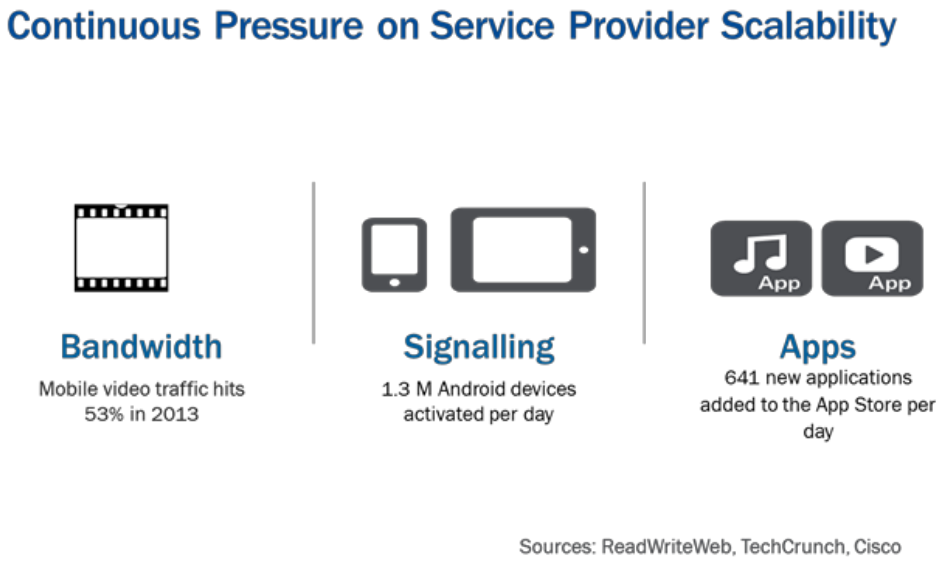
According to Cisco's Visual Networking Index, mobile video now accounts for more than 50% of mobile data traffic.

Put them all together and consider the impact on the data, application and control planes of a network. Of a mobile network.

Now consider how a service provider might scale to meet the demands imposed on their networks by continued growth, but make sure to factor in the need to maintain a low cost per subscriber and the ability to create new revenue streams through service creation.

Scaling service provider networks in all three dimensions is no trivial effort, but adding on the requirement to maintain or lower the cost-per-subscriber *and* enable new service creation?

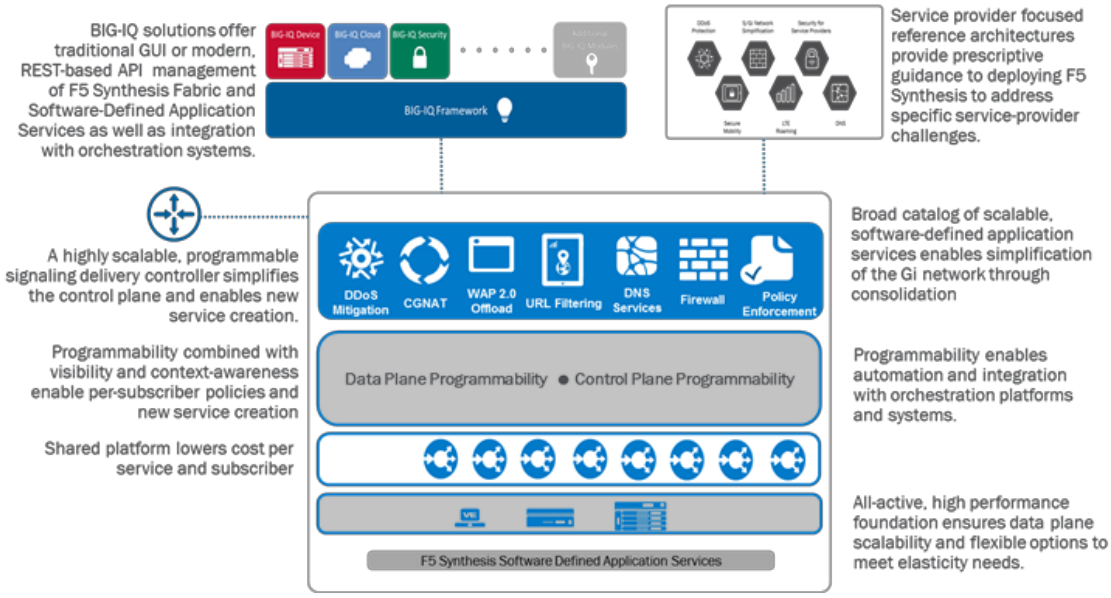
Sounds impossible - but it's not. That's exactly what F5 Synthesis for Service Providers is designed to do: enable mobile network operators to optimize, secure and monetize their networks.



F5 Synthesis for Service Providers

F5 Synthesis for Service Providers is an architectural framework enabling mobile network operators to optimize, secure and monetize their networks. F5 Synthesis achieves this by changing the service economy of scale by taking advantage of a common, shared platform to reduce operational overhead and improve service provisioning velocity while addressing key security concerns across the network.

F5 Synthesis for Service Providers enables mobile network operators to scale in three dimensions: control, data and application planes.



Control Plane

The control plane is the heart of a service provider network. Tasked with the responsibility for managing subscriber use and ensuring the appropriate services are applied to traffic, it can easily become overwhelmed by signaling storms that occur due to spikes in activations or an Internet-wide gaming addiction that causes millions of concurrent players to join in.

The control plane is driven by Diameter, and F5 Synthesis for Service Providers includes F5's Traffix Signaling Delivery Controller, nominated this year for Best Mobile Infrastructure at Mobile World Congress. With unparalleled performance, flexibility and programmability, F5 Traffix SDC helps mobile network operators scale the control plane while enabling the creation of new control plane services.

Less often considered but no less important in the control plane are DNS services. A scalable, highly resilient and secure DNS service is critical to both the performance and security of service provider networks. F5 Synthesis for Service Providers includes DNS services. F5 Synthesis is capable of scaling to 418 million response queries per second (RQPS) and includes comprehensive protection against DNS-targeting DDoS attacks.

Data Plane

The service provider data plane serves as the backbone between the mobile network and the Internet, and must be able to support millions of consumer requests for applications. Banking, browsing, shopping, watching video and sharing via social media are among the most popular activities, many of which are nearly continuous for some subscribers. Bandwidth hungry applications like video can become problematic for the data plane and cause degradations in performance that hamper the subscriber experience and send them off looking for a new provider.

To combat performance, security and reliability challenges, service providers have invested in a variety of targeted solutions that has led to a complex, hyper-heterogeneous infrastructure comprising the Gi network. This complexity increases the cost per subscriber by introducing operational overhead and can degrade performance by adding latency due to the number of disparate devices through which data must traverse.

F5 Synthesis for Service Providers includes a high-performance service fabric comprised of any combination of hardware or virtual appliances capable of supporting over 20 Tbps. Hardware and appliances from F5 are enabled with its unique vCMP technology, which allows the creation of right-sized service instances that can be scaled up and down dynamically and ultimately reduce the cost per subscriber of the services delivered.

The F5 Synthesis High Performance Service Fabric is built on a common, shared and highly optimized platform on which key service provider functions can be consolidated. By consolidating services in the Gi network on a single, unified platform like F5 Synthesis service fabric, providers can eliminate the operational overhead incurred by the need to manage multiple point products, each with its own unique management paradigm. Consolidation also means services deployed on F5 Synthesis High Performance Service Fabric gain the performance and scale advantages of a network stack highly optimized for mobile networking.

Application Plane

Value added services are a key differentiator and key revenue opportunity for service providers, but can also be the source of poor performance due to the requirement to route all data traffic through all services, regardless of their applicability. Sending text through a video optimization service, or video through an ad insertion service does not add value, but it does consume resources and time that impact the overall subscriber experience.

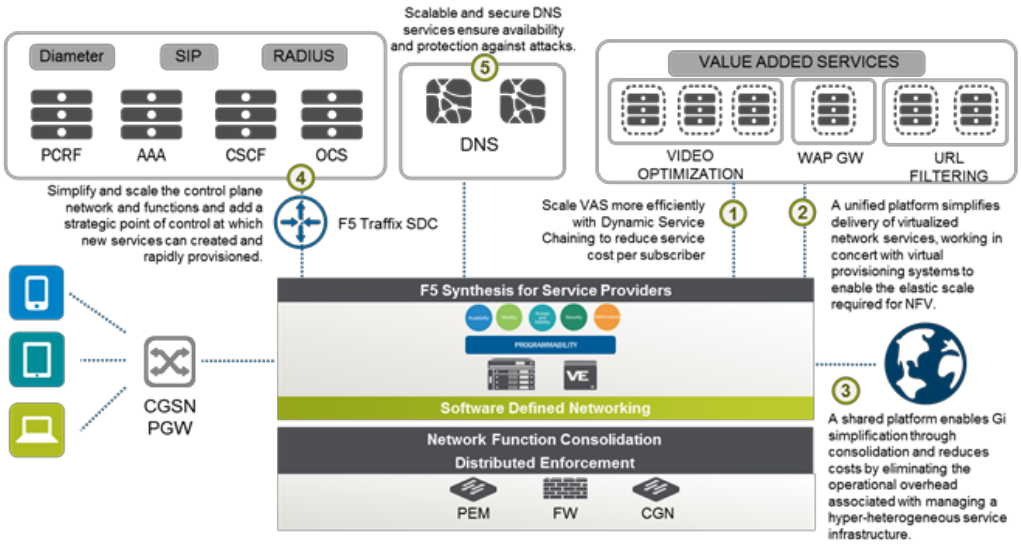
F5 Synthesis services include policy enforcement management capable of selectively routing data through only the value added services that make sense for a given subscriber and application combination. Using Dynamic Service Chaining, F5 Synthesis optimizes service chains to ensure more efficient resource utilization and improved performance for subscribers. This in turn allows service providers to selectively scale highly utilized value added services that saves time and money and reduces costs to deliver.

F5 Synthesis for Service Providers works in concert with virtual machine provisioning systems to enable service providers to move toward NFV-based architectures. Intelligent monitoring of value added services combined with awareness of load and demand enables F5 Synthesis for Service Providers to ensure VAS can be scaled up and down individually, resulting in significant cost savings across the VAS infrastructure. by eliminating VAS silos and the need to scale the entire VAS infrastructure at the same time.

F5 Synthesis for Service Providers also offers the most flexible set of programmability features in the industry. Control plane, data plane, management plane. APIs for integration, scripting languages for service creation, iApps and a cloud-ready, multi-tenant services fabric that can be combined with a self-servicing service management platform (BIG-IQ). This level of programmability changes the operational economy of scale through automation and orchestration opportunities.

Intelligent Mobile Broadband

Optimize, monetize, and secure



With F5 Synthesis for Service Providers, mobile network operators can simplify their Gi Network while laying the foundation for rapid service creation and deployment on a highly flexible, manageable virtualized service fabric that helps providers execute on NFV initiatives.

F5 Networks, Inc. | 401 Elliot Avenue West, Seattle, WA 98119 | 888-882-4447 | f5.com

F5 Networks, Inc.
Corporate Headquarters
info@f5.com

F5 Networks
Asia-Pacific
apacinfo@f5.com

F5 Networks Ltd.
Europe/Middle-East/Africa
emeainfo@f5.com

F5 Networks
Japan K.K.
f5j-info@f5.com