



GLOBAL MOBILE SERVICE PROVIDERS

“F5 has the only solution that enables us to manage data and video traffic on a per-subscriber basis to optimize and scale these services for all smartphone users.”

Senior Systems Engineer at a global mobile services provider

Global Mobile Service Providers Optimize Performance of IP Services with F5 Solution

Faced with exponential growth in IP traffic, global service providers were able to avoid costly upgrades throughout their infrastructures by deploying a solution from F5.

Using F5 BIG-IP Local Traffic Manager, the service providers can now optimize the flow of all IP traffic in real time on a per-subscriber and per-service basis. The F5 solution gives the service providers intelligent, centralized control over all their resources, thereby ensuring that every service is delivered with dependability and high performance. The results are reduced operational and capital costs, enhanced support for all existing IP-based services, accelerated rollout of new services, and increased average revenue per user (ARPU).

Business Challenges

Mobile service providers face an enormous challenge from the exponential growth in the data, video, and voice over IP (VoIP) traffic being consumed by users with smartphones, tablets, netbooks, and laptops. As data rates increase with each successive generation of IP-based services—from 2G and 3G, and ultimately to 4G—this challenge will only worsen.

Fierce competition limits how much service providers can charge for these services, and maintaining satisfactory performance levels for the growing number of users

and applications threatens to force some major and costly upgrades throughout service providers' infrastructures.

Furthermore, service providers want to offer a wide variety of plans to subscribers that range from basic to unlimited access, potentially with tiered performance levels. Subscriber plans that charge based on actual usage require detailed accounting, and unlimited plans often lead to excessive utilization that can degrade overall performance and limit the scalability of the existing network infrastructure.

Overview

Industry

Telecommunications
Service Providers

Challenges

- Upgrading to scale IP-based services would be costly
- Capacity of key resources in network infrastructure are reaching capacity
- Poor performance of data and video apps on intelligent mobile devices

Solution

- VIPRION® chassis
- BIG-IP® Local Traffic Manager™
- iRules®

Benefits

- No costly upgrades to infrastructure needed
- Customizable on a per-subscriber, per-service, and per-device basis
- Enhances performance and scalability of data and video services
- Increases ARPU

Some of the new service plans also require special capabilities for individual subscribers. For example, parents expect to be able to block or filter inappropriate forms of content in family plans that include children. Service providers also want the ability to offer premium content as an incentive for users to subscribe to premium plans.

To address these challenges, the service providers recognized the need to begin managing traffic more intelligently on a per-subscriber basis across the entire services infrastructure. Policy-based, dynamic steering of each user's traffic to optimal resources would enable the service providers to improve overall performance for all users. It would also permit the existing infrastructure to support more users and services without a costly upgrade.

Solution

The service providers carefully evaluated several load balancing solutions from leading vendors. They chose the F5 VIPRION chassis and BIG-IP Local Traffic Manager (LTM) controllers. F5 provided the only solution that fully met the service providers' needs, which included many more capabilities than basic load balancing.

Acting as a strategic point of control for the Service Delivery Network, BIG-IP LTM provides a unified platform comprised of reusable services that can be applied optimally to different types of traffic within different parts of the service providers' networks. The F5 solution also offers the unique ability to customize how the controllers manage IP traffic in real time by operating as a proxy between the users and the services.

The F5 intelligent Service Delivery Network supports all of the capabilities the service providers need to optimize service management, including traffic steering, content delivery, and subscriber management and access. What appeals to the service providers the most is the

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ability to modify how BIG-IP LTM inspects, directs, and transforms traffic using iRules scripts. iRules is an event-driven scripting language that provides complete and granular control over all IP traffic.

The deployment consists of VIPRION chassis installed in the service providers' data centers. Each VIPRION device is configured with BIG-IP LTM to implement intelligent and dynamic service delivery among the clusters of servers and other resources used to deliver, store, cache, compress, route, or otherwise manipulate the data, video, and VoIP traffic in the service providers' growing suites of IP-based services.

The service providers employ iRules scripts that perform session inspection on the entire service flow to identify the user, the user's location, the user's device type, and the user's application. iRules then manages that traffic for delivery to the optimal resources. The traffic management considerations include the location(s) of the requested content, the availability of cached and/or compressed versions, the current server's health and availability, and network conditions.

"In effect, the BIG-IP device establishes a layer of middleware between our subscribers and our services that gives us a traffic cop for directing users along whatever route best satisfies their needs. This dramatically improves performance by minimizing congestion," noted a project's Senior Systems Engineer.

Benefits

The F5 VIPRION chassis and BIG-IP Local Traffic Manager controllers now serve as strategic points of control that give service providers the capabilities and versatility needed to support, scale, adapt, and manage the variety of IP-based services being offered to meet changing subscriber demands.

The combination of subscriber and application awareness give service providers intelligent, centralized control over all resources to ensure that each service is delivered with dependable, high performance.

Fully customizable and dynamic

The service providers achieve the desired results by deploying BIG-IP Local Traffic Manager along with iRules scripts. Intelligent session inspection, connection traffic steering, and rate shaping are now under the service providers' full control using granular policies on BIG-IP LTM that are easy to create, modify, and enforce on a per-subscriber and/or per-service basis.

The service providers also have the ability to manage IP traffic and services on a per-device basis, depending on whether users have smartphones or systems with larger screens. This enables service providers to adapt to new conditions and accelerate the provisioning of new IP-based services to satisfy evolving market demands.

No costly upgrades to infrastructure needed

The service providers are able to install and configure the BIG-IP controllers without any disruption to or upgrade in its existing infrastructure, resulting in considerable cost savings.

No changes are necessary to either the service providers' own internal resources or to any internal or external third-party resources being used to deliver the services. This means no new servers, no changes to any subscriber directories, and no

complicated back-end development efforts. BIG-IP Local Traffic Manager is all the service providers need to provide seamless and fully optimized end-to-end service delivery.

Enhanced performance and scalability

Service providers are now able to provide the quality of experience expected by their subscribers based on the massive scalability, high availability, and customizable operation of the BIG-IP controllers.

BIG-IP Local Traffic Manager and iRules dynamically manage and direct all IP traffic to the best available and most appropriate pool of service resources. As a result, the service providers can fully leverage their entire existing infrastructures to support more users and more IP-based services, providing some much-needed room to grow more profitably.

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