



F5 DNS Services Infrastructure

The availability of new top-level domain (TLD) names will usher in a new era, acting as a catalyst to move beyond dot-com and into a new Internet that looks very different than the one we know today. Service providers, industry organizations, and others looking to customize and innovate around new TLDs will require the infrastructure to support and secure their investments. F5® DNS Services infrastructure and architectures can easily provide the foundation for organizations looking to take advantage of this exciting opportunity.

Manage, Scale, and Secure Your DNS Infrastructure

Being responsible for a top-level domain requires an infrastructure capable of consistently responding to a massive volume of queries. Researchers generally tag query rates seen by existing top-level, global DNS infrastructures in the 10,000–100,000 queries per second range. Obviously, this requires a fairly significant infrastructure and is likely distributed across multiple DNS services to safeguard against failure. Adding to the load will be the need to support DNSSEC, the security extension for DNS that adds a signature to DNS packets verifying the authenticity of the response. These signatures add to the size of packets and to the complexity involved in distributing DNS services as a means to scale DNS to meet demand.

F5 offers a suite of DNS services to help manage, scale, and secure DNS infrastructure. Designed as an integrated solution marrying traditional DNS services and advanced architectural options with centralized management, F5 BIG-IP® Global Traffic Manager™ (GTM) and Local Traffic Manager™ (LTM) create a common platform for one-stop DNS service management.

When combined with F5's Clustered Multiprocessing (CMP) technology and native network security features, BIG-IP GTM and LTM provide additional failsafe policies that guard against falling victim to failure or attack. BIG-IP GTM deployed on the F5 VIPRION® 4400 platform can sustain up to 6 million queries per second while effectively shielding internal DNS infrastructure from overload due to spikes in legitimate or illegitimate usage.

The underlying foundation for F5 products is the TMOS® operating system. DNS Express™, a capability of TMOS, offers additional value atop F5's traditional DNS services by adding a high-speed, in-memory authoritative DNS slave that can dramatically reduce the DNS server infrastructure needed to ramp up to support new TLDs.

Additionally, in conjunction with its strategic partner Infoblox, F5 offers an architectural solution that addresses the need to scale while reducing the complexity inherent in managing DNS services, including support for DNSSEC as protection against man-in-the-middle attacks that can poison and hijack DNS services.

Key features

- **Consolidated DNS Service Platform**—Offers centralized management
- **Integrated network security**—Ensures protection against DDoS attacks
- **IPv6 Gateway**—Supports hybrid IP environments
- **Carrier-Grade Support**—Provides world-class professional services and carrier-grade support

Key benefits

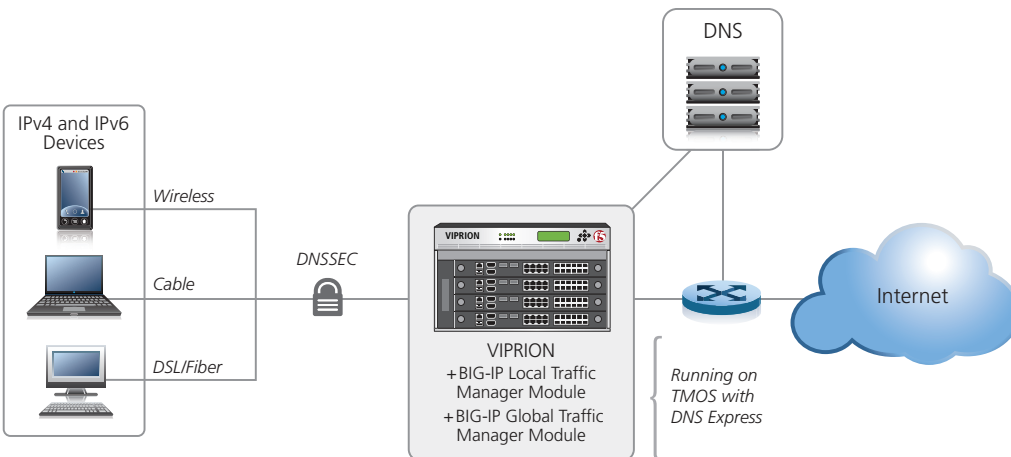
- **Scalable and Controlled DNS Infrastructure**—Allows consolidation of multiple DNS services into a single platform
- **Lower Cost**—Enables consolidation of existing DNS infrastructure and supporting dynamic, virtualization-based scaling strategies
- **Service Provider Scale**—Scales to effortlessly handle millions of queries per second
- **Unequaled Support**—Offers support options designed to keep your service operation online, whether using BIG-IP devices for internal infrastructure or for managed hosted solutions

Solution

F5 DNS Services infrastructure is an integrated platform offering consolidated product solutions for highly scalable and secure DNS services. These solutions include:

- **BIG-IP Global Traffic Manager**—BIG-IP GTM is a global service delivery solution, designed to direct end users to the most appropriate service location, based on geography, level of service, and availability. BIG-IP GTM includes DNSSEC capabilities, scaling, and actively participating in the DNS service delivery architecture as a fully secure and authoritative member.
- **F5 TMOS**—TMOS is F5's core platform technology, on which BIG-IP service delivery solutions are natively deployed. DNS Express is integrated into TMOS, and it uses F5's Clustered Multiprocessing technology to scale exponentially to millions of queries per second.
- **F5 and Infoblox Architectural Option**—Together, F5 and Infoblox provide the availability and security required of a top-level domain provider with a highly scalable and secure DNS services architecture comprising superior DNS management capabilities, intelligent global server load balancing, high-performance scalable DNS, and complete DNSSEC signing for all zones.

The F5 DNS Services solution brings together the components required to offer a complete, manageable, secure DNS services offering in an integrated and consolidated platform with the agility necessary to meet the challenge of managing a top-level domain.



F5 service delivery solutions insulate infrastructure with high-speed, secure DNS services.

Learn more

For more information about F5 DNS solutions, please see the following resources or use the search function on f5.com.

Solution pages

[Service Provider Solutions](#)

[DNS Security Solutions](#)

Product pages

[BIG-IP Global Traffic Manager](#)

[BIG-IP Local Traffic Manager](#)

[BIG-IP IPv6 Gateway](#)

Datasheet

[BIG-IP Modules](#)

Technical brief

[F5 and Infoblox DNS Integrated Architecture](#)

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