



## **BIG-IP Local Traffic Manager**

### **Ensuring Applications Are Always Secure, Fast, and Available**

*Inefficiencies, delays, and failures in application delivery can cost your organization millions of dollars in terms of wasted budgets, damage to company reputation, system and application downtime, legal liability, and lost opportunities.*

*BIG-IP® Local Traffic Manager™ is an Application Delivery Networking (ADN) system that provides the most intelligent and adaptable solution to secure, optimize, and deliver applications to help you effectively and competitively run your business.*

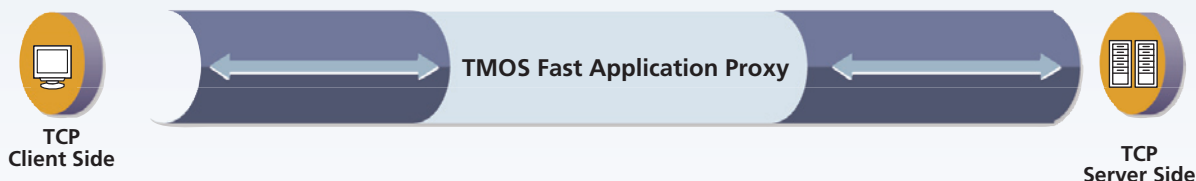
*It's the only system that gives you a set of unified application infrastructure services that deliver total control, vision, and flexibility into application security, performance and delivery. The result? Greater business agility and successful outcomes for the lifeblood of your organization today—the application itself.*

#### **Key Benefits:**

- **Reliability** – Delivers the industry's most advanced system to ensure that applications are always available.
- **Accelerated Applications** – Provides unmatched control to accelerate application performance by up to 3x, ensuring that priority applications are served first and offloading expensive server cycles.
- **Reduced Server and Bandwidth Cost** – Triples server capacity through a rich set of infrastructure optimization capabilities, and reduces bandwidth costs by up to 80 percent through intelligent HTTP compression, bandwidth management, and more.
- **Greater Network and Application Security** – From DoS protection to cloaking to filtering out application attacks, BIG-IP LTM adds critical security features that simply cannot be addressed elsewhere in the network.
- **Unmatched Application Intelligence and Control** – The industry's only solution that delivers complete application fluency, enabling network-speed full payload inspection, and programmable, event-based traffic management to understand and act upon application flows.
- **Total Integration for All IP Applications** – Provides a comprehensive solution that can integrate with all applications, not just web-based protocols (HTTP/S). Provides organizations with a centralized solution for all IP applications, including legacy and emerging applications like VoIP—all in a single, unified system.
- **Industry-leading Performance** – Delivers the industry's fastest traffic management solution to secure, deliver and optimize application performance. As a proven leader, BIG-IP LTM sets the performance bar with best-in-market SSL TPS, bulk encryption, and the highest concurrent SSL connections available today.
- **Easy to Manage, Better Visibility** – An advanced GUI greatly simplifies product configuration, offering granular visibility into traffic and box resources, as well as support for making rapid changes across large configurations.
- **Extends Collaboration Between Network and Application Groups** – Through partitioned views and application/protocol-specific monitors, BIG-IP LTM improves administrative functions and provides more application-aware traffic management.

## The Powerful TMOS Architecture: Complete Application Intelligence and Network Adaptability

At the heart of BIG-IP LTM is a revolutionary architecture called TMOS™ that provides a unified system for optimal application delivery, giving you total vision, flexibility, and control across all services. TMOS empowers BIG-IP LTM to intelligently adapt to the diverse and evolving requirements of applications and networks.



### TMOS Fast Application Proxy

TMOS enables BIG-IP LTM to efficiently isolate clients from the server-side flows and independently maintain optimal performance for each connecting device, translating communications between systems for improved application performance. Any system or IP application connected to BIG-IP LTM will work more efficiently.

### TCP Express

TCP Express™, an industry first, is integrated into F5 TMOS architecture. A state-of-the-art TCP stack, it offers a clientless approach for WAN optimization, delivering up to 80 percent performance gain for users and up to a four-fold improvement in bandwidth efficiency. Your enterprise can achieve higher performance, mitigate WAN-induced errors, and increase bandwidth efficiency for your existing infrastructure.

### iRules and Universal Inspection Engine

TMOS incorporates F5's customizable iRules™ and Universal Inspection Engine to provide unprecedented control over how to handle application traffic at any moment within the application transaction or flow. With complete payload inspection and transformation capabilities, event-driven iRules, and session-aware switching, BIG-IP LTM offers you the most intelligent control point to address diverse application delivery issues at network speeds.

## Comprehensive Functionality to Deliver Secure, Fast, and Available Applications

BIG-IP LTM provides the cohesive set of functionality you need to ensure your applications are always secure, fast, and available. Invoked through an easy-to-manage GUI and traffic profiles or through iRules, this functionality enables you to combine, target, and extend services to improve the efficiency of each application deployment.

Available...	Fast...	Secure...
Comprehensive Load Balancing	SSL Accelerator™ (M)	Advanced Client Authentication™ (M)
Advanced Application Switching	Intelligent Compression™ (M)	Resource Cloaking
Session/Flow Switching	TCP Optimization	Cookie Encryption
Customized Health Monitoring	L7 Rate Shaping™ (M)	Selective Content Encryption
Intelligent Network Address Translation	Content Spooling/Buffering	Application Attack Filtering
Universal Persistence	Content Transformation	DoS Attack and SYN Flood Protection
Response Error Handling	Connection Acceleration	Firewall – Packet Filtering
IPv6 Gateway™ (M)	Intelligent Quality of Service	Packet Sanitization
Advanced Routing™ (M)	WAN Optimization	Application Security Manager™ (M)
Intelligent Port Mirroring	Fast Cache™ (M)	Protocol Security Module™ (M)

(M) = Available as an add-on module

## Available

*BIG-IP LTM removes single points of failure and virtualizes the network and applications by providing industry-leading L7 intelligence. This ensures that all applications are always on and more scalable and easier to manage than ever before.*

### Application Health Knowledge

BIG-IP LTM provides sophisticated monitors to check device, application, and content availability, including specialized monitors for many applications (including various application servers, SQL, SIP, LDAP, XML/SOAP, RTSP, SASP, SMB and many more) as well as customized monitors to check content and simulate application calls. In addition, BIG-IP LTM can effectively manage applications on a shared server and allow applications to proactively report on their health.

### High Availability and Transaction Assurance

BIG-IP LTM delivers sub-second system failover and comprehensive connection mirroring, resulting in a highly available solution regardless of system, server, or application failure. BIG-IP LTM can proactively inspect and respond to any server or application error. Your organization can achieve superior reliability while reducing the system load.

### Comprehensive Load Balancing

BIG-IP LTM includes rich static and dynamic load balancing methods, including Dynamic Ratio, Least Connections, and Observed Load Balancing, which tracks dynamic performance levels of servers in a group. This ensures that the best resources are always selected for improved performance and scale.

### Intelligent Application Switching

Because BIG-IP LTM has the unique ability to read all IP applications, it can switch and persist on information unique to: a specific vendor's application server (BEA, Microsoft, IBM, Oracle, SUN, etc.); XML data for Web services applications; or custom values indicative to mobile/wireless applications. Your organization can achieve greater reliability and scalability thanks to the ability of BIG-IP LTM to switch, log, and persist in the payload or stream. You also have extraordinary flexibility to solve your organization's application delivery challenges using the F5 iRules control language.

### Comprehensive IPv6 Gateway

BIG-IP LTM can provide your organization with a seamless network migration strategy to meet growing IPv6 requirements. Through the IPv6 Gateway module, BIG-IP LTM provides complete IP transformation and load balancing capabilities between IPv4 and IPv6 networks, giving you a manageable and cost-effective means to migrate users and pool mixed IPv4 and IPv6 host resources.

## Fast

*The unequalled intelligence of BIG-IP LTM provides a powerful solution to help you improve your organization's application performance, increase the capacity of your existing infrastructure, lower infrastructure costs, and accelerate your applications.*

### WAN Optimization and Application Acceleration

BIG-IP LTM provides a highly targeted, centralized, and efficient means for reducing traffic volumes and minimizing the effect of Internet latency and client connection bottlenecks on application performance. Through capabilities such as Intelligent Compression, BIG-IP LTM provides rich support for compressing a variety of file types, including HTTP, XML, Javascript, J2EE applications, and many others. This accelerates application performance as much as 3x while reducing bandwidth utilization by up to 80 percent.

### Ensure Critical Application Performance

Flexible L7 Rate Shaping capabilities help you to manage bandwidth to ensure that priority applications are delivered without delay. BIG-IP LTM also provides customized control to set application-based bandwidth limits, allowable bandwidth spikes, and even queuing relationships between applications.

### Increased Server Capacity and Improved Site Responsiveness

BIG-IP LTM provides extensive connection management as well as TCP and content offloading capabilities that optimize server performance and dramatically speed page load times. For example, OneConnect™ connection pooling can increase server capacity by up to 60 percent by aggregating millions of requests into hundreds of server-side connections, ensuring requests are handled efficiently by the back-end system.

### Fast Cache – Up to a 9x Boost in Server Capacity

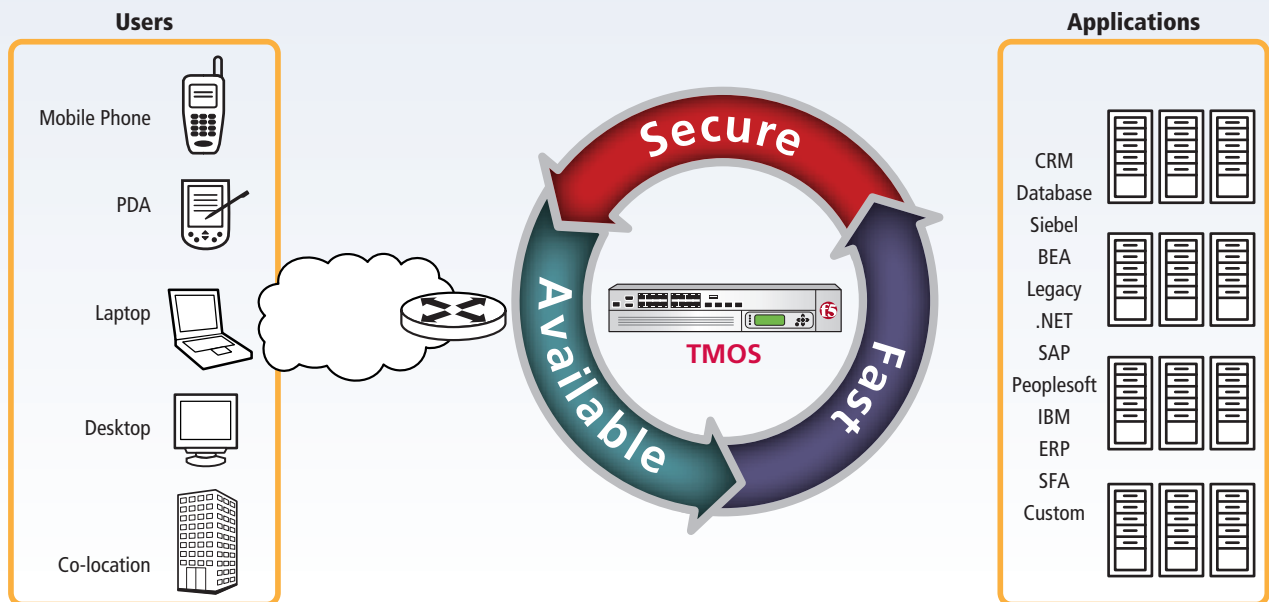
Intelligent caching functionality provides tremendous scalability and cost savings by offloading repetitive traffic from web and application servers. It's also the only solution that offers multistore caching to manage distinct cache repositories per application or department, delivering precise and intelligent control for priority applications.

### Encryption Everywhere

As the leading solution for SSL acceleration, BIG-IP LTM provides dramatic scalability for SSL processing with up to 2 Gbps of sustained SSL throughput. By accelerating the encryption of both bulk and setup, organizations can migrate 100 percent of their communications to SSL using more secure ciphers with virtually no application performance penalty or bottlenecks.

### Content Transformation

BIG-IP LTM provides a comprehensive solution to offload many burdensome or repetitious functions onto a centralized and high-powered network device. Beyond SSL, Compression, and many other functions, BIG-IP LTM provides a complete content transformation gateway to redirect, insert, or holistically transform application content for effective and efficient application integration.



## Secure

It's not just about stopping attacks—it's also about simultaneously serving legitimate users. BIG-IP LTM delivers the best of both worlds, providing a suite of security services that play a significant role in bolstering network and application security. From adding powerful network and protocol level security to filtering application attacks, BIG-IP LTM is deployed at a critical gateway to your most precious resources—the applications that run your business.

### Bolsters Application Security

- **Resource Cloaking** – BIG-IP LTM virtualizes and hides all application, server error codes, and real URL references that may provide hackers with clues about infrastructure, services and their associated vulnerabilities.
- **Customized Application Attack Filtering** – Full inspection and event-based policies deliver a greatly enhanced ability to search for, detect, and apply numerous rules to block known L7 attacks. BIG-IP LTM also applies secure application templates to block unknown attacks and attacks targeted at the business logic of the application. Additional layers of security protect against hackers, viruses, and worms, while allowing continuous service to legitimate traffic.
- **Centralized Authentication** – By acting as an authentication proxy for various traffic types, BIG-IP LTM provides top-level authentication for applications. This means you can push your security perimeter one level further down in the network and away from the applications, for greater protection of your web and application tiers.

### More Protection for Critical Content

- **Selective Encryption** – BIG-IP LTM delivers the industry's most selective encryption to holistically, partially, or conditionally encrypt data. This fine-grain control enables secure and optimized communications with a variety of different constituencies.
- **Cookie Encryption** – Cookies and other tokens transparently distributed to legitimate users are encrypted. You gain superior security for all stateful applications (e-commerce, CRP, ERP and other business-critical applications) and a higher level of user identity trust.

- **Advanced Encryption Standard for SSL** – BIG-IP LTM supports higher-standard AES algorithms with the most secure SSL encryption available on the market, at no additional processing cost.
- **Content Protection** – You can use BIG-IP LTM to prevent sensitive documents or content from leaving your site.

### Protects Against Heavy Attack Volumes

BIG-IP LTM combines a suite of security features to provide comprehensive protection against DoS attacks, SYN floods, and other network-based attacks. Features such as SYNCheck™ provide comprehensive SYN flood protection for the servers that sit behind the BIG-IP device. BIG-IP LTM acts as a security proxy that is designed to protect the entire network. BIG-IP LTM uses Dynamic Reaping, an adaptive method for reaping idle connections, to filter out the heaviest attacks while simultaneously delivering uninterrupted service for legitimate connections.

### Insulation from Protocol Attacks

BIG-IP LTM provides Protocol Sanitization and a Full TCP Termination point that independently manages client and server-side connections, protecting all back-end systems and applications from malicious attacks.

### Firewalling – Packet Filtering

BIG-IP LTM integrates a control point to define and enforce L4-based filtering rules (based on PCAP, similar to network firewalls) to improve network protection.

## **BIG-IP LTM Performance and Reliability**

### **Ground-Breaking Performance**

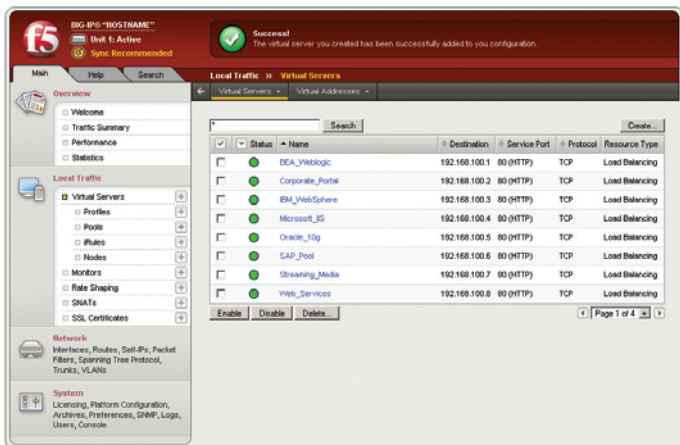
BIG-IP LTM delivers the industry's fastest application traffic management solution. Its specially designed architecture merges a high performance switching fabric with individual, best-in-class hardware optimizers for SSL and L4 to completely offload system CPU. BIG-IP LTM delivers real-world performance across all functions and provides deep packet inspection at network speeds.

### **System High Availability and Management**

BIG-IP LTM improves system management through critical features such as multi-boot, warm upgrades, and lights-out management. As a high availability device, BIG-IP LTM also provides unmatched visibility into the status of all processes running under the "HA table."

### **Advanced GUI and Simplified Management**

An advanced GUI delivers easy product configuration that lowers setup and ongoing maintenance costs.



### **Profile-Based Configuration**

Profile objects enable you to create traffic behavior templates that can be applied to different resources, reducing repetition and providing a centralized approach to changing settings.

### **Better Visibility**

BIG-IP LTM provides detailed system instrumentation on traffic statistics (globally and per object) to help you better monitor all activities and resources.

### **Rich User Interface**

Delivered over a secure, SSL browser-based interface, the advanced GUI includes online help, searching and sorting, in-line creation and much more, dramatically reducing the time it takes to set up and maintain large configurations.

### **More Functions, More User Types**

Administrative domains allow you to design customized partitions and assign varying degrees of administrative rights and views of BIG-IP LTM functions. Administrators can design customized views by service, application owners, or other segmentation scheme, providing unprecedented management scale and organizational efficiency.

## **iControl – Creating the Application Aware Network**

The F5 iControl™ API and SDK help automate communications between third-party applications and BIG-IP LTM, removing the need for manual intervention. iControl supports a true publish/subscribe model. This model reduces network overhead and improves the performance of applications that integrate with BIG-IP LTM through the iControl interface. For the majority of applications, this can reduce network bandwidth and processing time on both the client and the server.

### **Networking**

BIG-IP LTM supports basic layer 2 and layer 3 protocols:

**Supports STP, MSTP, RSTP**

**Link aggregation**

**VLAN tagging**

**QoS/ToS**

**Third party MIB support: all default Net-SNMP**

### **BIG-IP – Scale, Secure, and Optimize**

BIG-IP LTM intelligently manages hundreds of applications:

**Apache**

**BEA WebLogic**

**Check Point VPN-1/FireWall-1**

**Citrix Metaframe Presentation Server**

**HP OpenView**

**Lotus/Domino Notes servers**

**IBM WebSphere**

**Oracle:**

- 9i Application Server
- 10g Application Server
- E-Business Suite 11i
- Collaboration Suite

**Microsoft:**

- Application Center
- Commerce Server
- Exchange Server
- Outlook Web Access
- Windows Terminal Services
- SharePoint Portal Server
- Internet Information Services (IIS)
- Live Communications Server
- SQL Server
- Microsoft Operations Manager
- Mobile Information Server
- Internet Security and Acceleration Server
- Visual Studio.NET

**Siebel eBusiness Applications**

**PeopleSoft Enterprise**

**Macromedia ColdFusion**

**Trend Micro InterScan**

**Mercury Business Availability Center**

**SAP mySAP Business Suite**

**Netegrity SiteMinder**

**webMethods Enterprise Services Platform**

**Tivoli Access Manager**

**RSA SecureID**

**RealNetworks RealSystem Servers**

**Sun iPlanet Servers**

...and many more

## Available Add-On Modules

### Intelligent Compression Module

Condenses HTTP traffic using industry-standard gzip and DEFLATE compression algorithms, reduces bandwidth consumption, and speeds end-user download times over slower/low bandwidth connections.

### SSL Acceleration Module

Dramatically improves the performance of servers while providing security, speed, and traffic management during business-critical online transactions.

### L7 Rate Shaping Module

Ensures optimal application performance by allocating bandwidth for higher-priority applications, controls traffic spikes, and prioritizes traffic based on any L4 or L7 parameter.

### Application Security Manager Module

Award-winning web application firewall that secures web applications and web services from application attacks and helps organizations comply with PCI and other industry security standards.

### Advanced Client Authentication Module

Allows BIG-IP LTM to provide top-level client authentication of HTTP and other traffic types to LDAP, RADIUS, TACAS and other centralized authentication devices.

### Protocol Security Module

Enforces protocol checks for HTTP(s), FTP, and SMTP at BIG-IP system speed to prevent attacks that use protocol manipulation techniques.

### IPv6 Gateway Module

Provides complete IP transformation and load balancing capabilities between v4 and v6 networks. Makes user migration and the pooling of mixed IPv4 and IPv6 host resources manageable, cost-effective, and possible.

### Advanced Routing Module

Adds support for the following protocols: BGP, BGP4, RIPv1, RIPv2, RIPv6, and IS-IS.

### Fast Cache Module

Improves application and server performance by offloading repetitive requests for content from the back-end infrastructure.

### Protocol Security Module

Provides powerful security services for HTTP(s), SMTP, and FTP at BIG-IP system speed without requiring the expertise and management overhead of deploying a full-featured web application firewall.

### Message Security Module

Provides an extremely powerful and efficient tool for dealing with the growing volume of unwanted email by leveraging reputation data from Secure Computing's TrustedSource™ multi-identity reputation engine.

## Hardware Platforms

BIG-IP Local Traffic Manager is available on seven appliances. Additional software modules and hardware accelerators can be added as needed.



8800 Series and 8400 Series



6800 Series and 6400 Series



3600 Series



1600 Series

BIG-IP Local Traffic Manager is also available on the modular VIPRION system. This chassis and blade architecture enables simple scalability as your Application Delivery Network grows.



VIPRION Chassis



VIPRION Performance Blade 100



### F5 Networks, Inc. Corporate Headquarters

401 Elliott Avenue West  
Seattle, WA 98119  
206-272-5555 Phone  
888-88BIGIP Toll-free  
206-272-5556 Fax  
www.f5.com  
info@f5.com

### F5 Networks Asia-Pacific

+65-6533-6103 Phone  
+65-6533-6106 Fax  
info.asia@f5.com

### F5 Networks Ltd. Europe/Middle-East/Africa

+44 (0) 1932-582-000 Phone  
+44 (0) 1932-582-001 Fax  
emeainfo@f5.com

### F5 Networks Japan K.K.

+81-3-5114-3200 Phone  
+81-3-5114-3201 Fax  
info@f5networks.co.jp