Citrix NetScaler Enterprise Edition

APPLICATION DELIVERY SYSTEM INTEGRATING APPLICATION OPTIMIZATION AND COMPLETE L4-7 TRAFFIC MANAGEMENT

Citrix® NetScaler® Enterprise Edition provides Web application acceleration and advanced layer 4-7 traffic management, enabling enterprises to increase Web application performance by up to five times, improve application availability and reduce datacenter costs. NetScaler Enterprise Edition is available as a family of scalable, purpose-built appliances to optimize enterprise application delivery for multiple high-traffic internal applications, or to ensure high performance and availability of public-facing websites.

ACCELERATED APPLICATION PERFORMANCE

Citrix NetScaler Enterprise Edition can increase application performance by up to five times. Citrix® AppCompress™ improves end-user performance and reduces bandwidth consumption by compressing Web application data, regardless of whether it is encrypted or unencrypted, before it is sent to the client. The optional Citrix® AppCache™ speeds content delivery to users by providing fast, in-memory caching of both static and dynamically generated HTTP application content.

In addition, Citrix NetScaler delivers multiple TCP optimizations to improve the performance of the network and server infrastructure. TCP connection multiplexing reduces thousands of short-lived client connections into a much smaller number of long-lived, persistent server connections. This and other TCP optimizations reduce server load, improving server performance and accelerating application response times. NetScaler TCP optimizations are transparent to clients and servers, accelerating the delivery of any enterprise or Web-based application while requiring little or no configuration.

INTELLIGENT LOAD BALANCING AND CONTENT SWITCHING

Citrix NetScaler provides the industry's most comprehensive layer 4-7 traffic management. Deployed in front of application servers, NetScaler delivers fine-grained direction of client requests to ensure optimal distribution of traffic. In addition to Layer 4 information (protocol and port number), traffic management policies for TCP applications can be based upon any application-layer content. Administrators can granularly segment application traffic based upon information contained within an HTTP request body or TCP payload, as well as L4-7 header information such as URL, application data type or cookie. Numerous load-balancing algorithms and extensive server health checks provide greater application availability by ensuring client requests are directed only to correctly behaving servers.

Key Benefits

Accelerated Application Performance

- Data compression improves application response times for HTTP applications
- TCP optimizations enhance performance across high-latency and congested networks
- Optional in-memory caching immediately serves both static and dynamically generated HTTP content

Enhanced Security and Availability

- L4-7 content switching and comprehensive server health checks direct user requests to the optimal application server
- Protects applications from L4-7 denial-of-service (DoS) attacks
- Delivers robust high availability for any application infrastructure
- Provides global traffic management for multi-site enterprises via Global Server Load Balancing

Improved Datacenter Efficiency

- TCP optimizations offload costly networking connection management from servers
- Integrates SSL acceleration for faster delivery of secure Web traffic (HTTPS)
- Efficient traffic management optimizes server infrastructure
- Data compression reduces usage of network bandwidth
- In-memory caching frees servers from repeatedly serving the same content

CITRIX®

SSL ACCELERATION

NetScaler integrates hardware-based SSL acceleration to offload the compute-intensive processes of SSL connection setup and bulk encryption from Web servers. SSL acceleration reduces CPU utilization on servers, freeing server resources for other tasks. SSL acceleration is automatically enhanced by TCP optimizations and is fully integrated with the AppCompress and AppCache functionality. Citrix NetScaler Enterprise Edition is also available in a FIPS-compliant model providing secure key generation and storage.
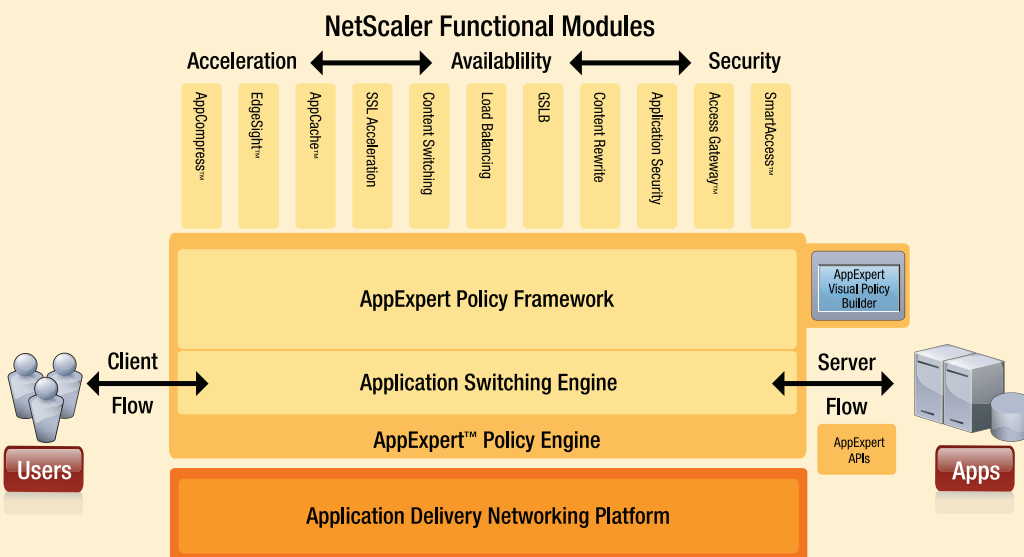
COMPREHENSIVE APPLICATION SECURITY

Patented Citrix® Request Switching® technology enables NetScaler Enterprise Edition to proxy legitimate client requests and block illegitimate requests. Without any performance penalty NetScaler Enterprise Edition defends against damaging denial of service (DoS) attacks. Content inspection capabilities enable Enterprise Edition to identify and block application-based attacks such as GET floods. Legitimate surges in application traffic that would otherwise overwhelm application servers are automatically handled with configurable Surge Protection and Priority Queuing features.

REDUCED DEPLOYMENT AND OPERATING COSTS

Citrix NetScaler Enterprise Edition lowers application delivery costs by reducing the number of required servers and by optimizing usage of available network bandwidth. The intuitive AppExpert Visual Policy Builder enables application delivery policies to be created without the need for coding complex programs or scripts. In addition, NetScaler reduces operational expenses by consolidating multiple capabilities in a single solution. For managing multiple NetScaler appliances, the separately available NetScaler Command Center provides centralized administration of system configuration, event management, performance management and SSL certificate administration.

As the complexity of network traffic and application deployments increases, NetScaler Enterprise Edition can be upgraded to NetScaler Platinum Edition, protecting investments in Citrix NetScaler solutions.

NETSCALER SYSTEM ARCHITECTURE

NetScaler Functional Modules

Acceleration ⟷ Availability ⟷ Security

AppCompress™ | EdgeSight™ | AppCache™ | SSL Acceleration | Content Switching | Load Balancing | GSLB | Content Rewrite | Application Security | Access Gateway™ | SmartAccess™

AppExpert Policy Framework

AppExpert Visual Policy Builder

Client Flow

Application Switching Engine

Server Flow

AppExpert™ Policy Engine

AppExpert APIs

Users

Apps

Application Delivery Networking Platform

Citrix NetScaler application delivery solutions are purpose-built using an advanced, multi-layered system architecture. At the core of this architecture is the AppExpert Policy Engine, which provides full, bi-directional visibility of Web application traffic and a common policy framework used by all NetScaler functional modules.

TRAFFIC MANAGEMENT

Layer 4 Load Balancing

- Protocols supported: TCP, UDP, FTP, HTTP, HTTPS, DNS and SIP (over UDP)
- Algorithms: Round Robin, Least Packets, Least Bandwidth, Least Connections, Response Time, Hashing (URL, Domain, Source IP, Destination IP, and CustomID), SNMP-provided metric, Server Application State Protocol (SASP)
- Session Persistence: Source IP, cookie, server, group, SSL session, SIP CALLID, Token-based
- Session Protocols: TCP, UDP, SSL_TCP
- Server Monitoring: Ping, TCP, URL, ECV, scriptable health checks, Dynamic Server Response Time
- Link load balancing

Layer 7 Content Switching

- Policies: URL, URL Query, URL Wildcard, Domain, Source/ Destination IP, and HTTP Header, Custom, TCP Payload Values

Global Server Load Balancing (GSLB)

- Algorithms: Site health, geographic proximity, network proximity
- Site health checking on status, connection load, packet rate, SNMP-provided metrics

HTTP Rewrite

- Policy-based bidirectional rewriting of HTTP header and payload elements

APPLICATION ACCELERATION

TCP Optimization

- Multiplexing, Buffering, Connection Keep-alive, Windows Scaling, Selective Acknowledgement

AppCompress

- GZIP-based compression for HTTP traffic
- Compression of encrypted data

AppCache (Optional)

- Caching for static and dynamic application content
- HTTP GET and POST method support
- Policies defined based upon HTTP header and body values

APPLICATION VISIBILITY

EdgeSight™ for NetScaler (Optional)

- Real-time and historical end-user experience monitoring
- Trending and reporting for Web application performance service level management

COMPREHENSIVE APPLICATION SECURITY

DDoS Attack Defense

- Continue service to legitimate users while protecting against attacks such as: SYN Flood and Ping of Death
- ICMP and UDP rate control

Surge Protection and Priority Queuing

- Adaptive rate control for TCP connections and HTTP requests
- Prioritized transaction dispatch for critical application requests

Packet Filtering

- Layer 3 and 4 Access Control Lists (ACL)
- Network Address Translation (NAT)
- Positive security via denial of nonconfigured services

CITRIX NETSCALER APPLICATION FIREWALL (OPTIONAL)

- Protects against application-layer attacks such as cross-site scripting, SQL injection, cookie poisoning and forceful browsing
- Prevents theft and leakage of sensitive corporate and customer information
- Positive security model protects against known and unknown attacks

NETWORK INTEGRATION

- Static routes
- OSPF, RIP, BGP
- VLAN 802.3Q
- Link Aggregation 802.3ad

SIMPLIFIED INSTALLATION AND MANAGEMENT

User Interface

- AppExpert Visual Policy Builder
- Secure Web-based GUI
- CLI, Telnet, SSH, Console
- Real-time performance dashboard
- Load-balancer configuration wizard

Third-party Management Support

- SNMPv1, SNMPv2 and SNMPv3: NetScaler MIB and MIB-II support
- XML/SOAP API for automated application-driven configuration

Real-time Consolidated Logging

- Offloads logging from application server to central location
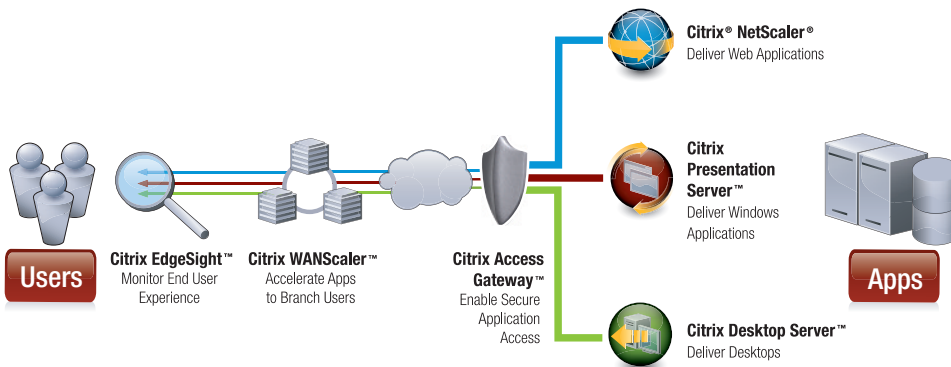
Licensing (Optional Access Gateway SSL VPN)

- Support for up to 10,000 concurrent users

PLATFORM SPECIFICATIONS

NETSCALER APPLICATION SWITCH	7000 PLATFORM	9010 PLATFORM	10010 PLATFORM	12000 PLATFORM
Chassis Dimensions:	1.8" (4.4cm) H (1U) x 17.3" (43.8cm) W x 18.8" (47.6cm) D	3.5" (8.9cm) H (2U) x 17" (42.4cm) W x 24" (61cm) D	3.5" (8.9cm) H (2U) x 17" (42.4cm) W x 24" (61cm) D	3.5" (8.8cm) H (2U) x 17" (42.4cm) W x 24" (61cm) D
Weight:	28 lbs (12.7 kg)	52 lbs (23.6 kg)	52 lbs (23.6 kg)	52 lbs (23.6 kg)
Power Supply	90-264VAC Full Range 47-63 Hz, 250W	90-264VAC Full Range 47-63 Hz, 500W	90-264VAC Full Range 47-63 Hz, 500W	90-264VAC Full Range 47-63 Hz, 500W
Interface Ports	6 x 10/100 BASE-T 2 x 10/100/1000 BASE-T	4 Ports in one of 2 configurations - 4 x 10/100/1000 BASE-T - 4 x 1Gbit Fiber SFP 1 x 10/100 BASE-T (Mgmt)	8 Ports in one of 2 configurations - 4 x 10/100/1000 BASE-T + 4 x 1Gbit Fiber SFP - 4 x 10/100/1000 BASE-T + 4 x 1Gbit Copper SFP 1 x 10/100 BASE-T (Mgmt)	8 Ports in one of 3 configurations - 8 x 1Gbit Fiber SFP - 8 x 1Gbit Copper SFP - 4 x 1Gbit Fiber SFP + 4 x 1Gbit Copper SFP 1 x 10/100 BASE-T (Mgmt)
Operating Ranges	Temperature and Humidity 0-50C; 5%-95%	Temperature and Humidity 0-50C; 5%-95%	Temperature and Humidity 0-50C; 5%-95%	Temperature and Humidity 0-50C; 5%-95%
Certifications	Emissions: FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES Safety: TUV-C, US Compliance: RoHS	Emissions: FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES Safety: TUV-C, US Compliance: RoHS	Emissions: FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES Safety: TUV-C, US Compliance: RoHS	Emissions: FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES Safety: TUV-C, US Compliance: RoHS
Warranty	1 year hardware; 90 days software; extended support plans available	1 year hardware; 90 days software; extended support plans available	1 year hardware; 90 days software; extended support plans available	1 year hardware; 90 days software; extended support plans available

Six Keys to Successful Application Delivery
Deliver Any Application to Any User with the Best Performance, Security, Cost and Agility

Citrix® NetScaler®
Deliver Web Applications

Citrix Presentation Server™
Deliver Windows Applications

Citrix Desktop Server™
Deliver Desktops

Citrix EdgeSight™
Monitor End User Experience

Citrix WANScaler™
Accelerate Apps to Branch Users

Citrix Access Gateway™
Enable Secure Application Access

Users

Apps

Citrix® NetScaler® for delivering Web-based applications — Optimize all web applications with an integrated networking solution that accelerates performance, improves security, and substantially reduces load on servers.

Citrix Presentation Server™ for delivering Windows-based Applications — Save millions in management costs and eliminate data security risks by installing all Windows applications in the datacenter and virtualizing or streaming them to end users over the network.

Citrix Desktop Server™ for delivering desktops — Reduce the cost, management and security risk of desktop computing by delivering Windows desktops virtually from the datacenter in a way that actually improves the end user experience.

Citrix Access Gateway™ for enabling secure application access — Provide a secure single point of access to all applications that automatically customizes access policies based on user scenarios.

Citrix WANScaler™ for accelerating applications to branch users — Instantly improve the performance of applications delivered over the wide area network while reducing bandwidth by up to 75%.

Citrix EdgeSight™ for monitoring end user experience — Ensure applications are meeting business metrics at all times by monitoring performance from the user's perspective.

About Citrix: Citrix Systems, Inc. (Nasdaq:CTXS) is the global leader and the most trusted name in application delivery infrastructure. More than 180,000 organizations worldwide rely on Citrix to deliver any application to users anywhere with the best performance, highest security and lowest cost. Citrix customers include 100% of the Fortune 100 companies and 98% of the Fortune Global 500, as well as hundreds of thousands of small businesses and prosumers. Citrix has approximately 6,200 channel and alliance partners in more than 100 countries. Annual revenue in 2006 was $1.1 billion. Learn more at www.citrix.com.

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Optimize your applications

Find out how Citrix NetScaler application delivery solutions can make your Web applications run up to 15 times faster, while enhancing application security and dramatically reducing operational expenses.

Visit us at
www.citrix.com/netscaler
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to learn more.

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