

Citrix ADC FIPS Platforms

Delivering scalability and performance for high security requirements



Citrix ADC (formerly NetScaler ADC) is the industry’s leading web and application delivery controller that maximizes the performance and availability of all applications and data. Citrix ADC platforms compliant with FIPS (Federal Information Processing Standards) meet the performance and scalability needs of today's highly secure data centers. FIPS-compliant multi-tenant platforms extend these benefits even further by consolidating services across secured virtual instances.

Feature	Premium Edition	Advanced Edition	Standard Edition
Application availability			
L4 load balancing and L7 content switching	•	•	•
Microsoft SQL, MYSQL	•	•	•
AppExpert rate controls	•	•	•
IPv6 support	•	•	•
Traffic domains	•	•	•
Subscriber-aware traffic steering	•	•	•
Global server load balancing (GSLB)	•	•	•
Carrier-Grade Network Address Translation (CGNAT)	•	•	•
Dynamic routing protocols	•	•	•
Surge protection and priority queuing	•	•	•
Application acceleration			
Client and server TCP optimizations	•	•	•
AppCompress	•	•	•
AppCache	•	•	•
Application security			
L4 DoS defenses	•	•	•
L7 DoS defenses	•	•	•
L7 rewrite and responder	•	•	•
Citrix Gateway connector for Exchange ActiveSync	•	•	•
Authentication, authorization, and auditing for traffic management	•	•	•
Citrix Web App Firewall (NetScaler AppFirewall) with XML security	•	•	•
IP Reputation	•	•	•
nFactor authentication	•	•	•
Cloud Connector for Citrix Networking (NetScaler Cloud Connector)	•	•	•

• Standard • Option

Feature	Premium Edition	Advanced Edition	Standard Edition
Front-end optimization*			
Content layout	•	•	
Domain sharding	•	•	
Image optimization	•	•	
Style sheets and JavaScript optimization	•	•	
TCP protocol optimization			
Multi-path TCP	•	•	•
BIC and cubic TCP	•	•	•
Simple manageability			
Web Insight	•	•	•
AppExpert visual policy builder	•	•	•
ActionAnalytics	•	•	•
AppExpert service callouts, templates, and visualizers	•	•	•
Role-based administration	•	•	•
Auditing, authorization, and authentication for administration	•	•	•
Configuration wizards	•	•	•
Native Citrix web interface	•	•	
Comtrade Management Pack for Citrix ADC	•		
Citrix Command Center	•	•	•
Unified Gateway			
Federated identity	•	•	
One URL/SSO using SAML 2.0	•	•	
Centralized Policy Management (SmartControl)	•		
Stateless RDP proxy	•	•	
Monitoring of Citrix Virtual Apps and Desktops traffic (real time)	•		
Monitoring of Citrix Virtual Apps and Desktops traffic (historical)			
Monitoring of Gateway traffic (real time)	•	•	
Monitoring of Gateway traffic (historical)	•		
Citrix Gateway (NetScaler Gateway)			
Broad client support for plugins	•	•	•
Customizable web portal	•	•	•
SSL VPN remote access	•	•	•
ICA proxy to Citrix Virtual Apps and Desktops	•	•	•
Contextual policies for Citrix Virtual Apps and Desktops	•	•	•
Endpoint Analysis	•	•	•
Secure browser-only access (CVPN)	•	•	•
Always-On	•	•	•
Integration with StoreFront	•	•	•

• Standard • Option

* An AppCache license is required for several front-end optimization features.

Platform	MPX/SDX 14080 FIPS	MPX/SDX 14060 FIPS	MPX/SDX 14030 FIPS
Platform attributes			
Memory	64 GB	64 GB	64 GB
CPU cores	9	8	6
Ethernet ports			
(Published Ethernet interfaces compliant per IEEE802.3-2002/2005/2008/2012)	16x 10GE SFP+	16x 10GE SFP+	16x 10GE SFP+
Transceivers support	10GE SFP+: SR, LR; 1G cu	10GE SFP+: SR, LR; 1G cu	10GE SFP+: SR, LR; 1G cu
Raid support	Yes	Yes	Yes
Pay-As-You-Grow and Burst Pack license upgrades		Upgrade option to SDX 14080 FIPS	Upgrade option to SDX 14060 FIPS, 14080 FIPS
Platform performance			
System throughput, Gbps (L7 throughput)	80	60	30
L7 HTTP requests/sec	2,000,000	1,800,000	1,400,000
SSL transactions/sec (2K key certificates)*	33,000	25,000	18,000
SSL throughput, Gbps	30	23	18
Compression throughput, Gbps	6.8	6	5
ICA Proxy/SSL VPN concurrent users	20,000	20,000	20,000
Number of instances included/ Maximum number of instances	25/25	25/25	10/25
Platform mechanical, environmental, and regulatory			
Power supplies	2	2	2
Input voltage and frequency ranges	100-240VAC full range, 47-63 Hz	100-240VAC full range, 47-63 Hz	100-240VAC full range, 47-63 Hz
Optional DC power supply	Yes	Yes	Yes
Max power supply	528W	528W	528W
Typical/max power consumption	300W 1024 BTU/Hr	300W 1024 BTU/Hr	300W 1024 BTU/Hr
Weight, lbs	60	60	60
Height	2U	2U	2U
Width	EIA 310-D, IEC 60297, DIN 41494 SC48D rack width with mounting brackets	EIA 310-D, IEC 60297, DIN 41494 SC48D rack width with mounting brackets	EIA 310-D, IEC 60297, DIN 41494 SC48D rack width with mounting brackets
Depth	28 in / 71.2 cm	28 in / 71.2 cm	28 in / 71.2 cm
Operating temperature	0-40C	0-40C	0-40C
Allowed relative humidity	5%-95%, non-condensing	5%-95%, non-condensing	5%-95%, non-condensing
Safety certifications	CSA	CSA	CSA
Electromagnetic emissions certifications and susceptibility standard	FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES	FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES	FCC (Part 15 Class A), DoC, CE, VCCI, CNS, AN/NES
Regulatory compliance	RoHS, WEEE; FIPS 140-2, Level 3	RoHS, WEEE; FIPS 140-2, Level 3	RoHS, WEEE; FIPS 140-2, Level 3
Citrix compliance regulatory model	2U1P1B	2U1P1B	2U1P1B

Performance varies depending on ciphers deployed; contact your Citrix sales representative for details.

Technical aspects

Citrix Gateway

- Provides consolidation of secure remote access infrastructure with one URL
- Provides SAML 2.0 federated identity to provide single sign-on across all applications whether in a data center or cloud
- One URL to access any application
- Always-On allows auto-reconnect of SSL VPN session when users are moving between networks
- Integration with StoreFront allows importing UI changes from StoreFront to Gateway portal and vice versa
- Gateway Insight for monitoring and troubleshooting all Gateway traffic for issues like authentication and EPA failures, single sign-on failures, etc.
- nFactor authentication for all applications
- Stateless RDP proxy
- Support for Linux (Ubuntu 14.04 32bit/64bit, Ubuntu 12.04 32bit/64bit)
- Support for Mac OS X 10.9 (Mavericks), OS X 10.10 (Yosemite)
- Support for Windows 7, 8, and 8.1 (32bit/64bit)
- Support for iOS 7.1 or later. Compatible with iPhone, iPad, and iPod touch
- Support for Android 4.1.x and 4.2.x (Jelly Bean), 4.4.x (KitKat), 5.x (Lollipop)

Secure access

- Integration with Citrix Virtual Apps and Desktops and Endpoint Management
- Device certificate scanning
- Single sign-on using NTLM/Kerberos/SAML, etc.
- SmartAccess: Adaptive application and action control enforced on Citrix Virtual Apps and Desktops servers
- SmartControl: Adaptive application and action control enforced on Citrix Gateway, thereby providing centralized policy management and security at the edge
- Integrated Citrix Gateway SSL VPN
- NetScaler 11.1, and earlier Standard and Enterprise Editions include (5) Universal licenses. Platinum Edition includes (100) Universal licenses. Starting at NetScaler 11.1, Standard includes 500 Universal licenses, Enterprise Editions include (1,000) Universal licenses, and there are no Universal license requirements with Platinum Edition. Universal license entitlements are per HA pair or per cluster depending on how you deploy Citrix ADC.
- Endpoint analysis of user device
- SAML 2.0 and nFactor; passwords for single sign-on to applications running behind Citrix Gateway
- Authentication, authorization, and auditing traffic management

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- SAML 2.0 and NTLMv1/2 support for configuring Citrix ADC with single sign-on (SSO)
 - Support for Active Directory, LDAP, RADIUS, TACACS+, OCSP, Diameter, etc.

L4-7 traffic management

Layer 4 load balancing (LB)

- Protocols supported: TCP, UDP, FTP, HTTP, HTTPS, DNS (TCP and UDP), SIP (over UDP), RTSP, RADIUS, Diameter, SQL, RDP, IS-IS, SMPP
- 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, SESSIONID, Diameter AVP
- Session protocols: TCP, UDP, SSL_TCP, Multi-path TCP, SPDY
- 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, HTTP Header, Custom, HTTP and TCP Payload Values, UDP, Diameter AVP
- Switch requests based on protocol of incoming packets

Database load balancing

- Support for: Microsoft SQL Server and MySQL
- Switching algorithms include SQL query parameters such as user and database names and command parameters
- Token-based load balancing provides advanced configuration for persistence and fault tolerant deployments

Rate-based policy enforcement

- Trigger Citrix ADC policies based upon connections per second, packets per second, or bandwidth used
- Source or destination-based upon header or payload information

Traffic domains

- Allows overlapping IP addresses
- Provides separate routing flows within a single appliance
- Enables basic multi-tenancy implementations

Admin Partitioning

- Independent instances that share resources on the appliance
- Maximum number of 512 admin partitions per appliance

Global server load balancing (GSLB)

- Algorithms: site health, geographic proximity, network proximity, connections, bandwidth, AG-E SSL VPN users
- Site health checking on status, connection load, packet rate, SNMP-provided metrics

Surge protection and priority queuing¹

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

Carrier-Grade Network Address Translation¹

- Support for: Full-cone NAT, Deterministic NAT
- Endpoint-Independent Mapping and Filtering, Hairpinning
- Application Layer Gateways: FTP, TFTP, ICMP, SIP, RTSP, PPTP, GRE

Subscriber-aware traffic steering

- Policy control interface: Gx, RADIUS

Application acceleration

TCP optimization

- Multiplexing, buffering, connection keep-alive, windows scaling, selective acknowledgement, fast ramp, TCP Westwood
- AppCompress
- Gzip-based compression for HTTP traffic AppCache²
- Caching for static and dynamic application content
- HTTP GET and POST method support
- Policies defined based upon HTTP header and body values

Application security

DoS attack defense

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

Content rewriting and response control

- Policy-based bidirectional rewriting of HTTP header and payload elements
- Policy-based redirection of incoming requests
- Body URL rewrite
- Responder module

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- Custom responses and redirects
 - Policy-based routing
 - Network aware policies

SSL Encryption

- Supports Thales nShield and SafeNet HSM integration

DNSSEC

- DNS proxy
- Authoritative DNS
- DNS signing

Packet filtering

- Layer 3 and 4 Access Control Lists (ACL)
- Network Address Translation (NAT)
- IPv4/IPv6 Network Address Translation (NAT)

Citrix Web App Firewall with hybrid security model²

- Positive security model protects against: buffer overflow, CGI- BIN parameter manipulation, form/ hidden field manipulation, forceful browsing, cookie or session poisoning, broken ACLs, cross-site scripting (XSS), command injection, SQL injection, error triggering sensitive information leak, insecure use of cryptography, server misconfiguration, back doors and debug options, rate-based policy enforcement, well known platform vulnerabilities, zero-day exploits, cross site request forgery (CSRF), credit card and other sensitive data leakage prevention
- Negative security model with automatically updated signatures to protect against L7 and HTTP application vulnerabilities
- Integrates with third-party scanning tools
- Common event format (CEF) logs

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- XML security: XML denial of service (xDoS)
 - XML SQL injection and cross site scripting, XML message validation, format checks, WS-I basic profile compliance, XML, XPath injection attachment check, xQuery Injection protection
 - WSDL scan prevention
 - Attachment checks
 - URL transformation
 - Cookie proxy and encryption
 - SOAP array attack protection

IP Reputation service

- Enhanced service that provides a continuously updated list of malicious IP addresses in near real-time

Cloud Connector for Citrix Networking

- Network connectivity protection via IPSec security
- Datacenter extension through GRE-based network bridging

Support for Citrix Endpoint Management³

- Front-end optimization scalable to over 100,000 concurrent users
- Citrix Gateway Connector for Exchange Active Sync provides a device-level authorization service
- Application-level policy-controlled SSL VPN tunneling for mobile clients

Network integration

- Static routes, monitored static routes, weighted static routes
- OSPF, RIP1/2, BGP2
- VLAN 802.1Q
- Link Aggregation 802.3ad
- Stateful IPv6 to IPv4 network address translation and DNS64
- Static and stateless network address translation from IPv4 to IPv6

High availability

- Active/Passive
- Active/Active
- VRRP
- ECMP
- Connection mirroring

Simplified installation and management

User interface

- Graphical application visualizer

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- Secure web-based GUI
 - CLI, Telnet, SSH, Console
 - Real-time performance dashboard
 - LB, GSLB Application Firewall and EdgeSight® for Citrix ADC configuration wizards
 - Citrix Virtual Apps configuration wizards [citrix.com 01/31/PDF 6](https://citrix.com/01/31/PDF/6)

Policy management

- AppExpert Visual Policy Builder
- Policy extensibility via HTTP service callouts
- AppExpert templates
- AppExpert Visualizers

Command Center

- Centralized configuration and management of over 200 Citrix ADC appliances

Citrix Application Delivery Management and AppFlow:

- Citrix Application Delivery Management is a software solution enabling traffic visibility; it includes HDX Insight and Web Insight, and is based on AppFlow
- HDX Insight parses ICA sessions to provide troubleshooting, network analysis and end-to-end performance for Citrix Virtual Apps and Desktops sessions. Historical data included in Premium Edition
- Web Insight monitors real-time web application traffic and assists capacity planning and helps ensure SLAs
- AppFlow Standards-based NetFlow/IPFIX (Internet Protocol Flow Information Export) solution
- Supported by leading performance monitoring and management vendors
- Provides transaction-level visibility for HTTP, SSL, TCP, and SSL/TCP flows

Action analytics

- Aggregates real-time traffic statistics and enables their use in setting dynamic policies
- Charting and analysis utilities using HDX Insight

Third-party management support

- SNMPv1, SNMPv2 and SNMPv3: Citrix ADC MIB and MIB-II support
- Microsoft System Center Operations Management (SCOM) support
- Comtrade support with Management Pack for Citrix ADC
- Microsoft System Center Virtual Machine Manager (SCVMM) support
- XML/SOAP API for automated application-driven configuration

Real-time consolidated logging

- Offloads logging from application server to a central location

Native web interface

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- Integrated Web Interface Server for Virtual Apps and Desktops
 - Supports JAVA environments with MPX and VPX platforms running NetScaler nCore OS
 - Authentication methods include: LDAP, RADIUS, NTLM, TACACS+, Client Certificate
 - Manage HTTPS requests via included SSL VPN
 - Wizards-based configuration through Citrix GUI
 - Login page customization
 - Includes Access, smooth roaming, STA server redundancy, and session reliability

Lower total cost of ownership

Web cache redirection¹

- Automatically direct requests with content not cached on Citrix ADC to cache farm
- N-tier multilayer load balancing support of cache servers

1. Available in Citrix ADC Advanced and Premium editions only.

2. Included in Premium edition only; not available with Standard or Advanced editions.

3. Advanced edition with AppCache or Premium edition recommended



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