

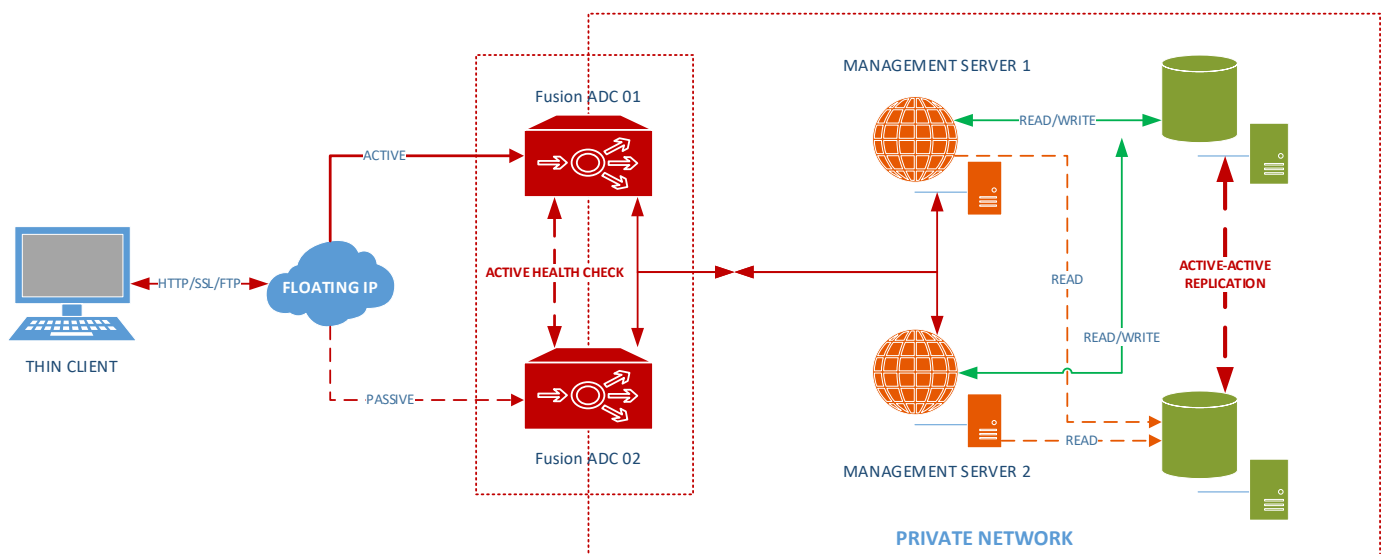
Terminologies Explained



The Fusion ADC appliance is built using the highly reliable and widely used edgeNEXUS® (formerly known as jetNEXUS) technology. Fusion ADC delivers a highly secured data transport mechanism that allows Thin Clients and CloudDesktop devices to communicate with the thin client management server in an isolated and secure manner.

The Fusion ADC appliances can be placed either in the Cloud, the DMZ or network and is tethered to both thin client and server using certificate based authentication, ensuring that the communication stream is secured to the highest degree.

The Fusion ADC virtual appliance can also be used to secure and load balance connections between your thin clients and the management server, be they in the Intranet, cross Internet or MPLS.



What is Layer 4 and Layer 7 load balancing?

Fusion ADC Load Balancers intelligently direct traffic among healthy servers in order to guarantee always-available applications.

Load Balancing allows you to optimise server utilisation, improve application performance and remove single points of failure.

Operating at Layer 7 (the application protocol level) Fusion ADC advanced load balancing algorithms ensure efficient, intelligent and configurable distribution of your application traffic. Featuring multiple methods of persistence (aka Sticky Sessions), the ability to gracefully add and remove servers from a pool and to create “servers of last resort”, Fusion ADC gives you control, performance and resilience.

Fusion ADC Load Balancers feature multiple different Connectivity Modes, including;

- Reverse Proxy
- High Performance Layer 4 Load Balancing
- Direct Server Return (DSR)
- Gateway

Fusion ADC Load Balancers feature multiple load balancing methods, including:

- Fastest Server
- Weighted Server
- Least Connections
- Round Robin
- IP Bound
- IP List Based

Terminologies Explained



- [Cookie Based](#)
- [Customisable Cookie](#)
- [Classic ASP Session Cookie](#)
- [NET Session Cookie](#)
- [JSP Session Cookie](#)
- [JAX-WS Session Cookie](#)
- [PHP Session Cookie](#)
- [Weighted Round Robin](#)
- [Weighted Least Connections](#)

What is Reverse Proxy?

Fusion ADC's default mode is as a Reverse Proxy: meaning that it handles incoming client requests and communicates with the load balanced servers behind it on their behalf.

In reverse proxy, incoming client connections hit the Fusion ADC Load Balancer, which then opens new and separate connections to the back-end servers (aka 'Content Servers' or 'Real Servers'). This means that clients never communicate directly with the back-end servers, allowing Fusion ADC to securely publish applications via the web. In a two-legged mode, Fusion ADC can be set up with one-leg in the DMZ and one-leg in the internal network to ensure unauthenticated connections never make it into your internal network.

By acting as a Reverse Proxy, Fusion ADC is able to intercept application traffic and offload processes from application servers in order to improve performance, carrying out tasks like SSL Offload, Compression and Caching far more efficiently than the servers themselves.

The Fusion ADC Reverse Proxy connectivity method now features a full native UDP Proxy and can also act as an IPV6 to IPV4 Gateway.

Increase Application Security with Reverse Proxy

The Fusion ADC reverse proxy mode can work in combination with pre-authentication to prevent unauthenticated and untrusted traffic from accessing resources residing on a private, corporate network.

What is SSL Offload?

SSL Offload is the termination/decryption of SSL requests on the Load Balancer, rather than on the application server.

Particularly in today's world of 2048-bit keys, SSL transactions are resource intensive and severely hamper application performance. Offloading SSL termination to Fusion ADC allows you to centrally manage your certificates and frees up your servers to focus on delivering the application, rather than decrypting SSL. In addition, when paying for application licensing on a per-CPU basis, pushing this CPU-intensive workload onto Fusion ADC allows you to deliver real Return on Investment.

As well as SSL Offload, Fusion ADC also allows you to either "Pass-Through" SSL Connections, or to decrypt and then re-encrypt SSL on the Load Balancer and pass on traffic securely to the back-end servers.

Greater Performance

The latest load balancer release from Fusion ADC features a more efficient SSL engine cutting CPU usage by 30% without degrading SSL performance.

New Server Name Identification (SNI) Functionality

Thanks to new SNI capabilities, users can present multiple certificates on the same service, helping to preserve dwindling IPV4 address space.

What is Intelligent Traffic Management?

Fusion ADC Load Balancers feature a unique, web-traffic manipulation engine called “flightPATH”.

flightPATH allows you to inspect incoming requests and outgoing responses in order to make intelligent decisions based on the content of those packets.

flightPATH combines powerful, granular control over your HTTP/http traffic, with the ease of GUI-driven, drag-and-drop functionality. Allowing you to create bespoke traffic rules to deal with the real-world application delivery problems you face, but designed with elegant simplicity. flightPATH is accessible to novices and experts alike.

What can flightPATH do for my organization?

Because flightPATH gives you a comprehensive toolkit for creating bespoke rules, the only limit is your imagination. Whilst the possibilities of flightPATH are endless, just a few examples of what can be achieved include:

- Switch requests from HTTP to http
- Route requests to specialised servers
- Rewrite content on the fly
- Blank out credit card details
- Prevent SQL injection
- Redirect users based on path
- Language detection
- Control authentication to applications
- Restrict users by source IP address
- Prevent 404s
- Block unwanted requests
- Geo-location to detect where requests come from
- and many more...

What is Content Compression?

Fusion ADC is able to compress web content during its journey from server to client, accelerating delivery and dramatically improving user experience.

Because decompression is handled by the client-side browser (such as Internet Explorer, Firefox or Chrome), no additional plug-in is required, meaning deployment is transparent to users. As well as enhancing delivery, compression reduces bandwidth costs and alleviates burdens on networking infrastructure.

What is Clustering?

Fusion ADC Load Balancers are capable of being deployed in HA Pairs or Clusters (either Active-Passive or Active-Active) to eliminate single points of failure.

In addition, the nature of High Availability in Fusion ADC means that, where clients can span sub-nets across more than one data centre, Fusion ADC Load Balancers can be deployed in a cluster across those data centres, negating the need for separate Global Load Balancing modules or appliances.

Fusion ADC Load Balancers aren't just limited to being deployed in HA Pairs, meaning clients can cluster together as many Fusion ADC appliances as they want.

What is Advanced Server Health Monitoring?

Advanced Server Health Monitoring is the key to delivering resilient applications.

Rather than just monitoring simple server availability, Fusion ADC drills down into Layer 7 to inspect the health of the application itself, allowing it to detect and automatically route around problematic servers.

As well as a host of pre-packaged Layer 7 application monitors (ranging from Exchange OWA to RDP to DICOM) Fusion ADC enables you to upload custom monitors for any TCP/IP application, giving you complete control over your environment.

Fusion ADC load balancers now support multiple, concurrent server health checks per application.

What is Fusion ADC Reporting?

Comprehensive reporting and visualisation to give you the application insight you need.

As well as capturing and displaying real-time traffic statistics through the GUI, Fusion ADC features full W3C logging and email alerting. In addition, Fusion ADC also provides a comprehensive SNMP MIB, enabling detailed performance data to be queried by third party SNMP management applications (eg. Solarwinds, Nagios etc).

GUI and Configuration

- [Secure Web-Based GUI](#)
- [Customisable Dashboard](#)
- [Configurable Widgets](#)
- [Automatic Fusion ADC Device Discovery](#)
- [jetPACK auto-configuration templates](#)
- [Clone Services](#)
- [Auto Complete](#)
- [Support for Slash Notation](#)
- [Configuration Back Up](#)

Management and Monitoring

- [Selectable SSL Certificate & Secure Port](#)
- [Full SNMP Monitoring \(V1,2 &3\)](#)
- [Command Line Interface \(CLI\)](#)
- [Email Alerting](#)
- [Real Time Stats](#)
- [Status Page with Live Individual](#)
- [Server Connections](#)
- [Historical Graphing](#)
- [Server Response Time Graphing](#)
- [Additional Services CPU Management](#)
- [Layer 4 Transaction Logs](#)
- [Remote Syslog Server](#)

NEW Historical Graphing

The Fusion ADC load balancer offers historical graphing to enable users to report on a number of variables including response time, requests per second, specific servers. These graphs can be overlaid for simple comparison between services.

NEW Custom Dashboards

The Fusion ADC load balancer delivers ultimate flexibility in reporting with new custom dashboards functionality. Users can add widgets and configure custom dashboard elements to tailor their reports to their unique requirements. Drag and drop functionality makes reporting a simple and fast experience.

Technical Specifications

SERVER LOAD BALANCING

- Layer 4 - 7 Load Balancing
- Layer 7 Application Persistence (aka. Persistence / Sticky Sessions / Cookie Based)
- Manual Server Weighting
- Automatic Server Weighting
- Reverse Proxy
- UDP Full Proxy
- Layer 7 Content Switching
- Active - Passive High Availability Mode
- Active - Active High Availability Mode
- Cross Data Centre Redundancy
- N+X Clustering
- Connection Draining
- Standby Server (aka Server of Last Resort)

LOAD BALANCING METHODS

- Fastest Server
- Least Connections
- Round Robin
- IP Bound
- IP List Based
- Cookie Based
- Customisable Cookie
- Classic ASP Session Cookie
- ASP.NET Session Cookie
- JSP Session Cookie
- JAX-WS Session Cookie
- PHP Session Cookie
- Weighted Round Robin
- Weighted Least Connections

SERVER HEALTH CHECKING

- Customisable Health Checks
- Simple HTTP
- Full HTTP (Layer 7)
- TCP Connect
- Out of Band Health Check
- DICOM
- RDP
- Ping
- Multiple Server Health Checks Per Service
- New HTTPS Health Check
- Redis Health Check (via App Store)
- DNS Health Check
- Upload Custom Health Checks
- Extra Setting for Custom Health Checks

NETWORKING

- IPV6 Support
- IPV6 > IPV4 Proxy
- VLAN Support
- Single or Multi Interface Configuration
- Choice of Interfaces (from 4x1GbE up to 4x10GbE or 8x1GbE)
- Support for S-NAT, NAT and PAT
- Static Routing With Default Gateway
- Unrestricted Interfaces (Virtual)
- High-Performance Virtual Network Drives (Virtual)
- Multiple DNS Server Support

LINK INTERFACE BONDING

- 802.3ad
- Round Robin
- Active / Passive
- Broadcast
- Adaptive
- Transmit
- Balance-XOR

CONNECTIVITY METHODS

- Reverse Proxy
- High Performance Layer 4 Load Balancing
- Direct Server Return

GLOBAL SERVER LOAD BALANCING (Additional Licence)

- Disaster Recovery for your data centers
- Active-Active:
- Round Robin
- Weighted
- Geo-Location
- Custom Location

SSL

- High-Performance, Unrestricted SSL Offload
- Easy-to-Use SSL Management
- AES Hardware SSL Acceleration
- SSL Pass-Through
- SSL Re-Encryption
- Certificate Signing Request (CSR) Generation and Renewal
- Simple Certificate Import / Export inc PKCS12
- Self-Signed Certificate Creation
- Support For Multiple Keys Inc: 1024, 2048, 4096
- Intermediate Certificate Support
- Support for Server Alternative Names

Technical Specifications

- Support for Wildcard SSL Certificates
- SSL Certificate Chaining
- Support for TLS 1.2
- Customisable Ciphers
- Full Support for Server Name Indication (SNI)
- Multiple Certificates Per Service for SNI

SECURITY

- Web Application Firewall (Additional Licence)
- Pre-Authentication
- NTLM / Basic Support
- Form or Basic Authentication
- Single Sign On (SSO)
- Microsoft TMG Replacement
- Upload Custom Forms From GUI
- Custom Login with Configurable Welcome Message
- Authentication Protocol LDAPS Servers
- Security Logging
- Login Timeout
- Multiple Conditions

TRAFFIC MANAGEMENT

(flightPATH)

- HTTP / HTTPS Traffic Manipulation
- Intuitive, Simple To Use
- Drag & Drop Rule Builder
- Layer 7 Content Switching
- Dynamic Routing
- Content Filtering
- Fully Customisable / Configurable
- Pre-Defined Rule Base
- Log and Alert
- Geo Location
- Selectable, Simple Match Conditions (inc does / does not: 'start with', 'end with', 'contain', 'equals') or
- Powerful Regular Expression Engine
- Extract Response Cookie Value
- Examples:
 - Block IPs / Networks
 - Redirect to Secure Website
 - Rewrite URLs
 - Replace Sensitive Info (Blank Credit Card Details)
 - Browser Detection
 - Device Detection
 - Body Rewrite
 - Prevent SQL Injections
 - Prevent Cross-Site Scripting
 - Add Google Analytics

- Redirect User Based on Country
- Certified for Key Applications

CLOUD BASED SERVICES ***

- Secure Interface From ALB-X to Cloud Services
- Check Cloud & Download for Software Updates
- Check Cloud for Support
- Check Cloud for Licence Information
- Check Cloud for New Security Rules

ACCELERATION

Compression

- Dynamic HTTP Compression
- Configurable Rule Base

Caching

- RAM-Based Caching with Disc Backup
- Automatic and Configurable Client-Side Caching
- Multiple Caching Profiles
- Auto-Detect and Prioritise Popular Content
- Simple Editing of Cache Rulebase
- Fully Configurable via GUI

Connection Management

- Connection Pooling / Multiplexing
- Connection Limiting
- Customisable Server Too Busy Page

MANAGEMENT & REPORTING

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- Configurable Widgets
- Automatic Fusion ADC Device Discovery
- jetPACK Application Templates (Auto-configuration)
- Clone Services
- Auto Complete
- Support for Slash Notation
- Configuration Back Up
- Software Updates
- Check Cloud Service for Software Updates
- Encrypted Software Updates
- Simple Software Update Via GUI
- Management and Monitoring
- Selectable SSL Certificate & Secure Port
- Full SNMP Monitoring (V1,2 &3)
- Command Line Interface (CLI)
- Email Alerting
- Real Time Stats
- Status Page with Live Individual Server Connections

About VXL Software

VXL Software is a global company, with offices in Asia, Europe and the USA. VXL Software is a division of VXL Instruments. Established in 1976, VXL is a global leading manufacturer of thin, zero and cloud-client devices. VXL Software has locations in the USA, UK, France, Germany, the United Arab Emirates, India and Singapore. VXL Software's Americas Group is headquartered in Houston, Texas. The European headquarters is in Manchester, UK. VXL Software's development team, and the Asia Pacific headquarters, are based in Mumbai, India.

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