AppBeat DC
Next Generation Web Application Delivery

crescendo networks

Application performance is one of most critical challenges facing organizations today. As businesses increase their dependence on web-based applications to conduct business and drive revenue, the need for superior application performance and availability grows. IT organizations struggle to meet escalating performance demands without increasing operating costs or infrastructure footprint.

Crescendo Networks' AppBeat™ DC gives IT organizations a simple and powerful way to improve application performance and availability. It accelerates and optimizes essential web applications by offloading and consolidating common tasks, so that server resources can be dedicated to the application itself. AppBeat DC has been independently validated in third-party tests as the clear performance leader in the Application Delivery Control (ADC) market, with performance far exceeding the competition.

Testimonials

"After installing AppBeat DC, our intranet users experienced improvements in response time ranging from 45%-100% and we saw outbound bandwidth reductions of up to 80%. We were amazed to see these improvements within 30 minutes of installing the boxes in our network."

Jim Feeney, VP of IT Store Systems Group, Aéropostale

"Crescendo's AppBeat DC eliminated bottlenecks within our application infrastructure and delivered an immediate improvement in the overall end-user experience. It delivered immediate ROI through a dramatic increase in server efficiency."

Andrzej Ciesielski, CTO, Interaktywna

Key Benefits

Application Acceleration

AppBeat DC delivers industry-leading application acceleration at multi-gigabit rates. With powerful, purpose-built hardware and innovative technologies, AppBeat DC performs multiple application acceleration functions concurrently, enabling unparalleled performance even under heavy load.

Improved End User Experience

Fast, consistent and reliable peformance creates a better application experience and shortened response time for the user. Patent-pending Short-Lived Transaction (SLT) technology, zero-latency compression and server normalization techniques improve the performance delivered to end users by 30-70%.

Increased Security and Application Assurance

AppBeat DC shields servers from malicious attacks and mediates flash crowd events. Removing the impact of peak- load periods on application response times ensures consistent application availability for customers.

Reduced Data Center Expenditures

By consolidating and offloading critical functions, AppBeat DC increases available server capacity by 300-500%. In addition, efficient hardware-based compression reduces bandwidth requirements by up to 75%. Using AppBeat DC, IT organizations can reduce existing and planned expenditures for a clear and immediate ROI.

Core Technologies

AppBeat DC achieves its industry-leading performance using innovative hardware and software technologies: the Maestro™ platform and Crescendo Networks' Short Lived Transaction™ (SLT) technology.

Maestro Platform

The underlying hardware for AppBeat DC, the Maestro platform, is the only industry solution to implement Layer 2-7 functionality in dedicated hardware with TCP termination/optimization, load balancing, compression, and SSL acceleration. Each function runs on a separate, purpose-built engine with dedicated CPU and memory resources. As a result, AppBeat DC can enable all of the functions at the same time without any performance slow-down. This feature concurrency distinguishes AppBeat DC from other application acceleration solutions that slow down as more features are enabled.

Maestro Platform Architecture

The Maestro platform uses dedicated, purpose-built processors for different functions, enabling feature concurrency and scalability.
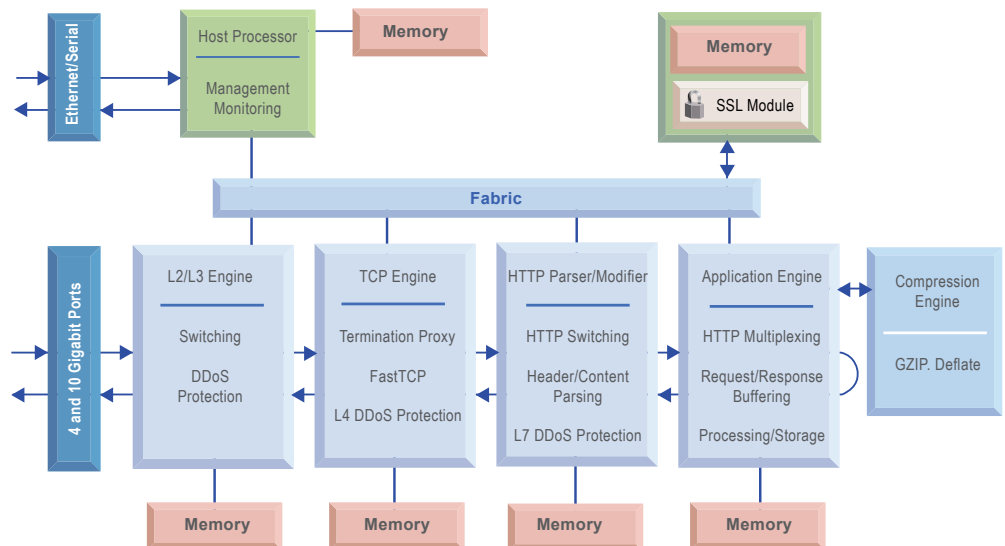
Short-Lived Transaction (SLT)

Crescendo's patent-pending SLT technology leverages the Maestro platform to provide unparallel performance for TCP termination and optimization, including:

- **Advanced connection management** for offloading TCP overhead from servers by consolidating many connections into a few

- **Unique request processing technology** that enables request and response buffering during the transaction flow, for optimal content delivery

- **Response optimization technology** that completely shields servers from WAN-based TCP overhead (dropped packets, congestion, etc), enabling content delivery at maximum throughput

Features

AppBeat DC supports multiple functions, from compression to load balancing, on a single device. And unlike other application acceleration solutions, it can deploy all of these functions at once without any performance penalty.

TCP Offload, Multiplexing and Acceleration

AppBeat DC significantly reduces the processing load on servers by handling TCP termination for clients. AppBeat DC receives all incoming requests and multiplexes and redirects them to servers over a controlled number of persistent server-side connections.   This approach relieves the servers of the connection setup, teardown and management processes that normally consume valuable server resources. The result is a dramatic increase in application performance.

AppBeat DC leverages the patent-pending Short-Lived Transaction (SLT) technology to deliver unparalleled performance in TCP management. In addition, innovative technology (FastTCP) speeds up TCP's standard slow-start algorithm, so each connection reaches maximum capacity quickly. Congestion avoidance logic maximizes the bandwidth of each connection while minimizing dropped packets.

Content Compression

By compressing content, AppBeat DC improves client response times and significantly reduces bandwidth requirements. With its dedicated, solid-state compression processor, AppBeat DC can compress content by up to 85%, operating at speeds of up to 3 Gbps, with zero latency. It supports multiple compression levels, all with guaranteed zero latency.
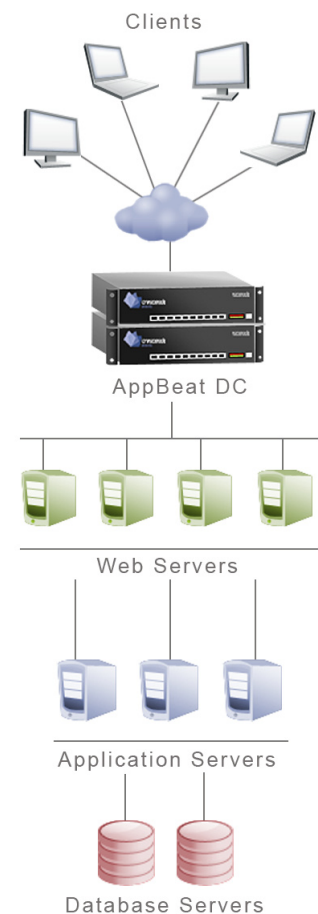
SSL Offload and Acceleration

With more applications requiring security, many servers now handle SSL processing in addition to their core applications. AppBeat DC offloads this CPU-intensive task, freeing server resources and making the site faster and more secure. AppBeat DC handles both SSL session setup and bulk data encryption tasks, employing dedicated hardware designed to accelerate these resource-intensive processes.

Comprehensive Load Balancing

Load balancing shields users from server failures or overloaded, slow servers, while enabling the even distribution of resources across the data center. AppBeat DC provides load balancing on a request-by-request basis, determining the optimal server for each request based upon actual HTTP load. Global server load balancing functionality extends load balancing beyond the single data center, enabling traffic distribution and control across geographically distributed data centers. By combining local and global server load balancing capabilities in one platform, AppBeat DC ensures optimal performance and business continuity for any type of organization.

Application Assurance and Availability

Severe changes in user patterns, traffic spikes and other traffic anomalies can seriously affect server performance. AppBeat DC maintains a normalized operating environment, shielding servers from erratic client behavior as well as malicious attacks (DDoS) and flash crowd events.

Clients

AppBeat DC

Web Servers

Application Servers

Database Servers

AppBeat DC integrates seamlessly into existing data centers, providing multi-gigabit application acceleration and optimization.

AppBeat DC Summary

Feature Summary

Application Acceleration

True TCP termination/offload/acceleration

- Server side: Eliminates the overhead of connection setup and tear down, handles a large number of client connections, and multiplexes requests to a controlled number of persistent server connections
- Client Side: FastTCP for transmission acceleration and packet loss prevention

Compression

- Real time compression
- Supports Gzip, Deflate (decompressed by Web browser)
- Hardware-based, zero latency

SSL

- Hardware based SSL offload for session setup and bulk data transmission
- Client side and server-side SSL functionality

Load Balancing (Layer 4 and 7)

- All decisions made at the request level
- Flexible layer 7 rules: URL, file-type, headers, etc.
- URL rewriting capabilities for requests being sent to servers
- Best server selection based on actual server load
- Application-level client persistence
- L4 load balancing with TCP acceleration
- Global server load balancing

Application Protection

Protection from DDoS attacks

- SYN Flood, Land, Teardrop, Smurf, Ping Of Death, Open/Close, ICMP Unreachable, ICMP Redirect, Looping UDP Ports, Fraggle, UDP Flood, TCP Flood

Application Assurance

- Guarantees application operation under any load

Redundancy/High Availability

- Active/Passive for hot standby
- Active/Active for load sharing
- Configuration synchronization between redundant devices

Management

AppBeat DC can be managed through a comprehensive, easy-to-use interface. Highlights include:

- Remote configuration and management
- Web GUI
- Command Line Interface (CLI)
- Telnet/SSH
- RS232 serial console
- SNMP compliant
- Event reporting through, event logs or syslog
- Dual images, multiple configurations

Performance

1 Million Total Connections
2.4 Million Syns/Second *
500K Connections/Second *
120K Transactions per Second
25K SSL Handshakes per Second *
1 Gbps Bulk Encryption Throughput *
3 Gbps Compression Throughput *
6 Gbps Optimized Throughput *
10 Gbps Total Throughput*

* Model Dependent

System Specifications

System Interfaces

- CN-5504: either 4 x SFP GbE ports (optical) or 4 triple speed, 10/100/1000 ports (copper)
- CN-5510: either 10 x SFP GbE ports (optical) or 10 triple speed, 10/100/1000 ports (copper)
- Management interfaces: RJ-45 serial port, RJ-45 10/100 Ethernet
- Support for link aggregation of multiple physical interfaces for higher bandwidth and fault tolerance

Power

- AC Input
- Voltage:
  - 90-250 VAC @ +6%, -10%
  - Frequency: 50-60 Hz
- Maximum current: 3.0 A
- Dual power supply (optional in CN-55xx)
- Heat dissipation:
  - Operating temperature: 0° to 40° C
  - Storage Temperature: -40° to 85° C
  - Relative Humidity: 5% to 95% noncondencing
  - Operational Altitude: 0 to 10,000 ft. (0 to 3,000m)
  - Acoustic Noise: 70 dB maximum
- Maximum AC: 200W, 682Btu/hr

Certifications

EMC:

- EN 55022
- EN 55024
- CES-003A
- VCCI 2002
- FCC part 15, Sub-part B

Safety

- EN 60950
- IEC 60950
- UL 60950
- CSA CS22.2 No. 950

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