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A Brief Introduction to AppBeat™ DC
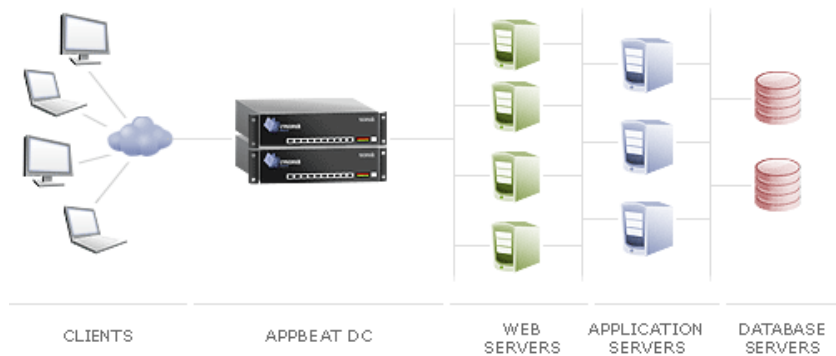
Next Generation Web Application Delivery

Introduction

This document is intended to serve as a short introduction to Crescendo Networks' AppBeat DC Web Application Delivery solution and its core features and benefits. The document will also highlight competitive advantages of the product, along with typical customers best suited for the solution.

Functionality

AppBeat DC leverages the Maestro platform, a purely hardware-based appliance that front-ends web applications in order to optimize and accelerate the application. This class of product is commonly referred to as an Application Front End (AFE) or Application Delivery Controller (ADC). AppBeat DC is deployed in the network as seen in the diagram below:

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

CLIENTS   APPBEAT DC   WEB SERVERS   APPLICATION SERVERS   DATABASE SERVERS

At this location, the product provides a number of key functions:

- **TCP termination and offload:** Relieves the servers from the overhead imposed by the volume of TCP connections in a web application.

- **Content compression:** Compresses content on the fly on its way from the servers to the clients. This reduces bandwidth for the application and improves overall client response time. Compression also relieves the server from having to compress content on its own.

- **Load balancing:** Provides the ability for multiple identical servers to host a single application, while AppBeat DC intelligently distributes user requests across the servers. Load balancing also provides protection against server failure at the connection, protocol, and content levels. AppBeat DC provides load balancing for HTTP and non-HTTP applications both locally and globally.

- **SSL offload:** Provides SSL termination and offload, relieving the servers from having to deal with the significant resources needed for processing secure connections.

Competitive Advantages

AppBeat DC has four significant advantages over other application delivery solutions:

- **Architecture** – AppBeat DC's Maestro platform is built solely with network processors and FPGAs. Other application delivery solutions are PCs-turned-into-appliances that use a central processing module with inherent operating system limitations. The Maestro platform architecture translates to better performance and scale.

- **Performance at Scale** – AppBeat DC's hardware-based architecture is capable of handling more than 3.0Gbps sustained web traffic. Its compression can perform compression at 3Gbps wire speed. Competitive software-based products are incapable of scaling to these levels.

- **Feature Concurrency** – Since all tasks are handled by dedicated, isolated hardware, multiple functions can be enabled without any performance degradation. Competitive devices that use shared processing resources across all functions will suffer in performance as more features are enabled, often causing them to become a network bottleneck.

- **Application Assurance** – AppBeat DC creates a consistent network environment for the servers to operate in, shielding them from erratic client behavior, traffic spikes, and unpredictable network conditions. By normalizing the environment in which the servers operate, AppBeat DC protects the application and provides business continuity, assuring that it survives any erratic and unpredictable user traffic that would otherwise cripple it.

Typical Applications

AppBeat DC's offload, acceleration, and optimization features can be applied to any web application using the HTTP protocol. This includes applications that are fronted by web servers, application servers with HTTP "listeners," or even cache servers. However, AppBeat DC becomes more applicable to a web environment if any or a combination of the following issues is a concern:

- **Bandwidth over-usage** – AppBeat DC's compression capabilities can significantly reduce the amount of outbound bandwidth used by a web application.

- **User response time improvement** – All offload functionality, specifically TCP offload, causes the servers to work more efficiently, which leads to an improved client experience. Furthermore, content compression reduces the

number of bytes sent to a client, which also enhances the perceived application performance for its clients.

- **Server resource utilization** – All offloading functions (SSL, TCP, and Compression) help relieve the server from significant overhead. By offloading all these functions, servers can dedicate their resources (CPU and memory) to the application itself, rather than overhead.

- **Peak load protection** – Servers are offloaded from dealing with application overhead, which means they can scale much more significantly and handle much more load. This way, AppBeat DC allows an application's server infrastructure to handle significantly more traffic, which means they're well protected from traffic spikes and peak loads.

- **High availability and fault tolerance** – AppBeat DC's load balancing functionality allows many servers to host a single application. This not only allows the application to scale by having new servers added as necessary; but also provides fault tolerance and high availability for the servers.

Anticipated Results

TCP Offload	
Server CPU Util. Savings:	Up to 50%
Server Mem. Usage Savings:	Up to 80%
Server Capacity Improvement:	More than 300%
Compression	
Client Response time Improvement:	Up to 66%
Site Bandwidth Savings:	Up to 66%
Server CPU Util. Savings:	Up to 90%
SSL	
Server CPU Util. Savings:	Up to 90%

About Crescendo Networks

Crescendo Networks is the recognized performance leader for accelerating and optimizing the delivery of business-critical, Web-enabled applications. The company's unique multi-tier application delivery architecture dramatically improves the operation of today's demanding application infrastructure. The world's largest corporations and fastest growing Web properties rely on Crescendo for the application performance and efficiency needed to ensure usability, facilitate rapid business growth, lower IT costs and capture additional revenue. To learn more about Crescendo Networks' application delivery solutions, visit www.crescendonetworks.com.