

WHITE PAPER



AppBeat™ DC for PeopleSoft Applications

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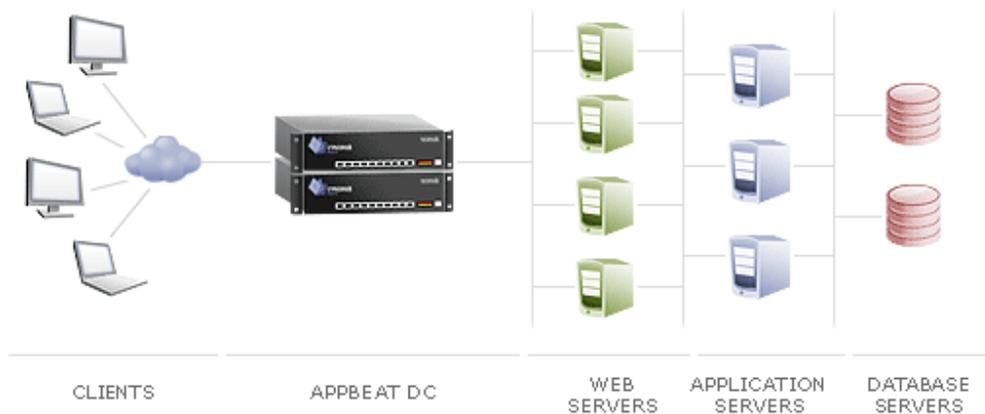
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Background

Crescendo's AppBeat DC application delivery solution offloads task-intensive functions from servers in a web application, optimizing that application and allowing the servers that host it to scale significantly. AppBeat DC front-ends the servers, intercepting and processing all user requests destined for them. By performing this functionality, AppBeat DC can provide various optimization services for the servers in the application, massively improving server performance while reducing user response time and consumed bandwidth.

AppBeat DC in PeopleSoft Environments

Web-enabled PeopleSoft applications meet compelling business demands, but are faced with challenges in end user performance, server scalability, and application assurance and consistency. AppBeat DC addresses these challenges through its multi-gigabit AppBeat DC hardware platform, its innovative feature set, and its unique approach towards server optimization and acceleration. A typical AppBeat DC implementation in a PeopleSoft application is illustrated in the diagram below:



In this configuration, AppBeat DC addresses the three key pain points for the application:

- **End-user Performance** - When the application is front-ended by Appbeat DC, its users notice a significant drop in response times.
- **Server Scalability** - AppBeat DC offloads the overhead associated with network processing from the servers and allows them to scale to their true potential.

- **Application Assurance** - AppBeat DC creates a server environment that provides predictable and consistent application performance regardless of user load or traffic spikes. The remainder of this document will briefly discuss each of these three key areas.

Improving End-user Performance

PeopleSoft clients will notice improved performance from the application when it's front-ended by AppBeat DC. AppBeat DC's hardware-based compression engine provides content compression at gigabit speeds and with zero latency. The client browsers are capable of content decompression which also makes the feature non-intrusive, with no need for additional hardware or software. Although content compression significantly benefits local users connected to the application via a LAN environment, the benefits are amplified for clients with remote users using the application through dial-up or broadband connections. AppBeat DC is also built from the ground-up to handle client TCP connections at scale, much better than what standard operating systems on servers or appliances can do. Furthermore, AppBeat DC's FastTCP optimizes the way the platform deals with WAN connections. FastTCP speeds up TCP's slow-start process while using an advanced congestion avoidance algorithm that not only uses the maximum potential bandwidth per TCP connection, but also minimizes the number of dropped packets in the process. PeopleSoft clients will notice improved response times since the TCP connections between them and the application are fully optimized by AppBeat DC.

Improving Server Scalability

PeopleSoft servers are subjected to many areas of overhead, imposed on them by the extraneous network processing cycles necessary for dealing with the web application. This load takes away precious processing cycles from the application itself and limits the servers in scale. In other words, they can never reach their true potential in application processing power. AppBeat DC allows each server in the PeopleSoft application to scale significantly through a number of mechanisms:

TCP Offload and Connection Consolidation

PeopleSoft servers are exposed to significant overhead in web applications due to TCP connection setup/teardown rate, the volume of simultaneous connections, and having to deal with problematic and inconsistent WAN connections. AppBeat DC addresses all these issues by totally shielding the servers from this burden. CPU cycles are freed to deal with the application itself, rather than the networking overhead.

Request/Response Buffering

When dealing with WAN connections, PeopleSoft servers are typically forced to adjust transmit/receive rates to match the speed of each client connection. AppBeat DC's buffering capabilities allow the servers to transmit/receive at maximum network rates.

Essentially, each server believes the clients are on the same LAN, while AppBeat DC takes care of receiving and sending data over slower WAN connections.

SSL Acceleration and Offload

Processing secure connections is a significant processing burden for PeopleSoft servers, both in the session setup phase (handshake) and the data transmission phase (bulk encryption). AppBeat DC's SSL offload engine not only offloads these tasks from the servers, but also delivers them at high speeds since all security phases are deployed in specialized hardware. After dealing with all secure client connections, AppBeat DC can communicate with the servers in clear text HTTP or via SSL. In case of the latter, the secure communication between AppBeat DC and the servers is done through lighter security schemes and longer lasting connections in order to minimize the impact on the servers while still maintaining end-to-end security.

Load Balancing

The PeopleSoft application can scale as a whole through Crescendo's server load balancing feature-set. The application is protected from server failures while each server in the cluster is fully optimized by AppBeat DC's offload capabilities. Furthermore, since AppBeat DC has full visibility into the request/response chain, it can select servers for each request based on actual server load; something that's not possible with traditional load balancers. These collective capabilities relieve PeopleSoft servers from the networking overhead associated with the application and allow each server, and the application as a whole, to reach its true potential.

Application Assurance

Application assurance and consistency is vital in PeopleSoft environments. Servers often react negatively to severe changes in user patterns, traffic spikes, and other conditions that deviate from what they're normally used to. AppBeat DC addresses this by maintaining a normalized environment for the servers to operate in, shielding them from erratic client behavior. First, AppBeat DC keeps a consistent connection profile for each server through its intelligent connection management algorithms, allowing that server to always operate at a steady state and not be affected by changes in traffic loads. Second, AppBeat DC has total control over the rate at which it sends requests to servers through request buffering, diverting requests away from overloaded servers and not overloading them any further. Servers, therefore, are protected from peak load situations and unusual traffic patterns that would otherwise have an adverse effect on the PeopleSoft application. This results in a perpetually consistent application environment across all tiers with predictable performance, regardless of client traffic patterns and spikes in user load.

Expected Results

AppBeat DC has proven itself in real-world PeopleSoft applications by providing both improved end-user response time and CPU utilization savings for the servers in the application. Realistically speaking, in a web-enabled PeopleSoft environment with the following specs:

- PeopleTool (PeopleSoft Framework) 8.44
- PeopleSoft CRM 8.8 WebLogic App Server An OEM version for PeopleSoft 8.1 (SP-1)
- Server OS for Web, APP, and DB tiers
- Windows 2003

AppBeat DC has shown the following improvements to the application:

Metric Improvement	
Average Response Time per End-user	Improved by 20%
Server CPU Utilization	Decreased by 30%

It's important to note that the statistics above were derived from a PeopleSoft environment with a small number of users who were all accessing the application through LAN connections. Performance improvements are expected to reach much higher levels in environments with more users, especially if they're connected to the application via WAN (dialup and broadband) connections.

Conclusion

AppBeat DC's server optimization, offload, and acceleration capabilities provide a self-evident number of benefits for PeopleSoft applications. When front-ended by AppBeat DC, PeopleSoft users will experience improved response times, while the servers in the application are relieved of processing overhead and allowed to reach their true operational capacity for the application. AppBeat DC also protects the servers from peak load conditions and inconsistent or erratic traffic loads. These benefits translate to an optimized PeopleSoft environment that can grow painlessly with the demands of the application. AppBeat DC's unique hardware-based platform allows all functionality to be performed concurrently with no degradation in device performance. AppBeat DC's distributed processing design allows all its features to be enabled in unison, without any one feature affecting the performance of another. This level of feature concurrency is impossible with an appliance that has a central processor design where all functions use the same shared resources. AppBeat DC's design allows it to be integrated into

PeopleSoft environments seamlessly and for functionality to be enabled as needed, without the appliance ever becoming the network bottleneck because of feature load.

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.

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