



## CitiStreet Achieves Extraordinary Scalability and Consistent Response Time on Benefits Web Portal

Azul Systems Ensures a Consistently Positive Customer Experience



### INDUSTRY

Employee Benefits Administration

### CHALLENGE

Ability to deliver exceptional benefits administration and recordkeeping services to over 12 million participants while continuing to grow rapidly.

### SOLUTIONS

Azul Compute Appliances enabled CitiStreet to create a platform that consistently satisfies service-level agreements and reduces data center complexity and management costs.

The global benefits administration outsourcing market continues to grow across all geographies as companies seek to reduce costs and offer attractive benefit packages to employees. According to experts, over the next few years, growth in this robust market segment is expected to be over 10 percent, with the overall global market reaching more than \$22 billion by 2010.

Founded in April 2000 by combining the longstanding benefit services divisions of State Street Corp. and Citigroup, CitiStreet is a premier global benefit provider, and one of the nation's largest retirement plan record keepers. The company offers a broad range of products and services for defined contribution, defined benefit and health and welfare plans of all sizes in all markets, including: full-service recordkeeping and administration, investment services, award winning, action oriented communications and education programs, counseling and advice.

### HIGH GROWTH AND CONVENTIONAL SERVERS THREATEN SERVICE LEVELS

As one of the largest global benefits-delivery firm in the US, CitiStreet has been rapidly growing since 2004. The company has approximately 12 million registered participants using its benefit administration portal application.

Cost-effectively managing service levels while rapidly growing participants is top of mind for CitiStreet. The key business drivers are to provide the ability to scale, the expertise, and the resources to deliver world-class service through leading edge technology to organizations with benefit plans of any size. Especially challenging is the open enrollment period when their business experiences some of the highest traffic volumes of the year. At these peak times, workloads can spike quickly, pressuring systems to respond by delivering high throughput, concurrency, and consistent response times.

As CitiStreet discovered, meeting these stringent peak demands can stress traditional server deployments beyond their capability, in part because of the inherent garbage collection process of large-scale Java-based applications.

A few years ago, CitiStreet standardized on a scale-out architecture based x86 Linux systems and JBoss application servers for deploying their web applications. In order to meet increasing throughput demands, the architecture eventually grew to 48 dual-core, dual-CPU servers. Consequently, this was beginning to substantially increase

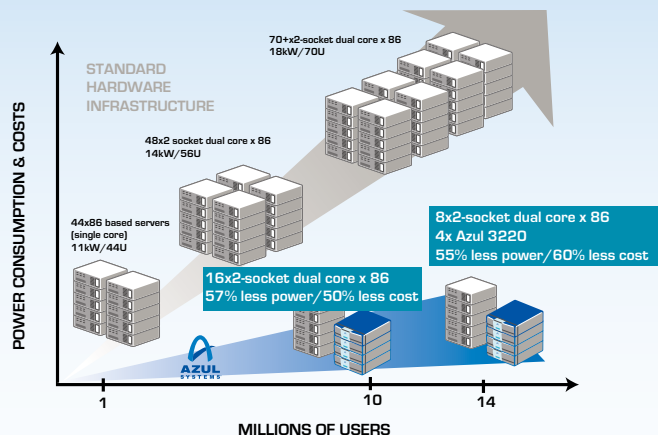
## REAL WORLD RESULTS: COST SAVINGS

“Azul appliances are addressing our strategic need for data center consolidation as well with reducing application host servers from 48 to 8, an incredible 6X reduction factor.”

—BARRY STRASNICK,  
CIO, CITISTREET

### BUSINESS BENEFITS

- Eliminated JVM garbage collection pauses and significantly improved application stability
- Reduced peak response time by 3.5X which improved the user experience even under extreme web traffic conditions
- Gained ability to respond to peak demands during open enrollment periods by leveraging Azul's inherent real-time utility computing capability
- Reduced the number of conventional servers by 6X, saving significant data center space, power, and management costs
- Azul's Real-time Performance Monitor assists with quickly diagnosing and resolving issues that might arise in production



Citistreet's Improved Portal Infrastructure with Azul

data center costs and complexity. In addition, heap sizes started to increase, creating unpredictable garbage collection pauses that caused inconsistent application response times, especially during those peak open enrollment periods.

After learning of its proven successes in helping enterprises scale Java application deployments while reducing data center complexity, CitiStreet turned to Azul Systems and eventually made the decision to standardize on the Azul platform to build out their core benefit administration architecture.

### AZUL SOLUTION HELPS CITISTREET MEET DEMAND FOR CONSISTENT RESPONSE TIMES

The two key concerns that Azul addressed for CitiStreet were unacceptable response times due to garbage collection pauses and data center's ability to host increasing number of servers as part of a scaled-out architecture.

CitiStreet deployed six Azul Compute Appliances, four in its main data center in Quincy, MA and two in its disaster recovery facility in Jacksonville, Florida.

Today, the new Vega 2-based Azul Compute Appliances delivers the necessary capacity as a shared network service, allowing CitiStreet to meet the scalability, reliability and memory needs of its Java applications that are critical

to delivering a high-quality user experience and online service to its business customers.

“Azul appliances are addressing our strategic need for data center consolidation as well as reducing application host servers from 48 to 8, an incredible 6X reduction factor, says Barry Strasnick, CIO, at CitiStreet. “To date, we have been impressed with not only the progress of the deployment, but also

Azul's deep expertise in Java application integration and their outstanding and responsive support.”

### CITISTREET CREATES PLATFORM FOR CONSISTENT CUSTOMER SERVICE AND LOWER OPERATIONAL COSTS

The introduction of Azul appliances has provided a number of key advantages for CitiStreet. First and foremost, it has eliminated the need for CitiStreet to deploy up to ten times the number of conventional server hardware. In addition, Azul's unique hardware-assisted garbage collection completely eliminates application delays due to garbage-collection pauses. As a result, CitiStreet has created a scalable platform that consistently satisfies service-level agreements, despite a rapidly growing participant base and fluctuating traffic patterns.

One case in point: recently during one high traffic and business-critical period, there were over 4.5 million visitors, 634 million web hits, and 35 million page views—with no application performance issues.

“We have been on production with Azul since August 2007. Since then we have had greater application stability and performance. That is a true testament to an innovative technology”, concluded Barry Strasnick.



1600 Plymouth Street Mountain View, CA 94043 USA | T + 1.650.230.6500 | F + 1.650.230.6600 | www.azulsystems.com

Copyright © 2008 Azul Systems, Inc. All rights reserved. Azul Systems, Azul and the Azul arch logo are registered trademarks of Azul Systems, Inc. in the United States and other countries. Java and all Java based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. Other marks are the property of their respective owners and are used here only for identification purposes.

