Convey Computer™ Memcached Appliance

Convey's memcached appliance provides an order of magnitude more throughput than memcached servers based on commodity systems, while maintaining sub-millisecond response time.

Dramatically increasing throughput and reducing latency in a single platform ensures scalability as performance needs grow.

Modern websites and web applications access large amounts of data, and a single page can generate tens or hundreds of queries to your web servers. Multiply this amount by a large number of visitors, and you will often get overloaded systems, with a corresponding reduction in the quality of service to your end users.

One popular way to reduce the load on backend databases and improve response time is to cache data in memory using a key-based storage system such as memcached. Organizations leverage memcached to increase the performance of dynamic, database-driven websites that handle high volumes of read requests—data, result sets, and objects like pre-compiled HTML. The challenge is throughput and scalability—growing your infrastructure to handle increased traffic without sacrificing response times.

BREAK THE SCALABILITY BARRIER

Memcached is implemented as a network service, and is easily scaled by adding more servers with additional memcached instances. Applications typically distribute requests across the servers based on a hash of the keys, so that each server holds a different slice of the total amount cached. This spreads the data storage and the request load evenly across the servers. Since web services routinely generate hundreds of cache lookups, each page display generates a burst of multiple requests to multiple servers. Rather than send requests one at a time, clients typically batch the requests to each server and send them as one transaction ("multiget"). Multiget reduces the number of network transactions and the number of commands that must be parsed, increasing throughput while maintaining latency.

But scaling a multiget-based architecture by adding servers faces a challenge: as the number of memcached instances increases, the number of keys per request goes down (because they are being spread over more servers), causing the number of network requests to go up. Ultimately there are so few data requests per network packet that network processing begins to dominate, and adding servers may actually decrease throughput.

A better approach is to increase the performance of the servers themselves, allowing each server to service more requests and retaining the network efficiency advantages through the use of multigets.

Convey's memcached appliance does just that. A single appliance provides an order of magnitude more throughput, while maintaining sub-millisecond response time. Dramatically increasing throughput and reducing latency in a single platform ensures scalability as performance needs grow.

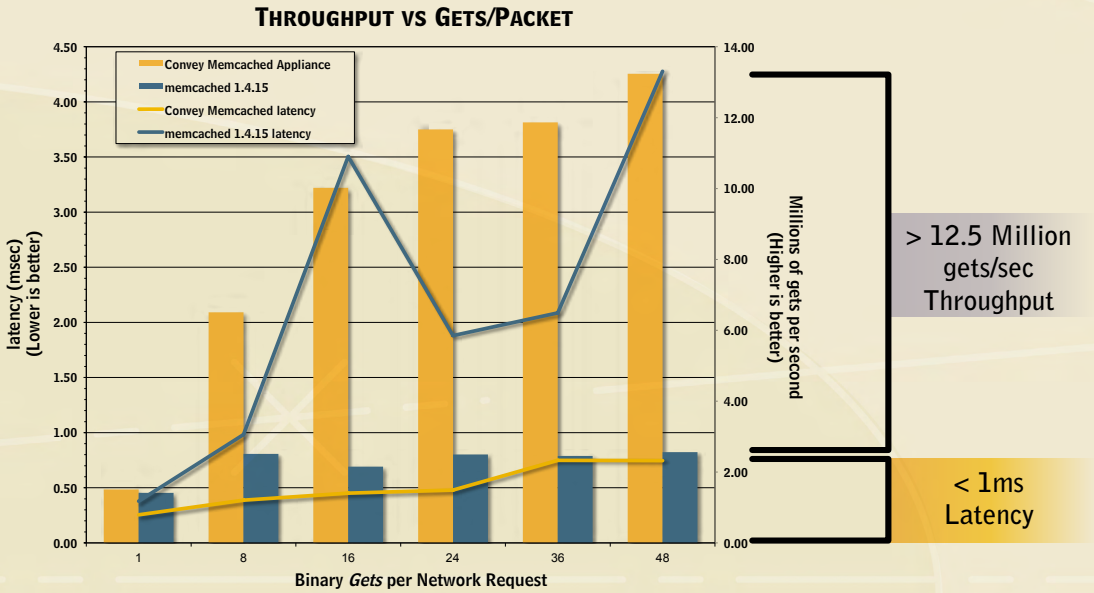
TRANSPARENT INTEGRATION

The Convey accelerated memcached appliance is completely transparent to the rest of the cluster; one appliance can be a direct plug-in replacement for multiple conventional memcached implementations commodity servers. The appliance runs standard Linux, supports standard fabric interfaces, and is easy to deploy and incorporate into your data center.

The World's First Hybrid-Core Computer.

Convey Computer™ Memcached Appliance

PERFORMANCE COMPARISON—CONVEY MEMCACHED VS STANDARD MEMCACHED



SPECIFICATIONS

Model	Memory	Network Interface	Mechanical
110-000021-128	128 GB	Dual 10Gb SFP+ Direct Attach Ethernet	3U, 1570W redundant power supplies
110-000021-256	256 GB		
110-000021-384	384 GB		

REDUCE COST OF OWNERSHIP

The Convey memcached appliance not only achieves order of magnitude performance increases, it also dramatically saves money in infrastructure, power, cooling, and maintenance costs. When used as nodes in a cluster, the appliance delivers substantially better performance per watt than conventional servers.

Replacing multiple racks of commodity servers with a single rack of Convey systems reduces OS instances, cabling, floor space, and other infrastructure costs. Total three-year cost of ownership can be reduced by sixty to eighty percent.

CONVEY'S MEMCACHED APPLIANCE

Convey's memcached appliance is based on Convey's proven hybrid-core technology. Hybrid-core computing is based on a heterogeneous architecture that combines the economies and programmability of industry standard processors with the performance and efficiency of a hardware-based, application-specific design. Performance-critical portions of the memcached server are accelerated directly in hardware—providing seven to ten times the throughput of a contemporary multi-core server while maintaining sub-millisecond response time.

CONVEY COMPUTER CORPORATION • 1302 E. COLLINS BOULEVARD, RICHARDSON, TEXAS 75081
PHONE: 214.666.6024 • TOLL FREE: 866.338.1768 • WWW.CONVEYCOMPUTER.COM