

Stingray Performance Quick Reference

Server Hardware			
Hardware model	Sun Fire x4170 ¹	HP ProLiant DL380 G7 ²	Dell R720 ³
Processor	2 x Quad Core Intel Xeon X5570	2 x Six Core Intel Xeon X5680	2 x Eight Core Intel Xeon E5-2690
Memory	12 GB	48 GB	96 GB
Networking	12 x 1GbE	4 x 10GbE	8 x 10GbE
Layer 4 performance			
Connections per second	105,000	96,200	114,000
Layer 7 performance			
HTTP connections per second	155,000	159,000	230,000
HTTP requests per second (0kB)	419,000	510,000	740,000
HTTP requests per second (2kB)	282,000	442,000	573,000
HTTP requests per second (8kB)	141,000 ¹	313,000	374,000
HTTP max. throughput	12 Gbps ¹	35.9 Gbps	52 Gbps
SSL performance			
SSL max. throughput	8.4 Gbps	14.1 Gbps	28 Gbps ⁴
SSL transactions per second (1024-bit)	23,100	39,000	52,000
SSL transactions per second (2048-bit)	n/a ⁵	8,300	13,000
HTTP content caching performance			
Cache requests per second	836,000	966,000	1,400,000
Cache max. throughput	12 Gbps ¹	74 Gbps ²	78 Gbps
Compression performance			
Throughput: 8kB files	3.70 Gbps	7.42 Gbps	11 Gbps
Throughput: 64kB files	4.44 Gbps	7.93 Gbps	12 Gbps
Throughput: 512kB files	4.46 Gbps	8.2 Gbps	14 Gbps

¹ Quad-core Xeon X5570: these tests were network bound to 12Gbits. System under test exhibited up to 70% idle time.

² Six-core Xeon X5680: used 4 x SolarFlare 10GbE NICs; additional 4 x 10GbE cards were used for cache throughput tests only

³ Sun x4170 and HP DL380 tests used Stingray Traffic Manager 9.0; Dell R720 test uses Stingray Traffic Manager 9.5

⁴ Since version 9.4, Stingray Traffic Manager supports Intel's AES-NI instructions, for enhanced AES performance

⁵ 2048-bit SSL performance was not tested on Sun Fire x4170, but can be estimated from the table

Performance Considerations

All benchmarks are carefully constructed to extract the maximum performance from the system under test. Real world network conditions, uneven traffic profiles and complex traffic management policies mean that benchmark figures (particularly throughput) may not be achieved when managing live traffic.

The Riverbed Stingray Community makes a number of recommendations on performance tuning Stingray Traffic Manager software and the following White Papers may be useful:

- Feature Brief: Application Acceleration with Stingray Traffic Manager
<https://splash.riverbed.com/docs/DOC-1573>
- Introducing Zeusbench
<https://splash.riverbed.com/docs/DOC-1480>
- Load Testing recommendations for Stingray Traffic Manager
<https://splash.riverbed.com/docs/DOC-1501>

Using the data

These results illustrate the performance potential of Stingray Traffic Manager software. They do not constitute a specific hardware recommendation, and similarly specified hardware from other leading vendors should deliver similar performance.

About the tests

Layer 4 performance	Connections per second measures the sustained rate at which new connections can be established from the client to the server, a read-write transaction (HTTP request and zero-byte response body) conducted and the connection closed.
Layer 7 performance	HTTP connections per second measures the sustained rate at which new connections can be established from the client to the server, an HTTP transaction conducted and the connection closed. This test uses keepalive connections to the server nodes. HTTP requests per second measures the sustained rate of HTTP transactions (0kB, 2kB and 8kB response body) using client-side and server-side keepalive connections. HTTP max. throughput uses large HTTP responses to measure the maximum sustained response throughput.
SSL performance	SSL transactions per second measures HTTPS requests per second; the tests use 1024-bit and 2048-bit RSA keys, RC4 bulk encryption, small HTTP responses and no session reuse. SSL max. throughput uses large HTTP responses to measure the maximum sustained response throughput.
HTTP content caching performance	Cache requests per second measures the sustained rate of HTTP transactions (0Kb response body) served directly from the Stingray Traffic Manager content cache. Cache max. throughput serves large HTTP responses from the cache to measure the maximum sustained response throughput.

About Riverbed

Riverbed delivers performance for the globally connected enterprise. With Riverbed, enterprises can successfully and intelligently implement strategic initiatives such as virtualization, consolidation, cloud computing, and disaster recovery without fear of compromising performance. By giving enterprises the platform they need to understand, optimize and consolidate their IT, Riverbed helps enterprises to build a fast, fluid and dynamic IT architecture that aligns with the business needs of the organization. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com.



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