

# Brocade Virtual Traffic Manager Performance Quick Reference

## Performance Quick Reference

### Server Hardware

Hardware model	HP ProLiant DL380 G7 <sup>3</sup>	Dell R720 <sup>2</sup>	Dell R730 <sup>1</sup>
Processor	2 × Six Core Intel Xeon X5680 <sup>4</sup>	2 × Eight Core Intel Xeon E5-2690	2 × Eight Core Intel Xeon E5-2640
Memory	48 GB	96 GB	128 GB memory
Networking	4 × 10 GbE	8 × 10 GbE	8 × 10 Gb SFP+ Fibre

### Layer 4 Performance

Connections per second	96,200	114,000	240,000
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### Layer 7 Performance

HTTP connections per second	159,000	230,000	310,000
HTTP requests per second (0 kB)	510,000	740,000	863,000
HTTP requests per second (2 kB)	442,000	573,000	600,000
HTTP requests per second (8 kB)	313,000	374,000	405,000
HTTP max. throughput	35.9 Gbps	52 Gbps	61.7 Gbps

### SSL Performance

SSL max. throughput	14.1 Gbps	28 Gbps <sup>6</sup>	50.4 Gbps <sup>7</sup>
SSL transactions per second (1024-bit)	39,000	52,000	55,800
SSL transactions per second (2048-bit)	8,300	13,000	19,100

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## HTTP Content Caching Performance

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Cache requests per second	966,000	1,400,000	1,710,000
Cache max. throughput	74 Gbps	78 Gbps	78 Gbps

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## Compression Performance

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Throughput: 8 kB files	7.42 Gbps	11 Gbps	N/A <sup>5</sup>
Throughput: 64 kB files	7.93 Gbps	12 Gbps	N/A <sup>5</sup>
Throughput: 512 kB files	8.2 Gbps	14 Gbps	N/A <sup>5</sup>

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<sup>1</sup>Dell R730 test used Brocade Virtual Traffic Manager 10.3

<sup>2</sup>Dell R720 test used Brocade Virtual Traffic Manager 9.5

<sup>3</sup>HP DL380 test used Brocade Virtual Traffic Manager 9.0

<sup>4</sup>HP DL380 test used 4x SolarFlare 10 GbE NICs; additional 4x 10 GbE cards were used for cache throughput tests only

<sup>5</sup>Not measured in this test

<sup>6</sup>Dell R720 test used Intel AES-NI for enhanced performance

<sup>7</sup>Dell R730 test used Intel AES-256-GCM for enhanced performance and security

## About The Tests

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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 (0 kB, 2 kB and 8 kB 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 (0 Kb response body) served directly from the Brocade Virtual Traffic Manager content cache. Cache max. throughput serves large HTTP responses from the cache to measure the maximum sustained response throughput.

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## 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 Brocade Community makes a number of recommendations on performance tuning Brocade Virtual Traffic Manager software and the following white papers may be useful:

- Application Acceleration with the Brocade Virtual Traffic Manager feature brief  
<http://community.brocade.com/t5/vADC-Docs/Feature-Brief-Application-Acceleration-with-Brocade-Virtual/ta-p/73680>
- Introducing Zeusbench  
<http://community.brocade.com/t5/vADC-Docs/Introducing-Zeusbench/ta-p/73899>
- Load testing recommendations for the Brocade Virtual Traffic Manager  
<http://community.brocade.com/t5/vADC-Docs/Load-Testing-Recommendations-for-Brocade-Virtual-Traffic-Manager/ta-p/73992>

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## USING THE DATA

These results illustrate the performance potential of Brocade Virtual Traffic Manager software. They do not constitute a specific hardware recommendation, and similarly specified hardware from other leading vendors should deliver similar performance. Mention of non-Brocade products or services is for information purposes only and constitutes neither an endorsement nor a recommendation.

**Corporate Headquarters**

San Jose, CA USA  
T: +1-408-333-8000  
info@brocade.com

**European Headquarters**

Geneva, Switzerland  
T: +41-22-799-56-40  
emea-info@brocade.com

**Asia Pacific Headquarters**

Singapore  
T: +65-6538-4700  
apac-info@brocade.com



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