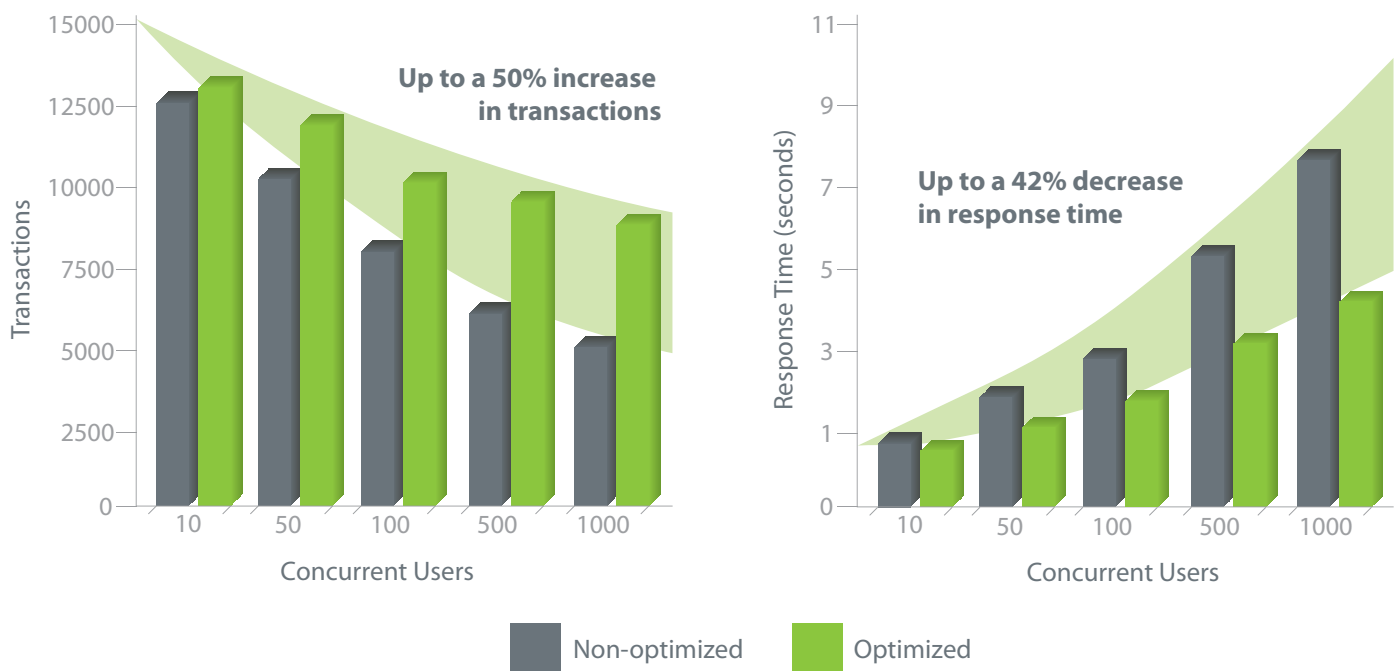


Optimize

A recent test confirmed that Optimize can enhance the reliability, scalability, and performance of a VMware ESX Server. The testing environment consisted of a VMware ESX Server (Quad CPUs, 8 GB of RAM) with 22 guest virtual operating systems. The load tool initially targeted two of the guest operating systems — one running Windows IIS and the other running a Microsoft SQL database server. The tool was configured to increase the number of concurrent users from 10 to 1000 in order to obtain the metrics below. The initial test was performed with optimization DISABLED and share allocation set to the default level of 1000 shares. Later testing was performed utilizing the same host and configuration with optimization ENABLED by Optimize. The results clearly show that organizations can expect significant gains with Optimize.



Key Features:

- Dynamic resource provisioning
- Physical and virtual resource prioritizing
- Manual or automatic tuning
- Remove complexity of server share management
- Monitor the health and availability of VMware
- Remote administration of VMware host servers
- Comprehensive heterogeneous management
- Intelligent allocation of resources
- Discovery and mapping of VMware
- Real-time resource optimization

Dramatic Benefits:

- Improve response time up to 42%
- Increase transaction throughput up to 50%
- Manage up to 25000 virtual servers and up to 2000 host servers
- Administer 20 to 200 operations per second
- Expand VM processing capability by more than 55%
- Extend hardware investment and lower total cost of ownership
- Enhance reliability, scalability, productivity and efficiency
- Accelerate end-user response time during peak loads
- Improve application availability and quality of service
- Easily adapt to changing business needs

About Virtugo:

Virtugo provides a modular set of dynamic software tools that enable enterprises to maximize their existing virtual infrastructure. Virtugo products install onto a single, razor-thin, intelligent layer, to make the virtual infrastructure more dynamic, more adaptive, and more efficient.

Application Load Test

Load tool

WebLOAD version 5

ESX Host Configuration

Number of CPUs: 4

Hyper-threading: Disabled

Amount of physical memory: 8 GB

ESX version: 2.5

Number of VMs: 22

Guest operating systems: 15 Windows 2000 and 7 Windows 2003

Computers used in the test

SQL Server (Windows 2003 Server) 10.201.0.46

IIS (Windows 2000 Server) 10.201.0.33

Application Load Test Results

Overall, the load test revealed a 33% increase in transactions and a 35% decrease in response time for systems with 10 to 1000 users. For systems with 100 to 1000 users (highlighted below), the load test revealed a 50% increase in transactions and a 42% decrease in response time.

| 10 USERS | Without Optimization | With Optimization | Percentage |
|-------------------------------|-----------------------------|--------------------------|-------------------|
| Round Time (average) | 0.829 | 0.712 | 14.11% |
| Failed Rounds (sum) | 171 | 117 | 31.58% |
| Successful Transactions (sum) | 12512 | 12965 | 3.62% |
| Throughput (bytes per second) | 25269.833 | 26379.805 | 4.39% |
| 50 USERS | Without Optimization | With Optimization | Percentage |
| Round Time (average) | 1.952 | 1.188 | 39.14% |
| Failed Rounds (sum) | 227 | 126 | 44.49% |
| Successful Transactions (sum) | 10987 | 12254 | 11.53% |
| Throughput (bytes per second) | 20652.818 | 25505.092 | 23.49% |
| 100 USERS | Without Optimization | With Optimization | Percentage |
| Round Time (average) | 2.288 | 1.317 | 42.44% |
| Failed Rounds (sum) | 574 | 425 | 25.96% |
| Successful Transactions (sum) | 8063 | 10094 | 25.19% |
| Throughput (bytes per second) | 19042.7 | 23673.932 | 24.32% |
| 500 USERS | Without Optimization | With Optimization | Percentage |
| Round Time (average) | 5.499 | 3.217 | 41.50% |
| Failed Rounds (sum) | 845 | 505 | 40.24% |
| Successful Transactions (sum) | 6187 | 9724 | 57.17% |
| Throughput (bytes per second) | 14440.808 | 20577.455 | 42.50% |
| 1000 USERS | Without Optimization | With Optimization | Percentage |
| Round Time (average) | 7.776 | 4.317 | 44.48% |
| Failed Rounds (sum) | 1527 | 864 | 43.42% |
| Successful Transactions (sum) | 5097 | 8578 | 68.30% |
| Throughput (bytes per second) | 9930.615 | 14673.932 | 47.76% |