



# FlexOne Performance Testing for a Large Enterprise Application



TalentPace delivered a response time of under 5sec for each user on an multi-tenant distribution management system by executing robust load testing with 1250 concurrent users performing various tasks simultaneously.

## Customer Profile

Established in 2002, the customer targets the full service dealer management with some of the biggest brands as its customers. It strives to bring sustainable profits to through real time business intelligence and revenue integrity solutions.

## Business Scenario

- Customer is having a Dealership Management System, which caters to Automobile dealers to begin with. Dealership Management System is a centrally hosted web application with a centralized database. It is multi-tenant in architecture and will be deployed using a SaaS model.
- The largest installation of Dealership Management System, the application experiences heavy loads during Mornings, when repair orders are created and in the evening, when the repair orders are invoiced and closed.
- The objective of the load test is to load the application with 1250 concurrent users performing various tasks, which would closely replicate a normal working day across multiple dealerships.
- This should be performed on a database, with more than 1 year of data. Page loads and other actions (such as submit) should take a max of 8 Seconds, even at peak load, which is defined as 5000 registered users with 25% concurrency Test the application with WCF, as this would be a worst case scenario. WCF was introduced to separate out Web and App into separate servers. Also, compare the performance with and without WCF.

## Solution Delivered

- TalentPace Team drew on best practices in software testing to deliver a solution that delivered sustained business value while ensuring critical functions remained unaffected.
- The purpose of subjecting an application to a load test is to identify and fix the bottlenecks that prevent the application from scaling to the required numbers.
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- Approach taken to test the application is
  - Run individual transactions for 100 to 500 users for varied test durations
  - Identify bottlenecks on Web and Database that prevent the application from scaling and fix the same
  - Re test the individual transaction and tune further, if required
  - Prepare data for mixed transactions
  - Run mixed loads
  - Identify bottlenecks, if any and fine tune
- Typical issues that are focused during testing are
  - Architecture related issues
  - Design related issues
  - Memory leaks
  - Connection leaks
  - Web / App code related issues
  - Database code related (Bad queries, long running queries)
  - Other Database related (Missing Indices, Deadlocks)
- High CPU Utilization (Sometimes low hang)

## Business Benefits

- Response to user requests < 5 seconds
- Enhanced performance with no additional hardware procurement
- Ability to handle additional 100 concurrent users
- Better and faster IT service
- 140 stored procedures were optimized
- 86 Indices were added
- Connection closing was missed in 1 place, this was fixed
- Concurrency Issue in Formula Calculation (C#.Net) was fixed
- Code was changed to bypass Service layer and WCF for testing

## Technologies

- ASP.Net MVC4 with Razor Engine, jQuery, AJAX and JSON
- C#.NET with WCF
- ADO.NET
- SQL Server 2012
- SSRS
- VSTS WebTest



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*Capabilities and working in multi locations team is something TalentPace had been specialized in. We are very happy with their contribution and the way they demonstrated independent testing capabilities are respectable. They brought in great efficiency in the entire product development and the success of our product engineering services largely belongs to TalentPace team.*

**Guru Prasad**

General Manager  
Hexagon Technologies

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## About TalentPace

TalentPace is a leading new generation information technology and global consulting services company delivering IT enabled solutions to the customers from across the geographies. Deep industry experience combined with customer centric approach makes TalentPace a remarkable partner in successful business outcomes. Our strong commitment and demonstrable capabilities TalentPace always delivered measurable and sustainable services to our customers. For more information, please visit [www.talentpace.com](http://www.talentpace.com) or write to us at [info@talentpace.com](mailto:info@talentpace.com)

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