



# Performance and Scalability

**Benchmark: Talisma CRM V9.0**  
*A Talisma Corporation white paper*

Talisma Corporation  
May 2014

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## Executive Overview

Talisma CRM has demonstrated scalability to manage 6000 concurrent users performing diverse banking operations. The test conducted in January 2014 demonstrated Talisma CRM's ability to scale up and meet the needs of financial institutions that are on a growth trajectory and expanding their customer and transaction base.

Talisma CRM is designed to help enterprises deliver a unique customer experience through unified view of customers, scalability, in-depth understanding of existing and emerging customer needs. Deployed across a range of verticals from retail to financial services, Talisma CRM has consistently enabled businesses deliver measurable value to their customers.

### Key benefits:

- Low investment – one-time low investment at entry level
- Scalable as you grow
- Increased efficiency with a centralized process

### Product overview

Talisma CRM Version 9.0 can be deployed as part of your existing infrastructure as part of your growing customer/transaction base.

The modules include: Service, Sales, Marketing, Chat, Analytics, Phone, Customer Portal, Export, SMS, Webclient, Import, KnowledgeBase integration and Social CRM.

### Result summary – 6000 concurrent user analysis for retail banking operations

Concurrent User	Average Response Time	Business Transactions	Transactions Per Hour	Average SQL Server Utilization	Average Web Server Utilization
6000	< 5 Seconds	25,500	1,20,000	20%	60%

\* This benchmark shows scalability and performance for a particular implementation of Talisma CRM 9.0. Results will vary for each implementation.

### Testing overview

Talisma CRM addresses the stringent requirements of the enterprise in the areas of performance and scalability, application flexibility and efficient Manageability

**Performance and scalability:** Talisma CRM takes unique advantage of the Microsoft Windows® and SQL Server platforms to provide enterprise levels of performance and scalability while keeping costs



under control. Application tuning can be carried out using commonly-available skills and tools sets, and the application is designed for easy horizontal scaling through standard network load balancing methods.

**Application flexibility:** Talisma CRM is engineered for change with point-and-click customization and a metadata-driven portable application model. The application is built on a highly flexible architecture based on industry standards such as Microsoft .NET, XML, and Web services.

**Efficient Manageability:** Talisma CRM helps improve application manageability through integration with enterprise systems. Multiple deployment models are available, including on-premise, hosted.

The test was executed independently by our customer bank in line with their performance and benchmark guidelines. The performance and certification carries an independent view as derived by the customer bank.

## Methodology

The test simulated real-world requirements of a large tier-one bank, consisting of 6,000 concurrent, active users. Test conditions simulated service customers running Talisma CRM.

We used commercially available load generator tools.

The think time range between various user operations was 5-45 seconds. Talisma CRM 9.0 executed workflow steps such as:

- Interaction management (creation, adding comments and messages and resolution)
- Opportunity handling (creation, managing status and change of status)
- Meeting management

## Test Environment

### Database

Contacts - 92 Lakhs  
Interactions - 50 lakhs

### DB Servers

Processor Type - Xeon E5 - 4620  
No. of physical processors - 4  
RAM - 256 GB  
Hard Disk - 600 GB

### App Servers, Web Servers

Processor Type - Xeon E5 - 2660  
No. of physical processors - 2  
RAM - 160 GB  
Hard Disk - 600 GB

## Testing methodology

The benchmark testing was conducted by IndusInd Bank in partnership with Talisma Corporation to demonstrate the performance and scalability characteristics of Talisma CRM 9.0 in conjunction with Microsoft Windows Server 2012 and Microsoft SQL Server 2012.

The test was executed independently by IndusInd bank in line with their performance and benchmark guidelines. The performance and certification carries an independent view as derived by Indusind bank. Test simulated real-world requirements, consisting of 6,000 concurrent, active users. Test conditions

simulated service customers running Talisma CRM. Commercially available load generator tools were used. The think time range between various user operations was 5-45 seconds.

## Business Transactions

Test scenarios were designed to approximate typical usage of Talisma by IndusInd Bank based on extensive research and analysis done. Simulated users performed common tasks including Create, Search and update CRM entities such as accounts, contacts, interactions, meetings and leads. Each business transaction in the testing represented a user performing an end-to-end business process involving multiple iterations between the user and the system.

For example, the following activities comprise the Create Interaction business transaction:

- Home Page
- Post Login Page
- Click on Workspace
- Select Account from search output and set it
- Select Interaction classification
- Click on Save Interaction
- Log out

## Hardware environment

This section describes the hardware used in the test configuration, as well as the software installed on each system.

Test Component	Number	Hardware	Processor	Operating System	RAM	Software
Database Server	1	HP DL560 Gen8	8 Socket Dual Core Intel 2.9GHz	Windows 2012 Standard Edition	256 GB	Microsoft SQL Server 2012 SP1 CU7
Web Server	4	VM Ware ESX Host (NOS4)	8 Socket Dual Core Intel 2.9GHz	Windows 2012 Standard Edition	160 GB	Talisma Web Client and Application Server Components
Load generation Servers	4	Dell Optiplex 390	Xeon Dual Core CPU	Window 7	8 GB	Load Injector Tool

## Transaction workload

Multiple business scenarios were tested to simulate a variety of enterprise roles and activities. The workload was created to simulate a high transaction CRM deployment exercising a broad range of CRM functionality. All 6,000 users were logged on rapidly in order to assess the impact of a large number of CRM users logging on to the system in a brief time period. The workload executed resulted in over 25,500 complex business transactions.

## Database server

The benchmark testing was performed against a database with size and complexity similar to a real-world implementation of Talisma CRM. The test database contained over 60 million business records with a total size of 900GB. Microsoft SQL Server 2012 running in Always On with 2 secondary's on a Intel Chipset Processor Type - Xeon E5 - 4620, No. of physical processors - 4, RAM - 256 GB server demonstrated the ability to handle a significant load and scaled consistently as the load increased.

## Results:

The results of the benchmark study validate that Talisma CRM 9.0 can scale to support 6,000 concurrent users in a single instance averaging < 5 second response times. These results were achieved on replica of an actual production database which included customization over and above basic out of box product Using the same machine configurations, test cases and data volumes, the benchmark tests were executed against user groups of three sizes to demonstrate how the application performance was affected as it scaled. The following table summarizes the performance of Talisma CRM for user groups of three sizes:

Metric	2,000 Users	4,000 Users	6,000 Users
Average Response Time	< 3 Sec	< 4 Sec	< 5 Sec
Business Transactions	11,178	19,364	25,500
Average SQL Server Utilization	10%	14%	20%
Average Web Server Utilization	25%	40%	60%

With 6,000 users, the application executed a projected transaction rate of 1, 20,000 business transactions per day. The test results were achieved with minimal tuning and optimization. Advanced tuning and optimization may deliver better user scalability.



## Conclusion

Talisma CRM demonstrated its ability to scale to support the needs of the largest global businesses. The benchmark testing showed that Talisma CRM, together with Microsoft Windows Server 2012 and Microsoft SQL Server 2012, scaled to support 6,000 users with customization and with minimal optimization.

Easy integration with key business applications and components helps companies realize cost benefits by allowing them to take advantage of existing investments in technology, infrastructure, and resources to maintain and optimize the application. The flexible application architecture offers companies choices, including the deployment model that meets their needs.

Note: The results published in this document are based on an analysis conducted on real-time performance at IndusInd Bank.

This document is provided for information purpose only and performance can vary depending on customer transaction process and technology environment.

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Talisma Corporation is the leading provider of enterprise customer experience management solutions to global institutions. Our offerings drive loyalty, strengthen customer outreach initiatives and enable relationship management covering interactions on traditional channels, such as sale, service requests and call center communications and new ones such as social media while maximizing customer lifetime value. Our CEM approach incorporates Talisma's consultancy services, implementation strategies, vertical-specific best practices and software designed to seamlessly transition your institution to a comprehensive CEM regime.

Talisma's customer base spans BFSI, Higher education, Aviation, Government and Retail verticals in over 26 countries. Talisma is a fully owned subsidiary of Campus Management Corp., a leader in enterprise software and services.



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