



RHINO

Test Report

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Table of Contents

[1. Execute summary 5](#_Toc478147269)

[1.1 Overview: Project Background and Scope 5](#_Toc478147270)

[1.2 Scope 5](#_Toc478147271)

[1.3 Testing Environment 6](#_Toc478147272)

[2. Execution and Analysis 7](#_Toc478147273)

[2.1 Performance Test Results and Analysis 7](#_Toc478147274)

[2.2 Test Run 3 – Baseline Two Hour Load Test 8](#_Toc478147275)

[2.3 Memory and CPU Utilisation for severs 11](#_Toc478147276)

[2.4 Analysis Summary 12](#_Toc478147277)

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# Execute summary

## Overview: Project Background and Scope

Rhino is the software to help owners of small businesses easily manage their work with:

* Clients’ contacts
* Sales proposals
* Projects
* Tasks
* Invoices
* Payment
* Administrative configurations like user management, project types, expense types, system settings, system appearance, etc.

Supported sectors in this application include:

* Construction
* Professional, Scientific & Technical Services:
* Administration & Support Services

## Scope

| Groups | Functions | Percentage (%) |
| --- | --- | --- |
| Normal users | Home | 100 |
| Login |
| Add Contact |
| Save Contact |
| Add Note for contact |
| Save Note for contact |
| Edit Note for contact |
| Delete Note for contact |
| Add Reminder for contact |
| Save Reminder for contact |
| Edit Reminder for contact |
| Delete Reminder for contact |
| Edit Contact |
| Delete Contact |

## Testing Environment

### Hardware / Operating system

According to the current plan, we have the following machines.

| Hardware | Operating System | Description |
| --- | --- | --- |
| 1 Test PC | Standard Harvey Nash system | It is using for implementing test script |
| 1 Web servers | RHE-IRE-APP-LT1 Windows Server 2012 R2 Standard 64-bit  Hardware: CPU Xeon E5-2676 v3 2.4GHz , 2 virtual processors  Memory: 8.00 GB RAM | It is using for hosting the web server.  Testing team must have permission to monitor the hardware usage of the test servers while testing |
| 1 DB Server | RHN-IRE-SQL-LT1 Windows Server 2012 R2 Standard 64-bit  Hardware: CPU Xeon E5-2676 v3 2.4GHz  Memory: 8.00 GB RAM | It is using for hosting the database.  Testing team must have permission to monitor the hardware usage of the test servers while testing |

\*The Servers setup and the load generation will be at RHINO environment. Test server environment separated from production server.

# Execution and Analysis

## Performance Test Results and Analysis

We are using scripts to simulate user behaviour for up to 100 virtual users, to measure response times of the system.

Each request should achieve an acceptable response time while processing.

**Performance Requirement**

Operation

* Login to the App = 3 seconds
* Refreshing a Data List (e.g. a list of Contacts, etc.) = 2 seconds
* Add Operator = 2 seconds
* Edit Operator = 2 seconds
* Save Operation = 2 seconds
* Delete Operation = 2 seconds

**Preparation**

* 30 tenants
* Each has 100 users, 10000 Timesheets, 10000 Expenses, 100 Projects, 200 Tasks, 100 Sale proposals, 200 Lines, 100 Contacts.

However, we still missing Notes/ Reminders data.

*I suggest we need more data for Notes/ Reminders for next run: each tenants has 300 notes (3 notes/1 user – 1 for contact, 1 for sale proposal, 1 for expense) and 300 reminders (3 reminders/ user - 1 for contact, 1 for sale proposal, 1 for expense)*

*Total: 9000 notes and 9000 reminders*

## Test Run 3 – Baseline Two Hour Load Test

* Duration: 110 minutes
* Started: Mar 24, 2017, 4:35:21 PM
* Ended: Mar 24, 2017, 6:26:53 PM

**Observations**

#Samples: 99702 samples

Average Response Time (ms) = 8768.72 ms ~8.7 s

90% line (ms): 90% samples has response time less than or equal 14007 ms ~ 14 s

95% line (ms): 95% samples has response time less than or equal 22479 ms ~22 s

99% line (ms): 99% samples has response time less than or equal 67199 ms ~67 s

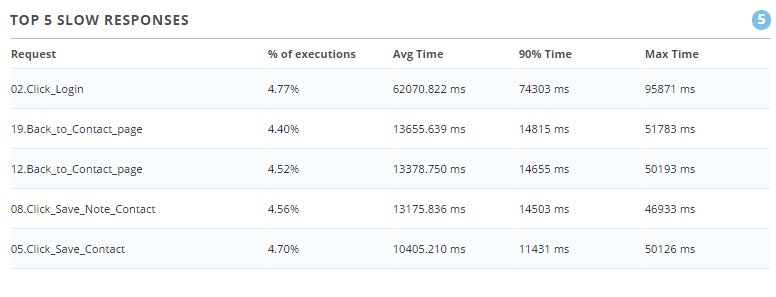
Min Response Time (ms): 1 ms

Max Response Time (ms): 95871 ms ~95.8 s

=> Test Run 3 is Failed during Load Test execution.

- 6/22 (27.3%) of transactions have response time as expected.

- Requests have Slow Response Times are in red.



### Request Statistics

This report shows statistics for each request (also known as element label) in the test

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Element Label** | **# Samples** | **Avg. Response Time (ms)** | **90% line (ms)** | **95% line (ms)** | **99% line (ms)** | **Min Response Time (ms)** | **Max Response Time (ms)** | **Max Response Time (s)** | **Error Percentage** |
| 01.Visit\_Home&Login\_page | 4686 | 75.3 | 149 | 241 | 668 | 7 | 1745 | 1.745 | 0 |
| 02.Click\_Login | 4637 | 63978.74 | 73663 | 77375 | 83711 | 773 | 95871 | 95.871 | 0.019 |
| 03.Visit\_Contact\_page | 4626 | 6723.02 | 7559 | 7835 | 11303 | 57 | 39801 | 39.801 | 0.0063 |
| 04.Click\_Add\_Contact | 4626 | 28.11 | 55 | 99 | 287 | 3 | 1093 | 1.093 | 0 |
| 05.Click\_Save\_Contact | 4611 | 10673.55 | 11607 | 13863 | 25039 | 162 | 50126 | 50.126 | 0.0106 |
| 06.Open\_Note\_Contact | 4557 | 10264 | 11231 | 11767 | 21151 | 111 | 46359 | 46.359 | 0.002 |
| 07.Click\_Add\_Note\_Contact | 4557 | 24.79 | 49 | 88 | 246 | 3 | 1420 | 1.42 | 0 |
| 08.Click\_Save\_Note\_Contact | 4530 | 13501.42 | 14727 | 15551 | 25087 | 120 | 46933 | 46.933 | 0.0038 |
| 09.Click\_Edit\_Note\_Contact | 4530 | 33.21 | 69 | 113 | 354 | 1 | 1651 | 1.651 | 0 |
| 10.Update\_Note\_Contact | 4530 | 3485.4 | 3875 | 4067 | 9519 | 51 | 35602 | 35.602 | 0.0042 |
| 11.DELETE\_Note\_for\_a \_Contact | 4522 | 10149.22 | 11159 | 11583 | 19535 | 108 | 40462 | 40.462 | 0.0035 |
| 12.Back\_to\_Contact\_page | 4514 | 13731.79 | 14991 | 15583 | 24559 | 160 | 50193 | 50.193 | 0.0016 |
| 13.Open\_Reminder\_Contact | 4509 | 3504.4 | 3873 | 4057 | 10695 | 52 | 35471 | 35.471 | 0.0009 |
| 14.Click\_Add\_Reminder\_Contact | 4501 | 6852.96 | 7583 | 7891 | 15319 | 94 | 32764 | 32.764 | 0.0002 |
| 15.Click\_Save\_Reminder\_Contact | 4489 | 10211.46 | 11151 | 11511 | 19935 | 112 | 42139 | 42.139 | 0.0005 |
| 16.Click\_Edit\_Reminder\_Contact | 4487 | 23.54 | 46 | 77 | 238 | 3 | 1352 | 1.352 | 0 |
| 17.Update\_reminder\_Contact | 4487 | 3532.93 | 3899 | 4147 | 9735 | 58 | 35400 | 35.4 | 0.0013 |
| 18.DELETE\_Reminder\_for\_a\_Contact | 4479 | 6996.7 | 7627 | 7915 | 14975 | 141 | 47417 | 47.417 | 0.0022 |
| 19.Back\_to\_Contact\_page | 4466 | 13850.58 | 15007 | 15591 | 24303 | 318 | 51783 | 51.783 | 0.0016 |
| 20.Click\_Edit\_Contact | 4460 | 24.38 | 49 | 78 | 215 | 3 | 1572 | 1.572 | 0 |
| 21.Update\_Contact | 4453 | 7134.4 | 7631 | 8083 | 16575 | 252 | 41188 | 41.188 | 0.002 |
| 22.Click\_DELETE\_Contact | 4445 | 7065.58 | 7723 | 7983 | 16215 | 244 | 42630 | 42.63 | 0.0009 |
| **ALL** | **99702** | **8768.72** | **14007** | **22479** | **67199** | **1** | **95871** | **95.871** | **0.0028** |

### Errors

0.28% samples got error.

All errors almost happened at the time all 200 users were in (16:36:40 PM). Before and after that time 3 minutes, no error happens.

* This report displays all errors received during the test run, categorized by label.

|  |  |
| --- | --- |
| **Transaction got errors** | **Percentage/ #samples (% Errors/ Total samples)** |
| 02.Click\_Login | 0.28 |
| 03.Visit\_Contact\_page |
| 05.Click\_Save\_Contact |
| 06.Open\_Note\_Contact |
| 08.Click\_Save\_Note\_Contact |
| 10.Update\_Note\_Contact |
| 11.DELETE\_Note\_for\_a \_Contact |
| 12.Back\_to\_Contact\_page |
| 13.Open\_Reminder\_Contact |
| 14.Click\_Add\_Reminder\_Contact |
| 15.Click\_Save\_Reminder\_Contact |
| 17.Update\_reminder\_Contact |
| 18.DELETE\_Reminder\_for\_a\_Contact |
| 19.Back\_to\_Contact\_page |
| 21.Update\_Contact |
| 22.Click\_DELETE\_Contact |

Response code:

* 500 - Internal Server Error

Explanation:

* The 500 Internal Server Error is a very general HTTP status code that means something has gone wrong on the website's server, but the server could not be more specific on what the exact problem is.

## Memory and CPU Utilisation for severs

* Started: Mar 24, 2017, 9:30 AM (UTC time)
* Ended: Mar 24, 2017, 11:30 AM (UTC time)

The Statistics can be generated by using PRTG tool at the servers.

### Web App Server:

Hardware info

o   CPU: Maximum 100% usage

o   Memory: Minimum 66% available

o   Bandwidth: Maximum 21,638 kbit/s

### Database Server:

Hardware info

o   CPU: Maximum 4.77% usage

o   Memory: Minimum 29.8% available

o   Bandwidth: Maximum 17,953 kbit/s

During executing time of these tests, after about 10 minutes, the CPU activity of Web Application Server was usually very high (>90%) and many time around 99 – 100%, got many warning by PRTG Network Monitor tool. In the middle of testing time, once the PRTG had to shutdown, and lost all mornitoring data of CPU Load.

## Analysis Summary

Test Run 3 is failed during Performance Test execution.

- 6/22 (27.3%) of transactions have response time as expected.

- We should not continue testing when CPU Load of Web Server was too high, the measurements then may be incorrect.

- We should find an alternative solution, may be using load balancer.