**Report about conducted load test**

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**Application:** BlogEngine.NET version 3.2

**Environment:** Test Environment

**Test Environment configuration(RAM, CPU etc.):**

|  |  |
| --- | --- |
| Processor | Intel(R) Core(TM) i7-10610U CPU 1.80 GHz 2.30 GHz |
| RAM | 3.95 GB |
| System type | 64-bit operating system |
| Operating System | Windows 10 Enterprise 21H1 |

1. **Why such testing was conducted:** To determine degradation point and capacity of the application
2. **Test script description:**

The following script should be run for

1. Anonymous script with probability usage is implemented according to the following table

|  |  |
| --- | --- |
| **Flow** | **Execution percentage %** |
| Home Page | 15 |
| Open Random Date | 10 |
| Open Predefined Date | 30 |
| Search by Name | 30 |
| Open Large Calendar | 10 |
| Open Contacts | 5 |
| Open Random page (yes/no) | 50/50 |
| Open post (yes/no) | 80/20 |
| Random or First | 65/35 |
| Comment (yes/no) | 20/80 |
|  |  |

1. Admin script
2. Editor script

**Anonymous script**

Diagram

Description automatically generatedDiagram

Description automatically generatedDiagram

Description automatically generated

**Admin Script**

Diagram

Description automatically generated

**Editor Script**

Diagram

Description automatically generated

1. **Tests:**   
     
   **Test run preconditions:** 2 admins, 2 editors should be created, and1000 posts created by different users.

**Load Model:** Capacity testing. Test was conducted overall for 212 users, duration 1200 sec, constant delay between requests 2 sec with deviation 0.10 sec.

|  |  |  |
| --- | --- | --- |
| **Users** | **Threads count** | **Rampup in seconds** |
| Admins | 2 | 600 |
| Editors | 10 | 120 |
| Anonymous Users | 200 | 6 |

1. **Short summary on conducted tests:**

According to capacity test results the comfort zone is before 75 users, and the saturation point is around 95 users for the combined tests scenario and 1000 posts. Test run was conducted 2 times, the results are reproducible.

1. **Detailed test results:**

According to test run result, application stays in the comfort zone while the users count is less than 75 users (at time 00:18, before orange vertical lines on the charts). The transaction response time is stabile while users count is less than 70 users and no errors, and after that the response time starts to grow and errors occurs.

The degradation zone is from 00:18-00:21 (between orange and green vertical lines) 75-95 users. In this zone the throughput increases slower. According to our test run results the saturation or the capacity point is around 95 users.

**Chart, line chart

Description automatically generated**



**Chart, histogram

Description automatically generated**

As it follows from chart, the CPU usage stays less than 70% for comfort zone (except 2-3 spikes), after that increases and reaches 70%.

A screenshot of a computer

Description automatically generated with medium confidence

From analyze of all charts we can conclude that the saturation point is about 95 users.

1. **Conclusion:** application reaches saturation point at *00:21,* when *95 virtual users* produced *~25 requests per second***.** According to test run results, the decrease of the throughput has been observed. The reasons of such a non-typical behavior should be determined on the base of additional server and application metrics, which will be collected further in upcoming modules.