

PERFORMANCE TESTING REPORT FOR PETSTORE API'S

Date: 10-02-2024

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SUMMARY:

This report presents the results of performance testing conducted on the Petstore APIs using Apache JMeter. The goal of the testing was performance under different load conditions. The evaluation focused on identifying bottlenecks or issues that could overall system functionality.

The following is a detailed analysis of the results and recommendations for improvement.

Test Objectives:

1. Evaluate API responsiveness by measuring response times under different loads.
2. Assess reliability by ensuring the APIs handle multiple concurrent requests without errors.
3. Identify bottlenecks that could degrade performance or cause failures.
4. Measure overall performance using throughput, latency, and transaction success rates.

Test Plan Structure:

Each key operation of the system was simulated as a Thread Group in JMeter. Below are the scenarios tested:

- GET Pets: Retrieve pets by status.
- POST Pets: Add new pets to the store inventory.
- UPDATE Pets: Update existing pet information.
- DELETE Pets: Remove pets from the store inventory.
- GET Store Orders: Retrieve store orders by ID.
- POST Store Orders: Create new orders.
- DELETE Store Orders: Delete orders by ID.
- POST User: Create new users.
- GET User: Retrieve users by username.
- UPDATE User: Update user information.

- DELETE User: Remove users from the system.

Key Performance Metrics:

Metric	Value
Number of Samples	100 per scenario
Throughput	20.2 requests/second
Average Response Time	1ms
90th Percentile	2ms
99th Percentile	2ms
Errors	0%
Transfer Rate	6.19 KB/s received, 3.67 KB/s sent

Results:

Overall Performance

- A throughput of 20.2 requests per second is acceptable for light load testing. This suggests that the APIs can handle concurrent requests without noticeable performance degradation.

Response Times

- The average response time was 1ms, indicating fast responses from the system.
- The 99th percentile response time remained at 2ms, confirming consistent performance without significant outliers.

Error Rate

- No errors were encountered during the test, indicating that the APIs are stable and performed well under the current conditions.

Potential Bottlenecks

- No bottlenecks were identified based on the current load. However, future tests with heavier loads will be necessary to verify scalability and detect any hidden issues.

Recommendations:

Increase Load for Further Testing:

- Run tests with higher concurrent users and longer durations to simulate production environments.

Scalability Analysis:

- Conduct ramp-up tests to observe how response times and throughput evolve as the number of concurrent users increases.

Conclusion:

The Petstore APIs demonstrated excellent performance during the tests, with fast response times and no errors. However, further testing under higher loads and prolonged usage is recommended to ensure the APIs can scale effectively in production environments.