5. Create a test plan for testing the performance and scalability of a web service, including test scenarios, test environment setup, and performance metrics to be measured

Ans:

Test Plan

Performance and scalability of a Myntra web service, including test scenario, test environment setup, and performance metrics to be measured.

Objective:

To evaluate the performance and scalability of Myntra's web service under various loads, ensuring it can handle increased traffic and usage.

Test Scope:

1.Web Service API

2.Database

3.Server Infrastructure

4.Network

Testing Technique:

Functional testing technique:

1.Black Box Testing

2.Equivalence Partitioning

3.StateTransition

Non-Functional testing technique:

1.Performance Testing

2.LoadTesting

3.Security Testing

4.Usability Testing

Test Environment Setup:

1.Hardware:

-4-6 load generators (LGs) with 16 GB RAM,4-core CPU

-2-3 database servers with 32 GB RAM,8-core CPU

-2-3 web servers with 16 GB RAM,4-core CPU

2.Software:

- Load testing tools (ex, Apache, JMeter, Gatling)

- Monitoring tools (ex, Prometheus)

-Myntra web service API

- Jira Project management tool (For Bug tracking)

- Selenium (for Automation testing)

- JAVA (For Automation Script)

3.Network: -

Simulated internet connectivity (100 Mbps-1Gbps)

Resources:

QA team consists of following team members

1.ABC

2.WER

DEVELOPMENT team consists of following team member:

1.DFG

2.GHJ

3.KLM

Test Scenarios:

Scenario 1: Baseline Performance

- 100 concurrent users

- 10 minutes ramp-up

- 30 minutes steady state

- Measure response time, throughput, and error rate

Scenario 2: Medium Load

- 500 concurrent users

- 10 minutes ramp-up

- 30 minutes steady state

- Measure response time, throughput, and error rate

Scenario 3: High Load

- 2,000 concurrent users

- 10 minutes ramp-up

- 30 minutes steady state

- Measure response time, throughput, and error rate

Scenario 4: Spike Load

- 5,000 concurrent users (sudden spike)

- 5 minutes ramp-up

- 15 minutes steady state

- Measure response time, throughput, and error rate

Scenario 5: Endurance

- 1,000 concurrent users

- 24-hour continuous testing

- Measure response time, throughput, and error rate

Performance Metrics:

1. Response Time (average, 95th percentile, 99th percentile)

2. Throughput (requests per second)

3. Error Rate (%)

4. CPU Utilization (%)

5. Memory Utilization (%)

6. Disk I/O (%)

7. Network Utilization (%)

8. Database Query Time (average, 95th percentile, 99th percentile)

Test Data:

1. User credentials

2. Product information

3. Order data

Test Schedule:

1. Testing window: 2 weeks

2. Daily testing: 8 hours

3. Weekly review and analysis: 2 hours

Deliverables:

1. Test report detailing performance metrics and findings

2. Recommendations for optimization and scalability improvements

3. Updated architecture and infrastructure design (if necessary)

Risks and Assumptions:

1. Network connectivity issues

2. Hardware limitations

3. Software compatibility issues

4. Data accuracy and consistency

Conclusion:

This test plan aims to evaluate the performance and scalability of Myntra's web service under various loads, ensuring it can handle increased traffic and usage. By conducting thorough testing, we can identify bottlenecks, optimize performance, and improve the overall user experience.