Performance Testing Magento

# Area of Testing: Checkout Process

## Why This Area?

The checkout process is significant to user retention and revenue generation as it contains the following operations:

1. Cart functions
2. Address lookup/validation
3. Shipping method retrieval
4. Payment processing
5. Order confirmation

This checkout flow also contains multiple API calls, database transactions, and session usage, so it is an area of high impact for load/performance testing.

# Testing Approach

## Objective

1. Determine the response time under normal load, peak load, and stress load
2. Determine how the system handles multiple simultaneous orders.
3. Observe whether the caching / CDN can handle high traffic for popular products.
4. Assess the performance of the search engine and indexing when under load
5. Determine if the session and cart are stable under high usage. Test Cases

## Test Scenarios

Scenario 1: Concurrent Checkout Flows with 50, 100, 500 simulated virtual users

Scenario 2: Spike Load Test on Product Page - simulated 1000 users (less than 1 min).

Scenario 3: Search Load Test - 50-100 concurrent users with continuous search for 5 minutes.

Scenario 4: Add-to-Cart Stress Test - 500 users with repeated add to cart of random products.

# Performance Parameters to Measure

1. Response Time
2. Throughput
3. Error Rate
4. Latency
5. Load Distribution

# Tools to Use

1. **k6** for code-based performance tests
2. **JMeter** for scripting & simulating users