## **Performance Testing Focus: Magento Checkout Process**

### **Why Test the Checkout Flow?**

The checkout process is the most **business-critical** path in any e-commerce site. Any delays or failures here can cause **abandoned carts, lost sales**, and **reputation damage**.

**Key reasons:**

* **Business Impact**: Directly tied to revenue. Failures = lost customers.
* **System Complexity**: Involves database queries, pricing/shipping calculations, external API calls (payment/shipping), and session handling—making it prone to bottlenecks.
* **User Sensitivity**: Shoppers are least tolerant of delays during checkout.
* **Scalability**: Must handle high traffic during sales (e.g., Black Friday) without crashing.

### **Testing Strategy**

Simulate real user journeys through the checkout process under various load conditions to detect performance issues and ensure stability.

**Goal**: Assess Magento checkout performance under expected, peak, and extreme loads.

### **Test Types**

* **Load Test**: Validate normal and peak load handling.
* **Stress Test**: Find the system’s breaking point.
* **Spike Test**: Check response to sudden traffic surges.
* **Endurance Test**: Detect memory/resource issues over long periods.

### **Assumptions & Setup**

* Products are already in the cart.
* Mix of guest and registered users.
* Test data (addresses, payment tokens) is ready.

### **Key Metrics (KPIs)**

* **Response Time**: Target 2–3s for all steps under load.
* **Throughput (TPS)**: Orders placed per second.
* **Error Rate**: Aim for <1% (0% for critical actions).
* **Resource Usage**: Monitor server CPU, memory, DB queries, API response times.