

Performance Testing

Date	06 November 2025
Team ID	F529277D47452DB9E7447BD087E08E5E
Project name	Medical inventory management
Maximum marks	4 marks

Goals & high-level objectives :

Verify system can handle expected and peak loads for core flows (search, read inventory, place/confirm orders, add/update stock, bulk imports).

Validate response-time SLAs, throughput, and resource usage under load.

Confirm data integrity and concurrency safety during high contention (e.g., two users decrement same stock).

Find bottlenecks (DB, API, caches) and gather actionable metrics for tuning and capacity planning.

Authentication / token refresh — visible at session start

The screenshot shows a browser window with multiple tabs open at the top. The active tab is 'Object Manager' from the Salesforce setup. The page displays a table titled 'Object Manager' with 53+ items, sorted by Label. The columns are labeled: LABEL, API NAME, TYPE, DESCRIPTION, LAST MODIFIED, and DEPLOYED. The data includes standard objects like Account, Activity, Address, and various custom objects such as Alternative Payment Method, API Anomaly Event Store, Appointment Category, and Approval Submission. The interface includes a search bar, a schema builder button, and a create button. The bottom of the screen shows the Windows taskbar with icons for File Explorer, Edge, and other applications.

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Account	Account	Standard Object			
Activity	Activity	Standard Object			
Address	Address	Standard Object			
Agent Work	AgentWork	Standard Object			
Alternative Payment Method	AlternativePaymentMethod	Standard Object			
API Anomaly Event Store	ApiAnomalyEventStore	Standard Object			
Appointment Category	AppointmentCategory	Standard Object			
Appointment Invitation	AppointmentInvitation	Standard Object			
Appointment Invitee	AppointmentInvitee	Standard Object			
Appointment Topic Time Slot	AppointmentTopicTimeSlot	Standard Object			
Approval Submission	ApprovalSubmission	Standard Object			

Performance metrics & SLAs (example):

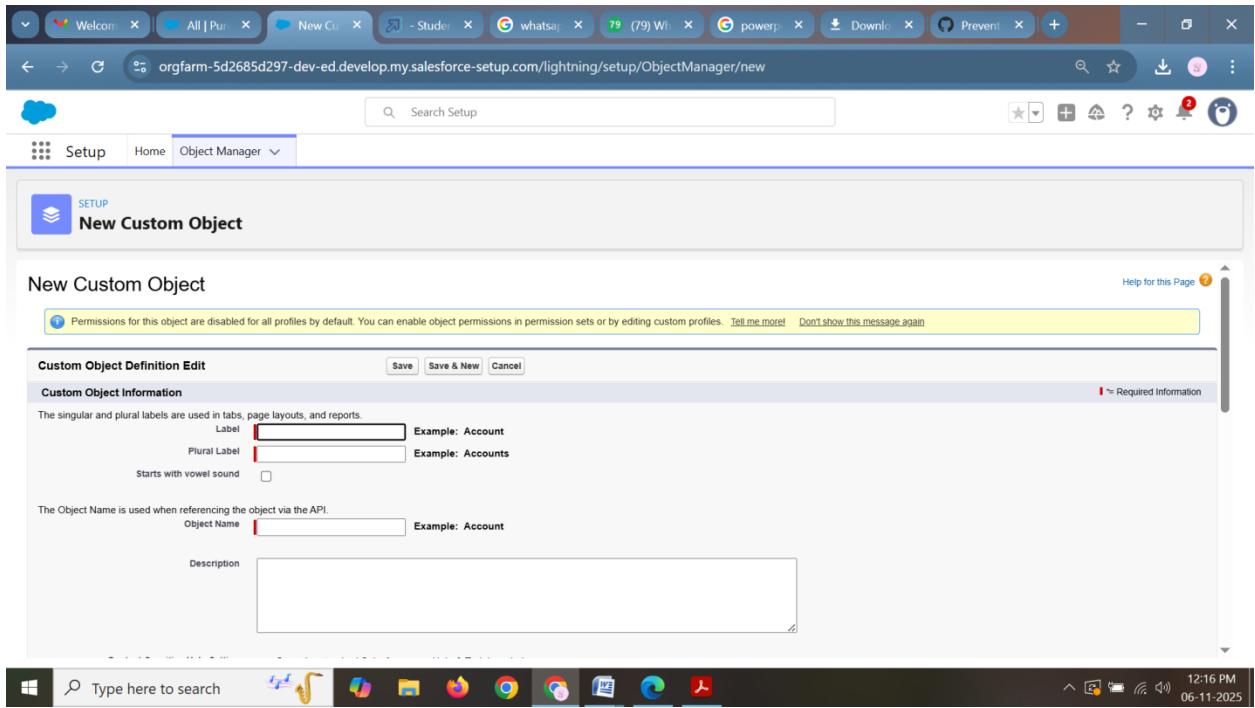
Inventory read (GET): $99\% \leq 500 \text{ ms}$, $99.9\% \leq 1.5 \text{ s}$

Inventory search (list) paginated: $95\% \leq 1.0 \text{ s}$, $99\% \leq 2.0 \text{ s}$

Place order (write flow): $95\% \leq 2.0 \text{ s}$, $99\% \leq 4.0 \text{ s}$

Bulk import: completes within X minutes depending on size (e.g., 10k rows < 5 min) — measure per-case

Error rate: $\leq 0.1\%$ under normal load



Test scenarios & user journeys (with mixes):

Read-heavy scenario (70% reads, 20% searches, 10% writes) — representative of normal operations.

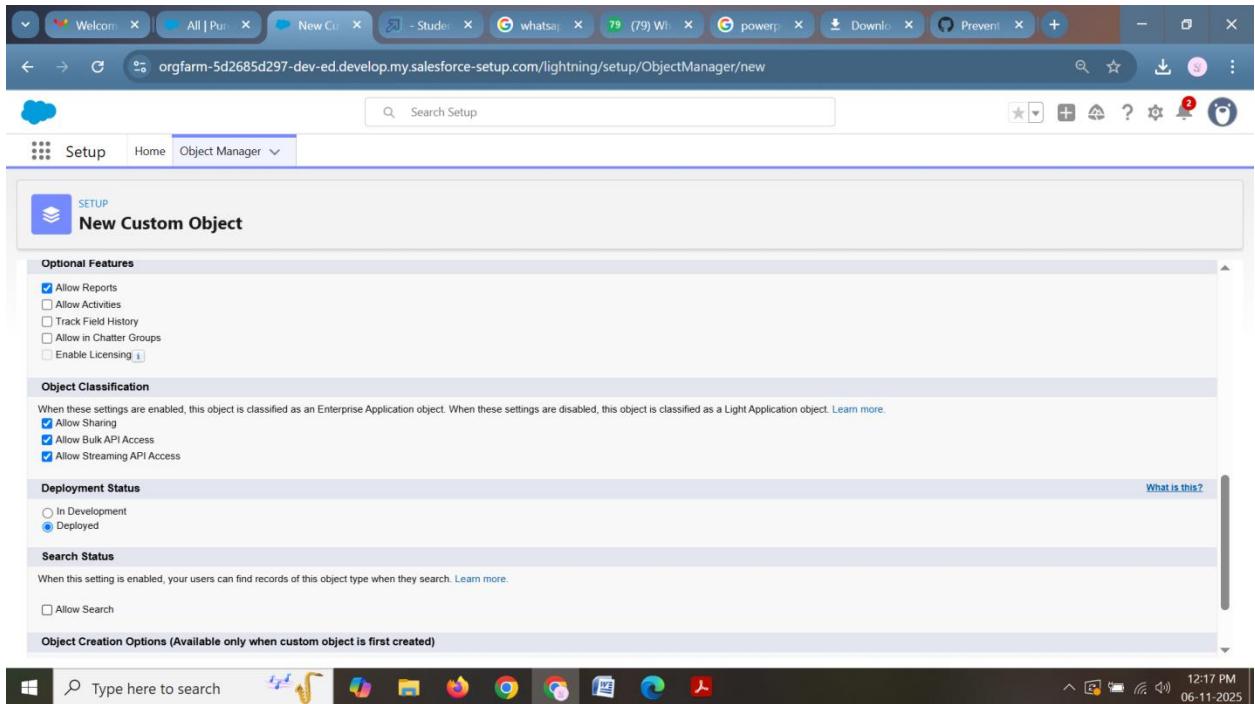
Write-heavy scenario (50% writes — orders/stock updates, 30% reads, 20% searches) — simulate stock reconciliation or inventory audit day.

Concurrency contention: many users attempt to decrement same SKU concurrently (simulate limited stock) — test optimistic/pessimistic locking.

Bulk upload scenario: run import job while system under normal load (observe effect).

Failover/ degraded mode: take one app node down mid-test, verify graceful degradation and performance of remaining nodes.

Long-run endurance: sustained peak for 6–8 hours.



Test data & state management:

Use a dedicated test environment with production-like dataset sizes (number of SKUs, categories, orders).

Prepare multiple user accounts with roles and tokens; reuse session cookies to simulate session behavior.

Include realistic SKU distributions: many low-activity SKUs + a smaller set of "hot" SKUs that get frequent reads/updates.

Data seeding scripts: create N SKUs (e.g., 100k), M locations (warehouses), and historic orders to produce realistic DB sizes.

Reset/rollback strategy between runs (DB snapshots, container reset, or test DB clones).