Performance Testing Report

Date	**November 02, 2025**
TeamId	NM2025TMID02810
Project Name	Streamlining Ticket Assignment For Efficient Support Operations
Maximum Marks	4 Marks

1. Introduction

This performance test assesses the improved ticket assignment engine in ServiceNow to validate its scalability and response efficiency. The evaluation targets automated routing through Assignment Rules, skill-based allocation, and Predictive Intelligence. The objective is to confirm that the platform can manage peak volume (up to 1,000 simultaneous tickets) without performance drop, consistently achieving assignment times under 5 minutes and maintaining SLA adherence above 95%.

Scope: Validated primary components including Dynamic Routing Rules, AI-Based Assignment, and the Performance Analytics Dashboard.
Not included in this cycle: Complete end-to-end user workflow simulations.

2. Objectives

- Verify system throughput under high-volume scenarios (e.g., 500 tickets/min).
- Measure response times for auto-assignment and load balancing.
- Identify bottlenecks in Predictive Intelligence queries or script executions.
- Ensure 99% uptime during stress tests, aligning with support ops KPIs.

Success Criteria:

- Average assignment latency <3 seconds.
- No failures >1% in 10,000 simulated assignments.
- CPU/Memory utilization <80% on test instances.

3. Test Environment

- **Platform:** ServiceNow Vancouver Release (Test Instance: dev-support-01).
- **Hardware:** 8 vCPU, 32 GB RAM, AWS m5.2xlarge; Database: RDS PostgreSQL.

- **Tools:** JMeter for load generation; ServiceNow Performance Analytics for monitoring; New Relic for APM.
- **Data Setup:** 10,000 synthetic tickets with varied categories, priorities, and user skills; 50 simulated agents.
- **Configuration:** Enabled Assignment Workbench, Predictive Intelligence (trained on 6 months historical data).

4. Test Scenarios

Tested under baseline, load, and stress conditions.

Scenario ID	Description	Users/Tickets	Duration	Expected Outcome
PT-01	Baseline: Single ticket assignment via rules.	1 user / 10 tickets	5 min	<1 sec latency.
PT-02	Load: Concurrent skill-based routing.	100 agents / 500 tickets	30 min	<5 sec avg; 95% success.
PT-03	Stress: Peak-hour simulation with AI predictions.	500 agents / 1,000 tickets/min	1 hour	<10 sec peak; No crashes.
PT-04	Endurance: Sustained moderate load.	200 agents / 300 tickets/hour	4 hours	Stable utilization <70%.

5. Performance Metrics

Key metrics tracked: Response Time (RT), Throughput (TP), Error Rate (ER), Resource Utilization (RU).

Metric	Target	Measurement Method
Assignment RT	<5 sec	End-to-end from ticket creation to assignment.
Throughput	>200 tickets/min	Successful assignments per minute.
Error Rate	<0.5%	Failed routings (e.g., script timeouts).
CPU RU	<80%	Instance average during peak.

6. Test Execution

- **Execution Dates:** Oct 25-31, 2025.

- **Iterations:** 3 per scenario; Ramp-up: 10 sec/user.
- **Issues Encountered:** Minor (2%) timeouts in PT-03 due to unoptimized Predictive model; resolved by indexing historical data.
- **Pass/Fail:** All scenarios passed after tuning.

7. Results and Analysis

Summary Table

Scenario	Avg RT (sec)	TP (tickets/min)	ER (%)	Max CPU (%)	Pass?
PT-01	0.8	600	0.1	20	Yes
PT-02	3.2	450	0.3	65	Yes
PT-03	7.5 (peak)	850	0.4	78	Yes
PT-04	2.1	300	0.2	60	Yes

Analysis:

- System scales linearly up to 800 tickets/min; AI Matcher adds ~2 sec overhead but improves accuracy (98% match rate).
- Bottleneck: Database queries for skill matching—recommend query optimization.
- Graphs: [Placeholder for RT vs. Load Chart; Throughput Trend]. Overall, meets objectives with 15% buffer for production.

8. Recommendations

- **Optimizations:** Cache frequent Predictive Intelligence results; Scale instances during peaks via auto-scaling groups.
- **Monitoring:** Integrate with ServiceNow's OOB alerting for RT >5 sec.
- **Retests:** Post-optimization in UAT; Include real-user simulations.
- **Risks Mitigated:** High load no longer risks SLA breaches.

9. Conclusion

The optimized ticket routing capabilities demonstrate strong performance and effectively sustain large-scale support workflows. Production rollout is advised, with only minor database adjustments required.