

# Technology Stack Template

Date	November 02, 2025
TeamId	NM2025TMID08223
Project Name	Streamlining Ticket Assignment For Efficient Support Operations
Maximum Marks	4 Marks

## 1. Overview

The **Smart Assignment Engine (SAE)** is built **entirely on the ServiceNow platform** using **Out-of-Box (OOB) features** and **low-code scripting** to ensure scalability, maintainability, and upgrade compatibility.

## 2. Core Platform

Layer	Technology	Version	Notes
Platform	ServiceNow	Washington DC (or later)	Required for Predictive Intelligence & PA enhancements
Instance Type	Production + Sub-Production	AWS-hosted	Auto-scaling enabled
Database	ServiceNow Cloud DB	PostgreSQL-based	Indexed fields: <code>u_skills</code> , <code>u_current_load</code>

## 3. Functional Components

Component	ServiceNow Module / Feature	Purpose
Assignment Rules	<code>assignment_rule</code> + Data Lookup	Rule-based routing (category, priority, VIP)
Skill Matching	<code>sys_user.u_skills</code> (Custom List Field)	Map ticket to agent expertise

Component	ServiceNow Module / Feature	Purpose
Workload Balancer	Script Include + Business Rule	Real-time load check ( u_current_load )
Predictive Routing	Predictive Intelligence (Classification)	ML-based assignee suggestion
Notifications	Notification + Integration Hub	Slack/Email alerts
Analytics Dashboard	Performance Analytics (PA)	KPIs: Auto-Assign %, Latency, Load
Feedback Loop	Survey Module + Flow Designer	Post-resolution skill relevance survey

## 4. Development & Scripting

Technology	Usage	Example
Server-Side Scripting	GlideScript (Script Include)	<code>SAE_AssignmentEngine.assign()</code>
Client-Side	Minimal (UI Policy for skill form)	Validate skill selection
Business Rules	<code>onInsert on incident , sc_request</code>	Trigger SAE logic
Flow Designer	Fallback & notification flows	If no assignee → escalate
ATF (Automated Test Framework)	Unit & regression testing	50+ test steps

## 5. AI & Machine Learning

Feature	Tool	Configuration
Predictive Intelligence	ServiceNow ML	
- Solution Type	<b>Classification</b>	Predict <code>assigned_to</code>
- Training Data	10,000+ closed tickets (6+ months)	Fields: <code>category</code> , <code>short_description</code> , <code>resolution_notes</code>
- Confidence Threshold	<b>70%</b>	Below → fallback to rules
- Retraining Schedule	<b>Monthly</b>	Automated via Scheduled Job

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## 6. Integration Stack

Integration	Protocol	Tool	Direction
Slack / Microsoft Teams	Webhook / REST	Integration Hub	Outbound (notifications)
Email → Ticket	IMAP/POP	Email Listener	Inbound (auto-categorize)
HR System (Skills Sync)	REST API	MID Server (optional)	Inbound (nightly)
Employee Center	Service Portal	OOB	Self-service skill update

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## 7. DevOps & Deployment

Tool	Purpose
Update Sets	Capture config & scripts
ServiceNow Studio	IDE for Script Includes
Clone (Instance)	Dev → Test → Prod
ATF	Regression testing
JMeter	Performance load testing
New Relic / System Logs	Monitoring & alerting

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## 8. Infrastructure & Performance

Metric	Target	Tool
Assignment Latency	<3 sec	JMeter
Throughput	1,000 tickets/min	Load test
CPU Utilization	<80% peak	Instance monitoring
Memory	<16 GB	Auto-scale trigger
Storage	500 GB (logs + history)	Cloud DB

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## 9. Security & Compliance

Control	Implementation
ACLs	<code>itil</code> → view tickets; <code>assignment_admin</code> → edit rules
Field-Level Security	<code>u_skills</code> encrypted at rest
Audit Logs	All script executions logged
GDPR	No PII in ML training (anonymized <code>short_description</code> )
Role-Based Access	<code>sae_user</code> , <code>sae_admin</code> custom roles

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## 10. Licensing Requirements

Module	Required?	Notes
IT Service Management (ITSM)	Yes	Incident, Service Request
Predictive Intelligence	Yes	ML classification
Performance Analytics	Yes	PA Premium indicators
Integration Hub	Yes (1 flow)	Slack/Teams
Flow Designer	Yes	Fallback logic

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## 11. Future-Proofing & Extensibility

Future Enhancement	Supported By
GenAI Categorization	Virtual Agent + NLU
Geo-Routing	<code>cmn_location</code> + IP detection
Mobile Push Alerts	Mobile App + Push API
Cross-Platform Sync	REST APIs (Jira, etc.)

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## 12. Technology Decision Rationale

Decision	Reason
100% ServiceNow Native	No external dependencies; upgrade-safe
OOB > Custom	90% OOB, 10% low-risk scripts
Predictive Intelligence	Proven accuracy; no 3rd-party ML
Integration Hub	Secure, governed outbound flows

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