

Predictive Routing

Genesys PureCloud

Predictive Routing

Documentation

Study Notes

Topic	Description
Predictive Routing	Machine learning-powered intelligent routing that matches contacts to optimal agents
AI Engine	White-box models with explainability features showing feature importance scores
Outcome Labels	Custom KPI metrics tracked and used to retrain models continuously
Queue Configuration	Per-queue settings enabling/disabling predictive routing with KPI selection
Model Retraining	Weekly automated retraining with daily data updates ensuring current accuracy
Data Retention	No model data retained beyond 90 days for privacy and compliance

Navigation

Admin → Architect → Routing → Predictive Routing Configuration OR Admin → Contact Center → Routing → Predictive Routing Settings

Predictive Routing Overview

Genesys Cloud's predictive routing uses machine learning to rank agents for optimal handling of interactions, supporting key performance indicators like average handle time and next contact avoidance. Unlike traditional rule-based routing, predictive routing analyzes hundreds of data points in real-time to identify which agent is most likely to deliver the best customer outcome based on your defined business goals.

Key Capabilities

- Predictive routing uses white-box models that allow gaining insights into how the features contribute to a prediction, with each input feature given a percentage/score that represents its importance
- Continuously improves scoring accuracy based on outcome data from previous interaction-agent matchups
- Real-time agent scoring based on historical performance and current state
- Automatically retrains and updates features used for agent scoring with daily data and retrains the data models weekly
- Support for custom KPI optimization (AHT, NCA, CSAT, etc.)
- Automatic fallback when models are unavailable

How It Works

1. Contact arrives at system
2. Contact metadata extracted (type, queue, customer data)
3. URS Strategy Subroutines submit interaction details to the Core Platform, which scores agents for their historical ability to handle such an interaction
4. Machine learning model scores all available agents
5. Contact routed to highest-scoring agent
6. Interaction outcome captured and logged
7. Models updated with new outcome data for future predictions

Edition & Module Requirements

Requirement	Details
Minimum Edition	Premium Edition (Genesys Cloud CX 1-4)

Requirement	Details
Module	Workforce Optimization or Predictive Routing add-on
License Type	Included with qualifying editions
AI Tokens	May consume tokens depending on configuration
Setup	Admin access to Architect and routing configuration

Study Notes - AI Model Features

Feature Category	Examples	Impact
Agent Profile Data	Skills, tenure, department, certifications	High - Core matching criteria
Agent Performance Data	Historic AHT, FCR, quality scores, tenure	High - Predicts future performance
Availability Data	Current status, workload, after-call-work	High - Real-time readiness
Interaction Metadata	Contact type, channel, customer segment	Medium - Context matching
Queue Statistics	Historical patterns, time-of-day trends	Medium - Volume prediction
Customer Data	History, value, previous interactions	Low-Medium - Personalization

AI Model Architecture

White-Box Model Explainability

Genesys helps you deduce the prediction by presenting a global interpretation that describes the average behavior of a model. A high value means that the feature will have a larger effect on the model's predictions and ranking of agents. While a small value is given to unimportant features whose contribution is mostly ignored for the model's predictions.

Model Training & Retraining

To keep up with changing levels of agent proficiency and customer interaction contexts, the data models continually retrain and learn from the latest features. Genesys Cloud updates the features

used for agent scoring with daily data and retrains the data models weekly. No data is retained in the models for more than 90 days.

Privacy & Compliance

Genesys does not use PII for the agent scoring process. Genesys Cloud only uses transaction conversation data to train machine learning models.

Data Requirements for Optimal Performance

Recommended Data Volume

Genesys recommends a periodic upload of outcome data to ensure better model training and prediction accuracy. The recommended frequency is once a day, or, at the minimum, once a week. Genesys recommends at least 90 days of data and ideally 180 days of data. If you retain fewer days of data, you can still use and benefit from predictive routing. However, the quality and effectiveness of your AI models and predictions is likely to suffer and the resulting benefit will be reduced compared to standard routing.

Data Sources

- Agent profile data such as skills, tenure, department, certificates, employee type
- Agent performance data such as historic average handle time for a queue
- Custom outcome data via Outcome Attributions API
- External data sources for outcome-based KPIs

Minimum Data Thresholds

Data, even if available, is considered for the purpose of routing calculation only if the data volume meets a minimum requirement. If the volume of data does not meet the specified threshold value, the machine learning model does not use the available data. While not mandatory for Genesys predictive routing to operate, for better prediction results, Genesys recommends that you ensure the availability of sufficient volume of data against maximum number of fields.

Outcome Labels & Custom KPIs

Default KPIs

Predictive Routing can optimize for standard Genesys metrics:

- **Average Handle Time (AHT)** - Minimize time to resolve
- **Next Contact Avoidance (NCA)** - Minimize customer repeat contacts
- **Customer Satisfaction (CSAT)** - Maximize customer satisfaction scores
- **First Contact Resolution (FCR)** - Prevent escalations and transfers

Custom Outcome Labels

If you use outcome-based custom KPIs, Genesys predictive routing relies on data from external data sources, which it receives through the Outcome Attributions API.

Uploading Outcome Data

- **Frequency:** Daily recommended, weekly minimum
- **Format:** CSV or API integration via Outcome Attributions API
- **Data Requirements:** At least 90 days, ideally 180 days for optimal models
- **Processing:** Data uploaded to Genesys Cloud for model retraining
- **Model Updates:** Weekly retraining cycle incorporates latest outcomes

Setting KPI Optimization per Queue

During queue configuration, administrators select which KPI the predictive routing model should optimize for that specific queue. The system will then score agents based on their historical performance against that metric.

Queue Configuration Steps

Step 1: Navigate to Routing Settings

1. Log into Genesys Cloud Admin
2. Go to Architect → Routing
3. Select queue to enable predictive routing
4. Open queue configuration settings

Step 2: Enable Predictive Routing

1. Locate "Predictive Routing" toggle
2. Toggle ON to enable feature
3. System validates that requirements are met
4. Configuration page appears

Step 3: Select KPI Optimization

1. Choose primary KPI from dropdown:
 - Average Handle Time (AHT)
 - Next Contact Avoidance (NCA)
 - Customer Satisfaction (CSAT)
 - Custom outcome metric
2. If custom KPI: Verify outcome data is being uploaded via API
3. Save selection

Step 4: Configure Scoring Parameters

1. Set minimum agent availability threshold
2. Define required skills for queue
3. Configure fallback routing behavior
4. Set scoring timeout (default: 3 seconds)
5. Enable/disable explainability logging

Step 5: Data & Outcome Mapping

1. Confirm queue is sending outcome data
2. For outcome-based custom KPIs, ensure periodic upload of outcome data via Outcome Attributions API
3. Map external outcome labels to routing KPI
4. Verify historical data volume meets minimums
5. Test data flow

Step 6: Validation & Testing

1. Enable predictive routing on small percentage of traffic
2. Monitor model accuracy metrics
3. Verify fallback routing works correctly
4. Gather baseline performance data
5. Review feature importance scores in reports

Step 7: Gradual Rollout

1. Increase traffic percentage gradually
2. Monitor agent utilization and contact distribution
3. Track KPI impact daily
4. Make refinements as needed
5. Scale to 100% when confident in performance

Model Scoring Process

Agent Scoring Flow

Incoming Contact



Extract Contact Metadata

├─ Contact type (voice, chat, email)

├─ Queue assignment

├─ Customer segment

└─ Interaction intent



Query AI Model

├─ Input: Contact metadata

├─ Features: Agent data, performance, availability

├─ Process: ML scoring algorithm

└─ Output: Agent scores (0-100)



Rank Agents

├─ Agent A: 87 score

├─ Agent B: 72 score

└─ Agent C: 91 score (highest)

└─ Agent D: 65 score

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Route to Highest Scorer

└─ Select: Agent C (91 score)

└─ Fallback: If unavailable → Agent A (87)

└─ Escalation: If all unavailable → Queue

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Log Interaction

└─ Selected agent score

└─ Feature importance values

└─ Outcome when complete

└─ Update training data

Feature Importance Explanation

The model provides transparency showing which factors most influenced each routing decision:

- **High Importance Features** (weight >10%)
 - Directly impact agent selection
 - Should be monitored and optimized
- **Medium Importance Features** (weight 5-10%)
 - Contribute meaningfully to decisions
 - Worth tracking for insights
- **Low Importance Features** (weight <5%)
 - Minimal impact on routing
 - May indicate data quality issues

Real-World Implementation Scenario

Banking Contact Center

Queue: Mortgage Support

KPI Optimization: Average Handle Time (AHT)

Agent Profiles:

└ Agent Sarah

| └ Skills: Mortgage, Refinance, Loan Modification

| └ Avg AHT: 6.2 minutes

| └ Tenure: 5 years

| └ Current: Available (0 contacts)

|

└ Agent James

| └ Skills: Mortgage, Basic Support

| └ Avg AHT: 8.1 minutes

| └ Tenure: 1 year

| └ Current: Available (1 contact)

|

└ Agent Maria

└ Skills: Mortgage, Refinance, Advanced

└ Avg AHT: 5.9 minutes

└ Tenure: 7 years

└ Current: Available (2 contacts)

Incoming Contact:

"I'd like information about refinancing my mortgage"

Model Analysis:

└ Contact Intent: Refinance inquiry

└ Expected AHT: ~7 minutes

└ Required Skills: Refinance, Mortgage

└ Channel: Voice

Agent Scoring (for AHT optimization):

└ Sarah: 89 score

| └ Reasoning: Strong refinance skills, excellent AHT,

| lower current load

└ James: 71 score

| └ Reasoning: Has required skills but higher baseline AHT

└ Maria: 85 score

└ Reasoning: Best AHT historically but already has
higher load (2 contacts)

Routing Decision:

Route to Agent Sarah (highest score: 89)

Expected Outcome:

- └ Faster resolution (Sarah's AHT advantage)
- └ Better customer experience
- └ Optimizes against AHT KPI
- └ Load distributed effectively

Model Metrics & Dashboard

Key Performance Indicators Tracked

Metric	Purpose	Good Range
Model Accuracy	How often predictions are correct	>75%
Feature Coverage	% of required data available	>85%
Agent Utilization	Even work distribution	70-90%
KPI Improvement	Impact on selected metric	+5-20%
Fallback Rate	When model can't score	<5%

Monitoring Model Health

- **Daily:** Check model score distribution
- **Weekly:** Review prediction accuracy vs. actual outcomes
- **Monthly:** Analyze feature importance changes
- **Quarterly:** Assess KPI impact and ROI

Best Practices

Data Quality

- **Validate Outcome Data** - Ensure outcome labels are accurate and complete
- **Consistent Data Format** - Maintain standardized data formats in API uploads
- **Timely Uploads** - Daily uploads ensure models have latest information

- **Complete Records** - Capture outcomes for all interactions, not just subset

Model Optimization

- **Start with One KPI** - Master one optimization goal before multiple
- **Monitor Feature Changes** - Track how feature importance shifts over time
- **A/B Test Approaches** - Compare predictive routing vs. traditional on test queues
- **Iterative Improvement** - Refine based on real-world performance data

Queue Configuration

- **Gradual Rollout** - Start with 10% traffic, increase to 100% gradually
- **Skill Validation** - Ensure agent skill assignments are accurate and current
- **Outcome Mapping** - Correctly map external KPIs to routing selection
- **Fallback Testing** - Verify routing works when models unavailable

Change Management

- **Communicate Changes** - Inform agents about predictive routing changes
- **Monitor Agent Sentiment** - Track agent acceptance and satisfaction
- **Provide Training** - Explain how predictive routing affects their work
- **Set Expectations** - Clear goals and targets for improvement

Common Implementation Issues & Solutions

Issue	Cause	Solution
Model not scoring agents	Insufficient data volume	Ensure 90+ days of outcome data available
Uneven agent utilization	Agents with similar skills	Review and update skill assignments
No KPI improvement	Wrong KPI selected for queue	Validate KPI choice aligns with business goals
High fallback rate	Skill mismatches in data	Audit and correct agent skill inventory
Slow model updates	Outcome data not uploading	Verify API integration and data flow
Feature importance unclear	New queue without history	Wait for sufficient data accumulation

Issue	Cause	Solution
Model accuracy low	Poor quality training data	Validate and clean outcome data

Interview Cheat Sheet

Question	Answer
What is Predictive Routing?	ML-powered routing that matches contacts to optimal agents based on historical data
What models does it use?	White-box models with explainability showing feature importance percentages
How often do models retrain?	Weekly with daily data updates; no data retained beyond 90 days
What data is needed?	90+ days recommended (ideally 180); daily or weekly outcome uploads
What KPIs can it optimize?	AHT, NCA, CSAT, or custom metrics via Outcome Attributions API
Where do you configure it?	Admin → Architect → Routing → Queue settings
Does it use PII?	No, only transaction conversation data for training
What's the expected improvement?	5-20% improvement in selected KPI
How do you upload outcomes?	Via Outcome Attributions API or CSV upload to Genesys Cloud
What if model unavailable?	Falls back to traditional routing automatically
How do agents get selected?	Highest-scoring agent routed first; fallback to next highest if unavailable
Can you explain routing decisions?	Yes, white-box models provide feature importance scores for transparency

Key Takeaways

- **Intelligent Matching** - By continuously learning from real-time and historical data, it helps optimize important KPIs like average handle time, first-contact resolution (through next contact avoidance (NCA)) and more
- **White-Box Transparency** - Models explain exactly which factors influenced each routing decision

- **Continuous Learning** - Weekly retraining with daily updates ensures models stay current
 - **Privacy-First** - No PII used; data retained only 90 days
 - **Custom Optimization** - Select any KPI (standard or custom) to optimize routing around
 - **Data-Driven** - Requires quality outcome data for accurate predictions
 - **Graceful Fallback** - Traditional routing if model unavailable
 - **Per-Queue Configuration** - Each queue can optimize for different KPIs
 - **Explainability** - Feature importance scores show transparency in AI decisions
 - **Proven ROI** - 5-20% improvement typical on selected KPI
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Additional Resources

Official Documentation Links

- Predictive Routing Overview: help.genesys.cloud/articles/predictive-routing-overview/
- AI Model Scoring: help.genesys.cloud/articles/how-the-ai-model-scores-agents-for-predictive-routing/
- Data Requirements: help.genesys.cloud/articles/sources-of-data-for-predictive-routing-decisions/
- Use of AI in Routing: help.genesys.cloud/articles/use-of-ai-in-predictive-routing/

Support & Training

- Genesys University: genesys.com/training
 - Community Forums: <https://community.genesys.com>
 - Technical Support: <https://support.genesys.com>
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