



# Guidewire Predictive Analytics: Initial Claim Segmentation

## > Routing and Processing Claims Optimally with Smart Classification at the Time of Creation

### Creating a Smart Core System

Many insurers have invested in modern core systems that are flexible and robust to drive transformational change through their operations. Compared to prior legacy mainframe environments, the new systems enable employees to work more efficiently and enjoyably, bring focus to the customer relationship and improve the quality of individual interactions, and enforce process consistency and best practice. Such investments have positioned these insurers to pursue new markets and to leverage new technologies more rapidly.

Significant advancements made in predictive analytics for P&C insurance have now created a unique opportunity for insurers with modern core systems to embed analytic scores within the core decision-making workflow, thereby creating a “smart” core system. Successfully leveraging predictive analytics requires a few key ingredients:

- A business problem with a clearly defined target outcome
- A functional design to integrate analytic scores into the core system workflow
- A technical design that includes data acquisition, model building, and core system integration

However, becoming a data- and analytics-driven insurance company requires much more than data and predictive models. It requires a solution that business users can understand and leverage easily so they can make fact-based decisions. You can maximize your technology investment, speed up implementation, and achieve faster ROI by using the Initial Claim Segmentation solution described in this document—a solution that integrates **Guidewire ClaimCenter** with **Guidewire Predictive Analytics** and its award-winning machine-learning technology.

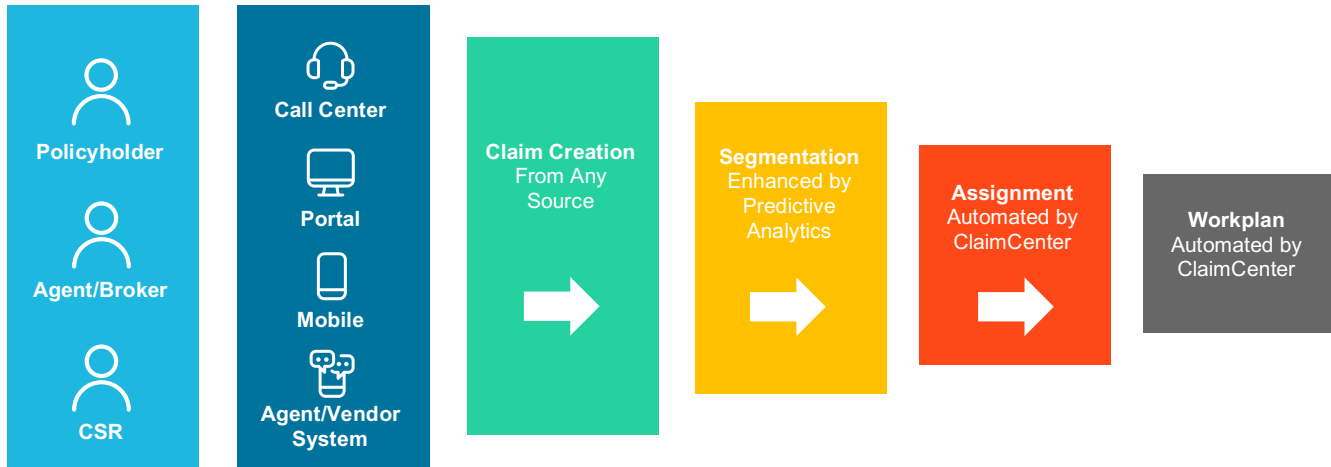
### Business Problem

As the insurance industry grapples with a shortage of qualified claims adjusters, it is now more critical than ever to assign a claim to the right adjuster as soon as it is received. Using simple business rules based on limited data tends to result in high reassignment rates, increased claim durations and settlement amounts, unnecessary expenses, and declining quality for customer claims experiences.

With predictive modeling techniques, you can better segment claims and assign them to the most appropriate adjuster. You can assign high-severity and more complex cases to the most qualified adjusters while channeling low severity claims to less experienced claims handlers. This results in significant increases in straight-through processing while also reducing your claims re-assignment rate. Better segmentation can also improve your workflow plans and reserving accuracy.

## Functional Design

When a claim is created in ClaimCenter, it is automatically segmented with an attribute that characterizes its expected severity and/or complexity. The claim is then assigned to a group and eventually to a person who is responsible for adjudicating it fairly and expeditiously. This segmentation/assignment process uses the insurer's chosen business rules, which are often broad guidelines that are based on limited information. By using Guidewire Predictive Analytics, however, you can leverage the power of machine learning to optimize the claim segmentation process by considering all relevant claims data and incorporating recent claims experience with regular updates. As a result, you can route claims to the teams that are best equipped to adjudicate them—as shown in the following diagram—whether that means straight-through or low-touch processing to reduce expenses, or assignment to the most experienced personnel to ensure expert negotiation and avert litigation.



**Figure 1: Guidewire Predictive Analytics enhances initial claim segmentation, assignment, and downstream processing regardless of the claim's source.**

With the Initial Claim Segmentation solution, there is no change to the standard process of claim creation in ClaimCenter on receiving a first notice of loss (FNOL) or first report of injury (FROI). Segmentation is one of the first setup rules to run after claim creation. The rules follow a decision tree to assign a Segment label to the claim. These labels are typically chosen to indicate the claim's expected severity, complexity, or line of business. Guidewire Predictive Analytics enables you to segment the claim more accurately using detailed classification trees built from machine learning. Prior to running any other segmentation rules, ClaimCenter invokes the scoring service API, which returns a classification score that is then combined with other segmentation rules to generate the Segment label. It is not necessary or even desirable for model classifications to replace all other decision criteria. For example, a fatality may be an independent reason to segment a claim as highly complex regardless of the model output.

The increased accuracy of segmentation may enable you to categorize claims more precisely by refining the meaning and number of the segments defined in your configurable typelist. However, segments should not be created for their own sake but rather should correspond to tangibly different strategies for claim assignment and adjudication.

## Downstream Uses of Segmentation

For a claim, segment information that is enhanced by machine learning can be used in several downstream processes:

- **Assignment:** Segmented claims are assigned to the appropriate adjuster group by the initial setup rules. The assignment rules classify claims according to line of business and geographic region, but the rules also use the segment information for efficient assignment, resulting in reduced costs for both high- and low-complexity claims.
- **Weighted Workload:** Every claim must eventually be assigned to an individual, and insurers use a variety of manual and automated rules (such as round-robin) for this purpose. ClaimCenter can also balance the burden on individual adjusters by using the weighted workload technique. The claim segment information can be used as one of the factors that identify

certain claims or exposures as more complex and thus likely to demand more of an adjuster's time. By using this information, the assignment logic sends fewer claims to adjusters with weightier claims, or it can assign the most complex claims to the most experienced adjusters within the group.

- **Workplan Generation:** After the claim is assigned, ClaimCenter typically generates activities (such as “contact claimant”) for the claim owner to begin working on the case. These activities and their deadlines can also depend on the claim segment. For example, a complex auto claim might generate an activity to “obtain police report,” whereas a low-severity claim might not.
- **Automated Reserving:** Because claims that are more complex usually have higher ultimate costs than simpler claims, claim segments can also be used to enhance rules to automatically establish case reserves.

The Claim Status page in ClaimCenter is enhanced to include a Predictive Analytics summary for adjusters and supervisors to get a quick view into the claim's complexity and drill down to view details on the underlying model scores and the key factors that are influencing them.

This solution also includes three diagnostic utilities that assist users to review and monitor the models:

- **Claim Overview:** a single page that displays all predictive analytics claims solutions on one page.
- **Claim / Explore Search:** a single page that displays all claims/exposures that have successful predictive analytics score attached to it based on specified user search criteria.
- **Claim Summary Dashboard:** a single place that displays how all the different models are impacting claims processing. It also displays counts for low/medium/high complexity and priority of claims/exposures.

## Other Functional Considerations

In ClaimCenter's claim-intake wizard, the original choice of mandatory and optional fields is typically made with operational considerations in mind. Machine-learning models obviously perform better with more information. The modeling process reveals the fields that contribute strongly to the segmentation score, and those fields can then be made mandatory to improve precision.

The Initial Claim Segmentation solution does not slow the claim workflow by explaining to users how the claim segment was derived, although the claim segment itself is typically visible on the status screen. However, it is possible to add a screen to ClaimCenter that shows the underlying model scores and the key factors that influenced them.

For the sake of simplicity, this solution describes only claim segmentation and assignment. If desired, exposures can be individually segmented simultaneously with the claim with additional predictive models. Some insurers also assign certain types of exposures to different adjusters regardless of the overall claim owner. If this assignment occurs automatically, the exposure assignment rules may also rely on the claim segment and/or the exposure segment from the predictive models.

Claim and exposure segments can also be used as additional categories for filtering or slicing any business intelligence reports on claims department performance. Such categorization can add insight or diagnose problems by distinguishing KPIs based on claim complexity.

## Technical Design

The functional design described above leverages Guidewire ClaimCenter for core operational workflow and Guidewire Predictive Analytics to build and deploy initial claim segmentation models. The technical design of the solution must consider three key components: data acquisition and preparation, analysis and modeling, and core system integration.

### Data Acquisition and Preparation

An initial modeling data set is prepared with sufficient target observations to build credible models. Based on our experience, Guidewire can identify the relevant fields and extract this historical information from ClaimCenter (and **Guidewire PolicyCenter**). Typical data elements for an initial claims segmentation model are derived from information about the claimant, policy, covered property, accident details and location, injuries, and treatment indicators. Because initial

segmentation models can rely on only those data elements that are typically available at the time of claim creation, we evaluate which elements meet this criterion. Depending on the quantity of historical data available in ClaimCenter (and in PolicyCenter), some projects will require additional data from legacy system environments.

After preparing an initial modeling data set, Guidewire collaborates with you to create target claim classifications for optimal processing, such as candidates for straight-through process, candidates for the high-severity team, and claims reported without injuries at first notice that later open injury exposures. A good target classification has enough observations to build credible models, is actionable, provides business value, and is measurable over time.

### Analysis and Modeling

This process starts by taking the information stored on a claim (such as body part injured) and creating both text and numeric variables with varying levels of specificity. Selection of the best variables drives model power and accuracy. Guidewire then builds and refines customized predictive models using a full range of statistical and machine-learning techniques designed specifically for the insurance industry.

### Integration with Guidewire ClaimCenter

To operationalize the model, Guidewire Predictive Analytics creates an API to score new claims. ClaimCenter then uses HTTPClient to call a REST service published in Amazon Web Services. Configuration tools define the scheduled times and/or triggering events that initiate these calls. Where necessary, UI screens are created or revised to display model results properly (see “Functional Design”). All processes are designed to safeguard ClaimCenter’s performance.

### Solution Delivery and Value Realization

Leveraging Guidewire Predictive Analytics, the Initial Claim Segmentation solution can be delivered in a relatively short time period with the following high-level delivery phases:

- Inception workshop (1–2 days)
- Data acquisition and preparation, followed by model building (1–2 months)
- Core system integration and implementation (1–2 months)

Guidewire can provide customers with consulting services to handle each of these phases, typically requiring only a few hundred hours of work. Customers can also use Guidewire software products independently and self-sufficiently, leverage one of our implementation partners, or use any combination of approaches.

In addition, customers have the option to leverage Guidewire Professional Services to help identify key performance indicators (KPIs) to measure the business benefit and validate ROI. Because predictive models can grow outdated as external business conditions and internal processes continue to change, Guidewire can also provide a complete lifecycle service that includes an annual model refresh to review and optimize model performance and then promptly deploy the revised model into production.

Guidewire is the platform P&C insurers trust to engage, innovate, and grow efficiently. We combine digital, core, analytics, and AI to deliver our platform as a cloud service. More than 380 insurers, from new ventures to the largest and most complex in the world, run on Guidewire. For more information, contact us at [info@guidewire.com](mailto:info@guidewire.com).



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