



Case Study



Public Sector Digital Modernization Project

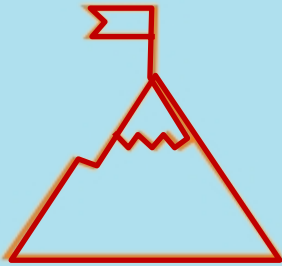
“Automated, Accurate, Reusable, and Quickly Deployable”

iSAT Extraction: Business Rule Extraction software implemented by AveriSource



About Client

Global Systems Integrator



Problem Statement

The Global Systems Integrator used Averisource's iSAT Extraction to decompose a public sector agency's existing legacy modules and migrate applications from its Mainframe to an AWS Hybrid Cloud environment.

The Global Systems Integrator needed an ISV partner with software capable of discovering deeply embedded business rules and data lineage in a mainframe programming language to design a future state set of applications. Additionally, the Global Systems Integrator needed to identify opportunities to simplify/optimize business rules, eliminate redundancy, etc., and accelerate the migration toward microservices to reduce technical debt and leverage the full benefit of the AWS Cloud environment.



What We Solved

The documented business rules reside in the source code of many enterprises. Understanding these rules is vital when faced with managing, modifying, extending, or modernizing these systems. Efficiently extracting this logic is particularly difficult in complex legacy applications where SME and technical knowledge is scarce. Adapting the complex data model and partitioning data services as abstracted API services is crucial to migration and essential to driving the migration to a successful completion.

Averisource's automated application analysis and business rules extraction software was installed on the Global Systems Integrator's private AWS Cloud EC2 instances. The Averisource-generated output provided the Global Systems Integrator with a reliable and expedited outcome to meet the public sector agency's business needs. Source code and business rule analysis improved downstream project velocity by over three times while maintaining effectiveness and accuracy.



How We Solved

1

Establish Context

Business purpose and domain model

Define requirements, goals and end state

2

Process Source Code

Baseline inventory

Generate reports/outputs

Map entry points

3

Map Business Processes

Describe entry points

Group into business Functions

4

Plan and Scope

Dependencies

Segmentation

Processes and data of interest

Detailed planning

5

Identify Candidates

Chains

Programs

Categories

Weights

Variables

Candidate rules

6

Extract Rules

Document for use in:

Application rewrite

Refactoring

COTS implementation

Rules engines

Candidate microservice rules



How We Solved

Business Rules Report Suite

The iSAT Extraction's suite of reports speeds the process of requirements gathering while reducing SME input and increasing accuracy: **Business Logic** – complete accounting of logic in control flow | **Rule Chaining** – interactive extraction across process flows | **Rule Tree** – end-to-end view of conditional flow | **Routine Flow** – control flow at paragraph/routine level | **Annotated Source** – categorized view of expanded source code | **Control Flow Diagram** – graphical representation of logic flow | **Data Dictionary** – details on variables and methods.

Business Process Mapping

Analyzing program connections, data operations, jobs, and transactions, iSAT Extraction automatically generates call chain diagrams of application “entry points.” These entry points are then mapped to the business functions they support, reducing the need for SME input and accelerating the business rule extraction process. This business alignment capability also enables the identification of obsolete and commodity processes for removal or replacement.

Rule Extraction Methodology

This proven methodology leverages iSAT Extraction's to efficiently extract business rules from legacy applications with a minimum amount of prior application expertise. The method marries business process mapping with the iSAT Extraction's unique business rule artifacts to give analysts a business-centric view of application source code and its underlying business logic. AveriSource's structured six-phase process and accompanying process guides more than quintuple the efficiency of requirements development.

Business Rule Chaining

A major complexity in requirements documentation is tracing rule flow as control is passed between programs. To overcome this difficulty, AveriSource's iSAT Extraction Rule Chaining capability combines business rules, data lineage, program connections and process sequence to empower users to extract rules within the complete “chain” of logic through an entire process.

Consider the case where a batch job with multiple steps uses call chains between numerous programs to operate on a critical set of variables. With iSAT Extraction's Rule Chaining, the user can request a chain of rules related to the variable of interest and then receive the sequenced results instantly – without manually tracking control flow or how variables are passed between programs. Programs are not analyzed in isolation; the process and its rules are viewed end-to-end, streamlining the rules mining process and capturing all business rules.



AveriSource iSAT Platform

AveriSource iSAT Assessment

Automated Digital Modernization Evaluator

iSAT Assessment is an Automated Digital Modernization Evaluator providing key analysis of legacy mainframe and i-Series applications to gather information about the size, scope and timeline of digital modernization projects.

- Inventory of all languages present in the source code, with a break down by language and lines of code
- Identification of components and modules called or connected to the code but not present in the analyzed code
- Application Overview – visual representation of the application based on Entry Point Analysis. Comprehend the reach of processes, connections between components, and connect entry point programs and jobs to business processes
- Connections Report - displays all of the connections between files in the application. Parent-child relationships between programs are identified as well as the types of connections between programs
- Statement Collector - displays collections of different types of executable statements in the application
- Complexity Analysis using industry-standard methods

AveriSource iSAT Extraction

Advanced Analysis and Business Rule Extraction

iSAT Extraction delivers critical information about applications including Data Lineage, Impact Analysis, Application Mapping, Connection Reports and Business Rules.

- 10X to 100X faster and more accurate than manual code analysis
- Comprehensive suite of reports and outputs with actionable and executable information
- Automatic categorization of Business Rules to provide business context and to allow segmentation of application modernization activities
- Data Lineage reports to help the client understand data operations within an application to make an informed decision around data storage and data requirements
- Dead, technical and redundant code automatically identified and segregated
- Source code to English-like translations in reports and Business Rules
- Business Alignment process to align code with business requirements, functions and activities

AveriSource iSAT Enablement

Microservices

iSAT Enablement utilizes metadata from iSAT Extraction to automate digital modernization to future ready applications. iSAT Enablement delivers microservices, while minimizing costly and error ridden manual efforts.

- Rapidly accelerate forward engineering velocity, remove technical debt and enable Cloud native deployment
- Microservices are delivered in C# or Java for easy deployment. Application components can be built in different programming languages (Polyglot)
- Ability to build extremely scalable applications
- Scalability results in lower operational costs