Modernizing Natural/Adabas Mainframe Applications

JavNat™ Overview

Introduction

In the evolving support[1] landscape of enterprise software, modernizing zOS mainframe applications is essential for organizations to remain technically competitive and cost efficient.

One such modernization task involves transforming Natural/Adabas applications, which play a key role in many business processes. However, these applications can be challenging to upgrade and then maintain to meet evolving modern requirements.

To address this need, FBDA has developed a solution set – NatMiner™/JavNat™ - that utilizes a portfolio of proven advanced technologies to deliver true value-added, low cost modernization solutions.

Key Takeaways

Modernizing Natural/Adabas applications with NatMiner/JavNat automated refactoring technologies can:

- deliver low-cost, low-risk modernization solutions;
- reduce or eliminate software licensing costs;
- ensure long-term support stability;
- maintain critical business functionality;
- improve software maintainability; and
- enable implementation of modern technologies.

FBDA uses NatMiner and JavNat to deliver a comprehensive analysis supporting an automatic refactoring of Natural/Adabas applications to a functionally equivalent Java accessing a choice of Relational Databases (RDBMS).

JavNat generated solutions are compatible with IBM zOS mainframe environments and can be deployed across various Java on-premis or Cloud infrastructures.

Solution Features

FBDA solutions include the following features:

- NatMiner - creates an RDBMS based Syntax Analysis Repository (SAR) for persistent storage of parsed source code data, enabling comprehensive analysis through more than 40 baseline reports, custom SAR queries, interface specifications, and navigable HTML based linked documentation.
- JavNat – generated assured error-free, open-source files for all refactored Natural modules, and a perpetual, derivative rights, open source license for all JavNat Transformation Framework (JTF) and JavNat Batch Facility (JBF) components, providing multiple support possibilities.
- Integrated tools for automated Adabas database schema and on-premis Adabas data conversion.
- A “3270 like” JSP/browser-based user interface (UI) – greatly simplifies test and user transition processes.
- Enables simple but powerful AJAX/JSP based UI enhancements such as drop-down lists and hot links to enhance user productivity.

See Figures 1 and 2 for additional solution information.

Implementation

FBDA's NatMiner/JavNat solution is typically organized into four phases, ensuring a structured and thorough approach:

- **Phase 1:** An initial complimentary FBDA scanning based analysis of your source files, offering accurate budgetary scope and cost estimates for your internal reviews, planning and approvals.
- **Phase 2:** A low cost NatMiner Discovery aNd Analysis (DNA) deep parsing of your application portfolio, offering comprehensive audit reports, the SAR database, and optionally, prototype Natural, Adabas schema, and Adabas data conversions, along with firm cost and schedule estimates.
- **Phase 3:** The transformation and refactoring of Natural and Adabas modules, at a low fixed price per module. FBDA guarantees deliverables will compile error free and are production-ready as well as suitable for multiple zOS or Cloud-native Java/RDBMS infrastructure choices.
- **Phase 4:** Customer implemented detailed unit and system tests and subsequent on-premis Adabas to RDBMS data migration with application production deployment to the preferred infrastructure. FBDA will assist as required with these activities.

Post Modernization Support

FBDA provides a five (5) year warranty on all JavNat generated artifacts and the licensed JTF / JBF components.

Optionally, customers may contract with FBDA for post-production support on a demand basis.

For technical details see: www.fbda.ca - or for a complimentary initial assessment contact: info@fbda.ca .

1. The recent acquisition of Software AG, and subsequent re-structuring/assets sales of substantially all of its forward-looking technology, by Silverlake Private Equity has left Natural/Adabas users wondering what the future holds for industry support of their often z/OS based mission critical applications. This article provides an analyst’s review of the issues. https://diginomica.com/end-road-software-ag-selling-integration-business-ibm

Fig 1: JavNat Solution Architecture Options

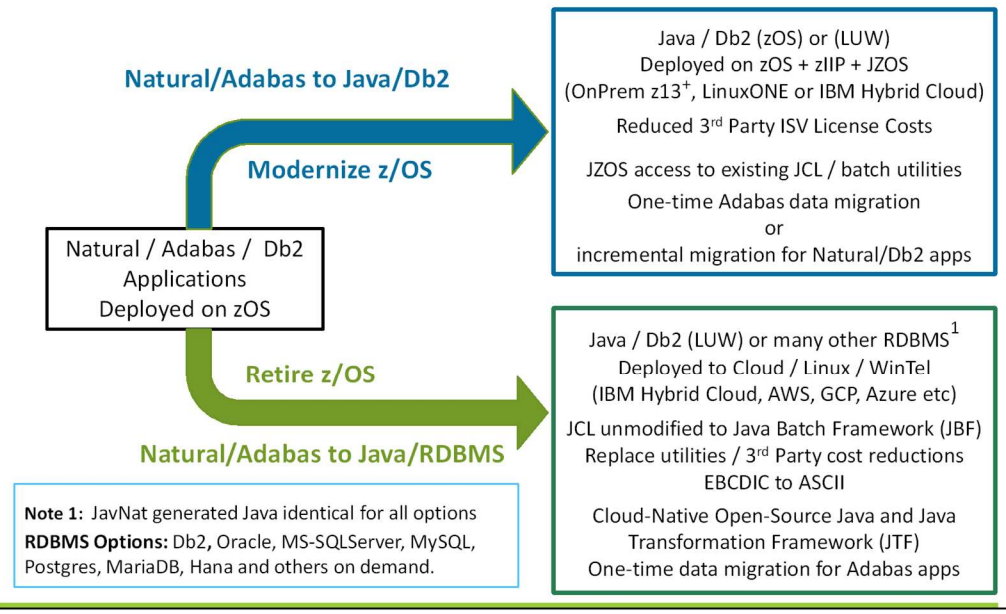

Fig 2: Major University Case Study

Client Objectives

- Modernize circa 1995 Student Information System (SIS)
- Move to lower cost RHEL / Intel environment
- Consolidate staff skills to Java, DB2 (LUW), Web Services, and Linux technologies
- Provide an agile platform for future modifications
- Convert "green" screens to browser enabling UI updates
- Enable major "micro-services" enhancements
- Enable commodity Cloud data warehouse

Challenges

- Register 100,000 students in days – not weeks
- 2.8 MLOC of zOS Natural /Db2 code
- 4,000+ screens / 8,000+ modules
- Entire-X constrained data access
- Staff demographics / skills constraints
- BC12 performance driven student "rationing"
- Mission critical – generating $1 B fees

Outcome

- Cost / ROI: $1.8 M - 18-month payback
- Full production since 2021
- Consolidated developer skill sets to Java
- Eliminated Natural license costs
- Eliminated registration window "rationing"
- Eliminated zOS MLC costs
- Maintained all Business Rules
- "3270 in Browser" UI = no user re-training
- Transformed Entire-X to Web Services
- Enabled major new functionality
- Hybrid on-prem prod + Cloud data warehouse