

Introduction

In the evolving landscape of enterprise software, modernizing mainframe applications is an essential task for organizations to remain competitive and efficient.

Often such tasks involve modernizing Natural/Adabas applications, which play a key role in many corporate and government business processes.

To address this need, FBDA has developed an automated solution set – NatMiner™ and JavNat™ – for analysis and refactoring/transformation that utilizes a portfolio of advanced refactoring technologies to 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.

Getting Started

Given the potential scope and required investment for modernization of mission critical Natural/Adabas applications, FBDA recommends a NatMiner™ based Discovery and Analysis (“DNA”).

A DNA is essential for establishing an objective financial and technology project foundation for management review and approval as well as for a successful implementation.

DNA Key Deliverables – Code Analysis Reports

The NatMiner solution delivers a series of static HTML reports with contents to include as a minimum the following:

- **Project Inventory Summary Report**
 - Number of Natural libraries.
 - Total number, source lines, and counts of each Natural module by library and module type.
 - Number of external calls to non-natural modules.
 - Number of FDTs and DDMs used in the code base.
- **Non-Natural Calls Report**
List of calls to non-Natural modules with parameters.
- **Missing Objects Report**
Provides information about DDMs, FDTs, Data Areas and executable modules that are referenced but not included in the customer-provided source code.
- **Project File Usage Report**
Provides a summary by FDT for each DDM, showing the number of instances of Read, Update, Delete, and Store.
- **Data Area Usage Report**
For data areas, a list of all modules where referenced.

- **MAP Usage Report**

For each MAP, show all modules in which it is referenced with source details including a MAP image.

- **FDT Analysis Reports**

An FDT graphical representation; analysis of FDT complexity and use of Adabas features such as descriptors, MUs and PEs; and an application_FDT affinity analysis.

- **Parsing Exception Report**

This report lists all modules that failed parse.

- **Migration Issues Reports**

These reports identify statements such as REINPUT that will require QA review after translation.

- **CONSTRUCT Usage Reports**

These reports identify references to Construct Support Modules which must be replaced with Java equivalents.

- **Cobol/Adabas**

For Cobol applications accessing an Adabas database using EXEC ADABAS syntax, reports identify all occurrences with the source logic to be replaced with SQL.

Note: The analysis reports and customer source files are all hyperlinked to facilitate browser-based customer review. Figure 1 below provides sample reports.

Options

The following optional deliverables are available:

- **Prototype Data/Source Code** - FBDA will transform samples of the Adabas FDTs/data and Natural source code to produce functionally equivalent Java/RDBMS implementations.
- **AI Generated Documentation** – FBDA will generate sample AI based module design documentation.

Project Summary Report

FBDA will prepare a report of the analysis to include Level 1 schedule and cost estimates for a JavNat implementation.

Customer Support

JavNat DNAs are delivered on a SaaS basis. Customers must provide all source code including FDTs to FBDA in SYSTRANS/SYSOBJH file format plus relevant STEPLIBS. FBDA will provide code extraction instructions, and a Java based tool (SYSTRANS Auditor™) for auditing the source code for completeness prior to shipment to FBDA.

Pricing and Delivery

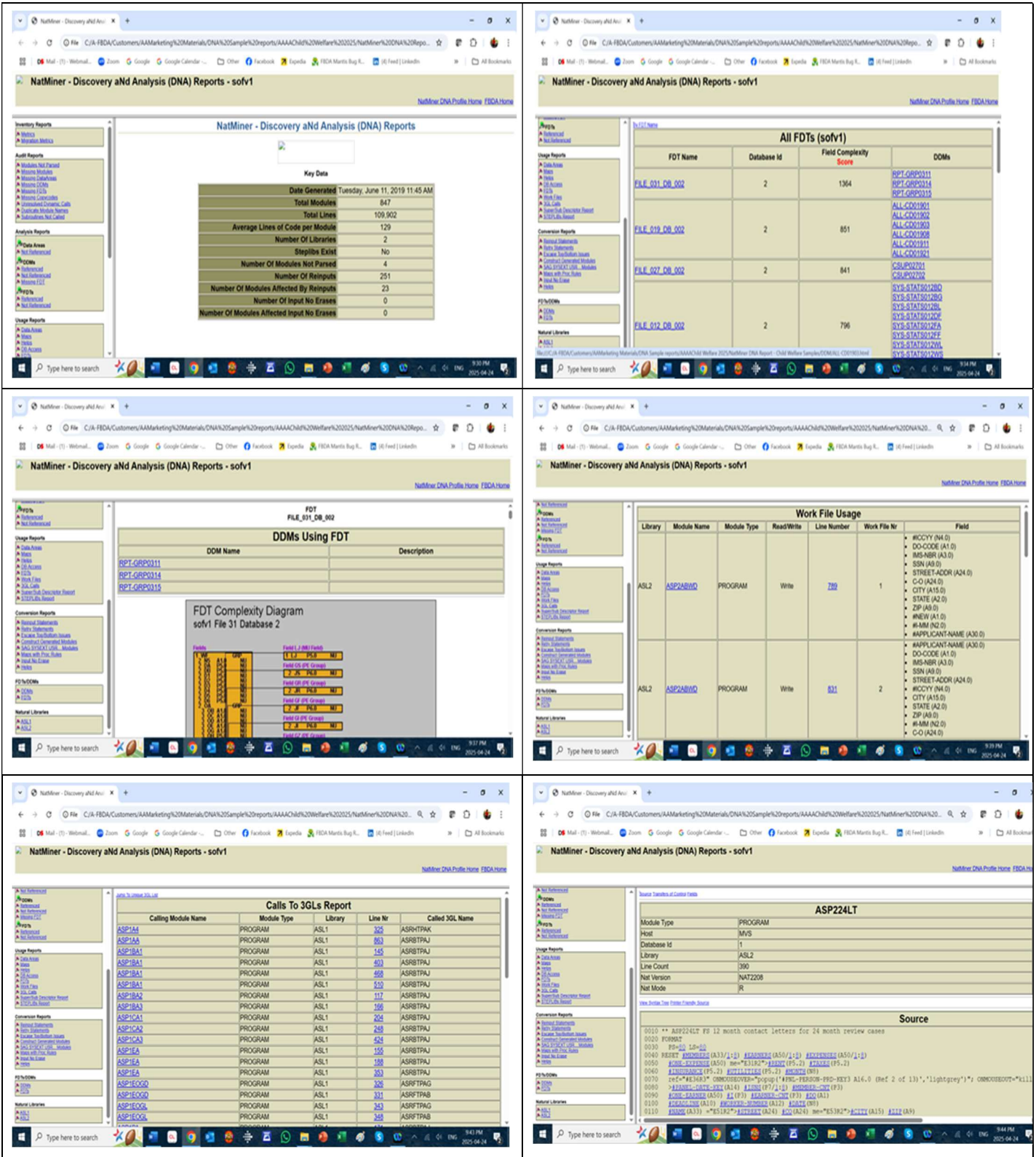
Pricing and delivery based on the number and scope of the Natural application(s), Adabas FDTs, and sample transformations.

DNA pricing starts at \$10K for a single source library. Prototype transformations at \$5K setup + \$100 per module.

Delivery is in the range of 4 to 12 weeks ARO.

Contact: info@fbda.ca to obtain a firm quote.

Figure 1: Selected Sample Reports



The figure displays six screenshots of the NatMiner DNA software interface, showing various reports generated during a discovery and analysis process. Each screenshot shows a browser window with the application's URL and a sidebar with navigation options.

Report 1: NatMiner - Discovery and Analysis (DNA) Reports - sof1

Key Data

Date Generated Tuesday, June 11, 2019 11:45 AM	
Total Modules	847
Total Lines	109,902
Average Lines of Code per Module	129
Number of Libraries	2
Steps Exist	No
Number of Modules Not Parsed	4
Number of Reinputs	251
Number of Modules Affected By Reinputs	23
Number of Input No Erases	0
Number of Modules Affected Input No Erases	0

Report 2: All FDTs (sof1)

FDT Name	Database Id	Field Complexity Score	DDMs
FILE_031_DB_002	2	1364	RPT-GRP0311 RPT-GRP0314 RPT-GRP0315 ALL-C001008 ALL-C001002 ALL-C001003 STATE (A2 0) RPT-GRP0311 ALL-C001021
FILE_019_DB_002	2	851	ALL-C001008 ALL-C001002 ALL-C001003 STATE (A2 0) RPT-GRP0311 ALL-C001021
FILE_027_DB_002	2	841	CSUP02021 CSUP02022 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020
FILE_012_DB_002	2	796	SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020 SYS-STAT02020

Report 3: DDMs Using FDT

DDM Name	Description
RPT-GRP0311	
RPT-GRP0314	
RPT-GRP0315	

Report 4: Work File Usage

Library	Module Name	Module Type	Read/Write	Line Number	Work File Nr	Field
ASL2	ASP24LTD	PROGRAM	Write	789	1	RCCTY (N4 0) DO-CODE (A1 0) MS-NBR (A3 0) SSN (A9 0) STREET-ADDR (A24 0) C-O (A24 0) CITY (A15 0) STATE (A2 0) ZIP (A6 0) INNEW (A1 0) #MM (N2 0) #APPLICANT-NAME (A30 0) #APPLICANT-NAME (A30 0) DO-CODE (A1 0) MS-NBR (A3 0) SSN (A9 0) STREET-ADDR (A24 0) RCCTY (N4 0) CITY (A15 0) STATE (A2 0) ZIP (A6 0) #MM (N2 0) C-O (A24 0)
ASL2	ASP24LTD	PROGRAM	Write	831	2	RCCTY (N4 0) DO-CODE (A1 0) MS-NBR (A3 0) SSN (A9 0) STREET-ADDR (A24 0) CITY (A15 0) STATE (A2 0) ZIP (A6 0) #MM (N2 0) C-O (A24 0)

Report 5: Calls to 3GLs Report

Calling Module Name	Module Type	Library	Line Nr	Called 3GL Name
ASP1A4	PROGRAM	ASL1	325	ASRHTPAK
ASP1A4	PROGRAM	ASL1	863	ASRBTPAJ
ASP1B1	PROGRAM	ASL1	145	ASRBTPAJ
ASP1B1	PROGRAM	ASL1	493	ASRBTPAJ
ASP1B1	PROGRAM	ASL1	498	ASRBTPAJ
ASP1B1	PROGRAM	ASL1	510	ASRBTPAJ
ASP1B2	PROGRAM	ASL1	117	ASRBTPAJ
ASP1B3	PROGRAM	ASL1	166	ASRBTPAJ
ASP1C1	PROGRAM	ASL1	204	ASRBTPAJ
ASP1C2	PROGRAM	ASL1	249	ASRBTPAJ
ASP1C3	PROGRAM	ASL1	424	ASRBTPAJ
ASP1E1	PROGRAM	ASL1	155	ASRBTPAJ
ASP1E2	PROGRAM	ASL1	188	ASRBTPAJ
ASP1E3	PROGRAM	ASL1	253	ASRBTPAJ
ASP1E00D	PROGRAM	ASL1	326	ASRFTPA6
ASP1E00D	PROGRAM	ASL1	331	ASRFTPA6
ASP1E00L	PROGRAM	ASL1	343	ASRFTPA6
ASP1E00L	PROGRAM	ASL1	348	ASRFTPA6

Report 6: Source Statistics of Control Files

ASP224LT

Module Type	PROGRAM
Host	MVS
Database Id	1
Library	ASL2
Line Count	390
Net Version	NAT208
Net Mode	R

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0010 ** ASP224LT FB 12 month contact letters for 24 month review cases
0020 PORG02
0030 PPG-LO
0040 RESET PORG02 (A33/1:1) #R0002 (A50/1:1) #R0002 (A50/1:1)
0050 #R0002 (A50) #R0002 (A50) #R0002 (A50) #R0002 (A50)
0060 #R0002 (A50) #R0002 (A50) #R0002 (A50) #R0002 (A50)
0070 ce="R348" OMBOO000="popo" ("R348-P000-P00-KEY A16.0 (ref 2 of 13)";"lightgrey"); OMBOO000="k111
0080 #R0002 (A50) #R0002 (A50) #R0002 (A50) #R0002 (A50)
0090 #R0002 (A50) #R0002 (A50) #R0002 (A50) #R0002 (A50)
0100 #R0002 (A50) #R0002 (A50) #R0002 (A50) #R0002 (A50)
0110 #R0002 (A50) #R0002 (A50) #R0002 (A50) #R0002 (A50)
  
```