

Adabas Natural Migration and Modernization Solutions



Highlights:

- Eliminate costly annual licensing fees and reduce operational expenses by as much as 70%
- Leverage proven methodologies to quickly rehost strategic applications or transform investments into new technologies
- Deploy an appropriate solution tailored to your organizational preferences and strategic direction
- Take advantage of automated toolsets that generate clean, easy to read code
- Consolidate data sources into relational databases; enhance data access across the enterprise
- Address the complete IT environment with the Clarity Mainframe Rehosting Reference Architecture and end-to-end service offerings

Selecting the right path forward

Whether your organization is looking to replatform legacy Adabas Natural investments to open systems, or to transform these technologies into new languages and data types, Clarity has the expertise, automated tools, and production-ready software to plan, execute, and manage a complete solution.

Well-planned and executed Adabas Natural migrations can secure the long-term viability of strategic applications while significantly reducing annual operating costs and better preparing an organization for new service oriented architecture (SOA) and business process management (BPM) initiatives. Depending on your business and technical requirements, Clarity can tailor a rehost approach that preserves existing IT investments, minimizes change, and delivers a rapid return on investment (ROI), or a complete transformational solution, which moves your Adabas Natural to a new language and relational database (RDBMS) environment.

If you are unsure about the appropriate path forward, a Clarity™ Migration and Modernization Assessment Process (MMAP) service can help analyze your current environment and assess the potential cost, duration, and impact of a rehost, transformation, or mixed solution approach. Our deep services bench, open systems and mainframe skills, fully-integrated reference architecture, and proven methodologies mean no disruption to ongoing operations, minimal risk, and rapid return on investment for your chosen solution path.

Rehosting – preserve functionality, minimize risk, lower operational cost

For organizations focused on maximizing existing business logic and data investments, Clarity can safely rehost Adabas Natural environments to distributed systems. By eliminating costly software and hardware maintenance fees, rehosting can reduce annual operating expenses by as much as 70% and can serve as a destination on its own or a step forward in a total IT transformation initiative.

Application environments

Clarity's comprehensive rehosting approach preserves current application investments, end user interfaces, and existing IT skills. As depicted in Figure 1, *Common Rehost Application Mappings*, Clarity leverages a proven methodology to safely move online and batch Natural, JCL, and related workloads to open systems.

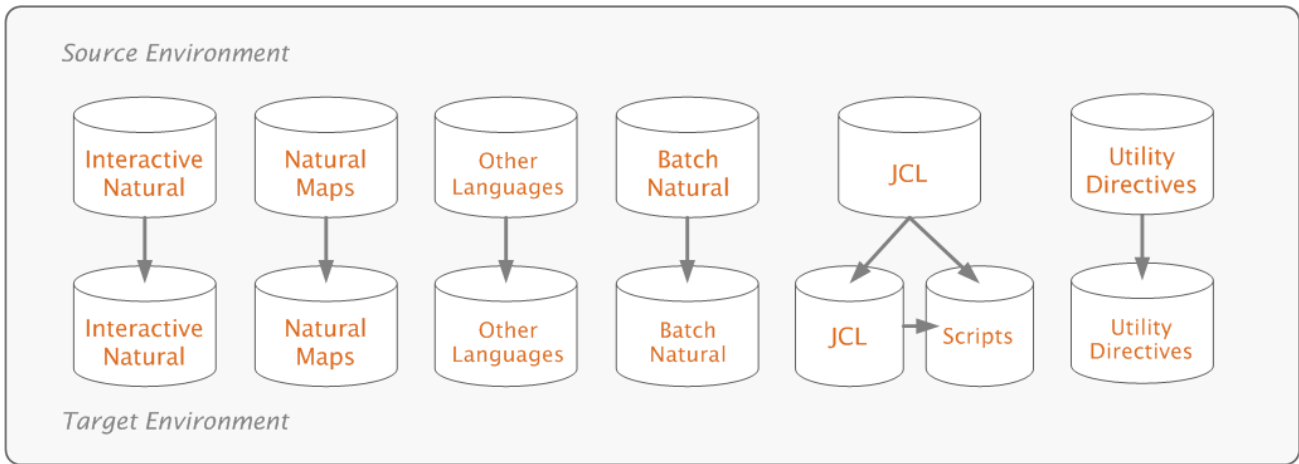


Figure 1. Common Rehost Application Mappings

Interactive environments

Depending on business and technical preferences, there are several options for addressing online Natural workloads and related legacy environments in a rehost approach.

- Natural and other programming languages running in online environments such as IBM® CICS® applications, IBM® IMS® transactions, TSO or Com-plete, can be moved to the Natural runtime environment on open systems.
- UniKix™ Transaction Processing Environment (TPE) software from Clarity is available for large online transaction processing (OLTP) and COBOL environments. With over 1300 implementations worldwide, UniKix TPE provides general purpose, high performance transaction processing; retaining interoperability with a rich set of end-user and application interfaces; and providing functionality such as BMS and VSAM file processing.
- Interactive Natural applications that make use of Maps can be rehosted to Maps in an open systems environment. End user interfaces typically look the same after a project, minimizing the need to retrain end users.

Other programming languages such as COBOL and PL/1 are commonly associated with Adabas Natural environments. These languages can be retained and rehosted to open systems or migrated to other programming languages such as Java if desired.

Batch environments

Clarity is uniquely positioned to rehost Natural Batch workload investments on open systems. UniKix™ Batch Processing Environment (BPE) software from Clarity provides automatic JCL translation from IBM® z/OS® environments or IBM® z/VSE® environments and gives special consideration to Natural Batch features. UniKix BPE software supports

common batch constructs such as Jobs, Procs, Steps, GDGs, Concatenated Data Sets, Classes, and Priorities and includes a binary compatible NATRJE module that requires no re-linking of the Natural nucleus on open systems.

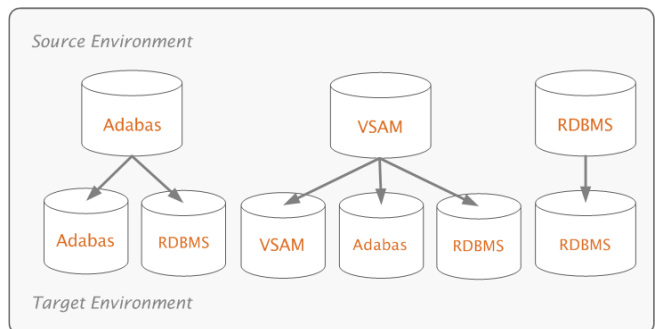
Many utility directives such as sort parameters and print routines are maintained on the new target environment in a rehost solution. For instance, common sort parameters can be rehosted to operate with Syncsort of Cosort. Utility directives that are specific to the source environment may be replaced with new utility directives on the new target platform or adapted as needed.

Data sources

Adabas delivers the same functionality across mainframe, Linux®, UNIX®, and Microsoft® Windows® platforms. Depending on organizational objectives, Adabas can be rehosted to an open systems platform, accessed in a distributed implementation, or replaced with a RDBMS such as IBM® DB2® software, Oracle® database, or SQL Server.

If Natural programs access an IBM DB2 database, other RDBMS, or VSAM records on the source environment mainframe -- as depicted in Figure 2, Common Data Mappings -- these data sources can be rehosted to equivalent offerings in the new target platform as well.

Figure 2. Common Data Mappings



Adabas Natural transformation – new functionality enabled by automated, efficient migration methodologies

For organizations looking to migrate and transform Adabas Natural to newer technologies, Clerity's automated toolsets and experienced service team ensure smooth and manageable implementations. Clerity can address a complete Adabas Natural environment by taking Natural program code to COBOL, Java, C#, and Enterprise Generation Language (EGL) and by moving Adabas to a relational database such as IBM DB2, Oracle, or SQL Server.

In a transformational approach, an advanced Natural parser and automatic conversion tools are leveraged to efficiently migrate Natural applications. As depicted in Figure 3, Natural Transformation Process Overview, source code is first analyzed and parsed in detail. The parsed output is then stored in an RDBMS repository. All subsequent schema and data migration, as well as source code conversion, is then driven from the repository.

Next, code is remediated for syntax changes between the different versions of Natural and for differences between various platforms. After remediation is complete, the code transformation process is undertaken.

Application environments

There are numerous interactive environments and batch facility choices to be made in a transformational approach. Specific selections often depend on your organization's strategic direction, existing expertise, and desired target language (COBOL, Java, C#, or EGL).

Interactive environments

- Natural code moved to native COBOL can take full advantage of UniKix TPE software.
- Natural code transformed into Java can operate in a

Java/JEE-based application server environment such as Oracle WebLogic Server or IBM® WebSphere® Application Server.

- Natural code moved to C# will typically make use of the .NET framework.
- Natural code moved to EGL could either leverage IBM CICS regions or WebSphere on the mainframe. On distributed platforms a JEE application server environment could be used as well.

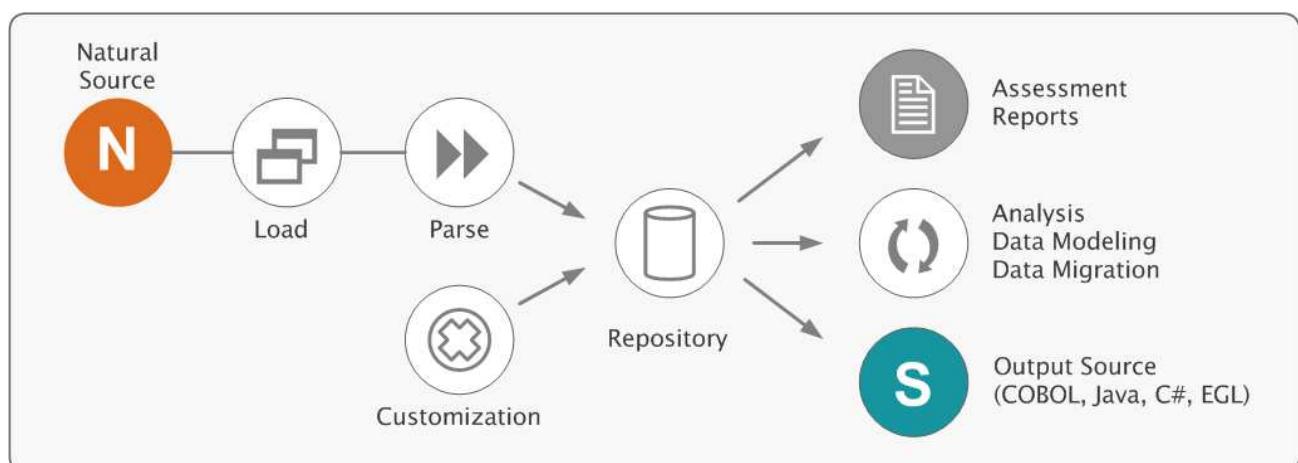
For interactive Natural applications that make use of Maps, user interface options depend on the target programming language as well.

- When Natural is transformed into COBOL, the user interface is typically moved to BMS Maps.
- Natural code that has been moved to Java or C# will leverage user interface technology that is native to Java or .NET respectively so that these interfaces can then be served by client software or application servers specific to those environments.
- The user interface environment for code transformed into EGL will depend on the target deployment platform.

Batch environments

- UniKix BPE technology can be used to provide a robust framework for Natural Batch code that has been transformed into Java, C#, or COBOL.
- JCL can be translated to macros using UniKix BPE software or replaced by scripts.
- Natural Batch workloads that have been transformed into EGL would likely run as COBOL and JCL on the mainframe or Java and scripts everywhere else.

Figure 3. Natural Transformation Process Overview



Data sources

In Clerity's transformational approach, Adabas structures are efficiently mapped to a RDBMS with limited impact on database administrators. As part of this process, Clerity first creates a relational database staging area. Existing mainframe Adabas systems are read and required schema information is extracted using standard Adabas utilities for the new target environment. Data is then massaged to the new database model. The new model and data conversion routines can then be generated.

Address the entire environment with the Clerity Mainframe Rehosting Reference Architecture

Adabas Natural workloads may interact with online transaction processing monitors, batch and Job Control Language (JCL) workloads, as well as an assortment of third party tools such as schedulers, sort utilities, and reporting tools. The fully-integrated Clerity Mainframe Rehosting Reference Architecture (MFRR) minimizes project disruption and helps address the solution areas surrounding your core application investments. The Clerity

MFRR provides a fully tested, tuned, and documented implementation model that takes the risks out of migration by detailing how typical requirements such as printing, security, and resource management can be quickly and effectively implemented on open systems.

Complete end-to-end solutions

Clerity's deep mainframe and open systems service bench can provide project management for the complete lifecycle of any migration. Our service experts can tailor an Adabas Natural migration and modernization solution with the level of service required to make your implementation successful, and our infrastructure experts can offer consultative advice for other necessary hardware and software components as required.

The combination of strong products, deep expertise, and flexible service offerings makes Clerity the best choice to migrate Adabas Natural systems to a more cost-effective environment that encourages new business opportunities.

Find more details about this solution and others at www.clerity.com.

About Clerity

Clerity is a leading full-service provider of mainframe migration, modernization, and optimization solutions. Drawing from over 16 years of experience, Clerity recognizes that companies have significant investments in core applications and procedures and provides a wealth of low risk, high value tools, technology, and services to reduce IT costs without sacrificing current functionality and service level agreements. Headquartered in Chicago, Illinois with offices worldwide, Clerity has customers in all in major countries, including some of the largest financial services ISVs and Fortune-class end users.

Learn how Clerity can provide an evolutionary path forward for your application and data environments at www.clerity.com.



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