

Service Highlights

More than 20 years of experience

Tool based processes for error-free conversion

Qualified personnel

OS migration

Language conversion

Integrated S/W Inventory and Assessment



Proven Legacy Migration Services from

Legacy application migration is complex and requires special expertise. It can be costly, time consuming, and risky for internal IT staff to learn the processes and programs necessary to tackle such a project. To remedy this, HTWC has developed a set of tools and services that are built upon years of experience in migration and application development.

Any legacy modernization project requires careful planning and execution. To minimize risk and ensure success, only experienced migration vendors with proven tools should be considered.

HTWC is proud to offer 2CHANGE, an end-to-end service that combines two decades of migration experience with the best modernization tools on the market. 2CHANGE is specifically designed to provide a low-risk solution for moving legacy applications and data to systems running on UNIX, Linux, or Windows.

2CHANGE provides a fully automatic migration process between different platforms and heterogeneous programming languages.

The expertise of HTWC engineers, combined with uniquely developed software tools, will ensure the success of any migration project.

Mainframe Rehosting to UNIX / Linux / Windows

There are many products on the market that allow some level of mainframe application and data rehosting on open systems such as UNIX, Linux, or Windows. However, other products typically leave the porting of legacy software to the customer. This is done either manually or with a semi-automated process that is incomplete and drives up cost.

Mainframe migration can seem like an overwhelming task. With 2CHANGE, HTWC provides the services and tools needed to produce a complete, automated conversion. This process handles all aspects of migrating source programs, copybooks, screen formats, and Job Control Languages (JCLs). A special function, also completely automatic, provides for migration of data stored in data sets as well as hierarchical and relational databases.

The migration process is quick, precise, and cost-effective. In addition, applications written in a previous version of COBOL, or in obsolete languages such as RPG II or Assembler, can be converted to the latest version of COBOL.

UNIX/Linux Rehosting Highlights

Move from legacy systems to UNIX/Linux/Windows

CICS and IMS/DC support

VSAM, DB2 and DL/I support

JCL conversion

By combining the automated 2CHANGE migration process with XFRAME, our powerful rehosting platform, you can realize a relatively low-risk, low cost mainframe migration and rehosting. With a new system rehosted on XFRAME, you will experience dramatically lower costs, and in most cases, better performances than the legacy environment.

A separate brochure is available for XFRAME that provides more details.

Assessment And Discovery

SYSMIG is the name given to our set of powerful migration tools. Typically, the first tool used for any project is ICON. Developed in-house by HTWC, ICON is used to scan and catalog a customer's software inventory. ICON provides easy access to the number and names of cataloged objects, with information on their quantity, typology and any detected anomalies. All the subsequent processing steps of 2CHANGE are accomplished using the inventory created by ICON, providing complete control over each converted module. A separate brochure is available for ICON that provides more details.

With an established software inventory, you are now in a position to make informed decisions about your migration options. With 2CHANGE, HTWC can provide the following language migrations and conversions:

- VSE/ESA to OS/390
- CPS to COBOL
- PL/1 to COBOL
- CA Easytrieve to COBOL
- Assembler to COBOL
- RPG to COBOL

All of the COBOL applications created during conversion are structured, readable, and easily maintainable.

With any project, HTWC engineers will also provide the best migration consulting and troubleshooting expertise in the industry.



VSE to OS/390 Highlights

Move from VSE/ESA to OS/390

*Automated COBOL I to COBOL II
conversion*

Automated JCL conversion

XMF and SPL

XMF is the name of HTWC's XFRAME Migration Framework, where the automatic conversion of source code can be managed in a controlled environment. Source Code Processing Language (SPL) is a migration language developed by HTWC which allows rule sets to be defined for specific conversion tasks.

In any conversion project, the primary objective is to preserve the valuable business logic built into legacy applications. To do this, a converter must be open, easy to use, powerful, and easy to extend. As an integrated environment, XMF controls the conversion life cycle of an entity or a stream of entities. Conversion with XMF can be run either fully automatically or interactively.

It works independently of the source and target language.

XMF and SPL allow HTWC to rapidly develop new conversion products and to adapt existing tools to customer requirements.

VSE/ESA to OS/390 Migration

The VSE2MVS Converter is a tool used to move software from IBM VSE to IBM z/OS (MVS). It is composed of two primary components, a COBOL to COBOL II converter and a VSE to z/OS JCL converter. Each of these tools can be used separately if needed.

The COBOL Level I to Level II converter will automatically change any Level I code that is no longer supported by the COBOL Level II compiler. Optionally, the original code is reformatted to provide better readability. For example, condition closing statements (i.e. END-IF, END-PERFORM, END-READ, etc.) are inserted in the original program, so it can readily leverage all the capabilities offered by COBOL II. Programs using CICS, DB2, and DL/I are also supported.

COBOL II Conversion of:

Assembler 370

COBOL I

PL/I

CSP

RPG/II

EASYTRIEVE

CSP to COBOL conversion

IBM Cross System Product/Application Development (CSP/AD) is a fourth generation language (4GL) developed by IBM. Using the HTWC CSP Converter, it is possible to extract and rebuild your existing CSP libraries into native COBOL, ready for use with the latest compilers. This migration process will produce:

- COBOL sources & copybooks
- BMS maps
- DCLGEN for RDBMS tables
- Record descriptors for VSAM or DL/I
- CICS configuration tables

With the latest release of the CSP Converter, programs that were originally developed in conversational mode may be converted to pseudo-conversational mode, significantly reducing the system overhead needed to run the new applications.

PL/I to COBOL Conversion

The HTWC PL/I tool will automatically translate PL/I programs coming from IBM and UNIX environments to COBOL II code. The conversion process is highly customizable, allowing the user to choose the template of resulting COBOL programs. A small set of run-time functions along with source code are provided to the user as part of this process. Conversion from CICS, DB2, and DL/I is also supported.

CA EASYTRIEVE to COBOL

The HTWC EZT2COB converter will automatically translate CA Easytrieve programs in IBM and UNIX environments into COBOL II code. The conversion process generates code that preserves the programming logic of the original Easytrieve application.

The generated code is 100% COBOL, every Easytrieve function is replicated in pure COBOL without any calls to external routines. All properties of commonly run reports are supported and automatically converted into logical COBOL processes. EZT2COB also supports multi-report programs as well as access to DB2, VSAM, and DL/I data.



Assembler Conversion Services

Many companies still rely on core applications written assembly language. These applications were usually written decades ago, yet their functionality and business logic can be difficult to replicate or replace. Unfortunately, maintaining this software is cumbersome and finding programmers with the necessary skills can be difficult. In many cases, these applications present a risk to the integrity of key IT infrastructure.

HTWC Assembler Conversion Services solves this problem by creating functionally identical COBOL applications from assembler code. This type of conversion provides a robust and convenient way to preserve valuable business logic, while creating new applications that can be run in a variety of environments.

The powerful HTWC tools, A2C and COBRE form the functional foundation of Assembler Conversion Services. Both tools are composed of rule sets which consist of hundreds of individual rules. These rules are written in HTWC's Source Code Processing Language (SPL) and executed in HTWC's Integrated (Integrated XFRAME Migration Framework) XMF.

Assembler Conversion Services from HTWC are very cost-effective. Each project is typically carried out on a fixed price basis and billing is performed per line of code. The final price will depend on the quality of the source code and the complexity of the applications. With the inherent flexibility of A2C, HTWC can easily meet the needs of most individual customers.



RPG to COBOL Conversion

The HTWC RPG Converter can automatically translate IBM RPG II programs to COBOL code. The conversion process is performed only once, in the HTWC migration labs. The converted applications are then returned to the customer, ready to run. No additional runtime system is required. In most cases, RPG II is converted to COBOL as part of a legacy migration project to open systems such as UNIX. In some cases, customers have converted existing RPG code without a platform change because they were unable to maintain the original code base. Each conversion service is designed to be highly adaptable to varying customer requirements.

VSAM to SQL Conversion

Using the VSAM2SQL Converter we can automatically migrate VSAM/ISAM files into RDBMS tables (Oracle or DB2). The Converter produces table creation scripts/JCLs, table loading programs and translates the user PL/I and COBOL code, changing both traditional and CICS file access instructions (OPEN, READ, WRITE, etc. and EXEC CICS READ, STARTBR etc.) into the corresponding EXEC SQL instructions.



Overview HTWC®

HTWC is a leading developer and vendor of rehosting and application management solutions. HTWC was founded with a focus on large organizations, helping to confront and resolve problems with enterprise systems, particularly the difficulty in integrating and modernizing legacy environments.

HTWC has specialized in mainframe rehosting and software management solutions since 1987.

Currently, HTWC labs develop products for rehosting analysis, migration, conversion, and reengineering of legacy software. The integration of these products guarantees a reliable, flexible, and cost effective solution for our customers.

Further information

For further information on the XFRAME® products please visit our website www.htwc.com. For specific questions, please contact us at info@htwc.com

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Head Office

HTWC® Srl
Viale America, 125
00142 - Rome (Italy)
Tel +39.06.54218261
Fax +39.06.5926911
info@htwc.com

Laboratory

HTWC® Srl
Viale Mosca, 10
00142 - Rome (Italy)
Tel +39.06.51964253
Fax +39.06.5036309
info@htwc.com

Germany

Mr. Gerardo Massi
Tel +49 89 464821
Cel +49 174 2402342
gerardo.massi@htwc.com