

# CODETURN FOR COBOL TO C# MIGRATIONS

FACT SHEET

## AT A GLANCE

Many of today's mainframe applications that were developed in COBOL are still mission-critical and continue to deliver significant benefits to the organizations that use and rely upon them. Nevertheless, the Total Cost of Ownership (TCO), skill shortage, or end of support associated with these applications have now escalated to unsustainable levels. Astadia's automated COBOL modernization and migration solution provides an opportunity to liberate these valuable and reliable business systems from their dependency on non-strategic legacy technology, and enable them to use Object-Oriented languages such as Java or C#.

## SERVICE HIGHLIGHTS

Astadia will take any application developed in COBOL and automatically convert it to a functionally identical one, now ready to run on Windows and .NET. Since both the transformation and the testing is fully automated, the outcome of the project is fully predictable, in terms of risks, costs, and duration.

## THREE STRONG PROMISES

All Astadia transformations ensure three types of equivalence:



### Functional equivalence

The migrated application's behavior is identical to that of the original one.



### Performance equivalence

The migrated application will perform at least as well as the original one.



### Maintenance equivalence

The maintenance of the migrated application will be comparable in effort to the original application.

## WHY MIGRATE FROM COBOL TO C#

There are many good reasons to make the move from COBOL to C#. These are typically the major concerns for businesses:

- High (and rising) maintenance and runtime fees for the existing COBOL products;
- Shrinking availability of COBOL developers and lack of interest in COBOL from young developers;
- The End-of-life scenarios for certain COBOL technologies;
- Lack of application extensibility and interoperability with other, non-COBOL applications.

C# and the .NET platform offer answers to all these concerns:

- Support fees are negligible or even non-existing;
- C# is one of the most widely-used programming languages today and actively being developed;
- The .NET platform is constantly extending as well becoming available on more operating systems and devices.

Next to that, moving to C# also means:

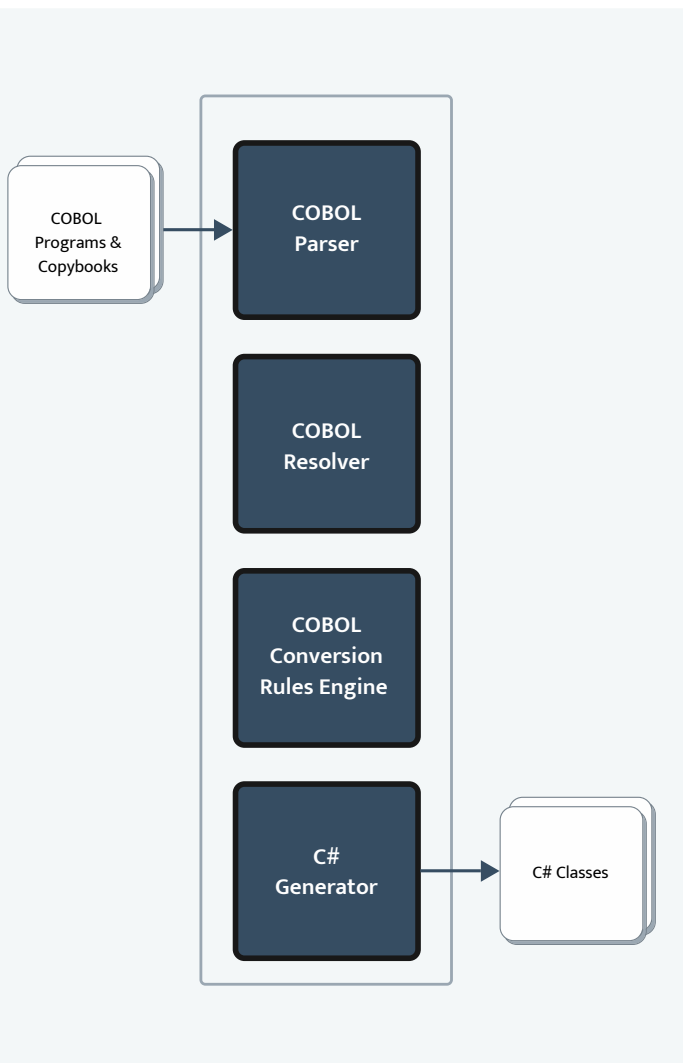
- Enabling the use of a state-of-the-art IDE, with extensive debugging, refactoring, profiling and (unit)testing support.
- Enabling the use of thousands of third-party libraries, covering almost all imaginable computing needs.

## COBOL TO C# TRANSFORMATION

Astadia uses its own specialized tools to automate the conversion of COBOL sources to C#, guaranteeing code quality, avoiding risks, and offering full predictability through 100% automation.

The architecture of the COBOL to C# converter contains:

- A parser that supports many COBOL dialect syntax, and embedded languages (e.g. EXEC CICS or EXEC SQL);
- A resolver that computes detailed control-flow and data-usage information;
- Conversion rules for all COBOL syntax, from single statements to complex patterns of code; and
- A code generator for C# enabling any desired coding style.



## KEY TRAITS OF THE TOOL

The tool's main features:

- Handles all COBOL data types with 100% fidelity;
- Handles also complex GO TO and PERFORM/fallthrough based control-flow;
- Handles POINTER, BASED and ADDRESS OF;
- Favors simple mappings when possible while having fallback mappings when needed (E.g. PERFORM will be a method invocation if possible but also RM/COBOL style PERFORMS can be mapped);
- Has clean mappings for most COPY and many COPY...REPLACING directives;
- Resulting code takes maximal advantage of modern IDEs refactoring possibilities so further changes can be done in an incremental and type-safe way;
- Resulting code can be configured to be more OO style or more procedural style;
- Offers many out-of-the-box customization possibilities (e.g. removing dead code, removing unused variables, naming and grouping of data, ...);
- A plugin-based architecture making it easy to create project-specific conversion rules;
- Enables modernization of UI (e.g. using web-based or WP UI) and data storage (using any RDBMS instead of ISAM/VSAM);
- Built to take advantage of massive parallelization resulting in even the biggest source code sets (with tens of millions of LOC) being converted in a matter of hours;

## REFERENCES

Astadia has a 100% success rate, having completed numerous conversion and modernization projects around the globe.

Each of these projects has been delivered on time, within budget and to the complete satisfaction of the customer.

Visit our [Case Studies website section](#) and contact us at [info@astadia.com](mailto:info@astadia.com) for a live demo.

Astadia is the market leading mainframe modernization consulting and systems integration boutique. A worldwide IT consulting firm, we specialize in moving IBM and Unisys mainframe applications and databases to distributed and cloud platforms.