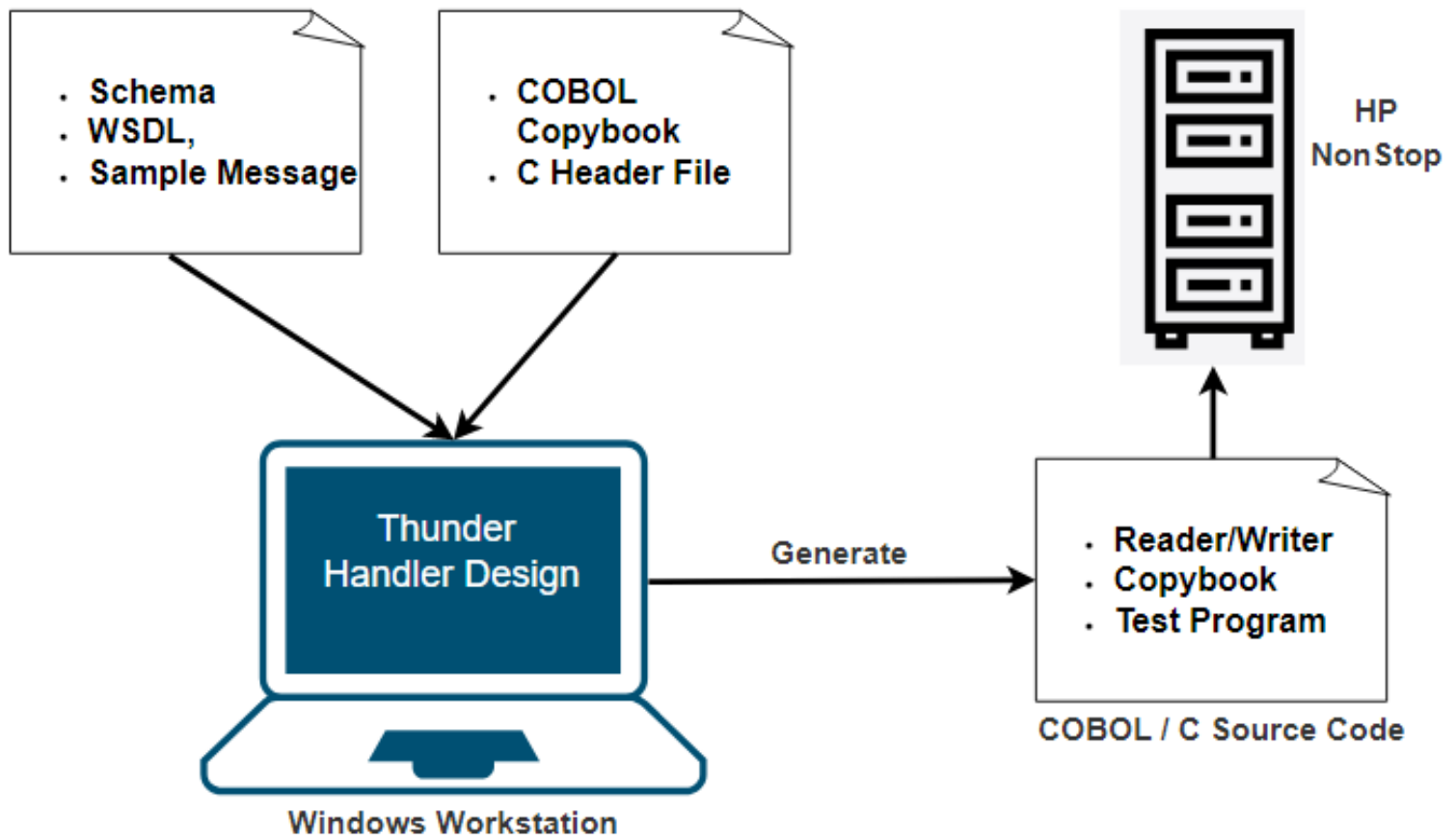


# XML Thunder Product Overview

## Using the Thunder Toolset

### Developer Workflow



XML Thunder enables COBOL, C and TAL programs to read and write XML documents so they can exchange data in XML format with other applications and companies.

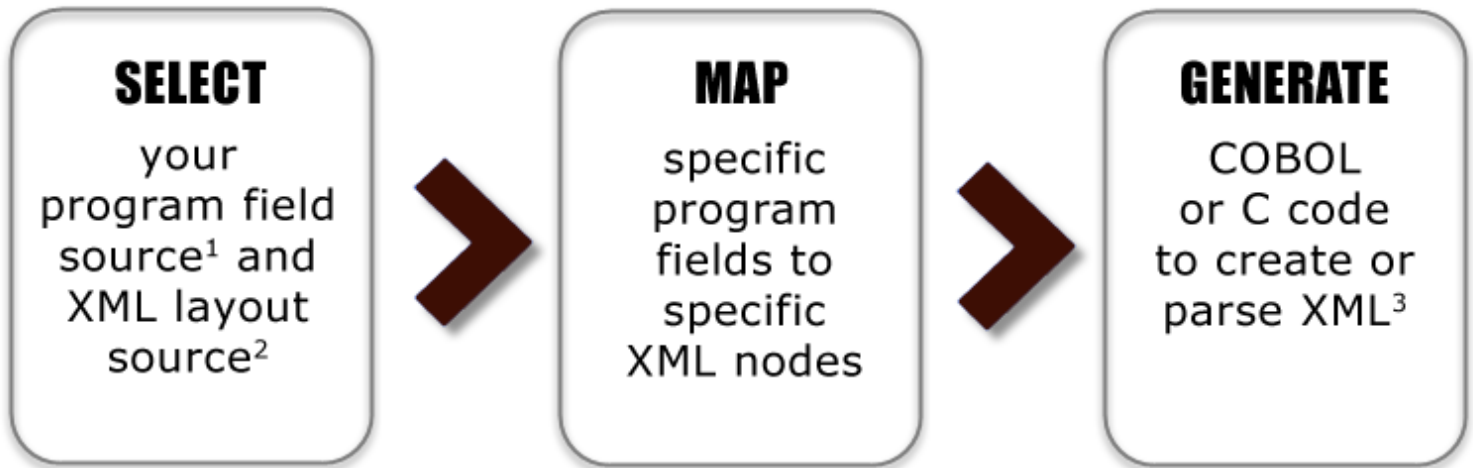
### Read and Write XML Documents in COBOL, C and TAL

XML Thunder generates all of the COBOL or C source code needed to:

- read XML documents into COBOL, C and TAL structures.
- create XML documents from COBOL, C and TAL structures.
- validate XML documents to ensure only well-formed and valid documents are processed.

The code is generated as a program that can be called from existing COBOL, C and TAL programs. A sample COBOL or C calling program is provided to assist with developing new programs.

# How it Works



<sup>1</sup>Program field source can be COBOL copybook, C header file or derived from the XML layout.

<sup>2</sup>XML source can be XSD, WSDL, sample XML message or derived from program data fields.

<sup>3</sup>The final output is a customized, callable program that can be used in existing applications. If you don't have an existing application, Thunder also provides a sample main (or calling) program that can serve as the starting point to developing it.

## Model-Driven Development

XML Thunder uses a model-driven development approach enabling a faster time to market and the ability to respond to changes quickly. The Thunder toolset provides:

- A Visual Designer showing the program field layout, the XML message layout, and the mapping between the two.
- A full life cycle solution that is used in both development and maintenance.
- Automated source code generation.

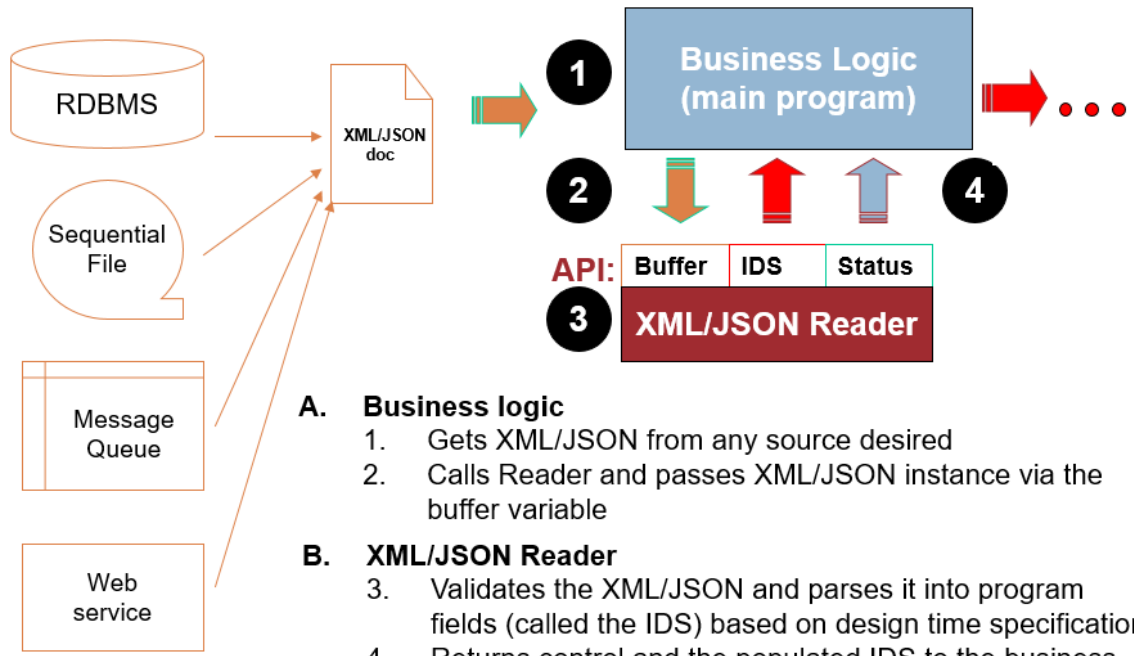
## Features

- High performance (not a generic parser!).
- Addresses the complexities of XML (e.g., choice, sequence, abstract types, etc.).
- Model-driven approach reducing development time and enabling developers to respond to changes quickly.
- Create Handler Designs from XML schemas, WSDLs, sample XML messages and COBOL/C data structures.
- Architecture and platform independent solution.
- Process messages of any size.
- Easy integration with existing programs

# How the Generated Code is Used at Runtime.

## Reading an XML Message

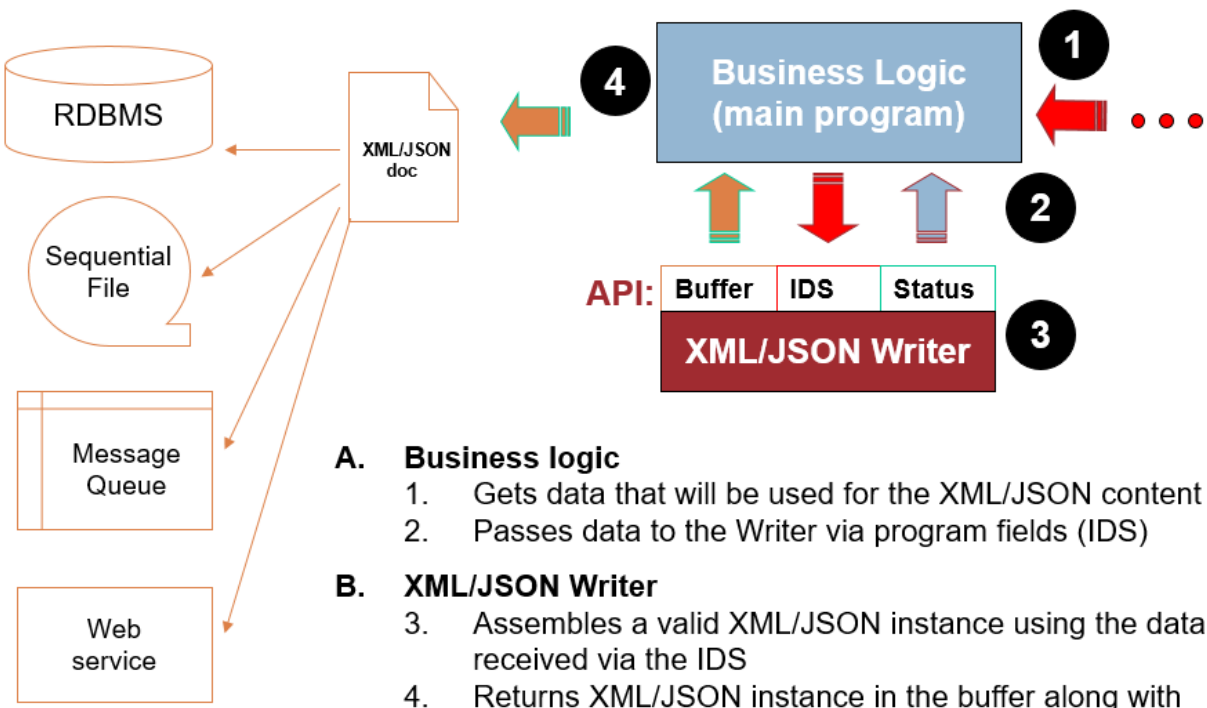
### Reading an XML/JSON Message



- A. Business logic**
  1. Gets XML/JSON from any source desired
  2. Calls Reader and passes XML/JSON instance via the buffer variable
- B. XML/JSON Reader**
  3. Validates the XML/JSON and parses it into program fields (called the IDS) based on design time specification
  4. Returns control and the populated IDS to the business logic for further processing

## Writing an XML Message

### Writing an XML/JSON Message



- A. Business logic**
  1. Gets data that will be used for the XML/JSON content
  2. Passes data to the Writer via program fields (IDS)
- B. XML/JSON Writer**
  3. Assembles a valid XML/JSON instance using the data received via the IDS
  4. Returns XML/JSON instance in the buffer along with status information for further processing