Agile COBOL Development in the Age of Digital Transformation

COBOL – the Language for Yesterday, Today, and Tomorrow
What is Digital Transformation?

It is the reworking of the products, processes and strategies obtained by leveraging current technologies.

- Customer Understanding
- Customer Touch Points
- Worker Enablement
- Emerging Customer Demands
- Customer Visibility
- Process Digitization
- Globalization
NetCOBOL is a world class COBOL development and runtime environment.

Why should you care?

COBOL is the right path from your past to the future. There is no reason to abandon COBOL just to be able to make your applications more flexible and responsive.

COBOL is indeed an agile language and fits right into the development environments of today and tomorrow.

COBOL was designed to handle data and in the world of Big Data, COBOL is still a major player.
CHUCK NORRIS DOESN’T WRITE CODE
He stares at a computer screen until he gets the program he wants.
Fujitsu COBOL products

Mainframe, Business computer and Open system for stable operation, high performance

2002 ～ NetCOBOL

.NET
NetCOBOL V8
Windows Server 2012, Windows 10,
Support for Visual Studio 2017,
Support for .NET Framework 4.6.2,
Support for IBM LE subroutines

NetCOBOL V11.0.1
Windows Server 2012, Windows 10™,
FUJITSU Cloud Service K5,
FUJITSU Cloud Service S5,
32bit and 64bit support,
INTARFRM(Application Framework), etc.

Linux
NetCOBOL V11.1™
RHEL 7 32bit™, 64bit,
FUJITSU Cloud Service K5,
FUJITSU Cloud Service S5,
Interstage Business Application Server,
Interstage Job Workload Server,
Apache Hadoop, Interstage Big Data Parallel
Processing Server linking™ etc.

1974 - 1992
Business computer
COBOLG

Mainframe
COBOL85

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NetCOBOL Versions

NetCOBOL for .NET

NetCOBOL for Windows

NetCOBOL for Linux

NetCOBOL for Solaris
NetCOBOL offers benefits for the CIO and the developer

- Multiple development environments
- No runtime fees
- Interfaces with cloud technologies
- Exciting new features
NetCOBOL offers alternatives for development

- Visual Studio
- Eclipse
- Project Manager
- Command Line Development
NetCOBOL Development Environment Benefits

Development Environment Options

- For the CIO
  - Cross platform teamwork
  - Choice of most cost effective environments

- For the Developer
  - Ability to call other languages
  - Ability to utilize code written in other languages
  - Shared routines
NetCOBOL Development in .NET

Visual Studio
NetCOBOL Development in .NET
NetCOBOL Development in .NET
Features:
Code Snippets

Code Snippets Manager

Language:
Fujitsu NetCOBOL

Location:
C:\Program Files (x86)\Microsoft Visual Studio\2017\Enterprise\Common\IDE\Extensions\eb2xw23iziw\SnippetManager\Fujitsu NetCOBOL

- CLASS-ID
- DELEGATE-ID
- ENUM-ID
- EVALUATE
- IF
- IF_ELSE
- INTERFACE-ID
- METHOD-ID
- OBJECT_Paragraph
- PERFORM VARYING
- PROGRAM-ID
- STATIC_Paragraph

Description:
Insert PERFORM statement.
PERFORM VARYING $Index$ FROM 1 BY 1
UNTIL $Index$ > $Max$
END- PERFORM

Shortcut:
PERFORM VARYING

SnippetTypes:
Expansion

Author:
FUJITSU LIMITED
NetCOBOL Development in .NET

Features:

Code Templates
NetCOBOL Development in .NET

Features:
Intellisense
NetCOBOL Development in .NET

Features:
COBOL File APIs
Eclipse
NetCOBOL Development in Linux (Eclipse)
NetCOBOL Development in Linux (Eclipse)
NetCOBOL Development in Linux (Eclipse)
NetCOBOL Development in Linux (Eclipse)
NetCOBOL Development in Linux (Eclipse)
NetCOBOL Development in Linux/Windows (Eclipse)

NetCOBOL x64 bit Server
- NetCOBOL compiler invoked remotely from Windows
- PowerBSORT
- PowerFORM RTS
- Still have:
  - Line mode Debugger
  - Std Debug format (works with Linux debuggers like GDB)

Windows 32 or 64bit

N+1 compilers
- 1 Linux compiler
- N Windows compilers (1 for each developer)

Deploy on M servers (independent of N)
NetCOBOL Development in Windows
NetCOBOL Runtime Environments

NetCOBOL never charges for runtime fees
NetCOBOL Runtime Environments

Other COBOL providers do charge for runtime fees:

- $300 and $50/yr maintenance
- $40,000 and $10,000/yr maintenance
- $150,000 and $35,000/yr maintenance
NetCOBOL Runtime Benefits

No runtime Fees

- For the CIO
  - Reduced significant yearly expense
  - No worries about audited environments

- For the Developer
  - Easier to distribute applications
  - No need for keeping records of deployment
NetCOBOL Cloud Deployment (Azure)

NetCOBOL for .NET supports:

- Running COBOL apps in Microsoft Cloud Services
- Accessing Azure SQL databases using COBOL
- Accessing Azure services by calling .NET SDK services
NetCOBOL Cloud Deployment Benefits

Cloud Enabled

- For the CIO
  - Pay as the need demands
  - Ability to horizontally scale applications

- For the Developer
  - Shared deployment
  - Access to SQL for Azure
NetCOBOL New Features

IBM LE Routines
XML documentation
NuGet Distribution
Hadoop Development
NetCOBOL New Features (LE Subroutines)

Support for IBM LE subroutines
- Bit operation subroutines
- Condition processing subroutines
- Date and time subroutines
- Dynamic storage area subroutines
- General subroutines
- Initialization and Termination subroutines
- Math subroutines
- Message processing subroutines
- Country wise language support subroutines
NetCOBOL New Features (XML Documentation)

XML Documentation

```cobol
METHOD-ID. METHOD-1 AS "SomeMethod".
DATA DIVISION.
LINKAGE SECTION.
01 L-TEXT PIC X(80).
01 R-VAL BINARY-LONG.
PROCEDURE DIVISION USING L-TEXT RETURNING R-VAL

*>> <summary>
*>>
*>> </summary>
*>> <param name="L-TEXT"></param>
*>> <returns></returns>
```

```xml
<METHOD-ID. METHOD-1 AS "SomeMethod".>
<DATA DIVISION.>
<LINKAGE SECTION.>
<01 L-TEXT PIC X(80).>
<01 R-VAL BINARY-LONG.>
<PROCEDURE DIVISION USING L-TEXT RETURNING R-VAL>
```

```xml
</METHOD-ID. METHOD-1 AS "SomeMethod".>
</DATA DIVISION.>
</LINKAGE SECTION.>
</01 L-TEXT PIC X(80).>
</01 R-VAL BINARY-LONG.>
</PROCEDURE DIVISION USING L-TEXT RETURNING R-VAL>
NetCOBOL New Features (NuGet packages)
Sequential processing performed by traditional batch processing can be accelerated by splitting data and performing parallel processing on multiple servers.

- **Low Cost** - By performing parallel processing on relatively inexpensive servers, an economical system can be configured.
- **High Availability** - By splitting the duplex data, reliability is improved. Even if the server (Slave Server) performing parallel processing goes down, another other Slave Server takes over and continues the processing.
- **Scale out** - Scale out can be performed easily by adding Slave Servers.
NetCOBOL New Features Benefits

- **For the CIO**
  - Control of Costs
  - Flexibility in deployments
  - Quicker and more agile development
  - Lower risk

- **For the Developer**
  - Feature rich runtime environment
  - Self documenting systems
  - Access to guaranteed secure routines
  - Ability to manage data easier
Q & A
GT Software – Who We Are

- Founded in 1982 (HQ in Atlanta, GA)
- More than 30 years of market leadership
- Focused on real-time mainframe modernization for strategic business initiatives, including migrations
- Broad experience across all mainframe and distributed environments
- Worldwide cross-industry customers and strategic partnerships
- Website: www.gtsoftware.com
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imPACt 2017 will be an action-packed, three-day conference filled with information and collaboration. Learn from the performance industry’s top experts while connecting with fellow specialists during this valuable event.

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Thank You