

A LEGACY MODERNIZATION UPDATE

Marble Computer, Inc.

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COBOL Programmer Productivity

COBOL Programmer productivity is very much dependent on the software tools available during a modernization project. More so when doing significant changes to the code. Even more critical when resolving production Abends.

According to a recent MicroFocus survey, “The Future of COBOL Applications”, respondents reported 85% of COBOL applications were strategic to their business. 52% of IT organizations are now using Agile Development with Integrated Development Environments (IDEs) for their COBOL programmers, while 22% still use Waterfall Development methodologies.

There are currently over 50 commercially available IDEs, but the 2 most popular IDEs in Enterprise IT environments are Eclipse and Visual Studio. Neither of which were built for COBOL development.

Both MicroFocus and IBM offer COBOL support in their IDEs. But how productive are these features when used by lesser capable COBOL programmers? In fact if one believes the 80/20 rule — 20% of COBOL programmers in a given IT organization are doing 80% of the work. The COBOL functionality in these IDEs have become difficult and confusing to use by the average programmer.

Thus, projects are taking longer and cost more than originally planned.

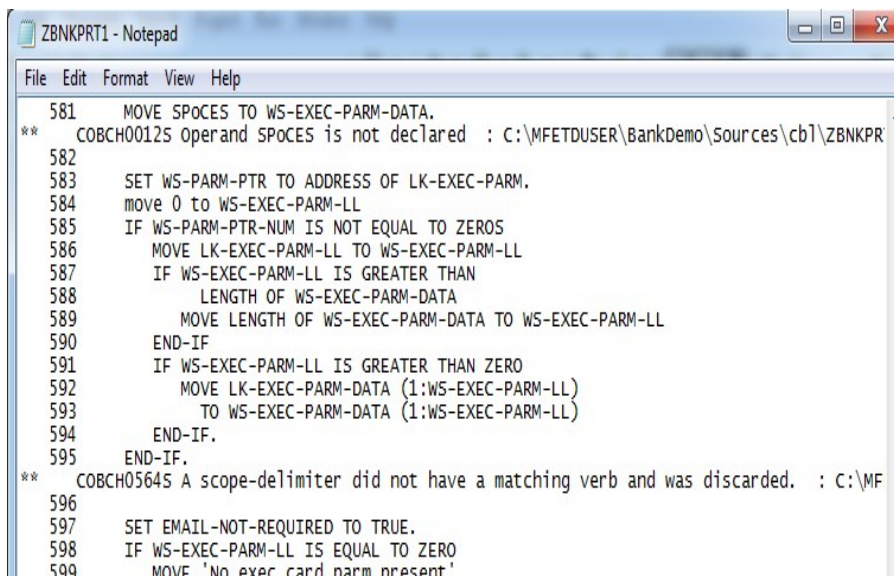
Control/DCD is a software product built for COBOL development. Control/DCD helps to maintain workflow by allowing programmers to focus on the intent of their development level tasks rather than the mechanics. This gives the developer more rapid feedback on the results of tasks such as code changes and program understanding.

IBM estimates that there is now around 250 billion lines of COBOL code being maintained throughout the world. These are mainframe production applications that store and process as much as 70% of the world’s Enterprise Data. Now with the delivery of new Enterprise Compilers like COBOL 6.2 productivity challenges exist.

Did you know.....

Marble Computer has been in business since 1983.

Control/DCD can increase COBOL programmer productivity 10-fold over previously used methodologies.



```
581  MOVE SPOCES TO WS-EXEC-PARM-DATA.
**  COBCH0012S Operand SPOCES is not declared : C:\MFETDUSER\BankDemo\Sources\cb1\ZBNKPR
582
583  SET WS-PARM-PTR TO ADDRESS OF LK-EXEC-PARM.
584  move 0 to WS-EXEC-PARM-LL
585  IF WS-PARM-PTR-NUM IS NOT EQUAL TO ZEROS
586    MOVE LK-EXEC-PARM-LL TO WS-EXEC-PARM-LL
587    IF WS-EXEC-PARM-LL IS GREATER THAN
588      LENGTH OF WS-EXEC-PARM-DATA
589      MOVE LENGTH OF WS-EXEC-PARM-DATA TO WS-EXEC-PARM-LL
590    END-IF
591    IF WS-EXEC-PARM-LL IS GREATER THAN ZERO
592      MOVE LK-EXEC-PARM-DATA (1:WS-EXEC-PARM-LL)
593      TO WS-EXEC-PARM-DATA (1:WS-EXEC-PARM-LL)
594    END-IF.
595  END-IF.
**  COBCH0564S A scope-delimiter did not have a matching verb and was discarded. : C:\MF
596
597  SET EMAIL-NOT-REQUIRED TO TRUE.
598  IF WS-EXEC-PARM-LL IS EQUAL TO ZERO
599    MOVE 'No exec card parm present'
```

The Problem: A Typical COBOL Program Listing via COBOL Editor on Eclipse PC

The Solution for Programmer Productivity

A .pdf document created on the mainframe and useable with any PDF reader, anywhere, anytime on any device.

Sample Output

Data Element Information

(0051) SORT-TYPE-SEQ-1

In 1-1 of 01 SORT-RECORD in WORKING-STORAGE

05 SORT-TYPE-SEQ-1 Pic X(001)

Performed Hierarchy for Above Data Element

```
01      N-SORT-INPUT-PROCEDURE
02      N500-WRITE-OUT-SORT-RECORD THRU N599-EXIT
02      N220-MATCH-FOR-MATCH THRU N299-EXIT
03      N410-TEST-SEQ-IN-IPT-RANGE THRU N410-EXIT
04      S-DO-FINAL-ADJUSTMENT
02      P-SORT-OUTPUT-ROUTINE
03      P110-CLEAR-QVW-LINE thru P195-EXIT
01      R-CORRECT-MAST-CODE
```

Control/DCD

The new way to manage the main-frame source code environment.

With over 37 years of mainframe experience Marble Computer is taking the legacy of it's DCD product line and utilizing the most advanced techniques for programmers to document and understand a programs logic and business rules.

Program modifications and repairs are made quickly, easily and accurately.

For more information:

Call (800) 252-1400 to arrange for a demo.



Marble Computer is an IBM Business Partner for z/OS Software.

Control/DCD

How It Works:

Control/DCD creates a new powerful way to analyze the COBOL application and makes it simple for the COBOL programmer to quickly understand the flow of the program as to data and process. Business rules are easily interpreted, data analysis is made simple, dead code is found.

Choose your output, the ISPF Editor report format, or Control/DCD's Digital Documentation Manual. The DDM comes in the standard .pdf format. Use FTP to transfer or store on the mainframe.

Sample command structure:

Find &(Operand)

Some **Operand** Examples:

DATA-NAME

CALL

COPY

CODE-NOT-USED

ERRORS

FORWARD-TRACING

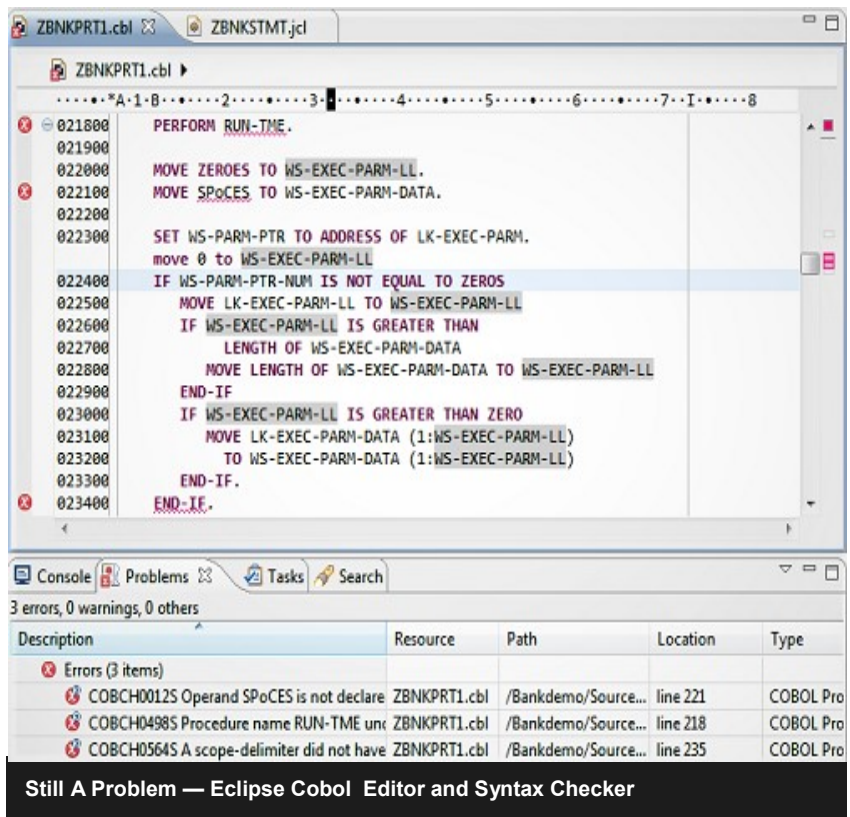
OPEN

PERFORM-ANALYSIS

PERFORMED-ROUTINES

SQL

HELP



Sample DDM Output (Continued)

Data Usage in Each Performed Routine For SORT-TYPE-SEQ-1

N-SORT-INPUT-PROCEDURE

```
MOVE '1' TO SORT-TYPE-SEQ-1 (332), '2' TO SORT-TYPE-SEQ-1 (335), '3' TO SORT-TYPE-SEQ-1 (340,362)
```

N220-LOOK-FOR-MATCH

```
MOVE '6' TO SORT-TYPE-SEQ-1 (394), '2' TO SORT-TYPE-SEQ-1 (403)
```

N410-TEST-SEQ-IN-IPT-RANGE

```
MOVE '7' TO # SORT-TYPE-SEQ-1 (414)
```

N500-WRITE-OUT-SORT-RECORD

```
MOVE '8' TO # SORT-TYPE-SEQ-1 (454)
```

P110-CLEAR-QVW-LINE

```
IF SORT-TYPE-SEQ-1 NOT = '3' (478)
IF SORT-TYPE-SEQ-1 = '1' (500)
```

S-FINAL-ADJUSTMENT

```
IF 'S' = SORT-TYPE-SEQ-1 (651)
```

Indirectly Used @ (50)

Control/DCD's Benefits

Adds an Intelligent COBOL Analytical capability to your IDE.

A simple command structure, with the addition of one character (An & character) added to the Find Command that works with a program's data names, paragraph names, and more. So the adoption rate is fast and efficient.

The Digital Documentation Manual is an up to date detailed guide of the COBOL program's analytics. The DDM can be stored on collaborative intranets like SharePoint. The DDM is updated with each modification change when used with Control/DCD.

Use the ISPF Editor, which all Mainframe personnel know, in a more intelligent fashion. Review online source code errors in all phases of the program. This includes Copybooks, Working Storage and Procedure Division.

Analyze an entire application to find potential and real errors in COBOL code. Plan a change in field size knowing all uses of the field are found. Learn where data elements are modified in the application and under what conditions.

Control/DCD's Data Tracing Analysis function means less Job Failures which creates better utilization of the production environment, makes life easier for Job Schedulers and those that support Job Scheduling systems.

No compile is necessary prior to using Control/DCD. Control/DCD acts as a pre-compiler. Let Control/DCD catch the 6 major Areas of Concern for COBOL 6.2. Focus on finding errors with Invalid Data, Parameter/Argument, Occurs Depending errors and table overflow issues.

Marble Computer software products are z/15 compliant, support z/OS V2.4 and COBOL Versions 6.2.



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