

June 10, 2022

WINZOS now provides CICS support.

CICS supports both VSAM and Db2 access services.

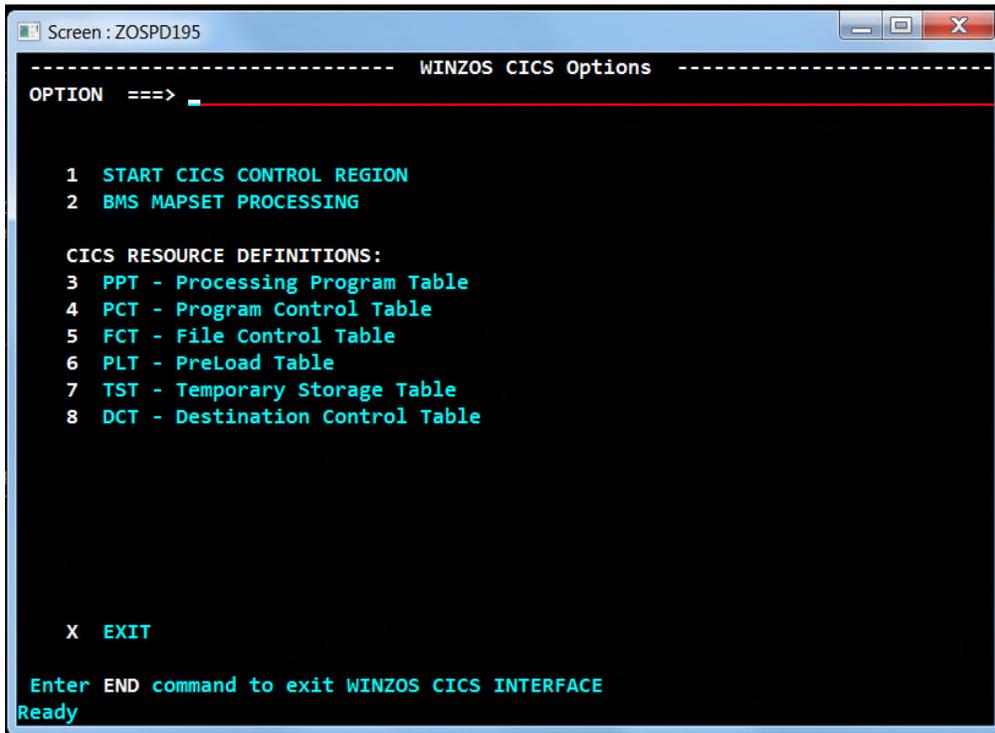
Selecting **M**ake on the COBOL compile panel member causes the source application to be scanned.

The scanning identifies both EXEC CICS and EXEC SQL commands.

Either or both are routed to the appropriate preprocessor(s).

A GnuCOBOL compile and link of the expanded preprocessed code ensues, creating a .DLL stored in LOADLIB.

Execution and CICS utilities are a function of the panel below:



```
Screen : ZOSPD195
----- WINZOS CICS Options -----
OPTION ==> _

1  START CICS CONTROL REGION
2  BMS MAPSET PROCESSING

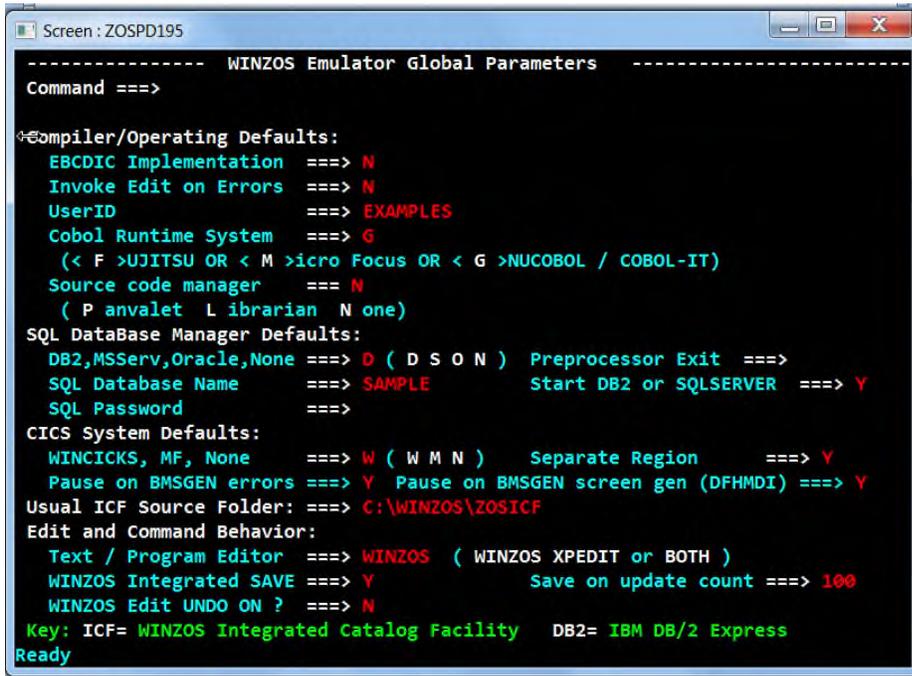
CICS RESOURCE DEFINITIONS:
3  PPT - Processing Program Table
4  PCT - Program Control Table
5  FCT - File Control Table
6  PLT - PreLoad Table
7  TST - Temporary Storage Table
8  DCT - Destination Control Table

X  EXIT

Enter END command to exit WINZOS CICS INTERFACE
Ready
```

A simple dialog provides for updates of the various CICS RDO tables.

BMS generation creates BMS screens. The display of the generated BMS generation is optional. See Panel 0.1.1 (below).



```
Screen : ZOSPD195
----- WINZOS Emulator Global Parameters -----
Command ==>

Compiler/Operating Defaults:
EBCDIC Implementation ==> N
Invoke Edit on Errors ==> N
UserID ==> EXAMPLES
Cobol Runtime System ==> G
(< F >UJITSU OR < M >icro Focus OR < G >NUCOBOL / COBOL-IT)
Source code manager ==> N
(P anvalet L ibrarian N one)
SQL DataBase Manager Defaults:
DB2,MSServ,Oracle,None ==> D ( D S O N ) Preprocessor Exit ==>
SQL Database Name ==> SAMPLE Start DB2 or SQLSERVER ==> Y
SQL Password ==>
CICS System Defaults:
WINCICKS, MF, None ==> W ( W M N ) Separate Region ==> Y
Pause on BMSGEN errors ==> Y Pause on BMSGEN screen gen (DFHMDI) ==> Y
Usual ICF Source Folder: ==> C:\WINZOS\ZOSICF
Edit and Command Behavior:
Text / Program Editor ==> WINZOS ( WINZOS XPEDIT or BOTH )
WINZOS Integrated SAVE ==> Y Save on update count ==> 100
WINZOS Edit UNDO ON ? ==> N
Key: ICF= WINZOS Integrated Catalog Facility DB2= IBM DB/2 Express
Ready
```

Note the field **Pause on BMSGEN Errors**. If "Y" BMS macro errors will be displayed as a message box indicating the DFHMDI line number and error text.

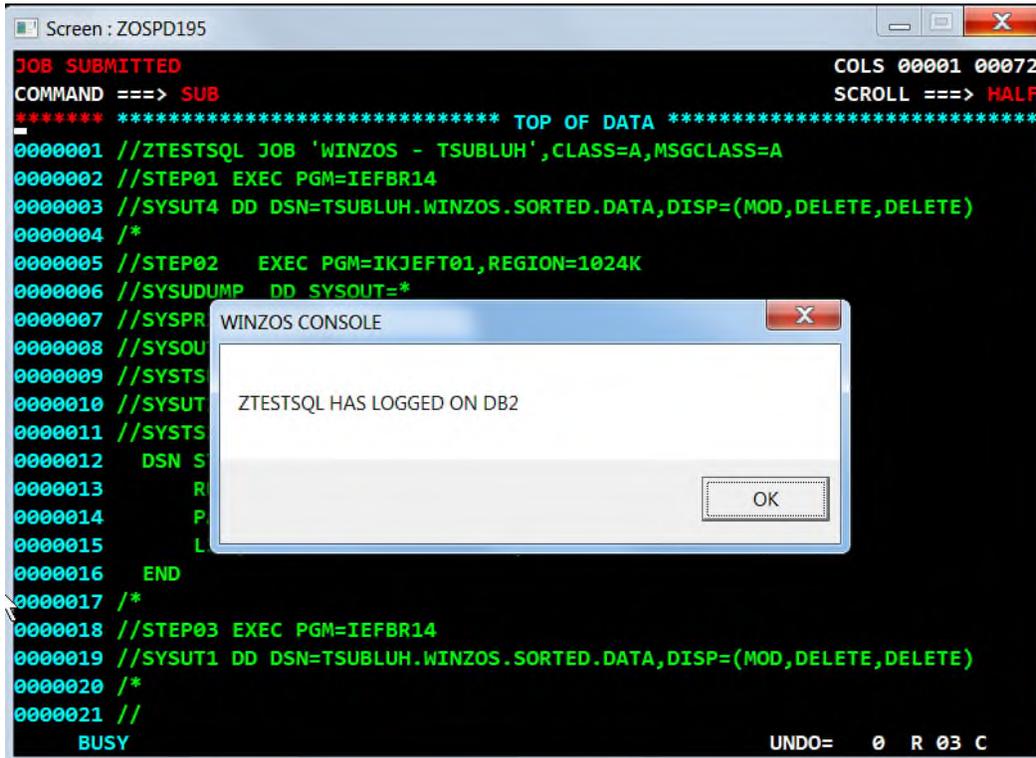
Note the field **Pause on BMSGEN screen gen (DFHMDI)**. If "Y" each DFHMDI macro set will display at the conclusion of the map generation. Press Enter to continue to the next DFHMDI set.

Also note that Type=DSECT is not implemented. In my experience the COBOL copybook defining the data structure is done in an ISPF edit session. The field naming constraints of the macro language are less than optimal.

I plan to address this in a forthcoming release whereupon a BMS painter will be introduced with the ability to create meaningful data names and a method to draw and portray the expected BMS screen without the necessity of coding each DFHMDF macro.

Future releases of the CICS services will include the ability to animate a CICS, CICS / Db2 application. Until such time that animation becomes available I have included a Windows API message box function (ZMSGBOX). Use of ZMSGBOX is useful in debugging. This is an example from executing a batch EXEC SQL program. COBOL display verbs are inoperable in a CICS environment. ZMSGBOX replaces DISPLAY logic.

An example of the use of ZMSGBOX1 can be found in EXAMPLES.Z.COBO(LZLOADSQL)



A further enhancement will provide EBCDIC support.

EXEC CICS API is extensible requiring only user maintained table updates

A significant feature of WINZOS CICS is the extensibility of the EXEC CICS preprocessor. An on request document addresses the capabilities for modifying syntax rules and code generation for existing EXEC CICS commands and for creating new commands. With these abilities to customize the handling of EXEC CICS commands, the user can support differences in syntax that arise from different versions of CICS on the mainframe. The user can also create new commands that support the migration of the applications to the Windows and web based environment. It is possible to use features of the Windows environment to implement features that were not available on zOS / non VSE environments.

The table driven paradigm used by the WINZOS makes possible these EXEC CICS API modifications / additions:

- code to be inserted in the transaction program,
- symbolic name conversion tables,
- error message text and severity tables, and
- EXEC CICS command definition tables.

Note: Extensive familiarity with CICS features and syntax is a prerequisite for use of the extensible API feature. To request the document please send an email to development@wincobol.com
The WINZOS install provides for both a new installation and an update installation.
The new install will create PDS(s) for the EXAMPLE JCL, COBOL, BMS...

An update install requires executing EXAMPLES.Z.CNTL (SETUPCAT) after installation is complete.
In the next week or so I will add to the wincobol.com website a video demonstrating use of CICS with WINZOS.

For those familiar with CICS it is a simple process with WINZOS

- Populate the PPT, PCT, and FCT
- The dataset names used in the FCT are Windows file names - use IDCAMS to create VSAM files, use option 3.4 to discern the Windows file
- Generate the BMS
- Compile the COBOL program(s)
- Start CICS execution

There is one gotcha with DB2.

When Db2 is installed, by default it uses a folder "Program Files " or "Program Files (x86)"
Both contain embedded spaces. Embedded spaces in a folder name confuse elements of GnuCOBOL (and even some elements of Db2). To circumvent the restriction, the Windows "short file / folder name" is deployed in the WINZOS .BAT files. An edit may be required to configure WINZOS to understand the location of Db2.

To discern where Db2 is installed:

From a CMD.EXE window, type **DB2LEVEL** – Press Enter

DB2 returns the location of the installed DB2 components:

DB21085I This instance or install.. "DB2") ...

Product is installed at "C:\PROGRA~2\IBM\SQLLIB"

The first node of the installed folder is of importance. In the above example "C:\PROGRA~2"

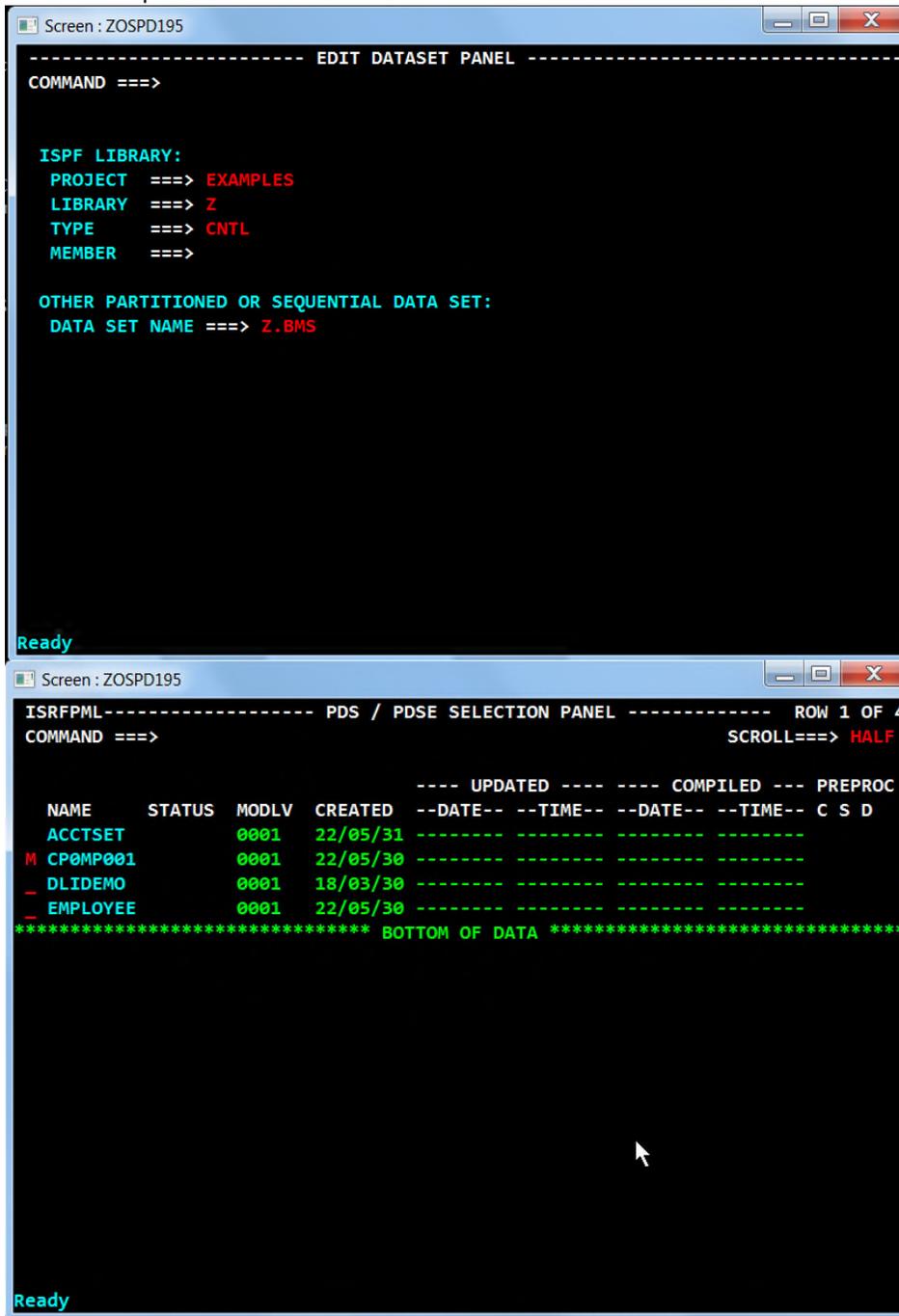
The return first node value will be used in the editing below.

Edit C:\WINZOS\ZOSPOOLP\SETDB2.BAT

SET DB2DIR=C:\PROGRA~2

Change the value to the value from the above DB2LEVEL output. Save SETDB2.BAT

To start the BMSGEN process use Option T.2
Note that I specified the other PDS Z.BMS



The image shows two screenshots of a mainframe terminal window. The top screenshot is titled "EDIT DATASET PANEL" and shows the following text:

```
----- EDIT DATASET PANEL -----  
COMMAND ==>  
  
ISPF LIBRARY:  
PROJECT ==> EXAMPLES  
LIBRARY ==> Z  
TYPE ==> CNTL  
MEMBER ==>  
  
OTHER PARTITIONED OR SEQUENTIAL DATA SET:  
DATA SET NAME ==> Z.BMS  
  
Ready
```

The bottom screenshot is titled "PDS / PDSE SELECTION PANEL" and shows a table of datasets. The text is as follows:

```
ISRFPM----- PDS / PDSE SELECTION PANEL ----- ROW 1 OF 4  
COMMAND ==> SCROLL==> HALF  
  
----- UPDATED ----- COMPILED --- PREPROC  
NAME STATUS MODLV CREATED --DATE-- --TIME-- --DATE-- --TIME-- C S D  
ACCTSET 0001 22/05/31 -----  
M CP0MP001 0001 22/05/30 -----  
- DLIDEMO 0001 18/03/30 -----  
- EMPLOYEE 0001 22/05/30 -----  
***** BOTTOM OF DATA *****  
  
Ready
```

Edit "E" is also supported as a function on this panel.

If "Pause on BMSGEN screen gen" has a value 'Y' (the default) this IBM terminal 3270 BMS screen will be displayed: Press Enter to continue to the next member of the mapset (if more exist).

```

Screen : WINKBMS
                                     Banco Nacional de Honduras
CP0M001                               Fecha
nodo >                               ESTATUS DE CONEXIONES TCP/IP      Hora
-----
st 'Hst Conexiön   Ip. Addr.   Puerto   -Msgs enviados-   -Msgs recibidos-
                                     encol.   total       encol.   total
-
                                     INI-iniciar   ABR-abortar   RCR-reciclar   TER-terminar
                                     PF3 ==> SALIR,   PF12==>ACTUALIZAR
MENSAJE:
4-B

```

The screen reflects the BMS generation from EXAMPLES.Z.BMS(CP0MP001):

```

Screen : ZOSPD195
WINZOS_EDIT :=>C:\WINZOS\BMS\CP0MP001.BMS----- COLS 00001 00072
COMMAND ==> SCROLL ==> HALF
***** ***** TOP OF DATA *****
0000001 PRINT NOGEN
0000002 MAPSETA DFHMSD TYPE=&SYSPARM,MODE=INOUT,CTRL=(FREEKB,FRSET), C
0000003 LANG=ASM,STORAGE=AUTO,TIOAPFX=YES,EXTATT=MAPONLY, X
0000004 DSATTS=(COLOR,HILIGHT)
0000005 CP0SYS1 DFHMDI SIZE=(24,80)
0000006 DFHMDF POS=(1,24),LENGTH=29,ATTRB=(PROT,ASKIP,BRT), C
0000007 COLOR=RED, X
0000008 INITIAL='Banco Nacional de Honduras '
0000009 DFHMDF POS=(2,1),LENGTH=7,ATTRB=(PROT,ASKIP), C
0000010 INITIAL='CP0M001',COLOR=TURQUOISE
0000011 DFHMDF POS=(2,65),LENGTH=5,ATTRB=(PROT,ASKIP), C
0000012 INITIAL='Fecha',COLOR=TURQUOISE
0000013 FECHA DFHMDF POS=(2,72),LENGTH=08,ATTRB=(PROT,ASKIP), X
0000014 COLOR=TURQUOISE
0000015 DFHMDF POS=(3,01),LENGTH=06,ATTRB=(PROT,ASKIP), C
0000016 COLOR=TURQUOISE, c
0000017 INITIAL='nodo >'
0000018 NNODO DFHMDF POS=(3,08),LENGTH=02,ATTRB=(PROT,ASKIP,BRT), C
0000019 COLOR=YELLOW
0000020 NODO DFHMDF POS=(3,12),LENGTH=08,ATTRB=(PROT,ASKIP,BRT), C
0000021 COLOR=YELLOW
Ready UNDO= 0 R 02 C

```

The EXAMPLE CICS APPLICATION

From the main menu Select Option T (Trans Manager)

On the WINZOS CICS Option Select **Option 1** Start a CICS Control Region using Option T.1

Key **ACCT** as the transaction.

Key an "L" in Last Name - Press Enter

This BMS screen is returned

```
Screen : WINKICKS
ACCOUNT FILE: MENU

TO SEARCH BY NAME, ENTER:                                ONLY LAST NAME
                                                           REQUIRED. EITHER
LAST NAME: L                                           FIRST NAME:      MAY BE PARTIAL.

FOR INDIVIDUAL RECORDS, ENTER:

REQUEST TYPE:      ACCOUNT:      PRINTER:      PRINTER REQUIRED
                                                           ONLY FOR PRINT
REQUEST TYPES:    D = DISPLAY    A = ADD        X = DELETE    REQUESTS.
                  P = PRINT      M = MODIFY    S = SOAP DEMO

THEN PRESS "ENTER"      -OR-    PRESS "CLEAR" TO EXIT

ACCT  SURNAME  FIRST  MI  TTL  ADDRESS  ST  LIMIT
11151 LINKLETTER RALPH  X  MR  MODIS BUILDING EAST  N  1000.00
11132 LINKLETTER RALPH  X  MR  555 OLD BAILEY RD  N  1000.00

4-B                                     ROW: 05 COL: 17
```

Key "M" in the REQUEST TYPE and 11151 in the ACCOUNT This BMS screen is returned.

```
Screen : WINKICKS
ACCOUNT FILE: RECORD CHANGE

ACCOUNT NO: 11151      SURNAME: LINKLETTER
FIRST: RALPH          MI: X TITLE: MR
TELEPHONE:            ADDRESS: MODIS BUILDING EAST
                           JACKSONVILLE
                           FL 32246

OTHERS WHO MAY CHARGE:
BRANCH
CORPORATE

NO. CARDS ISSUED: 3    DATE ISSUED: 05 30 21    REASON: L
CARD CODE: A          APPROVED BY: RAL        SPECIAL CODES: R

ACCOUNT STATUS: N      CHARGE LIMIT: 1000.00

HISTORY:  BALANCE  BILLED  AMOUNT  PAID  AMOUNT
          0.00    00/00/00  0.00    00/00/00  0.00
          0.00    00/00/00  0.00    00/00/00  0.00
          0.00    00/00/00  0.00    00/00/00  0.00

MAKE CHANGES AND "ENTER" OR "CLEAR" TO CANCEL

F4=LOOK UP AREACODE

4-B                                     ROW: 03 COL: 37
```

The ACCT test suite is ancient -the source is in EXAMPLES.Z.COBOL(ACCT??)

The 3270 Clear Key is implemented as Alt + F2

To terminate CICS key CSSF or /RCL or EXIT on a cleared screen

The Clear Key can be used when it appears that the application is confused :-)