z/TPF EE V1.1
z/TPFDF V1.1
TPF Toolkit for WebSphere® Studio V3
TPF Operations Server V1.2

IBM Software Group

TPF Users Group Spring 2007

TPF Debugger TPF Views

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Venue: TPF Toolkit Task Force

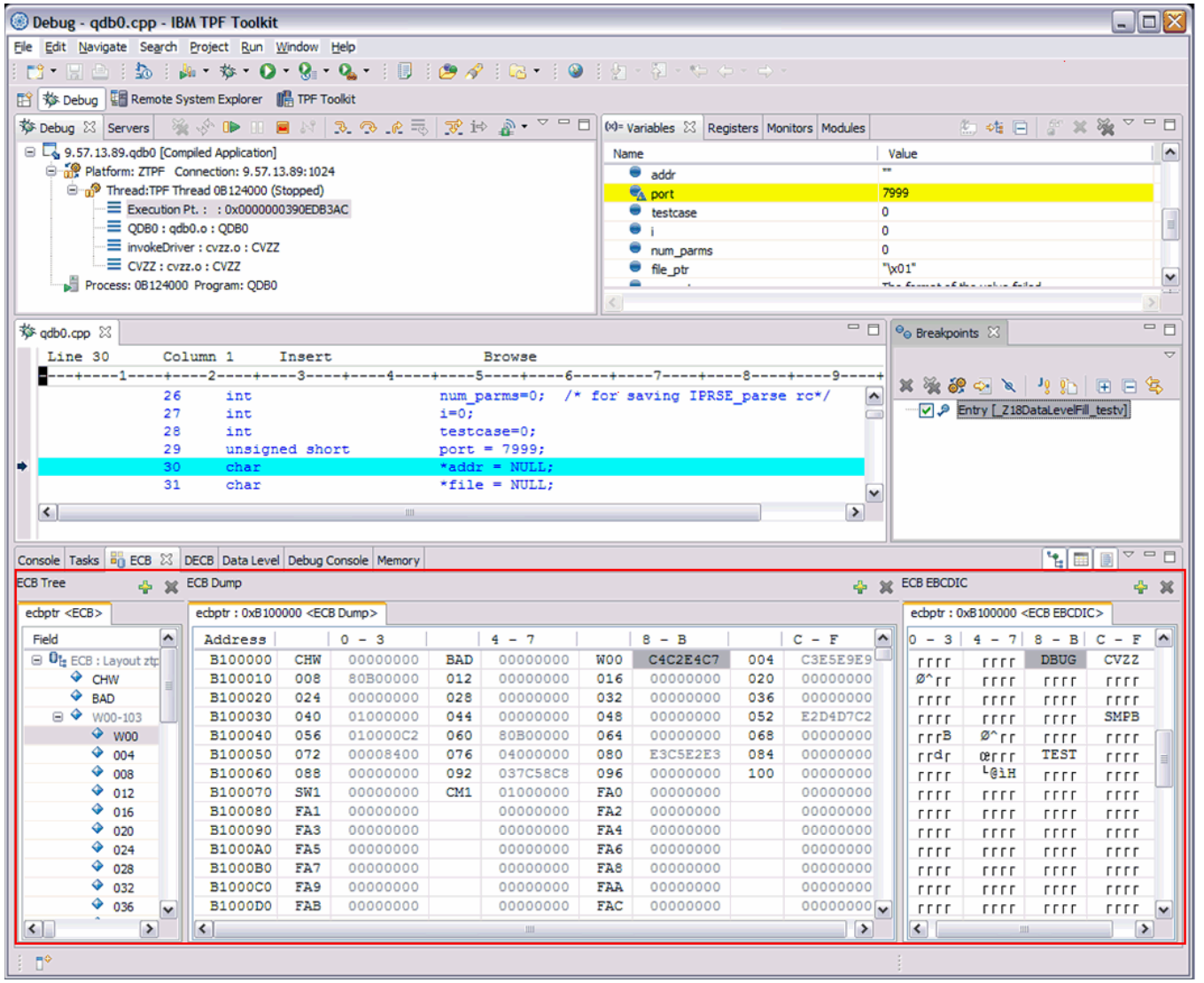
AIM Enterprise Platform Software
IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

TPF Debugger TPF Views

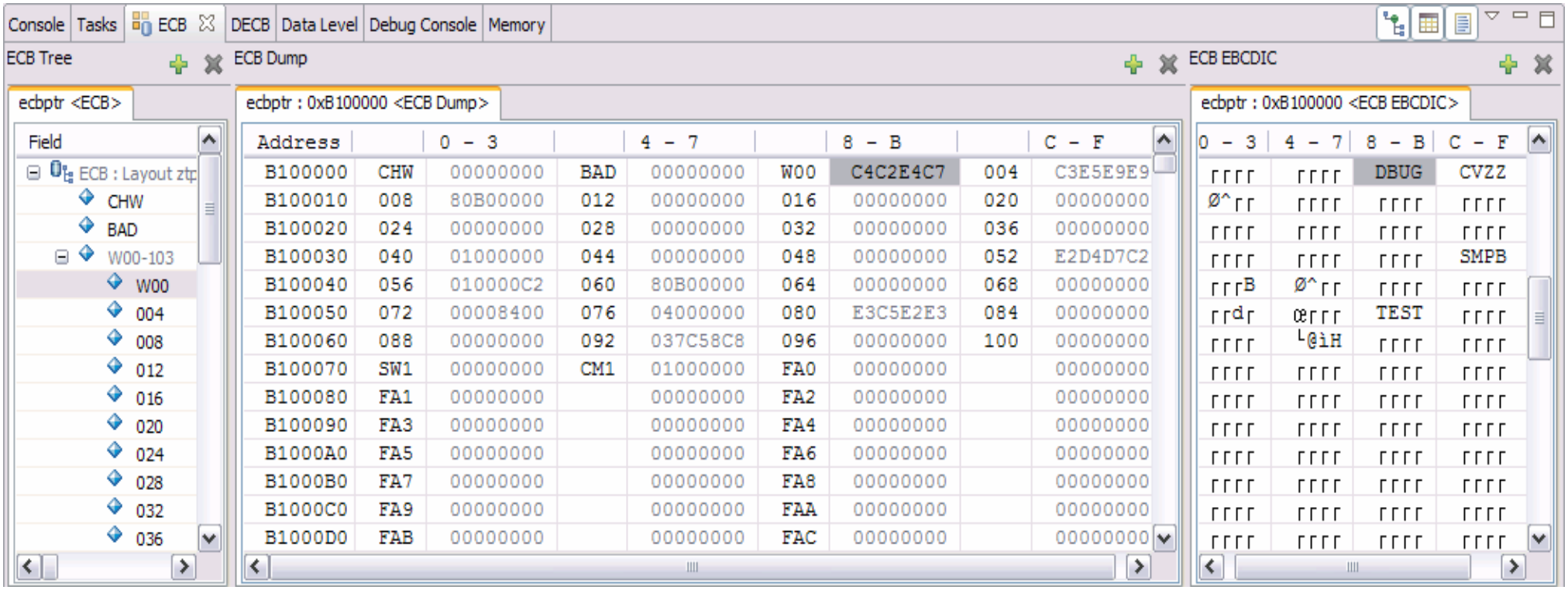
Views delivered:

- ECB
- Data Level
- DECB

All views backed by XML files located in the TPFSHARE directory allowing user customization.

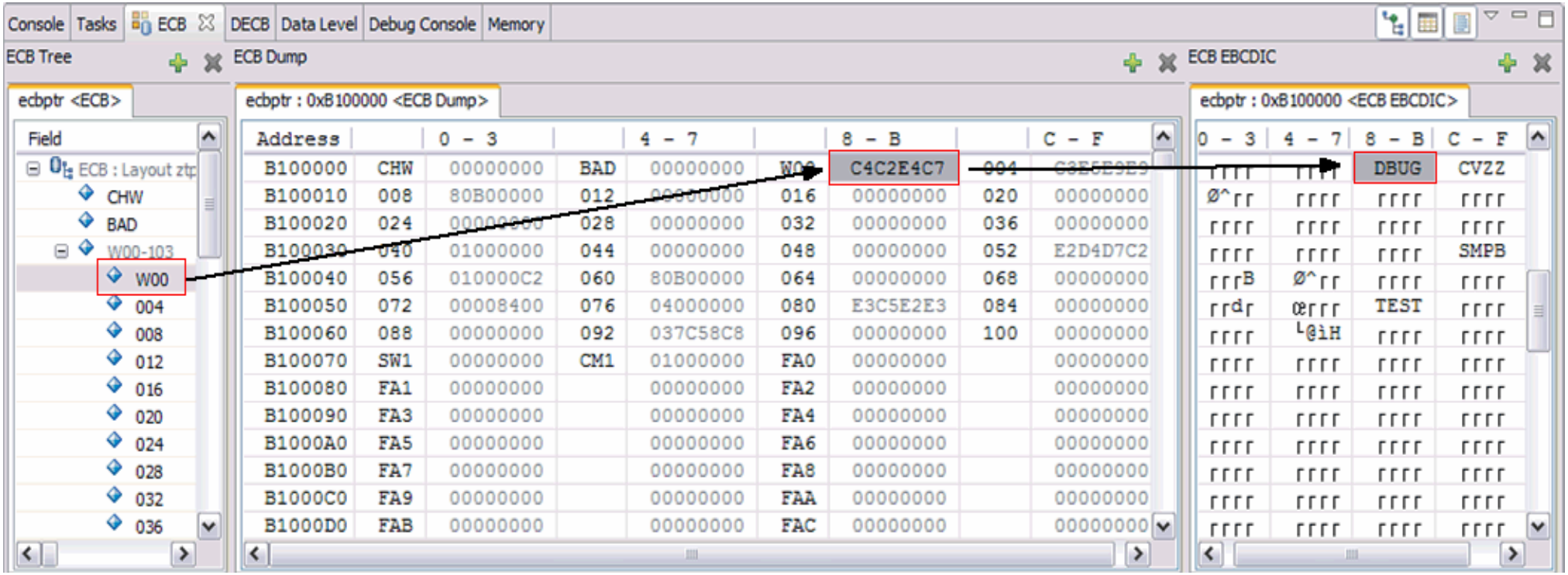


ECB View



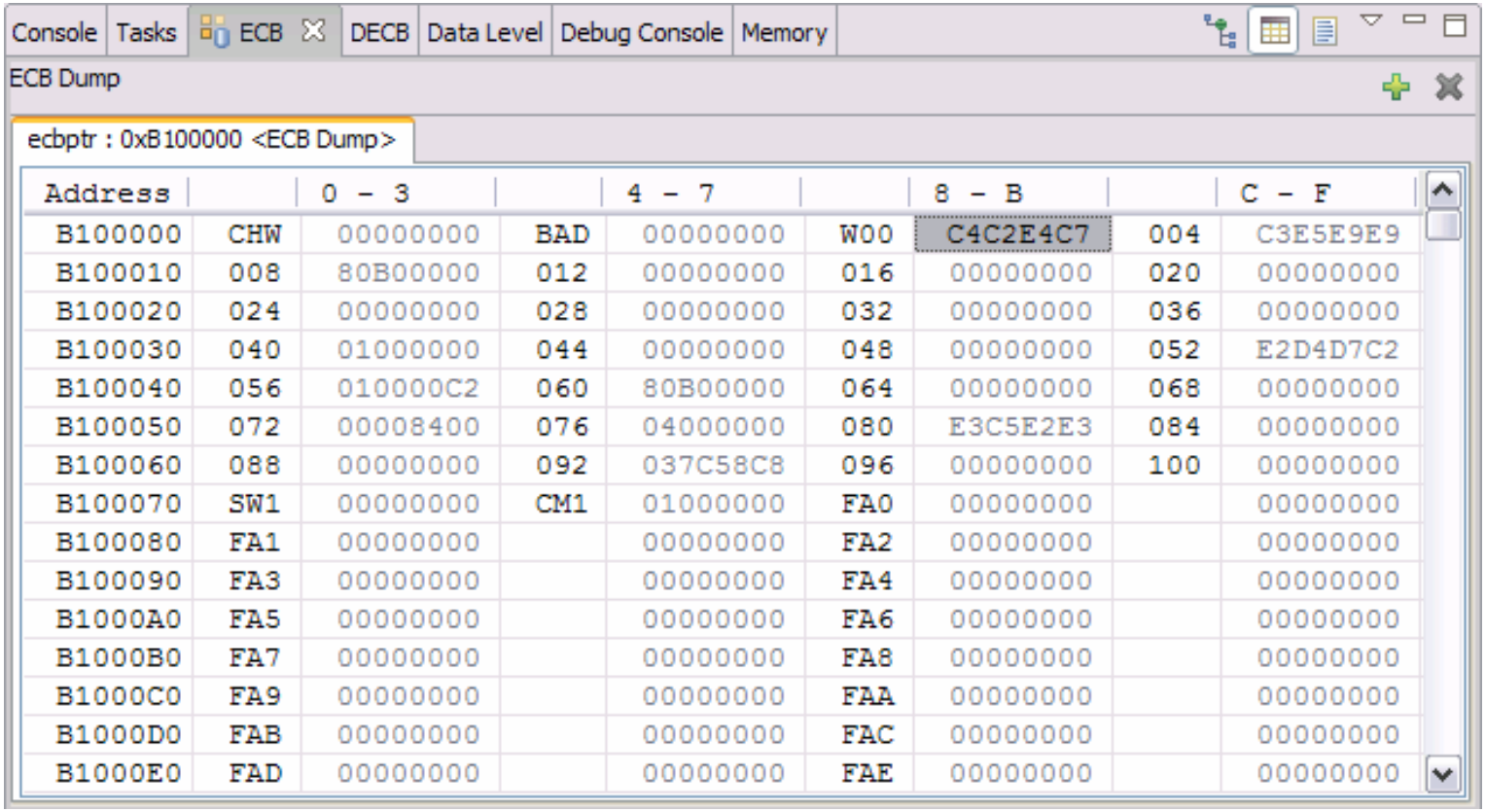
- Tree, Dump, and EBCDIC panes can be toggled on or off to suit preference or need by the buttons in the upper right hand corner.
- Additional mappings can be viewed in these panes such as ASCII, full XML map, or etc.

ECB View



- The three panes are linked so that if you click on a field in one pane, the same field is highlighted in the other two panes.

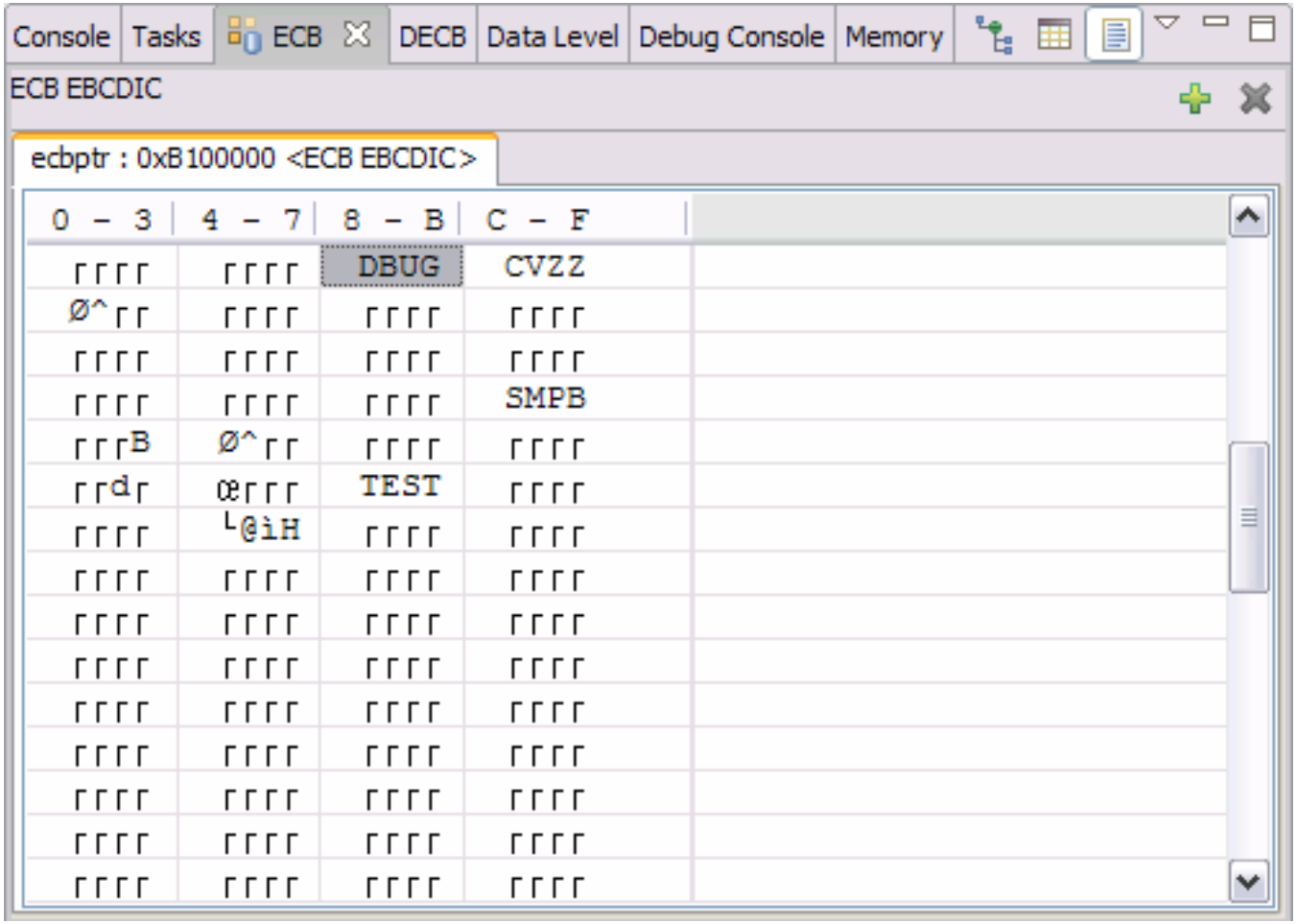
ECB View (Dump pane)



Address		0 - 3		4 - 7		8 - B		C - F
B100000	CHW	00000000	BAD	00000000	W00	C4C2E4C7	004	C3E5E9E9
B100010	008	80B00000	012	00000000	016	00000000	020	00000000
B100020	024	00000000	028	00000000	032	00000000	036	00000000
B100030	040	01000000	044	00000000	048	00000000	052	E2D4D7C2
B100040	056	010000C2	060	80B00000	064	00000000	068	00000000
B100050	072	00008400	076	04000000	080	E3C5E2E3	084	00000000
B100060	088	00000000	092	037C58C8	096	00000000	100	00000000
B100070	SW1	00000000	CM1	01000000	FA0	00000000		00000000
B100080	FA1	00000000		00000000	FA2	00000000		00000000
B100090	FA3	00000000		00000000	FA4	00000000		00000000
B1000A0	FA5	00000000		00000000	FA6	00000000		00000000
B1000B0	FA7	00000000		00000000	FA8	00000000		00000000
B1000C0	FA9	00000000		00000000	FAA	00000000		00000000
B1000D0	FAB	00000000		00000000	FAC	00000000		00000000
B1000E0	FAD	00000000		00000000	FAE	00000000		00000000

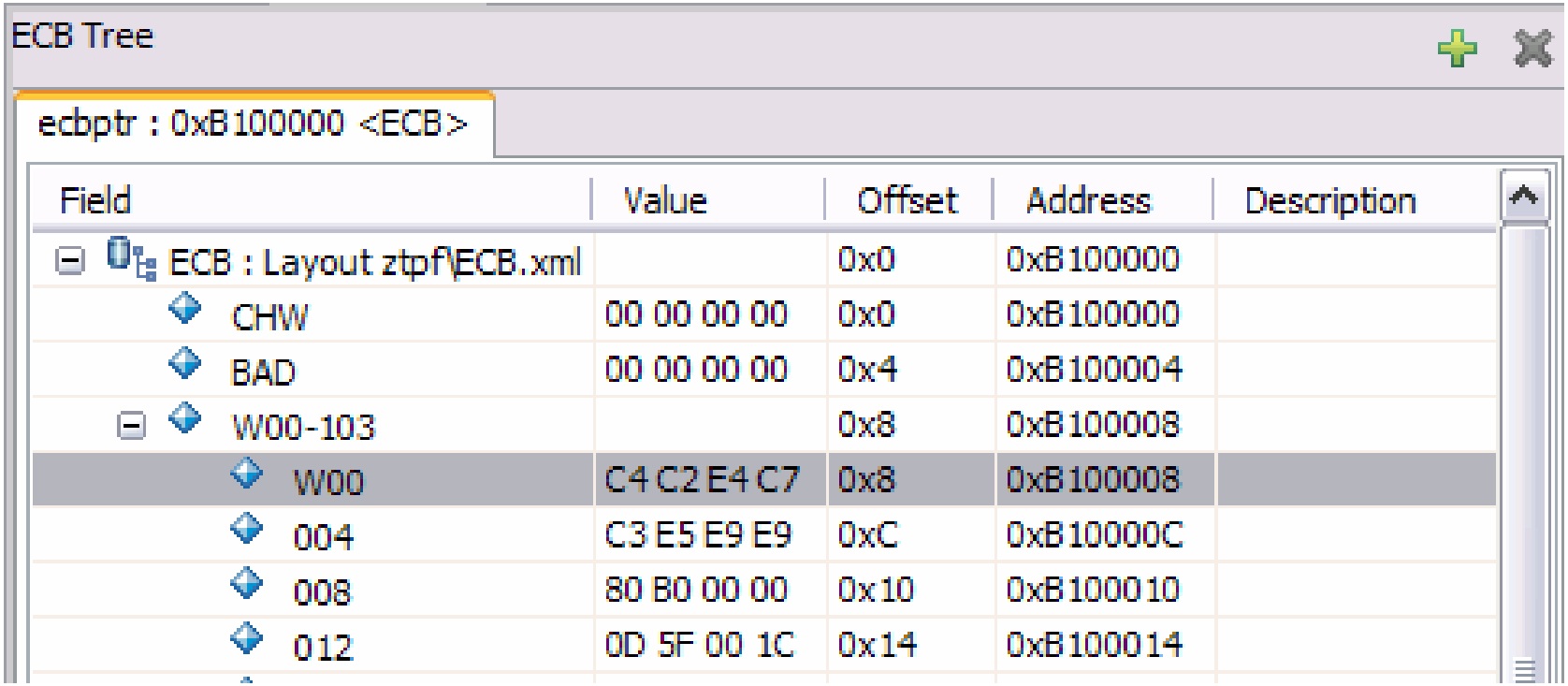
- Dump pane modeled after “Entry Blk” section of TPF dumps.
- Dump labels appear on 4 byte boundaries.

ECB View (EBCDIC pane)



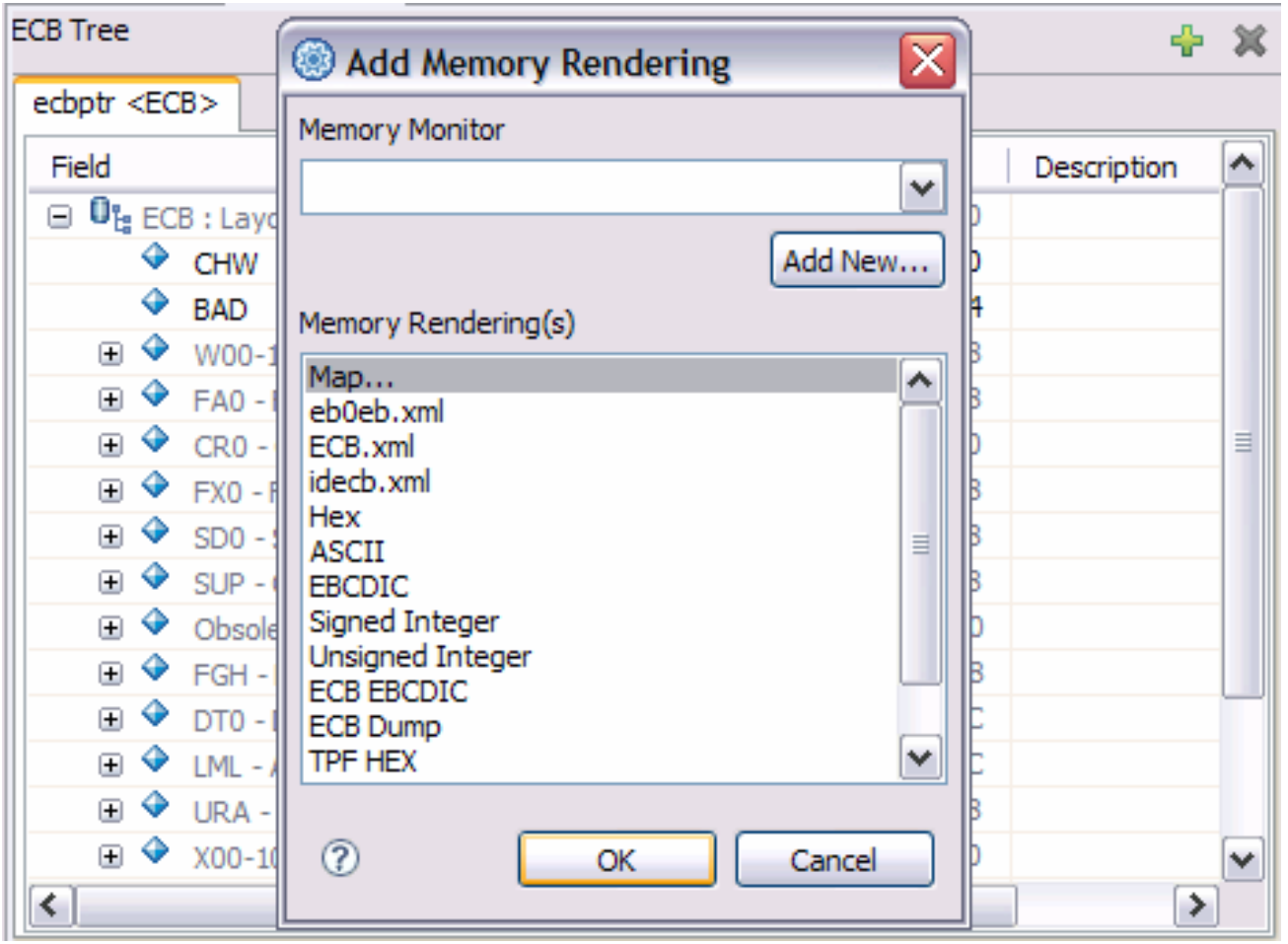
- ECBDIC view provides EBCDIC translation.

ECB View (Tree pane)



- Tree view allows quick navigation of the ECB.
- Tree view XML only shows dump labels.

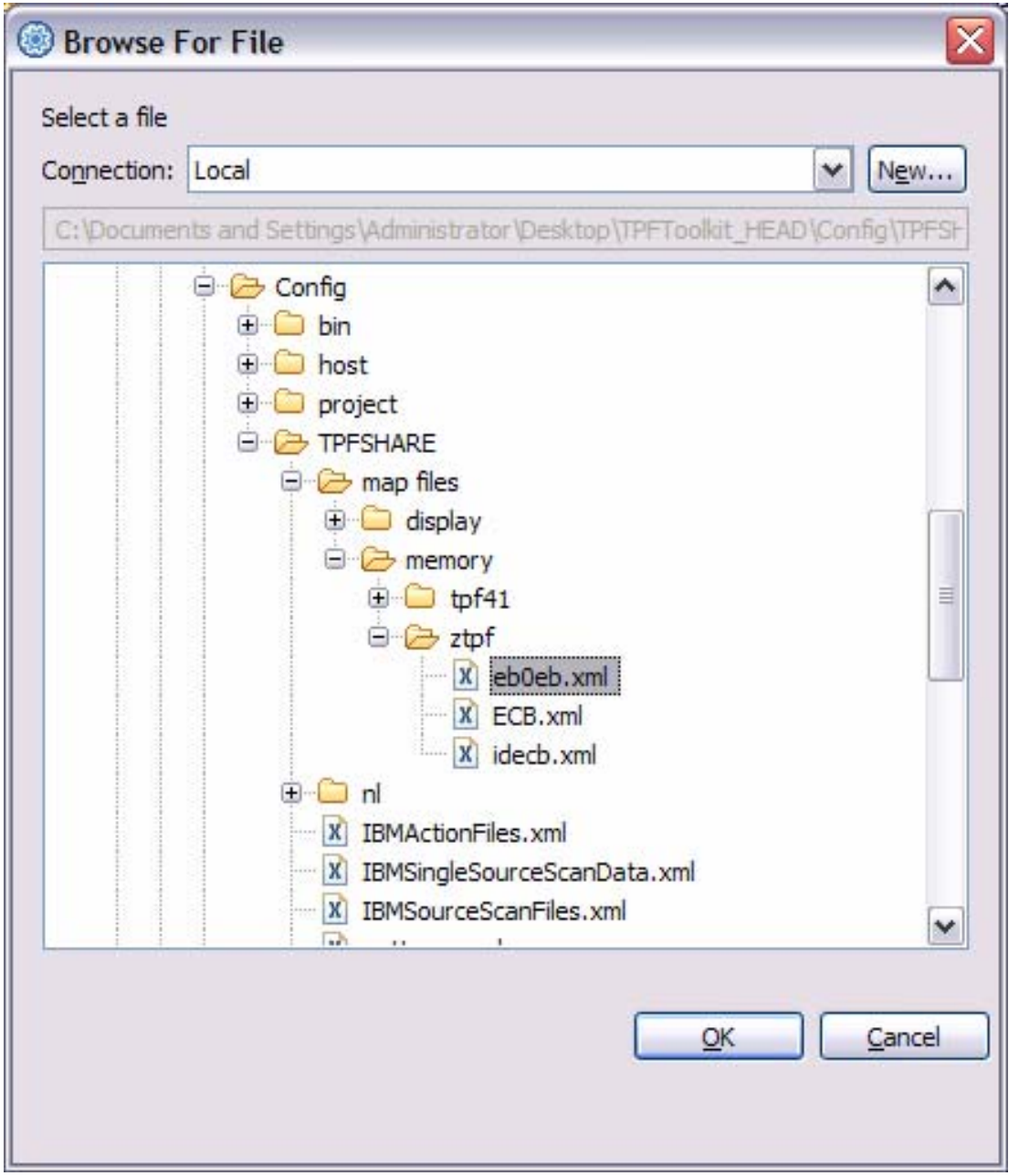
ECB View (Tree pane opening eb0eb.xml)



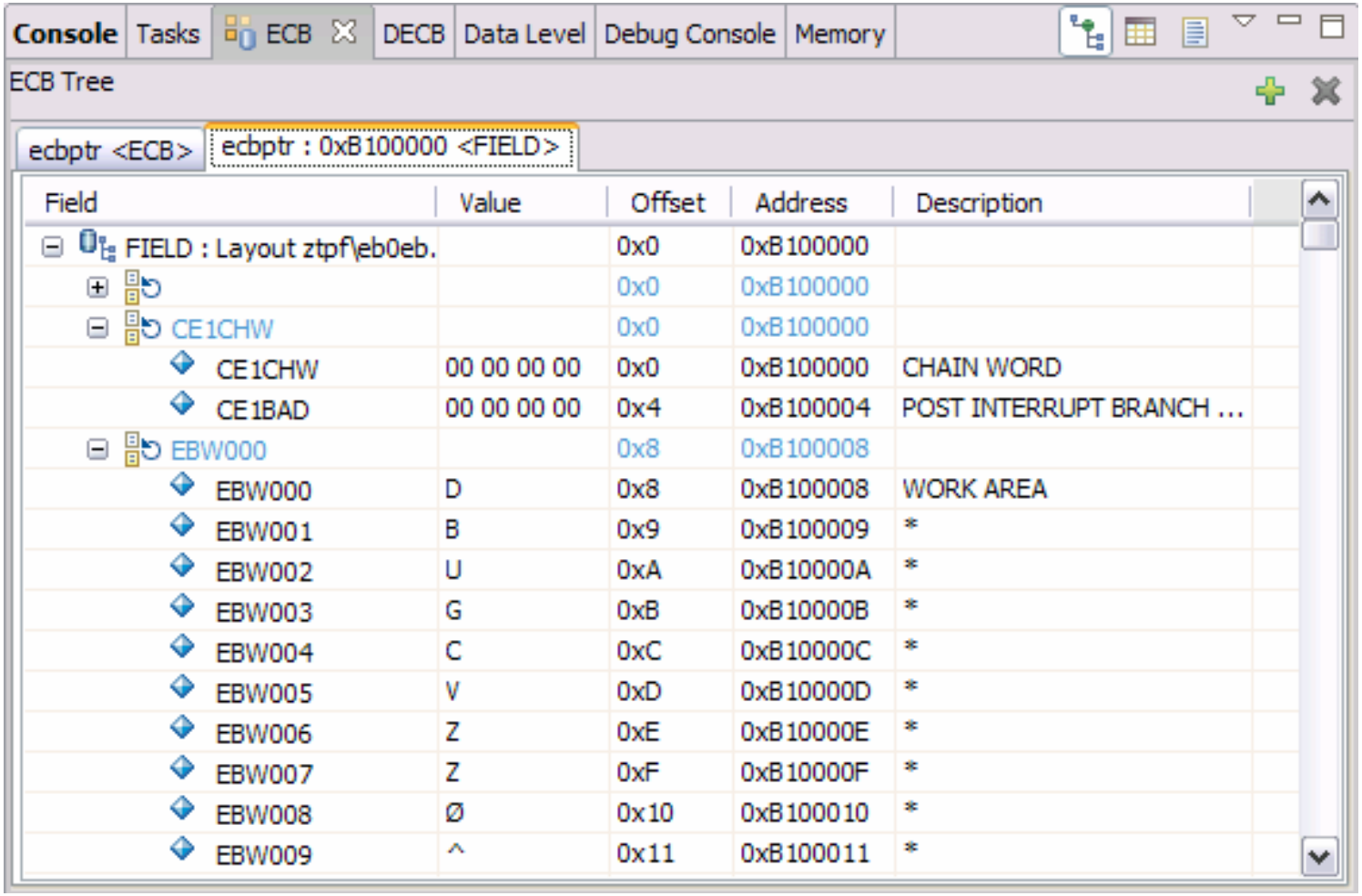
- To open the full XML map of the ECB: click the green  and choose Map…

ECB View (Tree pane opening eb0eb.xml)

- Choose the respective eb0eb.xml in the config/TPFSHARE/map files/memory/ztpf/eb0eb.xml directory and click OK



ECB View (Tree pane with eb0eb.xml)



Field	Value	Offset	Address	Description
FIELD : Layout ztpf\eb0eb.		0x0	0xB100000	
		0x0	0xB100000	
CE1CHW		0x0	0xB100000	
CE1CHW	00 00 00 00	0x0	0xB100000	CHAIN WORD
CE1BAD	00 00 00 00	0x4	0xB100004	POST INTERRUPT BRANCH ...
EBW000		0x8	0xB100008	
EBW000	D	0x8	0xB100008	WORK AREA
EBW001	B	0x9	0xB100009	*
EBW002	U	0xA	0xB10000A	*
EBW003	G	0xB	0xB10000B	*
EBW004	C	0xC	0xB10000C	*
EBW005	V	0xD	0xB10000D	*
EBW006	Z	0xE	0xB10000E	*
EBW007	Z	0xF	0xB10000F	*
EBW008	Ø	0x10	0xB100010	*
EBW009	^	0x11	0xB100011	*

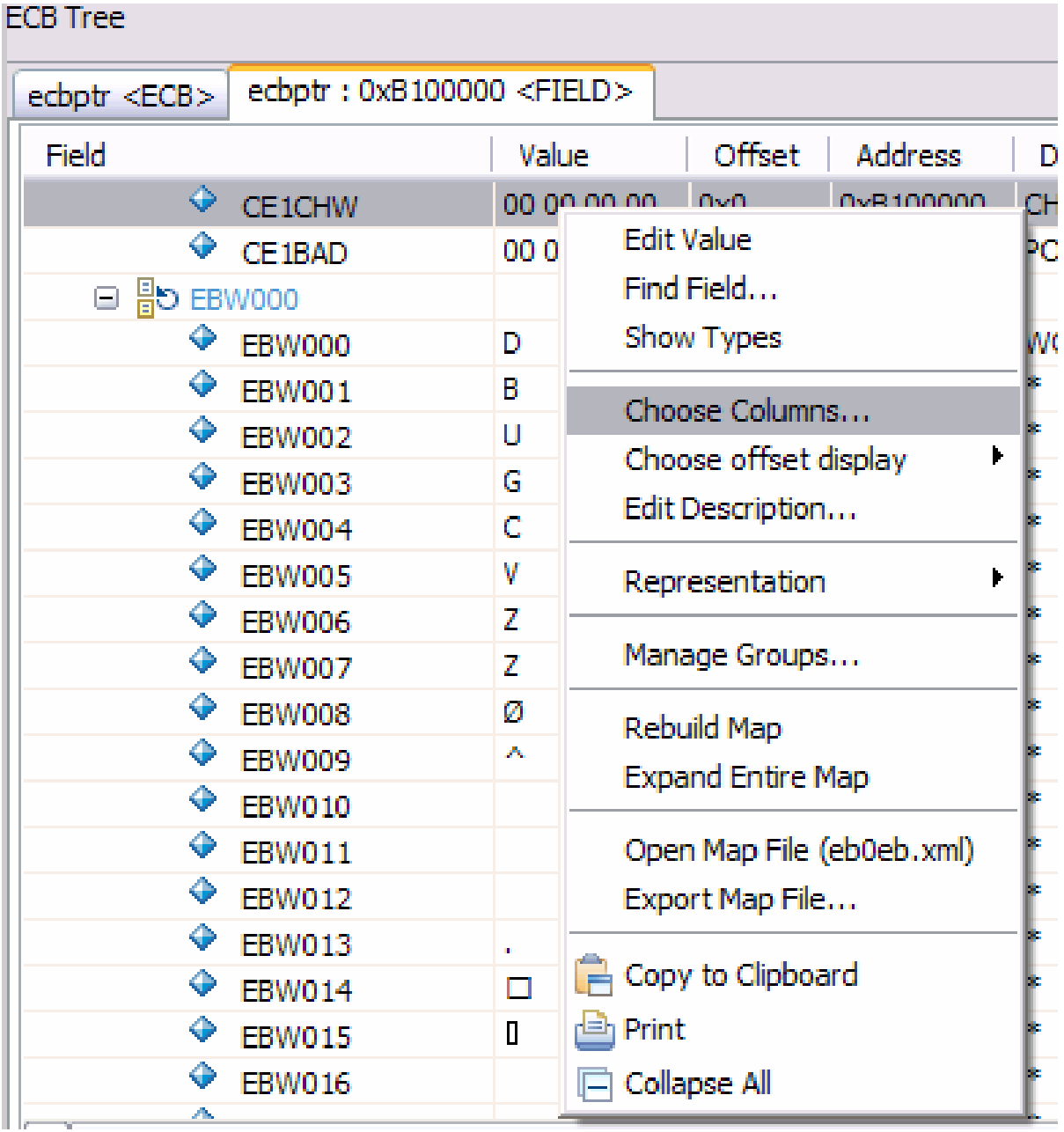
- Utilizes the new XML ORG_GROUP support to show every field in the EB0EB.

ECB View (XML flexibility)

- XML views are highly customizable
  - Click and drag columns to reorder
  - Click and drag to resize columns
  - Edit value
  - Find field
  - Show types (from XML)
  - Choosing columns to display
  - Choosing offset display type (decimal or hex)
  - Representation of data (hex, ASCII, or EBCDIC)
  - Ability to modify the XML maps

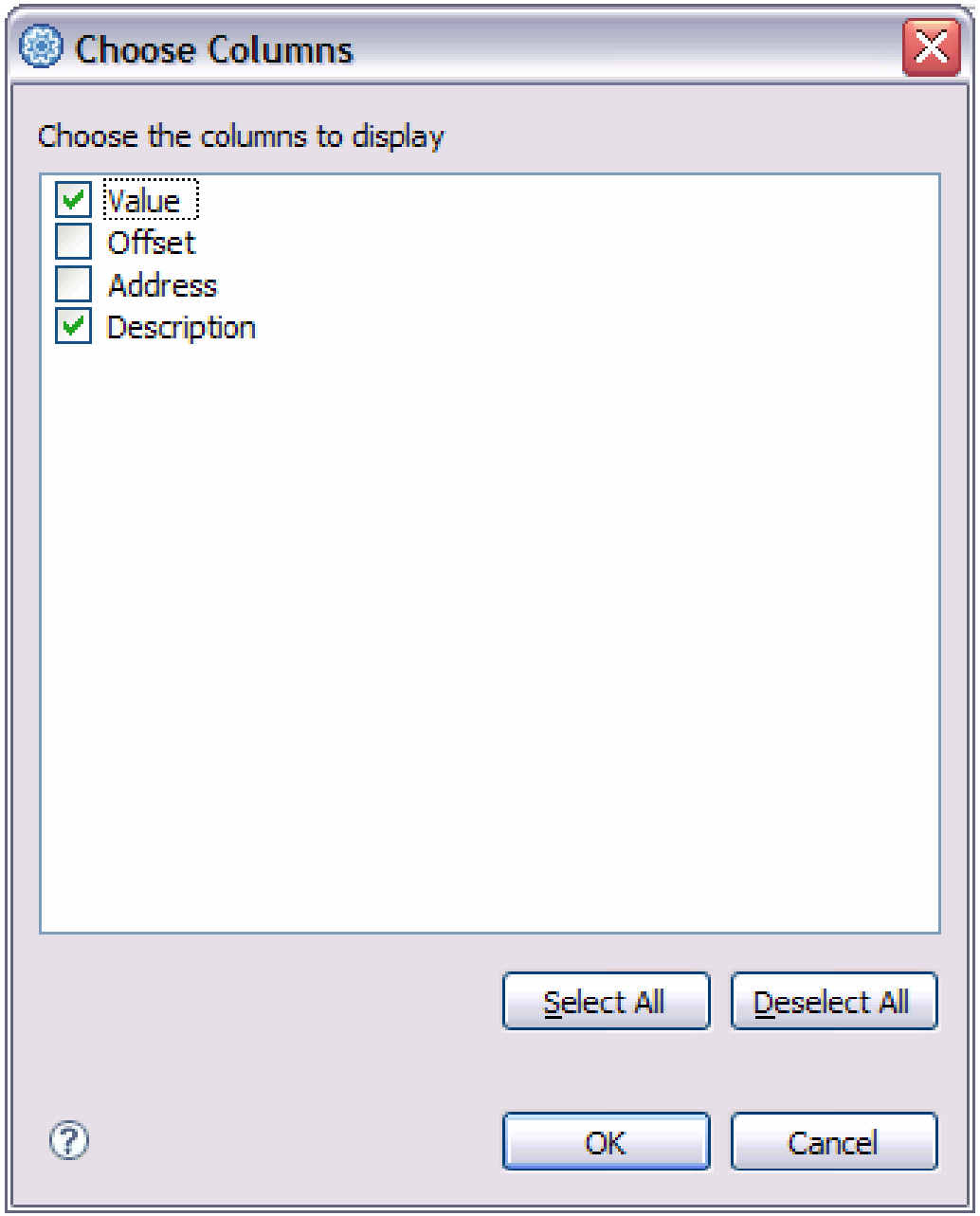
ECB View
(Choose columns)

- Right click and choose “Choose Columns”



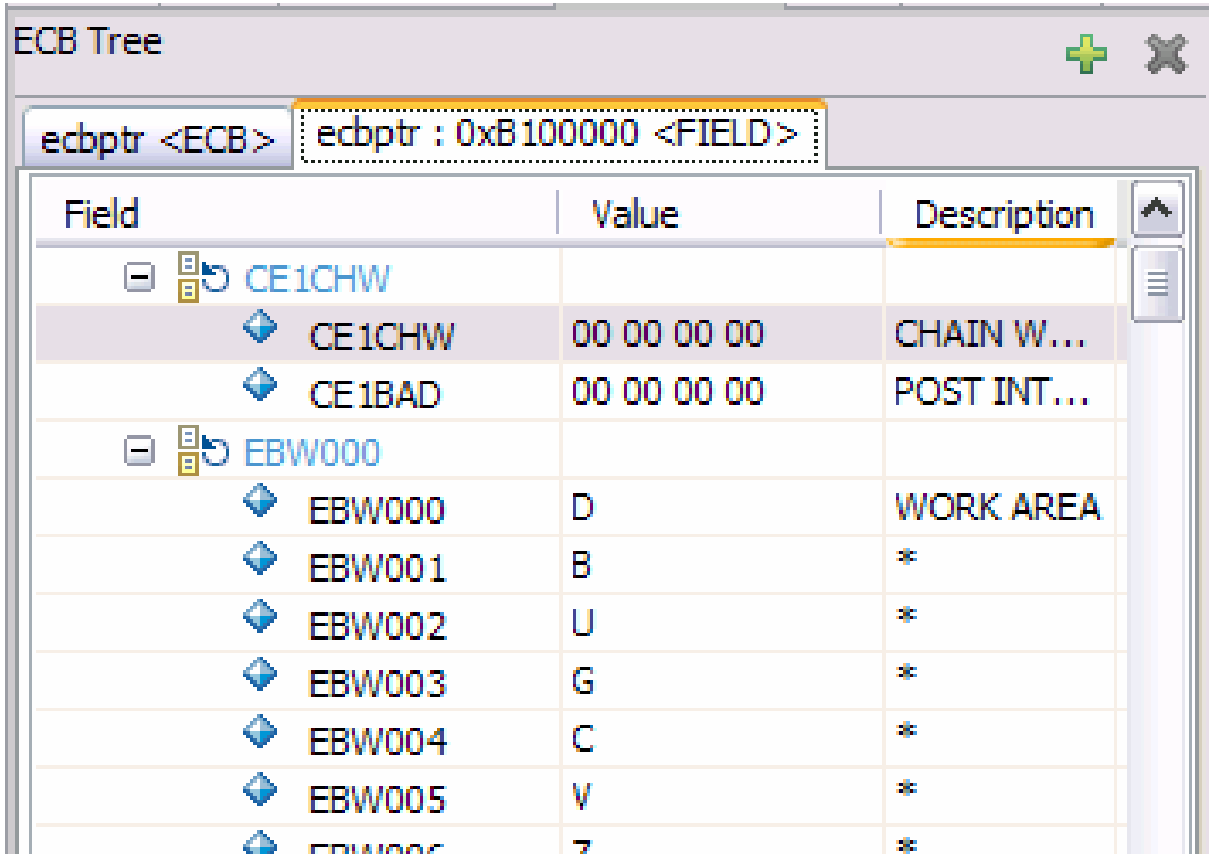
ECB View
(Choose columns)

- Select and/or deselect the columns you want to display.



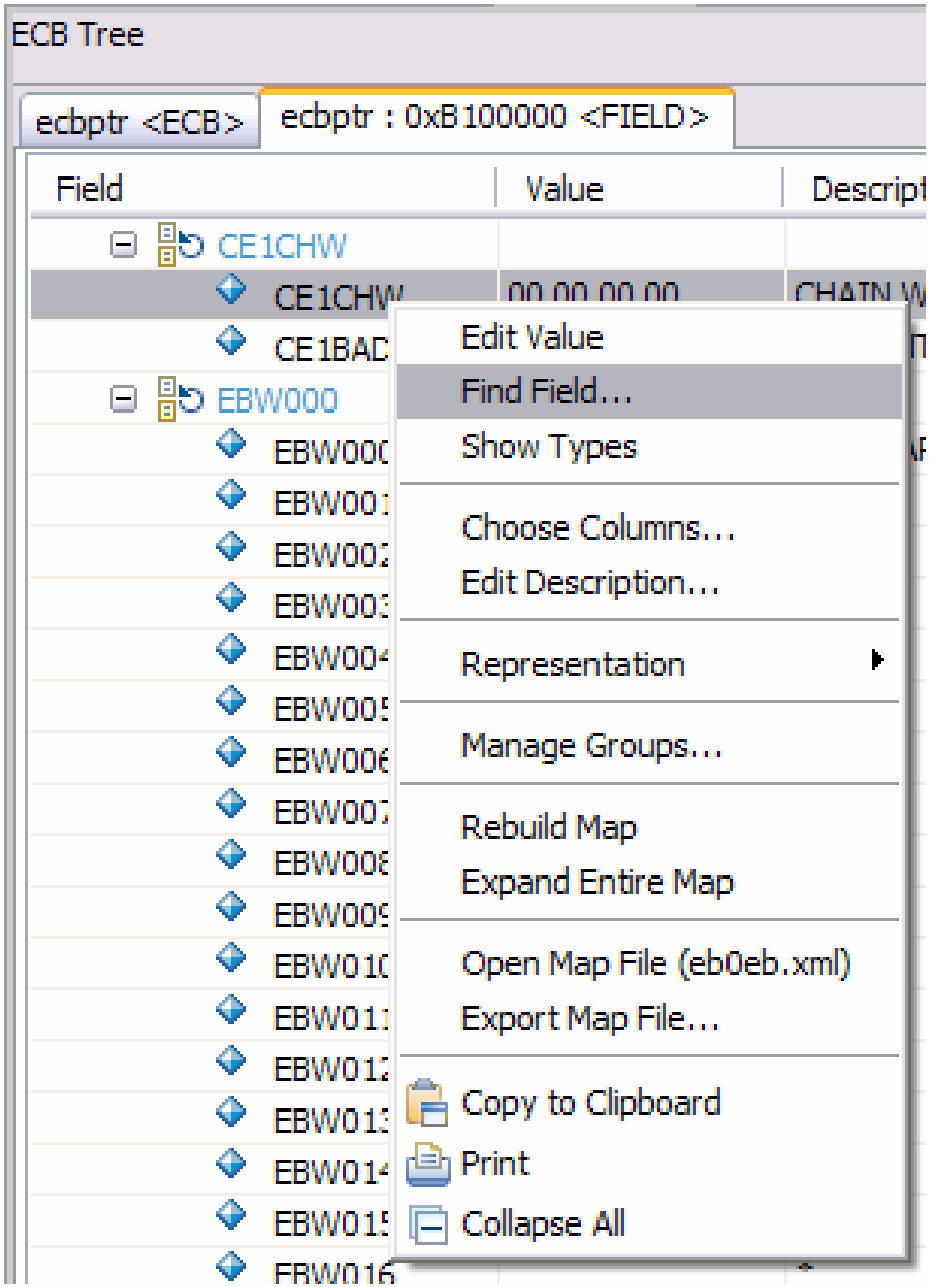
ECB View

(Choose columns)



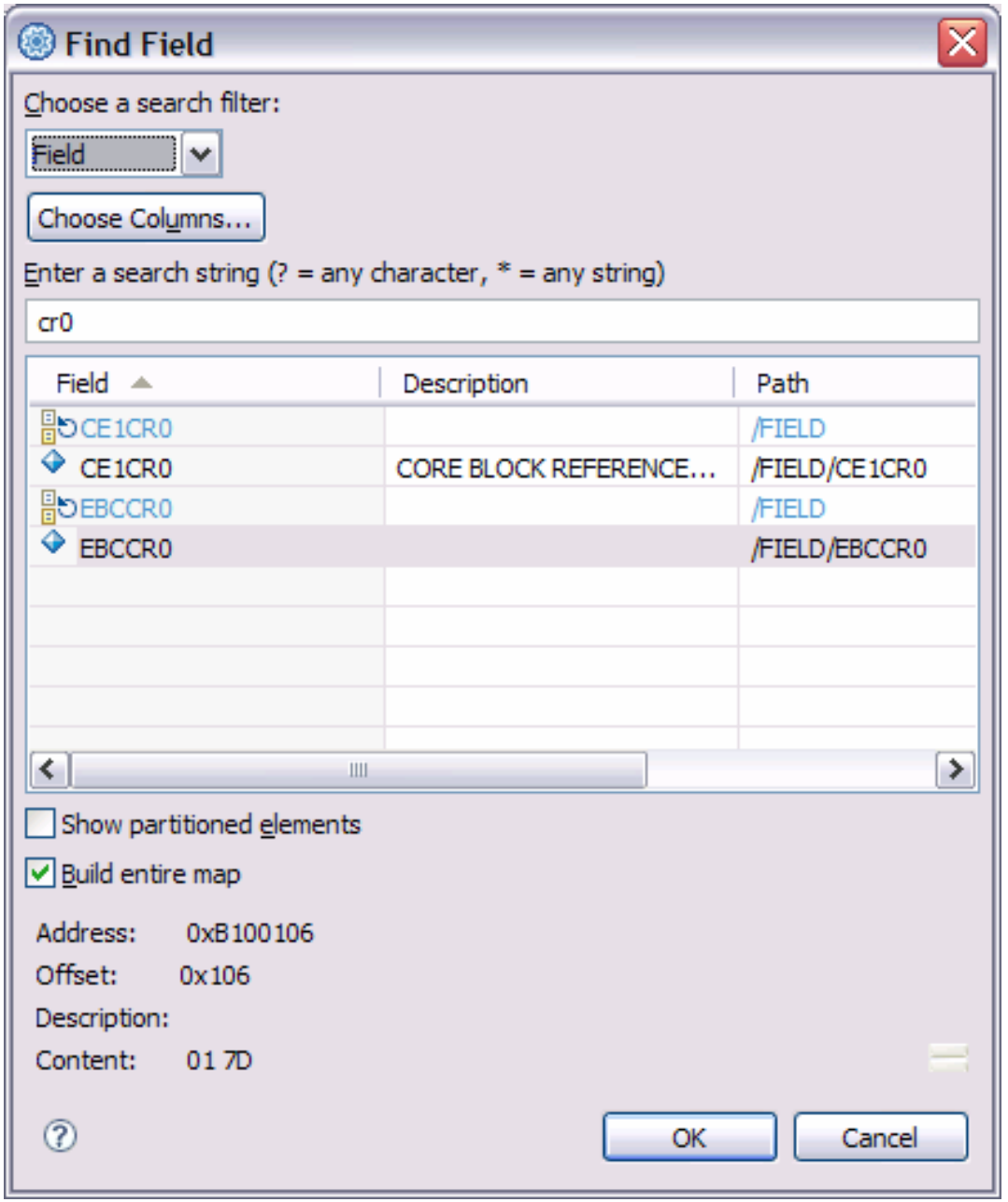
ECB View
(Find Field)

- Right click and choose “Find Field”

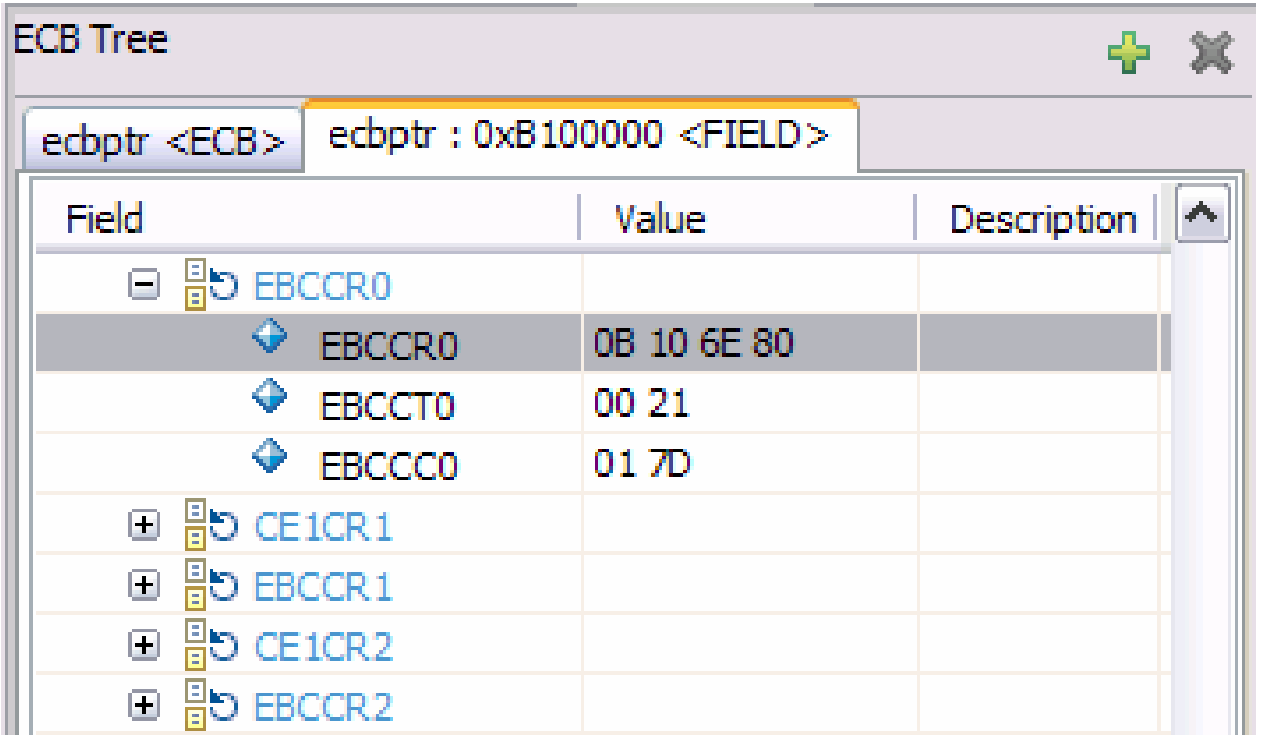


ECB View (XML find field)

- Ability to search on the field names, description, and etc.
- Selection displays information at the bottom.
- Double click field opens XML map at that location.

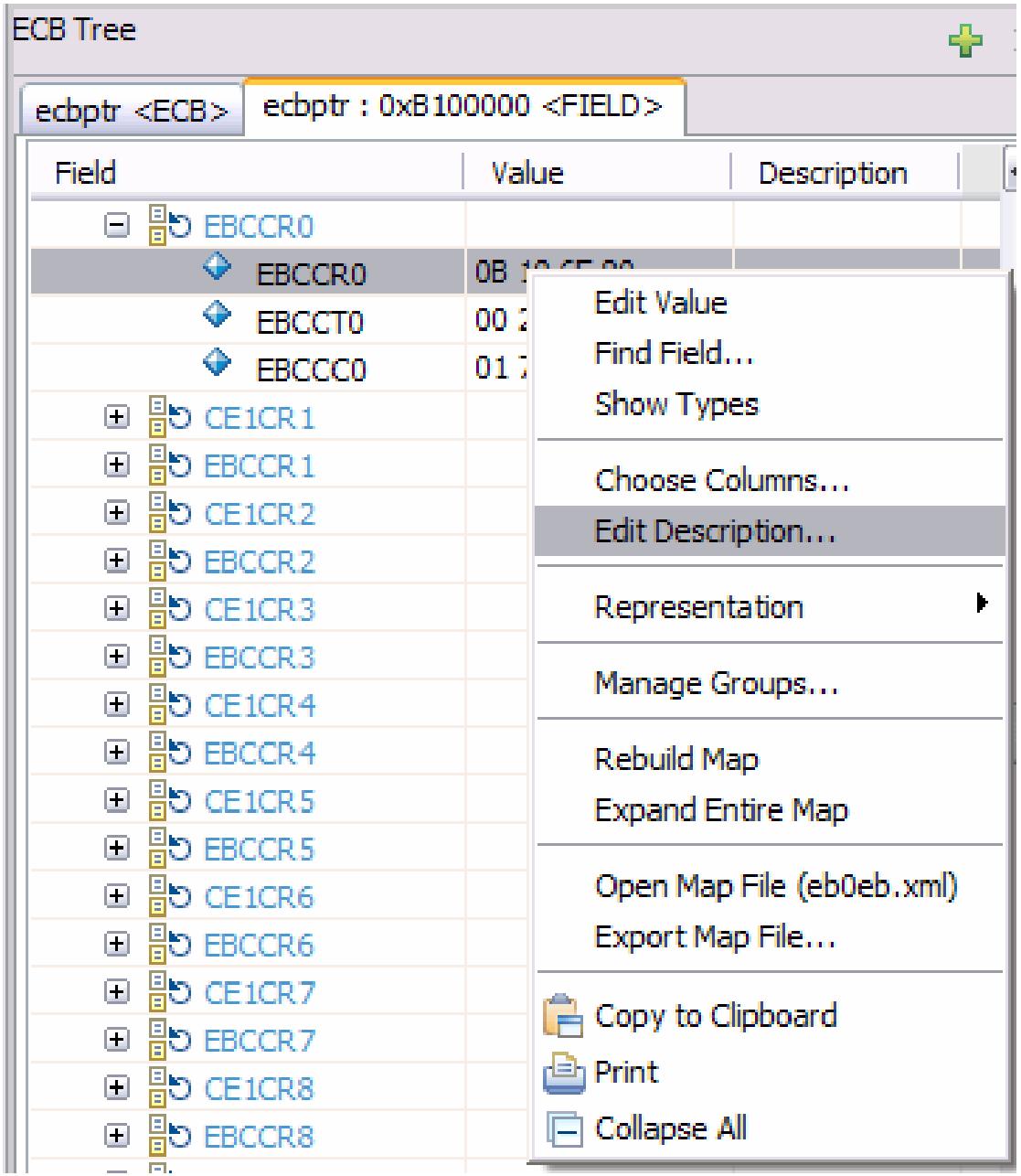


ECB View (Find Field)



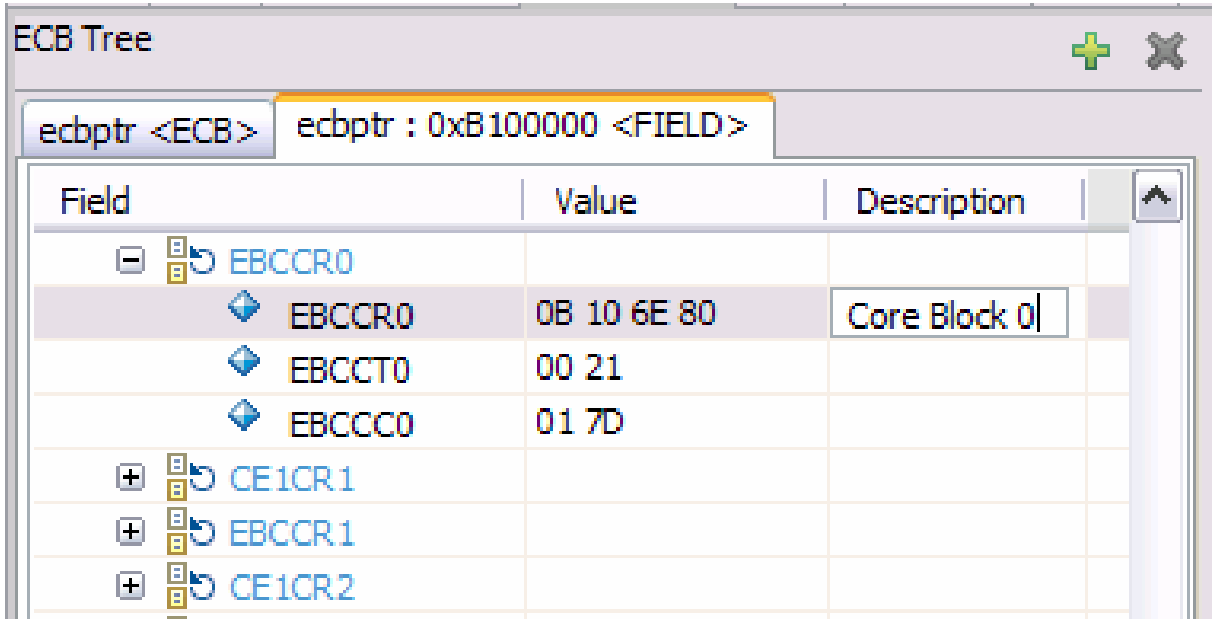
ECB View (Edit Description)

- Double click the description field
- Or right click and choose “Edit Description”



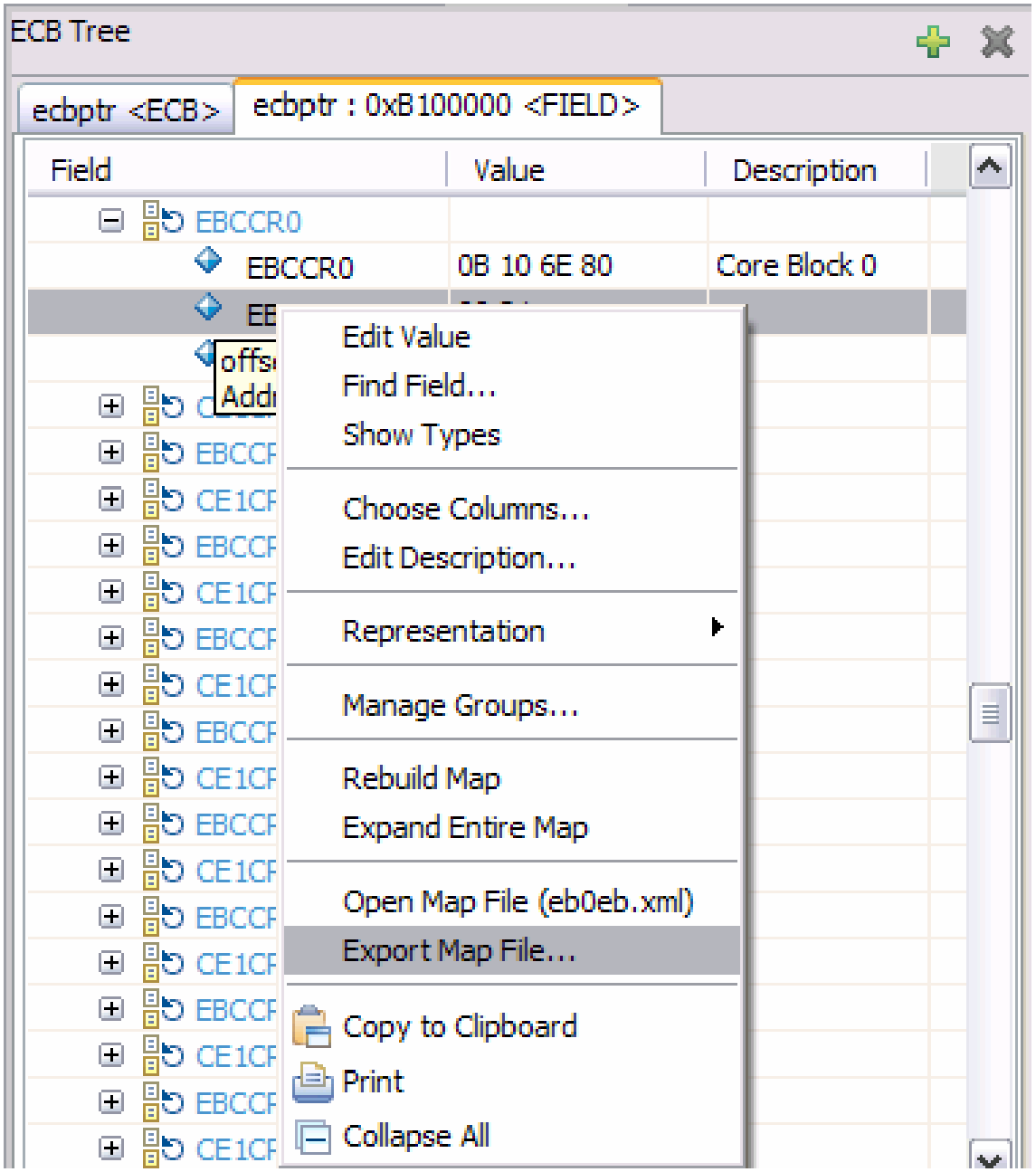
ECB View (Edit Description)

- Enter your text and hit enter



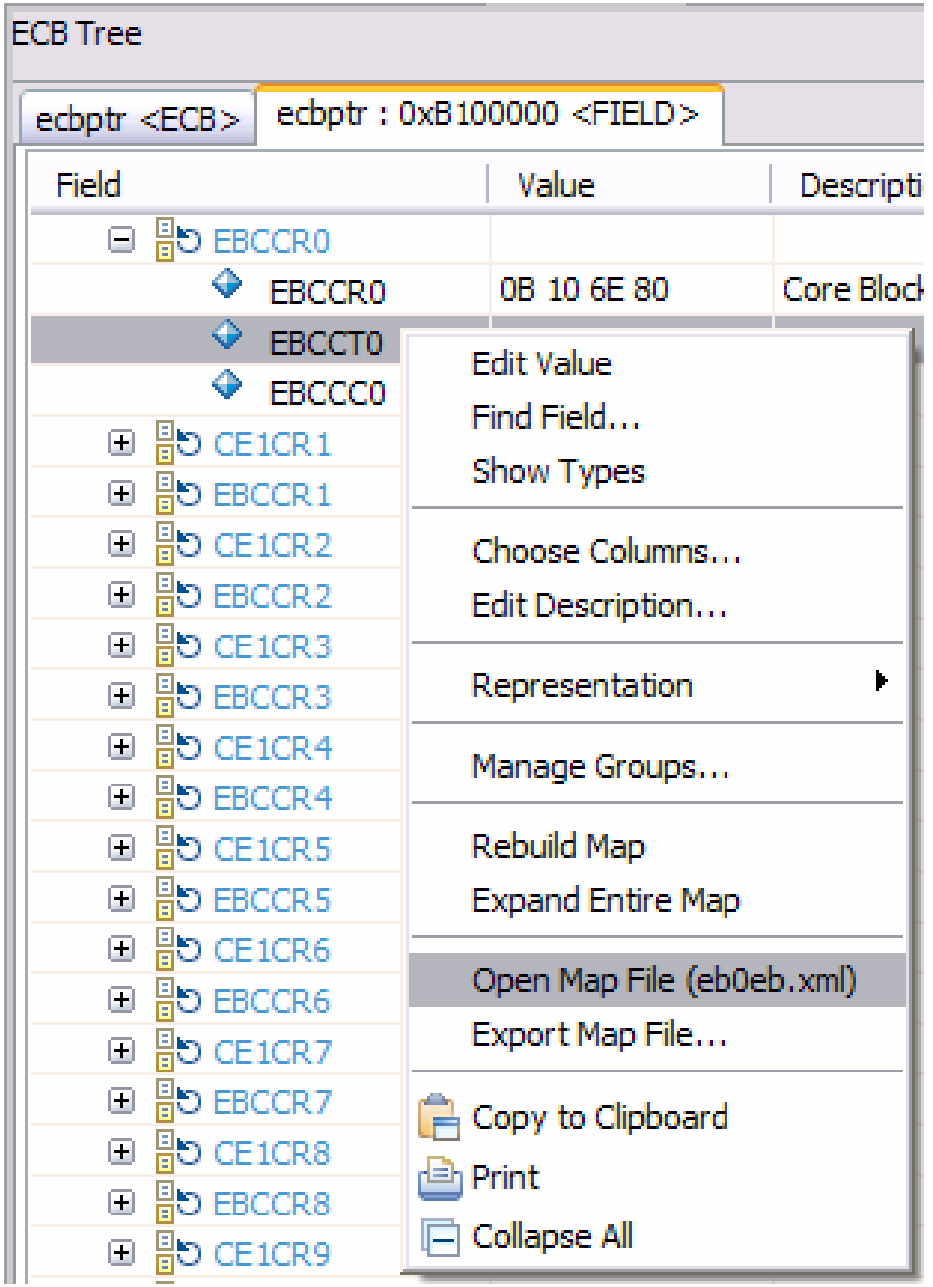
ECB View (Export Map)

- Once changes are made, right click and choose “Export Map File” save the changes to the XML file.



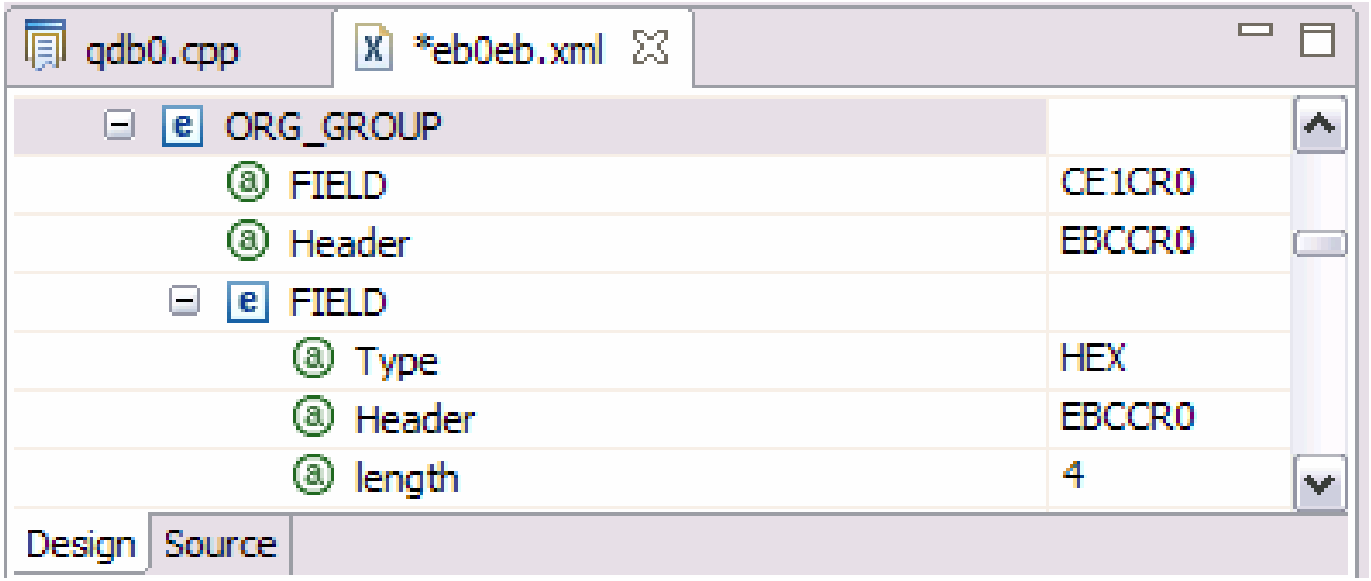
ECB View (Edit XML file)

- Right click and choose “Open Map File” to edit the current XML File.



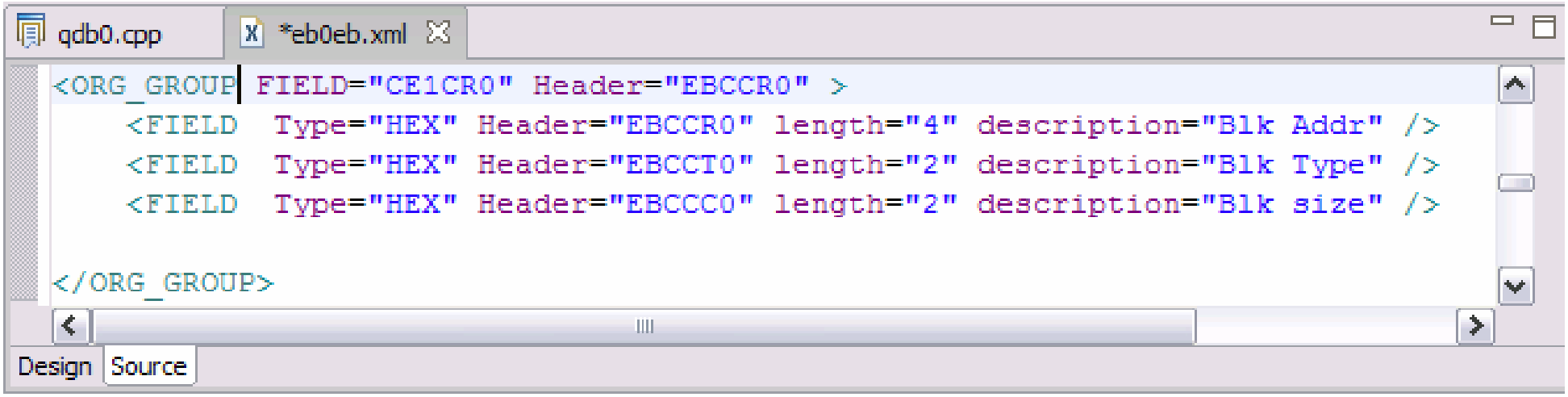
ECB View (XML editing)

- Ability to edit XML files in Design view (notice tab in lower left corner).



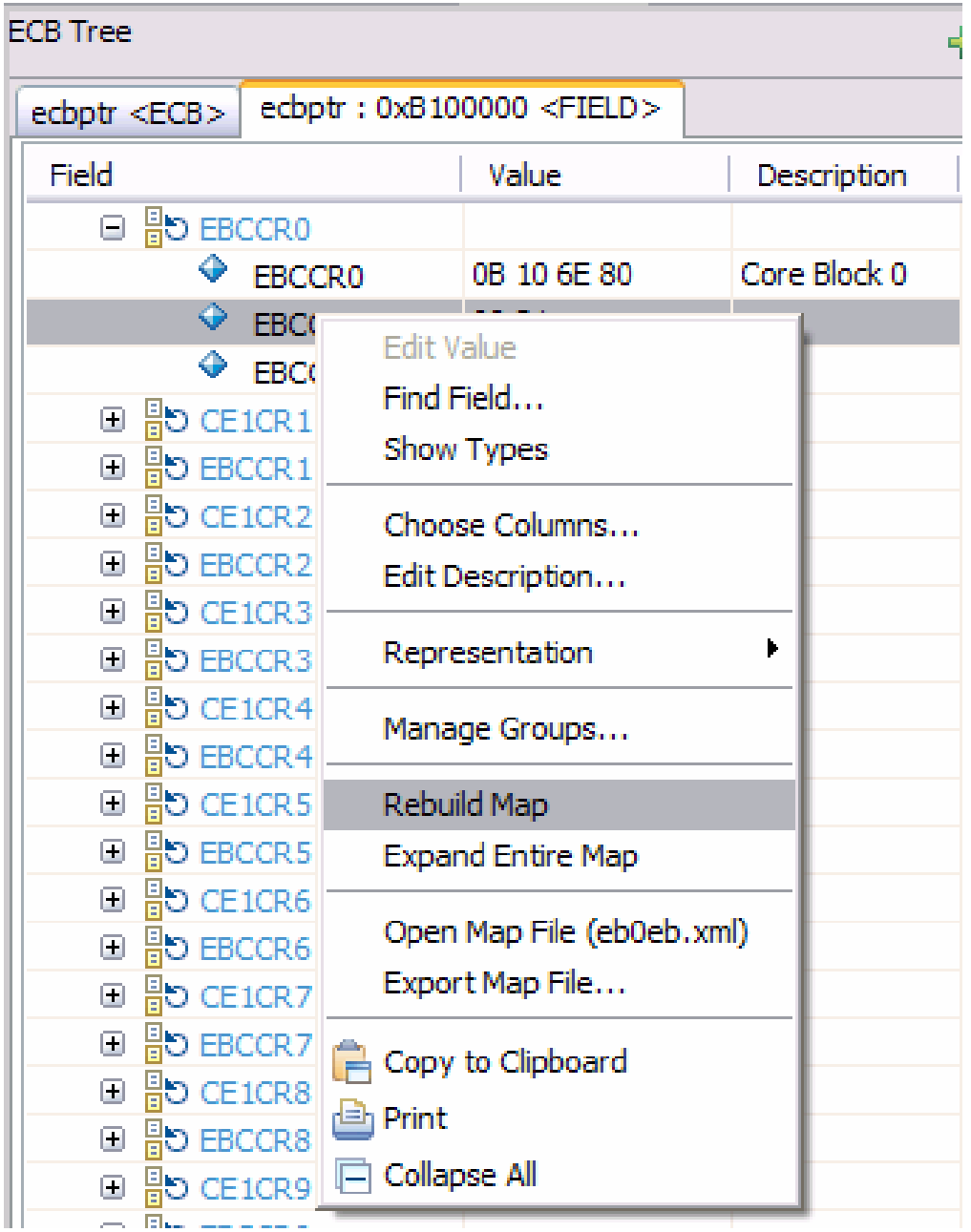
ECB View (XML editing)

- Ability to edit XML files in Source view.

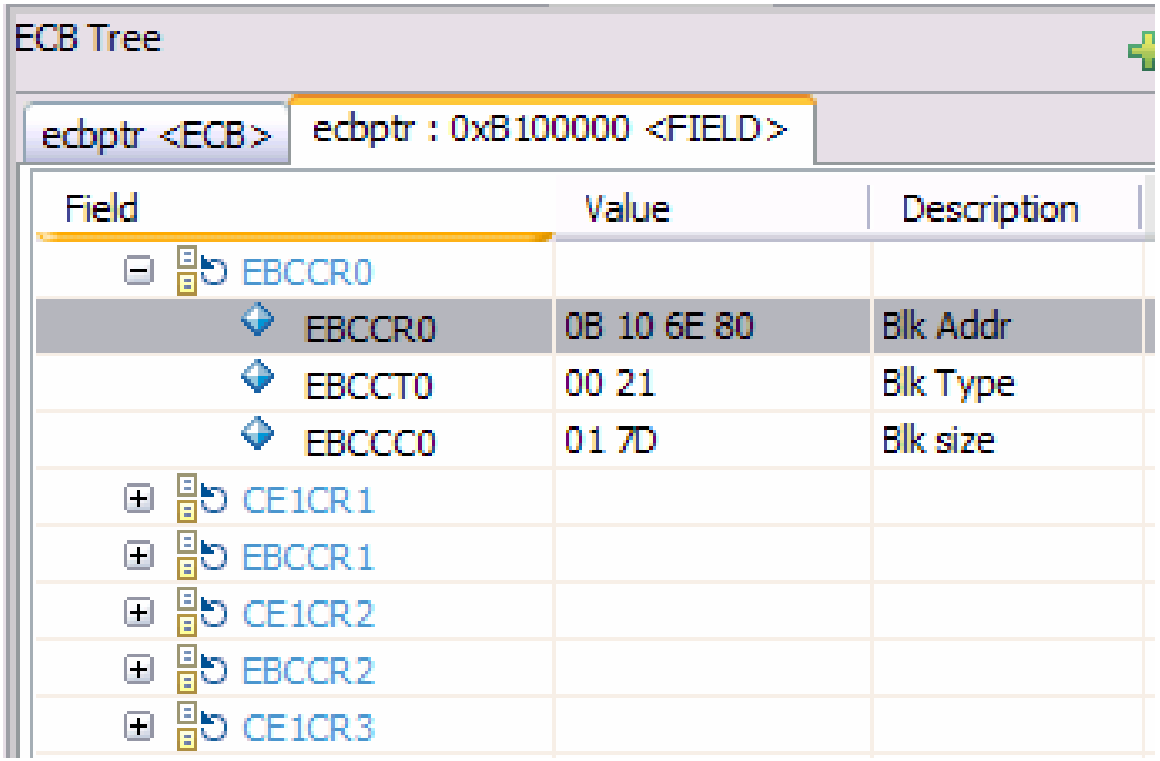


ECB View (XML editing)

- To apply the saved changes in the XML map, right click and choose “Rebuild Map”.



ECB View (XML editing)



Data Level View

Console | Tasks | ECB | DECB | Data Level | Debug Console | Memory

Data Level Table

ecbptr : 0xB100000 <Data Level Table>

Name	Blk Addr	Blk Type	Blk Size	RID	RCC	File Addr	File Ext	SUD	Rec Held	DETAC Cnt
D0	0B106E80	0021	017D	0000	00	00000000	0000000000000000	00	No	00
D1	0B108000	0001	0FFF	0000	00	00000000	0000000000000000	00	No	00
D2	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D3	0B106480	0021	017D	E7C9	00	102905A4	0000000000000000	00	Yes	00
D4	0B106C00	0021	017D	E7C9	00	102905A4	0000000000000000	00	Yes	00
D5	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D6	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D7	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D8	0B106C00	0001	017D	0000	00	00000000	0000000000000000	00	No	00
D9	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DA	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DB	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DC	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DD	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DE	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DF	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00

- Data level view shows the contents of the 16 data levels.
- Rec Held indicates the file address is held in the record hold table for this ECB.
- Backed by two XML files: config/TPFSHARE/map files/memory/ztpf/eb0eb.xml for location and config/TPFSHARE/map files/display/ztpf/DataLevelDisplay.xml for the layout.

DECB View

Console | Tasks | ECB | DECB | Data Level | Debug Console | Memory

DECB Table

0xB108D20 : 0xB108EA0 <DECB Table>

Addr	Name	Blk Addr	Blk Type	Blk Size	RID	RCC	File Addr	File Ext	SUD	Rec Held	DETAC Cnt
0B108020		0B106600	0021	017D	E7C9	00	00000000102905A3	0000000000000000	00	Yes	0000
0B108D20	QDCA.FIWHC.FIND	0B106C00	0001	017D	E7C9	09	00000000102905A1	0000000000000000	00	No	0000
0B108DA0	QDCA.FIWHC.FILE	0B106A80	0001	017D	E7C9	09	00000000102905A2	0000000000000000	00	No	0000
0B108E20	QDCA.COPY.LEVEL	0B106900	0021	017D	0000	00	0000000000000000	0000000000000000	00	No	0000
0B108EA0	QDCA.COPY.DECB	0B106780	0021	017D	0000	00	0000000000000000	0000000000000000	00	No	0000
0B108F20		0B106A80	0021	017D	E7C9	00	00000000102905A3	0000000000000000	00	Yes	0000

- DECB view contains information about the created DECBs.
- Backed by two XML files: config/TPFSHARE/map files/memory/ztpf/idecb.xml for location and config/TPFSHARE/map files/display/ztpf/DecbDisplay.xml for the layout.

ECB, Data Level, and DECB Views Delivery

- Tentatively targeted for 2Q 2007
- TPF Toolkit V3.2
- TPF Debugger APARs:
  - TPF 4.1 PJ31891
  - z/TPF PJ31890

ECB, Data Level, and DECB Views Discussion

- In the future, what additional functionality would you like to see in these views?
- What additional behaviors would be beneficial? For example: translating Blk Type to the string values: L0, L1, L2, and etc.
- What additional interaction with these views would be desirable? For example: Right click on a data level gives option to do getcc, relcc, and etc.

Potential Future TPF Views

- SW00SR (DF structure)
- Data Level DETAC Lists
- DECB DETAC Lists
- Heap (all malloc entries and contents)
- Other views?

SW00SR View Sketch (Context pane shown)

addr	wid	ref	dsect	sws	swi	cmd	rtn	nky	pca	rec	fad	ord
3800	FDEE	GR91SR	GR91SR	F123	01	OPEN	00	09	10	04	12	00
4200	FD05	GR91SR	GR91SR	F543	12	READ	00	12	20	08	50	00

Tree

+ Context
+ File Info
+ Keys
+ LREC
+ XML Map

Context | File Info | Keys | LREC | XML Map

```
PROGRAM STAMP                    SW00PGM    Q X D G
FILE IDENTIFIER                  SW00WID    FDEE
ACTUAL TPFDF COMMAND             SW00CMD    OPEN
ERROR 1                          SW00RTN    00
ERROR 2                          SW00RT2    04
ERR COUNT SINCE OPEN             SW00RT1    00
BAM RETURN INDICATORS            SW00RT3    00
CURRENT FILE ADDRESS             SW00CFA8   000000000809CF80
CURRENT CORE ADDRESS             SW00CCA    0092A300
CURRENT NAB                      SW00NAB    001A
INITIAL NAB VALUE                SW00INB    001A
CURRENT LREC CORE ADDR.          SW00REC    04
...
```

SW00SR View Sketch (File Info pane shown)

addr	wid	ref	dsect	sws	swi	cmd	rtn	nky	pca	rec	fad	ord
3800	FDEE	GR91SR	GR91SR	F123	01	OPEN	00	09	10	04	12	00
4200	FD05	GR91SR	GR91SR	F543	12	READ	00	12	20	08	50	00

Tree

Context | File Info | Keys | LREC | XML Map

```
+ Context
+ File Info
+ Keys
+ LREC
+ XML Map
```

```
RECORD ID                          SW00BID   FDEE
REFERENCE NAME                     SW00DRE   GR91SR
LAST USED FILE REF NAME            SW00LRF   GR91SR
ADDRESS OF LAST USED FILE          SW00SWB   00FF5398
FILE TYPE                          SW00RCT   0000
RETR. ALGORITHM BV                 SW00RBV   0000
INTERLEAVING FACTOR                SW00ILV   0000
NUMBER OF PARTITIONS               SW00PTN   0000
OPTION BYTE 1                      SW00OP1   00  (or translate to EQU)
OPTION BYTE 2                      SW00OP2   00  (or translate to EQU)
OPTION BYTE 3                      SW00OP3   00  (or translate to EQU)
OPTION BYTE 4                      SW00OP4   00  (or translate to EQU)
OPTION BYTE 5                      SW00OP5   00  (or translate to EQU)
```

SW00SR View Sketch (Keys pane shown)

addr	wid	ref	dsect	sws	swi	cmd	rtn	nky	pca	rec	fad	ord
3800	FDEE	GR91SR	GR91SR	F123	01	OPEN	00	09	10	04	12	00
4200	FD05	GR91SR	GR91SR	F543	12	READ	00	12	20	08	50	00

Tree

+ Context
+ File Info
+ Keys
+ LREC
+ XML Map

Context | File Info | **Keys** | LREC | XML Map

```
EXTENDED KEY AREA                SW00KEY   00000000
KEY INDICATORS                   SW00NKY   09
ADDRESS OF KEYLIST               SW00KLS   00000000
KEY 1 SEARCH ARG ADDRESS         SW00KS1   00000000
KEY 2 SEARCH ARG ADDRESS         SW00KS2   00000000
KEY 3 SEARCH ARG ADDRESS         SW00KS3   00000000
KEY 4 SEARCH ARG ADDRESS         SW00KS4   00000000
KEY 5 SEARCH ARG ADDRESS         SW00KS5   00000000
KEY 6 SEARCH ARG ADDRESS         SW00KS6   00000000
KEY INSTRUCTIONS                 KEY   1   CLI   95804002
                                           BC    474E0004
                                           BC    477E0018
                                 . . .
```

SW00SR View Sketch (LREC pane shown)

addr	wid	ref	dsect	sws	swi	cmd	rtn	nky	pca	rec	fad	ord
3800	FDEE	GR91SR	GR91SR	F123	01	OPEN	00	09	10	04	12	00
4200	FD05	GR91SR	GR91SR	F543	12	READ	00	12	20	08	50	00

Tree

Context | File Info | Keys | LREC | XML Map

```
+ Context
+ File Info
+ Keys
+ LREC
+ XML Map
```

```
+ Key 60
+ Key 70
+ Key 80
- Key 90
   - Field 1
   - Field 2
   - Field 3
   - Field 4
   - Field 5
```

SW00SR View Sketch (XML map pane shown)

addr	wid	ref	dsect	sws	swi	cmd	rtn	nky	pca	rec	fad	ord
3800	FDEE	GR91SR	GR91SR	F123	01	OPEN	00	09	10	04	12	00
4200	FD05	GR91SR	GR91SR	F543	12	READ	00	12	20	08	50	00

Tree

Context | File Info | Keys | LREC | XML Map

```
+ Context
+ File Info
+ Keys
+ LREC
- XML Map
   + SW00SWC
   + SW00SPT
      . . .
```

```
+ SW00SWC
+ SW00SPT
+ SW00HDR
- SW00BID
   - SW00BID = FDEE
   - SW00DLN = 0x00
   - SW00PGM = QXDG
   - SW00KLS = 00000000
   . . .
```

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