

CMP MEDIA LLC

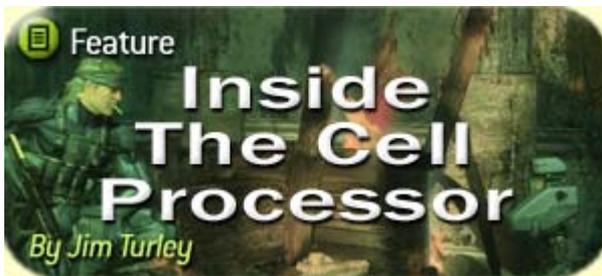
Gamasutra.com

Cell

Jim Turley

2006 7 13

http://www.gamasutra.com/features/20060713/turley_01.shtml



가

가?

9

9

IBM,

가 Cell

. Cell

3

, IBM

. Cell

가

가

Cell

. Cell

가

가

Alex Chow

가

Cell
5
2,560

가
가
가

가
(
) IBM
Cell

4GHz
4
1 2 5
Cell 1

2

Cell
Cell

가

Cell

Cell

1 Cell
CBE)

(Cell Broadband Engine,
64 PowerPC
PowerPC

8

2
, AMD,

Cell

Cell

64

Top-level block diagram of the Cell Broadband Engine (CBE)

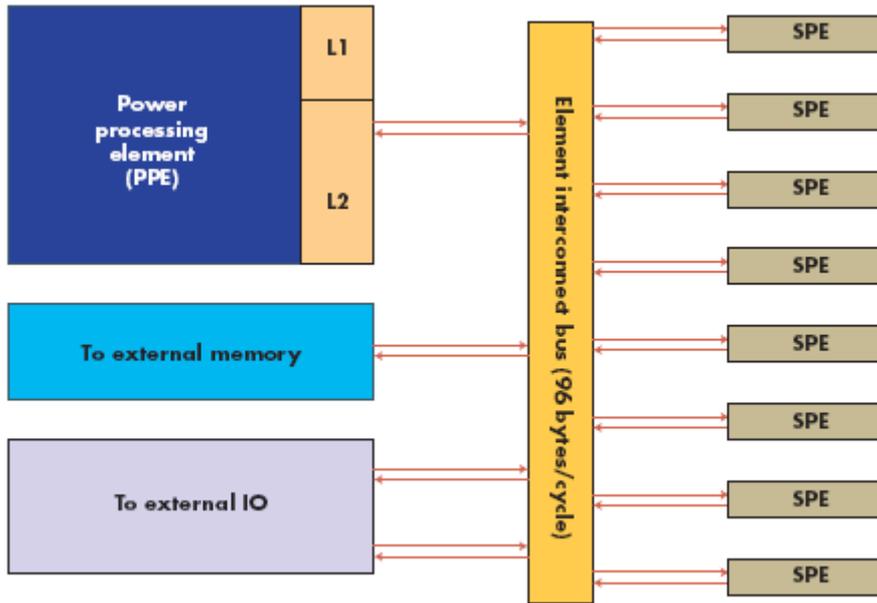


Figure 1

가 IBM PowerPC
 가
 media extensions, AltiVec)
 1 (L1) 512K 2 (L2) 가
 Cell 2 8 “
 (Synergistic Processor Elements, SPE)” Cell IBM/ /
 가 Power
 PowerPC 가
 SPE (heavy lifting)
 IBM SPE , (Power Processing Element,
 PPE)

Cell has eight synergistic processor elements (SPEs)

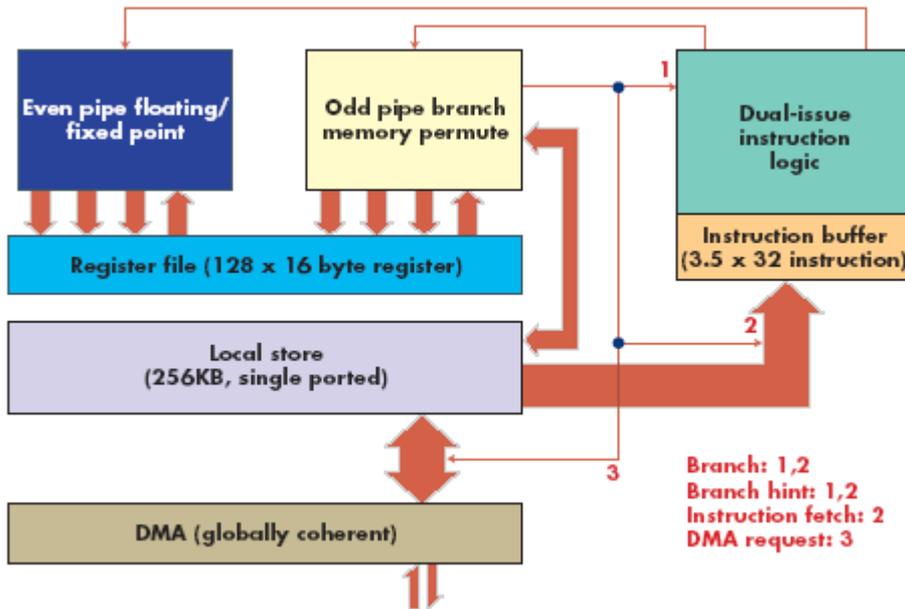


Figure 2

PowerPC 가 SPE dual-issue PPE
 2 SPE SPE
 “ ” (),
 , 가 .
 x86 , , 가
 ()가
 .
 .
 SPE 128 , 128 128 가 .
 128 SPE가
 SPE가 , 4
 long integer, 8 16 short integer, 16 char 1
 SPE RISC () 가 . SPE (128)
)
 char 16
 , ,
 SPE 7 가
 2 .

.) DSP()
 가 ,
 가 2 Cell
 가 SPE
 PPE SPE 가 SPE 256K “ ” 가
 SPE SPE 256K
 SPE Cell
 SPE PPE
 SPE Cell
 가
 ? SPE (deterministic
 access) 가 ,
 ()
 SPE
 SPE
 Cell SPE
 DMA 가 SPE Cell
 128 DMA 가 (64 , 64) PPE
 8 SPE Element Interconnect Bus (EIB)
 DMA SPE가
 (fetch) DMA ,
 PPE
 L1 L2 EIB
 SPE ,
 PowerPC SPE가 SPE
 SPE , 가
 SPE가 가 SPE DMA
 가 (fetch) PPE

Cell

Cell

가
가 Cell 가 9
(interlock), 가 dual-issue . 8 SPE

SPE

IBM C

Cell 8 SPE

“Octopiler”

18

Cell

, 가 4 (3 SuperH
68000)

Cell

가

Cell

가

Cell

Jim Turley

(Embedded Systems Design)

jturley@cmp.com