

(54)

NUMA

5

(time base register)

(coherency)

(SMP : shared multiprocessor)

(ccNUMA : cache coherent non - uniform memory access multiprocessor)

PowerPC

, IBM

(divisor)

. PowerPC

. PowerPC

가

1

, 2

, 2

1

1

2

100

1000

가 10

NUMA

NUM

A

가

(payload)

가

(age)

가

가

, 1 (NUMA)

1 가

1

1

가

1

가

(decrementer)

read time base)

(RTB :

(WTB : write time base)

1
 2 1 NUMA
 3 1
 4 1
 5

, 1 NUMA (100) (102a, 102b, 102c, 102d)(102) (104) (102) 102
) PowerPC (SMP : symmetric multiprocessor) (102)
 (104)
 (102)
 (100) 가 4 (100) 4

, 2 NUMA (100) (102) (202a 202n)(102)
 가 2 (202) SMP (202) (204)
 204) (207) 202) (206) I/O (210)가 (208) (208) (204)
 (204) (208) (102) ISA, PCI, EISA, AGP (102)
 212) (204) (104) NUMA (212) (102)

, 3 (100) (104) 가
 (102a) (202) (304)
 1 (202a) (102) (NSP : node synchronization processor)
 . NSP(202a) (304) NUMA (212) (310a) (102) (310) (1
 04) . [(104) (102) (310) (3
 04)]. , PowerPC (102a) (102a) (304)
 가 IA - 32 (202))
 (304)

, 4 (104) ROM (104) 가 (403) ,
 5 (401) (104) (401) (scratch memory)
 (306) (402) 가 (104) (401)
 (104) (310a, 310b, 310c, 310d) (310) (100) (102) 31
 0 (310) (104) (404) (401) (102)
 310) (404) (401) (102)
 (310) (404) (102) (304)
 가 (312) , 4 (104) (104) (serial line)
 , 가 (312) (104)
 (102) (403) 가 (104) ,
 (102) (102) (102)
 4 (104) (402) (402) (402)
 (306) (104)가 NSPs(202a) 가 (306)
 가 가 , (102)
 , 가 (104) NSPs(202a)가 NUMA (104) . NSP
 s(202a) (104) 가 2 가 ,
 (104) (102) NUMA (212)
 , 4 (hold traffic packet type),
 , (RTB) , (WTB)
 NUMA (212) NUMA (212)
 , 가 (outbound) (102)
 , (deterministic time delay)

, NUMA (212) ,
 RTB WTB NSPs(202a) RTB
 (120) NSP(202a) (304)
 (404) (104) WTB
 (404) NSP(202a) (304)
 RTB (TR)(
 가) , NSP(202a)
 (304) WTB
 NUMA (212) NSP(202a) (304)
 , NUMA (212) NSP(202a) (firmware) NUMA (212)
 , NUMA (212) (304)
 , NUMA (212) (104)
 가
 NSP(202a)가 NUMA (212) (304)
 , NUMA (212) (304) NUMA (212)
 , 5 NUMA (100) (102) (5
 00) 가 (104)
 (102)
 5 (500) (102) (502)
 (104)
 (102)
 (505). (T_w)
 (100) ,
 [5 (505) (504)].
 (104) (102) RTB (504).
 , NUMA (212) (304)
 , NSP(202a)
 (104) NSP(202a)
 NUMA (212) (202a) NSP(202a)
 (102) (508), (104)

4) (510) (104) (510, 512, 51
 (102) (,) 가
 (510) (TR) , TR
 TR (100) (510)
 (512) (104)가
 (306) (306)
 (102) (306)
 , 2
 (304)
 (304)가 ()

(514) (512) NSP(202a)
 (514) (TS) (512) 가
 (, TS) (304) (104)가
 (가)

(514) (516) NUMA (212) NUMA (212)
 (104) (102) (104) (304) (306)
 (518), (102) (102)
 (520).

(402) (500) (402) 가
 (402)

(57)

1.

(NUMA)

2.

1 , ,

3.

2 ,

4.

1 , ,
(resume)

5.

4 , .

6.

1 , 1 .

7.

1 , .

8.

7 , .

9.

8 , , .

10.

1 , .

11.

10 , .

12.

1 ,

(RTB)

13.

1 ,

(WTB)

14.

15.

14 ,

16.

14 ,

17.

14 ,

18.

17 ,

19.

14 ,

20.

19 , 가 .
가

21.

14 , / , .

22.

,

,

,

,

,

,

,

가

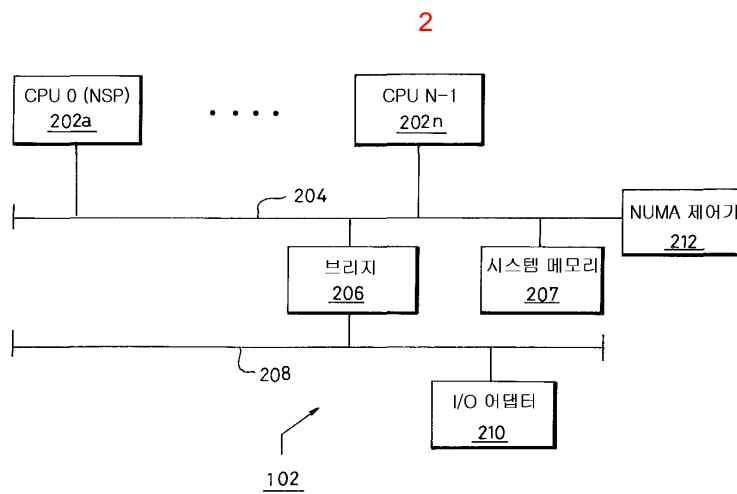
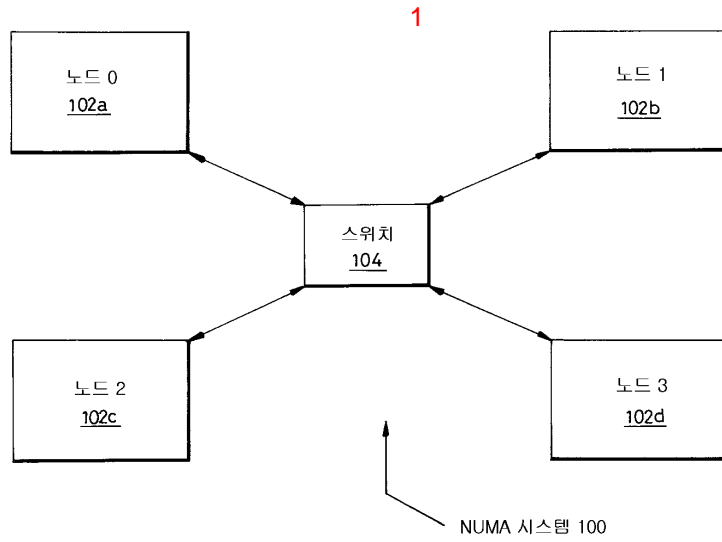
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23.

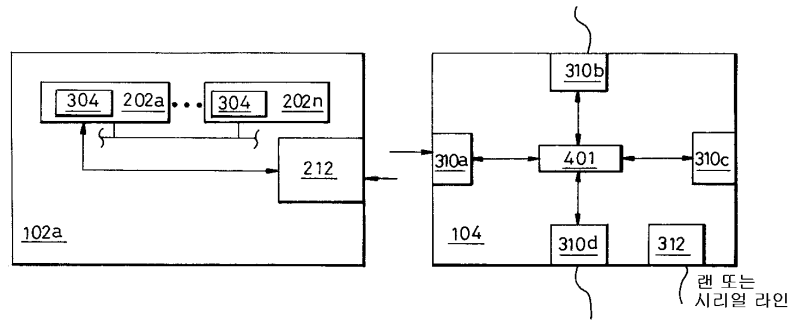
22 , , .

24.

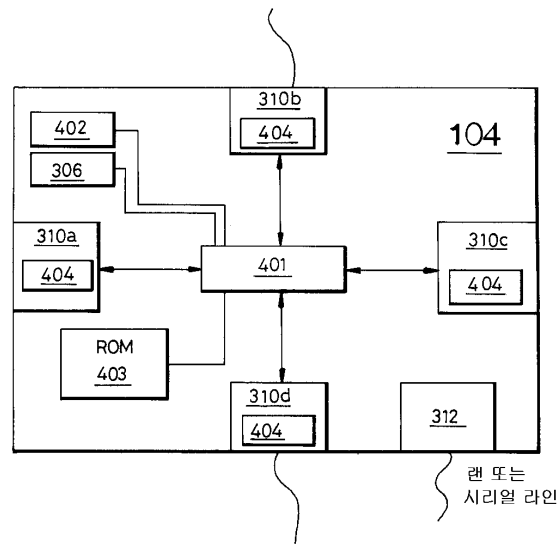
22 , , .



3



4



5

