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Glasco

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(54) **METHODS AND APPARATUS FOR SPECULATIVE PROBING AT A REQUEST CLUSTER**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 459 days.

This patent is subject to a terminal disclaimer.

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G06F 12/08 (2006.01)
G06F 12/16 (2006.01)

(52) **U.S. Cl.** **711/141; 711/118; 711/120; 711/128; 711/130; 711/146; 711/147; 711/148; 711/135**

(58) **Field of Classification Search** **711/141-146, 711/130, 147-149, 117-118, 135, 136, 119-122**
See application file for complete search history.

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(57) **ABSTRACT**

According to the present invention, methods and apparatus are provided for increasing the efficiency of data access in a multiple processor, multiple cluster system. A cache coherence controller associated with a first cluster of processors can determine whether speculative probing at a first cluster can be performed to improve overall transaction efficiency. Intervening requests from a second cluster can be handled using information from the speculative probe at the first cluster.

52 Claims, 15 Drawing Sheets

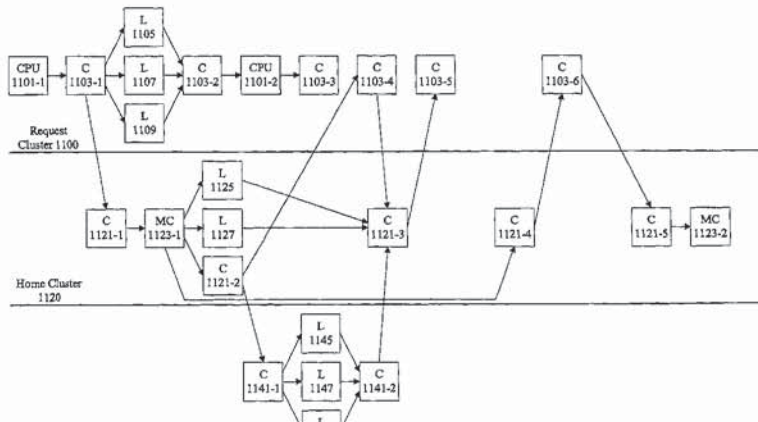


Figure 1A

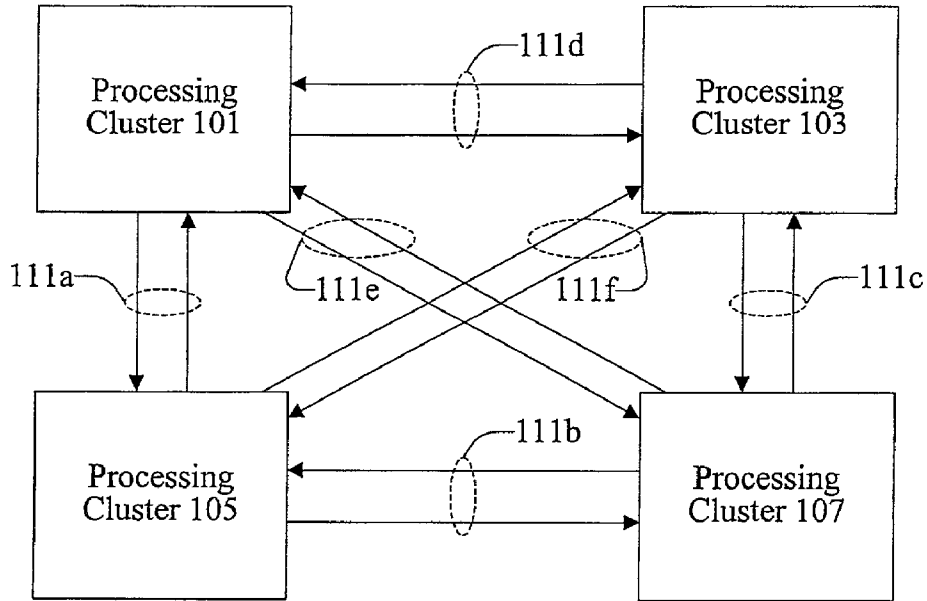


Figure 1B

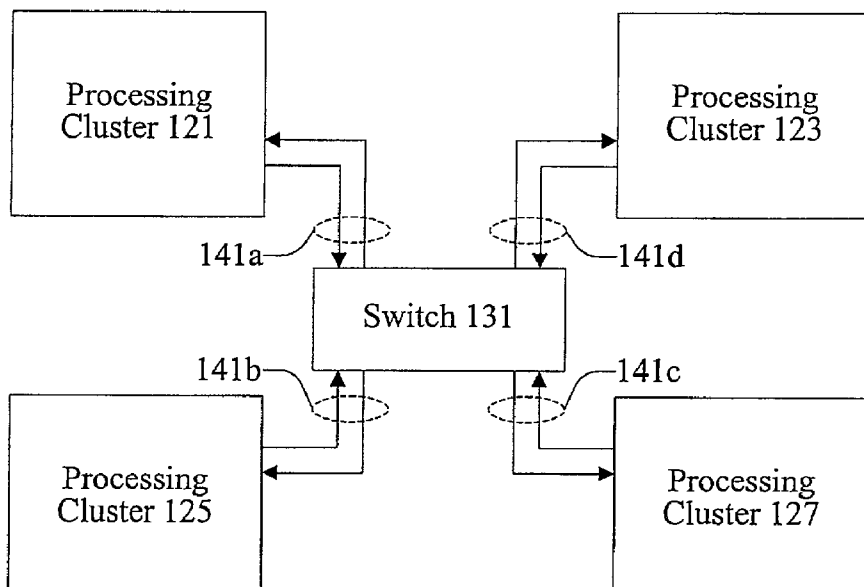


Figure 2

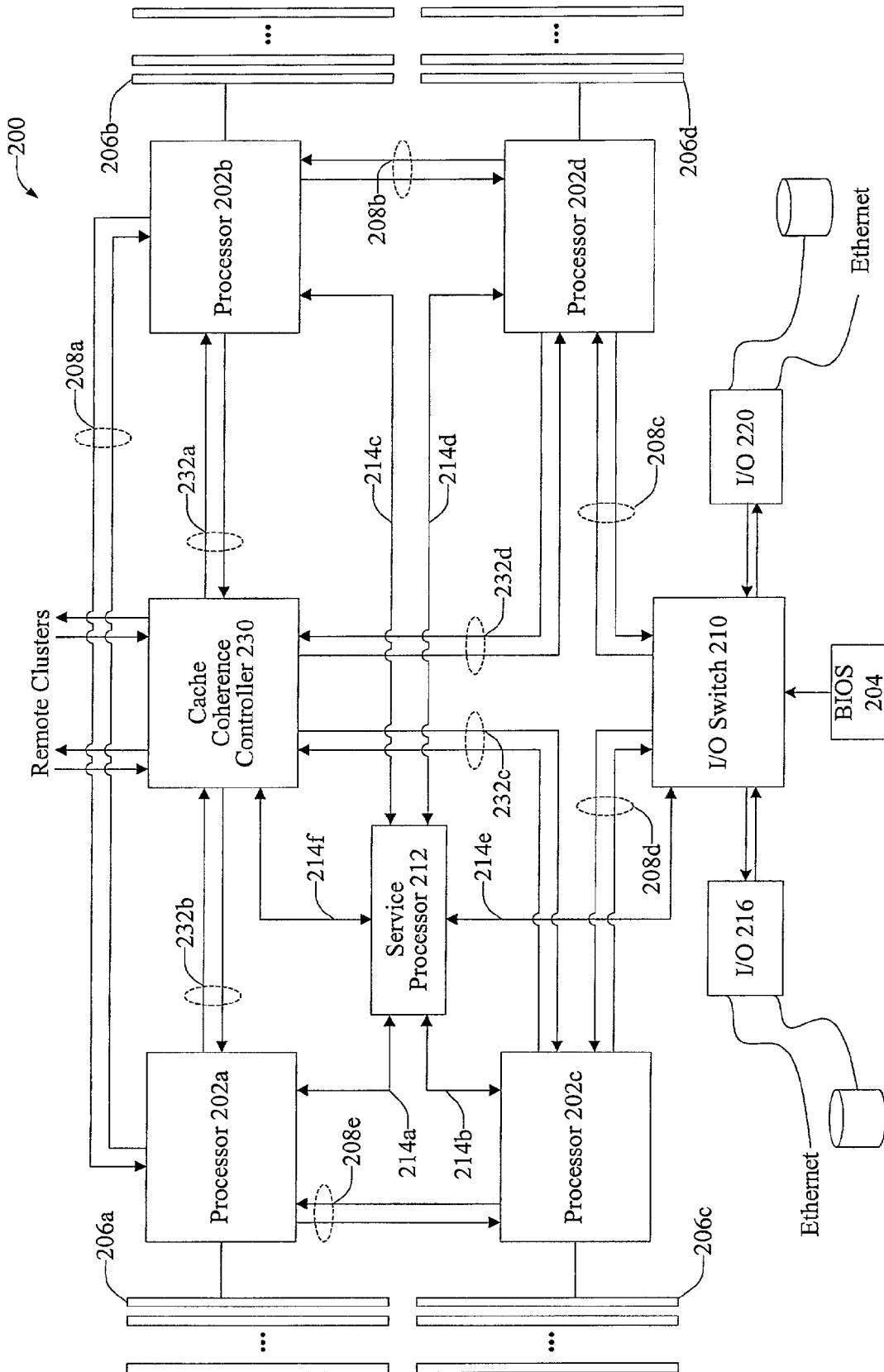


Figure 3

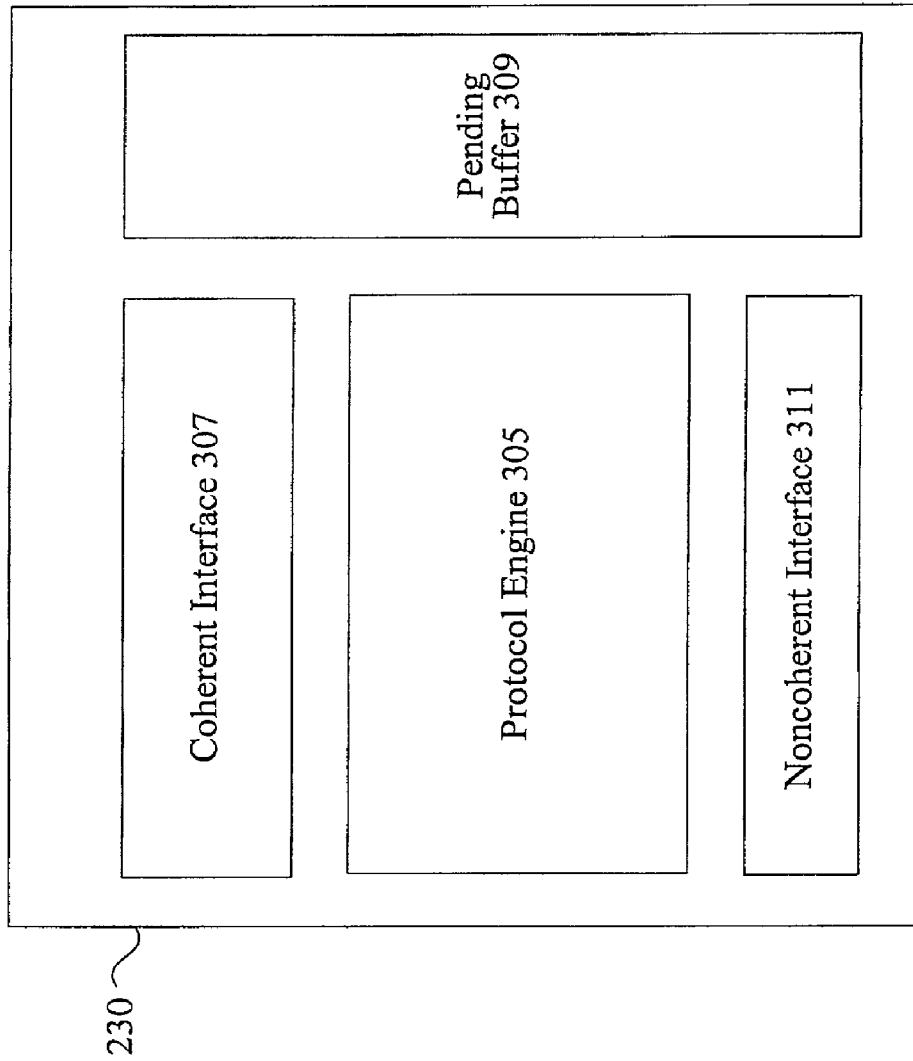
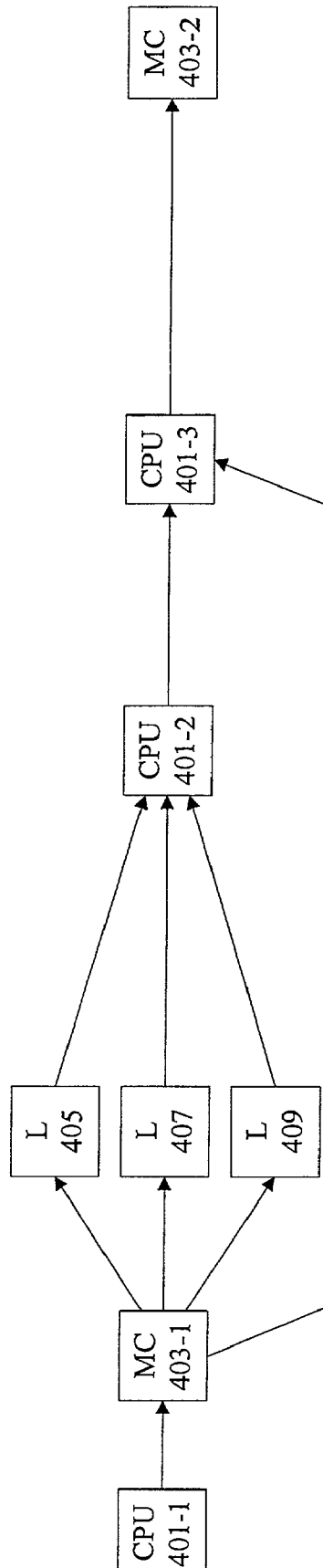


Figure 4



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