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O'Krafka et al.

(54) **BANDWIDTH REDUCTION TECHNIQUE IN A SNOOPING-BASED CACHE-COHERENT CLUSTER OF MULTIPROCESSING NODES**

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This patent is subject to a terminal disclaimer.

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G06F 12/00 (2006.01)

(52) **U.S. Cl.** **711/141**; 711/146; 711/147

(58) **Field of Classification Search** .... None
See application file for complete search history.

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(57) **ABSTRACT**

A cluster of multiprocessing nodes uses snooping-based cache-coherence to maintain consistency among the cache memories of the multiprocessing nodes. One or more of the multiprocessing nodes each maintain a directory table that includes a list of addresses of data last transferred by cache-to-cache transfer transactions. Thus, upon a local cache miss for requested data, a multiprocessing node searches its directory table for an address of the requested data, and if the address is found in the directory table, the multiprocessing node obtains a copy of the requested data from the last destination of the requested data as indicated in the directory table. Thereafter, a message indicating the completion of a cache-to-cache transfer is broadcast to other connected multiprocessing nodes on a "best efforts" basis in which messages are relayed from multiprocessing node to multiprocessing node using low priority status and/or otherwise unused cycles.
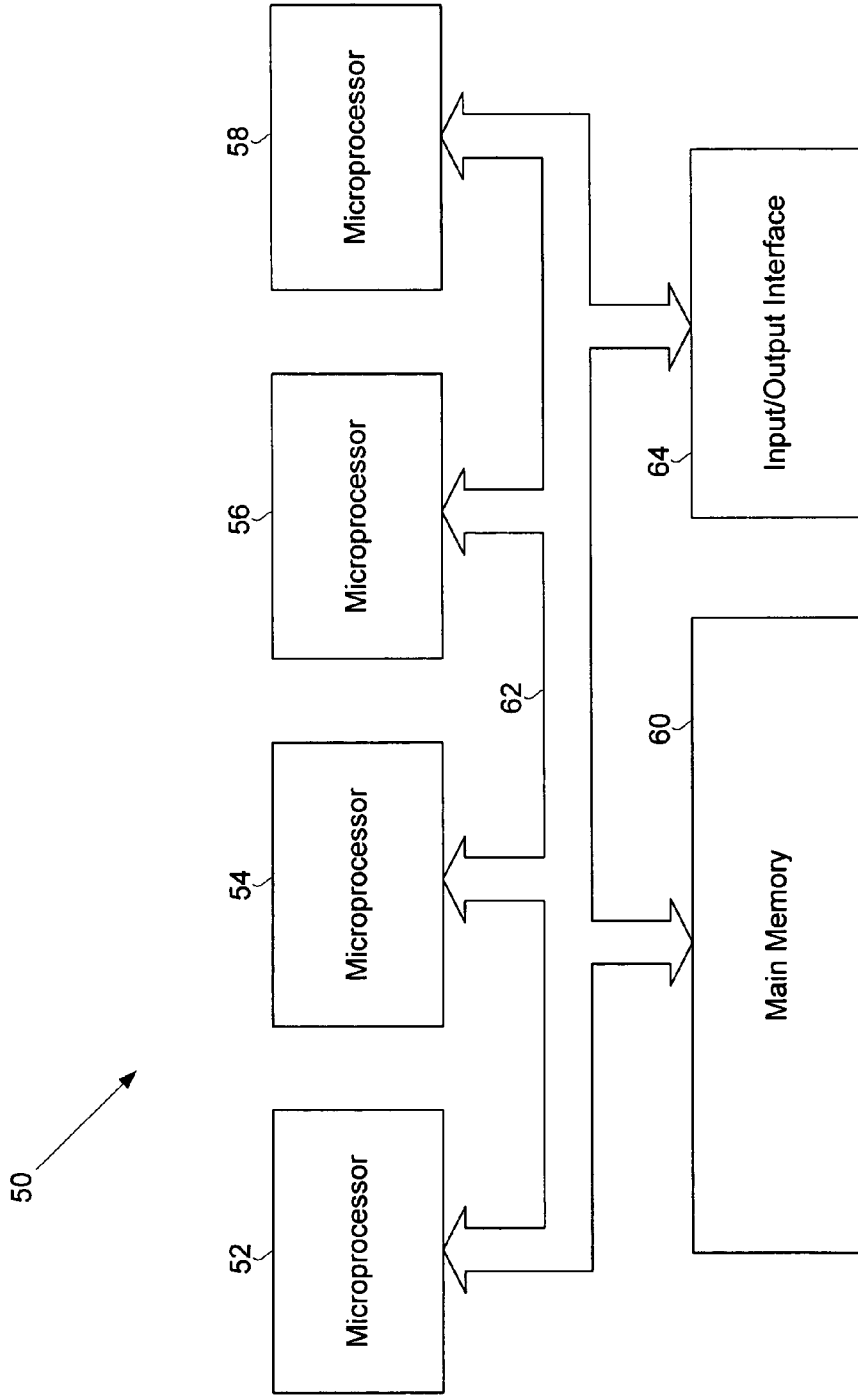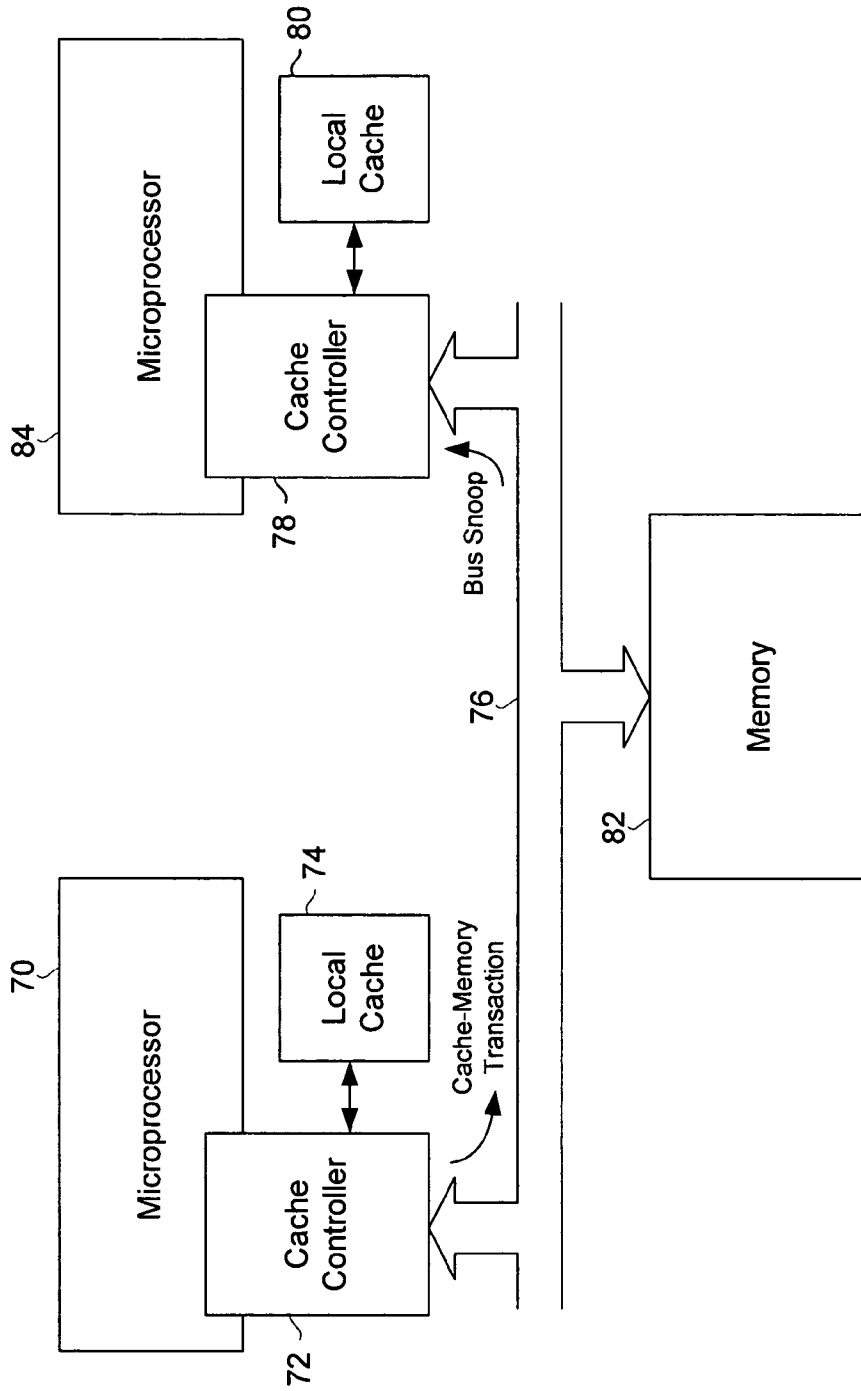
15 Claims, 10 Drawing Sheets
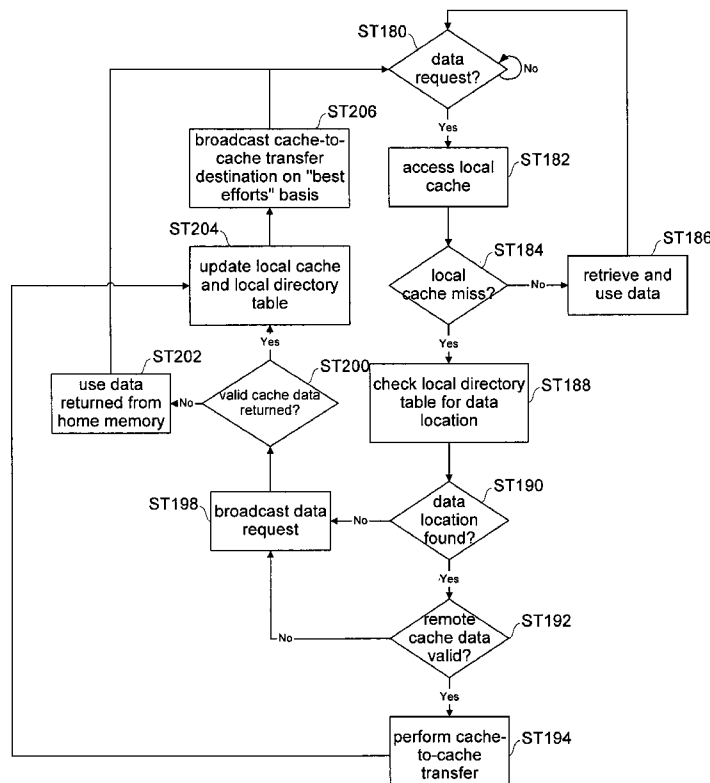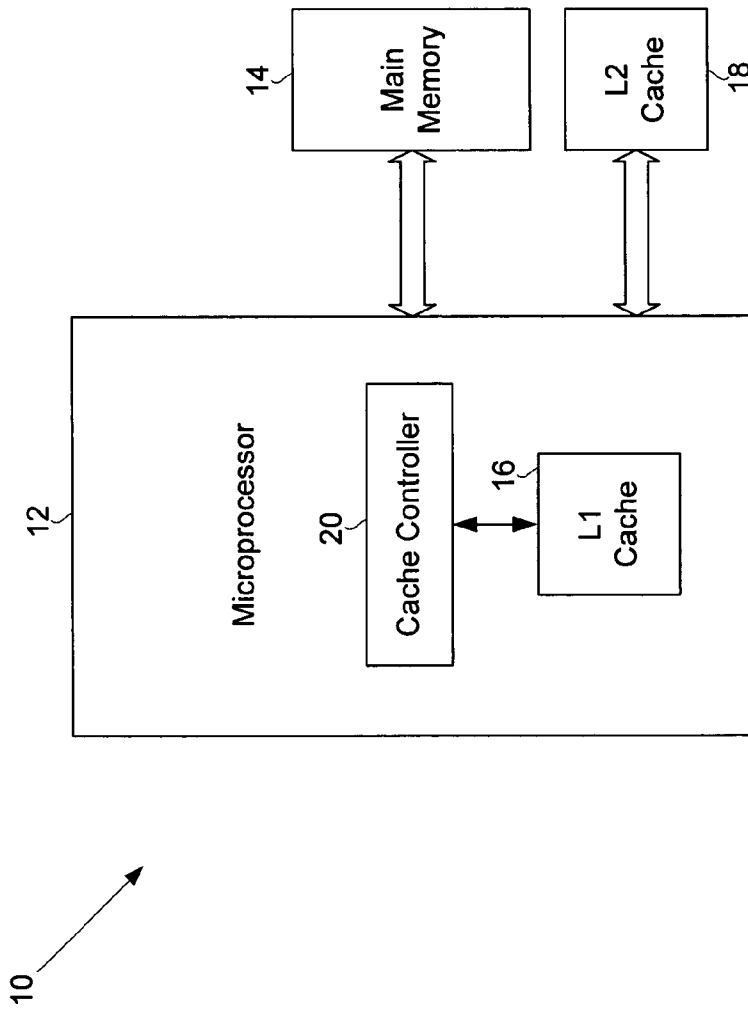
FIG. 1
(Prior Art)
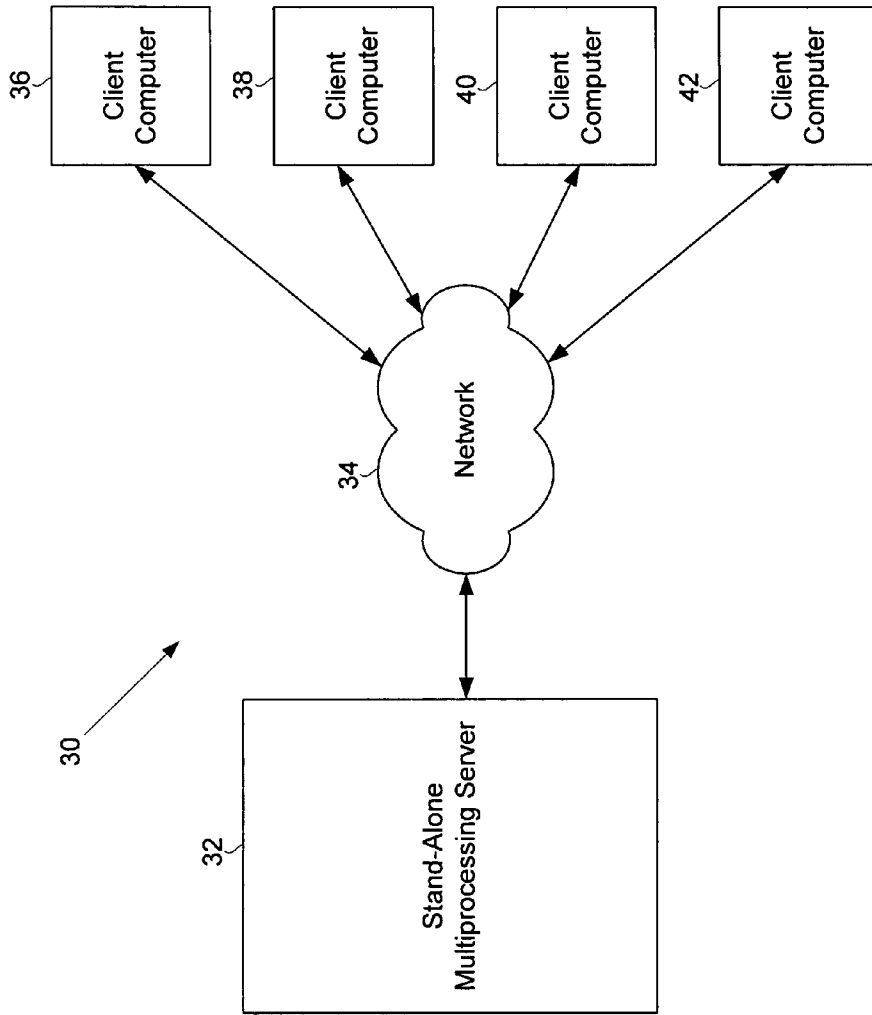
FIG. 2
(Prior Art)

FIG. 3
(Prior Art)

FIG. 4

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