

[54] METHODS AND APPARATUS FOR FIBER CHANNEL INTERCONNECTION OF PRIVATE LOOP DEVICES

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[57] ABSTRACT

[73] Assignee: Vixel Corporation, Bothell, Wash.

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Related U.S. Application Data

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[52] U.S. Cl. 370/351; 370/401; 370/422; 370/425; 370/351; 395/200; 395/286

[58] Field of Search 370/401, 403, 370/404, 405, 406, 422, 424, 425, 407, 351, 352, 355; 395/200, 286; 359/161, 197, 200

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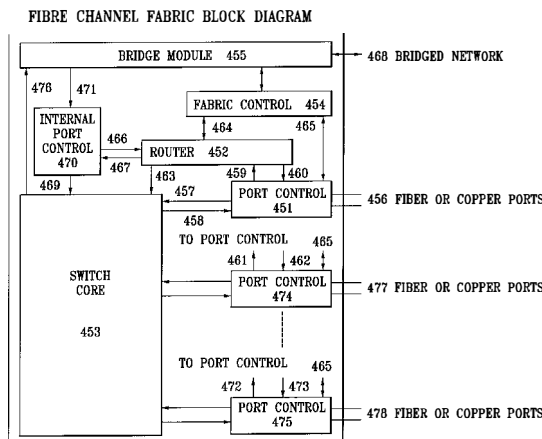
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Methods and apparatus for Fiber Channel interconnection is provided between a plurality of private loop devices through a Fiber Channel private loop device interconnect system. In the preferred embodiments, the Fiber Channel private loop device interconnect system is a fabric or an intelligent bridging hub. In one aspect of this invention, a Fiber Channel private loop device is connected to two or more Arbitrated Loops containing, or adapted to contain, one or more private loop devices. Preferably, the interconnect system includes a routing filter to filter incoming Arbitrated Loop physical addresses (ALPAs) to determine which Fiber Channel frames must attempt to be routed through the fabric. Numerous topologies of interconnect systems may be achieved. In another aspect of this invention, a method is provided for implementing a logical loop of private loop devices by segmenting the logical loop into a plurality of sets, assigning each set to a physical Arbitrated Loop and connecting the Arbitrated Loops to a Fiber Channel private loop device interconnect system. Additional methods are provided for restricting attached devices to Arbitrated Loop physical addresses within certain ranges. Additionally, methods are provided for resetting hosts, the method generally comprising the steps of detecting the addition of a storage device to a first Arbitrated Loop, and thereafter, resetting the Arbitrated Loop or loops on which a host or hosts reside on second Arbitrated Loop. Methods for operation with use of SCSI initiators generate a link service reject when no address match is found, or when an address match is found, but where no device with the destination ALPA exists on the Arbitrated Loop corresponding to the destination.

81 Claims, 16 Drawing Sheets



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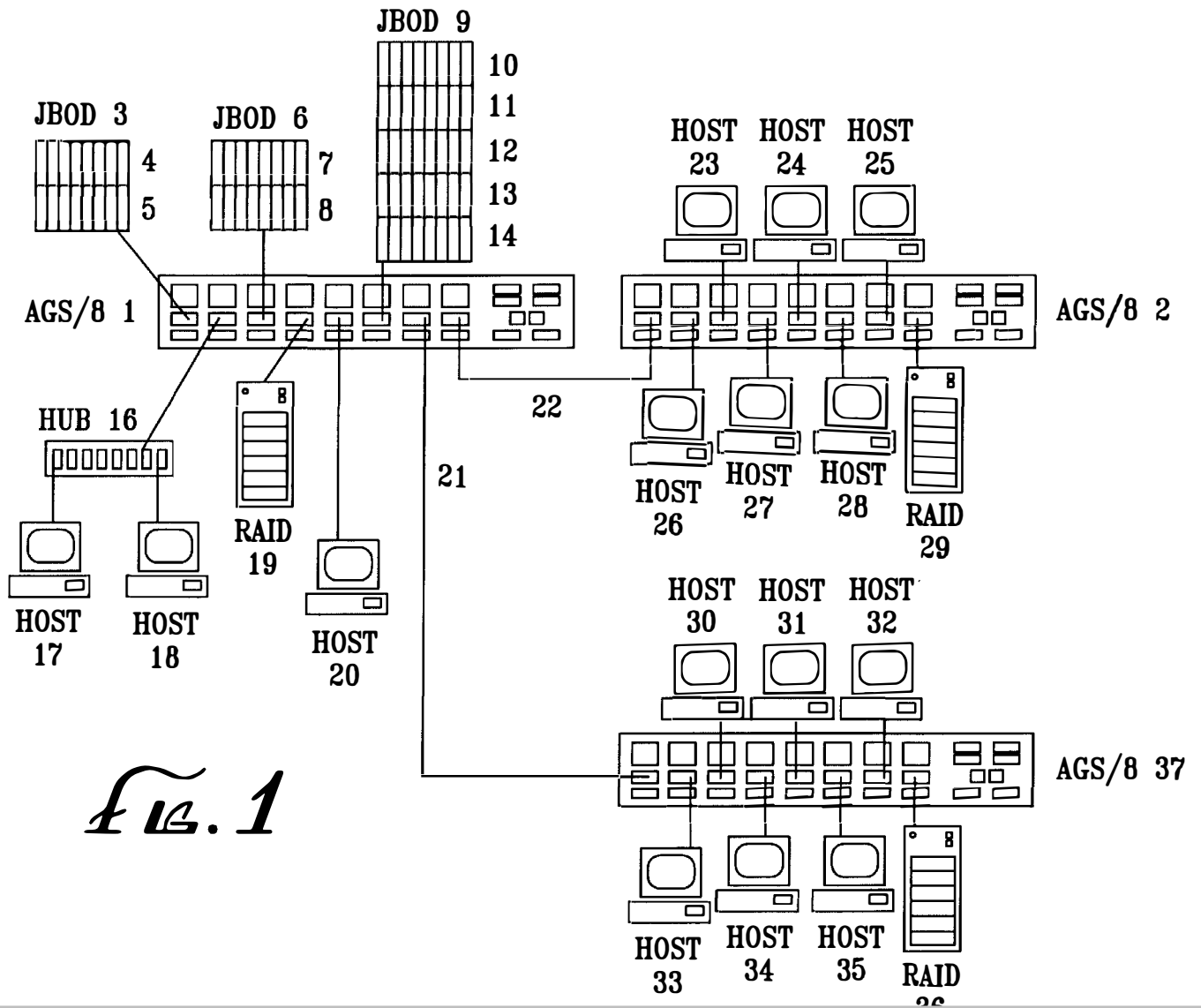


Fig. 1

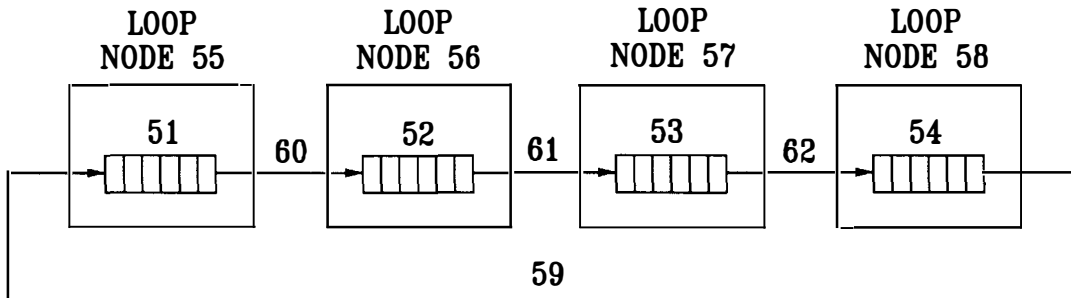


FIG. 3

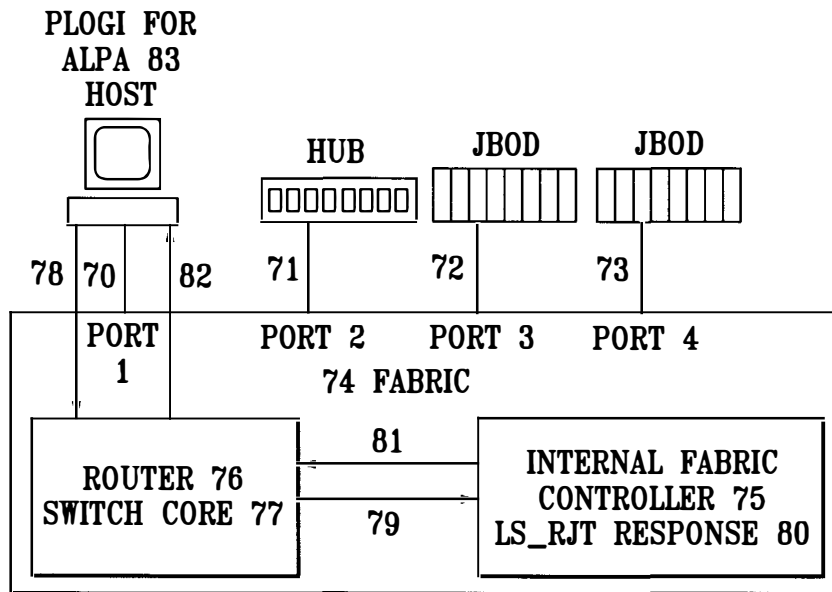


FIG. 4

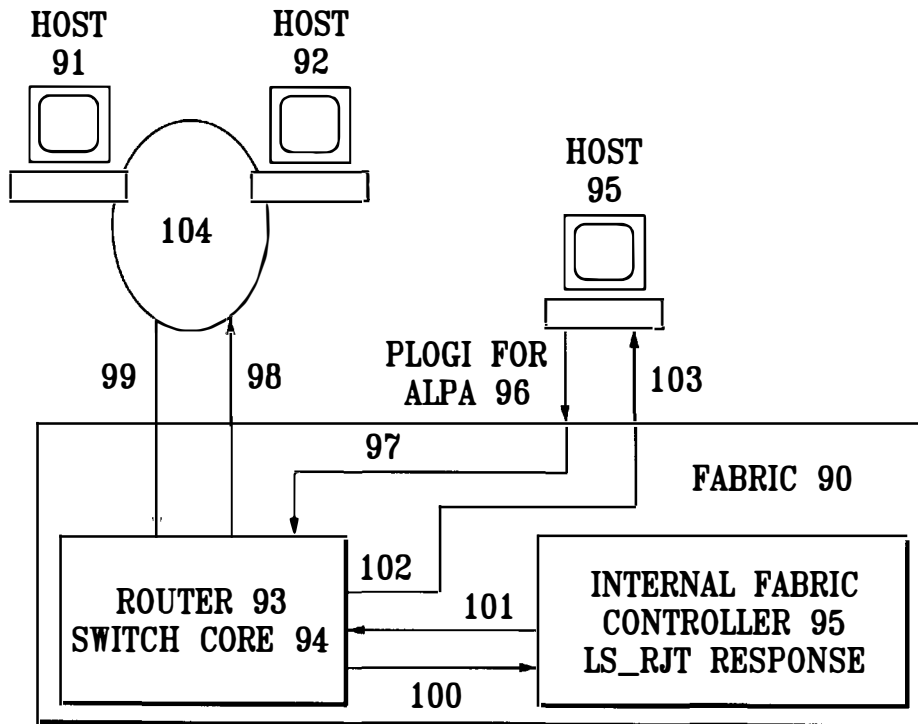


FIG. 5

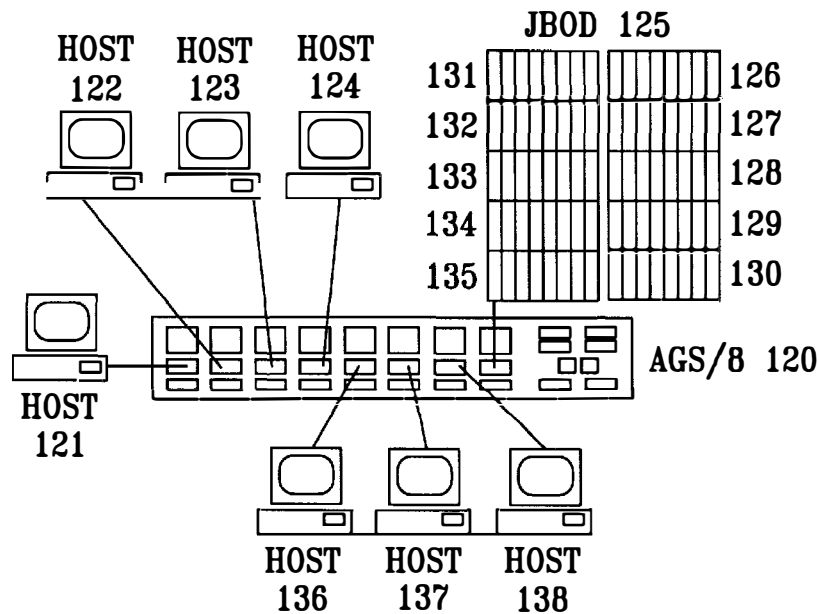


FIG. 6

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