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(54) Title: STORAGE SYSTEM, METHOD AND APPARATUS FOR PROCESSING OPERATION REQUEST

(54) 发明名称: 处理操作请求的存储系统、方法及装置

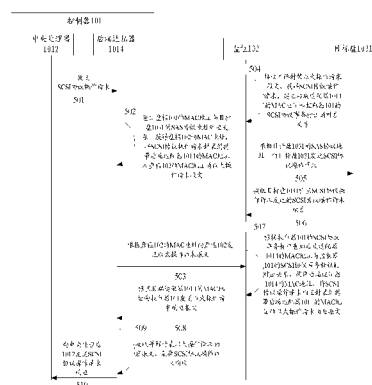


图 5 / FIG. 5

- 101: Controller
1012: Central processor
1014: Rear end adapter
102: Disk Enclosure
1031: Target disk
- 501: Transmit the SCSI protocol operation request
502: Query the correspondence between the MAC address of the Disk Enclosure 102 and the SAS protocol address of the target disk 1031, obtain the MAC address of Disk Enclosure 102, and encapsulate the SCSI protocol operation request into the Ethernet operation request message carrying the MAC address of the rear end adapter 1014 and the MAC address of the Disk Enclosure 102
503: Transmit the Ethernet operation request message to the Disk Enclosure 102 on the basis of the MAC address of the Disk Enclosure 102
504: Receive and decapsulate the Ethernet operation request message, obtain the SCSI protocol operation request, and build the correspondence between the MAC address of the rear end adapter 1014 and the SCSI protocol transaction identifier of the controller 101
505: Transmit the SCSI protocol operation request to the target disk 1031 on the basis of the SAS protocol address of the target disk 1031
506: Receive the SCSI protocol operation request response transmitted by the target disk 1031 on the basis of the SCSI protocol operation request
507: Query the correspondence between the MAC address of the rear end adapter 1014 and the SCSI protocol transaction identifier of the controller 101 on the basis of the SCSI protocol transaction identifier of the controller 101, obtain the MAC address of the rear end adapter 1014, and encapsulate the SCSI protocol operation request response into the Ethernet operation request response message carrying the MAC address of the rear end adapter 1014
508: Transmit the Ethernet operation request response message to the controller 101 according to the MAC address of the rear end adapter 1014
509: Receive and decapsulate the Ethernet operation request response message, and obtain the SCSI protocol operation request response
510: Transmit the SCSI protocol operation request response to the central processor 1012

(57) Abstract: Provided in the embodiments of the present invention are a storage system, method and an apparatus for processing an operation request, including: a controller directly encapsulates a SCSI protocol operation request into an Ethernet operation request message through a MAC layer instead of a TCP/IP protocol layer; a Disk Enclosure decapsulates the Ethernet operation request to obtain the SCSI protocol operation request, and transmits the SCSI protocol operation request to a target disk, thus the encapsulation layer is reduced, the storage system processing delay is decreased, and the storage system performance is improved.

(57) 摘要: 本发明实施例提供的处理操作请求的存储系统、方法及装置, 将控制器将 SCSI 协议操作请求不通过 TCP/IP 协议层, 直接在 MAC 层将 SCSI 协议操作请求封装到以太网操作请求报文, 盘框解封以太网操作请求获得 SCSI 协议操作请求, 将 SCSI 协议操作请求发送到目标盘, 减少了封装的层次, 减少了存储系统处理延时, 提高了存储系统性能。

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TG)。