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# 2U Tray Placement to Support 8 GPUs with Hard Drives

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## 2U Tray Placement to Support 8 GPUs with Hard Drives

Abstract

In rack-mounted computer systems, there is a need to package equipment efficiently. A technique is disclosed which enables 8 GPUs with hard drives to be placed in a 2U size rack node in a manner which provides easy service access.

Description

This disclosure relates to the field of rack-mounted computer systems.

A technique is disclosed that enables 8 GPUs with hard drives to be placed in a 2U size rack node.

To accomplish this in prior solutions, 2 stack up boards are used. However, if the user wants to install and/or replace a DIMM/CPU, he is required to remove GPUs and a GPU board, and re-route the cables in a 4U node.

According to the present disclosure, and as understood with reference to the Figure, in order to put 8 GPUs in a 2U node 20, 4 GPUs 10 are placed horizontally on both sides 22, 24 of a 2U node 20 , and a cover is provided to hold the GPUs in position. This allows a 1/2-width system board to supports 8 GPUs with a HDD cage in a single 2U tray.

Left and right risers plus 1 power riser are used on each side. The center space 26 is reserved to allow user access to the CPU and DIMMs. The 4 GPUs on each side slide into the GPU cage.

The free center space allows fresh air to be concentrated on the GPUs. In addition, because each side supports 4 GPUs, if one riser is defective, there is no need to remove all the GPUs. Instead, the defective riser can be easily replaced without disturbing the 4 GPUs on the other side. When the user needs to install DIMMs and/or the CPU, the user pulls out the air baffle and then can access the system board without removing other parts.

To facilitate installation and removal of GPUs, cables (such as for example the power cable) can be spring loaded within the node. This allows a cable to be pulled forward with a board or module, but then be automatically retracted when disconnected. The cable length is chosen such that it is easily accessible by the user within the node, and can be pulled out easily when attaching it to the board or module.

The disclosed technique advantageously provides cost savings and easy service access to the system board.
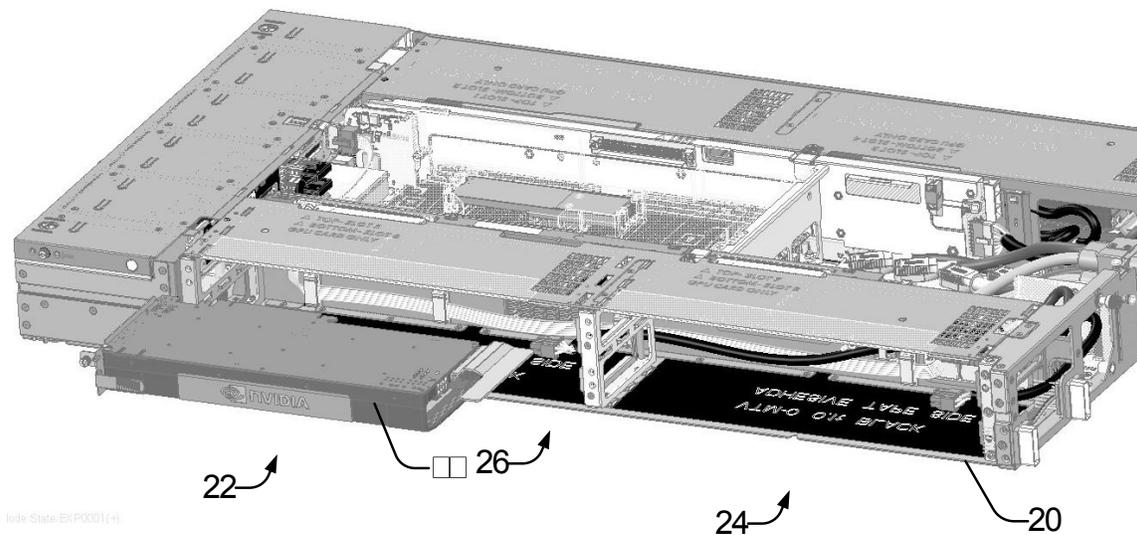
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