

WISEWAVE[®]

WISEWAVE Local Storage Acceleration

Overview

Real-time applications and high-IO applications in data centers require servers to provide high-bandwidth and low-latency IO access. Compared to cloud storage, local storage has higher bandwidth and lower latency. Wisewave Local Storage Acceleration solution can ensure high bandwidth and low latency of local storage, while enabling local NVMe storage to support flexible elastic virtualized storage, hardware-level SLA guarantee and native encryption, so that local storage can better meet customer needs and serve cloud service providers (CSPs) to optimize operating costs and create higher value.

Wisewave Local Storage Acceleration solution includes PCIe 4.0 X16-based hardware acceleration cards WD200SF and related software. One hardware acceleration card can connect to 4 NVMe SSDs through the SlimSAS cables, virtualizing them into up to 63 virtual disks and distributing them to the maximum 63 tenants. At the same time, CSP administrator can also set the read and write bandwidth and scheduling priority for each virtual disk and ensure the service quality of the user SLA through the hardware scheduling mechanism.

Wisewave Local Storage Acceleration solution supports native AES256 encryption algorithms to ensure the data security of tenants in scenarios where they share the same physical storage and the complete lifecycle of physical devices.

Wisewave Local Storage Acceleration solution can achieve hardware IO performance close to PCIe4.0 x16 while providing rich functions, and introduce a maximum latency of 2 microseconds, ensuring high performance and low latency of local storage.

Wisewave Local Storage Acceleration solution combines the flexibility of cloud disks with the high performance of physical disks, making it the best choice for high-IO scenarios.

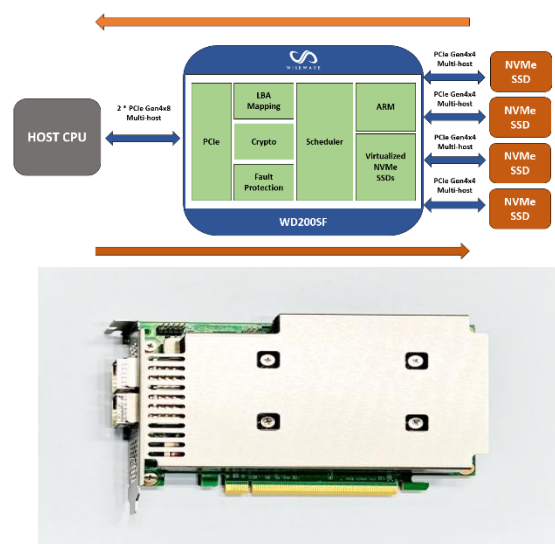
Feature

- **Cloud Native**
 - Supports NVMe device virtualization, and up to 4 physical disks can be virtualized into 128 instances
 - Compatible with traditional NVMe devices
 - Seamless support for bare-metal
 - Supports hot swapping of virtual NVMe devices
- **QoS**
 - 8k largest SQ and CQ fleets, up to 128 queues per instance
 - VM-based SQ/CQ scheduling mode
 - 1Mbps granular bandwidth management
 - Each CQ has independent interrupts and supports interrupt aggregation
- **Security**
 - Supports native AES256 (up to 128keys)
 - Instance-based cloud-native security, user awareness, no need to modify any user code
- **Exception Handling**
 - Isolate SSD devices from hot removal and physical damage
 - Online firmware upgrade, business interruption during the upgrade process
 - Block operations in the event of VM crash to protect SSD data integrity
- **O&M Enhancement**
 - Supports physical NVMe device health monitoring, IO monitoring and user-defined admin commands
 - Performance monitoring of instances/virtual appliances
- **Performance**
 - Approaching the limit performance of PCIe 4.0 x16 physical interfaces
 - The introduction delay is less than 2 microseconds
- **Open Programmable Architecture**
 - Supports in-memory computing
 - Tenant technology offload

Application

- Data center High IO Scenarios
- Enterprise Private Cloud Scenarios

Arch



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