KernSafe XTremeSAN

Ecosystem

HPC
GPFS

Lustre

AI/ML/DL
Big dataset

Cloud & Edge
ESX/ESXi

Xen

Hyper-v

Qemu-kvm

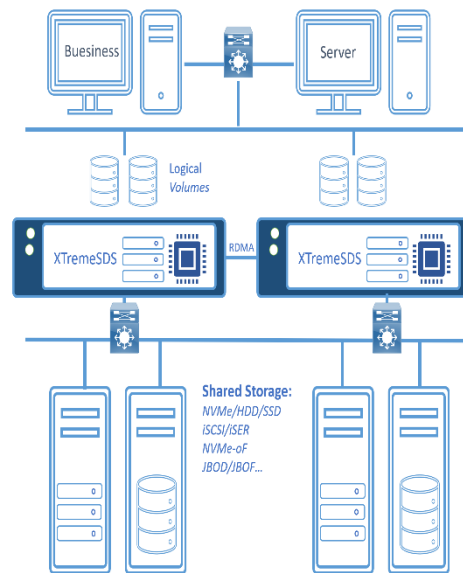Containers

Kubernetes

Database
OLAP

OLTP

Any-K videos
4K 8K 16K

XTremeSAN

is Software Defined Block Storage which designed for high performanced field like HPC, high performance storage like ALL Flash and Hybrid storage,
manage all local storage devices or remote shared storage (like JBOD, JBOF, E-SSD etc.) and providing storage block service.

Those storage disks will be managed as N-ways replicated or the world advanced floating striped erasure codes (EC) protected storage controller with the ability to create dynamic block, high availability volumes to reach upto 1000000IOPS.

Storage Controller provides ways for building data in redundancy and scale-up, performance scaled by adding more devices, all Volumes can be exposed to clients via iSCSI, iSER, NVMe-oF and VHost.

Features

Scalability

- Exporting volumes over multiple protocol: iSCSI, iSER, vHost, NVMe over Fabrics.

- Support most popular cloud infrastructure like: VMWare, Hyper-v, Xen, OpenStack, CloudStack and any other kvm/qemu based.

- Support both local and remote storage as backend, storage engine include: AIO, io-uring for HDD/SSD/NVMe, NVMe user mode driver. Remote storage: iSCSI, iSER and NVMe over Fabrics.

- Online storage expansion / shrink.

- Support existing TCP/IP network and as well as RDMA network.

Availability

- Replicating data over different backends, storage pools are living in multiple nodes, native support hybrid-cloud.

- Redundancy and automatically online recovery.

- Dynamic block volume over storage pools.

- Unlimited and zero copy snapshots.

- High availability and strong consistency.

Efficiency & Performance

- Designed for high performance hardware, NVMe and RDMA network.

- Fully utilize hardware performance.

Flexibility

- Utilize any x86 based hardware, existing network and storage, manage them as software defined.

- Centralized WEB based management.

KERNSAFE
Secure Storage Solution

Service Features and Benefits
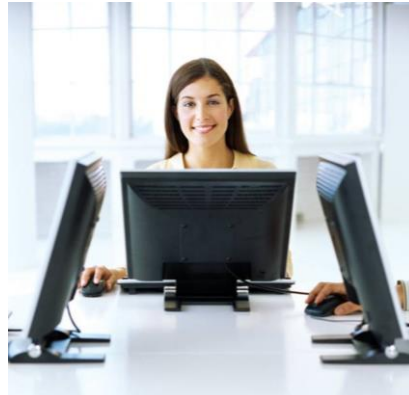
Single Node with scale-up more than 10000000IOPS.

- In-node multiple copies.
- Large earsure codes (EC) set, up to 128+4
- Hot replace and hot swap with auto recovery.
- Local storage, J/E/F-BOD/F and IP SAN.

N-Nodes with High availability.

- Cross-nodes multiple copies.
- Large EC set over multiple nodes.
- Shared storage: J/E/F-BOD/F, IP SAN.
- Auto-recovery and high availability.

Two nodes HA is the ideal choice for most of SBS, that provides the lowest TCO.

System Requirements

- Software requires:
    - Linux with kernel >= 3.10
    - Recommend OS: CentOS 7.x and Ubuntu Server 20+.
- Hardware requires (minimum):
    - Intel Xeon class processor or similar.
    - 4 cores and more.
    - 16 GB of RAM.
    - One additional disk for storage.
    - x64 based system.
    - Network Connections: RDMA (InfiniBand, RoCE, iWarp) or Ethernet (TCP/IP).
- Recommend Configuration (All Flash):
    - Intel Xeon 2680 v4 2.4GHZ x 2, 28 cores in total.
    - 64 GB DDR4 memory.
    - NVMe Disks x 8
    - InfiniBand Network.
    - Ethernet Network (management)

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