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Understand use cases for Raw Device Mapping

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Raw device mapping (RDM) is a method for a VM to have direct access to a LUN on a Fibre Channel or iSCSI system. RDM is a mapping file in a separate VMFS volume that acts as a proxy for a raw physical storage device. The RDM allows a virtual machine to directly access and use the storage device. The RDM contains metadata for managing and redirecting disk access to the physical device.

RDM offers several benefits:

- User-Friendly Persistent Names
- Dynamic Name Resolution
- Distributed File Locking
- File Permissions
- File System Operations
- Snapshots
- vMotion
- SAN Management Agents
- N-Port ID Virtualization

Certain limitations exist when you use RDMs:

- Not available for block devices or certain RAID devices
- Available with VMFS-2 and VMFS-3 volumes only
- No snapshots in physical compatibility mode
- No partition mapping

You need to use raw LUNs with RDMs in the following situations:

- When SAN snapshot or other layered applications are run in the virtual machine. The RDM better enables scalable backup offloading systems by using features inherent to the SAN.
- In any MSCS clustering scenario that spans physical hosts — virtual-to-virtual clusters as well as physical-to-virtual clusters. In this case, cluster data and quorum disks should be configured as RDMs

rather than as files on a shared VMFS.

Information for this article was gathered from the [ESX Configuration Guide](#).

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