Configuring Disks and Volumes

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Reviewing Physical Disk Types

SATA	SCSI	SAS	SSD
			
100 IOPS	150 IOPS	200 IOPS	1000's of IOPS

Selecting a Partition Table Format

Master Boot Record (MBR)

Partition table format from 1980's

Supports partitions up to 2 TB

Can support a max of 4 primary partitions

GUID Partition Table (GPT)

Successor to MBR

Supports partitions up to 18 EB

Can support a max of 128 partitions per disk

File Systems

FAT

Basic file system

Partition size limits

Basis for FAT32 & exFAT

NTFS

Support for metadata

Auditing & journaling

Security controls & encryption

ReFS

Backward compatible with NTFS

Support for larger files and volumes

NTFS or ReFS?

Active Directory Domain Services & File Replication Service (NTFS)

Volume Shadow Copy Service (NTFS)

Distributed File System (NTFS)

Hyper-V Servers (ReFS)

Storage Spaces Direct (ReFS)

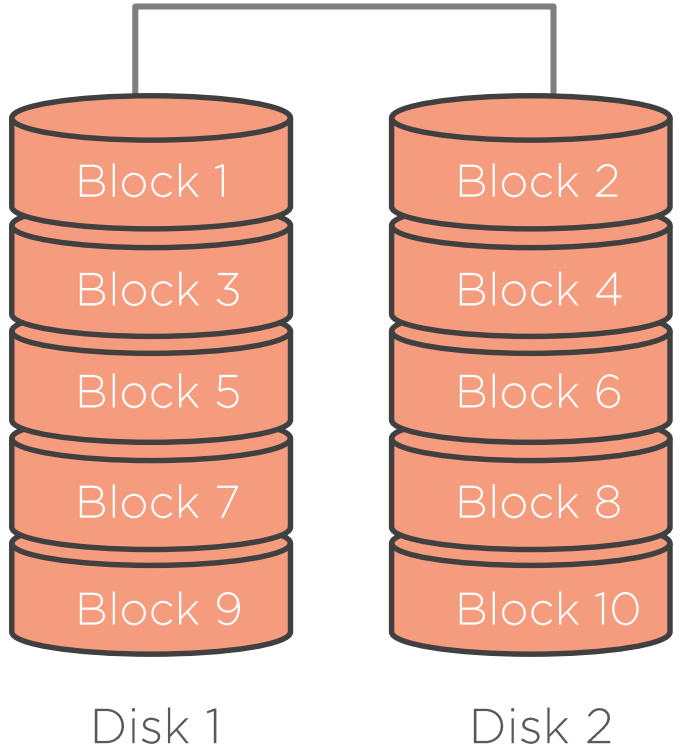
RAID | redundant array of independent disks

RAID 0

Disk Striping

Data is Striped Across both Disks

Best Performance, but not redundant



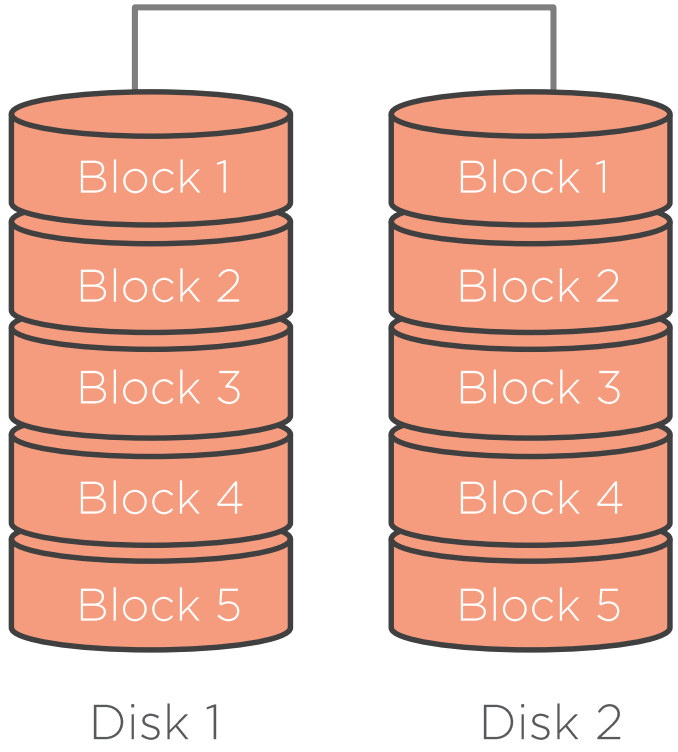
RAID 1

Disk mirroring

Data is duplicated (exact copy)

Good redundancy, but requires double the number of disks

Good read performance

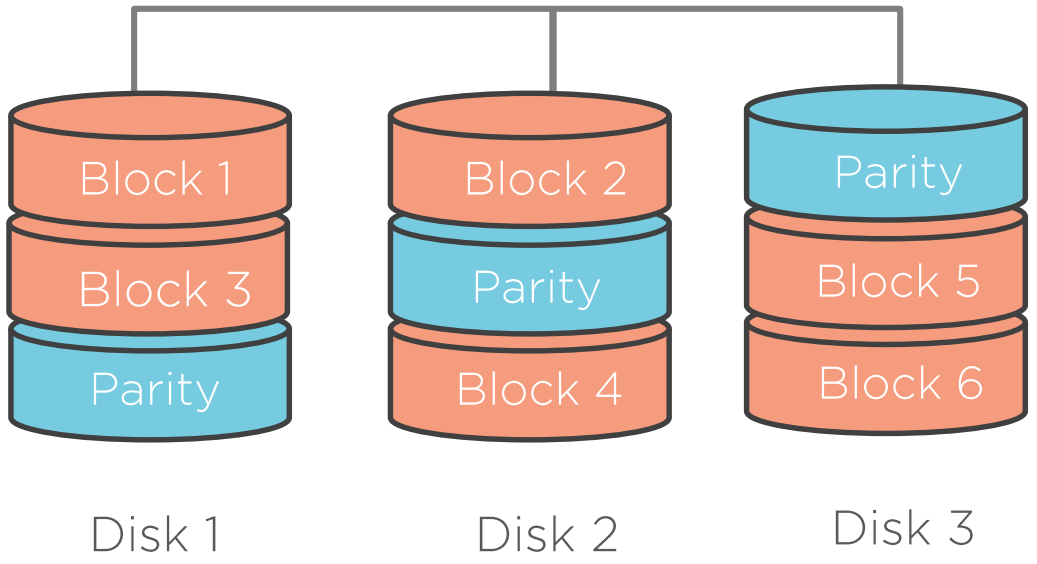


RAID 5

Disk striping with parity

High performance and redundancy

Requires a minimum of 3 disks



Summary

- Understanding Physical Disk Types
- Selecting a Partition Table Format
- Basic vs. Dynamic Disks
- File Systems: FAT, NTFS and ReFS
- Understanding RAID
- Managing Windows Volumes
- Working with Virtual Disks