



Global Leader in Software Defined Storage

# Nexenta Technical Sales Professional (NTSP)

COURSE CONTENT

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Nexenta Technical Sales Professional (NTSP) Course

# **USE CASE: MICROSOFT SHAREPOINT**

# Use Case

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## Microsoft SharePoint Environment

Objectives:

- Determination of requirements
- General characteristics
- System Design
- Disk Layout
- Optimization

# Determination of requirements

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- SharePoint server is very low IO – pretty much any disk configuration will work for content storage.
- The underlying engine to SharePoint is SQL server, which should be configured according to standard SQL practice (not duplicated here). SQL in this implementation has several databases, some with medium to high performance requirements, and some with negligible performance requirements.
- Only SAN (iscsi or FC) disk attachment is supported by Microsoft. NAS attach storage is only supported if the SharePoint content databases are configured for Remote Blob Storage (RBS).
- Data Integrity
  - Microsoft generally recommends mirroring for SQL database/log volumes, although all RAID levels are supported. If ZIL and L2ARC caches are sized appropriately, RAID Z3 would provide the best data integrity if performance is acceptable.

# General Characteristics

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- Performance and redundancy must be balanced
  - Mirroring for pure performance, but may require replication in SQL for resiliency.
  - Raidz1 for capacity, but still only single fault tolerant, so may desire copies.
  - Raidz2/3 for resiliency if performance is acceptable. Definitely good for content storage.
- Performance should not be expected on large capacity solutions (1PB+)
- I/O
  - Sharepoint itself is very low performance. The supporting applications (SQL, IIS) can be very demanding depending on how placed and if they are on the SAN or not.
- Throughput
  - Depending on workload this could be a factor
  - The more spindles the better performance
- ZIL may be of benefit here for performance reasons, and also for data integrity, if desired. L2ARC may be of value, depending on access patterns to the data, and overall configuration.

# System Design

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- CPU
  - The faster the better
  - Prefer faster core speed versus number of cores
- Memory
  - Minimum 128GB
  - Larger memory for Read intensive environments
- Host Attach
  - 4 x 10Gbe – Determine if SFP+ or BT
    - 2 x LACP across cards
    - IPMP between the two LACP pairs
  - 4 x 8GB Fibre channel with round robin config
- HBA
  - One JBOD per HBA if possible

# Disk Layout

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- Pools
  - 2 pools minimum per deployment suggested
- Redundancy Type
  - Mirroring – Log/database drives (RaidZ2 or RaidZ3 also supported if performance will suffice)
    - One pool per controller if load distribution desired.
  - RaidZ2/Z3 – Content volumes/BLOB storage (if used).
    - 6+1 max Z2, one pool per controller if load distribution desired.
    - The more vDevs the better
- ZIL/SLOG
  - Mirrored Pairs
    - Configure on Log/Database drives
    - If two pools make sure you have 2 mirrored pairs
- L2ARC
  - 1%-3% of usable capacity
  - Make sure you have enough memory to handle larger L2ARC builds
  - Don't exceed 4TB
  - The more DRAM the lower this can be

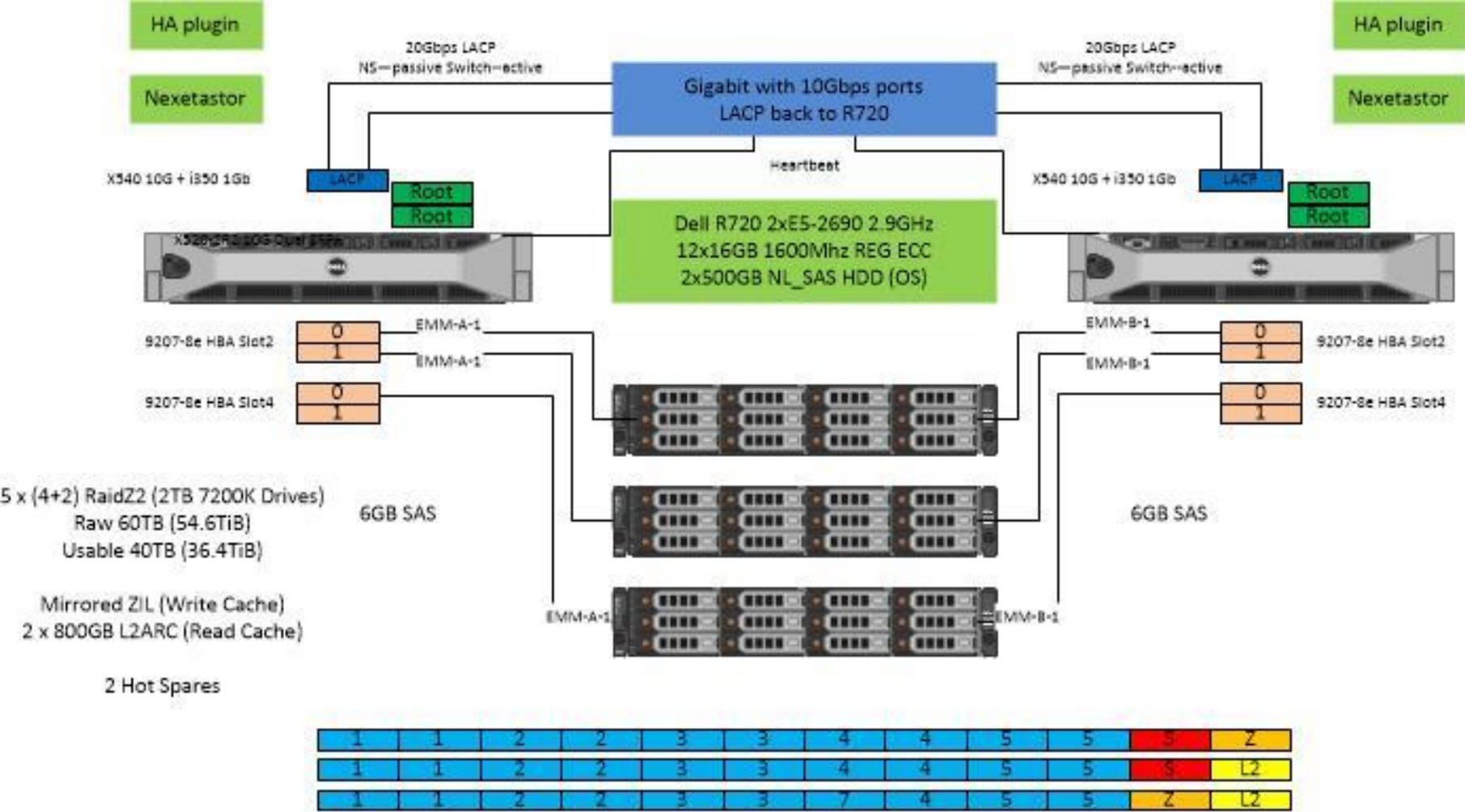
# Optimization

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- Record Size
  - 128K is recommended
- Protocol
  - Block level attach – iScsi or fibre channel
  - CIFS if Remote Blob Storage configured \*only\*
- Throughput
  - This only applies in high throughput environments
    - The more disks the better the throughput
    - Assume ½ disk throughput specifications per data drive (don't include parity disks)
      - 7.2K = 82.5MBs
      - 10K = 100MBs
      - 15K = 115MBs
      - MLC = 250MBs
      - SLC = 400MBs
- Due to potentially large data volumes, deduplication is not recommended.



# SharePoint Example



# Module Quiz Questions

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- What is the heaviest IO component in SharePoint?
- When is the use of CIFS attachment allowed?
- What Redundancy Type is recommended?
- What is the maximum amount of L2ARC?

# Module Quiz Answers

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- What is the heaviest IO component in SharePoint?
  - The SQL instance associated with SharePoint
- When is the use of CIFS attachment allowed?
  - Only if Remote Blob Storage (RBS) is configured, otherwise block attach is required.
- What Redundancy Type is recommended?
  - Mirrors for log/db volumes, Z2/Z3 for content/BLOB storage, if used, although other raid levels are supported.
- What is the maximum amount of L2ARC?
  - 4TB