



Global Leader in Software Defined Storage

# Nexenta Technical Sales Professional (NTSP)

GENERIC VDI

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Nexenta Technical Sales Professional (NTSP) Course

# **GENERIC VDI**

Ron Ingram, Sales Engineer  
Boston, MA

# Module Outline

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- Assumptions
- Process
- General VDI Design Considerations
- Linked Clones
- Stateless Desktops
- Full Clones
- To ZIL or Not To ZIL
- Reference Articles
- Module Summary
- Module Quiz Questions

# Assumptions

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It is assumed that you:

- Understand the basic concepts behind virtualized systems, hypervisors, etc.
- Have reviewed the NTSP training module “Use Cases: Virtualization/Hypervisor Storage” for best practice recommendations in using NexentaStor in a virtualized server environment.
- Understand when to deploy the different types of VDI architectures: stateless, persistent, linked clones, etc. It is not the intent of this course to suggest which architecture to use, but to suggest NexentaStor best practices for specific architectures.

# Process

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Follow industry-standard recommendations when designing/deploying a VDI project using NexentaStor storage:

- Use VMware Capacity Planner or a similar tool to assist with determining desktop requirements
- It is highly recommended that you do a small pilot before going live
- Use the pilot results to adjust/correct VDI configuration

In general:

- IOPS are all-important; use mirrored drives
- Remember that changing the type of VDI (from linked clones to full clone, for example) may result in significantly higher storage capacity requirements or other changes to the storage. Try to avoid design lock-in until your pilot results have been analyzed.

# General VDI Design Considerations

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- IOPS are all-important
- Depending upon how you implement, read cache may be critical for good performance
- Use smaller, faster drives
- Use mirrors rather than RAID-Z
- Use as many mirrored pairs as possible
- Set NexentaStor record size to 32K
- Use multiple Nexenta pools, spread across different controllers, so that a controller failover will not impact all of your virtual desktops
- Try to keep pool sizes balanced, with no one pool too much larger than others

# Linked Clones

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- Each desktop instance uses the same template copy, and only changes (deltas) required by a user (mostly persona and application data) are unique to their desktop instance
- Requires much less space than Full Clones.
- Since each image is using the same base copy, it is more likely that that data will reside in cache.
- Mirrored drives are recommended but a little less important since most writes will go to the persona and application data, not the shared OS data.
- Persona data tends to grow over time so plan to allow for future expansion.

# Linked Clones

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- Linked Clones are commonly used with Stateless Desktops. When using Stateless Desktops:
  - The user receives a fresh copy of their desktop from a pool of identical desktops every time they sign on
  - All users will use the same copy of the basic OS, so it is likely to be in read cache when needed. Provide plenty of read cache for performance.
  - All users will have persona data and application data stored separately from OS data. This data will grow over time so make sure you allocate enough and/or can expand it as needed.



# Full Clones

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- Each desktop instance uses a full copy of the base desktop image
- Requires a lot more storage space than linked clones
- There is less chance that the image will reside in cache than with linked clones
- Use mirrored drives
- Use as much read cache as possible

# Full Clones

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- Full Clones are often used with Persistent Desktops. When using a persistent desktop:
  - The user gets the same desktop every time they sign on.
  - In addition to the OS, a persistent desktop requires storage of the ‘persona’ (personal information) and application data. This additional storage must be planned for and provided.
  - A persistent desktop can be considered to be much the same as a conventional VM. Calculate performance and storage requirements as you would for any other VM.
  - Use mirrored drives for performance since each user is using their own unique copy of the OS, persona and data. Less chance the data will be in cache when required.

# To ZIL Or Not To ZIL?

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- ZIL is needed if using persistent desktop model, where each user's desktop instance has a unique copy of the OS.
- ZIL is needed if the NexentaStor hosting the VDI is not 100% dedicated to VDI
- ZIL is NOT needed if using a stateless model AND the persona data and application data is stored in a different (non-VDI) NexentaStor pool or on a totally different storage device.
- ZIL may NOT be needed when using Xen Desktop with Intellicache, so that writes are cached elsewhere before they reach the NexentaStor.

# Reference Documents

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The following documents may prove useful in planning your VDI deployment:

“Storage Considerations for VMware Horizon View 5.2”

– [vmware.com/files/pdf/view\\_storage\\_considerations.pdf](http://vmware.com/files/pdf/view_storage_considerations.pdf)

“How to Use Intellicache with XenDesktop”

- <https://support.citrix.com/article/ctx129052>

# Module Summary

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- Plan ahead so that you can use your pilot results to make final changes
- Use mirrored drives for IOPS
- Treat persistent desktops like a conventional VM when calculating size and performance requirements
- ZIL may not be needed if the bulk of the writes will be to data on a separate array or in a separate NexentaStor pool

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NTSP – Use Case; Generic VDI

# QUIZ

# Module Quiz Questions

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- Conducting a pilot of your project is an unnecessary step in most cases. T/F  
Answer: False. It is always far better to conduct a pilot before production deployment. There are too many variables and unknowns to be able to safely predict how your VDI deployment will work in production.
- All VDI implementations require as much ZIL capacity as possible.  
T/F Answer: False. Depending upon the type of VDI deployment, and whether or not the NexentaStor array is dedicated solely to VDI, ZIL may be unnecessary.
- A desktop image using the stateless model can be sized for capacity and performance in the same way as any other VM. Answer: False. This statement is true for images using the persistent model, not for stateless systems.

# Module Quiz Questions

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- NexentaStor 'recordsize' parameter should always be set to 128K for VDI deployments. T/F

Answer: False. The recommended recordsize setting is 32K.

- It is best to restrict VDI images to the storage in a single NexentaStor pool. T/F

Answer: False. It is best to have at least 2 pools, spread across the controllers in a NexentaStor cluster, so that a controller failover will impact only the desktops in the pool owned by the stopped controller rather than your entire VDI environment.