



DXi-Series Supplement - Optimizing Veeam with Quantum Storage

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Your difference is in your data.


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DXi and Veeam

Challenge

Customers who want to use Veeam Backup & Replication with Quantum DXi in enterprise environments working with hundreds of VMs concurrently should consider the following guidelines to optimize performance. Some examples of these use cases are:

- High-performance requirements with Veeam features that create random I/O like Instant VM Recovery, Data Labs, database point-in-time restore, and others. Please visit <http://www.veeam.com> for information about Instant VM Recovery and other Veeam features.
- There is a requirement for fast restores from backup chains with more than 6 incremental backups that depend on a full backup which creates large merge operations on the Quantum DXi.
- There is a requirement for fast restores of large VMs that contain multiple virtual hard disks equaling terabytes in size.

Cause

With the demand placed on the Quantum DXi in these scenarios, it is important to consider the hardware configuration as it pertains to where backups are stored. In general Quantum DXi running Veeam Data Mover Service creates performance that is equal to plain disk in many common use cases, including:

- Active full backups
- Incremental backups
- Synthetic full backups of no more than 6 backup chains
- Instant recovery operations for VMs that will be moved back to primary storage without long overlaps with heavy backup loads

In cases like those listed in the Challenge section, you may want to consider adding additional storage tiers, as in the solutions below.

Solution

Quantum DXi architecture integrates with Veeam to provide comprehensive data lifecycle management at scale. This section addresses challenges with solutions that scale with your enterprise. In all cases, it is strongly encouraged that you consult with Quantum and/or a value-added reseller to discuss individual objectives.

The industry 3-2-1 backup rule can be used as a guideline for the backup infrastructure planning:

3: Maintain at least three copies of your data and applications. That's the one copy you're using and two backups. This way, if one of your backups is unavailable for any reason (such as, the backup is co-located with your primary copy and both go down), you can still recover what you need.

2: Store your backups on at least two different types of media or storage controller logics. One reason for this is that each type of media has its own vulnerabilities, and you don't want both of your backups susceptible to the same problem.

For example: Run your business on a general-purpose fast storage system, store your backups on Quantum DXi as primary or secondary backup, and make secondary backup copies to Quantum's Scalar tape libraries or Quantum ActiveScale Cloud Tier.

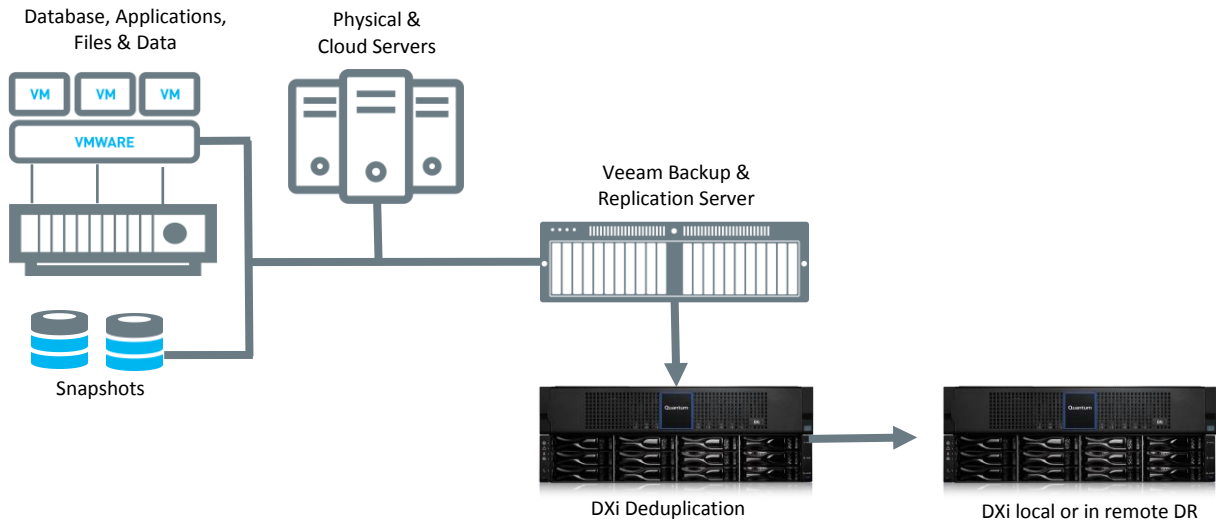
1: Keep one of the backups in a different location. Consider a crisis in your primary data center, such as a fire or power failure. If all your copies are collocated, they can all be affected, taking down your organization.

Deployment Considerations

Quantum offers a comprehensive approach to data protection which is tightly integrated with Veeam and can be configured in a variety of ways to scale as requirements evolve. Quantum DXi supports a Veeam integrated repository using VDMS to offload process intensive tasks to optimize the backup infrastructure and provides excellent performance. As the environment scales this can be augmented by adding a Quantum QXS storage array to assure recovery requirements especially as related to random I/O like Instant Recovery, Data Labs and other features mentioned in the challenge section although DXi VDMS deduplicated repositories for primary backup is more than sufficient in most cases. Quantum DXi Enterprise models have large memory capacity to support an impressive number of parallel VDMS backup/restore streams. Synthetic full backup workflows improve the backup speeds considerably offering incredible performance.

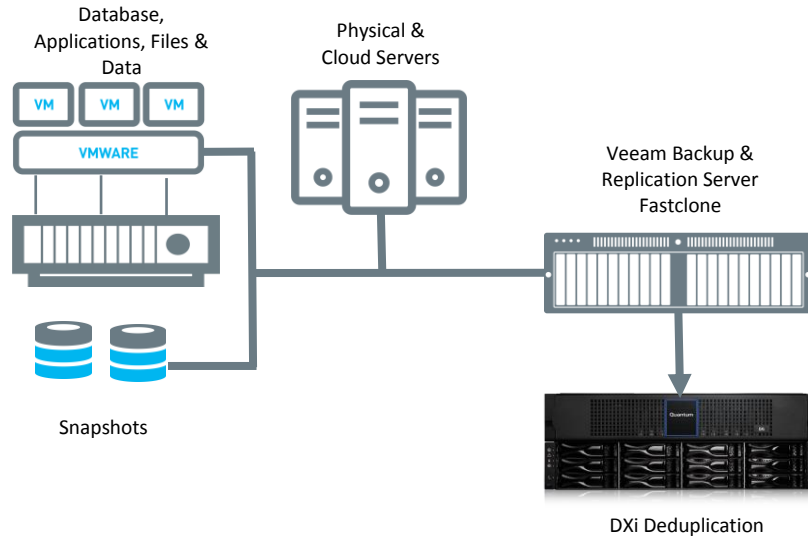
Solution 1:

A typical deployment is where backups are directed to the DXi Veeam integrated repository. A second copy can be created by Veeam Backup Copy Job or DXi replication to a second DXi appliance. Quantum recommends using the DXi replication feature as this offloads the replication process from the Veeam infrastructure and deduplicates/compresses the data stream for more efficient bandwidth utilization. The Quantum DXi can support a large number of concurrent backup/restore streams using the VDMS feature.



Solution 2:

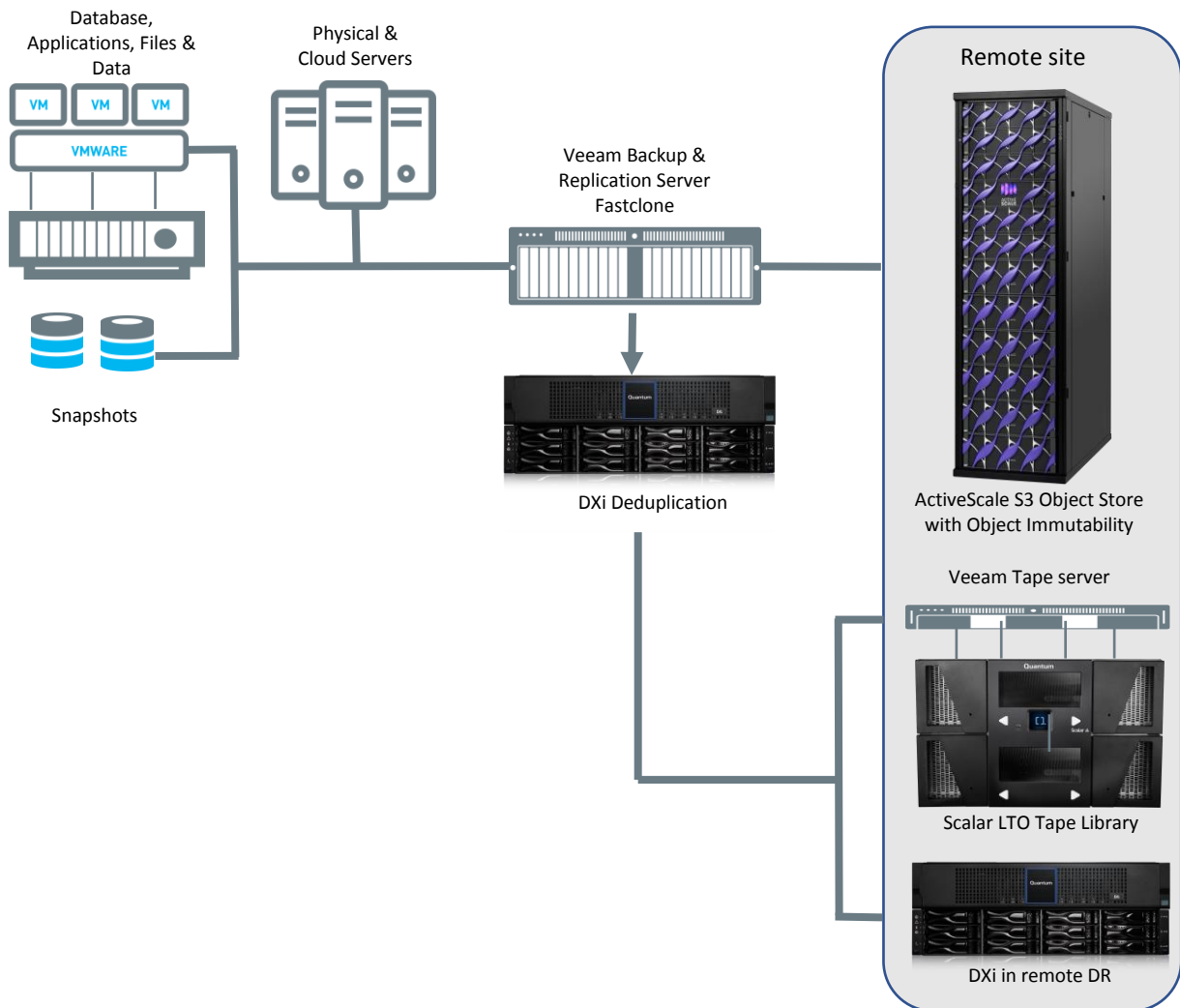
To reduce overall backup duration, utilize synthetic full backup workflows. The Integrated DXi supports fast cloning within Veeam. This dramatically reduces the amount of time required to synthesize a full backup utilizing incremental backups as interim protection. The incremental backup merging into a synthetic full is up to 15 times faster using fast cloning than a traditional synthetic full backup. This is done referencing existing data blocks already on disk.



Solution 3: Consider adding offsite repositories for DR protection and archive.

In addition to the above scenarios, you can use the following Veeam-powered options to create an offsite copy of your data.

- a. **Place Quantum DXi deduplication appliance at the second site.** Use DXi replication to secure the offsite backup.
- b. **Add ActiveScale Object storage system as Veeam’s Cloud Tier with Object Immutability** to secure data offsite.
- c. **Add a Scalar tape library locally or in the DR site** to create copies for long term retention



Helpful Resources

The following is a list of documents, references, and links where you can find additional information regarding specific activities and products.

Veeam Online Resources:

- [Veeam Backup & Replication Documentation](#)
- [Veeam Help Center \(Technical Documentation\) -- Online Help Center](#)
- [Veeam Customer Support Portal](#)
- [Veeam Community Forums](#)
- [Veeam Online University](#)
- [Veeam Resource Library](#)
- [Veeam FAQs](#)

VMware Web Site

<http://www.vmware.com/>

Microsoft Web Site

<http://www.microsoft.com/en-us/default.aspx>

Quantum Web Site

<http://www.quantum.com>

Contacting Quantum

More information about Quantum products is available on the Service and Support website at <http://www.quantum.com/serviceandsupport/get-help/index.aspx>. The Service and Support Website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

For further assistance, or if training is desired, contact the Quantum Customer Support Center:

Region	Support Contact
North America	1-800-284-5101 (toll free) +1-720-249-5700
EMEA	+800-7826-8888 (toll free) +49 6131 324 185
Asia Pacific	+800-7826-8887 (toll free) +603-7953-3010

For worldwide support: <http://www.quantum.com/serviceandsupport/get-help/index.aspx#contact-support>