

How to Build a Lightning-Fast, Multi-Petabyte Backup Repository

Exponential data growth requires breaking barriers and choosing solutions that have unlimited scalability and performance so you can grow to any size environment.



Exponential data growth is something every IT team faces. It's natural to worry about exceeding capacity, wondering how a solution will scale or perform over time. The best approach is to use a software solution that's not limited by hardware, allowing you to turn generic hardware into a robust, infinitely-scalable storage pool.

This tech brief explains how you can scale your deduplicated secondary storage to unprecedented size using Quest NetVault Plus. This data protection solution combines Quest NetVault backup and recovery software and Quest QoreStor cloud-connected data storage, deduplication and replication software. Along with massive scalability, you get accelerated backup performance and reduced data transfer across the network while maintaining optimal levels of deduplication.

THE CHALLENGE

With today's massive volumes of data, even with deduplication, it's common to exceed existing storage capacity, requiring IT teams to add more storage devices. Adding devices not only adds to IT costs, it introduces complication and risk.

What's wrong with just adding storage devices? There are a couple of problems. One, having to uniquely identify targets for data sets makes management irksome, time consuming and hard to track. Two, if it's done with just a load balancing approach, you gain some automation, but just relying on current load of the target systems does not always provide you with the best utilization or resilience of data sets.

Let's explore these two issues. First, using an approach that just identifies the least busy target in which to send the data might sound good at first. But consider this: Spreading data over multiple deduplication systems will result in lower deduplication rate and an increase in disk usage. Second, in the case of backup solutions that have a chain of full and incremental backups, if the data is split over multiple devices, backup jobs and data sets, losing even one storage device can have a big impact on your ability to recover your data.

Several backup and recovery vendors have responded to the need to scale out backup secondary storage. For example, some have added the ability to scale out the backup repository, but in many cases, they don't always support deduplication

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solutions. Without integrating deduplication, you could end up wasting a big portion of the storage space you’ve budgeted for.

Furthermore, this approach introduces complexity. You still have to map out which servers go to which storage devices. And if something changes, you may find yourself having to go back and spend administrative time tediously adjusting policies just to maintain the mapping work you’ve already done.

THE SOLUTION

With NetVault Plus, you can scale out your deduplicated secondary storage simply by adding more storage locations, as well as growing storage capacity vertically. The difference between this and other scale-out solutions, however, is that NetVault Plus software treats multiple QoreStor targets as a single logical unit, rather than multiple units. This allows you the additional benefit of scaling horizontally easily and affordably. Unlike other solutions, the scaling happens in the NetVault Plus application, which is aware and in control of all the data.

This ability is due to a new intelligent, automated deduplication-aware balancer that spreads the load dynamically, keeping “like” data together, while spreading the load across any number of QoreStor servers. This keeps storage efficiency and performance

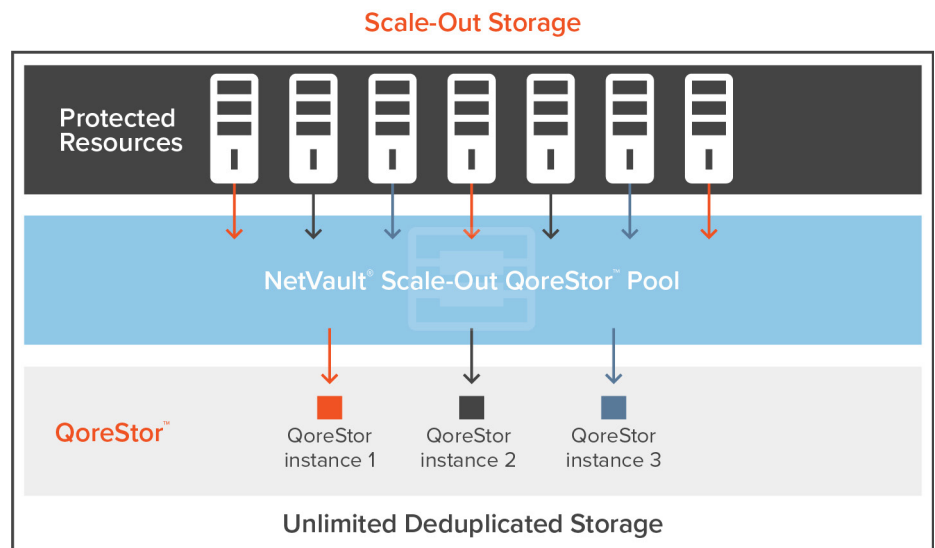
high, reducing risk of segregated data chains, while at the same time making management tasks simpler, since the rest of the system treats it as if it were a single device.

With NetVault Plus, the storage pool becomes a logical representation of all your storage. You would have just one storage pool and start with one QoreStor instance. When you’re running low on storage space, you can simply add another QoreStor instance into the mix.

Additionally, as you add devices, additional connections become available, increasing the ingest speed at which you can write backup data. Under this scenario, you’ll get increased performance as you expand your storage.

In fact, with NetVault Plus, you can scale out load-balanced pools of QoreStor servers to more than 10 petabytes of storage and 200+ terabytes of data per hour ingest speed in an enterprise environment with a large number of protected devices.

With NetVault Plus, you’re not stuck with a one-size-fits-all solution. You don’t have to worry about being constrained to a starter system if you started small. Conversely, you also don’t have to worry about scaling to enterprise levels right away. You can scale to whatever size you need, as fast or as slow as needed.



ADDITIONAL BENEFITS

In addition to being able to store unprecedented amounts of data, scaling out your storage with NetVault Plus and QoreStor leads to several other additional benefits, including:

Easier Management

Because NetVault combines multiple QoreStor servers into a single logical entity, management becomes significantly easier. You can simply send your data to the storage pool. Whether you have one QoreStor instance or 20, you would only need to configure the setup once.

It doesn't really matter if you have multiple QoreStor instances because NetVault streamlines the process. You don't have to worry about configuring the backup of server A to target QoreStor A. You simply back up Server A to the pool, and NetVault Plus intelligently manages the rest.

Reduced Network Utilization

With the source-side deduplication built into NetVault Plus and QoreStor, you're looking at an average of only 10% of your data traversing through the network, leading to fewer congestion points, since there are no media servers to contend with.

Furthermore, with NetVault Plus, data flows from the source directly to storage, allowing unparalleled throughput, since there are no media servers to create bottlenecks.

Better Cost Effectiveness

Scaling out with NetVault Plus also leads to significant cost savings, particularly on hardware. Why? Because it allows you to use commodity hardware on which to build a highly scalable system. You'll have no hardware lock-in from a specific hardware vendor.

Mitigated Risk

Scaling out your deduplicated backup storage isn't only about storing more,

it's also about mitigating risks, like reducing the risk of losing your backup data due to a hardware failure. How? Because NetVault Plus has a logical or abstract layer on top of the storage so you don't have to worry about defining which devices and which storage units to use. So if one of those storage units fails, you will lessen the amount of potential lost data.

For example, we've heard one story where a company encountered a deduplication appliance firmware issue, which brought down one of its appliances, which subsequently took out hundreds of backups across the whole infrastructure. That's not an issue when you scale out using NetVault Plus.

CONCLUSION

With NetVault Plus, when you pair the powerful data protection capabilities and horizontal scaling of NetVault with the enterprise-class deduplication and vertical scaling of QoreStor, you'll be able to:

- Simplify management by leveraging a single logical device vs. many siloed devices.
- Increase performance with each new QoreStor instance vs. having limited performance to a single node.
- Reduce overall space usage, with like data stored together, which ensures a true 15:1 average dedupe ratio across storage devices.
- Reduce the risk of data loss associated with more traditional load balanced device management.

NEXT STEPS

Would you like to be able to protect all your enterprise data and leverage a multi-petabyte scale-out backup storage repository that is blazing fast and uses commodity hardware? Learn how NetVault Plus can help.

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Quest Software Inc.

Attn: LEGAL Dept
4 Polaris Way
Aliso Viejo, CA 92656

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