Enterprises today increasingly turn to array-based snapshots and replication to augment or replace legacy data protection solutions that have been overwhelmed by data growth. The challenge is that native array snapshot tools – and alternative 3rd party solutions – have varying degrees of functionality, automation, scripting requirements, hardware support and application awareness. These approaches can add risk as well as administrative complexity and make it more difficult to realize the full potential of snapshots – whether in single disk vendor estates or in heterogeneous storage environments.

This checklist will enable you to build a shortlist of the 'must have' features needed for snapshots to deliver exactly what you require in your application environment or Private Cloud.
THE BASICS

GUI DRIVEN – ERADICATE SCRIPTING
Managing snapshots has typically meant relying on tools from the disk array vendors, which can often require extensive scripting, monitoring and maintenance, both in general and specific to individual applications. Scripts introduce expense and risk but they also make it almost impossible to audit changes and produce effective reports.

APPLICATION AWARENESS
Historically, array-based snapshots have not been application aware, and often simply capture data blocks that are only crash consistent at a volume level. So you might meet your protection criteria – fast with little impact. The problem is recovery – often requiring labor-intensive manual transaction playback with less than optimal success rates. This approach makes snapshots for Operational or Disaster Recovery very risky.

HYPERVISOR AWARENESS
Server virtualization adds a layer of storage abstraction that array-based snapshots are often unaware of, making coordinating snapshots with hypervisors a complex process. This can also further complicate application protection with snapshots.

INDEX FOR FAST & GRANULAR FILE RECOVERY
Recovering a specific file from a snapshot often requires time intensive manual searching within each individual snapshot due to the lack of a comprehensive catalogue that provides index and search capabilities.

ADVANCED FEATURES

MULTI-VENDOR MANAGEMENT CAPABILITY
Array tools are typically limited to vendor-specific arrays, i.e. they cannot be used across arrays from multiple different vendors, leading to increased cost and complexity. Where application support is available, the array vendor’s tools will often have a different management GUI per application or even by type of array, increasing training requirements.

POLICY BASED MANAGEMENT
The type of snapshot taken, frequency, how long it is retained and whether it is replicated can differ from vendor to vendor, array to array, application to application. Centralizing this under a common GUI for all the arrays in play simplifies daily management, automating processes all without the need for scripting.

CONSOLIDATED ALERTS AND REPORTING
When snapshots are managed by a multitude of different applications, potentially from different vendors, getting a handle on what’s going on can be difficult, so can setting up alerts and exception rules. Centralized alerts and reporting can provide insights enabling you to make decisions before problems arise, avoiding issues and reducing TCO.

FLEXIBLE LICENSING
Everything you need in one flexible license so you don’t have to worry about adding different types of arrays, OS or applications – you just cover the data capacities on the primary storage with a single capacity based license. Easy bolt-on of fully integrated replication, backup and dedupe functions.
LOW COST REPLICAION OPTION
Most enterprise disk arrays have a hardware based replication option, normally to an identical array. While this is a genuine necessity for some tier 1 applications, it’s an expensive luxury for others that can mean Operational or Disaster Recovery is compromised. The ability to snap and mount a second host for transfer to non-identical hardware has a number of use cases including DR and Dev and Test.

ADVANCED INTEGRATION FEATURES

SNAPSHOT LIFECYCLE EXTENDED BEYOND THE ARRAY BY INTEGRATED BACKUP SOFTWARE
Poor integration between snapshot management software and backup applications often leads to scripting to get them to work together. This increases risk and complicates snap and backup policy changes; it also fragments alerts and reporting. This can lead to disk arrays filling up, precipitating the purchase of more disk hardware.

MULTI-TIER DIRECT RECOVERY
Another challenge when snapshots are handed to backup products by scripts involves the recovery process and the loss of context of the data. The first issue is that you need to first identify where to go to get the data you require – the snap manager, or the backup app. Once that is identified, the loss of context of original data can stop the backup application from understanding how to perform a granular recovery. In the worst cases you are forced into a two stage recovery – first a recovery to scratch disk, then a manual ‘mount and mine’ to get the application data back in place. With fully integrated snapshot management and backup, you are able to go to a single GUI to perform a granular recovery directly to the main application, regardless of which recovery tier you need to access.

ORCHESTRATED RECOVERY automates database and application recovery across snapshots and secondary copies made by integrated backup software. This delivers automated, application-aware recovery from any storage tier, across multiple arrays and data management architectures. For example, your chosen protection strategy may be to snap a database every 6 hours, then take log backup every 30 minutes and perform a backup to secondary storage once a day from one of the snapshots. Orchestrated Recovery will then allow you to select the database and recovery point-in-time that you require; it then intelligently decides whether to copy back from a secondary copy or to revert to the snapshot – and then automatically replays the logs to bring the database back into a consistent state, to the selected point-in-time. This ability to replay the logs even if they were created with traditional streaming backup and combine them with hardware snapshots simplifies recovery and can reduce the number of snapshots required.

SUGGESTED READING >>
“5 Reasons Your Storage Snapshots Aren’t Working”
If your snapshots are manually-managed or of the build-it-yourself variety, there may be several reasons that they aren’t working very well. Learn more about the top reasons your snapshots are failing.
READ NOW
**WORKFLOW AUTOMATION**

Snapshots have the potential to be repurposed for a number of uses. By leveraging an integrated backup application with global dedupe, you can minimize the impact of collecting data from core applications and VM’s and leverage the backup application to efficiently transport them to other locations. Workflow automation can then be used automate Cloud DR testing or recovery to systems used by Dev teams either locally or in the cloud.

If you find each of these features to be important, consider evaluating Commvault® IntelliSnap® technology. It supports 95% of the most common disk arrays, with the list growing all the time. IntelliSnap technology is an ideal protection platform for Enterprise Applications, as well as clouds running VMware and Microsoft Hyper-V. It makes an ideal starting point for effective Operational and Disaster Recovery. You can check support for your environment or next disk purchase online at [documentation.commvault.com](https://documentation.commvault.com).

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**RESOURCES**