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UNLOCKING THE FULL POTENTIAL OF AMAZON FSX FOR NETAPP ONTAP

With BlueXP workload factory

INTRODUCTION

The world of enterprise storage is evolving rapidly, and Amazon FSx for NetApp ONTAP (FSx for ONTAP) stands out as a robust solution, offering unparalleled features and capabilities for managing demanding workloads.

This eBook is designed to help you unlock the full potential of your FSx for ONTAP environment. Whether you're seeking to improve data protection, optimize storage efficiency, or streamline disaster recovery, this guide provides practical methods to enhance your FSx for ONTAP usage. By implementing these methods, you'll be well-equipped to meet the diverse needs of your organization while maximizing performance and cost effectiveness.

UNLOCKING THE FULL POTENTIAL

FSx for ONTAP is a fully managed storage service that delivers the powerful capabilities of NetApp® ONTAP® technology. With its robust feature set, FSx for ONTAP empowers organizations to meet their storage needs efficiently. To fully leverage its capabilities, it is crucial to implement strategies that maximize its potential.

For specialized tasks, such as setting up cross-region disaster recovery or configuring self-managed databases, FSx for ONTAP offers a wealth of features. While there are several tools and options available to carry out FSx for ONTAP operations, they don't provide access to every FSx for ONTAP feature, and you might wind up juggling between using consoles, APIs, and CLIs.

That's where BlueXP™ workload factory for AWS (workload factory) shines. It unleashes the full potential of FSx for ONTAP through an intuitive, unified platform, simplifying management and enhancing functionality. Workload factory is a unified interface that provides the widest access to advanced FSx for ONTAP features. Through automation built on industry best practices, it streamlines configuration and management tasks, reducing the likelihood of errors and eliminating the need for extensive ONTAP expertise.

Below are ten essential strategies aimed at elevating your FSx for ONTAP experience using workload factory. These strategies focus on optimizing storage efficiency, enhancing data protection, and refining disaster recovery processes. They provide actionable insights to help you maximize the potential of your deployment. By adopting these approaches, you can customize FSx for ONTAP to meet your organization's unique objectives and needs both effectively and cost efficiently.
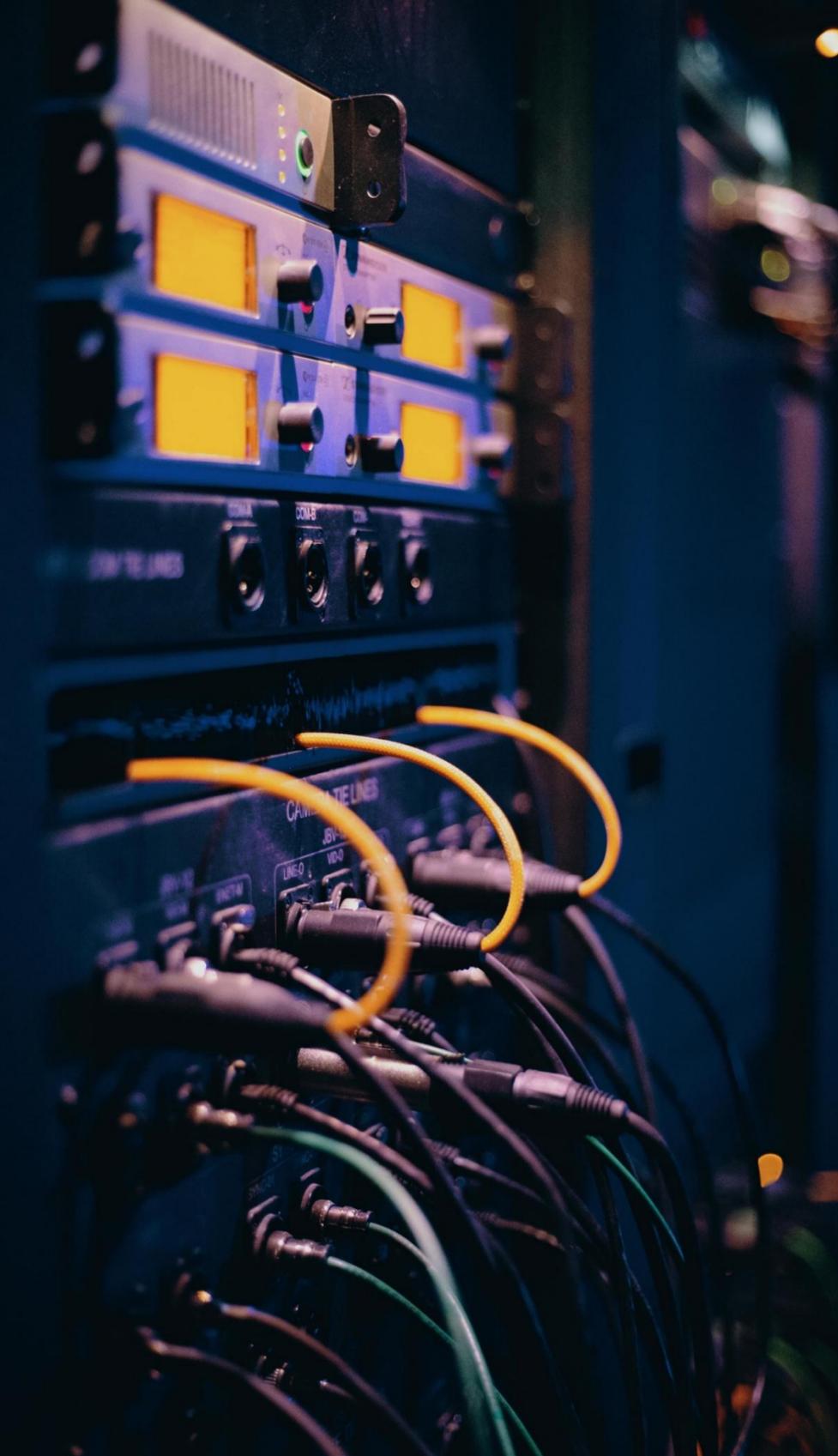
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1
LEVERAGE INSTANT THIN BACKUPS FOR COST-EFFECTIVE DATA PROTECTION

NetApp Snapshot™ copies provide an advanced approach to data protection with their thin, in-place technology, which eliminates the inefficiencies of traditional methods. Unlike solutions that require copying data to object storage, incurring delays and additional capacity costs, NetApp Snapshot copies are highly efficient. That makes them a cost-effective choice to keep data safe without adding unnecessary overheads.

On the AWS console for FSx for ONTAP, you are provided with a default Snapshot policy. However, most companies have dedicated protection policies tailored to their unique requirements, which the default option may not fully support. Workload factory addresses this by enabling you to create custom protection policies that suit your specific needs. With workload factory, you can schedule Snapshot creation as frequently as every few minutes and retain up to approximately 1,000 backups per volume, offering the flexibility and control necessary to reach your business' data protection goals.

Learn how to set up local backups using workload factory.

2
OPTIMIZE STORAGE PRICE PERFORMANCE

Data tiering on FSx for ONTAP automatically moves infrequently used data from a performant SSD pool to a low-cost capacity storage tier. However, choosing the right data-tiering policy is key to optimizing costs / performance. Workload factory makes that easy by guiding you with clear terms. It walks you through picking the perfect policy for your use case—whether you're running mission critical databases or using FSx for ONTAP for low-cost archive target—saving you time and guesswork.

See how to change the tiering policy of a volume in workload factory.

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3
SIMPLIFY MULTIPROTOCOL DATA SHARING

ONTAP's multiprotocol access is a powerful capability that allows both NFS and CIFS/SMB protocols to access the same data, making it ideal for organizations with mixed Windows and Linux environments. This feature simplifies data sharing and eliminates the need for application refactoring, saving time and resources. However, it is not directly accessible through the AWS console for FSx for ONTAP. Workload factory provides an easy way to enable and use this capability, enhancing data management efficiency without requiring deep technical expertise.

Learn how to manage CIFS share in a volume with workload factory.

4
ENHANCE CONFIGURATION OVERSIGHT WITH VISUAL INDICATORS

Workload factory offers a straightforward and user-friendly interface to oversee your data protection strategy. On the volume screen, within the protection column, you'll notice clear, intuitive icons that represent essential protection methods: ONTAP Snapshot copies, replications (SnapMirror®), AWS backups, immutable files (SnapLock® Enterprise), and immutable Snapshot copies (tamperproof snapshots).

These icons provide an instant visual cue, allowing you to quickly determine if a volume aligns with the defined policy or if there's a drift from the optimal configuration. This visual system enables you to efficiently identify and resolve issues, so your capacity savings and data protection stay on course.

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5
ESTABLISH ROBUST DISASTER RECOVERY AND DATA REPLICATION

Workload factory empowers you to establish robust disaster recovery (DR) and data replication strategies for FSx for ONTAP. You can create replication relationships between any ONTAP clusters—whether across Availability Zones (AZs), AWS Regions, or hybrid multi-cloud environments.

Workload factory uses NetApp SnapMirror replication technology. This process performs secure, block-level replication that preserves ACLs, and incrementally transfers only compressed blocks after reduction, with end-to-end encryption, making it highly cost-effective and performant. Your replication configurations can be set from workload factory. You can change replication intervals, set longer backup retention periods, choose a more aggressive data-tiering policy, or throttle your connection to minimize impact. Workload factory will lead you through the process and will set smart defaults according to your specific use case, whether it's for migration or for data protection.

The replication relationships can be monitored and controlled from workload factory, where you can choose to Break, Update, Reverse, or Delete replication relationships. Test your DR readiness with operations such as Resync, Pause, or Reverse resync, keeping your strategy effective and up to date.

This is much easier than using commands with the ONTAP CLI, which requires ONTAP expertise. Workload factory democratizes these administrative tasks by making them available through a few clicks.

For example, if you want to create a copy in a remote location before making a major application change, it's just a simple click in workload factory to initiate a replication update so that you have a safe copy of the data in case you need to roll back. Remote copies can be locked with immutable Snapshot copies for creating a cyber vault to protect against ransomware attacks.

[Watch this DR in minutes with workload factory demo.](#)

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STREAMLINE BLOCK STORAGE MANAGEMENT

You can create block devices—i.e., iSCSI LUNs—directly from workload factory. FSx for ONTAP block devices are unique as they can be shared across AZs, have multi-AZ protection, and have disks of up to 128TB. Workload factory simplifies the management of block storage, providing high availability and high performance.

Access

Access type

Select a volume style:

○ File access
Multiple authorized users and devices can access the volume using the SMB/CIFS protocol, the NFS protocol, or concurrent NFS and SMB access.

◉ Block access
Hosts running business critical applications can access the volume using the iSCSI protocol.

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7
USE INSTANT DATA CLONES FOR RAPID DEVELOPMENT AND TESTING

NetApp FlexClone® technology is a powerful ONTAP capability that allows you to create instant, space-efficient clones of production data without affecting performance or requiring significant amounts of extra storage.

Unlike traditional data copying methods, which can be slow and resource-intensive, FlexClone creates writable clones in mere seconds, making it an invaluable tool for developers and database administrators who need quick access to production-like environments without compromising data safety or increasing costs.

However, FlexClone is not directly accessible through the AWS console for FSx for ONTAP, which could make it challenging for users unfamiliar with ONTAP to take advantage of its benefits.

This is where workload factory provides an advantage—it simplifies your process, enabling you to use FlexClone effortlessly.

Once created, the clone will appear in the volumes list with a sign indicating that it's a clone, but one that's able to operate as any other volume.

Important Note: To access production data with zero impact on your live environment, run operations from the secondary file system. This keeps your production data safe while allowing you to perform testing or development tasks effectively.

Learn how to clone a volume with workload factory.
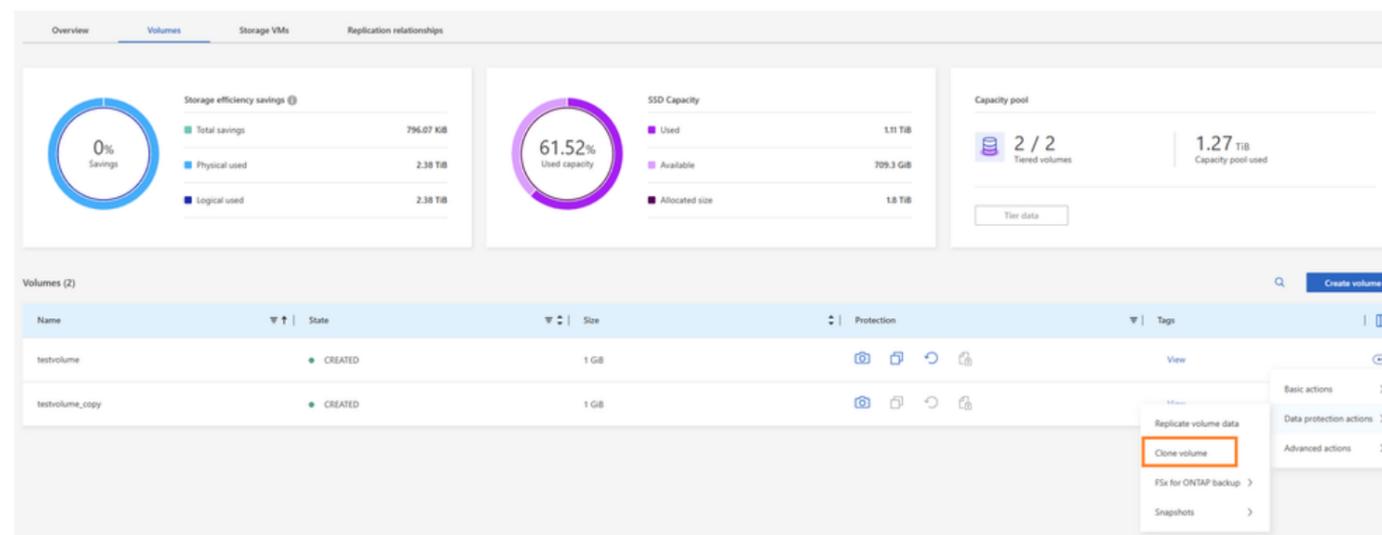
8

AUTOMATE YOUR DEPLOYMENT PROCESSES

While defining your FSx for ONTAP file system configuration, workload factory creates an automation template for the deployment that is aligned with best practices for the workload. You can find code snippets provided in the Codebox to create templates for automating your deployments through API requests, CloudFormation, and Terraform.

Once the configuration is reviewed, you can provide the credentials and go ahead with your deployment. The saved templates can be reused for repeatable deployments and operational efficiency.


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IMPLEMENT AUTOMATED CAPACITY MANAGEMENT

After deploying FSx for ONTAP, you'll need to actively monitor the file system to avoid ever reaching full capacity, which could disrupt your operations. Without automation, this means manually checking utilization and increasing the file system size yourself, a process that takes time and could easily be missed. Fortunately, workload factory enhances day-2 operations with automated capacity management.

Workload factory will continuously monitor your capacity utilization. If it hits a specified threshold, the system automatically adjusts the file system size, making it elastic and eliminating the need for timely manual intervention. Additionally, you can create volumes with auto growth for specific.
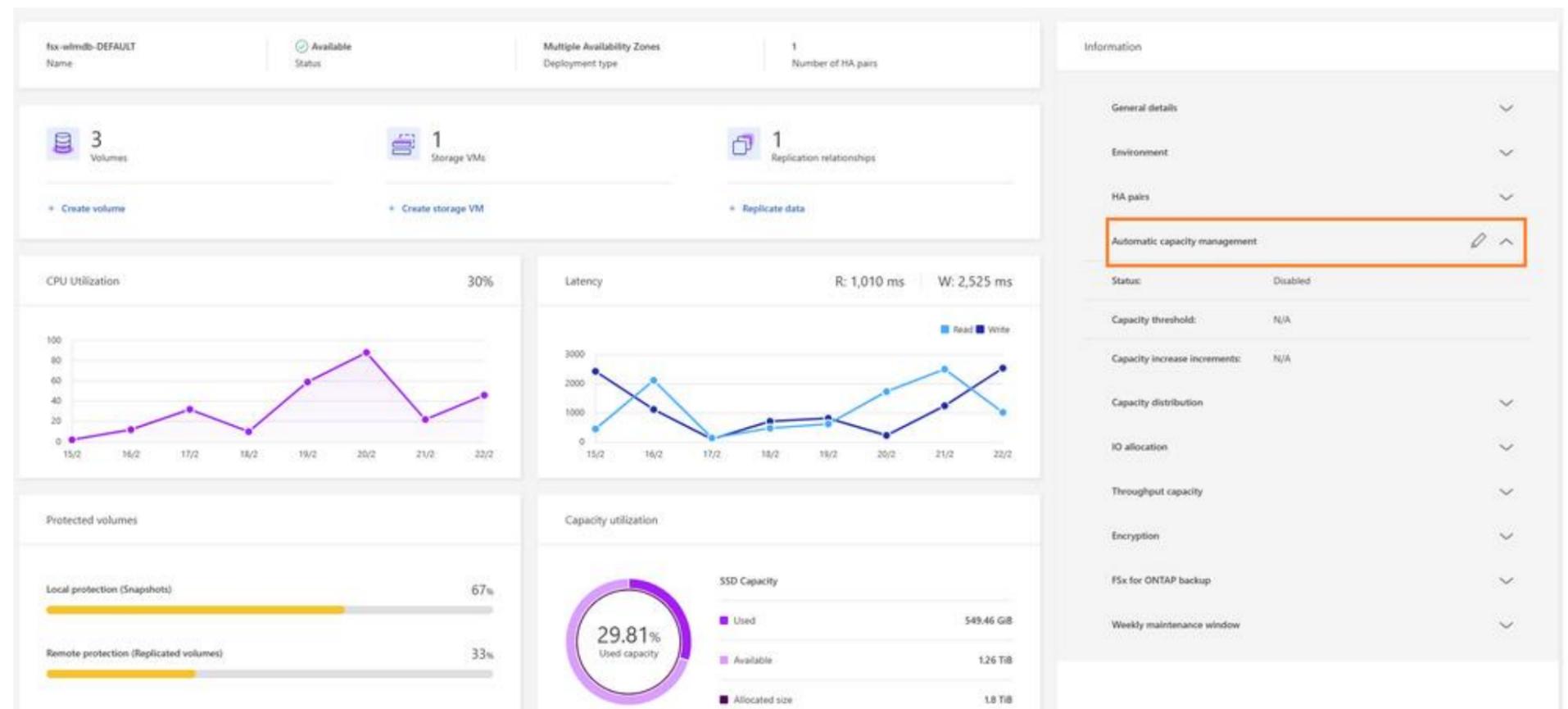
10
STRENGTHEN SECURITY

Workload factory simplifies day-2 protection management operations for FSx for ONTAP by providing streamlined access to advanced security features that protect your data, backups, and access controls.

Protecting data with immutable files: With SnapLock, workload factory lets you create immutable files that cannot be modified or deleted for a specified retention period. This maintains data integrity and can help address certain compliance requirements, all while being easy to configure through the intuitive workload factory interface.

Safeguarding backups with immutable Snapshot copies: Workload factory lets you secure your backups using immutable Snapshot copies (ONTAP Tamperproof snapshots). These immutable Snapshot copies cannot be changed or deleted, providing robust protection against tampering or deletion by ransomware attacks.

This immutability can also be applied to replication targets, so your secondary copy remains secure. Workload factory simplifies the setup and management of these tamperproof snapshots, enhancing backup reliability by creating a cyber vault for your data.

Hardening access with NFS export policies: Workload factory allows you to restrict access to volumes through NFS export policies. For example, you can limit access to a volume to specific client IP addresses—a common security best practice that reduces the risk of unauthorized access. Unlike the AWS console, which doesn't offer this capability, workload factory provides the tools to easily implement this critical access control.

By integrating these powerful security measures—immutable files, immutable Snapshot copies, and NFS export policies—workload factory offers a user-friendly solution to strengthen the security and protection of your FSx for ONTAP environment.

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ACHIEVING OPERATIONAL EXCELLENCE WITH WORKLOAD FACTORY

Workload factory emerges as a valuable tool for FSx for ONTAP users to streamline their storage management. It simplifies deployment, makes operations more accessible, and aligns the service to your specific storage needs through a workload-centric approach. With optimized configurations and enhanced operational efficiency, workload factory offers unique capabilities you won't find in other operational tools for FSx for ONTAP deployment.

TAKE THE NEXT STEP

Ready to unlock the full potential of your FSx for ONTAP environment and simplify workload management?

Get Started Now →