

E-BOOK

How to depressurize your cloud and find your happy place

A guide to better cloud living through data
management and storage

 **NetApp**



Your guide to better cloud living

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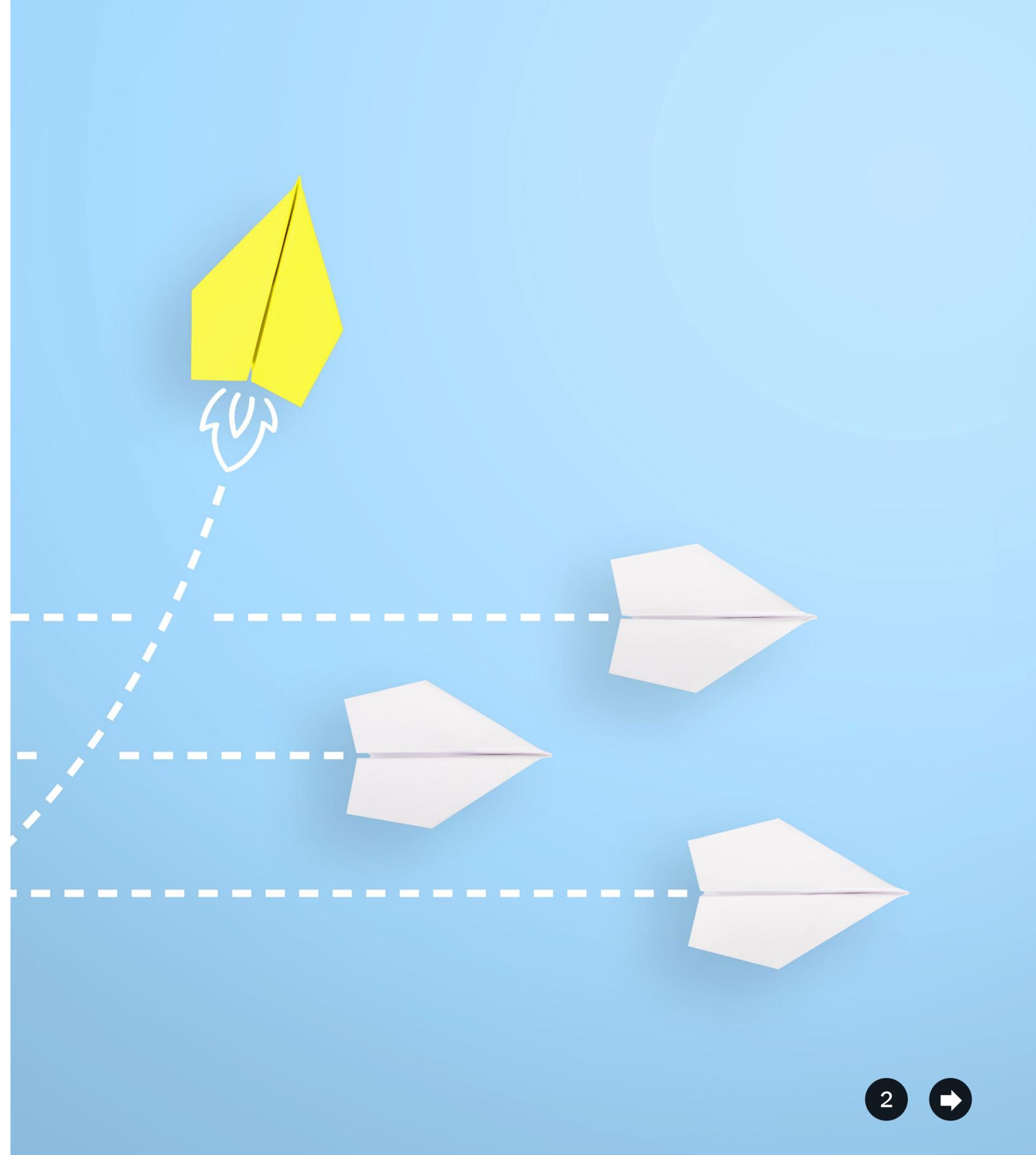
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Mama said there'd be days like these...

Under pressure? The cloud used to be fun. It was the terrain of hot startups and leading-edge enterprises. Being a cloud professional was cool. And it still is.

But today, it's also a lot of pressure, and you're facing big headaches, including some that probably keep you up at night. If you're trying to manage cloud resource consumption, capacity, performance, protection, security, and cost, continuously and intelligently, without breaking a sweat (dabs forehead), you're not alone.





It's easy to get overwhelmed by the staggering complexity of your multicloud environment, especially if your data management and storage services aren't sufficient. You have a ton of manual processes and limited visibility weighing your team down, and you're waiting for the next shoe to drop. Everyone has expectations for what the cloud should be and do, and it's on your shoulders to deliver. Sound familiar?

Of course it does. Because you dance the cloud tango every morning.

You're barely through your first caffeine hit of the day when bam! The development team is pinging you because their hastily constructed new app has another last-minute requirement. The finance team has sent another calendar invitation titled "Cloud spend chat." Your CISO wants to evaluate your ransomware preparedness. And if a team member resigns? Gulp. Your workload will only get heavier while you compete for cloud skills in a tight labor market.

Meanwhile, your data is growing in the background. Without optimal data management, you'll probably get some atrocious cloud bills, and even more pressure from the finance team. Throw in constant security threats and evolving business needs and you have a lot to deal with.

Deep breath. It will be okay.

Your day-to-day cloud life doesn't have to be this way

Yes, the cloud is a managed service. But it doesn't manage itself.

It's time to thrive in the cloud while gaining (and keeping) a competitive advantage through faster cloud innovation. It's time to take charge, and NetApp can help. We know that with cloud skillsets in high demand, you need every bit of help you can get.

NetApp lifts the burden of manual tasks that come with cloud management. Our portfolio gives you complete control and visibility powered by artificial intelligence and machine learning. With continuous automation and optimization through services like cloud tiering for cost control, threat detection with intelligent, actionable insights, and application-driven infrastructure provisioning for container-based application development, **you've got this.**



We know it's easier said than done, but these four steps will help you depressurize your cloud and find your happy place.



Improve your cloud ROI



Better protect and secure your data



Ease the delivery of your cloud-native apps



Simplify your cloud infrastructure management

You're already on your way. Now it's time to put these steps into practice. What follows is your guide to what you need to do to get started.



Your handy guide to better cloud data management and storage

In the cloud, you need to ask whether your services are working hard for you or whether you're working hard for them. A good place to start is by maximizing your return on investment (ROI) to get finance out of your hair.



1

Improve your cloud ROI

Let's take the SOS out of ROI. Next time your finance team says "We need to talk," you can join the call with confidence, using this step-by-step game plan.

Prioritize and optimize data needs for cloud workloads and apps

Your applications and workloads rely on storage from your cloud provider. It's easy to assume that the amount of space you're currently using is the amount of space you *have to* be using. Blow that thinking away. Data deduplication, thin provisioning, compression, and data compaction all cut down on storage without compromising performance.

Enter [NetApp® Cloud Volumes](#), a cloud data management platform that slashes total cost of ownership (TCO) for native cloud storage while delivering high performance. Just look at the impact it had on [TechnologyOne's AWS workloads](#), where it exceeded the performance of native AWS storage by a factor of 10 while extending the AWS resilience service-level agreement to 99.999% availability. The result? An 85% reduction in production data footprint, which equaled seven-figure savings.¹

Identify and manage your stale, duplicate, and non-business-related data

An estimated 75% of enterprise data is "dark data" running around IT estates, its whereabouts unknown.² Discover exactly where your data sits, map it for easy locating later, and then classify it, so you can create policies that support actions such as storage tiering and retention periods.

[NetApp Cloud Data Sense](#) can give your rascally data a home. It makes data discovery, mapping, and classification painless. Using powerful AI algorithms, NetApp Cloud Data Sense provides automated controls, so you can find anything, anywhere, at any time.





Keep pace with growing data and stay on budget with tiered storage

Leaving cold data in high-value storage is kind of like buying state-of-the-art security and a temperature-controlled safe for a \$15 Mona Lisa poster.

Identify your cold data and then move it to cheaper storage options. If you're with AWS, that's AWS S3. If you're with Azure, it's Azure Blob Storage. If you're with Google, it's the GCP Archive and Coldline tiers. Create policies that automatically identify when the classification of a data type changes, so it can be pushed to the appropriate storage tier.

NetApp Cloud Tiering offers financial freedom and flexibility by automatically pushing your data to the right storage tier at the right time. Companies enjoy an average of 70% savings through optimized storage, up to 50 times more space, and up to 30% reduction in TCO.³

Simplify provisioning and consumption of data services

Cloud teams don't have to predict capacity budget needs with the same level of accuracy as a weather forecaster predicts storms. They can focus on making purchasing decisions, safe in the knowledge that it's money well spent. That's how you boost your ROI – by making each dollar you spend productive.

How do you accomplish this? It's easy with Cloud Wallet, a feature of NetApp Cloud Manager. You can identify unused or underused licenses and exchange them for other NetApp data services your organization is hungry for, like Cloud Tiering, Cloud Data Sense, or Cloud Backup products. Cloud Wallet can save 3 to 5 days of procurement time and help you avoid prohibitive upfront costs. Just point and click.

2

Better protect and secure your data

Calls from finance? Handled. Let's pluck the next thorn in your side: cybersecurity.

Or as we like to call it: cyber resilience. Cyber resilience is about keeping threats out, tackling them if they do get through, and recovering quickly if you experience an incident, whether it's caused by cyberthreats or human error.

NetApp's approach infuses cyber resilience into all our services. When you use a NetApp service to improve your ROI, it has built-in data protection. When you use a NetApp service to deliver native apps, it has built-in data protection. You get the picture.

Let's take a step-by-step look at how you can move toward cyber resilience.



Protect and respond to ransomware with automated tools

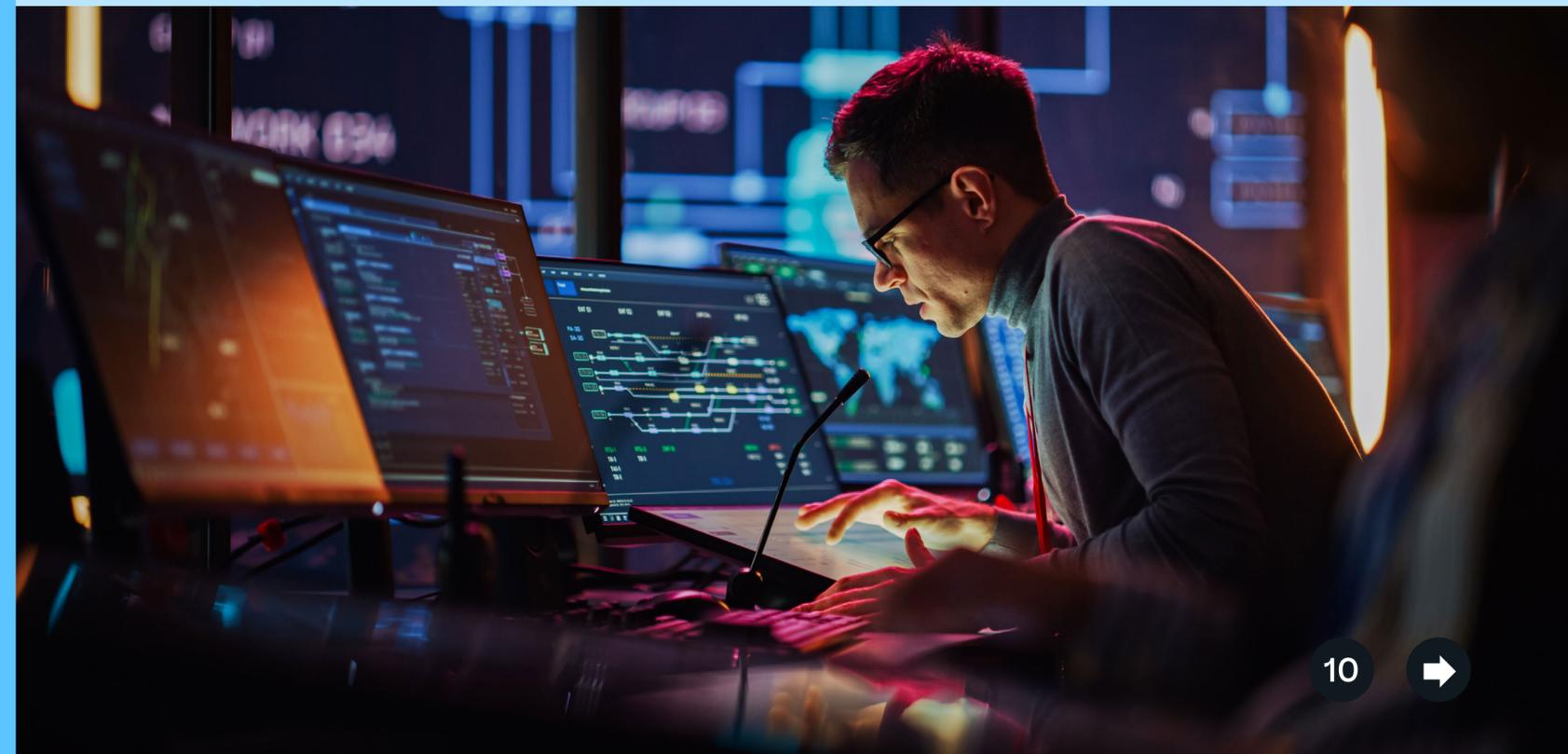
Forget “if” and forget “when.” The questions about cyberattacks now are “how many?” and “how damaging and costly?” Put a system in place that can keep out as many cybercriminals as possible and tackle the few that do get through. One of the most tiresome activities for Security Operations Center employees is responding to threat alerts, the majority of which are false alarms. An automated solution that can identify which threats are worth following up on is a significant time saver (and burnout preventer).

NetApp Cloud Secure, part of NetApp Cloud Insights, analyzes all user activity and converts that into behavioral models. When some activity is out of the ordinary, the cloud security team receives an alert and NetApp Cloud Secure automatically makes a NetApp Snapshot™ copy. User activity analysis also simplifies corporate compliance by auditing patterns of access to critical data. After a thwarted ransomware attack, you can open the Cloud Secure graphical interface to investigate easily. Because Cloud Secure can be deployed as software as a service (SaaS), you’re up and running with NetApp Cloud Volumes in hours rather than days.

Meet compliance and retention rules by mapping and classifying sensitive data

Make it easier to comply with corporate governance and regulatory requirements by mapping and classifying your information, and thereby identifying security risks to sensitive data. Use a simple point-and-click interface to generate compliance reports and manage data ownership and access controls.

This is where NetApp Cloud Data Sense extends beyond helping you achieve better cloud ROI. It doesn’t just tell you what data you can delete or bump to a cheaper storage option. It also tells you what data needs extra love and care in the form of more stringent access controls or more frequent backups. You’ll understand your data landscape, which will help you automate the tasks that maintain it.





Achieve business continuity with automated backups and snapshots

Set-it-and-forget-it systems make it easy to back up exponentially growing data. Implement a backup solution that allows you to back up your data faster and more efficiently, while incurring fewer costs.

When you combine [NetApp Cloud Backup](#) with [NetApp Cloud Volumes](#) and [NetApp Cloud Manager](#), you can do just that. You can set up and activate the process for regular backups in 2 minutes. Identify your clusters through Cloud Manager and choose from a selection of popular retention periods or create a customized policy that meets your specific compliance requirements. These backups are incremental, and they're stored forever. Plus, they're encrypted and entered into a browsable catalog for easy searchability. Thanks to NetApp Snapshot copies, you can create a point-in-time image of your production volumes without duplicating your entire dataset.

Secure critical environments with robust access and login controls

Once you set up your data solutions for backup, AI-powered tiering, provisioning, and everything else you need, you'll have a unified platform that integrates all of these services with robust user and access control features.

Tie everything together with [NetApp Cloud Manager](#), an SaaS-delivered, unified cloud management platform. It's fully integrated with solutions such as NetApp Cloud Volumes, NetApp Cloud Insights, and NetApp Cloud Backup, as well as third-party solutions. Highly secure API connectors maintain customer information within the customer's VPN or virtual network, making it inaccessible to the public. Cloud Manager also offers secure single sign-on and authentication processes that enable equal parts user friendliness and security.

3

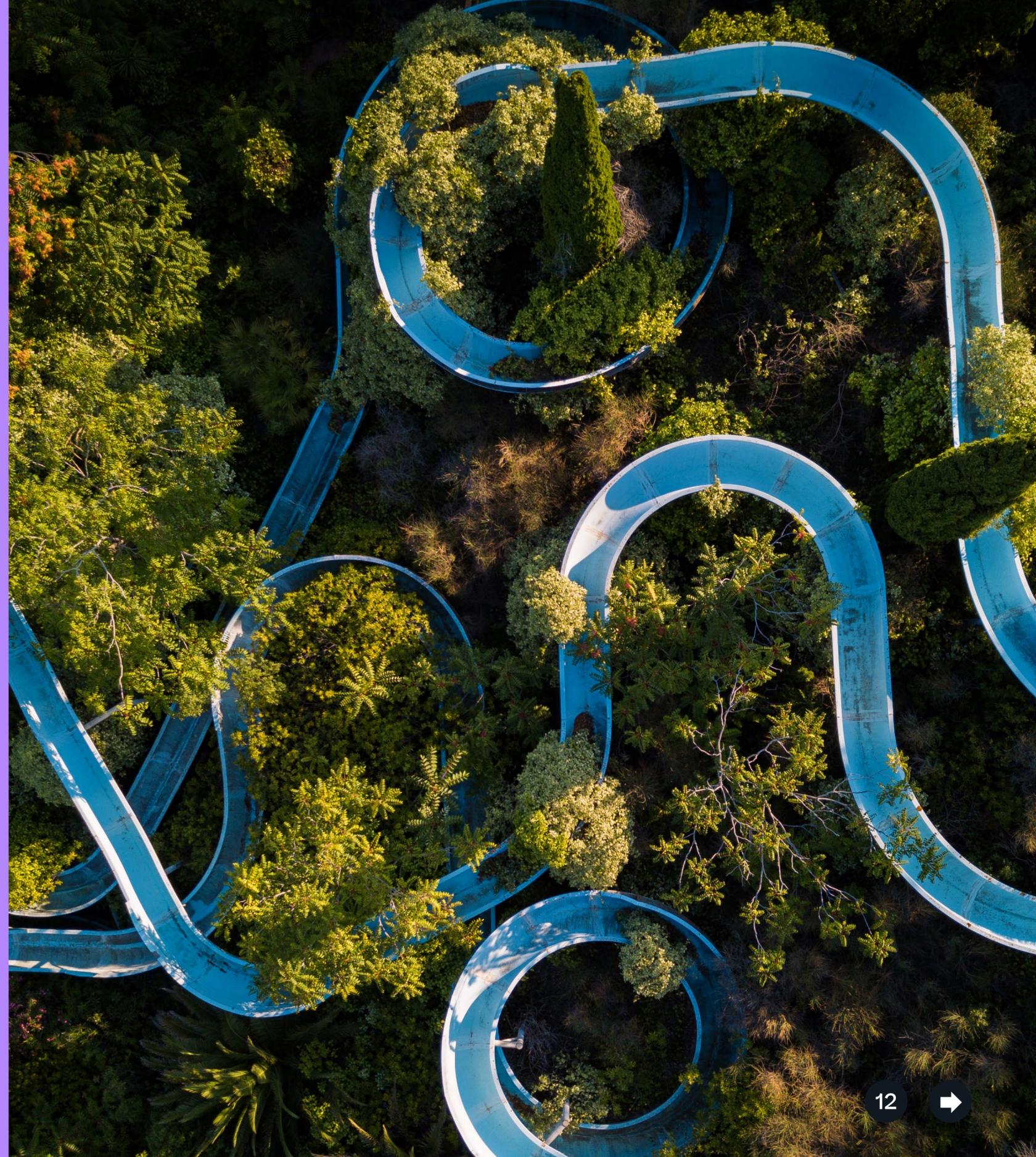
Ease the delivery of cloud-native apps

We've talked a lot about prevention. Now let's talk about creation. Container-based application development has grown in popularity, with 85% of organizations expected to run container-based applications this year.⁴ However, containerization introduces unique provisioning and data storage challenges. Here's how you can tackle these challenges one by one.

Deliver persistent Kubernetes stores that are protected and easily migratable

Backing up your Kubernetes environment is like cooking risotto: It requires constant attention. Your backups must account for the different elements of a Kubernetes environment, including ConfigMaps, certificates, and volumes. Once you've fine-tuned your backup process you need to automate it, because your Kubernetes environment will change quickly. Put these backups in one place, instead of fragmenting them over multiple backup options, so you can restore your Kubernetes environment quickly.

NetApp [Astra™ Control](#) is an application-aware data management solution specifically designed for Kubernetes. It manages, protects, and moves data-rich workloads running on Kubernetes across multiple clouds. Astra Control ties into other NetApp solutions so that your Kubernetes environments enjoy all the Snapshot, backup, replication, and cloning capabilities available.





Offer on-demand environments to your DevOps teams with no up-front investment

Forget initiating a procurement exercise every time your DevOps team needs access to cloud resources. Instead, give them access to a platform where they can get the data resources they need instantly.

[NetApp Cloud Volumes](#) allows DevOps teams to access high-availability deployment configurations, instantaneous volume cloning, built-in storage efficiencies, and a single-pane-of-glass view for automation and orchestration. It can manage and move data across clouds. For cloud-native development, DevOps teams can leverage the [NetApp Astra](#) suite of solutions.

Integrate containerized apps and legacy workloads on one storage infrastructure

Instead of managing multiple environments, put your various workloads, whether traditional or cloud-native apps, into a single cloud environment. That way you can enjoy the cost savings of cloud storage and cloud data management.

By using [Astra](#) and [NetApp Cloud Volumes](#) together, you can dynamically provision cloud resources as persistent volume requests on demand. NetApp Cloud Volumes becomes the unified data storage space for both Kubernetes and virtual machine workloads in a single datastore.

4

Simplify your cloud infrastructure management

You've got a lot of snazzy bells and whistles. It's time to find a conductor to make them all sound good together. Otherwise, you'll be running from instrument to instrument doing frantic tune-ups in real time. Here's a beat-by-beat breakdown of how to introduce harmony into your cloud infrastructure management.

Achieve 24/7 availability of key services with simplified monitoring

You may not have a crystal ball, but you do have a lot of systems with patterns that can be analyzed. An insights platform that detects anomalies and brings them to your attention can save time and focus your attention where it's needed most.

NetApp Cloud Insights certainly comes close to a crystal ball. It lets you monitor, troubleshoot, and optimize your applications and resources across your technology stack. This ability made delivering cloud-based solutions a breeze for Citrus Consulting Services, which consistently gets NetApp Cloud Insights up and running in 15 minutes for its customers.⁵

Empower your teams to access data storage resources themselves.

Your team is bogged down with requests for data storage resources, and most requests are standard. With a little bit of planning and a user-friendly point-and-click interface, those standard requests can all be automated. You can potentially reach the point of self-service, where business

units can retrieve the resources they need, leaving you free to focus on more complex requests.

This kind of simplicity is possible with NetApp Cloud Manager. Employees can discover, deploy, and manage NetApp Cloud Volumes resources in a consistent manner using common policies, regardless of where they're accessed.





Consolidate your unstructured data

Save administrative costs by efficiently managing unstructured data residing in data islands spread across your IT environment. You can also enhance performance for a globally distributed set of users of that data.

With [NetApp Cloud Volumes Edge Cache](#), you can consolidate all of your qualitative data to the cloud and benefit from built-in backups and file caching technology that improve the user experience for employees around the world.

Standardize and automate deployment requirements

Automate complex deployments so crucial steps aren't missed. Not only does automation free up your time, it also mitigates risk.

[AppTemplate](#), a free feature of [NetApp Cloud Manager](#), simplifies and streamlines resource deployment and makes it easier for organizations to stay in line with corporate standards.

You've got this

Managing the cloud doesn't have to be a Sisyphean task. You can start depressurizing your cloud today. Take it one step at a time. Achieve a greater return on investment, infuse cyber resilience into your cloud environment, support easy cloud-native app delivery, and simplify your cloud infrastructure management.

Get your hands dirty

We can help you find your happy place. Check out our [cloud services \(and free trials\)](#) and see how we can help you take charge in the world's biggest clouds:

- [AWS](#)
- [Microsoft Azure](#)
- [Google Cloud](#)

 [Learn more about our cloud services](#)

1. [TechnologyOne Uses NetApp to Optimize Cloud Services](#)
2. [What is Dark Data? Learn Its Uses and Challenges](#)
3. [NetApp Cloud Tiering](#)
4. [Forecast Analysis: Container Management \(Software and Services\), Worldwide](#)
5. [Citrus Consulting accelerates digital transformation for their customers with Cloud Insights](#)



About NetApp

In a world full of generalists, NetApp is a specialist. We're focused on one thing, helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world's biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric, simplify and connect your cloud, and securely deliver the right data, services, and applications to the right people—anytime, anywhere.





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