NetApp

EBOOK

DATA INFRASTRUCTURE INSIGHTS

5 WAYS NETAPP OBSERVABILITY SIMPLIFIES VMWARE OPTIMIZATION

Improve VMware performance and drive transformation across your entire infrastructure

INTRODUCTION

SO LONG TO THE VMWARE WE ALL KNEW AND HELLO TO NEW POSSIBILITIES.

We’re in the midst of an IT infrastructure revolution.

As Broadcom ends perpetual licensing, transitions over to a subscription-based pricing model, and forces the purchase of additional products through bundles, the long-term costs of many companies’ current deployments are increasing—and becoming untenable as a result.

But we believe this moment is an incredible opportunity to completely transform your virtualized infrastructure and create unprecedented insights into your data without blowing a massive hole in your IT budget.

COSTS AREN'T THE ONLY CHALLENGE.

Here's what else you need to consider:

- How will Broadcom change VMware's product portfolio?
- Which products will be deprecated?
- How will you retool and rework your applications?
- Will this impact where your workloads live?

NetApp is the only vendor that is positioned to provide you with the capabilities you need to manage your workloads, optimize your storage infrastructure, and even gain actionable insights into your future needs—not just in months, but years—so you can prepare.

After all, whether you're trying to optimize VMware instances or migrating various workloads to different platforms, it will become increasingly difficult for IT operations teams to get the visibility needed to efficiently assess and execute optimiztion and migration strategies.

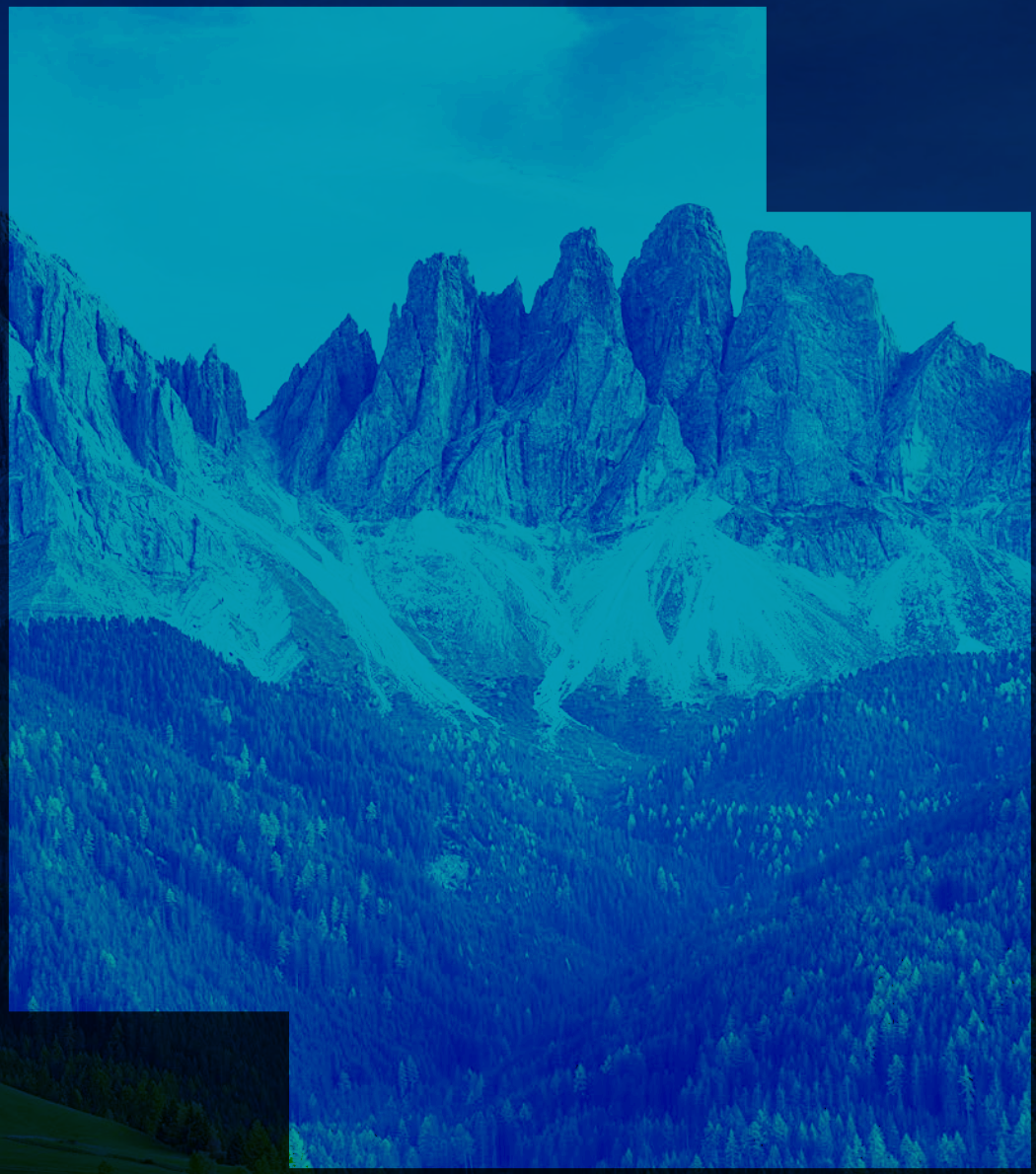
Heterogeneous environments especially make it all but impossible to look across these workloads and optimize for performance, efficiency, and cost. Worse, this lack of visibility makes it difficult to effectively plan ahead and prepare for capacity changes, product launches, or any other potential shifts in the landscape.

DATA INFRASTRUCTURE INSIGHTS GIVES YOU ALL THE TELEMETRY, ANALYTICS, AND INSIGHTS YOU NEED TO:

1. Understand what different storage teams need
2. Continuously balance workloads across your virtualized environment and eliminate waste
3. Increase efficiency and ROI through time and labor savings

THESE ARE 5 WAYS THAT DATA INFRASTRUCTURE INSIGHTS WILL HELP YOU SIMPLIFY YOUR VMWARE OPTIMIZATION

and gain a better view of both your current and future virtualized infrastructure.



1 ANALYZE WORKLOADS TO OPTIMIZE PERFORMANCE AND MAXIMIZE EFFICIENCY

Get the confidence you need to right-size your workloads and ensure proper balancing.

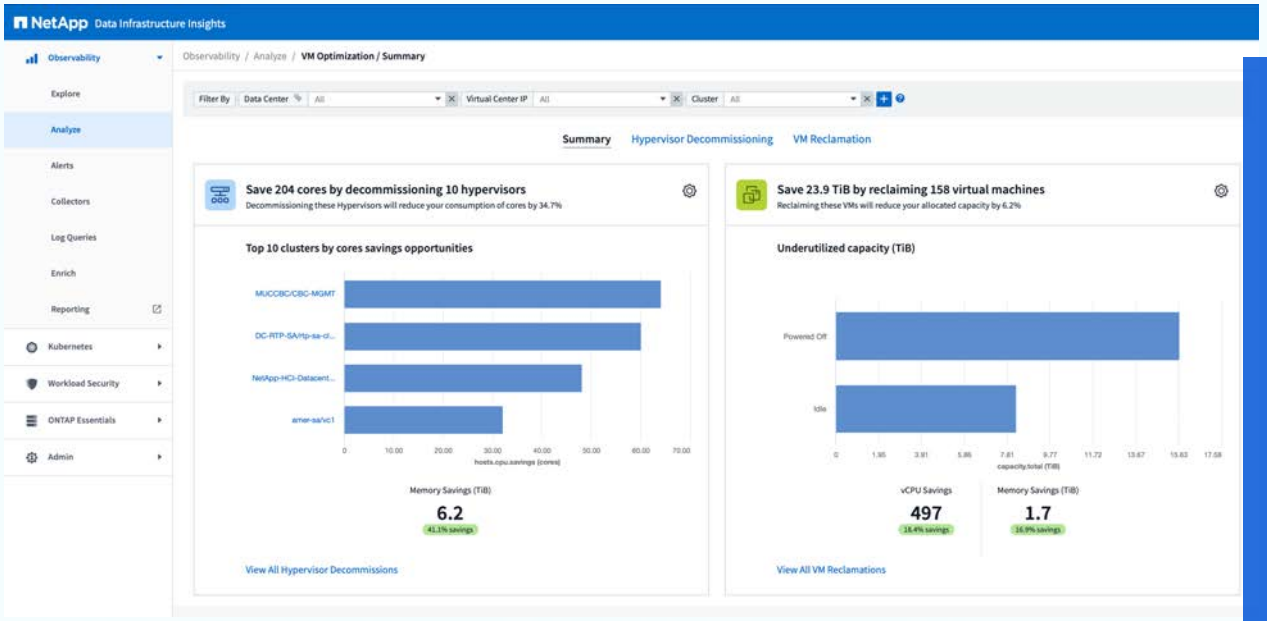
As IT leaders determine their strategy around the VMware licensing changes, the consensus first step is to optimize their current VMware deployment. This means ensuring your resources are properly utilized by identifying any overprovisioned VMs and storage.

Historically, however, the challenge of doing this has to do with a lack of visibility.

If you don't understand who is using your workloads and why, then it won't be easy reducing and shifting them around for optimal performance. In fact, it may not even be possible.

Data Infrastructure Insights solves this problem by providing a clear understanding of your data as well as automated guidance on what can be optimized and removed.

With the ability to analyze your infrastructure and map the relationships between your workloads and storage without any custom work required, the process of identifying overprovisioning is easy.



VMware License Optimization Summary
Data Infrastructure Insights looks through your vCenter estates and examines all the hosts to show you which are cost effective or not with the VMware optimization summary.

From this dashboard, you can drill down into any item to see historical utilization and set overhead thresholds as well as get a preview of outcomes of any right-sizing decisions you might make.

Doing this regularly will not only help improve performance but will also increase the density of available resources and ensure that none of them are going to waste. Plus, with more visibility into which workloads can be moved or downsized, you can proactively ensure they are properly balanced across your controllers.

This will **enhance system reliability, maximize throughput and responsiveness**, and **help optimize resources**. Crucially, it will also make it easier to adapt to evolving data needs and accommodate growth, laying a foundation for future scalability and modernization efforts, as well as delivering an improved user experience.

2 FACILITATE LONGER-TERM CAPACITY PLANNING

Uncover your future storage and compute needs in seconds.

Keeping your storage and virtualized workloads running at peak efficiency is just one part of ensuring optimal performance—the other is knowing what your capacity and compute needs will look like in the future.

While essential, doing this accurately can be a challenge, especially as your workloads grow more diverse and your storage needs become more complex. Because of this, many organizations must often allocate days just to compile the data to do this.

Data Infrastructure Insights reduces this task to seconds. With comprehensive visibility across your entire hybrid IT infrastructure, you can instantly learn what resources each team is using, how much storage or compute they are consuming, and what they're using it for.

With Data Infrastructure Insights, orphaned capacity no longer associated with VMs is automatically identified and automated guidance projects capacity risks—and all this data can be monitored from a single screen.Through both standard and customizable dashboard and reports, you can quickly uncover compute and storage issues, mitigate issues, and put in place plans for your future needs.

Virtual Disk Capacity (Zero IOPs over 30 days)

Select desired Storage Array

pStorage

VM	VMDK <<< DataStore	Type	Prov. Cap(GB)	Used Cap(GB)	IOPs	DataStore	Volume >>> DataStore	Storage
AIQUM	[NetApp] AIQUM/AIQUM_1.vmdk	VMDK	12	12	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
AIQUM	[NetApp] AIQUM/AIQUM_3.vmdk	VMDK	30	30	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
JumpHostMII	[Datastore03] JumpHostMII/JumpHostMII.vmdk	VMDK	40	0	0	Datastore03	SVM-POC:Datastore03:/vol/Datastore03/Datastore03	DEMOF2750
netapp-ontap-tools-for-vmware-vsphere-9.13-9554	[Datastore01] netapp-ontap-tools-for-vmware-vsphere-9.13-9554_1/netapp-ontap-tools-for-vmware-vsphere-9.13-9554_3.vmdk	VMDK	10	10	0	Datastore01	SVM-POC:Datastore01_vol:/vol/Datastore01_vol/Datastore01	DEMOF2750
netapp-ontap-tools-for-vmware-vsphere-9.13-9554	[Datastore01] netapp-ontap-tools-for-vmware-vsphere-9.13-9554_1/netapp-ontap-tools-for-vmware-vsphere-9.13-9554_1.vmdk	VMDK	8	8	0	Datastore01	SVM-POC:Datastore01_vol:/vol/Datastore01_vol/Datastore01	DEMOF2750
OTV1	[NetApp] OTV1/OTV1_1.vmdk	VMDK	8	1.1582	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
OTV1	[NetApp] OTV1/OTV1_3.vmdk	VMDK	10	0.7139	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
SCV1	[NetApp] SCV1/SCV1_3.vmdk	VMDK	10	0.1719	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
SCV1	[NetApp] SCV1/SCV1_2.vmdk	VMDK	20	1.4658	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
SCV1	[NetApp] SCV1/SCV1_1.vmdk	VMDK	8	1.3359	0	NetApp	svm1_cluster2:NetApp:/vol/NetApp/NetApp	cluster2
vCenter-7.0	[Datastore01] vCenter-7.0/vCenter-7.0_12.vmdk	VMDK	50	50	0	Datastore01	SVM-POC:Datastore01_vol:/vol/Datastore01_vol/Datastore01	DEMOF2750
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vCenter-7.0	[Datastore01] vCenter-7.0/vCenter-7.0_7.vmdk	VMDK	10	10	0	Datastore01	SVM-POC:Datastore01_vol:/vol/Datastore01_vol/Datastore01	DEMOF2750
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VMware vCenter Server	[vmdsfc02] VMware vCenter Server/VMware vCenter Server_14.vmdk	VMDK	25	0.5596	0	vmdsfc02	vmwareDSfc01:vmdsfc02:/vol/vmdsfc02/vmdsfc02	rtp-cilab-fas2750
VMware vCenter Server	[vmdsfc02] VMware vCenter Server/VMware vCenter Server_16.vmdk	VMDK	200	4.2432	0	vmdsfc02	vmwareDSfc01:vmdsfc02:/vol/vmdsfc02/vmdsfc02	rtp-cilab-fas2750
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VMware vCenter Server	[vmdsfc02] VMware vCenter Server/VMware vCenter Server_3.vmdk	VMDK	50	1.0732	0	vmdsfc02	vmwareDSfc01:vmdsfc02:/vol/vmdsfc02/vmdsfc02	rtp-cilab-fas2750
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VMware vCenter Server	[vmdsfc02] VMware vCenter Server/VMware vCenter Server_13.vmdk	VMDK	50	1.1143	0	vmdsfc02	vmwareDSfc01:vmdsfc02:/vol/vmdsfc02/vmdsfc02	rtp-cilab-fas2750

Report on orphaned VMs
Data Infrastructure Insights offers reporting capabilities that can identify orphaned VMs by compiling a list of virtual machines that are no longer actively used.

Not only is this much faster and more accurate than traditional methods (which for many companies still involve compiling data in spreadsheets), but it can also help reduce long-term risk and costs by preventing unneeded purchases.

This is what one of our customers—a well-known global technology manufacturer—was able to accomplish.

After implementing Data Infrastructure Insights and simplifying their storage monitoring, they no longer had to rely on separate teams to monitor each storage system.

Instead, they could conduct workload analysis and capacity planning in just seconds, saving them hours of work and millions in investments along the way.[1]

1: SOURCE: Leading hi-tech manufacturer streamlines storage management with Data Infrastrucutre Insights

3 DRIVE DATA CENTER MODERNIZATION AND MIGRATION

Get guided insights to improve workload performance and maximize ROI across your infrastructure.

There are many reasons for data center modernizations:

Creating an enhanced user experience

Seeking out opportunities for cost reduction

Gaining the ability to respond faster to marketplace needs

Integrating new technologies to get a competitive advantage

There's also the need to respond to major technology shifts, such as the Broadcom acquisition of VMware.

That said, migrating workloads can often feel like walking through a minefield. You must carefully plan out your path well beforehand, then tread lightly as you move ahead.

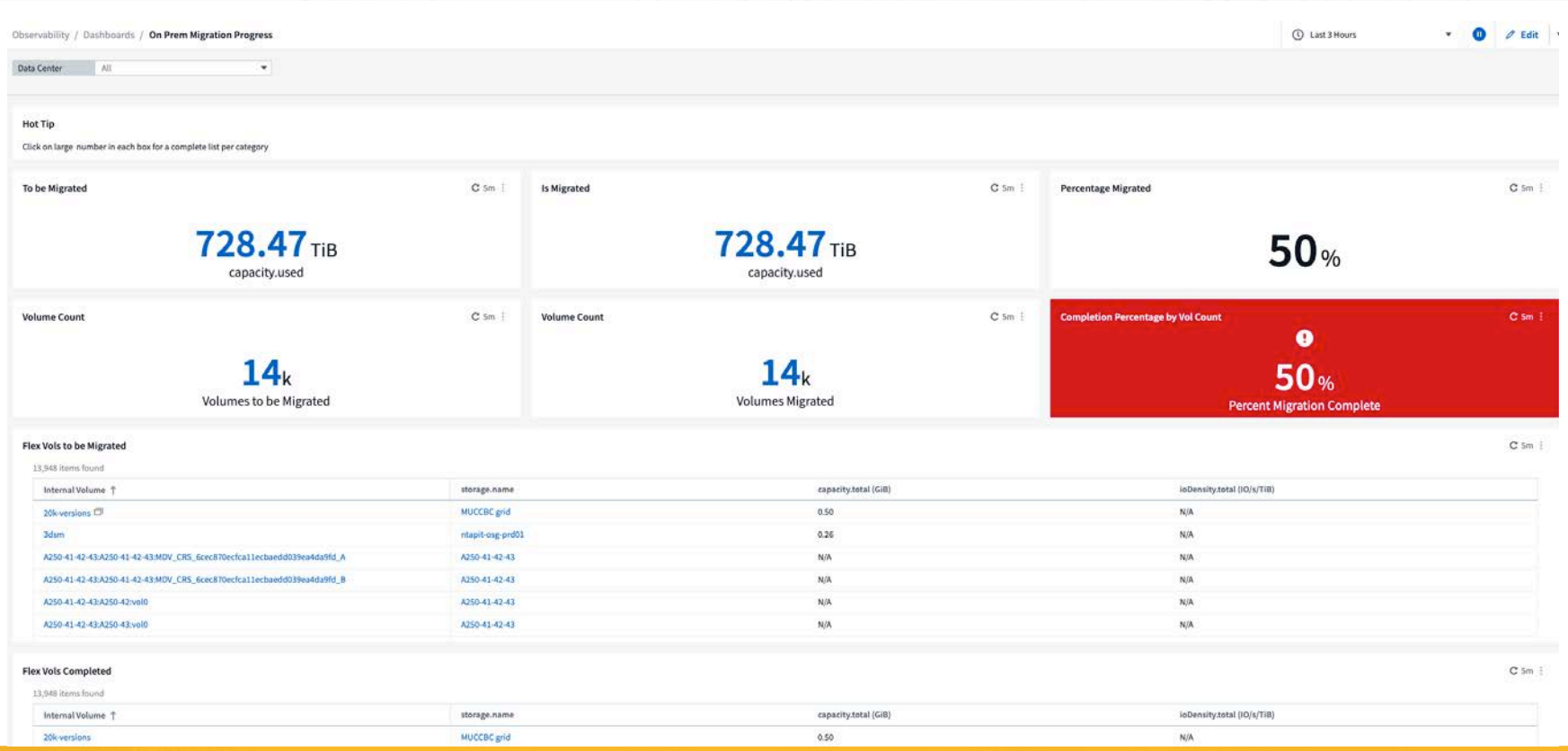
Any errors can drastically slow down your progress and risk upsetting the users who count on your data and applications being available.

Despite these challenges, migrating workloads out of legacy data centers and moving them over to more efficient environments is essential to modernizing your infrastructure.

Data Infrastructure Insights plays a key role in accelerating and facilitating a seamless workload migration and modernization process.

This begins with the ability to assess the VMs, storage volumes and other applications. Use that information to architect the proper infrastructure at your target destination, making it simple to identify the ideal resources for your migration. You can easily identify over- and under-provisioned resources prior to migration to ensure they're the optimal size. Identifying waste is critical in this stage to make sure that waste is not migrated.

During the actual migration, Data Infrastructure Insights has multiple features to help make this process simple, such as: **the ability to annotate and prioritize applications**, **automatically monitor every aspect of the migration**, and **set up alerts** to ensure every critical application is meeting your SLAs.



Migration Dashboard
This image show a migration dashboard, providing visibility into the progress of a migration.

Users can track the status of migrating workloads, identify potential issues, and monitor performance metrics throughout the migration process.

Afterwards, you can continue using Data Infrastructure Insights to help modernize your applications, like utilizing its Kubernetes tools or by using metadata to enable reporting at varying levels.

All these capabilities will help you maximize your ROI across your new infrastructure and drive continuous optimization post-migration.

4 OPTIMIZE EXISTING SPEND AND SAVE TIME

Reduce costs from performance bottlenecks by quickly troubleshooting with ease.

Wasted space, idle resources, and other inefficiencies can eat up much of your budget if you don't closely monitor and control them.

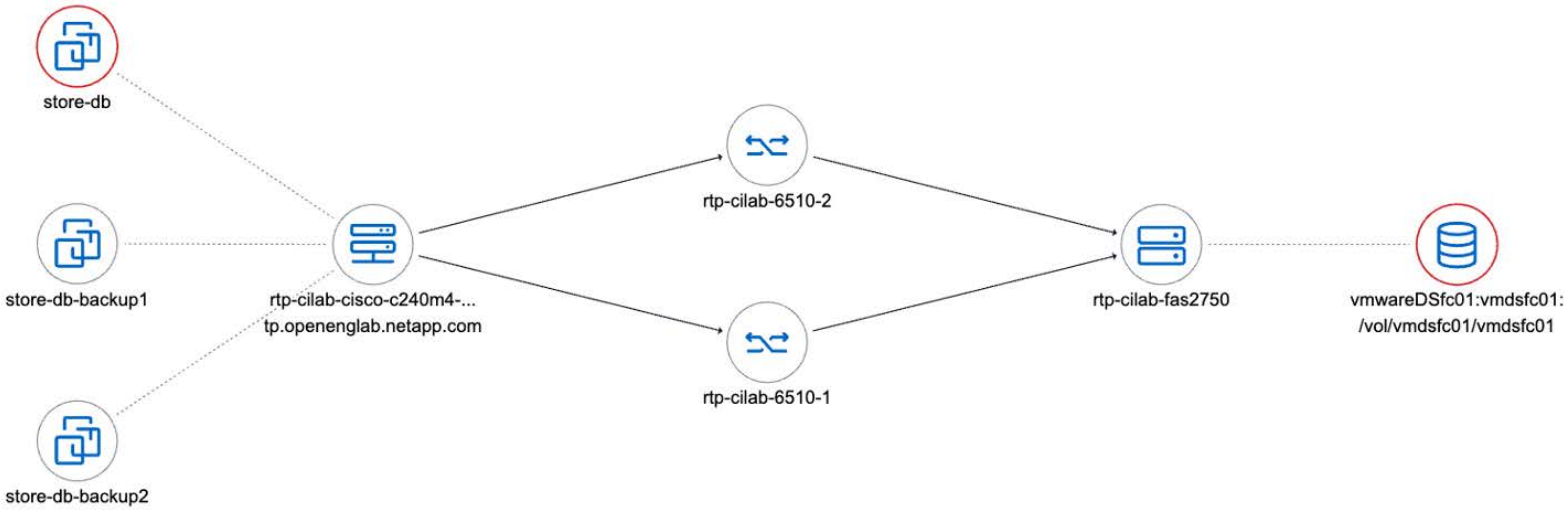
So will dealing with under provisioned workloads and their consequences.

The problem is that taking care of both can be incredibly time-consuming. Not only will it involve a lot of data mining, but your storage admins will likely have to jump from tool to tool as they check to see what is being used. And the bigger your environment is, the harder all this will be.

But that doesn't have to be the case. By giving you more visibility into every aspect of your infrastructure, Data Infrastructure Insights enables you to gain more control over your costs by quickly assessing your virtualization and storage needs so you can identify what needs more resources and where there's availability.

Here's how Data Infrastructure Insights does this in 3 steps:

1. It collects, normalizes, and correlates all your data
2. Then it provides automatic topology views on your dashboard
3. With this info, you can start reallocating data storage as needed



VM to LUN Topology
This VM-to-LUN topology shows all infrastructure resources in the data path for an application from the associated VMs back to the associated storage.
Here, from left to right, you see three VMs, the hypervisor, SAN switches, storage, and back-end storage unit.

AI powered capabilities can not only help

reduce your troubleshooting time by up to 90%,

but can also make your day-to-day resource management more effective.[2]

You'll be able to make informed decisions to proactively reduce waste and shift resources to maximize utilization across your different environments, ensuring your future costs stay low and your storage needs remain properly allocated.

2: NetApp Cloud Insights: A GigaOm benchmark report

5 REDUCE RISK

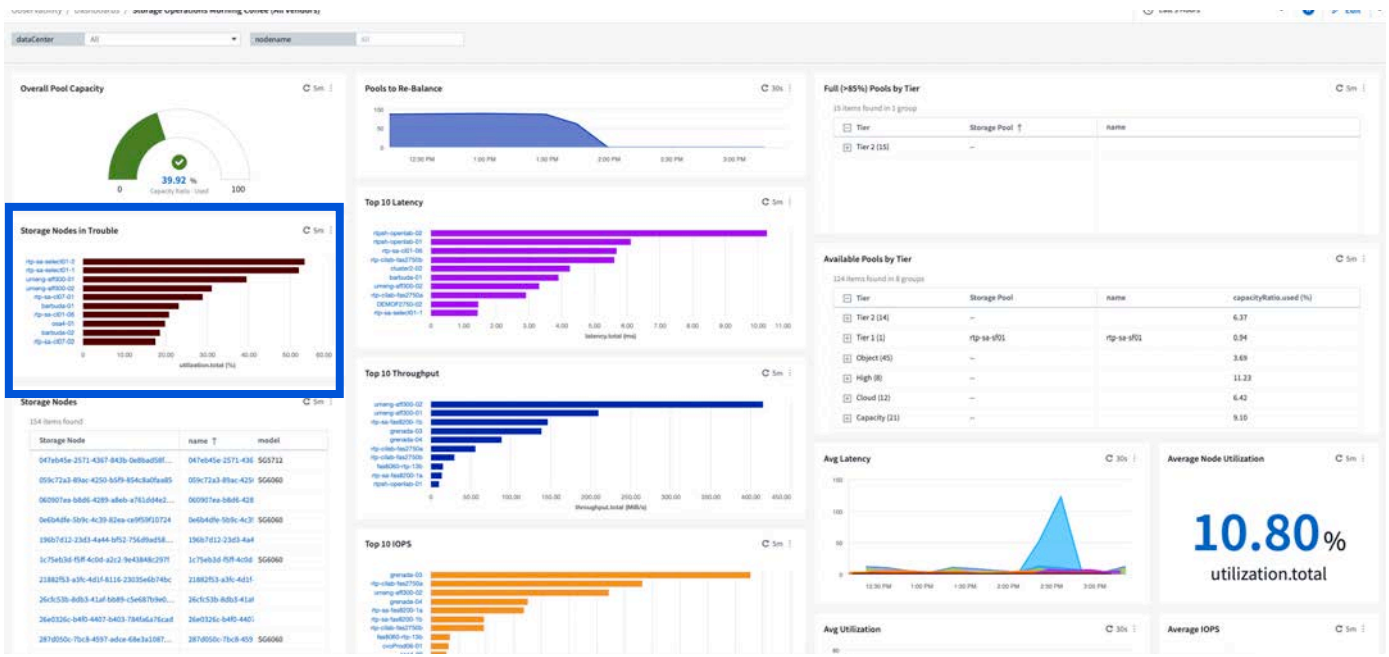
Identify and mitigate threats to create a more resilient and scalable storage environment.

When it comes to storage and workload management, every optimization, reclamation, and redesign can come with risks.

Large-scale data migration projects can strain storage capacity—and so can the rapid provisioning of VMs.

Without proper oversight during tasks like this, you run the risk of hitting a threshold or having to deny storage capacity requests from an application owner who needs it. This can quickly affect performance, introduce a risk of downtime, and increase costs.

By providing you with the insights you need to make data-driven decisions, Data Infrastructure Insights gives you the visibility to avoid risk and properly manage your organization's storage and virtualization needs.



Morning Coffee Dashboard
Data Infrastructure Insights allows users to customize dashboards that provide a high-level overview of critical infrastructure metrics.

This allows for rapid identification of potential issues or areas needing immediate attention, such as the “Storage Nodes in Trouble” module highlighted on this dashboard.

Dashboards help you understand how everything in your environment is mapped together. They show what your performance looks like on top of this infrastructure and what your costs will be. You get a 360-degree view that allows you to know who’s doing what, where, and how so that you know when something will break before it actually does.

CONCLUSION

No one knows what the next five years will bring for storage and workload management now that VMware is owned by Broadcom.

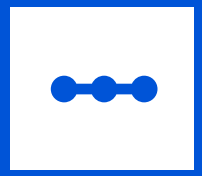
IT'S TIME TO PREPARE FOR WHATEVER MAY COME.

VMware could remain the dominate player in the market, or maybe a new competitor will take its place; perhaps Kubernetes will gain wider adoption. AI is also poised to become a significant disruptor in ways experts still can't predict.

THIS IS WHY NETAPP DATA INFRASTRUCTURE INSIGHTS CAN MAKE SUCH A DIFFERENCE:

Easily uncover how your workloads are getting used and the best opportunities for optimization

Make your migrations seamless while turning risk reduction into a more effective process



Increase efficiency and scalability as you keep up with the evolving needs of your business

As a SaaS offering, receive continuous updates and new features from the NetApp team


THERE'S NO GOING BACK
TO THE WAY WE OPERATED
WITH VMWARE
... but that doesn't mean we have to be unprepared
for the future.

Ready to discover how Data Infrastructure Insights can transform your infrastructure and give you unprecedented observability?

Request a demo and let's chat about your current and future VMware plans.

NO MATTER WHAT ROAD YOU END UP ON,

NetApp Data Infrastructure Insights

WILL SUPPORT YOU AND HELP YOU THRIVE.

Find out more at netapp.com/DII

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NetApp is the intelligent data infrastructure company, combining unified data storage, integrated data services, and CloudOps solutions to turn a world of disruption into opportunity for every customer. NetApp creates silo-free infrastructure, harnessing observability and AI to enable the industry's best data management. As the only enterprise-grade storage service natively embedded in the world's biggest clouds, our data storage delivers seamless flexibility. In addition, our data services create a data advantage through superior cyber resilience, governance, and application agility. Our CloudOps solutions provide continuous optimization of performance and efficiency through observability and AI. No matter the data type, workload, or environment, with NetApp you can transform your data infrastructure to realize your business possibilities. www.netapp.com

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