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Quantifying the Value of Intelligent Data Management

Executive Summary

Managing Data Growth within Flat Budgets is a Challenge
Data is growing fast – nearly 90% of the world's data was created in the last two years and enterprise data is doubling every two years. The challenge is how to manage all of this data, while keeping within flat budgets. How can you leverage cost-efficient secondary storage, such as cloud and object storage, without disrupting users or applications?

How to Quantify and Track the ROI of Managing Cold Data Efficiently
Over 60-90% of data is cold and infrequently accessed within months of creation. Yet, this cold data is often stored and managed in the exact same way as hot or active data—which is highly ineffient and costing organizations millions.

Organizations across industries are leveraging Komprise to cut 50%+ of the overall storage costs, and 70%+ of cold data costs by:

- Identifying hot and cold data across NAS—NFS, SMB/CIFS, and Lustre

- Providing interactive ROI analysis of how much an organization saves, based on different data management policies

- Transparently archiving cold data to cost-efficient secondary storage such as cloud or object storage

- Delivering transparent access to archived data from the source, so there is no disruption to users or applications

- Lowering DR costs and shrinking backups; providing a cost-efficient DR solution and eliminating cold data from the active backup footprint

- Scaling on-demand to handle massive data growth via a seamless, scale-out architecture that simply adds virtual appliances as the amount of data grows—without any dedicated infrastructure

- Providing an adaptive architecture that throttles back as needed to run in the background, without impacting storage or network performance

Business Value Highlights

Average Savings on Cold Data:

88%

Three-Year Overall Savings:

57%

Three-Year Overall Savings:

$10.4M

Payback Period:

Immediate

Based on 4PB Average NAS Environment
With 60% Cold Data

Situation Overview

Organizations are drowning in data. Over 60-90% of data is cold and infrequently accessed within months of creation. Managing this data the same way as active or hot data becomes inefficient and untenable.

Since 80% of the cost of data is in its management, efficiently identifying and managing cold data yields significant savings. But in most organizations, both hot and cold data are being stored, replicated, and backed-up exactly where users put it—on expensive Tier 1 storage.

IT organizations want to be as effecent as possible with their storage spend, especially given flat or shrinking budgets, but are struggling. Identifying and managing cold data, without changing user and application access, has not been easy... until now.

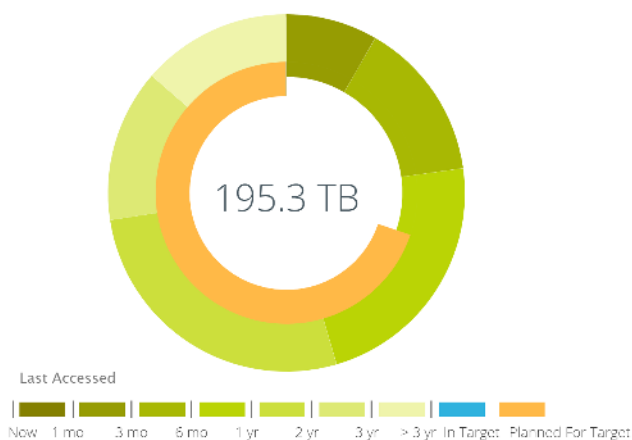## Intelligent Analytics-driven Data Management with Komprise

Interactive ROI Visualization
Komprise shows hot/cold data across your storage. As you set policies on when to archive and copy data, Komprise interactively projects:
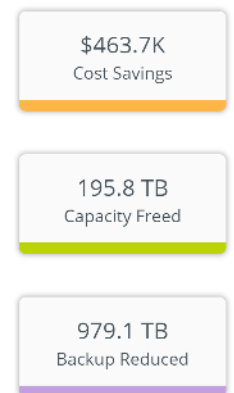
• How the data footprint at the source will change based on the chosen objectives

• The cost impact of the policy

• The projected Return-on-Investment (ROI)

This provides a no-risk way to plan capacity and the most effective data management approach before actually moving any data.

> "
> Komprise shows the zombie data and the millions we can save— visibility we never had before.
> "
>
> **VP Global Storage**
> **Fortune 50 Financial Services**

Figure 1: Komprise Analytics of Data Usage

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Analytics-Driven

Komprise enables businesses to manage their data intelligently by identifying inactive data across a customer's storage and transparently moving infrequently accessed data to cost-efficient options, such as cloud or object storage—all without any changes to user or application access. This cuts over 70% of cold data storage costs and solves the business challenge of managing data growth within flat budgets.

Move Data with No Changes to User and Application Access

Komprise moves data transparently—without using any proprietary agents or static links on the storage systems (mechanisms that have caused problems traditionally). There is no change to manage for users and applications—they continue to see and access the data as they did before.

Simple to operate service that Adapts to your environment and scales on-demand

Komprise uses an easy-to-deploy, scaleable, distributed architecture that consists of one or more Komprise Observer virtual appliances, running at the customer site. Observers are connected to the Komprise Director that can run either as a cloud service or on-premise. Komprise works seamlessly, across any on-premise NFS, SMB/CIFS, Lustre, and object/cloud storage. Komprise partners include: NetApp, EMC, IBM, Amazon Web Services, Google Cloud Storage, Quantum, Spectra Logic, and Scality.

No Stubs, No Agents, No Changes to Hot Data or Meta-data paths, No Disruption

The Komprise architecture raises the bar on simplicity and efficiency, with several unique innovations:

- Distributed virtual global namespace—without getting in front of all the meta-data
- Transparent file access —without stubs or static pointers
- Native data access to data on target—without any storage lock-in
- Seamless scale-out—without any central databases or bottlenecks
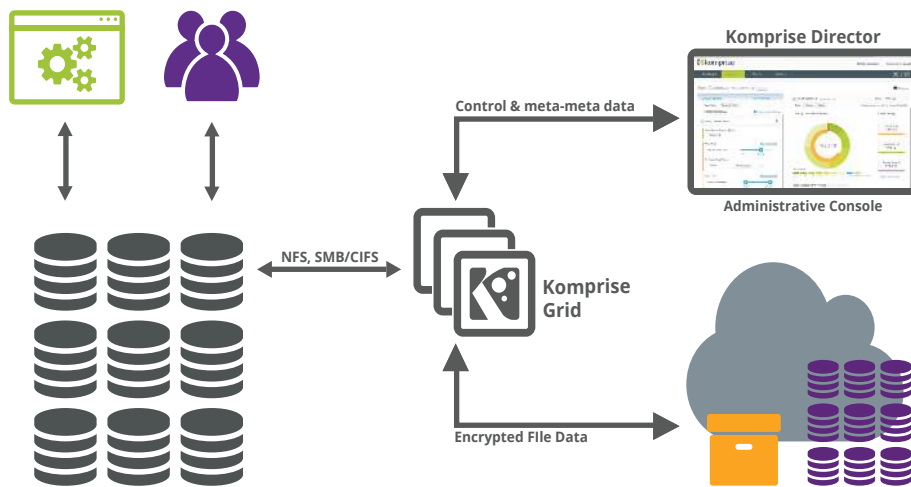- Adaptive architecture—without burdensome management

> ❝
> We see immense benefits of using Komprise as it provides a ubiquitous layer across storage to analyze, manage and migrate data based on its SLA, and not where users put it
> ❞
>
> **Jay Smestad**
> **Senior Director Infrastructure Architecture**
> **Pacific Biosciences**

Figure 2: Komprise Architecture Overview

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Komprise Business Value

Customer Demographics

The TCO shown is a culled aggregation of data from 10 organizations using Komprise to manage data across NAS, object storage, and cloud.

The customer profiles are as shown in the table right. The data footprint in the organizations varied from 100 terabytes of NAS data to 10 petabytes of NAS data.

Typical NAS storage used were NetApp, EMC Isilon, and Windows File Servers.

Variable	Average	Min	Max
Employees	10584	75	120,000
NAS Footprint	5 PB	100 TB	10 PB
Percent Cold Data (Not accessed in over 1 year)	60%	50%	85%
Annual Data Growth	30%	20%	102%
NAS Storage	NetApp 7, NetApp CDOT (8), EMC Isilon, EMC VNX, Windows File Servers, HDS		
Secondary Storage	AWS S3, Google Cloud Storage, Microsoft Azure, Oracle Cloud, EMC ECS, IBM Cloud Object Storage, Spectra Logic Verde, Spectra Logic Black Pearl, NetApp E-Series		
Use Cases	Transparently Archive Cold Data by Policy Put a DR copy of data in the cloud		
Verticals	Semiconductor, Engineering, Genomics, Healthcare, Financial Services, Insurance, High-Tech, Manufacturing, Gaming, Government, Media & Entertainment		

Figure 3: Demographics of Organizations Used in TCO Analysis

Financial Benefits & Savings

Organizations using Komprise report lower storage costs, lower disaster recovery costs, smaller backup footprint, and lowered backup costs, as well as improved performance of the Tier 1 storage and increased visibility.

Cost Metrics

- **Cost of Cold Data Storage:** By identifying and transparently archiving cold data on secondary storage, Komprise reduces the cost of storing cold data

- **Cost of Mirror/Replication/DR:** Most organizations mirror all the NAS data on identical infrastructure at a second site for disaster recovery and protection from hardware failure. Komprise reduces DR/mirror costs in two ways:

  1. When Komprise moves cold data from the NAS, that footprint is no longer mirrored, thus eliminating the mirror costs of cold data. Since the cold data is typically moved to resilient storage that maintain multiple copies, the data is still recoverable in the case of a disaster.

  2. Komprise also provides a copy functionality to put a low cost DR copy of data in a secondary storage solution of the customer's choice. This is used to reduce the DR cost of active hot data—so instead of using an identical mirror of NAS storage that doubles the costs, the mirror/DR costs can be cut by over 70% by using Komprise.

- **Cost of Backups:** Backups are getting more expensive, backup windows are getting longer, and backups are hard to manage due to of the sheer volume of unstructured data. By moving cold data out of the actively managed footprint, Komprise shrinks the bulk of the backup footprint. This makes backups run faster, reduces backup licensing, and reduces storage costs.

Variable	Average	Min	Max
Cost of NAS Storage (3YR Cost, Raw/TB)	$900/TB	$600/TB	$1,450/TB
% of NAS Data is Mirrored/Replicated	95%	50%	100%
Backup Cost/TB	$750/TB	$300/TB	$1,300/TB
Cost of Secondary Storage (3YR Cost/TB)	$300/TB	$144/TB	$420/TB

Figure 4: Cost Metrics of the TCO Analysis – All costs are over a 3 year period per TB

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Cost Savings Analysis

Based on the average costs from the cost metrics above, on a 4PB NAS environment with a 30% year-over-year growth rate, Komprise saves customers an average 57% of overall storage costs and over $2.6M+ annually.
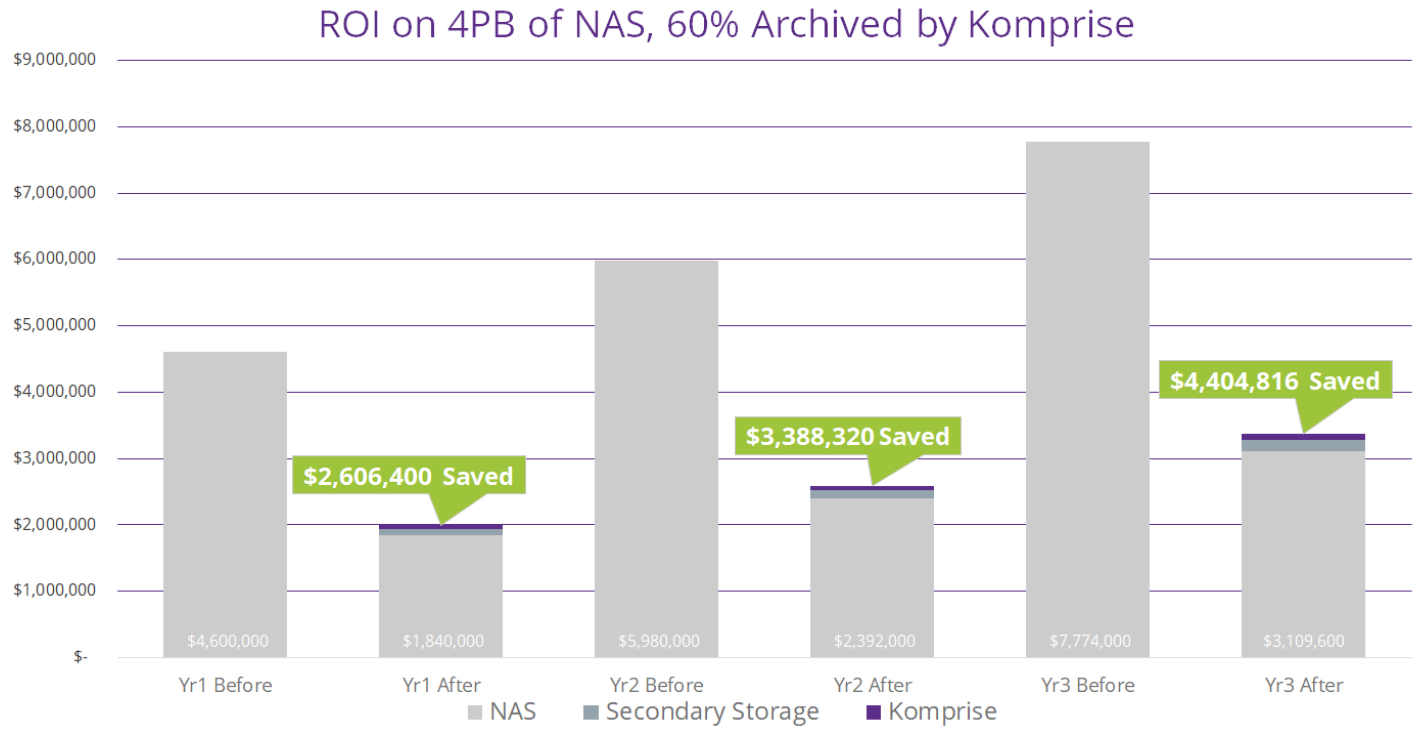
ROI on 4PB of NAS, 60% Archived by Komprise

Figure 5: ROI on 4PB of NAS, 50% Archived by Komprise

Costs	Yearly Before	Year 1 After	Year 2 After	Year 3 After	3 Year Overall
Amount Of Data On NAS (TB)	4000	1600	2080	2704	
Replication/Mirror Footprint (TB)	3,800	1520	1976	2568.8	
Cost Of NAS (Per GB/Month)	$0.04	$0.04	$0.04	$0.04	
Cost Of Secondary Storage (3Yr Cost/TB)	$750/TB	$300/TB	$1,300/TB		
Backup Cost (Per GB/Month)	$0.02	$0.02	$0.02	$0.02	
Annual Cost Of NAS Data	$4,600,000	$1,840,000	$2,392,000	$3,109,600	$8,832,000
Amount Of Cold Data Moved By Komprise		960	1248	1622.4	
Cost Of Secondary Storage (Per GB/Month)		$0.01	$0.01	$0.01	
Komprise Cost (Per GB/Month)		$0.005	$0.005	$0.005	
Annual Cost Of Cold Data		$153,600	$199,680	$259,584	$353,280
Total Costs W/Proposed Solution:		$1,993,600	$2,591,680	$3,369,184	$4,585,280
Overall Savings		$2,606,400	$3,388,320	$4,404,816	$10,399,536
				Cold Data % Savings	88%
				Overall % Savings	57%

Figure 6: Detailed Cost Savings Breakdown

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Additional Benefits

In addition to the operational savings, customers report several benefits of using Komprise.

Plan Future Storage Purchase with Insight and Visibility
Komprise provides much-needed visibility into how data is growing and being used across a customer's storage environment. IT no longer has to make critical storage capacity planning decisions in the dark and now can understand how much more storage will be needed, when, and how to streamline purchases during planning.

Optimize Storage, Backup and DR Footprint
Komprise reduces the amount of data stored on Tier 1 NAS, as well as the amount of actively managed data—so customers can shrink backups, reduce backup licensing costs, and reduce DR costs.

Reduced Datacenter Footprint
Komprise moves and copies data to secondary storage to help reduce on-premise data center costs, based on customizable policies.

Risk Mitigation
Since Komprise works across storage vendors and technologies to provide native access without lock-in, organizations reduce the risk of reliance on any one storage vendor.

Summary

Organizations require visibility across storage and intelligent data management to efficiently handle the pace of data growth.

Komprise provides a simple to adopt, scalable, storage-agnostic, ROI-driven, non-intrusive solution. Komprise deploys in minutes and works in the background to optimize storage and data management spend—without any changes to user or application access.
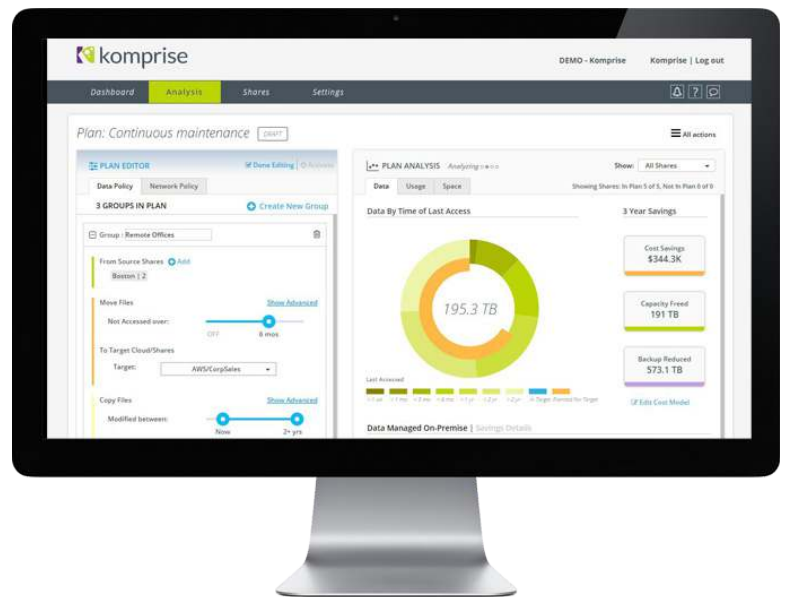
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