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STORAGE

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THE VALUE OF SOFTWARE-DEFINED STORAGE

SOLUTION OVERVIEW

THE VALUE OF SOFTWARE-DEFINED STORAGE

IT departments are struggling under exponential data growth, which is driving unexpected capacity demands and exceeding budgets. Traditional storage appliances are too cumbersome, rigid, and expensive to handle this massive data growth. As a result, companies are moving from traditional, appliance-based storage to software-defined storage. Demand for appliance-based storage is expected to halve by 2021,[1] while software-defined storage is growing 36.7% year over year.[2] This shift is largely driven by the significant cost benefits of software-defined storage.

THE STORAGE LIFE CYCLE

To see the major difference in total cost of ownership (TCO), IT leaders need only to compare the storage life cycle. For traditional storage, an organization purchases an appliance, which includes both the hardware and the software. Then, support costs appreciate rapidly until a new appliance is purchased. This model has two major inefficiencies:

- Bundling software and hardware enables traditional vendors to force their customers to repurchase the software every life cycle. Given that software (red in the accompanying figure) typically costs between 60 and 70% of the initial purchase, for a $100,000 initial purchase this can quickly add a $60,000 to $70,000 tax to every storage life cycle.[3]
- The traditional vendor rapidly appreciates support costs to shorten the repurchase lifecycle. Because vendors make most of their profits and margins through software repurchases, halving the repurchase life cycle doubles the business.

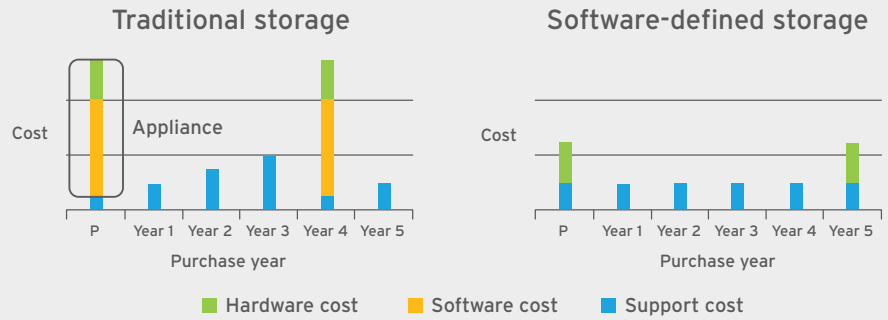

Figure 1. Traditional cost of ownership vs. software-defined storage cost of ownership

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1 *Tanner, Paige. "Enterprise Storage Moves to Software-Defined Storage." Market Realist. 2015. http://marketrealist.com/2015/09/enterprise-storage-moves-software-defined-storage/*

2 *MarketsandMarkets. "Software-Defined Storage Market Worth 22.56 Billion USD by 2021. 2016. http://www.prnewswire.com/news-releases/software-defined-storage-market-worth-2256-billion-usd-by-2021-589991581.html*

3 *Range for gross hardware margin for EMC and NetApp CY 2011-2016*

By decoupling software from hardware, software-defined storage removes these inefficiencies from the life cycle. There are no software repurchases because licenses span generations of hardware. (Red Hat® subscriptions are all-inclusive.) Also, support costs don't increase because the vendor's software repurchase incentive is removed.

NO HARDWARE VENDOR LOCK-IN

In addition to changing the storage life cycle, the transition from appliance-based storage to software-defined storage eliminates hardware vendor lock-in. With software-defined storage, IT organizations can choose any set of enterprise-grade hardware, and they are free to switch hardware vendors or media as prices and requirements change. For example, consider a 50 terabyte (TB) environment that grows 50TB per year over four years for a total of 250TB. Assume a $1 per gigabyte (GB) initial hardware cost.

In a traditional storage environment, all 250TB of capacity would be purchased initially at $1 per GB, as that is when negotiating leverage is greatest. The total cost would be $250K or $50K "depreciated" per year over five years total (four years plus the first, starting year). Capacity would be filled over the latter four years.

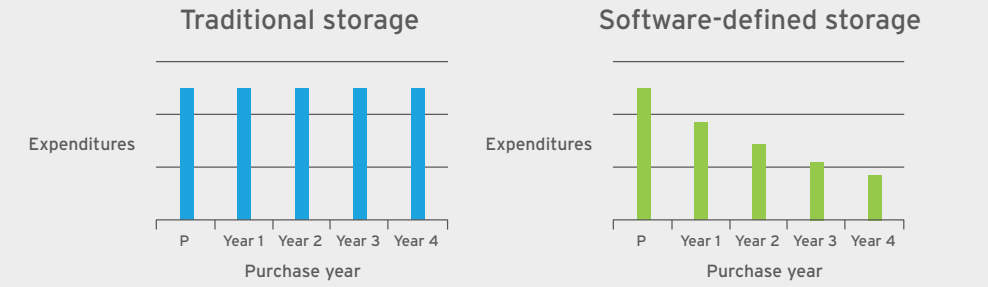


Figure 2. Traditional storage hardware expenditures vs. software-defined storage hardware expenditures

In the software-defined storage model, hardware is only purchased as needed for capacity. Given that hardware and media costs are rapidly declining—server hardware is decreasing 18.9% year over year[4] and solid-state drive (SSD) prices are decreasing 33% year over year[5]—the software-defined storage model saves approximately $95,000, or 37.8%, on hardware costs.

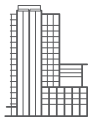
4 *Singularity.com. 2016. CPU decline - http://www.singularity.com/charts/page62.html*
Singularity.com. 2016. RAM decline - http://www.singularity.com/charts/page58.html
Assumed 20% cost is due to CPU, 30% is DRAM, 50% other non-declining components

5 *Newman, Jared. "Plummeting SSD Prices Are Quickly Closing in on Traditional Hard Drives. 2015. http://www.pcworld.com/article/3011199/storage/plummeting-ssd-prices-are-quickly-closing-in-on-traditional-hard-drives.html*

Through software-defined storage, customers typically experience greater than the 37.8% hardware savings for two main reasons:

- When purchasing in increments, environmental costs are approximately half because there is less hardware to support.
- Most datacenters experience exponential rather than linear growth, thereby magnifying the largest cost savings that occur in years three and four.

Software-defined storage solves the problem of massive data growth for IT departments running on ever-tightening budgets by obsoleting software repurchases, mitigating rapidly appreciating support, and removing the hardware vendor lock-in associated with traditional appliances. Contact your Red Hat sales representative to learn more about the value software-defined storage can bring to your datacenter.



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Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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