

Hybrid Hyperconverged Systems Benefit Growing Storage and Retention Needs

REVOLV
SECURITY BECOMES IT READY



Executive Summary

The security professional has been coping for years with the demand for increased retention times and larger storage systems. Storage of video data has always been the stock of trade for security, but the use case of this data has become ever more real-time in requirement as opposed to forensic. However, this increased demand has not seen an increased understanding of the requirements of storing today's video data nor an acceptance of the effect of this data on a network used to significantly less ingest and overall review. This white paper discusses how the adoption of hybrid hyperconverged infrastructure by security departments can scale storage with ease, while simultaneously providing better compute access for the user of this data and a more seamless workflow for IT.

About BCD

BCD is a global video data infrastructure manufacturer comprised of three divisions: BCDVideo, Video Storage Solutions (VSS), and BCDOEM.

The company was originally established in 1999 as Burgess Computer Decisions, an IT technology solutions provider specializing in designing high-availability servers for multi-national Fortune 500 companies. Our customer-first approach and white-glove service have allowed us to build a global footprint throughout the security community, with more than 150,000 systems currently recording over three million cameras in 90 countries. Our reputation for customer service, logistics, and system performance is literally 40 years in the making.

More importantly, we are not just another technology solutions provider. We are a positive market disruptor. We identify problems and needs in the security industry and then address them with innovative and purpose-built solutions that are guaranteed and backed by lifetime technical support. We seek to maximize return on investment (ROI) and reduce the complexities of video data infrastructure for our customers, whether they are security integrators, distributors, or partners through our OEM division.

Surveillance Data Growth

The installation and use of IP video cameras has continued to grow exponentially.

As recently as 2017, IP cameras had around 1 zettabyte of data. This is expected to grow to 175 zettabytes or more by 2025.



David Reinsel, John Gantz and John Rydning, "Data Age 2025: The Digitization of the World from Edge to Core," IDC, published November 2018, accessed September 4, 2019, <https://www.seagate.com/files/www-content/our-story/trends/files/idc-seagate-dataage-whitepaper.pdf>

Michael Kanellos, "152,000 Smart Devices Every Minute In 2025: IDC Outlines The Future of Smart Things," Forbes, published March 3, 2016, accessed September 4, 2019, <https://www.forbes.com/sites/michaelkanellos/2016/03/03/152000-smart-devices-every-minute-in-2025-idc-outlines-the-futureof-smart-things/#27a910d34b63>

Storage in the hHCI Era

Today we are retaining more video data than ever. According to App Developer, more overall data was created in 2016 and 2017 alone than in the previous 5,000 years of human history combined.¹ Yet according to reporting in MIT Technology Review, only about 0.5 percent of this is ever analyzed.² According to IDC, worldwide businesses spent \$189.1 billion on big data and business analytics solutions in 2019, an increase of 12.0 percent over 2018.³ A survey of executives at large organizations conducted by IDC at the end of 2014 revealed that 70 percent were already purchasing big data from outside sources and 100 planned to be doing so by 2019.⁴ Meanwhile, a survey of 616 marketing and advertising professionals conducted by Warc in October 2017 found nearly six in 10 (59 percent) said big data will be an important area for their business, as did 55 percent of brands.⁵ The Strategy & Unit at PriceWaterhouseCoopers estimates the value of commercialized data in the financial sector alone was worth \$300 billion in 2018.⁶

Commonplace examples of the use of big data in business today include:

- Toyota selling GPS navigation information (speed and position) to municipal planning departments and corporate delivery fleets at a starting price of \$2,000 per month.⁷
- Cargill has developed a data analysis tool called “NextField Data RX” that applies data from input variables like soil moisture content, seed type, and temperature fluctuations to create personalized recommendations for farmers who wish to increase crop yield.⁸
- Starbucks collects data from 25,000 stores to provide customers with personalized product recommendations and targeted marketing as well as to inform overall marketing, sales and business decisions.⁹

Video Surveillance is a Part of the Power of Big Data

According to survey of senior executives at large corporations, virtually all big companies (97 percent) have invested in data analytics, and global spending on big data analytics is expected to grow from \$166 billion in 2018 to \$260 billion in 2022, a compound annual growth rate (CAGR) of 11.9 percent.¹⁰

1. Harris, Richard. “More data will be created in 2017 than the previous 5,000 years of humanity.” App Developer. December 23, 2016. Available through: <https://appdeveloperomagazine.com>

2. Regalado, Angelo. “The Data Made Me Do It: The next frontier for big data is the individual.” MIT Technology Review. May 3, 2013. Available through: www.technologyreview.com

3. IDC. Worldwide Semiannual Big Data and Analytics Spending Guide. August 2018. Available through: www.idc.com

4. IDC. Press Release: “IDC Reveals Worldwide Big Data and Analytics Predictions for 2015.” BusinessWire.com. December 11, 2014. Available through: www.businesswire.com

5. Katz, Rimma. Big Data Is a Big Priority for Brands and Agencies: Study shows more than half believe it will power their digital transformation efforts in 2018.” eMarketer Pro. December 20, 2017. Available through: <https://content-na2.emarketer.com> (paywall)

6. Short, James E. and Todd, Steve. “What’s Your Data Worth?” MIT Sloan Management Review. Spring 2017. Available through: <http://ilp.mit.edu/media>

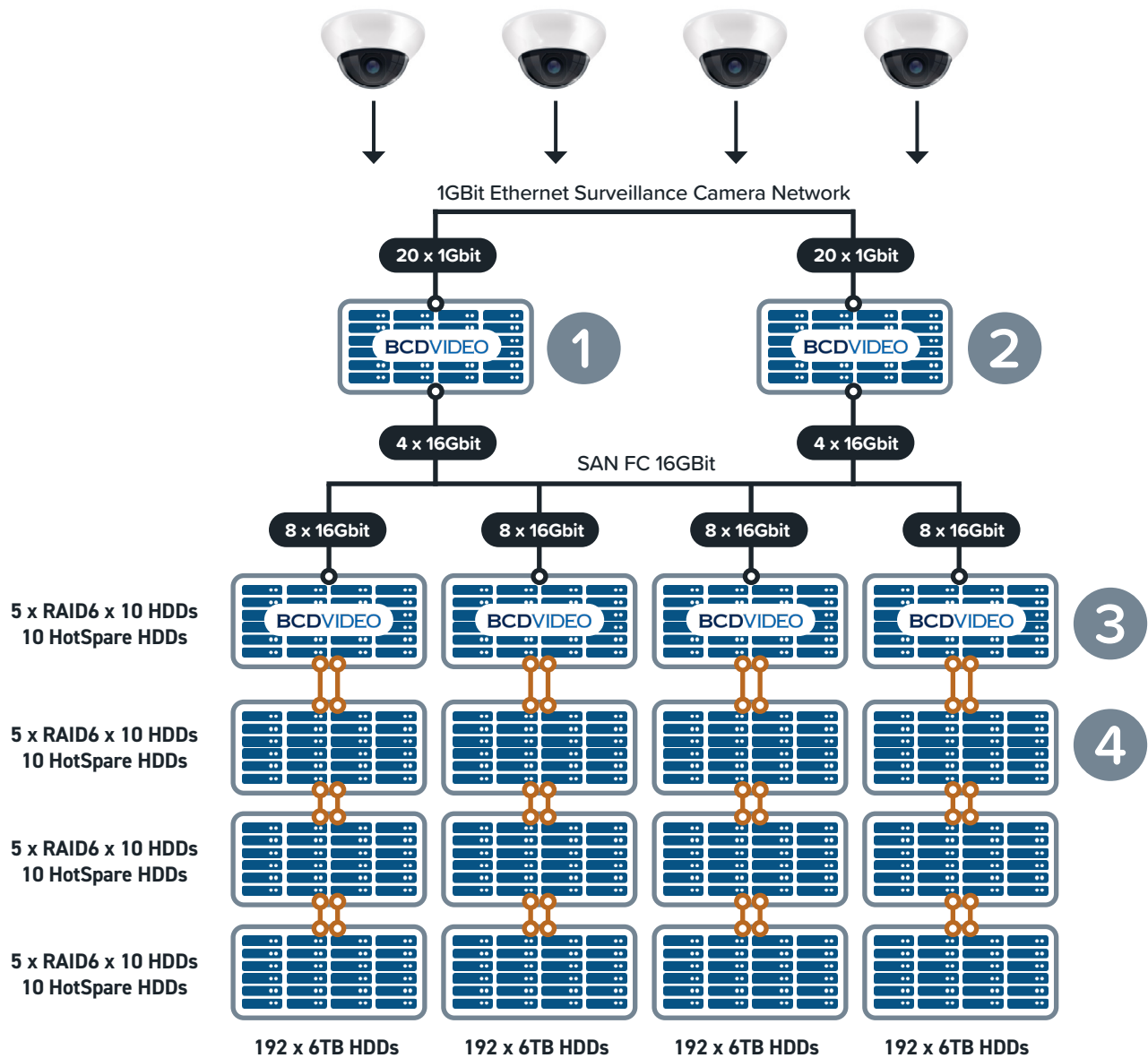
7. Lewis, Alan and McKone, Dan. “To Get More Value from Your Data, Sell It.” Harvard Business Review. October 21, 2016. Available through: <https://hbr.org>

8. Prakash, Banu. “Digitizing One Of The World’s Oldest Businesses.” Medium. February 24, 2018. Available through: <https://medium.com>

9. Marr, Bernard. “Starbucks: Using Big Data, Analytics And Artificial Intelligence To Boost Performance.” Forbes. May 28, 2018. Available through: www.forbes.com

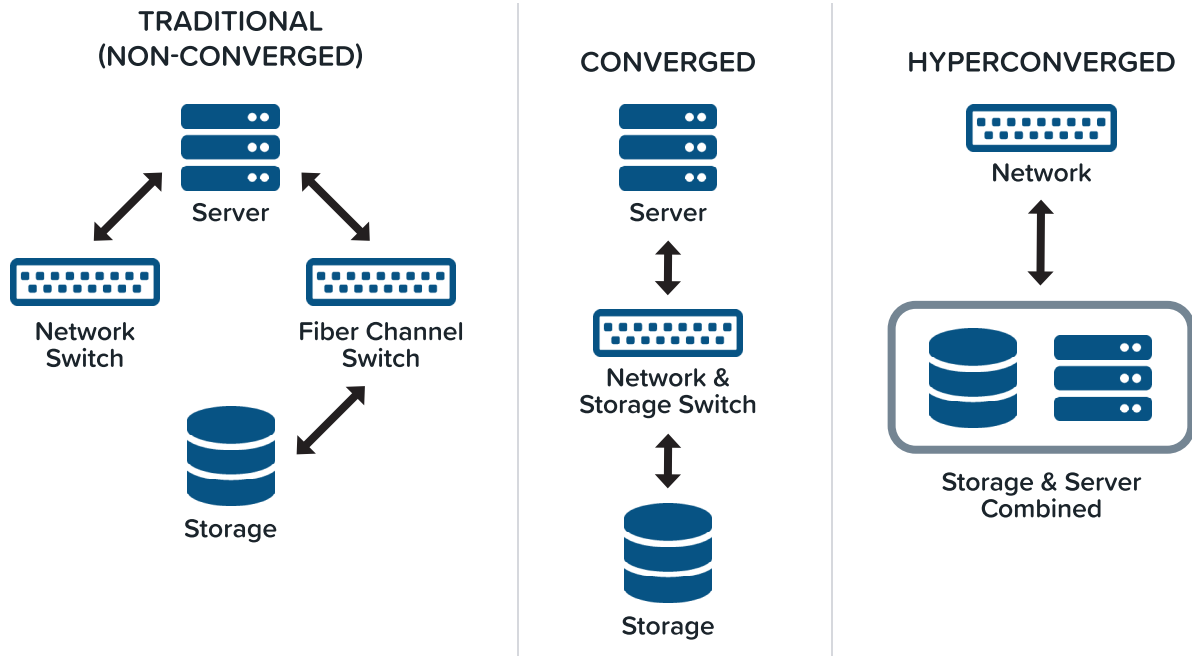
10. IDC. Worldwide Semiannual Big Data and Analytics Spending Guide. August 2018. Available through: www.idc.com

How Video Surveillance Has Traditionally Stored Video Data



The current method of storage for incoming video has relied on large pools of storage. These pools, NAS or SAN, provide data protection via RAID 5 or RAID 6. These pools also exist away from any centralized management system such as HCI.

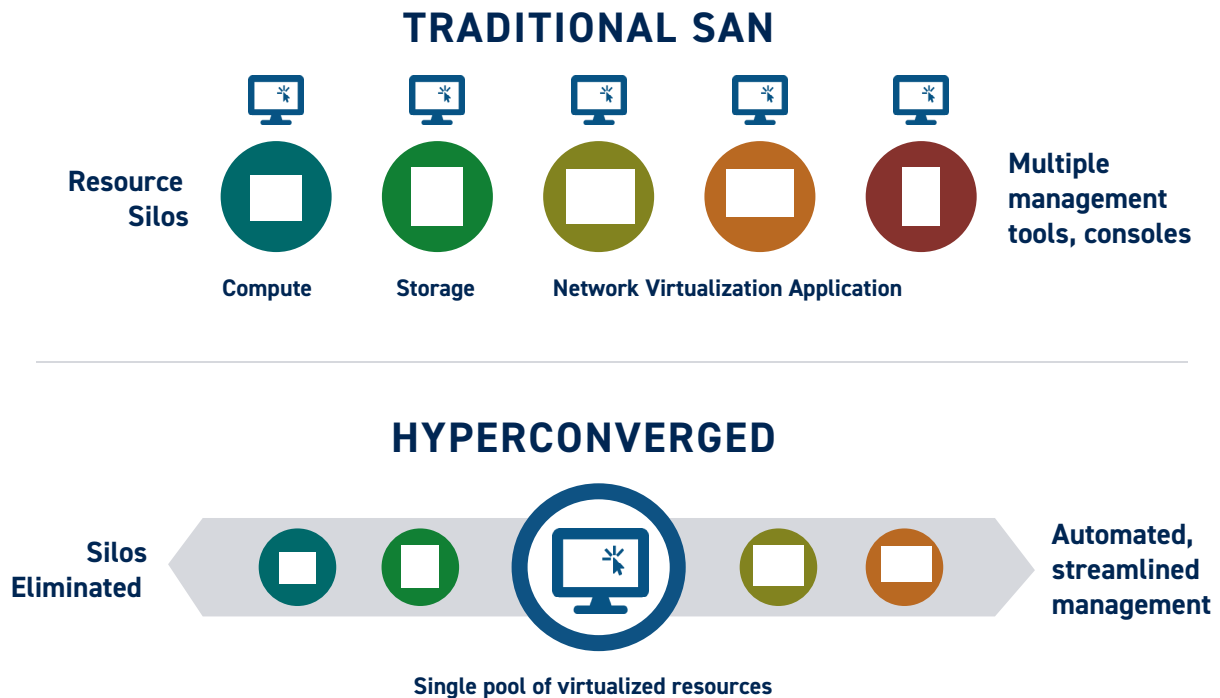
So Why Not Just Use Hyperconverged Systems With All Of The Benefits They Provide?



The traditional architecture is migrating from non-converged (all parts of system are generally disparate) to converged (the systems server and computing components merged together with storage kept separate) to hyperconverged (all parts of the system are merged together).

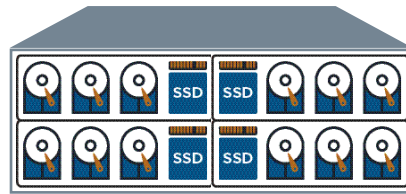
Simplified IT Management & Operational Efficiency

hHCI consolidates multiple administration functions into a simple, unified management framework.

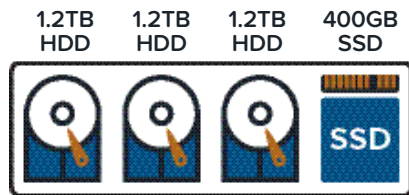


- Empower IT with simplified management
- Avoid complex maintenance and integration challenges
- Cheaper to maintain and deploy
- Hardware and software are in the same server
- Scale up and out with ease and granularity
- Faster and easier deployment
- Improved performance with SSD Disk
- Avoid being “locked-in” by a specific hardware
- Self-service or full orchestration options
- Green IT initiative

Hyperconverged Is Not A Video Storage Platform

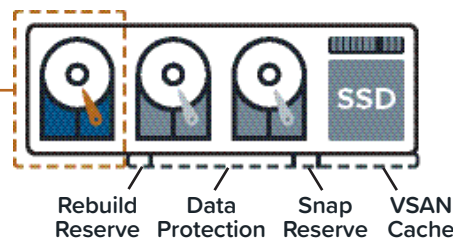


16TB
RAW

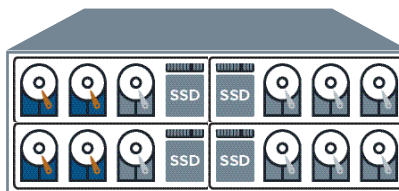


4TB
RAW PER NODE

23.9%
USABLE PER NODE



3.8TB
USABLE

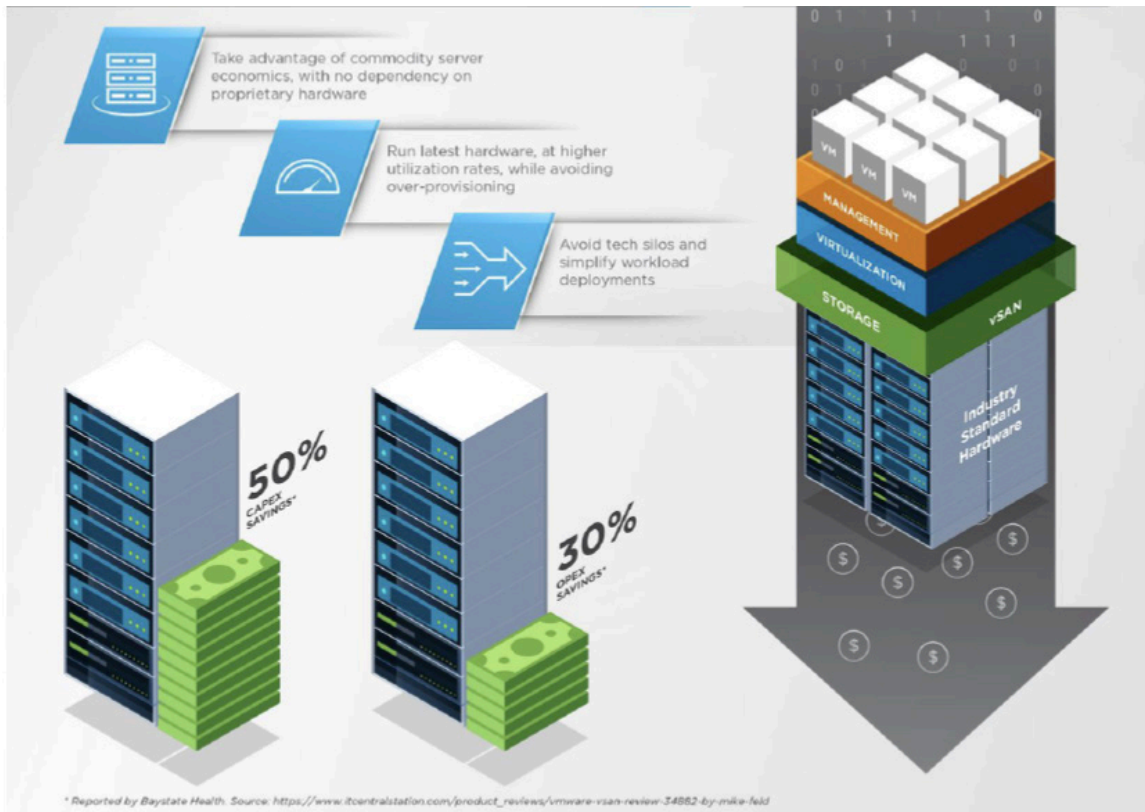


Integrators and their customers need to have flexible and robust storage systems that do more than just protect against data loss. They need systems that can be scaled quickly and independently without requiring the addition of computing nodes and associated memory. Conventional HCI combines storage, compute, and virtualization on each node – and placing storage on top of the hypervisor – in an approach that promises simplicity and lower cost. This approach does not allow for the addition of storage as a stand-alone purchase.

This is known as the “HCI Tax”:

- Conventional HCI implementations generally require you to have similar CPU, memory, and storage configuration on all the nodes in a cluster
- Therefore to expand storage (e.g. when retention time is increased on current cameras) a new cluster must be purchased.
- This means higher cost and leaves valuable resources in CPU and memory sitting idle.

Hybrid Hyperconverged Infrastructure: The Right Solution For Growing Video Retention And Use



Data is rendered useless unless it is securely recorded, analyzed, and delivered for actionable results. It is critical that storage systems can be expanded quickly and the new storage be used with no delay. It is also critical to allow systems that have been hyperconverged into a single cluster to access this new storage without requiring hyperconvergence. This is where creating a hybrid hyperconverged system provides the best of convergence and hyperconvergence.

About REVOLV

Simplify management and reduce operating costs with BCD's REVOLV hybrid hyperconverged infrastructure (hHCI) solution. Each REVOLV solution (DEEPSTOR® Lite, DEEPSTOR®, and DEEPSTOR®+) is built using the latest Intel® processors, the best-in-class Dell servers, specialized switching from Alcatel-Lucent Enterprise and powerful SAN storage from Dell EMC. All tied together with the latest hypervisor technology from VMWare to provide security, flexibility, and complete scalability. REVOLV also provides the user with a unique piece of software called HARMONIZE which allows the hHCI solution to be managed from within the video management system giving you more control and more peace of mind.

About the DEEPSTOR® Family and Harmonize Software Suite

DEEPSTOR Lite®, DEEPSTOR® and DEEPSTOR+®, the three main products in the REVOLV line, each address a different need for providing a scalable hHCI platform with true high availability and data redundancy. The Harmonize Software Suite delivers a fully functional GUI to the user that allows for system management via the on-site video management system.

DEEPSTOR Lite®, DEEPSTOR® and DEEPSTOR+®

By leveraging the best of converged and hyperconverged technologies with the innovations inside HARMONIZE Software Suite, REVOLV delivers a system that can grow in response to current needs and expand to allow for the implementation of new technologies.



DEEPSTOR Lite®



DEEPSTOR®



DEEPSTOR+®

DEEPSTOR Lite®, DEEPSTOR® and DEEPSTOR+®

STORAGE

SAN based storage that can grow up to 4PB and be added on the fly.



COMPUTE

Servers built with 2nd generation Intel® Xeon® Scalable processors for powerful processing and memory.



SOFTWARE & SUPPORT

HARMONIZE with hypervisor software from VMWare, provides users with a system that is managed through the familiar video management system GUI.



For more information visit: [BCDVIDEO.COM/REVOLV](https://bcdvideo.com/revolv)

BCD

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