2018 Deduplication Backup Target Appliance Buyer's Guide

DCIG is pleased to announce the availability of the *DCIG 2018 Deduplication Backup Target Appliance Buyer's Guide d*eveloped from the cloud data protection body of research. The *DCIG 2018 Deduplication Backup Target Appliance Buyer's Guide* weights, scores and ranks more than 100 features of twenty-two (22) products from six (6) vendors. Using ranking categories of *Recommended, Excellent, and Good* this Buyer's Guide offers much of the information an organization should need to make a highly-informed decision as to which deduplication backup target appliance will suit their needs.

Each appliance included in the *DCIG 2018 Deduplication Backup Target Appliance Buyer's Guide* had to meet the following criteria:

- Product is available as a physical appliance
- Product compresses and deduplicates data
- Provider offers and supports the appliance
- Sufficient information available to reach meaningful conclusions
- Product generally available by October 1, 2017

DCIG's succinct analysis provides insight into the state of

the deduplication backup target appliance marketplace. The Buyer's Guide identifies the specific benefits organizations can expect to achieve using a deduplication backup target appliance and key features organizations should be aware of as they evaluate products. It also provides brief observations about the distinctive features of each product. Ranking tables enable organizations to get an "at-a-glance" overview of the products; while DCIG's standardized one-page data sheets facilitate side-by-side comparisons assisting organizations to quickly create a short list of products that may meet their requirements.

Access this report is only available to individuals who pay to **subscribe** to the **DCIG Competitive Intelligence Portal**. Subscribers also gain access to the DCIG Interactive Buyer's Guide (IBG). The IBG enables organizations take the next step in the product selection process by generating custom reports, including comprehensive side-by- side feature comparisons of the products in which the organization is most interested.

Four Cloud Data Protection Appliance Considerations

2017 might well be the year that backup and recovery went from being viewed as a corporate insurance policy for data to a key business enabler and for good reasons. Natural disasters and ransomware attacks have heightened the need for fast, reliable backups and recoveries while new backup product architectures are changing the conversation around what services that cloud data protection appliances can deliver. As organizations go to select one of the current generation of cloud data protection appliances, here are four considerations they should keep in

mind.

1. ***Scale-up vs scale-out architecture.*** Enterprise cloud data protection appliances use two architectures to add capacity: scale-up and scale-out. Scale-up appliances start with a fixed amount of capacity, memory, and processing but give enterprises the flexibility to add more capacity in two ways. The appliance may have extra, empty slots inside the unit where enterprises may insert additional hard disk drives (HDDs) into them. Alternatively, enterprises may add on storage capacity on external expansion units. Scale-out architectures gives enterprises the flexibility to add more capacity, memory, and processing by using preconfigured nodes with much higher capacity limit. Further, scale-out architectures simplify upgrades and ongoing maintenance. Products from Cohesity and Rubrik exemplify these new cloud data protection architectures.
2. ***Support for multiple clouds.*** The first generation of cloud data appliances primarily connected to a proprietary or reseller cloud services using them as a backup target. This has changed. All cloud data protection appliances now support connectivity to cloud storage providers with the majority of them abandoning proprietary cloud services providers in favor of public cloud storage providers such as Amazon S3, Google Cloud, and Microsoft Azure. Having access to multiple cloud storage providers gives enterprises the option to tier backup across multiple providers. This approach helps to control costs as well as optimize data placement for applications based on each application's specific archiving, backup, data classification, data retention, and/or recovery requirements.
3. ***"White glove" recovery options.*** A number of cloud data protection appliance providers such as Carbonite and Unitrends offer "white glove" services options that provide proactive, "hands-on" services to guide

enterprises through local and/or cloud-based recoveries and restores. Unitrends, for example, offers services guaranteeing 1-hour virtual machine service level agreements (SLAs), Recovery Assurance and automated disaster recovery (DR) testing.

4. ***Data mining and classification.*** While enterprises primarily create backups to perform recoveries, they now increasingly recognize these backup repositories are an invaluable resource for enterprises to use to classify and mine data. Albeit slowly, more appliances are moving down this path of indexing the data in backup repositories to help enterprises classify, understand, and derive value from the data that reside there with solutions from Veritas leading the pack in this area.

The introduction of cloud-based backup targets, technologies, and recoveries into the backup process has permanently altered how companies view data protection. Today's cloud data protection appliances reflect this new reality. Enterprises may choose appliances based on multiples factors including their support for scale-up or scale-out architectures, multiple cloud services ranging from using the cloud as a backup target to doing full recoveries in the cloud, and even selecting providers that can walk you through disaster recoveries with their white glove services. Choose the right cloud data appliance for your environment today still demands that enterprises understand their technical requirements but now, more so than ever, they can examine how well these appliances map back to their business needs as well.

DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide Now Available

DCIG is pleased to announce the availability of the *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* developed from the backup appliance body of research. The *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* weights, scores and ranks more than 100 features of twenty-two (22) products from six (6) vendors. Using ranking categories of *Recommended and Excellent,* this Buyer's Guide offers much of the information an organization should need to make a highly-informed decision as to which cloud data protection appliance will suit their needs.

Each appliance included in the *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* had to meet the following criteria:

- Appliance includes backup and recovery software
- Product is available as a physical appliance
- Software connects to at least one public or private cloud storage provider
- Software compresses and deduplicates data
- Software provider offers and supports the appliance
- Stores backup data on the appliance
- There must be sufficient information available to DCIG to make meaningful decisions. DCIG makes a good faith effort to reach out and obtain information from as many storage providers as possible. However, products may be excluded because of a lack of sufficient reliable data
- Must be formally announced and/or generally available for purchase as of August 1, 2017

DCIG's succinct analysis provides insight into the state of

the cloud data protection appliance marketplace. The Buyer's Guide identifies the specific benefits organizations can expect to achieve using a cloud data protection appliance and key features organizations should be aware of as they evaluate products. It also provides brief observations about the distinctive features of each product. Ranking tables enable organizations to get an "at-a-glance" overview of the products; while DCIG's standardized one-page data sheets facilitate side-by-side comparisons assisting organizations to quickly create a short list of products that may meet their requirements.

End users **registering** to access this report via the **DCIG Competitive Intelligence Portal** also gain access to the DCIG Interactive Buyer's Guide (IBG). The IBG enables organizations take the next step in the product selection process by generating custom reports, including comprehensive side-by- side feature comparisons of the products in which the organization is most interested.

DCIG 2017-18 Hyperconverged Infrastructure Appliance Buyer's Guide Now Available

DCIG is pleased to announce the availability of the *DCIG 2017-18 Hyperconverged Infrastructure Appliance Buyer's Guide* developed from the converged infrastructure body of research.

The *DCIG 2017-18 Hyperconverged Infrastructure Appliance Buyer's Guide* weights, scores and ranks more than 100 features of twenty-four (24) products from five (5) vendors. Using

ranking categories of *Recommended* and *Excellent,* this Buyer's Guide offers much of the information an organization should need to make a highly-informed decision as to which hyperconverged appliance will suit their needs.

Each appliance included in the *DCIG 2017-18 Hyperconverged Infrastructure Appliance Buyer's Guid*e had to meet the following criteria:

- Must be available (orderable) as a single SKU and includes its own hardware and software
- Must be marketed as a hyperconverged appliance
- Must support at least one hypervisor (XEN, Hyper-V, VMware, KVM, etc)
- Must provide compute and storage in the same infrastructure solution (i.e. the appliance can host multiple virtual machines and use local direct attached storage as the storage layer)
- Must not require an external storage appliance (i.e. SAN/NAS)
- Must cluster nodes together
- Must support a centralized management and reporting structure
- Must provide data protection features
- There must be sufficient information available to DCIG to make meaningful decisions. DCIG makes a good faith effort to reach out and obtain information from as many storage providers as possible. However, products may be excluded because of a lack of sufficient reliable data
- Must be formally announced and/or generally available for purchase as of April 28, 2017.

DCIG's succinct analysis provides insight into the state of the hyperconverged appliance marketplace. The Buyer's Guide identifies the specific benefits organizations can expect to achieve using an hyperconverged appliance and key features organizations should be aware of as they evaluate products. It also provides brief observations about the

distinctive features of each product. Ranking tables enable organizations to get an “at-a-glance” overview of the products; while DCIG’s standardized one-page data sheets facilitate side-by-side comparisons assisting organizations to quickly create a short list of products that may meet their requirements.

End users **registering** to access this report via the **DCIG Competitive Intelligence Portal** also gain access to the DCIG Interactive Buyer’s Guide (IBG). The IBG enables organizations take the next step in the product selection process by generating custom reports, including comprehensive side-by- side feature comparisons of the products in which the organization is most interested.

DCIG 2016-17 Small/Midsize Enterprise Integrated Backup Appliance Buyer’s Guide Now Available

DCIG is pleased to announce the availability of the *DCIG 2016-17 Small/Midsize Enterprise Integrated Backup Appliance Buyer’s Guide* developed from DCIG’s backup appliance body of research.

Integrated backup appliances address enterprise data protection challenges by pre-integrating backup software with self-contained purpose-built backup appliances. Because Integrated backup appliances include backup software, they displace both legacy backup hardware and legacy backup software.

The *DCIG 2016-17 Small/Midsize Enterprise Integrated Backup Appliance Buyer's Guide* weights, scores and ranks more than 100 features of twenty-nine (29) products from seven (7) different providers. Using ranking categories of Recommended, Excellent and Good, this Buyer's Guide offers much of the information an organization should need to make a highly informed decision as to which integrated backup appliance will suit their needs.

Each backup appliance included in the *DCIG 2016-17 Small/Midsize Enterprise Integrated Backup Appliance Buyer's Guide* meets the following criteria:

- Must be available as a physical appliance that includes backup and recovery software as a combined bundle under one SKU
- Provides features and capacities appropriate for small/midsize enterprises
- Must store backup data on the appliance via on premise DAS, NAS or SAN-attached storage
- May connect to a public storage cloud
- Sufficient information provided to reach meaningful conclusions
- Must be formally announced or generally available for purchase on July 1, 2016

DCIG's succinct analysis provides insight into the state of the integrated backup appliance marketplace. The Buyer's Guide identifies the specific benefits organizations can expect to achieve using an integrated backup appliance, and key features organizations should be aware of as they evaluate products. It also provides brief observations about the distinctive features of each product. Ranking tables enable organizations to get an "at-a- glance" overview of the products; while DCIG's standardized one-page data sheets facilitate side-by-side comparisons, assisting organizations to quickly create a short list of products that may meet their requirements.

End users registering to access this report via the DCIG Analysis Portal also gain access to the DCIG Interactive Buyer's Guide (IBG). The IBG enables organizations take the next step in the product selection process by generating custom reports, including comprehensive side-by-side feature comparisons of the products in which the organization is most interested.

DCIG 2016-17 Integrated Backup Appliance Buyer's Guide Now Available

DCIG is pleased to announce the availability of the *2016-17 Integrated Backup Appliance Buyer's Guide* developed from DCIG's backup appliance body of research.

Integrated backup appliances address enterprise data protection challenges by pre-integrating backup software with self-contained purpose-built backup appliances. Because Integrated backup appliances include backup software, they displace both legacy backup hardware and legacy backup software.

The *DCIG 2016-17 Integrated Backup Appliance Buyer's Guide* ranks more than 100 features of thirty-three (33) products from ten (10) different providers. Using ranking categories of *Recommended*, *Excellent* and *Good*, this Buyer's Guide offers much of the information an organization should need to make a highly informed decision as to which integrated backup appliance will suit their needs.

Each backup appliance included in the *DCIG 2016-17 Integrated*

Backup Appliance Buyer's Guide meets the following criteria:

- Must be available as a physical appliance that includes backup and recovery software as a combined bundle under one SKU
- Must store backup data on the appliance via on premise DAS, NAS or SAN-attached storage
- May connect to a public storage cloud
- Sufficient information provided to reach meaningful conclusions
- Must be formally announced or generally available for purchase on July 1, 2016

DCIG's succinct analysis provides insight into the state of the integrated backup appliance marketplace. The Buyer's Guide identifies the specific benefits organizations can expect to achieve using an integrated backup appliance, and key features organizations should be aware of as they evaluate products. It also provides brief observations about the distinctive features of each product. Ranking tables enable organizations to get an "at-a- glance" overview of the products; while DCIG's standardized one-page data sheets facilitate side-by- side comparisons, assisting organizations to quickly create a short list of products that may meet their requirements.

End users registering to access this report via the DCIG Analysis Portal also gain access to the DCIG Interactive Buyer's Guide (IBG). The IBG enables organizations take the next step in the product selection process by generating custom reports, including comprehensive side-by-side feature comparisons of the products in which the organization is most interested.

Feature Consolidation on Backup Appliances Currently Under Way

Integrating backup software, cloud services support, deduplication, and virtualization into a single hardware appliance remains a moving target. Even as backup appliance providers merge these technologies onto their respective appliances, the methodologies they employ to do so can vary significantly between them. This becomes very apparent when one looks at growing number of backup appliances from the providers in the market today and the various ways that they offer these features.

Some providers such as Cohesity provide options in their appliances to satisfy the demands of three different backup appliance configuration. Their appliances may be configured as a target-based deduplication appliance, an integrated backup (offer both storage and backup software for data protection behind the firewall) and as a hybrid cloud backup appliance which gives their appliances to backup data locally and store data with cloud services providers.

By offering options to configure their appliances this way, it opens up the door for their products to address multiple use cases over time. In recently speaking with Cohesity, it often initially positions its product as a target deduplication appliance as a means to non-disruptively get a foothold in

organizations with the hopes that organizations will eventually start to use its backup software as well.

Cohesity's scale-out design also makes it an appealing alternative to competitors such as EMC Data Domain. By scaling out, organizations can eliminate creating the backup silos that results from deploying multiple instances of EMC Data Domain. Using Cohesity, organizations can instead create one central backup repository that makes its solution a more scalable and easier to manage deduplicating backup target that EMC Data Domain.

Further, now that Cohesity has a foothold, organizations can begin to test and use Cohesity's backup software in lieu of their existing software. A number have already found that Cohesity's software is already sufficiently robust that it meets the needs of their backup environment. This frees organizations to save even more money and further consolidate their backup infrastructure on a single solution.

Other providers also bundle deduplication along with virtualization and connectivity to cloud services providers as part of their backup appliance offering to offer instant and cloud recovery as part of their solution. In doing so, one specific area in which these appliances differentiate themselves in their ability to deliver instant recoveries on the appliance and even with cloud services providers.

Many providers now offer make virtual machines (VMs) available on their backup appliances to host application recoveries and some even make VMs available with cloud services providers. These VMs that reside locally on the backup appliance give organizations access to application recoveries such as Microsoft Exchange or SQL Server or to use these VMs for test and development. DCIG has found that appliances from Barracuda, Datto, Dell, and Unitrends all support these types of capabilities.

In evaluating these features across different backup appliances, DCIG finds that the Dell DL4300 Backup and Recovery Appliance sets itself apart from the others with its Virtual Standby feature that includes fully licensed VMs from Microsoft. Its VMs run in the background in standby mode and receive constant application. In this way, they are ready for access and use at any time should they be called up. This compares to the others where VMs on the appliance take time to set up. While organizations may want also bring up production level applications on the VMs on other backup appliances, it does take more time to bring these applications on these VMs and may require the intervention of the backup administrators to do this.

However other providers also give organizations a means to access and recover their data and applications.

- Using Barracuda organizations can recover from a replicated site using a Local Control appliance and Local LiveBoot. Once accessed, administrators may recover to the local appliance using virtual machines.
- Datto aoffers instant restore capabilities where VMs may be set up locally on the appliance for instant recovery. If the Datto appliance connects to the cloud, users also have the option to run VMs in the cloud which gives organizations time to fix a local server outage and providing business continuity during this time.
- Unitrends lets users mount VMs for instant recovery on the appliance and in the cloud. Users that opt-in to its Disaster Recovery Service gain access to up to five VMs depending on the size of the appliance or they may also acquire VMs in the cloud if needed.

The consolidating of deduplication, virtualization, and cloud connectivity coupled with new scale-out capabilities provide organizations more reasons than ever to purchase a single appliance to protect their applications and data. Buying a single backup appliance not only provides a smart data

protection plan but affords them new opportunities to introduce new technologies into their environment.

The means in which providers incorporate these new technologies into their backup appliances is one of many components to consider when selecting any of today's backup appliances. However, their cloud connectivity, instant recovery, consolidated set of features, and scale-out features are becoming the new set of features that organizations should examine on the latest generation of backup appliances. Look for the release of a number of DCIG Buyer's Guide Editions on backup appliances in the weeks and months to come that provide the guidance and insight you need to make these all important decisions about these products.

The Hot Topic of Deduplication

Rarely does a day go by at DCIG when deduplication is not mentioned in some context. Instead of storing every chunk of data, deduplication removes redundant data and stores unique recording data just once across the network. Offering up to 20x reductions in data, data deduplication directly equates to lower backup storage costs for almost any size data center as less hardware is needed for storage backup.

Deduplication is available in numerous forms: in backup software, virtualization software, as well as purpose built physical deduplicating backup appliances. In DCIG's recently released2014-15 Deduplicating Backup Appliance Buyer's Guide, it uncovered some interesting insight into these appliance as there is a healthy mix of old and new technologies.

Virtual Appliances. A new use case scenario, this Guide extends its coverage to include the growing number of deduplicating backup appliances that are now available as virtual machines on the market. Instead of only making deduplication available on a hardware-based appliance, 3 of the 10 deduplication vendors listed in the DCIG 2014-1015 Deduplicating Backup Appliance Buyer's Guide now make deduplicating backup appliances available as virtual appliance: Dell with its DR2000v, Quantum with its DXI V1000 and V4000 and HP which introduced two virtual appliances over the past year, the HP StoreOnce VSA 4TB and 10TB models.

Virtual appliances most often come into play for in small, remote and branch office environments, especially in those offices that are highly or entirely virtualized. Instead of needing to purchase a hardware appliance, they may acquire a deduplicating virtual appliance at a lower cost that is also easier to install and maintain. Further, the software capabilities of the virtual appliance are typically the same as the hardware appliance. These virtual appliances support the leading hypervisors (Microsoft Hyper-V, VMware ESX) and can be installed on existing hypervisor servers.

Simplified Pricing and Selection. Vendors are also looking to simplify pricing and licensing. Licensing has long been a tricky issue and many companies now bundle the needed deduplication technology and other software offered as part of the appliance in the base cost of the deduplication appliance. Others have simplified their choices even further. Quantum recently consolidated its lineup of appliances and now targets different lines for midrange and enterprise data environments. In the midrange space, it offers the DXi 4700, in the enterprise space, it is the DXi6900.

Separating Storage from Controller. EMC Data Domain also revamped its deduplicating backup appliance lineup by introducing the DD2200, DD4200, DD4500, and DD7200. Each of these is based on a data less head where the controller is

sold with minimal to no storage. Existing or new storage shelves can be connected to the controller purchased.

Unbundling Software from Hardware. Physical deduplicating backup appliances have their plug-and-play benefits selling a single solution under on SKU though some providers are moving to separate the hardware and software sale. HDS's and its Sepaton lineup of deduplicating backup appliances is one such example. HDS is working a purely high-end software deduplication solution with its VirtuoSO platform due to go GA in 1QCY15.

Sepaton recommended hardware configurations supporting the platform, however; VirtuoSO is deduplication and management software powering the hardware. Geared for scalability, VirtoSO will initially scale to more than 2PBs with each node starting at just 34TBs. Subsequently, it says the software will support up to 8PBs and 16PBs showing its intent on going into the high-end of the enterprise data center market.A surface level of Sepaton's appliance may prompt one to conclude they are similar to another. This is not the case. Even with set pricing scenarios, there are multiple options to make.

Customers still have many options for appliance management, hardware capacity, and deduplication itself. While many have moved away from purely comparing inline vs post process deduplication, each method still have advantages and disadvantages. Some add capacity by scaling up, others scale out and some do both. So sizing the appliance for today's needs and tomorrow's demands are important. Helping to set the direction, DCIG's side by side comparison found in its most recent Deduplication Backup Appliance Buyer's Guide will certainly help in that endeavor.

The DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide is immediately available. Subscribing users of the DCIG Analysis Portal may access and download the Guide by following

this link. Individuals who have not yet subscribed to the DCIG Analysis Portal may test drive the DCIG Analysis Portal for 30 days as well as download this Guide by following this link.

DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide Now Available

DCIG is pleased to announce the availability of its DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide that weights, scores and ranks over 100 features on 47 different deduplicating backup appliances from 10 different providers. This Buyer's Guide provides the critical information that all size organizations need when selecting deduplicating backup appliances to protect environments ranging from remote offices to enterprise data centers.

Deduplication is a proven data reduction technology that removes redundant data by only storing one copy of unique data. Reducing storage consumption by up to 20X or more, everyone from small businesses to enterprise data centers benefits through lower storage costs, shortened backup windows and improved backup success rates.

The plug-and-play nature of deduplicating backup appliances has contributed to their success as these appliances quickly and easily fit into almost any size corporate network. They also help organizations better keep up with their ever increasing amounts of production data as they finally have a solution that gives them a means to control the large volumes of backup data that all of this production data generates. This has led to the rapid adoption of these appliances and them becoming a mainstay in many data centers with organizations now spending upwards of $2 billion annually on purpose built backup appliances such as these.

The continuing adoption of these appliances in both small and large organizations is contributing to ongoing innovation in deduplicating backup appliances. Vendors have revamped their product lines by introducing new appliances that are faster, more scalable, more versatile and less expensive. Consider:

- EMC has reintroduced into its Data Domain line the capability to detach a controller from the backup storage so that existing storage shelves can be used with new controllers.
- Quantum has simplified its lineup and now only sells a single system into enterprise shops and another line for midrange backup.
- Dell, HP and Quantum have made their deduplicating backup appliances available as virtual appliances. These typically operate in tandem with their hardware counterparts and provide organizations the option to put a virtual deduplicating backup appliance into highly virtualized small and remote offices without needing to deploy a physical hardware appliance.

It is in this context that DCIG presents its DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide. As prior Buyer's Guides have done, it puts at the fingertips of organizations a comprehensive list of deduplicating backup appliances and the features they offer in the form of detailed, standardized data

sheets that can assist them in this important buying decision.

The DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide accomplishes the following objectives:

- Provides an objective, third party evaluation of deduplicating backup appliances that evaluates and scores their features from an end user's perspective.
- Scores and ranks the features of each deduplicating backup appliance based upon the criteria that matter most to end users and then presents these results in an easy to understand tables that displays the products' scores and rankings so they can quickly ascertain which deduplicating backup appliance is the most appropriate for their needs.
- Provides a standardized data sheet for each of the 49 deduplicating backup appliances from 10 different providers so users may do quick comparisons of the features that are supported and not supported on each product.
- Gives any organization a solid foundation for getting competitive bids from different deduplicating backup appliance providers that are based on "apples-to-apples" comparisons.

The DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide Top solutions include (in alphabetical order): EMC Data Domain 7200, 4500 and 990; HP StoreOnce 6500, Quantum DXi8500, 6900, and 6802; and NEC HYDRAstor HS8-4104R-7920, HS8-4006R-720, and HS8-4002S-192.

HP StoreOnce 6500 earned the "Best-in-Class" ranking for the first time. Having revamped its product line over the past year, HP has set a high standard with its flagship StoreOnce 6500 backup appliance to which others are now compared. Others vying for the top included Quantum, with its revamped product line, and NEC where, through a combination of hybrid and storage nodes, its HYDRAstor HS8-4000 lines can scale to a

massive 7.9PB in backup storage capacity. However it was through its combination of deduplication, hardware, management and support capabilities that the HP StoreOnce 6500 came out on top.

In doing its research for this Buyer's Guide, DCIG uncovered some interesting statistics about deduplicating backup appliances in general:

- All systems compress data after it is deduplicated.
- 100% offer backup acceleration software. Support for Symantec OST was the most prevalent though others offer support for Accent, AIR and Dell's Rapid Data Access (*RDA*).
- All deduplicating backup appliances deduplicate incoming data while concurrently replicating to another system.
- Almost all bundle deduplication technology with their backup appliance at no extra charge.

As with prior DCIG Buyer's Guides, it accomplishes the following objectives for end users:

- Lists each deduplicating backup appliance by vendor
- Lists out features of each deduplicating backup appliance showing key features supported or not supported
- Scores the features most relevant to end users
- Provides "*at a glance*" reference for companies evaluating specific deduplicating backup appliances or their features
- Provides a deduplicating backup appliance ranking showing how products compare against similar products on the market
- Offers recommendations as to which deduplicating backup appliance rankings and products best align with their specific backup objectives
- Provides 47 deduplicating backup appliance data sheets from 10 different vendors so organizations may compare

solutions from one or many technology providers.
- Facilitates and accelerates the process of organizations obtaining bids on competitive products

The DCIG 2014-15 Deduplicating Backup Appliance Buyer's Guide is immediately available. Subscribing users of the DCIG Analysis Portal may access and download the Guide by following this link. Individuals who have not yet subscribed to the DCIG Analysis Portal may test drive the DCIG Analysis Portal for 30 days as well as download this Guide by following this link.

Early Insights from the Forthcoming DCIG 2014-15 Deduplicating Backup Appliance Buyers Guide

As DCIG readies its third release of the DCIG Deduplicating Backup Appliance Buyer's Guide, it always encounters certain trends and the emergence of new features in the products covered in each respective Guide. DCIG's experience was no different in its preparations for this Guide. Virtual appliances and scale-out and scale-up architectures in particular caught our eye as DCIG prepares to release this Guide.

Virtual Appliances

Deduplicating backup appliances come in two forms: physical and virtual. While the forthcoming Buyer's Guide covers physical deduplicating backup appliances which offer hardware and software as a single SKU, virtual appliances utilized for

deduplication represent a growing trend. This year, DCIG chose to examine which physical deduplicating appliances are also available as virtual appliances.

Three of the vendors in the forthcoming release of this Buyer's Guide offer virtual appliances: Quantum in its DXi V1000 and V4000; HP with its StoreOnce solution; and Dell makes available the DR2000v. Some virtual appliances geared for deduplication may operate as a standalone solutions while others can only be deployed with a complementary physical deduplicating backup appliance. For example, Dell's DR2000v may only be used when it is deployed in conjunction with either its DR4100 or DR6100 models. In every case where a vendor offers a virtual appliance option, it can interact with physical deduplicating backup appliances in that vendor's family of products with the virtual appliance providing most if not all of the same deduplication and management capabilities as the physical appliance offers.

Small and midsized enterprises (SMEs) often have remote and small offices that are now highly virtualized and require an easy to deploy, easy to manage and cost effective deduplication target. This is where virtual appliances have particular appeal. When the last DCIG Buyer's Guide on deduplicating backup appliances was produced, the only deployment option that remote and small offices realisticaly had was to use smaller, physical deduplicating backup appliance (which are still available and will be covered in this Guide.)

Now, instead of purchasing a physical appliance for these offices, they can purchase a virtual appliance which are generally available at a lower cost. At time of publication, the Dell DR2000v virtual appliance listed for $4,200 which includes one terabyte of licensed storage capacity, $7,500 for two terabytes of licensed storage capacity and $13,500 for four terabytes of licensed storage capacity. The HP StoreOnce virtual appliance with four terabytes and ten terabytes of

licensed, usable capacity are priced at about $2,000 and $5,000, respectively.

One benefit of the virtual appliance is it removes the need for any additional physical hardware. Virtual appliances support the leading hypervisors such as VMware ESX and Microsoft Hyper-V and may be installed on existing hypervisor servers.

Scale-up, Scale-out or Both

Two methods for adding storage capacity to a deduplicating backup appliance exist: scale-up and scale-out. Some appliances are even capable of both which give organizations the flexibility to scale up by adding internal storage and then adding more nodes to scale-out which remaining in a single logical configuration for simplified administration.

Deduplicating backup appliances that only offer a scale-up architecture have a wide range of usable capacity going from single or low double-digit terabytes of capacity to more than 100 terabytes. This compares to deduplicating backup appliances that only offer a scale-out architecture where nodes with preconfigured amounts of storage capacity are added to the existing configuration.

Each architecture has its benefits and limitations. Using a scale-out architecture, organizations purchase nodes as they need them. Each time they add a node to the solution, it provides more storage capacity, network interfaces and processing power. In a scale-up configuration, each component (processing, networking ports and capacity) are scaled incrementally. As such, the number of processors does not necessarily increase as more storage capacity is added.

One benefit of using a scale-out architectures is that the nodes are viewed and treated as one single logical entity by the solution. However just because they are all managed as a single, logical solution does not necessarily mean all of the

nodes work together as one. Organizations need to verify that a deduplicating backup appliance that uses a scale-out architecture also offers “global deduplication” which deduplicates data across all of the nodes in a multi-node system. If it does not offer this feature, data is still deduplicated but only on each node so data deduplication is not optimized.

Another potential drawback to using a scale out architecture is the possibility of “node sprawl” as adding nodes is easy to do but it may not be the most optimal way to grow. To counter this, organizations may want to purchase individual nodes with more capacity and processing power.

ExaGrid and NEC are two notable providers that offer a scale-out architecture as part of their solution. ExaGrid recently increased the number of appliances available in a grid format from ten to 14 with its 4.7 software release, which increased its limits across its product line.

Instead of ten ExaGrid EX21000E appliances in a single grid for 480 terabyte raw capacity, it can combine 14 ExaGrid EX21000E appliances for 672 terabytes of raw capacity. NEC, which sells its products in blocks under set SKUs depending on the market segment, uses hybrid and storage nodes in various configurations to scale from as little as 12 terabytes to 7.9 petabytes.

With the consolidation of vendor lineups, a similar change is happening to models with scale-up architecture. For example, instead of selling several appliances into the mid-market datacenter market, Quantum now just sells one model for each **—** **the** DXi 4700 for the midrange and the DXi6900 for enterprise **—** by providing a wide range of scale-up options. The DXi 4700 scales from five terabytes to 135 terabytes and the 6900 ranges from 17 terabytes to 510 terabytes of usable backup storage.

When it Comes to Backup, the Smart Money is on Rapid Reliable Recovery; Interview with StorageCraft's Chief Evangelist Matt Urmston, Part 3

Matt Urmston, StorageCraft's Chief Evangelist and Director of Product Management, has worked in a variety of roles in backup, archiving, data recovery and high availability. In this third blog entry of this interview series, Matt emphasizes that StorageCraft's value is in the recovery process—getting systems back online quickly and efficiently, and having that work every time.

Charley: What do you hear as customers' reasons for choosing your company?

Matt: I can tell you that across the board the one thing that we always hear back from StorageCraft customers is, "*It just works.*" The product does what it is supposed to do.

Your question is interesting because a lot of people are out evaluating backup software. Often times their testing will be heavy on the backup aspect. "How long does it take to run a backup job? Do I see a lot of additional processor cycles being used? Is there a lot of IO? Is it dragging my system to its knees?" This becomes the main focus and extent of the evaluation—it is all about the backup and the performance impact backup is going to have on the systems. They say,

“Okay, I have my backup and that all works great.

Many companies will make buying decisions based on the backup aspects of a particular solution, where really they need to be evaluating recovery. In most cases when they compare the recovery process between StorageCraft and one of its competitors, they quickly realize that *StorageCraft’s value is in the recovery process—getting systems back online quickly and efficiently, and having that work every time.*

StorageCraft also has had partners who occasionally get wooed away to a competitor because of pricing. We’ve seen some of our competitors get pretty aggressive, especially when they’re going after managed service providers (MSPs). StorageCraft had a few who have come to us and said, “*Listen, I’m negotiating prices with this competitor, is there any way you guys can try to match their pricing?*”

Although StorageCraft works very closely with our partners during sales cycles and do what we can to help them win business, there have been times that we’ve just had to say ‘no’. StorageCraft is comfortable where it is at with its pricing and technology and what it is offering. In most cases those partners have come back after they have had a customer’s system go down and they had to perform a recovery.

Charley: What products do you compete against?

Matt: It kind of goes in waves. It is really interesting. We will have some competitor crop up, we will have an account rep say, “*Hey listen, I am really getting beat up by AppAssure*.” For a while AppAssure was a big competitor. There was a time when they were making a big push, but then they kind of went away. We do not run into them much anymore.

Acronis traditionally is a competitor. StorageCraft would go head to head in competitive situations with them. They have also just kind of drifted away. I do not know if they have made some decisions to try to go after some larger

environments or not, but StorageCraft does not really run into them a whole lot anymore.

Symantec's System Recovery has been a direct competitor in the past as well. But, as with so many other competitors we have been comfortable with our ability to win deals against them just based on our reputation for reliability when it comes to recovery.

Those are StorageCraft's traditional competitors. Some that are cropping up now are in the Backup and Disaster Recovery (BDR) space where they are offering backup appliances. Then there are a lot of smaller players or newcomers that will pop up on certain deals. It's rare to have a week go by that I don't get that email with a company name in the subject line asking "Have you ever heard of these guys?"

But today if you were to ask our sales team who they are running into most often, it is probably going to be Unitrends, Veeam, or Axcient. There really seems to be a trend toward the hardware solutions.

Charley: Are you looking to move into hardware?

Matt: This is a recurring topic of discussion internally. I believe the first time StorageCraft talked about offering a BDR device it was about two years ago. StorageCraft decided it is not interested in getting into the hardware business because of low margins, refreshes, maintenance, etc. Plus we have some great partners who are already providing hardware solutions based on StorageCraft Technology.

As we include our partners in this discussion, especially our MSP partners, for the most part they are saying, "*Do not force me into using hardware that I am not familiar with or a device that doesn't meet my standards. I already have relationships with Dell or whoever it might be. Let me buy the hardware.*" Most MSPs are already providing hardware to their customer. They know what type of hardware they like to use and support.

In Part I of DCIG's executive interview with StorageCraft's Chief Evangelist, Matt Urmston, he explained the features that ShadowProtect offers to minimize or even eliminate the possibility of users encountering BSODs when conducting a recovery.

In Part II of this interview series, we expanded on how StorageCraft uses ImageManager to provide a full DR solution that can offer rapid recovery in less than five minutes, and also how ShadowProtect performs equally well whether it's placed in a physical or virtual environment.

In Part IV of this interview series, we delve into how StorageCraft fits itself into the cloud storage landscape and what cloud replication looks like for backup and recovery.

StorageCraft Gets a Headstart on the Competition by Enabling Recovery in Minutes Instead of Hours; Interview with StorageCraft's Chief Evangelist Matt Urmston, Part 2

Companies all want more reliable backup and recovery, with short recovery times when things go awry. *In part II of this interview series with StorageCraft's Chief Evangelist Matt Urmston, we expand on how StorageCraft uses StorageCraft*

ImageManager and StorageCraft Headstart Restore technology to provide a full DR solution that can offer recovery in as little as five minutes, and also how ShadowProtect performs equally well in physical and virtual environments.

Charley: You can access ImageManager from anywhere?

Matt: Correct. And that anywhere access to ImageManager was a rudimentary DR solution. StorageCraft included in ImageManager some replication technology based around FTP. Basically, StorageCraft told its customers at that time, that they could take that data and move it wherever they wished. In a lot of cases StorageCraft's partners were taking customer data and moving that either to a colocation facility, or to storage in their own offices.

StorageCraft found it was continually being asked: "*What's the best practice, what's the best way to do this, what should I do once I have the data at the remote site, is there a way that I can now run those images at my remote site for that customer?*" So StorageCraft introduced some new technologies as it grew into that DR phase of development.

One of those DR technologies is VirtualBoot, which provides really rapid recovery. Take any recovery point, simply right click on it, and then select an option to VirtualBoot. It will spin that image up as a virtual machine, often in less than five minutes.

StorageCraft also introduced a technology called Headstart Restore that is designed for much larger data sets. As StorageCraft grew as a company and grew into some larger environments, it was finding that a traditional restore just wasn't fast enough to meet business requirements. As the data volumes grew beyond the TB size, it could take hours to do a recovery because of disk speed limitations.

StorageCraft wanted to provide a way for its customers to stage recoveries, so it introduced Headstart Restore. In a

nutshell, Headstart Restore takes a base backup image and converts it to a virtual disk—VMDK or VHD—and then drip feeds incremental backups to that virtual disk. In the event that a production server crashes, now there is a virtual disk already in place sitting over on an ESX host or on a Hyper-V host. When recovery is needed, Headstart Restore can quickly finalize the process and get that system up and running as a virtual instance without forcing the customer to restore data back to some physical device.

It's really all about recovery time objectives. StorageCraft finds that many managed service providers (MSPs) are competing on their service level agreements (SLAs). StorageCraft technology allows MSPs to get very aggressive with those SLAs, and talk about recovery time objectives in terms of minutes as opposed to hours or days.

Charley: Are you focused on SMB or enterprise?

Matt: StorageCraft is almost exclusively focused on SMB. It also sells almost exclusively through the channel, its network of value-added resellers and managed service providers. StorageCraft also works with some distributors who have some direct to market customers that they work with. But yes, StorageCraft is focused on SMB. Later on, StorageCraft will look at products and services that might appeal to larger companies.

Charley: Physical and virtual backup. StorageCraft addresses both?

Matt: Absolutely. The StorageCraft backup agent, ShadowProtect, is run in both physical and virtual environments. The agent that runs on an endpoint does not know the difference between a physical machine and a virtual machine. Once ShadowProtect creates an image, the file format is exactly the same whether the source server is a physical box or virtual server. That is really what allows

ShadowProtect to take those backups and then restore to wherever the customer prefers.

At the hypervisor level, if a customer has a VMware environment and wants to migrate to a Hyper-V environment, they can migrate by taking backup images of guest machines that are in an ESX environment and then performing a restore of those images to a Hyper-V host. With ShadowProtect, migrating is that simple.

In Part I of DCIG's executive interview with StorageCraft's Chief Evangelist, Matt Urmston, he explained the features that ShadowProtect offers to minimize or even eliminate the possibility of users encountering BSODs when conducting a recovery.

In Part III of this interview series, we discuss what the competitive landscape looks like for StorageCraft and why its customers choose StorageCraft over other solutions.

Eliminating the Dreaded Blue Screen of Death from the Recovery Process; Interview with StorageCraft's Chief Evangelist Matt Urmston, Part 1

The one screen that no system admin ever wants to see is the dreaded blue screen of death (BSOD), especially when doing a

recovery. Yet when recovering an application on a different hardware platform, BSODs become a distinct possibility. In this first installment of DCIG's executive interview with StorageCraft's Chief Evangelist, Matt Urmston, he explains the features that ShadowProtect offers to minimize or even eliminate the possibility of users encountering BSODs when conducting a recovery.

Charley: Tell me about your background and position and ShadowProtect.

Matt: I'm Matt Urmston, and I've been with StorageCraft for six years. I've spent 20 years in IT and the bulk of that has been in HA, Archiving, and Backup and DR. I currently play a dual role at StorageCraft, I'm both the Chief Evangelist and Director of Product Management.

Charley: When did StorageCraft start?

Matt: The Company was founded in December 2003. For the first four or five years we funded the company through our OEM arrangements with other folks, basically licensing them our technology so they could create their own backup and disaster recovery solutions.

We are proud that StorageCraft continues to be completely self-funded, continues to be profitable.

Charley: How has StorageCraft moved away from being a point product?

Matt: StorageCraft was very development driven in its early days. The CTO and current director of development were "*The Guys*." The two of them, along with one or two other developers, pretty much developed ShadowProtect around a technology that they had OEM'd at a previous company.ShadowProtect is an image-based backup product that does a really good job of capturing systems in a stable state. It integrates really well on Windows systems into their VSS

framework to make sure that when we're capturing those snapshots, that they are in a very clean, stable state, which lends itself well to a reliable restore.

One of the things that the founders wanted to focus on, and that they had noticed in the industry, was that performing the restore was often a very painful and time consuming process, especially when restoring from tape. Companies had to gather all their tapes and catalog all of the data before even starting the restore process. In a lot of cases that tape was not very reliable, so companies lost data at the time of restore.

Early Focus on Rapid Reliable Recovery and Hardware Independent Restore

The focus in the development of ShadowProtect was really on the recovery. We wanted to make sure that when it came time to recover, it was going to be able to do so reliably and successfully and in a timely fashion.

Our focus was on getting rid of that backup window and providing the ability to run backups continuously throughout the day by capturing changes as they occur. This allowed those backups to be taken as frequently as every 15 minutes, then once snapshots were taken, we wanted to give users the ability to quickly do restores.

Part of the recovery goal that StorageCraft set out to accomplish was to give end users the flexibility to recover to any hardware, not just the exact same hardware that the system was running on.

We went to market as a very stable "*hardware independent restore.*" Customers could take the backup images they had created and restore them to disparate hardware, including going from a physical system to a virtual system or even from one hypervisor to another.

With ShadowProtect, it really does not matter where recovery takes place. ShadowProtect takes images from one system and drops them on another. Our technology makes sure all of the necessary drivers are in place at boot up time so that the system does not blue screen and force the customer to do additional work to get it up and running. ShadowProtect takes care of all of that for them.

The Move from Recovery Product to DR Solution

StorageCraft went to market and quickly realized that if it was going to grow as a company, it would have to move away from just being selling a backup and recovery product and move to providing a disaster recovery (DR) solution—the StorageCraft® Recover-Ability™ solution

To do so, we introduced a product called ImageManager. ImageManager's role, first and foremost, is to manage the incremental chain and to verify images, protecting the integrity of the backup images created by ShadowProtect. Additionally, ImageManager provides the replication technologies that take those images, replicate them offsite, and create a remote DR location. Now in the event of a site disaster, an organization can use ShadowProtect to spin machines up at a remote site and provide for that true disaster recovery.

In part II of this interview series, we expand on how StorageCraft uses ImageManager to provide a full DR solution that can offer rapid recovery in less than five minutes, and also how ShadowProtect performs equally well whether it's placed in a physical or virtual environment.

Insights from the Forthcoming DCIG 2014-15 Integrated Backup Appliance Buyer's Guide

The forthcoming DCIG 2014-15 Integrated Backup Appliance Buyer's Guide provides organizations the unique opportunity to review and evaluate the large number of backup appliances that represent more steps forward in the continuing effort to simplify backup in today's real-world IT environments. By providers integrating the core components needed to deliver backup in a single box, more of these appliances come closer to achieving the "*plug and play*" ideal that enterprises seek.

Integrated backup appliances have already been proven successful. But as this latest generation of appliances illustrate, organizations can expect an even better experience from backup appliances going forward. More deduplication options, heightened support for virtualized environments, new alliances between hardware and software providers and increased emphasis on providing more tightly integrated support from a single provider are just some of the new features that these appliances boast.

Other areas where organizations will also see changes in backup appliances from the previous DCIG 2012 Backup Appliance Buyer's Guide include:

- Backup appliances make better use of solid state drives (SSDs) which contribute to increases in throughput and performance.
- Large providers like Dell have shed its alliances with traditional backup software providers such as CommVault and Symantec in favor of creating its own line

integrated backup appliances that only use Dell hardware and software.

- No longer with Dell, Symantec and CommVault have adapted to this new world of backup appliances. Symantec now develops and markets its own line of appliances while in the last quarter of 2013 CommVault aligned with STORServer, the winner of the previous DCIG 2012 Backup Appliance, to create a compelling new line of backup appliances.

One key differentiator witnessed in the research for this Buyer's Guide is that providers are strengthening their offerings with services. As organizational needs increase, providers are bulking up their support and technology support teams to meet their heightened expectations for faster response times and quicker resolutions to the challenges they face.

Another intriguing shift in customer support is that a few providers such as STORServer are rolling out *data recovery guarantees*. A data recovery guarantee is a major commitment to make, but is important for those who purchase an appliance. Depending on the appliance, data may be able to be retrieved from the cloud, from the appliance itself, or may simply mean the appliance can perform data recovery in a certain amount of time. Based on the highly competitive nature of this market, it is logical to conclude that other providers will soon feel the pressure to offer a feature like this in the not too distant future.

The growth of integrated backup appliances has led organizations to choose appliances that better align with where they want to store their data – be it in private clouds, public clouds or some combination of both (hybrid clouds.) It is because of this fragmentation that DCIG now segments backup appliances between those intended for use in private clouds, such as are featured in this *DCIG 2014-15 Integrated Backup Appliance Buyer's Guide*, and those do hybrid backup which keep

data both on premise and in public clouds. This type of backup appliances will be addressed in the upcoming *DCIG Hybrid Cloud Backup Appliance Buyer's Guide,* also due out in the first half of 2014. Currently DCIG has no plans to produce a Buyer's Guide on backup software that only store data in public clouds or with public cloud providers.

Integrated backup appliance challengers come mainly from other types of purpose-built backup appliances (PBBAs), including deduplicating backup appliances and deduplication software that can be run on regular backup servers. While deduplicating backup appliances primarily function as backup targets for existing backup software that organizations already own, a number of these can optionally host backup software and be deployed as an all-in-one solution.

However since the integration between backup software and underlying deduplicating appliance is minimal at best and non-existent at worst, DCIG elected not to evaluate these solutions. This lack of integration also factored into DCIG's decision to name this Buyer's Guide the ***Integrated Backup Appliance Buyer's Guide*** as opposed to just using the term *Backup Appliance Buyer's Guide* as levels of integration exist between the hardware and software that do not exist in these other solutions.

The appetite for implementing integrated backup appliances into organizations that do not already own them, or do and will need to expand their lineup, seems poised to only increase in the years to come. The good news is that regardless of organization's size, if they are ready to move ahead now with implementing an integrated backup appliance, the number of products available coupled with the diversity of features they offer almost guarantees they will find a solution that meets their needs in this forthcoming DCIG Buyer's Guide. ***Look for its release very soon!***

Integrated Backup Appliances that De-emphasize Cloud Connectivity

The cloud seems to pervade every conversation around computing these days. However not all organizations are as enamored with the cloud as analysts and the press would lead us to believe. If anything, there is a sizable contingent of organizations that are fairly adamant about keeping their data out of the cloud and behind their corporate firewall. This is why, as DCIG prepares to release its forthcoming Buyer's Guide on Integrated Backup Appliances, that it specifically ***de-emphasized*** cloud connectivity.

Backup appliances are sold in all sizes to fit businesses ranging from small up to large enterprises. As such, different backup appliance types have emerged to meet their differing requirements which has lead DCIG to divide the backup appliance market into three types:

- ***Private Cloud.*** Backups that remain behind the corporate firewall.
- ***Hybrid Cloud.*** Backup evenly divided between on premise and the cloud.
- ***Public Cloud.*** Backup in the cloud where all data is sent to the cloud.

The forthcoming DCIG 2014-15 *Integrated Backup Appliance Buyer's Guide* addresses the first type, private cloud backup, with the hybrid cloud backup being addressed by DCIG's upcoming *Hybrid Cloud Backup Appliance Guide.* Since most public cloud backup solutions do not require an onsite appliance like the ones covered in these two Guides, DCIG has

no immediate plans to produce a Buyer's Guide on this topic.

Each of the three backup types offers specific features to support their intended use case. Those using backup appliances behind the firewall, or in a private cloud environment, have different requirements from those taking a hybrid cloud or public cloud approach. The *2014 Integrated Backup Appliance Buyer's Guide* focuses on backup appliances that reside behind the firewall and are primarily intended to keep data off of cloud storage providers.

These appliances offer backup software that offers the sufficient management capabilities to set backup and restore policies in an organization which is all bundled with the needed hardware in a single SKU. These best appliances typically combine the ability to do the backup of virtual and physical machines and match it with the hardware technology that different size companies demand. Yet what differentiates this backup approach from others is that while connectivity to cloud storage should be a consideration when making a purchase of one of these appliances, it is a much smaller factor in the overall decision making process and generally will ***NOT*** be a deciding factor in the final product selection.

Hybrid cloud backup takes a very different approach to backup storage as it uses cloud storage as an integral component in the storage process. While there may be a full backup onsite, the hybrid approach is a persistent connection to the cloud storage that cannot be optionally turned off.

The cloud storage service is critical to the functioning of these appliances and an aspect of backup appliances that will be addressed more thoroughly in the upcoming *DCIG 2014-2015 Hybrid Cloud Backup Appliance Buyer's Guide*. For instance, in selecting a cloud storage provider, one has to consider if it offers virtualization in the cloud. Using this functionality, a company can create a virtual machine (VM) in the cloud to recover data should the onsite appliance go down or be

unavailable. Using this option, application/data recovery can take place at another location altogether.

Other considerations when selecting a cloud storage provider that is part of a hybrid cloud backup solution includes:

- Is the backup data stored in only one physical location or multiple?
- Of particular concern to many large organizations is, "In what ***country*** is the data stored?"
- How quickly the application or data be recovered?
- What methods (tape, replication, vMotion, etc.) does the cloud provider offer for recovering that data?
- What network speeds are available to connect to the cloud service provider?
- How much bandwidth does the cloud provider have coming into their data center(s)?
- Does it have access to or reserve sufficient bandwidth to perform a recovery for ***your*** applications even as it backs up and ingests data from its other clients?

Public cloud backup is the third option for backup that focuses primarily on sending all backup data to a public cloud backup service provider. While there may be a small level of backup on premise, this type of backup does not require an onsite backup appliance like the ones covered in the other two upcoming DCIG Buyer's Guides.

In examining public cloud backup, one primarily looks at its following service offerings:

- Recovery speed to and from the cloud
- Where and how the data is stored
- Potentially how well the service addresses regulatory issues such as those involving healthcare and financial services

Maturing Deduplicating Backup Appliances Still Offer Plenty of Features for Organizations to Evaluate

As DCIG prepares to release a number of Buyer's Guides on Midrange Deduplication Backup Appliances in the next few weeks, we thought we would share some of our observations that came out of our evaluation of these products. Like all Buyer's Guides that DCIG prepares, it did a comprehensive review of available deduplicating backup appliances in anticipation of releasing these Guides. As it did so, it uncovered that deduplication itself has moved well beyond the breakthrough technology that it was a decade or so ago to provide an assortment of features there leaves plenty for organizations to consider when buying one of these appliances.

Backup appliances already make up a large component of the backup space (tape libraries, backup software, backup appliances, etc.) and may now arguably be the largest component by revenue. In a recent IDC report, factory revenue associated with the purpose built backup appliance market is growing 16.4% on a year over year basis with capacity shipped showing an even stronger 45% growth from the year before.

Despite its increased adoption, DCIG in its research found no significant breakthrough in deduplication technology in deduplicating backup appliances since the last Buyer's Guide that DCIG released. While advancements in these appliances have certainly occurred as reflected by greater appliance capacities and throughput speeds at a reduced cost – the

deduplication technology itself is remarkably unchanged from a couple of years ago.

This maturing of deduplication technology is somewhat of a mixed blessing for organizations. On one hand, it gives them more confidence and reason to believe that the deduplication technology on which the appliance is based will be stable and work as intended. In other words, the chances for hidden "gotcha's" have likely diminished.

Conversely, a maturing of the market means there are more deduplicating backup appliances available for organizations to consider for purchase. While there are only a fairly small number of vendors shipping such products (about ten,) there are over 40 different products available from these vendors.

As a result, organizations must make the following choices when selecting a deduplicating backup appliance:

- ***Encryption***. Legislation such as HIPAA, Sarbanes-Oxley, and the SEC 17-a4 rules have almost made it incumbent for organizations to encrypt their backup data as opposed to leaving it in its native format and risk having it exposed. This has resulted in 66 percent, or nearly two in three backup appliances, now supporting encryption in some form.
- ***Public clouds.*** Organizations want to get their backup data offsite and storing with public cloud provides them a convenient and economical means to do so. While this is still in its infancy, 30 percent of deduplicating backup appliances already provide some form of support for public cloud connectivity. It is worth noting that ATScloud *(not Amazon S3!)* is the most commonly supported public cloud offering among those deduplicating backup appliance that offer support for a public cloud.
- ***Scale-up vs. scale-out.*** Appliances scale in one of two ways. The first is systems scale-up capacity by adding more of it to the controller head or heads. Others use a

scale-out architecture where multiple nodes (each with a controller that includes system memory, processing and storage capacity) can be added and work in tandem. Scale-out appliances tend to scale higher than single controller systems. When a single controller system hits the high end of capacity, a new higher capacity appliance must be purchased. DCIG found 44% of deduplicating backup appliances offer a scale-out architecture while the rest were configured in a scale-up configuration.

- ***Inline vs. post process deduplication***. When deduplication was first released, religious wars over which form of deduplication was better ensued. In recent years these debates have largely subsided though inline seems to have won, at least from an adoption perspective. 70 percent of deduplicating backup appliances using inline deduplication while only 30% use post process.
- ***Licensing.*** Most deduplication appliance vendors tout an all-inclusive licensing scheme (all software licenses needed to operating appliance.) However, it is important to look closely at some. While deduplication is certainly included, other features such as replication, encryption, and backup acceleration may introduce extra licensing costs.
- ***Appliance management software.*** It probably comes as no surprise to anyone that larger, high-end systems offer greater software capabilities to manage the deduplicating backup appliance. However, in many situations smaller capacity (and less expensive) appliances offer the same management software as their high-end counterparts. For example, Quantum offers many of the same software features on its midtier DXi4601 as it does on its high end DXi6802.

The deduplication technology on deduplicating backup technologies may be mature but the features found on each

appliance continue to rapidly change and evolve. As they do, it makes it more complicated and difficult for organizations to select the right appliance for their environment which is why DCIG is updating its Deduplicating Backup Appliance Buyers Guide for 2013. So if you are looking for the right deduplicating backup appliance for your environment, stay tuned! A number of Buyer’s Guide that covers this segment of the market from various price points will be released in the weeks to come.