The Insider's Guide to Evaluating Hybrid Cloud Backup Appliances

DCIG

2016-17
HYBRID CLOUD BACKUP APPLIANCE BUYER'S GUIDE

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Introduction

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Heraclitus of Ephesus, c. 535 BC – 475 BC

"Everything changes and nothing stands still." This ancient saying of Heraclitus rings true in today's information technology industry—including the data protection industry.

The purpose-built backup appliance market is dynamic. In the months since DCIG published the inaugural *DCIG 2015-16 Hybrid Cloud Backup Appliance Buyer's Guide:*

- New vendors have entered the market

- Existing vendors have introduced new products based on more powerful hardware; delivering more performance and capacity to keep up with ever growing enterprise data protection requirements

- Vendors have released new software features to provide more benefits to end users, blurring the boundaries between traditional product categories

The purpose-built backup appliance market is growing. This is part of an ongoing shift toward pre-integrated appliance-based solutions that can be rapidly deployed into the enterprise data center through largely non-disruptive plug-and-play installations. In fact, according to IDC, worldwide purpose-built backup appliance (PBBA) factory revenues grew 11.5% year over year, and capacity shipped increased 35.3% to 1EB since 2Q15.[1]

Ever-increasing data volumes, driven by the growth in both structured and unstructured data, strain corporate backup abilities and create a need for new solutions. While other backup and data optimization technologies offer some relief, PBBA's have become the go to solution.

DCIG evaluates PBBA products based on three primary use cases:

- **Deduplicating backup appliances** are sometimes referred to as "Backup Target Appliances". These appliances displace legacy backup targets; integrating into existing data protection schemes. Their optimized deduplication technologies reduce backup storage consumption by up to 20x while accelerating the backup process. These appliances typically work with a variety of backup applications, though some products only integrate with the provider's own data protection software.

- **Integrated backup appliances (IBA)** are deduplicating backup appliances that include pre-integrated data protection software. They displace both legacy backup targets and legacy backup software. In the integrated backup appliance use case backup data may be replicated to another location but the data remains entirely within the custody of the corporation behind the corporate firewall.

- **Hybrid cloud backup appliances (HCBA)** are deduplicating backup appliances that include pre-integrated data protection software **and** integration with at least one cloud-based storage provider to minimally facilitate the automated movement and retrieval of data from a public cloud storage provider. The cloud provider's capabilities may extend to include full restorations and the running of the organization's applications at the cloud provider's data center. An HCBA's ability to replicate backups to the cloud supports disaster recovery needs and provides essentially infinite storage capacity.

"Worldwide Purpose-Built Backup Appliance (PBBA) Market ... - IDC." 2016. 29 Sep. 2016
<https://www.idc.com/getdoc.jsp?containerId=prUS41628016>

As core business processes become digitized, the ability to keep services online and to rapidly recover from any service interruption becomes a critical need. Given the growth and maturation of cloud services, many organizations are exploring the advantages of storing their application data with cloud providers and even recovering applications in the cloud.

Special hybrid cloud backup considerations. Organizations need to apply some additional criteria when evaluating hybrid cloud backup appliances; as more factors come into play than with other PBBA's. For instance, organizations are advised to spend time validating:

- The HCBA's interoperability with the various cloud providers and what additional functionality they support beyond just copying data to the cloud, if any

- Available bandwidth and the cost of this bandwidth to a specific cloud provider

- Bulk data transfer options to quickly establish a fully protected data environment and accelerate disaster recovery

Organizations that have outgrown the capabilities of their legacy backup solutions will discover a large number of vendors and products vying to become their next generation solution. Thoroughly researching the many available products has become too time consuming and costly to be feasible for many organizations. The *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* solves this problem. This Buyer's Guide evaluates the full range of PBBA product capabilities, including features that enable the long-term retention of backups in the cloud and even application recovery in the cloud.

DCIG's analysts have already done the heavy lifting for enterprise technology buyers by:

- Identifying a common technology need with many competing solutions but with little comparative data available to technology purchasers

- Scanning the environment to identify available products in the marketplace

- Gathering normalized data about the features each product supports

- Providing an objective, third-party evaluation of those features from an end-user perspective

- Describing key product considerations and important changes in the marketplace

- Presenting DCIG's opinions and product feature data in a way that facilitates rapid feature-based comparisons

The Value This DCIG Buyer's Guide Creates for Buyers

It is in this context that DCIG presents its *2016-17 Hybrid Cloud Backup Appliance Buyer's Guide.* The level of detail in this Buyer's Guide, combined with DCIG's consistent ranking system, helps organizations in two key ways: First, it provides a powerful yet concise method to evaluate each product so organizations can understand the overall strengths and weaknesses of each one. Using this information, evaluators can better align the specific needs of their environment with the features available on each appliance.

Second, this Buyer's Guide provides a concise one-page data sheet for each product. The data sheets drill down into the specifics of each product to provide information on virtualization, management, backup and recovery, replication cloud management, hardware and support features. These feature areas contribute the overall ranking for each product.

The *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* is based on a pool of more than 130 products in DCIG's Backup Appliance Body of Research. DCIG analysts ranked hybrid cloud backup appliances based on an evaluation of more than 100 different features. The twenty-three (23) appliances from six (6) vendors that met the inclusion criteria and achieved a ranking of Recommended, Excellent or Good are included in this Buyer's Guide.

Please note that this Buyer's Guide is NOT intended to be a substitute for internal testing. DCIG encourages any organization that is considering the purchase of a hybrid cloud backup solution to do its own in-house testing if at all possible as it is impossible for DCIG to predict how well the appliance will perform in every environment.

We hope this Buyer's Guide meets its intended purposes in your environments and serves as a helpful aid in supplementing and expediting your organization's normal decision making and product evaluation process.

As a supplement to the downloadable Buyer's Guide, 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. See portal.dcig.com to learn more about the DCIG Analysis Portal.

Charley and Ben

Executive Summary

Hybrid cloud backup appliances have emerged as a leading solution to incorporate cloud services into an organization's backup and disaster recovery plans. The *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* gives organizations insights into this important market segment.

Hybrid cloud backup appliances offer many benefits to organizations. Using these solutions, companies can more easily backup and recover applications on premise. Then, once the application data is initially protected, it may be replicated off-site.

Once the data is in the cloud, a number of hybrid cloud backup appliances give organizations new options for recovery. For example, a number of these solutions may host virtual machines (VMs) either on the appliance or in the cloud with the cloud provider to do application recoveries.

Hybrid cloud backup appliances now offer sufficiently robust hardware and software to meet the data protection requirements of almost any size organization. The hybrid cloud model introduces, for the practical purposes of most organizations, the concept of an infinite cloud-based storage pool for backup data storage and application recovery purposes. The support of one or more cloud providers by hybrid cloud backup appliances makes them a one-stop shop that potentially offers both onsite and offsite backup and recovery.

The regulatory environment around data storage and security has become increasingly stringent and more complex. National laws and industry-specific regulations abound, especially with regard to personally identifiable information (PII). Thus financial, governmental and healthcare organizations may be understandably reluctant to store or recover private, sensitive information in the cloud.

Increased clarity about industry regulations, coupled with the maturation of cloud technology itself, may enable more organizations to confidently move ahead with their adoption of hybrid cloud backup appliances. Nevertheless, it is incumbent on each organization to match its regulatory data management requirements to cloud storage provider(s) certified capabilities. It is for these reasons that DCIG encourages organizations to thoroughly research their data privacy and retention requirements when selecting a hybrid cloud backup appliance and cloud provider.

Beyond understanding the regulatory environment, the greatest challenge now facing organizations may be sorting through the dozens of models available on the market to identify the right size model with the right options for their environment.

This is where the distinctions between appliances become critical. While their differences may be technical and maybe even seemingly minor on the surface, they can have a significant impact upon the success an organization experiences when using a hybrid cloud backup appliance in its environment. This is why DCIG evaluated more than 100 features on each product, including support for multiple hypervisors and cloud providers.

It is in this context that DCIG presents the *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide.* As prior DCIG Buyer's Guides have done, it puts at the fingertips of organizations a resource that provides them with a comprehensive list of hybrid cloud backup appliances that can assist them in this important buying decision while removing much of the mystery around how these appliances are configured and which ones are suitable for which purposes.

This *2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* accomplishes the following objectives:

- Provides an objective, third-party evaluation of products that evaluates and ranks their features from an end user's viewpoint

- Includes recommendations on how to best use this Buyer's Guide and the products contained in it

- Evaluates the features of each product based upon criteria that matter most so end users can quickly know which appliance is most appropriate for them

- Provides a standardized data sheet for each product so end users can do quick comparisons of the features supported and not supported on each product

- Gives any organization the ability to request competitive bids from different providers

How to Use this *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide*

This Buyer's Guide is intended to help users accelerate their product research and selection process—driving cost out of the research process while simultaneously increasing confidence in the results. The purpose of this Buyer's Guide is NOT to tell users exactly which product(s) to purchase. Rather, it is to help guide them in coming up with a short list of competitive products that have comparable features that meet their specific needs.

Just because a product ranks well does not automatically mean that it is the right product for an organization. If anything, because of the scope of the products evaluated and analyzed, it may have features that are too robust for the needs of an individual department or organization.

However, this Buyer's Guide does give organizations some sense of how each product compares to other products covered in this Guide, as well as offers additional insight into what product offerings are available on the market.

DCIG recommends that companies use this Buyer's Guide in the following seven ways:

1. *Eliminate the painstaking research normally associated with identifying a short list of products that meet their needs.* DCIG analysts dug through product web sites, reports and product manuals to uncover more than 100 features supported by the twenty-three (23) products from six (6) vendors in this Buyer's Guide. A glance at the resulting ranking sheet reveals how complete the features of each product are compared to the other products. A look at the corresponding data sheet reveals whether or not a product supports the features required to make it onto a particular organization's short list for further consideration.

2. *Do apples-to-apples comparisons of products from different vendors.* It behooves an organization to get competitive bids from multiple vendors. After all, *when they compete, you win!* But that tactic only works well when organizations know that they are receiving competitive bids on products that are roughly comparable. Using this Buyer's Guide, organizations can do a better job of accomplishing that objective.

3. *Separate the apples from the oranges.* Just as important as doing apples-to-apples comparisons is identifying when an orange is thrown into the mix.

Sometimes it is very difficult for an organization to know if it is truly getting a good deal when bids come in from vendors that include different products. Now organizations can refer to the rankings of each product on this guide so they know when they are getting a good deal, a great deal or just a *"so-so"* one.

4. *Gain perspective on how products from less well-known vendors compare against established and better-known brands*. There's a built-in level of comfort when buying products from well-known vendors. There's also a built-in resistance to buying products from vendors that are perceived as unknown quantities. This Buyer's Guide helps to remove some of that apprehension. Using this Buyer's Guide, organizations can see how these products stack up.

5. *Normalize complex terminology.* Every industry has a proclivity to adopt acronyms and jargon that is specific to it. This Buyer's Guide sifts through the acronyms and jargon and then normalizes these terms, providing a foundation for meaningful comparisons. Definitions for these normalized terms are provided in the Glossary in this Guide.

6. *Take advantage of standardized data sheets to quickly compare products side-by-side.* The product data sheets available from the different vendors are rarely laid out in the same way or contain the same information. Some vendors even have data sheet formats that vary from product to product within their own portfolio. This Buyer's Guide tackles this problem by creating a standard, easy-to-read data sheet for every product. In this way, product data sheets for individual products can be printed out and laid down side by side so that the features on them can be quickly compared.

7. *Help justify buying recommendations to business teams.* An overall ranking of *Recommended, Excellent* or *Good* is included at the top of every product data sheet. This overall ranking summarizes in a single word how feature rich a product is compared to the other products in the Buyer's Guide.

Disclosures

Over the last few years the general trend in the US has been for both large and boutique analyst firms to receive some or all of their revenue from vendors.

DCIG is no different in this respect as it also receives payment for the different services it performs for vendors. The services that DCIG provides include blogging, customer validations, product reviews, executive white papers, special reports and white papers.

In the interest of transparency, a number of the vendors included in this DCIG Buyer's Guide are or have been DCIG clients. This is not to imply that their products were given preferential treatment in the Buyer's Guide. All it means is that DCIG had more knowledge of their products so that DCIG could consider their product for inclusion in this Buyer's Guide.

In that vein, there are a number of important facts to keep in mind when considering the information contained in this Buyer's Guide and its merit.

- No vendor paid DCIG any fee to research this topic or arrive at pre-determined conclusions.

- DCIG did not guarantee any vendor that its product would be included in this Buyer's Guide

- DCIG did not imply or guarantee that a specific product would receive a preferential ranking in this Buyer's Guide, before or after completion of research

- All research was based upon publicly available information, information provided by the vendor, and/or the expertise of those evaluating the information

- No negative inferences can be drawn against any vendor not included in the Buyer's Guide

- It is a misuse of the Buyer's Guide to make comparisons between any vendor not ranked in the Buyer's Guide.

Because of the number of features analyzed and weighed, there was no way for DCIG to accurately predict at the outset how individual products would end up ranking. DCIG wants to emphasize that no vendor was privy to how DCIG weighed individual features. In every case the vendor only found out the rankings of its product(s) after the analysis was complete.

Inclusion and Exclusion Criteria

The *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* is based on DCIG's Backup Appliance Body of Research on more than 130 backup appliances. The following criteria were used when determining whether or not to include as a specific hybrid cloud backup appliance in this Buyer's Guide:

- Must be available as a physical appliance

- May also ship as a virtual appliance

- Stores backup data on the appliance via on premise DAS, NAS or SAN-attached storage

- Enables connectivity with at least one cloud-based storage provider for remote backups and long-term retention of backups in a secure/encrypted fashion

- Offers multiple layers of storage efficiency (deduplication/compression) and high availability (multiple controllers/nodes)

- Provides the ability to connect the cloud-based backup images on more than one geographically dispersed appliance

- Includes backup and recovery software that enables seamless integration into an existing infrastructure

- Includes support for standard application level backups (Exchange, Oracle, MSSQL, Sharepoint, etc...)

- Sufficient information provided to reach meaningful conclusions

- It must be generally available on July 1, 2016.

The Eight-Step Process Used to Rank Products

To rank each product included in this Buyer's Guide, DCIG went through an eight-step process to come to the most objective conclusion possible.

1. *DCIG established which features would be evaluated and which ones would not.* Prior to selecting the features which would be evaluated, DCIG quantified, then "normalized" the list of available features such that a common name for each feature was established. In cases where a feature could not be objectively defined or understood, it was excluded from consideration.

2. *The features were grouped into six (6) general categories.* The features to be evaluated were grouped into four broad categories: Virtualization, Management, Backup & Recovery, Replication Cloud Management, Hardware and Support.

3. *DCIG completed a survey for each vendor's product(s) and then sent the survey(s) to each vendor for verification.* Each vendor was invited to review their

data and respond with any corrections or edits to the DCIG-completed survey(s). In every case, every vendor had the opportunity to review and respond to any DCIG-completed survey.

4. DCIG identified a list of products that met the DCIG definition for *"Hybrid Cloud Backup Appliance"* based on the inclusion/exclusion criteria.

5. *DCIG weighted each feature to establish a scoring rubric.* The weighting of each feature was done by a team of DCIG research analysts. The weightings were used to reflect if a feature was supported and potentially how useful and/or important the feature was to end users.

6. *Each product's features were scored based on information gathered in the surveys.* Features were marked as either *"supported"* or *"unsupported/ undetermined"* and then scored accordingly. Rankings were finalized after any updates from vendors had been entered and the review period expired.

7. *Products were ranked using standard scoring techniques.* One of the goals of this Buyer's Guide is to establish clear lines of differentiation with conclusions that are arrived at objectively. To accomplish this goal, the mean or average score for all products was first determined and then the standard deviation. DCIG developed an overall ranking for each product based on where that product's overall score fit into standard deviation ranges.

8. *Product data sheets were created and sent to the vendors for review before publication.* Each data sheet included in this published version of the *Buyer's Guide was sent to the vendors prior to publication for their review and feedback. In every case, each vendor had an opportunity to review and update the content included on its respective data sheet(s).*

Due to the large number of product features that DCIG evaluated, only a subset of the collected data could be included on the data sheets. The feature data on the data sheets was selected based on the following criteria: 1) the most variability, 2) the greatest scoring weight, and 3) of the greatest interest to prospective array purchasers. The full set of product feature data may be accessed in the DCIG Analysis Portal available through DCIG's website: **www.dcig.com**.

DCIG Comments

Feature Consolidation in the Purpose Built Backup Appliance Market

It was just last year that the inaugural *DCIG 2015-16 Hybrid Cloud Backup Appliance Buyer's Guide* was released. It was created to reflect the segmentation in the cloud backup market into two major use cases. For use behind corporate firewalls, DCIG evaluates the features of PBBA's with pre-integrated data protection software in its Integrated Backup Appliance Buyer's Guides. For use in conjunction with public cloud providers, DCIG evaluates the features of PBBA's with pre-integrated data protection software in its Hybrid Cloud Backup Appliance Buyer's Guides.

Careful observers will note that several of the appliances in this guide appear in other DCIG Buyer's Guides. This is a reflection on the versatility of this class of products. Features that are important in the private cloud are also important in the public cloud. For instance, encryption and replication are important whether traversing private or public networks. Deduplication and WAN acceleration, while important in both cases, is especially valuable when organizations are charged for the amount of data they transfer into and out of their cloud provider.

Hybrid cloud appliances offer features that integrated backup appliances may not offer, especially at the lower end of the market. The classic use case for the hybrid cloud backup appliance is one where the appliance creates a local backup similar to an integrated backup appliance and then copies the data to a public cloud provider such as Amazon or Azure. This can be a major advantage for organizations without multiple data centers that can be utilized as disaster recovery sites. The onsite copy accelerates recovery when data loss is localized and not caused by a site becoming unavailable. The copy in the cloud is available for recovery in the event of a true disaster.

Hybrid Cloud Backup Appliance Use Cases

Viewing hybrid cloud backup appliances strictly in the context of *"backup and recovery"* is a mindset that organizations must strive to overcome. While these appliances certainly fulfill this traditional role, new use cases are constantly emerging for these appliances. These uses may extend to all secondary storage use cases starting with data protection and extending to copy data management,

test/dev, and data analytics. These extended use cases may create substantial additional value for organizations that take full advantage of the related product capabilities.

Minimally, hybrid cloud backup appliances solve a challenge that confronts many SMEs. An HCBA provides onsite backups as well as the flexibility to store backup copies of an organization's data in the cloud for data recovery purposes. Instead of needing to purchase and install backup appliances at two or more locations for data recovery, organizations may use a hybrid cloud backup appliance in conjunction with a public cloud storage provider as a means to:

- Move backup data offsite

- Keep a retention copy or copies of the backup data with the provider long term

Once these standard data protection requirements are met, organizations may now look to leverage some of the other features that a number of hybrid cloud backup appliances offer. For example, some hybrid cloud backup appliances give organizations the flexibility to create one or more VMs on the appliance that can host the protected applications and/ or their data. Using these features, these organizations can, with comparative levels of ease and simplicity and without disrupting their production environment, test and verify that they can restore protected applications and data.

Some appliances even offer the flexibility to run these applications on a VM in a standby state. In this configuration, if the production application goes offline, the application running on the standby VM on the hybrid cloud backup appliance can keep the application operational until the production server or VM comes back online.

Restoring applications on a standby VM also gives organizations new flexibility to test application and operating system fixes, patches and upgrades before they apply them on the production server. An organization may bring up an application on a VM on the hybrid cloud backup appliance in a configuration that mimics their production environment.

Fixes, patches or upgrades may then be applied to either the OS and/or application to verify that they work. This technique also gives administrators some practice on how to apply the patch and grants them visibility and understanding into what occurs on the system when the fix or patch is applied such as seeing what alerts are generated (if any) and how much time the update takes to complete.

Organizations using public cloud storage providers that offer cloud recovery options may even be able to go so far as to simulate a disaster recovery (DR) in the provider's cloud. Granted, no organization should expect any of the appliances evaluated in this Buyer's Guide to provide an out-of-the-box, turnkey DR solution. Nevertheless, using these appliances and the partnerships the vendors have built with various public cloud storage providers, organizations may realistically look toward creating a viable DR solution much more easily than in the past.

The Role of Virtual Machines

Virtual machines (VMs) have become a core component of both Integrated and Hybrid Cloud Backup Appliances. In many respects VMs have made life much easier for backup software. By leveraging the programming interface (API) of the hypervisor the backup software can guarantee the consistency of the storage regardless of the OS or filesystem in use. Technologies including Change Block Tracking have improved the efficiency of incremental backups. Often the backup software vendor only needs to call the API and read the backup stream without doing any further processing. This frees backup vendors to work on management, storage, and transportation of the backed up virtual machines.

Several vendors have integrated closely enough with cloud providers to allow VMs that have been backed up using the appliance to be powered on in the cloud. In a recovery scenario this can save a tremendous amount of time and cost. Rather than having to recover servers by copying backups from the cloud provider to the primary data center, the virtual machines are simply booted up in the cloud. Another use of this functionality could include the creation of test environments in the cloud based off the original virtual machines.

Hybrid cloud backup appliances can accelerate local recovery as well. All the models in this Guide have the ability to present storage to a hypervisor to allow a VM to be recovered without copying data back to production storage. As noted above, some models also support running the VM directly on the appliance itself.

Public Cloud vs Proprietary Cloud

The public cloud has several large, high visibility vendors including Amazon, Microsoft and Google. Numerous additional cloud providers support the OpenStack platform. The public cloud vendor supported by the largest number of appliances in this guide is Amazon, followed by Microsoft

Azure. An appliance that supports multiple cloud providers reduces the risk of cloud vendor lock in.

Several vendors in the *DCIG 2016-2017 Hybrid Cloud Backup Appliance Buyer's Guide* offer their own proprietary cloud services; including Quorum, STORServer, and Unitrends. By providing a proprietary cloud service, vendors are able to better control the integration and quality of the cloud service. Vendors are sometimes willing to provide guaranteed recovery metrics.

Virtual and Physical Restore Capabilities

One capability that is not universal across the products is their ability to backup and restore to physical servers. Given their focus on the cloud, it is understandable that hybrid cloud backup appliance vendors prioritized protecting virtual machines over physical servers. The majority of the vendors covered in this guide however do support both physical and virtual machines. These vendors support all four potential recovery scenarios:

- P2P: Physical to Physical
- P2V: Physical to Virtual
- V2P: Virtual to Physical
- V2V: Virtual to Virtual

The P2P and V2V scenarios are the most common scenarios for most organizations. In both cases no changes are need to the underlying drivers of the operating system (OS) or storage. In V2V backups a snapshot is taken of a VM's virtual hard drives and copied to the appliance. For P2P backup vendors often use agents to snapshot and copy the data. Some vendors are now storing the data in virtual drives on the backup appliance even for physical devices as an enabler for multiple recovery scenarios.

Bare metal recovery is an important feature for many organizations. A bare metal recovery is one in which a blank server is recovered to exact state of the server it is replacing. It avoids the time and inconsistency of first installing and configuring the OS before restoring the data to a server. In most cases bare metal recovery is inherent in V2V recoveries because the entire state of the VM is stored. The task can be a little more difficult when dealing with physical servers.

The tricky part of bare metal recoveries is that the hardware drivers must be reconfigured on the OS to work with a different form of hardware than was originally installed. Once solved though this feature provides organizations with

several opportunities. V2V can also be helpful in migrating from one hypervisor to another.

P2V provides a mechanism for an organization to transition to virtual servers or to the cloud. Physical servers are backed up to the appliance and can then be restored to either a local, private virtual server or uploaded to a cloud provider. The use of a hybrid cloud backup appliance can thus provide a low-risk way for an organization to test the virtualization or cloud waters.

P2V is also useful for disaster recovery. An application may run on dedicated hardware for its production environment but may be able to utilize a virtual environment in a disaster recovery scenario.

V2P is the least used recovery scenario. One use case is to move an application that is not performing well, or that is interfering with the performance of other applications, onto a dedicated physical server. This can also be useful when troubleshooting problems if a software vendor insists the problem is somehow associated with the virtualization stack.

Network Optimization

Organizations of all sizes need to take network bandwidth and costs into account when considering cloud based backups. Whether an organization is considering private, public, or hybrid cloud, factors such as available bandwidth, latency and cost need to be considered. Most public cloud providers charge for the amount of data transmitted into and/or out of their environment. In addition organizations are charged for their local connection to the internet, generally based on bandwidth and circuit distance.

Organizations should identify their recovery objectives. These objectives are usually expressed in terms of time and are referred to as "RPO" (recovery point objective) and "RTO" (recovery time objective). RPO can be thought of as how much data the organization can afford to lose; and RTO as how long the organization can afford for a service to be offline. A shorter RPO requires more frequent backups or snapshots. A shorter RTO requires greater bandwidth to the cloud or recovery site.

One way to reduce the amount of time to move data between sites or to the cloud is to reduce the amount of data transmitted. All the vendors in this guide support WAN acceleration. WAN acceleration uses techniques such as deduplication and compression to reduce the amount of data transmitted over the network.

Bulk Data Transfers

The most likely times that network bandwidth will become an issue are when an organization is initially putting its backup data into the cloud and when and if it needs to recover all of the data all at once to its production site. To address these challenges, organizations should verify that the public cloud storage provider that it plans to use with the hybrid cloud backup appliance has a seeding program. Ideally the provider will offer two bulk data transfer capabilities:

First, the hybrid cloud backup appliance completes a full local backup of the organization's data and then stores it to shippable media (CD, DVD, disk, tape) as opposed to transmitting it over a network link. This media is then sent to the cloud provider's site and restored. Once restored, only changed block of data are sent by the hybrid cloud backup appliance over the WAN link to the cloud provider.

Second, this same method is used in reverse when needing to do a large transfer of data to the organization's site. In this situation, the cloud provider copies the most recent backup of the organization's data to removable media and ships it to the organization.

These seeding and recovery options minimize the amount of data the organization will need to send over a WAN link, and enable the organization to more quickly establish a fully protected data environment without interfering with normal WAN traffic. In combination with data and WAN optimization techniques, bulk data transfers help organizations minimize the cost of providing the required bandwidth for backing up to, and restoring from, the cloud.

Geographical Separation

In order to provide the expected business continuity/disaster recovery benefits of backup up to the cloud, the cloud provider's facility should be far enough away so it is:

- On a separate power-grid. This minimizes the likelihood of a power outage affecting both the primary and secondary site simultaneously.

- Geographically separated. Natural disasters occur, but the area they impact is typically limited to at most a few hundred miles. Organizations should select a provider that is sufficiently far away that it will not be impacted by the same natural disasters that may impact the organization, yet is not so far away that transmission latency or costs become a problem. Major public cloud providers

automatically replicate data to multiple data centers, and provide methods for customers to specify the required range of geographical distribution for their data.

Complying with Regulatory Requirements

The regulatory environment around data storage and security has become increasingly stringent and more complex. National laws and industry-specific regulations abound, especially with regard to personally identifiable information (PII).

For example, some laws and regulations restrict organizations for storing certain types of data in other countries. This may preclude organizations from selecting a public cloud storage provider that has a local data center but which may, in the background, replicate that data to its data centers in other countries for data redundancy and availability purposes. If this replication of data among the provider's sites cannot be certified to meet pertinent regulatory requirements, that cloud provider should not be used for the regulated data.

Similarly, organizations may have a requirement to complete the replication from the appliance to the provider's cloud or vice versa within a specified time frame. This requirement may preclude the use of certain cloud providers or require additional time and cost to establish connectivity that enables the cloud provider to meet the requirement.

In the United States laws such as Sarbanes-Oxley and the ever evolving rules associated with the Health Insurance Portability and Accountability Act (HIPAA) apply to a broad range of organizations. Other regulations apply only to specific industries, such as FERPA to educational providers.

Organizations affected by these and other laws must minimally evaluate public cloud storage providers from these perspectives:

1. The country or countries where cloud storage providers may have data centers

2. The ability of the cloud storage provider to comply with various regulatory mandates

3. The proximity of the cloud provider's data center or centers to the organization's own site

The fact that hybrid cloud backup appliances generally keep a full copy of data onsite that is needed to recover protected applications is one of their more desirable aspects. This copy of data accelerates the recovery process should an outage

occur. It also provides opportunity for an organization to implement some level of control in terms of how it manages the data that it copies to the cloud to include:

1. Identifying the sensitivity of the data

2. Determining if it is going to send that data to the cloud

3. Choosing the most appropriate public cloud storage provider or providers to store this data

The key point is that just because hybrid cloud backup appliances enable an organization to store data in the cloud does not mean that the organization can store all of its data in any given provider's cloud. Many public cloud storage providers meet certification levels and the core government requirements associated with the transmission and retention of data. It is incumbent on the organization to match its regulatory data management requirements to the cloud storage provider's certified capabilities.

It is for these reasons that DCIG encourages organizations to thoroughly research their data storage and retention requirements when selecting a hybrid cloud backup appliance and cloud provider.

A growing number of hybrid cloud backup appliances support multiple cloud providers. Storing data in multiple public storage clouds adds some complexity to the backup environment. However if one limits the total number of cloud providers to three or less, a hybrid cloud backup appliance that supports multiple cloud providers may be used with minimal complexity. In this situation, an organization can set policies to direct which data goes to which cloud provider. This gives organizations the opportunity to satisfy specific regulatory requirements for the data or applications that are subject to those requirements while storing other non-regulated data with more affordable cloud providers.

Performance and Pricing

Two factors that strongly influence buying decisions are performance and cost. Therefore, it may come as a surprise to see no performance benchmarks and no pricing information in this Buyer's Guide. There are two core reasons why performance and pricing information are not included in this Buyer's Guide.

First, performance results vary according to data center environments, the data being stored, and implementation decisions. Introducing any type of performance metric

would only result in the analysis in this Buyer's Guide becoming more subjective, not less.

Second, this Buyer's Guide is intended to provide a point-in-time snapshot of this marketplace. If DCIG had tried to test and establish performance benchmarks for all of these products, the next generation of appliances could well be available before the testing was completed, making this Buyer's Guide obsolete before it ever saw the light of day.

As for pricing, many factors influence final price including capacity purchased, services, extended warranties, negotiations, etc. These factors differ for every vendor and for every organization.

DCIG recognizes that price and performance are relevant and often key considerations. However, it is almost impossible for a third party like DCIG to obtain objective and accurate measures of these factors on a large scale. Therefore, evaluating performance and price is a part of the buying process that is best left to end users.

DCIG Observations & Recommendations

General Observations

General observations on all products in the *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* include the following:

- Support concurrent backups and restores

- Support restoration of data from a copy of data that has been replicated to a second location

- Support WAN acceleration to the cloud storage provider

- Present storage to a hypervisor to allow a VM to be recovered without copying data back to production storage

- Support application consistent backups of Exchange, SQL, Sharepoint and Oracle databases

- Support advanced at-rest and in-flight encryption

- Provide some metering capabilities

- Support performance monitoring

- Support trend tracking showing if a client or VM is backing up more data over time

- Generate alerts when specified performance thresholds are breached

- Nearly all can recover an individual file from the cloud without downloading the entire VMDK

- Nearly all offer network ports configuration by task such as management, replication or ingest

- Most can set data retention periods differently for replicated vs. original data

- Most can select specific files or folders for backup while excluding others

Recommended Ranking

CommVault, STORSever and Unitrends products earned top rankings in this year's *2016-17 Hybrid Cloud Backup Appliance Buyer's Guide.* The eleven products that earned *Recommended* rankings include the CommVault A600, the STORSever A740-CV, A740-TSM, EBA 2802-CV and EBA 2802-TSM, and the Unitrends 824S, 933S, 936S, 943S, 944S and 946S. *Recommended* products share the following features:

- Scale to offer high levels of cache, processing power and storage capacity

- May cluster multiple appliances together to create a highly available configuration

- All offer advanced capabilities such as auto-tiering and metering

- All support adaptive throttling based on consumed WAN bandwidth (compared to 88% at the Excellent grouping)

- Support VADP, multiple hypervisors, and vCenter for instant recovery

- Support scheduled conversions of existing physical backup to virtual (declines to 75% at *Excellent* ranking)

- All products through *Excellent* have P2P, P2V, V2P and V2V restores (compares to 50% at *Good* ranking)

- Eighty-two percent offer connectivity to multiple cloud providers and 90% offer a proprietary cloud service

- Eighty-two percent can create VMs on the backup appliance used to recover and host an application

- Seventy-three percent have a virtual appliance edition

- Sixty-four percent scale to more than 100TB with s ome scaling to more than 1PB

Vendors across the *Recommended* grouping revised and revamped their product lines since DCIG's issued the *2015-16 Hybrid Cloud Backup Appliance Buyer's Guide.*

CommVault A600 earned the *Recommended* ranking in this year's Buyer's Guide. It scales up from 24 TB to 384 TB raw (288 TB usable) capacity. Four nodes can then be combined to scale out to a 1,536 TB raw (1,152 TB usable) capacity backup system.

CommVault is well known for its data protection software. In the past, Commvault has partnered with backup appliance vendors to pre-install its Simpana backup software on their appliances. The Commvault A Series of appliances marks CommVault's entry into the physical appliance market.

CommVault offers a full complement of VM capabilities on the local appliance. The A600 integrates virtualization on the appliances and in the cloud; and is able to recover and host applications. The CommVault A600 appliance leverages the full Simpana feature set for backing up both physical and virtual environments.

Four STORServer products earned a *Recommended* ranking in this year's Buyer's Guide. The STORServer A740 models provide 12 TB to 480 TB of raw storage capacity and up to four 10 GbE and 8/16 Gb FC ports. The STORServer EBA 2802 provide 40 TB to 1.6 PB of raw storage capacity double the port counts of the A740.

STORServer backup appliances are the only products in this Buyer's Guide that support 40 Gb Ethernet connectivity. STORServer backup appliances can handle from 1,500 to 2,500 concurrent backup streams, many times more than other products. The appliances also support more backup software, metering and management console options than the other products in this Buyer's Guide.

The STORServer products include software from either IBM (-TSM) or CommVault (-CV). Unlike some others, STORServer leverages both disk and tape for onsite backup while connecting to third party cloud providers—including Amazon—and STORServer's proprietary cloud service for offsite backup, data recovery and operations.

Six Unitrends products earned a *Recommended* ranking, including the Unitrends Recovery 824S, 933S, 936S, 943S, 944S and 946S. Unitrends introduced new appliances including the Recovery 946S and 944S at the top of

its lineup. These products use a combination of SATA and SSD drives for their operating system, metadata lookup, and overall operational speed. Unitrends is able to protect a broad array of virtual, physical and cloud-based servers and data, including the ability to instantly recover VMs and physical workloads to the appliance. Unitrends supports multiple cloud storage providers including AWS, Azure, Google and Rackspace. The Recovery 946S offers a fixed raw capacity of 182 TBs, 2.5x the capacity of the previous top-end model.

Unitrends offers cloud services through its Unitrends Cloud, leveraging VM capabilities that help to set it apart. Its Disaster Recovery as a Service is an add-on feature where VMs operate in a standby mode to serve as a secondary data recovery site, should the primary site go down. This enables data recovery and operations in the cloud. It also offers bandwidth throttling including time of day scheduling and QoS adaptive throttling.

Excellent Ranking

The seven appliances ranked as *Excellent* include CommVault's A210 & A410, the Unitrends Recovery 603, 604, 713S, 714S and 814S. The products that earned *"Excellent"* rankings in the *2016-17 Hybrid Cloud Backup Appliance Buyer's Guide* share the following characteristics:

- Store data with multiple cloud storage providers

- Support all types of restores (P2P, P2V, V2P, V2V)

- Include vCenter for instant recovery (declines at *Good* ranking)

- Integrate with VMware vCenter Server for monitoring and management tasks

- Can include or exclude VM based on search criteria

- Create an export of metadata to a different location

- Multi-tenancy where the appliance resources can be isolated from one another

- Policy based configurations set on a per-container basis in VMware

- Most support the IPMI protocol and NDMP backup protocol (NDMP drops in the *Good* ranking)

- Connectivity to public storage clouds

- Sixty-five percent offer virtual appliances

- Most protect multiple hypervisors

All of the *Excellent* ranking products are smaller siblings of products in the Recommended category.

CommVault's A210 is a fixed capacity appliance with 21 TB raw (12 TB usable) capacity that can be scaled-out to 84 TB raw (48 TB usable) with a common pool for deduplication. The A410 fixed appliance with 42 TB raw (24 TB usable) capacity that can be scaled-out to 168 TB raw (84 TB usable) capacity. Like the *Recommended* A600, these appliances also leverage Commvault's Simpana backup software.

Unitrends Recovery 603, 604, 713S, 714S and 814S share all the software features of the *Recommended* Unitrends models, but with less robust hardware and connectivity options. Raw capacity range from 3 TB to 12 TB for these models.

Good Ranking

The five hybrid cloud backup appliance models ranked as *Good* include Cohesity C2300 and C2500, Quorum onQ-280-32 and 288-32, and the Veritas NetBackup 5240. Appliances at the *Good* level offer all the core features necessary for a hybrid cloud configuration including deduplication, virtualization, and cloud connectivity. Products in the *Good* ranking in the *2016-17 Hybrid Backup Appliance Buyer's Guide* generally share the following common features:

- Support instant recovery on the appliance using virtual machines

- All have a combination of SSD and SATA drives

- Robust encryption for data at-rest and in-flight

- VM Instant Recoveries are offered by all of these appliances

- All can restore data from a copy that has been replicated to a second location

Cohesity is a startup that introduced its first products, the C2300 and C2500 appliances, in October 2015. Cohesity's founder is Mohit Aron, who previously co-founded Nutanix. Cohesity markets its products as hyperconverged secondary storage for all secondary use cases including backup, test/dev and analytics.

The C2300 provides 12 TB raw disk capacity plus 800 TB of PCIe-based flash storage per node, with 4-nodes per 2U appliance. The C2500 offers twice the capacity of the

C2300. Cohesity implements a scale-out architecture. As tested by ESG, a 32 C2500 node configuration provides 768 TB raw capacity.

Cohesity has implemented a rapid release schedule to fill the gaps in its feature set, releasing version 3 of its operating software in September 2016. In July 2016, Cohesity announced it had achieved FIPS 140-2 certification for encryption of sensitive data.

Quorum onQ-280-32 and 288-32 onsite appliances integrate with the proprietary Quorum Cloud backup service. A Quorum appliance can also replicate to another Quorum appliance, and offer a full set of virtualization capabilities on the appliance and in the cloud.

The Quorum onQ-288-32 is a fixed capacity appliance with 32 TB raw capacity per node. Smaller Quorum onQ nodes are available down to 3 TB. Multiple nodes can be configured together to support high availability, while maximum raw capacity corresponds to the number of nodes added.

Quorum products support a range of replication options (1:1, 1:N and N:1). Users can monitor real-time deduplication ratios as data is sent to another appliance or to the cloud. Quorum's cloud includes a remote onQ appliance where users can turn on and spin up recovery nodes for data recovery purposes.

Veritas NetBackup 5240 replaced the 5230. The updated model includes more CPU cores, cache and storage capacity, increasing the number of backup streams the appliance can process by 33% to 192 streams. Veritas integrates its own NetBackup backup software with a hardware appliance for the plug-and-play appliance market.

The Veritas 5240's deduplication features include automation of the deduplication stream as data is being written, deduplication ratio by backup job, and policies for deduplicating certain data while letting other data bypass deduplication altogether. Veritas is reportedly planning to introduce a virtual appliance by the end of 2016.

HYBRID CLOUD BACKUP APPLIANCE BUYER'S GUIDE RANKINGS

OVERALL RANKINGS
Vendors Listed Alphabetically in Each Category

RECOMMENDED	
	CommVault A600
	STORServer EBA 2802-TSM
	STORServer EBA 2802-CV
	STORServer A740-TSM
	STORServer A740-CV
	Unitrends Recovery 946S
	Unitrends Recovery 944S
	Unitrends Recovery 943S
	Unitrends Recovery 936S
	Unitrends Recovery 933S
	Unitrends Recovery 824S
EXCELLENT	CommVault A410
	CommVault A210
	Unitrends Recovery 814S
	Unitrends Recovery 714S
	Unitrends Recovery 713S
	Unitrends Recovery 604
	Unitrends Recovery 603
GOOD	Cohesity C2500
	Cohesity C2300
	Quorum onQ-288-32
	Quorum onQ-280-32
	Veritas NetBackup 5240

HYBRID CLOUD BACKUP APPLIANCE BUYER'S GUIDE PRODUCTS

Cohesity C2300

OVERALL RANK   **GOOD**

VIRTUALIZATION

Virtual Appliance	⬤
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	⬤
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	⬤

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	⬤
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	⬤
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	3
Physical Recovery Types *TOTAL #*	⬤
Bare Metal Recovery	⬤
Concurrent Backups/Restores	✓
Restore Types	V2V
# Concurrent Backup Streams *MAX*	Unlimited *
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	⬤

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	5
Cloud Datacenter Locations *TOTAL #*	⬤
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	⬤
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	2 / 2 / ⬤
4/8/16Gb FC Interfaces *MAX*	⬤ / ⬤ / ⬤
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	Unlimited *
Cache *MAX*	Unlimited *

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED   ⬤ UNSUPPORTED / UNDETERMINED

* Largest tested deployment 32 nodes with raw storage of 384 TB and cache of 2,048 GB.

Cohesity C2500

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BACKUP APPLIANCE

VIRTUALIZATION

Virtual Appliance	●
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	●
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	●

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	●
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	●
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	3
Physical Recovery Types *TOTAL #*	●
Bare Metal Recovery	●
Concurrent Backups/Restores	✓
Restore Types	V2V
# Concurrent Backup Streams *MAX*	Unlimited *
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	●

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	5
Cloud Datacenter Locations *TOTAL #*	●
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	2 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	24 TB
Raw Storage *MAX*	Unlimited *
Cache *MAX*	Unlimited *

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

* Largest tested deployment 32 nodes with raw storage of 768 TB and cache of 2,048 GB.

DCIG

CommVault A210

OVERALL RANK **EXCELLENT**

VIRTUALIZATION

Virtual Appliance	⬤
VADP VMWare APIs **TOTAL #**	4
Hypervisors / Virtual OS(s) **TOTAL #**	5
vCenter Instant Recovery Features **TOTAL #**	5
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software **TOTAL #**	1
Network Security Protocols	✓
Native Metering **TOTAL #**	4
Management Consoles **TOTAL #**	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods **TOTAL #**	2 / 1
Dedupe Implementation Types **TOTAL #**	4
Physical Recovery Types **TOTAL #**	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams **MAX**	300
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers **TOTAL #**	7
Cloud Datacenter Locations **TOTAL #**	⬤
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	✓
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces **MAX**	4 / 2 / ⬤
4/8/16Gb FC Interfaces **MAX**	⬤ / 2 / ⬤
Controller Configurations **TOTAL #**	3
Raw Storage **MIN**	21 TB
Raw Storage **MAX**	84 TB
Cache **MAX**	128 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods **TOTAL #**	4

✓ SUPPORTED   ⬤ UNSUPPORTED / UNDETERMINED

CommVault A410

VIRTUALIZATION

Virtual Appliance	●
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	5
vCenter Instant Recovery Features *TOTAL #*	5
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	4
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 1
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	300
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	7
Cloud Datacenter Locations *TOTAL #*	●
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	✓
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	● / 2 / ●
Controller Configurations *TOTAL #*	3
Raw Storage *MIN*	42 TB
Raw Storage *MAX*	168 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

CommVault A600

VIRTUALIZATION

Virtual Appliance	●
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	5
vCenter Instant Recovery Features *TOTAL #*	5
VM Instant Recovery	✔
Recover and Host App on VM	✔

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✔
Native Metering *TOTAL #*	4
Management Consoles *TOTAL #*	1
Performance Monitoring	✔
Backup VM Trending	✔
Internal Storage Capacity Alerting	✔
Server Prioritization	✔
Multi-tenancy Isolation	✔

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 1
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✔
Concurrent Backups/Restores	✔
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	300
Limit Number of Backup Streams	✔
File Inclusion/Exclusion	✔

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	7
Cloud Datacenter Locations *TOTAL #*	●
WAN Acceleration	✔
On-Premise to Cloud Recovery	✔
Cloud to On-Premise Recovery	✔
Cloud to Cloud SaaS Applications	✔
Fan-in/Fan-out Options	✔
Encryption Type	At Rest/In Transit
FIPS Certified	✔
Access Multiple Cloud Locations	✔
Appliance to Appliance Bandwidth Throttling	✔
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✔

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	● / 2 / ●
Controller Configurations *TOTAL #*	3
Raw Storage *MIN*	24 TB
Raw Storage *MAX*	1,536 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✔ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Quorum onQ-280-32

OVERALL RANK **GOOD**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs **TOTAL #**	4
Hypervisors / Virtual OS(s) **TOTAL #**	2
vCenter Instant Recovery Features **TOTAL #**	●
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software **TOTAL #**	1
Network Security Protocols	✓
Native Metering **TOTAL #**	2
Management Consoles **TOTAL #**	3
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods **TOTAL #**	2 / 1
Dedupe Implementation Types **TOTAL #**	4
Physical Recovery Types **TOTAL #**	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams **MAX**	3
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers **TOTAL #**	1
Cloud Datacenter Locations **TOTAL #**	3
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	●
Access Multiple Cloud Locations	●
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces **MAX**	4 / 2 / ●
4/8/16Gb FC Interfaces **MAX**	2 / 2 / 2
Controller Configurations **TOTAL #**	2
Raw Storage **MIN**	32 TB
Raw Storage **MAX**	32 TB
Cache **MAX**	384 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods **TOTAL #**	3

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Quorum onQ-288-32

OVERALL RANK **GOOD**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	2
vCenter Instant Recovery Features *TOTAL #*	●
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	2
Management Consoles *TOTAL #*	3
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 1
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	3
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	1
Cloud Datacenter Locations *TOTAL #*	3
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	●
Access Multiple Cloud Locations	●
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	2 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	32 TB
Raw Storage *MAX*	32 TB
Cache *MAX*	384 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

STORServer A740-CV

OVERALL RANK **RECOMMENDED**

HYBRID CLOUD
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BUYER'S GUIDE
BACKUP APPLIANCE

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	2
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	3
Network Security Protocols	✓
Native Metering *TOTAL #*	5
Management Consoles *TOTAL #*	3
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	1,500
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	2
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	✓
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 4 / 2
4/8/16Gb FC Interfaces *MAX*	4 / 4 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	480 TB
Cache *MAX*	128 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED   ⬤ UNSUPPORTED / UNDETERMINED

STORServer A740-TSM

VIRTUALIZATION

Virtual Appliance	●
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	2
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	●

MANAGEMENT

Backup Software *TOTAL #*	4
Network Security Protocols	✓
Native Metering *TOTAL #*	5
Management Consoles *TOTAL #*	3
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	1,500
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	1
Cloud Datacenter Locations *TOTAL #*	2
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	✓
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 4 / 2
4/8/16Gb FC Interfaces *MAX*	4 / 4 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	480 TB
Cache *MAX*	128 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

STORServer EBA 2802-CV

OVERALL RANK **RECOMMENDED**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	2
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	3
Network Security Protocols	✓
Native Metering *TOTAL #*	5
Management Consoles *TOTAL #*	3
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	2,500
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	2
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	✓
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 8 / 4
4/8/16Gb FC Interfaces *MAX*	8 / 8 / 8
Controller Configurations *TOTAL #*	4
Raw Storage *MIN*	40 TB
Raw Storage *MAX*	1,600 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED ● UNSUPPORTED / UNDETERMINED

STORServer EBA 2802-TSM

OVERALL RANK RECOMMENDED

VIRTUALIZATION

Virtual Appliance	⬤
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	2
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✔
Recover and Host App on VM	⬤

MANAGEMENT

Backup Software *TOTAL #*	4
Network Security Protocols	✔
Native Metering *TOTAL #*	5
Management Consoles *TOTAL #*	3
Performance Monitoring	✔
Backup VM Trending	✔
Internal Storage Capacity Alerting	✔
Server Prioritization	✔
Multi-tenancy Isolation	✔

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✔
Concurrent Backups/Restores	✔
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	2,500
Limit Number of Backup Streams	✔
File Inclusion/Exclusion	✔

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	1
Cloud Datacenter Locations *TOTAL #*	2
WAN Acceleration	✔
On-Premise to Cloud Recovery	✔
Cloud to On-Premise Recovery	✔
Cloud to Cloud SaaS Applications	✔
Fan-in/Fan-out Options	✔
Encryption Type	At Rest/In Transit
FIPS Certified	✔
Access Multiple Cloud Locations	✔
Appliance to Appliance Bandwidth Throttling	✔
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✔

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 8 / 4
4/8/16Gb FC Interfaces *MAX*	8 / 8 / 4
Controller Configurations *TOTAL #*	4
Raw Storage *MIN*	40 TB
Raw Storage *MAX*	1,600 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✔ SUPPORTED   ⬤ UNSUPPORTED / UNDETERMINED

Unitrends Recovery 603

OVERALL RANK **EXCELLENT**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	4
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	1 / ● / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	3 TB
Raw Storage *MAX*	3 TB
Cache *MAX*	8 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 604

OVERALL RANK **EXCELLENT**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	4
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	1 / ● / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	4 TB
Raw Storage *MAX*	4 TB
Cache *MAX*	8 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 713S

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	8
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	2 / ● / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	6 TB
Raw Storage *MAX*	6 TB
Cache *MAX*	16 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 714S

OVERALL RANK   **EXCELLENT**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	8
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	8 TB
Raw Storage *MAX*	8 TB
Cache *MAX*	16 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 814S

OVERALL RANK **EXCELLENT**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	16
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	12 TB
Cache *MAX*	16 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 824S

OVERALL RANK **RECOMMENDED**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	32
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	25 TB
Raw Storage *MAX*	25 TB
Cache *MAX*	64 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 933S

OVERALL RANK **RECOMMENDED**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	32
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	37 TB
Raw Storage *MAX*	37 TB
Cache *MAX*	128 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 936S

OVERALL RANK **RECOMMENDED**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	32
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	73 TB
Raw Storage *MAX*	73 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 943S

OVERALL RANK **RECOMMENDED**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	32
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	97 TB
Raw Storage *MAX*	97 TB
Cache *MAX*	480 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED   ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 944S

OVERALL RANK **RECOMMENDED**

2016-17 DCIG BUYER'S GUIDE — HYBRID CLOUD BACKUP APPLIANCE

VIRTUALIZATION

Virtual Appliance	✔
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✔
Recover and Host App on VM	✔

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✔
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✔
Backup VM Trending	✔
Internal Storage Capacity Alerting	✔
Server Prioritization	✔
Multi-tenancy Isolation	✔

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✔
Concurrent Backups/Restores	✔
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	32
Limit Number of Backup Streams	✔
File Inclusion/Exclusion	✔

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✔
On-Premise to Cloud Recovery	✔
Cloud to On-Premise Recovery	✔
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✔
Encryption Type	At Rest/In Transit
FIPS Certified	✔
Access Multiple Cloud Locations	✔
Appliance to Appliance Bandwidth Throttling	✔
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✔

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	122 TB
Raw Storage *MAX*	122 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✔ SUPPORTED ● UNSUPPORTED / UNDETERMINED

Unitrends Recovery 946S

OVERALL RANK **RECOMMENDED**

VIRTUALIZATION

Virtual Appliance	✓
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	✓

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	3
Management Consoles *TOTAL #*	1
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	✓

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	32
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	6
Cloud Datacenter Locations *TOTAL #*	7
WAN Acceleration	✓
On-Premise to Cloud Recovery	✓
Cloud to On-Premise Recovery	✓
Cloud to Cloud SaaS Applications	●
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	182 TB
Raw Storage *MAX*	182 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	1 Year
Support Availability	24X7X365
Support Methods *TOTAL #*	4

✓ SUPPORTED ● UNSUPPORTED / UNDETERMINED

Veritas NetBackup 5240

OVERALL RANK **GOOD**

VIRTUALIZATION

Virtual Appliance	⬤
VADP VMWare APIs *TOTAL #*	4
Hypervisors / Virtual OS(s) *TOTAL #*	⬤
vCenter Instant Recovery Features *TOTAL #*	7
VM Instant Recovery	✓
Recover and Host App on VM	⬤

MANAGEMENT

Backup Software *TOTAL #*	1
Network Security Protocols	✓
Native Metering *TOTAL #*	5
Management Consoles *TOTAL #*	3
Performance Monitoring	✓
Backup VM Trending	✓
Internal Storage Capacity Alerting	✓
Server Prioritization	✓
Multi-tenancy Isolation	⬤

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*	2 / 2
Dedupe Implementation Types *TOTAL #*	4
Physical Recovery Types *TOTAL #*	3
Bare Metal Recovery	✓
Concurrent Backups/Restores	✓
Restore Types	P2P, P2V, V2P, V2V
# Concurrent Backup Streams *MAX*	192
Limit Number of Backup Streams	✓
File Inclusion/Exclusion	✓

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*	4
Cloud Datacenter Locations *TOTAL #*	⬤
WAN Acceleration	✓
On-Premise to Cloud Recovery	⬤
Cloud to On-Premise Recovery	⬤
Cloud to Cloud SaaS Applications	⬤
Fan-in/Fan-out Options	✓
Encryption Type	At Rest/In Transit
FIPS Certified	✓
Access Multiple Cloud Locations	✓
Appliance to Appliance Bandwidth Throttling	✓
Replication to Other Appliance	Continuous, Periodic, Synchronous
Differing Retention Periods	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 8 / ⬤
4/8/16Gb FC Interfaces *MAX*	10 / 10 / ⬤
Controller Configurations *TOTAL #*	1
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	300 TB
Cache *MAX*	256 GB

SUPPORT

Warranty	3 Years
Support Availability	24X7X365
Support Methods *TOTAL #*	3

✓ SUPPORTED ⬤ UNSUPPORTED / UNDETERMINED

APPENDICES

Definitions, Explanations and Terminology

This section contains brief definitions and/or explanations of the terms used when developing the data sheets found in the *DCIG 2016-17 Hybrid Cloud Backup Appliance Buyer's Guide.*

VIRTUALIZATION

Virtual Appliance
Indicates if the appliance is available as a virtual edition.

VADP VMWare APIs *TOTAL #*
VMware developed the vStorage Application processing interface for Data Protection (VADP) to help it better manage and expedite the protection of virtual machines. Some of VADP's features include full and incremental Changed Block Tracking (CBT), and logical volume management (LVM). Indicates the total number of application programming interfaces (APIs). For a detailed list of exactly which methods are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Hypervisors/Virtual OS(es) *TOTAL #*
Indicates the total number of hypervisors and/or virtual operating systems supported. If a hybrid cloud backup appliance can run in a virtual environment, it may support multiple hypervisors such as Microsoft HyperV, VMware ESX/ESXi and Citrix XenServer. For a detailed list of exactly which hypervisors are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

vCenter Instant Recovery Features *TOTAL #*
If supported, indicates the model's vCenter instant recovery features.

VM Instant Recovery
Indicates if the appliance has the ability to instantly recover a virtual machine after failure.

Recover and Host App on VM
In addition to creating a VM, the hybrid cloud backup appliance may recover and host an application on a VM. This is useful in initiating a recovery on the appliance on a VM and then moving the VM to a host.

MANAGEMENT

Backup Software *TOTAL #*
Indicates the number of backup software options that can be installed on the backup appliance. The backup software is included with all the hardware needed to operate as a backup appliance and then sold as a bundled solution available as a single SKU. For a detailed list of which software products are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Network Authentication Protocols
Indicates if network authentication protocols are supported for authenticating users and/or administrators accessing the backup appliance and the data stored on it. For a detailed list of exactly which network authentication protocols are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Native Metering *TOTAL #*
Indicates the total number of related capabilities in appliances that include native metering. Using metering, companies can not only view real-time statistics and track historical trending but charge-back storage usage to users, business units or projects. For a detailed list of exactly which metering capabilities are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Management Consoles *TOTAL #*
Lists the total number of management consoles the model supports. Users monitor the hybrid cloud backup appliance through a management console, which captures alerts and error messages from the appliance. For a detailed list of exactly what types of management consoles are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Performance Monitoring
Indicates if the backup appliance includes application software that reports on how the hybrid cloud backup appliance is performing.

Backup VM Trending
If supported, measures which client or virtual machine is backing up more or less data over time.

Internal Storage Capacity Alerting
Indicates whether or not the backup appliances sends out notifications when it is reaching capacity.

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Appendix A—Definitions, Explanations and Terminology (continued)

Server Prioritization
Indicates whether or not the backup appliance is able to schedule backups based on the length of time since a server's latest backup.

Multi-Tenancy Isolation
Indicates whether multiple users (tenants) can use the appliance while keeping each tenant's data isolated and invisible from others for security purposes.

BACKUP & RECOVERY

Dedupe Options / Methods *TOTAL #*
Indicates the number of deduplication options available and used. For a detailed list of deduplication options, please access the DCIG Analysis Portal at http://portal.dcig.com.

Dedupe Implementation Types *TOTAL #*
Indicates the total number of deduplication implementation types (source, target, media server, or a combination of these) that are supported by the model. For a detailed list of exactly which deduplication implementation types are supported by the appliance, please access the DCIG Analysis Portal at http://portal.dcig.com.

Physical Recovery Types *TOTAL #*
Lists the total number of options the hybrid cloud backup appliance provides for doing a recovery of a physical machine. Options include going to similar hardware, dissimilar hardware and virtual machines. For a detailed list of exactly which recovery types are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Bare Metal Recovery
Indicates if the hybrid cloud backup appliance can restore a server from the ground up without pre-established requirements for hardware configuration or installed software.

Concurrent Backups/Restores
Indicates whether the model is able to perform backups while concurrently doing restores.

Restore Types
Lists what types of restores are possible. Options are V2V *(Virtual to Virtual),* V2P *(Virtual to Physical),* P2V *(Physical to Virtual),* and P2P *(Physical to Physical)*.

Concurrent Backup Streams *MAX*
Indicates the maximum number of data streams that can be backed up by the appliance simultaneously.

Limit Number of Backup Streams
Restricts the number of backup streams an appliance can accept at one time to improve performance of the jobs already running.

File Inclusion/Exclusion
Indicates whether the model is able to include or exclude files to be backed up.

REPLICATION CLOUD MANAGEMENT

Public Cloud Service Providers *TOTAL #*
Lists the number of public cloud storage connectivity options available to the hybrid cloud backup appliance. Some connect to independent third-party cloud storage providers such as Amazon, Microsoft Azure and Rackspace, as well as proprietary cloud storage offer.

Cloud Datacenter Locations *TOTAL #*
If a proprietary cloud backup service is provided, indicates the number of locations of the cloud datacenters.

WAN Acceleration
WAN acceleration is the use of deduplication and compression to reduce the amount data transferred over a network connection. The reduction in data transmitted has the effect of reducing the amount of time to transmit the data.

On-Premise to Cloud Recovery
If supported when using the cloud service, indicates if the backup appliance provides on-premise to cloud recovery regardless of the source hypervisor.

Cloud to On-Premise Recovery
If supported when using the cloud service, indicates if the backup appliance provides cloud to on-premise recovery regardless of the source hypervisor.

Cloud to Cloud SaaS Applications
Indicates when using the cloud service, if the appliance supports cloud-to-cloud backup for SaaS offerings.

Fan-in/Fan-out Options
Indicates if the backup appliance supports 1:1, 1:N, N:1, or N:N data replication configuration options. For a detailed list of exactly which replication methods are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Encryption Type

Lists how the data is encrypted when in transmission to and from the cloud provider, and when stored on-premise or off-site in the cloud. There are two types: in-transit and at-rest.

FIPS Certified

Indicates if the hybrid cloud backup appliance is Federal Information Processing Standard (FIPS) certified.

Access to Multiple Cloud Locations

Indicates if the appliance has the ability to save that data to multiple cloud-based locations.

Appliance to Appliance Bandwidth Throttling

If supported, indicates if the backup appliance offered can limit the amount of data being replicated at one time.

Replication to Other Appliance

Indicates whether or not the backup appliance supports replication of data between different appliances with similar hardware at other locations whether within the same hardware family or not. If supported, it lists how replication is implemented *(continuous, periodic, or synchronous)*.

Differing Retention Periods

Indicates if the data retention periods can be set differently for replicated vs. original data.

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*

If supported, indicates the maximum number of 1Gb, 10Gb and 40Gb Ethernet storage networking ports available on the appliance.

4/8/16Gb FC Interfaces *MAX*

If supported, indicates the maximum number of 4Gb, 8Gb and 16Gb Fibre Channel storage networking ports available on the appliance.

Controller Configurations *TOTAL #*

Indicates the total number of configurations available for the appliance controller. For a detailed list of exactly which controller configurations are supported, please access the DCIG Analysis Portal at http://portal.dcig.com.

Raw Storage *MIN*

Lists the minimum amount of raw storage capacity the model natively supports.

Raw Storage *MAX*

Lists the maximum amount of raw storage capacity the model natively supports.

Cache *MAX*

Lists the maximum amount of cache capacity the model natively supports in a fully scaled configuration.

SUPPORT

Warranty

Indicates the standard warranty that is offered with the backup appliance.

Support Availability

Indicates the hours of support availability.

Support Methods *TOTAL #*

Indicates the total number of methods in which IT organizations can access support from the provider. For a detailed list of exactly which support methods are available, please access the DCIG Analysis Portal at http://portal.dcig.com.

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Appendix B—Vendor Contact Information

Hybrid Cloud Backup Appliance Provider Contact Information

Cohesity

451 El Camino Real #235
Santa Clara, CA 95050
www.cohesity.com
+1.855.926.4374
+1.855.9COHESITY

CommVault

1 Commvault Way
Tinton Falls, NJ 07724
www.commvault.com
+1.732.728.5310
+1.888.746.3849

Quorum

2890 Zanker Road, Suite 102
San Jose, CA 95134
www.quorum.net
+1.408.708.4500
+1.877.99.Quorum

STORServer, Inc.

485-B Elkton Drive
Colorado Springs, CO 80907
www.storserver.com
+1.719.266.8777
+1.800.550.5121

Unitrends

200 Wheeler Road
North Tower, 2nd Floor
Burlington MA 01803
www.unitrends.com
+1.866.359.5411

Veritas

500 East Middlefield Road
Mountain View, CA 94043
www.veritas.com
+1.866.837.4827

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