Vendor Landscape: Virtual Backup Software

Evaluate virtual backup software to end the arguing between virtual and backup admins.

INFO~TECH research group

Introduction

Server virtualization is now being used for production workloads and traditional backup vendors are adding features to support this. On the other hand, solutions designed specifically for VM backup offer some key advantages over this approach. But, add image-based backup solutions to the mix, that do a bit of both, and things get very complicated.

This Research Is Designed For:

- ✓ Enterprises seeking to select a solution to backup their virtual infrastructure.
- ✓ Their virtual backup use case may include:
  - Those with traditional backup solutions look at what a virtual only solution might offer.
  - Those with virtual only solutions looking to understand the advantages of a traditional approach.
  - Organizations wanting a general survey of capabilities of new and traditional backup vendors in virtual backup.

This Research Will Help You:

- ✓ Understand what's new in the virtual backup market.
- ✓ Evaluate virtual backup vendors and products for your enterprise needs.
- ✓ Determine which products are most appropriate for particular use-cases and scenarios.

Executive Summary

Info-Tech evaluated 14 competitors in the Virtual Machine Backup market, including the following notable performers:

Champions

- **Symantec's** strong developer base and broad global channel and support ecosystem help it quickly deliver on features and respond to customer feedback.
- **CommVault's** forward-looking hardware integration and OEM strategy, and ability to deliver on must-have virtual backup features make it a great solution for virtual backup.

Value Award

- **Symantec Backup Exec V-Ray edition** is a cost effective solution considering the capabilities, commitment, and support framework that Symantec provides.

Trend Setter Award

- **Veeam** was named a Trend Setter for doing things in backup not possible with traditional solutions, such as running deduped and compressed VMs from backups, and for its comprehensive techniques for efficient network utilization.

Info-Tech Insight

1. **How virtualized are you?**
   Organizations are getting more invested in virtualization. This makes it important to select a solution that best meets recovery needs for VMs. As organizations provision more and more VMs, it only gets more challenging to effectively backup everything.
2. **Consider the cost/complexity trade-off**
   Point solutions for VM backup are inexpensive relative to traditional solutions that handle physical *and* virtual backup and are easier to use. However, most organizations are not 100% virtualized meaning that companies often manage two solutions: one for virtual, one for physical.
3. **Don't forget about tape**
   Many more recent additions to the backup market do not provide the capability to backup to tape for longer term retention. If you currently use tape, or plan to, this should be a consideration.

Market Overview

How it got here

- **Virtualization is production ready.** With advances in server capacity (memory, multi-core processing), and increases in vCPU, RAM, and IOPS capacity limitations, the majority of servers can now be virtualized. In 2012, more than half of server workloads (58%) are virtualized.
- **Legacy agent-based backup approaches are no longer good enough.** With server virtualization, the density of workloads on servers has increased, and installing agents on multiple guest operating systems supported by a host server is not tenable.
- **Enter virtualization-focused backup solutions.** Point solutions designed for virtual backup introduced agentless backups that reduced impact of backup and recovery on production workloads. Designed for virtual backup, they are easier to use and more cost effective.
- **Backup and virtual admins started butting heads.** As more production apps get virtualized, virtual admins that had purchased point solutions and backup admins using traditional backup products are overlapping in responsibility.

Where it's going

- **Organizations want one solution not two.** Currently more than 35% of organizations manage two or more backup solutions. However, most organizations are not 100% virtualized and more than half (52%) are still using tape (source: Info-Tech Research Group).
- **Traditional and virtual backup solution distinctions are blurring.** Traditional backup solutions have found ways to conduct agentless backups, with VMware largely through exposure of APIs, and virtual backup solutions have begun to add support for physical servers and app awareness for app consistent backups. Pushing buyers to focus on specific requirements, in terms of backup media support (e.g. tape), and characteristics that ease implementation and management of virtual infrastructure.
- **Cloud will be the next differentiator.** As backup solutions mature, and standards become more open, capabilities to integrate with public or private cloud will enable more flexibility in archiving *and* disaster recovery of their virtual infrastructure.

As the market evolves, capabilities that were once cutting edge become default and new functionality becomes differentiating. Support for VMware APIs for Data Protection has become a Table Stakes capability and should no longer be used to differentiate solutions. Instead, focus on ease-of-use and how the solution fits with your current backup architecture to get the best fit for your requirements.

Virtual Backup Software Vendor selection / knock-out criteria: market share, mind share, and platform coverage

- Organizations are using either traditional backup, image-based backup, or virtual backup targeted solutions to backup their virtual infrastructure. For this Vendor Landscape, Info-Tech focused on those vendors that offer virtual backup for any of VMware ESX/ESXi, Microsoft Hyper-V, Citrix Xen Server, or other hypervisors.
- Solutions that have a strong market presence and/or reputational presence among large to mid-sized enterprises were included.

Included in this Vendor Landscape:

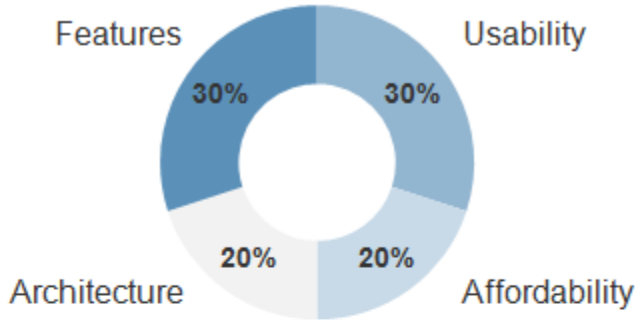
- **CA Technologies.** With roots in systems management, CA ARCserve offers ease-of-use and standout reporting.
- **CommVault.** A strong backup solution offering physical and virtual backup with great hardware integration capabilities.
- **Dell AppAssure.** A recent Dell acquisition, AppAssure is easy to use and has seen steady recent growth and popularity.
- **Dell Quest vRanger.** A virtual backup pioneer, vRanger is known for ease-of-use and performance in virtual backup.
- **EMC.** Market share leader in storage and disk backup, EMC's Avamar offers standout deduplication capabilities.
- **FalconStor.** With roots in OEM of VTLs, FalconStor has recently shifted to the buy side with Continuous Data Protector.
- **HP.** Traditionally known for cost effectiveness with Data Protector, HP offers strong integration with HP hardware.
- **IBM.** Second in market share, Tivoli Storage Manager is highly scalable and fast following in VM backup features.
- **Microsoft.** With the recent release of System Center 2012, Data Protection Manager has become much more scalable.
- **NetApp Syncsort.** A great all-in-one hardware and software implementation that leverages NetApp hardware.
- **PHD Virtual.** A standout virtual backup solution that makes data recovery fast, flexible, and cost effective.
- **Symantec.** Market share leader, Symantec's Backup Exec and NetBackup have strong developer support behind them, which has enabled it to respond quickly to demands of virtual backup.
- **Unitrends.** An image-based backup solution, it offers flexible backup approaches and near continuous data protection.
- **Veeam.** Offers easy to use virtual backup, with unique backup verification, and recovery direct from backups.

Virtual machine backup criteria & weighting factors

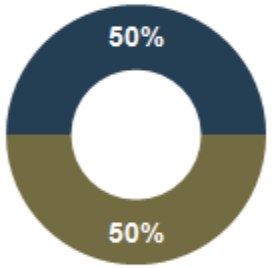
Product Evaluation Criteria	
Features	The solution provides basic and advanced feature/functionality.
Usability	The solution's dashboard and management tools are intuitive and easy to use.
Affordability	The three year TCO of the solution is economical.
Architecture	The solution has flexible deployment options and supports multiple hypervisors.

Vendor Evaluation Criteria	
Viability	Vendor is profitable, knowledgeable, and will be around for the long-term.
Strategy	Vendor is committed to the space and has a future product and portfolio roadmap.
Reach	Vendor offers global coverage and is able to sell and provide post-sales support.
Channel	Vendor channel strategy is appropriate and the channels themselves are strong.

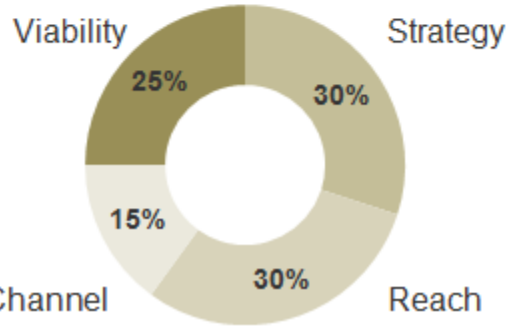
Criteria Weighting:



Product



Vendor



The Info-Tech virtual machine backup vendor landscape

Zones of the Landscape

Champions receive high scores for most evaluation criteria and offer excellent value. They have a strong market presence and are usually the trend setters for the industry.

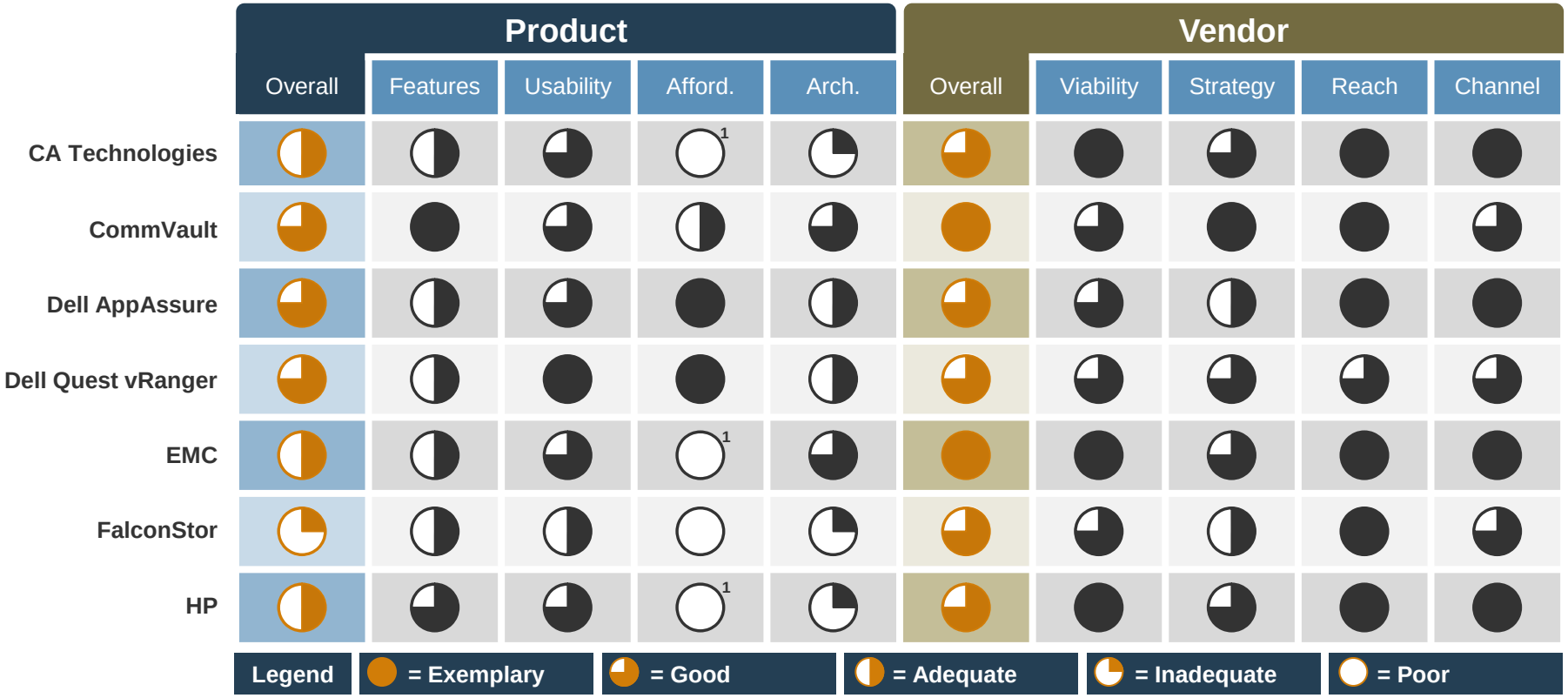
Market Pillars are established players with very strong vendor credentials, but with more average product scores.

Innovators have demonstrated innovative product strengths that act as their competitive advantage in appealing to niche segments of the market.

Emerging Players are newer vendors that are starting to gain a foothold in the marketplace. They balance product and vendor attributes, though score lower relative to market Champions.

For an explanation of how the Info-Tech Vendor Landscape is created, see Information Presentation – Vendor Landscape in the Appendix.

Balance individual strengths to find the best fit for your enterprise



[1] The vendor declined to provide pricing, and publicly available pricing could not be found.

For an explanation of how the Info-Tech Harvey Balls are calculated, see Information Presentation – Criteria Scores (Harvey Balls) in the Appendix.

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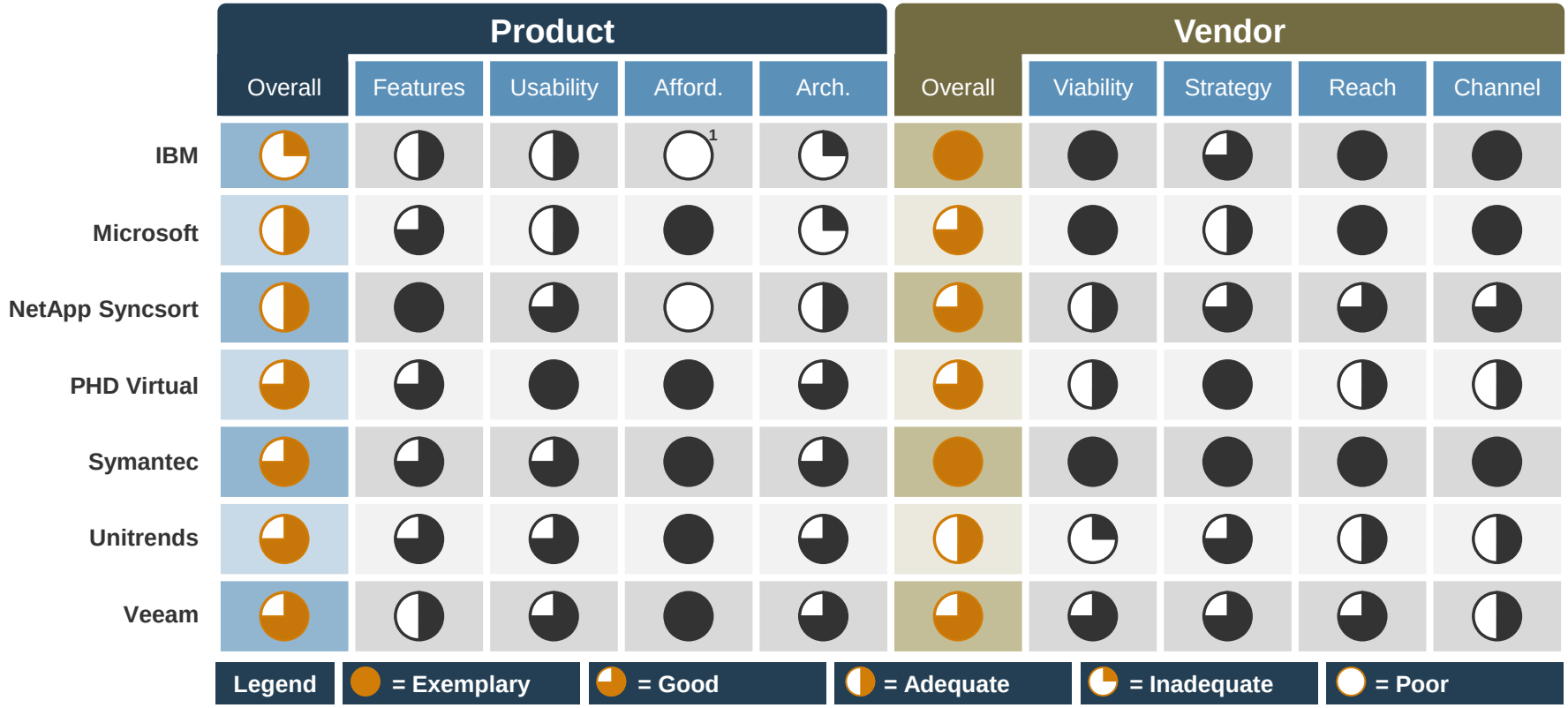

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The Info-Tech virtual machine backup value index

What is a Value Score?

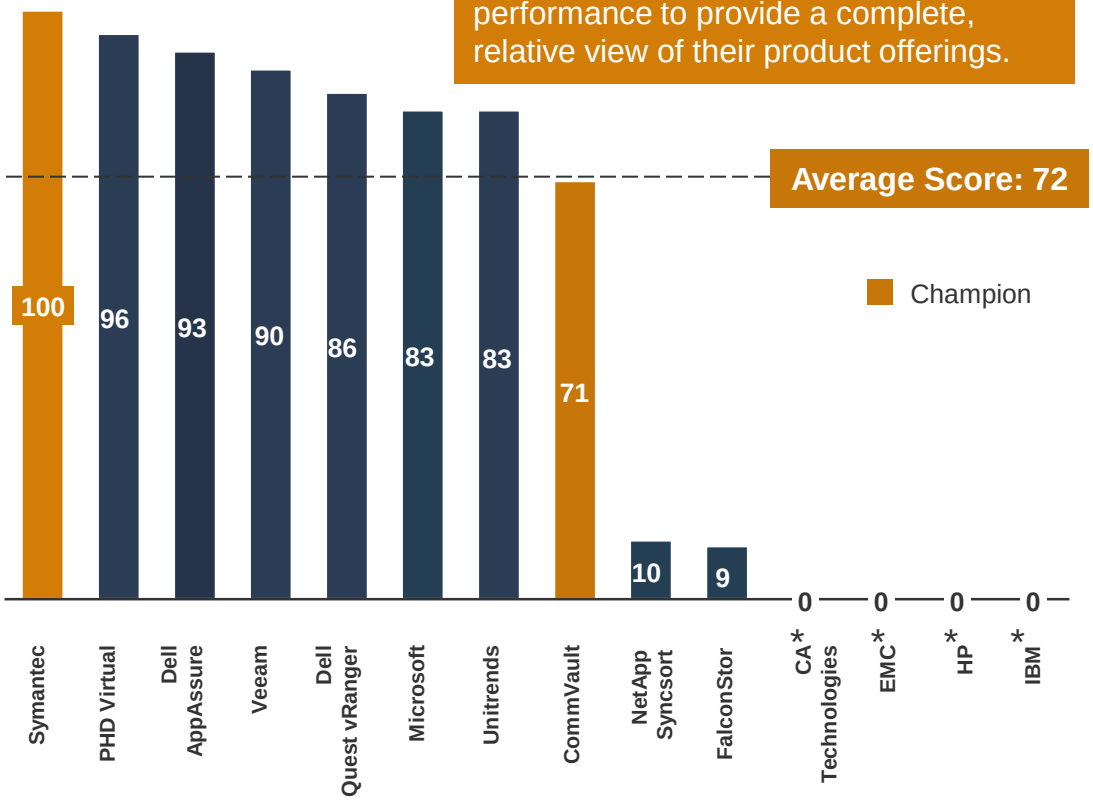
The Value Score indexes each vendor's product offering and business strength **relative to its price point.** It **does not** indicate vendor ranking.

Vendors that score high offer more **bang-for-the-buck** (e.g. features, usability, stability, etc.) than the average vendor, while the inverse is true for those that score lower.

Price-conscious enterprises may wish to give the Value Score more consideration than those who are more focused on specific vendor/product attributes.

*The vendor declined to provide pricing, and publicly available pricing could not be found

On a relative basis, Symantec maintained the highest Info-Tech **Value Score**™ of the vendor group. Vendors were indexed against Symantec's performance to provide a complete, relative view of their product offerings.



For an explanation of how Price is determined, see Information Presentation – Price Evaluation in the Appendix.

For an explanation of how the Info-Tech Value Index is calculated, see Information Presentation – Value Index in the Appendix.

Table Stakes represent the minimum standard; without these, a product doesn't even get reviewed

The Table Stakes

Feature	What it is:
Deduplication	Duplicate blocks of data are eliminated locally before being sent across the network
"Sandbox" Restore Testing	Create a sometimes temporary, dedicated data store and network for testing data recoverability
Monitoring and Reporting	Ability to monitor active processes and status of virtual machines with default and custom reports
Script Automation	Support for command line utilities for custom scripting to automate complex activities
Microsoft SQL and Exchange	Application awareness for application consistent backups, including log truncation

What Does This Mean?

The products assessed in this Vendor Landscape™ meet, at the very least, the requirements outlined as Table Stakes.

Many of the vendors go above and beyond the outlined Table Stakes, some even do so in multiple categories. This section aims to highlight the products' capabilities **in excess** of the criteria listed here.

Info-Tech Insight

If Table Stakes are all you need from your virtual backup solution, the only true differentiator for the organization is price. Otherwise, dig deeper to find the best price to value for your needs.

Advanced features are the capabilities that allow for granular market differentiation

Scoring Methodology

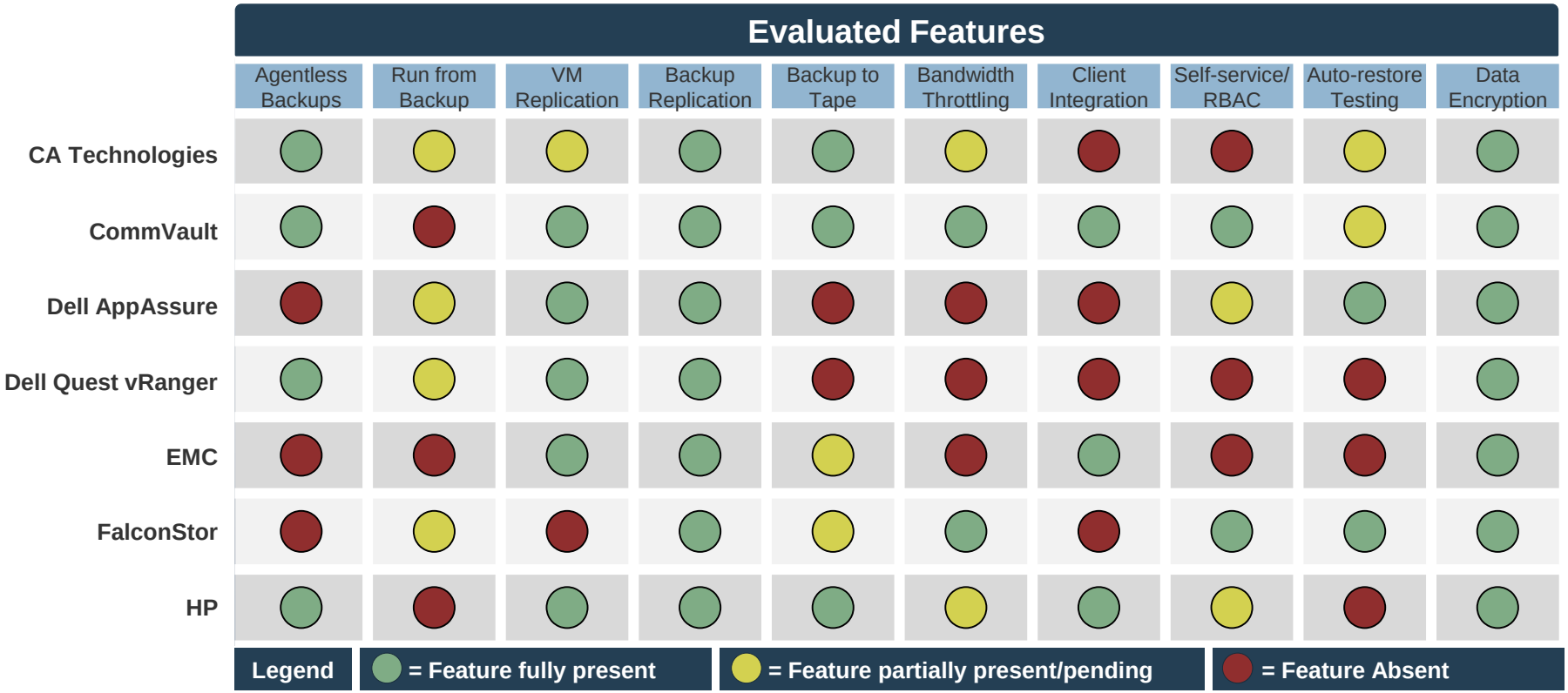
Info-Tech scored each vendor's features, offering as a summation of their individual scores across the listed advanced features. Vendors were given 1 point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points.

Advanced Features

Feature	What we looked for:
Agentless Backups	Conduct backups without requirement of agent on guest machine operating systems
Run VMs from Backups	Run VMs from backup copies, whether synthetic or otherwise on backup media
VM replication	Replicate production VMs to a secondary data store
Backup Replication	Replicate backup copies of VMs for disaster recovery
Direct Backup to Tape	Ability to send backup copies to tape without intervention from a third-party solution
Bandwidth Throttling	Controlling download and upload speeds to manage bandwidth usage
Hypervisor Client Integration	Integration with hypervisor client such that backups and policies can be partially managed
Self-Service/ RBAC	Role-based Access Control to allow helpdesk admins or users conduct recoveries on their own
Auto-Restore Testing	Automatically verify recoverability of VMs that have been backed up
Data Encryption	Capability of the solution to encrypt data before sending across the WAN

For an explanation of how Advanced Features are determined, see Information Presentation – Feature Ranks (Stop Lights) in the Appendix.

Each vendor offers a different feature set; concentrate on what your organization needs



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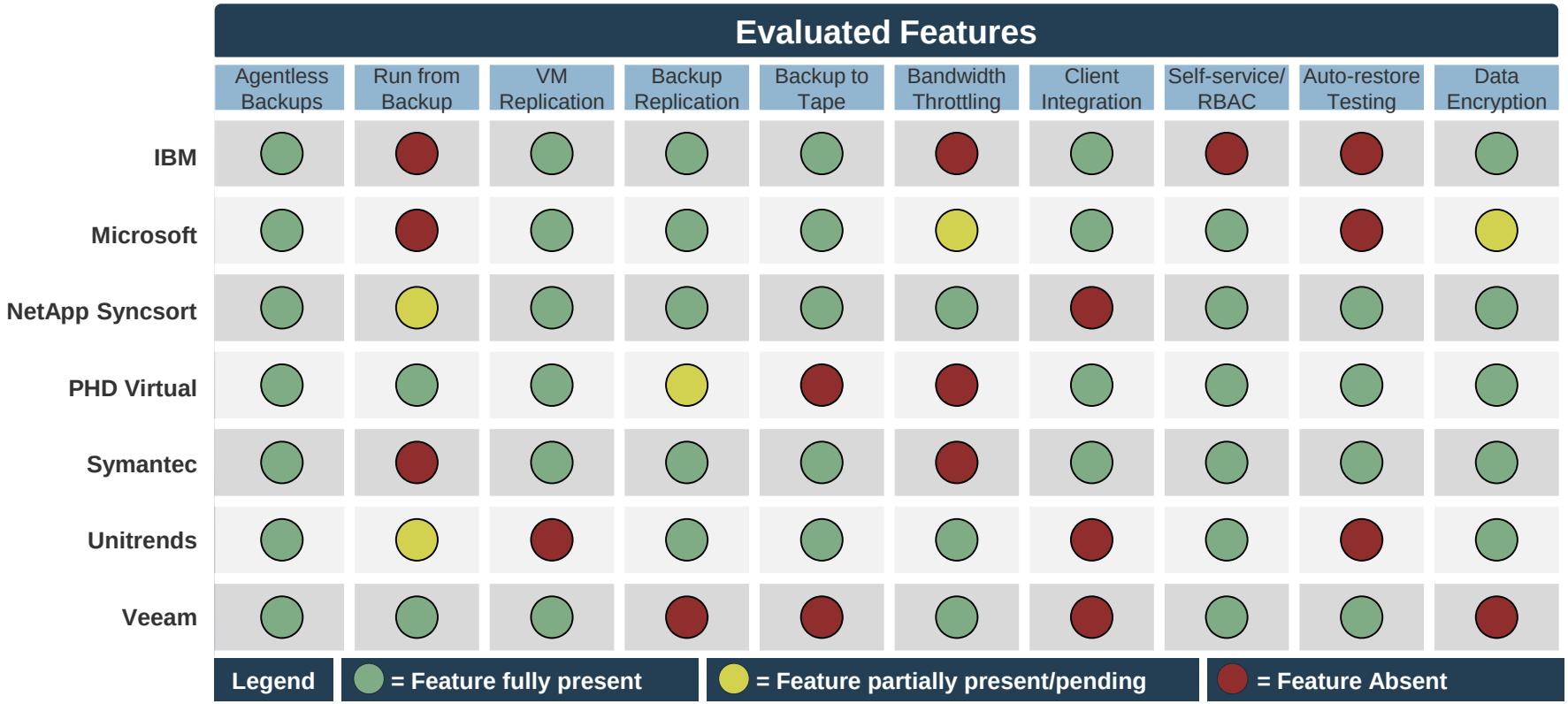

For an explanation of how Advanced Features are determined, see Information Presentation – Feature Ranks (Stop Lights) in the Appendix.

Select the solution that supports the hypervisors that you need it to; many products let you manage more than one

Over 50% of organizations are managing more than one hypervisor* in their virtual environment, making it critical to understand what vendors support.

* Source: Info-Tech Research Group; *N = 88*

1 Hypervisor Support

2

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use-cases come to the forefront. Whether those use-cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use-cases as Scenarios, and calls attention to them where they exist.

VMware ESX/ESXi

All solutions support VMware.

Microsoft Hyper-V

CA technologies
commvault solving forward
DELL AppAssure
EMC² where information lives
FalconStor Software
hp
IBM
Microsoft
syncsort
Symantec +KVM
UNITRENDS Unified Data Protection, Without Limits
VEEAM

XenServer

CA technologies
commvault solving forward
DELL AppAssure
IBM +KVM
PHD Virtual
UNITRENDS Unified Data Protection, Without Limits +KVM

For an explanation of how Scenarios are determined, see Information Presentation – Scenarios in the Appendix.

Select the solution that matches your situation; some products are designed specifically for virtual backup

Twenty three percent of organizations use separate products for virtual and physical backup, while 60% use one to do both.*

* Source: Info-Tech Research Group; *N = 52*

1

2 Physical Backup

Virtual Backup Only

PHD Virtual™ VEEAM

Virtual and Physical Backup

ca technologies
commvault solving forward
DELL AppAssure
DELL Quest Software
EMC² where information lives
FalconStor Software
hp
IBM
Microsoft
syncsort
Symantec
UNITRENDS Unified Data Protection, Without Limits

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For an explanation of how Scenarios are determined, see Information Presentation – Scenarios in the Appendix.

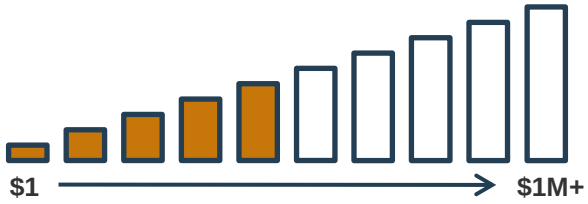
Market share leader, Symantec has great vCenter integration with many deployment options

Champion

Products:	Backup Exec 2012 NetBackup 7.5
Employees:	17,000
Headquarters:	Mountain View, CA
Website:	symantec.com
Founded:	1982
Presence:	NASDAQ: SYMC FY12 Revenue: $6.73B

Symantec™

3 year TCO for this solution falls into pricing tier 5, between $25,000 and $50,000



Pricing provided by vendor.

Overview

- Symantec is the largest provider of security software worldwide and market share leader in the backup software market. It offers Backup Exec for Windows-centric SMBs and NetBackup for large companies supporting many OSs.

Strengths

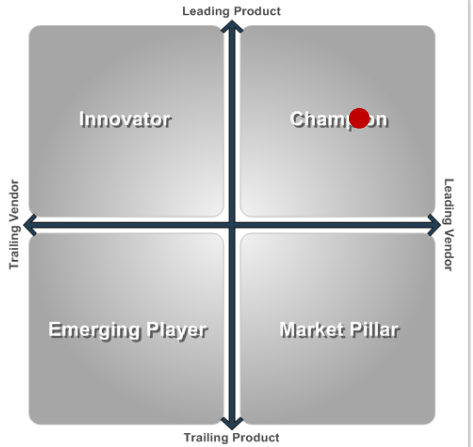
- Backup Exec *and* NetBackup are available as stand alone software for physical or virtual machines, or as a pre-integrated appliance, simplifying implementation.
- Backup Exec V-Ray edition for highly virtualized environments can be installed on a physical or virtual server, and includes dedupe, backup to disk and tape, as well as granular file, data and folder recovery, and the ability to back itself up.
- Symantec revamped its Backup Exec user interface in March 2012 to simplify management.
- Backup Exec and NetBackup integrate with vCenter, enabling backup monitoring and drill-down capabilities for VM admins.
- Widely supported storage integration with OpenStorage APIs.

Challenges

- Some Backup Exec customers were challenged by transition from a job-focused backup structure (in 2010) to a server-focused structure (in 2012). While this continues to be addressed, many of the requested changes were implemented in Symantec's updated Backup Exec 2012 R2 interface.

Symantec has been quick to add key virtual backup features to make data protection of VMs faster and easier to manage

Vendor Landscape



Value Index

100

1st out of 14

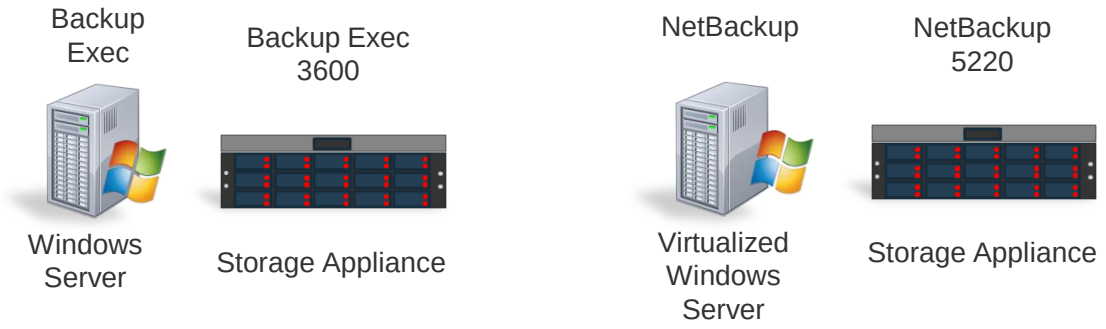
Product

Overall	Features	Usability	Afford.	Arch.

Vendor

Overall	Viability	Strategy	Reach	Channel

Deployment Options



Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption

Info-Tech Recommends:

For the most part, Symantec should be a consideration for most, as it tends to lead or quickly follow in key features and functionality with is large developer base.

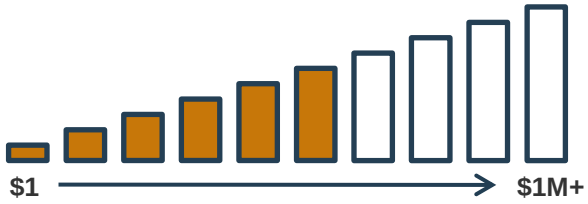
CommVault's standout array integration makes it a great choice for those with tight backup windows

Champion

Product:	Simpana v9 – Virtual Server Agent v9
Employees:	1,400+
Headquarters:	Oceanport, NJ
Website:	commvault.com
Founded:	1996
Presence:	NASDAQ: CVLT FY12 Revenue: $382.3M

commvault
solving forward

3 year TCO for this solution falls into pricing tier 6, between $50,000 and $100,000



Pricing provided by vendor.

Overview

- CommVault offers a comprehensive portfolio of data management and compliance products beyond just data protection. With Virtual Server Agent, it expands capabilities of Simpana to advanced protection of virtual infrastructure.

Strengths

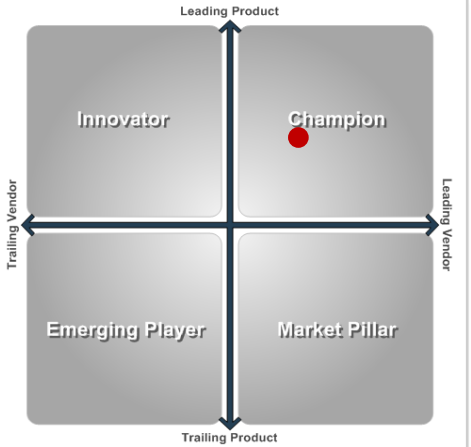
- Array integration with IntelliSnap technology for leveraging of snapshots at the array continues to be a strong point that has been strengthened by CommVault's IntelliSnap Connect Program, launched in January of 2012; key program members include NetApp, HDS, Dell Compellent, and Nimble Storage.
- Web console and vCenter plugin enable VM owners and VMware admins to perform file level recoveries and to view backup details without backup admin intervention.
- Virtual Server Agent provides a common recovery process through the software on the front end regardless of what hardware, hypervisor, or snapshot engine is being utilized on the backend to best accomplish recovery objectives.

Challenges

- Cost consistently comes up as a negative in conversations with Info-Tech customers; however, CommVault's capacity-based post dedupe licensing model has made this more palatable.

CommVault has always received praise from Info-Tech customers for its ease-of-use and solid support

Vendor Landscape



Value Index

71

7th out of 14

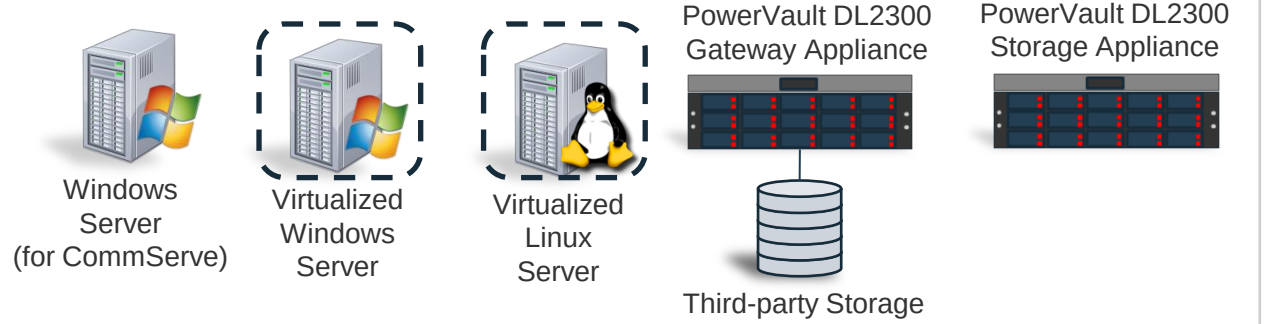
Product

Overall	Features	Usability	Afford.	Arch.
◔	●	◕	◑	◕

Vendor

Overall	Viability	Strategy	Reach	Channel
●	◕	●	●	◕

Deployment Options



Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
●	●	●	●	●	●	●	●	●	●

Info-Tech Recommends:

Organizations of any size looking for a solid, reliable, all-in-one solution, should look to CommVault.

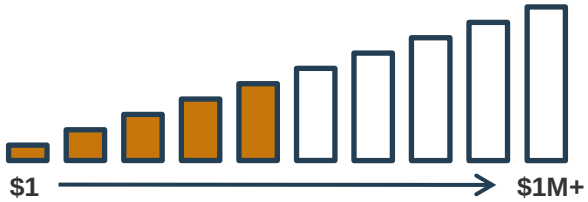
Microsoft provides capable Hyper-V backup and restore

Market Pillar

Product:	Data Protection Manager 2012
Employees:	89,000
Headquarters:	Redmond, WA
Website:	microsoft.com
Founded:	1975
Presence:	NASDAQ: MSFT FY2011 Revenue: $69.94 B

Microsoft®

3 year TCO for this solution falls into pricing tier 5, between $25,000 and $50,000



Pricing formulated from publicly available sources.

Overview

- Data Protection Manager (DPM) was introduced by Microsoft to the System Center Suite in 2005, and got an update with the most recent general availability release in September 2012 for backup and recovery of Windows-based machines.

Strengths

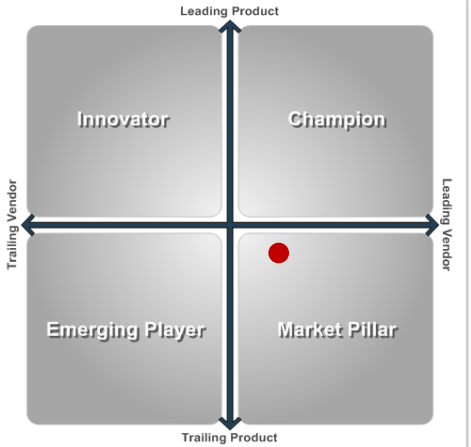
- Reliable backup of Exchange Server, SQL Server, Dynamics CRM, SharePoint, and Windows server and client, as well as third-party apps with appropriate Volume Shadow Copy Services (VSS) writer.
- Recent release added ability to manage up to 100 DPM 2012 servers through a single Operations Manager 2012 console.
- More granular, item-level recovery of SharePoint with DPM 2012, in addition to improved reporting.
- New Role-based Access Control (RBAC) through integration with Operations Manager allows helpdesk operators to perform limited restore functions, reporting operators to perform read-only functions, in addition to full functionality for DPM admins.

Challenges

- With release of new System Center Suite 2012, Data Protection Manager cannot be purchased as a stand-alone product and is licensed as a whole.
- DPM 2012 will not support Windows 8 or Hyper-V 3.0 until a future release of Service Pack 1.

Data Protection Manager may be a “good enough” solution for those managing Windows-centric environments

Vendor Landscape



Value Index

83

6th out of 14

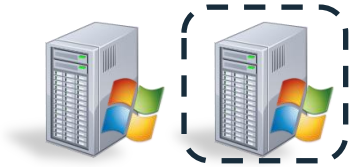
Product

Overall	Features	Usability	Afford.	Arch.

Vendor

Overall	Viability	Strategy	Reach	Channel

Deployment Options



Features

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Info-Tech Recommends:

The new System Center 2012 and Windows 8 together deliver enhancements to Hyper-V that make it more appropriate for large scale production environments. Those planning to implement Hyper-V 3.0 should consider Data Protection Manager within System Center for managing backup of Hyper-V.

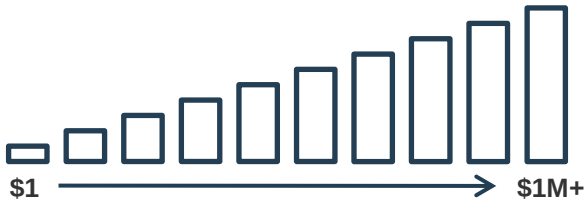
EMC's Avamar offers great deduplication functionality with solid vSphere integration

Market Pillar

Product:	Avamar 6.1
Employees:	53,600
Headquarters:	Hopkinton, MA
Website:	emc.com
Founded:	1979
Presence:	NYSE: EMC
	FY11 Revenue: $20 B

EMC² where information lives®

The vendor declined to provide pricing, and publicly available pricing could not be found



Overview

- Acquired by EMC in 2006, Avamar is a data protection and deduplication solution focused on backup to disk. Since then, EMC has also purchased Data Domain (2009), which has become a market leading disk-based deduplication appliance.

Strengths

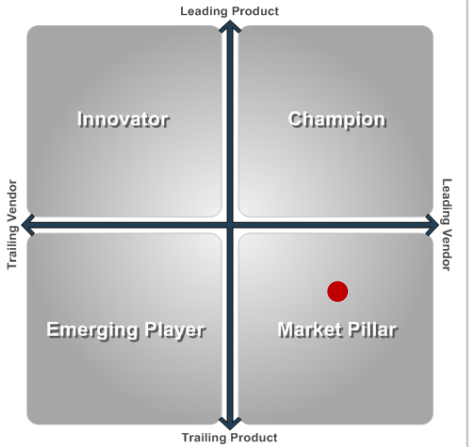
- Availability of software-only option as well as Avamar Data Store, a pre-integrated appliance, simplifies implementation, management and support.
- Integration with vSphere to permit monitoring and management from within vCenter, which enables visibility into protection policies, and backup status for VM admins, and allows them to define backup policies for VMs as they're are created.
- Source-based and global deduplication, long a standout with Avamar, reduces network utilization and capacity requirements.
- Grid-based architecture simplifies scaling of virtual infrastructure backup, and integration with Data Domain deduplication capabilities improves backup for larger streaming loads.

Challenges

- Cost and licensing complexity have been cited by many Info-Tech customers as deterrents.

Trend setter in storage and disk backup, EMC offers a comprehensive portfolio of backup hardware and software

Vendor Landscape



Value Index

N/A

The vendor declined to provide pricing, and publicly available pricing could not be found

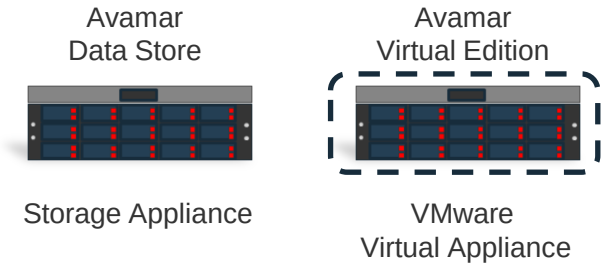
Product

Overall	Features	Usability	Afford.	Arch.

Vendor

Overall	Viability	Strategy	Reach	Channel

Deployment Options



Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption

Info-Tech Recommends:

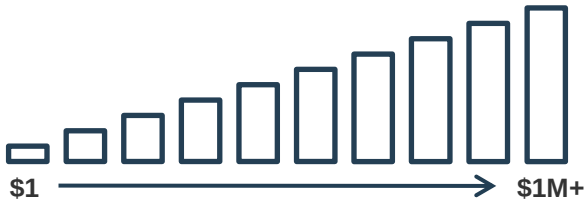
Organizations looking to move to a disk-based backup strategy should look to Avamar and potentially EMC's Data Domain disk backup appliance especially where performance is critical and cost is not the primary decision factor.

CA Technologies' ARCserve family offers easy-to-use software with standout reporting

Market Pillar

Product:	ARCserve R16
Employees:	13,200
Headquarters:	Islandia, NY
Website:	ca.com
Founded:	1976
Presence:	NASDAQ: CA FY12 Revenue: $4.81B

The vendor declined to provide pricing, and publicly available pricing could not be found



Overview

- ARCserve products include Backup for large, complex environments, D2D for snapshot-based backup and recovery for Windows, Replication for basic off-site replication for DR or P2V migration, and High Availability for protection of critical systems.

Strengths

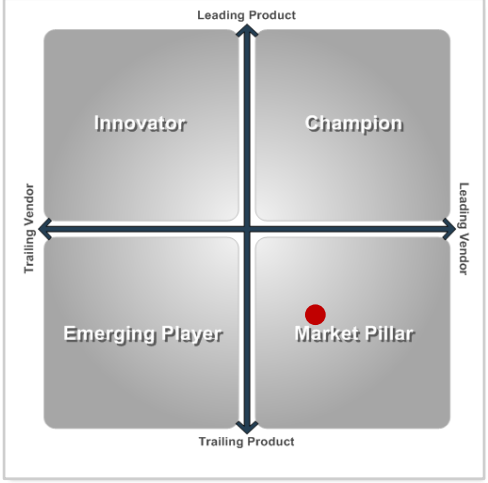
- ARCserve has traditionally been known for its ease-of-use, set up, and standout dashboarding, reporting, and infrastructure visualization capabilities.
- CA Technologies' strong VMware and Microsoft partnerships put it among leading vendors in supporting virtual environments for Windows shops, with VADP integration for VMware and VSS integration for Hyper-V.
- Block-level Infinite Incremental (I^2) backups eliminate periodic full backups and enables RPOs as aggressive as 15 minutes.
- Virtual Standby converts virtual or physical server backups into a virtual format as bootable recovery points. These VMs can be powered on (manually or automatically) as a stand-in.

Challenges

- CA Technologies' portfolio of ARCserve products is comprehensive but, as a tradeoff, can be difficult to navigate.
- Bandwidth throttling and VM replication require purchase of add-on Replication and High Availability (RHA) or D2D products.

CA Technologies has a strong and global support network

Vendor Landscape



Value Index

N/A

The vendor declined to provide pricing, and publicly available pricing could not be found

Product

Overall	Features	Usability	Afford.	Arch.
◐	◑	◕	○	◔

Vendor

Overall	Viability	Strategy	Reach	Channel
◕	●	◕	●	●

Deployment Options

Windows Server

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
●	●	●	●	●	●	●	●	●	●

Info-Tech Recommends:

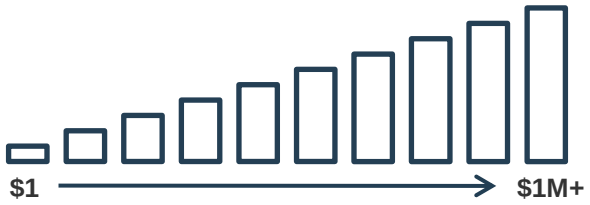
Small to mid-sized organizations with VMware, Microsoft Hyper-V or even Citrix XenServer deployments should consider ARCserve for its ease-of-use and standout reporting.

HP offers standout VMware vCloud Director integration for private cloud environments

Market Pillar

Product:	Data Protector 7
Employees:	349,600
Headquarters:	Palo Alto, California
Website:	hp.com
Founded:	1939
Presence:	NYSE: HPQ FY11 Revenue: $127.2 B

The vendor declined to provide pricing, and publicly available pricing could not be found



Overview

- HP has a strong portfolio of desktop, servers and storage along with a growing software lineup including recent acquisition, Autonomy (2011). HP offers both backup software in Data Protector, StoreOnce D2D backup appliances and tape backup.

Strengths

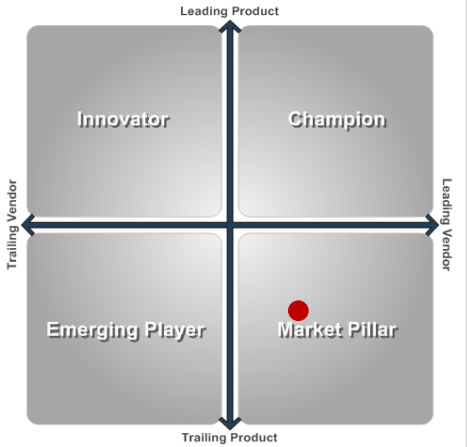
- For VMware environments, Data Protector Granular Recovery Extension (GRE) capability enables VMware admins to recover single items directly from the vSphere console.
- Automatic detection and policy application to new VMs ensures that no VMs go unprotected.
- Data Protector offers strong integration with HP hardware, such as snapshots and replication with 3Par, EVA, P9000, and deduplication with StorageOnce D2D Systems.
- HP recently announced integration between Data Protector and VMware vCloud Director, allowing VM admins to manage protection of multiple vCenter instances from one interface, and browse vCloud Director setup and configuration.

Challenges

- Bandwidth throttling is not supported natively, but is possible for replication with StoreOnce D2D products.
- HP continues to struggle to gain a strong foothold in the market despite recent surges in mind share from 3Par and StoreOnce D2D in the storage and disk backup markets respectively.

With little fanfare, Data Protector provides great hardware integration with 3Par, LeftHand, and StoreOnce D2D

Vendor Landscape



Value Index

N/A

The vendor declined to provide pricing, and publicly available pricing could not be found

Product

Overall	Features	Usability	Afford.	Arch.
◐	◕	◕	○	◔

Vendor

Overall	Viability	Strategy	Reach	Channel
◕	●	◕	●	●

Deployment Options

Windows Server

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
●	●	●	●	●	●	●	●	●	●

Info-Tech Recommends:

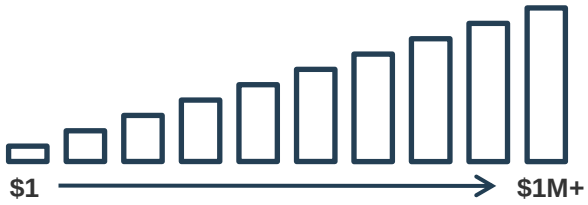
Data Protector should be on the shortlist of any HP customer, whether looking at storage, disk backup or servers.

Pioneer in backup, IBM has made significant enhancements to virtual backup in the last year

Market Pillar

Product:	Tivoli Storage Manager for Virtual Environments V6.4
Employees:	433, 400
Headquarters:	Armonk, New York, New York
Website:	ibm.com
Founded:	1911
Presence:	NYSE: IBM FY2011 Revenue: $106.9 B

The vendor declined to provide pricing, and publicly available pricing could not be found



Overview

- A worldwide leader in IT hardware, software, and services, and number two in market share, IBM has a strong history in backup, pioneering tape backup, disk-to-disk backup, and the incremental forever approach to backup.

Strengths

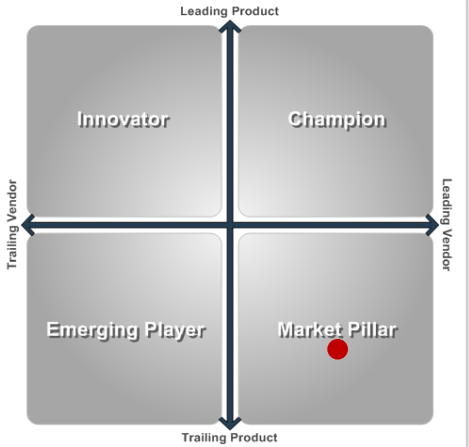
- Tivoli Storage Manager for Virtual Environments recently added the capability to conduct incremental forever backups for virtual environments, eliminating the need for periodic full backups in VMware environments.
- Supports recovery of individual files from within VMs, non-disruptive snapshots at the VM level, and “instant restore” that allows a guest to access a volume while the volume is being recovered.
- IBM added capabilities to support application-consistent backups of Microsoft Exchange and SQL server in virtual environments (with log truncation).
- Strong integration with NetApp and IBM storage is a plus.

Challenges

- Info-Tech customers have criticized IBM for being slow to implement virtual backup capabilities into TSM.
- Complexity tends to be the primary complaint from a usability standpoint, both from an ongoing management and a support standpoint. Not typically a good solution for an IT generalist.

Robust backup capabilities for numerous architectures with a strong technical support and services organization

Vendor Landscape



Value Index

N/A

The vendor declined to provide pricing, and publicly available pricing could not be found

Product

Overall	Features	Usability	Afford.	Arch.
				

Vendor

Overall	Viability	Strategy	Reach	Channel
				

Deployment Options

Windows Server

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
									

Info-Tech Recommends:

IBM Tivoli Storage Manager is a robust solution that is often deployed by entry level and large enterprise customers with heterogeneous OS environments. It is also deployed by mid-sized companies with investment in IBM technologies.

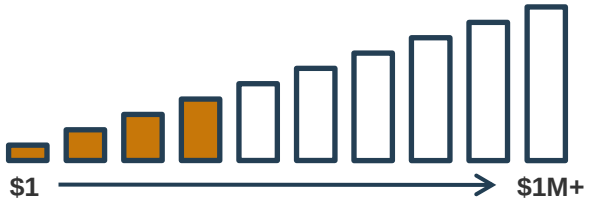
PHD Virtual offers affordable and user-friendly virtual infrastructure backup

Innovator

Product:	PHD Virtual Backup v6.0
Employees:	75
Headquarters:	Philadelphia, PA
Website:	phdvirtual.com
Founded:	2005
Presence:	Privately Held

PHD Virtual™

3 year TCO for this solution falls into pricing tier 4, between $10,000 and $25,000



Pricing provided by vendor.

Overview

- PHD Virtual Backup differentiates on ease-of-use, affordability, and flexibility in backup modes for backing up virtual infrastructure. It also offers PHD Virtual Monitor for performance and SLA monitoring of virtual and physical environments.

Strengths

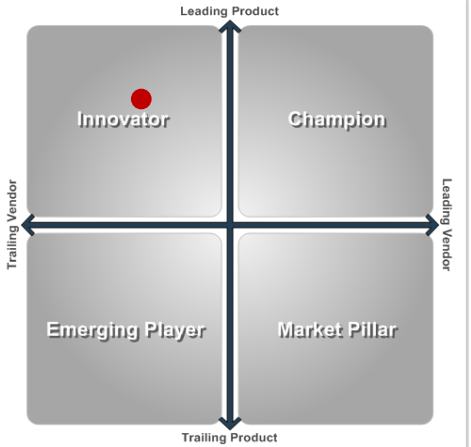
- One of the few virtual backup solutions that can integrate directly with hypervisor clients (e.g. VMware vCenter, Citrix XenCenter) to simplify management for VM admins.
- Instant VM Recovery uniquely enables users to run VMs from backup targets directly for restore testing (no mounting of VMs first), which can then be moved live to production storage.
- Standout block level verification and block healing technologies add integrity to backups to ensure recoverability.
- Multiple backup modes enables data storage optimally designed for backup targets, whether for deduplication appliances, off-site storage, or regular virtual disk storage.
- Linux-based virtual appliance requires no third-party OS license.

Challenges

- Backup of physical infrastructure as well as backup to tape requires use of a third-party backup solution. However, backups can be exported in compressed OVF format for backup to tape.
- One of the few vendors that does not currently support Microsoft Hyper-V; however, this is planned for mid 2013.

PHD Virtual provides quick recovery and direct integration with hypervisor client for virtual backup from a single console

Vendor Landscape



Value Index

96

2nd out of 14

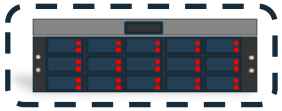
Product

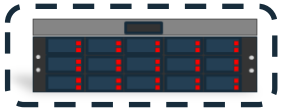
Overall	Features	Usability	Afford.	Arch.
				

Vendor

Overall	Viability	Strategy	Reach	Channel
				

Deployment Options





Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
									

Info-Tech Recommends:

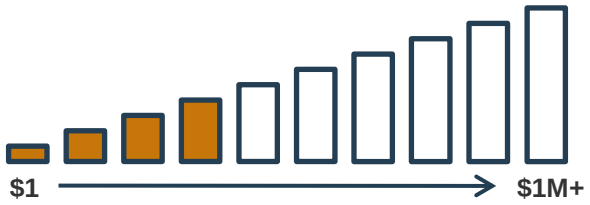
Small to mid-sized, cost conscious organizations are a good fit for PHD Virtual, but its architecture enables it to scale up into larger environments. If managing separate virtual and physical backups is not a concern, have a look at PHD Virtual.

Veeam offers cost effective and practical virtual infrastructure backup and recovery verification

Innovator

Product:	Backup & Replication 6.5 Enterprise Edition
Employees:	900
Headquarters:	Baar, Switzerland
Website:	veeam.com
Founded:	2006
Presence:	Privately Held

3 year TCO for this solution falls into pricing tier 4, between $10,000 and $25,000



Pricing provided by vendor.

Overview

- Designed specifically for virtual backup, Veeam was the first to offer the ability to restore files without restoring virtual machine image. It differentiates on ease-of-use and price, and also offers solutions for management and reporting on virtual infrastructure.

Strengths

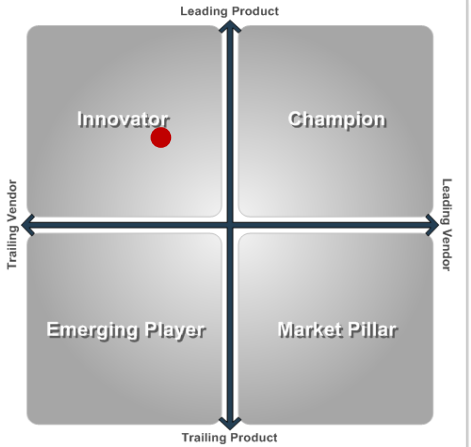
- Veeam's patent pending vPower technology allows it to run a virtual machine from a compressed and deduplicated backup file on backup storage for quick recovery.
- SureBackup automated recovery verification ensures recoverability, by powering on VMs behind a proxy, testing OS, and apps, then powering off VMs and sending a report.
- Leverages native snapshot and replication capabilities within virtual infrastructure, and enables direct restore of VMs, files or app items from HP LeftHand or HP StoreOnce VSA.
- Veeam optimizes network utilization using multiple methods, including bandwidth throttling, WAN optimization, intelligent load balancing, and a *forever incremental* backup model.

Challenges

- Replication of backups requires third-party utility or storage.
- Backup of physical infrastructure and backup to tape requires a third-party backup solution; however, Smart Plug-in and Management Pack provide virtual infrastructure visibility to HP Operations Manager and Microsoft System Center.

Veeam has established itself as a virtual backup vendor and is finding ways to make integration with physical backup easier

Vendor Landscape



Value Index

90

4th out of 14

Product

Overall	Features	Usability	Afford.	Arch.
◔	◑	◕	●	◕

Vendor

Overall	Viability	Strategy	Reach	Channel
◔	◕	◕	◕	◑

Deployment Options

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
●	●	●	●	●	●	●	●	●	●

Info-Tech Recommends:

Veeam is a great virtual backup solution. Unless you are in a situation where a single solution for physical *and* virtual backups are a must, include Veeam on your virtual backup shortlist.

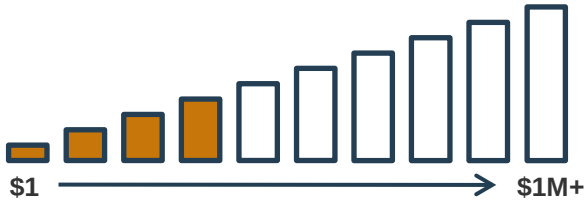
Unitrends offers flexible backup and recovery options primarily targeted at small to mid-sized businesses

Innovator

Product:	Unitrends Enterprise Backup version 6.4.1
Employees:	150
Headquarters:	Columbia, SC
Website:	unitrends.com
Founded:	1989
Presence:	Privately Held

UNITRENDS
Unified Data Protection, Without Limits

3 year TCO for this solution falls into pricing tier 4, between $10,000 and $25,000



Pricing provided by vendor.

Overview

- Unitrends is a growing data protection company focusing on flexibility, offering virtual *and* physical appliances, broad server, storage, OS and hypervisor support, and providing multiple recovery and data protection strategies.

Strengths

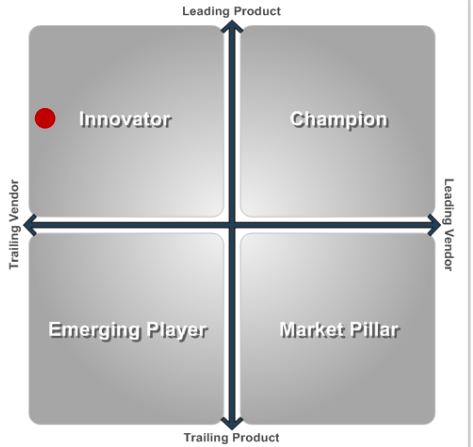
- Incremental forever strategy allows Unitrends to enable fully customizable combinations of full, synthetic full, incremental, or differential backups on both single-server or multiple-server backup jobs.
- *Near continuous data protection model* allows for RPOs as low as 60 seconds, and failover virtualization enables Instant Recovery for VMware, leveraging storage vMotion, for recovery into live mode or audit mode for verification and testing.
- Supports replication of backups and fixed or rotational archiving of data on tape (if hypervisor supported, disk and public cloud).
- Visualization capabilities are better than most. With Unitrends, simplifying backup scheduling, monitoring, and reporting.

Challenges

- Installation services on Unitrends Enterprise Backup virtual appliance were recently added. Implementers of this option are recommended to have an admin well versed in virtualization.
- While Unitrends does not support direct backup to tape, it supports tertiary backup to tape for long-term retention.

Unitrends is still a growing vendor; evaluate support capabilities in your area by asking for references

Vendor Landscape



Value Index

83

6th out of 14

Product

Overall	Features	Usability	Afford.	Arch.

Vendor

Overall	Viability	Strategy	Reach	Channel

Deployment Options

Unitrends Enterprise Backup (UEB)

Windows Server

Unitrends Backup Appliance

Storage Appliance

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption

Info-Tech Recommends:

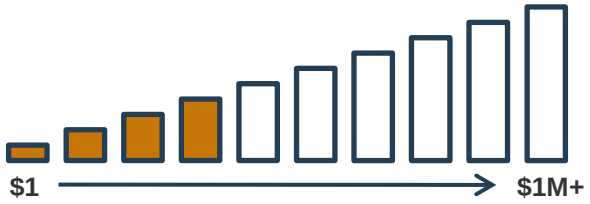
Organizations looking for simplicity in deployment and management, as well as customizability in their backup scheduling capabilities should look to Unitrends. However, be wary of deploying virtual appliance options without extensive experience with virtualization.

AppAssure offers a simplified and cost effective approach to backup, replication, and recovery

Innovator

Product:	AppAssure Backup Replication and Recovery
Employees:	110,000
Headquarters:	Round Rock, TX
Website:	dell.com
Founded:	1984
Presence:	NASDAQ: DELL FY11 Revenue: $62.1B

3 year TCO for this solution falls into pricing tier 4, between $10,000 and $25,000



Pricing provided by vendor.

Overview

- Acquired by Dell in early 2012, AppAssure is a backup, replication, and recovery solution for VMware, Linux, Microsoft Windows Server, Hyper-V and Exchange, which has grown quickly over the last three years with now over 6,000 customers.

Strengths

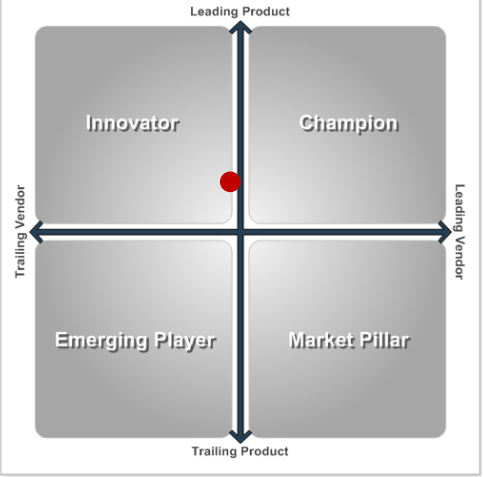
- AppAssure can create snapshots of an image (virtual or physical) every 5 minutes (up to 288 per day), with recovery times ranging from one to several seconds using its Live Recovery by running VMs directly from backup files.
- Recovery Assured tests and verifies recoverability of Exchange, SharePoint and SQL Server apps in the backup file, and also conducts integrity checking against disk blocks during archiving, replication, and data seeding operations to detect and avoid transfer and retention of corrupt blocks during backups.
- Recent acquisition by Dell will bolster support capabilities and enable increased revenue through capitalization on Dell's global sales channel.

Challenges

- AppAssure only supports backup to disk, and therefore requires a third-party backup solution to backup to tape.
- While Dell claims AppAssure's proprietary Smart Agent change block tracking technology uses 100Mbs of RAM and 1-2% of CPU, some may be deterred by the agent-based backup.

AppAssure earned a lot of attention pre *and* post Dell acquisition, and stands to benefit from its global sales channel

Vendor Landscape



Value Index

93

3rd out of 14

Product

Overall	Features	Usability	Afford.	Arch.
				

Vendor

Overall	Viability	Strategy	Reach	Channel
				

Deployment Options

Windows Server

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
									

Info-Tech Recommends:

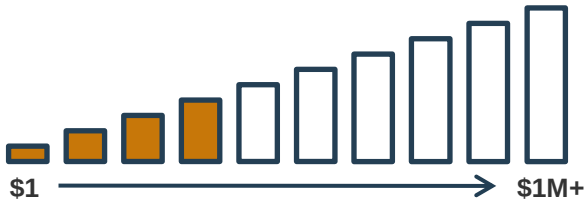
Small to mid-sized Windows shops looking for ease-of-use and potential cloud integration should look to AppAssure, but discuss the future of AppAssure with Dell contacts given Dell's recent purchase of Quest Software.

Quest Software, now a part of Dell, offers strength and reliability in virtual backup and also backs up physical servers

Innovator

Product:	vRanger
Employees:	110,000
Headquarters:	Round Rock, TX
Website:	dell.com
Founded:	1984
Presence:	NASDAQ: DELL FY12 Revenue: $62.1B

3 year TCO for this solution falls into pricing tier 4, between $10,000 and $25,000



Pricing provided by vendor.

Overview

- Acquired by Dell in September 2012, Quest Software offers systems management, security, business intelligence, and applications. Its vRanger product is known for being an early entrant and strong player in virtual backup.

Strengths

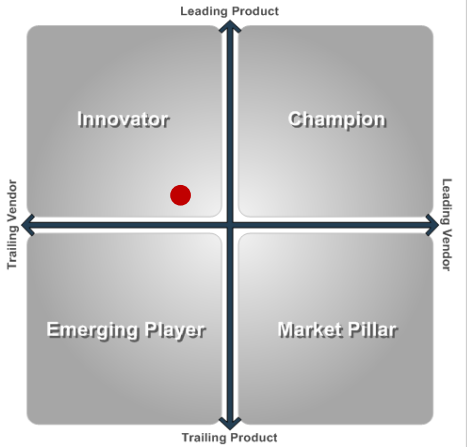
- Quest recently added support for backup of physical servers, with vRanger eliminating the need for multiple backup products.
- Customer support, ease-of-use, and scalability have been cited as positives by Info-Tech customers using Quest vRanger.
- One of the first products to achieve VMware Ready certification for vSphere 5, and its native catalog service enables users to easily search and restore files and systems across all backups.
- Backup speed is cited as a strong point with multi-threaded processing and patented Active Block Mapping technology.
- Integration with EMC Data Domain, market leading backup appliance, allows it to leverage DD Boost software for fast streaming of deduplicated backup streams to the appliance.

Challenges

- Evaluating organizations have expressed concerns regarding the future of vRanger following Quest's recent acquisition by Dell. However, Dell has indicated to Info-Tech that vRanger is strategic to the company's data protection portfolio and strategy, and it will continue to be developed and supported to the fullest.

Quest Software has always been a solid virtual backup player, but hasn't got much air time; this could change with Dell

Vendor Landscape



Value Index

86

5th out of 14

Product

Overall	Features	Usability	Afford.	Arch.
◔	◑	●	●	◑

Vendor

Overall	Viability	Strategy	Reach	Channel
◔	◕	◕	◕	◕

Deployment Options

Windows Server

Virtualized Windows Server

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption
●	●	●	●	●	●	●	●	●	●

Info-Tech Recommends:

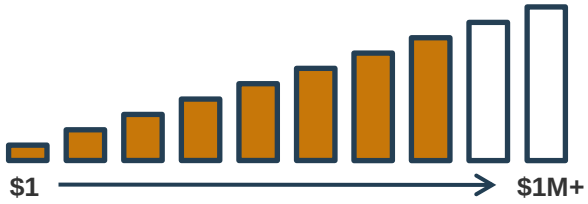
Organizations that are becoming heavily virtualized and are looking for a solution to better manage their virtual environment should have a look at Quest Software for its maturity in the market. However, be diligent with asking vendor contacts about the future of the solution following Dell's recent acquisition.

NetApp Syncsort offers integrated hardware and software for unified backup and disaster recovery

Emerging Player

Product:	NetApp Syncsort Integrated Backup (NSB)
Employees:	350+
Headquarters:	Woodcliff Lake, NJ
Website:	syncsort.com
Founded:	1968
Presence:	Privately Held

3 year TCO for this solution falls into pricing tier 8, between $250,000 and $500,000



Pricing provided by vendor.

Overview

- With roots in mainframe sorting and open systems backup with Backup Express (BEX), Syncsort's NSB enables unified backup and disaster recovery that leverages NetApp's standout array-based snapshots, deduplication, and replication capabilities.

Strengths

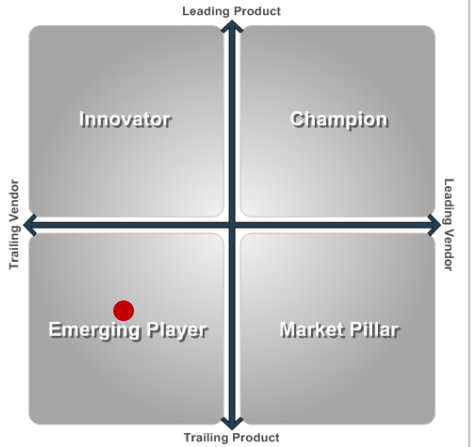
- NSB offers simplified administration by automating recovery operations "under the covers," such that the backup admin does not need to know how to manage NetApp target storage.
- Simplified deployment through *out-of-the-box* software, hardware, and hypervisor integration eliminates uncertainty around architecture design, as well as determination of where features like deduplication and replication are best enabled.
- Use of NetApp's clone technology enables failover of workloads to a second (off-site) array for disaster recovery, all managed and configured through the NSB interface.
- All backups are in native (not proprietary) format and a full catalog spans disk and tape for wildcard search and restore.

Challenges

- Simultaneous purchase of integrated software and hardware may pose a challenge for organizations, as backup hardware and software often have different refresh cycles.
- Vendor lock in may be a concern with NetApp hardware as a primary integration point.

NSB offers a single point of contact for hardware and software support, and simplifies backup management and deployment

Vendor Landscape



Value Index

8

9th out of 14

Product					Vendor				
Overall	Features	Usability	Afford.	Arch.	Overall	Viability	Strategy	Reach	Channel

Deployment Options

Windows Server

Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption

Info-Tech Recommends:

Current NetApp customers or those looking for simplicity in management, especially those in a position to conduct a wholesale refresh of hardware *and* software, should definitely include NSB on their shortlist.

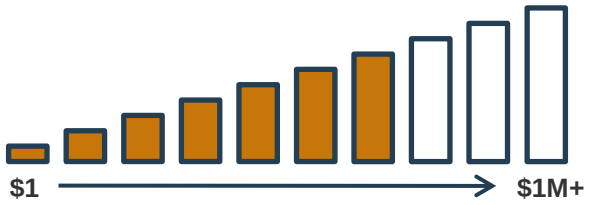
FalconStor offers mature, automated, and scalable backup and DR with flexible deployment options

Emerging Player

Product:	Continuous Data Protector (CDP) with RecoverTrac
Employees:	442
Headquarters:	Melville, NY
Website:	falconstor.com
Founded:	2000
Presence:	NASDAQ: FALC FY12: Revenue $82.9M

FalconStor Software

3 year TCO for this solution falls into pricing tier 7, between $100,000 and $250,000



Pricing provided by vendor.

Overview

- FalconStor is a Data Protection vendor that provides Continuous Data Protection with CDP, storage virtualization with its Network Storage Server, and disk target solutions like its Virtual Tape Library and File-interface Deduplication Systems.

Strengths

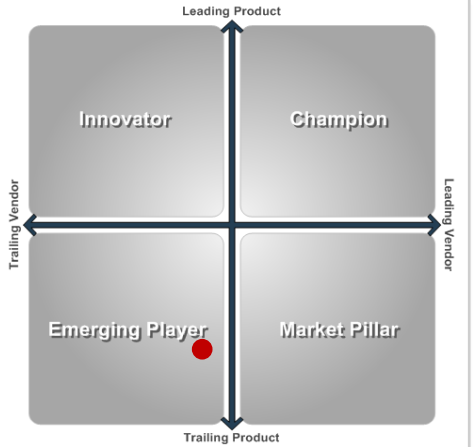
- RecoverTrac provides robust automated failover and recovery for DR that is not possible with many virtual backup solutions.
- CDP offers data protection at large scale, with up to 1,000 snapshots and 64TB per LUN, with an advanced multi-threaded architecture for simultaneous replication, compression and encryption operations.
- FalconStor offers flexible CDP deployment options, such as a Virtual Appliance (up to 10TB), Storage Appliance (preconfigued with up to 192TB), VS Series HA Appliance (up to 288TB with higher performance and availability), and Gateway Appliance (to leverage existing storage) and a software-only solution.
- MicroScan reads data at a 512 byte level for efficient replication.

Challenges

- Flexibility can come with added complexity, as multiple consoles are required for added utilities, such as RecoverTrac and HyperTrac.
- Some customers have expressed frustration with delays for product updates.

FalconStor is a mature vendor in backup, capable of supporting complex, critical, and heterogeneous environments

Vendor Landscape



Value Index

9

8th out of 14

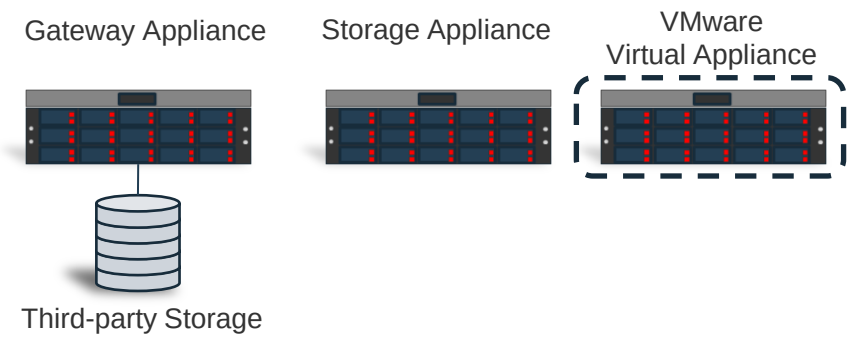
Product

Overall	Features	Usability	Afford.	Arch.

Vendor

Overall	Viability	Strategy	Reach	Channel

Deployment Options



Features

Agentless Backups	Run from Backup	VM Replication	Backup Replication	Backup to Tape	Bandwidth Throttling	Client Integration	Self-service/ RBAC	Auto-restore Testing	Data Encryption

Info-Tech Recommends:

Consider FalconStor if vendor lock-in on hardware is an issue or if data availability for disaster recovery is of critical importance. FalconStor can find a solution to fit most any set of requirements.

Quantum's vmPRO software offers flexible, fast, and simply-managed virtual backup for VMware environments

Honorable Mention

Product:	Quantum vmPRO 3.0
Employees:	1830
Headquarters:	San Jose, CA
Website:	Quantum.com
Founded:	1980
Presence:	NYSE: QTM
	FY12 Revenue: $652M

Quantum®

Overview

- Traditionally known for its disk and tape backup products - DXi and Scalar, respectively - Quantum entered the VM backup market through acquisition of Pancetera Software in 2011.

Strengths

- Full-featured vmPRO standard is available free for up to 1TB.
- vmPRO backups are stored in native VMDK format, enabling full visibility through vCenter. Customers can boot VMs from backups, using vmPRO GUI or a simple file browser, whether in an off-site data center or in the Cloud.
- Native format backup also avoids issues with vendor lock-in associated with proprietary backups, for long-term flexibility.
- Quantum's Progressive Optimization technology leverages VMware's APIs for Data Protection to deliver up to 75% reduction in host, network, and storage resource utilization.
- Integration with Quantum's DXi Disk Backup Systems enables deduplication, encryption, and replication.

Challenges

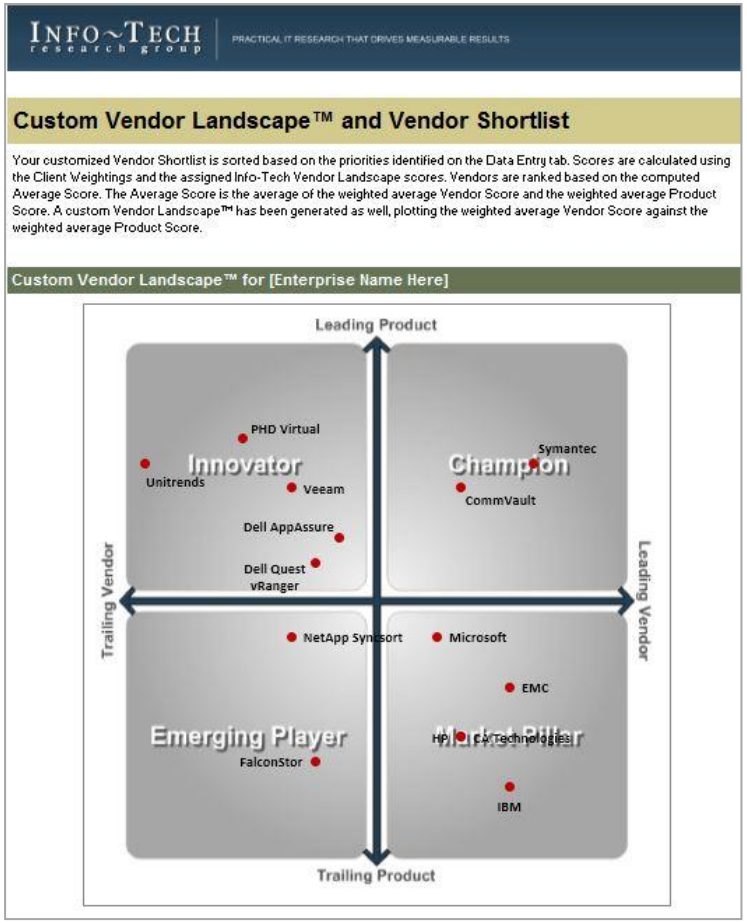
- vmPRO currently does not support Microsoft Hyper-V or Citrix XenServer.
- vmPRO relies on other solutions for backing up to tape.
- Convincing customers of the benefits of backing up in a native VMDK format may be a challenge.

Identify leading candidates with the *Virtual Backup Vendor Shortlist Tool*

The Info-Tech *Virtual Backup Vendor Shortlist Tool* is designed to generate a customized shortlist of vendors based on *your* key priorities.

This tool offers the ability to modify:

- Overall Vendor vs. Product Weightings
- Individual product criteria weightings:
  - ✓ Features
  - ✓ Usability
  - ✓ Affordability
  - ✓ Architecture
- Individual vendor criteria weightings:
  - ✓ Viability
  - ✓ Strategy
  - ✓ Reach
  - ✓ Channel



Appendix

1. Vendor Landscape Methodology: Overview
2. Vendor Landscape Methodology: Vendor/Product Selection & Information Gathering
3. Vendor Landscape Methodology: Scoring
4. Vendor Landscape Methodology: Information Presentation
5. Vendor Landscape Methodology: Fact Check & Publication
6. Product Pricing Scenario

Vendor Landscape Methodology: Overview

Info-Tech's Vendor Landscapes are research materials that review a particular IT market space, evaluating the strengths and abilities of both the products available in that space, as well as the vendors of those products. These materials are created by a team of dedicated analysts operating under the direction of a senior subject matter expert over a period of six weeks.

Evaluations weigh selected vendors and their products (collectively "solutions") on the following eight criteria to determine overall standing:

- Features: The presence of advanced and market-differentiating capabilities.
- Usability: The intuitiveness, power, and integrated nature of administrative consoles and client software components.
- Affordability: The three-year total cost of ownership of the solution.
- Architecture: The degree of integration with the vendor's other tools, flexibility of deployment, and breadth of platform applicability.
- Viability: The stability of the company as measured by its history in the market, the size of its client base, and its financial performance.
- Strategy: The commitment to both the market-space, as well as to the various sized clients (small, mid-sized, and enterprise clients).
- Reach: The ability of the vendor to support its products on a global scale.
- Channel: The measure of the size of the vendor's channel partner program, as well as any channel strengthening strategies.

Evaluated solutions are plotted on a standard two by two matrix:

- Champions: Both the product and the vendor receive scores that are above the average score for the evaluated group.
- Innovators: The product receives a score that is above the average score for the evaluated group, but the vendor receives a score that is below the average score for the evaluated group.
- Market Pillars: The product receives a score that is below the average score for the evaluated group, but the vendor receives a score that is above the average score for the evaluated group.
- Emerging Players: Both the product and the vendor receive scores that are below the average score for the evaluated group.

Info-Tech's Vendor Landscapes are researched and produced according to a strictly adhered to process that includes the following steps:

- Vendor/product selection
- Information gathering
- Vendor/product scoring
- Information presentation
- Fact checking
- Publication

This document outlines how each of these steps is conducted.

Vendor Landscape Methodology: Vendor/Product Selection & Information Gathering

Info-Tech works closely with its client base to solicit guidance in terms of understanding the vendors with whom clients wish to work and the products that they wish evaluated; this demand pool forms the basis of the vendor selection process for Vendor Landscapes. Balancing this demand, Info-Tech also relies upon the deep subject matter expertise and market awareness of its Senior and Lead Research Analysts to ensure that appropriate solutions are included in the evaluation. As an aspect of that expertise and awareness, Info-Tech's analysts may, at their discretion, determine the specific capabilities that are required of the products under evaluation, and include in the Vendor Landscape only those solutions that meet all specified requirements.

Information on vendors and products is gathered in a number of ways via a number of channels.

Initially, a request package is submitted to vendors to solicit information on a broad range of topics. The request package includes:

- A detailed survey.
- A pricing scenario (see Vendor Landscape Methodology: Price Evaluation and Pricing Scenario, below).
- A request for reference clients.
- A request for a briefing and, where applicable, guided product demonstration.

These request packages are distributed approximately twelve weeks prior to the initiation of the actual research project to allow vendors ample time to consolidate the required information and schedule appropriate resources.

During the course of the research project, briefings and demonstrations are scheduled (generally for one hour each session, though more time is scheduled as required) to allow the analyst team to discuss the information provided in the survey, validate vendor claims, and gain direct exposure to the evaluated products. Additionally, an end-user survey is circulated to Info-Tech's client base and vendor-supplied reference accounts are interviewed to solicit their feedback on their experiences with the evaluated solutions and with the vendors of those solutions.

These materials are supplemented by a thorough review of all product briefs, technical manuals, and publicly available marketing materials about the product, as well as about the vendor itself.

Refusal by a vendor to supply completed surveys or submit to participation in briefings and demonstrations does not eliminate a vendor from inclusion in the evaluation. Where analyst and client input has determined that a vendor belongs in a particular evaluation, it will be evaluated as best as possible based on publicly available materials only. As these materials are not as comprehensive as a survey, briefing, and demonstration, the possibility exists that the evaluation may not be as thorough or accurate. Since Info-Tech includes vendors regardless of vendor participation, it is always in the vendor's best interest to participate fully.

All information is recorded and catalogued, as required, to facilitate scoring and for future reference.

Vendor Landscape Methodology: Scoring

Once all information has been gathered and evaluated for all vendors and products, the analyst team moves to scoring. All scoring is performed at the same time so as to ensure as much consistency as possible. Each criterion is scored on a ten point scale, though the manner of scoring for criteria differs slightly:

- Features is scored via **Cumulative Scoring**
- Affordability is scored via **Scalar Scoring**
- All other criteria are scored via **Base5 Scoring**

In Cumulative Scoring, a single point is assigned to each evaluated feature that is regarded as being fully present, a half point to each feature that is partially present or pending in an upcoming release, and zero points to features that are deemed to be absent. The assigned points are summed and normalized to a value out of ten. For example, if a particular Vendor Landscape evaluates eight specific features in the Feature Criteria, the summed score out of eight for each evaluated product would be multiplied by 1.25 to yield a value out of ten.

In Scalar Scoring, a score of ten is assigned to the lowest cost solution, and a score of one is assigned to the highest cost solution. All other solutions are assigned a mathematically determined score based on their proximity to / distance from these two endpoints. For example, in an evaluation of three solutions, where the middle cost solution is closer to the low end of the pricing scale it will receive a higher score, and where it is closer to the high end of the pricing scale it will receive a lower score; depending on proximity to the high or low price it is entirely possible that it could receive either ten points (if it is very close to the lowest price) or one point (if it is very close to the highest price). Where pricing cannot be determined (vendor does not supply price and public sources do not exist), a score of 0 is automatically assigned.

In Base5 scoring a number of sub-criteria are specified for each criterion (for example, Longevity, Market Presence, and Financials are sub-criteria of the Viability criterion), and each one is scored on the following scale:

5 - The product/vendor is exemplary in this area (nothing could be done to improve the status).
4 - The product/vendor is good in this area (small changes could be made that would move things to the next level).
3 - The product/vendor is adequate in this area (small changes would make it good, more significant changes required to be exemplary).
2 - The product/vendor is poor in this area (this is a notable weakness and significant work is required).
1 - The product/vendor is terrible/fails in this area (this is a glaring oversight and a serious impediment to adoption).

The assigned points are summed and normalized to a value out of ten as explained in Cumulative Scoring above.

Scores out of ten, known as Raw scores, are transposed as-is into Info-Tech's Vendor Landscape Shortlist Tool, which automatically determines Vendor Landscape positioning (see Vendor Landscape Methodology: Information Presentation - Vendor Landscape, below), Criteria Score (see Vendor Landscape Methodology: Information Presentation - Criteria Score, below), and Value Index (see Vendor Landscape Methodology: Information Presentation - Value Index, below).

Vendor Landscape Methodology: Information Presentation – Vendor Landscape

Info-Tech's Vendor Landscape is a two-by-two matrix that plots solutions based on the combination of Product score and Vendor score. Placement is not determined by absolute score, but instead by relative score. Relative scores are used to ensure a consistent view of information and to minimize dispersion in nascent markets, while enhancing dispersion in commodity markets to allow for quick visual analysis by clients.

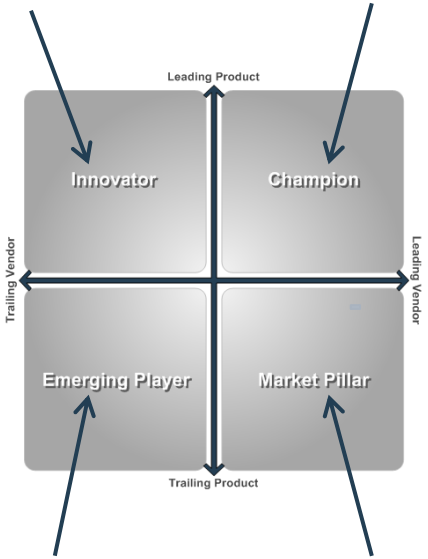
Relative scores are calculated as follows:

1. Raw scores are transposed into the Info-Tech Vendor Landscape Shortlist Tool (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).
2. Each individual criterion Raw score is multiplied by the pre-assigned weighting factor for the Vendor Landscape in question. Weighting factors are determined prior to the evaluation process to eliminate any possibility of bias. Weighting factors are expressed as a percentage such that the sum of the weighting factors for the Vendor criteria (Viability, Strategy, Reach, Channel) is 100% and the sum of the Product criteria (Features, Usability, Affordability, Architecture) is 100%.
3. A sum-product of the weighted Vendor criteria scores and of the weighted Product criteria scores is calculated to yield an overall Vendor score and an overall Product score.
4. Overall Vendor scores are then normalized to a 20 point scale by calculating the arithmetic mean and standard deviation of the pool of Vendor scores. Vendors for whom their overall Vendor score is higher than the arithmetic mean will receive a normalized Vendor score of 11-20 (exact value determined by how much higher than the arithmetic mean their overall Vendor score is), while vendors for whom their overall Vendor score is lower than the arithmetic mean will receive a normalized Vendor score of between one and ten (exact value determined by how much lower than the arithmetic mean their overall Vendor score is).
5. Overall Product score is normalized to a 20 point scale according to the same process.
6. Normalized scores are plotted on the matrix, with Vendor score being used as the x-axis, and Product score being used as the y-axis.

Vendor Landscape

Innovators: solutions with below average Vendor scores and above average Product scores.

Champions: solutions with above average Vendor scores and above average Product scores.



Emerging Players: solutions with below average Vendor scores and below average Product scores.

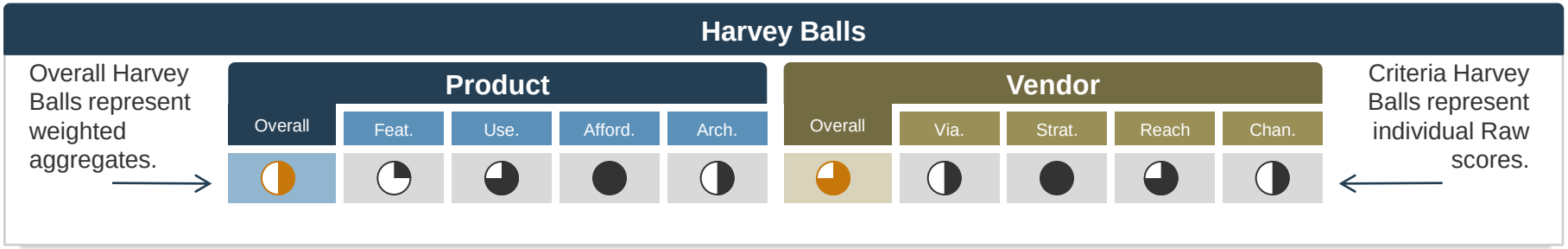
Market Pillars: solutions with above average Vendor scores and below average Product scores.

Vendor Landscape Methodology: Information Presentation – Criteria Scores (Harvey Balls)

Info-Tech's Criteria Scores are visual representations of the absolute score assigned to each individual criterion, as well as of the calculated overall Vendor and Product scores. The visual representation used is Harvey Balls.

Harvey Balls are calculated as follows:

1. Raw scores are transposed into the Info-Tech Vendor Landscape Shortlist Tool (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).
2. Each individual criterion Raw score is multiplied by a pre-assigned weighting factor for the Vendor Landscape in question. Weighting factors are determined prior to the evaluation process, based on the expertise of the Senior or Lead Research Analyst, to eliminate any possibility of bias. Weighting factors are expressed as a percentage, such that the sum of the weighting factors for the Vendor criteria (Viability, Strategy, Reach, Channel) is 100%, and the sum of the Product criteria (Features, Usability, Affordability, Architecture) is 100%.
3. A sum-product of the weighted Vendor criteria scores and of the weighted Product criteria scores is calculated to yield an overall Vendor score and an overall Product score.
4. Both overall Vendor score / overall Product score, as well as individual criterion Raw scores are converted from a scale of one to ten to Harvey Ball scores on a scale of zero to four, where exceptional performance results in a score of four and poor performance results in a score of zero.
5. Harvey Ball scores are converted to Harvey Balls as follows:
   - A score of four becomes a full Harvey Ball.
   - A score of three becomes a three-quarter full Harvey Ball.
   - A score of two becomes a half full Harvey Ball.
   - A score of one becomes a one-quarter full Harvey Ball.
   - A score of zero (zero) becomes an empty Harvey Ball.
6. Harvey Balls are plotted by solution in a chart where rows represent individual solutions and columns represent overall Vendor / overall Product, as well as individual criteria. Solutions are ordered in the chart alphabetically by vendor name.



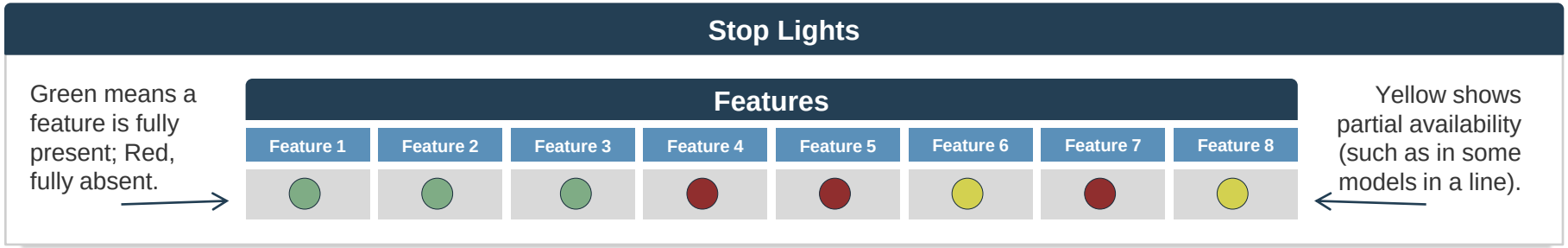
Vendor Landscape Methodology: Information Presentation – Feature Ranks (Stop Lights)

Info-Tech's Feature Ranks are visual representations of the presence/availability of individual features that collectively comprise the Features' criterion. The visual representation used is Stop Lights.

Stop Lights are determined as follows:

1. A single point is assigned to each evaluated feature that is regarded as being fully present, a half point to each feature that is partially present or pending in an upcoming release, and zero points to features that are deemed to be fully absent.
   - Fully present means all aspects and capabilities of the feature as described are in evidence.
   - Fully absent means all aspects and capabilities of the feature as described are in evidence.
   - Partially present means some, but not all, aspects and capabilities of the feature as described are in evidence, **OR** all aspects and capabilities of the feature as described are in evidence, but only for some models in a line.
   - Pending means all aspects and capabilities of the feature, as described, are anticipated to be in evidence in a future revision of the product and that revision is to be released within the next 12 months.
2. Feature scores are converted to Stop Lights as follows:
   - Full points become a Green light.
   - Half points become a Yellow light.
   - Zero points become a Red light.
3. Stop Lights are plotted by solution in a chart where rows represent individual solutions and columns represent individual features. Solutions are ordered in the chart alphabetically by vendor name.

For example, a set of applications is being reviewed and a feature of "*Integration with Mobile Devices*" that is defined as "*availability of dedicated mobile device applications for iOS, Android, and BlackBerry devices*" is specified. Solution A provides such apps for all listed platforms and scores "Green", solution B provides apps for iOS and Android only and scores "Yellow", while solution C provides mobile device functionality through browser extensions, has no dedicated apps, and so scores "Red".



Vendor Landscape Methodology: Information Presentation – Value Index

Info-Tech's Value Index is an indexed ranking of solution value per dollar as determined by the Raw scores assigned to each criteria (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).

Value scores are calculated as follows:

1. The Affordability criterion is removed from the overall Product score and the remaining Product score criteria (Features, Usability, Architecture) are reweighted so as to retain the same weightings relative to one another, while still summing to 100%. For example, if all four Product criteria were assigned base weightings of 25%, for the determination of the Value score, Features, Usability, and Architecture would be reweighted to 33.3% each to retain the same relative weightings while still summing to 100%.
2. A sum-product of the weighted Vendor criteria scores and of the reweighted Product criteria scores is calculated to yield an overall Vendor score and a reweighted overall Product score.
3. The overall Vendor score and the reweighted overall Product score are then summed, and this sum is multiplied by the Affordability Raw score to yield an interim Value score for each solution.
4. All interim Value scores are then indexed to the highest performing solution by dividing each interim Value score by the highest interim Value score. This results in a Value score of 100 for the top solution and an indexed Value score relative to the 100 for each alternate solution.
5. Solutions are plotted according to Value score, with the highest score plotted first, and all remaining scores plotted in descending numerical order.

Where pricing is not provided by the vendor and public sources of information cannot be found, an Affordability Raw score of zero is assigned. Since multiplication by zero results in a product of zero, those solutions for which pricing cannot be determined receive a Value score of zero. Since Info-Tech assigns a score of zero where pricing is not available, it is always in the vendor's best interest to provide accurate and up to date pricing

Value Index

Vendors are arranged in order of Value Score. The Value Score each solution achieved is displayed, and so is the average score.

Those solutions that are ranked as Champions are differentiated for point of reference.

Vendor Landscape Methodology: Information Presentation – Price Evaluation

Info-Tech's Price Evaluation is a tiered representation of the three year Total Cost of Ownership (TCO) of a proposed solution. Info-Tech uses this method of communicating pricing information to provide high-level budgetary guidance to its end-user clients while respecting the privacy of the vendors with whom it works. The solution TCO is calculated and then represented as belonging to one of ten pricing tiers.

Pricing tiers are as follows:

1. Between $1 and $2,500
2. Between $2,500 and $5,000
3. Between $5,000 and $10,000
4. Between $10,000 and $25,000
5. Between $25,000 and $50,000
6. Between $50,000 and $100,000
7. Between $100,000 and $250,000
8. Between $250,000 and $500,000
9. Between $500,000 and $1,000,000
10. Greater than $1,000,000

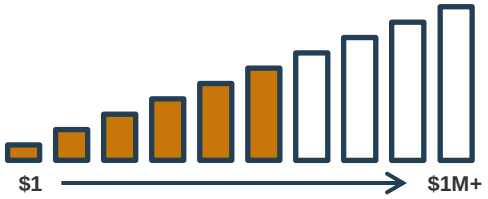
Where pricing is not provided, Info-Tech makes use of publicly available sources of information to determine a price. As these sources are not official price lists, the possibility exists that they may be inaccurate or outdated, and so the source of the pricing information is provided. Since Info-Tech publishes pricing information regardless of vendor participation, it is always in the vendor's best interest to supply accurate and up to date information.

Info-Tech's Price Evaluations are based on pre-defined pricing scenarios (see Product Pricing Scenario, below) to ensure a comparison that is as close as possible between evaluated solutions. Pricing scenarios describe a sample business and solicit guidance as to the appropriate product/service mix required to deliver the specified functionality, the list price for those tools/services, as well as three full years of maintenance and support.

Price Evaluation

Call-out bubble indicates within which price tier the three year TCO for the solution falls, provides the brackets of that price tier, and links to the graphical representation.

3 year TCO for this solution falls into pricing tier 6, between $50,000 and $100,000.



Pricing solicited from public sources.

Scale along the bottom indicates that the graphic as a whole represents a price scale with a range of $1 to $1M+, while the notation indicates whether the pricing was supplied by the vendor or derived from public sources.

Vendor Landscape Methodology: Information Presentation – Scenarios

Info-Tech's Scenarios highlight specific use-cases for the evaluated solution to provide as complete (when taken in conjunction with the individual written review, Vendor Landscape, Criteria Scores, Feature Ranks, and Value Index) a basis for comparison by end-user clients as possible.

Scenarios are designed to reflect tiered capability in a particular set of circumstances. Determination of the Scenarios in question is at the discretion of the analyst team assigned to the research project. Where possible, Scenarios are designed to be mutually exclusive and collectively exhaustive, or at the very least, hierarchical such that the tiers within the Scenario represent a progressively greater or broader capability.

Scenario ranking is determined as follows:

1. The analyst team determines an appropriate use case.
   For example:
   - Clients that have multinational presence and require vendors to provide four hour onsite support.
2. The analyst team establishes the various tiers of capability.
   For example:
   - Presence in Americas
   - Presence in EMEA
   - Presence in APAC
3. The analyst team reviews all evaluated solutions and determines which ones meet which tiers of capability.
   For example:
   - Presence in Americas – Vendor A, Vendor C, Vendor E
   - Presence in EMEA – Vendor A, Vendor B, Vendor C
   - Presence in APAC – Vendor B, Vendor D, Vendor E
4. Solutions are plotted on a grid alphabetically by vendor by tier. Where one vendor is deemed to be stronger in a tier than other vendors in the same tier, they may be plotted non-alphabetically.
   For example:
   - Vendor C is able to provide four hour onsite support to 12 countries in EMEA while Vendors A and B are only able to provide four hour onsite support to eight countries in EMEA; Vendor C would be plotted first, followed by Vendor A, then Vendor B.

Vendor Landscape Methodology: Information Presentation – Vendor Awards

At the conclusion of all analyses, Info-Tech presents awards to exceptional solutions in three distinct categories. Award presentation is discretionary; not all awards are extended subsequent to each Vendor landscape and it is entirely possible, though unlikely, that no awards may be presented.

Awards categories are as follows:

- **Champion Awards** are presented to those solutions, and only those solutions, that land in the Champion zone of the Info-Tech Vendor Landscape (see Vendor Landscape Methodology: Information Presentation - Vendor Landscape, above). If no solutions land in the Champion zone, no Champion Awards are presented. Similarly, if multiple solutions land in the Champion zone, multiple Champion Awards are presented.
- **Trend Setter Awards** are presented to those solutions, and only those solutions, that are deemed to include the most original/inventive product/service, or the most original/inventive feature/capability of a product/service. If no solution is deemed to be markedly or sufficiently original/inventive, either as a product/service on the whole or by feature/capability specifically, no Trend Setter Award is presented. Only one Trend Setter Award is available for each Vendor Landscape.
- **Best Overall Value Awards** are presented to those solutions, and only those solutions, that are ranked highest on the Info-Tech Value Index (see Vendor Landscape Methodology: Information Presentation – Value Index, above). If insufficient pricing information is made available for the evaluated solutions, such that a Value Index cannot be calculated, no Best Overall Value Award will be presented. Only one Best Overall Value Award is available for each Vendor Landscape.

Vendor Awards

Info-Tech's **Champion Award** is presented to solutions in the Champion zone of the Vendor Landscape.

Info-Tech's **Trend Setter Award** is presented to the most original/inventive solution evaluated.

Info-Tech's **Best Overall Value Award** is presented to the solution with the highest Value Index score.

Vendor Landscape Methodology: Fact Check & Publication

Info-Tech takes the factual accuracy of its Vendor Landscapes, and indeed of all of its published content, very seriously. To ensure the utmost accuracy in its Vendor Landscapes, we invite all vendors of evaluated solutions (whether the vendor elected to provide a survey and/or participate in a briefing or not) to participate in a process of Fact Check.

Once the research project is complete and the materials are deemed to be in a publication ready state, excerpts of the material specific to each vendor's solution are provided to the vendor. Info-Tech only provides material specific to the individual vendor's solution for review encompassing the following:

- All written review materials of the vendor and the vendor's product that comprise the evaluated solution.
- Info-Tech's Criteria Scores / Harvey Balls detailing the individual and overall Vendor / Product scores assigned.
- Info-Tech's Feature Rank / Stop Lights detailing the individual feature scores of the evaluated product.
- Info-Tech's Value Index ranking for the evaluated solution.
- Info-Tech's Scenario ranking for all considered scenarios for the evaluated solution.

Info-Tech does not provide the following:

- Info-Tech's Vendor Landscape placement of the evaluated solution.
- Info-Tech's Value Score for the evaluated solution.
- End-user feedback gathered during the research project.
- Info-Tech's overall recommendation in regard to the evaluated solution.

Info-Tech provides a one-week window for each vendor to provide written feedback. Feedback must be corroborated (be provided with supporting evidence), and where it does, feedback that addresses factual errors or omissions is adopted fully, while feedback that addresses opinions is taken under consideration. The assigned analyst team makes all appropriate edits and supplies an edited copy of the materials to the vendor within one week for final review.

Should a vendor still have concerns or objections at that time, they are invited to a conversation, initially via email, but as required and deemed appropriate by Info-Tech, subsequently via telephone, to ensure common understanding of the concerns. Where concerns relate to ongoing factual errors or omissions they are corrected under the supervision of Info-Tech's Vendor Relations personnel. Where concerns relate to ongoing differences of opinion they are again taken under consideration with neither explicit not implicit indication of adoption.

Publication of materials is scheduled to occur within the six weeks immediately following the completion of the research project, but does not occur until the Fact Check process has come to conclusion, and under no circumstances are "pre-publication" copies of any materials made available to any client.

Product Pricing Scenario

Info-Tech Research Group is providing each vendor with a common pricing scenario to enable normalized scoring of Affordability, calculation of Value Index rankings, and identification of the appropriate solution pricing tier as displayed on each vendor scorecard.

Vendors are asked to provide *list* costs for Virtual Infrastructure Backup software licensing to address the needs of a reference organization described in the pricing scenario. Please price out the **lowest possible** 3-year Total Cost of Ownership (TCO) including list prices for software and licensing fees to meet the requirements of the following scenario.

Three-year total acquisition costs will be normalized to produce the Affordability raw scores and calculate Value Index ratings for each solution.

The pricing scenario:

- The organization has 7 host servers (20 VMs per host) connected to a shared SAN that they need to back up. Each host server is a 2 socket server with Xeon 5600 processors and 256 GB or RAM, running VMware virtual infrastructure on ESXi 5.0, structured in a single ESX cluster supporting Microsoft Windows Server 2003/2008.
- An organization is looking to implement a virtual infrastructure backup solution. They have 7 host servers (20 VMs per host) connected to a shared SAN that they want to add hypervisors to with a three year licensing agreement. Their host servers are 2 socket servers with Xeon 5600 processors and 256 GB of RAM. These backups will be replicated to disk at a second site for disaster recovery purposes.
- All said and done, the organization has approximately 20 TB of raw undeduplicated data and is growing at rate of 20% per year of raw undeduplicated data. The solution must be sufficient to support their infrastructure until at least the end of the 3 year term. For the purposes of this scenario assume that, based on a compound increase of 20% per year, the organization will have 34.56 TB of undeduplicatied data at end of year 3.

The organization also requires gold level support services to be included in their purchase.

Product Pricing Scenario, continued

The expected solution capabilities are as follows:

- Image-based backup
- Snapshots
- Disk-based replication to second site
- Gold level support services should include the following:
  - Implementation support
  - Technical documentation and guides
  - 24/7 Technical support by phone or online
- Additional Note 1: Do not include licensing cost for Microsoft host server operating systems
- Additional Note 2: If the management suite requires the purchase of an addition host server, do not include the cost of the hardware.