Migrating from an Agent-based to a VM-based Data Protection Solution

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I. Why Migrate?

In the early days of Virtualization, traditional, agent-based backup products worked reasonably well within a virtualized environment. Administrators were familiar with the solutions and management was aware of the investment in the current architecture. As virtualization progressed, though, and new features like Cloning and Templates became available, it became clear that existing backup solutions would not be able to adapt and the cost of maintaining these solutions within a virtualized environment would only grow.

Since traditional backup software licensing was at the per-guest level and required individual agents installed on each device to be backed up, moving this model into a virtualization environment just did not make economic sense. Why pay extra to backup machines that were powered off, or cloned, or a template? And as virtualization environments continued to expand, with more hosts and larger VM populations, the cost of data protection would only be driven higher and higher.

II. Example Scenario

An environment with three ESX Hosts (2 CPU Dual Core Hosts) with 10 VMs running on each host, results in a total of 30 VM guests. In a typical scenario, twenty of those guests might be currently running (5 with DB and 1 mail server, for example) and the other 10 might be powered off (5 clones of the DB, 1 of the mail server and 4 templates).

In a traditional agent based backup scenario, in order to backup this environment, you would need:

- A Legacy Physical Server
- Backup Server Software
- Client agent software
- A Client Bare metal Restore agent
- Client Software agents (DB, Exchange, etc)
- Tape Drives (Optional)
- System Administration

Costs associated with backing up this example environment with a traditional agent-based approach (hardware, software, environmental, systems administration) are illustrated in the table below. These estimates are based on both actual scenarios and commonly used industry standards.

Agent Example – Hardware, Software, Environmental Costs

(nr = non-recurring costs), (r=recurring costs)

ITEM	QTY	Price	Extended
Physical Server	1	$2,000	$2,000 (nr)
Miscellaneous (cables, rack space)	1	$200	$200 (nr)
Environmental (Electric, LAN, cooling)	1		$1,000 (r)
Operating System (server grade)	1	$1000	$1,000 (nr)
Tape Drive excluded			
Backup Server Software	1	$2,000	$2,000 (nr)
Backup Basic Agent	30	$300	$9.000 (nr)
Backup Bare Metal	30	$225	$6,750 (nr)
Advanced Agents	12	$1,200	$14,400 (nr)
Sub Total (nr)		$35,350	**$35,350 (nr)**
Annual 20% Support/Maintenance			**$7,070 (r)/yr**
Total Costs			**$43,240 (yr. 1)**
Total (r) Recurring Annual Costs			***$8,070 (r)/yr***

Agent Example – System Administrative Costs

System Administration (patching,upgrades,troubleshooting)	20 hr	$50/hr	$1,000 (r)
Per client administration	30x4hr	$50/hr	$6,000 (r)
Total (r) Recurring Sys Admin Costs			**$7,000 (r)/yr.**

III. A VM-Based Backup Solution – esXpress

PHD Virtual's **esXpress** was designed to provide a complete data protection solution for the VMware environment. esXpress uses Virtual Backup Appliances (VBAs), which are simply small VMs, to back up other VMs. No new hardware is introduced. No agent-based software is required. **esXpress** is priced at a host level, is independent of the number and type of VMs running on that host, and is also independent of the "firepower" of the host. esXpress Enterprise Edition (16 VBA/host) lists at $2,200/host (including 1 year of 24x7 platinum support). Annual platinum support renewals list at $500/host. All product features are included in the pricing – there are no hidden charges.

esXpress Example – Software Costs

esXpress – Enterprise Edition (includes1 yr of Support)	3	$2,200	$6,600
Total Cost			**$6,600 (yr. 1)**
Total (r) Recurring Costs (after yr. 1)	3	$500	**$1,500 (r)/yr.**

esXpress Example – System Administrative Costs

Host Administration	3x8 hr	$50/hr	$1,200 (r)
Total (r) Recurring Syst. Admin Costs			**$1,200 (r)/yr.**

To protect the example environment from above, the 1 year total list price of **esXpress** (with platinum support) is **$6,600**. This is less than 1-year of support alone for the non-recurring elements of the traditional agent-based solution! Going forward, these cost savings are only amplified as the differential in recurring costs continues to add up. Remember, the example above is based on only 3 hosts running 30 VMs. Consider the cost impact of larger host farms with even greater VM populations.

And in addition…

Note from the table above that administering an even modestly populated VM solution is far more expensive for the agent-based approach than for **esXpress**. Also not considered in this analysis is the physical storage savings (on backup targets) associated with the deduplication facility included with **esXpress** (dedupe ratios average 25:1).

IV. Summary

esXpress was designed for the VMware environment and uses VMs to back up other VMs, independent of number and type.

esXpress does not completely replace the traditional backup solutions. Existing solutions would still be maintained for restoring older backups and are required for any physical servers. In fact, esXpress has a simple and straightforward method for interfacing with traditional backup solutions called Data Smart Dynamic Export (DSDE).

esXpress adds enormous value to overall data protection by allowing both horizontal and vertical Virtualization growth without re-architecting the entire backup architecture. For more in-depth understanding of the overall value proposition for esXpress, please request our white paper on the subject.

About PHD Virtual

As the pioneer of virtual backup appliances (VBAs), PHD Virtual Technologies has been transforming data protection in virtual IT environments since 2006. Its award-winning data protection solution for virtual infrastructures, esXpress, is used today by more than 2000 enterprises worldwide to achieve unlimited dynamic growth, high availability, no single point of failure and scalable performance. PHD Virtual is committed to helping our customers and provides free, easy-to-use virtualization utilities to assist with the administration and management of virtualized environments.

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