The False Dilemma: Agentless vs. Agent-Based Backup

Have you ever been caught up in an argument that didn't seem to make much sense? It's not an uncommon experience —especially in the world of disaster recovery.

Why? To put it simply, disaster recovery solution vendors are gunning for market share, and creating an argument is one way to attract attention. And for the past few years, agent-based vs. agentless backup has been a common argument among many vendors.

There are zealots on both sides. Some say agent-based backup offers the best opportunity for success, while others say that agentless backup is the way to go. The sides seem polarized. This is seen clearly in The Enterprise Strategy Group's (ESG) 2015 Data Protection Modernization Survey.

Firms surveyed on their use of agentless or agent-based backups report little change in their strategy over the coming 24 months.

But the argument doesn't necessarily solve your problems. Simply put, you're just looking for the best way to accomplish three essential goals:

- Reduce the risk of losing data when something goes wrong
- Perform recovery operations as quickly as possible
- Minimize impact to production systems and end users when backing up or recovering

Each approach has pros and cons.
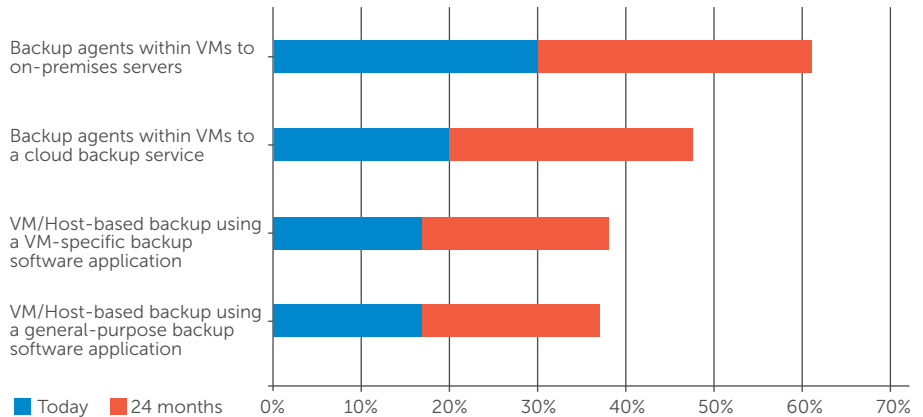
2015 Data Protection Modernization Survey, The Enterprise Strategy Group

> Simply put, you need the best way to reduce risk of losing data, perform recovery operations as quickly as possible, and minimize impact to end users.

Agent-based backups

Let's talk about agent-based backups first. What are agents? They're small applications installed on a server or virtual machine to facilitate backup. On an agent-based backup, the work is done by the agent on the source systems, which sends the backup data to predefined destinations.

The backup driver resides at the operating system kernel level. Agent-based backup offers a range of advantages:

1. **Application awareness** — Built for specific applications, agents enable very granular recovery.

2. **Security** — Once installed, the agent has access to the operating system and application. There's no need to store privileged username/password information on a potentially insecure backup server.

3. **Breadth** — Agents can protect both physical and virtual machines. Great for legacy workloads.

4. **Reliability** — With no single point of failure, an agent continues to run even if a backup management console goes offline.

5. **Local** — Agents can boost backup performance by pre-processing and compressing data locally.

6. **Access** — Application owners can manage backups and restores to a guest OS.

7. **Legacy** — Agent-based backup is a time-tested and proven solution.

Agentless backups

But agentless backup has its advocates as well, and for good reason.

Agentless backups rely on an external system to manage and perform the backup operations for each source system. In theory, all processing, storage, replication, and other functions happen on, or are managed by, the host or the central backup controller.

Sounds good, and it is. Agentless backup offers:

1. **Leading-edge capability** — Agentless backup is built from the ground up for virtual environments.

2. **Simplicity** — Agentless backup doesn't require installing agents across dozens or hundreds of virtual machines. It also doesn't require rebooting each host after agent installation.

3. **Affordability** — There's no agent fee for each virtual machine.

4. **Performance** — Though the host still performs the processing, it incurs less CPU, memory, and I/O impact.

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5. **Comprehensiveness** — Image-level backup ensures rapid VM-level restores similar to agent-based systems.

6. **Agility** — Agentless backup is easier to set up, easy to add new servers to the backup schedule, and can back up either to online or offline virtual machines.

Which do you pick?

All the advantages of agent-based and agentless backup sound good, don't they? It's hard to criticize the advantages of either approach. But vendors like to engage in a flame war about agent vs. agentless that impedes your path to value.

Many vendors insist that you should pick one or the other. But the fact is that agentless and agent-based approaches have complementary strengths. Why should you have to choose?

The answer is, you don't.

The fact is that most organizations need both approaches. They require high levels of granularity and physical server support for some workloads, and simplicity with cost controls for other workloads.

Imagine choosing a vendor that combines the best aspects of agent-based and agentless approaches. You could have the reliability and insights of an agent-based solution, alongside the cost reductions and flexibility of an agentless product — all from a single source.

Next steps

When evaluating vendors, look for some essential capabilities:

1. Ideally, solutions should support agentless and agent-based backup from the same console, using the same file format. This capability gives you the flexibility to perform agentless backups and agent-based restores, or agent-based backups and agentless restores.

2. Consider "smart agents." These are lightweight agents that offer some of the advantages of leading-edge, virtual-aware agentless backup alongside the benefits of agent-based approaches.

3. Make sure your product can integrate agents into virtual machine templates. That facilitates installation by reducing the need for so-called "push installs."

4. Make sure the solution can encompass both physical and virtual seamlessly. You might need the ability to backup/restore from physical to virtual, or vice versa.

5. Test both granular (file level, email level) recovery as well as image level recovery. An ideal solution must do both well.

Conclusion

To summarize, it's not in your best interest to get caught up in a false dilemma, an argument between two opposing viewpoints that doesn't take into account your needs for both breadth and depth. Agent-based and agentless both offer distinct advantages. It's worth evaluating both as you work toward adopting the best backup and recovery approach that fits your unique needs.

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