## INSIDER'S GUIDE TO

# Agent-Based vs. Agentless Backup

SHUTTERSTOCK

**Here are 15 questions that will help you get to the root of whether an agent-based or agentless solution will work better for your organization.** By Scott Bekker

**One of the age-old** questions of tech is agent vs. agentless. It dates back to the management suite wars and to early database backups, if not earlier. Basically, any problem that involved utilities for distributed systems eventually spawned vendors on either side of the question.

The agent-based vs. agentless battle is currently raging over backup solutions, especially in the virtualization space.

Like most technology debates, a seemingly simple description of a binary problem masks deeper and more complex issues. Asking and demanding detailed answers on a number of thorny questions will put an IT buyer in a good position when it comes to selecting the right solution for a substantially virtualized environment.

### 1. Is the solution agent-based or agentless?

This first question is often presented as the most important, but it's really only the starting point for an analysis of a backup and recovery solution. It tells you how the vendor defines itself in the agent-vs.-agentless debate, but it really should just lead to many more questions. That agent-vs.-agentless shorthand will be unpacked in the rest of this article.

### 2. What is the installation process?

One of the main knocks on an agent-based system is the fact that an agent needs to be installed on every system, physical or virtual, that needs to be backed up. The process is a potentially time-intensive task for administrators, which needs to be run machine-by-machine and virtual machine-by-virtual machine. It's important to test the process and note what native tools the vendor offers to streamline and speed up installation.

### 3. How does the backup solution discover systems?

One aspect that's often a selling point of agentless systems and a frequent feature of central consoles for agent-based solutions is system discovery. A network scan that magically populates with a lengthy list of all the systems in need of backup is a powerful tool in a product demo. A major factor to keep in mind is the idea of false simplicity. The tool may seemingly magically find all the virtual and physical systems on

the network, lulling an administrator into complacency. What requires vigilance, especially in the initial setup process, is whether the tool is providing a false sense of security. The quick discovery might be missing key virtual or physical machines, a hole that administrators won't know about until a failure requires a backup for a machine that the solution never discovered. Spot checks are critical to ensure coverage during the evaluation process. Later, but not too much later, a comprehensive system-by-system check to ensure that every physical and virtual system was captured in the discovery process is absolutely critical.

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### 4. How are the endpoints managed?

Another item to check on an agent-based system is how effectively the tool accounts for endpoint management. There should be native tools for keeping the agents up-to-date. This is a good time to check how frequently the vendor updates the agents to get a sense of how much of an administrative burden the tool will present, and to make sure that the vendor's policy time frame for updating the underlying software, say VMware or Hyper-V, is faster than your company's update time frame. That last point applies equally to an agentless system. The vendor's update time frame must outpace or match your company's, or you're going to spend time waiting around on updates from your backup vendor.

### 5. Does the solution integrate with your preferred management tool?

The native tools that a backup vendor provides are all well and good, but organizations tend to build up institutional expertise in an overarching management tool. The extent to which a backup solution integrates with the organization's tool of choice is critical on both the agent-based and agentless sides. For example, an agentless tool may have powerful centralized reporting, but if the agent-based tool integrates with the single-pane-of-glass management tool that's already in-house, it's more likely to get used.

### 6. How often does the solution require reboots?

This is a key question in an agent-based solution. A lot of the systems that are most important to back up are mission-critical systems with strict uptime requirements. Agents that require reboots for installation or for updating will have an effect on those uptime considerations.

### 7. What does agentless mean, exactly?

An agentless system still touches the local machine and runs services, sometimes even called agents, to conduct the backup. While this is obvious enough, it somewhat blurs the question of whether a system is agent-based or agentless. There are performance and version-support issues for the agentless system's local service that can cause the same type of headaches that are sometimes associated with agent-based machines.

### 8. What is the local resource consumption?

The agent or agentless question actually tells you very little about local performance. This issue can be as important as uptime, as a mission-critical system that slows substantially during daily backups could cost a company more in the long run than a clean, quick and occasional update-related reboot. This is an issue that can only be addressed with a side-by-side test on your local machine or virtual machine with its unique configuration.

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### 9. What are the dependencies of the tool?

Agent-based and agentless tools always have local dependencies, be they OS services or virtualization management tools. Such services can themselves be efficient or clunky. It's important to understand what other services and tools the permanent agent or the agentless tool's service calls upon to perform its work.

### 10. How powerful is the centralized console?

A powerful central console is critical to an administrator tasked with making sure anywhere from a few to a few dozen to a few hundred machines are successfully backed up. A good centralized console allows sophisticated scheduling,

system prioritization and granular backup control. Given that they are server-based and centralized to start with, agentless systems often have very powerful centralized controls. However, a centralized management tool tends to be table stakes for agent-based solutions, as well. The best tools on both sides, again, integrate with the most common management platforms to allow control to be delivered from an administrator's management tool of choice.

All of the considerations here are secondary to the most important one. Do the backups, whether they're agent-based or agentless, actually work?

### 11. How good is the reporting?

Related to the power of the centralized control is the strength of the centralized reporting. An agentless system would be expected to give a better overview, and a cleaner look at what percentage of the jobs ran successfully. However, a system with agents can often provide substantially more depth on the status and backup history of a particular system. With central consoles and feature additions, mileage will vary and it's not safe to assume which type provides the most useful details.

### 12. How much local flexibility does the system provide?

One advantage to agent-based systems can be extremely granular control over backup. Because the tool can be running as a background process in the local machine, agents can allow for more flexible backup scheduling, more variation in the time of backup and the ability to perform a scheduled backup even when the connection to a central backup server might be down for increased resiliency.

### 13. What is the impact of the backup process on network performance?

Local resource consumption isn't the only performance consideration during the backup window. Firing backup jobs across multiple systems can negatively impact network performance, depending on configuration. The agent-based vs. agentless question can be important for organizations without a separate network for backup traffic. The more flexible scheduling of agents can sometimes allow an administrator to more efficiently spread backup times to minimize bandwidth consumption.

### 14. How resilient is the host?

In an agentless system, a major concern is uptime and resiliency of the centralized backup software, whether it's server-based or a cloud service. Downtime in a centralized, agentless system can lead to missed backups. Frequent updates, especially if they're automated by the vendor, can lead to unexpected outages during your organization's backup window. One consideration is that a centralized server that covers many platforms that aren't part of your backup environment may lead to what amounts to unneeded server updates. For example, in an all VMware environment, updates to the Microsoft Hyper-V feature set supported by the central server are unnecessary, but may be unavoidable. That's OK if the vendor's quality assurance is rock solid. If it's not, an update to a feature that is superfluous in your organization mighty disrupt the entire backup schedule. In an agent-based situation, for example, the agents backing up Windows systems might only need to be updated when there's a Windows update, not, for example, when there's a Linux update. On the flip side, updating a host is usually an extremely rapid process compared to rolling out updates to all the agents in an environment. Configuring an environment for server resiliency and uptime is a well-understood process, and it needs to be done for the agentless server.

### 15. How well does the backup work?

Of course, all of the considerations here are secondary to the most important one. Do the backups, whether they're agent-based or agentless, actually work? In other words, is the system recoverable from a failure every time? Nothing else matters in a backup and recovery solution—it's all process in support of that end goal. As with any backup and recovery scenario, the most important aspect is regular recovery tests to ensure not that the backups are occurring as scheduled, but that they are producing recoverable files.

As with anything in technology, or in life for that matter, every choice involves tradeoffs. Decisions are rarely 80 percent-vs.-20 percent slam dunks. Instead, they tend to hew closer to an agonizing split of 51 percent for, 49 percent against. The agent vs. agentless choice is no different. The vendors who have bet on either side of the question are generally aware of both the benefits of their approach and the drawbacks, and they tend to develop their products over time to decrease the differences. These 15 questions should help you prevent the statement, "we're agent-based" or "we're agentless" from serving as the end of the answer on that particular debate with a vendor. **VR**

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