tapes are slower because they take so much longer to fill the tape, but when you consider the much larger amount of data stored on the tape, they're actually much faster. For example, an LTO-5 tape takes just over 3 hours to copy 3TB of data, chugging along at about 1TB per hour. But the newest version, LTO-8, can copy 30TB of data to tape in 9 hours and 15 minutes; that's a whopping 3.25TB per hour, three times as fast as the LTO-5.

Keep in mind that many other factors can affect the speed at which data is written to the tape. Like any other network performance issue, the speed of an overall system is limited by the speed of its slowest link. No matter how fast your tape drive can theoretically write data to the tape, it won't achieve anywhere near this speed if it's connected to your servers over a slow network connection. So you should keep the tape drive as close as possible to the data it's backing up, and use the fastest possible connection between the tape drive and the data.


TIP

If the total amount of data being backed up exceeds the capacity of a single tape, you should consider a robotic tape library that can automatically change tapes when one tape becomes full. That way, you can load as many tapes as your backup will require so that the entire tape backup job can complete without the need to manually swap tapes.

Understanding Backup Software

Windows Server comes with a rudimentary backup program called Windows Server Backup (WSB). However, this backup program is not sophisticated enough for any real-world use. Here are just a few of the limitations of WSB:

- WSB can back up only to a local disk drive or to a network share. It can't back up to removable media, including tape.
- If you back up to a network share, WSB automatically overwrites the previous backup every time it runs. That means that while a WSB backup is running with a network share as its target, you have no backup at all until the backup completes.
- WSB can back up only the single server it's installed on. You can't use a single WSB user interface to back up all the servers on your network. As a result, you'll have to configure WSB separately on every server to ensure that all servers are backed up, and you'll have to log in to every server and fire up WSB to ensure that the backups are running successfully.

Because WSB has so many limitations, most organizations should use a more sophisticated backup program that is designed specifically to back up server computers.