

# BackupAssist - Shadow Copy Protect Mode

BackupAssist v8.4 includes a new feature called Shadow Copy Protect Mode. This feature is for System Protection backups, and it can be enabled for users who are losing backup history.

## The issue

A few BackupAssist users discovered that in some instances, their System Protection backups had lost their older, historical backups. An investigation has found that this is caused by VSS. In rare instances, VSS is deleting the backup history when the backup job (wbadmin) is having trouble writing to the backup destination. If the backup job is able to successfully write to the backup destination, it does not report a problem because it does not know that VSS deleted the backup history. It only knows that it was able to complete its backup successfully.

**The result is that backup history is lost and the backup job successfully creates a new backup.**

## The cause

This problem mainly affects users whose backup destinations have performance issues that are causing the backup job to have trouble writing to the backup destination. Specifically, these problems commonly occur on low performance network destinations.

Effected destinations:

- Low cost or under spec'd iSCSI targets
- Low cost or under spec'd NAS destinations with Data containers.
- Non-optimized network infrastructure.

These scenarios appear to be compounded when the backup job does not use a dedicated storage area network (SAN), and instead uses a standard site LAN or WAN. The performance issues that can arise on a shared WAN or LAN can adversely affect a backup jobs ability to write the image backup to the backup destination at the rate required.

## The solution

The first step is to resolve the underlying problem with the destination or the LAN/WAN performance. Upgrading or reconfiguring the destination or network, or rescheduling the backup job can resolve the write errors, and therefore the problem. If the problem persists, then BackupAssist has a solution.

The solution is **Shadow Copy Protect Mode**, an optional configuration for System Protection backups. Shadow Copy Protect Mode firstly stops VSS from deleting the backup history and, if the backup fails, it retries the backup. This retry will be a full image backup and not an incremental backup. The retry nearly always results in a successful backup. If the retry does result in another write error, the backup job will fail with a warning message, rather than allowing backup history to be lost in most cases.

If Shadow Copy Protect Mode is used, a full backup retry will only run if a write error occurs. Users losing backup history are not losing it every time the backup job runs. They should therefore not experience a full backup every time the backup job runs - only when the write error occurs.

**SPM will only help protect the destination from history loss. It will not provide a permanent solution to the reason why the history loss occurred. It's not a good thing to have SPM turned on permanently; it's just a temporary measure while the user figures out a way forward.**

This table compares a backup with SPM and without SPM

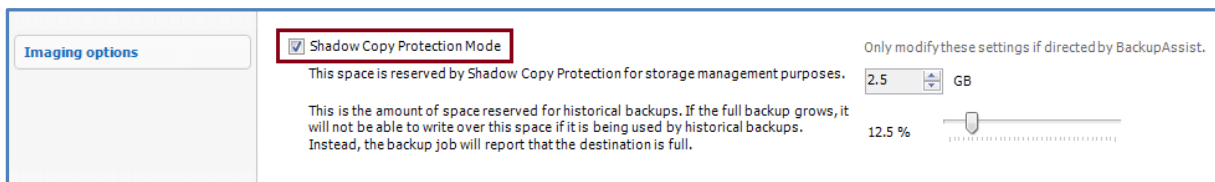
No Shadow Copy Protect Mode	Shadow Copy Protect Mode
Wbadmin tries to write	Wbadmin tries to write
VSS fails to update history	VSS fails to update history
All backup history is lost	SPM stops VSS history deletion
Wbadmin writes successfully	Wbadmin's write fails
	BackupAssist requests a wbadmin retry
	Wbadmin retries with a full backup ( <u>very</u> high success rate).

### Enabling Shadow Copy Protect Mode

The best resolution is to address the problem with the destination or the network's performance. Upgrading or reconfiguring the destination or network, or rescheduling the backup job can resolve the write errors, and therefore the problem.

If the problem persists, then enable Shadow Copy Protect Mode.

1. Select the *Backup* tab's *Manage* Menu and
2. Select the backup job
3. Select *Edit*
4. Select *Imaging options*
5. Select *Shadow Copy Protection Mode* under *VSS Backup Mode*



## The implementation

### BackupAssist v8.4

BackupAssist v8.4 includes a promoted implementation of Shadow Copy Protect Mode. This version performs all of the steps shown in the table above. By requesting a retry, SPM will (in nearly all instances) result in a successful image backup, and no backup history will be lost.

### Storage management

Because Shadow Copy Protect stops wbadmin from managing storage (removing old backups to make room for new ones), Shadow Copy Protect Mode also performs the storage management function.

There is a % bar below the Shadow Copy Protect Mode tick box, that allows you to specify the amount of space reserved for historical backups. As the full backup grows, historical backups are deleted to make room. However, you can specify a % of protected space, within which the historical backup cannot be deleted. These will be the most recent historical backups, and the backup job will report that the destination is full, rather than write over them.