

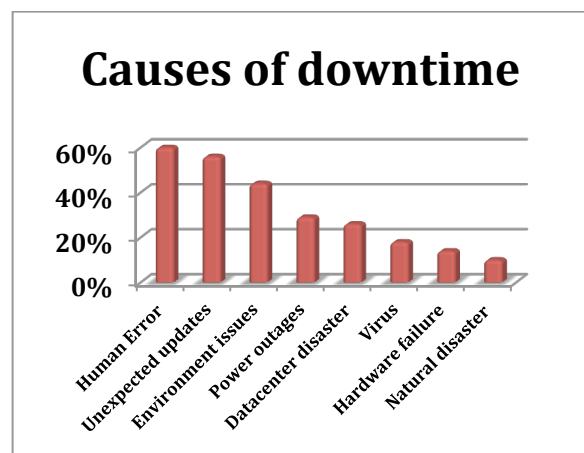


## Adaptable System Recovery (ASR) for Linux Virtual Machines

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## THE NEED FOR BARE-METAL RECOVERY

What would downtime of a critical tier-1 systems cost your company? To calculate how much your business loses when systems go down, you will need to factor in employee salaries and benefits, lost revenue, and how much it costs to restore your systems. According to the Symantec 2011 SMB Disaster Preparedness Survey, disasters can have a significant financial impact on SMBs, costing an average of \$3,000 for small businesses **per day** and \$23,000 for medium-sized organizations **per day**.



Imagine that your company will need to recover from a total system failure with the loss of all data, the operating system, applications, settings, and patches. Many systems administrators are under the false impression that a simple reinstall of the operating system or re-provision from

a template will be good enough since their enterprise backup products are backing up the data. Recovering from a catastrophic failure is a complex operation that takes anywhere from hours to weeks. **Do you remember?**

- All user accounts and passwords?
- What security patches to re-apply?
- Which changes have been made since it was installed originally?
- How the firewall was configured?
- Which third-party applications need to be re-installed?

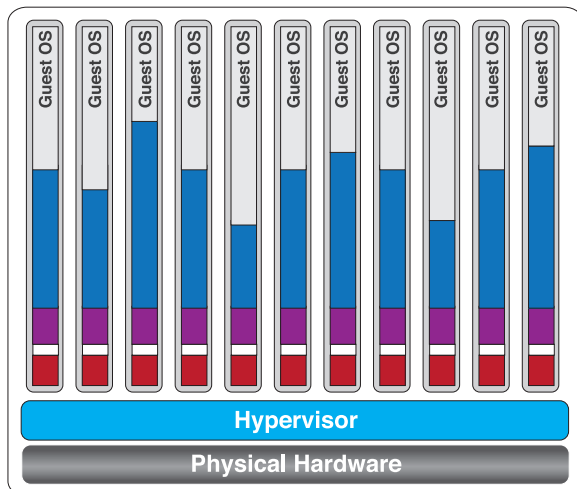
Even the most experienced, competent administrator would take considerable time getting the system back to the **exact** state right before the failure. Bare-Metal Recovery (BMR) is the process of restoring the Operating System (OS) with all of the configurations and application data in tact. BMR prevents lengthy downtime and costly mistakes when attempting to replicate the original system.

## SNAPSHOTS VS. FILE-LEVEL BACKUPS

So you might be saying, "That's not a problem, I create snapshots of my Virtual Machines (VMs) and restore the entire snapshot." That sounds great in theory, but in practice this can cause a lot of unforeseen problems with speed and storage. When you back up a snapshot of

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a VM, you are creating a copy of the entire disk (empty space and all). These disk images are large binary files that can only be used to recover the entire system and not individual files.



To recover individual files, you need file-level backup software. Some admins with VMs end up running two different types of backups on their systems; disk-image snapshots so they can recover the OS, and file-level backups because of the ability to easily restore individual files.

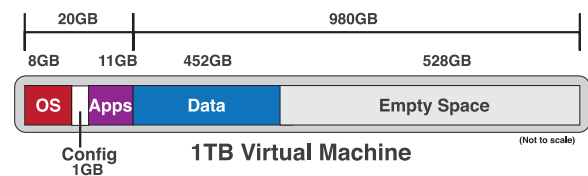
### Snapshots: Slower Recovery

Since snapshots are all-or-nothing, you have to spend hours backing up the entire system image even though you may only want the OS portion of it. During recovery, you could be wasting valuable time restoring the entire image back to your VM host just to turn around and overwrite terabytes of user data from more recent file-level backups.

### Snapshots: Wasted Storage

When creating a backup plan, you will want to keep some backups local and send some to offsite storage for Disaster

Recovery purposes. Most admins will also keep a few copies of the backups locally just in case. So now that there are two different backups of the entire system (which include empty disk space), your storage requirements may have just doubled or even tripled.



## THE BEST OF BOTH WORLDS

Storix® System Backup Administrator (SBAdmin™) uses a process called **Adaptable System Recovery (ASR)**, which allows for selective backup and recovery of the Operating System at the file-level. With SBAdmin, you have the choice of backing up the full system or just the Operating System portion of the virtual machine. Since an SBAdmin backup is not a disk image, you are not backing up empty disk space, just the data that is being used.

### SBAdmin: Fast Backup & Recovery

Our file-level backups can be tailored to your needs by allowing you to include only the OS or by excluding certain data. Selectively limiting the data can make for a very fast backup and recovery window. Many customers have stated they reduced their backup and recovery windows from 4 hours to less than 5 minutes.

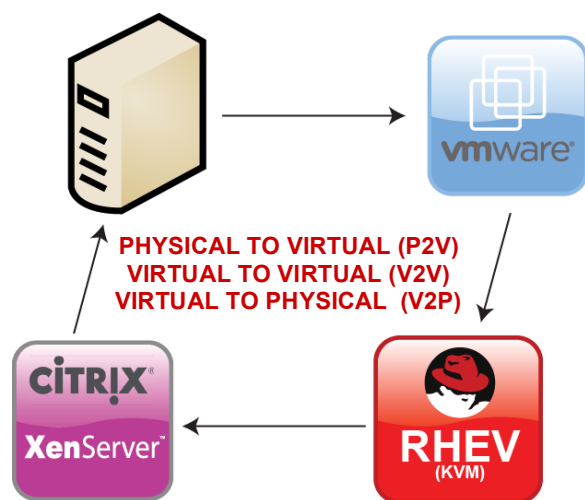


## SBAdmin: File-level De-duplication

Although there are ways to minimize snapshot image backups through block-level de-duplication, you're still forced to create a backup of the entire disk image with a snapshot backup product. With SBAdmin, you can select to just back up the files you want and with our incremental and/or differential backup features, you can reduce your storage needs to a fraction of a VM snapshot strategy.

## DON'T GET "LOCKED-IN"

Virtualization vendors all hail the benefits of moving from physical to virtualized systems. However, most fail to leave out the fact that once a system has been virtualized using their products, it is very difficult to change to a different vendor or move back to physical hardware. Now that you are under contract, you are essentially "locked in" to a virtualization vendor. At the time of recovery, you do not want to worry about licensing issues holding up recovery of your systems.



Just as easily as SBAdmin can move your production system from physical to virtual (P2V), the same process of Adaptable System Recovery, can be used to migrate back to physical hardware (V2P) or to a different virtualization technology (V2V). With SBAdmin, you can be sure that your systems are not only backed up in case of disaster, but can be re-deployed onto most virtualization technologies or back to physical hardware if necessary.

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## TAKE THE RISK OUT OF RECOVERY

DR plans are much better on paper. When an actual outage occurs, the unpredictable and unanticipated always seem to occur. Are you 100% sure that disk image you copied off is going to work? With SBAdmin, you can restore the system exactly as before or to whatever hardware or VM environment that is handy at the time. Why take the risk?

## RESOURCES

Storix SBAdmin: <http://www.storix.com>

Symantec 2011 SMB Disaster Preparedness Survey:

[http://www.symantec.com/about/news/resources/pre\\_ss\\_kits/detail.jsp?pkid=dpsurvey](http://www.symantec.com/about/news/resources/pre_ss_kits/detail.jsp?pkid=dpsurvey)