Mike Nelson – SVD article

VDI Backup Strategies

In more than a few of the I.T. shops that I have worked with that are running some form of VDI solution, their policy around backing up those virtual desktops is this – they don't. Whether that is right or wrong is left up to each individual's evaluation and their environmental situation. But, if you do backup your virtual desktops, or are in the planning stages of a deployment, let's talk about some ideas around this decision and a few strategies that you may consider for your implementation.

The easiest decision to not backup your virtual desktops should be done as form of policy around all your organizations workstations and laptops. After all, virtual desktops are just like a "normal" desktop to the user, right? They should have the expectation set that they really are using nothing different than what they would get from a physical desktop, right? And, more often than not, that includes I.T. saying that we don't back up desktops. If that is your environment, then case closed – no backups. If, however, your company subscribes to the solution that backs up desktops, either by groups or throughout the entire organization, then you need to take a look at how you can back them up easily, effectively, safely, and securely.

With backup technology as it is today, you should by default consider a solution that incorporates some basic technologies that have been around for a while. These include File Level Restore, De-duplication, and disk image backup. Some may argue that De-duplication doesn't work well for desktop backups, but remember that while desktop files are most likely not as static as ones that would reside on say, a server disk, de-duplication is still something that will provide benefits around the constant operating system files and the like that hardly ever get modified. I use de-dupe in all my backups so I'm not even really sure why you would ever want to turn it off since there really isn't any strong negatives around not having it active, except of course, for its use of possibly valuable disk space in your organization.

As with the backing up of virtual servers, your backup solution for VDI should include some way of doing a full disk image backup. What that means is it has the capability of making a copy of the virtual machines disk file (.vmdk, .vhd, or whatever) so that restoring a machine from a set state can be done quickly by just copying the disk image files back to the VM location. Most, if not all, of these full disk image mechanisms also include compression and some may even have the ability to split a disk image file into multiple files, making transporting or copying the file easier.

In order to be able to very quick and easy file restores for your desktops, which I have found is much more common than having to recover an entire desktop image, you need a solution that has the File Level Restore (FLR) capability. In older versions of FLR, you could only do file level restores for Linux-based virtual machines. Nowadays, the Windows OS platform is becoming more widely supported

and it is also becoming quite easy to do your file level restores using intuitive GUI interfaces rather than the older way of keying in long command lines.

You also need to decide the medium(s) you will use to store the backups, and the process that has to happen to recover from these medium(s). Do you backup to disk only? SAN or local disk, or both? Do you backup to disk first and then copy to tape? Do you backup straight to tape? These are all questions you should consider and weigh when deciding on a solution that fits your environment. One common scenario that I have done several times is to have a full disk image done of the machine (with FLR capability) to DAS (Direct Attached Storage) disk, and then it is de-duplicated on its way to the final data resting place, which is tape. There are a few commercial software packages that have some or all of these capabilities and they should be evaluated to fit your needs.

One last thing to consider is security. Does the possible solution contain a way to encrypt backups? Almost all standard network backup packages today offer some level of encryption. If you need to ensure that if security is a requirement for your desktops, either due to internal policy and/or compliance, that the solution you implement has that option.

I am a believer that in most of all the VDI implementations out there, you really will have a hard time convincing me that complete backups of those desktops are a necessary business need. Rather, I would suggest that users need to stop storing their personal and business files on their desktops and get them on the network where they belong, and where they are backed up by default. These days, rebuilding a virtual desktop is just a few mouse clicks away, and by not having anything else to recover for your users, makes yours and their lives much easier.