

Virtual Machines Backup using CA Arcserve

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Abstract - Backup is a day to day persistent task that needs to be designed and configured in an effective manner. The loss of file or folder or sometimes the crash of entire server is bound to occur in an Infrastructure environment. When a data loss or server crash occurs the Backup is the failsafe that organizations rely upon. It's the job of the Backup Administrator to forecast the ways data loss incidents that can occur and build a custom design solution that provides a reliant and swift recovery. Traditionally the servers were physical machines where the Operating System was installed and the applications are configured but the rise of Virtual infrastructure has led to the evolution where a server is nothing but a group of disk files (.VMDK, .VHD) hence it again becomes the job of the Backup solution architect to provide a solution that can back up the virtual machines and its needless to say the restore data should be consistent and the entire operation is seamless. We are going to discuss about how the data is backed up in a VMware VCenter environment using the Backup Software CA Arcserve.

Key Words: Backup, VMware VCenter, CA Arcserve, SAN storage, HBA

1. INTRODUCTION

Backup Components

The Backup software has two components one the Backup server where the centralized backup manager is installed and configured and it is connected to SAN storage to Tape Library. The other is the client component also called as an agent that is installed on machines/servers that need to be taken backup. It is to be mentioned here the Backup server has to be a physical server like Dell R 730 or HP ProLiant series where the tape library or the SAN storage can be attached to through the HBA's. Its needless to say the up to date driver software for the Tape library and the firmware for the HBA (Host Bus Adapted) is properly installed. It is mandatory to have domain service accounts with administrator privileges also in the VMware Vcenter be used while configuring the backup jobs in the backup server. The backup job tells the CA software where are the source VM's, the type of backup

to be performed and the destination of the backup say a tape library or SAN storage.

1.1 Traditional Backup Methodologies

The backup is a daily activity that needs to be stored in SAN storage or Tape library .Once the agent is installed in a client the Backup server communicates to the client through TCP port 4050 and starts copying the all files of the client over the LAN. This method really helpful as backup is stored in the Tape as a folder structure so if folder or a file is accidentally deleted the restore can be made effectively. But it was always a challenge when it comes to the system state backup of the client (which his actually a production server holding critical application/business data). It is also to be noted here the client is actually a Virtual machine (VM) hosted in a VMware VCenter which in turn is running on VMware Esxi Hosts.Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar:

1.2 VMware Virtual Machine Backup

CA Arserve is one of the Backup software in the market that offer the traditional file level backup and also the VM state backup. A proxy backup server is configured which communicates with the VMware Vcenter and creates a snapshot of the VM, a snapshot is a just-in-time copy of the VM including the configured CPU, RAM .in-time copy of the operating system and all the files in the hard drive. It is like hard copy of the VM with all its attributes and data stored to a tape or a storage device. Be a small file that was deleted two months ago or if the whole VM that crashed after application upgrade it can be restored to a previous state without any hassle and at the same time providing data integrity. This method is called mixed mode backup.

The CA ARCServe VMware Configuration Tool is installed when the first time a CA Backup server is installed. Please note a backup server is the physical machine where a Tape Library or San storage is attached. When CA VMware Configuration tool is setup, the same backup server functions as a proxy server which communicates with VMware Vcenter to collect all the VM's configured. The configuration tool gathers the actual local of the VMDK files stored in the Datastore. A separate physical or VM can also be configured as a proxy server if needed.

It is recommend to have a fiber channel connectivity from the Backup server to the SAN storage where the VM's are saved as .VMDK files. The storage administrator has to zone the backup server HBA to see the LUN's where the VM's are stored. If the above method was not feasible a 10 Gbps LAN connectivity should suffice the need, the CA VMware Configuration Tool gathers all this information and provides to the backup server hence at the time of backup the software automatically choose the transport mode that is effective.

2. RESTORE

The restore operation is simple the relevant tape for the requested date of recovery needs to be loaded in the Tape Library and the requested file or folder can be recovered to the desired location in the network. When a Virtual Machine recovered the CA Arcserve actually creates a new VM with the same hostname, configuration and IP settings in the destination Vcenter hence it is recommended to the power down and rename the VM that is being restored.

3. CONCLUSIONS

For a growing Virtual Infrastructure where the physical hardware server footprint that is dwindling day by day the CA Arserve is one of the enterprise solutions that be trustworthily implemented to provide safe and successful backup and the same time providing data consistent recovery .

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REFERENCES

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