

VM Loses Connection During Snapshot Removal

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Problem:

Snapshots can hurt performance of virtual machines. It even can lead to freeze / unresponsiveness for many minutes.

Cause:

The snapshot removal process significantly lowers the total IOPS that can be delivered by the VM because of additional locks on the VMFS storage due to the increase in metadata updates, as well as the added IOP load of the snapshot removal process itself. In most environments, if you are already over 30-40% IOP load for your target storage, which is not uncommon with a busy SQL/Exchange server, then the snapshot removal process will easily push that into the 80%+ mark and likely much higher. Most storage arrays will see a significant latency penalty once IOP's get into the 80%+ mark which will of course be detrimental to application performance.

Solution:

The following is a cumulative list of ways to potentially get around this snapshot limitation:

- Snapshot consolidation can take longer when using Virtual Appliance (Hot Add) mode if the VMs reside on NFS storage due to a VMware issue with the locking mechanism. If possible, try switching to NBD mode for backups to see if the Snapshot consolidation is quicker, or migrate the backup proxy to the same ESX(i) host where the VM resides.
- If the VMs CPU resources spike heavily during Snapshot consolidation, consider increasing the CPU reservation for that VM.
- Ensure you are on the latest build of your current version of vSphere, hypervisors, VMware Tools and SAN firmware when applicable.
- Move VM to a host with more available resources.
- Move VM to a datastore with more available IOPS, or split the disks of the VM up into multiple datastores to more evenly spread the load.
- If possible, change the time of day that the VM gets backed up or replicated to a time when the least storage activity occurs.
- Ensure that the VM has no additional Snapshots on it outside of the one created during the Veeam job.
- Use a working Dir to redirect Snapshots to a different datastore than the one the VM resides on.
- Disable VMware Tools Sync driver on the VM: http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1009886

More Information:

Below is a great article that explains the Snapshot consolidation process. Contained within it you will find another link that provides in-depth detail on the technical aspect of this process.

<http://up2v.nl/2011/05/09/know-the-performance-impact-of-snapshots-used-for-backup/>

Here is VMware's KB on this topic:

VMware KB: http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1002836