Importance of local storage performance ...

 mattjk 80 posts since

Dec 19, 2007

Hi all,

How important is the performance of local storage when storing all VMDK's on a SAN - i.e., the local storage is only used to store ESX Server itself (and I assume provide swap disk, etc)?

RAID-1 is a given for redundancy, but beyond that? Is there going to be any appreciable difference in real-world ESX performance between 2-disk RAID-1 7.2k SATA and 2-disk RAID-1 15k SAS?

Thanks.

 weinstein5 *6,331 posts since*
Nov 19, 2005 1. **Re: Importance of local storage performance when using a SAN?** Mar 17, 2008 5:59 PM

you are correct - RAID-1 shoudl be fine for the local disk - it is used by the Service Console including SC swap file -

 mattjk *80 posts since*
Dec 19, 2007 2. **Re: Importance of local storage performance when using a SAN?** Mar 17, 2008 10:16 PM

in response to: weinstein5 Yep I already know that much - at least RAID-1 is a given. My question is regarding whether the performance of local storage affects the overall performance of ESX significantly - i.e. is there a big diff between using 2 15k SAS disks vs 2 7.2k SATA disks?

 mattjk *80 posts since*
Dec 19, 2007 3. **Re: Importance of local storage performance when using a SAN?** Mar 19, 2008 1:39 AM

Bump.

Anyone?

 weinstein5 *6,331 posts since*
Nov 19, 2005 4. **Re: Importance of local storage performance when using a SAN?** Mar 19, 2008 4:48 AM

in response to: mattjk

I have not seen much of a difference inn the overall performance of your ESX hosts - there will be a slight performance increase in the Service Console just basedon the imptoved performance of the swap space fir the service console - this of course is assuming is all you VMs being stored on some NAS/SAN device -

 mike.laspina *2,270 posts since*
May 26, 2006 5. **Re: Importance of local storage performance when using a SAN?** Mar 19, 2008 8:24 AM

Hello,

Yes there will be a big difference. The reason a 15k is faster than a 10k is the number of reads and writes that can occur on a single rotation of the platter. For example in one rotation moment on a 15K we get an arbitrary 6 writes this will equal 4 writes on a 10k drive. This is 50% better per rotation time . What you need to consider is do you really want to use local SATA disk. We normally do this to prevent heavy swap I/O over the SAN. You can prevent this by using the correct memory resource on the host. I have almost not vmdk swapping and I don't have any local disk, it all boot from SAN. The other thing to think about is RAID 1 will cost 50% on every write operation, this will not be optimal for a swap vmdk. Ram and tuning is the correct way to deal with these issues.

p.s. I would chose SAS over SATA for this purpose.

Message was edited by: mike.laspina

depping *2,997 posts since*
Jan 17, 2005 6. **Re: Importance of local storage performance when using a SAN?** Mar 19, 2008 8:50 AM

in response to: mike.laspina Good call mike! 6 or 4 is a huge difference indeed.

Duncan

My virtualisation blog:

http://www.yellow-bricks.com

mike.laspina *2,270 posts since*
May 26, 2006 7. **Re: Importance of local storage performance when using a SAN?** Mar 19, 2008 8:56 AM

in response to: depping

Thanks Duncan,

I actually didn't word it quite correctly. Its not a single rotation. It is the number of rotations in a moment of time that gives it more read/write I/O.

But regardless the result is the same, significantly better performance.

mattjk *80 posts since*
Dec 19, 2007 8. **Re: Importance of local storage performance when using a SAN?** Mar 20, 2008 6:36 PM

in response to: weinstein5 Thanks for the info guys.

zippy_paul *1 posts since*
Feb 2, 2007 9. **Re: Importance of local storage performance when using a SAN?** Jun 23, 2008 7:33 AM

in response to: mattjk I'm not sure if the question has been answered. we've established that 15kSAS drives are faster than 10k ones... and that you need adequate RAM in your ESX server... and mike did mention that he would use SAS for this purpose, however i didn't quite catch the reason.

and Mike are you saying that you would not use RAID 1 because of the 50% hit?

i've got the same issue. i'm building ESX Servers. we have iSCSI SAN on which i want to store most stuff, however am thinking perhaps it's better if i put the ESX swap file on local storage... in which case, is it worth using SAS? (assuming we're on a tight budget) and if so, why?