SONY

White Paper | Network Video Management System

Guidelines and recommendations in a virtual server environment

Network Video Management System
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1. Virtual Server environment support

Sony's Network Video Management System(NVMS) SOW-E applications and services support being installed and run on virtualized Windows® servers.

Both VMware® and Microsoft Hyper-V® are used as test platforms, and there are no known compatibility issues

2. Using NVMS Recording Servers on virtual servers

Virtualization is often used to utilize hardware resources better, because normally the different virtual servers running on the hardware host server do not load the virtual server to a great extent and often not at the same time.

The NVMS Recording Server service that records all the cameras and streaming video to clients is a comparatively high resource-demanding service that will put a high load on CPU, memory, network, and the storage system. The normal gain by using virtualization disappears to a large extent when running the NVMS Recording Server service on a virtual server because in many cases it will use all available resources - leaving nothing for other virtual servers to use.

When running other virtual servers in parallel with a virtualized NVMS Recording Server on the same hardware host, the NVMS Recording Server potentially might not record images at the configured frame rate because resources in some time periods are used by the other virtual servers on the host, leaving fewer resources to the video surveillance system.

Another typical reason for using virtualization is fast recovery after hardware failure. The NVMS Recording Server will also benefit from this, but if the Recording Server and its databases have not been shut down properly, the databases will require a repair. Depending on the size of the databases and extent of the problem in the database, it might take a long time to repair the databases. Should the physical hardware host be taken out for service, it is important that the virtual server with the NVMS Recording Server is shut down properly.

An additional option when hardware should be taken out for service is to migrate the virtual server from one hardware host to another. This can be done while the NVMS Recording Servers are running, but it is recommended to stop the Recording Server service before doing this to ensure a problem-free migration. If it is done while the Recording Server service is running, there will be a dropout in live and recorded video for the duration of the migration – typically 3-10 seconds, after

which everything will be running again.

When using the virtual server it will require around 15-20% more resources to run the NVMS Recording Server.

3. Conclusion and recommendations for hardware and configuration of virtual servers

As described in this document, virtualization is definitely possible, and in some cases can be an advantage because of the increased robustness and manageability, and in other cases a disadvantage because of the increased resource usage. When deciding on whether to use virtualization or not, the different advantages and disadvantages have to be taken into account.

When running in a virtual environment, it is important that the hardware host has as much physical memory as is allocated for the virtual servers, and that the virtual server running the Recording Server is allocated enough CPU and memory - which it is not by default. Typically the recording server needs 2-4 GB depending on configuration.

Network adaptor allocation and hard disk performance can also be a bottleneck. It can be an advantage to allocate a physical network adaptor on the host server to the virtual server running the Recording Server; this makes it easier to ensure that the network adaptor is not overloaded with traffic to other virtual servers than the Recording Server. If the network adaptor is used for several virtual servers, the network traffic to the other virtual instances might result in the Recording Server not retrieving the configured amount of images, and too few images will be recorded.

The same applies to storage system access and performance. If the storage system is used for other virtual servers, they might slow down data throughput from the Recording Server in periods where the other virtual servers also access the storage system, resulting in fewer images than configured being recorded.

Revision History

Date	Revision	Description
2016/10/07	1.0.0	First edition.