64-bit Architecture

Genius Vision NVR
Enterprise Edition

Synopsis

- Introduction
- Software Porting
- Missing Functions
- Product Packaging (pricing)
- Hybrid Issues
- Misc Technical Issues

Introduction

What does 64-bit solve?

- Access RAM beyond 4GB (user: 2GB)

What does 64-bit not solve?

- Bottlenecks elsewhere. For example: bigger RAM delays I/O bottleneck, but eventually still crashes.

OS support

	32-bit OS	64-bit OS
32-bit application	**Natively supported**	**Supported by WoW64**
64-bit application	**Not supported**	**Natively supported**

For device drivers, 32-bit and 64-bit are not compatible.

Software Porting

In contrast of a popular misconception, 64-bit application is not an "upgrade" to 32-bit application. It's a totally different application.

Although some software porting techniques exists to compile 64-bit version from 32-bit one, they are essentially different. This means total functional tests are required to ensure the completeness and reliability of the 64-bit version.

Missing Functions

64-bit architecture enables NVR application to support memory beyond 4GB(2GB), but it requires cooperation of all system components to become 64-bit.

As a result, the lack of 64-bit support of some components will cause software to lost some functions when migration to 64-bit architecture.

Known Limits of 64-bit

Known Unsupported Drivers
- ACTi
- ArecontVision
- EtroVision
- VIVOTEK

Known Unsupported Functions
- 3GStreaming

Note: this is not the complete list. There might be unsupported features that are not listed below.

Product Packaging (Pricing)

Commercial Edition (x86, 32-bit)	Professional License	Intelligent License	Panoramic License	n/a
Enterprise Edition (x64, 64-bit)				Enterprise License (per-server)
Lite Edition	Reduced set of functions, more affordable price			
Community Edition (32/64-bit)	Non-commercial use only.			

Feature Comparison

Software Feature Matrix

	Lite	Professional	Intelligent	Panoramic
Full remote control	✔	✔	✔	✔
Remote control through Internet Explorer	✔	✔	✔	✔
Multiple monitors	✔	✔	✔	✔
512x Smart Search		✔	✔	✔
Central management system		✔	✔	✔
Event and trigger rule management		✔	✔	✔
Mobile apps	✔	✔	✔	✔
eMAP	✔	✔	✔	✔
Export video to AVI	✔	✔	✔	✔
Software motion detection	✔	✔	✔	✔
Visual tamper detection	✔	✔	✔	✔
Object counting			✔	
Missing object/foreign object			✔	
Panorama view				✔
Panoramic digital PTZ				✔

* Specifications are subject to change without notice.

Technical Support Issue

There are still minor differences between running 32-bit application on 64-bit OS and running 32-bit application on 32-bit OS. Some 32-bit applications are not even compatible with WoW64.

So in the aspect of technical support, the 32-bit/64-bit information about OS and application is very important and must be attached with support request.

Registry Issues

64-bit Windows OS has "registry redirection" feature that obscure some part of 64-bit registry nodes from 32-bit application.

To ensure maximum compatibility, Genius Vision NVR uses 32-bit registry even in 64-bit native mode. This means when accessing HKLM\SOFTWARE\GeniusVision in 64-bit OS, one needs to look for HKLM**Wow6432Node**\SOFTWARE\GeniusVision instead.

Registry nodes under HKCU is not affected by 64-bit OS.

File System Issues

When 32-bit application run in 64-bit OS, access to directory C:\Windows\System32 will be directed to C:\Windows**SysWow64**

In other words, **unintuitively**, under 64-bit OS,
- C:\Windows\System32 is only for **64-bit applications**.
- C:\Windows**SysWow64** is only for **32-bit applications**.

Program Files Issues

When installing 32-bit application into 64-bit OS, the default installation is "**C:\Program Files (x86)**", where "**C:\Program Files**" is for 64-bit applications.

This is not a hard rule (it can be altered by individual developer), but a practice that Microsoft recommends.