Milestone - Balanced RAM improves XProtect Smart Client performance

Support Team - 2018-08-11 - Comments (0) - Security

If you are experiencing poor performance of XProtect Smart Client even on high-end machines, it might be because of inappropriate RAM layout.

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ARTICLE DETAILSArticle Number: 000002774
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Last Modified: 2016-8-29SYMPTOMSXProtect Smart Client (all versions) may utilize unusually large amounts of CPU processing power (relative to the amount of cameras that are being viewed), despite having a powerful CPU.

Example: When viewing 25 cameras (720p resolution / 30 FPS), on a workstation with an Intel Core i7-6700 CPU, you may expect the CPU utilization to be approximately 46%, but in this scenario it is actually at 98%.CAUSEThe CPU of the machine may support more than one memory channel, (i.e. two, three, or even four). This is called Single, Dual, Triple, and Quad RAM. In order to obtain the best performance from the system, Smart Client workstations should be configured so that the number of physical RAM modules present is equal to or greater than the number of memory channels supported by the CPU.

For example: CPUs that support dual-channel RAM should be configured with at least two physical RAM modules. This configuration is called 'balanced RAM' and will provide the best possible performance. In this scenario, 2 x 4GB modules will provide better performance than 1 x 8GB module (assuming RAM speed and other factors are equal).

If a workstation is configured with less than the number of memory channels supported by the CPU (example: CPU supports dual-channel memory, but only 1 x 8GB physical RAM module is installed), then a significant amount of additional CPU computing power is consumed and Smart Client performance suffers significantly.

Our testing indicates that Smart Clients installed on systems with balanced RAM utilize approximately half as much CPU as unbalanced systems. In case of an on-board graphics adapter, the graphics uses the on-board RAM and thus GPU and CPU need to share the bandwidth of the memory channel(s), so bottlenecks may occur if there is only a single memory channel.

You can verify the number of memory channels and the memory layout by using tools like:

- CPU-Z (http://www.cpuid.com/softwares/cpu-z.html)
- GPU-Z (https://www.techpowerup.com/gpuz)

TROUBLESHOOTING STEPSN/ARESOLUTIONFor optimised performance, the number of physical RAM modules should be equal to or greater than the number of RAM channels supported by the CPU

- Tags
- IP Surveillance
- Milestone
- Smart Client

- XProtect