



Technical Info: Viewstation & Remote Viewing Requirements
Published: 7/24/23

PC Hardware Specifications

As HD and even UHD 4K cameras become more and more commonplace the need for stronger computer hardware to view multiples of these high quality streams increases.

SCW recommends the following for our Viewstation CMS software - these recommendations should serve as a guideline. There are many variables that can change the need to either meet or exceed these recommended specifications, including your camera resolutions, how many cameras you plan to stream, and how often you plan to watch them.

For example, the specifications of your computer matter a lot more if you're setting up a constant viewing platform like a guard station or front desk and matter less if you're just occasionally wanting to look at your cameras for short periods of time.

Recommended requirements: At least an 8th gen (or newer) quad core i5 with 16GB of RAM and an **Intel integrated HD** graphics processor. The PC should be **wired** to a 1Gbps switch/network.

Please check the following reference configurations.

Reference specs are for Viewstation 1.5.0

Windows 10 Performance - CPU is i7-6700 CPU at 3.40ghz

CPU/Computer	Nvidia RTX 2070 / 8GB RAM	Intel HD 530 8GB RAM	Intel HD 530 16GB RAM
h.264 GPU Enabled			
12MP - 10Mbps - 20FPS	8 Streams	9 Streams	12 Streams
4K - 8Mbps - 25FPS	11 Streams	11 Streams	14 Streams
4MP - 6Mbps - 20FPS	23 Streams	22 Streams	27 Streams
1080p - 4Mbps - 25FPS	36 Streams	37 Streams	47 Streams
720p - 2Mbps - 25FPS	49 Streams	64 Streams	64 Streams
D1 - 1Mbps - 25FPS	53 Streams	64 Streams	64 Streams

h.264 Standard (NO GPU)			
12MP - 10Mbps - 20FPS	4 Streams	4 Streams	7 Streams
4K - 8Mbps - 25FPS	5 Streams	5 Streams	9 Streams
4MP - 6Mbps - 20FPS	11 Streams	11 Streams	14 Streams
1080p - 4Mbps - 25FPS	15 Streams	15 Streams	24 Streams
720p - 2Mbps - 25FPS	32 Streams	32 Streams	53 Streams
D1 - 1Mbps - 25FPS	46 Streams	46 Streams	61 Streams
H.265 GPU Enabled			
12MP - 5Mbps - 20FPS	9 Streams	9 Streams	11 Streams
4K - 4Mbps - 25FPS	12 Streams	11 Streams	13 Streams
4MP - 3Mbps - 20FPS	23 Streams	17 Streams	28 Streams
1080p - 2Mbps - 25FPS	39 Streams	34 Streams	49 Streams
720p - 1Mbps - 25FPS	48 Streams	59 Streams	64 Streams
D1 - 512 Kbps - 25FPS	51 Streams	64 Streams	64 Streams
H.265 Standard (No GPU)			
12MP - 5Mbps - 20FPS	3 Streams	3 Streams	3 Streams
4K - 4Mbps - 25FPS	3 Streams	3 Streams	6 Streams
4MP - 3Mbps - 20FPS	7 Streams	7 Streams	10 Streams
1080p - 2Mbps - 25FPS	12 Streams	12 Streams	19 Streams
720p - 1Mbps - 25FPS	28 Streams	28 Streams	42 Streams
D1 - 512 Kbps - 25FPS	42 Streams	42 Streams	57 Streams

Note: This should be used as a reference, and is assuming a dedicated PC with all resources to Viewstation, other programs being used like web browsers, etc will lower this capability. GPU decoding is only supported on Windows, no Mac support currently.

Other Hardware Considerations

Other factors to consider when sourcing hardware for remote viewing is whether you are purchasing a desktop or laptop, Windows or Mac, and more. SCW highly recommends a Windows desktop computer for the best experience possible.

Desktops computers are built for constant speed and power delivery. The space and cooling fans inside desktops allows the more powerful CPUs to maintain their top speeds for near indefinite periods of time.

Modern laptops are generally built to be thin with cool temps and low voltage processors. These low voltage CPUs feature the ability to jump up to high speeds but due to the lack of

space and cooling generally can not withstand those speeds for very long and they begin to throttle the CPU down to keep temperatures low. Other factors can also affect laptop viewing such as power plans, whether you're on battery or plugged in, and more.

Network

Another factor to consider is your network. For internal / local network use it's recommended your computers be wired to the network rather than using Wi-Fi. Wi-Fi will likely struggle to deliver constant video, even with a strong signal. Be sure that the network features 1Gbps equipment throughout.

If you are viewing your system from away from the location over the internet you'll have to also factor in your internet speed, especially the internet speed at the location of the system.

Internet speeds come in both download speeds and upload speeds. Download speeds are the most well known and advertised, that speed is used when you download a file/etc from the internet. Upload speeds are used when you send something to or over the internet, for example, uploading photos to the cloud, or sending security camera footage to someone viewing over the internet.

In general, download speeds are significantly higher than upload speeds. Upload speeds are rarely advertised and often you have to check the fine print to see the speed. For example, a nationwide ISP offers 940Mbps download, but the upload is currently 35Mbps. 35Mbps would top your internet at sending around ~5 4K streams at h.265 with nothing else using it.

To determine your internet speeds you can go to www.speedtest.net and check the upload speed. For the client viewing remotely the download speed is the most important spec.



Speedtest.net result.

General Considerations

When viewing through the web, Viewstation or the SCW Go Mobile app - keep in mind that your smoothest experience will **always** come directly from the video output (HDMI/VGA) of the NVR. Even with the best specs, you may experience occasional micro-stuttering, slight delays, etc. Especially on the highest quality video feeds (IE 4K videos)

If you are sensitive to these issues it is always recommended to utilize the built in display on the NVR. This offers a dedicated view for someone, without even the need for a computer. Some of our larger NVRs even support decoding cards for video wall functionality.

HDMI extenders through ethernet cable can also work to send that video feed across large distances.

Conclusion

If any of these specifications or info seems daunting - please do not hesitate to contact SCW. Our experience sales and support representatives can point you in the right direction so that you get the experience you need from your remote viewing platform.

Sales: 828-483-4237

Support: 828-352-2242

We're also available via live chat at www.getscw.com or by emailing hello@getscw.com