

What are the recommended hardware specifications for Wave Desktop?

The Wisenet Wave Desktop client can be installed on most modern computers with 64-bit architecture. That being said, Wisenet Wave, and all software in general, is only as stable as the hardware it is installed upon.

Although Wave Desktop is an extremely lightweight application that uses a minimum amount of hardware resources, we do recommend using the following hardware specifications for most situations.

Prerequisites

In order to use the Wave Desktop application, a computing device needs to have at least the following prerequisites:

- A supported 64-bit Operating System
- [OpenGL 2.1](#) Support or better
- An Intel or AMD [CPU](#)

Note: The recommendations below are based on the assumption that the computer being used is dedicated to the Wave Client application with the default settings and is not used to run additional applications concurrently as this may impact the performance and stability of your System.

Hardware Recommendations

We recommend using the following specifications and prerequisites mentioned above to have a smooth user experience when using the Wave Desktop client with up to 64 devices in a layout.

Single Monitor Workstation:

Type	Requirement
CPU	Intel i5 8th gen or AMD Ryzen 5 3000 Quad-Core or better
RAM	8 GB DDR3 1600 MHz or better
Network Interface	1 Gbit or better
GPU	Intel HD Graphics onboard GPU or better
Storage	Dedicated SSD or NVMe disk for the OS, 128 GB or larger

Dual Monitor Workstation:

Type	Requirement
CPU	Intel i7 8th gen or AMD Ryzen 7 3000 Quad-Core or better
RAM	16 GB DDR3 1600 MHz or better

Network Interface	1 Gbit or better
GPU	Intel HD Graphics onboard GPU or better
Storage	Dedicated SSD or NVME disk for the OS, 128 GB or larger

Quad Monitor Workstation:

Type	Requirement
CPU	Intel i9 or AMD Ryzen 9 Quad-Core or better
RAM	32 GB or better
Network Interface	1 Gbit or better
GPU	GeForce GTX 1650 or better
Storage	Dedicated SSD or NVME disk for the OS, 128 GB or larger

Note 1: Wave Desktop uses only the CPU for video decoding and can display up to 64 items on the viewing grid. The GPU is used for dewarping on the fly, drawing animations, controls, and rendering UI elements in the client.

Note 2: We assume that one instance of Wave Desktop runs on one monitor. If you want to run two instances of Wave Desktop on one monitor, use the recommended specs of the "Dual Monitor Workstation". For three or four instances of Wave Desktop, use the recommended specs for the "Quad Monitor Station".

Note 3: Please take notice that dewarping a fish-eye camera will set its resolution to "High". As a result, the specifications as mentioned above might not apply and are dependent on the camera settings (e.g., resolution, framerate, etc). It is better to take the suggestions mentioned below in the decoding capabilities paragraph.

Decoding capabilities

Although it is difficult to offer reliable recommended specifications with regard to the decoding capabilities of a system due to multiple variables of a stream, we tried to provide some guidance to select the right workstations for your requirements.

The following camera settings were taken into consideration when creating these recommendations:

- Resolution of 1920 x 1080 or less
- Framerate of 15 fps or fewer
- Bandwidth of 2 Mbps or fewer
- [Group of Pictures](#) (GOP) of 15 (IBBBBPBBBBPBBBBI)
- H.264 compression method

Up to 8 high-resolution streams:

Type	Requirement
CPU	Intel i5 8th gen or AMD Ryzen 5 3000 Quad-Core or better
RAM	8 GB DDR3 1600 MHz or better
Network Interface	1 Gbit or better
GPU	Intel HD Graphics onboard GPU or better
Storage	Dedicated SSD or NVMe disk for the OS, 128 GB or larger

Up to 16 high-resolution streams:

Type	Requirement
CPU	Intel i7 8th gen or AMD Ryzen 7 3000 Quad-Core or better
RAM	16 GB DDR3 1600 MHz or better
Network Interface	1 Gbit or better
GPU	Intel HD Graphics onboard GPU or better
Storage	Dedicated SSD or NVME disk for the OS, 128 GB or larger

Up to 32 high-resolution streams:

Type	Requirement
CPU	Intel i9 or AMD Ryzen 9 Quad-Core or better
RAM	32 GB or better
Network Interface	1 Gbit or better
GPU	GeForce GTX 1650 or better
Storage	Dedicated SSD or NVME disk for the OS, 128 GB or larger

Note 1: Please keep in consideration that most monitors have a native resolution of 1920x1080. As a result, there is no benefit of displaying more than 1 Full HD camera in High Resolution on such a screen. The same applies to displaying more than 4 Full HD cameras on a 4K screen or more than 16 Full HD cameras on an 8K screen.

Why no minimum hardware requirements?

Although Wave Desktop is a very lightweight application that can run on an Atom Powered [Intel Compute stick](#) (as we show in [THIS](#) video), there are too many variables and use cases to determine viable minimum requirements.

A user who only reviews footage based on events/notifications and exports only small sections of footage would have very different requirements than a professional operator that interacts with many cameras/resources at the same time.

What about ARM-based devices?

ARM is gaining popularity - Microsoft uses ARM in some of their [Surface devices](#) and Apple has recently released Macbooks utilizing their new ARM-based [M1 chip](#).

We also have an ARM-based Desktop Client installation package for Linux powered devices like the [Nvidia Jetson Nano](#) single board computers, but this package currently is only available as an experimental build.

For a quick and easy setup guide for your ARM-based Single Board Computer, suitable only for prototyping and experimental use, please refer to [this](#) support article. To create your own ARM-based Linux NVR, please take notice of [this](#) support article. More on our ARM Support Policy can be read [here](#).

Do you have different requirements?

Every project has its unique needs, but the recommendations above will fulfill the needs of most projects. If you have special requirements like displaying many high-resolution streams, using more than four monitors for a video wall, or other project-specific requirements, please reach out to your local Wisenet Wave reseller to discuss these requirements and possible solutions.

Questions

If you have any questions related to this topic or you want to share your experience with other community members or our team, please visit and engage in our [support community](#) or reach out to your local reseller.