

Recommended Hardware Notes

Guidance on choosing hardware

This document provides supplementary guidance for the Recommended Hardware page on the RT Software website.

It is important to review the notes before making a final purchase decision.

Our software can be deployed on a range of different platforms:

1) PCs - often placed on desktops
2) Rack mounted servers or workstations
3) Private cloud / virtualised deployment
4) Public cloud - such as AWS

There is also a choice of video formats:

A) SDI
B) IP - SMPTE2110
C) IP - NDI

It is important to be clear what kind of system you require to ensure you receive a competitive quote.

If you are unsure what system you plan to build, we are happy to provide guidance. Here are some of the questions you should consider for your project:

1. Are you using HD or UHD resolution?

UHD will add additional cost, especially for the GPU and Video cards.

2. Which of our products do you need?

RT Software's Swift range is modular so in many of our products (for example Swift News, Swift Studio) the core components will use 1 or more Swift Engine renderers. You can refer to the name of the product on the lefthand side of the Recommended Hardware page.

If you are unsure which products your project will be using please talk to us.

3. Use the grid to find the numbers of outputs, previews and inputs you expect to use.

If you need something different from the options shown on the page, we can help! Just talk to us and we can find the right option for you.

What type of physical hardware do you require?

Desktop or rack mounted PCs?

Rack mounted may be a little more expensive, but avoids the noise of air cooling fans being closer to operators.

RT Software is migrating many of its systems to be browser based. As a result a common architecture is to place render engines in a server room (or cloud), with small, quiet desktop machines near to operators to display their browser controls.

Do you plan to use uncompressed IP video - SMPTE 2110?

You will need to use rack mounted machines. This is because the NVIDIA Bluefield cards require stronger cooling from more substantial fans that are found in rack mounted machines.

Which graphics card?

The grid shows a GPU against every option that requires it. More demanding graphics can sometimes require a higher power card, for example when using Unreal Engine graphics. Talk to us for advice if you are unsure.

Which video card?

Some of the options offer a choice of SDI video cards. This is because they may offer a different split on the number of inputs / outputs, or different audio options for example. If you add more than 1 card to reach the number of video I/Os you need, you will need to check if the PC platform you plan to use supports the increased number of PCIe slots.

See above for guidance on IP video.

Using a laptop?

Sometimes laptops are more convenient, although they may be physically limited in which PCIe cards they can support.

Specific Product Guidance

Please speak to us for further guidance if you need more help on our products.
sales@rtsw.co.uk

Swift Screens

Where Swift Screens is being deployed as a video wall solution, each grid of 4 screens requires an additional GPU card, so check if your selected PC can support additional cards. Swift Screens can provide outputs as HDMI.

Swift Studio

When Unreal Engine graphics are being used, this will require additional graphics processing, so may require a higher power GPU and CPU.

When using Swift Studio with a studio tracking system, such as StarTracker, a dedicated network connection may be an advantage to ensure comms are guaranteed. We recommend a second network card for this - 10GBase-T Flex Port.

Swift News

System designs that require large quantities of graphics preview streams to Swift Live or journalist's newsroom clients may require dedicated hardware. We can advise on a project by project basis on the specifications required for this.

Tactic Pro

Tactic Pro supports record to disk, as long as the machine meets or exceeds the Z4 specification. The Z2 machine (a possibility for some Tactic Lite uses) will not be sufficient due to the extra load on the CPU.

Approximate recording durations on a 1TB disk, using DNxHD codec are:

- 1080i50 - 13 hours
- 1080i59.95 - 10.9 hours
- 1080p50 - 6.5 hours
- 1080p59.94 - 5.4 hours

At the time of writing a single 2TB M.2 NVMe SSD should be used for Record to Disk, but this is subject to change, so please contact us to confirm.

When using Tactic Pro with an EVS, a dedicated network connection may be an advantage to ensure comms are guaranteed. We recommend a second network card for this - 10GBase-T Flex Port.

Management - DataServer, MediaWatcher, Repository

These management applications do not require the same level of system resources as graphics rendering machines. Typical specifications can often support all 3 applications on the same hardware simultaneously.

For larger workloads, long term storage of assets might require a sufficiently large disk, so

ensuring at least 1TB of storage is a sensible policy.

As a core of the system, dual redundancy is often requested. Please read separate notes on this.

Technical Details

For most users the following details may not be relevant and can be ignored, but for project engineers planning a project these details should be examined to see if they are relevant.

Video Cards and Processing

- Where a single video o/p is shown it can be exchanged for a dual Fill and Key at no processing cost – but the video card must be checked to see if it can provide the additional output.

- Where two o/ps are shown it can be exchanged for dual Fill and Key at no processing cost and will not affect the suggested I/O video card.

- Where two or more live inputs are listed, these are assumed to be split equally across separate Render Instances running on the same machine. Contact RTSW if a different arrangement is required.

- Limitations on Render Instances are due to Windows OS bottlenecks. But RT Software can provide a higher density than 2 instances on a single machine using

virtualisation if required.

- Memory. The internal architecture of a PC or server means you will typically get better performance by using multiple smaller sticks of memory than a single larger one. The more demanding the application, the more important this is. All our builds expect a minimum of 32GB which should be split across 2x 16GB memory sticks.

- PCIe lanes. Each GPU or Video card expects to have a certain amount of PCIe bandwidth. If you put a 16 lane PCIe card into an 8 lane slot you will not get the best performance. Always check what your card expects and what the PC can provide.

- Our preferred supplier is HP. There is a cost and support advantage to buying the PC with the graphics card installed at the HP factory. It means support will be handled by HP, and you should get a lower cost than purchasing separately. When RT Software provides the PCs we include the HP 5 year, next business day warranty.

Contact RT Software for more specific help and support for anything not covered here - sales@rtsw.co.uk