THE ULTIMATE GUIDE TO THE REMOTE GAME DEVELOPMENT STUDIO

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CONTENTS

INTRODUCTION

Today's game designers and developers need the ability to work from anywhere. And technology has never been better equipped to deliver elements of the hardware these high-tech professionals need to do their best work, no matter where they work. Let's take a closer look at the specific technologies to consider and questions to ask, to determine what tools your developers need for a creative, productive, high-performance studio anywhere.

DETERMINING WHAT TECHNOLOGIES YOUR REMOTE DEVELOPERS NEED

Determining what technologies can best serve your remote developers requires asking the right questions. Game development hardware needs change depending on a number of factors, such as the types of applications teams are working on, the virtual or mixed reality environments they're creating, and more.
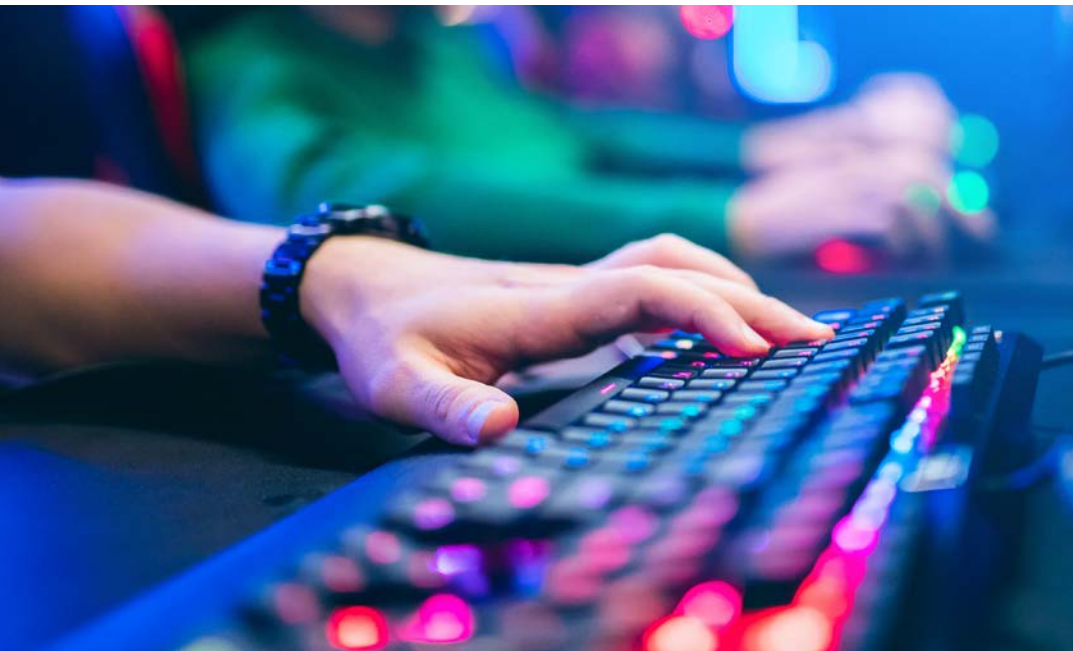
Questions to consider include:

- How remote is your development team? Will they always work from a home office or other environment, or do they need solutions that adapt to hybrid workplace models?

- What projects will the team be working on? For example, are they developing a 2D application or a 3D application? 3D game engines such as Unity and Unreal Engine require more sophisticated resources.

- What tasks will the developer or designer be completing, such as testing code or modeling complex 3D features?

- Does the developer have specific preferences, such as workflows across multiple screens, or unique ergonomic demands?

- Does the developer want a pre-built solution or the option to build a customized development rig?

- What software, accessories, and other considerations, such as specific privacy components, does the solution need to support?

- Does the developer prefer an Apple or Windows environment?

THE COMPONENTS NEEDED FOR THE ULTIMATE REMOTE DEVELOPMENT STUDIO

As you work through the questions above, it can be easy to get overwhelmed by the sheer number of gaming development hardware options on the market. To help you narrow down the field, we're going to take a deep dive into the individual components required to support today's most demanding programs. For purposes of this guide, we're going to assume you need to build a hardware solution that will support a 3D game for maximum flexibility.

The minimum setup of gaming development hardware needed for a remote development studio include:

- A quad-core 2.50GHZ CPU to provide adequate processing power and speed up compiling tasks

- 8GB of RAM to adequately power multiple applications

- A high-capacity graphics card

GRAPHICS CARD: POWER UP YOUR VISUAL CAPABILITIES

Today's video games and virtual reality experiences feature high-quality graphics. The best solutions for a remote development studio include a high-capacity graphics card, such as an NVIDIA GeForce GTX 470 or Radeon HD 6870—and higher.

The other option is to choose a solution with a dedicated graphics card, rather than an integrated one. A dedicated graphics card offers the extensive level of power required to display even the most advanced graphics. A high-quality graphics card provides the tools needed to smoothly traverse virtual worlds and offers visibility into areas such as subtle lighting effects that are layered into the worlds being created. The ability to see these details is essential to delivering accuracy at the minute levels audiences expect from their mixed reality experiences.

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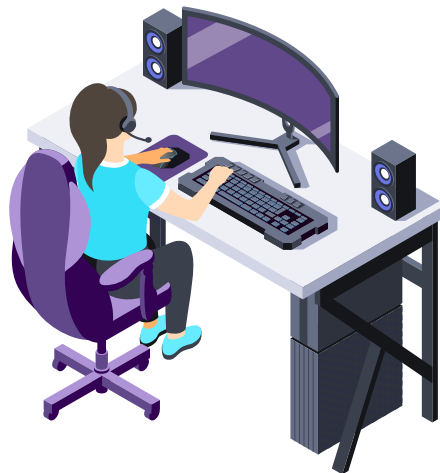
CPU: DRIVING THE MOST SOPHISTICATED GAMES

The CPU that's chosen determines what level of computing power is available to developers working on creating virtual environments. Processing power impacts several factors, such as how fast programs operate or how quickly code compiles and renders for testing. Investing in CPU power can reduce the time needed to compile code from hours to minutes, vastly expediting the timeline required to complete a project. When choosing a CPU, a 2.50GHZ quad-core processor is a standard starting point. Other factors to consider include:
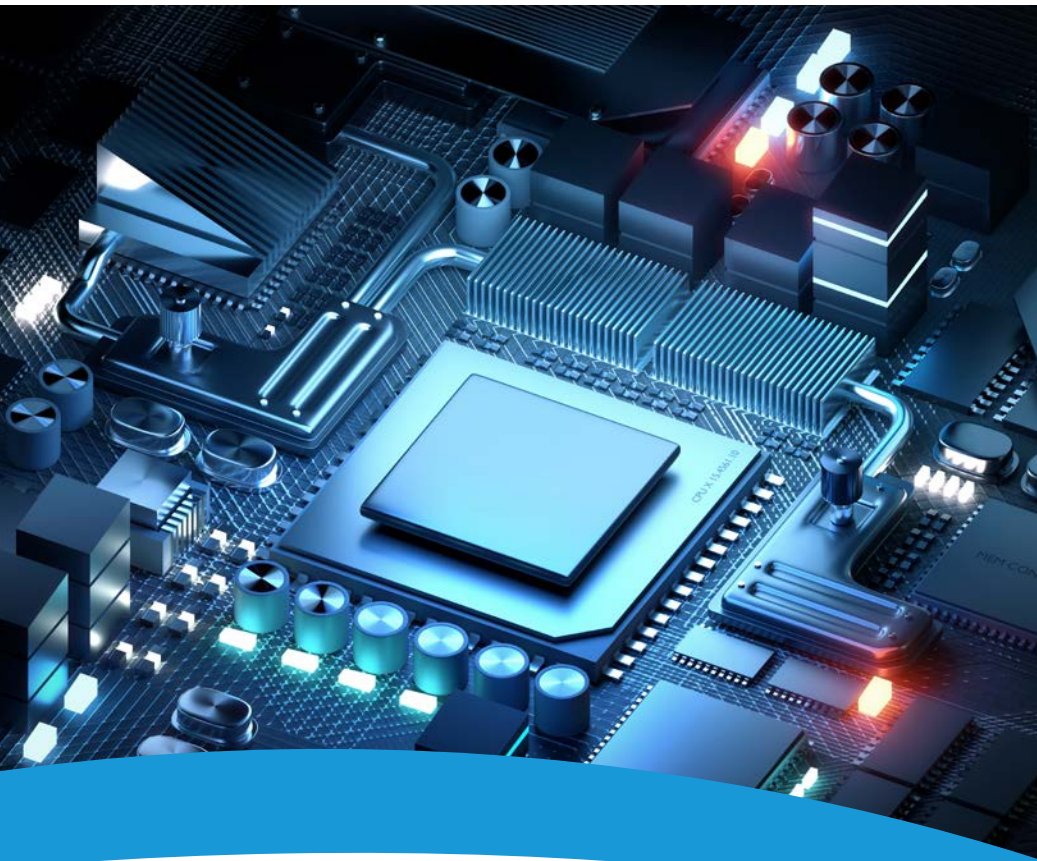
- **Multi-Threaded Option:** With multi-threaded CPUs, there's significant power available for each thread to power individual workflows.

- **Quad-Core:** When choosing a generation of processors, look at i5 or later. If choosing an i5, look for options that are quad-core, which provide greater speed and capacity. i7 and later models are minimally quad-core.

- **Testing Considerations:** While state-of-the-art CPUs can expedite the development process, they can prove to be a hindrance during testing. Testing a game (or aspects of a game) on top-tier game development hardware can offer a distorted view of how it will perform on the average user's device or headset. Many developers maintain a second machine that features a mainstream level of computing power to use for testing.

RAM: THE MEMORY TO SUPPORT CUTTING-EDGE PROGRAMS

The amount of memory a remote game development studio has affects the system's performance in various ways. It affects speed, as well as the ability to work in multiple programs at once—or use the latest cutting-edge programs such as game engines or programs—with ease.

8GB of RAM offers a balance between cost and performance that should allow most developers to process a standard workload. If there are any concerns about accessing the most sophisticated programs or simultaneously running multiple, high-bandwidth programs, 16GB of RAM will provide abundant storage while still keeping costs in check. Unreal Engine, for example, recommends 8GB of RAM to operate, while Adobe Photoshop can run on 2GB or optimize performance at 8GB of RAM. With 16GB, it's possible to operate both of these programs without difficulty.

SOLID STATE DRIVES: ACCESS FILES SMOOTHLY

Another component IT professionals should consider investing in is a solid state drive. Solid state drives function essentially like conventional hard drives (HDDs), but they use flash storage to retain information and access it digitally. HDDs, by contrast, use an arm and platter to record information and read it when required. As a result of the difference in technology, solid state drives offer near-instantaneous file access and much smoother serving of complex visuals and other aspects of virtual worlds.
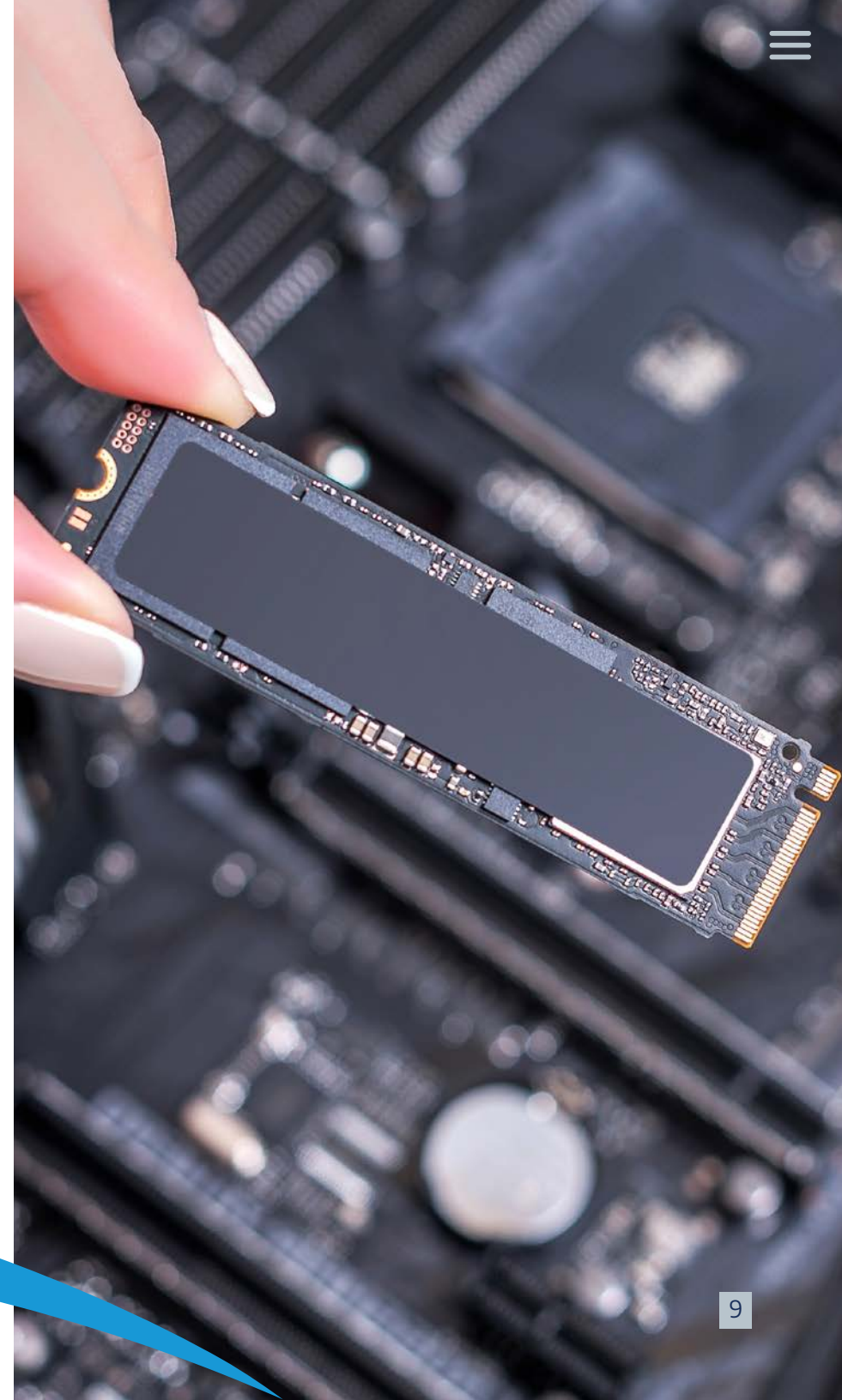
MONITORS: A WINDOW INTO COMPLEX WORKFLOWS

When thinking about the requirements of a remote developer's studio, it's important to consider that some work may need to be done on the designer or developer's primary laptop. If that's the case, investing in the largest laptop available in the model being considered can provide an expansive work display. But when developers and designers need a larger view, they typically connect their laptops to one or more external monitors. When evaluating monitors, specific technical specifications to consider include:

- **Screen Size:** The larger the monitor that designers have to work with, the greater details that they are able to view. Larger screens can also reduce eye strain and fatigue for developers and designers who spend long stretches of time at their desks.

- **Single Screen vs. Double Screen:** Does the developer's workflow benefit from multiple screens? For example, working on two screens at the same time enables a developer to review code on one screen and QA the results on a second screen for maximum efficiency and real-time coding access.

- **Refresh Rate:** The higher refresh rate a monitor has, the higher quality and smoother the display of the virtual worlds. When choosing a refresh rate, it's important to ensure compatibility with the computer's graphics card in order to streamline operations.

SPEAKERS AND HEADPHONES: GETTING A BEAT ON SOUND

When choosing game development hardware, it's important to invest in the right technologies to support sound access. In some cases, these will include both speakers and headset. Most gaming development hardware computers offer built-in speakers for optimal sound quality. Factors to consider include:

- What is the quality of the built-in speakers?

- Are there multiple speakers for more nuanced and complete soundscapes?

- Does the built-in microphone offer adequate quality to support conference calls or real-time collaboration?

Often, a remote design studio requires a more specialized solution, such as a wireless gaming headset. Wireless gaming development headsets provide the ability to work from anywhere, listen to sounds privately when working in crowded or loud environments, and increase the flexibility to participate in collaboration sessions and conference calls without a hitch.

NETWORK CAPABILITIES: ACCESS THE PRIVACY AND SPEED NEEDED

Consider what network remote game developers will be working on. Some companies provide dedicated home networks for maximum speed and efficiency. Others encourage employees to utilize their home networks and rely on tools such as VPNs to maintain privacy and security. There are no universal standards for networks, as they are largely determined by the tasks being completed and the technology being supported. However, the two aspects that must be considered include achieving adequate speed and ensuring company privacy standards are met.

# ERGONOMICS: YOU DON'T HAVE TO SACRIFICE FORM FOR FUNCTION

When developing a remote gaming hardware technology stack, it's helpful to remember that developers and other gaming professionals typically spend long hours completing a wide range of tasks on their machines. As a result, ergonomics is critical to their health, comfort, and even daily levels of productivity. When evaluating ergonomics, aspects of the environment to consider include:

- Desks, including whether solutions such as a standing desk or convertible desk might be appropriate

- Office chairs or other solutions, such as yoga balls, stabilizers, and kneeling desk options

- Keyboards and whether they're optimized for efficiency

- Mice, including wireless and wired mice

- Accessories such as mousepads, wrist rests, and more

SOFTWARE: PROJECT MANAGEMENT TO DESIGN TOOLS

While the majority of this resource discusses the hardware required for the ultimate remote development studio, it's important to include the role of software as well. Designers working with colleagues around the globe require access to a wide range of software tools.
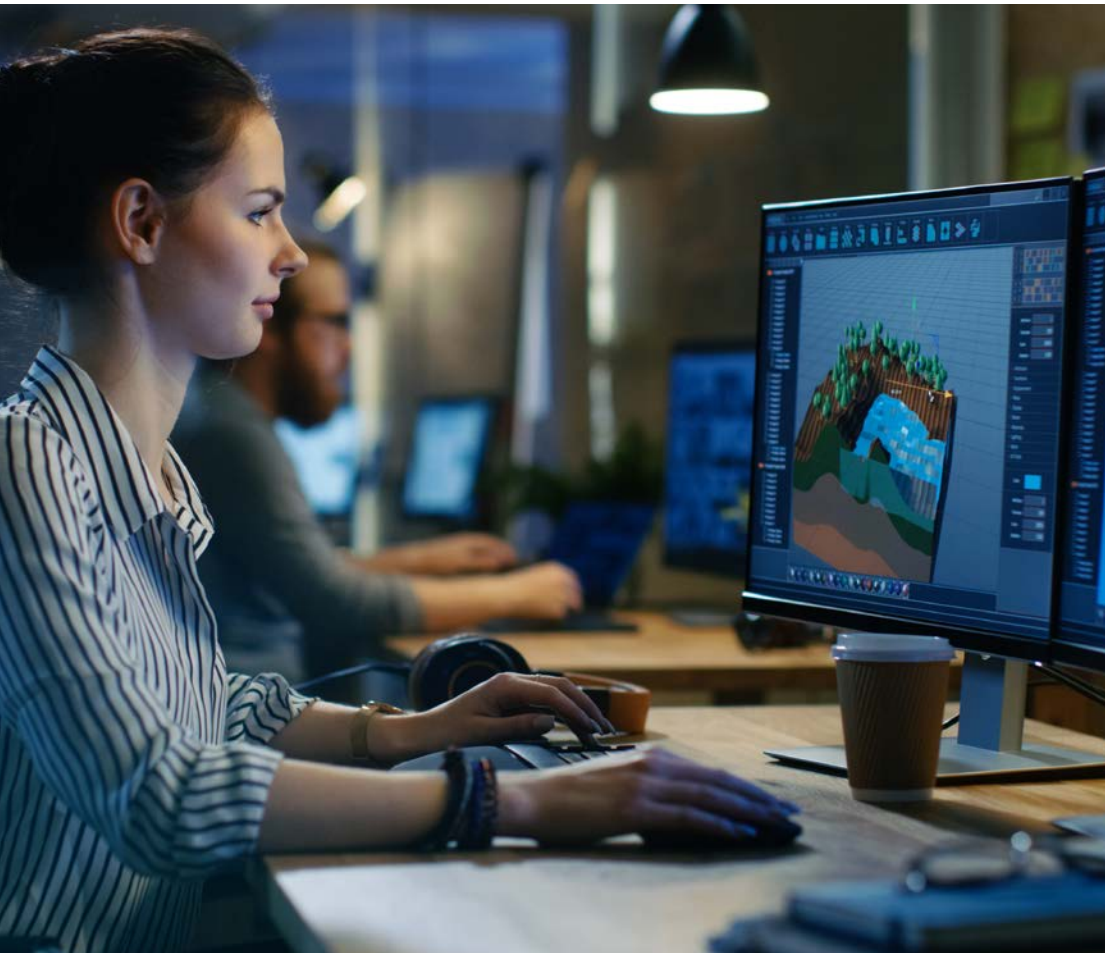
Some of the most common include:

- Specialized software used to develop games, including game engines, photography manipulation software, and compilers

- Project management tools that track project progress against deadlines and communicate that work is completed

- Unified communications tools that facilitate chat apps, video conferencing, and real-time collaboration

NEXT STEPS

Working with remote developers, designers, and other gaming professionals can greatly expand your access to top-tier talent. And due to the intensive nature of this work, the right equipment is crucial. IT professionals don't have to navigate this alone.

Contact Connection today to speak with a hardware expert and build a technology stack that's uniquely aligned with your organization's needs.

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