Gaining real return on investment by running AutoCAD® on HP Z Workstations

Technology in Practice, with HP and Robert Green

Anyone who uses a current version of AutoDesk® AutoCAD® knows that it isn't just for 2D drafting anymore. In fact, with the ability to import 3D geometry from other software packages or from 3D scanned point cloud files, AutoCAD® is becoming a 2D/3D everything-for-everyone product in many companies— making 3D performance a much larger issue than it has been in years past.

Of course, the ability to visualize this 3D geometry requires computing resources that are well beyond the capabilities of most consumer PCs. Plus, as CAD models grow ever larger, the processor caching, system RAM speed, and controller technologies that bring the data from storage disk to processor must be more robust as well. In short, that four-year-old, dual-core machine with the generic graphics card, insufficient RAM, and old disk subsystems really isn't up to the tasks of today's AutoCAD® product line.

Understanding the cost of older computers

Oftentimes AutoCAD® users explain to their management teams that a workstation-class machine will help them get the most out of the application and improve productivity. Unfortunately, managers oftentimes have the mistaken impression that a workstation is "simply too expensive."

What many of them don't recognize are the hidden costs of using so-called inexpensive PCs. For example, older dual-core machines equipped with limited RAM and generic graphics cards are usually not built to handle huge AutoCAD® files. This means that crashes can and do happen. The result is work having to be started again—reducing productivity and morale.

Making the financial case for new workstations

So how can your organization make a financial case for new workstations? The trick is to figure out how much time you're losing by not having modern, fast, reliable workstations on your users' desktops.

To do that, you have to ask yourself some basic diagnostic questions:

- What does it cost every time a computer locks up or crashes?
- How much time do we lose due to slow rendering/processing of models?
- What does it cost when a computer breaks down?
- What does it cost to keep up with hardware drivers for new AutoCAD® versions?
- How much time will IT spend keeping computers up to date?
- What are the implications when poorly performing computers keep us from optimizing design iteration and innovation?
- What does it cost to be stuck with consumer PCs that we can't upgrade?

Based on those answers, your organization can then total the time you are losing during a three-year service life of a new workstation and compute how long it will take to pay back the cost of the new workstation.

Taking advantage of added computing resources and reliability

Traditionally workstations cost much more than consumer PCs and you can't purchase them at the corner big box office store. But a system such as the HP Z230 SFF Workstation with an Intel® Core™ i7 quad-core processor[1] is surprisingly affordable, and brings far more computing resources and reliability to the table than consumer PCs do.

Because AutoCAD® 2015-based products do much more visual processing and 3D work than previous versions, certified professional graphics now becomes a more important component to consider. With certified professional graphics the HP Z230 SFF Workstation is a much more powerful alternative for heavy 3D workloads than a vanilla consumer PC.

In addition, AutoCAD® 2015's new antialiasing graphics display and high-precision visual styles actually benefit from powerful graphics to create a much more realistic and readable screen image. Event when working with 2D linework and text, the difference is notable. And when working with point clouds or 3D geometry, the added graphics and processing power makes a huge difference.

For users seeking uncompromising power and performance, an HP Z230 SFF with an Intel® Xeon® processor offers the HP Z Turbo drive, a PCIe-based SSD storage solution that offers up to two times the performance of conventional SATA SSDs to load applications rapidly and speed through large data set processing with ease. These SSDs can be combined with mechanical HDDs to meet your need to maximize storage space while still yielding blazing performance.

If you're still not convinced that the extra power and reliability is worth the extra investment, here's another way to look at it: A CAD professional will typically spend 5,760 hours at the computer in a three-year period. This translates into an approximate cost of $0.29 per hour for an HP Z230 SFF with an Intel Xeon processer. Why would you ever force a highly compensated professional to suffer with an old, consumer PC when they could be so much more productive for so little?

Reducing downtime with serviceability

Of course, when something breaks on your consumer PC, how long does it take to fix? And how much time does it take to keep hardware drivers up to date?

Contrast your answers with the reality of owning a professional workstation such as the HP Z230 SFF, which offers features such as:

- A three-year next-day parts replacement and onsite service warranty. The exact part you need will be sent overnight for an easy swap out. How hard would it be to figure out and obtain the exact part you need to fix a consumer PC?

- Telephone support. HP Z Workstations all offer 24/7/365 phone support.

- Tool-free servicing. The HP Z230 SFF Workstation has a tool-free chassis that is easy to open and easy to service. That means no messing with screwdrivers, thumbscrews, or cabling. Just power down, swap out parts, and power up.

- HP Performance Advisor[2]. This utility tracks software applications for graphics drivers and systems settings, and automatically updates your system when greater performance may be obtained.

Learn more about how your organization can improve productivity and delivery a return on investment through the use of workstations by visiting hp.com/go/AutoCAD.

About HP

HP helps you stay ahead of the curve with professional desktop and mobile workstations designed for large and complex datasets, dispersed teams, and tight deadlines. HP Z Workstations, built for Pros with Intel® Inside®, deliver the innovation, high performance, expandability, and extreme reliability you need to deliver your 3D CAD projects in less time. To learn how to configure a HP Z Workstation, visit the HP and Autodesk page at hp.com/go/autodesk. Start saving now!

About Robert Green

Robert Green provides CAD management consulting, programming, speaking, and training services for clients throughout the United States, Canada, and Europe. A mechanical engineer by training and alpha CAD user by choice, Robert is also well known for his insightful articles and book, Expert CAD Management: The Complete Guide. Reach Robert at rgreen@greenconsulting.com

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1 Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing system required. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

2 HP Performance Advisor requires Windows and internet access.