



Executive summary

Get better desktop performance at a lower cost with the latest hardware from HP and Intel

Intel Optane memory made an HP EliteDesk 800 G4 desktop faster and less expensive to operate than an older desktop with more RAM

The productivity gains from this affordable system accelerator add up to great cost-of-ownership savings

Up to **86%** less time to perform everyday tasks

11% lower purchase price

Potential savings of **\$4,761,738** across 1,000 users over three years

When shopping for new employee desktops, you need find the right balance between cost and performance. Though you might be tempted to purchase last year's desktop on the cheap, the latest hardware from HP and Intel could deliver better desktop performance at a lower cost.

At Principled Technologies, we tested two configurations of HP desktops:

- EliteDesk 800 G4 with 16GB RAM and 16GB Intel® Optane™ memory
- EliteDesk 800 G3 with 32GB RAM, no Intel Optane

Across a range of tasks in common applications, the newer desktop with Intel Optane memory outperformed the previous-generation desktop with 32GB RAM, completing tasks in up to 86.7 percent less time.

We also analyzed the ownership costs that a hypothetical company purchasing systems for 1,000 employees could expect. In our model, Intel Optane decreased costs by \$4.7 million over three years.

A faster system with Intel Optane

We performed 17 tasks on the two HP EliteDesk 800 desktops, including powering on the system, launching applications, and opening large Adobe® Photoshop® files. The G4 desktop with Intel Optane took less time to complete each task than the G3 desktop with 32GB RAM. The time saved ranged from 16 to 86 percent, with most tasks taking over 50 percent less time to complete on the newer desktop.

A boost in productivity saves time and money

To estimate the productivity savings a company could yield from choosing the HP EliteDesk 800 G4 with Intel Optane over the previous-generation desktop with 32GB RAM, we used a hypothetical organization shopping for 1,000 desktop systems. The employees that will use the systems all into three groups, each with specific application needs: communicators, content creators, and data analysts.

We calculated the weekly productivity cost for each task on each device by multiplying the following:

- Task frequency per week across the 1,000 users
- Tested time (in seconds) to complete the task
- Cost per second (based on estimated employer cost for salary and benefits)

We then added the costs per task and device and multiplied this number by the total number of workweeks in three years.¹

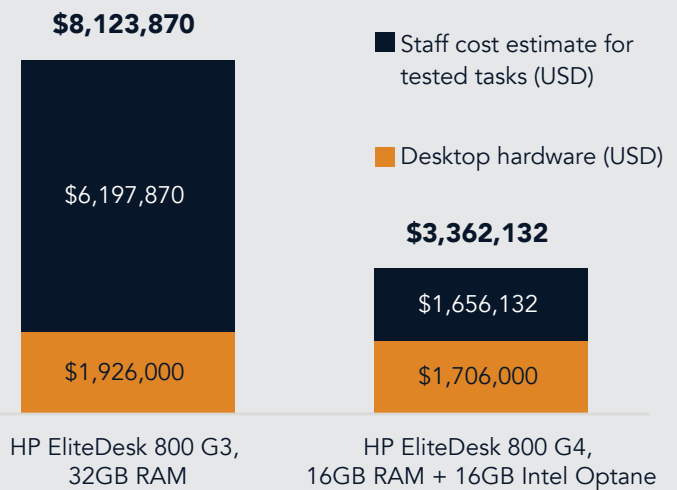
By choosing the newer desktop with 16GB RAM and Intel Optane, the company saves two ways: 1) by gaining employee productivity as a result of improved system and application performance, and 2) by spending less on hardware.

As the chart to the right shows, the three-year cost for these 1,000 workers in our model was \$4,296,348 lower for the HP EliteDesk 800 G4 with 16GB RAM + 16GB Intel Optane than it was for the G3 desktop with 32GB RAM.

Performance with a lower price tag

Our hands-on tests with Intel Optane show high-performing desktops don't have to carry an exorbitant cost. An HP EliteDesk 800 G4 with 16GB RAM and 16GB Intel Optane memory saved enough time on common office tasks to offer millions in productivity savings over the course of three years. That, combined with the 11 percent lower hardware cost, means a business could save \$4.7 million over three years compared to purchasing previous-generation desktops and outfitting them with additional RAM.

Savings of \$4,761,738 over three years with Intel Optane



1 Learn more about our testing and cost analysis in the [full report](#), and get all the details in the [science addendum](#) to the report.

Read the report at <http://facts.pt/rj2uojy>



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This project was commissioned by HP.