HOSTED WORKSTATIONS POWERED BY THE INTEL® XEON® PROCESSOR E3 V4 FAMILY

**Why Hosted Workstations?**

Designed in America. Prototyped in India. Manufactured in China. Assembled in Mexico. Tested in Brazil. Sold around the globe. Today’s products are world products, engineered by professionals as diversely located as there are developed economies.

Some R & D organizations are global—development follows the sun around the planet and never stops around the clock. Other companies have found that engineering productivity happens best in a home office or other location remote from the main enterprise. Organizations that want to always hire the best—whether permanent or on contract—aren’t choosy about where the worker gets the job done. What are important are the innovation, the result, and the schedule. So, companies have to remain flexible to stay competitive and to enable effective collaboration across the R & D team’s efforts.

Deploying and managing user-located workstations with a diversely geographical staff is expensive. IT departments are turning to hosted workstations to enable evolving engineering workforces, because:

- Hosted workstation solutions enable IT to quickly, efficiently, and securely provide anytime/anywhere access to powerful, graphical workstations.
- Hosted workstations give engineers a choice to use a variety of end-point devices, such as tablets, laptops, PCs, and even smartphones, so they can be productive on any device at any time of their choosing.
- Client virtualization enables organizations to address the mobility, data security, and regulatory requirements of an evolving workforce.
- By centralizing and standardizing workstation operations, IT can provide employees the mobility that they desire, while maintaining data security, simplifying management, and reducing total cost of ownership (TCO).

**Hosted Workstation Productivity in Action**

**Neither Rain, nor Sleet, nor Even Snow**

Engineers in cities frequented by inclement weather, like Boston, Chicago, and New York, need to continue to work irrespective of the type or amount of precipitation falling. In 2015 Boston-based workers and other U.S. workers on the Eastern seaboard were brought to a halt by severe blizzards. In such conditions, companies with hosted workstation solutions can remain productive with secure access to data and applications, using mobile or desktop technologies available to users.

**Reducing Risk of Lost IP and Productivity**

It’s common to take work home by loading files onto a USB stick and transferring them to a home office workstation. But this is risky business due to the potential of a lost USB flash drive. Surveys have revealed that these convenient flash drives are found in taxis and clothes delivered to dry cleaners. If a lost drive is maliciously infected with a virus and returned, it becomes a serious security risk for the enterprise. With hosted workstations, USB drives become obsolete. Data is remotely accessible from nearly anywhere using a variety of mobile or desktop devices. These powerful workstations enable local performance with centralized security and management.

**Massive Files? No Problem.**

When it comes to large and complex designs, such as aircraft, buildings, and ships, massive files accessed by a collaborative team around the world can hinder productivity. Users wait for several hundred megabytes of centrally stored model data to download to a local workstation, and then they wait again while changed files upload. With hosted workstation solutions, data remains in the data center. Only the necessary user interface and graphics information transfers over an infrastructure optimized for the end-point device’s capabilities. Productivity can remain high, data transfer is minimized, and sensitive information is protected.

**Simplified, Powerful Hosted Workstation Solutions**

Many hosted workstation solutions deployed today are a complex system of large core count, multi-socket servers with expensive, high-powered discrete graphics cards that require IT to carefully partition them into smaller, virtualized resources for users. Ensuring the compute and graphics resources are balanced adequately for power users while not over-provisioning for lighter loads can be a time-consuming IT burden.

With high-density servers built on Intel® Xeon® processor E3-1200 v4 family with Intel® Iris™ Pro Graphics, IT can quickly and easily deploy complete, dedicated workstation-class hosted solutions and professional graphics to remote users with minimal effort. HP, Supermicro, and Quanta are already delivering such systems, housing as many as 45 hosted workstations that dedicate 4 cores/8 threads and integrated, workstation-level professional graphics to each demanding user, in a single 4.3U chassis.

**Intel® Xeon® Processor E3-1200 v4 Family Delivers Rich Applications for Hosted Workstation Solutions**

Intel Xeon processor E3-1200 v4 family with Intel Iris Pro Graphics integrates workstation-class graphics onto the processor die. The tight integration between CPU and graphics, plus a 128 MB eDRAM cache with 51 GB/s bandwidth, reduces power consumption and data movement, while increasing performance and density. With up to 1.8x the graphics performance of the previous-generation Intel® Xeon® processor E3-1200 v3 family, the Intel Xeon processor E3-1200 v4 family enables professional-level computing and graphics for engineering, media, and design workloads. The result is a leap forward in graphics capability that can help deliver hosted workstation solutions at lower cost for today’s demanding engineering applications.
## COMPARISON OF INTEL® GRAPHICS CAPABILITIES

<table>
<thead>
<tr>
<th>Feature</th>
<th>INTEL® XEON® PROCESSOR E3-1200 V3</th>
<th>INTEL® XEON® PROCESSOR E3-1200 V4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphics performance improvement over previous generation</td>
<td>N/A</td>
<td>Up to 80%&lt;sup&gt;2,3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Max. system memory</td>
<td>32 GB</td>
<td>32 GB</td>
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<tr>
<td>Max. memory speed</td>
<td>DDR3-1600</td>
<td>DDR3-1866</td>
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<tr>
<td>Max. video RAM</td>
<td>1.7 GB</td>
<td>16 GB</td>
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<tr>
<td>eDRAM capacity</td>
<td>N/A</td>
<td>128 MB</td>
</tr>
<tr>
<td>Graphics Execution Units</td>
<td>20</td>
<td>48</td>
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</tbody>
</table>

## RESPONSIVE GRAPHICS/MEDIA PERFORMANCE FOR HOSTED WORKSTATIONS

- **Intel® Iris™ Pro graphics with integrated, on-package eDRAM**: Accelerates video processing and remote workstation workloads.

- **Intel® Quick Sync Video**: Dedicated hardware-based accelerator makes video transcoding faster and easier.

- **Intel® Advanced Vector Extensions 2 (Intel® AVX2)**: Accelerates vector- and integer-based imaging, video editing, modeling, and simulation applications.

- **Intel® Turbo Boost Technology 2.0**: Higher performance when you need it most.

- **Intel® Hyper-Threading Technology (Intel® HT Technology)**: Faster performance for threaded applications.

- **Intel® Graphics Virtualization Technologies (Intel® GVT)**: Built-in hardware support for graphics virtualization. Enables dedicated or shared access to Intel® Iris™ Pro graphics P6300 for remote workstation users.
Looking to the Future

Intel processor E3-1200 v4-based hosted workstation solutions offer the professional-level graphics and computing that demanding engineers need. These high-performance workstations help evolving workforces to stay innovative, agile, and competitive without sacrificing security or IT manageability. Intel-powered workstations based on the Intel Xeon processor E3-1200 v4 family can help lower TCO, while enabling great flexibility by allowing users to work on any device, any time, from anywhere.

See for yourself how a hosted workstation with the Intel Xeon processor E3-1200 v4 family and Intel Iris Pro Graphics can impact your organization. Register for a trial today at www.intel.com/workstation/.

Learn more about the Intel Xeon Processor E3-1200 v4 family with Intel Iris Pro Graphics and Hosted Workstation Infrastructure at www.intel.com/workstation.