



Solution Brief The Dell EMC Optimized Platform for ANSYS Workloads

Accelerate innovation with HPC-enabled simulation

To compete in the world of digital manufacturing, your business needs the most advanced tools. That once meant making a significant investment in new servers and tackling technical challenges, like migrating from Windows to Linux, head on. Now industry leaders Dell EMC, Intel®, ANSYS and OCF have partnered to offer an accessible bridge to HPC for businesses still using workstations for ANSYS engineering simulation software.

Solving your HPC Challenges

Small and mid-sized manufacturers are facing a difficult decision: When is the right time to leave workstations behind and invest in a true HPC solution? Many understand the strategic advantages of running ANSYS applications on HPC servers, such as the ability to enhance product design while reducing development costs and shortening time to market. HPC delivers these benefits by providing the power to run more engineering simulations in less time – thus facilitating more design iterations. The flexible, modular architecture of modern HPC is also easy to scale and can be reconfigured to adapt to changing needs. Businesses are already turning to HPC to increase competitiveness. Among small and mid-sized businesses, this growth is happening even faster, as organizations are motivated to move away from workstations.

Ready by Nature

Together, Dell EMC, ANSYS, Intel® and OCF have developed an integrated and customizable solution that bridges the technology gap between workstations and full-scale HPC clusters. It's accessible to smaller businesses and accelerates manufacturing workloads, reduces time to production and lowers system costs.

This Basic Building Block (BBB) server solution can be used for all types of ANSYS solvers, such as ANSYS Mechanical, ANSYS Fluent, and ANSYS CFX. It enables you to deploy simple but powerful HPC systems based on the 4-socket Dell EMC PowerEdge R840 server. BBBs can be directly coupled via a highspeed network cable, such as InfiniBand or Ethernet, without the need for an additional high-speed switch when additional compute capability is required for each simulation run (HPC couplet). BBBs also provide a simple framework to help you incrementally grow the size and power of your HPC cluster. You can purchase individual BBBs, BBB couplets, or combine the two with a high-speed switch in a single monolithic system.

This comprehensive, scalable solution is customized to fit your specific ANSYS workload requirements. Integrating everything your business needs, including ANSYS job management software as well as services, the Dell EMC Optimized Platform for ANSYS Workloads deploys fast and starts working for your business right out of the box.

Why the Dell EMC Optimized Platform for ANSYS Workloads

The Dell EMC HPC Optimized Platform for ANSYS Workloads is a powerful and affordable server building block solution for businesses that are currently compute-bound on workstations. It's an affordable, easy to manage Windows-based solution that can scale and is customized to fit ANSYS workloads.

By leveraging standardized building blocks and the combined expertise of Dell EMC, Intel®, ANSYS and OCF, the Dell EMC HPC Optimized Platform for ANSYS Workloads makes cutting-edge HPC available to small and medium sized companies.

This solution guides your business into the new generation of high performance computing, with flexible financing options to make it easier to acquire, plus remote management options to make it easier to manage.

At a glance

A plug-and-simulate HPC server that is optimized for ANSYS simulations based on extensive benchmark testing with realistic models. Preconfigured with ANSYS simulation and available with external management.

- Dell EMC PowerEdge R840 server
- Quad Intel® Xeon® Gold 6142 processors
- 384 GB of memory, 24 x 16 GB 2667 MT/s DIMMS
- PERC H740P RAID controller
- 4 x 480 GB mixed-use SATA SSD in RAID 0
- Dell EMC iDRAC9 Express
- 2 x 1600 W power supply units (PSUs)
- Mellanox EDR InfiniBand™ (optional)
- Mellanox 25 GbE (optional)

- Validated configuration for ANSYS workloads
- Optimized performance
- Risk free
- Highly scalable
- Straightforward upgrade path
- Easy to manage

“Upgrading from a workstation solution to a Dell EMC HPC-server solution increases the output of the most expensive simulation resources - the people who do simulation.”

Wim Slagter

Director of HPC & Cloud Alliances
ANSYS Inc.

Dell EMC Optimized Platform for ANSYS Workloads meets further key needs including:

Simplifying HPC adoption:



Simplify HPC planning with small, medium and large solution sizes, to meet your growing computation, storage, networking and software requirements. Easily install, configure and manage your HPC solution with professional services and (remote) support readily available.

Future-proofing performance:



With 4-socket Dell EMC servers powered by the latest Intel® Xeon® Scalable processors, you have the power you need to enhance product design and tackle your most complex challenges. You also have plenty of room to scale up. Your custom solution is benchmarked using ANSYS Mechanical, Fluent, and CFX software to provide validated performance data.

Accommodating Windows users:



A common obstacle to HPC adoption is that true HPC clusters run on Linux, while most CAE workstations use Windows. Moving from Windows to Linux is in itself a challenge that requires new skills and workflows. The Dell EMC Optimized Platform for ANSYS Workloads solves this by supporting both Windows and Linux, so you can make the switch in your own time.



Flexible Finance Options

HPC used to be the domain of large enterprises using expensive equipment. With Dell Financial Services, you have a wealth of leasing and financing opportunities that make it easier than ever to meet your needs. We can help you reduce capital expense, lower your overall cost of ownership and avoid technology obsolescence. You can transform how you pay for technology, with options including consumption-based solutions where you pay for what you need with little-to-no obligation.

Professional Services

In the past, deploying and supporting HPC systems required a major investment of time and resources – which, often, small and mid-sized manufacturers cannot make. The Dell EMC Optimized Platform for ANSYS Workloads changes the rules by offering you a complete portfolio of professional and affordable services.

From design and implementation to support and systems management, you have everything you need to manage your HPC solution including on-premise and cloud systems. With Dell EMC, a recognized HPC leader with a long history of successful deployments, you also have a trusted partner for the life of your solution

Learn More

Want to know more about how the combined expertise of Dell EMC, Intel®, ANSYS and OCF can open the door to the right HPC solution?

Visit www.dellemc.com/en-gb/solutions/high-performance-computing to have a Dell EMC representative contact you. Alternatively, go to <http://www.ansys.com/delltechnologies> to learn more about the partnership.

Partnering to Help You Succeed

The partnership between Dell EMC, Intel®, ANSYS and OCF is uniquely positioned to bring you the maximum return on your HPC digital manufacturing investment.



Dell EMC is the world's number one HPC vendor, and the only provider with an end-to-end HPC solution portfolio. We understand that successful HPC solutions are designed to handle specific workloads and are supported by professional services that empower you to achieve your goals. We take a solution-level approach to your HPC project, giving you an optimal solution of workstations, servers, networking, storage, software, services and support.



From AI and analytics to simulation and modeling, Intel's HPC platform integrates world-class compute with powerful memory, storage, fabric, and acceleration to tackle your biggest challenges today and tomorrow.



ANSYS is the global leader in engineering simulation. With vast experience in helping the world's most innovative companies deliver radically better products to their customers, ANSYS offers the broadest portfolio of engineering simulation software.



OCF is a leader in integrating HPC, storage and analytics technologies to help organizations meet data and computation challenges. OCF delivers these solution to Science, Engineering and Business with expertise in-house in design, delivery, support and management of these environments.