Mechanical Modeling Made Faster, Cheaper, Easier

Microsoft® Windows® Compute Cluster Server 2003 Runs ANSYS® Mechanical™ and ANSYS® Mechanical™ HPC

Microsoft® Windows® Compute Cluster Server 2003

ANSYS®

Partner Profile

ANSYS, Inc. is the designer of engineering simulation solutions that are used in a broad spectrum of global industries. ANSYS, Inc., founded in 1970, develops and globally markets engineering simulation software and technologies that are widely used by engineers and designers in turbo machinery, aerospace, automotive and electronics, among other industries. The Company focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. The Company and its global network of channel partners provide sales, support and training for customers in over 40 countries throughout the world.

The Challenge

To accurately simulate the real-world performance of product designs and engineering processes requires the use of complex mathematical algorithms. These algorithms take a long time to compute, unless a high-performance computing (HPC) solution is used. HPC increases solution speeds and reduces the turnaround time of complex computations. However, until recently HPC solutions have been expensive and difficult to administer and manage, making them unattainable for all but the most well-funded design teams.

Solution

ANSYS Mechanical™ simulation software combined with ANSYS Mechanical™ HPC can now run on Microsoft® Windows® Compute Cluster Server 2003. This Windows-based HPC platform is easy to set up and use - and provides the processing speed necessary to run complex simulations on clusters of affordable, industry-standard 64-bit hardware. The combination of Microsoft Windows Compute Cluster Server 2003, ANSYS Mechanical and ANSYS Mechanical HPC can increase your productivity and help you deliver better and more innovative products in less time.

Benefits

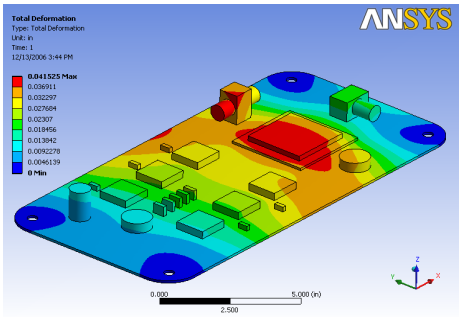
- Complex structural modeling capabilities
- High speed computing platform
- Enhanced processing speed
- Lower cost
- Reduced time to market

Overview

ANSYS Mechanical combined with ANSYS Mechanical HPC and Windows Compute Cluster Server 2003 enable engineers to perform highly realistic structural simulations quickly and easily, with minimal administrative overhead, and the added security and manageability benefits that integration with Microsoft Active Directory directory services brings.

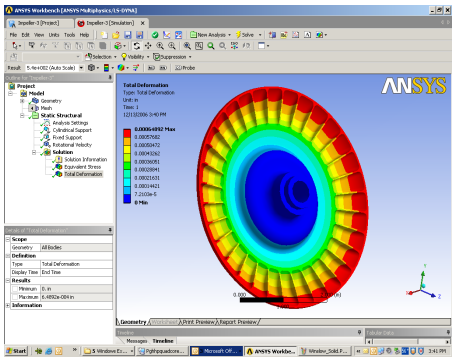
ANSYS Mechanical

The ANSYS Mechanical family of products offers full depth of analysis, from concept simulation to advanced analysis, and a breadth of simulation capabilities from linear to nonlinear coupled physics analysis. ANSYS Mechanical provides simulation tools with a full complement of nonlinear and linear elements, and material laws ranging from metal to rubber. ANSYS Mechanical also contains the most comprehensive set of solvers available, including parallel solvers when combined with ANSYS Mechanical HPC. These products are built upon years of proven and reliable technology and are widely used across industries from automobile, aerospace, biomedical, electronics and consumer products.



Deflection results of a Thermal Stress analysis of a PCB

ANSYS® Workbench™ is an integrated environment from which you can access CAD, meshing tools, model parameters, and ANSYS Mechanical, all from one intuitive user interface. When combined with ANSYS Mechanical HPC, you can also access CCS cluster resources.



ANSYS Workbench user interface

Windows Compute Cluster Server 2003

Windows Compute Cluster Server (CCS) 2003 is the new high performance computing platform from Microsoft that enables users of ANSYS Mechanical to reduce analysis time and increase time-to-market. CCS is easy to setup, with Wizard-based deployment procedures and an intuitive Windows user interface.

In addition to its ease of use and deployment, CCS is cost efficient because it runs on clusters of industry-standard 64-bit computers. CCS provides the additional benefit of enhancing security for your HPC jobs. By leveraging the existing Windows infrastructure, CCS can integrate with Active Directory for user authorization and authentication services.

CCS contains an integrated job scheduler, simplifying the workflow process. Both job creation and submission are performed right within the application.

The Combination

Running ANSYS Mechanical with ANSYS Mechanical HPC on Windows Compute Cluster Server increases the performance of this dynamic simulation software, enabling you to achieve realistic simulation of product performance faster, cheaper, and easier than with HPC platforms of the past.

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Microsoft Windows Compute Cluster Server 2003

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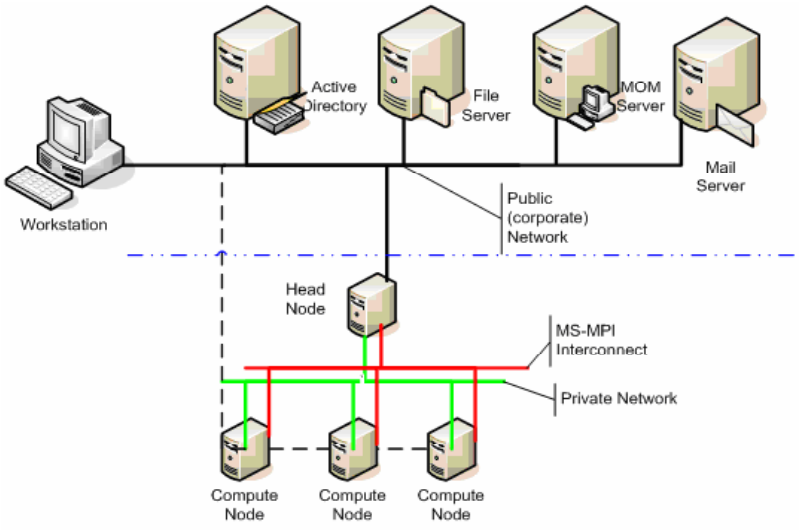
Architecture

Windows Compute Cluster Server head node:

- Controls and mediates all access to the cluster resources.
- Acts as the single point of management, deployment, and job scheduling for the compute cluster.

Windows Compute Cluster Server uses the existing corporate infrastructure and Active Directory for:

- Security
- Account management
- Operations management



Windows Compute Cluster Server 2003 Requirements

CPU Requirement:	64-bit architecture computer Intel Pentium, or Xeon family with Intel Extended Memory 64 Technology (EM64T) processor architecture, or AMD Opteron family, AMD Athlon family, or compatible processor(s).
Minimum RAM:	512 MB
Maximum RAM:	32 GB
Multiprocessor Support :	Up to 4 processors
Disk Space for Setup:	4 GB
Disk Volumes:	Head node requires a minimum of two volumes (C:\ and D:\). For additional roles, additional partitions are recommended. Compute node requires a single volume. RAID 0/1/5 may be used, but is not required.
Network Interface Cards:	All nodes require at least one. Each node may require additional network interface cards as appropriate for the network topology, for public network access or in support of an MPI network.

For More Information

For more information about Windows Compute Cluster Server 2003, please visit http://www.microsoft.com/hpc.

For more information about ANSYS software, please visit http://www.ansys.com.

For information about purchasing Microsoft Windows Compute Cluster Server 2003, e-mail hpcinfo@microsoft.com

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