

## Customer Success Story

# Appro XtremeServer High Performance Cluster powers Fluent Flow-Modeling Simulations



*“The cluster delivered the horsepower we needed to get simulation results back to the customer in time to impact their engineering decision making.”*

*Barbara Hutchings*

*Strategic Partnerships*

*ANSYS, Inc.*

### Background

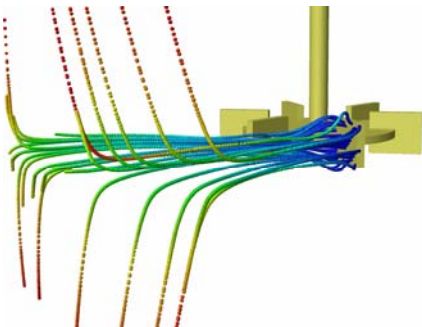
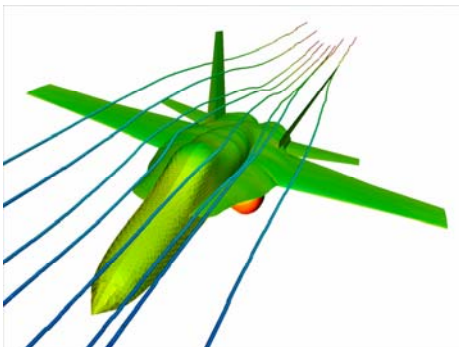
ANSYS, Inc. (NASDAQ: ANSS) is a global innovator of simulation software and technologies designed to optimize the product development process. Simulation software plays a vital role in supporting the manufacturing industry by enabling design and research engineers to build virtual prototypes and simulate the performance of proposed and existing designs, allowing them to improve design quality while reducing cost and speeding time to market. The ANSYS set of solutions addresses the needs of organizations in a wide range of industries such as Aerospace, Automotive, Chemical Processing, Civil Engineering, Electronics, Government/Defense, Medical, and more.

In addition to selling simulation software, ANSYS also offers engineering consulting services. When a customer needs a project fast tracked, they can engage experts at ANSYS to assist with the simulation process and engineering problem solving. Typically, answers are needed within days or weeks, and multiple design options need to be considered. To support these customers, ANSYS needs high performance computing (HPC) systems to power their simulation projects.

When clusters are used as an HPC solution, it is very important to look at the entire infrastructure, including optimized and validated HPC servers, choosing processor types as well as considering the right interconnects and switch technologies. These decisions are very important for the overall success for the cluster performance. In addition, ANSYS focuses on software compatibility and tuning for high performance during software development.

### The Challenge

Recently, ANSYS engineering consultants needed to expand their cluster capacity in order to run flow-modeling simulations for a customer who had critical requirements for rapid turnaround. The FLUENT computational fluid dynamics (CFD) software is used for simulating fluid flow, heat and mass transfer, and a host of related phenomena involving turbulence, reactions, and multiphase flow. “Our customers sometimes turn to us to when their simulation requirements exceed the capacity of their internal HPC resources,” said Barbara Hutchings, who manages partnerships at ANSYS.





## The Solution

ANSYS turned to Appro to supply state-of-the-art cluster servers to support the project. Appro supplied a dynamic scalable HPC cluster of 40 1U, 2-socket Appro XtremeServers, adding up to 160 cores of AMD Opteron processors. In addition to doubling compute power, Appro XtremeServers were configured with 64GB of DDR2 memory per node providing the ANSYS team with a sophisticated high performance computing resource with faster memory bandwidth and better power efficiency.

For this project, the cluster was integrated on site by ANSYS IT staff, using an Infiniband interconnect supplied by Voltaire, Inc. Appro and Voltaire work together in many cluster integration projects to deliver compatible, powerful and stable high performance computing solutions helping customers to achieve their business goals.

“With the Appro cluster in place, our FLUENT simulations were fast and robust,” said Hutchings. “The cluster delivered the horsepower we needed to get simulation results back to the customer in time to impact their engineering decision making,” said Hutchings. Following the initial project, ANSYS plans to deploy the same cluster to address other engineering consulting needs.

## About ANSYS, Inc.

ANSYS, Inc., founded in 1970, develops and globally markets engineering simulation software and technologies widely used by engineers and designers across a broad spectrum of 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. Headquartered in Canonsburg, Pennsylvania, U.S.A., with more than 40 strategic sales locations throughout the world, ANSYS, Inc. and its subsidiaries employ approximately 1,400 people and distribute ANSYS products through a network of channel partners in over 40 countries. Visit [www.ansys.com](http://www.ansys.com) for more information.

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## About Appro

Appro accelerates technical applications and business results unlocking the value of IT for the high-performance and enterprise computing markets through differentiated performance balanced architecture, open standards, and engineering expertise. Appro is a leading developer of innovative, high-performance, density-managed servers, cluster-solutions, storage subsystems, and high-end workstations for the high-performance and enterprise computing markets.

Appro's headquarters is in Milpitas, CA with an R&D and manufacturing partner in Asia and a sales and service office in Houston, Texas. To learn more go to [www.appro.com](http://www.appro.com).

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