

**Realize Your Product Promise®**

**ANSYS®**

**Enterprise Cloud™**

## ANSYS Enterprise Cloud is a complete simulation platform, delivered in your secure, dedicated environment on the public cloud.

Complete and extensible, ANSYS Enterprise Cloud unleashes the power of cloud computing for global access to simulation-driven product development.

From the on-premise data center to the public cloud, the IT environment is a critical enabler of effective and innovative use of engineering simulation for product development. The best deployments provide simplified access to consistent tools, with ample HPC capacity for high-fidelity models and rapid design exploration. These deployments deliver secure access to shared data for enhancing collaboration and leveraging engineering IP. Increasingly, however, product development companies are deciding that the installation, provisioning and maintenance of data centers is not their core business and want to understand how simulation workloads can be migrated to the cloud.

ANSYS Enterprise Cloud is a unique enterprise-level engineering simulation platform on the cloud, delivered as a turnkey service within your dedicated corporate cloud account. ANSYS Enterprise Cloud includes secure storage and simulation data management, enabling you to enhance global collaboration and maximize your return on the intellectual property (IP) contained in your simulation data. It provides access to 3-D graphics and high-performance computing resources in the cloud that scale on demand, for business agility and cost management. Powered by the ANSYS Cloud Gateway user environment and a carefully engineered architecture, this single-

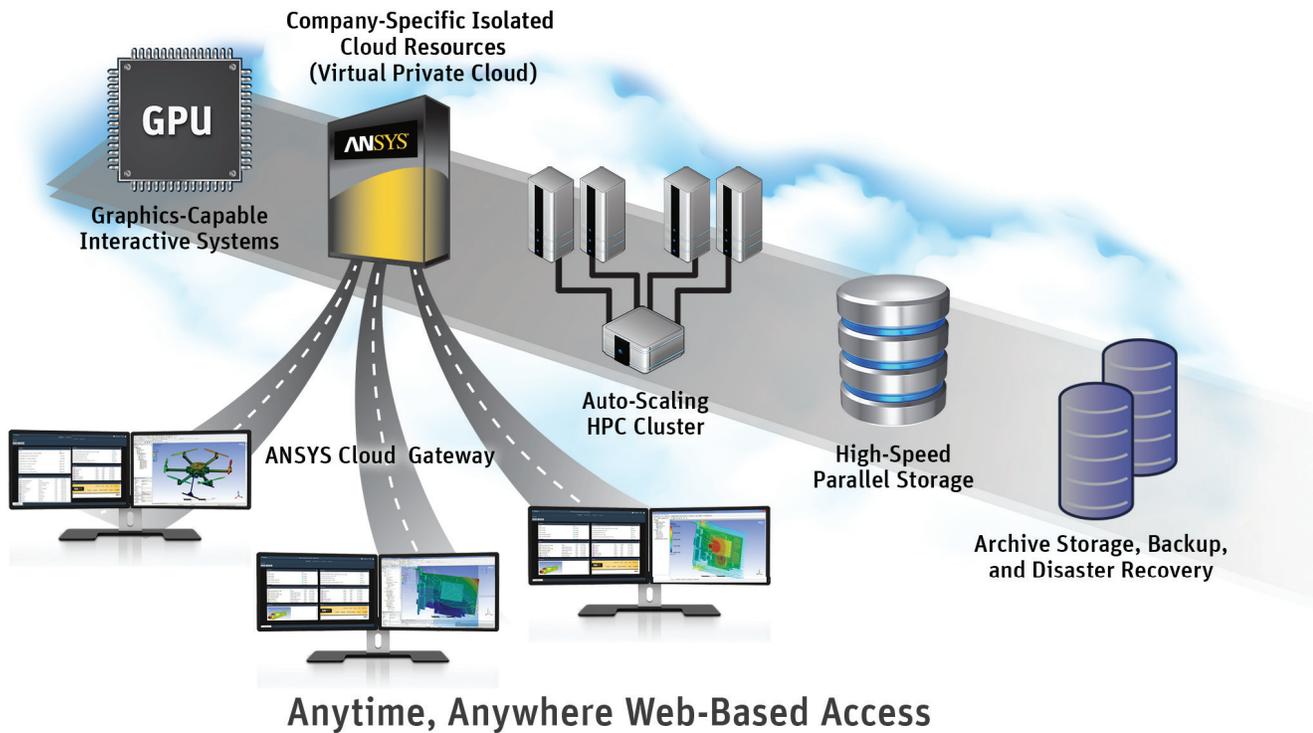
tenant solution, available today on the Amazon Web Services™ (AWS™) platform, provides a virtual-private cloud for globally-available enterprise simulation.

### **Breakthrough Capacity and Business Agility**

Since its inception, engineering simulation has been constrained by memory and processing capacity of computers available to the end user. Today, cloud computing can deliver the capacity you need for bigger models that yield high-fidelity solutions and greater insight into design performance. Cloud computing also provides the capacity and turnaround time you require for design exploration and optimization, to produce an understanding of product behavior over the full range of design options and environmental conditions. ANSYS Enterprise Cloud delivers this capacity when and where you need it, allowing engineering organizations to quickly respond to business needs, without long hardware and software procurement and deployment timelines.

### **Complete End-to-End Multiphysics Workflows**

ANSYS Enterprise Cloud delivers the unmatched ANSYS multiphysics simulation platform and supports end-to-end simulation workflows — including interactive pre-processing, solver computations on auto-scaling HPC clusters, 3-D graphical post-processing, and powerful data



management. Compared to batch-only cloud solutions, this end-to-end process ensures productive access to simulation on the cloud — minimizing the time and cost to move files. The ANSYS Cloud Gateway is a web-based user environment, ensuring productive end-user access to familiar application interfaces in the cloud.

**Adaptable and Extensible**

Enterprise-level use of simulation-driven product development requires a platform that adapts to your unique needs and incorporates all of the tools that you require. ANSYS Enterprise Cloud was designed for extensibility and customization, allowing you to build in job-management support for third-party or in-house tools and support data management for non-ANSYS files. The ANSYS Cloud Gateway provides powerful capabilities to define process automation and create custom workflows.

**Globally Available and Secure**

Delivered on the AWS global platform, ANSYS Enterprise Cloud can be replicated in multiple zones, providing global access to a consistent set of tools and data for enhanced engineering collaboration. ANSYS Enterprise Cloud protects the key IP contained in your simulation data, replacing decentralized desktop or local data storage with credentialed access to a highly

redundant centralized cloud repository on Amazon Simple Storage Service™. Cloud security best practices and encryption tools ensure that your data is secure.

**Low-Risk and Rapid Deployment**

ANSYS Enterprise Cloud is a turnkey, ready-to-go, solution that has been tested and certified by ANSYS and is fully supported. The rapid, automated provisioning ensures that you are up and running in days, without costly internal investment or delays.

**Optimized Utilization and Cost Control**

ANSYS Enterprise Cloud enables you to scale up and scale down resources based on your needs, ensuring high hardware and software utilization rates. Total cost can be controlled by defining resource limits. You can focus on your core business and eliminate the time spent on specifying, procuring, deploying, managing and decommissioning aging infrastructure. You can reduce pressure on facilities and liberate capital for other investments.

## Low-Risk and Rapid Time-to-Solution

Implementation of end-to-end simulation on the cloud is not a trivial undertaking. Simulation workflows require a unique combination of interactive 3-D graphics, high-performance computing (HPC) and data management to ensure both end-user productivity and cost-effectiveness. ANSYS Enterprise Cloud provides a fully engineered solution that can be sized to your needs. It comes complete with unique productivity tools that deliver auto-scaling HPC and graphics that act and feel like a local workstation. On the cloud, as on-premise, IT systems require attention to detail, and ANSYS Enterprise Cloud delivers a solution that includes those tested and supported details. ANSYS will help you succeed as you begin to take simulation to the cloud.

When you choose ANSYS Enterprise Cloud, ANSYS will deliver a combination of software and services that ensure a trouble-free deployment and rapid startup. Solution experts will work with you to implement the following steps to success:

1. **Establish your corporate account on AWS**, with secure network connection to your environment. In addition, establish your strategy for managing your AWS Virtual Private Cloud (VPC). You can self-manage or work with your preferred managed service provider.
2. **ANSYS experts will deploy** the ANSYS Enterprise Cloud reference architecture in your AWS account. Our team will deploy all the optimized machine instances you will need for a complete standard solution including web servers, database, file system, HPC compute nodes, visualization nodes and archive storage – sized to your expected use case and loaded with the productivity tools you will need. We'll install ANSYS cloud-tested multiphysics applications, along with ANSYS Cloud Gateway software that includes remote 3-D graphics and HPC orchestration components. This highly automated deployment will have you up and running in days, not weeks or months.

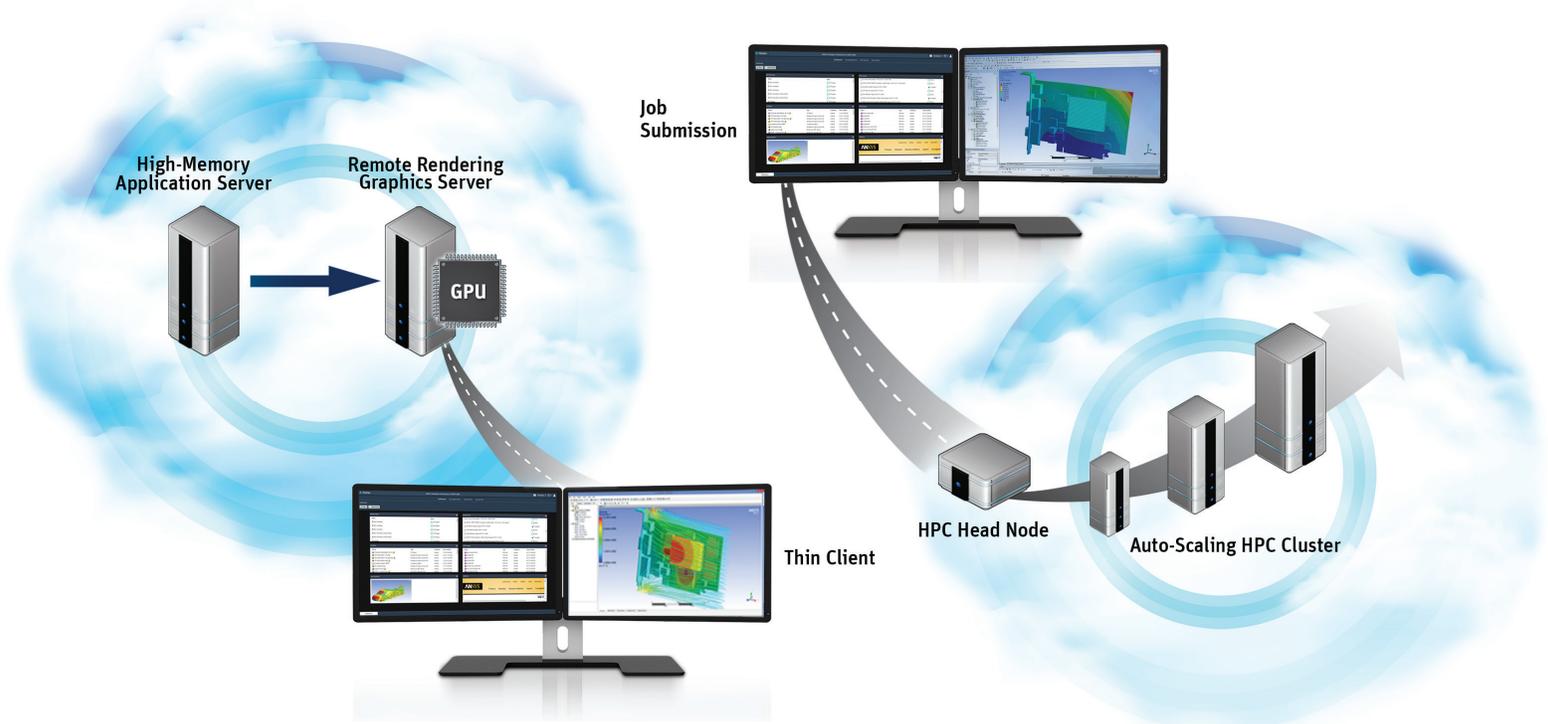


3. **Jump onto the ANSYS Cloud Gateway** using start-up training services to introduce end users and system administrators to this powerful web-based cloud portal. You will quickly be using the Cloud Gateway to submit, monitor and manage interactive and batch simulation jobs – without cryptic command-line inputs that can be complex to learn and maintain.
4. **Use ANSYS applications, in the normal manner.** ANSYS Cloud Gateway provides engineers and designers with a new portal into ANSYS Enterprise Cloud. Once you launch an ANSYS simulation, you will use the familiar ANSYS environment to which you are accustomed. There is no long learning curve as you move your simulation workloads to the cloud. Your subscription license to the ANSYS Cloud Gateway, in combination with your normal ANSYS application licenses, provides you with full support for use applications you have licensed in the ANSYS Enterprise Cloud environment.
5. **Customize to your needs.** ANSYS can provide services to help you implement support for non-ANSYS applications that you need to run in the Enterprise Cloud environment. We can also help you automate processes and implement defined workflows that are part of your product-development process. You can scale up or scale down capacity — as your needs evolve. ANSYS Enterprise Cloud is designed to flex with your requirements.
6. **Stay current.** Periodic updates ensure that you are running on the latest system configuration and always operating at peak performance.

## The ANSYS Cloud Gateway – Productive and Secure Access to the Cloud

ANSYS Cloud Gateway provides engineers, designers and administrators with the tools they need for productive and secure engineering simulation in the ANSYS Enterprise Cloud environment. Accessed via a standard web browser using a secure communication protocol, the ANSYS Cloud Gateway enables end-to-end engineering workflows that are performed entirely within the cloud data center – to optimize security, performance and access. Key capabilities include:

- **Interactive GPU-enabled sessions:** Using the Cloud Gateway, end users can launch remote desktops that incorporate high-performance 3-D graphics. These sessions enable you to work in the cloud, in the same way you would on a local workstation to perform interactive model setup and post-processing using the standard ANSYS application interfaces with which you are familiar. Unique remote rendering technology makes large-memory machines available for your biggest models. You will not need to consume time and network bandwidth to download files in order to review results.
- **Auto-scaling HPC job management:** The ANSYS Cloud Gateway solves simulation projects using an HPC cluster that scales on demand and uses machine types that are optimized separately for computational fluid dynamics and structural analysis. You can manage and control these jobs through the ANSYS Cloud Gateway web browser with monitoring and other application-level controls that enable you to steer the solution process.
- **Secure data management:** ANSYS Cloud Gateway simplifies simulation data management, providing users with the ability to archive files using database technology for easy search and retrieval. Simulation files in the cloud are encrypted and stored in low-cost, highly redundant storage — ensuring security of the data. The ANSYS Cloud Gateway also provides the tools you need to move files between your local desktop or file system and your working directory in the cloud.



Remote rendering on ANSYS Enterprise Cloud delivers interactive performance combined with high memory, delivering a high-end desktop workstation experience in the cloud.

Auto-scaling technology provisions HPC resources on demand and releases them when the job is complete

- **Resource monitoring:** Users and administrators can monitor and control activity within the cloud data center, providing insight into system status and performance, and enabling cost controls. The Cloud Gateway tools complement the resource-monitoring tools from AWS and other third parties, so you can obtain all the information you need, using the tools you prefer.
- **Secure Access:** Gateway administrators control access to the cloud data center via secure login credentials that can also be used to define individual or group access to specific resources. Microsoft® Active Directory® or Lightweight Directory Access Protocol (LDAP) integration is also available for simplified user administration.

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ANSYS is dedicated exclusively to developing engineering simulation software that fosters rapid and innovative product design. Our technology enables you to predict with confidence that your product will thrive in the real world. For over 40 years, customers in the most demanding markets have trusted our solutions to help ensure the integrity of their products and drive business success through innovation.

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