Computational Science and Engineering Online

Cyber-environment for Research and Education in Computational Bioscience

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... a laboratory without walls for scientific computing
Cyberinfrastructure for Computational Science and Engineering

Universities

National Labs

Industries

Physics

Chemistry

Biology

Material Science

Reaction Engineering

Visualization/Analysis Tools

Tutorial Lessons

Communication Tools

Scientific Application Tools

Databases & Electronic Notebook

Computational Science and Engineering Online (CSEO)

Online Computing Environment

Computing Grids
CSE-Online removes technical barriers to teaching and learning computational bioscience.

- Eliminates the need of a computing lab for teaching. Students can use their laptop computers in any platform in the normal classroom or anywhere with wireless connection.
- No installation/maintenance for the modeling tools is required.
- Local availability of sufficient computing power for running these tools is not required.

CSE-Online provides an efficient way to utilize state-of-the-art molecular modeling tools and data. Through our software innovations:

- Modeling tools are delivered to the users on demand as simple as html pages to web browsers.
- These tools and data can be located on your desktop and any server worldwide.
- The most current version of tools is immediately available.
- Data can be shared with others.

CSE-Online is the first cyber-environment that provides secure and simple access to supercomputing resources on the computing grid such as the TeraGrid from the user desktop environment.

- No user account on the computing grid is required.
- Direct access to data and resources on the computing grid without using a portal.
CSE-Online provides an efficient way to utilize state-of-the-art molecular modeling tools and distributed data, significantly reducing the burden of non-creative and repetitive tasks.

- Provide transparent access to distributed data and computing resources
- Reduce the need for learning the I/O format and look-and-feel of various modeling tools.
- Eliminate the need to learn extraneous OS’s, such as Unix, and computing environments on different systems.
- Facilitate vertical integration of different tools.
- Permits customization of individual workbench.

CSE-Online creates a virtual research environment running on any platform.

- Data, tools, and resources are delivered on demand to the users via the Internet.
- Persistent connection is not required.
- Identical research environment can be accessed anywhere at anytime.

CSE-Online integrates the collaborative environment within the user virtual desktop.

- Sharing data with others at multiple sites is as simple as drag-drop without having to leave the user research environment.
A number of demo movies are available in the Demos link

Cyber-environment for computer-aided drug design and many of the new features discussed here will be available in January of 2007