



The Engineering Simulation Initiative

High Performance Computing for Engineering Simulation in the Transportation Industry

High Performance Computing Facilities



Eagle: 184-node IBM Winterhawk-II

- Four Power3-II processors per node
- 2GB memory per node.
- > 1 TeraFLOPs compute power.
- ORNL, Computer Science and Mathematics

Falcon: 64-node Compaq AlphaServer SC

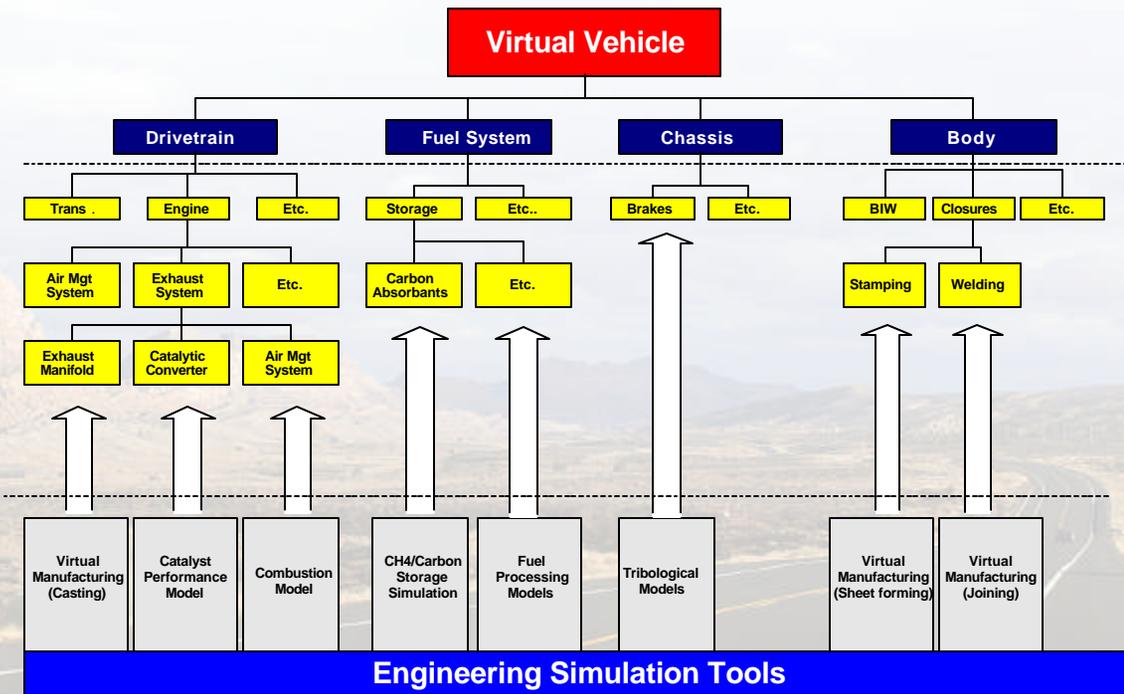
- Four Alpha EV67 processors per node
- 2GB memory per node.
- 2 TB of Fiber Channel disk attached.
- 342 GFLOPs compute power.
- ORNL, Computer Science and Mathematics

Jupiter: 26-node IBM Winterhawk-II

- Four Power3-II processors per node
- 3 GB memory per node.
- 156 GFLOPs compute power
- PNNL, Energy Science and Technology Division

Colony: 96-node Dell Gigaset Linux Cluster

- Two Pentium III processors per node.
- 512 MB memory per node.
- 9 GB disk per node.
- PNNL, Molecular Science Computing Facility



Manufacturing Processes

- Sheet metal forming
- Superplastic forming
- Tailored welded blank stamping
- Electromagnetic forming
- Tubular forming
- Superplastic forming
- Hydroforming
- Joining of sheet and tubular structures

ESI Focus Areas

Product Design and Performance

- Crashworthiness
- Stress analysis
- Aerodynamics
- Underhood thermal management

Emissions

- Catalysis
- Particulate formation

Fuel Cells

- Solid oxide fuel cells