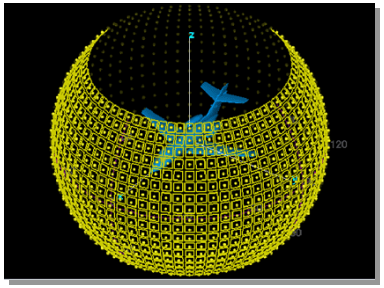
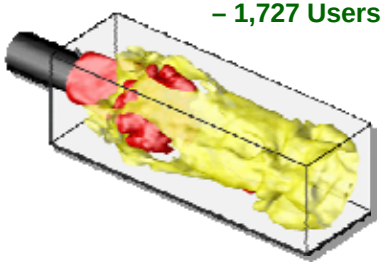
HPCMP Serves a Large, Diverse DoD User Community

- 529 projects and 4,342 users at approximately 188 sites
- Requirements categorized in 10 Computational Technology Areas (CTA)
- FY 2008 non-real-time requirements of 1,108.5 Habu-equivalents
- Total number of actual system users = 2,293

Computational Electromagnetics & Acoustics – 322 Users

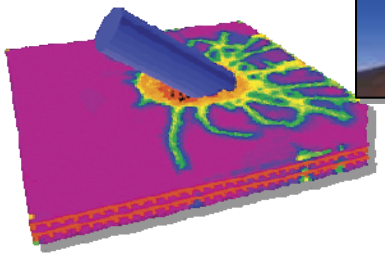


Computational Fluid Dynamics – 1,727 Users

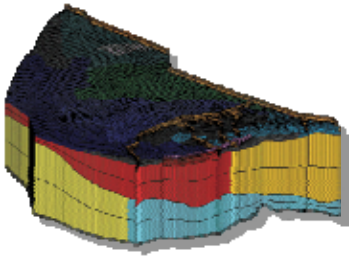


Electronics, Networking, and Systems/C4I – 164 Users

Computational Structural Mechanics – 423 Users

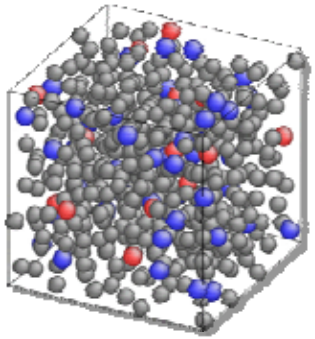


Environmental Quality Modeling & Simulation – 169 Users

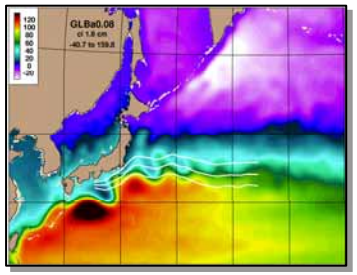


Forces Modeling & Simulation – 78 Users

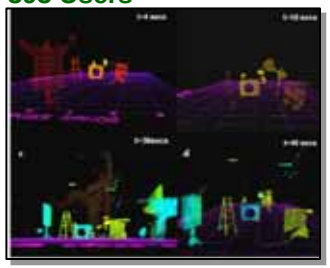
Computational Chemistry, Biology & Materials Science – 501 Users



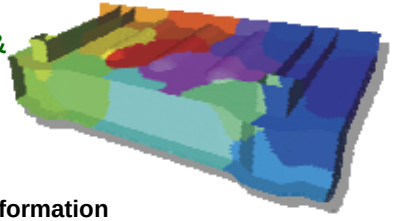
Climate/Weather/Ocean Modeling & Simulation – 259 Users



Signal/Image Processing – 393 Users



Integrated Modeling & Test Environments – 147 Users



Source: Portal to the Information Environment - February 2008

159 users are self characterized as "Other"

Solving the hard problems . . .

DoD HPC Modernization Program

HPC Centers

- Supercomputers
- High-Speed Networks
- Mass Storage
- Data Exploration
- Customer Assistance

Networking

Defense Research & Engineering Network

Army HPCMP Participation

ARL & ERDC MSRCs
AHPCRC & SMDC ADCs
1,343 Users/24 Organizations/108 Projects
50 DREN Sites
12 Challenge Projects/3 DHPIs
5 Institutes

Navy HPCMP Participation

NAVO MSRC
942 Users/16 Organizations/197Projects
41 DREN Sites
12 Challenge Projects/3 DHPIs
1 Institute

Air Force HPCMP Participation

AFRL MSRC
MHPCC ADC
1,520 Users/25 Organizations/199 Projects
22 DREN Sites
14 Challenge Projects/1 DHPI
3 Institutes

Defense Agencies Participation

DARPA, DTRA, JNIC, JFCOM,
MDA, PA&E & OTE
537 Users/4 Organizations/25 Projects
31 DREN Sites
1 Challenge Projects/2 DHPIs

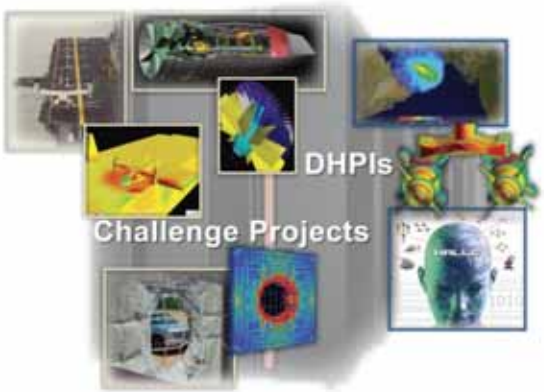
Other

ARSC ADC
1 University-DHPI
35 DREN Sites

Software Applications Support

Resource Management

Requirements & Allocations



Solving the hard problems . . .

DoD HPC Modernization Program

HPC Centers

- Supercomputers
- High-Speed Networks
- Mass Storage
- Data Exploration
- Customer Assistance

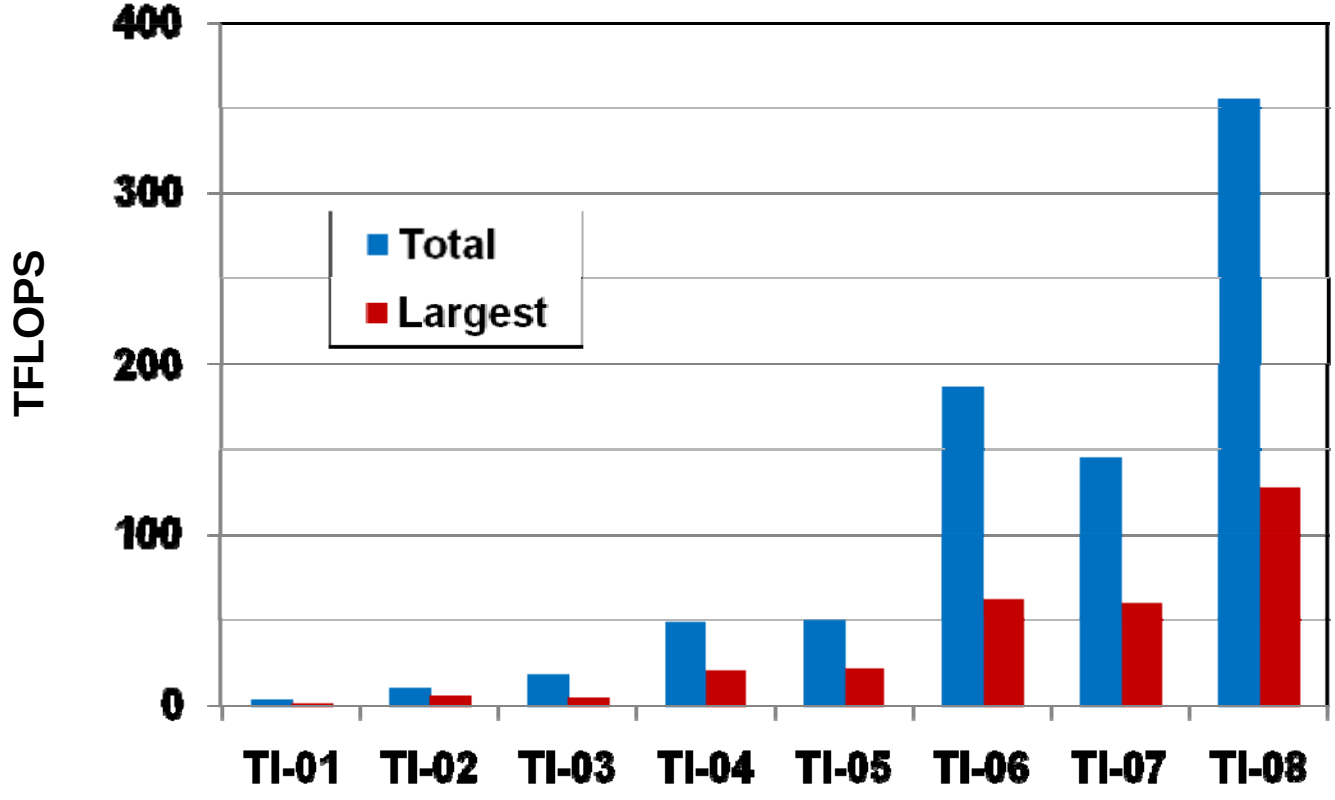
HPC Acquisition

- Annual process – Technology Insertion
- HPC systems replaced every 4-5 years
- Consolidated acquisition
- ~ $40M per year
- FY09 process underway – awards in Q2

HPC Installations (TI-01 through TI-08)

Added HPC Capability Trend

MSRCs and ADCs



TI-08 Delivery Order Awards

- **Cray XT5 – 118 TFLOPS**
  - **12,872 cores, 2GB of memory per core**
- **Cray XT5 – 101 TFLOPS**
  - **10,540 cores, 4GB of memory per core**
- **IBM P6 – 90 TFLOPS**
  - **4,768 cores, 2 GB of memory per core**
- **Cray XT5 – 32 TFLOPS**
  - **3,504 cores, 4GB of memory per core**
- **Cray XT5 – 19 TFLOPS**
  - **2,052 cores, 2GB of memory per core**
- **Also of note: 300 PlayStation cluster – 540 TFLOPS**