High Performance Virtual Machines (HPVMs)

High Performance Virtual Machines enable parallel applications on distributed resources. HPVMs provide performance stability and standard API's to simplify programming for a dynamic environment.

**New Ideas**
- Simplify high performance distributed applications programming
  - combine API’s and stable performance
  - leverage parallel applications & tools to distributed environments
- Innovative middleware architecture
  - coordinated resource management for predictable performance with
  - leverage commodity software elements (OS, applications)
- Integrated multi-level effort with commercial compilers (PGI HPF) and performance tools deliver rich software environment for applications

**Impact**
- Enable and accelerate integration of next-generation high performance and distributed applications by delivering fundamental technologies for coordinated resource management and stable performance models.
- Demonstrate and prototype technologies for portable, high performance distributed applications, enabling design, simulation, and deployment activities
- Demonstrate a unified computing and communication infrastructure for integrating distributed and HPC applications

**Schedule**

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**HPVM Interfaces**
- Ver 1.0: Message Passing + Global Address Myrinet
- Ver 2.0: + Communication QoS + Servernet
  + Distributed Computation QoS + Wide Area
- Ver 3.0: + High Performance Fortran (ATM and IPv6)

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