PUNCH: The Purdue University Network Computing Hubs
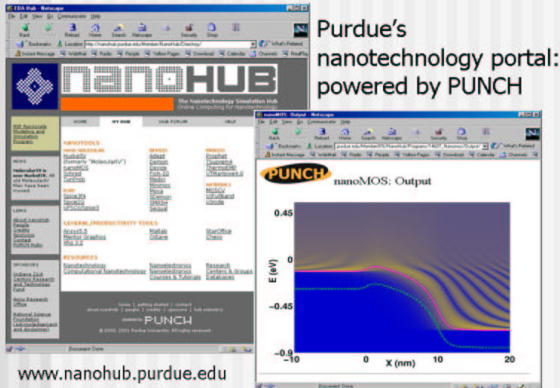
www.punch.purdue.edu

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Purdue's nanotechnology portal: powered by PUNCH

www.nanohub.purdue.edu

PUNCH is a software network computer that allows users to transparently access and use computing resources that are distributed across networks and administrative domains

PUNCH features

- Share, deploy applications via portals
- Install applications without change
- Manage access via logical accounts
- Manage data views via virtual file system
- Share resources across administrative domains

PUNCH technologies

- Logical accounts for single sign on
- Virtual file system for data management
- Decentralized, pipelined architecture for resource management
- Fine-grained access- and security-management
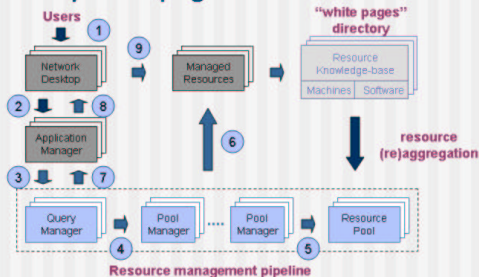- Meta-programming language for application management

Logical user accounts

- Shadow and file accounts are recycled among users by PUNCH
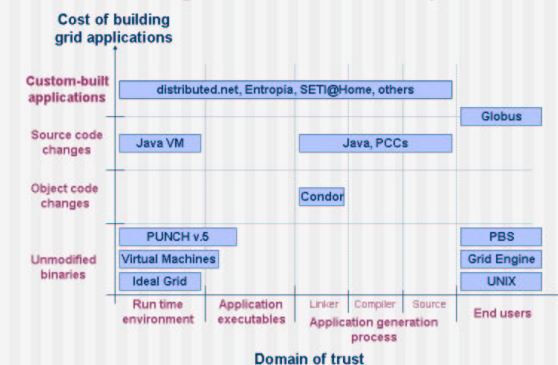
Virtual file system service

- Seamless access to decentralized storage services of a grid
- Supports unmodified binary applications and native file system clients, servers

Active yellow pages service

- Pipelined architecture supports decentralized resource management

Access management and security

- "Untrusted" users and applications managed via a reconfigurable restricted shell and system call monitoring

PUNCH status

- Operational since 1995; v.5 being deployed
- Powers nanotechnology, computer architecture, and EDA portals
- 2,000 users; 70+ applications
- Being commercialized by Cantiga Systems Inc. (nirav@cantiga.com for more info)