Berkeley NOW Project
Jan 1997
Retreat

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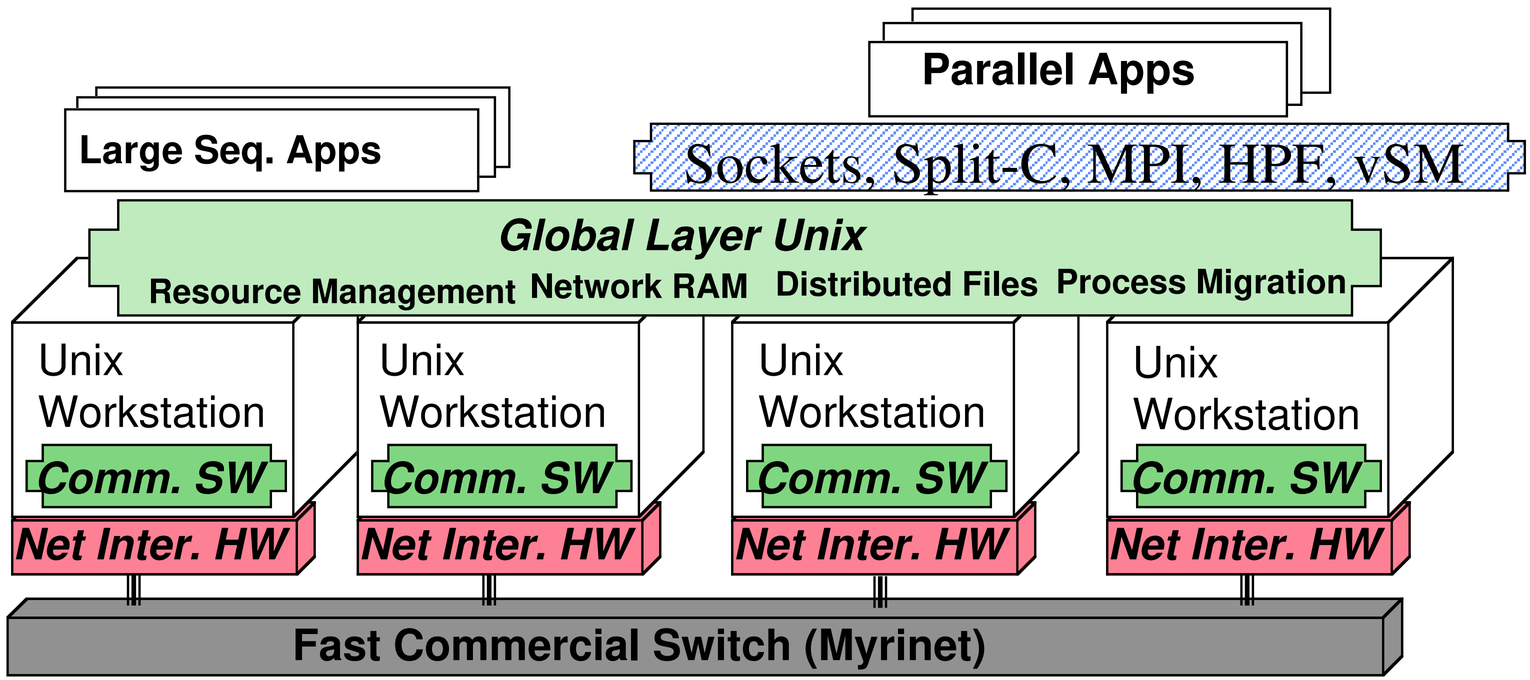
Outline

- Introductions
- Project Goals & Background
- Overview of the Retreat Agenda

Goals of the Research

- **Fundamental change in how we design large-scale computing systems**
  - snap together commodity components
  - self-managing, self-tuning, highly available
- **Make the "killer network" real**
  - realize the potential of emerging hardware technology
  - and push its effect through the rest of the system
- **Integrated system on a building-wide scale**
  - pool of resources (proc, disk mem)
  - remote processor and memory closer than local disk
  - federation of systems with local and global role
- **The right way to build internet services**

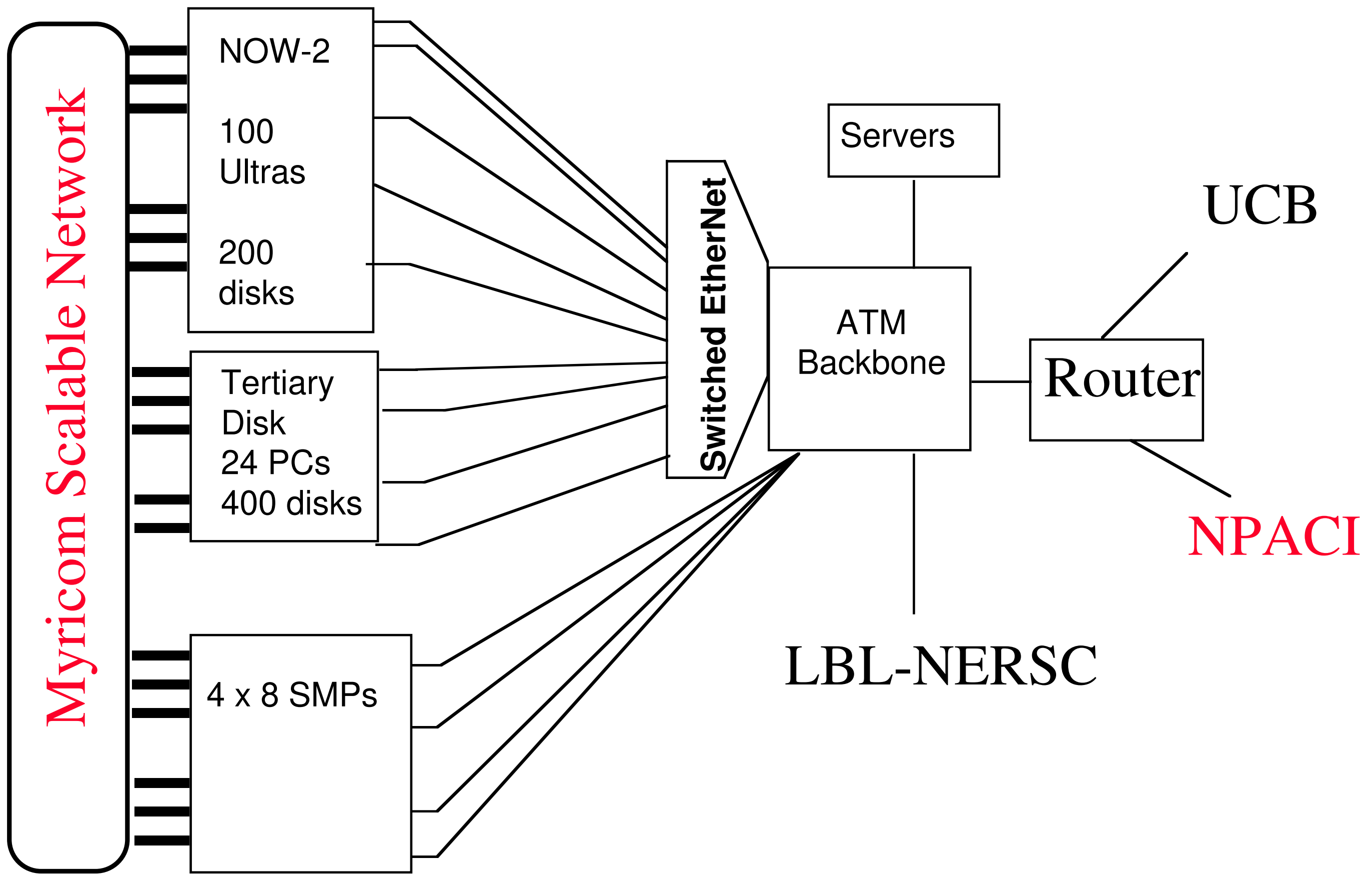
NOW System Architecture



Quick Status

- **Large cluster operational**
  - 100 nodes under glunix before Supercomputing96
- **Generic Active Messages Released** *(hit C=10μs)*
- **Evaluation against range of uses**
- **xFS scalability demonstrated**
  - teapot MGR + AM storage server close
- **network virtual memory demonstrated**
- **AM 2 with virtual networks operational**
  - self-configuration demonstrated
- **Technology Transfer to inktomi** www.HotBot.com
- **World Record disk-to-disk sort** *(self-tuning)*
- **Supporting scientific applications** *(MPI, svm)*
- **Growing into the web**

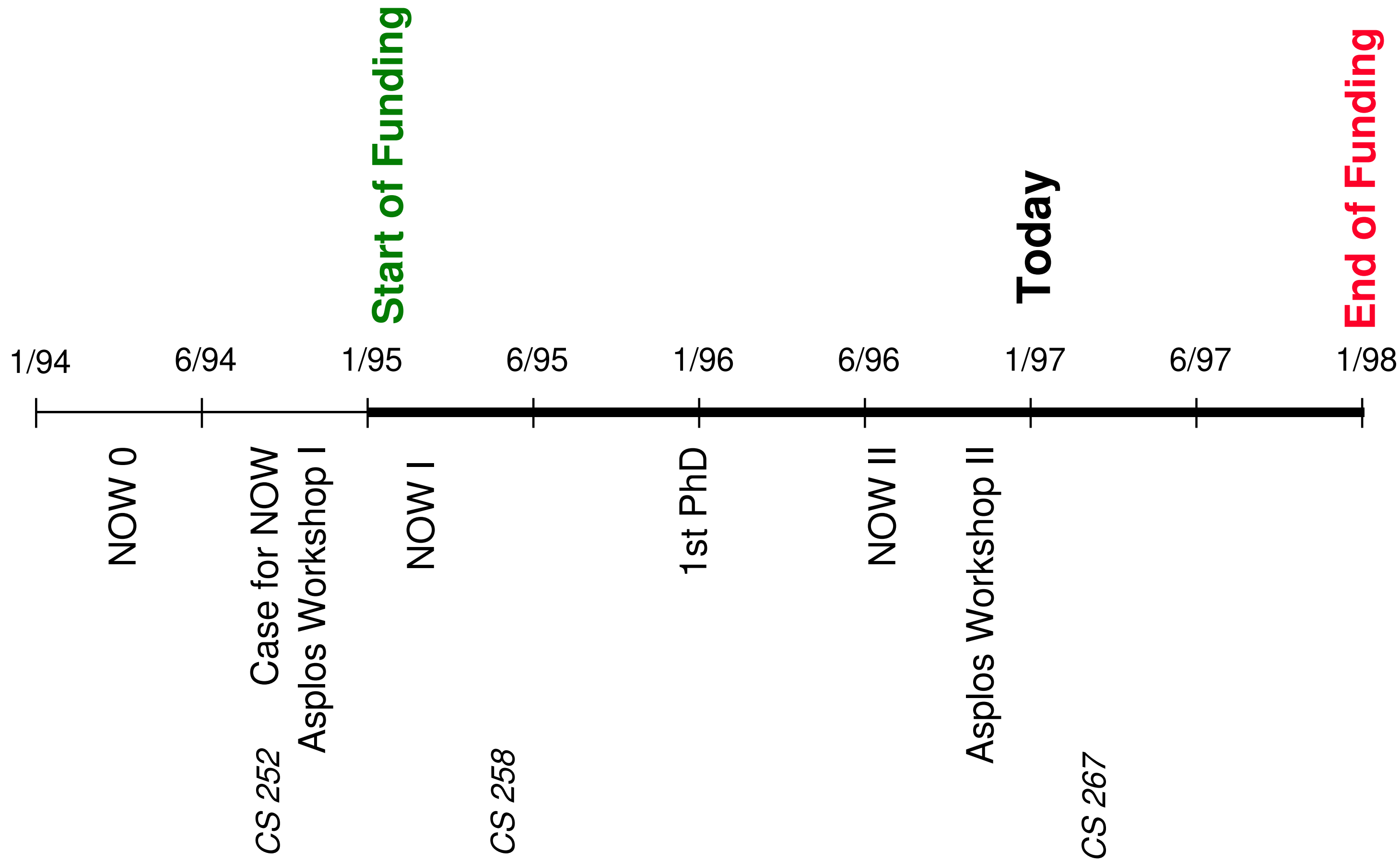
Overall System Configuration



Toward Immense Disk Clusters

Clusters of SMPs (CLUMPS)

Project (Retreat) Timeline



Retreat Agenda

NOW System Architecture (revisited)