Supporting Dynamic Ad hoc Collaboration Capabilities

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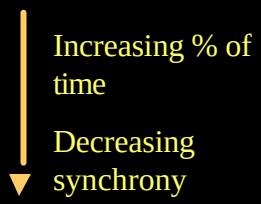
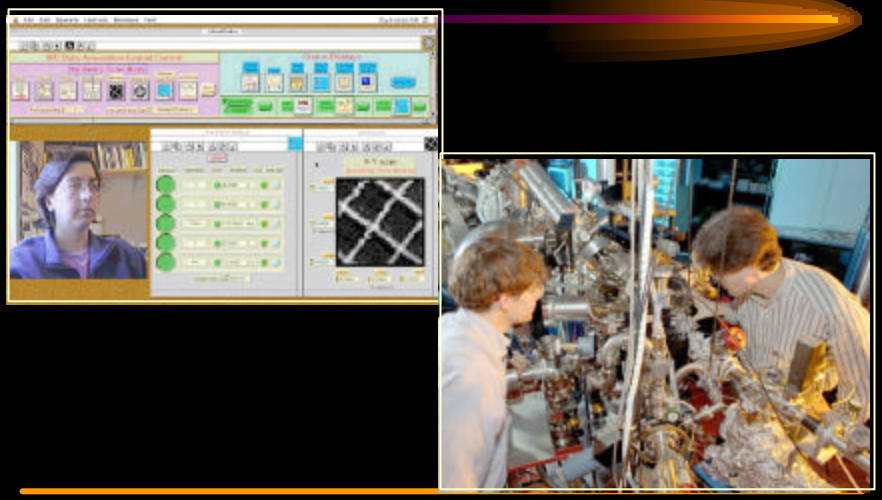
Collaboration Environment

- Collaborative communication options
  - Formal meeting in person
  - Videoconference
  - Teleconference/telephone
  - Informal discussion/meeting
  - File/document sharing
  - E-mail/chat
  - Papers/documents/web



Spectro-Microscopy Collaboratory



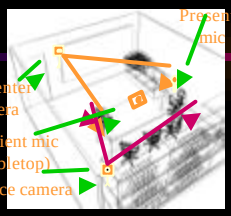
Collaboration Realities

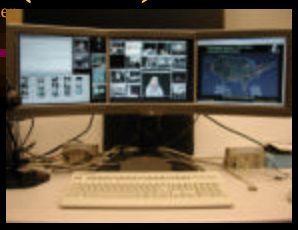
- Collaboration takes effort
  - Must provide a perceptible benefit
  - Must fit with current work practices
- Collaboration tools need to be used regularly (not on the shelf)
- Group must already have a strong need to collaborate

How do we Collaborate?

- Contact capability
  - Presence/availability information
  - Chance encounters
  - Seek out individuals
  - Schedule meetings
- Discussions
- Share work processes and products
- Security
  - Verify identity
  - Limit authorization

Access Grid Nodes (ANL)





Pervasive Collaborative Computing Environment Goals

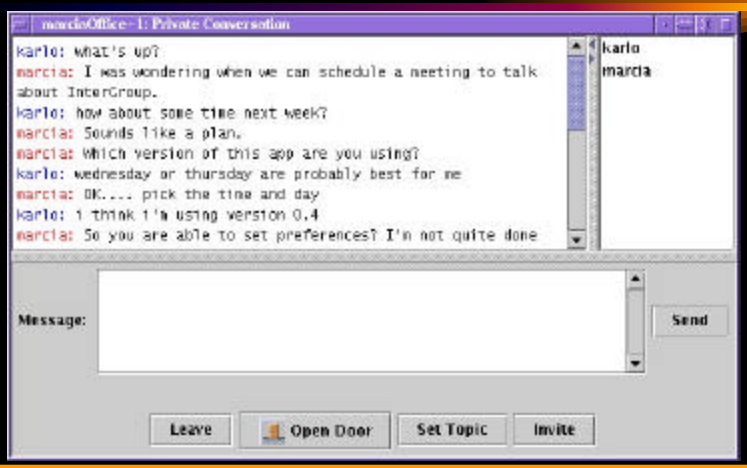
- Support ‘continuous’ collaboration
  - Ubiquitous – available anywhere
  - Synchronous and asynchronous
  - Persistent
- Low threshold for entry into the environment
- Target daily tasks and base connectivity
- Leverage off of existing components when possible
- Security

PCCE – Messaging

- Baseline presence information (rendezvous)
- Messaging
  - Permanent contexts topical meeting places
  - Group and private text-based messaging
  - Storage of preferences and current state
- Security
  - X.509 or username/password authentication
  - Data encryption over SSL connections
- Asynchronous notes

PCCE Messaging Application

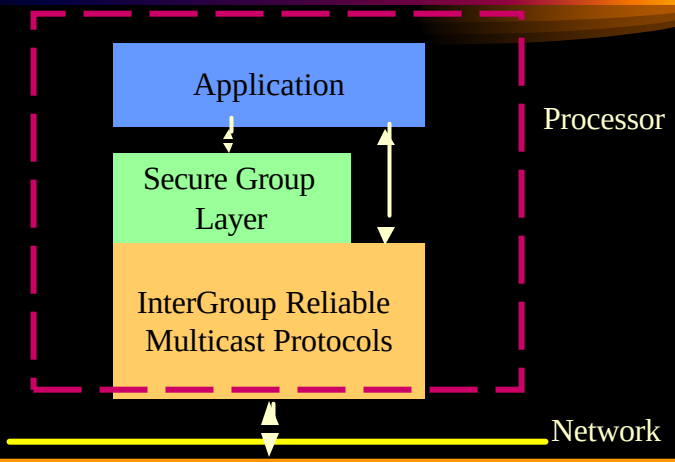
Messaging GUI



Group Communication

- Provide efficient, reliable, and secure communication between collaborating sites
- Multicast communication channel directly connecting the participants
- Support participants spread across the Internet
- Support ad hoc formation of groups
- Remove dependence on servers

InterGroup + SGL



File-Sharing

- Peer-to-peer
  - Using reliable multicast infrastructure
  - Files shared from natural locations
- Secure
- Distributed authorization

Collaborative Design Process

- Identify key activities to share
- Make sure all participants have an incentive
- Develop realistic use cases/interactions
- Role play the interactions
- Attempt the interaction using simple tools like the web or VNC and the telephone
- Identify critical missing elements
- Keep it as simple as possible
- Get in the habit of using it

Conclusion

- Collaborative interactions need to be supported by a continuum of tools
- A basic connectivity presence tool is critical
- Synchronous and asynchronous interaction must be supported
- Video is often unnecessary for day-to-day interactions

URL

- http://www-itg.lbl.gov/Collaboratories

Future Directions

- Shared editing
  - Code development
  - Text document
- Workflow monitoring
- Improved asynchronous messaging
- Incremental trust/authentication