



# Reliable and Secure Group Communication



*MICS/SciDAC Program Name*

**Picture/Diagram  
Related to Project**

## The Novel Ideas

- Developing the infrastructure needed to support true peer-to-peer communication
- Secure group communication that is peer-to-peer and based on crypto algorithms that are provably secure
- Reliable multicast capabilities that are scalable to the Internet
- Flexible message delivery options in terms of reliability and ordering

## Impact and Connections

- IMPACT:
  - Improved communication infrastructure for collaborative applications enabling truly peer-to-peer applications
  - Many-to-many group communication that scales to the Internet
  - A secure group layer that creates an SSL equivalent for group communication
  - Flexibility to implement a broad range of application requirements.
- CONNECTIONS: Pervasive Collaborative Computing Environment

## Milestones/Dates/Status

- The primary goal of this project is the development and implementation of group communication capabilities that are reliable and secure
- Reliable Multicast
 

|  |      |
|--|------|
| - Development of InterGroup                        | Year |
| - Beta release of the InterGroup protocol          | 1-2  |
| - Testing and implementation of additional feature | 2    |
| - Testing and implementation of additional feature | 2-4  |
- Secure Group Layer:
 

|   |     |
|---|-----|
| - Proofs of security for the cryptographic algorithms | 1-2 |
| - Implementation of protocols                         | 2-4 |
- Improvements
 

|  |   |
|--|---|
| - Enhancements to scalability and features | 5 |
|--|---|

Principal Investigators: Deb Agarwal - LBNL

MICS Program Manager: Mary Anne Scott

Date Prepared