2006 Access Grid Workshop

AG Toolkit 3.0 Overview and Usage

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Access Grid

- To enable groups of people to interact with Grid resources and to use the Grid technology to support group to group collaboration at a distance
    - ☑ Group-to-group interaction
    - ☑ Real-time video
    - ☑ High-quality audio
    - ☑ Shared data & applications

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Access Grid Toolkit

- Goals
  - ☑ Scalability
    - ○ Many users, many servers
  - ☑ Supportability
  - ☑ Richness
    - ○ Media, interaction
  - ☑ Security
    - ○ Confidentiality
    - ○ Authorization
  - ☑ Collaboration framework
    - ○ Support collaborative tools development
  - ☑ Integration with Grid infrastructure
    - ○ Access to compute, data resources
  - ☑ Open license

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Access Grid Toolkit (cont')

- **VenueClient**
  - ☑ Integrated data sharing
  - ☑ Integrated text messaging
  - ☑ Integrated event messaging
  - ☑ Shared Applications
- **Encrypted audio/video**
- **Extensible media framework**
- **Certificate Management**
  - ☑ CA certificate import
- **Authorization**
- **Integrated Multicast Bridging**
- **Complete documentation**
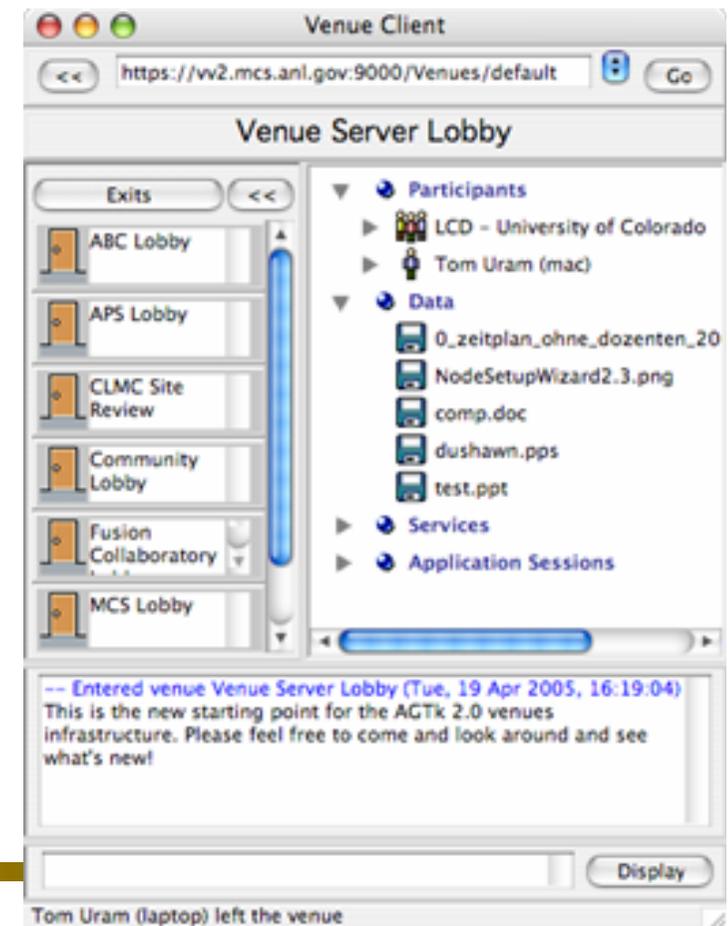
Results

- Downloads
  - 6000+ (outside Argonne)
- Certificates
  - 8000+ certificate requests
  - 53 countries
- Venue Servers
  - 10+ external to Argonne
  - Run by large organizations, small collaborations
- Platforms
  - Windows, OSX, Linux (Gentoo, Slackware, FedoraCore, FreeBSD, RedHat, SuSE)

Worldwide AG Nodes
(the subset registered with portal)

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Development Toolkit

- **SOAP-based components throughout**
  - ☑ VenueServer, Venue, VenueClient, etc.
- **Published API**
  - ☑ Query Venue multicast addresses for building gateway
- **Shared Applications Support**
- **Node Services Support**

Access Grid 3

- **Standards-based**
  - ☑ Proven tools and protocols
  - ☑ Improved performance
  - ☑ Improved stability
  - ☑ Interoperability
- **Platform independence**
- **Ease developer integration**
- **Open license**
  - ☑ Certificates optional for clients
  - ☑ Lower cost of entry

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AG3: Standards-based

- Reliance on standard Internet technologies (SSL, SOAP/XSD, FTP, Jabber)
  - GSI replaced by SSL throughout
  - New SOAP implementation, with WSDL support
    - Interoperability
    - Facilitates client development
  - XML Event distribution
    - Interoperability
    - Performance
  - Integrated FTPS data storage
    - Stability of established standard
  - Jabber-based text chat
    - Established standard
    - Interoperability with large Jabber client base

AG3: Improved Venue Client

- Multicast Indicator
- Media tool controls
- Improved venue navigation
  - ☑ tree-based
  - ☑ view options

AG3: Improved Venue Client

- **Multicast Indicator**
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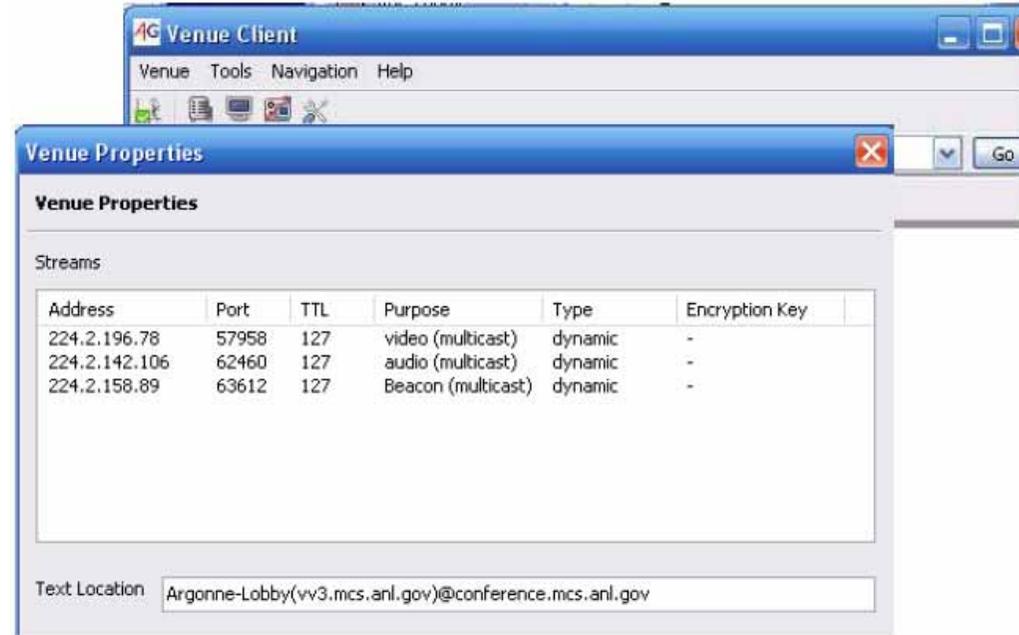
AG3: Integrated Jabber chat client

- Solves the AG chat multiplicity problem
- Interoperable with wide range of Jabber clients (e.g., PSI, iChat)
- Facilitates handheld integration

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AG3: Integrated RSS-based scheduling

■ **Communities can publish meeting schedules to which their members can subscribe**

■ **View meeting webpage or join meeting directly**

■ **Schedule format conforms to RSS 2 spec**

AG3: New venue-independent bridging

- Establishes network of bridges (QuickBridge, currently)
- Clients request bridges for particular multicast addresses

AG3: Venue-independent bridging

- "Closest" bridge is used by default
- Bridge information, including bridge host and ports, presented in VenueClient
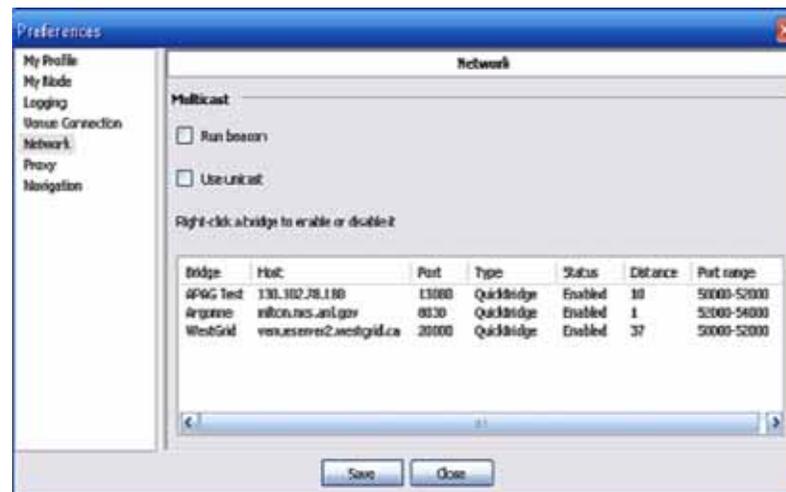
AG3: Network monitoring

- Integrated per-Venue multicast beacon client

- Multicast connectivity viewer
  - ☑ Similar to RAT reception quality matrix

- Show multicast loss between participants independent of audio and video
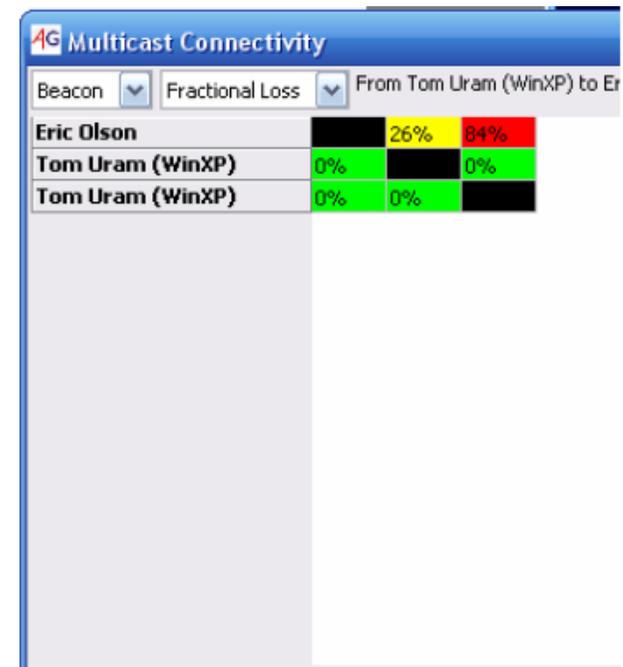
AG3: Service advertisement and discovery (via Bonjour)

- VenueClient, NodeService, and ServiceManager are advertised locally
- Simplifies multi-machine node configuration (select from among discovered service managers)
- Simplifies node control
- Improved mechanism for finding VenueClient to control

How to use AGTk 3.0

- Hardware Checkup

- Software Setup

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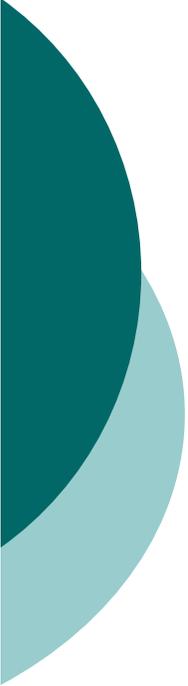
AGTk 3.0: Hardware Checkup

- **Prerequisites**
  - ☑ Laptop PC, Web camera, Headset (headphone & mic).
  - ☑ Network Connection (100Mbps Ethernet)

- **Preparations**
  - ☑ System OS: Window XP/2k.
  - ☑ Connect Web camera & setup (install device driver).
  - ☑ Connect headset including headphone and microphone & check its operation.

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AGTk 3.0: Software Setup

- http://www-new.mcs.anl.gov/fl/research/accessgrid/software/releases/3.0.2/

- Download the followings:
  - ☑ Python 2.3
  - ☑ Python win32 Extensions
  - ☑ wxPython 2.6
  - ☑ Bonjour
  - ☑ Access Grid Toolkit 3.0.2

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More Information

- ■ **Access Grid Reference Sites**
  - ☑ Access Grid (http://www.accessgrid.org/)
  - ☑ Access Grid Korea (http://www.accessgrid.or.kr)
  - ☑ ACE Team, GIST (http://ace.nm.gist.ac.kr)
  - ☑ AG Central (http://portal.accessgrid.org/)

- ■ **Reference**
  - ☑ T. Uram, "The Access Grid: An Open Collaboration Framework," The APAC Conference and Exhibition on Advanced Computing, Grid Applications and eResearch, Queensland, Australia, September 2005.

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