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Access Grid 2

A Constructive Look

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Approach

- Raise issues
- Be open
- Be constructive

Contents

- Observations
  - Change in emphasis
  - Reliability
  - Usability
  - Design
- Suggestions
- Inspiration

Change in Emphasis

- **1998-2002:**
- Access Grid = Designed space; emphasis on human factors
- "Group-to-group" collaborative environment is unique vision

- **2002-Now:**
- Software client for any configuration
- Not so unique…
- …means tough competition from commercial vendors (e.g. Skype, iChat)

Reliability

- Key factor in user satisfaction
- Access Grid not perceived as robust, especially outside community:
  - Toolkit
  - Poorly configured equipment
  - Networking
  - VNC dropouts
  - Etc.
- No objective measure of reliability?

Usability

- Connection delays
  - Time to launch
  - Time to change venue
- Core tools (vic/rat) showing their age
- Weak sense of online community
- Is certificates model logical?
  - Compulsory
  - Nodes/users

Design

- Venue Server is single point of failure
- Scalability (e.g. at SC Global 04)
- Where's the Grid?
- Just how extensible is it? (e.g. adding media streams)
- Lack of interoperability (e.g. presentation sharing)

Suggestions

- Loosely coupled model to allow greater interoperability (e.g. Access Grid 1)?
- Lightweight server?
- Peer-to-peer model?
- Web-based client?

Inspiration

- Quote from www.zope.org (thanks to Darran Edmundson):

  Over the history of Zope 2, we've learned many things we would like to do differently and many improvements we would like to make. Zope 3 provides us the opportunity to learn from the past and build an even better version of Zope. To some degree, we can take out time to "get it right", thanks to the fact that we have an excellent system, Zope 2, that we can use while we build the future.

- Ctrl-H / Zope → Access Grid / Enter

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AG 3.0 and Beyond

Thomas Uram
Argonne National Laboratory

Overview

- AG Vision
- State of the Toolkit
- AG 3.0
- Beyond 3.0

Access Grid Vision

- Group-to-group Conferencing
  - Model collocation of N remote groups of researchers
- Collaborative Science
  - Model collocation of the researchers' computational and scientific resources

State of the Toolkit

- AG 2.3
  - Greatly improved robustness
    - "Hung VenueServer" bug fixed
  - Easy installation
  - Good platform support (including OS X)
  - Network Services

Some statistics

Downloads (from outside Argonne)

- OS X : 600+
- Windows : 3900+
- Gentoo : 290+
- Fedora/Debian/Slackware/FreeBSD : 1000+

Certificates

- AG Dev CA:
  - 3400+ certificates, 47 countries
- Anonymous CA: 1400+ certificates

Venue Servers

- Argonne vv2 server has been entered 19000+ times this year
- vv2 uptime : 95%
- Over ten venue servers outside Argonne

Broadening developer base

Communities

- EuroAG
- Asia-Pacific Access Grid
- Access Grid Canada
- Access Grid Korea

Science domains

- Advanced Photon Source
- National Fusion Collaboratory
- HPC Europa
- TeraGrid
- WestGrid
- UC ASC Flash Center
- LEAD Project

FUTURESLAB

ARGONNE NATIONAL LABORATORY

Common complaints

- Poor connection performance
- User unfriendly
  - initial configuration difficult
  - certificates
  - networking
    - multicast
    - firewalls
- Lack of documentation

AG 3.0

- Utilize standards-based technologies
  - SSL (instead of GSITCP): Proven transport, good platform support,
  - ZSI (instead of SOAPpy): SOAP Interoperability allows development in other languages/platforms
  - Jabber (instead of custom text)
    - Mature technology
    - Integration with wide range of stand-alone (non-AG) clients
- Standardize interfaces
- Improve performance
- Improve robustness

Beyond 3.0

- Development Priorities
  - Maintain stable core
    - Continuous improvement
    - Sound foundation for developers
  - Maintain interfaces
    - Support and retain interoperability work

Beyond 3.0

- Collaboration Priorities
  - Simplify operation
  - Improve audio and video quality
  - Provide feedback on connection quality and alternatives for repair
  - Develop node tuning framework
  - Extend basic collaboration support
    - Integrate scheduling
    - Simplify venue access control

Beyond 3.0

- Collaborative Science Priorities
  - Integrate domain applications
  - Integrate instruments
  - Integrate computational resources

Questions?

Ideas for User Community Involvement

Jennifer Teig von Hoffman,
Boston University

Growth of AG Community is A Clear Success

- As discussed by Ivan Judson of ANL earlier today, discussions and arguments about what the AG should be and do are proof of AG success
- User community has had varying levels of involvement from the very beginning

Diversity of Users

- Many Types
  - Semi-technical node operators
  - Desktop users (PIG)
  - Non-technical AG participants
  - Independent developers

Diversity of Users

- Each with particular perspective, and each can bring different things
  - Beta testers? Application development? Outreach and deployment support?
  - AGDP is one of many examples of users organizing to contribute to the larger community

An Essential Conflict

- Funding agencies may or may not consider “what users want” to be a top priority for development funding
  - i.e., an AG “white board” or “voting” service might be popular, but may or may not be cutting-edge enough to be easily fundable

Strength Through Diversity

- Many are developing software for Access Grid
  - AG Toolkit has enabled and inspired many enhancements
- Do these independent developers create only what they need, or might they be interested in serving general user community needs as well? *(rhetorical!)*

Organize and Bridge

- With better organization among end-users, we can more clearly state our requirements
- With better organization among independent developers, they can more readily consider our needs

Organizing User Input

- AG user group?
- User-centric version of AGEP?
  - http://www-unix.mcs.anl.gov/fl/research/accessgrid/documentation/agep/
- *Your ideas: Examples of successful open source user involvement?*

ACCESS GRID

BOSTON UNIVERSITY

Developer Community Involvement in AG

Brian Corrie
WestGrid & Simon Fraser University

Overview

- Goal:
  - Increasing involvement of AG developer community
- Why:
  - Growing developer community
  - Growing interest in contributing to the effort
- How:
  - That is why we are here today!!!

How?

- Fostering the development of tools for AG!
  - Encourage more developers…
- Involving the AG community in the process
  - Roadmap, design, implementation

Developers and the AG

- How does it work?
  - Extensible node services and shared applications
- What do we need?
  - Better/more services?
    - Vic/Rat are showing their age…
    - Push the limits of advanced AG environment
  - Better/more shared applications
    - Need to make our meetings more effective
    - More tools, more functionality

Where are we at?

- Current status
  - Range of developers coding shared apps
    - Tens of shared apps under development (?)
  - Some developers working on node services
- Successes
  - Extensibility, some well defined APIs
    - SharedApp developer manual around for a while
    - NodeService developer manual recently released

What isn't so easy!

- Developing to the AGTK APIs
  - SharedApp API is well documented
    - Increasing number of shared apps being developed
  - Other APIs are not so well documented
    - Hard to determine what you can/can't do
      - How do we talk to the VenueServer, NodeServices, etc.
  - The good news…
    - Node Service programming manual has recently been released
    - SOAP APIs to components coming soon (VenueServer, Venues)

How?

- Developing tools for the AG
- Involving the AG community in the process

Where are we at?

- AGTK is being developed by a small team
  - Argonne has done a great job
- We now have a critical mass of AG developers
  - Very familiar with the toolkit
- How can we leverage the new AG experts?
  - Contributing to the RoadMap, Design, and Implementation

Questions

- What does Argonne want?
- What does the community want?
- How can the community contribute?

Issues

- How can the community stay informed?
  - Not a lot of information available about AG 3.0 (???)
    - Roadmap, design
  - Communication is critical!
  - Change is good, unknown change is bad…
- How can the community contribute?
  - Currently: Bugzilla, AGEP, pestering Tom et al
  - Where to from here?
    - Does the current approach work?
    - How does it get managed (open source model)?

Discussion…