Enabling Collaboration Using the Biomedical Informatics Research Network (BIRN)

BIRN
Biomedical Informatics
Research Network

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BIRN Capabilities

- BIRN's mission is to enable collaborative bioscience/biomedicine

- Capabilities:
  - share data
  - provide user and group security
  - query across disparate data sources
  - construct data processing workflows
  - collaborative infrastructure (wikis,...)

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Collaboration Model

- How do we support creation and operation of collaborations?
- VO lifecycle question
  - Identify users
  - Provision out services
  - Aggregate services
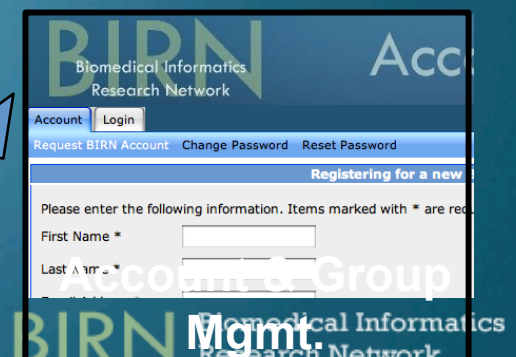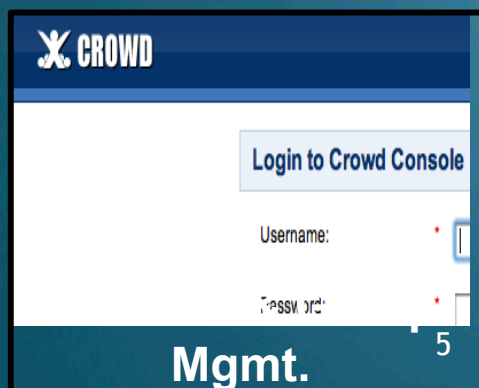- Consider the following model: collaborative groups nucleate around PI or project

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Typical Multi-site Study

Current Scenario

Wiki

User

Data Transfer
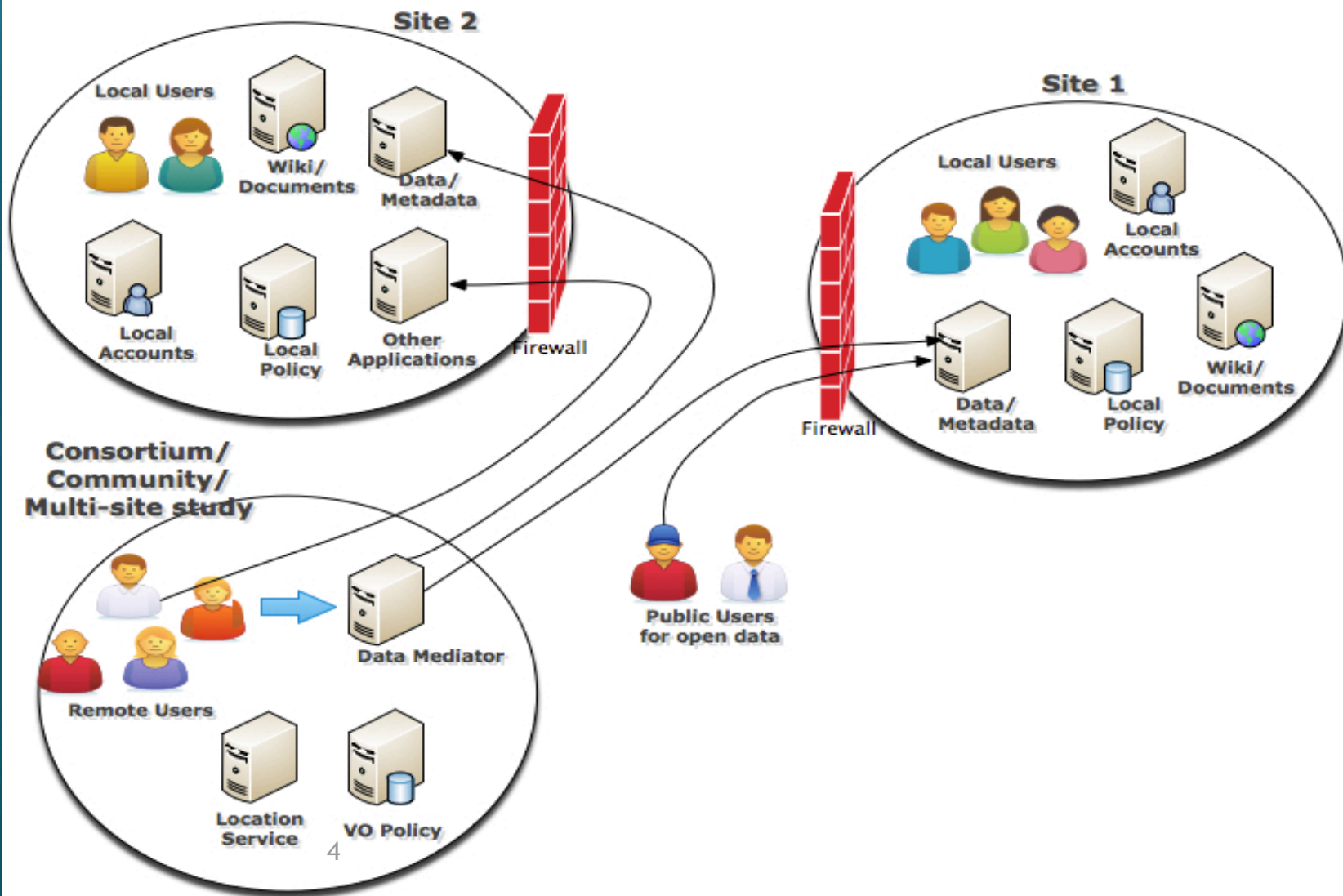
Provision accounts & groups

Provision accounts & groups

Request accounts & groups

Mgmt.

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Account & Group Mgmt.

BIRN Use Cases

- Support multiple-VOs
  - Different security and application requirements
- Support browser based access and thick clients
- Support multiple identities
  - Browser based single sign-on
  - X.509 certificate for grid-based tools
- Provision multiple applications
  - Centrally manage users and groups, and allow access to various applications

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Collaborations as Groups

- Identify project members
- Assign roles and privleges based a per group basis
- Must be "self administered"
- Must be possible to apply policy to wide range of services
  - Data, analytic, collaboration, ...

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BIRN Security

- Vet new user requests for community membership
- Provide new user identity or leverage existing
- Provide single sign-on for users
- Manage and enforce access control policy
- Manage user groups for projects within community

Requirements

- Identity Management System
  - Ability to create new accounts
  - Options to leverage existing accounts (campus account)
  - Access to X.509 certificate
- Group Management
  - Autonomous management of group
  - Configurable vetting policies per group
  - Customized registration per groups
- Single-sign on to various applications
  - Create account and groups once, use multiple applications

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GO Solution Features: Group Management

- BIRN community as a group
  - Hierarchy of groups
  - Group membership as GO profile identity
- Per group vetting
  - Polices: Automatic add of user or notification of registration authority
  - User information: customized forms to collect user information
- Interfaces:
  - Web interface for administration
  - REST API for query

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GO Solution Features: Provisioning

- Provision various applications with users and group information
- Choose set of groups to provision
  - E.g. Provision GridFTP server with FBRIN users only
- Choose identity type to provision
  - One of the identity types from the profile can be chosen
- Example: Provision GridFTP server and Confluence with users from group "FBIRN"
  - GridFTP server with DNs of users in FBIRN group in GridMap files
  - Confluence with InCommon identity of users in FBRIN group

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Sample Walk-through

- User creates a GO identity
- User requests membership to FBIRN
- FBRIN specific form collects user information
- User submits information
- Triggers an email to the FBIRN administrator
- Administrator logs into GO, approves/rejects user request

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Sample Walk-through

- Accepted user is added to FBRIN group
- User can now:
  - Log into Confluence and look at FBRIN issues
  - Obtain a short-term X.509 Certificate from GO CA.
  - Transfer data from FBIRN GridFTP server using the certificate
- User requests membership to an experiment group under FBIRN, "Phase12010"
  - Customized form and vetting process as before
  - Once accepted, user can access data on server protected by group "Phase12010"

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Upgrade Scenario

Secure access to documents

Secure access to data

Manage accounts and groups

Wiki (Confluence)

Data Transfer (Globus GridFTP)

Provision accounts and groups

Provision accounts and groups

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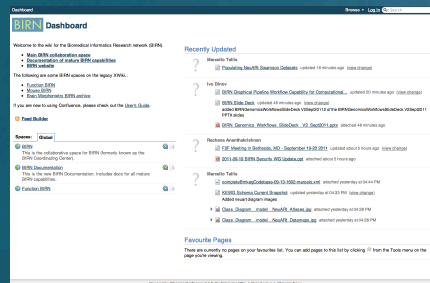
Upgrade Features

- Simplify user experience
  - Single username/password and group management
  - Consolidated web presence for various user interfaces
- Security standards compliance
  - Users can use Campus credentials (planned)
  - Use standard client tools like browsers
- Autonomous community management
  - Manage users and groups, policies without blocking on service administrator
  - Enforce community specific policies

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Group Features

- Vetting policy
  - Auto approval, administrator approval
  - Information needed for approval processing
  - Customizable notifications to administrators and users
- Visibility policy
  - Of user, group, group membership

Collaboration Management

BIRN Customized Web Presence

BIRN Community Admission Policy

BIRN Community Policy

BIRN Dashboard

Create New Group

https://birndev.globuscs.info/group/admin/CreateGroup#id=94b7791e-4de1-11e1-96b8-12313b0834f2

WebHome < E...t < CI Wiki   Portecle: Home   safari   HPC in the Cloud: FreeConference   BIRN JIRA   GO User Services   Globus Confluence   Adobe Connect   BIRN Wiki

BIRN Biomedical Informatics Research Network **ACCESS Group Management**
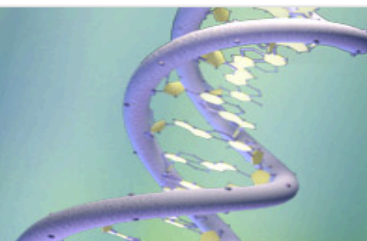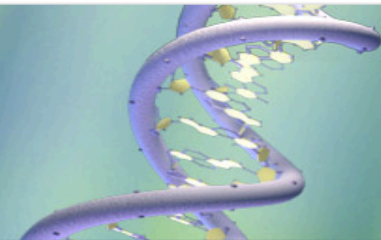
Dashboard | Browse Groups | Manage Groups | Efdisk's Profile | Sign Out

Create New Group

Name Group > Review and Set Policies > Review Settings and Activate

Name Group

Group Belongs To   BIRNCommunity   Change
                           FBIRN

Group Name   University of Chicago

Description

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Group of FBIRN users at University of Chicago

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Create Group   Cancel

Configure Group

Configure New Group

Name Group > Review and Set Policies > Review Settings and Activate

Set Policies

Group Visibility
- ◉ Public (visible to all)
- ○ BIRN Community Members only (visible to all)
- ○ Visible within parent group (**FBIRN**)
- ○ Private (by invitation only)

Member Name Visibility
- ◉ Public (visible to all who can view group)
- ○ Visible within parent group (**FBIRN**)
- ○ Visible to this group's members only
- ○ Visible to this group's admins only

Required Fields to Join Group
Pre-selected checkboxes indicate that this field is required by the parent group.
- ☑ User Name
- ☑ Full Name
- ☑ E-Mail Address
- ☑ Current Project Name
- ☑ Institution
- ☑ Organization
- ☐ Address
- ☐ City
- ☐ State
- ☐ Zip Code
- ☑ Phone

Who Can Invite New Members
- ◉ Any member of BIRN Community
- ○ This group's members and members of **FBIRN**
- ○ This group's members only
- ○ Admin only

Who can request membership?
- ◉ Anybody can request membership to this group.
- ○ Any member of the BIRNCommunity can request membership.
- ○ Only members of **FBIRN** can request membership.
- ○ Requests to join are disabled, membership to this group is by invitation only.

Approvals
- ◉ Auto approve member once all policies are met
- ○ auto approve admin invited member once all policies are met, others require admin approval
- ○ admin approval required

Continue   Finish Later

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Summary

- Pushing on managing collaboration lifecycles
  - Group management, application provisioning
- Hosted services as a critical part of the infrastructure
- Focus on self-management services that enable collaborations to organize and provision

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