

Enabling Collaboration Using the Biomedical Informatics Research Network (BIRN)



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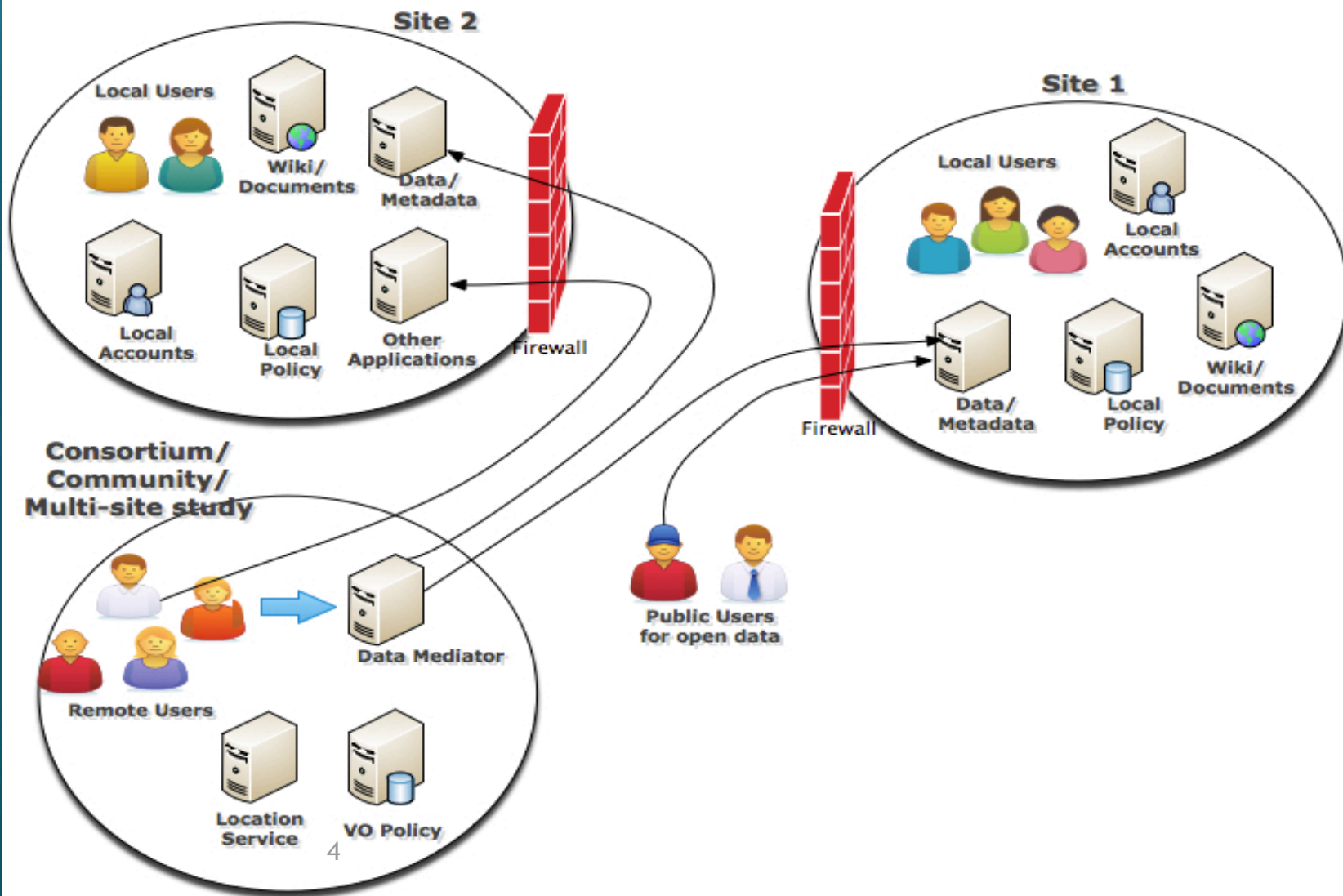
BIRN Capabilities

- 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,...)

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

Typical Multi-site Study



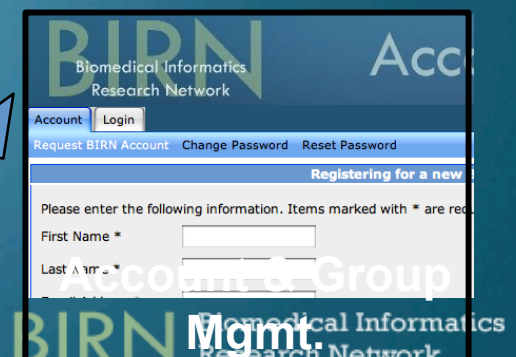
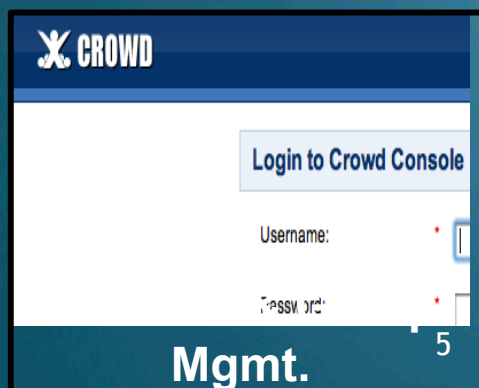
Current Scenario



Provision
accounts &
groups

Provision
accounts &
groups

Request accounts
& groups



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

Collaborations as Groups

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

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

GO Solution Features: Group Management

- BIRN community as a group
 - Hierarchy of groups
 - Group membership as GO profile identity
- Per group vetting
 - Policies: 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

GO Solution Features: Provisioning

- Provision various applications with users and group information
- Choose set of groups to provision
 - E.g. Provision GridFTP server with FBIRN 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 FBIRN group

Sample Walk-through

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

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”

Upgrade Scenario

Secure access to documents

Secure access to data

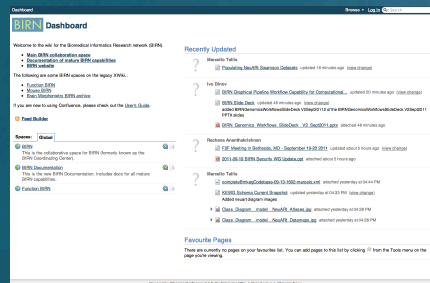
Manage accounts and groups



Data Transfer
(Globus GridFTP)

Provision
accounts and
groups

Provision
accounts and
groups



Wiki (Confluence)



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

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

[Dashboard](#)[Browse Groups](#)[My Profile](#)

efdisk

[Sign Out](#)

Browse Groups

- [-] BIRNCommunity
 - [-] Brain Morphometry
 - T1-weighted MR-based brain mo...
 - Deformation-based morphometry
 - Voxel-based morphometry
 - Taub Institute
 - [-] Function BIRN
 - FBIRN Best Practices Committee
 - Federated Informatics Research ...
 - System Administrators
 - [-] Non Human Primate Research
 - New England National Primate R...
 - California National Primate Rese...
 - Wisconsin National Primate Res...
 - Wake Forest University Primate ...
 - [-] Caribbean Primate Research Ce...
 - The Laboratory of Primate Mo...
 - Sabana Seca
 - The Virology Laboratory
 - Cayo Santiago
 - National Center for Research Re...
 - Southwest National Primate Res...



Browse Groups

Browse and join groups in the BIRNCommunity



My Profile

View and change your account settings, including contact information and security credentials

In the Spotlight

Welcome!

Welcome to the new BIRNCommunity experience, while we are in development please forward any issues or suggestions to ranantha@mcs.anl.gov.

Placeholder

This is data that would come from the BIRNCommunity.org site's own news feed which we hope to implement shortly.

BIRN Customized Web Presence

SignUp | BIRNCommunity

https://birndev.globuscs.info/SignUp

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
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Research Network

ACCESS Group Management

[Browse Groups](#) | [Sign Up](#) | [Sign In](#)

Sign Up...

Already a member? [Sign-In.](#)

BIRN has partnered with Globus Online to provide us with our community platform and tools. If you already have a Globus Online account [click here.](#)

Full Name Rachana Ananthakrishnan
Email ranantha@mcs.anl.gov
Username [rachanabirn4](#)
Password Very Weak

Confirm Password

Terms of Service Last Updated: 10-Nov-2010

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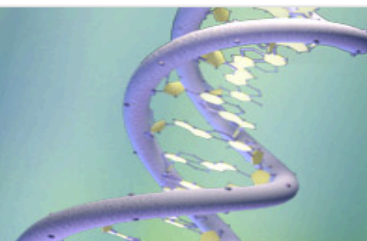
BIRN Community Admission

Policy

Join Group | Group | BIRNCommunity
https://birndev.globuscs.info/group/joinGroup
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ACCESS Group Management



[Dashboard](#) | [Browse Groups](#) | [Rachanabirn4's Profile](#) | [Sign Out](#)

Join BIRNCommunity

| | |
|-----------------------------|---|
| Full Name | Rachana Ananthakrishnan |
| E-Mail Address | ranantha@mcs.anl.gov |
| Current Project | <input type="text" value="FBIRN"/> |
| Contact Phone Number | <input type="text" value="123456789"/> |
| Organization | <input type="text" value="University of Chicago"/> |
| Institution | <input type="text" value="Computational Institute"/> |
| | <input type="button" value="Submit"/> <input type="button" value="cancel"/> |

BIRN Community Policy


Join Group | Group | BIRNCommunity

https://birndev.globuscs.info/group/JoinGroup

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 | Rachanabirn4's Profile | Sign Out

 Email validation is required before your request can be accepted.

Check your email inbox and proceed to the location provided, and we'll have you on your way.


Can't find your validation email?

Confirm your email address:

[Resend](#)

20

BIRN is supported by NIH grants 1U24-RR025736, U24-RR021992, U24-RR021760 and by the Collaborative Tools Support Network Award 1U24-RR026057-01.

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BIRN Dashboard

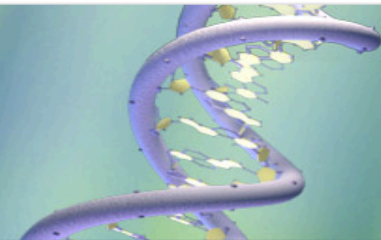
Dashboard | BIRNCommunity

https://birndev.globuscs.info/dashboard/Main

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My Groups

BIRNCommunity
CONTACTBIRN-36
Mouse BIRN
FBIRN
Duke
UC Irvine



Browse Groups

Browse and join groups in the BIRNCommunity



My Account

View and change your account settings, including contact information and security credentials

In the Spotlight

LONI Pipeline Workshop with BIRN Genomics capability in Cincinnati on March 2012 An upcoming workshop will be held in Cincinnati in March that will include the BIRN Genomics Graphical Pipeline capability. For [More ...](#)

BIRN paper on Genomics Pipeline most popular on journal site A paper published in the journal BMC Bioinformatics by a team of BIRN researchers led by Ivo D. Dinov of UCLA and Fabio [More ...](#)

[More News](#)

Create New Group

[Administrative](#) [Create Group Page](#) | [Admin](#) | [Groups](#) | [BIRNCommunity](#)

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

[WebHome](#) < [Eext](#) < [CI Wiki](#) [Portecle: Home](#) [safari](#) [HPC in the Cloud:](#) [FreeConference](#) [BIRN JIRA](#) [GO User Services](#) [Globus Confluence](#) [Adobe Connect](#) [BIRN Wiki](#)



Biomedical Informatics
Research Network

ACCESS Group Management

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 [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**
FBIRN

Change

| | |
|------------|-----------------------|
| Group Name | University of Chicago |
|------------|-----------------------|

Description

B *I* U                

Group of FBIRN users at University of Chicago

22

Create Group

Cancel

Configure Group

[Dashboard](#) | [Browse Groups](#) | [Manage Groups](#) | [Efdisk's Profile](#) | [Sign Out](#)

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](#)

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