INFED
INFLIBNET Access Management Federation
http://parichay.inflibnet.ac.in

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INFLIBNET Centre
(An Inter University Centre of University Grants Commission)
Infocity, Gandhinagar 382007
# Coverage

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About INFLIBNET Centre

Information and Library Network Centre.

Established in 1991 as a UGC’s Project, Recognized as an Inter-University Centre of the UGC in 1996.

Just shifted to its own building at at InfoCity Gandhinagar. Gujarat
Mission and Vision

Create a virtual network of people and resources in academic institutions

Provide seamless, reliable and ubiquitous access to scholarly, peer-reviewed electronic resources in all education institutions

Build and strengthen ICT infrastructure in educational institutions with value-added services.

Develop secure and convenient access management systems enabling users to access information from anywhere, anytime.

Develop resource selection guides and online tutorials for effective delivery and usage of e-resources.

Facilitate creation of open access digital repositories in every educational institution
## At a Glance

### Universities / Institutes

<table>
<thead>
<tr>
<th>Activity</th>
<th>Content</th>
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<tr>
<td>e-Book</td>
<td>80,000</td>
</tr>
<tr>
<td>e-Journal: UGC-Infonet</td>
<td>7,500</td>
</tr>
<tr>
<td>e-Journal: NLIST</td>
<td>3,800</td>
</tr>
<tr>
<td>Full-text Theses</td>
<td>3,500</td>
</tr>
<tr>
<td>Expert Database</td>
<td>15,500</td>
</tr>
<tr>
<td>e-Resource-Subject Gateway</td>
<td>1,800</td>
</tr>
<tr>
<td>Open Journal: OJAS</td>
<td>13</td>
</tr>
<tr>
<td>Bibliographic Database</td>
<td>13</td>
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</table>

### Colleges / Institutes

- Shodhganga (Full-text Theses): 100+
- UGC-Infonet (Internet Connection): 182
- UGC Digital Library Consortium: 320
- Book Database: 145
- Serial Database: 238
- Theses Database: 245
- NLIST: e-Resources to Colleges: 3100+
Connectivity

Prof. Yash Pal conceived the idea of connecting Universities through a common network way back in 1991, well ahead of its time. That paved the way for National Knowledge Network and Others.

- **UGC-INFONET Internet Connectivity**
  - Provided Internet connectivity (10 Mbps) to 182 universities under the purview of the UGC. All universities migrated to NKN. Modified UGC-INFONET Proposed.

- **National Knowledge Network / NME-ICT**
  - 1 Gbps MPLS Network Connectivity + 100 Mbps Internet connectivity to all universities and 10 Mbps (broadband) to Colleges

- **Reformatted UGC-INFONET**
  - UGC-INFONET Laboratories in Universities
  - Video Conferencing Facilities
  - Strengthened Network Infrastructure
• Provides access to 7,500 journals and 12 bibliographic databases to the 320 universities (Including 200 core members and 118 Associate Members)

• Provides access to 3,800+ electronic journals and 80,000 electronic books to Govt.-aided and non-aided colleges. 3100+ colleges have already joined.
UGC-InfoNet Offerings

7,500 electronic journals (Current + back files) from 20 publishers including:

- University Presses
- Scholarly Societies
- Commercial Publishers
- Aggregators

11 bibliographic databases

- SciFinder Scholar (1907+)
- MathSciNet (1940+)
- Web of Science (through N-LIST)

<table>
<thead>
<tr>
<th>Publisher</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>OuP</td>
<td>Oxford University Press</td>
</tr>
<tr>
<td>CuP</td>
<td>Cambridge University Press</td>
</tr>
<tr>
<td>ACS</td>
<td>American Chemical Society</td>
</tr>
<tr>
<td>AIP</td>
<td>American Institute of Physics</td>
</tr>
<tr>
<td>APS</td>
<td>American Physical Society</td>
</tr>
<tr>
<td>AR</td>
<td>Annual Reviews</td>
</tr>
<tr>
<td>IoP</td>
<td>Institute of Physics</td>
</tr>
<tr>
<td>SIAM</td>
<td>Society for Industrial and Applied Mathematics</td>
</tr>
<tr>
<td>RSC</td>
<td>Royal Society of Chemistry</td>
</tr>
<tr>
<td>EPW</td>
<td>Economical and Political Weekly</td>
</tr>
</tbody>
</table>
N-LIST Offerings

3,800 e-Journal and 80,000+ books for Govt. / Govt. aided and non-aided colleges. 3100+ colleges are registered.

3,800 electronic journals
- University Presses
- Scholarly Societies
- Aggregators

One bibliographic database
- MathSciNet (1940+)

80,000+ electronic books
- E-brary (73,000)
- Cambridge Univ. Press (1000+ titles)
- McGraw Hill (1308 titles)
- NetLibrary (986)
- Oxford Scholarship Online (902)
- Hindustan Books (65+ titles)
- Institute of South East Asian Studies Books (382+ titles)
- Springer eBooks (1500+ titles)
- Taylor & Francis eBooks (1500+ titles)
- More ebooks are being added

3145 Colleges 4,44,000+ Users
Current Situation

E-Journal Consortia
- 160 Universities
- 69 Associate Members
- 4 IUCs + Others
- Access is limited within Institutional Campus
  - Reason: IP based authentication, impractical to have user id and password for all users and share it across resource providers

N-LIST
- 6000+6000 Colleges (3100+ registered so far)
- 4.44+ Lakh Users
- Access is through EZProxy Software
  - All requests are being served through single server. Accounts are being created and passed on to colleges
In nut shell..

Access is restricted within the confine of a given university campus.

Although, usage of e-resources is satisfactory, access to e-resources are restricted to university campuses due to lack of proper authentication mechanism.

In case of NLIST, access is through a single server using proxy.
Ideally....

Ideally user should be to access e-resources from his / her campus, home or even while travelling

Solution requires setting-up of proper user authentication and access control mechanism ensuring trust relationship between publisher, identity providing agency and the user institution
Need of Federation

A formal federation is required as trusted interface between the institutions and publishers / service providers.

INFLIBNET Access Management Federation (INFED) is trusted entity between all the parties, including member colleges, universities and publishers.
How Federation(INFED too) Works..

The user accesses a protected resource.

The resource redirects the user to the WAYF, so that he/she can select his home organization. Depending on the policy of the federation, the user may be able to record this preference, perhaps in a cookie, for future use.

The user is then directed to his home organization, which sends him to the authentication system at his organization.

The user authenticates himself, by whatever means his organization deems appropriate for this federation.

After successful authentication, a one-time handle or session identifier is generated for this user session, and the user is returned to the resource.

The resource uses the handle to request attribute information from the Identity Provider for this user.

The organization allows or denies the attribute information to be made available to this resource using the Attribute Release policy.

Based on the attribute information made available, the resource then allows or denies the user access to the resource.
How this stuff works?

1. User will attempt to Access E-Resource
2. Asks for validation
3. Will choose INFED and Identity Provider
4. Will Redirect to corresponding IDP
5. Will Enter Credentials (emailid/password)
6. Will Supply Attribute of User to SP and set a cookie in users browser
7. Will allow access to user based on credential
Demo : resource page
Demo : Federation Selection

Select an identity provider

If you are an Athens user, please proceed to the Athens Login page.

If the link above does not work, you may log in here Athens Login page (beta)

Otherwise, select an identity provider.

The Service you are trying to reach requires that you authenticate with your home institution, please select it from the list below.

Choose from a list:

<table>
<thead>
<tr>
<th>Federation</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Franco/French Federation</td>
<td>India/Indian Federation</td>
</tr>
<tr>
<td>Germany/German Federation</td>
<td>Japanese Federation</td>
</tr>
<tr>
<td>India/Indian Federation</td>
<td>Portuguese Federation</td>
</tr>
<tr>
<td>Japan/Japanese Federation</td>
<td>Portugal/RCTsai Portuguese Federation</td>
</tr>
<tr>
<td>Japan/Japanese Federation</td>
<td>Spain/Spanish Federation</td>
</tr>
<tr>
<td>Japan/Japanese Federation</td>
<td>Switzerland/SWITCHai Federation</td>
</tr>
<tr>
<td>Japan/Japanese Federation</td>
<td>UK/UK Federation</td>
</tr>
<tr>
<td>Japan/Japanese Federation</td>
<td>US/InCommon Federation</td>
</tr>
<tr>
<td>Japan/Japanese Federation</td>
<td>All Sites</td>
</tr>
</tbody>
</table>

Select

Remember for session

or
Demo : IDP Login

INFLIBNET Access Management Federation

- Home
- About INFED
- Objectives
- Why INFED?
- Shibboleth
- Membership
- Contact Us

Parichay Login to Service Provider : https://shibboleth.cambridge.org/shibboleth-sp

Parichay Username: yatrik@inlibnet.ac.in
Parichay Password: *******

Login
Demo : Attribute Release (Back-end Process)

- Cache-Control is: max-age=0
- referer is: https://parichay.inflibnet.ac.in/idp/profile/SAML2/Redirect/SSO?
  SAMLRequest=fZJfT8IwFMW%2FytJ31m0wwYYtmfAgCQph6IMvptvuWJPSzt5O5dtbGCo%2B;
- DNT is: 1
- Shib-Session-ID is: _25a4acd0299637a6de7fe629ff015e21
- Shib-Session-Index is: 478f7aefa24234638b18518864d39aae3f408763681103318ba75a50fff14c61
- Shib-Identity-Provider is: https://parichay.inflibnet.ac.in/idp/shibboleth
- Shib-Authentication-Instant is: 2013-02-09T08:54:24.794Z
- Shib-AuthnContext-Class is: urn:oasis:names:tc:SAML:2.0:ac:classes:PasswordProtectedTransport
- entitlement is: http://nlist.inflibnet.ac.in/nlistarts
- persistent-id is: https://parichay.inflibnet.ac.in/idp/shibboleth!https://sp.testshib.org/shibboleth-sp!QxGh0Nx2DFGIDeLzWOUqw9qSWpg=
- orgunit-dn is: NLIST
- org-dn is: 56_INFLIBNET Centre
- Shib-Application-ID is: default
- REMOTE_USER is: https://parichay.inflibnet.ac.in/idp/shibboleth!https://sp.testshib.org/shibboleth-sp!QxGh0Nx2DFGIDeLzWOUqw9qSWpg=
The Great Indian Implementation Challenge

Last FIVE Years:

- Universities were introduced “bulk” e-resources 8 year back, “e-resources” culture got “populated” 4-5 years back
- Colleges were introduced e-resources under NLIST
- Universities got/getting 100 Mbps through NKN (Earlier 2 to 10Mbps)
- Colleges are having connectivity (under NME-ICT)
- Internet Penetration

India among fastest growing Internet markets: Study

NEW DELHI: India is among the top three fastest growing Internet markets in the world, a study by industry body Assocham and ComScore has said.

"Among the Dric nations, India has been the fastest growing market adding over 18 million Internet users and growing at an annual rate of 41 per cent,” the study said.
Challenges....

High internet penetration implies user will/should not restrict to access devices at institution

“Shibboleth” or “Federated Access” culture is still in incubation.

Indian Higher Education system is very “huge”

Most of the Universities/Colleges doesn’t have email id as “student@university.ac.in”, Even don’t have well managed “LDAP” or “Active Directory” kind of structure.

Universities/Colleges don’t have skill sets, resources and infrastructure to establish and manage “Identity Provider”
Approach by INFED (Hands-Off)

IDPs cannot be created “overnight” so immediately established common IDP per consortia (“NLIST”, “UGC-Infonet DLC”), where in user from each institution can be identified uniquely (as required by SP), and the ball can be rolled.

Encourage Universities/Institution to have their own IDP and Advocacy

In case they are not capable to do that on their own, Help them in installation, establishment and hosting.

Once they are ready with their IDP, give them their stuff (Migrate data from common IDP to Institutional IDP)

(Presently ‘part-time @Leisure’ working on creation of virtual image for “Configurable IDP”)
What about ‘Non-Shibboleth’ Compliant Resources

Presently we are using EZProxy, Which will be configured for Shibboleth based authentication.

Ezproxy has to be aware of resources that are Shib-enabled.

For these Shib-enabled resources, EZproxy can be configured to hand off to Shibboleth for authentication and authorization, rather than proxy the user's entire session.

Non Shib Resources can be accessed through EZProxy
Customizations Done.

- Created separate User Interface for user registration
- Customized attribute release in a way that a single IDP can serve for multiple organizations
- Re-written entire JAAS (Java Authentication and Authorization Service) Module to deal with RDBMS based user authentication
- Configured Shibboleth IDP to release attributes from RDBMS rather than LDAP.
How do Users will Get Registered?

INFLIBNET is having one Coordinator at each Institute

Coordinator will have Name, email id, role(faculty/student), Department details of eligible users

Coordinator will send(Upload), Name, Email, Role, Department to INFLIBNET

Continued
User Registration....... 

INFLIBNET will send Email Link to users for Confirming registration and Creating Password

Users will register at INFLIBNET with encrypted password created by themselves (Users can do Direct Registration but needs to be approved by Univ. Officials)

INFLIBNET will have Database of all registered Users
What INFLIBNET will have?

Database of Users

- Name
- Email id
- Password
- Role
- Contact Details
- Department
- Institute Name and Code
- Validity (Period)
Interface: Admin User Creation
Interface: Admin Login
Interface : User Creation (By Institute Admin)
Metadata Exchange

Each entity's (IDP or SP) metadata is registered once with the INFED

Aggregated metadata for all registered entities is re-published by the federation operator so that it can be consumed by all participating entities.

This means that each entity only exchanges metadata with the federation operator, but gains the same benefit as from exchanging metadata with each participant.

INFED Metadata is available at http://parichay.inflibnet.ac.in/metadata/infed.xml
## Attribute Release

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>eduPersonTargetedID</td>
<td>A persistent, non-reassigned, privacy-preserving identifier for a user shared between an identity provider and service provider</td>
</tr>
<tr>
<td>eduPersonEntitlement</td>
<td>URI that indicates a set of rights to specific resources</td>
</tr>
<tr>
<td>eduPersonScopedAffiliation</td>
<td>Specifies the person's affiliation within a particular security domain in broad categories such as student, faculty, staff etc. (eg. <a href="mailto:student@nlist.inflibnet.ac.in">student@nlist.inflibnet.ac.in</a>)</td>
</tr>
<tr>
<td>eduPersonOrgDN</td>
<td>Distinguished name (DN) representing the institution with which the person is associated.</td>
</tr>
</tbody>
</table>

Attribute release can be customised as per Service Provider’s Requirement

INFED is concerned about privacy of users, “Recommendations on use of Personal Data” is available.
Federation Documents

Federation Operator Procedures
November 2011
Version 1.0
http://parichay.inflibnet.ac.in/documents/operator_procedures.pdf

Recommendations for use of Personal Data
November 2011
Version 1.0
http://parichay.inflibnet.ac.in/documents/use_of_personal_data.pdf

Rules of Membership
November 2011
Version 1.0
http://parichay.inflibnet.ac.in/INFED%20Membership%20Form.pdf
Who Can Join INFED

The INFED currently has the following four classes of participants are eligible to join the federation. All institutions have to apply for the membership of INFED on prescribed application form:

- **Universities**: All Govt. / Govt.-aided universities covered under Section 12(B) and 2 (F) Section of the UGC Act, 1956 and all Inter-University Centre (IUCs) of the UGC that are eligible to get access to e-resources through the UGC-INFONET Digital Library Consortium are eligible to participate of the INFED.

- **Colleges**: All Govt. / Govt.-aided colleges (6,000+) covered under 12(B) and 2(F) Section of the UGC Act, 1956 that are eligible to get access to e-resources through the National Library and Information Infrastructure for Scholarly Content (N-LIST) are eligible to participate in INFED.

- **Private Universities / Colleges and Other Institutions**: The Federation may allow private universities, private colleges and other organizations to participate in the Federation with approval of its National Steering Committee.

- **Publishers**: All publishers providing access to e-resources under the UGCINFONET Digital Library Consortium or NLIST Programme are member of the INFED by default.
### Membership Fees (?)

#### Colleges and Associate Members of the UGC-Infonet Digital Library Consortium

- The Fee for INFED is in-built into the Membership Fee being charged from colleges for N-LIST Programme and from Associate Members of the UGC-Infonet Digital Library Consortium. As such, colleges and Associate Members of the UGC-Infonet Digital Library Consortium do not have to pay any additional fee for joining INFED.

#### Core Members of the UGC Infonet Digital Library Consortium

- INFED does not propose to charge any fee from the core member universities of the UGC-Infonet Digital Library Consortium. However, as the workload and membership database increases for core members, INFED may propose a nominal membership fee for core member universities.

#### Other Institutions

- Membership for other institutions would be opened only after complete implementation of INFED for all publishers. Charges for other institutions would be announced at a later date.

#### Publishers

- No fee will be charged from publishers providing access to their e-resources to the universities and colleges under UGC-INFONET Digital Library Consortium and N-LIST programme respectively.
How to Join INFED

Universities / colleges falling into categories mentioned may submit their application along with a signed participation agreement. The federation may request additional information with regard to participating institution.

Participating universities and colleges are required to assign its officers and / or faculty as its Administrative and Technical contacts to the INFED. These officers will be responsible for maintaining the database of authorized users for his / her organization. These officer would be responsible for adding new authorized users and deleting users that are no longer authorized, i.e. retired staff and faculty and students who have passed-out or rusticated.

Universities / Colleges covered under the 12(B) and 12(F) Section of the UGC Act would be accepted as members of the INFED on receipt of application along with signed agreement along with a photocopy of notification issued by the UGC about 12(B) and 2 (F) status of the university. Application from other institutions / research organizations would be examined and accepted on case to case basis.
Present Status.

- Installation and Initial Testing of Concept
- Testing With External Service Provider
- User Creation Interface
- Integration of Common IDP with RDBMS Data
- Release of Attributes as per Service Provider’s Requirement
- Establishment of Federation successfully tested with Royal Society of Chemistry, Cambridge University Press (Others in Progress)
- Conversion of present EZProxy user accounts (NLIST) to Shibboleth IDP
- Enveloping more institutions. Collaboration with Other Federation, Advocacy, Signing of Agreement with present member Institution
THANK YOU!