

# eduGAIN

## supporting Research and Education Services

Today, online services are crucial for research and education. This can be for e-learning, teaching and conferencing, scientific collaboration, analysing and sharing data, accessing journals and libraries etc. Access to these resources is often controlled with a user name and password, allowing a user to be authenticated (prove who they are) and authorised (allowing access to something). While enabling easy and convenient access for users is a key part of delivering a service, service providers do not want the “headaches” associated with issuing and supporting passwords for users, and the user does not want yet another password. Managing multiple passwords is difficult for users and service providers don’t want to have to manage potentially thousands of users’ details.

To solve this, identity federations were established to allow participating institutions to

authenticate users on behalf of participating service providers. Reducing the overhead on service providers and allowing users to reduce the number of passwords they have to manage. However, to interconnect federations requires bilateral agreements between lots of service and identity providers.

**eduGAIN** provides an efficient, flexible way for participating institutions, and their affiliated users and services, to interconnect authentication and authorisation infrastructures.

With just one trusted identity provided by user’s institution, and as part of an identity federation participating in eduGAIN, users can access services from other participating federations.

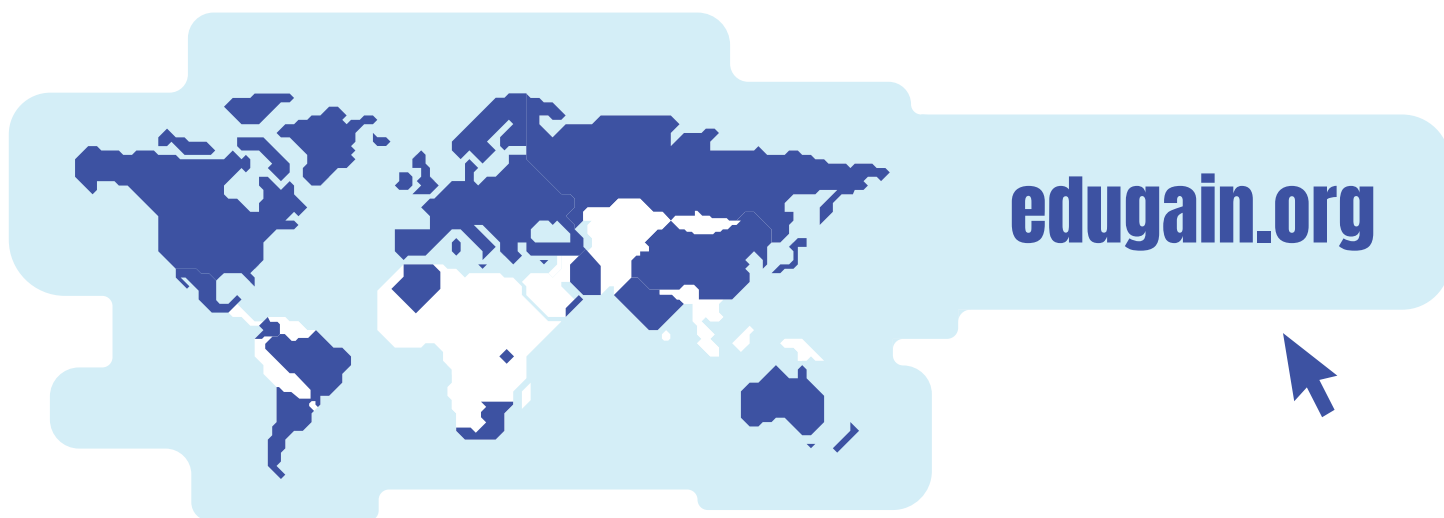
R&E identity federations are typically deployed on a national level and use different architectures, systems and policies. eduGAIN enables identity

federations to interconnect, so that participating institutions and services can collaborate without the need to establish individual bilateral connections.

Users, services and organisations who need to easily and securely manage access to services benefit from eduGAIN. This is achieved through identity federations enabling the reuse of their existing identity systems, across borders, by conforming to a set of standard guidelines, avoiding the need to make many individual agreements with service providers.

eduGAIN is a global service. Around the world there are more than 70 federations participating in or in the process of joining eduGAIN, with more than 4,200 identity providers and 3,200 service providers. eduGAIN now supports nearly 30 million students, staff and researchers around the world.

### eduGAIN WORLDWIDE



**70+**  
FEDERATIONS

**>4.200**  
IDENTITY PROVIDERS

**>3.200**  
SERVICE PROVIDERS

**35M**  
AUTHENTIFICATIONS  
PER WEEK (est)




**30M**  
USERS (est)

# Who is eduGAIN for?

eduGAIN provides a range of benefits for organisations and individuals who wish to access or share services and data.

## SERVICE PROVIDERS

Joining an identity federation participating in eduGAIN offers Service Providers the ability to:

-  Grow your audience by making your service available to users around the world
-  Lower costs per user – your audience grows without increasing costs for maintenance of users' credentials
-  eduGAIN works via the SAML protocol allowing a wide range of authentication methods to be used

## IDENTITY PROVIDERS

Joining an eduGAIN federated identity federation offers:

-  More services to your users – enables access to a wider range of national and international services
-  No extra administrative burden if you are already participating in an identity federation
-  Reduction in cost and effort by reducing the need for bilateral agreements with service providers

## USERS - IDENTITY HOLDERS

As a Student, Researcher or member of Staff, being able to use eduGAIN is invaluable:

-  One digital identity for all services connected through eduGAIN
-  Securely access a wider range of national and international services using your institutional id and password
-  Because your username and password are never shared you can be confident your personal data is safe

## Key concepts

Many organisations use **Authentication and Authorisation Infrastructures** (AAs) to build a trusted environment where users can be identified using a single identity. The need for user identity to cross borders between organisations and services, lead to the creation of federated identity environments.

Home organisations (e.g. a university, research institute) register users by assigning a digital identity. They also operate an **Identity Provider** (IdP), e.g. university, and are able to authenticate their users and provide a limited set of attributes that characterise the user in a given context. **Service Providers** (SP), e.g.

libraries, delegate authentication to Identity Providers in order to control access to the resources.

An **Identity Federation** is a group of Identity and Service Providers that sign up to an agreed set of policies for exchanging information about users and resources. There are many Research and Education identity federations around the globe and usually with national coverage.

**eduGAIN interconnects** identity federations around the world, simplifying access to content, services and resources for the global research and education community. The eduGAIN technology involves a "**metadata service**", which regularly retrieves and aggregates information from participating federations about Service and Identity Providers, and makes this information available to federations. eduGAIN coordinates necessary elements of the federations' technical infrastructure and provides a policy framework controlling the exchange of this information between Identity Federations.

SP = Service Provider  
IdP = Identity Provider  
MDS = Metadata Service

