

# Bootstrapping NREN Identity Federations and the eduroam Confederation in Africa

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# Agenda

- eduroam Overview
- African eduroam Confederation
- Regional Proxy Server (RPS)
- Switchboard

Background – why together makes sense

Update on the African eduroam Regional Proxy Server (RPS),  
growth of national roaming operators (NROs) and



## eduroam (education roaming)

- Global (wireless) roaming service for users in research & higher education
- Provides researchers, teachers, and students easy and secure Internet connectivity across campus and when visiting other participating institutions
- User authentication performed by home organisation - Authorization to access Internet handled by visited organisation
- Hierarchical Stack
  - Local Level – Service provided by institution (University, Research Lab)
  - National Level – Federation operated by National Roaming Operator (NRO, usually the NREN)
  - Regional/Global Level – Confederations run by regional REN (AfREN, GEANT)

## Regional REN

Regional Proxy  
for Africa



## National REN | NRO

Federation Proxy  
for .tg



Federation Proxy  
for .gh



## Institution

AUTHORISATION  
Service Provider



Identity Provider  
for univ-lome.tg



User Directory  
LDAP, AD, SQL



# African eduroam Confederation

# Confederation | Motivation

- African Federations connected directly to European Top Level RADIUS
- Intra-Continental Traffic travelled via Europe
- Regional RENs provided assistance and training to NRENs, but were dependent on European Operations Team for technical implementation
- Frustrating role as middleman
- Bring visibility to the eduroam activities in Africa
- Provide a vehicle to coordinate the continental efforts and speak as one voice

## Confederation | Current State

- Initial meeting at UbuntuNet-Connect 2017, idea was well received
- Representative from each region in the eduroam GeGC (Global eduroam Governance Committee)
- Joint Support across the continent under the AfREN umbrella
- <http://eduroam.africa> reserved for future use
- Informal; Community approach; No policy and constitution yet
- Setup and operation of Regional Proxy Server (RPS)



# Regional Proxy Server African RPS

## African RPS | Pilot Phase

- Up and running as a (production-level) pilot since September 2017
- Instances running in WACREN (Lagos) and UbuntuNet Alliance (Kampala, Cape Town) region
- Fail-over, Backup
- Shorter response times thanks to proximity
- More to follow: An instance in every PoP
- Being the technical (as well as support) proxy between African NRENs and global eduroam activities facilitates deployment and support

## RPS | Statistics

- Ten NRENs are connecting through the African RPS
- UbuntuNet: Burundi, Ethiopia, Malawi, Madagascar, Tanzania, Zambia, Zimbabwe
- WACREN: Benin, Bukina Faso, Cote d'Ivoire, Ghana, Mali, Nigeria, Sirerra Leone, Togo,
- A few thousand authentication requests a day
- Mostly outgoing to Europe, US and South Africa
- Central logging and monitoring infrastructure
- Troubleshooting through the whole stack: IdP, FLR & RPS

# Switchboard

# Switchboard – Motivation

- Supply metadata to global eduroam database
- Statistics, Monitoring, CAT (Configuration Assistant Tool) & eduroam Map
- Simplify management of federations by the NRO
- Auto-generate configuration files for IdP
- Automatically announce changes throughout the stack

## Switchboard – Current State

- Beta version is live
- Publish federation metadata to global eduroam database
- Work on additional features is ongoing
- Integrate feedback from pilot federations
- TERNET/Tanzania | ZAMREN/Zambia | ZIMREN/Zimbabwe
- Interested to participate? Get in touch

# eduID.africa

# eduID.africa

- eduID: Federated Identity Management solution for accessing web application using Single Sign-On (SSO)
- WACREN and UbuntuNet Alliance licensed a solution that allows the deployment of an IdP in less than 5 minutes
- Currently working on adding some missing features
  - Connection to existing User Directories: LDAP, Database, Active Directory
  - Closer integration with Federation management application
  - Simplify process to join eduGAIN



# SAML Identity Provider as a Service

Easy. Secured. Trusted. Inexpensive.

Get started for free now

## READY IN FIVE MINUTES

Your interoperable and secure SAML Identity Provider is just a few clicks away! No infrastructure or SAML expertise is required.

## EASY ADMINISTRATION

You get a great UI for managing your users, we do all boring SAML stuff.

## COMPATIBILITY

Integrate with your national identity federation by using the latest standards and recommendations.

## LOW FEES

You pay based on the number of users actually using the service. No per-login fee. Reduced price is available for educational and research institutes. With low usage it is **absolutely free**.

## How to set up an Identity Provider?



eduGAIN

# eduGAIN – enabling worldwide access

eduGAIN allows students and researchers to securely access a world of educational resources using a single sign-on.

[Find out More](#)

The eduGAIN interfederation service connects identity federations around the world, simplifying access to content, services and resources for the global research and education community. eduGAIN comprises over 50 participant federations connecting 2,672 Identity Providers to 1,909 Service Providers.



**Students, Researchers and Staff**

eduGAIN helps nearly 27,000,000 students, re



**Service Providers**

With eduGAIN participants from over 2,600 identity



**Institutions**

eduGAIN enables institutions to easily and scalably

# Thank you!

# Questions?

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