

# Deploying and running multi-tenant IdP, SP and FLR in Amazon AWS



Radiator



# Radiator Software

- Former  
(Australian) Open System Consultants  
and  
(Finnish) Arch Red
- Maker of Radiator AAA server
  - Formerly Radiator RADIUS server

# Motivation and background

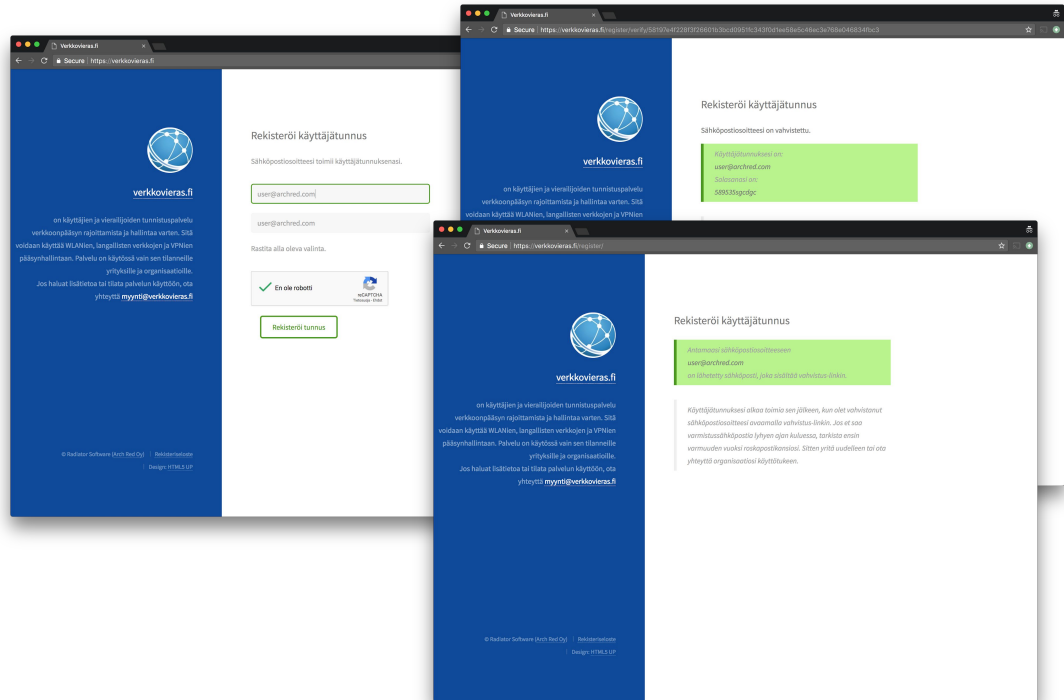
- Radiator as a service for organisations without RADIUS server or expertise to maintain one
- Easy way to participate in roaming federations such as roam.fi and eduroam

# Features

- Cloud based
- Turnkey subscription
- Simple user enrolment and optional guest accounts
- PAP and EAP (PEAP, TTLS and PWD) supported

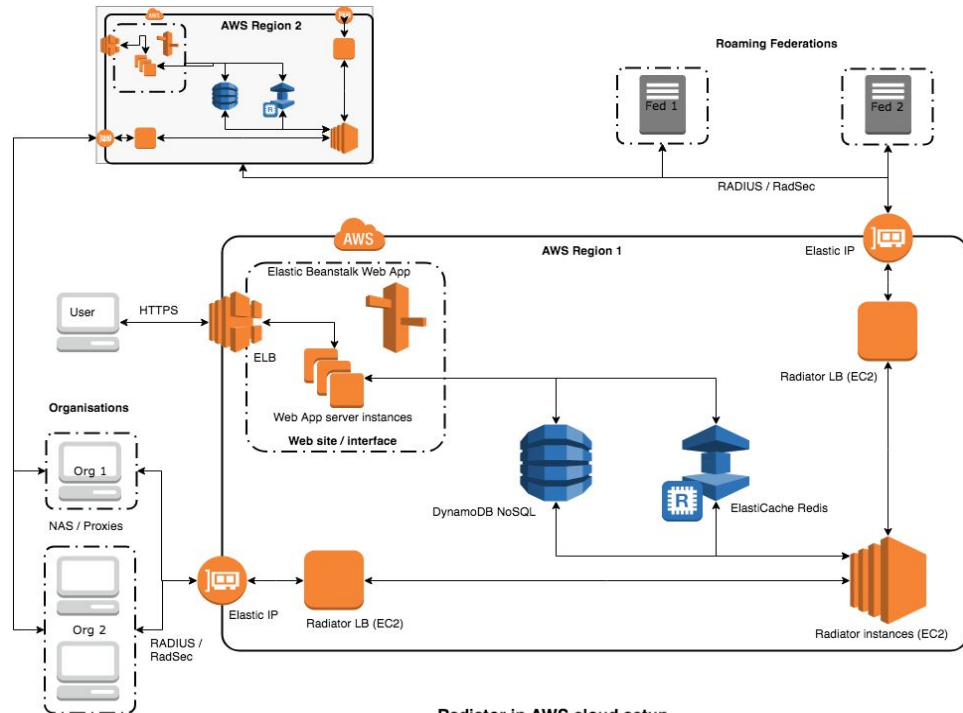
# User enrolment

- Organisation's users enrol with their email address
- A verification link is sent to the email address
- After the verification, a password will be generated and shown



# Architecture

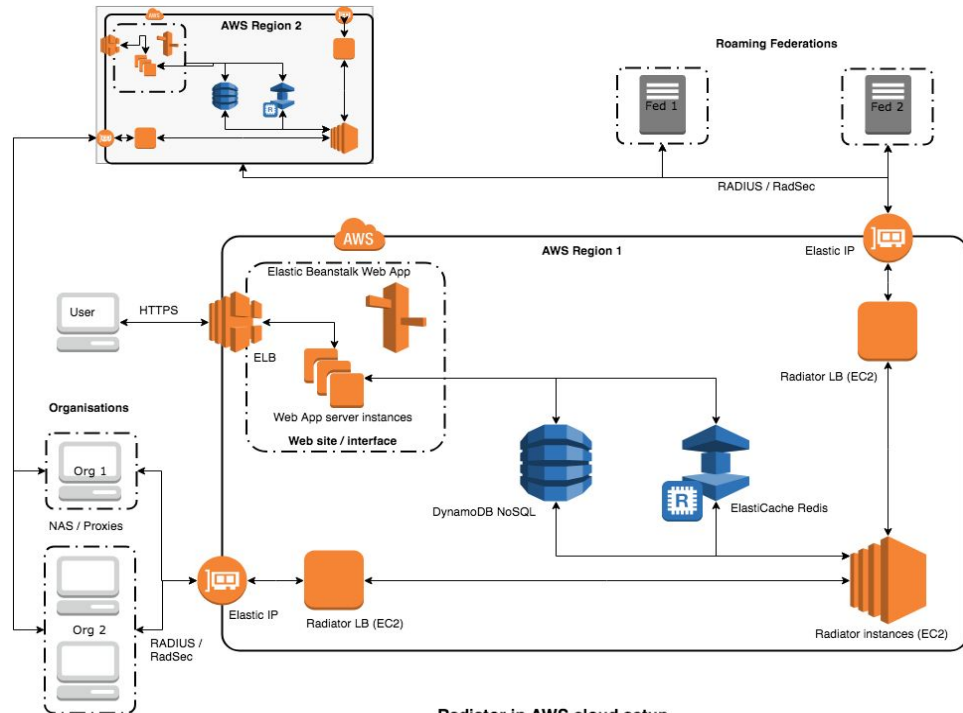
- Multi-tenant
  - Organisations identified by source IP
- Two separate AWS regions for high availability
- Horizontal and vertical scaling for performance



Radiator in AWS cloud setup

# Architecture

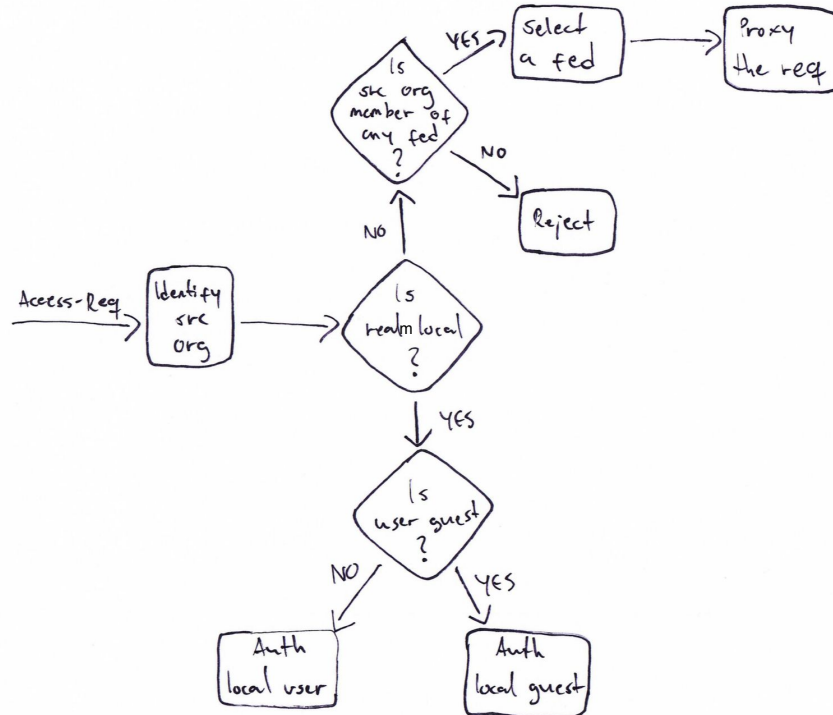
- Custom Radiator LB used for load balancing
- Web interface deployed as Elastic Beanstalk Web App
- Everything stored within DynamoDB NoSQL
  - Redis used as a faster cache



Radiator in AWS cloud setup

# Request flow

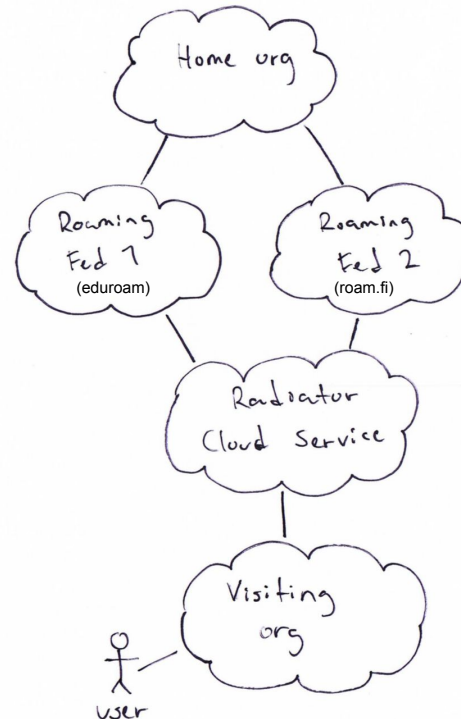
- Access-Requests are labeled with a source organisation identifier
- Each organisation has a separately configurable policy for guest access and roaming
- An organisation can be a member of multiple roaming federations





# Handling multiple roaming federations

- How to select a roaming federation when multiple options?
  - Eduroam used as a default “gateway”
- A novel approach, advertise (aggregated) realms over Status-Server VSAs



# Experiences

- Custom AMI image for Radiator instances
  - Replaced by AWS OpsWorks (chef) in the future
- DynamoDB is priced by IOPS
  - Aurora SQL DB would be a better option for aggregating statistics
- Some connection problems with ElastiCache Redis time to time

# Thank you

Questions?