Protecting OGC Web Services with the 52°North Security System

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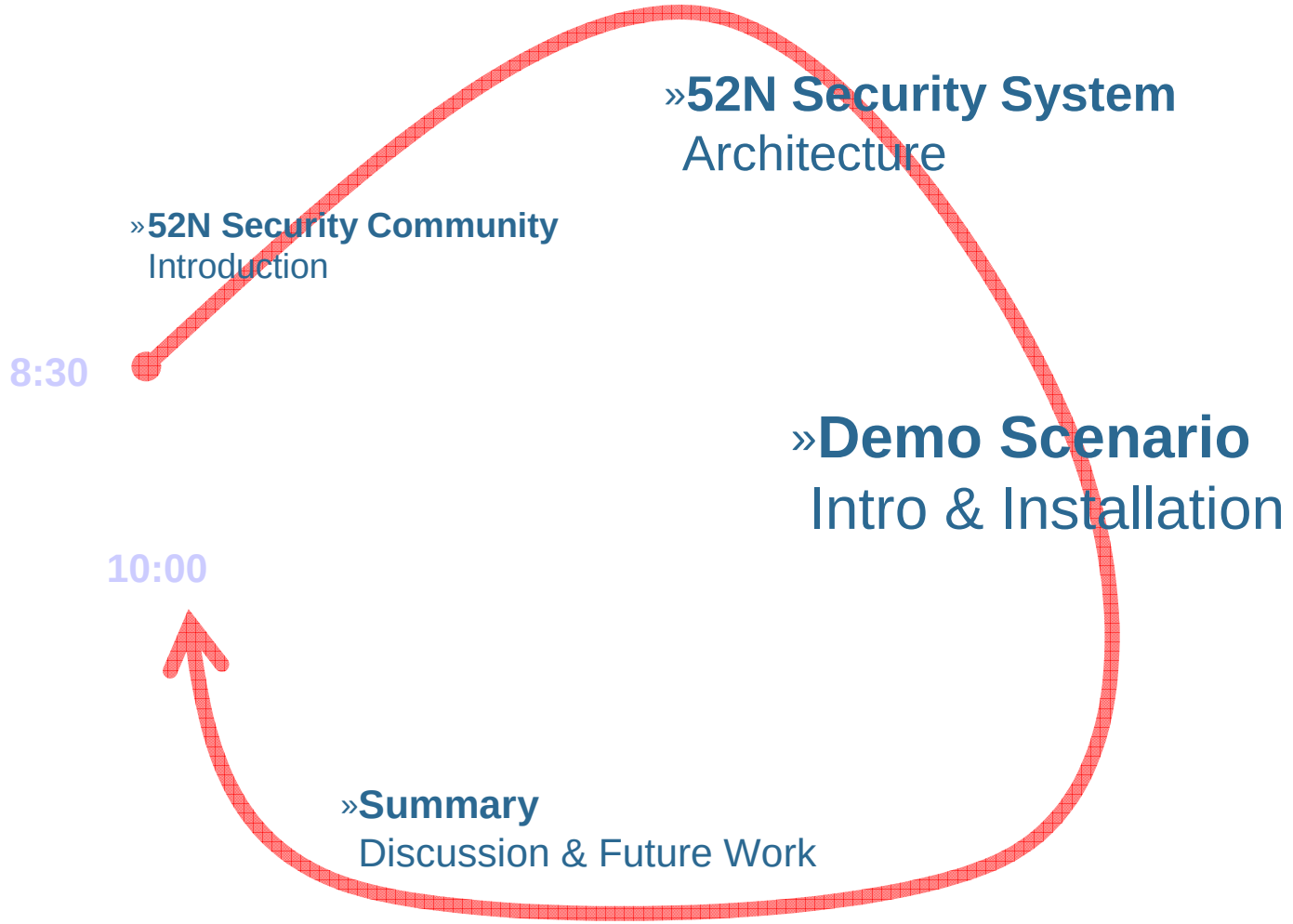
52North.org

Tutorial Roadmap



52°North

or „52-N“ or „5-2-N“ or „52-North“ or „5-2-North“

- Founded in 2004
  - Institute for Geoinformatics, Münster, Germany
  - ITC Enschede, The Netherlands
  - con terra GmbH, Münster, Germany
  - since 2006: ESRI Inc., Redlands, US
- Mission: Development of innovative components for spatial data infrastructures

  Sensor Web Enablement | Security (Access Control)

  Processing Services | Raster Processing
- License Model: Dual Licensing (GPL 2.0 & Commercial)
  - Example: con terra securityManager, based on 52n Security Services

52N Security Community

http://www.52north.org/security

- Topics
  - Access Control for Services in SDI

Alice is allowed to access all layers except <points of interest>

  - License Management

Alice must agree to the terms of use before she can access the WMS

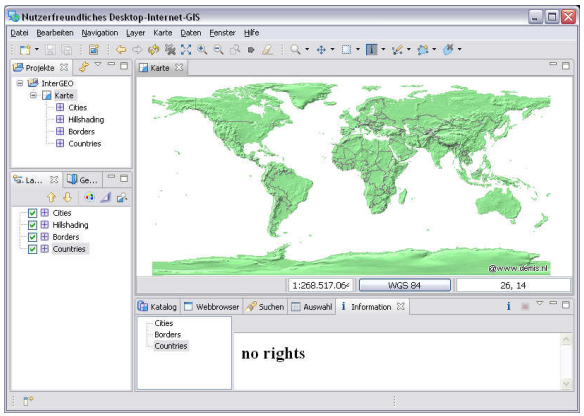
  - Client Software

Alice wants to access the protected service with her favorite map client software as usual

52north exploring horizons

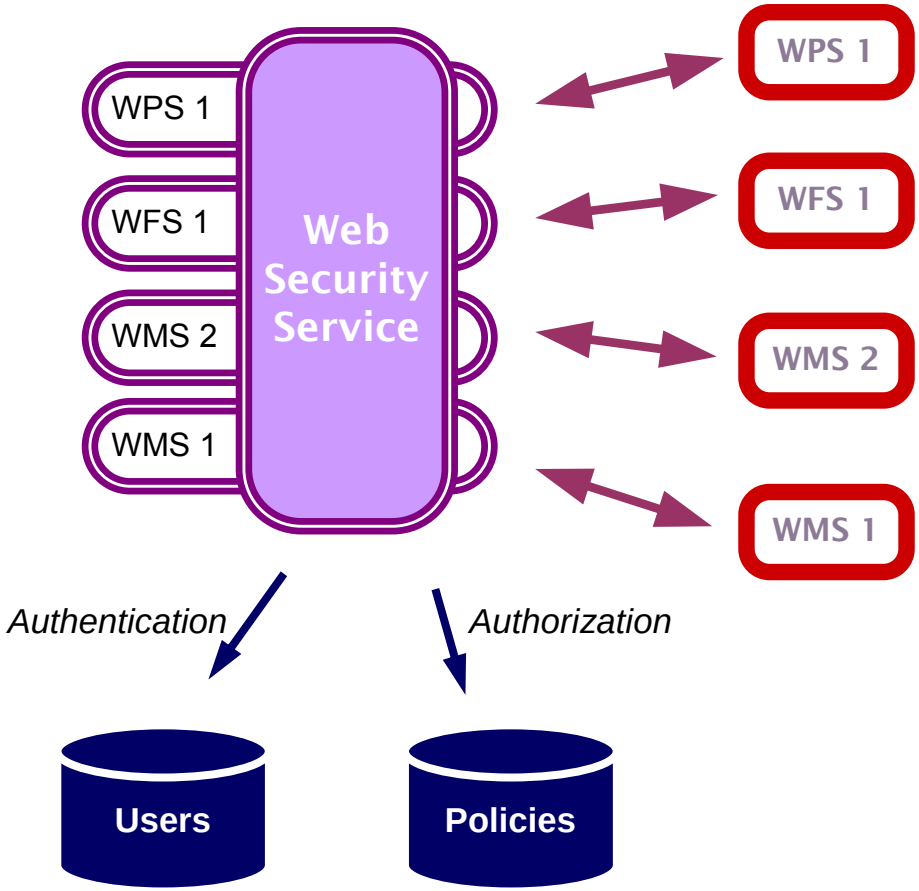
Security Architecture

Basic Architecture



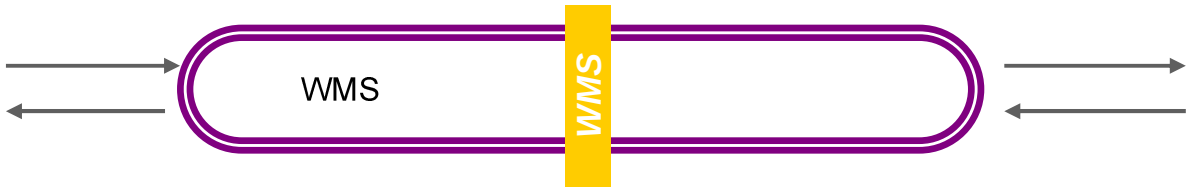
Request + Credentials

Response



Interceptors

- Operation allowed? → Block/Forward request
- Layer allowed? → remove Layer from request or capabilities
- Area allowed? → block or clip response



52N Interceptors

- *WMS*: operations/layers/spatial extent

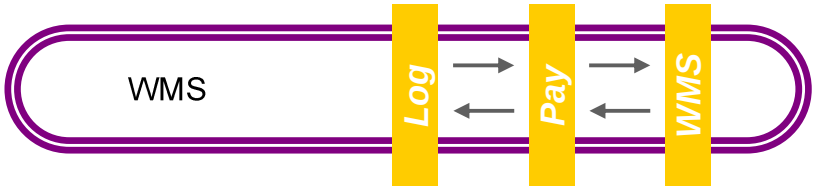
- *SOS*: operations/FOI,offerings,…/ spatial and temporal extent

- *Logging Interceptor*

Further known

- *WFS(-T)*
- *WCS*
- *ArcIMS*
- *ArcGIS Server*

Interceptors – Chaining



- username, request content, timestamp, … in file/DB

- debit account

Authentication Processors

* Extract credentials
* Protocol specific

52N Authentication Schemes

- *HTTP Basic Auth*: username/password in HTTP header
- "*No Auth*": default user
- *WSS-native*: SAML

Wish list

- *WS-S Token Profiles*
- *HTTP Digest Authentication*
- *OpenID*

LoginModules

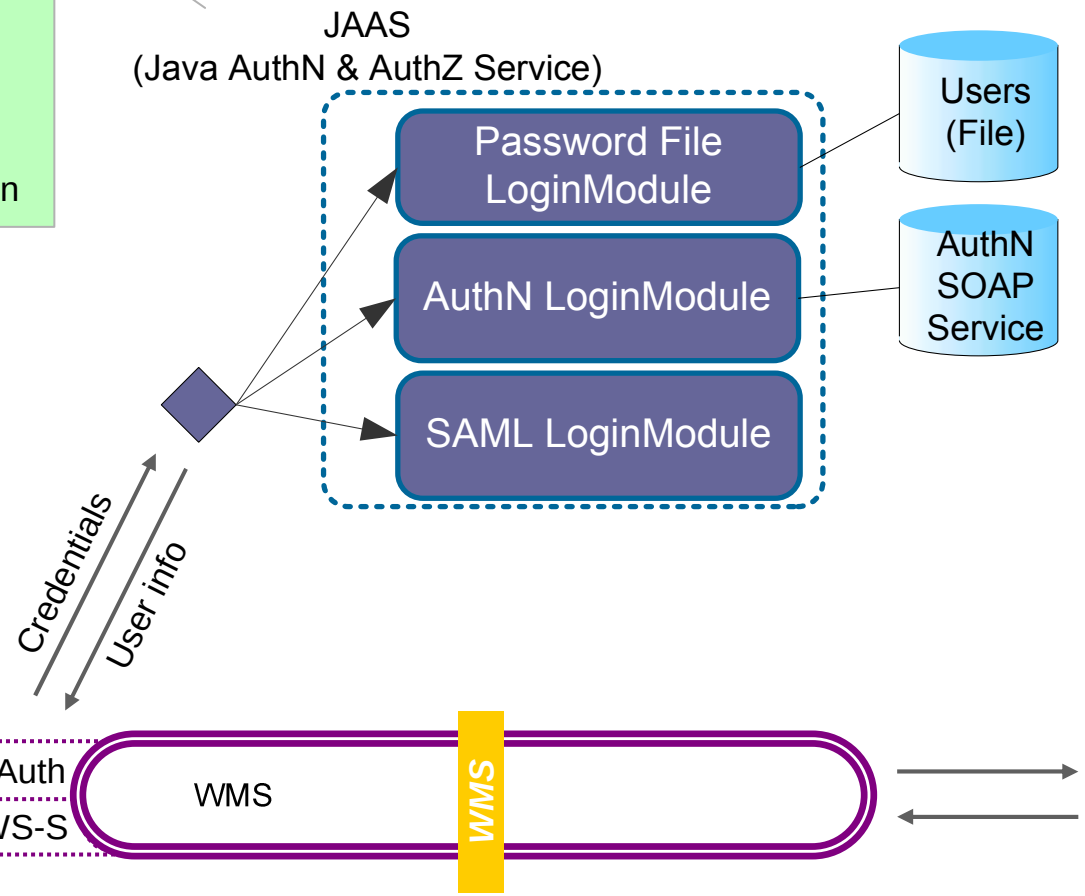
- verify credentials
- retrieve user information: name, roles, address,..
- sequentially walks through LoginModules to collect information
- User information is passed to interceptor chain

52N LoginModules

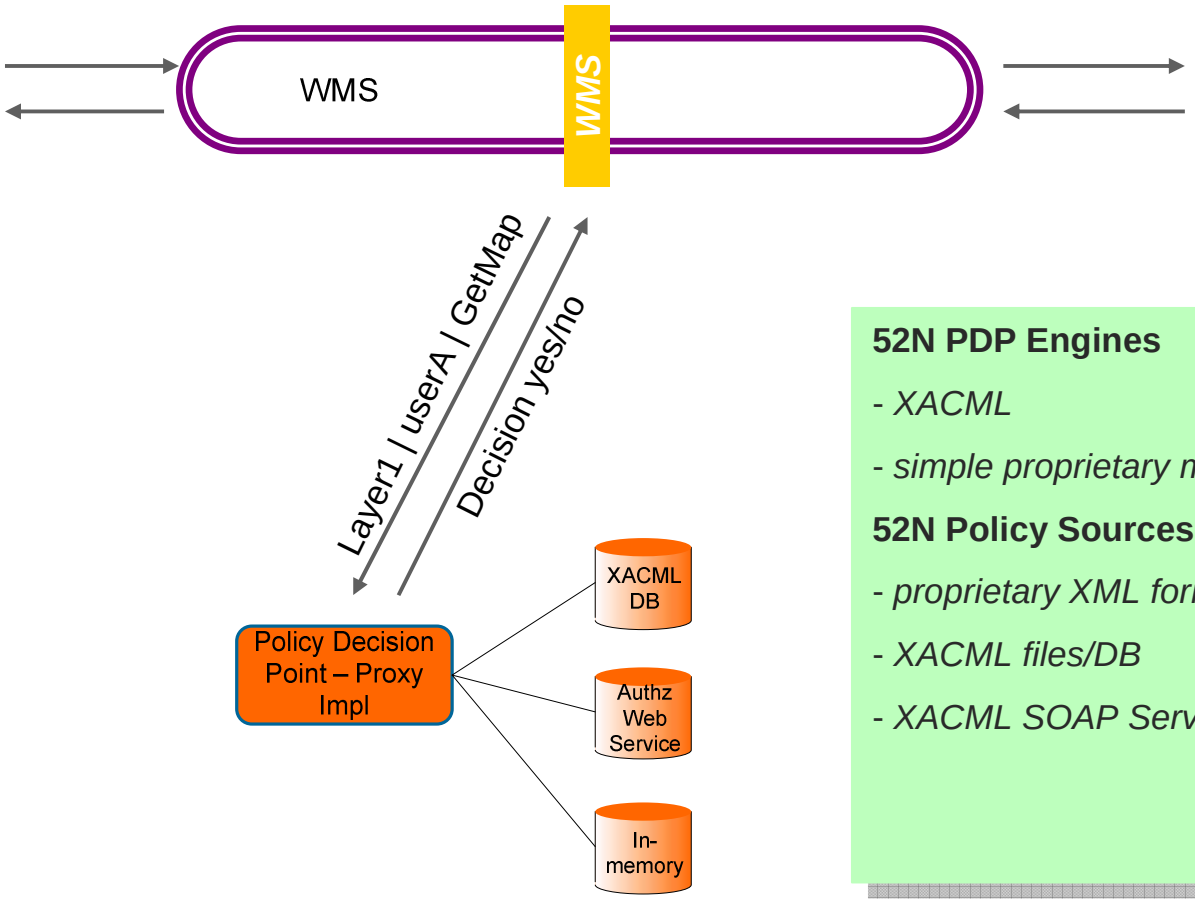
- *SAML LM*: verify SAML Assertion
- *Password File LM*: verify username/password
- *WAS LM*: Dedicated AuthN Service

Further known

- *LDAP LM*
- *Password DB LM*
- *X.509 LM*



Policy Decision Points



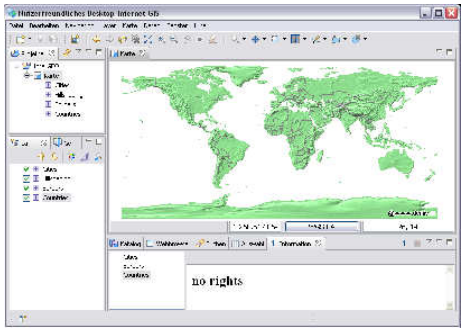
52N PDP Engines

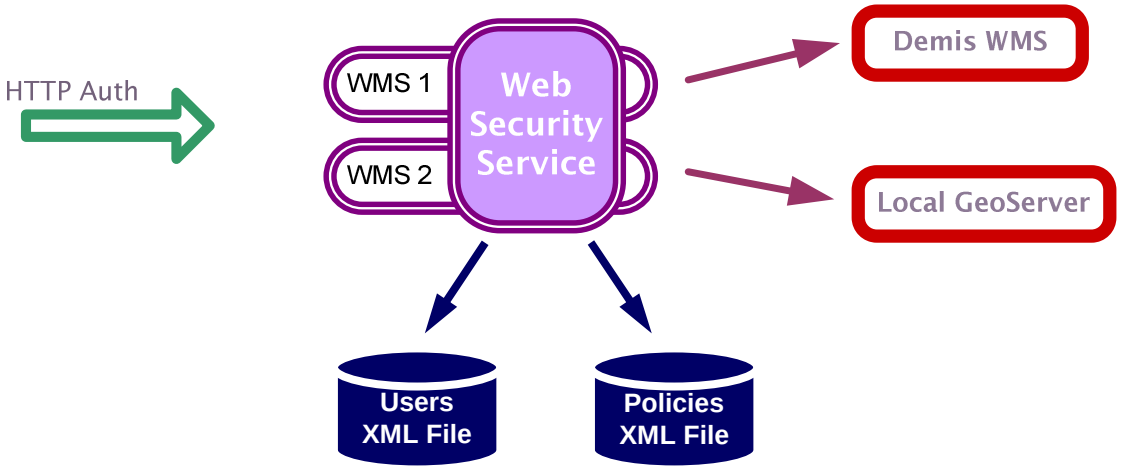
- *XACML*
- *simple proprietary model*

52N Policy Sources

- *proprietary XML format*
- *XACML files/DB*
- *XACML SOAP Service*

Demo Szenario

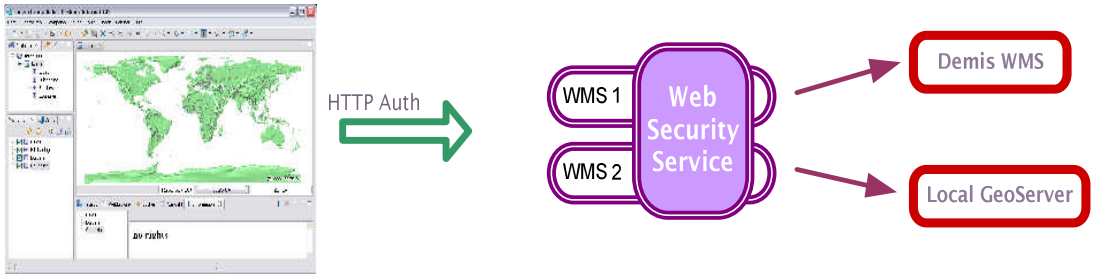


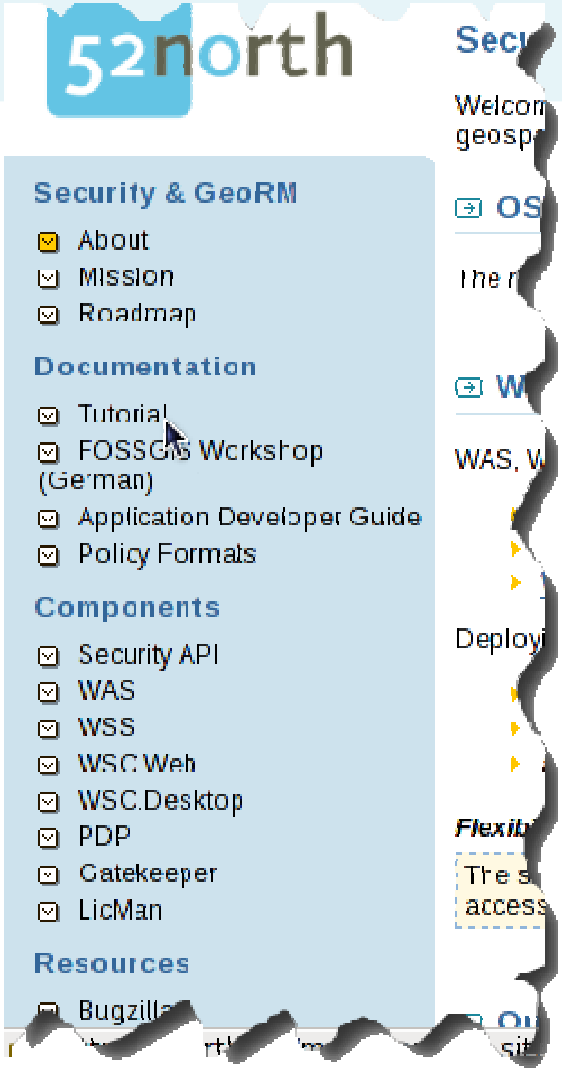


Requirements & suggested setup

Software	Source
Windows OS	Your laptop ;-)
uDig	Arramagong Live DVD or 52n Security CD
Java	52N Security CD
Jetty Web Server bundle: WSS + local GeoServer	52N Security CD
Text Editor, Browser, …	Your laptop

Demo Scenario





www.52north.org/security

Future Work

Beyond the daily maintenance work…

- Implement additional authentication schemes
  - esp. SOAP WS-S as proposed by OGC
- Stabalize and release WPS and WFS interceptors
- Support Spring-based configuration
- ? Integrate with OGC service implemenations
- Implement license workflow
  - User gets access only after they accepted a click-through license

Enjoy FOSS4G!

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