



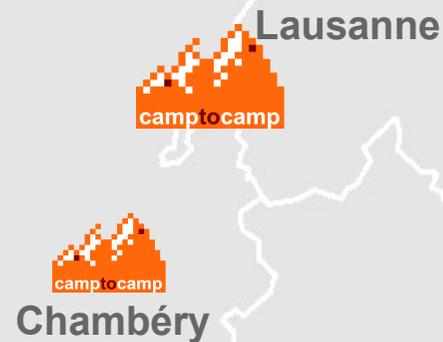
Secure your GIS

Protecting GIS applications suites

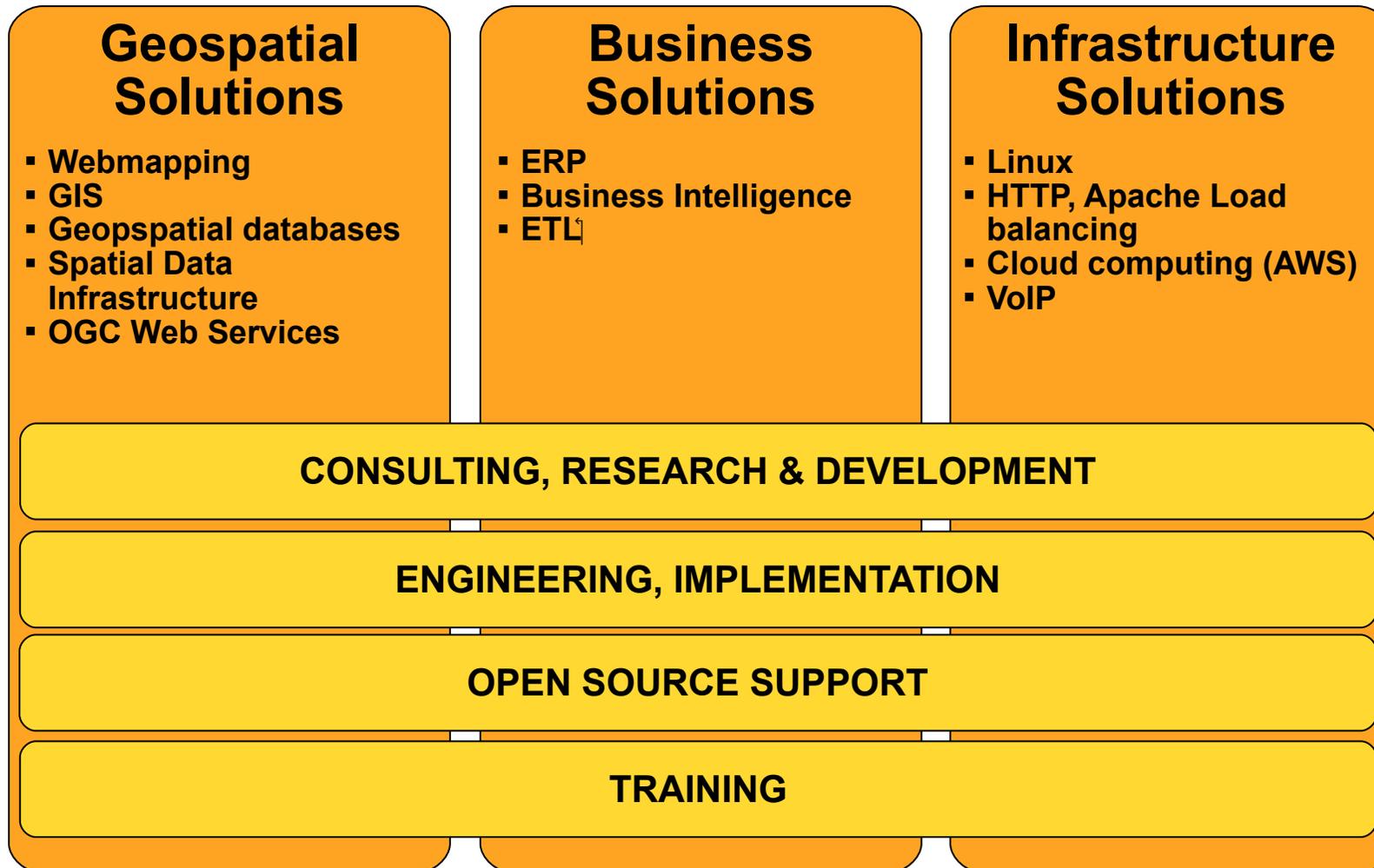
Outline

- Camptocamp SA
- Introduction
 - Green field
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- Landscape
 - Non-spatial solutions
 - Geoserver
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 - Deegree
- Examples of Complete Solutions
- Resources

- **Open Source solutions provider as editor and integrator**
- **Staff of 35 in Switzerland and France**
- **Camptocamp helps you move forward with the latest Open Source technologies**



Camptocamp activity domains



Green field

- Non-geospatial is easy
- Most frameworks have security components
 - Choose framework of choice
 - Develop applications
- Framework Evaluation
 - Single Sign on
 - Authentication mechanisms (LDAP, Database, CAS, OpenID)
 - Authorization mechanisms (LDAP, Database)

Suite of FOSS Applications

- Different application frameworks
- Different Languages
- Different frameworks supporting different options
- Challenging for sysadmins to configure
- Single Sign on may be required (or at least desirable)

Geospatial aspect

- Typical frameworks do not support Geospatial domain
- Most frameworks allow URL restrictions for queries like:
 - http://myservice/ows?service=wms&layer=***
- Cumbersome security
- BBox queries are difficult

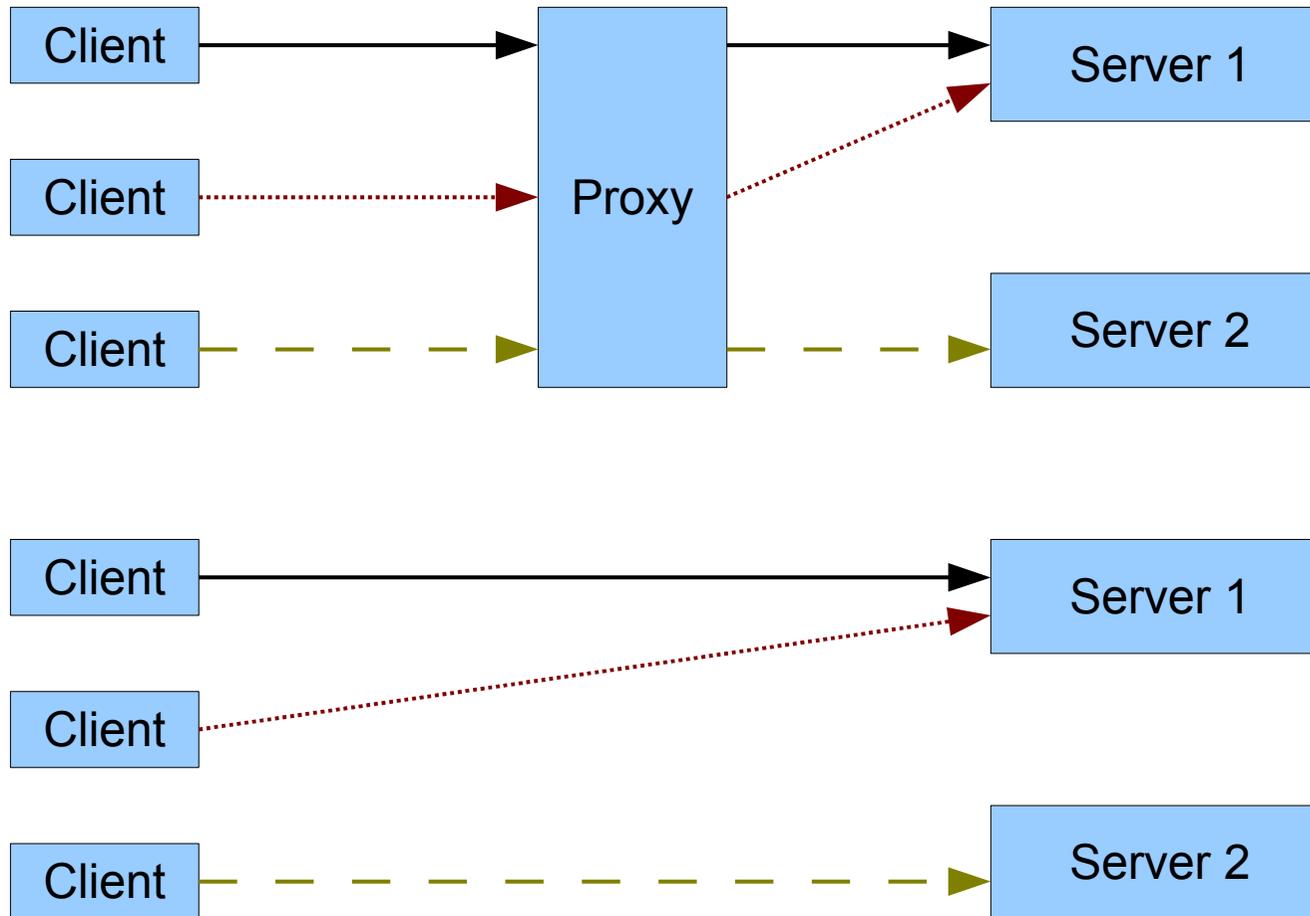
Non-spatial Solutions

- Framework X security
 - Not useful for retrofitting heterogenous application suite
- Security Proxy
 - <http://www.google.ch/search?q=security+proxy>
 - Not all are open source solutions
- Spring Security
 - Good basis for a security proxy

Geospatial solutions

- Geoserver (embedded security)
 - www.geoserver.org
- Secure OWS (security proxy)
 - www.secureows.org/
- 52° North Web Security Service (security proxy)
 - 52north.org/maven/project-sites/security/
- Deegree (embedded security)
 - wiki.deegree.org/deegreeWiki/deegree3/SecuritySubsystemDocumentation

Proxy VS embedded



Hybrid Proxy/Embedded (Geoserver)



Proxy VS Embedded

- Both have advantages
- Proxy
 - Forward all requests (Can cause problems for performance)
 - Only one place for all security configuration
 - Can secure many servers
- Embedded
 - Potentially less load on servers and possible better performance
 - Deeper integration and therefore (theoretically) less chance of misconfiguration
 - Less complicated configuration

Geoserver

- Built-in geospatial security
- Services Secured
 - Web Feature Service (WFS)
 - Web Map Service (WMS)
 - Web Coverage Service (WCS)
 - WFS Proxy
 - WMS Proxy
- Security Axes
 - Layer
 - Namespace
 - Service

Geoserver Pro/Con

- Pros

- Performance, no proxying requests
- Based on Spring/Acegi security
 - Support almost all authentication and authorization schemes
 - Large community testing and using it
 - Very flexible
- Supports most common protocols
- Simple/powerful configuration options

- Cons

- Extent restriction not supported
- Projection restriction not supported
- Non-standard configuration files



SecureOWS

- Geospatial Security Proxy
- Services Secured
 - WMS
 - WFS
 - WCS
- Security Axes
 - Layer
 - Service
 - Extent
 - MapSize
 - Projection

SecureOWS Pro/Con

- Pros

- Fine grained security configuration options
- Can secure an number of servers
- Provides a client for managing connections
 - <https://www.secureows.org/trac/secureows/wiki/ClientSoftware>

- Cons

- Proxy solution
- Non-standard configuration files
- Limited number supported authentication/authorization mechanisms

52° North WSS

- Geospatial Security Proxy
- Services Secured
 - WMS
 - WFS
- Security Axes
 - Layer
 - Service
 - Extent
 - Projection

52° North WSS Pro/Con

- Pros

- Standards compliant configuration files
 - I have not found any other implementations, please let me know of more solutions
- Fine grained security configuration options
- Can secure any number of servers
- Pluggable architecture

- Cons

- Limited number supported authentication/authorization mechanisms
- Limited number of services supported
- Proxy issues



Deegree

- Embedded security
- Proxy options?
- Services Secured
 - WMS
 - WFS
 - WCS
 - CSW
- Security Axes
 - Service

Deegree Pro/Con

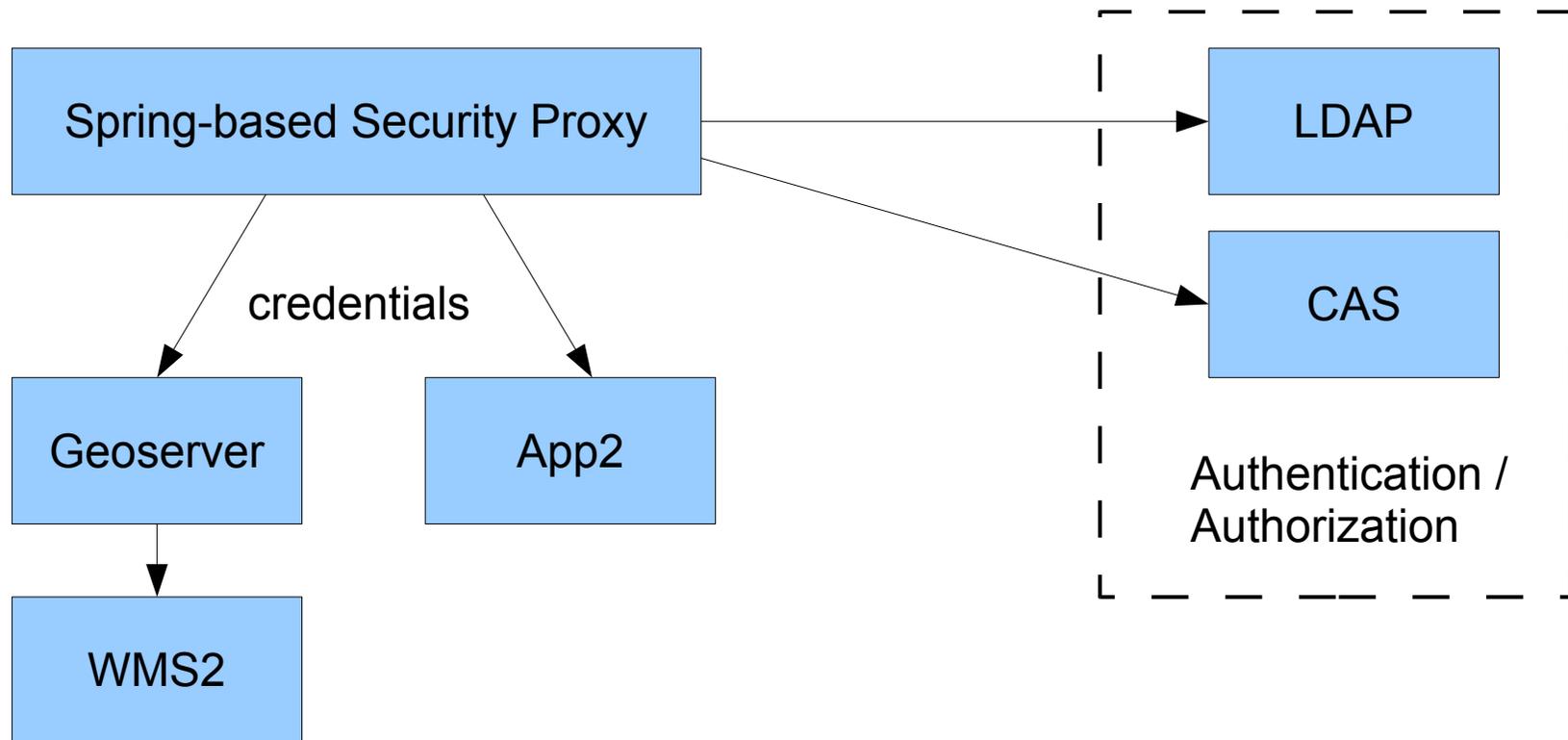
- Pros

- Embedded security
- Many types of services supported

- Cons

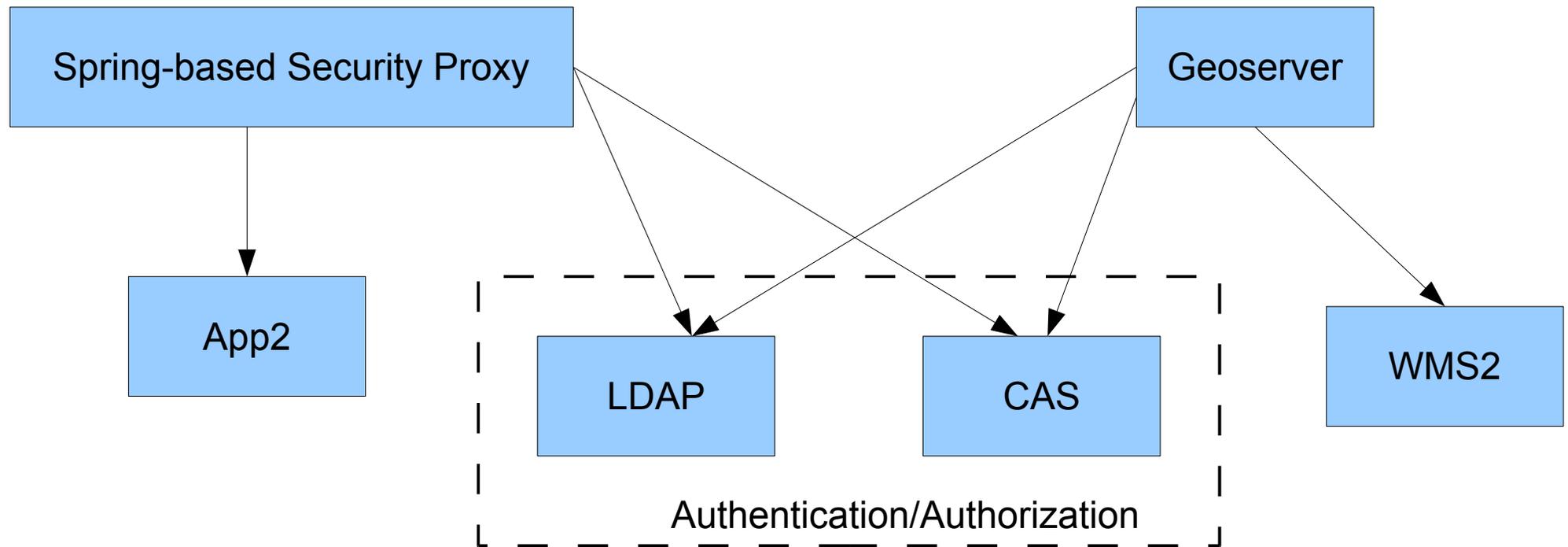
- Very limited documentation
- Limited number supported authentication/authorization mechanisms
- Poor granularity of security options

Complete Solution 1



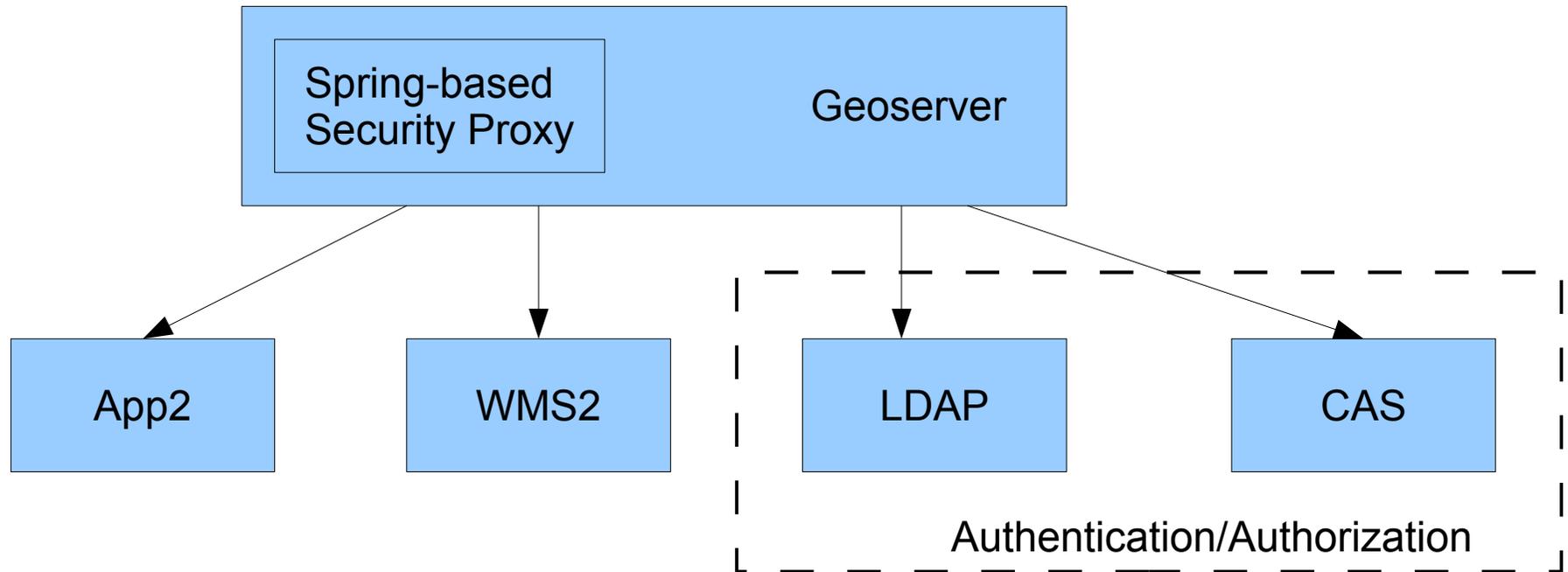
- Geoserver and App2 obtain authorization from proxy
- Or Proxy controls access based on URL patterns

Complete Solution 2



- Geoserver has same configuration as proxy and accesses CAS and LDAP directly

Complete Solution 3



- Embed proxy within Geoserver

Wrap up

- 52° North WSS seems like one of the best Geospatial solution
 - Lacks plethora of authentication strategies for application suite
- Geoserver is not as advanced Geospatial
 - Spring Security more than makes up when securing an application suite
- SecureOWS client is useful for Applications like ArcView

Resources

- Camptocamp

- <http://www.camptocamp.com/>

- GeoServer

- <http://www.geoserver.org/>

- SecureOWS

- <https://www.secureows.org/>

- 52 North

- <http://52north.org/maven/project-sites/security/>

- Deegree

- <http://wiki.deegree.org/deegreeWiki/deegree3/SecuritySubsystemDocumentation>





Thank you for your attention

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