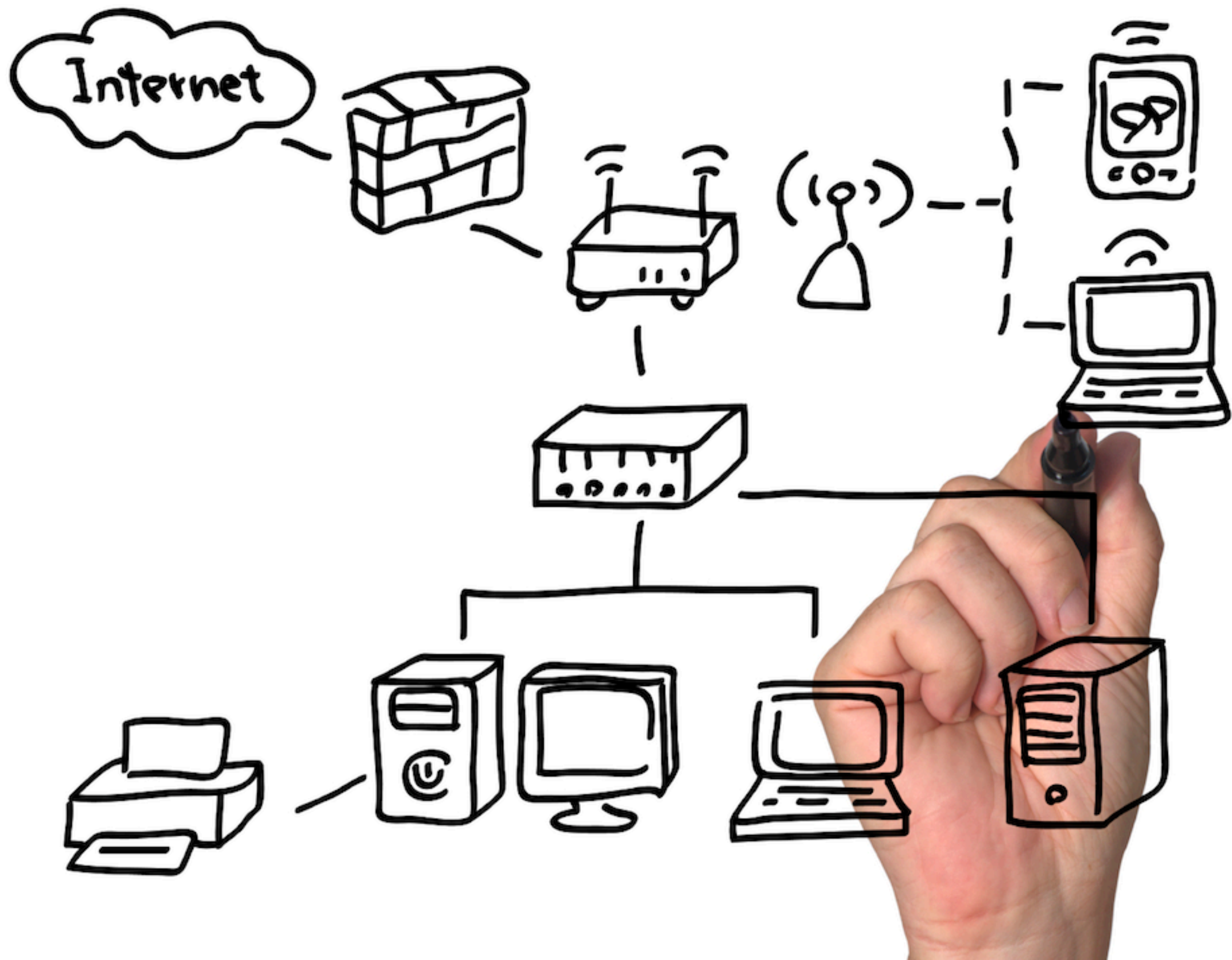


Confident Data Transfers

with **Apache Camel Security**

JavaOne, 10/03/2012



Apache Camel Components

[illegible]

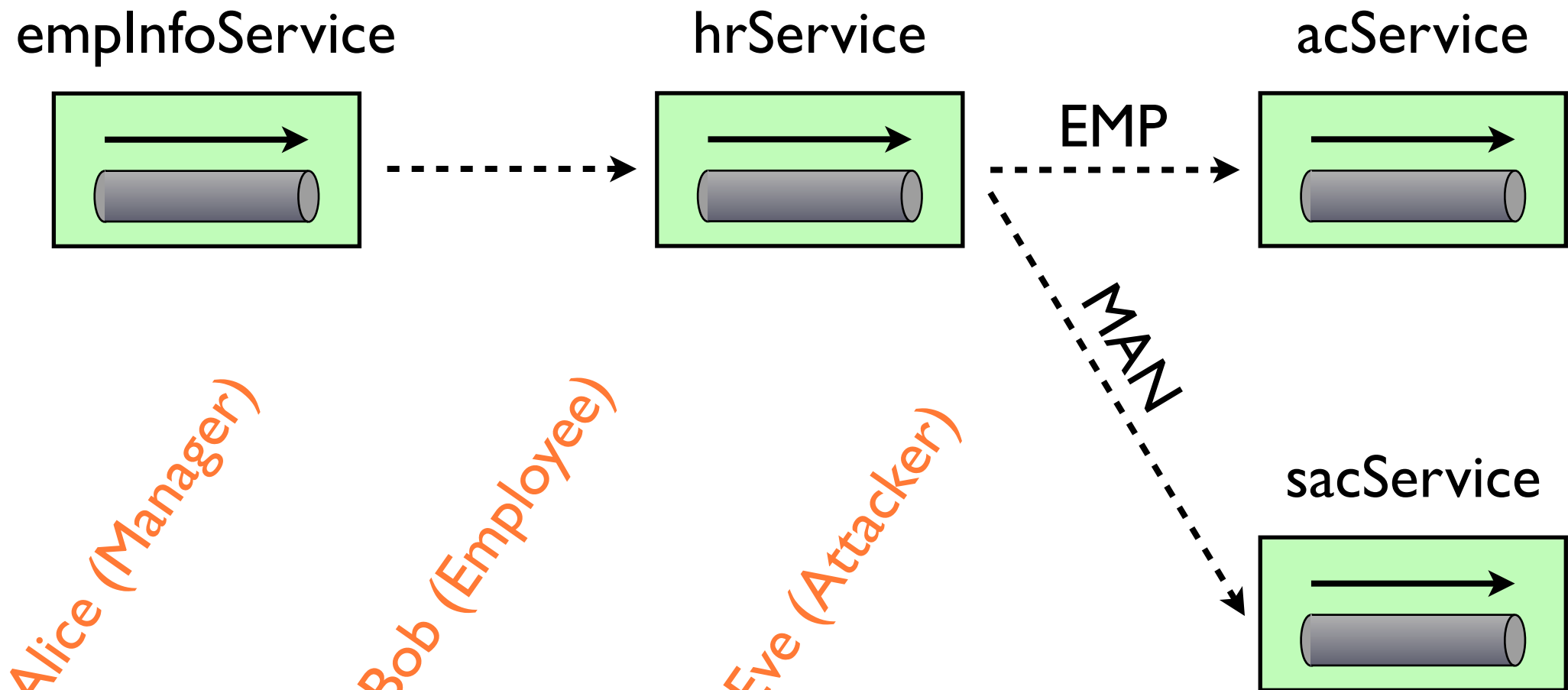


```
@Component  
public class MyRouteBuilder  
    extends RouteBuilder {
```



```
<camelContext id="camel"  
    xmlns="http://camel.apache.org/schema/spring">
```

Demo



**And
security?**





SSL

A black, rectangular electronic device, possibly a portable GPS or a small monitor, is shown against a bright blue sky with scattered white clouds. The device has a screen that displays the text "calculating better way..." in a white, bold, sans-serif font. The device is mounted on a black cable or stand, and its top edge features a small, circular vent or speaker grille.

**calculating
better
way...**



desired **security** level

**route
security**

**payload
security**



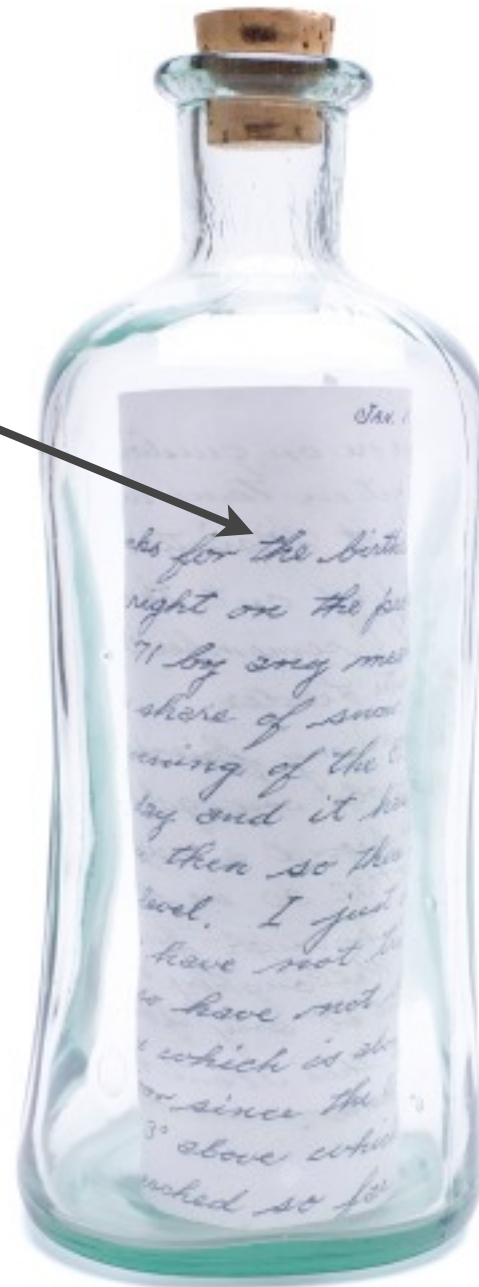
Payload Security

Crypto Data Format

any data

encrypt & sign

all algorithms



complete
message only

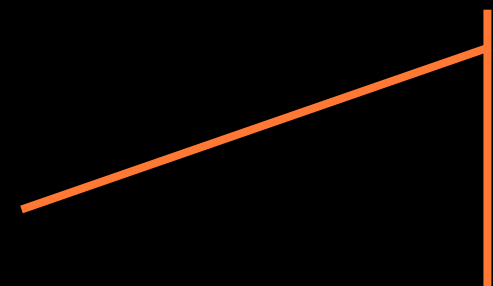
```
<dataFormats>  
  <crypto />  
</dataFormats>
```



symmetric
key

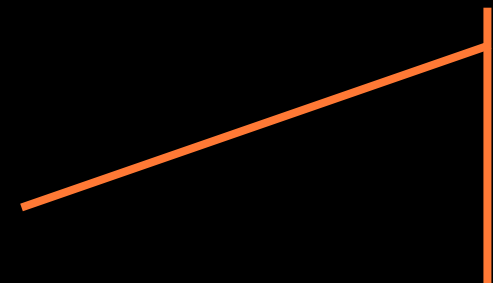
```
<bean />
```

```
<marshal />
```



encryption

```
<unmarshal />
```



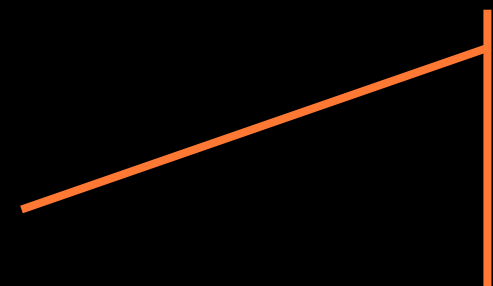
decryption


```
<dataFormats>  
  <pgp />  
</dataFormats>
```



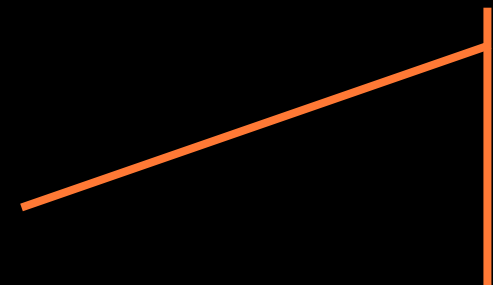
asymmetric
key

```
<marshal />
```



encryption

```
<unmarshal />
```



decryption

```
<bean />
```

keystore

```
<to uri="crypto:sign" />
```

sign

```
${in.header.CamelDigitalSignature}
```

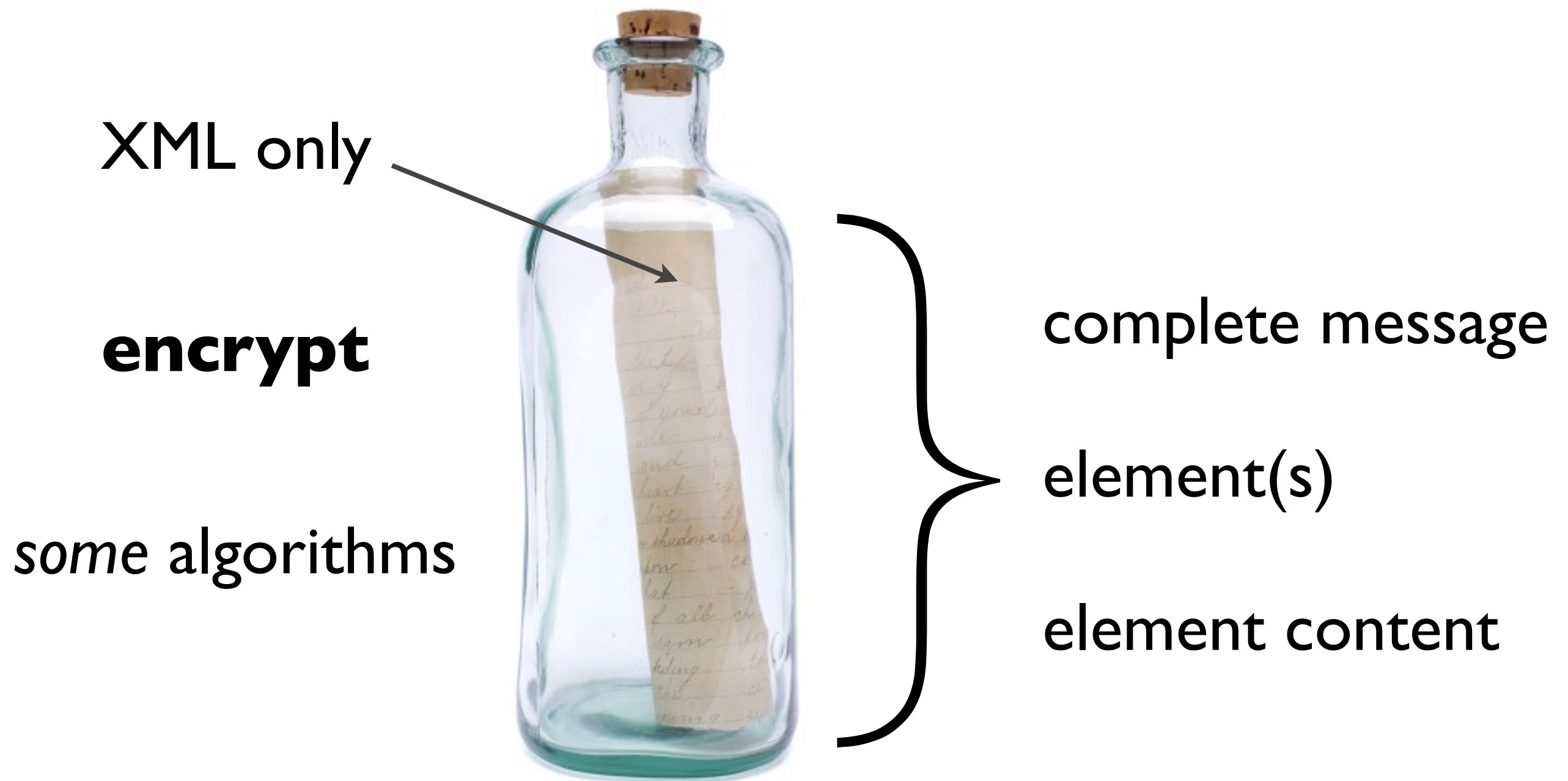
```
MCwCFAomydE01HI1hT7BKXURgP5BkO+/AhQ28dLXiFpvX0XdMlqxR4XH0Zraig==
```

```
<to uri="crypto:verify" />
```

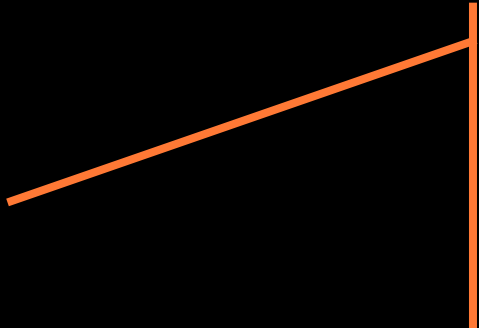
verify

```
java.security.SignatureException:  
Cannot verify signature of exchange
```


XMLSecurity Data Format

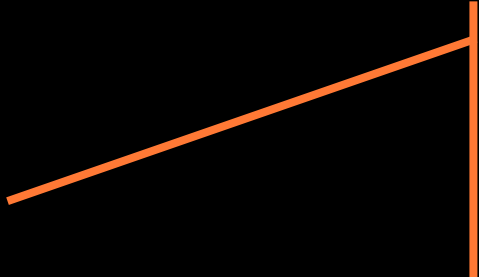


```
<keyStoreParameters />
```



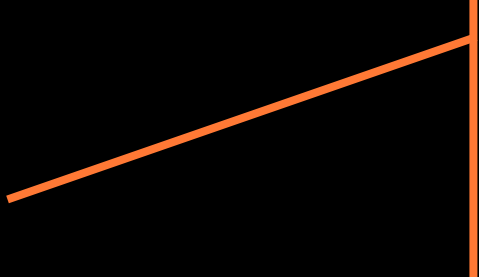
asymmetric
key

```
<marshal>  
  <secureXML />  
</marshal>
```



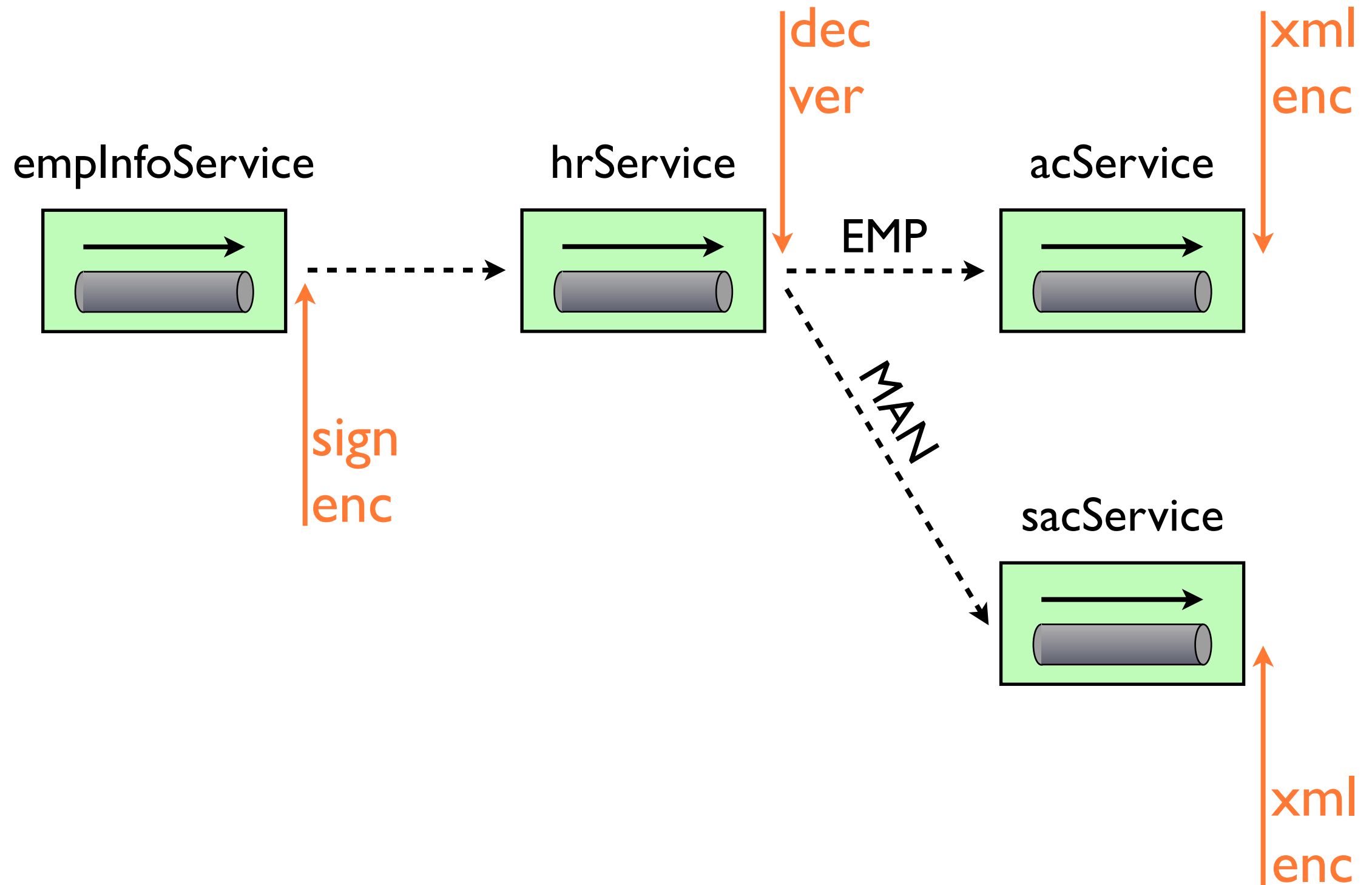
encryption

```
<unmarshal>  
  <secureXML />  
</unmarshal>
```



decryption

Demo





Crypto

**XML
Security**

Features

enc & sign

enc

Data

any

XML

Input

complete
message
only

complete
message or
fragments
(XPath)

Algorithms

all

limited



desired **security** level

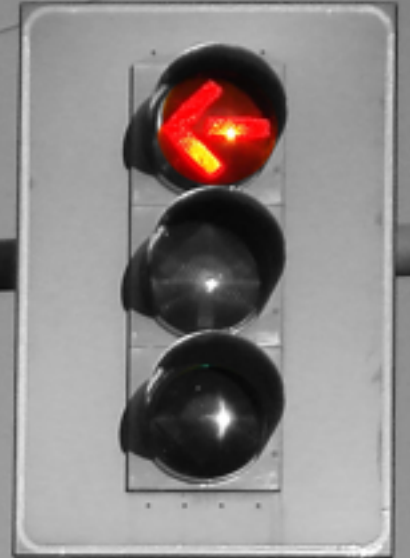
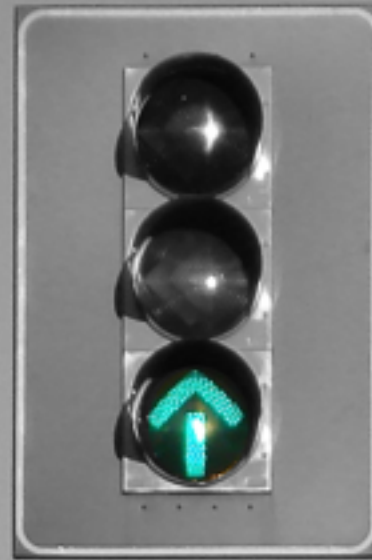
Route Security



Spring Security **or** Apache Shiro



Spring Security Component



roles

xml

AuthorizationPolicy-----

UsernamePassword
AuthenticationToken

```
<authorizationPolicy />
```

policy/
policies

```
<bean />
```

access
decision
manager

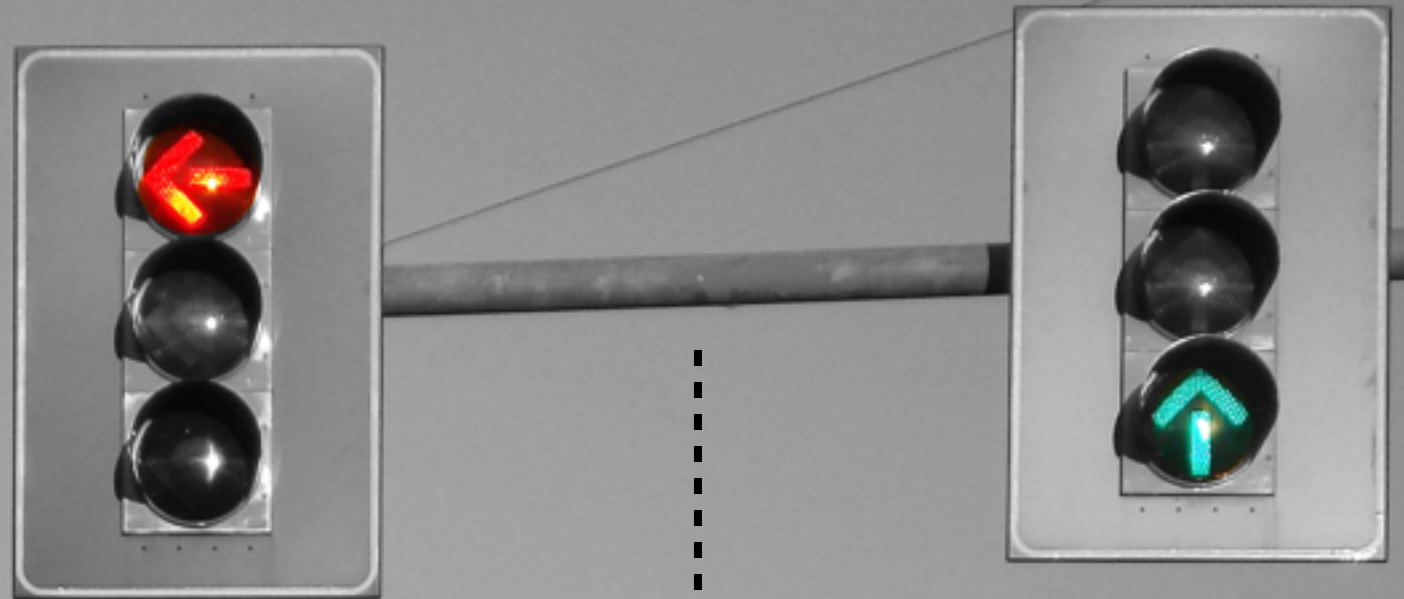
```
<authentication-manager />
```

users
and
roles

```
<policy ref="..." >  
  <to uri="..." />  
</policy>
```

route
protect-
ion

Apache Shiro Component



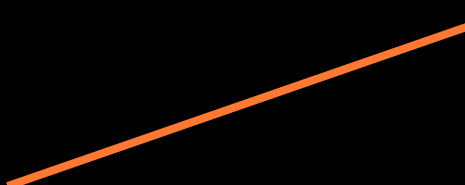
permissions

xml

ini

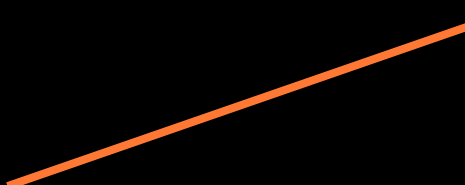
ShiroSecurityPolicy ----- **ShiroSecurityToken**

```
[users]  
[roles]
```



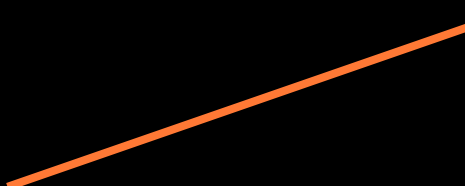
ini file

```
<bean />
```



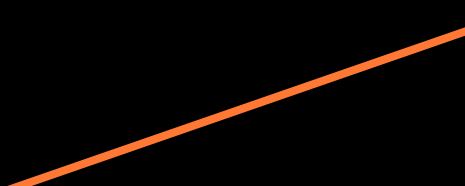
permission
bean(s)

```
<bean />
```



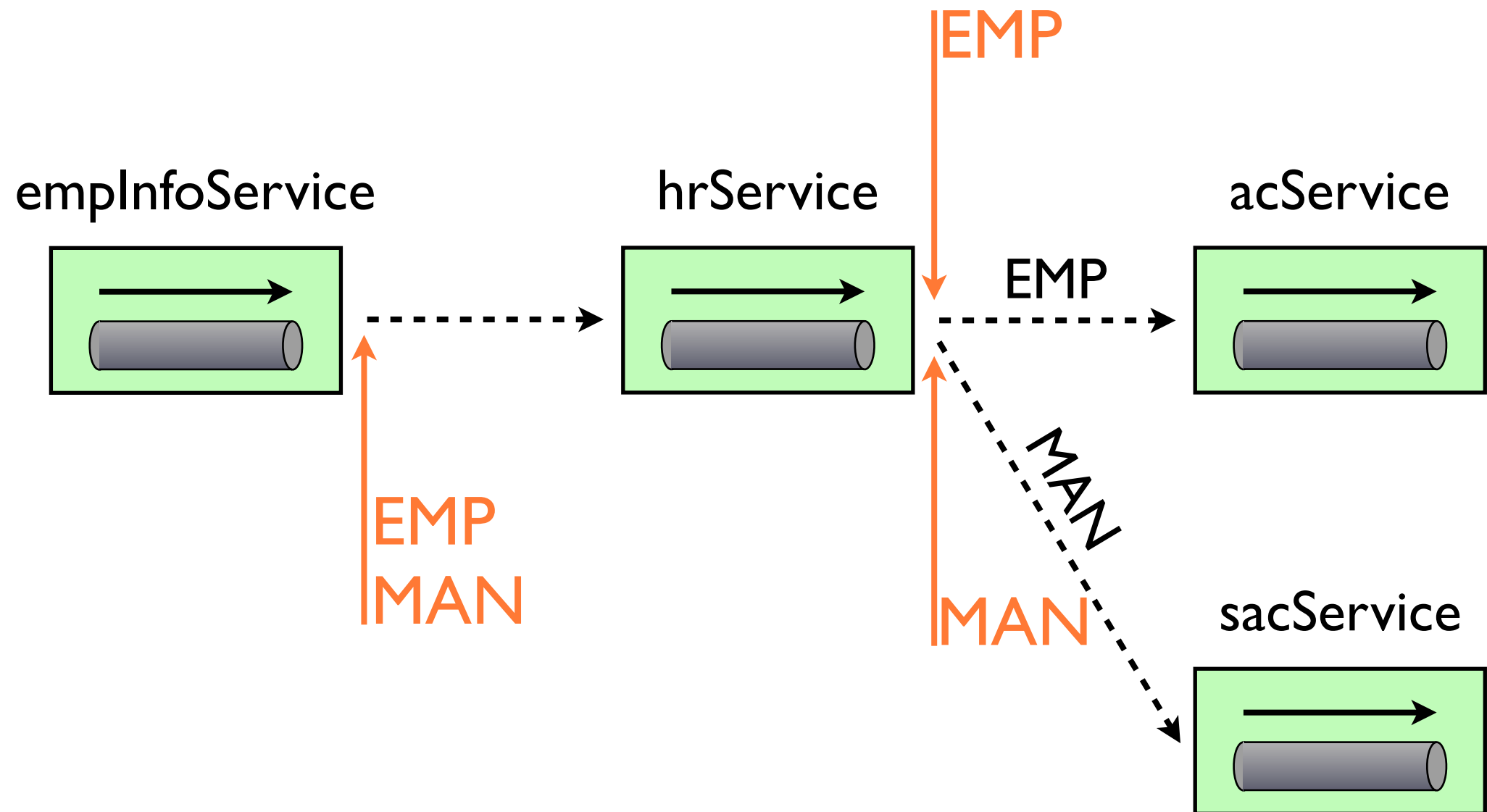
policy
bean(s)

```
<policy ref="..." >  
  <to uri="..." />  
</policy>
```



route
protection

Demo



Spring
Security

Apache
Shiro

Features

authentication &
authorization

Configuration

xml

ini + xml

Systems

any

any

Concept

roles

permissions





desired **security** level



Combine Payload & Route Security

*limit components
& data formats*

*protect critical
routes only*



*think early,
integrate later*

Protect your messages





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Pictures

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09: ©iStockphoto.com/svera, 10: <http://spaceflight.nasa.gov/gallery/images/shuttle/sts-118/html/iss015e21740.html> (NASA),
11: ©iStockphoto.com/turner890, 15: ©iStockphoto.com/turner890, 18: ©iStockphoto.com/Prebranac,
19: ©iStockphoto.com/svera, 20: ©iStockphoto.com/constantgardener, 21: ©iStockphoto.com/221A,
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27: ©iStockphoto.com/4ehov, 28: ©iStockphoto.com/svera, 29: ©iStockphoto.com/aristotoo,
30: ©iStockphoto.com/drimages, 31: ©iStockphoto.com/salem

Resources

Apache Camel <http://camel.apache.org>

Crypto Data Format <http://camel.apache.org/crypto.html>

XMLSecurity Data Format <http://camel.apache.org/xmlsecurity-dataformat.html>

Spring Security Component <http://camel.apache.org/spring-security.html>

Apache Shiro Component <http://camel.apache.org/shiro-security.html>

Sample Project <https://github.com/dschadow/JavaOne>