Cocoon Blocks

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Same talk as last year?

- Changed architecture 3 times since last time and rewritten the implementation a couple of times
- The latest incarnation is based on the Spring framework and the servlet set of APIs
- What I will describe is now part of Cocoon 2.2

Motivation

- Plugin architecture
- Webapp reuse
- Isolated internals in the blocks
- Simplify using Cocoon together with other Servlet frameworks

Overview

- The big picture
- Architecture
  - Focus on the webapp reuse part
  - Examples
- Current state and next steps

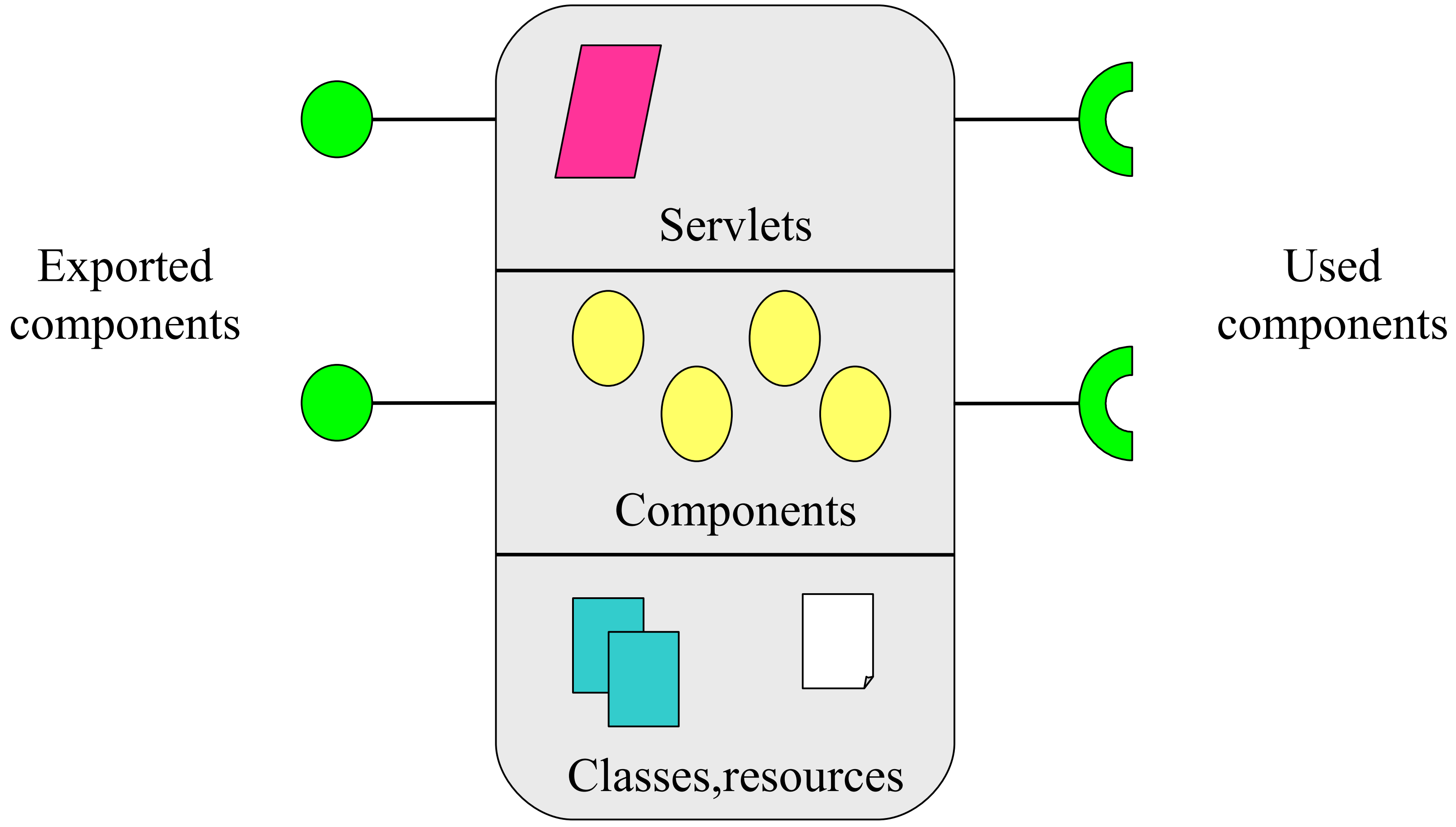
Blocks

- A plugin architecture is needed
- Designed by Stefano and the rest of the community 4+ years ago
- Compile time blocks for a few years, but no external contracts
- Several prototypes the last 1.5 years
- Essentially back compatible, a new integration level: package and reuse applications

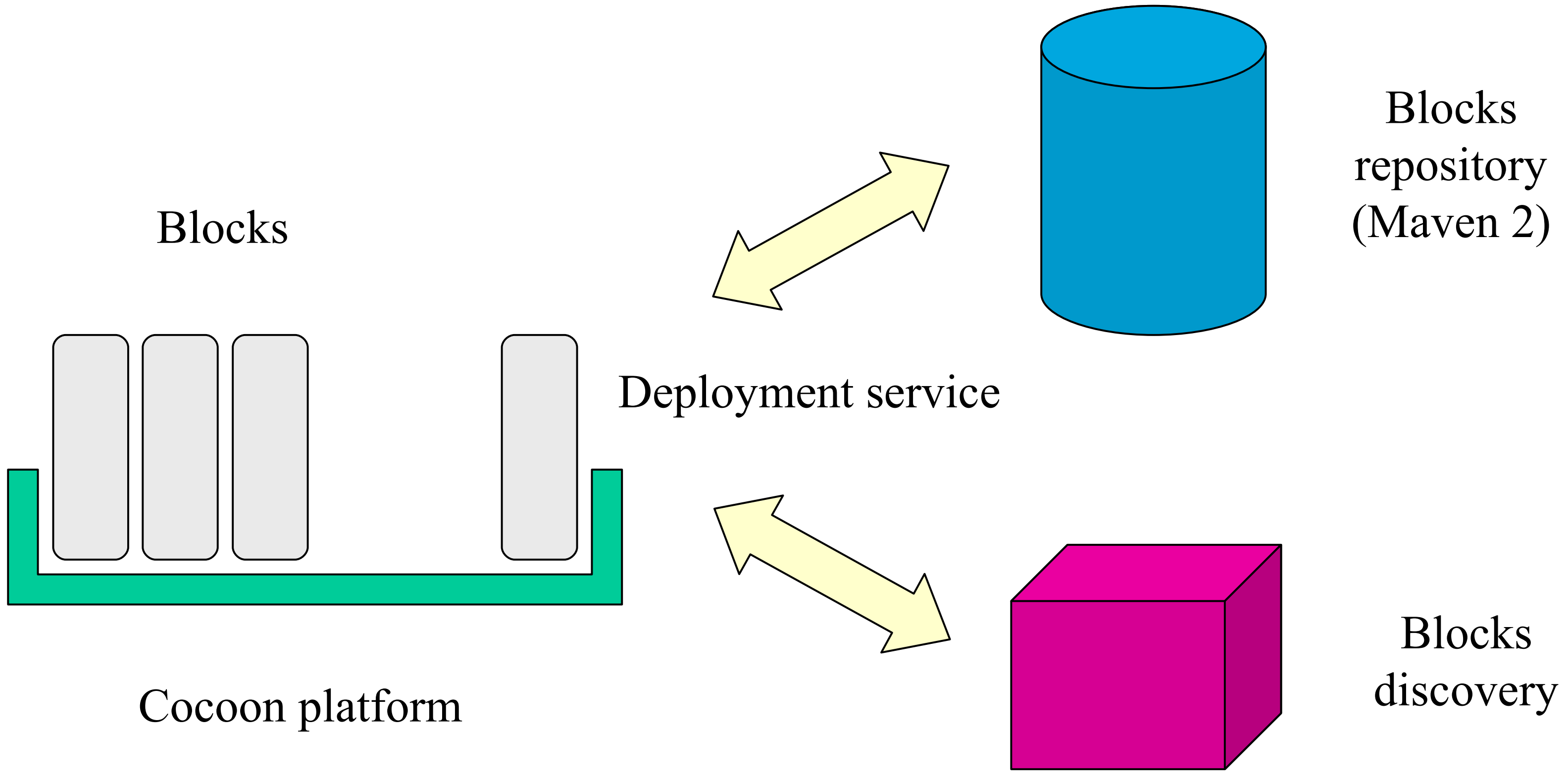
What is a block?

- A packaged application (or part) containing:
  - Libraries and resources
  - Components
  - Webapp functionality
- Configurable at deploy time
- Might depend on other blocks
- Isolated internals (only partly in 2.2)

What is a Block?



Deployment architecture



Block Architecture

- Built upon Spring and Maven
- A block is a Maven module
  - Packaging format
  - Components
  - Servlet(s)
  - Resources
  - Libraries

Block structure

```
myblock/
  META-INF/
    legacy/
      components.xconf        # Avalon conf
    properties/
       component.properties
    spring/
      components.xml          # Spring conf (incl block servlet)
  COB-INF/                    # webapp resources
      sitemap.xmap            # block sitemap
      resources/
      ...
  org/apache/cocoon/myblock/  # classes
      foo.class
      ...
```

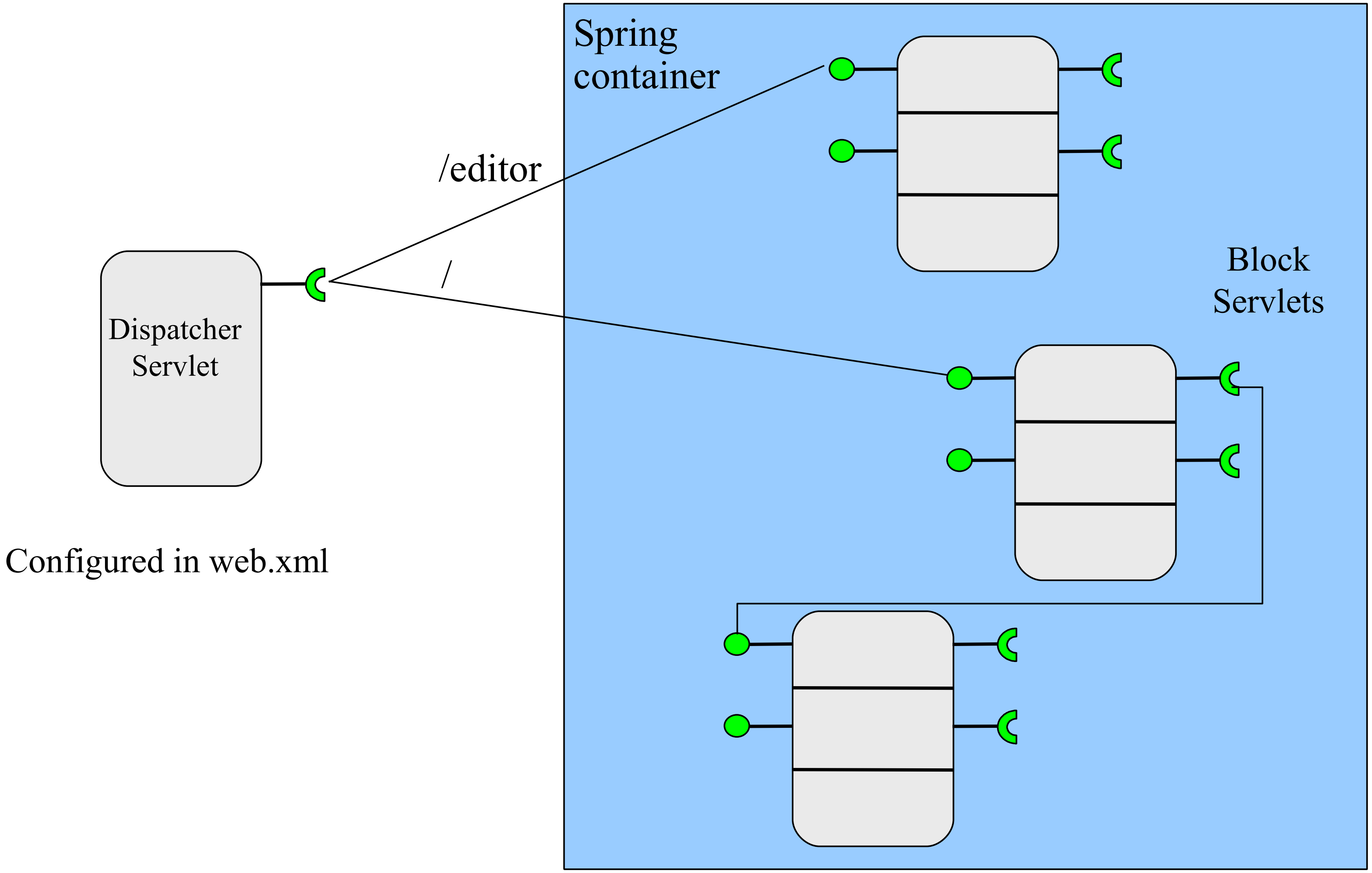
Components in blocks

- Exported to and managed in a global Spring container
- Now the component configurations are copied from the blocks to the global Spring configuration by cocoon:deploy
- Reading the configuration from the block would be preferable

Webapps in blocks

- As usual
- Spring managed Servlets
- Adds
  - Call servlets (sitemaps) in connected blocks
  - Use block deploy time attributes
  - Extend blocks (with polymorphism)

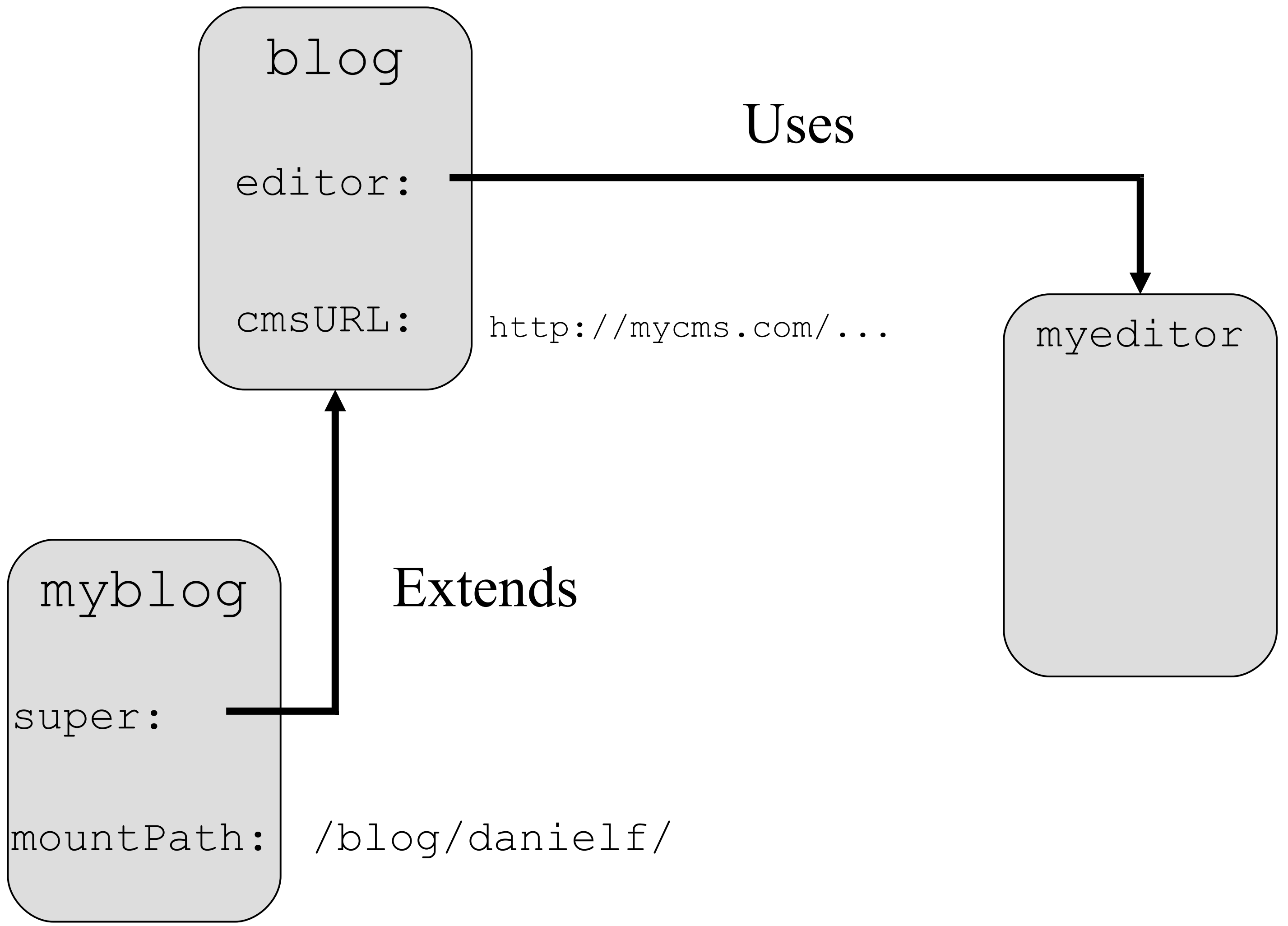
Block architecture



Based on the Servlet API

- No new API
- The BlockServlet is a Spring managed Servlet that sets up a minimal Servlet container for an embeded Servlet (e.g. SitemapServlet)
- Block properties --> Servlet init params
- Block connections --> named dispatchers
- Can be used with any servlet, nothing Cocoon specific

Wiring


blog
editor:
cmsURL:
http://mycms.com/...
Uses
myeditor
myblog
super:
mountPath:
/blog/danielf/
Extends

BlockServlet configuration

```
<beans xmlns="http://www.springframework.org/schema/beans">
  <bean id="org.apache.cocoon.blocks.blog"
        class="org.apache.cocoon.blocks.BlockServlet">
    <property name="mountPath" value="/test1"/>

    <property name="blockServletClass"
              value="org.apache.cocoon.sitemap.SitemapServlet"/>

    <property name="properties">
      <map>
        <entry key="cmsURL" value="http://mycms.com/test"/>
      </map>
    </property>

    <property name="connections">
      <map>
        <entry key="editor"
               value-ref="org.apache.cocoon.blocks.editor"/>
      </map>
    </property>
  </bean>
</beans>
```

Deployment configuration

```
# blog.properties
## configure the blog block
org.apache.cocoon.blog.properties.cmsURL=
  http://mycvs.com/danielf
org.apache.cocoon.blog.connections.editor=
  com.mycms.myeditor

## configure my extended version
com.mycms.myblog.mountPath=
  /blog/danielf
com.mycms.myblog.connections.super=
  org.apache.cocoon.blog
```

Block protocol

`block:/foo.xml`
- root sitemap in current block

`block:./bar.xml`
- current sitemap in current block (not yet)

`block:editor:/foo.xml`
- root sitemap in editor block

`block:super:/foo.xml`
- root sitemap in extended block

Block properties, paths

`{block-property:cmsURL}`

- Block property in sitemap (input module)

`{cmsURL}`

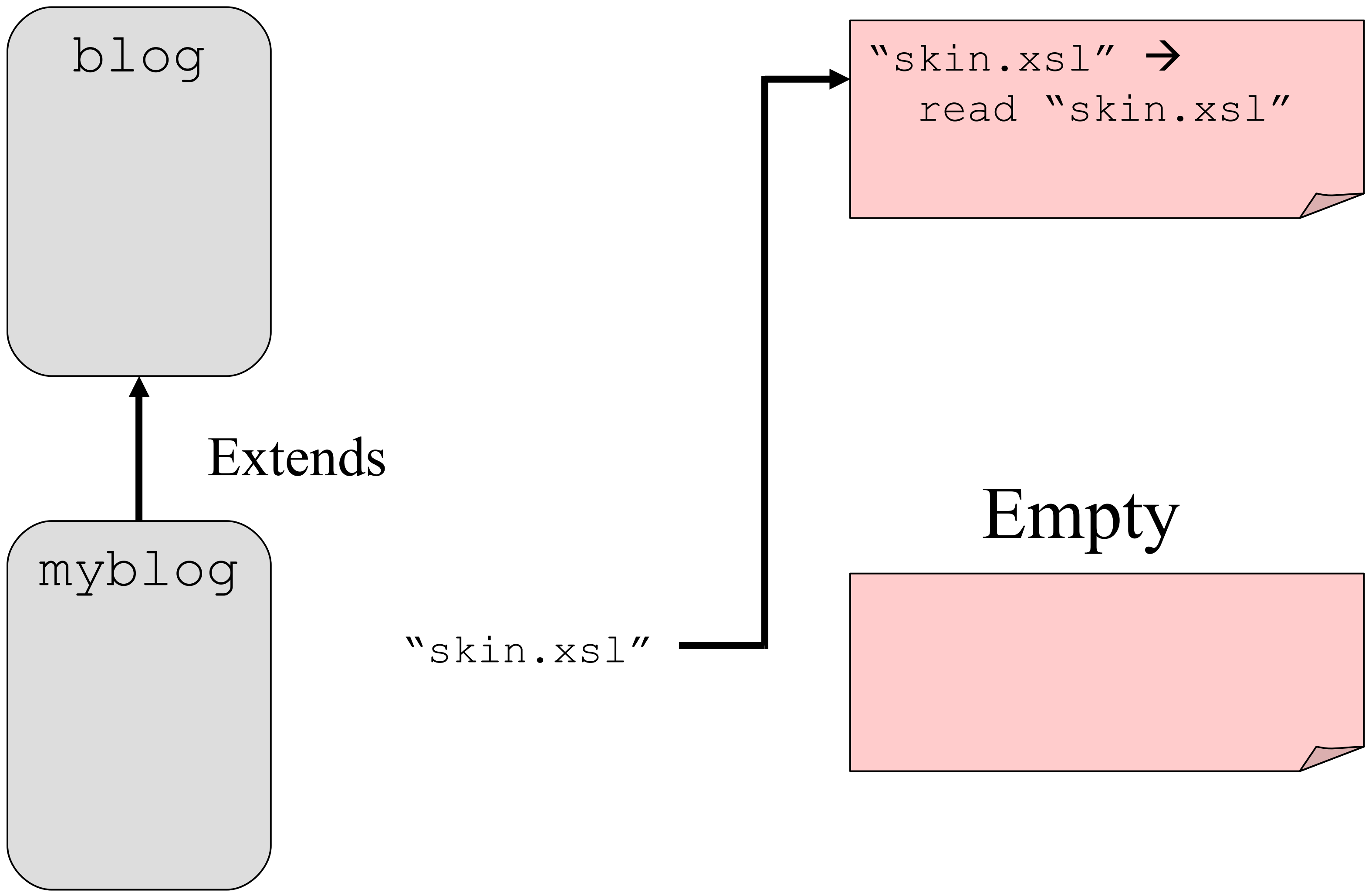
- Block property in component configuration

`{block-path:myblog:/start}`

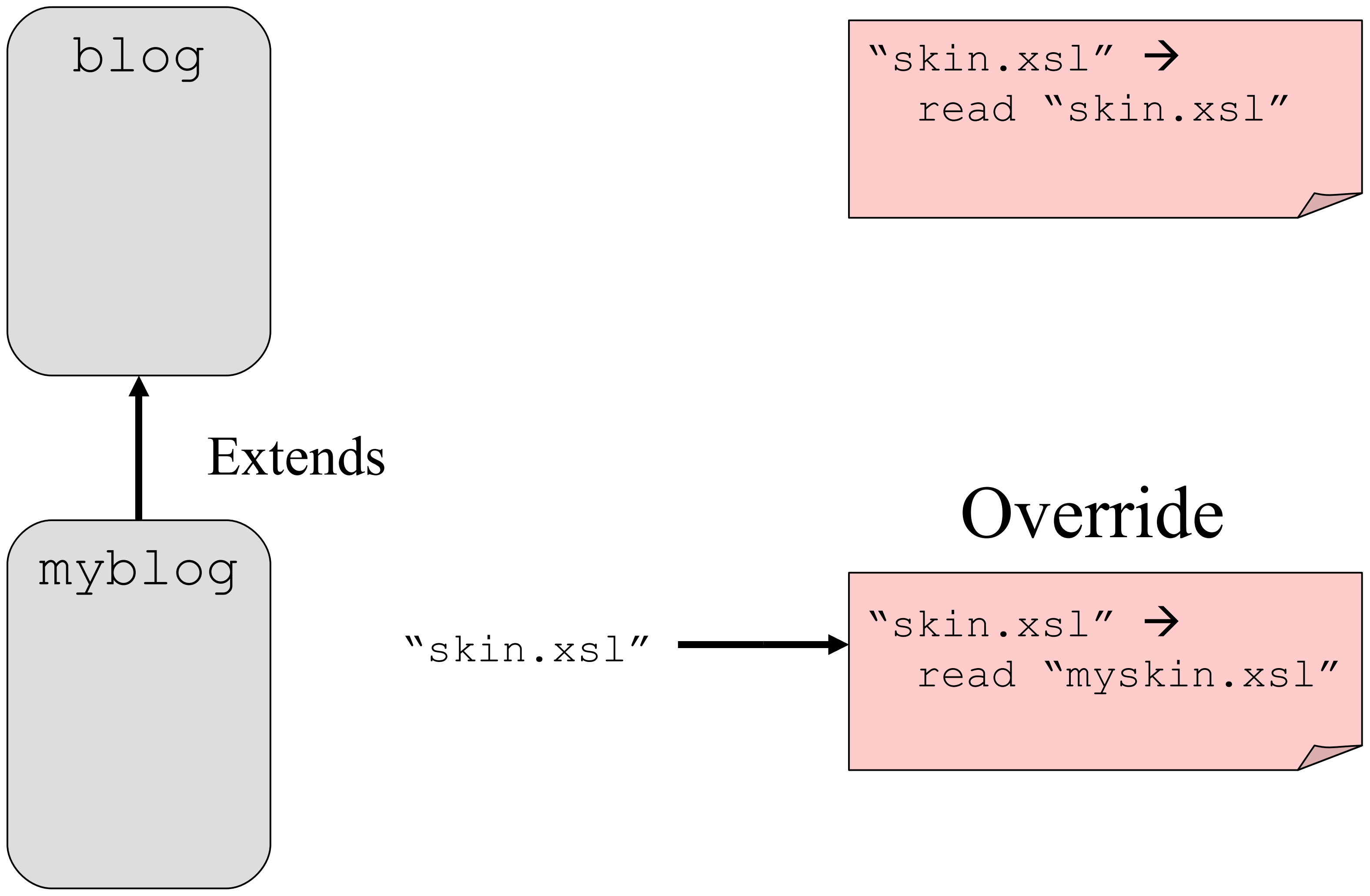
`--> /blog/danielf/start`

- “Absolutizes” block protocol URIs to mounted URIs, used in link transformer

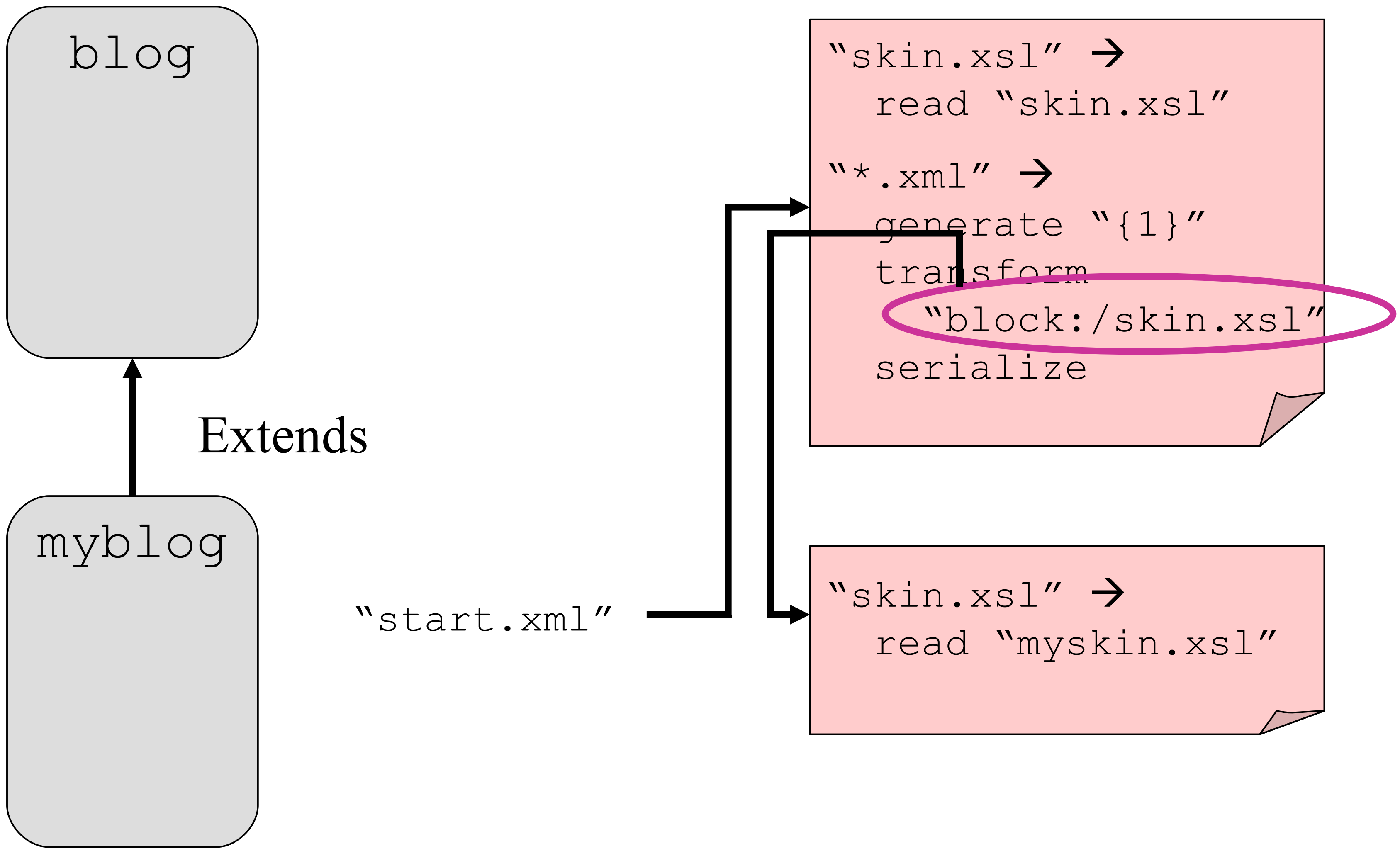
Sitemap polymorphism



Sitemap polymorphism



Sitemap polymorphism



Scenario

- Download blog block
- Deploy with parameters (or use default)
  - Test
- Create empty extension (Maven archetype)
  - Test
- Override some default or example rule
  - Test
- …

Summary

Blocks gives us:

- Binary application packages
  - Classes & resources
  - Components
  - Webapp functionality
- Parameterizable applications
- Reusability by extension
- Dependency handling between applications

Current state

- Implementation in Cocoon 2.2
- Stabilize it, use it for the samples

Next steps

- 3.0
  - OSGi based
  - Uses ”official” Spring-OSGI bridge
  - class loader isolation
  - partial hot plugablillity