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Securing Your Applications with CAS and Acegi

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Overall Presentation Goal

Learn How to Use Acegi Security and CAS to secure your Spring-based Applications

Qualifications

- Dmitriy Kopylenko
  - Senior Architect on Architecture & Framework Team
  - Committer to various open source projects including Spring and Acegi
- Scott Battaglia
  - Application Developer for Enterprise Middleware
  - Lead Developer/Architect for JA-SIG CAS
  - Committer for Acegi Security

Presentation Overview

- Why Use Acegi Security?
- Why use JA-SIG CAS?
- Adding Acegi and CAS to YOUR Application
- How Acegi Works
- How CAS Works
- Rutgers Experience with Acegi/CAS
- Conclusion

Why Use Acegi Security?

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Acegi Overview

- Official Spring Project
- Used in projects for over 2 ½ years now
- Over 70,000 downloads before 1.0 release
- High test coverage
- 14 active committers
- Apache 2.0 licensed

Authentication Features

- LDAP
- BASIC
- Digest
- JAAS
- CAS
- X.509 Certificates
- DAO
- Run-as Replacement
- Form-based login
- Anonymous

- Remember-Me
- SiteMinder
- HTTP Switch User
- Concurrent User Limiting
- Container Adapters
  - JBoss
  - Jetty
  - Tomcat
  - Resin
- Write your own
- Decide at deployment

Authorization Features

- Web requests
  - Http://my.server.com/some/secure/path
- Java methods
  - AspectJ compile-time weaving
  - Spring AOP runtime weaving
- Domain object instance security
- Write your own
- All with authentication independence!

Other Features

- Localization
- Channel security (HTTPS)
- Human user detection (JCAPTCHA)
- Filter to bean proxy capabilities
- Tag libraries
  - JSP and Velocity
- Two sample applications
- Quality documentation

Technical Design

- Uses Spring IoC container
  - DI, events, localization and JdbcTemplate
- Completely interface-driven
- High cohesion, loosely coupled
- Encourage customization and extension
- Java 1.3+ compatible
  - Java 5 code packaged in “Tiger” JAR

Why Use JA-SIG CAS?

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CAS Overview

- Official JA-SIG Project
- Used in production for over a year
- High test coverage
- 8 active committers
- JA-SIG License

Authentication Features

- LDAP
- DAO
- NTLM (3.1)
- SPNEGO (3.1)
- RADIUS (3.1)
- File System
- X.509
- “Trusted”
- JAAS
- Acegi
- Create your own…
- Chain them together

Other Features

- Localization
- Clustering (3.1)
- Client Libraries (PHP, Java, etc.)
- Demo-able/Quickstart WAR file
- Quality Documentation
- Active community mailing lists

Technical Design

- Use Spring IoC Container
  - DI, Localization, events, JdbcTemplate, LdapTemplate, etc.
- Completely interface driven
- Encourage customization and extension
- Java 1.4+/Servlet 2.4 compatible

Adding Acegi and CAS to YOUR Application

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Steps

Download

- Spring 2.0 RC4
- Acegi Security 1.0.1
- CAS Server 3.0.5
- Java 1.5
- Apache Tomcat 5.5.17

- Add files from Acegi's "tutorial" sample
- Edit Spring Petclinic XML and JSP files

DEMO

How Acegi Works

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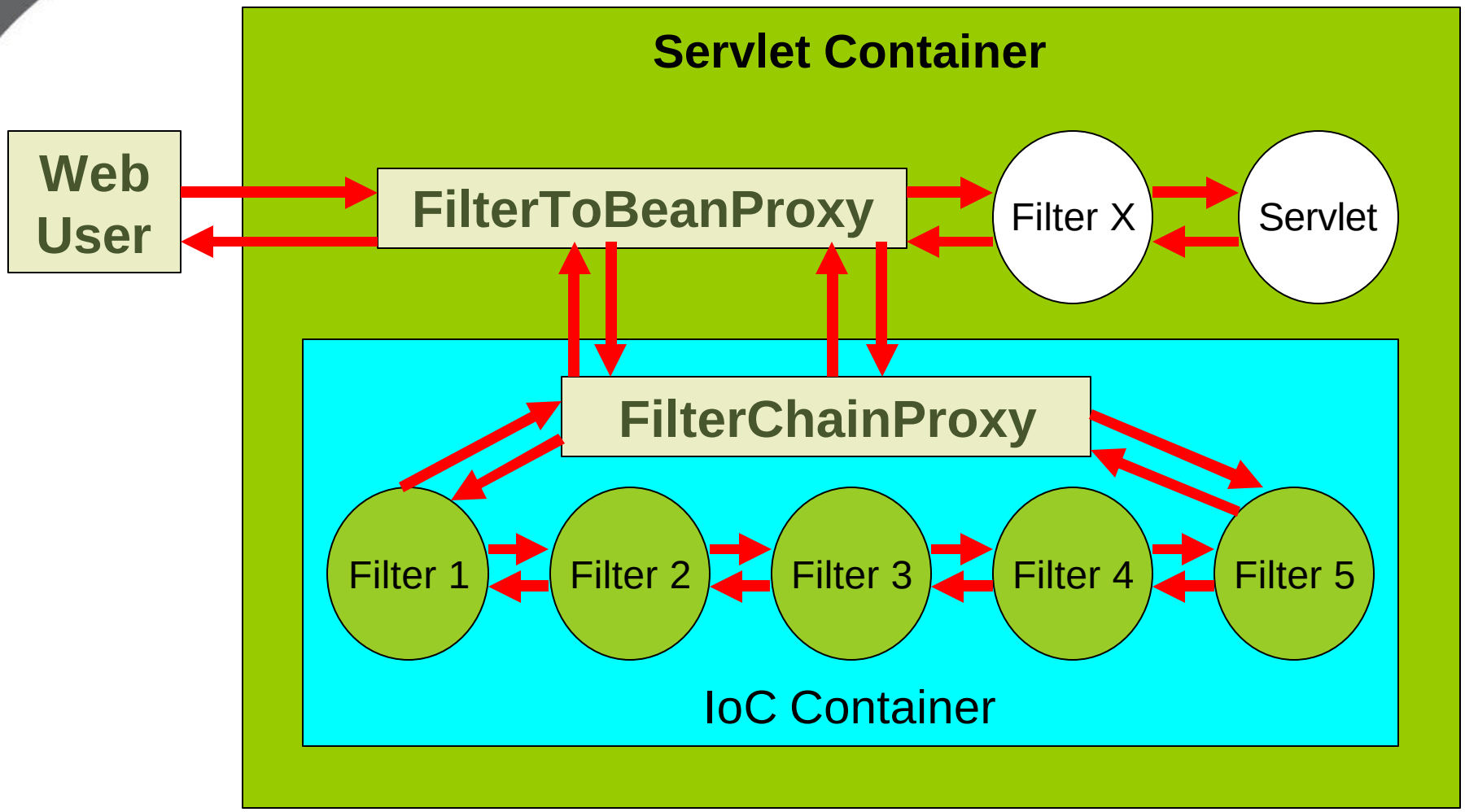
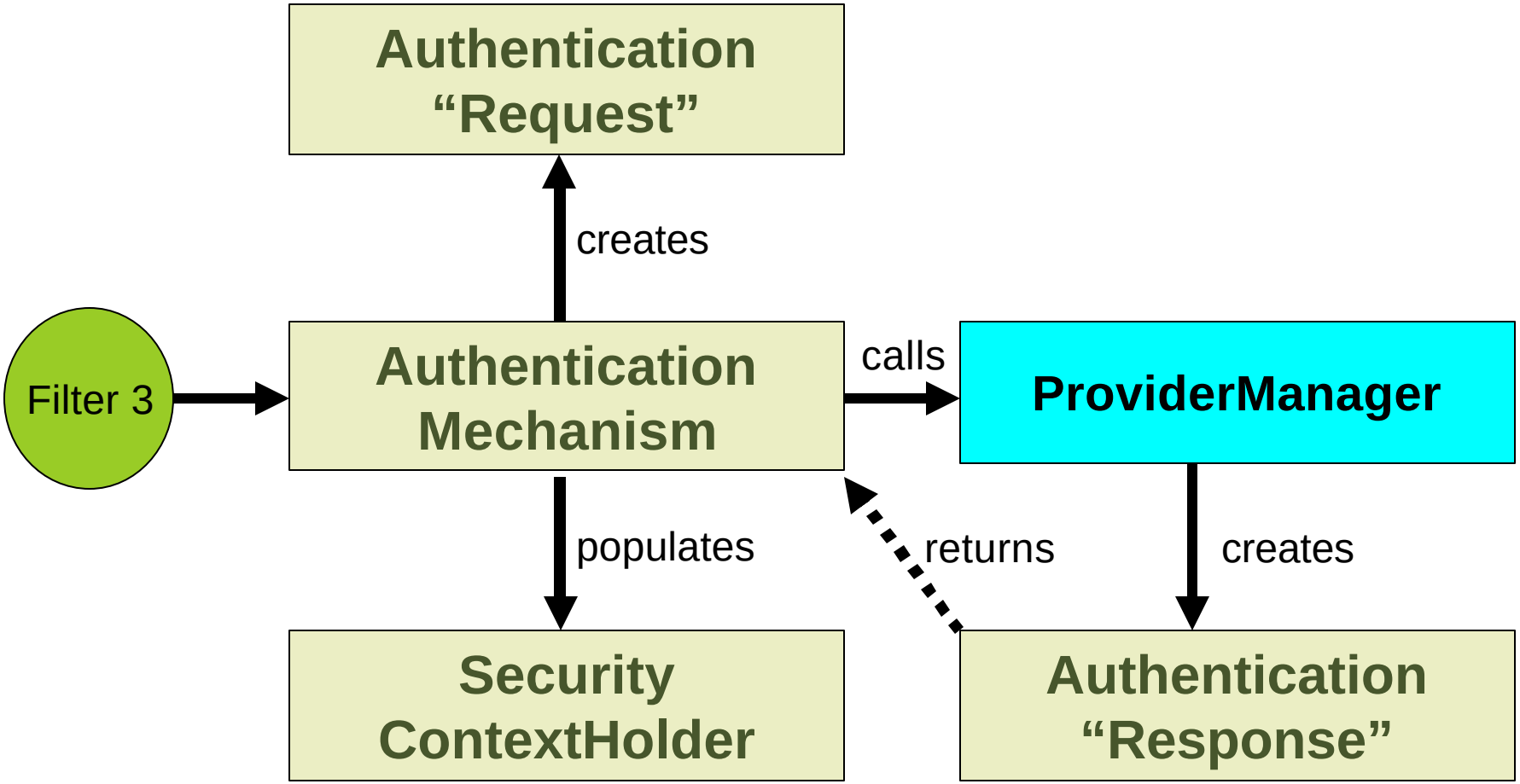
Filters Are Central



Main Filters

#	Filter Name	Main Purpose
1	HttpSessionContext IntegrationFilter	Stores SecurityContextHolder between HTTP requests
2	LogoutFilter	Clears SecurityContextHolder when logout requested
3	Authentication Mechanism Filters	Puts Authentication into SecurityContextHolder
4	Exception TranslationFilter	Converts Acegi Security exceptions into HTTP
5	FilterSecurity Interceptor	Authorizes web filter requests based on URL patterns

Security Context Population



How CAS Works

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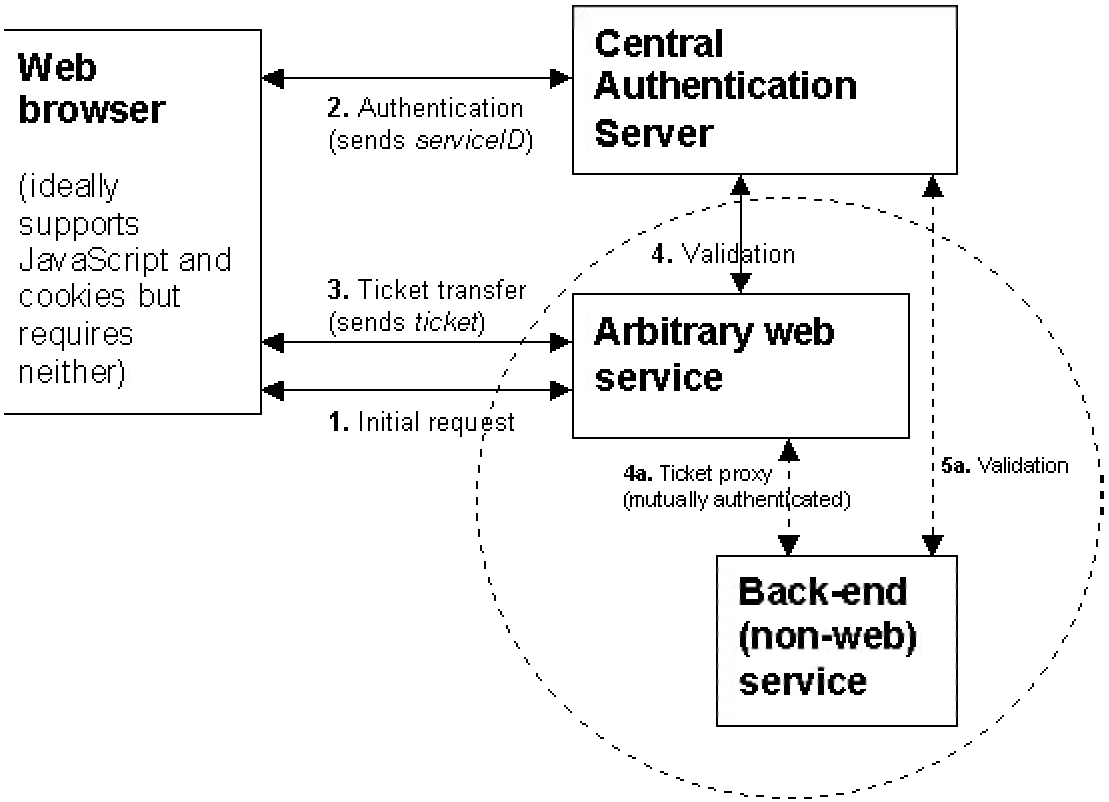
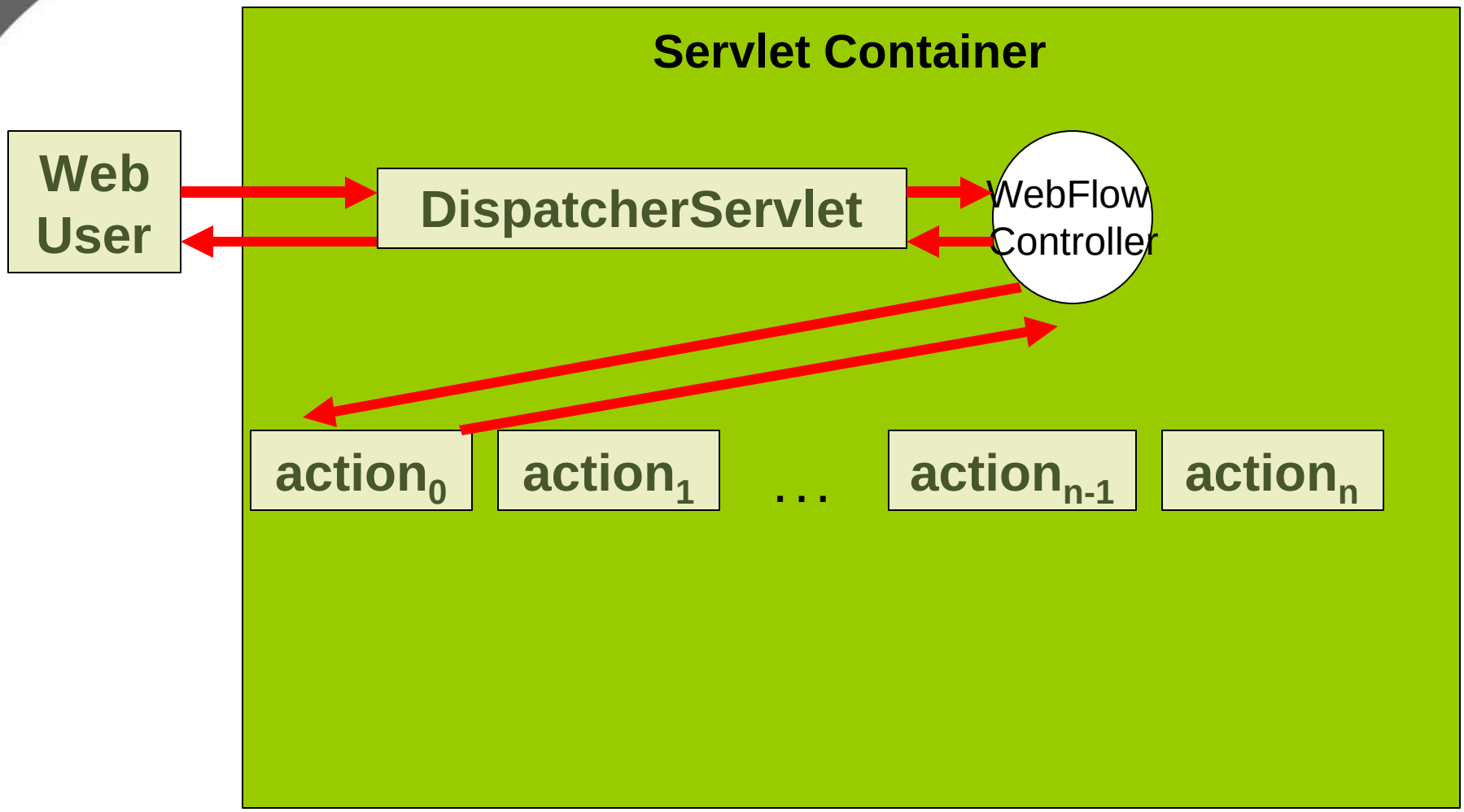
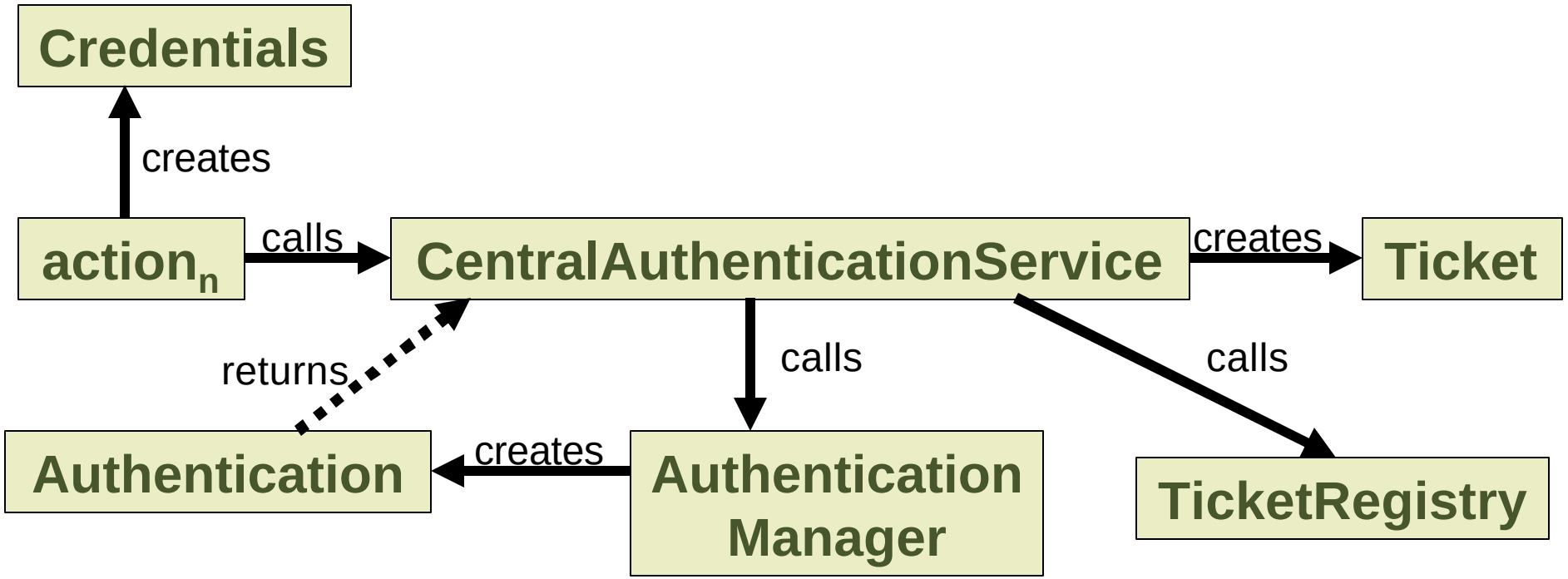
CAS Protocol



Spring Web Flow




Credentials
creates
action$_n$
calls
CentralAuthenticationService
creates
Ticket
returns
calls
calls
Authentication
creates
Authentication Manager
TicketRegistry

Rutgers Experiences using Acegi/CAS

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What We Were Doing

- Duplicating authentication code on each application
- Multiple authentication methods
- Sign in to each application
- De-centralized authentication

What Did We Do

- Introduced a portal
- Centralized authentication
- Single Sign On
- Proxy Authentication
- Introduced Acegi into Java applications

Benefits

- Better user experience
- Minimized access to passwords
- Created “horizontal” authentication component

Conclusion

Conclusion

- Acegi Security is fully-featured solution
  - Many authentication strategies
  - Decoupled web and method authorization
  - Completely customizable by end users
  - Active community, quality documentation, etc.
- CAS is a fully-featured solution
  - Many authentication strategies
  - Easily pluggable and extensible
  - Active community, quality documentation, etc.
  - Support for multiple platforms

Conclusion

- Acegi and CAS “just work”. Go ahead and try it.

Resources

- http://www.acegisecurity.org
- http://www.ja-sig.org/products/cas/
- http://www.springframework.org
- http://www.ja-sig.org/wiki

Q&A