

JavaEE architectures

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"It's not work if you like it"
...so I never worked. #java



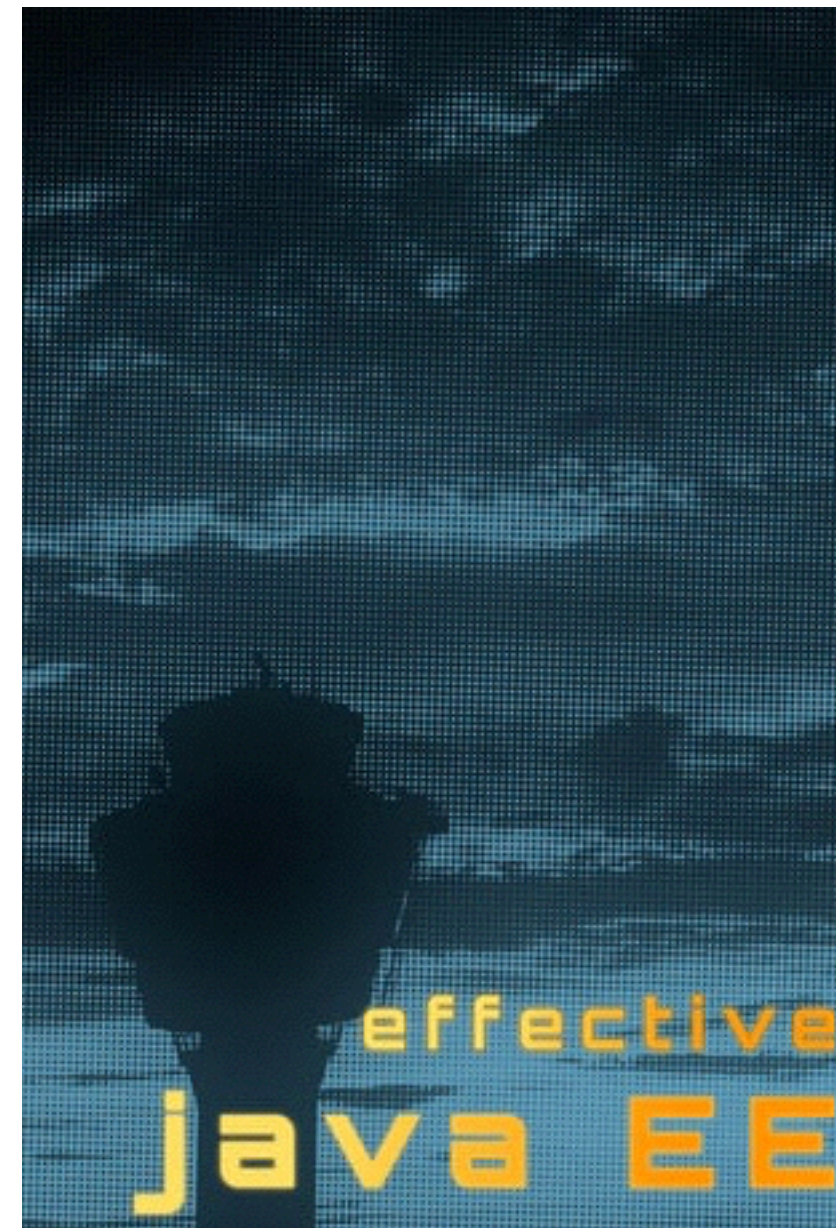
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Real World Java EE Night Hacks

Dissecting the Business Tier

[Iteration One]

CDI REST JPA2 JMX

EJB 3.1 JAX-RS Maven 3 Java EE

ScalaTest Hudson DevOps BASE

Arquillian JUnit CI Stress Test

X-RAY

Adam Bien

Foreword by James Gosling

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REAL WORLD

JAVA EE PATTERNS

RETHINKING BEST PRACTICES



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realworldpatterns.com









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Understanding CAP in Java EE context

CAP vs. FLP (Fischer, Lynch and Paterson)

In an asynchronous network where messages may be delayed but not lost, there is no consensus algorithm that is guaranteed to terminate in every execution for all starting conditions, if at least one node may fail-stop.

Hardware Costs

Sun E10K		
	E10K Server - Enterprise 10000 Server - Sun Microsystems	
	<p>Sun Enterprise E10000 Server. This is a complete server with all system boards, power supplies, fan trays etc. It was installed at AOL and was in good working order until it was deinstalled. The CPU's and memory have been removed, but this is a great machine for parts. If you are suporting E10K servers, this is a perfect spare.Click here for technical information on the Sun Fire E10K server</p> <ul style="list-style-type: none">• 30-Day Warranty on all hardware• Great for spare parts. Complete list of installed options is available upon request.• Can ship today• in stock. Call for availability on quantities over 1	
 <p>We would also be happy to take your order or answer any questions over the phone 480-367-6698</p> <p>For Sales dial 1</p> <p>or Michael Hankerson extension 101</p>	Manufactured By: Sun Microsystems	
	<div> Print Product Description</div> <div> Email a Friend</div> <div> Sign-up for Monthly Specials</div> <div> Update My Profile</div>	
		<div>List Price:\$1,200,000.00</div> <div>Qty <input type="text" value="1"/> qty:</div> <div>Add To Cart</div> <div>\$1,995.00</div>

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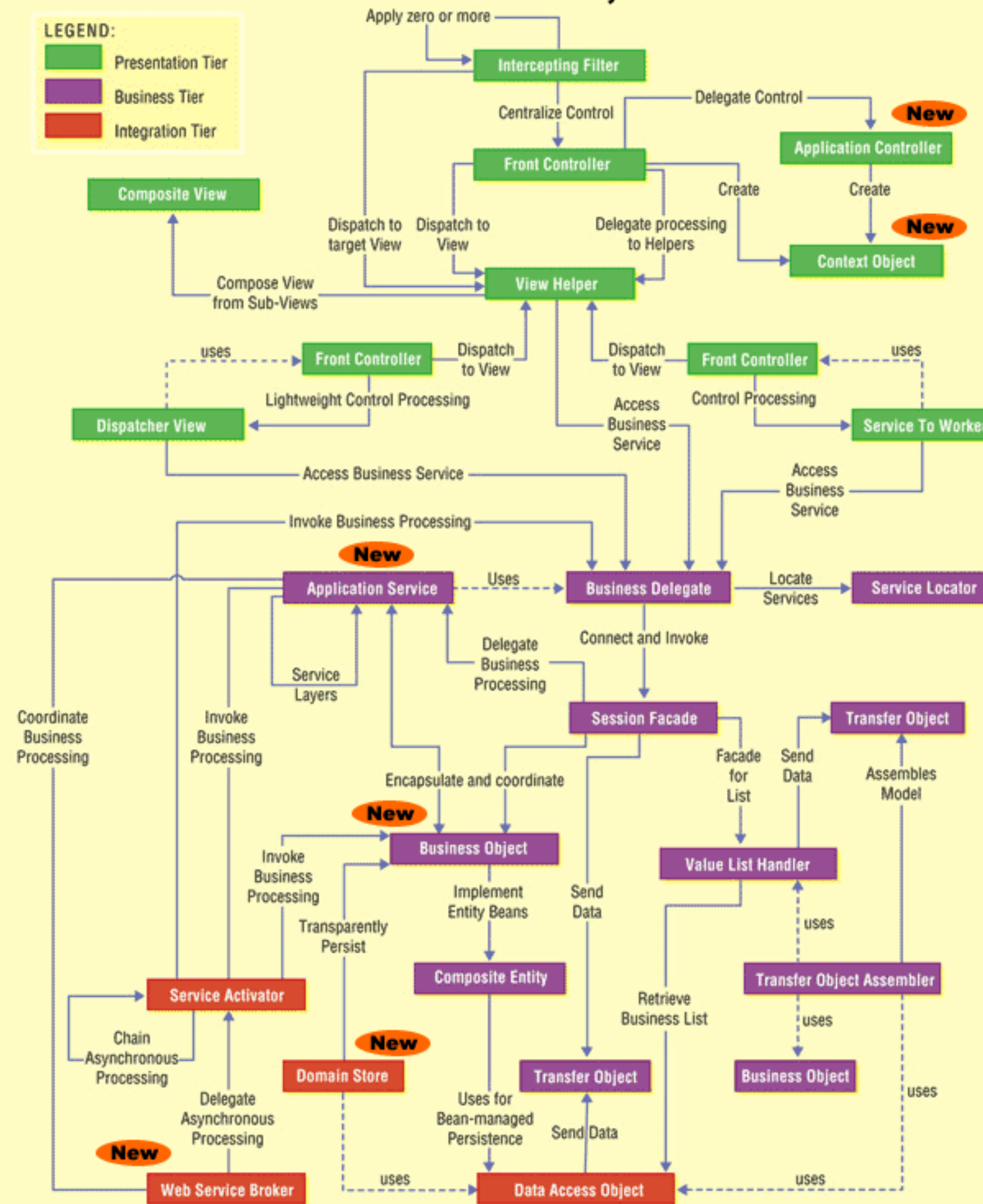
**BASE vs. ACID, or how
to start a project**

Clear Code

Deprecated J2EE Patterns

Core J2EE Patterns, 2nd Edition

LEGEND:



GoF Patterns

Factory, Abstract Factory, Singleton, Builder,
Prototype, Adapter, Bridge, Decorator, Facade,
Flyweight, Composite, Proxy, Template,
Observer, Visitor, Command, Strategy, State,
Chain of Responsibility

Documentation and Test

Cargo Cult?

"Cargo cult programming is a style of computer programming characterized by the ritual inclusion of code or program structures that serve no real purpose."

[http://en.wikipedia.org/wiki/Cargo_cult_programming]

Conway's Law

Parkinson's Law of Triviality

Deployment Strategies

- Blue-Green Deployment
- Hot Deployment
- Virtualization
- Containers

GRASP

- High Cohesion, Minimal Coupling
- Protected Variations
- Information Expert
- Polymorphism
- Pure Fabrication

Immutable Infrastructure

Reactive Programming

Pragmatic modularization of Java EE applications

Microservices

Structuring

- The Vision
- Cohesion <-> Coupling
- Essential Entities and Business Components
- “Maximal Cohesion, Minimal Coupling”

Command Query Responsibility Segregation (CQRS)

“CQRS states that every method should either be a command that performs an action, or a query that returns data to the caller, but not both.

In other words, asking a question should not change the answer.“

[http://en.wikipedia.org/wiki/Command-query_separation]

Event Sourcing

“Event Sourcing ensures that all changes to application state are stored as a sequence of events. Not just can we query these events, we can also use the event log to reconstruct past states, and as a foundation to automatically adjust the state to cope with retroactive changes.”

[<http://martinfowler.com/eaDev/EventSourcing.html>]

Designing plugins, templates and hooks

Caveats of asynchronous applications

RESTful architectures vs. SOAP

Service governance and versioning

- API Versioning
- Dealing with extensions
- (In)Compatibilities
- SCM

Stateful vs. stateless Java EE architectures

- Where is the state?
- What about the scalability?

MoM and Java EE with JMS

- API Compatibility
- Deliver Once And Only Once
- Persistent Queues / Durable Subscribers
- Poisoned Messages

Logging, errorhandling

- Who needs logs?
- Error classification
- Audits and traces

Management and monitoring

- JMX, REST
- "Business monitoring"
- Automated setup and deployment

Continuous Integration and Continuous Deployment

Introduction to clustering, shared nothing and grid architectures

Integration of legacy
resources with and without
JCA 1.6: code walk-throughs

Thanks && see you:

Adam Bien's Workshops

Munich (MUC) Airport Workshops, 10th, Winter Edition:

Java EE 7 Bootstrap, Monday, December 7th, 2015

Effective Java EE 7, Tuesday, December 8th, 2015

also available as: [Streaming / Download Edition]

Java EE 7 Architectures, Wednesday, December 9th, 2015

HTML 5 for Java Developers, Thursday, December 10th, 2015

JavaScript for Java Developers, Friday, December 11th, 2015

Dedicated Virtual Workshops [on demand]

Collateral materials from previous editions.

Special Event: Microservices With Java EE 7 and Java 8, January 25th, 2016

Special Event: Continuous Java EE 7 Testing, Deployment and Code Quality, January 26th, 2016

Thank You!

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