

Tutorial

Dynamic Server Applications with Eclipse RT

```
GreetingsResource.java
package hello.jaxrs;

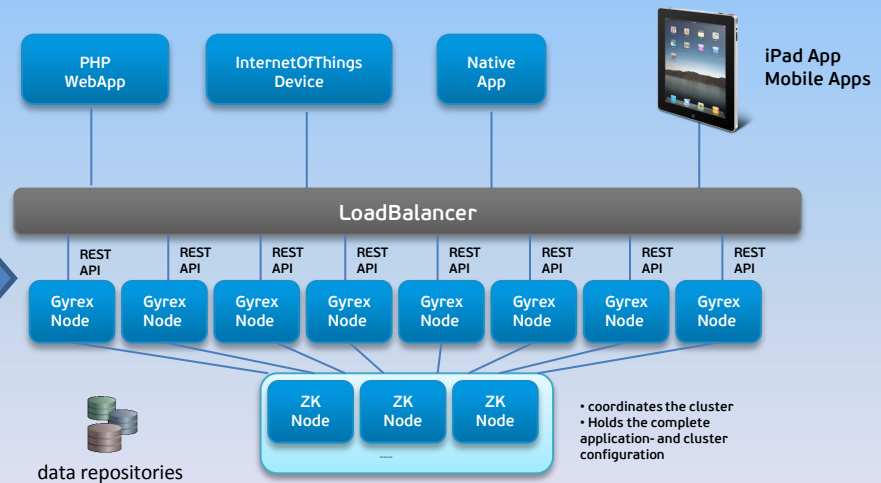
import hello.service.GreetingService;

/**
 * Hello World JAX-RS Resource
 */
@Path("/greetings")
public class GreetingsResource {

    // inject OSGi service using JAX-RS @Context
    @Context
    private GreetingService greetingService;

    // inject OSGi service using JSR 330 @Inject
    @Inject
    private GreetingService greetingService2;

    @Context
    private UriInfo uriInfo;
}
```



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In this tutorial you will

- **LEARN** what modern server applications need to feature
- **UNDERSTAND** the usage of selected EclipseRT technologies
- **BUILD** an EclipseRT server application based on Equinox and Eclipse Gyrex
- **SETUP** a private cluster connecting all attendees



Modern Server Application Requirements

- Support high traffic use cases
- Support different frontend technologies and devices
- modular in development and deployment
- Easy to setup
- Open for new technologies → easy to extend AND to shrink
 - e.g. persistence

Million
transactions
per hour



Eclipse RT

“EclipseRT is the collection of OSGi-based runtimes and frameworks built by the Eclipse open source projects. ”

Containers, Middleware, EnterpriseFrameworks

eclipse)link

jetty://

equinox
OSGI



GYREX

eclipseRT



Equinox

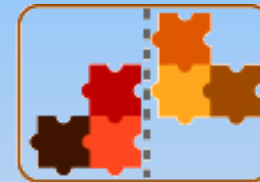
- reference implementation for OSGi spec
- foundation of EclipseRT
- component oriented development and assembly



Create



Extend



Assemble



Eclipse jetty

features

- Asynchronous HTTP Server
- Standard based Servlet Container
- [Web Sockets](#) server
- Asynchronous HTTP Client
- OSGi, JNDI, JMX, JASPI, AJP support

Small foot print allows large scaling

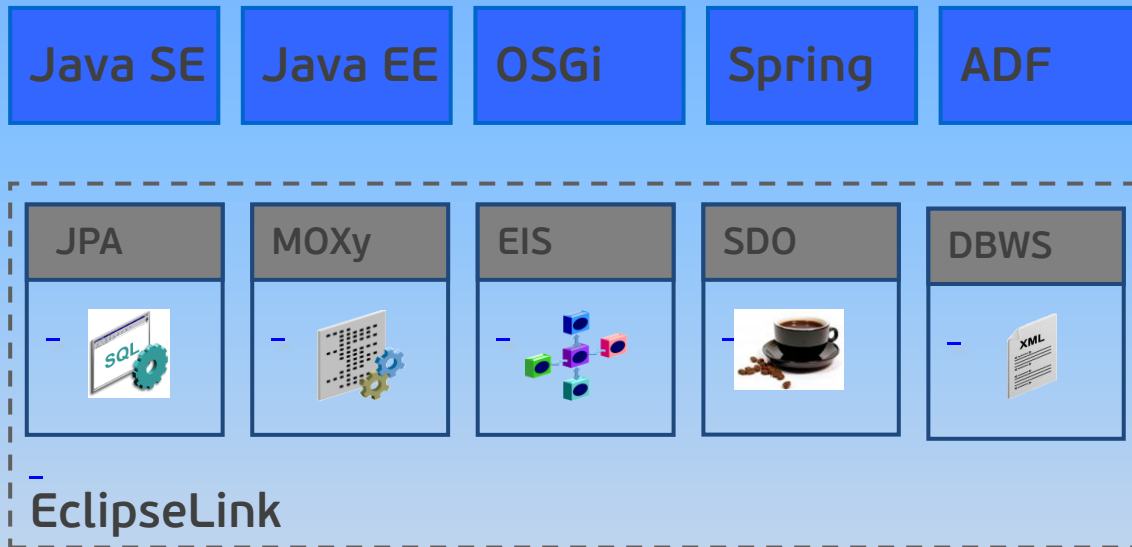
Jetty runs in

- Apache Hadoop
- Google AppEngine



EclipseLink

Comprehensive Java persistence solution
addressing relational, XML, and database web services.



XML Data



Legacy Systems



GYREX

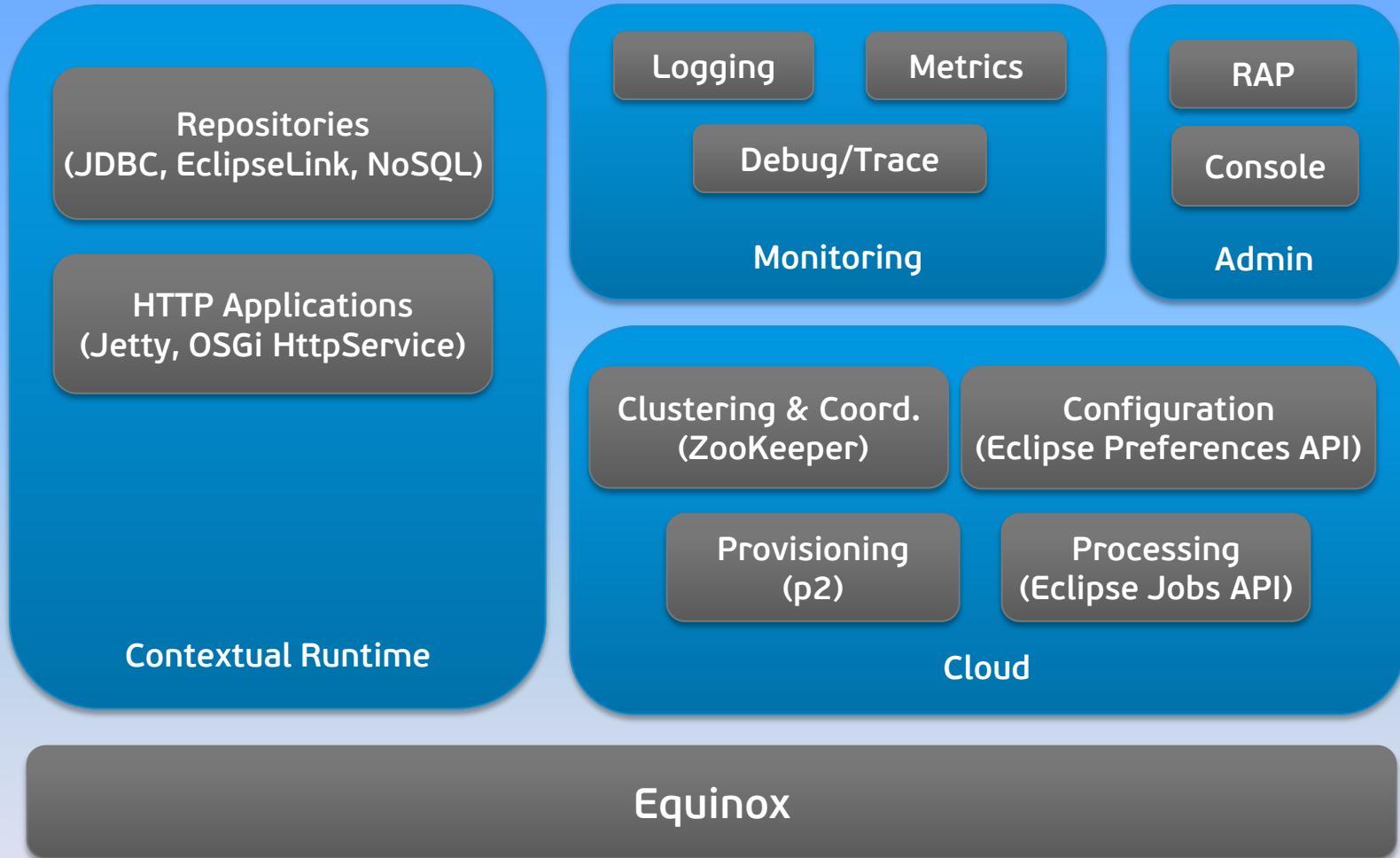
lightweight application stack for building server applications using EclipseRT technologies.

- built-in clustering
- built-in web-based administration UI
- built-in multi tenancy
- enhancements for professional maintenance
 - centralized logging
 - cluster provisioning UI

GYREX



GYREX Components

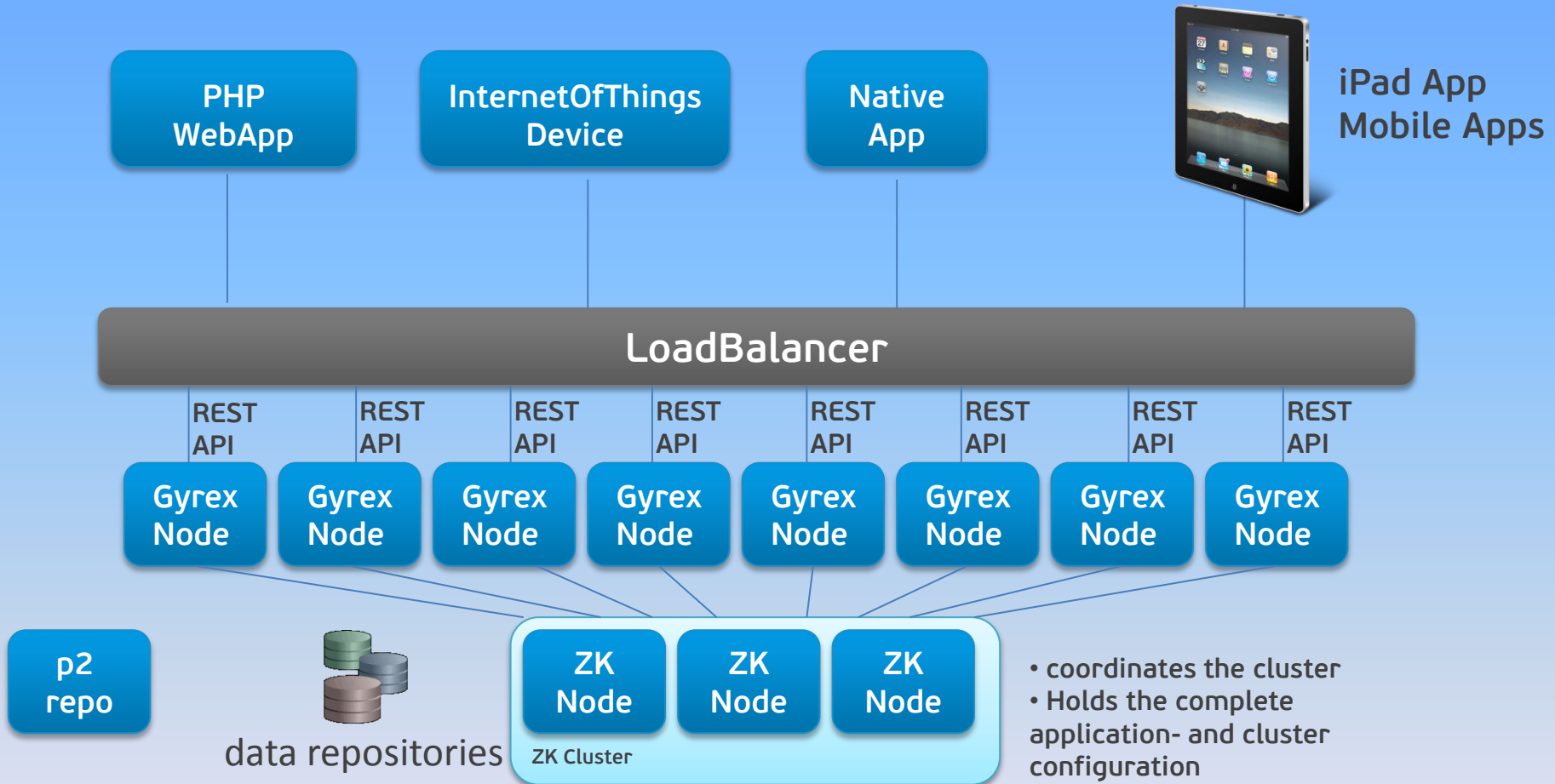


GYREX



GYREX Infrastructure Setup

For a High Traffic Application with different frontends

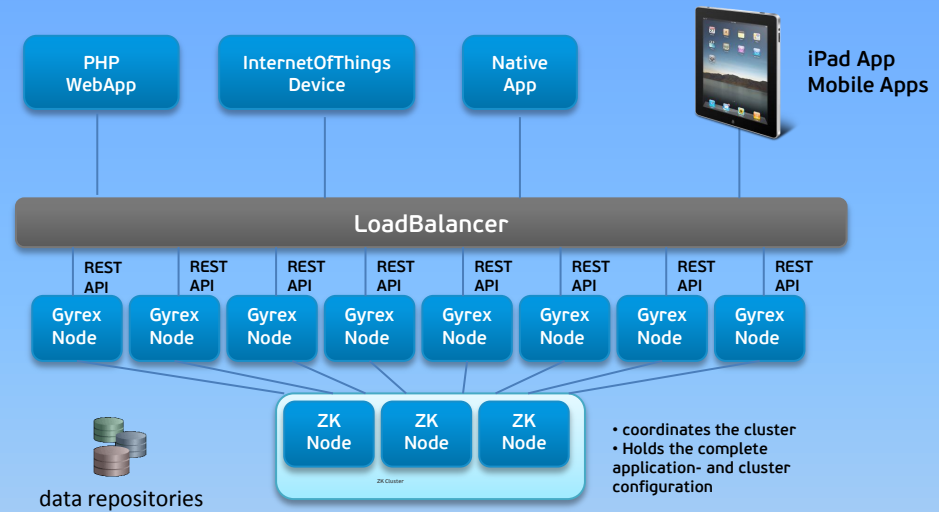


GYREX



GYREX Features

- light weight application stack
- fast 100% OSGi runtime
- central cluster configuration through zookeeper
- cluster aware job scheduling
- multi tenant application support
- automated deployment through p2
- support for cluster node roles, e.g. „job worker node“ and „api node“



GYREX



Exercises

- Setup workspace and target platform
- Simple OSGi Service implementation
- JAXRS example application
- Private cluster setup

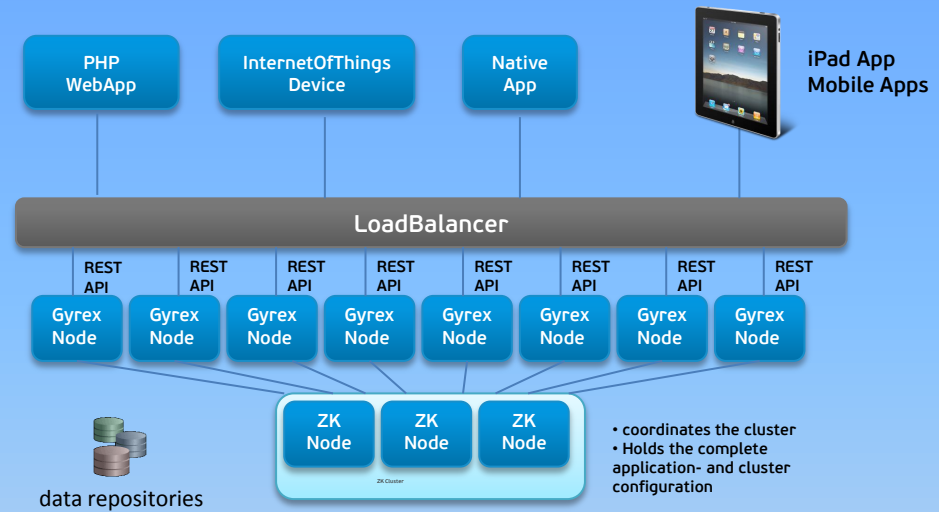
Setup Steps

- Copy USB-stick content to local disk
- Extract fresh Eclipse installation from archive
- Copy samples folder into eclipse/dropins
- Start Eclipse with new workspace
- Open Java Perspective
- Import targetplatform project
(File->Import->Existing Projects)
- Set LOCAL TargetPlatform



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GYREX



For more information

- <http://www.eclipse.org/gyrex/>
- <http://www.eclipse.org/equinox/>
- <http://www.eclipse.org/rt/>



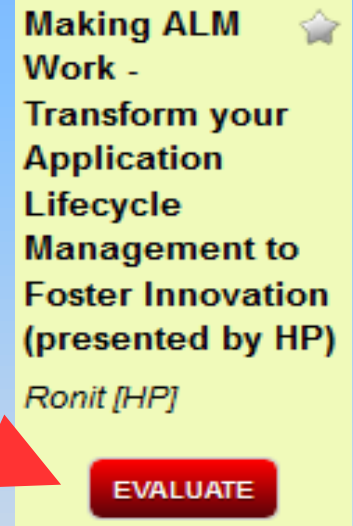
Give Feedback on the Sessions


1

Sign In: www.eclipsecon.org

2

Select Session Evaluate



Making ALM Work - 
Transform your Application Lifecycle Management to Foster Innovation (presented by HP)
Ronit [HP]

EVALUATE

A red arrow points from the 'Select Session Evaluate' text to the 'EVALUATE' button.

3

Vote



Thank You
for your attention

