



# JSR-373

On the way to a new Java EE Management Standard

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# About me

## ▶ Development and Operations @ ConSol

- ❖ Large Java Projects
- ❖ Open Source Monitoring (Nagios)
- ❖ [www.consol.de](http://www.consol.de)

## ▶ Open Source

- ❖ [roland@jolokia.org](mailto:roland@jolokia.org)
- ❖ <https://github.com/rhuss>

## ▶ Growing Chilis since 2005



# Agenda

- ▶ JMX (JSR-3)
- ▶ JMX Remote (JSR-160)
- ▶ Java EE Management (JSR-77)
- ▶ Java EE Management 2.0 (JSR-373)



# JMX (JSR-3)

- ▶ Java Management Extensions (2000)

  - ❖ Monitoring and Management

- ▶ JMX-Operations

  - ❖ Attribute Reading

  - ❖ Attribute Writing

  - ❖ Execution of Operations

  - ❖ Notifications

- ▶ Available out of the box since JDK 1.5

# JSR-160

- ▶ JMX Remote API (2003)
- ▶ Remote MBeanServer Export
- ▶ Connectors:
  - ❖ RMI Connector mandatory
  - ❖ JRMP and IIOP
  - ❖ JMXMP optional
- ▶ Transparent Programming Modell
  - ❖ Client-Stubs

# Problems with JSR-160

- ▶ Firewalls
- ▶ Strongly Typed
- ▶ Authorization difficult
- ▶ Java only

# JSR-262

## ► JSR-262: Web Services Connector for JMX Agents

Public Review Ballot	13 May, 2008
Public Review	15 Feb, 2008
Early Draft Review 2	23 Apr, 2007
Early Draft Review	18 May, 2006
Expert Group Formation	21 Dec, 2004
JSR Review Ballot	07 Dec, 2004



# JSR-262, 2.5

**What need of the Java community will be addressed by the proposed specification?**

Access to management and monitoring of Java applications and of the Java Virtual Machine itself from **clients not using the Java platform** and in network configurations where the **existing JMX connector protocols are inappropriate** (for example because of firewalls).



# JSR-262

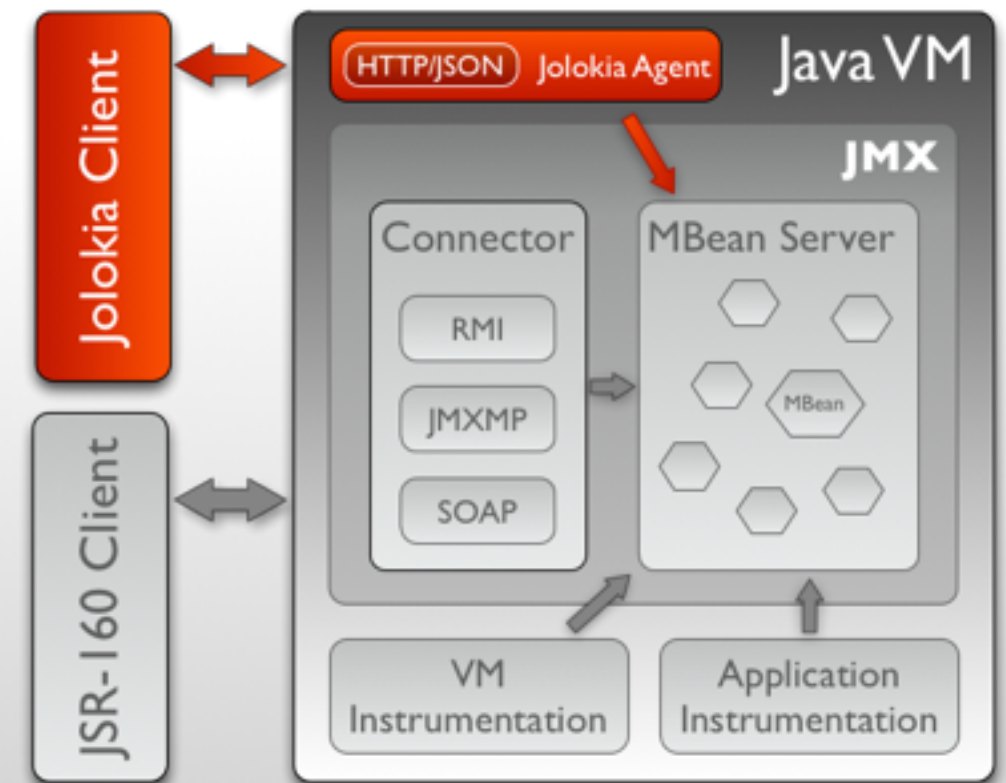
- ▶ State since November 2009: **inactive**

Q: I've noticed that JSR XXX is labeled "Inactive". What does "Inactive" mean?

A: This means that the JSR has not gone final and that its Spec Lead and Expert Group have not published a milestone draft for their JSR in more than **18 months**. This may mean that the specification has reached a particularly difficult stage in its development or that the community **interest in the JSR has waned**. Once the "Inactive" label is applied, the PMO works closely with the Spec Leads of any "Inactive" JSRs to get them to produce the next milestone draft/release so as to remove the "Inactive" label. If the Spec Lead and Expert Group are unable to produce a draft after a further six months from the application of the "Inactive" label - that is to say, a JSR goes **at least two years without** posting a draft or release - the PMO may **withdraw** the JSR in question from the process.

# Jolokia

- ▶ JSON-HTTP Bridge to JMX
- ▶ REST-like protocol
- ▶ Agent based approach
- ▶ Extras:
  - ❖ Bulk Requests
  - ❖ Role based security
  - ❖ Client Libraries



# JSR-77

## ► Java EE Management Model

### ❖ Unique naming scheme

▲ . . . . .

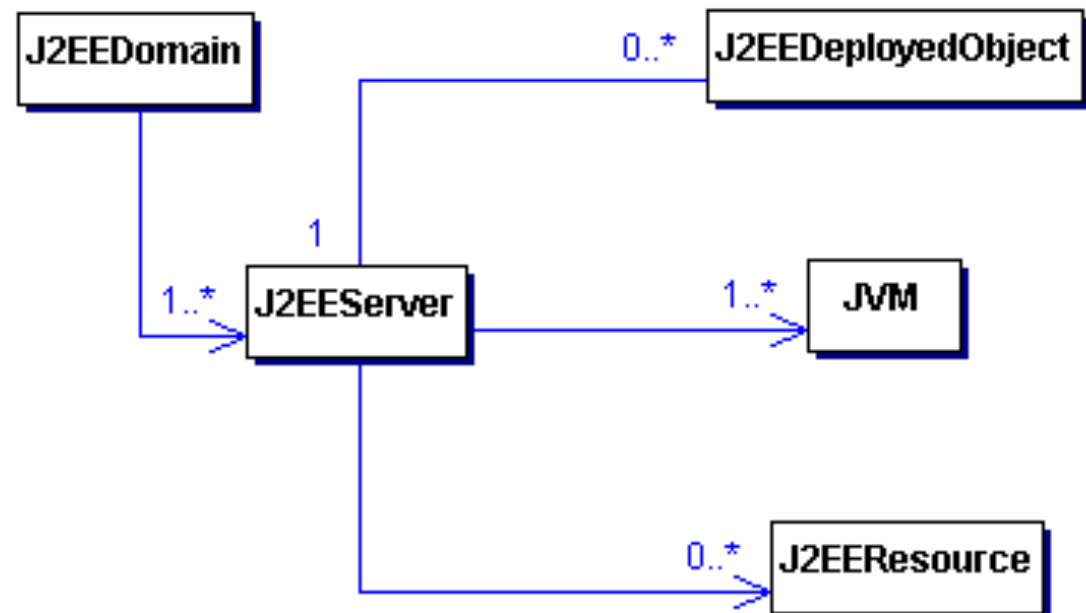
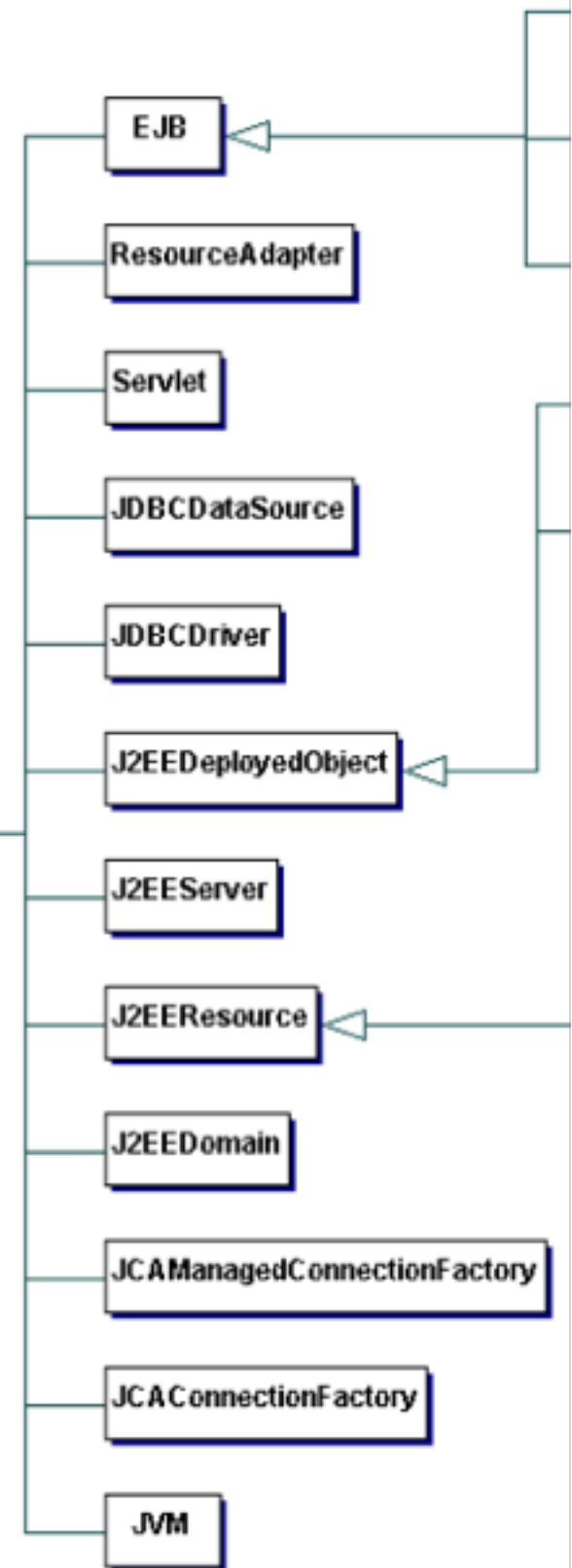
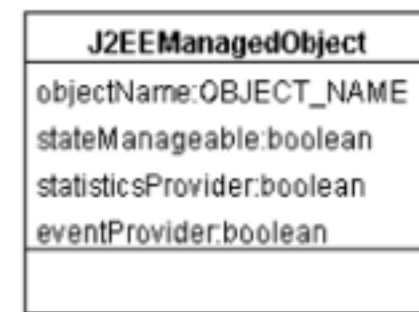


Figure 3. Relationships in JSR 77



# JSR-77

## ▶ Management & Monitoring

- ❖ State Management (optional)
- ❖ Event Handling (optional)
- ❖ Performance Monitoring (optional)

## ▶ Access API

- ❖ Management EJB (MEJB)
- ❖ JMX (remote via JSR-160)
- ❖ SNMP MIB (optional)
- ❖ CIM/WBEM (optional)

# JSR-373

- ▶ Java EE Management 2.0
- ▶ Based on JSR-77
- ▶ REST API for Java EE platform management
  - ❖ It's *NOT* about a REST based JMX connector !
- ▶ Server-Sent Events (SSE) for notifications
  - ❖ WebSockets also considered
- ▶ REST Deployment of Java EE applications

# JSR-373

- ▶ Support for
  - ❖ State Management
  - ❖ Event Handling
  - ❖ Performance Monitoring
- ▶ Support for MEJB fading out (“proposed optional”)



# Early Roadmap JSR-373

- ▶ Q3 2015 : First Draft
- ▶ Q4 2015 : Second Draft
- ▶ Q3 2016 : Release

# It's just the beginning ...

## ► Open Questions:

- ❖ Full JMX support or tag JMX support as 'proposed optional' ?
- ❖ JSON to use as content type for REST API ?
- ❖ JSON Schema support ?
- ❖ New ManagedObjects for newer JEE constructs ?

## ► What do YOU expect for a Java EE Management API ?

# Questions ?

