Apache TomEE
Tomcat with a Kick

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 #TomEE

Apache TomEE: **Overview**

- Pronounced "Tommy"
  - short for Tomcat EE

- Java EE 6 Web Profile certification in progress

- Apache TomEE includes support for:
  - Servlet 3.0 (Apache Tomcat)
  - JPA 2.0 (Apache OpenJPA)
  - JSF 2.0 (Apache MyFaces)
  - CDI 1.0 (Apache OpenWebBeans)
  - EJB 3.1 (Apache OpenEJB)
  - JMS (Apache ActiveMQ)
  - WebServices (Apache CXF)

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Apache TomEE: **Overview**

- Certify, certify, certify

- Preserve Tomcat
  - Leverage Tomcat JNDI, Security, everything
  - Get more, don't give up anything
  - Add extras without removing anything
  - No need to learn a new server environment

- Lightweight
  - 45MB zip (will be trimmed further)
  - Runs with no extra memory requirements (default 64MB)

- Existing IDE tools for Tomcat should also work with TomEE

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Apache TomEE: **Web Profile Certification Status**

- We can't say *(them's the rules)*

- Work being done on Amazon EC2
  - t1.micro linux images, lot's of them
  - 100 going at once!
  - Each has 613BM memory max
  - Though TomEE runs with default memory options *(64MB)*
  - It's quick!

- Will be Cloud certified!

- Wish we could show you the setup *(sorry, also the rules)*

Apache TomEE: **History**

- Predates Java EE 6 Web Profile

- Previously known as OpenEJB-Tomcat integration
  - or ... OpenEJB-OpenJPA-ActiveMQ-CXF-DBCP-Tomcat integration
  - Tomcat EE (TomEE) is more accurate
  - Origin of EE 6 "EJBs in .wars" feature, aka Collapsed EAR

- Drop-in-war for any Tomcat version:
  - Tomcat 5.5.x
  - Tomcat 6.x
  - Tomcat 7.x

- Integration approach inspired by OpenEJB's embeddable nature

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Apache TomEE: **High Level Status**

- Just shy of beta
  - some parts mature
  - some parts new (very new)

- Dig in if you...
  - like to give feedback
  - have feature requests
  - want to contribute *(anything at all)*

- Wait if you...
  - don't have spare time

- Released code is stable but less functional
  - smaller subset of pre Java EE 6 libs

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Apache TomEE: **Integrated**

Servlets	3.0	Apache Tomcat 7
JSP	2.2	-
JSF	2.0	Apache MyFaces
JPA	2.0	Apache OpenJPA
CDI	1.0	Apache OpenWebBeans
EJB	3.1	Apache OpenEJB
JMS	1.1	Apache ActiveMQ
JAX-WS	2.2	Apache CXF
JAX-RS	1.1	-
Connectors	1.6	Apache Geronimo Connector/Transaction
JavaMail	1.4	Apache Geronimo JavaMail
Bean Validation	1.0	Apache Bean Validation

Apache TomEE: **Status**

Servlets	3.0	★★★★★	
JSP	2.2	★★★★★	
JSF	2.0	★★★★★	
JPA	2.0	★★★★★	
CDI	1.0	★★★☆	heavy activity
EJB	3.1	★★★★☆	
JMS	1.1	★★★★★	
JAX-WS	2.2	★★★★★	
JAX-RS	1.1	★★☆☆	heavy activity
Connectors	1.6	★★★★	
JavaMail	1.4	★★★★★	
Bean Validation	1.0	★★★★★	

Meh.... Sounds heavy....

Apache TomEE: Tomcat vs TomEE

	Tomcat	TomEE
Heap space used	9.3MB	15MB
PermGen used	15MB	39MB
Classes loaded	1,913	5,193
Server startup	341 ms	1662 ms
		(647 ms - released code)

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Apache TomEE: **Deployment**

- Supported archive types
  - WAR
  - EAR
  - EJB JAR
  - RAR

- Drop into
  - webapps/

Apache TomEE: **Transactions**

- Integrated Transaction Manager

- Connection pooling is Transaction aware
  - Everyone in same transaction shares the same connection

- Servlets, ManagedBeans, etc. can start transactions
  - @Resource UserTransaction transaction;

- No need for EJBs to use transactions

- Incoming and outgoing JMS messages transaction aware

- JPA EntityManagers transaction aware

Apache TomEE: **Security**

- Backed by Tomcat's Security Realm
  - Any org.apache.catalina.Realm impl will work

- Servlets security aware (obviously)

- Web Services security aware
  - Login to Tomcat Realm supported via WS Security

- Java EE Connector API security aware

- EJB method permissions security aware
  - Login to Tomcat Realm supported
  - Propagation from HTTP clients supported

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Apache TomEE: Remote Communication

- Over HTTP
  - JAX-WS
  - JAX-RS
  - EJB

- Binary or other
  - JMS
  - EJB
  - Connector (any)

Demo

Apache TomEE: **Possible Future**

- Fully Embedded version

- Arquillian adapter

- Java EE 6 Web Profile ... in BeanStalk?
  - *should be possible*

- Super trim version of TomEE?
  - *no WS no JMS no Connector no JPA no DB?*

- Meta-annotations throughout
  - *close to it already*

Apache TomEE: Minimum for Certification

Servlets	3.0	Apache Tomcat 7
JSP	2.2	-
JSF	2.0	Apache MyFaces
JPA	2.0	Apache OpenJPA
CDI	1.0	Apache OpenWebBeans
EJB	3.1	Apache OpenEJB
JMS	1.1	Apache ActiveMQ
JAX-WS	2.2	Apache CXF
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Apache TomEE: **Embedded Container**

Servlets	3.0	★★★★★	
JSP	2.2	★★★★★	
JSF	2.0	★★★★★	
JPA	2.0	★★★★★	
CDI	1.0	★★★★	recently completed
EJB	3.1	★★★★★	
JMS	1.1	★★★★★	
JAX-WS	2.2	★★★★★	
JAX-RS	1.1	★☆☆	heavy activity
Connectors	1.6	★★★★	
JavaMail	1.4	★★★★★	
Bean Validation	1.0	★★★★★	

Demo

Thank you!

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