

Apache

Apache TomEE

Java EE 6 Web Profile

TomEE
OpenEJB
OpenJPA
OpenWB
MyFaces
Tomcat

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#TomEE



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What is Apache TomEE?

- Java EE 6 Web Profile certified stack
- Tomcat through and through
- Tomcat + Java EE = TomEE (pronounced “Tommy”)
- All Apache components
 - MyFaces
 - OpenWebBeans
 - OpenEJB
 - OpenJPA
 - Bean Validation
- Core Values
 - Be Small
 - Be Tomcat
 - Be Certified

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Aren't there enough of those already?

- Still seem to be a lot of “just” Tomcat users
- Tomcat still the recommended server for most Apache projects
 - MyFaces
 - OpenWebBeans
 - CXF
 - OpenEJB
 - etc. etc.
- We truly believe Java EE is not “heavy”
 - OpenEJB, strong desire to disprove “heavy”
 - No one else was going to do it
- The Web Profile? Perfect!
 - had our name on it
 - too perfect not to try



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Flavors of TomEE

- Apache TomEE Web Profile (Java EE 6 Certified)
 - OpenWebBeans
 - OpenEJB
 - OpenJPA
 - MyFaces
 - Bean Validation
- Apache TomEE Plus (NOT Java EE 6 Certified)
 - CXF (JAX-RS, JAX-WS)
 - ActiveMQ (JMS)
 - Geronimo Connector
- Embedded Apache TomEE



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Basic Stats

- Size: the entire Web Profile is only 24Mb
- Memory usage: very little required, passed the TCK without changing any default JVM memory settings
- Agility: the server can go through a start/deploy/test/undeploy/stop cycle in 2-3 seconds, when run in embedded mode

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So do other app servers suck?

Of Course Not

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When did it start?

- Years ago.... or this year. Depends on your perspective.
- My answer: this year.
- Heavy certification work began in February this year
 - Wow, we were not nearly as close as we thought we were
- Particularly big months
 - March
 - April... (sorry for breaking EC2)
 - May
 - June
 - July .. brutal
 - August.. yep
 - oh and ... September
 - what day is it now?



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How did we do it?

- Certified on Amazon EC2
 - t1.micro linux images, lot's of them
 - 100 spot instances going at once!
 - Each has 613MB memory max
 - Pass complete Web Profile TCK with default jvm memory (tiny!)
- Current certified OSs
 - Amazon Linux AMI 2011.09, EBS boot, 32-bit EC2 t1.micro
 - Amazon Linux AMI 2011.09, EBS boot, 32-bit EC2 m1.small
 - Amazon Linux AMI 2011.09, EBS boot, 32-bit EC2 c1.medium
- Got a Cloud? Donate time!



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The Same Old Argument



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“We Just Use Tomcat”

- We just use Tomcat **and....**
 - all the extra parts we like
 - integrated in a custom fashion
- Battle standard for Java EE “haters”
 - Tomcat used as an argument Java EE is unnecessary
- What is unnecessary?
 - Compliance testing?
 - Portability?
 - Completeness in implementation?
 - Consistency of integration?
- “It’s unnecessary at the cost of”
 - Let’s remove that cost



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Redefining “worth it”

- “Oh yeah, we’ll our home grown stack is just like yours but”
 - not tested
 - not certified
 - costs us to create and maintain
 - missing major features
 - not tuned
- “... we ROCK!!!”
- Hard to make the same old argument and not look foolish
- Truly do have some valid reason for not using a certified stack?
 - tell us, we’ll fix it



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Tomcat: What's not there



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Gaps in plain Tomcat

- No Transaction support
- No Connection Pooling support
 - Connection pooling support should be transaction aware
- No @Resource
 - UserTransaction
 - BeanManager
 - Validator
 - ValidatorFactory
- No @PersistenceUnit
- No @PersistenceContext
- No @Inject
- No @EJB



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Gaps in plain Tomcat

- No support for Global JNDI
 - `java:module`
 - `java:app`
 - `java:global`
- No support for `@Resource(lookup="...")`
- No support for `@DataSourceDefinition`
- No support for new `<env-entry>` types:
 - `java.lang.Class`
 - `Enums`
- No Integrated Security



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How long can you
do without?



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Demo

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Technical Goals

- How small can it get?
 - Binary: 24MB download... can we get below 20MB?
 - Memory: 6,000 classes loaded ... can we get to 2,000?
- Nail down the embedded setup
 - Shave 2-3 second cycles down to 1 second
- So many optimizations
 - Class scope filtering
 - JAXB Overhead
 - Duplicate classes
- Certify more parts
 - JAX-RS
 - Connector
 - JAX-WS



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Technical Goals (cont.)

- Flush out validation (not the JSR-303 kind)
 - Servlet
 - JSF
 - CDI
- Improve Logging
 - Too verbose
 - Not as informative as it could be
- Refactor and clean code
 - Mad dash to certify
 - Simplify and trim
- Polish, Polish, Polish...



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Questions?

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thank you!
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