JTango

Tango in Java

Context

- Shared development :
  - Client -> ESRF (Pascal Verdier)
  - Server since 2010 -> SOLEIL (Gwenaëlle Abeillé)
- In 2010, the Server API has been completely refactored to comply with the latest java features.
  - TODAY Java 1.6

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Java special feature: Annotations

- Add meta-data to a Java source code
- Can be added on method, field of class
- Can be used at compilation time or at runtime

- Example:

```java
@Override
public AttributeValue getValue() throws DevFailed {
```

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Tango Server annotations

- @Device: class
- @Attribute: field
- @Command: method
- @State: field
- @Init: method
- @DeviceProperty

….

- Allow to inject Tango to a simple Java class

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Example

```
@Device
public class TestServer {

    @Attribute
    private double att;

    public double getAtt() {
        return att;
    }

    public void setAtt(final double att) {
        this.att = att;
    }

    @Init
    public void init() {
        att = 10.3;
    }

    @Command
    public void on() {

    }
}
```

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Dynamic API

- For attributes and commands:

```java
class DynamicAttributeTest implements IAttributeBehavior

@DynamicManagement
DynamicManager dynamicMngr;

@Init
public void init() throws DevFailed {
    dynamicMngr.addAttribute(new DynamicAttributeTest());
}
```

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Events

- Full support, you can either:
  - Zeromq: JNI API that calls C++ API
  - Jeromq: full java API

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Main Tango 9 features

- Enum attributes

```
public enum TestType {
    VALUE1, VALUE2
}

@Attribute
private TestType enumAttribute = TestType.VALUE1;
```

- Forwarded Attribute:

```
dynMger.addAttribute(new ForwardedAttribute("rootName", "testfowarded", "testfowarded"));
```

```
@Pipe(description = "hello", displayLevel = DispLevel._EXPERT, label = "coucou")
private PipeValue myPipe;
```

- Pipe
```
public PipeValue getMyPipe() {
    return myPipe;
}

public void setMyPipe(final PipeValue myPipe) {
    this.myPipe = myPipe;
}
```

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