# REST API

# Tango REST API EcoSystem

https://github.com/tango-controls/rest-api

eplay visit on the given page. Possible reasons →
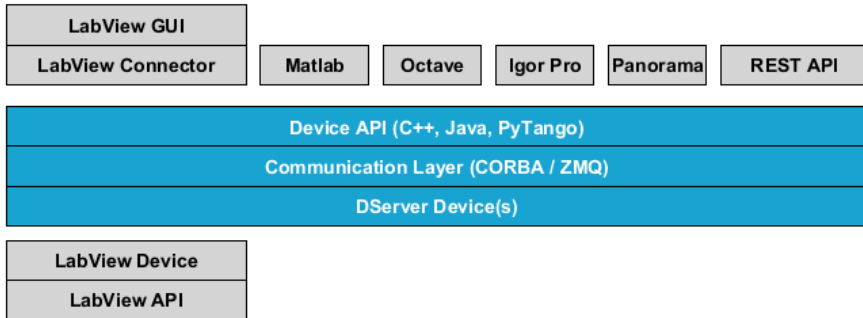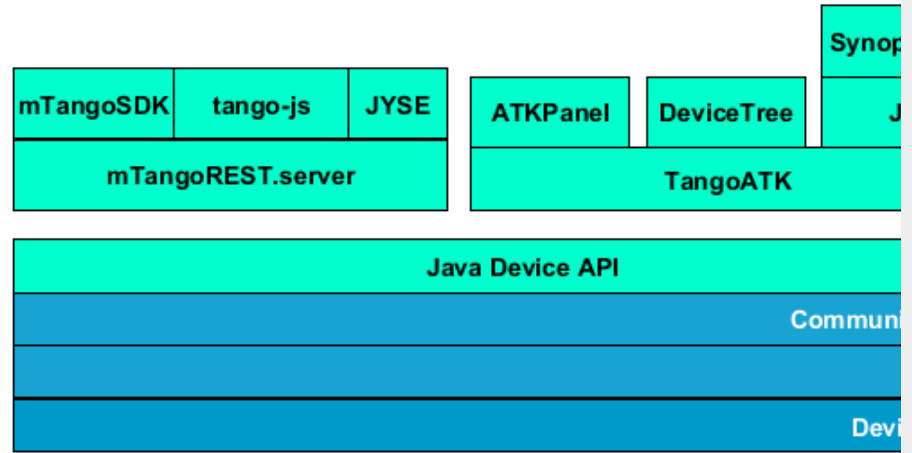
tango-controls / rest-api

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Tango REST API specification    http://tango-rest-api.readthedocs.io                    Edit

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102 commits          1 branch          4 releases          1 contributor

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| 📁 docs | close #21 | a month ago |
| 📁 src/test/java/org/tango/rest/test | progress #29 | 8 days ago |
| 📄 .gitignore | add .gitignore | 5 months ago |
| 📄 .travis.yml | close #28 | 9 days ago |
| 📄 README.md | progress #29 | 8 days ago |
| 📄 docker-compose.yml | progress #28 | 9 days ago |
| 📄 mkdocs.yml | add mkdocs.yml | 6 months ago |
| 📄 pom.xml | progress #29 | 8 days ago |

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# Tango REST API RC4

There are three parts in this proposal: URL specification; Implementation remarks; Implementation recommendations. The first one names valid URLs that must be handled by the implementation. Each URL is presented following this format:

| URL | RESPONSE TYPE | NOTE |
|-----|---------------|------|
| `METHOD url` | JSONArray/JSONObject/NULL | short comment |

Such table is followed by a JSON response's examples block:

```
URL : {'JSON response':'example'}
```

In two following sections several implementation guidelines are highlighted.

In general API follows standard CRUD idiom:

| HTTP verb | CRUD | collection | instance |
|-----------|------|------------|----------|
| GET | READ | Read a list. 200 OK | Read the details of one instance. 200 OK |
| POST | CREATE | Create a new instance. 201 OK | - |
| PUT | UPDATE/CREATE | Full Update. 200 OK | Create an instance. 201 Created |
| DELETE | DELETE | - | Delete instance. 200 OK |

POST create an instance of collection by the URI of this collection. POST returns the URI and the id of the newly created instance.

# URL example driven specification:

All URLs in this section omit protocol//host:port part: `http://host:port` . An implementation may or

# Tango REST API status report

- Migration to GitHub

- Read the Docs

- Updates (RC4)

- Added to the official Tango documentation

- ESRF deployment

- DESY deployment

- JINR deployment

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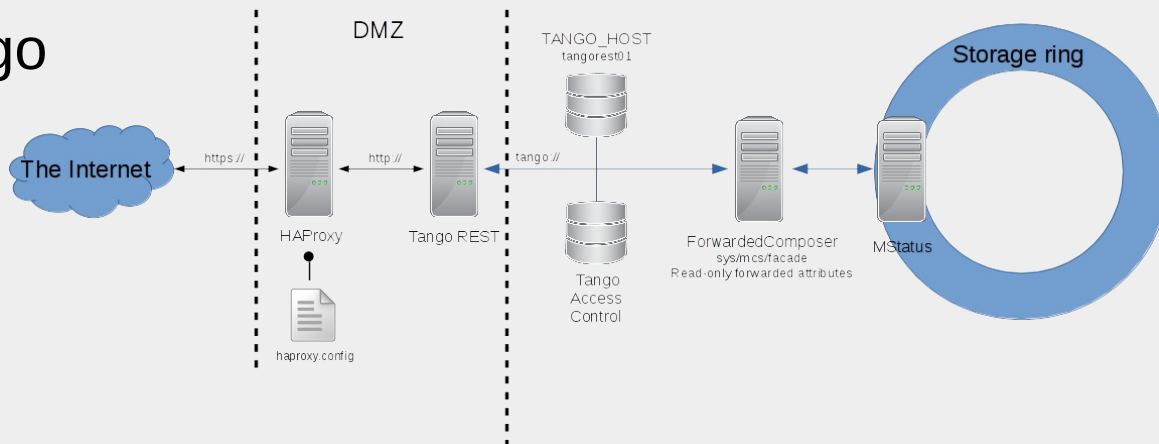
# Roadmap (main points)

- RC5

  – TANGO_HOST port as a matrix parameter:

    tango/rest/rc4/hosts/orion/10000/... VS tango/rest/rc5/hosts/orion/...

    OR tango/rest/rc5/hosts/orion;port=10005/...

  – Content-type VS URL addressing:

    …/attributes/ushort_image/value/image VS …/value Content-type: image/jpeg

    …/attributes/ushort_image/value/plain VS …/value Content-type: text/plain
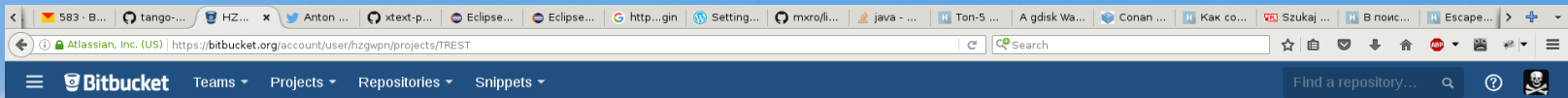
- RC6

  – HTTP/2

    push events!!!

# mtangorest.server – *Tango REST API implementation*

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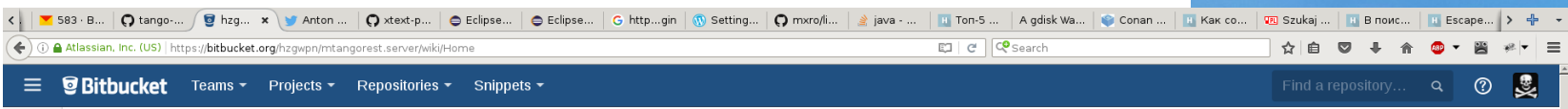
HZG/WPN / TangoREST / mTangoREST.server

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## Getting started with mTangoREST.server

Download latest mTangoREST.server zipped war or jar file from downloads

### .war

Unzip and place it into your servlet container's webapps folder ( `{CATALINA_HOME}/webapps` ). Restart the container. If everything is fine you should notice something like the following output in the log:

```
TangoRestServer has been initialized.
[2015-03-05 03:54:31,112] Artifact tango:war: Artifact is deployed successfully
[2015-03-05 03:54:31,113] Artifact tango:war: Deploy took 2 338 milliseconds
```

To be 100% sure that mtango.server is properly deployed open your browser and type in the address bar `http://localhost:8080/tango/rest` . An authorization popup will appear, to pass the authorization you should define user(s) with role(s) mtango-rest, mtango-admin `*)` in the servlet container (see {CATALINA_HOME}/conf/tomcat-users.xml). You should see a list of supported Tango REST API versions list:

```
{
    "rc3":"http://localhost:8080/tango/rest/rc3"
}
```

```
*) This one is used to access mTango admin panel. If you do not plan to use it (it is not required for this tutorial) just skip this role.
```

### .jar

Download the latest mtango.server .jar.

Define TangoRestServer device in the Tango DB:

Jive 4.31 [hzgxenvtest:10000]

File  Edit  Tools  Filter

Class | Alias | Att. Alias | Property

Server | Device

...

DataBaseds
DataFormatAdapter

# mtangorest.server

- Latest release rc4-1.4
- RC4
  - Image (2D array) data types
  - Event mechanism tweaks
- Refactoring (JAX-RS)
- Consistent http response codes (305, 500, 503)
- Docker container
- Bug fixes
  - No filter configured with id 'json-response-fields-filter'
  - Events wrong response

# TANGO
## *WebApp*

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General purpose Tango web application

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⊙ **144** commits    ⑂ **1** branch    ⊗ **2** releases    👥 **1** contributor

Branch: **master** ▾    New pull request      Create new file   Upload files   Find file   Clone or download ▾

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| | | |
|---|---|---|
| 📁 WEB-INF | README.md edited online with Bitbucket | 9 months ago |
| 📁 apps | Resolve #34: Remember user defined REST_API and TANGO_HOST | 3 months ago |
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| 📁 models | progress #127 | 18 days ago |

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# TangoWebapp status report

- Moved to GitHub

- Updates
  - Multiple TANGO_HOSTs
  - Use cookie to remember
    TANGO_HOSTs
  - Migration to RC4

- Amazon Cloud deployment

- Deployed at DESY (P03nano)
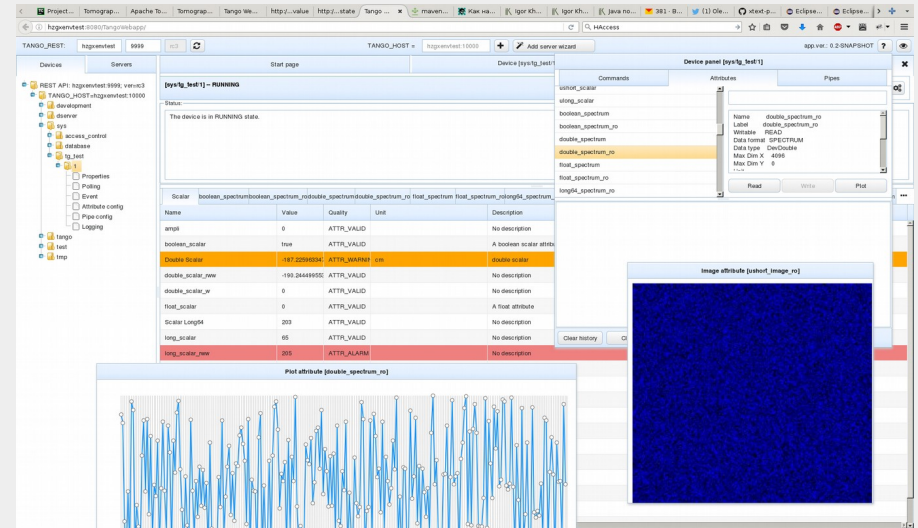
# **Other Tango REST API projects**

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# Related projects

- JYSE studio (the next talk)

  - In-browser dashboard builder

- tangojs

  - A bunch of JS components for data visualization

  - MAX IV prepared a demo project: https://github.com/Unknown22/TangoJSDemo

- mTangoUI

  - Component based framework for building web/mobile applications

# Thank you!
# Questions?

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