

RESTfulJive manual

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1 Introduction

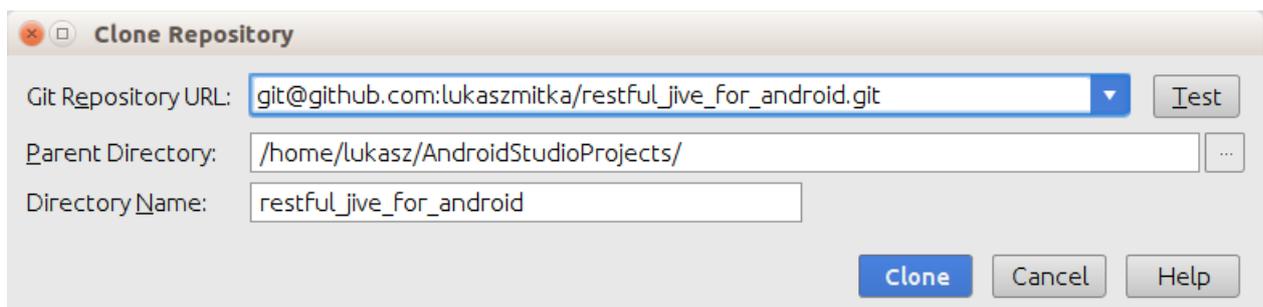
RESTfulJive is an Android application for accessing Tango devices and its properties, attributes and commands. It was developed at National Synchrotron Radiation Centre SOLARIS in Kraków as part of my master thesis.

2 Installation

In this chapter you will be introduced how to get and install the application on your Android device.

2.1 Getting the source code

To get the source code from Github, run Android Studio, from menu bar select VCS -> Checkout from Version Control -> Git. In the field VCS repository URL paste: `git@github.com:lukaszmitka/restful_jive_for_android.git`. In the field Parent Directory select where to locate project. Third field will autocomplete with project name, but you could change it as you will. Then click Clone, this will download and open project.



2.2 Installing and running the application

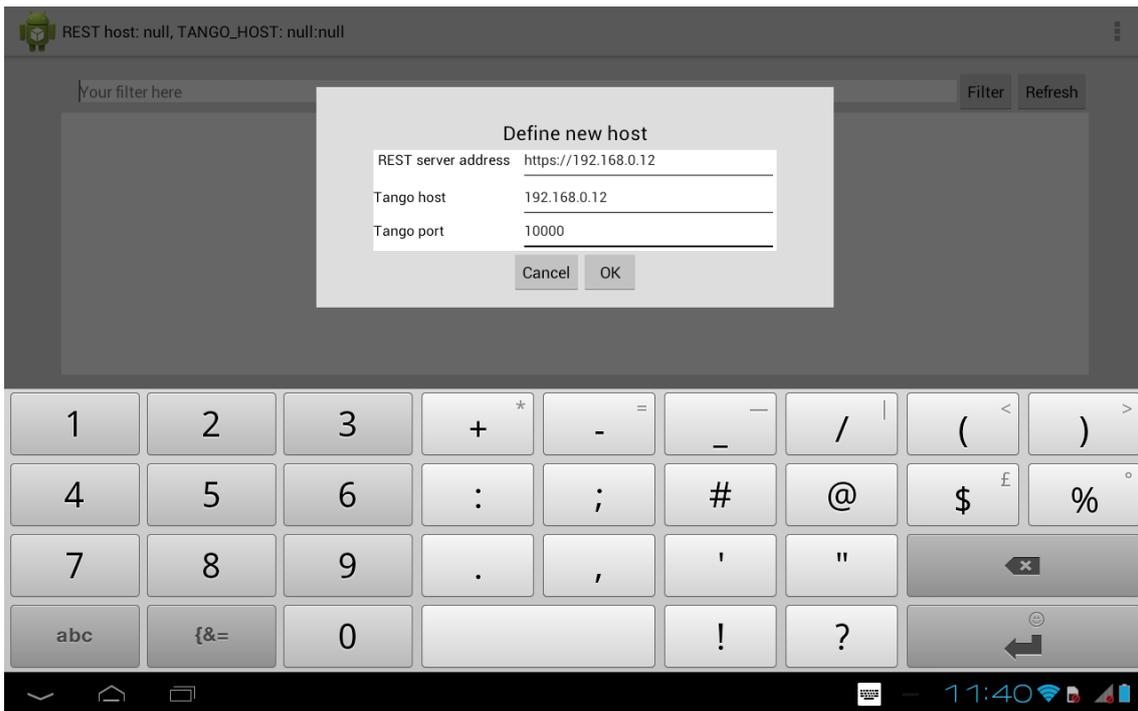
To install the application, plug your Android device to the USB port of your computer, then in project opened in step “Getting the source code” select from menu bar Run -> Run 'app'. This will compile, install and run application on your device.

3 Description and usage

In this chapter you will learn about application functions and how to use it.

3.1 Application first launch

When you run application for the first time, you will have to provide address of RESTful Tango Interface server and Tango database. RESTful Tango Interface server is a proxy between Tango database and application. You can change this later from options menu. If you want to know more about configuring and running RESTful server check https://github.com/lukaszmitka/restful_tango_interface_2.



3.2 Main view

In this view you can see list of devices registered in Tango database.

3.2.1 Overview

In the action bar, at the top of screen there is information about RESTful server and Tango database you are connecting to. Below action bar, starting from left, there is sorting status, which indicates what kind of sorting is applied to device list, next is filter text field, here you can type filtering pattern, further is "Filter" button for applying filter, last element in this line is "Refresh" button for refreshing device list. Below them, there is device list.



3.2.2 Sorting

By default they are sorted alphabetically by names. You can sort devices by their class, device server they are registered on or by their domain and class obtained from device name. Sorting type can be set from options menu.

3.2.3 Filtering

If you are looking for specific device, you can narrow device list. To do this type full device name or its part into text field next to Filter button. Then press Filter button. On the list, will remain only devices matching pattern you typed.

3.2.4 Options menu

From options menu you can change application configuration.

3.2.4.1 Set host This option lets you to set new address of RESTful Tango Interface server and Tango database. This opens the same dialog as in application first launch.

3.2.4.2 Show full list This option sorts devices alphabetically by names.

3.2.4.3 Sort by Devices This option sorts devices by their domain and class obtained from device name.

3.2.4.4 Sort by Classes This option sorts devices by their class.

3.2.4.5 Sort by Servers This option sorts devices by device server they are registered on.

3.2.4.6 About filter This option shows detailed information about how to type regular expression while searching for device.

3.2.4.7 Track status This option checks every device if it responds, active devices are marked with green diode next to name, inactive devices are marked with red diode. Performing this action can take long time, depending on number of devices in database.

3.2.4.8 Load SSL certificate file This option allow you to load SSL certificate file and add security exception with it. It is useful when you are connecting to server encrypted with SSL certificate that is not signed by known Certificate Authority.

3.2.4.9 Enter login and password You should use this option when server you are connecting to request users to log in.

3.2.5 Device actions

Under each device name there are three buttons, you can also perform long click on device name.

3.2.5.1 Details This button opens view with basic information about device.

3.2.5.2 Properties This button opens view with device properties.

3.2.5.3 Attributes This button opens view with device attributes.

3.2.5.4 Long click on device name This action opens menu, where you can choose two options. First of them is "Monitor" which opens generic operator panel generated from attributes. Second option "Test" opens device panel where you can see and execute device commands, edit attributes or administrate device.

3.3 Properties view

In this view you can see device properties.

3.3.1 Overview

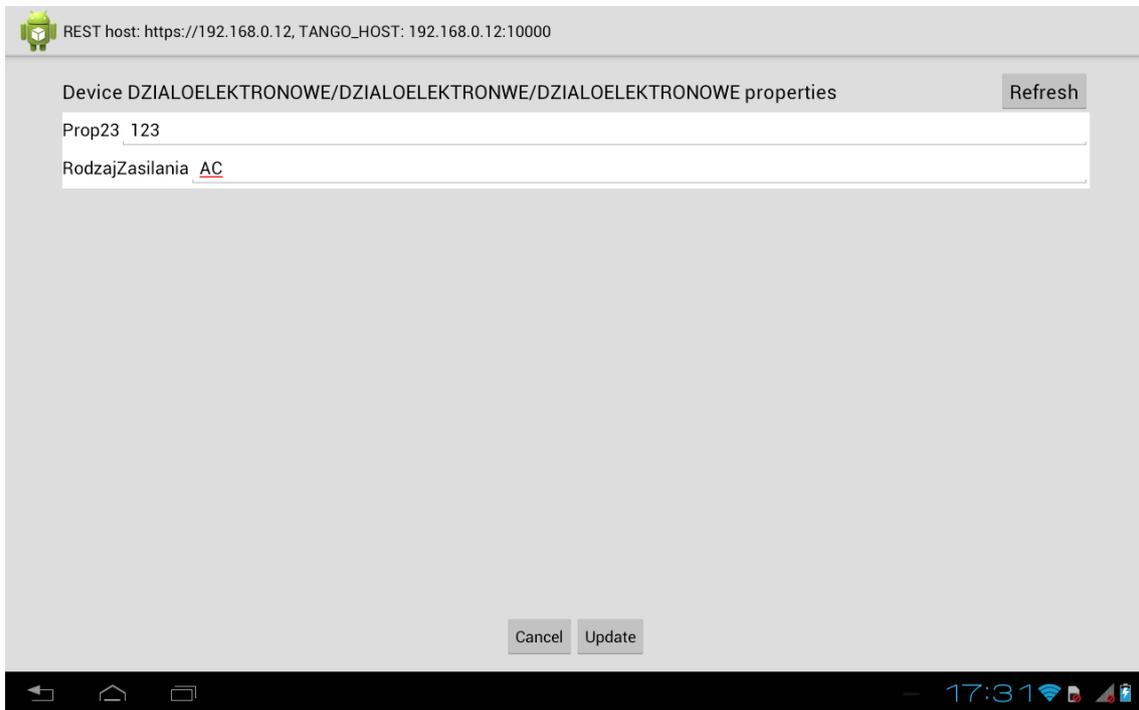
In the action bar, at the top of screen there is information about RESTful server and Tango database you are connecting to. Below action bar, on left there is name of chosen device, on right there is "Refresh" button, which reloads properties list with new values. Below them is properties list. At the bottom of screen there are two buttons, "Cancel" close properties view and return you to device list view, "Update" write new values to properties.

3.3.2 Updating properties

To update property, type new value into text field next to property name, then click "Update" button, application will write new value. Some of text fields can be grayed out and not editable, this means that property is read only.

3.3.3 Refreshing properties

To refresh properties, click "Refresh" button, application will read properties from server and update view with new values.



3.4 Attributes view

In this view you can see device attributes.

3.4.1 Overview

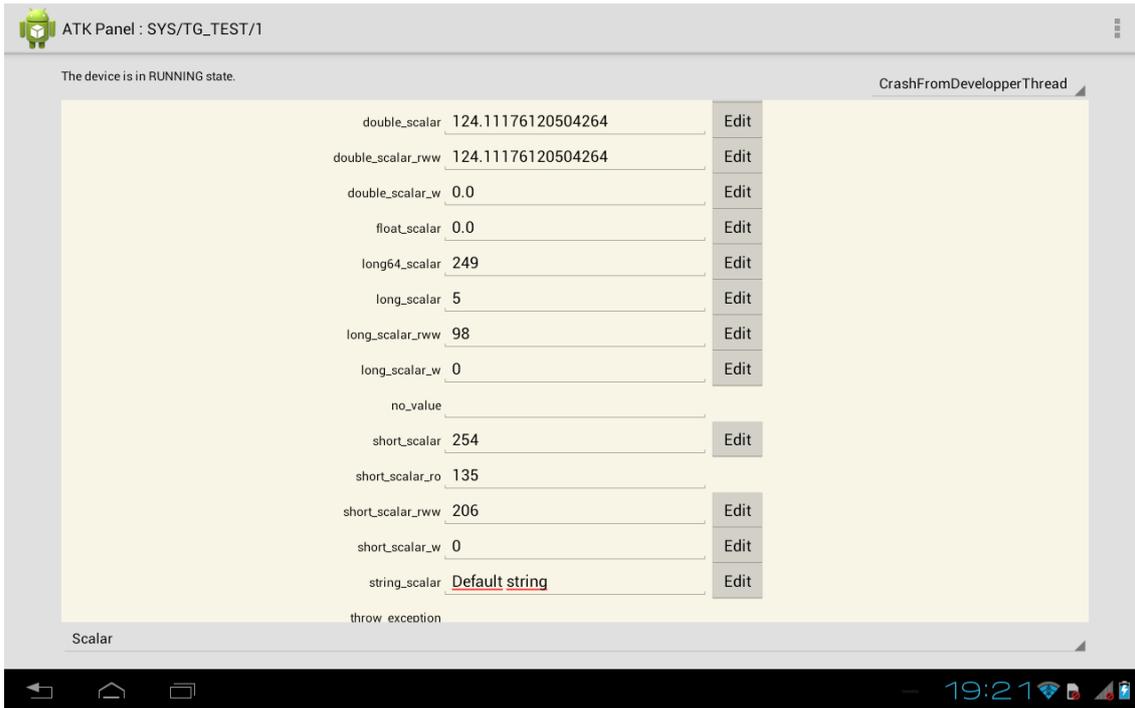
In the action bar, at the top of screen there is information about RESTful server and Tango database you are connecting to. Below action bar, on left there is name of chosen device, on right there is "Refresh" button, which reloads attribute list with new values. Below them is attributes list. At the bottom of screen there are two buttons, "Cancel" close attributes view and return you to device list view, "Update" write new values to attributes.

3.4.2 Updating attributes

To update attribute, type new value into text field next to attribute name, then click "Update" button, application will write new value. Some of text fields can be grayed out and not editable, this means that attribute is read only.

3.4.3 Refreshing attributes

To refresh attributes, click "Refresh" button, application will read attributes from server and update view with new values.



3.5.2 Editing attributes

To edit attribute, click button "Edit" next to attribute, this will open dialog where you can type new attribute value.

3.5.3 Executing commands

To execute command choose it from commands drop-down menu. If command need input argument, you will see dialog asking for it, after that command will be executed. If command returns any value, application will show another dialog with command output, in other case, you will see only notification that command was executed.

3.5.4 Options menu

In options menu there is one option, "Set refreshing period". This allow you to set time between consecutive attribute reads. Time is given in miliseconds.

3.6 "Test" mode

This view allow you to execute commands, edit attributes or perform some administrative actions.

3.6.1 Overview

In the action bar, at the top of screen there is information about RESTful server and Tango database you are connecting to. In the action bar there are also three tabs: "Commands", "Attributes" and "Admin". Rest of the layout depends on chosen tab.

3.6.1.1 "Commands" tab On top of this tab, there is name of chosen device. Below it, there is command list. At the bottom of tab, there are three buttons: "Description", "Execute" and "Plot", text field for command input argument and command input and output type.

Checking command description By clicking "Description" button you will get dialog with description of command.

Executing command Before executing command you should type in text field command input argument. Then press "Execute" button to perform action. If command returns any value, dialog box will appear.

Plotting command If command returns value of type spectrum or image, "Plot" button is clickable. This action is performed as command execution, but output is used to draw a plot.

3.6.1.2 "Attributes" tab On top of this tab, there is name of chosen device. Below it, there is attribute list. At the bottom of tab, there are four buttons: "Description", "Read", "Write", "Plot" and text field for attribute input value.

Checking attribute description By clicking "Description" button you will get dialog with description of attribute.

Reading attribute By clicking "Read" button you will get dialog box with attribute value.

Writing attribute Before writing attribute you should type in text field attribute input argument. Then press "Write" button to perform action. You will get dialog box confirming that attribute was updated.

Plotting command If attribute is of type spectrum or image, "Plot" button is clickable. This action is performed as attribute read, but output is used to draw a plot.

3.6.1.3 "Admin" tab This tab allows you to select source of device reads, set timeout, answer minimum and maximum limit, read black box, check info and polling status, ping or restart device.

Setting read source To select device read source select appropriate value from drop-down menu named "Source".

Setting device timeout To set device timeout type value in milliseconds into text field named "Timeout" and press button "Apply" next to this field.

Reading black box To read device black box type number or entries to be read into text field named "BlackBox" and press button "Execute" next to this field.

Setting limit min To set device answer minimum limit type value into field named "Answer limit (min)" and press button "Apply" next to this field.

Setting limit max To set device answer maximum limit type value into field named "Answer limit (max)" and press button "Apply" next to this field.

Reading device info To read device info press button "Device info". Dialog box will appear.

Pinging device To ping device press button "Ping device". Dialog box with response time will appear.

Reading polling status To read device polling status press button "Polling status". Dialog box with polling status will appear.

Restarting device To restart device press button "Restart". Dialog box confirming action will appear.