

NAME

tango – TANGO specific functions

DESCRIPTION

TANGO is an object-oriented distributed control system using CORBA, developed as a collaborative effort among the Alba, Desy, Elettra, ESRF and Soleil institutes. See www.tango-controls.org for complete details. The support built into `spec` uses the newly developed C-binding library for TANGO.

HARDWARE ACCESS

For all the TANGO functions below, `spec` will assign values to the built-in variables `TANGO_ERR` and `TANGO_ERR_STACK`. The former is a string-type variable containing the lowest-level “reason” given by the TANGO library for an error or the null string if no error occurred. The variable `TANGO_ERR_STACK` is an associative array containing the complete error stack for commands generating an error. The elements of the stack are indexed as

```
TANGO_ERR_STACK[0][ "reason" ]
TANGO_ERR_STACK[0][ "origin" ]
TANGO_ERR_STACK[0][ "desc" ]
TANGO_ERR_STACK[0][ "severity" ]
TANGO_ERR_STACK[1][ "reason" ]
TANGO_ERR_STACK[1][ "origin" ]
TANGO_ERR_STACK[1][ "desc" ]
TANGO_ERR_STACK[1][ "severity" ]
...
```

If no error occurs the array will be empty.

PROPERTIES

`tango_io(dev, "?")` – Lists the command properties for `dev` in a concise format, showing the input and output data types for each available command.

`tango_io(dev, "??")` – Lists the command properties for `dev` in a more verbose format, showing not only the input and output data types, but also the command description, as supplied by the TANGO server.

`tango_io(dev, "timeout")` – Returns the current connection timeout for `dev` in seconds.

`tango_io(dev, "timeout", sec)` – Sets the connection timeout for `dev` in seconds.

`tango_io(dev, "source")` – Returns the data source for `dev`. A value of 0 indicates data is read directly from the device. A value of 1 means data is read from the polling cache. A value of 2 indicates data is read from the cache or the device.

`tango_io(dev, "source", value)` – Sets the data source for `dev`. Allowed values are 0, 1 and 2, with meanings as described above.

`tango_io(dev, cmd [, argin [, argout])` – Allows general access to TANGO devices.

ATTRIBUTES

`tango_get(dev, "?")` or `tango_put(dev, "?")` – Lists the attributes, the read-write permissions and data type for `dev` in a concise format.

`tango_get(dev, "??")` or `tango_put(dev, "??")` – Lists the attributes, the read-write permissions, data type and command description for `dev`.

`tango_get(dev, "timeout")` or `tango_put(dev, "timeout")` – Returns the current connection timeout for `dev` in seconds.

`tango_get(dev, "timeout", sec)` or `tango_put(dev, "timeout", sec)` – Sets the connection timeout for `dev` in seconds.

`tango_get(dev, attr [, extras])` – Reads a device attribute. If the optional argument `extras` is included, it must be an associative array. The elements of the array will be assigned attribute data elements indexed as follows:

- `extras["data_name"]` – String name of data type
- `extras["data_type"]` – Data scalar-type code
- `extras["dim_x"]` – Data dimension for X
- `extras["dim_y"]` – Data dimension for Y
- `extras["name"]` – Attribute name
- `extras["quality"]` – Data quality factor
- `extras["time_stamp"]` – Time stamp

For scalar data "dim_y" is zero. The "time_stamp" element contains the time in seconds and milliseconds from the UNIX epoch.

`tango_put(dev, attr, value)` – Writes a device attribute.