



**TANGO
Device
Server**

Tango Device Server User's Guide

AttributeComposer Class

**Revision: 1.2 - Author: katyho
Implemented in Java**

Introduction:

Class Inheritance:

- fr.esrf.TangoDs.Device_Impl
 - AttributeComposer

Properties:

Device Properties

Property name	Property type	Description
AttributeNameList[]	string	The list of attribute name used to composed the resum state and the spectrum result.
PriorityList[]	string	The priority number of a quality (the greater is the most important is ex: 5 for ALARM) Call GetTangoQuality to know the list of the Tango Quality order.
TextToTalkList	Array of string	The text to talk for a State : STATE, text to talk.
LogicalBoolean	string	The logical gates to apply on the list of attribute.
Int	private	The time out of the device proxy
Int	private	The internal period of the Reading Thread
ValueReader	private	The thread for read the value of attributes
StateUpdater	private	The thread for update the state of device
ValueUpdater	private	The thread for update the value of attributes
DevState	private	The FAULT state
DevState	private	The last DevState
String	private	The full name of a TextTalker device (optional)

Device Properties Default Values:

Property Name	Default Values
AttributeNameList[]	No default value
PriorityList[]	No default value
TextToTalkList	No default value
LogicalBoolean	No default value
Int	No default value
Int	No default value
ValueReader	No default value
StateUpdater	No default value
ValueUpdater	No default value
DevState	No default value
DevState	No default value
String	No default value

There is no Class properties.

Attributes:

Scalar Attributes			
Attribute name	Data Type	R/W Type	Expert
booleanResult	DEV_BOOLEAN	READ_WRITE	No
lastStateEvent	DEV_STRING	READ	No
State	DEV_STRING	READ	No
version	DEV_STRING	READ	No

Spectrum Attributes			
Attribute name	Data Type	X Data Length	Expert
spectrumResult	DEV_DOUBLE	10000	No
attributesQualityList	DEV_STRING	1000	No
attributesNumberPriorityList : The list of the attributes quality in priority number format. Call GetAttributeNameForIndex to know which attributes corresponds to an index of the spectrum. Call GetPriorityForQuality to know the values of tango qualities.	DEV_SHORT	1000	No
booleanSpectrum	DEV_SHORT	10000	No
attributesResultReport	DEV_STRING	10000	No

Commands:

More Details on commands....

Device Commands for Operator Level

Command name	Argument In	Argument Out
Init	DEV_VOID	DEV_VOID
State	DEV_VOID	DEV_STATE
Status	DEV_VOID	CONST_DEV_STRING
GetAttributeNameForIndex	DEV_SHORT	DEV_STRING
GetPriorityForQuality	DEV_STRING	DEV_SHORT
SetAllValues	DEV_DOUBLE	DEV_VOID
SetAllFormat	DEV_STRING	DEV_VOID
SetAllUnit	DEV_STRING	DEV_VOID
SetAllMinValue	DEV_DOUBLE	DEV_VOID
SetAllMaxValue	DEV_DOUBLE	DEV_VOID
SetAllMinAlarm	DEV_STRING	DEV_VOID
SetAllMaxAlarm	DEV_STRING	DEV_VOID
SetAllLabel	DEV_STRING	DEV_VOID
ActivateAll	DEV_VOID	DEV_VOID
DeactivateAll	DEV_VOID	DEV_VOID

Device Commands for Expert Level Only

Command name	Argument In	Argument Out
GetTangoQualities	DEV_VOID	DEVVAR_STRINGARRAY
GetLogicalChoices	DEV_VOID	DEVVAR_STRINGARRAY

1 - Init

- **Description:** This commands re-initialise a device keeping the same network connection.
After an Init command executed on a device, it is not necessary for client to re-connect to the device.
This command first calls the device *delete_device()* method and then execute its *init_device()* method.
For C++ device server, all the memory allocated in the *nit_device()* method must be freed in the *delete_device()* method.
The language device desctructor automatically calls the *delete_device()* method.
- **Argin:**
DEV_VOID : none.
- **Argout:**
DEV_VOID : none.
- **Command allowed for:**

2 - State

- **Description:** This command gets the device state (stored in its *device_state* data member) and returns it to the caller.
- **Argin:**
DEV_VOID : none.
- **Argout:**
DEV_STATE : State Code
- **Command allowed for:**

3 - Status

- **Description:** This command gets the device status (stored in its *device_status* data member) and returns it to the caller.
- **Argin:**
DEV_VOID : none.
- **Argout:**
CONST_DEV_STRING : Status description
- **Command allowed for:**

4 - GetAttributeNameForIndex

- **Description:**
- **Argin:**
DEV_SHORT : The index of the spectrum data
- **Argout:**
DEV_STRING : The attributeName corresponding to the argin index
- **Command allowed for:**

5 - GetTangoQualities (for expert only)

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEVVAR_STRINGARRAY : The list of the qualities
- **Command allowed for:**

6 - GetPriorityForQuality

- **Description:**
- **Argin:**
DEV_STRING : The qualities name (ex:VALID, ALARM)
- **Argout:**
DEV_SHORT : The priority of the quality
- **Command allowed for:**

7 - GetLogicalChoices (for expert only)

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEVVAR_STRINGARRAY : The list of the logical choice for LogicalBoolean property
- **Command allowed for:**

8 - SetAllValues

- **Description:**
- **Argin:**
DEV_DOUBLE :
- **Argout:**
DEV_VOID : Set given value on all the attribute
- **Command allowed for:**

9 - SetAllFormat

- **Description:** This command set the format property eg : %6.3f on all the attributes
- **Argin:**
DEV_STRING : The format of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

10 - SetAllUnit

- **Description:** This command set the Unit property eg : Volt on all the attributes
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

11 - SetAllMinValue

- **Description:** This command set the minimum value property on all the attributes
- **Argin:**
DEV_DOUBLE : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

12 - SetAllMaxValue

- **Description:**
- **Argin:**
DEV_DOUBLE : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

13 - SetAllMinAlarm

- **Description:**
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

14 - SetAllMaxAlarm

- **Description:**
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

15 - SetAllLabel

- **Description:**
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

16 - ActivateAll

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID : Activate All attributes send 1 or true
- **Command allowed for:**

17 - DeactivateAll

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID : Deactivate All attributes send 0 or false
- **Command allowed for:**

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Device Commands Description

AttributeComposer Class

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For C++ device server, all the memory allocated in the *init_device()* method must be freed in the *delete_device()* method.
The language device desctructor automatically calls the *delete_device()* method.
- **Argin:**
DEV_VOID : none.
- **Argout:**
DEV_VOID : none.
- **Command allowed for:**

2 - State

- **Description:** This command gets the device state (stored in its *device_state* data member) and returns it to the caller.
- **Argin:**
DEV_VOID : none.
- **Argout:**
DEV_STATE : State Code
- **Command allowed for:**

3 - Status

- **Description:** This command gets the device status (stored in its *device_status* data member) and returns it to the caller.
- **Argin:**
DEV_VOID : none.
- **Argout:**
CONST_DEV_STRING : Status description
- **Command allowed for:**

4 - GetAttributeNameForIndex

- **Description:**
- **Argin:**
DEV_SHORT : The index of the spectrum data
- **Argout:**
DEV_STRING : The attributeName corresponding to the argin index
- **Command allowed for:**

5 - GetTangoQualities (for expert only)

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEVVAR_STRINGARRAY : The list of the qualities
- **Command allowed for:**

6 - GetPriorityForQuality

- **Description:**
- **Argin:**
DEV_STRING : The qualities name (ex:VALID, ALARM)
- **Argout:**

DEV_SHORT : The priority of the quality

- **Command allowed for:**

7 - GetLogicalChoices (for expert only)

- **Description:**

- **Argin:**

DEV_VOID :

- **Argout:**

DEVVAR_STRINGARRAY : The list of the logical choice for LogicalBoolean property

- **Command allowed for:**

8 - SetAllValues

- **Description:**

- **Argin:**

DEV_DOUBLE :

- **Argout:**

DEV_VOID : Set given value on all the attribute

- **Command allowed for:**

9 - SetAllFormat

- **Description:** This command set the format property eg : %6.3f on all the attributes

- **Argin:**

DEV_STRING : The format of all the attribute

- **Argout:**

DEV_VOID :

- **Command allowed for:**

10 - SetAllUnit

- **Description:** This command set the Unit property eg : Volt on all the attributes
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

11 - SetAllMinValue

- **Description:** This command set the minimum value property on all the attributes
- **Argin:**
DEV_DOUBLE : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

12 - SetAllMaxValue

- **Description:**
- **Argin:**
DEV_DOUBLE : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

13 - SetAllMinAlarm

- **Description:**
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :

- **Command allowed for:**

14 - SetAllMaxAlarm

- **Description:**
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

15 - SetAllLabel

- **Description:**
- **Argin:**
DEV_STRING : The unit of all the attribute
- **Argout:**
DEV_VOID :
- **Command allowed for:**

16 - ActivateAll

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID : Activate All attributes send 1 or true
- **Command allowed for:**

17 - DeactivateAll

- **Description:**
- **Argin:**

DEV_VOID :

- **Argout:**

DEV_VOID : Deactivate All attributes send 0 or false

- **Command allowed for:**

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