

Meeting	HDB++
Date	19.09.2014
Time/Place	Teleconf
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Agenda	HDB++ design guidelines revision

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1 Requirements/developments for the next future

#	Request	To do	Who	When
1.1	In case of error, store the error description	Add varchar column to the data_type tables and related code to EventSubscriber	Elettra	Available
1.2	Store quality factor in addition to data value	Add column to the data_type tables and related code to EventSubscriber	Elettra	Nov 2014
1.3	Make some attribute configuration parameters available in the historical database	Add a table to store <i>display-unit</i> , <i>format-string</i> and <i>label</i> . The table will also contain <i>att_conf_id</i> and the three timestamps. Add a fifo and producer/consumer threads to subscribe to attribute-configuration-change events into EventSubscriber	Elettra	Dec 2014
1.4	Multiple TANGO host support: Tango 8	The correct FQDN has to be specified or just the domain/family/member can be specified letting the ConfigurationManager select the right TANGO_HOST/port	Elettra	Available
1.5	Support for write-only attribute	Bugfix	Elettra	Available
1.6	Additional indexing on att_name varchar in att_conf table for faster search	Modify att_conf table	Elettra	Dec 2014
1.7	Historical database data extraction library	Core library written in C++; C wrapper to be used also with php and python. Define the list of interface methods and send to ESRF ASAP	Elettra	Prototype and docs available
1.8	GUI for Configuration Manager	java based GUI tool	ESRF	Available
1.9	Configure polling, event parameters and alarm threshold programmatically for AttributeNokNumber in EventSubscriber to enable alarms		Elettra	Dec 2014
1.10	Do not count stopped attributes as faulty		Elettra	Dec 2014
1.11	Provide per-attribute errors list	Is last error/exception description sufficient? Or do we need to store the error stack/history?	t.b.d.	
1.12	Provide max value for AttributePendingNumber	Implement AttributeMaxPendingNumber attribute	Elettra	Dec 2014

#	Request	To do	Who	When
1.13	Provide number-of-events counter per attribute; reset by ResetStatistics; store the timestamp of the last call to ResetStatistics in an attribute (seconds since EPOCH)	<p>Already available with the Attribute Status command; should this be:</p> <ul style="list-style-type: none"> • a command with FQDN as input value • an attribute vector type containing all the counters <p>AttributeEvenNumberList</p>	Elettra	Available

Table 1: Requirements/developments for the next future

2 Requirements/developments for the not-so-near future

#	Request	To do	Who	When
2.1	Multiple TANGO host support: Tango 9	Use the DbGetCSDbServerList command to verify the FQDN. Then we still face the problem how to manage the aliases; there are two possibilities: <ul style="list-style-type: none"> the ConfigurationManager can replace the alias with the real hostname; not the desired behaviour the DatabaseDS has to be modified in order to return also the alias name as a valid FQDN; the events will come from the proper FQDN (i.e. alias) 	Elettra, ESRF	To be clarified. Is it necessary?
2.2	Monitor on periodic event based archiving	Provide timeout on periodic event subscriptions; can be implemented as an alarm timer in the configuration change event thread	Elettra	March 2015
2.3	Array support. Currently arrays are stored as fixed length strings into var-char; this may lead to loss of precision. Alternate approaches: <ul style="list-style-type: none"> store into native data type using an additional index to reconstruct the array store in binary form use native array support do nothing and rely to timestamp 	Test postgres native array support	Elettra, ESRF	Available with Cassandra. Evaluate Postgres and all...
2.4	Device locking mechanism to avoid concurrent setups	Collaborative client/server locking mechanism	ESRF, Elettra	Available in CM GUI
2.5	java-based extraction library	Pure java implementation of the same API as the C/C++ extraction library; depends on the C API	ESRF	Prototype available

#	Request	To do	Who	When
2.6	Additonal database table to store data statistics for scalar values	New table with start_time, stop_time, min, max, average; additional statistics may be useful; write a tango device server, based on the extraction library, to calculate and store the statistics; depends on the extraction library	ESRF, Elettra	March 2015
2.7	Extraction library data format support	Attribute history data format, json data format, both?!?	Elettra, ESRF	t.b.d.
2.8	NoSQL databases	NoSQL databases evaluation	ESRF	Prototype available
2.9	Data stream management system (DSMS)	InfluxDB evaluation	Elettra	March 2015
2.10	Store encrypted passwords in the device/class property		Elettra	March 2015

Table 2: Requirements/developments for the not-so-near future

3 Pending stuff

#	Request	To do	Who	When
3.1	Polling thread often/always late on last attribute of the poller configuration			
3.1	dev_enum: dedicated data table to store value and label; both value and configuration change event subscription			
3.3	Archiving support for device server commands (TANGO core related)			

Table 3: Pending stuff

4 Best practices

#	Request	To do	Who	When
4.1	Run/Shutdown support - 1st	Separate attributes that have to be archived all the time from those that aren't (e.g. during shutdown) using different dedicated EventSubscriber instances; this allows for straightforward start/stop archiving on per-instance basis (e.g. from a higher layer Tango device implementing some sort of machine shifts calendar)		
4.2	Run/Shutdown support - 2nd	Introduce per-attribute flag to specify stopped-at-shutdown; an additional command StopForShutdown will stop all flagged attributes. To maintain the whole configuration into the Tango database the flag will be specified comma separated in the AttributeList property.	Elettra	
4.3	Old data filtering	Add "managed" flag to the att_conf table, updated by the AttributeAdd and AttributeRemove methods	t.b.d.	

Table 4: Best practices