

Simple Network Management Protocol (SNMP)

- Communication protocol to remotely manage / diagnose network equipments (not only network)
 - In a way similar to Tango
- On top of UDP
 - Agent listening on port 161
 - Traps (similar to Tango events) use port 162 on manager
- Today release 3
 - SNMP v1 in 1988
 - SNMP v2c
 - A security model but controversial (explains the c)
 - Incompatible with v1
 - SNMP v3
 - Authentication / Encryption

Management Information Base (MIB)

- Define which data can be read/write using SNMP
 - Data are referenced in tree-manner with number for each leaves
 - 1.3.6.1.4.1.318.1.1.13.3.3.2.2.2.40
 - Input water temperature in one cooling unit
 - 1.3.6.1.2.1.1.5
 - Host system name
 - In naming notation
 - iso.org.dod.internet.mgmt.mib-2.system.sysName
 - MIB defined which data are available and give them a name
 - Named data with MIB name if the MIB file is available
 - RFC1213::sysName.0 (easier than 1.3.6.1.2.1.1.5 or iso.org.dod....)
 - PowerNet-MIB::airIRRP500UnitStatusEnteringFluidTemperatureMetric
 - MIB files available from the WEB
 - <http://www.oidview.com/mibs/detail.html>

TangoSnmp class

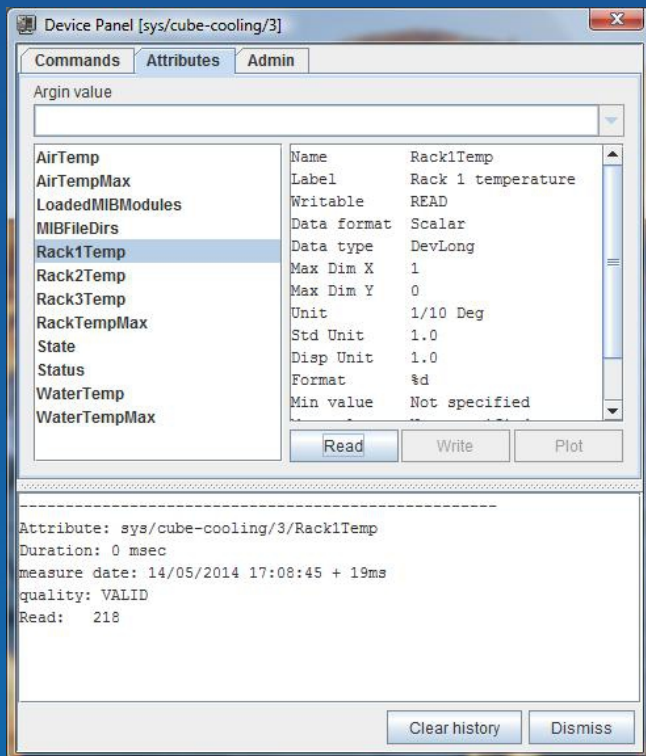
- Get/Set SNMP data from Tango
- Snmp data mapped to Tango attribute(s)
 - Dynamic mapping defined by a dev property **DynamicAttributes**
 - Attribute name
 - OID (Object Identifier)
 - Tango data type
 - Write type (READ - READ_WRITE)
 - Label (optional)
 - Unit (optional)
 - Format (optional)
- Use Net-SNMP library (available in Debian/Ubuntu repo)
 - <http://www.net-snmp.org/>

TangoSnmp class

- Two other attributes
 - LoadedMIBModules / MIBFileDirs
- Two commands
 - GetSnmpData / SetSnmpData
- Only SNMP V2c release
- Supported data types
 - DEV_STRING, DEV_LONG, DEV_ULONG, DEV_ULONG64
 - More data type to be added (on request?)
- Device switch to ALARM state if one attribute is
 - Wrongly defined
 - Definition incoherent with MIB info

Device properties [sys/cube-cooling/3]

Property name	Value
agentIpAddr	cooling3ch
DynamicAttributes	WaterTemp=PowerNet-MIB::airIRRP500UnitStatusEnteringFluidTemperatureMetric,DevLong,READ,Water temperature,1/10 Deg,%d WaterTempMax=PowerNet-MIB::airIRRP500UnitThresholdsEnteringFluidHighTempMetric,DevLong,READ,Max water temperature,1/10 Deg AirTemp=PowerNet-MIB::airIRRP500UnitStatusReturnAirTempMetric,DevLong,READ,Air temperature,1/10 Deg AirTempMax=PowerNet-MIB::airIRRP500UnitThresholdsReturnAirHighTempMetric,DevLong,READ,Max air temperature,1/10 Deg Rack1Temp=PowerNet-MIB::airIRRP500UnitStatusRackInletTemperature1Metric,DevLong,READ,Rack 1 temperature,1/10 Deg Rack2Temp=PowerNet-MIB::airIRRP500UnitStatusRackInletTemperature2Metric,DevLong,READ,Rack 2 temperature,1/10 Deg Rack3Temp=PowerNet-MIB::airIRRP500UnitStatusRackInletTemperature3Metric,DevLong,READ,Rack 3 temperature,1/10 Deg RackTempMax=PowerNet-MIB::airIRRP500UnitThresholdsRackInletHighTempMetric,DevLong,READ,Max rack temperature,1/10 Deg



Available from tango-ds SourceForge svn
https://svn.code.sf.net/p/tango-ds/code/DeviceClasses/Communication/snmp/tags/TangoSnmp-Release_2.0