Management Of The FERMI Control System Infrastructure

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Control system infrastructure in short
• Distributed control system based on a three-layer star-topology network
• 80 front-end computers, 20 servers (VM), 110 peripheral switches
• Based on the TANGO Control System Framework

Requirements
• Integrated system monitoring
• Remote system management
• Remote switching on/off of control system computers and controlled devices

In-band system monitoring
• A TANGO device server to monitor selected OS parameters

Out-of-band remote system management
• Chassis Monitor Module: an embedded micro to monitor and control the VME crates
• IPMI interfaces on Intel-based computers
• SNMP used for network switches management
Power Distribution Units
• Controls, diagnostics, power supplies, vacuum, radio frequency modulators racks have been equipped with intelligent PDUs
• A large number of PDUs installed in the tunnel near the machine
• Three models from Raritan and APC selected
• TANGO device server based on SNMP and manufacturer MIB + GUI

Nagios
• Open Source tool to monitor IT infrastructures
• Checks critical parameters such as disk space, system time synchronization, database replication
• Warnings and critical states are notified via mail to the system administrator, to the people on call and to the responsible of specific subsystems