

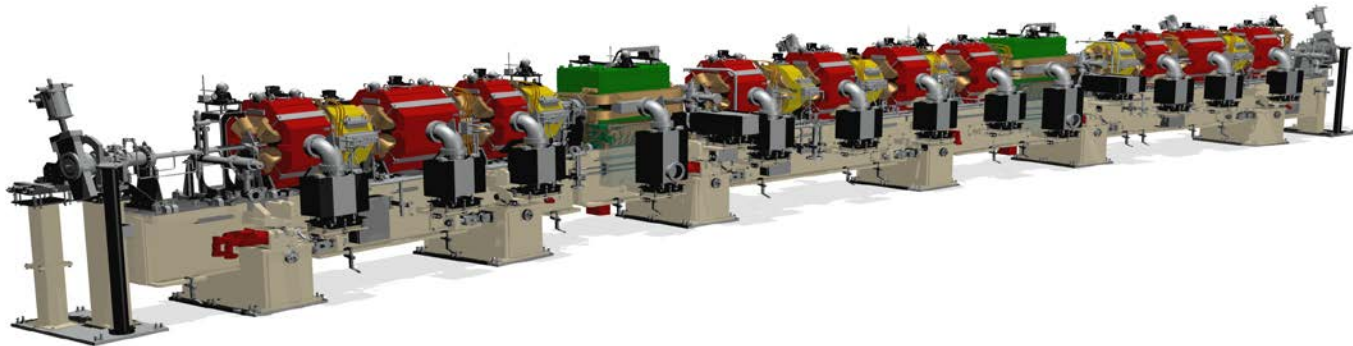
BURT at DLS

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Controls Group



Background

- One big accelerator
 - Plus linac and booster synchrotron
- Fixed lattice – changes every year or so
- Different ‘optics’ – operation modes



BURT

- Back-up and restore tool
- Just snapshots of PV values
- Restores the machine to a known state
- Switches the machine between operational modes
- After 'burting', AP use the LOCO algorithm to fine-tune the configuration

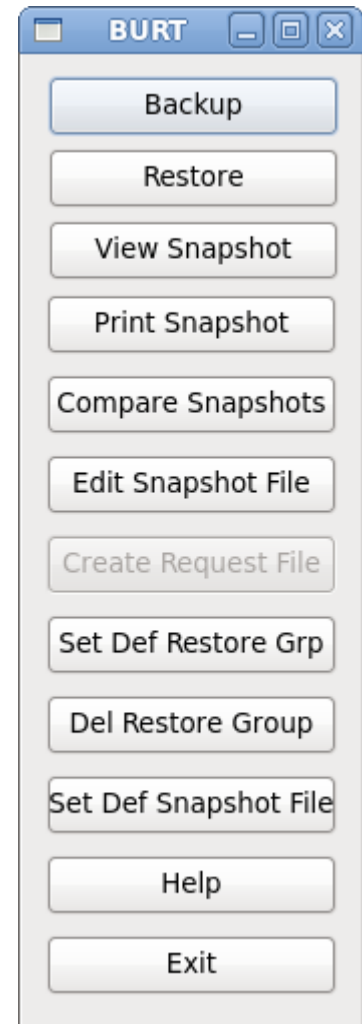
Burt implementation

- Old-school EPICS extension
- Written in C
- 22 files, 8000 lines of code
- Not (really) updated since 2008



Burt implementation

- Extension developed at DLS (circa 2010?) to group multiple snapshot files
- Python-Qt gui developed to manage the files
- Post to elog when saving and restoring



Burt at DLS

- Current usage defined by experience
- 250 'request' files
- 60k 'snapshot' files (!)
- Not well versioned

Possible improvements

- ‘Check’ files:
 - Raise a warning if a PV value does not match its expected value
- ‘Write-only’ values:
 - The value at the time of the snapshot is less important than the ‘correct’ value

Overall

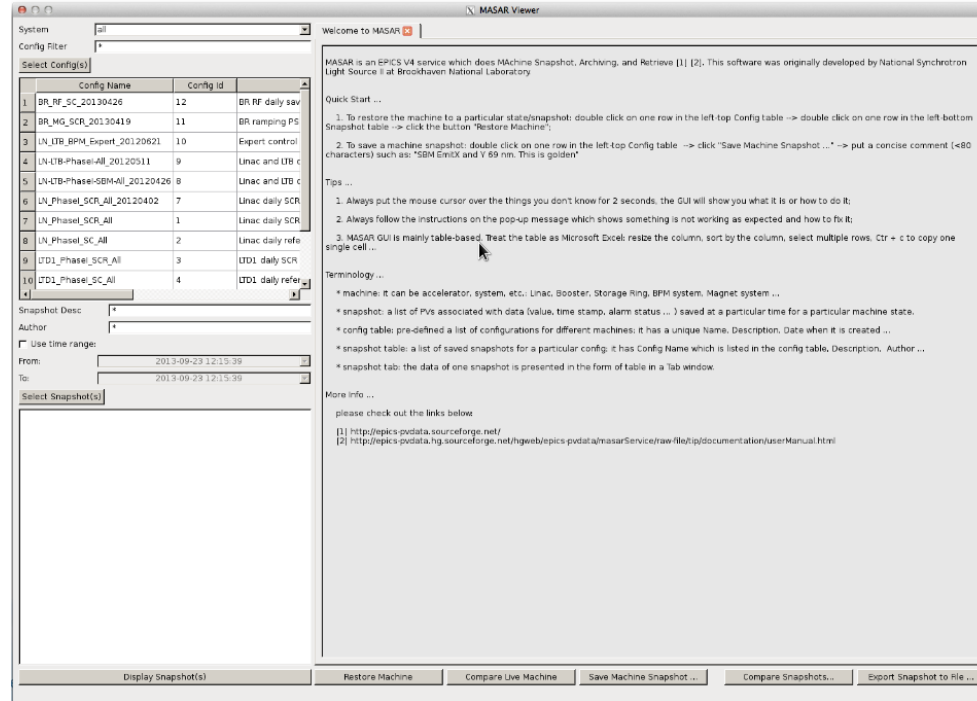
- **Pros:**
 - Simple
 - Stable
 - Reliable
- **Cons:**
 - File management is a little tricky
 - Further development would be tricky

Beamlines

- Burt is not widely used
- Defaults are set at IOC build time
- Autosave restore:
 - Reset PVs to sensible values on IOC restart

Masar

- Machine Snapshot, Archiving and Retrieval
- Very much like Burt in principle



Masar

- Developed by Guobao Shen at NSLS-II
- Relational database storage
- ?C++ implementation?
- ?Java application server (Wildfly)?
- Plotting, compare tools
- EPICS v4 API
- Scriptable with Python

Score?

- Save compare restore
- Associated with OpenXAL project
- Details are difficult to come by

Discussion...