

Monitoring RHIC through EPICS-ADO bridges

- AdoEpics bridge performance:
Overhead of the get()/set() requests: 0.3 ms.
Data transfer of encoded (XDR) data: 30 MB/s.
Data transfer of binary data: 300MB/s.
- Goal:
Run several bridges to real RHIC equipments.
Load bridges with multiple client connections.
Monitor the CPU and memory usage.

Environment

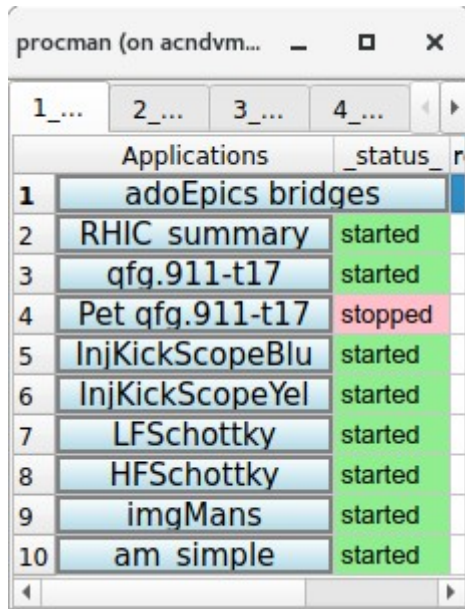
EIC control infrastructure

The EIC network and host environment is **not established yet**.
The EPICS clients (pages, plotting, logging) are not yet available.

Current deployment

- The processes are running in the CAD environment, at **acndvm04** VM.
- To run the tools, described in this presentation:
 :ssh acndvm04
 :source /opt/epics/setup.csh
 :python -m procman -c /opt/epics/procman
- Simple clients from github were used :
 - [pypet](#) - for control pages,
 - [pvplot](#) – for plotting,
 - aplog/[apstrim](#) – for data logging.
- The starting/stopping of tools is managed by a mini StartUp app: [procman](#).

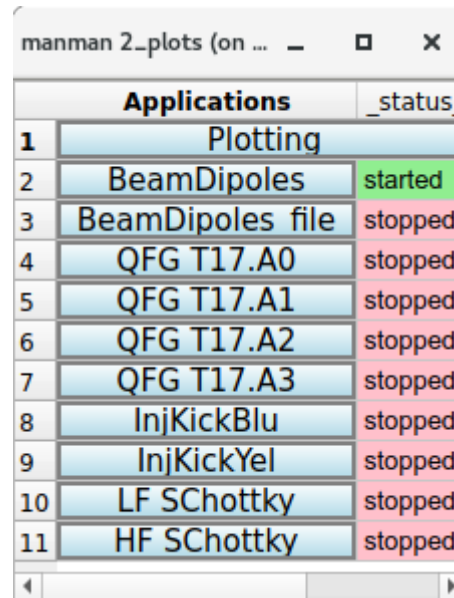
Applications, managed by the procman



procman (on acndvm...)

	Applications	_status_
1	adoEpics bridges	
2	RHIC summary	started
3	qfg.911-t17	started
4	Pet qfg.911-t17	stopped
5	InjKickScopeBlu	started
6	InjKickScopeYel	started
7	LFSchottky	started
8	HFSchottky	started
9	imgMans	started
10	am simple	started

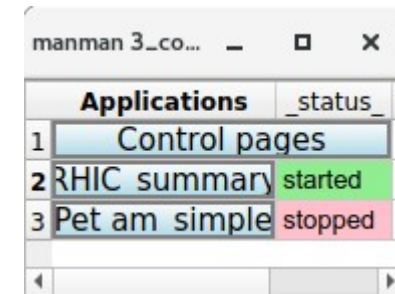
Bridges



manman 2_plots (on ...)

	Applications	_status_
1	Plotting	
2	BeamDipoles	started
3	BeamDipoles file	stopped
4	QFG T17.A0	stopped
5	QFG T17.A1	stopped
6	QFG T17.A2	stopped
7	QFG T17.A3	stopped
8	InjKickBlu	stopped
9	InjKickYel	stopped
10	LF Schottky	stopped
11	HF Schottky	stopped

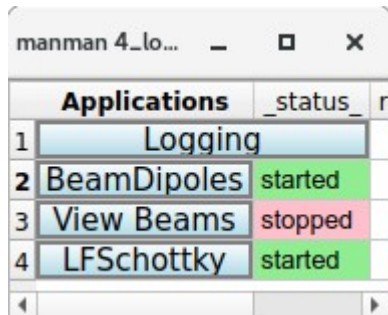
Plotting



manman 3_co...

	Applications	_status_
1	Control pages	
2	RHIC summary	started
3	Pet am simple	stopped

Control pages

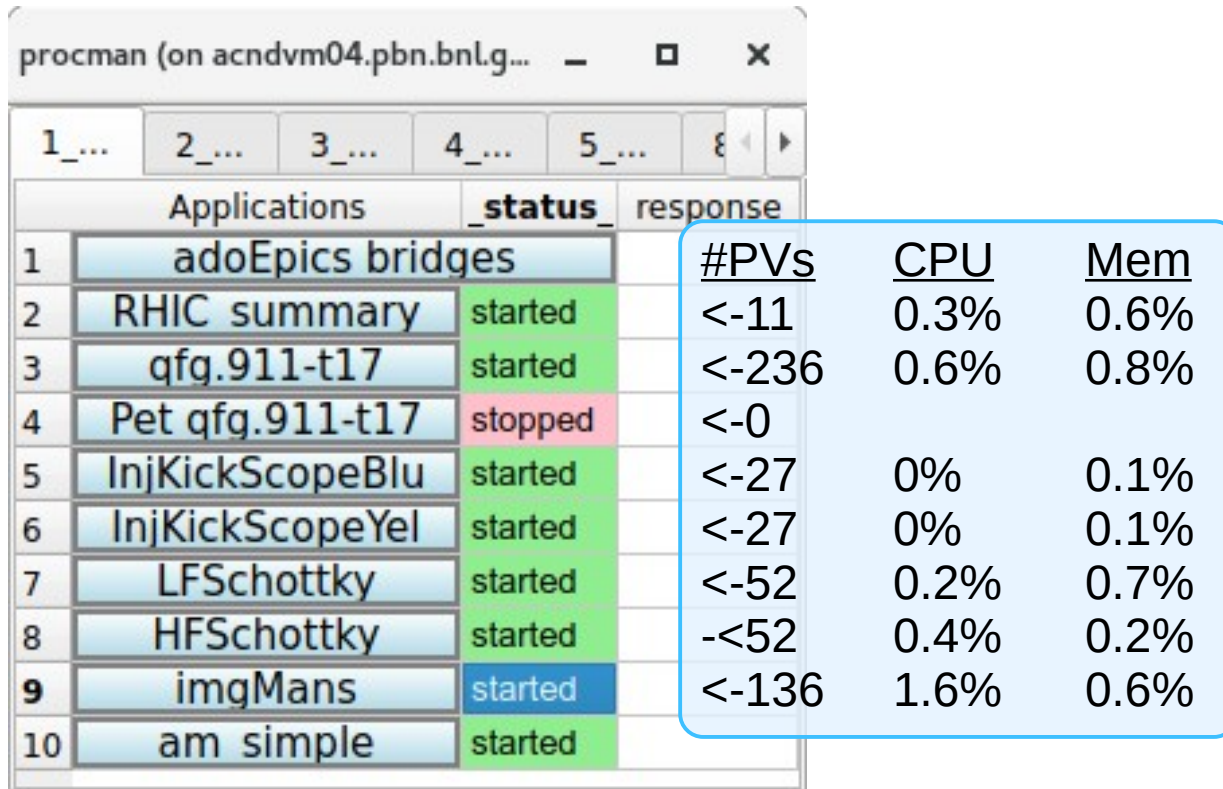


manman 4_lo...

	Applications	_status_
1	Logging	
2	BeamDipoles	started
3	View Beams	stopped
4	LFSchottky	started

Loggers

Resource utilization at acndvm04



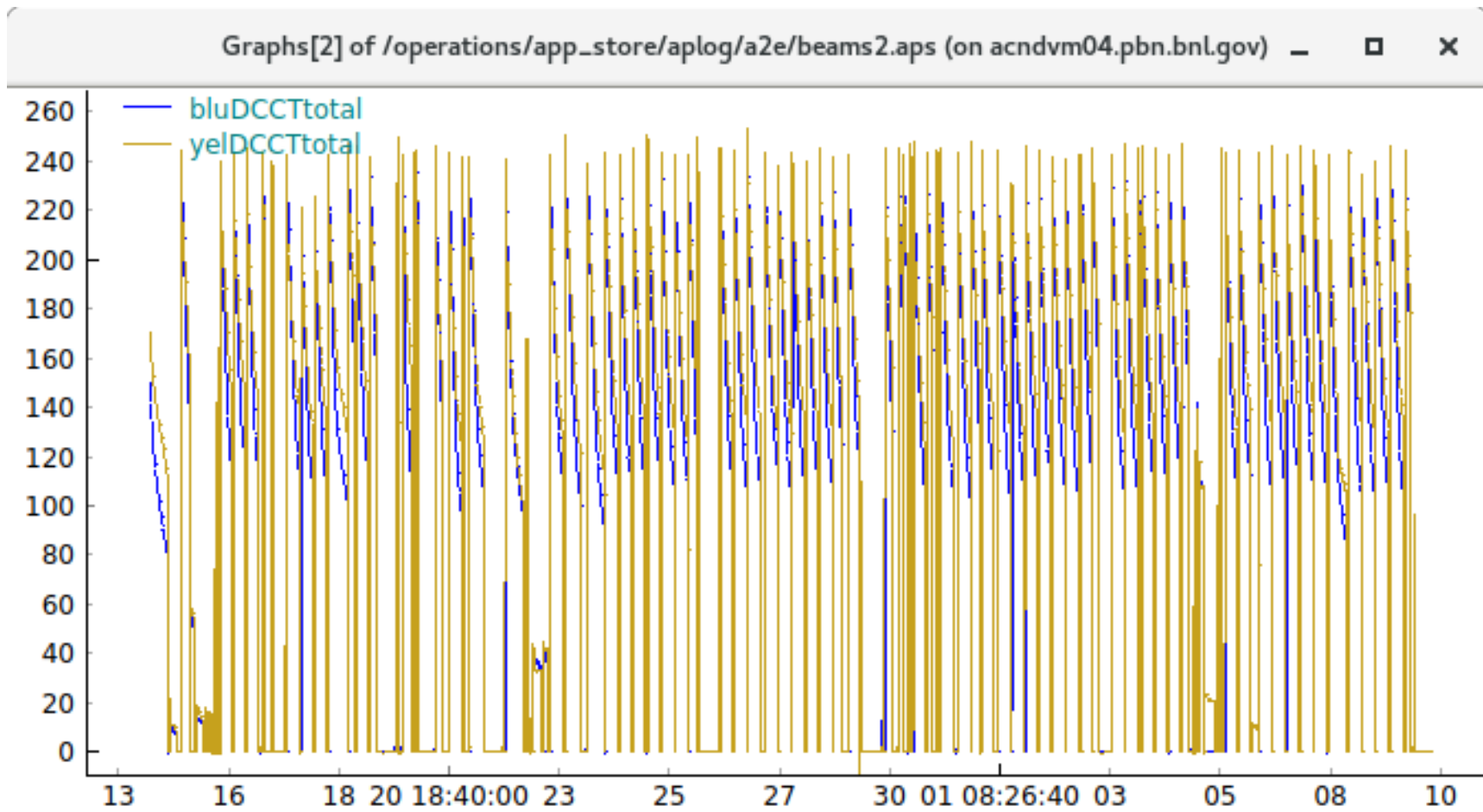
The screenshot shows a window titled 'procman (on acndvm04.pbn.bnl.g...)' with a table of applications. A blue callout box highlights resource utilization data for the first nine applications.

	Applications	_status_	response	#PVs	CPU	Mem
1	adoEpics bridges					
2	RHIC summary	started		<-11	0.3%	0.6%
3	qfg.911-t17	started		<-236	0.6%	0.8%
4	Pet qfg.911-t17	stopped		<-0		
5	InjKickScopeBlu	started		<-27	0%	0.1%
6	InjKickScopeYel	started		<-27	0%	0.1%
7	LFSchottky	started		<-52	0.2%	0.7%
8	HFSchottky	started		-<52	0.4%	0.2%
9	imgMans	started		<-136	1.6%	0.6%
10	am simple	started				

Bridged ~500 parameters from ~20 ADOs.
Many of them are arrays.

- **Total CPU usage: 3%,**
- **Memory usage: 3%**

Long term test



RHIC beam intensities, logged for 28 days.

Example: RHIC Summary

