

Nathan Scott Performance Tools, Red Hat January 2015

(Performance Co-Pilot)



Outline

- Performance Co-Pilot (PCP)
 - Overview
 - PCP Basics

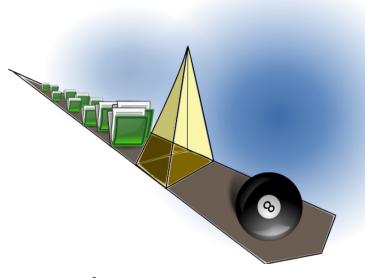


- General
- JSON access
- Containers in PCP
- New metric collectors (PMDAs) and monitor tools

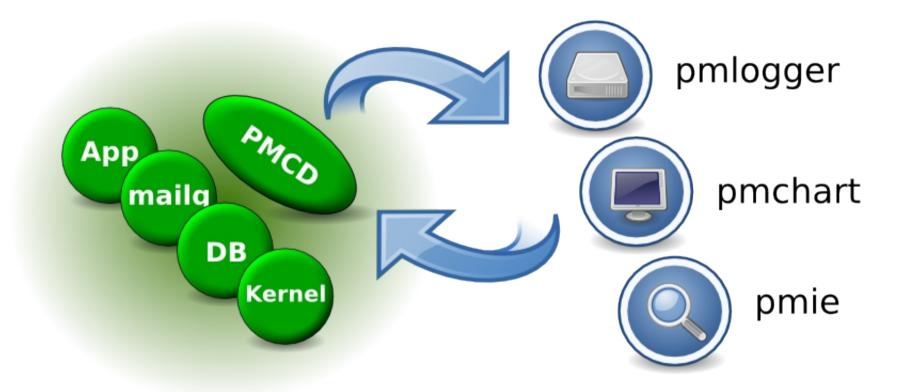


Overview

- What is PCP?
 - Open source toolkit
 - System-level analysis
 - Live and historical
 - Extensible (monitors, collectors)
 - Distributed



Architecture



Metrics

pminfo --desc -tT --fetch disk.dev.read

disk.dev.read [per-disk read operations]

Data Type: 32-bit unsigned int

Semantics: counter

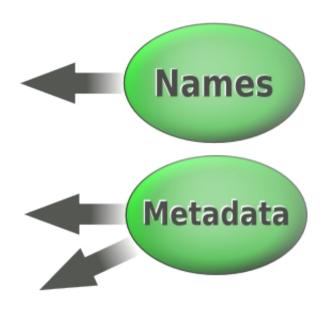
Units: count

Help: Cumulative count of disk reads since boot time

Values:

inst [0 or "**sda**"] value **3382299**

inst [1 or "**sdb**"] value **178421**



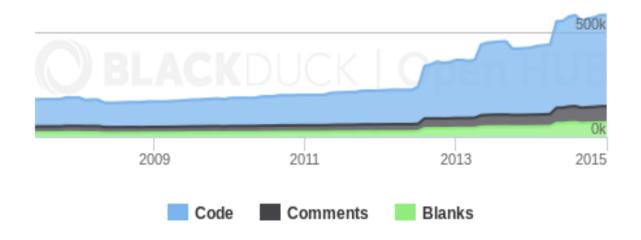




General

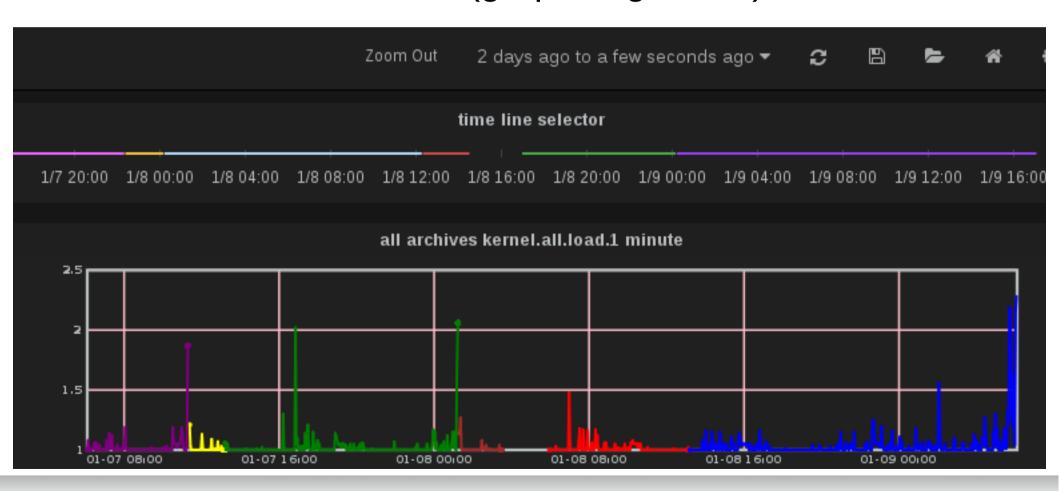
- Supported in RHEL 6.6 and RHEL 7 onward
- Tackling long-standing, difficult problems
- Regular stable releases
- Out-of-the-box experience

Lines of Code



JSON access

- pmwebd (HTTP/JSON)
- Interactive web charts (graphite/grafana)



Monitoring containers

- Zero-install inside containers
- Wire protocol extensions for container naming
- Simplifying access
 - mapping dev_t to names
 - data reduction to cgroups making up a container
 - processes within a container, etc
- Docker support, but written to allow use by others



New collector work

- Metric collectors
 - Lots of kernel metric additions
 - dmcache, jbd2, gluster, zswap, gfs2, cifs, nfs4.1...
 - cgroups, [hot]proc, nvidia, hardware event counters
 - Web, DNS, elasticsearch, memcached additions
 - Database server additions
 - Python PMDA interfaces



New monitor work

- Reporting tools
 - Python tools
 - iostat, free, numastat, atop, collectl and others
 - Web tools
 - GUI tools
 - pmchart usability improvements
- Ease of setup
- Importing data from sar, iostat



Resources

http://www.pcp.io

Source, downloads, books, FAQ, mailing lists

git://git.pcp.io/pcp dev



