OpenPegasus vs. Sfcb

Comparing OpenSource CIM Servers
(which some people claim to be impossible)
Topics in this comparison

- Performance
  - Instructions pathlength, response time
- Footprint
  - static memory usage at startup & running operations
- Features
- Stability
- Testing
- Platform support
- Open-ness of the community
- What external statistics say on this topic
Performance

Instructions pathlength (CPU footprint) OP 2.10 versus Sfcb 1.3.7

- OpenPegasus 2.10 is between 75 and 300 times faster as OP 2.4 since Performance work started in 2005
- OpenPegasus uses two to six times less CPU than Sfcb for typical CIM operations
- OpenPegasus 2.12 is even faster (no precise measurements done yet)
Performance
Response times Sfcb 1.3.7 / OP 2.10

Response time of Sfcb divided by response time of OpenPegasus (displays how many times slower Sfcb was)
Footprint
static memory size (max usage) Sfcb 1.3.7 & OP 2.10
Features

- Survey conducted by Single CIM Infrastructure workgroup consisting of CIM architects, OpenPegasus and Sfcb developers at IBM in Spring 2009

  - **Basis**
    - Compiled list of CIM exploiters representing Storage, Systems x, p, z and zOS
    - 39 nontrivial features, requested value ranking
    - 76 surveys sent, 34 responses

  - **Analysis**
    - OpenPegasus contains 17 features deemed necessary that SFCB did not
    - SFCB contains 2 features deemed necessary that OpenPegasus did not

  - **Conclusion**
    - If the feature content identified by both the OpenPegasus and SFCB stakeholders is viewed as a superset of required then **OpenPegasus has more required functionality by a 8 to 1 margin.**

**Remark:** This margin is growing when comparing OP 2.12 with Sfcb 1.3.15 due to a larger team contributing features to OpenPegasus 2.11/2.12 while Sfcb did not add a single feature since version 1.3.7 (not considering small enhancements here).
Stability
Crashes, Dumps, hangs, Resource Leaks etc.

- Sfcb showed nasty stability issues when first time used in a product in 2012
  - Don't trust me, read their own ChangeLog and you might be scared-> http://sblim.cvs.sourceforge.net/sblim/sfcb/ChangeLog?view=markup
  - In 2012 mostly resource leaks (8), memory overwrites(3), hangs(2) and 
dump/crashes(6) all found in product testing and not through server test suite

- OpenPegasus
  - one server memory leak reported in an exception path in 2012
  - two crashes introduced by new features but found and fixed before 
release thanks to Nightly Build and Test procedure
  - nothing else in 2012 yet
# Testing

<table>
<thead>
<tr>
<th>OpenPegasus nightly testing</th>
<th>Sfcb sporadic testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 80% code coverage</td>
<td>• 25% code coverage</td>
</tr>
<tr>
<td>• <strong>nightly</strong> Memory leak and error testing (valgrind)</td>
<td>• <strong>No</strong> tests of memory usage</td>
</tr>
<tr>
<td>• 15 platforms</td>
<td>• 1 platform</td>
</tr>
<tr>
<td>• 3 different Compilers</td>
<td>• 1 Compiler</td>
</tr>
</tbody>
</table>

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# Platform Support

## OpenPegasus
- FreeBSD
  - upcoming in OP 2.13
- z/OS
- i5/Pase
- AIX
- OpenVMS
- Windows
  - IA-64, x86
- HP-UX
- Mac OS X
- VxWorks
- Sun Solaris
- Linux
  - PPC, IX86, IA64, zSeries, XSCALE, SuperH

## Sfcb
- FreeBSD
- ThreadX
- Linux
  - PPC, IX86, IA64, zSeries, MIPS, SuperH
## OpenSource Community Model

### OpenPegasus

- **Meritocracy model = Open Community**
  - *Everyone* can commit after approval through voting process
  - Decision-power based on recognition for participation and contribution
  - **Unrestricted participation** in architectural discussion and design
  - Meeting Minutes, Design Documents, release status etc. free available from website
  - **15** active Contributors in last 12 months

### Sfcb

- **IBM Dictatorship = Closed IBM Community**
  - *IBM only* can do commits
  - IBM makes **ALL** decisions
  - Architecture done by IBM-only
  - **no public** records or communication on status or direction of the project
  - **5** active Contributors in last 12 months
External Statistics on topic
26 Sep 2012 snapshot from ohloh.net
(go check it out yourself)

In a Nutshell, OpenPegasus...
... has had 11,299 commits made by 98 contributors
representing 664,501 lines of code
... is mostly written in C++
   with a decently commented source code
... has a well established, mature codebase
   maintained by a large development team
   with stable year-over-year commits
... took an estimated 179 years of effort (COCOMO model)
   starting with its first commit in January, 2001
   ending with its most recent commit 3 days ago

In a Nutshell, sfcb...
... has had 1,831 commits made by 19 contributors
representing 100,932 lines of code
... is mostly written in C
   with a very low number of source code comments
... has a well established, mature codebase
   maintained by a average size development team
   with decreasing year-over-year commits
... took an estimated 26 years of effort (COCOMO model)
   starting with its first commit in March, 2006
   ending with its most recent commit 13 days ago

Activity https://www.ohloh.net/p/3397

30 Day Summary Aug 26 — Sep 25
30 Commits
8 Contributors

12 Month Summary Sep 25 — Sep 25
207 Commits
   Up +43 (22.995%) from previous 12 months
15 Contributors
   Up +3 (25.000%) from previous 12 months

Activity https://www.ohloh.net/p/596698

30 Day Summary Aug 26 — Sep 25
5 Commits
2 Contributors

12 Month Summary Sep 25 — Sep 25
164 Commits
   Down -139 (-47.279%) from previous 12 months
5 Contributors
   Down -1 (-16.667%) from previous 12 months