Legend

**Environment**

| | |
|---|---|
| Computer | 3.2+GHz, 6 cores + HT, 64GB RAM |
| OS | Ubuntu 12.04 |
| HDD | LSI Controller w/ 1GB cache, default settings; 8 x 3TB HDD as RAID 0, ext4 |
| SSD | 2 x 512GB SDD in software RAID 0, no TRIM support in this config, ext4 |
| RAM | 32GB tmpfs |

**Tests**

| | | |
|---|---|---|
| dump | $repo -r0:5000 -q > /dev/null | |
| load | $repo -q | (dump file is on RAM disk) |
| export | $ruby/trunk -q or $bsd/head -q | (target is a RAM disk) |
| log | $repo/ --limit 20000 > /dev/null | |

Uses standard SVN CL client and server /trunk@1604933, no debug, with full optimization.
Apache 2.2 without authz, Worker MPM, 1 Process, 64 Threads
Client and server run on the same machine.
Machine otherwise idle.

**Extra options used in the different configurations**

| | | |
|---|---|---|
| slow | Apache | (all default) |
| | svnserve | (all default) |
| | file: | (all default) |
| | dump | (all default) |
| | load | (all default) |
| | | |
| medium | Apache | SVNInMemoryCacheSize=256 |
| | svnserve | -M 256 |
| | file: | memory-cache-size=256     (in config file) |
| | dump | -M 256 |
| | load | -M 256 |
| | | |
| fast | Apache | SVNInMemoryCacheSize=1024 |
| | | SVNCacheRevProps=on |
| | | SVNBlockRead=on |
| | | SVNCompressionLevel=0 |
| | svnserve | -M 1024 -c 0 --cache-revprops yes --client-speed 1000 --block-read yes |
| | file: | memory-cache-size=1024   (in config file) |
| | dump | -M 1024 |
| | load | -M 1024        execute with 'eatmydata' lib |

**Repositories**

| | | |
|---|---|---|
| ruby | r46054 | http://svn.ruby-lang.org/repos/ruby/ |
| bsd | r263988 | http://svn0.eu.FreeBSD.org/base |

**Methodology**

OS disk caches were cleared before each individual test.
Servers got restarted before each individual test.
The whole test procedure got run twice to get an indication on result variation; results are from 2. run.
Some results vary by 5 to 10% or 50ms (depending on what is larger).

Legend

**Key to result tables**

| | |
|---|---|
| Runtime | lifetime of the respective client process, given in seconds |

<span style="background-color:gold;color:purple;">**outlier**</span>

F7 ./. F6      (runtime format 7 repo) / (runtime format 6 repo) – 1

| <span style="background-color:green;">< -50%</span> | <span style="background-color:khaki;">unchanged</span> | <span style="background-color:red;">> +50%</span> |
|---|---|---|
| (twice as fast) | | (1/3 slower) |

Pack/nopack    (runtime packed repo) / (runtime non-packed repo) – 1

| <span style="background-color:green;">< -50%</span> | <span style="background-color:khaki;">unchanged</span> | <span style="background-color:red;">> +50%</span> |
|---|---|---|
| (twice as fast) | | (1/3 slower) |

CPU        (user + sys time) / (runtime)

| 0% | <span style="background-color:cornflowerblue;">100%</span> | | *client-only* |
|---|---|---|---|

Dump - old

| Runtime | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby-f6-nopack | 22.6 | 12.5 | 11.7 | 20.2 | 11.5 | 11.4 | 18.0 | 9.8 | 9.3 |
| ruby-f7-nopack | 24.3 | 11.0 | 10.1 | 23.6 | 10.7 | 10.5 | 22.0 | 9.1 | 9.0 |
| ruby-f6-packed | 18.1 | 9.8 | 9.6 | 17.9 | 9.5 | 9.3 | 17.7 | 9.4 | 9.3 |
| ruby-f7-packed | 30.3 | 10.1 | 9.7 | 29.1 | 9.5 | 9.1 | 29.2 | 9.6 | 10.0 |
| bsd-f6-nopack | 10.4 | 7.0 | 8.5 | 8.2 | 6.9 | 6.7 | 6.3 | 5.1 | 4.9 |
| bsd-f7-nopack | 12.4 | 5.9 | 5.0 | 11.9 | 6.2 | 5.8 | 10.2 | 4.6 | 4.2 |
| bsd-f6-packed | 6.8 | 5.5 | 5.0 | 6.3 | 6.4 | 4.9 | 6.2 | 5.0 | 4.9 |
| bsd-f7-packed | 21.1 | 5.2 | 5.5 | 20.4 | 4.7 | 4.2 | 20.2 | 4.6 | 4.1 |

| F7 ./. F6 | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby-nopack | 7% | -12% | -14% | 17% | -7% | -8% | 22% | -7% | -3% |
| ruby-pack | 67% | 3% | 0% | 63% | 0% | -2% | 65% | 2% | 8% |
| bsd-nopack | 19% | -16% | -41% | 45% | -10% | -15% | 62% | -9% | -14% |
| bsd-pack | 213% | -7% | 8% | 222% | -27% | -15% | 226% | -9% | -17% |

| Pack ./. nopack | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby-f6 | -20% | -22% | -18% | -12% | -17% | -18% | -1% | -3% | 0% |
| ruby-f7 | 25% | -9% | -4% | 24% | -11% | -14% | 33% | 5% | 11% |
| bsd-f6 | -35% | -21% | -40% | -23% | -6% | -27% | -2% | 0% | 0% |
| bsd-f7 | 70% | -12% | 8% | 72% | -24% | -27% | 97% | -1% | -3% |

| CPU | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby-f6-nopack | 79% | 72% | 75% | 87% | 79% | 78% | 96% | 89% | 92% |
| ruby-f7-nopack | 89% | 78% | 84% | 91% | 81% | 81% | 97% | 92% | 92% |
| ruby-f6-packed | 95% | 91% | 91% | 96% | 92% | 92% | 96% | 93% | 92% |
| ruby-f7-packed | 94% | 88% | 86% | 97% | 92% | 91% | 97% | 92% | 83% |
| bsd-f6-nopack | 56% | 66% | 52% | 71% | 67% | 66% | 88% | 85% | 85% |
| bsd-f7-nopack | 79% | 69% | 74% | 82% | 66% | 64% | 93% | 84% | 83% |
| bsd-f6-packed | 84% | 82% | 85% | 88% | 68% | 85% | 88% | 86% | 85% |
| bsd-f7-packed | 91% | 76% | 63% | 96% | 83% | 81% | 96% | 85% | 83% |

**Interpretation of results**
- Outlier possibly gives F7 (hdd fast bsd-nopack) and packed (hdd fast bsd-f6) an extra 20% advantage.

- Dump is mainly CPU bound as HDD, SSD and RAM deliver roughly the same performance.
- F7 performance in "slow" config suffers from "block-read" feature being enabled even for small caches (fixed on HEAD, see latest measurements).
- Medium-sized caches double performance in virtually all cases.

- Packed is faster than non-packed as I/O is more linear. Even true for F7 with the old code if caches Are larger than the pack size.
- F7 is not expected to deliver much higher dump speeds than F6 because the item order of F6 (rev by rev, starting with r0) fits the dump request better than F7 (path order and per-node history).

Load - old

| Runtime | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby-f6 | 88 | 78 | 40 | 1008 | 990 | 41 | 43 | 34 | 34 |
| ruby-f7 | 97 | 81 | 41 | 1008 | 989 | 42 | 50 | 35 | 35 |
| bsd-f6 | 75 | 73 | 36 | 969 | 967 | 36 | 28 | 26 | 26 |
| bsd-f7 | 86 | 77 | 37 | 993 | 976 | 38 | 38 | 28 | 27 |

| F7 ./. F6 | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby | 11% | 4% | 3% | 0% | 0% | 4% | 16% | 3% | 5% |
| bsd | 14% | 5% | 4% | 2% | 1% | 6% | 36% | 6% | 5% |

| CPU | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| ruby-f6 | 59% | 54% | 98% | 3% | 8% | 98% | 100% | 99% | 99% |
| ruby-f7 | 62% | 55% | 99% | 3% | 8% | 98% | 100% | 99% | 99% |
| bsd-f6 | 54% | 52% | 98% | 3% | 7% | 97% | 99% | 99% | 99% |
| bsd-f7 | 60% | 53% | 98% | 4% | 7% | 97% | 100% | 100% | 99% |

**Interpretation of results**

- With "medium" and "fast" config, commits in F7 are slightly more expensive than in F6, this is due to index data being written. Actual overhead is within measurement error margins.
- F7 performance in "slow" config suffers from "block-read" feature being enabled even for small caches (fixed on HEAD, see latest measurements).

- Disabling fsync for the load process makes it CPU bound and gives similar speed for all storage media with RAM maintaining a small advantage.

Export - old

| Runtime | | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-f6-nopack | 31.3 | 29.5 | 29.3 | 4.1 | 3.6 | 3.5 | 1.7 | 1.5 | 1.5 |
| | ruby-f7-nopack | 30.7 | 30.8 | 30.5 | 4.1 | 3.7 | 4.3 | 2.0 | 1.7 | 2.1 |
| | ruby-f6-packed | 12.3 | 10.7 | 11.9 | 2.6 | 2.1 | 2.2 | 1.7 | 1.5 | 1.5 |
| | ruby-f7-packed | 6.6 | 4.2 | 4.4 | 3.9 | 2.2 | 2.4 | 3.7 | 2.0 | 2.2 |
| | bsd-f6-nopack | 408.7 | 402.1 | 400.6 | 29.8 | 27.9 | 27.2 | 13.1 | 10.9 | 10.3 |
| | bsd-f7-nopack | 319.5 | 312.9 | 292.7 | 34.8 | 31.9 | 38.0 | 16.2 | 12.7 | 21.9 |
| | bsd-f6-packed | 241.9 | 240.8 | 240.7 | 19.8 | 18.1 | 18.2 | 13.1 | 11.1 | 11.1 |
| | bsd-f7-packed | 162.9 | 79.7 | 96.8 | 110.0 | 24.9 | 43.6 | 108.2 | 22.8 | 41.2 |
| svn:// | ruby-f6-nopack | 29.8 | 29.6 | 28.8 | 3.6 | 3.6 | 2.8 | 2.1 | 2.2 | 1.4 |
| | ruby-f7-nopack | 28.0 | 27.9 | 27.6 | 3.9 | 3.9 | 3.2 | 2.3 | 2.4 | 2.1 |
| | ruby-f6-packed | 11.6 | 10.9 | 9.8 | 3.0 | 3.1 | 2.1 | 2.2 | 2.3 | 1.3 |
| | ruby-f7-packed | 5.1 | 4.2 | 3.8 | 3.3 | 2.8 | 2.2 | 3.3 | 2.5 | 1.9 |
| | bsd-f6-nopack | 351.2 | 351.4 | 334.4 | 36.7 | 36.8 | 20.9 | 26.0 | 26.2 | 10.6 |
| | bsd-f7-nopack | 266.0 | 265.3 | 220.9 | 38.6 | 38.8 | 24.7 | 26.8 | 26.8 | 15.2 |
| | bsd-f6-packed | 279.6 | 279.0 | 263.3 | 33.5 | 33.3 | 18.1 | 27.3 | 26.9 | 11.7 |
| | bsd-f7-packed | 128.7 | 98.4 | 86.4 | 65.5 | 35.0 | 23.4 | 62.5 | 32.0 | 20.5 |
| file:// | ruby-f6-nopack | 28.8 | 29.0 | 29.2 | 3.1 | 3.1 | 3.1 | 1.5 | 1.5 | 1.6 |
| | ruby-f7-nopack | 27.6 | 27.8 | 27.9 | 3.7 | 3.5 | 3.7 | 2.3 | 2.1 | 2.1 |
| | ruby-f6-packed | 10.5 | 10.1 | 10.7 | 2.4 | 2.5 | 2.5 | 1.5 | 1.6 | 1.7 |
| | ruby-f7-packed | 8.2 | 4.4 | 4.2 | 6.7 | 2.5 | 2.5 | 6.4 | 2.2 | 2.2 |
| | bsd-f6-nopack | 338.8 | 339.4 | 339.2 | 25.2 | 25.4 | 25.4 | 14.6 | 15.1 | 15.4 |
| | bsd-f7-nopack | 228.0 | 224.2 | 223.7 | 34.3 | 30.4 | 29.5 | 25.0 | 20.8 | 20.1 |
| | bsd-f6-packed | 266.9 | 267.5 | 266.9 | 22.3 | 22.2 | 22.3 | 15.9 | 15.5 | 15.8 |
| | bsd-f7-packed | 175.6 | 97.3 | 87.7 | 112.5 | 36.5 | 27.0 | 109.9 | 33.7 | 24.0 |

| F7 ./. F6 | | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-nopack | -2% | 5% | 4% | 0% | 5% | 23% | 19% | 15% | 44% |
| | ruby-pack | -46% | -61% | -63% | 53% | 2% | 8% | 117% | 35% | 50% |
| | bsd-nopack | -22% | -22% | -27% | 17% | 14% | 40% | 23% | 17% | 112% |
| | bsd-pack | -33% | -67% | -60% | 455% | 37% | 140% | 728% | 105% | 270% |
| svn:// | ruby-nopack | -6% | -6% | -4% | 7% | 6% | 16% | 10% | 7% | 52% |
| | ruby-pack | -56% | -62% | -61% | 9% | -8% | 4% | 49% | 9% | 39% |
| | bsd-nopack | -24% | -25% | -34% | 5% | 5% | 18% | 3% | 2% | 44% |
| | bsd-pack | -54% | -65% | -67% | 95% | 5% | 30% | 129% | 19% | 75% |
| file:// | ruby-nopack | -4% | -4% | -5% | 21% | 14% | 21% | 60% | 37% | 34% |
| | ruby-pack | -22% | -57% | -61% | 178% | -1% | -1% | 321% | 34% | 33% |
| | bsd-nopack | -33% | -34% | -34% | 36% | 19% | 16% | 71% | 38% | 30% |
| | bsd-pack | -34% | -64% | -67% | 403% | 64% | 21% | 592% | 117% | 52% |

| Pack ./. nopack | | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-f6 | -61% | -64% | -59% | -37% | -40% | -35% | -1% | -1% | -1% |
| | ruby-f7 | -78% | -86% | -86% | -3% | -41% | -43% | 80% | 16% | 3% |
| | bsd-f6 | -41% | -40% | -40% | -34% | -35% | -33% | -1% | 2% | 8% |
| | bsd-f7 | -49% | -75% | -67% | 216% | -22% | 15% | 568% | 80% | 88% |
| svn:// | ruby-f6 | -61% | -63% | -66% | -16% | -15% | -23% | 3% | 4% | -2% |
| | ruby-f7 | -82% | -85% | -86% | -14% | -26% | -31% | 40% | 6% | -10% |
| | bsd-f6 | -20% | -21% | -21% | -9% | -10% | -14% | 5% | 3% | 11% |
| | bsd-f7 | -52% | -63% | -61% | 70% | -10% | -5% | 133% | 19% | 35% |

| Export - old | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ruby-f6** | -64% | -65% | -64% | -22% | -17% | -19% | 4% | 7% | 5% |
| **ruby-f7** | -70% | -84% | -85% | 79% | -28% | -33% | 174% | 4% | 5% |
| **bsd-f6** | -21% | -21% | -21% | -11% | -13% | -12% | 8% | 3% | 3% |
| **bsd-f7** | -23% | -57% | -61% | 228% | 20% | -8% | 339% | 63% | 19% |

(left label: file://)

| CPU | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| **http://** | | | | | | | | | |
| ruby-f6-nopack | 2% | 2% | 2% | 14% | 16% | 16% | 33% | 36% | 37% |
| ruby-f7-nopack | 2% | 2% | 2% | 14% | 15% | 13% | 26% | 33% | 25% |
| ruby-f6-packed | 5% | 6% | 5% | 23% | 27% | 25% | 32% | 37% | 36% |
| ruby-f7-packed | 9% | 14% | 13% | 15% | 27% | 22% | 16% | 27% | 26% |
| bsd-f6-nopack | 2% | 2% | 2% | 25% | 26% | 27% | 56% | 65% | 69% |
| bsd-f7-nopack | 3% | 3% | 3% | 21% | 23% | 20% | 45% | 56% | 34% |
| bsd-f6-packed | 4% | 4% | 4% | 37% | 41% | 40% | 56% | 66% | 65% |
| bsd-f7-packed | 6% | 11% | 9% | 8% | 31% | 18% | 8% | 34% | 19% |
| **svn://** | | | | | | | | | |
| ruby-f6-nopack | 3% | 3% | 2% | 16% | 15% | 15% | 26% | 25% | 30% |
| ruby-f7-nopack | 3% | 3% | 2% | 14% | 15% | 13% | 24% | 23% | 21% |
| ruby-f6-packed | 6% | 6% | 6% | 19% | 18% | 19% | 26% | 24% | 30% |
| ruby-f7-packed | 12% | 14% | 12% | 17% | 20% | 19% | 17% | 22% | 22% |
| bsd-f6-nopack | 4% | 4% | 3% | 23% | 23% | 28% | 32% | 32% | 53% |
| bsd-f7-nopack | 4% | 4% | 4% | 22% | 22% | 23% | 31% | 31% | 37% |
| bsd-f6-packed | 4% | 4% | 4% | 25% | 25% | 31% | 30% | 31% | 48% |
| bsd-f7-packed | 7% | 10% | 8% | 13% | 24% | 25% | 14% | 26% | 28% |
| **file://** | | | | | | | | | |
| ruby-f6-nopack | 6% | 6% | 7% | 40% | 43% | 44% | 71% | 74% | 74% |
| ruby-f7-nopack | 9% | 8% | 8% | 57% | 53% | 51% | 82% | 80% | 80% |
| ruby-f6-packed | 13% | 15% | 14% | 51% | 51% | 54% | 72% | 74% | 74% |
| ruby-f7-packed | 73% | 41% | 44% | 90% | 73% | 73% | 93% | 81% | 81% |
| bsd-f6-nopack | 6% | 6% | 6% | 63% | 63% | 64% | 97% | 97% | 97% |
| bsd-f7-nopack | 13% | 11% | 11% | 75% | 71% | 71% | 98% | 98% | 98% |
| bsd-f6-packed | 8% | 8% | 8% | 73% | 73% | 73% | 97% | 97% | 97% |
| bsd-f7-packed | 63% | 35% | 28% | 97% | 92% | 90% | 99% | 98% | 98% |

**Interpretation of results**

- Packed and to a lesser degree non-packed F7 repositories become CPU bound on fast storage.
  This has been fixed on HEAD (see new measurements).

- Packed repositories perform significantly better than non-packed ones when I/O is not cheap.
- On HDD, packed F7 repos perform significantly better than F6. The effect increases with cache size.
- On HDD, non-packed F7 ruby repos performs roughly the same as F6 (as expected). The bsd repo seems
  to accidentally have a better on-disk placement of the individual files – which has nothing to do with F7.
  This 20 .. 30% advantage is not affected by cache sizes as it should when it was to do with F7. We don't
  see that difference between ruby and bsd on the other storages locations.

- svnserve delivers the most consistent performance while Apache measurements show the effects of
  the client dynamically deciding how many connections to use: If the server answers quickly enough,
  no second connection will be used. The effect is most pronounced with bsd-f7-packed, where "medium"
  is faster than the other configs and even faster then svnserve. In the other configs, http: is slower than svn:.
- When reading from fast storage, network compression becomes a bottleneck for all repos.
  Compare svn: slow & medium with fast on SSD. The latter has compression turned off.

Log - old

**Runtime**

| | | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-f6-nopack | 10.90 | 9.34 | 8.66 | 3.65 | 3.49 | 3.60 | 0.78 | 0.64 | 0.69 |
| | ruby-f7-nopack | 9.81 | 9.36 | 9.06 | 3.70 | 3.42 | 3.74 | 0.75 | 0.73 | 0.73 |
| | ruby-f6-packed | 2.36 | 1.68 | 0.82 | 1.91 | 1.64 | 0.71 | 1.74 | 1.64 | 0.67 |
| | ruby-f7-packed | 2.44 | 1.85 | 0.84 | 1.93 | 1.68 | 0.88 | 1.74 | 1.64 | 0.73 |
| | bsd-f6-nopack | 13.77 | 13.14 | 12.65 | 3.53 | 3.65 | 3.52 | 0.86 | **0.66** | 0.79 |
| | bsd-f7-nopack | 8.49 | 8.46 | 8.36 | 3.56 | 3.43 | 3.57 | 0.76 | 0.84 | 0.70 |
| | bsd-f6-packed | 2.57 | 2.07 | 1.20 | 1.80 | 1.79 | 0.97 | 1.59 | 1.49 | 0.83 |
| | bsd-f7-packed | 2.83 | 2.00 | 1.09 | 1.81 | 1.67 | 0.92 | 1.60 | 1.66 | 0.70 |
| svn:// | ruby-f6-nopack | 8.60 | 8.60 | 8.90 | 3.37 | 3.39 | 3.46 | 0.52 | 0.55 | 0.61 |
| | ruby-f7-nopack | 9.11 | 9.12 | 9.11 | 3.50 | 3.49 | 3.54 | 0.51 | 0.54 | 0.67 |
| | ruby-f6-packed | 1.75 | 1.64 | 0.62 | 1.60 | 1.84 | 0.61 | 1.59 | 1.54 | 0.61 |
| | ruby-f7-packed | 1.62 | 1.62 | 0.54 | 1.70 | 1.56 | 0.61 | 1.64 | 1.66 | 0.68 |
| | bsd-f6-nopack | 12.48 | 12.71 | 12.64 | 3.37 | 3.36 | 3.49 | 0.54 | 0.53 | 0.80 |
| | bsd-f7-nopack | 8.45 | 8.50 | 8.38 | 3.33 | 3.49 | 3.50 | 0.55 | 0.55 | 0.69 |
| | bsd-f6-packed | 1.90 | 1.88 | 1.13 | 1.57 | 1.62 | 0.78 | 1.42 | 1.46 | 0.72 |
| | bsd-f7-packed | 1.76 | 1.77 | 0.96 | 1.59 | 1.85 | 0.73 | 1.44 | 1.44 | 0.64 |
| file:// | ruby-f6-nopack | 8.79 | 8.22 | 7.53 | 3.55 | 3.53 | 3.63 | 0.61 | 0.64 | 0.70 |
| | ruby-f7-nopack | 9.17 | 8.97 | 8.85 | 3.54 | 3.83 | 3.73 | 0.70 | 0.69 | 0.69 |
| | ruby-f6-packed | 1.87 | 1.68 | 1.72 | 1.68 | 1.73 | 1.77 | 1.65 | 1.69 | 1.93 |
| | ruby-f7-packed | 1.65 | 1.76 | 1.80 | 1.70 | 1.75 | 1.77 | 1.66 | 1.80 | 1.75 |
| | bsd-f6-nopack | 12.42 | 12.60 | 12.94 | 3.56 | 3.54 | 3.62 | 0.63 | 0.64 | 0.71 |
| | bsd-f7-nopack | 8.34 | 8.41 | 8.43 | 3.53 | 3.53 | 3.62 | 0.63 | 0.73 | 0.72 |
| | bsd-f6-packed | **1.97** | 2.07 | 2.12 | 1.85 | 1.74 | 1.94 | 1.56 | 1.56 | 1.62 |
| | bsd-f7-packed | 2.53 | 2.28 | 2.19 | 1.72 | 1.85 | 1.74 | 1.52 | 1.55 | 1.70 |

**F7 ./. F6**

| | | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-nopack | -10% | 0% | 5% | 1% | -2% | 4% | -4% | 14% | 5% |
| | ruby-pack | 4% | 10% | 3% | 1% | 3% | 23% | 0% | 0% | 8% |
| | bsd-nopack | -38% | -36% | -34% | 1% | -6% | 2% | -12% | 29% | -12% |
| | bsd-pack | 10% | -3% | -10% | 1% | -6% | -5% | 1% | 11% | -15% |
| svn:// | ruby-nopack | 6% | 6% | 2% | 4% | 3% | 2% | -2% | -3% | 10% |
| | ruby-pack | -8% | -1% | -12% | 6% | -15% | 0% | 3% | 7% | 11% |
| | bsd-nopack | -32% | -33% | -34% | -1% | 4% | 0% | 1% | 2% | -14% |
| | bsd-pack | -8% | -6% | -14% | 2% | 14% | -7% | 1% | -1% | -12% |
| file:// | ruby-nopack | 4% | 9% | 18% | 0% | 9% | 3% | 14% | 8% | -2% |
| | ruby-pack | -11% | 5% | 5% | 1% | 1% | 0% | 1% | 6% | -9% |
| | bsd-nopack | -33% | -33% | -35% | -1% | 0% | 0% | 0% | 13% | 2% |
| | bsd-pack | 28% | 10% | 3% | -7% | 7% | -10% | -3% | 0% | 5% |

**Pack ./. nopack**

| | | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-f6 | -78% | -82% | -91% | -48% | -53% | -80% | 122% | 155% | -3% |
| | ruby-f7 | -75% | -80% | -91% | -48% | -51% | -77% | 132% | 123% | 0% |
| | bsd-f6 | -81% | -84% | -90% | -49% | -51% | -72% | 85% | 127% | 5% |
| | bsd-f7 | -67% | -76% | -87% | -49% | -51% | -74% | 112% | 96% | 1% |
| svn:// | ruby-f6 | -80% | -81% | -93% | -53% | -46% | -82% | 203% | 180% | 1% |
| | ruby-f7 | -82% | -82% | -94% | -52% | -55% | -83% | 218% | 208% | 2% |
| | bsd-f6 | -85% | -85% | -91% | -53% | -52% | -78% | 161% | 173% | -11% |
| | bsd-f7 | -79% | -79% | -89% | -52% | -47% | -79% | 162% | 164% | -8% |

## Log - old

| file:// | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|
| ruby-f6 | -79% | -80% | -77% | -53% | -51% | -51% | 170% | 165% | 175% |
| ruby-f7 | -82% | -80% | -80% | -52% | -54% | -53% | 138% | 160% | 154% |
| bsd-f6 | -84% | -84% | -84% | -48% | -51% | -46% | 145% | 142% | 129% |
| bsd-f7 | -70% | -73% | -74% | -51% | -48% | -52% | 140% | 113% | 135% |

| | **CPU** | HDD | | | SSD | | | RAM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | slow | medium | fast | slow | medium | fast | slow | medium | fast |
| http:// | ruby-f6-nopack | 3% | 3% | 4% | 8% | 9% | 9% | 38% | 45% | 40% |
| | ruby-f7-nopack | 3% | 3% | 3% | 8% | 9% | 8% | 37% | 38% | 39% |
| | ruby-f6-packed | 13% | 17% | 33% | 16% | 18% | 39% | 17% | 19% | 42% |
| | ruby-f7-packed | 12% | 16% | 36% | 16% | 19% | 32% | 17% | 18% | 39% |
| | bsd-f6-nopack | 3% | 3% | 3% | 9% | 9% | 9% | 36% | 48% | 39% |
| | bsd-f7-nopack | 4% | 4% | 4% | 9% | 10% | 9% | 39% | 37% | 43% |
| | bsd-f6-packed | 12% | 15% | 25% | 17% | 17% | 31% | 19% | 22% | 35% |
| | bsd-f7-packed | 12% | 16% | 27% | 18% | 19% | 33% | 19% | 19% | 42% |
| svn:// | ruby-f6-nopack | 2% | 2% | 2% | 5% | 5% | 5% | 34% | 31% | 29% |
| | ruby-f7-nopack | 2% | 2% | 2% | 5% | 5% | 5% | 33% | 31% | 26% |
| | ruby-f6-packed | 9% | 10% | 26% | 10% | 9% | 30% | 11% | 11% | 29% |
| | ruby-f7-packed | 10% | 10% | 28% | 10% | 11% | 26% | 11% | 10% | 27% |
| | bsd-f6-nopack | 2% | 2% | 2% | 5% | 5% | 5% | 33% | 32% | 22% |
| | bsd-f7-nopack | 3% | 2% | 2% | 6% | 5% | 5% | 34% | 32% | 26% |
| | bsd-f6-packed | 10% | 10% | 16% | 12% | 11% | 22% | 13% | 12% | 27% |
| | bsd-f7-packed | 10% | 10% | 18% | 11% | 10% | 26% | 13% | 13% | 30% |
| file:// | ruby-f6-nopack | 8% | 12% | 10% | 20% | 20% | 22% | 51% | 53% | 55% |
| | ruby-f7-nopack | 8% | 8% | 9% | 20% | 19% | 21% | 45% | 49% | 56% |
| | ruby-f6-packed | 73% | 82% | 81% | 80% | 79% | 81% | 82% | 81% | 75% |
| | ruby-f7-packed | 82% | 78% | 80% | 81% | 78% | 83% | 82% | 77% | 83% |
| | bsd-f6-nopack | 7% | 7% | 7% | 20% | 20% | 22% | 50% | 53% | 57% |
| | bsd-f7-nopack | 9% | 10% | 10% | 20% | 21% | 22% | 52% | 47% | 56% |
| | bsd-f6-packed | 63% | 62% | 62% | 68% | 73% | 68% | 78% | 80% | 80% |
| | bsd-f7-packed | 49% | 55% | 60% | 71% | 69% | 75% | 80% | 80% | 77% |

## Interpretation of results

- Packed repos are much faster here than non-packed ones when I/O is not for free.
- On RAM disks, the processing overhead of pack revprops shows (albeit still at very throughput of >10krev/s) Revprop caching ("fast" config, n/a for file:) eliminates the problem if necessary.

- The outlier for bsd-f6-packed on HDD with ra_local is neither consistent with the measurements for other configs, RA layers nor storages. It creates a signal in F7./.F6 that is probably false. Same goes for the the second outlier bsd-f6-nonpacked on RAM.
- bsd-f7-nopack shows the same accidental better performance on HDD as it did in the export tests. Apart from that, there is neither a significant nor a consistent difference between F6 and F7.

- Apart from the exceptions noted, F6 and F7 perform the same – as can expected. The test only accesses Revprops and does not touch any revision file contents.