AUTONUMA bench

Red Hat, Inc.

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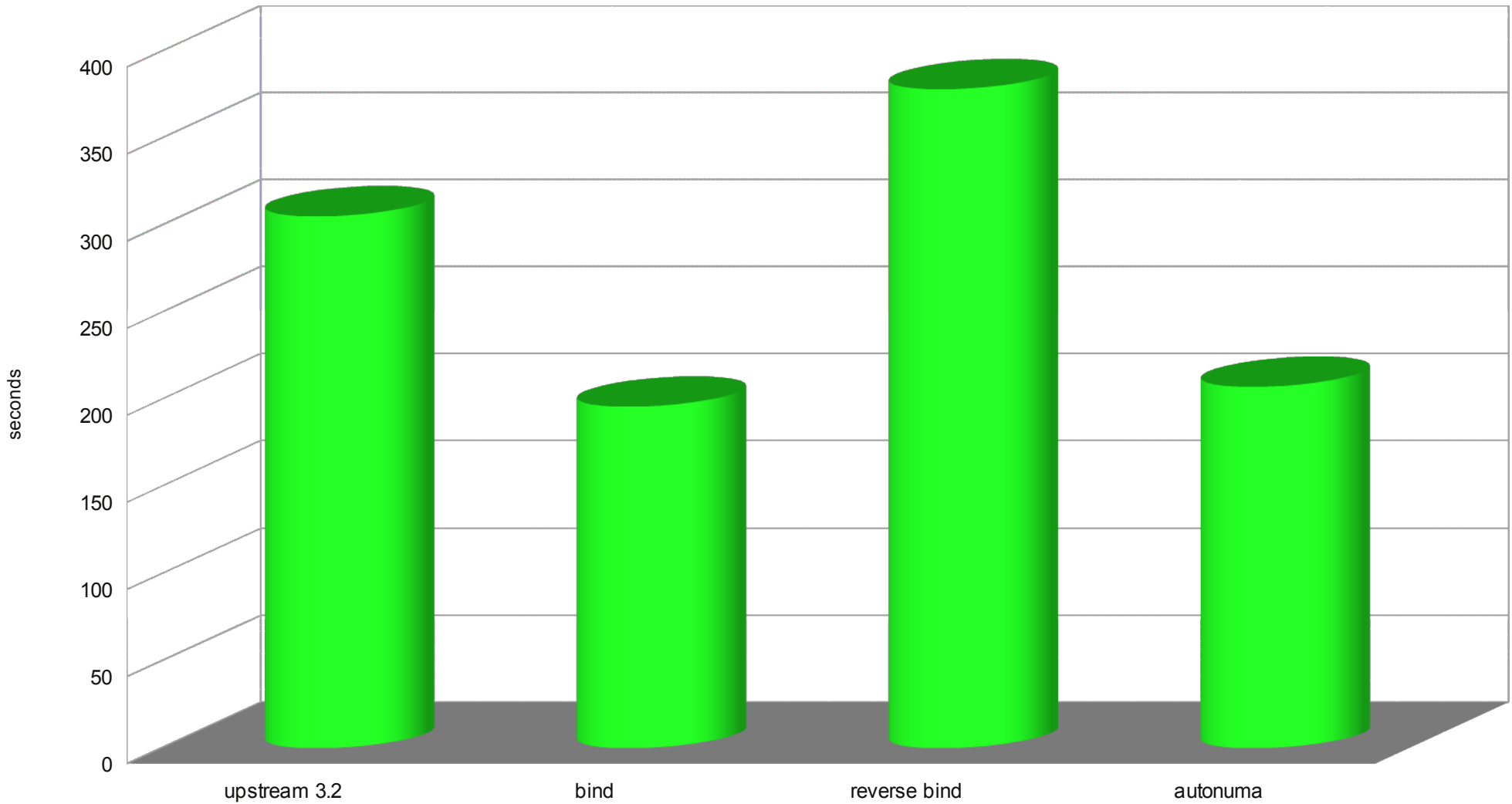7e4dc3dbbda23b873ca7771b5cf296078e6ed1f7

26 Jan 2012

Hardware

- 2 NUMA nodes

- 2 CPU sockets

- 6 CPU cores per socket

- 2 HT CPU threads per core (total 24 CPUs)

- 8GB of RAM per node (total 16 GB of RAM)

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numa01 -DNO_BIND_FORCE_SAME_NODE
all threads shares the same memory, 12 threads per process, 2 processes
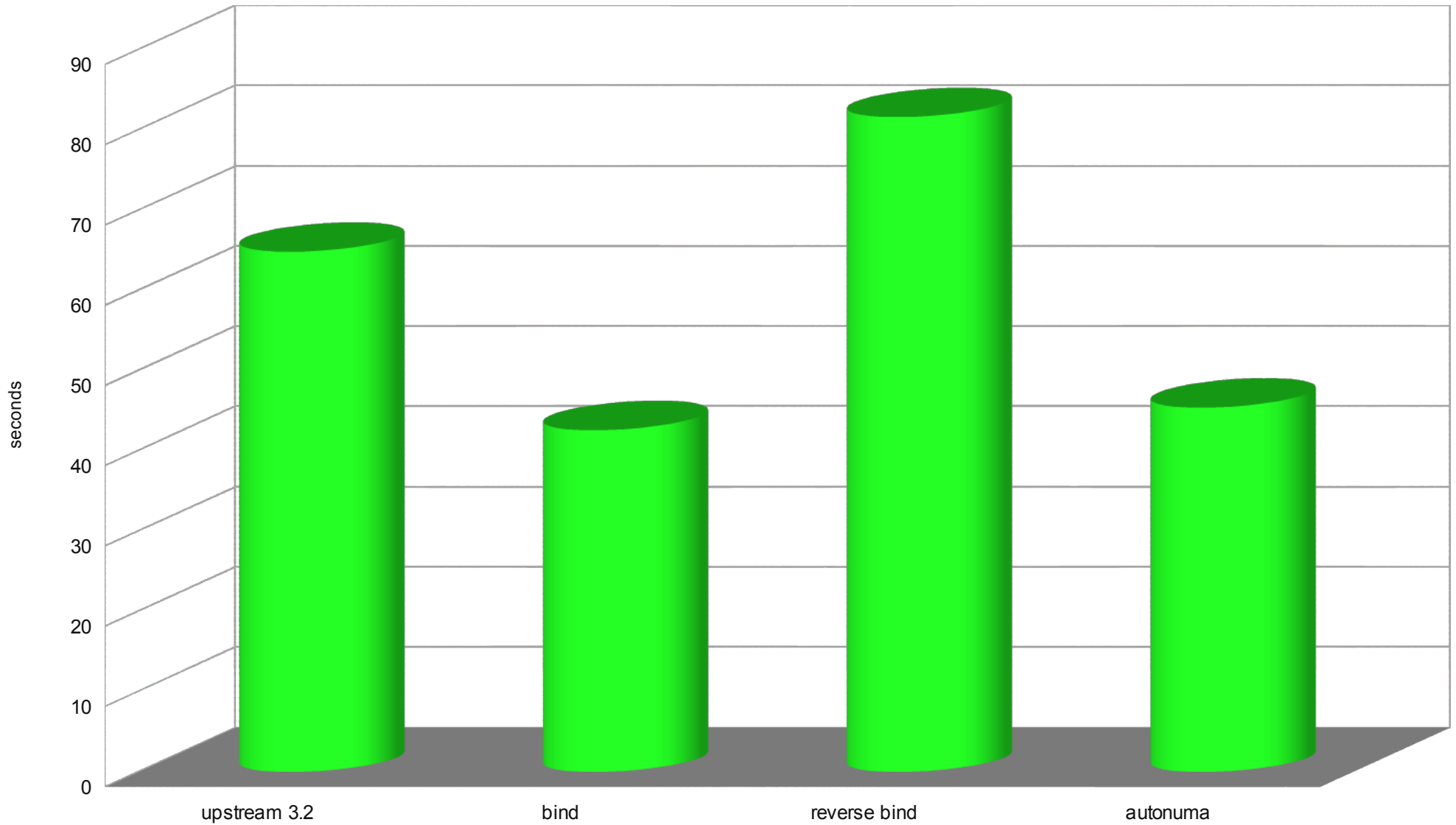
lower is better

■ numa01 -DNO_BIND_FORCE_SAME_NODE (12 thread per process, 2 process) thread uses shared memory

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numa02 per-thread local memory, 24 threads per process 1 process
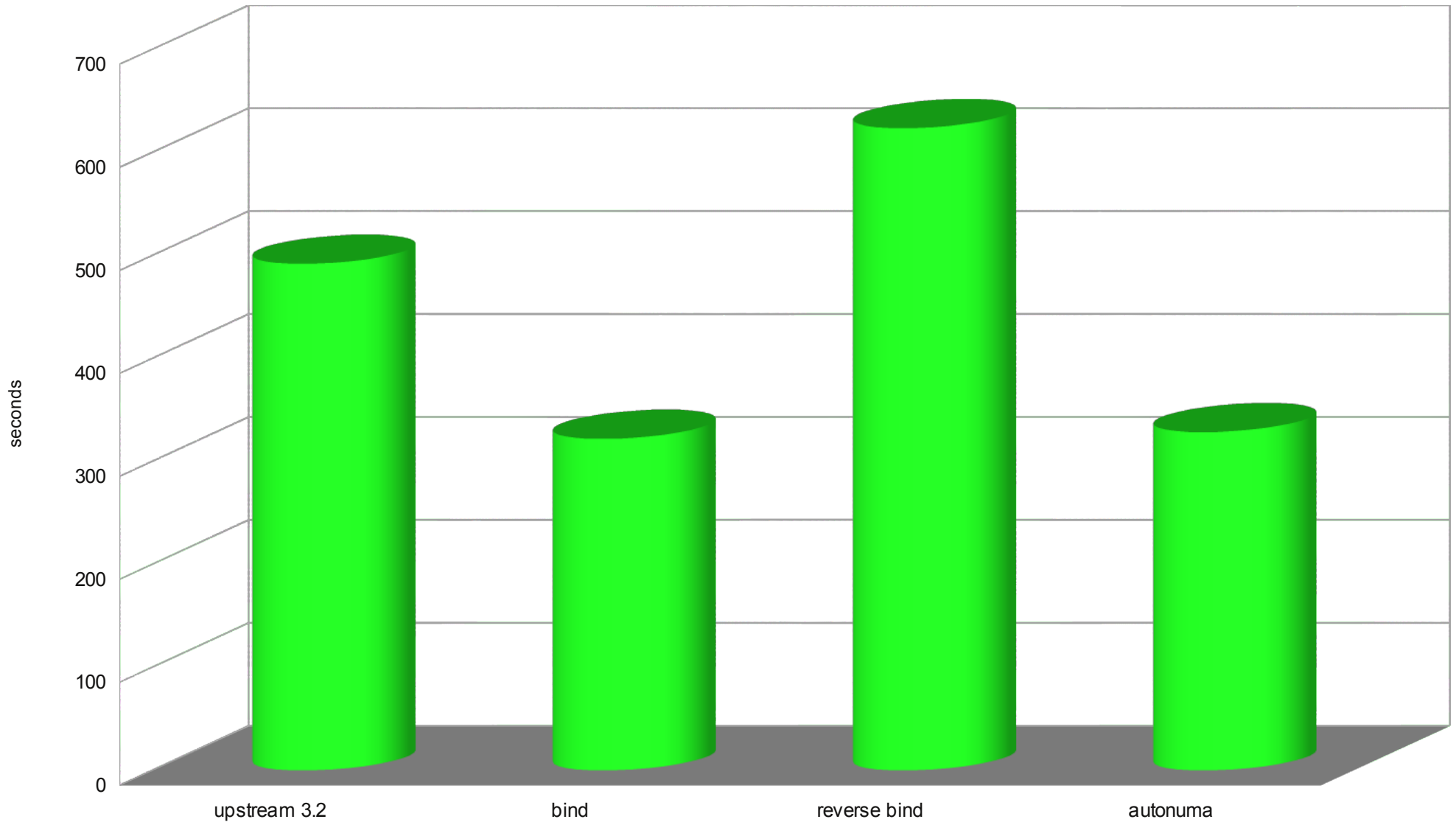
lower is better

Numa02 (24 thread per process, 1 process) thread uses local memory

# numa01 per-thread local memory, 12 threads per process, 2 processes

lower is better

seconds

700
600
500
400
300
200
100
0

upstream 3.2   bind   reverse bind   autonuma

■ numa01 -DTHREAD_ALLOC (12 threads per process, 2 process) thread uses local memory

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x2 CPU overcommit: numa01 -DNO_BIND_FORCE_SAME_NODE + numa02
24 threads using local memory +
12 threads using shared memory +
12 threads using shared memory

lower is better
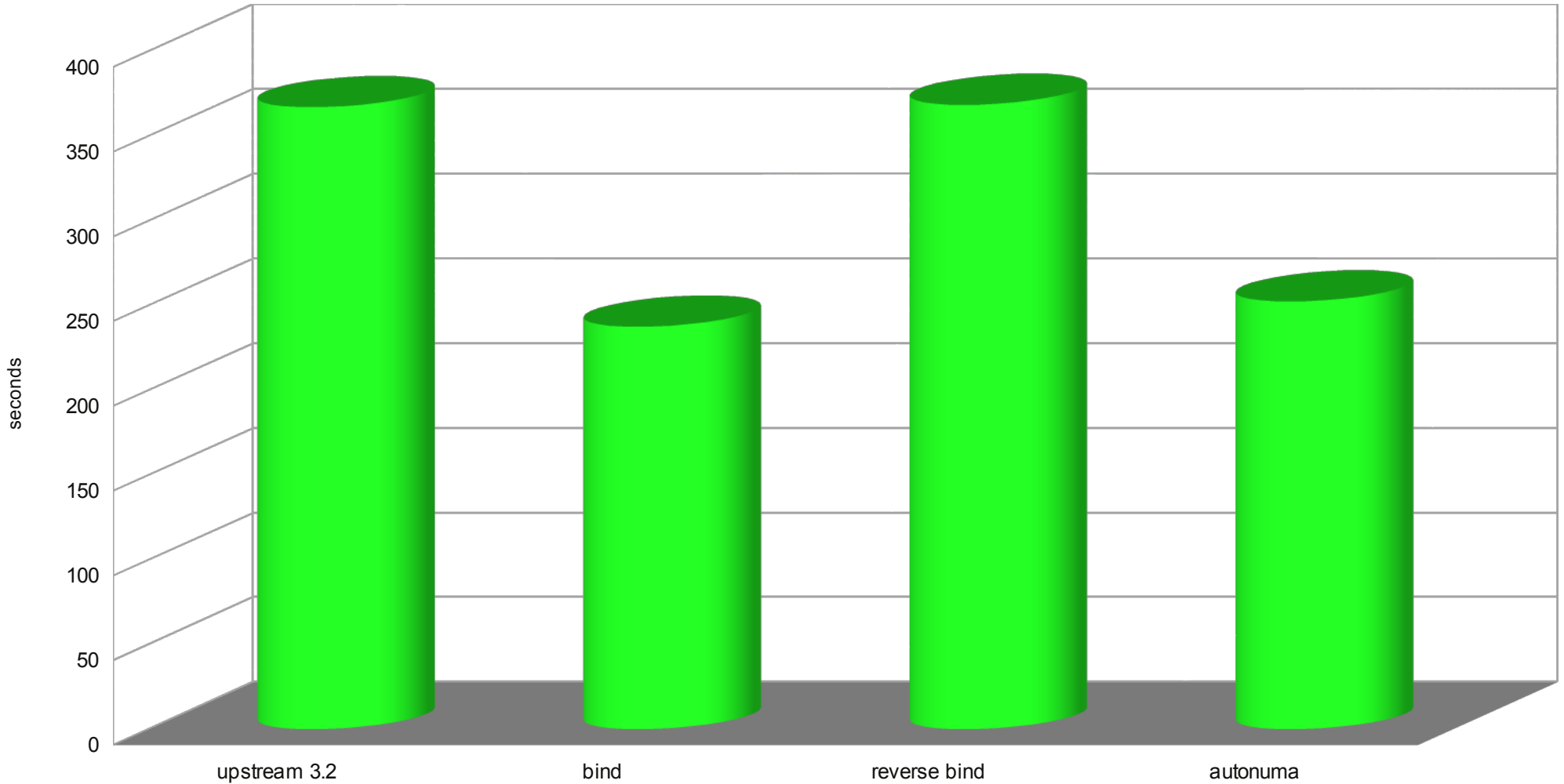
■ numa01 -DNO_BIND_FORCE_SAME_NODE + numa02 (3 processes total, 48 threads total) x2 overcommit

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autonuma benchmark (hash 7e4dc3dbbda23b873ca7771b5cf296078e6ed1f7 vs 3.2 upstream default vs 3.2 upstream bind vs upstream inverse bind)				
	upstream 3.2	bind	reverse bind	autonuma
numa01 -DNO_BIND_FORCE_SAME_NODE (12 thread per process, 2 process) thread uses shared memory	305.36	196.07	378.34	207.47
Numa02 (24 thread per process, 1 process) thread uses local memory	64.81	42.58	81.6	45.39
numa01 -DTHREAD_ALLOC (12 threads per process, 2 process) thread uses local memory	491.88	321.94	623.62	328.43
numa01 -DNO_BIND_FORCE_SAME_NODE + numa02 (3 processes total, 48 threads total) x2 overcommit	366.96	237.43	368.35	252.31

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