

## Execution Time Statistics (ms)

SF=0.01, indexes disabled - excluding postgres {q07,q20}, 100 iterations

q01 (PostgreSQL): 0%=37.59, 25%=38.08, 50%=38.64, 75%=42.22, 100%=68.38, CV=14.92%  
q01 (pgx-lower): 0%=115.19, 25%=116.37, 50%=116.90, 75%=118.94, 100%=140.07, CV=3.53%  
q02 (PostgreSQL): 0%=22.18, 25%=22.72, 50%=22.98, 75%=29.61, 100%=89.96, CV=35.20%  
q02 (pgx-lower): 0%=119.22, 25%=119.97, 50%=120.27, 75%=124.00, 100%=141.82, CV=3.46%  
q03 (PostgreSQL): 0%=24.14, 25%=24.62, 50%=24.85, 75%=27.60, 100%=46.89, CV=14.83%  
q03 (pgx-lower): 0%=136.28, 25%=137.08, 50%=137.59, 75%=138.74, 100%=161.80, CV=2.92%  
q04 (PostgreSQL): 0%=13.61, 25%=13.88, 50%=14.36, 75%=18.31, 100%=32.38, CV=23.63%  
q04 (pgx-lower): 0%=60.11, 25%=62.00, 50%=62.42, 75%=64.91, 100%=85.16, CV=6.61%  
q05 (PostgreSQL): 0%=8.92, 25%=9.09, 50%=9.36, 75%=12.06, 100%=162.71, CV=157.80%  
q05 (pgx-lower): 0%=93.09, 25%=95.17, 50%=95.43, 75%=97.27, 100%=119.55, CV=3.70%  
q06 (PostgreSQL): 0%=8.43, 25%=8.80, 50%=9.06, 75%=12.51, 100%=24.19, CV=34.30%  
q06 (pgx-lower): 0%=44.16, 25%=44.72, 50%=45.09, 75%=46.96, 100%=56.99, CV=5.64%  
q08 (PostgreSQL): 0%=9.35, 25%=9.64, 50%=9.95, 75%=17.76, 100%=5008.27, CV=621.02%  
q08 (pgx-lower): 0%=108.76, 25%=110.43, 50%=111.09, 75%=113.48, 100%=130.65, CV=3.65%  
q09 (PostgreSQL): 0%=18.60, 25%=18.89, 50%=19.14, 75%=23.86, 100%=41.17, CV=23.55%  
q09 (pgx-lower): 0%=124.81, 25%=125.56, 50%=126.01, 75%=130.89, 100%=140.96, CV=2.77%  
q10 (PostgreSQL): 0%=12.22, 25%=12.47, 50%=12.67, 75%=13.86, 100%=96.05, CV=73.16%  
q10 (pgx-lower): 0%=95.21, 25%=96.20, 50%=96.88, 75%=99.49, 100%=117.91, CV=3.70%  
q11 (PostgreSQL): 0%=2.91, 25%=3.11, 50%=3.22, 75%=5.16, 100%=8.17, CV=36.20%  
q11 (pgx-lower): 0%=65.80, 25%=66.81, 50%=67.08, 75%=69.05, 100%=89.34, CV=5.60%  
q12 (PostgreSQL): 0%=15.46, 25%=16.22, 50%=16.83, 75%=25.78, 100%=39.42, CV=29.43%  
q12 (pgx-lower): 0%=62.57, 25%=63.16, 50%=63.54, 75%=64.43, 100%=87.40, CV=6.71%  
q13 (PostgreSQL): 0%=8.73, 25%=9.04, 50%=9.55, 75%=14.78, 100%=25.80, CV=32.20%  
q13 (pgx-lower): 0%=44.22, 25%=44.77, 50%=45.12, 75%=46.39, 100%=70.61, CV=9.16%  
q14 (PostgreSQL): 0%=8.04, 25%=8.40, 50%=8.65, 75%=13.41, 100%=20.61, CV=33.06%  
q14 (pgx-lower): 0%=52.42, 25%=52.95, 50%=53.28, 75%=56.19, 100%=78.23, CV=9.91%  
q15 (PostgreSQL): 0%=8.40, 25%=8.74, 50%=9.05, 75%=16.67, 100%=24.04, CV=36.72%  
q15 (pgx-lower): 0%=65.38, 25%=65.74, 50%=66.04, 75%=66.91, 100%=89.45, CV=6.23%  
q16 (PostgreSQL): 0%=5.34, 25%=5.63, 50%=5.84, 75%=11.57, 100%=15.33, CV=38.97%  
q16 (pgx-lower): 0%=66.05, 25%=66.84, 50%=67.14, 75%=67.79, 100%=89.37, CV=4.59%  
q17 (PostgreSQL): 0%=0.83, 25%=1.01, 50%=1.10, 75%=1.36, 100%=2.48, CV=34.19%  
q17 (pgx-lower): 0%=101.51, 25%=102.62, 50%=103.46, 75%=104.81, 100%=125.77, CV=3.79%  
q18 (PostgreSQL): 0%=31.59, 25%=33.16, 50%=41.12, 75%=50.06, 100%=59.75, CV=21.17%  
q18 (pgx-lower): 0%=99.13, 25%=101.92, 50%=102.26, 75%=103.65, 100%=124.68, CV=3.37%  
q19 (PostgreSQL): 0%=13.79, 25%=14.13, 50%=14.68, 75%=17.41, 100%=583.57, CV=288.51%  
q19 (pgx-lower): 0%=79.94, 25%=81.90, 50%=82.30, 75%=83.31, 100%=105.45, CV=4.18%  
q21 (PostgreSQL): 0%=43.59, 25%=170.78, 50%=171.32, 75%=177.60, 100%=194.65, CV=10.91%  
q21 (pgx-lower): 0%=137.87, 25%=142.59, 50%=142.95, 75%=144.29, 100%=167.16, CV=2.65%  
q22 (PostgreSQL): 0%=3.48, 25%=3.83, 50%=3.96, 75%=5.20, 100%=11.19, CV=39.78%  
q22 (pgx-lower): 0%=59.85, 25%=60.47, 50%=60.79, 75%=61.99, 100%=82.88, CV=5.75%

### AGGREGATE:

PostgreSQL: 0%=0.83, 25%=8.88, 50%=14.17, 75%=24.54, 100%=5008.27, CV=538.17%

pgx-lower: 0%=44.16, 25%=63.58, 50%=93.33, 75%=116.22, 100%=167.16, CV=33.82%

# Execution Time Statistics (ms) - Continued

SF=0.01, indexes disabled, 5 Iterations

q01 (PostgreSQL): 0%=38.12, 25%=38.28, 50%=38.31, 75%=39.22, 100%=69.40, CV=27.70%  
q01 (pgx-lower): 0%=116.49, 25%=117.61, 50%=117.79, 75%=119.50, 100%=127.70, CV=3.39%  
q02 (PostgreSQL): 0%=24.00, 25%=27.70, 50%=29.59, 75%=30.57, 100%=87.92, CV=60.29%  
q02 (pgx-lower): 0%=118.33, 25%=119.70, 50%=120.06, 75%=120.20, 100%=121.08, CV=0.75%  
q03 (PostgreSQL): 0%=24.77, 25%=24.79, 50%=24.85, 75%=26.44, 100%=33.24, CV=12.21%  
q03 (pgx-lower): 0%=137.00, 25%=137.12, 50%=139.99, 75%=142.88, 100%=145.10, CV=2.27%  
q04 (PostgreSQL): 0%=14.07, 25%=15.70, 50%=19.46, 75%=20.00, 100%=21.91, CV=15.88%  
q04 (pgx-lower): 0%=61.06, 25%=62.13, 50%=62.50, 75%=62.60, 100%=64.11, CV=1.57%  
q05 (PostgreSQL): 0%=9.27, 25%=9.35, 50%=9.50, 75%=12.54, 100%=163.99, CV=150.35%  
q05 (pgx-lower): 0%=93.34, 25%=94.01, 50%=94.91, 75%=95.87, 100%=95.89, CV=1.06%  
q06 (PostgreSQL): 0%=8.94, 25%=9.04, 50%=9.49, 75%=14.85, 100%=15.33, CV=25.29%  
q06 (pgx-lower): 0%=44.96, 25%=44.99, 50%=45.42, 75%=46.74, 100%=48.39, CV=2.85%  
q07 (PostgreSQL): 0%=11.91, 25%=11.94, 50%=12.11, 75%=14.44, 100%=1834.73, CV=193.32%  
q07 (pgx-lower): 0%=97.55, 25%=97.94, 50%=98.12, 75%=98.47, 100%=99.34, CV=0.62%  
q08 (PostgreSQL): 0%=9.78, 25%=9.87, 50%=10.09, 75%=16.52, 100%=5008.05, CV=197.71%  
q08 (pgx-lower): 0%=109.90, 25%=109.90, 50%=110.23, 75%=110.77, 100%=118.05, CV=2.82%  
q09 (PostgreSQL): 0%=19.48, 25%=19.82, 50%=19.94, 75%=20.02, 100%=28.78, CV=16.62%  
q09 (pgx-lower): 0%=126.16, 25%=129.95, 50%=130.39, 75%=131.03, 100%=133.02, CV=1.72%  
q10 (PostgreSQL): 0%=12.70, 25%=12.95, 50%=13.04, 75%=16.68, 100%=19.43, CV=17.88%  
q10 (pgx-lower): 0%=96.18, 25%=96.76, 50%=97.12, 75%=97.71, 100%=100.10, CV=1.39%  
q11 (PostgreSQL): 0%=3.12, 25%=3.12, 50%=4.32, 75%=5.09, 100%=5.19, CV=21.78%  
q11 (pgx-lower): 0%=66.29, 25%=66.55, 50%=66.79, 75%=67.06, 100%=72.22, CV=3.30%  
q12 (PostgreSQL): 0%=16.51, 25%=16.70, 50%=18.79, 75%=19.53, 100%=28.84, CV=22.60%  
q12 (pgx-lower): 0%=62.69, 25%=63.47, 50%=63.49, 75%=63.69, 100%=64.91, CV=1.13%  
q13 (PostgreSQL): 0%=9.17, 25%=9.39, 50%=15.77, 75%=15.92, 100%=16.41, CV=24.88%  
q13 (pgx-lower): 0%=44.63, 25%=45.41, 50%=45.60, 75%=46.20, 100%=48.53, CV=2.87%  
q14 (PostgreSQL): 0%=8.39, 25%=8.78, 50%=8.79, 75%=8.90, 100%=8.92, CV=2.19%  
q14 (pgx-lower): 0%=52.73, 25%=52.98, 50%=53.55, 75%=54.01, 100%=55.25, CV=1.66%  
q15 (PostgreSQL): 0%=8.61, 25%=8.65, 50%=15.04, 75%=15.09, 100%=15.17, CV=25.35%  
q15 (pgx-lower): 0%=65.69, 25%=65.82, 50%=66.22, 75%=66.74, 100%=85.93, CV=11.32%  
q16 (PostgreSQL): 0%=5.34, 25%=5.47, 50%=6.60, 75%=7.91, 100%=9.59, CV=22.89%  
q16 (pgx-lower): 0%=66.88, 25%=67.52, 50%=67.94, 75%=68.16, 100%=68.41, CV=0.79%  
q17 (PostgreSQL): 0%=1.10, 25%=1.13, 50%=1.13, 75%=1.53, 100%=1.62, CV=17.22%  
q17 (pgx-lower): 0%=102.68, 25%=102.92, 50%=103.13, 75%=103.57, 100%=104.00, CV=0.46%  
q18 (PostgreSQL): 0%=32.43, 25%=35.91, 50%=45.91, 75%=46.66, 100%=47.81, CV=15.12%  
q18 (pgx-lower): 0%=101.67, 25%=101.98, 50%=102.55, 75%=102.55, 100%=102.65, CV=0.38%  
q19 (PostgreSQL): 0%=14.23, 25%=14.47, 50%=14.62, 75%=14.67, 100%=22.90, CV=20.80%  
q19 (pgx-lower): 0%=82.41, 25%=82.60, 50%=82.79, 75%=83.08, 100%=83.64, CV=0.52%  
q20 (PostgreSQL): 0%=52087.88, 25%=52095.66, 50%=52126.71, 75%=52242.31, 100%=52536.11, CV=0.32%  
q20 (pgx-lower): 0%=131.93, 25%=131.94, 50%=132.42, 75%=132.66, 100%=134.45, CV=0.70%  
q21 (PostgreSQL): 0%=174.06, 25%=186.64, 50%=186.70, 75%=186.78, 100%=187.28, CV=2.78%  
q21 (pgx-lower): 0%=139.41, 25%=139.64, 50%=139.90, 75%=140.47, 100%=141.39, CV=0.51%  
q22 (PostgreSQL): 0%=3.76, 25%=3.80, 50%=3.87, 75%=3.89, 100%=3.98, CV=1.98%  
q22 (pgx-lower): 0%=60.64, 25%=60.74, 50%=60.85, 75%=61.18, 100%=61.20, CV=0.37%

## AGGREGATE:

PostgreSQL: 0%=1.10, 25%=9.07, 50%=15.25, 75%=28.83, 100%=52536.11, CV=441.71%

pgx-lower: 0%=44.63, 25%=63.79, 50%=96.04, 75%=117.98, 100%=145.10, CV=33.12%

# Execution Time Statistics (ms) - Continued

SF=0.01, indexes enabled, 100 iterations

q01 (PostgreSQL): 0%=37.33, 25%=38.03, 50%=38.24, 75%=40.09, 100%=69.36, CV=19.14%  
q01 (pgx-lower): 0%=115.92, 25%=116.69, 50%=117.11, 75%=119.12, 100%=139.81, CV=3.93%  
q02 (PostgreSQL): 0%=6.18, 25%=6.52, 50%=6.66, 75%=9.61, 100%=14.91, CV=30.76%  
q02 (pgx-lower): 0%=119.22, 25%=120.37, 50%=120.82, 75%=122.66, 100%=142.12, CV=2.91%  
q03 (PostgreSQL): 0%=11.41, 25%=20.55, 50%=20.81, 75%=21.39, 100%=45.92, CV=21.81%  
q03 (pgx-lower): 0%=134.29, 25%=137.39, 50%=137.93, 75%=140.48, 100%=163.12, CV=2.62%  
q04 (PostgreSQL): 0%=4.42, 25%=14.03, 50%=14.19, 75%=14.54, 100%=32.55, CV=29.25%  
q04 (pgx-lower): 0%=59.91, 25%=62.19, 50%=62.51, 75%=64.69, 100%=78.67, CV=4.55%  
q05 (PostgreSQL): 0%=6.12, 25%=6.38, 50%=6.47, 75%=6.64, 100%=41.43, CV=90.34%  
q05 (pgx-lower): 0%=93.05, 25%=95.39, 50%=95.71, 75%=97.21, 100%=117.47, CV=4.06%  
q06 (PostgreSQL): 0%=8.57, 25%=8.88, 50%=9.09, 75%=9.42, 100%=22.95, CV=30.66%  
q06 (pgx-lower): 0%=44.32, 25%=45.01, 50%=45.48, 75%=47.38, 100%=58.25, CV=6.27%  
q07 (PostgreSQL): 0%=7.24, 25%=19.46, 50%=19.75, 75%=20.19, 100%=43.16, CV=26.86%  
q07 (pgx-lower): 0%=96.72, 25%=98.11, 50%=99.01, 75%=100.63, 100%=121.29, CV=4.08%  
q08 (PostgreSQL): 0%=10.32, 25%=10.55, 50%=10.77, 75%=11.31, 100%=75.75, CV=102.41%  
q08 (pgx-lower): 0%=108.90, 25%=109.94, 50%=110.75, 75%=114.54, 100%=124.38, CV=2.95%  
q09 (PostgreSQL): 0%=23.90, 25%=24.25, 50%=24.47, 75%=24.94, 100%=50.29, CV=16.44%  
q09 (pgx-lower): 0%=124.27, 25%=125.33, 50%=129.42, 75%=131.08, 100%=147.47, CV=3.32%  
q10 (PostgreSQL): 0%=12.62, 25%=12.90, 50%=13.07, 75%=13.42, 100%=25.72, CV=16.50%  
q10 (pgx-lower): 0%=95.08, 25%=96.67, 50%=98.78, 75%=100.36, 100%=120.15, CV=4.06%  
q11 (PostgreSQL): 0%=3.36, 25%=3.57, 50%=3.64, 75%=3.77, 100%=9.61, CV=35.84%  
q11 (pgx-lower): 0%=66.26, 25%=66.83, 50%=67.36, 75%=68.80, 100%=92.57, CV=6.79%  
q12 (PostgreSQL): 0%=14.50, 25%=16.05, 50%=16.53, 75%=17.08, 100%=37.34, CV=28.54%  
q12 (pgx-lower): 0%=62.99, 25%=63.37, 50%=63.79, 75%=66.54, 100%=88.35, CV=6.62%  
q13 (PostgreSQL): 0%=8.85, 25%=9.20, 50%=9.39, 75%=9.63, 100%=23.81, CV=27.38%  
q13 (pgx-lower): 0%=44.49, 25%=44.90, 50%=45.28, 75%=46.70, 100%=56.56, CV=6.32%  
q14 (PostgreSQL): 0%=8.27, 25%=8.49, 50%=8.69, 75%=9.15, 100%=21.78, CV=31.98%  
q14 (pgx-lower): 0%=52.06, 25%=53.02, 50%=53.34, 75%=54.35, 100%=77.10, CV=8.26%  
q15 (PostgreSQL): 0%=8.39, 25%=8.73, 50%=8.93, 75%=9.34, 100%=20.55, CV=31.99%  
q15 (pgx-lower): 0%=65.13, 25%=65.81, 50%=66.07, 75%=67.56, 100%=86.48, CV=5.70%  
q16 (PostgreSQL): 0%=5.40, 25%=5.57, 50%=5.67, 75%=5.83, 100%=16.12, CV=37.69%  
q16 (pgx-lower): 0%=66.29, 25%=67.01, 50%=67.50, 75%=68.86, 100%=90.38, CV=5.38%  
q17 (PostgreSQL): 0%=0.87, 25%=1.05, 50%=1.11, 75%=1.22, 100%=2.62, CV=33.92%  
q17 (pgx-lower): 0%=101.77, 25%=102.89, 50%=103.71, 75%=105.97, 100%=129.07, CV=4.68%  
q18 (PostgreSQL): 0%=25.55, 25%=33.42, 50%=34.62, 75%=48.32, 100%=59.78, CV=22.22%  
q18 (pgx-lower): 0%=98.06, 25%=101.97, 50%=102.58, 75%=105.11, 100%=126.39, CV=5.03%  
q19 (PostgreSQL): 0%=14.05, 25%=14.34, 50%=14.55, 75%=15.92, 100%=26.47, CV=16.47%  
q19 (pgx-lower): 0%=81.42, 25%=82.02, 50%=82.59, 75%=84.17, 100%=92.72, CV=3.01%  
q20 (PostgreSQL): 0%=15.26, 25%=15.82, 50%=16.09, 75%=16.62, 100%=31.86, CV=17.08%  
q20 (pgx-lower): 0%=128.86, 25%=131.96, 50%=132.41, 75%=133.83, 100%=157.05, CV=3.20%  
q21 (PostgreSQL): 0%=11.74, 25%=12.12, 50%=12.39, 75%=12.79, 100%=32.27, CV=25.73%  
q21 (pgx-lower): 0%=138.98, 25%=139.69, 50%=140.24, 75%=142.10, 100%=163.68, CV=3.04%  
q22 (PostgreSQL): 0%=3.63, 25%=3.83, 50%=3.88, 75%=4.00, 100%=10.18, CV=39.98%  
q22 (pgx-lower): 0%=60.31, 25%=60.99, 50%=61.25, 75%=62.15, 100%=76.45, CV=4.84%

## AGGREGATE:

PostgreSQL: 0%=0.87, 25%=8.45, 50%=12.86, 75%=19.47, 100%=75.75, CV=74.93%

pgx-lower: 0%=44.32, 25%=65.64, 50%=96.75, 75%=118.00, 100%=163.68, CV=32.86%

## Execution Time Statistics (ms) - Continued

q01 (PostgreSQL): 0%=378.32, 25%=379.55, 50%=380.27, 75%=386.37, 100%=776.36, CV=34.36%  
q01 (pgx-lower): 0%=724.09, 25%=734.63, 50%=735.02, 75%=784.04, 100%=821.54, CV=4.90%  
q02 (PostgreSQL): 0%=54.84, 25%=54.86, 50%=54.93, 75%=55.63, 100%=116.34, CV=36.41%  
q02 (pgx-lower): 0%=353.59, 25%=355.73, 50%=364.00, 75%=364.56, 100%=389.04, CV=3.45%  
q03 (PostgreSQL): 0%=108.00, 25%=108.84, 50%=110.41, 75%=111.19, 100%=150.93, CV=14.05%  
q03 (pgx-lower): 0%=943.82, 25%=945.54, 50%=945.74, 75%=952.28, 100%=979.44, CV=1.40%  
q04 (PostgreSQL): 0%=30.40, 25%=30.53, 50%=55.93, 75%=57.24, 100%=59.48, CV=28.51%  
q04 (pgx-lower): 0%=397.60, 25%=400.75, 50%=400.82, 75%=402.38, 100%=405.00, CV=0.60%  
q05 (PostgreSQL): 0%=44.62, 25%=46.98, 50%=47.76, 75%=80.16, 100%=124.61, CV=44.77%  
q05 (pgx-lower): 0%=520.79, 25%=520.94, 50%=524.85, 75%=526.59, 100%=527.85, CV=0.55%  
q06 (PostgreSQL): 0%=64.12, 25%=66.01, 50%=66.04, 75%=67.26, 100%=107.44, CV=22.47%  
q06 (pgx-lower): 0%=435.17, 25%=436.99, 50%=442.57, 75%=444.87, 100%=445.15, CV=0.93%  
q07 (PostgreSQL): 0%=62.83, 25%=98.31, 50%=105.60, 75%=106.88, 100%=121.42, CV=19.78%  
q07 (pgx-lower): 0%=541.99, 25%=543.60, 50%=545.66, 75%=546.81, 100%=556.11, CV=0.90%  
q08 (PostgreSQL): 0%=91.68, 25%=92.28, 50%=92.69, 75%=97.99, 100%=136.55, CV=16.92%  
q08 (pgx-lower): 0%=558.48, 25%=559.56, 50%=561.33, 75%=561.48, 100%=567.59, CV=0.56%  
q09 (PostgreSQL): 0%=201.51, 25%=202.71, 50%=204.62, 75%=241.23, 100%=259.77, CV=10.83%  
q09 (pgx-lower): 0%=1047.04, 25%=1048.56, 50%=1053.02, 75%=1068.95, 100%=1102.54, CV=1.95%  
q10 (PostgreSQL): 0%=105.82, 25%=106.06, 50%=106.14, 75%=106.70, 100%=274.55, CV=48.16%  
q10 (pgx-lower): 0%=755.86, 25%=758.64, 50%=763.00, 75%=763.99, 100%=790.21, CV=1.60%  
q11 (PostgreSQL): 0%=34.72, 25%=35.29, 50%=36.01, 75%=36.86, 100%=401.64, CV=134.40%  
q11 (pgx-lower): 0%=180.22, 25%=180.55, 50%=180.69, 75%=180.88, 100%=181.01, CV=0.15%  
q12 (PostgreSQL): 0%=97.70, 25%=101.50, 50%=101.53, 75%=101.89, 100%=102.51, CV=1.69%  
q12 (pgx-lower): 0%=467.35, 25%=467.59, 50%=469.44, 75%=470.83, 100%=483.73, CV=1.29%  
q13 (PostgreSQL): 0%=142.35, 25%=142.96, 50%=143.01, 75%=143.66, 100%=145.33, CV=0.71%  
q13 (pgx-lower): 0%=144.36, 25%=152.07, 50%=152.50, 75%=152.61, 100%=154.12, CV=2.29%  
q14 (PostgreSQL): 0%=68.53, 25%=69.15, 50%=69.20, 75%=70.84, 100%=73.41, CV=2.52%  
q14 (pgx-lower): 0%=415.29, 25%=416.64, 50%=417.29, 75%=418.83, 100%=425.51, CV=0.86%  
q15 (PostgreSQL): 0%=66.12, 25%=66.20, 50%=66.37, 75%=73.13, 100%=73.96, CV=5.20%  
q15 (pgx-lower): 0%=430.22, 25%=430.31, 50%=430.59, 75%=431.98, 100%=432.84, CV=0.24%  
q16 (PostgreSQL): 0%=93.34, 25%=93.80, 50%=94.48, 75%=98.61, 100%=109.55, CV=6.22%  
q16 (pgx-lower): 0%=274.02, 25%=274.28, 50%=274.67, 75%=276.47, 100%=278.19, CV=0.57%  
q17 (PostgreSQL): 0%=77355.42, 25%=77436.84, 50%=77548.36, 75%=77558.07, 100%=77822.90, CV=0.20%  
q17 (pgx-lower): 0%=4938.03, 25%=4990.81, 50%=5004.42, 75%=5012.99, 100%=5022.41, CV=0.60%  
q18 (PostgreSQL): 0%=385.39, 25%=386.44, 50%=387.66, 75%=403.03, 100%=539.87, CV=14.28%  
q18 (pgx-lower): 0%=837.84, 25%=839.30, 50%=839.86, 75%=853.43, 100%=858.29, CV=1.00%  
q19 (PostgreSQL): 0%=96.91, 25%=97.10, 50%=97.18, 75%=97.31, 100%=128.19, CV=12.03%  
q19 (pgx-lower): 0%=619.14, 25%=638.41, 50%=641.45, 75%=648.67, 100%=661.03, CV=2.14%  
q20 (PostgreSQL): 0%=391749.15, 25%=392039.83, 50%=392460.26, 75%=392468.38, 100%=393513.32, CV=0.15%  
q20 (pgx-lower): 0%=459.16, 25%=459.78, 50%=459.94, 75%=462.44, 100%=463.22, CV=0.35%  
q21 (PostgreSQL): 0%=107.00, 25%=107.99, 50%=108.73, 75%=108.97, 100%=109.54, CV=0.81%  
q21 (pgx-lower): 0%=960.12, 25%=979.72, 50%=980.94, 75%=985.30, 100%=1000.42, CV=1.32%  
q22 (PostgreSQL): 0%=53.09, 25%=53.39, 50%=54.06, 75%=63.61, 100%=66.15, CV=9.71%  
q22 (pgx-lower): 0%=135.95, 25%=136.20, 50%=136.22, 75%=136.40, 100%=137.19, CV=0.31%

### AGGREGATE:

PostgreSQL: 0%=30.40, 25%=66.59, 50%=104.06, 75%=149.53, 100%=393513.32, CV=384.16%

pgx-lower: 0%=135.95, 25%=401.21, 50%=502.26, 75%=779.02, 100%=5022.41, CV=129.32%

## Execution Time Statistics (ms) - Continued

q01 (PostgreSQL): 0%=377.67, 25%=378.05, 50%=378.37, 75%=379.79, 100%=397.46, CV=0.89%  
q01 (pgx-lower): 0%=722.26, 25%=732.58, 50%=736.85, 75%=744.20, 100%=818.97, CV=1.98%  
q02 (PostgreSQL): 0%=56.14, 25%=56.87, 50%=58.70, 75%=83.78, 100%=102.92, CV=20.92%  
q02 (pgx-lower): 0%=348.09, 25%=351.08, 50%=353.16, 75%=364.46, 100%=378.90, CV=2.22%  
q03 (PostgreSQL): 0%=108.13, 25%=109.41, 50%=110.24, 75%=114.54, 100%=135.46, CV=4.18%  
q03 (pgx-lower): 0%=942.54, 25%=945.49, 50%=948.05, 75%=954.31, 100%=995.14, CV=1.27%  
q04 (PostgreSQL): 0%=30.02, 25%=30.70, 50%=31.20, 75%=60.28, 100%=67.61, CV=35.21%  
q04 (pgx-lower): 0%=398.07, 25%=399.56, 50%=400.80, 75%=401.91, 100%=411.82, CV=0.68%  
q05 (PostgreSQL): 0%=43.42, 25%=44.41, 50%=44.69, 75%=79.80, 100%=97.21, CV=32.01%  
q05 (pgx-lower): 0%=519.93, 25%=521.25, 50%=522.05, 75%=523.57, 100%=538.11, CV=0.62%  
q06 (PostgreSQL): 0%=63.89, 25%=65.79, 50%=66.21, 75%=101.03, 100%=114.87, CV=23.43%  
q06 (pgx-lower): 0%=431.63, 25%=433.14, 50%=433.95, 75%=435.08, 100%=448.87, CV=0.70%  
q07 (PostgreSQL): 0%=62.17, 25%=62.98, 50%=63.62, 75%=98.53, 100%=116.41, CV=25.37%  
q07 (pgx-lower): 0%=541.21, 25%=545.24, 50%=548.29, 75%=552.31, 100%=566.31, CV=0.94%  
q08 (PostgreSQL): 0%=91.51, 25%=93.12, 50%=94.31, 75%=96.70, 100%=146.97, CV=17.60%  
q08 (pgx-lower): 0%=557.60, 25%=560.51, 50%=563.83, 75%=567.40, 100%=582.01, CV=0.86%  
q09 (PostgreSQL): 0%=201.58, 25%=202.61, 50%=204.15, 75%=246.28, 100%=260.55, CV=10.29%  
q09 (pgx-lower): 0%=1039.13, 25%=1059.34, 50%=1099.92, 75%=1104.23, 100%=1119.98, CV=2.33%  
q10 (PostgreSQL): 0%=106.57, 25%=107.90, 50%=108.11, 75%=119.11, 100%=163.26, CV=15.85%  
q10 (pgx-lower): 0%=737.11, 25%=757.75, 50%=761.23, 75%=767.73, 100%=792.15, CV=1.59%  
q11 (PostgreSQL): 0%=35.07, 25%=35.83, 50%=36.83, 75%=42.77, 100%=71.39, CV=28.74%  
q11 (pgx-lower): 0%=179.06, 25%=180.16, 50%=180.73, 75%=182.61, 100%=195.65, CV=2.23%  
q12 (PostgreSQL): 0%=101.22, 25%=101.73, 50%=102.16, 75%=107.37, 100%=133.25, CV=7.31%  
q12 (pgx-lower): 0%=465.89, 25%=468.72, 50%=472.19, 75%=474.04, 100%=489.97, CV=0.87%  
q13 (PostgreSQL): 0%=143.40, 25%=145.82, 50%=147.08, 75%=169.28, 100%=181.14, CV=7.59%  
q13 (pgx-lower): 0%=143.34, 25%=144.39, 50%=146.49, 75%=152.47, 100%=162.26, CV=3.04%  
q14 (PostgreSQL): 0%=68.49, 25%=68.84, 50%=69.44, 75%=70.55, 100%=79.74, CV=2.97%  
q14 (pgx-lower): 0%=414.45, 25%=416.04, 50%=417.20, 75%=419.56, 100%=427.29, CV=0.65%  
q15 (PostgreSQL): 0%=65.78, 25%=66.12, 50%=66.73, 75%=74.46, 100%=89.02, CV=8.22%  
q15 (pgx-lower): 0%=430.03, 25%=431.47, 50%=432.07, 75%=433.32, 100%=445.17, CV=0.66%  
q16 (PostgreSQL): 0%=93.58, 25%=94.85, 50%=95.52, 75%=109.28, 100%=123.62, CV=8.77%  
q16 (pgx-lower): 0%=273.79, 25%=274.88, 50%=275.49, 75%=277.02, 100%=288.41, CV=1.09%  
q18 (PostgreSQL): 0%=379.90, 25%=384.22, 50%=391.38, 75%=400.09, 100%=545.66, CV=9.19%  
q18 (pgx-lower): 0%=835.22, 25%=839.35, 50%=842.57, 75%=847.45, 100%=909.85, CV=1.06%  
q19 (PostgreSQL): 0%=96.31, 25%=96.67, 50%=96.90, 75%=99.08, 100%=144.03, CV=13.36%  
q19 (pgx-lower): 0%=624.67, 25%=654.44, 50%=659.91, 75%=664.17, 100%=678.18, CV=1.19%  
q21 (PostgreSQL): 0%=102.77, 25%=103.40, 50%=103.60, 75%=106.50, 100%=155.82, CV=14.61%  
q21 (pgx-lower): 0%=957.87, 25%=977.49, 50%=982.60, 75%=987.48, 100%=999.51, CV=1.05%  
q22 (PostgreSQL): 0%=52.09, 25%=53.22, 50%=55.48, 75%=79.13, 100%=94.14, CV=21.06%  
q22 (pgx-lower): 0%=134.51, 25%=135.46, 50%=135.98, 75%=136.76, 100%=147.46, CV=1.87%

### AGGREGATE:

PostgreSQL: 0%=30.02, 25%=65.90, 50%=96.62, 75%=119.24, 100%=545.66, CV=79.90%

pgx-lower: 0%=134.51, 25%=393.28, 50%=504.95, 75%=748.81, 100%=1119.98, CV=49.63%

# Execution Time Statistics (ms) Continued

SF=1, indexes disabled, excluding {q02,q17,q20,q21}, 100 iterations

q01 (PostgreSQL): 0%=2294.81, 25%=2297.67, 50%=2299.49, 75%=2329.07, 100%=2354.74, CV=0.71%  
q01 (pgx-lower): 0%=4081.16, 25%=4108.91, 50%=4158.33, 75%=4220.71, 100%=4580.28, CV=2.47%  
q03 (PostgreSQL): 0%=1221.54, 25%=1224.53, 50%=1225.81, 75%=1228.55, 100%=1281.11, CV=1.13%  
q03 (pgx-lower): 0%=5404.54, 25%=5430.10, 50%=5516.50, 75%=5531.09, 100%=5830.80, CV=1.42%  
q04 (PostgreSQL): 0%=737.20, 25%=739.72, 50%=740.62, 75%=742.07, 100%=791.57, CV=1.49%  
q04 (pgx-lower): 0%=2248.99, 25%=2254.87, 50%=2260.48, 75%=2267.09, 100%=2359.32, CV=0.74%  
q05 (PostgreSQL): 0%=496.27, 25%=497.78, 50%=498.63, 75%=502.24, 100%=540.11, CV=2.67%  
q05 (pgx-lower): 0%=2985.55, 25%=2994.14, 50%=2998.00, 75%=3003.40, 100%=3144.62, CV=0.64%  
q06 (PostgreSQL): 0%=319.48, 25%=320.23, 50%=320.76, 75%=323.22, 100%=364.31, CV=3.82%  
q06 (pgx-lower): 0%=2558.82, 25%=2568.62, 50%=2574.63, 75%=2585.13, 100%=2697.75, CV=0.97%  
q07 (PostgreSQL): 0%=463.89, 25%=464.76, 50%=465.41, 75%=467.63, 100%=511.78, CV=3.19%  
q07 (pgx-lower): 0%=2984.06, 25%=2994.59, 50%=3003.91, 75%=3041.93, 100%=3168.95, CV=1.55%  
q08 (PostgreSQL): 0%=391.37, 25%=392.95, 50%=393.61, 75%=395.63, 100%=451.49, CV=3.73%  
q08 (pgx-lower): 0%=3151.06, 25%=3156.82, 50%=3164.70, 75%=3171.09, 100%=3212.85, CV=0.34%  
q09 (PostgreSQL): 0%=1182.96, 25%=1187.05, 50%=1188.49, 75%=1191.96, 100%=1236.49, CV=0.91%  
q09 (pgx-lower): 0%=6430.28, 25%=6500.56, 50%=6582.96, 75%=6776.00, 100%=6984.92, CV=2.33%  
q10 (PostgreSQL): 0%=549.37, 25%=551.54, 50%=552.59, 75%=554.20, 100%=566.00, CV=0.63%  
q10 (pgx-lower): 0%=4240.98, 25%=4282.25, 50%=4320.43, 75%=4424.75, 100%=4580.41, CV=2.23%  
q11 (PostgreSQL): 0%=112.71, 25%=114.22, 50%=114.64, 75%=131.57, 100%=154.21, CV=10.76%  
q11 (pgx-lower): 0%=720.98, 25%=724.90, 50%=731.88, 75%=739.26, 100%=752.05, CV=1.08%  
q12 (PostgreSQL): 0%=560.78, 25%=561.92, 50%=562.59, 75%=563.51, 100%=605.38, CV=2.08%  
q12 (pgx-lower): 0%=2716.60, 25%=2723.16, 50%=2728.74, 75%=2735.62, 100%=2773.08, CV=0.46%  
q13 (PostgreSQL): 0%=665.44, 25%=669.55, 50%=672.81, 75%=677.90, 100%=714.89, CV=1.99%  
q13 (pgx-lower): 0%=1463.44, 25%=1473.51, 50%=1477.16, 75%=1482.14, 100%=1496.15, CV=0.47%  
q14 (PostgreSQL): 0%=333.28, 25%=334.01, 50%=334.79, 75%=341.08, 100%=347.57, CV=1.26%  
q14 (pgx-lower): 0%=2414.13, 25%=2419.19, 50%=2422.76, 75%=2430.66, 100%=2463.36, CV=0.42%  
q15 (PostgreSQL): 0%=353.40, 25%=354.38, 50%=354.82, 75%=356.39, 100%=394.40, CV=2.97%  
q15 (pgx-lower): 0%=2426.28, 25%=2431.94, 50%=2436.18, 75%=2441.51, 100%=2479.93, CV=0.35%  
q16 (PostgreSQL): 0%=321.38, 25%=325.86, 50%=327.97, 75%=355.84, 100%=367.89, CV=4.39%  
q16 (pgx-lower): 0%=1447.97, 25%=1453.72, 50%=1456.63, 75%=1461.11, 100%=1479.01, CV=0.41%  
q18 (PostgreSQL): 0%=3814.14, 25%=3847.41, 50%=3856.64, 75%=3866.34, 100%=3919.34, CV=0.39%  
q18 (pgx-lower): 0%=4378.01, 25%=4388.36, 50%=4394.06, 75%=4401.20, 100%=4472.35, CV=0.36%  
q19 (PostgreSQL): 0%=510.25, 25%=511.75, 50%=513.54, 75%=514.66, 100%=528.23, CV=0.44%  
q19 (pgx-lower): 0%=3659.02, 25%=3703.55, 50%=3731.14, 75%=3803.91, 100%=3933.32, CV=1.96%  
q22 (PostgreSQL): 0%=140.33, 25%=143.18, 50%=143.95, 75%=145.61, 100%=189.04, CV=7.41%  
q22 (pgx-lower): 0%=589.53, 25%=591.42, 50%=593.43, 75%=600.33, 100%=610.80, CV=1.01%

## AGGREGATE:

PostgreSQL: 0%=112.71, 25%=345.58, 50%=511.43, 75%=740.61, 100%=3919.34, CV=109.33%

pgx-lower: 0%=589.53, 25%=2260.59, 50%=2878.57, 75%=4157.93, 100%=6984.92, CV=50.44%

## **Execution Time Statistics (ms) - Continued**

## Memory Usage Statistics (MB)

SF=0.01, indexes disabled - excluding postgres \{q07,q20\}, 100 iterations

q01 (PostgreSQL): 0%=29.00, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.22%  
q01 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q02 (PostgreSQL): 0%=29.12, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.19%  
q02 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q03 (PostgreSQL): 0%=29.38, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.10%  
q03 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q04 (PostgreSQL): 0%=29.38, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.10%  
q04 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q05 (PostgreSQL): 0%=29.38, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.10%  
q05 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q06 (PostgreSQL): 0%=29.38, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.10%  
q06 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q08 (PostgreSQL): 0%=29.38, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=1.10%  
q08 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q09 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.94%  
q09 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q10 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q10 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q11 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q11 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q12 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q12 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q13 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q13 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q14 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q14 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q15 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q15 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q16 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q16 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q17 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.93%  
q17 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q18 (PostgreSQL): 0%=29.75, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.92%  
q18 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q19 (PostgreSQL): 0%=29.88, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.86%  
q19 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q21 (PostgreSQL): 0%=30.00, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.83%  
q21 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%  
q22 (PostgreSQL): 0%=30.00, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.80%  
q22 (pgx-lower): 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%

### AGGREGATE:

PostgreSQL: 0%=29.00, 25%=31.88, 50%=32.00, 75%=32.12, 100%=32.12, CV=0.99%

pgx-lower: 0%=32.12, 25%=32.12, 50%=32.12, 75%=32.12, 100%=32.12, CV=0.00%

## Memory Usage Statistics (MB) - Continued

SF=0.01, indexes disabled, 5 iterations

q01 (PostgreSQL): 0%=28.88, 25%=30.62, 50%=31.25, 75%=32.00, 100%=32.25, CV=3.89%  
q01 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q02 (PostgreSQL): 0%=29.12, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.63%  
q02 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q03 (PostgreSQL): 0%=29.25, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.48%  
q03 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q04 (PostgreSQL): 0%=29.25, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.48%  
q04 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q05 (PostgreSQL): 0%=29.25, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.48%  
q05 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q06 (PostgreSQL): 0%=29.25, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.48%  
q06 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q07 (PostgreSQL): 0%=29.38, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.34%  
q07 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q08 (PostgreSQL): 0%=29.62, 25%=30.62, 50%=31.38, 75%=32.00, 100%=32.25, CV=3.08%  
q08 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q09 (PostgreSQL): 0%=29.88, 25%=30.62, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.83%  
q09 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q10 (PostgreSQL): 0%=29.88, 25%=30.62, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.83%  
q10 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q11 (PostgreSQL): 0%=29.88, 25%=30.62, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.83%  
q11 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q12 (PostgreSQL): 0%=29.88, 25%=30.75, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.77%  
q12 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q13 (PostgreSQL): 0%=29.88, 25%=30.75, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.77%  
q13 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q14 (PostgreSQL): 0%=29.88, 25%=30.75, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.77%  
q14 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q15 (PostgreSQL): 0%=29.88, 25%=30.75, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.77%  
q15 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q16 (PostgreSQL): 0%=30.00, 25%=30.75, 50%=31.50, 75%=32.00, 100%=32.25, CV=2.64%  
q16 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q17 (PostgreSQL): 0%=30.00, 25%=30.75, 50%=31.62, 75%=32.00, 100%=32.25, CV=2.67%  
q17 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q18 (PostgreSQL): 0%=30.00, 25%=30.75, 50%=31.62, 75%=32.00, 100%=32.25, CV=2.67%  
q18 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q19 (PostgreSQL): 0%=30.00, 25%=30.88, 50%=31.62, 75%=32.00, 100%=32.25, CV=2.61%  
q19 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q20 (PostgreSQL): 0%=30.12, 25%=30.88, 50%=31.62, 75%=32.00, 100%=32.25, CV=2.48%  
q20 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q21 (PostgreSQL): 0%=30.62, 25%=31.25, 50%=32.00, 75%=32.25, 100%=32.25, CV=2.03%  
q21 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%  
q22 (PostgreSQL): 0%=30.62, 25%=31.25, 50%=32.00, 75%=32.25, 100%=32.25, CV=2.03%  
q22 (pgx-lower): 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%

### AGGREGATE:

PostgreSQL: 0%=28.88, 25%=30.62, 50%=31.50, 75%=32.00, 100%=32.25, CV=3.02%

pgx-lower: 0%=32.25, 25%=32.25, 50%=32.25, 75%=32.25, 100%=32.25, CV=0.00%

## **Memory Usage Statistics (MB) - Continued**

## **AGGREGATE:**

PostgreSQL: 0% $=29.00$ , 25% $=31.75$ , 50% $=31.88$ , 75% $=31.88$ , 100% $=31.88$ , CV $=1.07\%$

**pgx-lower:** 0%**=**31.88, 25%**=**32.00, 50%**=**32.00, 75%**=**32.00, 100%**=**32.00, CV**=**0.08%

## Memory Usage Statistics (MB) - Continued

SF=0.16, indexes enabled, 5 Iterations

q01 (PostgreSQL): 0%=29.12, 25%=31.50, 50%=32.61, 75%=32.83, 100%=33.12, CV=4.60%  
q01 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.30%  
q02 (PostgreSQL): 0%=29.25, 25%=31.50, 50%=32.61, 75%=32.83, 100%=33.12, CV=4.45%  
q02 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.30%  
q03 (PostgreSQL): 0%=29.50, 25%=31.50, 50%=32.61, 75%=32.83, 100%=33.12, CV=4.15%  
q03 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.30%  
q04 (PostgreSQL): 0%=29.50, 25%=31.50, 50%=32.61, 75%=32.83, 100%=33.12, CV=4.15%  
q04 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.30%  
q05 (PostgreSQL): 0%=29.50, 25%=31.50, 50%=32.61, 75%=32.83, 100%=33.12, CV=4.15%  
q05 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.30%  
q06 (PostgreSQL): 0%=29.62, 25%=31.50, 50%=32.73, 75%=32.83, 100%=33.12, CV=4.05%  
q06 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q07 (PostgreSQL): 0%=29.62, 25%=31.50, 50%=32.73, 75%=32.83, 100%=33.12, CV=4.05%  
q07 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q08 (PostgreSQL): 0%=29.75, 25%=31.50, 50%=32.73, 75%=32.83, 100%=33.12, CV=3.90%  
q08 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q09 (PostgreSQL): 0%=29.75, 25%=31.63, 50%=32.73, 75%=32.83, 100%=33.12, CV=3.87%  
q09 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q10 (PostgreSQL): 0%=29.88, 25%=31.63, 50%=32.73, 75%=32.83, 100%=33.12, CV=3.72%  
q10 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q11 (PostgreSQL): 0%=30.50, 25%=31.75, 50%=32.73, 75%=32.83, 100%=33.12, CV=2.99%  
q11 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q12 (PostgreSQL): 0%=30.50, 25%=31.75, 50%=32.73, 75%=32.83, 100%=33.12, CV=2.99%  
q12 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q13 (PostgreSQL): 0%=30.50, 25%=31.75, 50%=32.73, 75%=32.95, 100%=33.12, CV=3.04%  
q13 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q14 (PostgreSQL): 0%=30.50, 25%=31.75, 50%=32.73, 75%=32.95, 100%=33.12, CV=3.04%  
q14 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q15 (PostgreSQL): 0%=30.50, 25%=31.88, 50%=32.73, 75%=32.95, 100%=33.12, CV=3.00%  
q15 (pgx-lower): 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.22, CV=0.20%  
q16 (PostgreSQL): 0%=31.25, 25%=32.25, 50%=32.98, 75%=33.08, 100%=33.37, CV=2.34%  
q16 (pgx-lower): 0%=33.19, 25%=33.22, 50%=33.34, 75%=33.35, 100%=33.35, CV=0.21%  
q17 (PostgreSQL): 0%=31.00, 25%=32.00, 50%=32.76, 75%=32.90, 100%=33.09, CV=2.38%  
q17 (pgx-lower): 0%=33.07, 25%=33.19, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.27%  
q18 (PostgreSQL): 0%=31.25, 25%=32.25, 50%=32.89, 75%=33.02, 100%=33.21, CV=2.20%  
q18 (pgx-lower): 0%=33.07, 25%=33.19, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.27%  
q19 (PostgreSQL): 0%=31.25, 25%=32.38, 50%=32.89, 75%=33.02, 100%=33.21, CV=2.17%  
q19 (pgx-lower): 0%=33.07, 25%=33.19, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.27%  
q20 (PostgreSQL): 0%=31.25, 25%=32.38, 50%=32.87, 75%=32.89, 100%=33.21, CV=2.12%  
q20 (pgx-lower): 0%=33.07, 25%=33.19, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.27%  
q21 (PostgreSQL): 0%=31.63, 25%=32.61, 50%=32.99, 75%=33.01, 100%=33.34, CV=1.80%  
q21 (pgx-lower): 0%=33.07, 25%=33.19, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.27%  
q22 (PostgreSQL): 0%=31.50, 25%=32.61, 50%=33.01, 75%=33.12, 100%=33.34, CV=1.99%  
q22 (pgx-lower): 0%=33.07, 25%=33.19, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.27%

### AGGREGATE:

PostgreSQL: 0%=29.12, 25%=31.50, 50%=32.73, 75%=33.00, 100%=33.37, CV=3.45%

pgx-lower: 0%=33.07, 25%=33.10, 50%=33.21, 75%=33.22, 100%=33.35, CV=0.26%

## Memory Usage Statistics (MB) - Continued

SF=0.16, indexes enabled, excluding {q19,q20}, 100 iterations

q01 (PostgreSQL): 0%=29.00, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.59%  
q01 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.28%  
q02 (PostgreSQL): 0%=29.38, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.50%  
q02 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.28%  
q03 (PostgreSQL): 0%=29.38, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.47%  
q03 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.28%  
q04 (PostgreSQL): 0%=29.38, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.47%  
q04 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.29%  
q05 (PostgreSQL): 0%=29.38, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.47%  
q05 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.29%  
q06 (PostgreSQL): 0%=29.50, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.42%  
q06 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.29%  
q07 (PostgreSQL): 0%=29.50, 25%=33.09, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.42%  
q07 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.29%  
q08 (PostgreSQL): 0%=29.62, 25%=33.09, 50%=33.20, 75%=33.33, 100%=33.52, CV=1.39%  
q08 (pgx-lower): 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.29%  
q09 (PostgreSQL): 0%=29.62, 25%=33.07, 50%=33.20, 75%=33.33, 100%=33.52, CV=1.36%  
q09 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.27%  
q10 (PostgreSQL): 0%=29.75, 25%=33.09, 50%=33.20, 75%=33.33, 100%=33.52, CV=1.33%  
q10 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.27%  
q11 (PostgreSQL): 0%=30.38, 25%=33.08, 50%=33.20, 75%=33.33, 100%=33.52, CV=1.17%  
q11 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.27%  
q12 (PostgreSQL): 0%=30.38, 25%=33.08, 50%=33.20, 75%=33.33, 100%=33.52, CV=1.17%  
q12 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.26%  
q13 (PostgreSQL): 0%=30.38, 25%=33.08, 50%=33.18, 75%=33.30, 100%=33.52, CV=1.15%  
q13 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.26%  
q14 (PostgreSQL): 0%=30.38, 25%=33.08, 50%=33.18, 75%=33.30, 100%=33.52, CV=1.15%  
q14 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.26%  
q15 (PostgreSQL): 0%=30.50, 25%=33.08, 50%=33.18, 75%=33.30, 100%=33.52, CV=1.12%  
q15 (pgx-lower): 0%=33.43, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.26%  
q16 (PostgreSQL): 0%=31.25, 25%=33.24, 50%=33.36, 75%=33.47, 100%=33.71, CV=0.93%  
q16 (pgx-lower): 0%=33.48, 25%=33.61, 50%=33.68, 75%=33.78, 100%=33.91, CV=0.27%  
q18 (PostgreSQL): 0%=30.96, 25%=33.10, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.00%  
q18 (pgx-lower): 0%=33.46, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.27%  
q19 (PostgreSQL): 0%=30.96, 25%=33.10, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.01%  
q19 (pgx-lower): 0%=33.46, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.26%  
q21 (PostgreSQL): 0%=30.96, 25%=33.10, 50%=33.20, 75%=33.34, 100%=33.52, CV=1.00%  
q21 (pgx-lower): 0%=33.46, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.27%  
q22 (PostgreSQL): 0%=30.96, 25%=33.10, 50%=33.20, 75%=33.34, 100%=33.52, CV=0.99%  
q22 (pgx-lower): 0%=33.46, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.86, CV=0.26%

### AGGREGATE:

PostgreSQL: 0%=29.00, 25%=33.10, 50%=33.20, 75%=33.34, 100%=33.71, CV=1.28%

pgx-lower: 0%=33.30, 25%=33.61, 50%=33.66, 75%=33.73, 100%=33.91, CV=0.27%

# Memory Usage Statistics (MB) - Continued

SF=1, indexes disabled, excluding {q02,q17,q20,q21}, 100 iterations

q01 (PostgreSQL): 0%=29.25, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=2.07%  
q01 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q03 (PostgreSQL): 0%=29.38, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=2.03%  
q03 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q04 (PostgreSQL): 0%=29.38, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=2.03%  
q04 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q05 (PostgreSQL): 0%=29.38, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=2.03%  
q05 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q06 (PostgreSQL): 0%=29.50, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=1.99%  
q06 (pgx-lower): 0%=35.99, 25%=36.15, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q07 (PostgreSQL): 0%=29.50, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=1.97%  
q07 (pgx-lower): 0%=35.99, 25%=36.16, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q08 (PostgreSQL): 0%=29.62, 25%=35.86, 50%=35.94, 75%=36.00, 100%=36.14, CV=1.94%  
q08 (pgx-lower): 0%=35.99, 25%=36.16, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q09 (PostgreSQL): 0%=29.75, 25%=35.86, 50%=35.95, 75%=36.00, 100%=36.15, CV=1.89%  
q09 (pgx-lower): 0%=36.00, 25%=36.17, 50%=36.23, 75%=36.29, 100%=36.39, CV=0.23%  
q10 (PostgreSQL): 0%=29.88, 25%=35.86, 50%=35.95, 75%=36.00, 100%=36.15, CV=1.85%  
q10 (pgx-lower): 0%=36.00, 25%=36.18, 50%=36.25, 75%=36.30, 100%=36.39, CV=0.24%  
q11 (PostgreSQL): 0%=29.88, 25%=35.86, 50%=35.95, 75%=36.01, 100%=36.15, CV=1.85%  
q11 (pgx-lower): 0%=36.00, 25%=36.18, 50%=36.25, 75%=36.30, 100%=36.39, CV=0.24%  
q12 (PostgreSQL): 0%=30.00, 25%=35.86, 50%=35.95, 75%=36.01, 100%=36.15, CV=1.82%  
q12 (pgx-lower): 0%=36.00, 25%=36.18, 50%=36.25, 75%=36.30, 100%=36.39, CV=0.24%  
q13 (PostgreSQL): 0%=30.00, 25%=35.86, 50%=35.95, 75%=36.01, 100%=36.15, CV=1.82%  
q13 (pgx-lower): 0%=36.00, 25%=36.19, 50%=36.25, 75%=36.30, 100%=36.39, CV=0.23%  
q14 (PostgreSQL): 0%=30.00, 25%=35.86, 50%=35.95, 75%=36.01, 100%=36.15, CV=1.82%  
q14 (pgx-lower): 0%=36.00, 25%=36.19, 50%=36.25, 75%=36.30, 100%=36.39, CV=0.23%  
q15 (PostgreSQL): 0%=30.00, 25%=35.86, 50%=35.95, 75%=36.01, 100%=36.15, CV=1.82%  
q15 (pgx-lower): 0%=36.00, 25%=36.19, 50%=36.25, 75%=36.30, 100%=36.39, CV=0.23%  
q16 (PostgreSQL): 0%=35.62, 25%=37.47, 50%=37.53, 75%=37.59, 100%=37.73, CV=0.60%  
q16 (pgx-lower): 0%=37.47, 25%=37.58, 50%=37.62, 75%=37.67, 100%=37.79, CV=0.17%  
q18 (PostgreSQL): 0%=32.92, 25%=35.81, 50%=35.91, 75%=35.98, 100%=36.10, CV=0.93%  
q18 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q19 (PostgreSQL): 0%=32.92, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=0.94%  
q19 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%  
q22 (PostgreSQL): 0%=32.92, 25%=35.86, 50%=35.93, 75%=36.00, 100%=36.11, CV=0.94%  
q22 (pgx-lower): 0%=35.99, 25%=36.14, 50%=36.21, 75%=36.27, 100%=36.39, CV=0.25%

## AGGREGATE:

PostgreSQL: 0%=29.25, 25%=35.86, 50%=35.95, 75%=36.02, 100%=37.73, CV=2.04%

pgx-lower: 0%=35.99, 25%=36.16, 50%=36.23, 75%=36.30, 100%=37.79, CV=0.92%

## **Memory Usage Statistics (MB) - Continued**

# IPC (Instructions Per Cycle) Statistics

SF=0.01, perf stats - branch/LLC analysis, 10 iterations

q01 (PostgreSQL): 0%=1.95, 25%=1.96, 50%=1.96, 75%=1.97, 100%=1.99, CV=0.42%  
q01 (pgx-lower): 0%=1.35, 25%=1.40, 50%=1.40, 75%=1.40, 100%=1.41, CV=0.50%  
q02 (PostgreSQL): 0%=1.78, 25%=1.80, 50%=1.80, 75%=1.80, 100%=1.91, CV=1.84%  
q02 (pgx-lower): 0%=1.12, 25%=1.12, 50%=1.12, 75%=1.12, 100%=1.13, CV=0.29%  
q03 (PostgreSQL): 0%=1.69, 25%=1.88, 50%=1.88, 75%=1.88, 100%=1.88, CV=2.69%  
q03 (pgx-lower): 0%=1.37, 25%=1.37, 50%=1.38, 75%=1.38, 100%=1.39, CV=0.36%  
q04 (PostgreSQL): 0%=1.63, 25%=1.95, 50%=1.95, 75%=1.95, 100%=1.96, CV=4.82%  
q04 (pgx-lower): 0%=1.35, 25%=1.36, 50%=1.37, 75%=1.37, 100%=1.39, CV=0.40%  
q05 (PostgreSQL): 0%=1.69, 25%=1.72, 50%=1.73, 75%=1.73, 100%=1.81, CV=1.67%  
q05 (pgx-lower): 0%=1.31, 25%=1.32, 50%=1.32, 75%=1.32, 100%=1.33, CV=0.36%  
q06 (PostgreSQL): 0%=2.00, 25%=2.05, 50%=2.07, 75%=2.07, 100%=2.07, CV=0.89%  
q06 (pgx-lower): 0%=1.50, 25%=1.53, 50%=1.54, 75%=1.54, 100%=1.55, CV=0.68%  
q07 (PostgreSQL): 0%=1.68, 25%=1.78, 50%=1.79, 75%=1.79, 100%=1.79, CV=1.53%  
q07 (pgx-lower): 0%=1.31, 25%=1.32, 50%=1.33, 75%=1.33, 100%=1.34, CV=0.43%  
q08 (PostgreSQL): 0%=1.67, 25%=1.69, 50%=1.70, 75%=1.70, 100%=1.79, CV=1.76%  
q08 (pgx-lower): 0%=1.27, 25%=1.29, 50%=1.29, 75%=1.29, 100%=1.30, CV=0.42%  
q09 (PostgreSQL): 0%=1.72, 25%=1.74, 50%=1.74, 75%=1.75, 100%=1.75, CV=0.30%  
q09 (pgx-lower): 0%=1.45, 25%=1.46, 50%=1.47, 75%=1.47, 100%=1.47, CV=0.43%  
q10 (PostgreSQL): 0%=1.79, 25%=1.89, 50%=1.89, 75%=1.89, 100%=1.90, CV=1.52%  
q10 (pgx-lower): 0%=1.39, 25%=1.41, 50%=1.41, 75%=1.41, 100%=1.42, CV=0.43%  
q11 (PostgreSQL): 0%=1.71, 25%=1.77, 50%=1.78, 75%=1.78, 100%=1.78, CV=1.05%  
q11 (pgx-lower): 0%=1.09, 25%=1.10, 50%=1.10, 75%=1.11, 100%=1.11, CV=0.47%  
q12 (PostgreSQL): 0%=2.01, 25%=2.03, 50%=2.03, 75%=2.03, 100%=2.04, CV=0.32%  
q12 (pgx-lower): 0%=1.42, 25%=1.43, 50%=1.43, 75%=1.43, 100%=1.45, CV=0.31%  
q13 (PostgreSQL): 0%=1.86, 25%=1.88, 50%=1.88, 75%=1.89, 100%=1.89, CV=0.29%  
q13 (pgx-lower): 0%=1.10, 25%=1.11, 50%=1.12, 75%=1.12, 100%=1.13, CV=0.48%  
q14 (PostgreSQL): 0%=1.99, 25%=2.07, 50%=2.09, 75%=2.09, 100%=2.10, CV=0.96%  
q14 (pgx-lower): 0%=1.40, 25%=1.42, 50%=1.43, 75%=1.43, 100%=1.44, CV=0.69%  
q15 (PostgreSQL): 0%=1.96, 25%=2.05, 50%=2.07, 75%=2.07, 100%=2.07, CV=0.87%  
q15 (pgx-lower): 0%=1.35, 25%=1.36, 50%=1.37, 75%=1.37, 100%=1.38, CV=0.47%  
q16 (PostgreSQL): 0%=1.91, 25%=1.96, 50%=1.96, 75%=1.96, 100%=1.97, CV=0.46%  
q16 (pgx-lower): 0%=1.26, 25%=1.27, 50%=1.27, 75%=1.27, 100%=1.29, CV=0.31%  
q17 (PostgreSQL): 0%=1.34, 25%=1.52, 50%=1.52, 75%=1.52, 100%=1.54, CV=1.25%  
q17 (pgx-lower): 0%=1.38, 25%=1.39, 50%=1.40, 75%=1.40, 100%=1.40, CV=0.42%  
q18 (PostgreSQL): 0%=1.70, 25%=1.75, 50%=1.76, 75%=1.76, 100%=1.76, CV=0.46%  
q18 (pgx-lower): 0%=1.40, 25%=1.42, 50%=1.42, 75%=1.42, 100%=1.43, CV=0.41%  
q19 (PostgreSQL): 0%=1.97, 25%=2.04, 50%=2.04, 75%=2.04, 100%=2.05, CV=1.02%  
q19 (pgx-lower): 0%=1.45, 25%=1.48, 50%=1.49, 75%=1.49, 100%=1.50, CV=0.61%  
q20 (PostgreSQL): 0%=2.00, 25%=2.08, 50%=2.09, 75%=2.09, 100%=2.09, CV=0.86%  
q20 (pgx-lower): 0%=1.22, 25%=1.23, 50%=1.23, 75%=1.24, 100%=1.24, CV=0.48%  
q21 (PostgreSQL): 0%=1.89, 25%=1.95, 50%=1.95, 75%=1.95, 100%=1.95, CV=0.81%  
q21 (pgx-lower): 0%=1.39, 25%=1.39, 50%=1.40, 75%=1.40, 100%=1.40, CV=0.33%  
q22 (PostgreSQL): 0%=1.76, 25%=1.78, 50%=1.78, 75%=1.78, 100%=1.79, CV=0.31%  
q22 (pgx-lower): 0%=1.09, 25%=1.10, 50%=1.10, 75%=1.10, 100%=1.11, CV=0.45%

## AGGREGATE:

PostgreSQL: 0%=1.34, 25%=1.77, 50%=1.89, 75%=2.03, 100%=2.10, CV=7.88%

pgx-lower: 0%=1.09, 25%=1.27, 50%=1.37, 75%=1.42, 100%=1.55, CV=9.40%

# SF=1, perf stats - branch, LLC analysis, excluding {q02,q17,q20,q21}, 10 iterations

q01 (PostgreSQL): 0%=1.95, 25%=1.97, 50%=1.97, 75%=1.97, 100%=1.97, CV=0.27%  
q01 (pgx-lower): 0%=1.78, 25%=1.80, 50%=1.80, 75%=1.81, 100%=1.81, CV=0.41%  
q03 (PostgreSQL): 0%=1.46, 25%=1.49, 50%=1.49, 75%=1.50, 100%=1.50, CV=0.39%  
q03 (pgx-lower): 0%=1.84, 25%=1.84, 50%=1.85, 75%=1.85, 100%=1.86, CV=0.37%  
q04 (PostgreSQL): 0%=1.48, 25%=1.49, 50%=1.49, 75%=1.49, 100%=1.50, CV=0.27%  
q04 (pgx-lower): 0%=1.86, 25%=1.89, 50%=1.89, 75%=1.90, 100%=1.90, CV=0.52%  
q05 (PostgreSQL): 0%=1.47, 25%=1.48, 50%=1.48, 75%=1.49, 100%=1.49, CV=0.38%  
q05 (pgx-lower): 0%=1.78, 25%=1.79, 50%=1.79, 75%=1.80, 100%=1.81, CV=0.42%  
q06 (PostgreSQL): 0%=2.00, 25%=2.00, 50%=2.00, 75%=2.00, 100%=2.01, CV=0.20%  
q06 (pgx-lower): 0%=1.80, 25%=1.81, 50%=1.82, 75%=1.82, 100%=1.84, CV=0.51%  
q07 (PostgreSQL): 0%=1.44, 25%=1.45, 50%=1.45, 75%=1.45, 100%=1.46, CV=0.23%  
q07 (pgx-lower): 0%=1.74, 25%=1.79, 50%=1.80, 75%=1.80, 100%=1.82, CV=0.92%  
q08 (PostgreSQL): 0%=1.46, 25%=1.47, 50%=1.47, 75%=1.47, 100%=1.47, CV=0.21%  
q08 (pgx-lower): 0%=1.76, 25%=1.78, 50%=1.78, 75%=1.78, 100%=1.79, CV=0.40%  
q09 (PostgreSQL): 0%=1.59, 25%=1.60, 50%=1.60, 75%=1.60, 100%=1.60, CV=0.14%  
q09 (pgx-lower): 0%=0.88, 25%=1.77, 50%=1.77, 75%=1.77, 100%=1.78, CV=9.86%  
q10 (PostgreSQL): 0%=1.83, 25%=1.84, 50%=1.85, 75%=1.85, 100%=1.86, CV=0.34%  
q10 (pgx-lower): 0%=1.83, 25%=1.86, 50%=1.87, 75%=1.87, 100%=1.89, CV=0.58%  
q11 (PostgreSQL): 0%=1.77, 25%=1.77, 50%=1.77, 75%=1.77, 100%=1.78, CV=0.20%  
q11 (pgx-lower): 0%=1.67, 25%=1.71, 50%=1.71, 75%=1.72, 100%=1.73, CV=0.82%  
q12 (PostgreSQL): 0%=1.96, 25%=1.96, 50%=1.96, 75%=1.96, 100%=1.97, CV=0.12%  
q12 (pgx-lower): 0%=1.87, 25%=1.90, 50%=1.90, 75%=1.91, 100%=1.91, CV=0.55%  
q13 (PostgreSQL): 0%=1.63, 25%=1.63, 50%=1.63, 75%=1.64, 100%=1.64, CV=0.30%  
q13 (pgx-lower): 0%=1.62, 25%=1.64, 50%=1.65, 75%=1.65, 100%=1.65, CV=0.48%  
q14 (PostgreSQL): 0%=1.95, 25%=1.95, 50%=1.95, 75%=1.95, 100%=1.96, CV=0.05%  
q14 (pgx-lower): 0%=1.83, 25%=1.84, 50%=1.85, 75%=1.85, 100%=1.85, CV=0.40%  
q15 (PostgreSQL): 0%=1.90, 25%=1.91, 50%=1.91, 75%=1.91, 100%=1.92, CV=0.26%  
q15 (pgx-lower): 0%=1.83, 25%=1.85, 50%=1.85, 75%=1.86, 100%=1.86, CV=0.50%  
q16 (PostgreSQL): 0%=2.02, 25%=2.02, 50%=2.02, 75%=2.02, 100%=2.03, CV=0.10%  
q16 (pgx-lower): 0%=2.07, 25%=2.10, 50%=2.10, 75%=2.10, 100%=2.10, CV=0.35%  
q18 (PostgreSQL): 0%=1.66, 25%=1.67, 50%=1.67, 75%=1.67, 100%=1.68, CV=0.29%  
q18 (pgx-lower): 0%=1.78, 25%=1.81, 50%=1.82, 75%=1.82, 100%=1.84, CV=0.77%  
q19 (PostgreSQL): 0%=1.96, 25%=1.97, 50%=1.97, 75%=1.97, 100%=1.97, CV=0.07%  
q19 (pgx-lower): 0%=1.80, 25%=1.83, 50%=1.83, 75%=1.84, 100%=1.85, CV=0.67%  
q22 (PostgreSQL): 0%=1.75, 25%=1.76, 50%=1.76, 75%=1.76, 100%=1.77, CV=0.20%  
q22 (pgx-lower): 0%=1.72, 25%=1.75, 50%=1.76, 75%=1.76, 100%=1.76, CV=0.60%

## AGGREGATE:

PostgreSQL: 0%=1.44, 25%=1.49, 50%=1.77, 75%=1.96, 100%=2.03, CV=11.82%

pgx-lower: 0%=0.88, 25%=1.78, 50%=1.82, 75%=1.85, 100%=2.10, CV=5.52%

## **IPC (Instructions Per Cycle) Statistics - Continued**

## LLC Miss Rate (%) Statistics

q01 (PostgreSQL): 0%=29.25, 25%=34.17, 50%=35.94, 75%=37.33, 100%=42.99, CV=6.65%  
q01 (pgx-lower): 0%=4.18, 25%=4.46, 50%=4.51, 75%=4.60, 100%=6.97, CV=6.24%  
q02 (PostgreSQL): 0%=8.62, 25%=13.74, 50%=13.89, 75%=14.25, 100%=19.81, CV=12.80%  
q02 (pgx-lower): 0%=2.34, 25%=3.61, 50%=3.71, 75%=3.80, 100%=4.13, CV=5.01%  
q03 (PostgreSQL): 0%=25.53, 25%=26.41, 50%=26.70, 75%=27.26, 100%=42.19, CV=11.19%  
q03 (pgx-lower): 0%=6.21, 25%=7.97, 50%=8.09, 75%=8.20, 100%=8.62, CV=3.04%  
q04 (PostgreSQL): 0%=25.65, 25%=26.31, 50%=26.49, 75%=26.84, 100%=44.72, CV=16.01%  
q04 (pgx-lower): 0%=6.76, 25%=8.47, 50%=8.68, 75%=8.83, 100%=9.63, CV=3.90%  
q05 (PostgreSQL): 0%=12.09, 25%=23.95, 50%=24.49, 75%=25.08, 100%=28.94, CV=16.24%  
q05 (pgx-lower): 0%=4.49, 25%=5.66, 50%=5.76, 75%=5.83, 100%=6.26, CV=3.77%  
q06 (PostgreSQL): 0%=42.45, 25%=43.93, 50%=44.63, 75%=46.91, 100%=58.98, CV=8.06%  
q06 (pgx-lower): 0%=12.23, 25%=14.78, 50%=15.00, 75%=15.16, 100%=16.28, CV=3.01%  
q07 (PostgreSQL): 0%=14.15, 25%=14.94, 50%=15.84, 75%=16.68, 100%=30.35, CV=22.91%  
q07 (pgx-lower): 0%=4.65, 25%=5.61, 50%=5.76, 75%=5.88, 100%=6.33, CV=3.75%  
q08 (PostgreSQL): 0%=8.38, 25%=17.56, 50%=18.07, 75%=18.63, 100%=20.70, CV=17.92%  
q08 (pgx-lower): 0%=3.49, 25%=4.59, 50%=4.62, 75%=4.70, 100%=5.24, CV=3.94%  
q09 (PostgreSQL): 0%=6.34, 25%=9.46, 50%=10.02, 75%=10.71, 100%=11.61, CV=12.19%  
q09 (pgx-lower): 0%=5.14, 25%=5.94, 50%=6.04, 75%=6.17, 100%=6.97, CV=3.90%  
q10 (PostgreSQL): 0%=18.29, 25%=21.52, 50%=22.24, 75%=23.00, 100%=24.91, CV=6.08%  
q10 (pgx-lower): 0%=5.06, 25%=6.14, 50%=6.22, 75%=6.32, 100%=6.74, CV=3.59%  
q11 (PostgreSQL): 0%=16.72, 25%=17.37, 50%=17.73, 75%=18.40, 100%=22.25, CV=6.27%  
q11 (pgx-lower): 0%=4.34, 25%=5.38, 50%=5.46, 75%=5.53, 100%=5.96, CV=3.98%  
q12 (PostgreSQL): 0%=30.78, 25%=31.77, 50%=32.19, 75%=32.88, 100%=44.60, CV=9.59%  
q12 (pgx-lower): 0%=7.36, 25%=8.50, 50%=8.80, 75%=8.93, 100%=9.78, CV=3.42%  
q13 (PostgreSQL): 0%=11.11, 25%=12.11, 50%=12.58, 75%=13.39, 100%=17.90, CV=7.34%  
q13 (pgx-lower): 0%=7.19, 25%=8.26, 50%=8.37, 75%=8.51, 100%=9.21, CV=4.16%  
q14 (PostgreSQL): 0%=34.97, 25%=36.75, 50%=37.30, 75%=39.83, 100%=51.87, CV=9.31%  
q14 (pgx-lower): 0%=9.69, 25%=9.99, 50%=10.29, 75%=10.53, 100%=11.59, CV=4.26%  
q15 (PostgreSQL): 0%=33.67, 25%=35.68, 50%=36.23, 75%=38.02, 100%=56.58, CV=13.69%  
q15 (pgx-lower): 0%=6.29, 25%=7.32, 50%=7.42, 75%=7.73, 100%=8.61, CV=4.03%  
q16 (PostgreSQL): 0%=31.03, 25%=33.34, 50%=33.94, 75%=34.51, 100%=47.90, CV=8.68%  
q16 (pgx-lower): 0%=5.38, 25%=6.06, 50%=6.30, 75%=6.40, 100%=6.93, CV=3.75%  
q17 (PostgreSQL): 0%=41.61, 25%=47.07, 50%=47.61, 75%=48.03, 100%=55.62, CV=4.00%  
q17 (pgx-lower): 0%=5.47, 25%=6.00, 50%=6.14, 75%=6.31, 100%=6.95, CV=3.68%  
q18 (PostgreSQL): 0%=30.96, 25%=31.84, 50%=32.35, 75%=33.41, 100%=38.55, CV=5.14%  
q18 (pgx-lower): 0%=5.72, 25%=6.27, 50%=6.46, 75%=6.63, 100%=7.13, CV=4.01%  
q19 (PostgreSQL): 0%=26.69, 25%=36.49, 50%=37.33, 75%=38.19, 100%=40.47, CV=6.02%  
q19 (pgx-lower): 0%=6.83, 25%=7.31, 50%=7.46, 75%=7.74, 100%=8.41, CV=3.80%  
q20 (PostgreSQL): 0%=39.10, 25%=40.64, 50%=41.16, 75%=42.14, 100%=55.17, CV=7.91%  
q20 (pgx-lower): 0%=3.18, 25%=3.56, 50%=3.64, 75%=3.72, 100%=4.22, CV=3.86%  
q21 (PostgreSQL): 0%=23.76, 25%=24.37, 50%=24.62, 75%=25.08, 100%=30.04, CV=4.85%  
q21 (pgx-lower): 0%=4.87, 25%=5.02, 50%=5.17, 75%=5.24, 100%=5.74, CV=3.26%  
q22 (PostgreSQL): 0%=38.01, 25%=39.45, 50%=40.05, 75%=40.65, 100%=45.41, CV=2.97%  
q22 (pgx-lower): 0%=5.59, 25%=5.83, 50%=6.05, 75%=6.18, 100%=6.75, CV=4.22%

### AGGREGATE:

PostgreSQL: 0%=6.34, 25%=18.64, 50%=31.20, 75%=37.84, 100%=58.98, CV=38.88%

pgx-lower: 0%=2.34, 25%=5.46, 50%=6.19, 75%=8.05, 100%=16.28, CV=35.82%

# LLC Miss Rate (%) Statistics - Continued

SF=1, perf stats - branch/LLC analysis, excluding {q02,q17,q20,q21}, 10 iterations

q01 (PostgreSQL): 0%=27.71, 25%=28.66, 50%=29.04, 75%=29.25, 100%=30.32, CV=1.79%  
q01 (pgx-lower): 0%=24.44, 25%=27.25, 50%=27.61, 75%=27.83, 100%=28.23, CV=3.34%  
q03 (PostgreSQL): 0%=37.93, 25%=39.14, 50%=39.43, 75%=39.73, 100%=40.28, CV=1.22%  
q03 (pgx-lower): 0%=31.45, 25%=36.63, 50%=36.88, 75%=37.09, 100%=37.60, CV=3.29%  
q04 (PostgreSQL): 0%=38.90, 25%=39.68, 50%=39.90, 75%=40.17, 100%=41.53, CV=1.25%  
q04 (pgx-lower): 0%=32.61, 25%=38.73, 50%=38.91, 75%=39.06, 100%=39.48, CV=3.50%  
q05 (PostgreSQL): 0%=36.66, 25%=37.29, 50%=37.73, 75%=38.21, 100%=38.80, CV=1.49%  
q05 (pgx-lower): 0%=33.26, 25%=36.77, 50%=36.87, 75%=37.04, 100%=37.36, CV=2.23%  
q06 (PostgreSQL): 0%=32.33, 25%=32.92, 50%=33.16, 75%=33.39, 100%=34.19, CV=1.03%  
q06 (pgx-lower): 0%=29.12, 25%=34.22, 50%=34.33, 75%=34.48, 100%=34.73, CV=3.04%  
q07 (PostgreSQL): 0%=33.62, 25%=34.13, 50%=34.34, 75%=34.47, 100%=35.10, CV=0.83%  
q07 (pgx-lower): 0%=29.50, 25%=34.04, 50%=34.22, 75%=34.40, 100%=34.69, CV=3.03%  
q08 (PostgreSQL): 0%=30.93, 25%=31.95, 50%=32.14, 75%=32.45, 100%=32.94, CV=1.26%  
q08 (pgx-lower): 0%=32.99, 25%=36.48, 50%=36.61, 75%=36.75, 100%=36.97, CV=2.26%  
q09 (PostgreSQL): 0%=27.42, 25%=28.99, 50%=29.68, 75%=30.27, 100%=31.14, CV=2.63%  
q09 (pgx-lower): 0%=8.49, 25%=40.28, 50%=40.59, 75%=40.74, 100%=41.29, CV=15.73%  
q10 (PostgreSQL): 0%=34.33, 25%=34.96, 50%=35.19, 75%=35.44, 100%=36.25, CV=0.96%  
q10 (pgx-lower): 0%=30.50, 25%=34.55, 50%=34.70, 75%=35.00, 100%=35.26, CV=3.24%  
q11 (PostgreSQL): 0%=32.05, 25%=33.02, 50%=33.28, 75%=33.59, 100%=34.50, CV=1.33%  
q11 (pgx-lower): 0%=22.25, 25%=24.44, 50%=24.59, 75%=24.72, 100%=25.00, CV=2.83%  
q12 (PostgreSQL): 0%=28.05, 25%=28.78, 50%=28.97, 75%=29.27, 100%=30.29, CV=1.28%  
q12 (pgx-lower): 0%=27.85, 25%=32.33, 50%=32.69, 75%=36.78, 100%=37.27, CV=7.99%  
q13 (PostgreSQL): 0%=49.59, 25%=50.20, 50%=50.44, 75%=50.76, 100%=51.22, CV=0.75%  
q13 (pgx-lower): 0%=44.85, 25%=45.98, 50%=46.22, 75%=46.51, 100%=46.89, CV=1.02%  
q14 (PostgreSQL): 0%=32.71, 25%=33.25, 50%=33.53, 75%=33.75, 100%=34.58, CV=1.23%  
q14 (pgx-lower): 0%=29.52, 25%=35.11, 50%=35.34, 75%=35.46, 100%=35.85, CV=4.78%  
q15 (PostgreSQL): 0%=35.45, 25%=36.03, 50%=36.34, 75%=36.59, 100%=37.33, CV=0.99%  
q15 (pgx-lower): 0%=30.62, 25%=34.74, 50%=35.06, 75%=35.12, 100%=35.34, CV=3.31%  
q16 (PostgreSQL): 0%=24.88, 25%=26.28, 50%=26.59, 75%=26.85, 100%=27.47, CV=1.61%  
q16 (pgx-lower): 0%=23.98, 25%=27.28, 50%=27.55, 75%=27.71, 100%=28.30, CV=3.94%  
q18 (PostgreSQL): 0%=7.00, 25%=7.25, 50%=7.40, 75%=7.55, 100%=8.91, CV=3.72%  
q18 (pgx-lower): 0%=34.45, 25%=39.80, 50%=40.05, 75%=40.24, 100%=40.46, CV=3.93%  
q19 (PostgreSQL): 0%=30.61, 25%=31.21, 50%=31.53, 75%=31.78, 100%=32.38, CV=1.24%  
q19 (pgx-lower): 0%=26.55, 25%=29.39, 50%=29.79, 75%=30.03, 100%=30.68, CV=2.88%  
q22 (PostgreSQL): 0%=23.16, 25%=23.71, 50%=23.98, 75%=24.34, 100%=25.19, CV=1.72%  
q22 (pgx-lower): 0%=24.39, 25%=27.92, 50%=28.13, 75%=28.30, 100%=29.97, CV=4.28%

## AGGREGATE:

PostgreSQL: 0%=7.00, 25%=29.12, 50%=33.16, 75%=36.34, 100%=51.22, CV=25.76%

pgx-lower: 0%=8.49, 25%=29.53, 50%=34.81, 75%=37.04, 100%=46.89, CV=16.21%

## **LLC Miss Rate (%) Statistics - Continued**

## Branch Miss Rate (%) Statistics

**SF=0.01, perf stats - branch/LLC analysis, 10 iterations**

q01 (PostgreSQL): 0%=0.24, 25%=0.26, 50%=0.26, 75%=0.27, 100%=0.27, CV=2.90%  
q01 (pgx-lower): 0%=0.78, 25%=0.79, 50%=0.80, 75%=0.80, 100%=0.84, CV=0.98%  
q02 (PostgreSQL): 0%=0.30, 25%=0.31, 50%=0.31, 75%=0.31, 100%=0.57, CV=17.89%  
q02 (pgx-lower): 0%=1.65, 25%=1.66, 50%=1.66, 75%=1.66, 100%=1.69, CV=0.34%  
q03 (PostgreSQL): 0%=0.25, 25%=0.26, 50%=0.26, 75%=0.26, 100%=0.46, CV=21.22%  
q03 (pgx-lower): 0%=1.09, 25%=1.09, 50%=1.10, 75%=1.10, 100%=1.13, CV=0.63%  
q04 (PostgreSQL): 0%=0.15, 25%=0.16, 50%=0.16, 75%=0.16, 100%=0.50, CV=53.29%  
q04 (pgx-lower): 0%=1.18, 25%=1.19, 50%=1.19, 75%=1.19, 100%=1.21, CV=0.41%  
q05 (PostgreSQL): 0%=0.07, 25%=0.59, 50%=0.59, 75%=0.59, 100%=0.60, CV=30.10%  
q05 (pgx-lower): 0%=1.13, 25%=1.13, 50%=1.13, 75%=1.13, 100%=1.18, CV=0.52%  
q06 (PostgreSQL): 0%=0.30, 25%=0.33, 50%=0.34, 75%=0.34, 100%=0.34, CV=3.31%  
q06 (pgx-lower): 0%=0.77, 25%=0.78, 50%=0.78, 75%=0.78, 100%=0.81, CV=0.73%  
q07 (PostgreSQL): 0%=0.27, 25%=0.27, 50%=0.27, 75%=0.27, 100%=0.50, CV=22.77%  
q07 (pgx-lower): 0%=1.11, 25%=1.12, 50%=1.12, 75%=1.12, 100%=1.14, CV=0.25%  
q08 (PostgreSQL): 0%=0.06, 25%=0.50, 50%=0.50, 75%=0.51, 100%=0.52, CV=30.50%  
q08 (pgx-lower): 0%=1.12, 25%=1.13, 50%=1.13, 75%=1.13, 100%=1.18, CV=0.60%  
q09 (PostgreSQL): 0%=0.33, 25%=0.34, 50%=0.34, 75%=0.34, 100%=0.40, CV=4.96%  
q09 (pgx-lower): 0%=0.89, 25%=0.89, 50%=0.89, 75%=0.90, 100%=0.91, CV=0.58%  
q10 (PostgreSQL): 0%=0.22, 25%=0.26, 50%=0.27, 75%=0.27, 100%=0.27, CV=5.68%  
q10 (pgx-lower): 0%=0.98, 25%=0.98, 50%=0.98, 75%=0.98, 100%=1.06, CV=1.15%  
q11 (PostgreSQL): 0%=0.35, 25%=0.37, 50%=0.38, 75%=0.38, 100%=0.39, CV=2.39%  
q11 (pgx-lower): 0%=1.79, 25%=1.79, 50%=1.79, 75%=1.80, 100%=1.85, CV=0.62%  
q12 (PostgreSQL): 0%=0.19, 25%=0.20, 50%=0.20, 75%=0.20, 100%=0.24, CV=4.13%  
q12 (pgx-lower): 0%=0.97, 25%=0.98, 50%=0.99, 75%=0.99, 100%=1.02, CV=0.96%  
q13 (PostgreSQL): 0%=0.46, 25%=0.47, 50%=0.47, 75%=0.47, 100%=0.57, CV=4.43%  
q13 (pgx-lower): 0%=1.95, 25%=1.96, 50%=1.96, 75%=1.96, 100%=2.04, CV=0.55%  
q14 (PostgreSQL): 0%=0.22, 25%=0.25, 50%=0.25, 75%=0.25, 100%=0.25, CV=3.55%  
q14 (pgx-lower): 0%=0.91, 25%=0.92, 50%=0.92, 75%=0.92, 100%=0.96, CV=0.86%  
q15 (PostgreSQL): 0%=0.26, 25%=0.28, 50%=0.29, 75%=0.29, 100%=0.31, CV=4.13%  
q15 (pgx-lower): 0%=1.08, 25%=1.09, 50%=1.09, 75%=1.09, 100%=1.14, CV=0.55%  
q16 (PostgreSQL): 0%=0.48, 25%=0.49, 50%=0.50, 75%=0.50, 100%=0.54, CV=1.42%  
q16 (pgx-lower): 0%=1.64, 25%=1.65, 50%=1.65, 75%=1.65, 100%=1.72, CV=0.83%  
q17 (PostgreSQL): 0%=1.44, 25%=1.59, 50%=1.60, 75%=1.61, 100%=1.87, CV=3.31%  
q17 (pgx-lower): 0%=0.94, 25%=0.95, 50%=0.95, 75%=0.95, 100%=0.99, CV=0.49%  
q18 (PostgreSQL): 0%=0.16, 25%=0.16, 50%=0.16, 75%=0.17, 100%=0.27, CV=14.01%  
q18 (pgx-lower): 0%=0.90, 25%=0.90, 50%=0.90, 75%=0.90, 100%=0.95, CV=0.97%  
q19 (PostgreSQL): 0%=0.22, 25%=0.23, 50%=0.23, 75%=0.25, 100%=0.26, CV=4.50%  
q19 (pgx-lower): 0%=0.79, 25%=0.80, 50%=0.81, 75%=0.81, 100%=0.87, CV=1.23%  
q20 (PostgreSQL): 0%=0.24, 25%=0.28, 50%=0.28, 75%=0.28, 100%=0.29, CV=4.13%  
q20 (pgx-lower): 0%=1.37, 25%=1.38, 50%=1.38, 75%=1.38, 100%=1.41, CV=0.40%  
q21 (PostgreSQL): 0%=0.32, 25%=0.37, 50%=0.37, 75%=0.37, 100%=0.38, CV=4.07%  
q21 (pgx-lower): 0%=0.99, 25%=1.00, 50%=1.00, 75%=1.00, 100%=1.02, CV=0.34%  
q22 (PostgreSQL): 0%=0.32, 25%=0.36, 50%=0.36, 75%=0.36, 100%=0.41, CV=4.07%  
q22 (pgx-lower): 0%=1.99, 25%=1.99, 50%=1.99, 75%=2.00, 100%=2.02, CV=0.34%

### AGGREGATE:

**PostgreSQL: 0%=0.06, 25%=0.26, 50%=0.31, 75%=0.38, 100%=1.87, CV=75.36%**

**pgx-lower: 0%=0.77, 25%=0.92, 50%=1.09, 75%=1.38, 100%=2.04, CV=30.98%**

# Branch Miss Rate (%) Statistics - Continued

SF=1, perf stats - branch/LLC analysis, excluding {q02,q17,q20,q21}, 10 iterations

q01 (PostgreSQL): 0%=0.22, 25%=0.24, 50%=0.25, 75%=0.25, 100%=0.26, CV=3.23%  
q01 (pgx-lower): 0%=0.25, 25%=0.26, 50%=0.26, 75%=0.26, 100%=0.28, CV=1.94%  
q03 (PostgreSQL): 0%=0.38, 25%=0.38, 50%=0.38, 75%=0.38, 100%=0.39, CV=0.52%  
q03 (pgx-lower): 0%=0.13, 25%=0.13, 50%=0.13, 75%=0.13, 100%=0.14, CV=2.04%  
q04 (PostgreSQL): 0%=0.38, 25%=0.38, 50%=0.38, 75%=0.38, 100%=0.39, CV=1.07%  
q04 (pgx-lower): 0%=0.11, 25%=0.11, 50%=0.11, 75%=0.11, 100%=0.12, CV=2.41%  
q05 (PostgreSQL): 0%=0.39, 25%=0.40, 50%=0.40, 75%=0.40, 100%=0.41, CV=0.93%  
q05 (pgx-lower): 0%=0.13, 25%=0.13, 50%=0.13, 75%=0.13, 100%=0.14, CV=2.04%  
q06 (PostgreSQL): 0%=0.32, 25%=0.32, 50%=0.32, 75%=0.32, 100%=0.33, CV=1.14%  
q06 (pgx-lower): 0%=0.23, 25%=0.23, 50%=0.23, 75%=0.23, 100%=0.24, CV=0.83%  
q07 (PostgreSQL): 0%=0.37, 25%=0.38, 50%=0.38, 75%=0.38, 100%=0.39, CV=1.08%  
q07 (pgx-lower): 0%=0.11, 25%=0.11, 50%=0.11, 75%=0.11, 100%=0.12, CV=2.41%  
q08 (PostgreSQL): 0%=0.45, 25%=0.47, 50%=0.47, 75%=0.47, 100%=0.49, CV=1.02%  
q08 (pgx-lower): 0%=0.13, 25%=0.13, 50%=0.13, 75%=0.13, 100%=0.14, CV=2.74%  
q09 (PostgreSQL): 0%=0.28, 25%=0.28, 50%=0.28, 75%=0.29, 100%=0.29, CV=1.63%  
q09 (pgx-lower): 0%=0.19, 25%=0.20, 50%=0.20, 75%=0.20, 100%=2.64, CV=160.88%  
q10 (PostgreSQL): 0%=0.20, 25%=0.20, 50%=0.21, 75%=0.21, 100%=0.21, CV=2.44%  
q10 (pgx-lower): 0%=0.15, 25%=0.16, 50%=0.17, 75%=0.18, 100%=0.20, CV=7.57%  
q11 (PostgreSQL): 0%=0.18, 25%=0.18, 50%=0.19, 75%=0.19, 100%=0.20, CV=3.18%  
q11 (pgx-lower): 0%=0.24, 25%=0.24, 50%=0.24, 75%=0.24, 100%=0.27, CV=2.49%  
q12 (PostgreSQL): 0%=0.21, 25%=0.21, 50%=0.21, 75%=0.21, 100%=0.23, CV=2.03%  
q12 (pgx-lower): 0%=0.18, 25%=0.19, 50%=0.24, 75%=0.24, 100%=0.26, CV=12.10%  
q13 (PostgreSQL): 0%=0.41, 25%=0.42, 50%=0.42, 75%=0.43, 100%=0.45, CV=2.25%  
q13 (pgx-lower): 0%=0.37, 25%=0.37, 50%=0.38, 75%=0.38, 100%=0.38, CV=1.22%  
q14 (PostgreSQL): 0%=0.20, 25%=0.21, 50%=0.21, 75%=0.21, 100%=0.21, CV=0.47%  
q14 (pgx-lower): 0%=0.08, 25%=0.08, 50%=0.08, 75%=0.08, 100%=0.10, CV=5.58%  
q15 (PostgreSQL): 0%=0.21, 25%=0.22, 50%=0.22, 75%=0.22, 100%=0.23, CV=1.75%  
q15 (pgx-lower): 0%=0.09, 25%=0.09, 50%=0.09, 75%=0.09, 100%=0.10, CV=2.94%  
q16 (PostgreSQL): 0%=0.32, 25%=0.33, 50%=0.33, 75%=0.34, 100%=0.35, CV=1.76%  
q16 (pgx-lower): 0%=0.35, 25%=0.35, 50%=0.36, 75%=0.36, 100%=0.37, CV=1.46%  
q18 (PostgreSQL): 0%=0.07, 25%=0.07, 50%=0.07, 75%=0.07, 100%=0.07, CV=0.00%  
q18 (pgx-lower): 0%=0.08, 25%=0.08, 50%=0.08, 75%=0.08, 100%=0.10, CV=7.76%  
q19 (PostgreSQL): 0%=0.20, 25%=0.20, 50%=0.21, 75%=0.21, 100%=0.25, CV=3.69%  
q19 (pgx-lower): 0%=0.14, 25%=0.14, 50%=0.15, 75%=0.16, 100%=0.16, CV=5.34%  
q22 (PostgreSQL): 0%=0.22, 25%=0.23, 50%=0.23, 75%=0.26, 100%=0.28, CV=7.33%  
q22 (pgx-lower): 0%=0.19, 25%=0.19, 50%=0.19, 75%=0.19, 100%=0.21, CV=2.55%

## AGGREGATE:

PostgreSQL: 0%=0.07, 25%=0.21, 50%=0.28, 75%=0.38, 100%=0.49, CV=35.35%

pgx-lower: 0%=0.08, 25%=0.11, 50%=0.16, 75%=0.24, 100%=2.64, CV=76.16%

## **Branch Miss Rate (%) Statistics - Continued**

# Number of Branches Statistics

SF=0.01, perf stats - branch/LLC analysis, 10 iterations

q01 (PostgreSQL): 0%=110648218.00, 25%=110905635.00, 50%=110985899.00, 75%=111090194.00, 100%=227446364.00, CV=27.61%  
q01 (pgx-lower): 0%=293740398.00, 25%=293872532.25, 50%=293939436.00, 75%=294058703.25, 100%=304656110.00, CV=0.36%  
q02 (PostgreSQL): 0%=21599673.00, 25%=21622118.25, 50%=21623520.00, 75%=21625030.75, 100%=27495779.00, CV=6.23%  
q02 (pgx-lower): 0%=201751602.00, 25%=202186882.75, 50%=202311538.00, 75%=202375000.25, 100%=205506115.00, CV=0.18%  
q03 (PostgreSQL): 0%=28170874.00, 25%=57760316.75, 50%=57763096.50, 75%=57764866.75, 100%=57821040.00, CV=16.86%  
q03 (pgx-lower): 0%=266160087.00, 25%=266546541.50, 50%=266603610.50, 75%=266680920.00, 100%=267602130.00, CV=0.06%  
q04 (PostgreSQL): 0%=8877423.00, 25%=39109278.25, 50%=39128933.00, 75%=39130704.50, 100%=39155017.00, CV=26.43%  
q04 (pgx-lower): 0%=114254983.00, 25%=114325030.00, 50%=114353022.00, 75%=114373317.50, 100%=114574616.00, CV=0.04%  
q05 (PostgreSQL): 0%=16084472.00, 25%=16107110.00, 50%=16108427.50, 75%=16109826.25, 100%=153760935.00, CV=137.80%  
q05 (pgx-lower): 0%=186854179.00, 25%=187517218.25, 50%=187568621.00, 75%=187613375.50, 100%=187799738.00, CV=0.09%  
q06 (PostgreSQL): 0%=23900447.00, 25%=23923921.50, 50%=23925282.00, 75%=23927088.50, 100%=27339083.00, CV=3.91%  
q06 (pgx-lower): 0%=101666491.00, 25%=101959097.00, 50%=102010696.50, 75%=102128525.25, 100%=102459450.00, CV=0.15%  
q07 (PostgreSQL): 0%=20532238.00, 25%=64014504.75, 50%=64019893.50, 75%=64021635.75, 100%=64068823.00, CV=22.96%  
q07 (pgx-lower): 0%=198593779.00, 25%=198707668.50, 50%=198743792.00, 75%=198779824.50, 100%=199182992.00, CV=0.04%  
q08 (PostgreSQL): 0%=28402533.00, 25%=28408668.50, 50%=28427753.00, 75%=28429976.00, 100%=289356521.00, CV=142.79%  
q08 (pgx-lower): 0%=230868347.00, 25%=230989040.00, 50%=231039929.00, 75%=231087271.00, 100%=231788823.00, CV=0.05%  
q09 (PostgreSQL): 0%=75702110.00, 25%=75725082.00, 50%=75728913.50, 75%=75732471.00, 100%=89790110.00, CV=5.63%  
q09 (pgx-lower): 0%=272274589.00, 25%=272393787.50, 50%=272445106.50, 75%=272505466.25, 100%=273540204.00, CV=0.05%  
q10 (PostgreSQL): 0%=36850045.00, 25%=36871787.75, 50%=36874824.50, 75%=36876764.25, 100%=50021870.00, CV=10.61%  
q10 (pgx-lower): 0%=201635919.00, 25%=201728677.00, 50%=201772111.50, 75%=201809972.25, 100%=202233145.00, CV=0.04%  
q11 (PostgreSQL): 0%=10705741.00, 25%=10725705.25, 50%=10726974.50, 75%=10728095.75, 100%=10966098.00, CV=0.31%  
q11 (pgx-lower): 0%=109074955.00, 25%=109126281.50, 50%=109159805.50, 75%=109180753.50, 100%=109484420.00, CV=0.05%  
q12 (PostgreSQL): 0%=45075305.00, 25%=50374222.00, 50%=50376816.50, 75%=50378367.00, 100%=50386248.00, CV=3.32%  
q12 (pgx-lower): 0%=135875947.00, 25%=135964087.75, 50%=136334813.50, 75%=136398236.75, 100%=136579944.00, CV=0.17%  
q13 (PostgreSQL): 0%=24829738.00, 25%=24846193.50, 50%=24855149.00, 75%=24857043.00, 100%=25752196.00, CV=0.76%  
q13 (pgx-lower): 0%=63480050.00, 25%=63547842.50, 50%=63568568.50, 75%=63578605.50, 100%=63943473.00, CV=0.08%  
q14 (PostgreSQL): 0%=22068780.00, 25%=22092107.00, 50%=22093475.00, 75%=22095137.50, 100%=25122582.00, CV=4.22%  
q14 (pgx-lower): 0%=110830183.00, 25%=110857123.75, 50%=110879965.00, 75%=110912651.75, 100%=111098381.00, CV=0.04%  
q15 (PostgreSQL): 0%=22433211.00, 25%=22454239.50, 50%=22456345.00, 75%=22457551.00, 100%=26248382.00, CV=4.95%  
q15 (pgx-lower): 0%=128582448.00, 25%=128623669.50, 50%=128642590.00, 75%=128682077.00, 100%=128834769.00, CV=0.04%  
q16 (PostgreSQL): 0%=14264050.00, 25%=14931621.50, 50%=14937419.00, 75%=14938929.25, 100%=15151484.00, CV=1.27%  
q16 (pgx-lower): 0%=107531015.00, 25%=107627360.00, 50%=107667191.50, 75%=107707179.50, 100%=107958815.00, CV=0.06%  
q17 (PostgreSQL): 0%=1072889.00, 25%=1092347.00, 50%=1092552.00, 75%=1092976.75, 100%=1125260.00, CV=0.70%  
q17 (pgx-lower): 0%=215585477.00, 25%=215727772.00, 50%=215759823.50, 75%=215814921.75, 100%=215898824.00, CV=0.03%  
q18 (PostgreSQL): 0%=60768880.00, 25%=92792031.50, 50%=92795581.00, 75%=92800663.00, 100%=92822702.00, CV=8.42%  
q18 (pgx-lower): 0%=212747849.00, 25%=212794927.00, 50%=212824523.50, 75%=212855963.50, 100%=213117959.00, CV=0.02%  
q19 (PostgreSQL): 0%=45006929.00, 25%=45033840.75, 50%=45036731.00, 75%=45058472.00, 100%=51450215.00, CV=4.03%  
q19 (pgx-lower): 0%=190949315.00, 25%=191244318.00, 50%=191378254.00, 75%=191654893.75, 100%=192004264.00, CV=0.14%  
q20 (PostgreSQL): 0%=43401630.00, 25%=43427327.50, 50%=43429679.00, 75%=43430892.50, 100%=49633924.00, CV=4.15%  
q20 (pgx-lower): 0%=248268176.00, 25%=248401332.75, 50%=248466606.50, 75%=249514557.50, 100%=249713930.00, CV=0.21%  
q21 (PostgreSQL): 0%=33057878.00, 25%=33080351.75, 50%=33081580.50, 75%=33082819.25, 100%=37033193.00, CV=3.53%  
q21 (pgx-lower): 0%=306883840.00, 25%=306998628.25, 50%=307040500.50, 75%=307360376.00, 100%=307487765.00, CV=0.06%  
q22 (PostgreSQL): 0%=12381565.00, 25%=12400103.00, 50%=12401133.50, 75%=12408848.75, 100%=13536769.00, CV=2.04%  
q22 (pgx-lower): 0%=90468380.00, 25%=90567502.75, 50%=90604724.00, 75%=90633346.00, 100%=90912358.00, CV=0.07%

## AGGREGATE:

PostgreSQL: 0%=1072889.00, 25%=21623001.25, 50%=28430465.00, 75%=50377392.50, 100%=289356521.00, CV=86.40%

pgx-lower: 0%=63480050.00, 25%=110880136.50, 50%=195299021.50, 75%=231039615.50, 100%=307487765.00, CV=38.58%

# Number of Branches Statistics Continued

SF=1, perf stats - branch/LLC analysis, excluding {q02,q17,q20,q21}, 10 iterations

q01 (PostgreSQL): 0%=7116116745.00, 25%=7161212040.75, 50%=7169305735.50, 75%=7178351788.75, 100%=7380093902.00, CV=0.55%  
q01 (pgx-lower): 0%=13495306237.00, 25%=13507848645.00, 50%=13508756802.50, 75%=13511391287.00, 100%=13681083934.00, CV=0.35%  
q03 (PostgreSQL): 0%=987139692.00, 25%=990496649.75, 50%=992083383.50, 75%=993601405.00, 100%=996794091.00, CV=0.23%  
q03 (pgx-lower): 0%=15643398891.00, 25%=15644457521.50, 50%=15646826244.00, 75%=15671519428.25, 100%=16101638868.00, CV=0.60%  
q04 (PostgreSQL): 0%=300263648.00, 25%=305232475.00, 50%=305912160.50, 75%=306583446.75, 100%=308976670.00, CV=0.40%  
q04 (pgx-lower): 0%=6503403198.00, 25%=6503706001.00, 50%=6504126524.50, 75%=6504450982.75, 100%=6728516897.00, CV=0.71%  
q05 (PostgreSQL): 0%=364010497.00, 25%=367184404.25, 50%=367958032.50, 75%=368698914.00, 100%=370642608.00, CV=0.32%  
q05 (pgx-lower): 0%=8480982699.00, 25%=8482223368.25, 50%=8483246725.50, 75%=8484640255.50, 100%=8676220369.00, CV=0.49%  
q06 (PostgreSQL): 0%=826083151.00, 25%=829853417.50, 50%=830342232.00, 75%=831610541.00, 100%=842299555.00, CV=0.30%  
q06 (pgx-lower): 0%=8079203198.00, 25%=8082372824.75, 50%=8083047811.00, 75%=8084191053.50, 100%=8267270425.00, CV=0.44%  
q07 (PostgreSQL): 0%=610989006.00, 25%=614653621.00, 50%=615812071.00, 75%=616526625.00, 100%=618708239.00, CV=0.26%  
q07 (pgx-lower): 0%=8846610921.00, 25%=8851509938.00, 50%=8853366312.50, 75%=8864451361.75, 100%=9084917789.00, CV=0.54%  
q08 (PostgreSQL): 0%=1092047656.00, 25%=1097681616.25, 50%=1099485558.50, 75%=1101933745.75, 100%=1106162489.00, CV=0.26%  
q08 (pgx-lower): 0%=8933193979.00, 25%=8946057017.75, 50%=8946911579.00, 75%=8948440148.00, 100%=9142241327.00, CV=0.46%  
q09 (PostgreSQL): 0%=3010056016.00, 25%=3025640002.00, 50%=3030421809.00, 75%=3035173979.75, 100%=3048305201.00, CV=0.24%  
q09 (pgx-lower): 0%=16221659139.00, 25%=16230166942.25, 50%=16235844399.50, 75%=16242991598.00, 100%=122897607809.00, CV=100.77%  
q10 (PostgreSQL): 0%=1359187901.00, 25%=1371487897.50, 50%=1375161968.00, 75%=1379435037.00, 100%=1394662621.00, CV=0.56%  
q10 (pgx-lower): 0%=12477727127.00, 25%=12498395902.75, 50%=12526494288.50, 75%=12548738755.25, 100%=12809574993.00, CV=0.60%  
q11 (PostgreSQL): 0%=324542240.00, 25%=325680242.75, 50%=329946468.50, 75%=332210833.25, 100%=336214491.00, CV=1.04%  
q11 (pgx-lower): 0%=1898068311.00, 25%=1898514337.00, 50%=1899210946.00, 75%=1899693404.75, 100%=1976322388.00, CV=0.86%  
q12 (PostgreSQL): 0%=1582532928.00, 25%=1586696000.75, 50%=1587890166.00, 75%=1588762252.00, 100%=1595347617.00, CV=0.14%  
q12 (pgx-lower): 0%=8522192941.00, 25%=8525867095.50, 50%=8527059543.50, 75%=8563979935.75, 100%=8774143116.00, CV=0.81%  
q13 (PostgreSQL): 0%=1206390711.00, 25%=1210190525.50, 50%=1211959756.50, 75%=1325370756.00, 100%=1329955393.00, CV=4.33%  
q13 (pgx-lower): 0%=2657726865.00, 25%=2659212460.00, 50%=2661354731.50, 75%=2661607561.25, 100%=2715226799.00, CV=0.65%  
q14 (PostgreSQL): 0%=766641123.00, 25%=769572115.50, 50%=770044520.50, 75%=770897912.00, 100%=777899228.00, CV=0.21%  
q14 (pgx-lower): 0%=7290546425.00, 25%=7290655532.25, 50%=7290713702.50, 75%=7291095134.75, 100%=7490861729.00, CV=0.78%  
q15 (PostgreSQL): 0%=823515760.00, 25%=827597165.25, 50%=828201664.50, 75%=828771925.75, 100%=836865911.00, CV=0.23%  
q15 (pgx-lower): 0%=7264220645.00, 25%=7264377416.50, 50%=7264436248.00, 75%=7264754755.50, 100%=7453851344.00, CV=0.60%  
q16 (PostgreSQL): 0%=852669837.00, 25%=858127404.75, 50%=860612660.00, 75%=863569755.75, 100%=869389177.00, CV=0.42%  
q16 (pgx-lower): 0%=3828088738.00, 25%=3829015831.25, 50%=3829502302.00, 75%=3831228245.50, 100%=3873805567.00, CV=0.32%  
q18 (PostgreSQL): 0%=6703721151.00, 25%=6706730342.75, 50%=6708282086.00, 75%=6710081475.75, 100%=6717530210.00, CV=0.04%  
q18 (pgx-lower): 0%=12860930671.00, 25%=12861363410.50, 50%=12861765666.00, 75%=12863047813.50, 100%=13284901664.00, CV=0.85%  
q19 (PostgreSQL): 0%=1481569243.00, 25%=1488478079.25, 50%=1489686134.50, 75%=1490916503.75, 100%=1499835331.00, CV=0.20%  
q19 (pgx-lower): 0%=12019402647.00, 25%=12022161484.00, 50%=12023607989.00, 75%=12026805619.00, 100%=12166842221.00, CV=0.25%  
q22 (PostgreSQL): 0%=418936652.00, 25%=427771220.50, 50%=433576604.50, 75%=443336665.25, 100%=455653644.00, CV=2.10%  
q22 (pgx-lower): 0%=1563354665.00, 25%=1563491686.00, 50%=1563546173.00, 75%=1563613107.00, 100%=1617973130.00, CV=1.02%

## AGGREGATE:

PostgreSQL: 0%=300263648.00, 25%=615817690.00, 50%=928264434.50, 75%=1489679500.75, 100%=7380093902.00, CV=117.70%

pgx-lower: 0%=1563354665.00, 25%=6504164417.75, 50%=8524076442.50, 75%=12527146027.75, 100%=122897607809.00, CV=76.18%

## **Number of Branches Statistics - Continued**